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MITSUBISHI HEAVY INDUSTRIES

TECHNICAL MANUAL

MICRO INVERTER PACKAGED AIR-CONDITIONERS

(Split system, air to air heat pump type)

CEILING CASSETTE-4 WAY TYPE

Single type	Twin type	Triple type
FDT100VNAVG	FDT100VNAPVG	FDT140VNATVG
100VSAVG	100VSAPVG	140VSATVG
125VNAVG	125VNAPVG	
125VSAVG	125VSAPVG	
140VNAVG	140VNAPVG	
140VSAVG	140VSAPVG	

CEILING CASSETTE-4 WAY COMPACT TYPE

Twin type	Triple type
FDTC100VNAPVF	FDTC140VNATVF
100VSAPVF	140VSATVF
125VNAPVF	
125VSAPVF	

CEILING SUSPENDED TYPE

Single type	Twin type	Triple type
FDE100VNAVG	FDE100VNAPVG	FDE140VNATVG
100VSAVG	100VSAPVG	140VSATVG
125VNAVG	125VNAPVG	
125VSAVG	125VSAPVG	
140VNAVG	140VNAPVG	
140VSAVG	140VSAPVG	

DUCT CONNECTED-LOW/MIDDLE STATIC PRESSURE TYPE

Single type	Twin type	Triple type
FDUM100VNAVF2	FDUM100VNAPVF	FDUM140VNATVF
100VSAVF2	100VSAPVF	140VSATVF
125VNAVF	125VNAPVF	
125VSAVF	125VSAPVF	
140VNAVF	140VNAPVF1	
140VSAVF	140VSAPVF1	

DUCT CONNECTED-HIGH STATIC PRESSURE TYPE

Single type
FDU100VNAVF2
100VSAVF2
125VNAVF
125VSAVF
140VNAVF
140VSAVF

FLOOR STANDING TYPE

Single type	Twin type
FDF100VNAVD2	FDF140VNAPVD1
100VSAVD2	140VSAPVD1
125VNAVD	
125VSAVD	
140VNAVD	
140VSAVD	

WALL MOUNTED TYPE

Single type	Twin type	Triple type
SRK100VNAZR	SRK100VNAPZSX	SRK140VNATZSX
100VSAZR	100VSAPZSX	140VSATZSX
	125VNAPZSX	
	125VSAPZSX	

V Multi System

(OUTDOOR UNIT)	(INDOOR UNIT)	
FDC100VNA	FDT50VG	FDE50VG
100VSA	60VG	60VG
125VNA	71VG	71VG
125VSA		
140VNA		
140VSA		

MITSUBISHI HEAVY INDUSTRIES THERMAL SYSTEMS, LTD.

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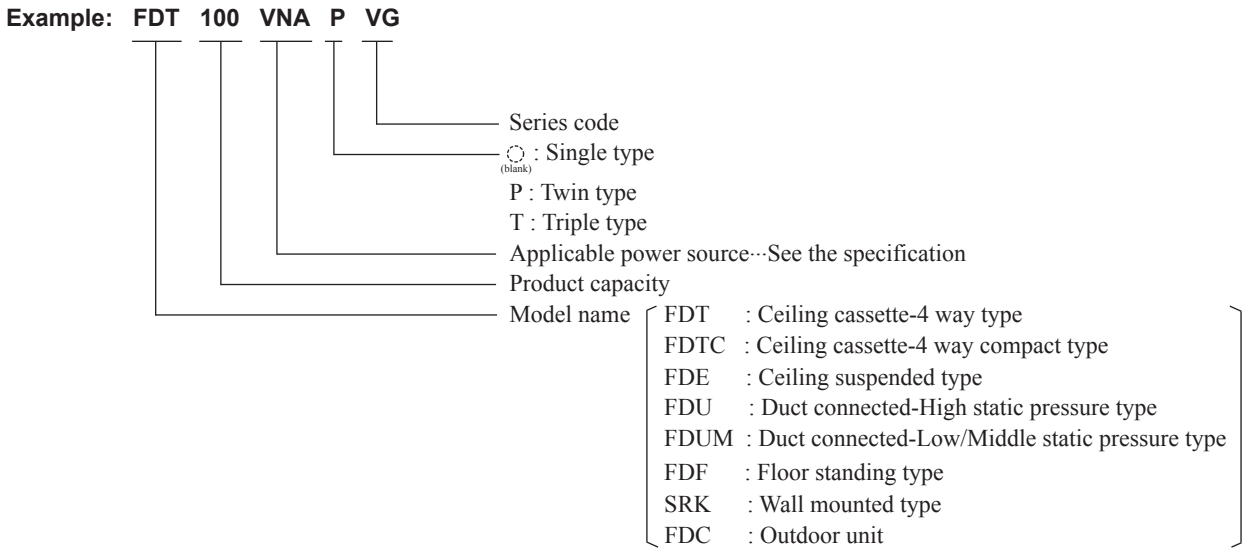
■How to read the model name



1.1 SPECIFICATIONS

(1) Ceiling cassette-4 way type (FDT)

(a) Single type

Item			Model	FDT100VNAVG	
				Indoor unit **FDT100VG**	Outdoor unit **FDC100VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ~ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ~ 12.5(Max.)]	
	Power consumption	Cooling	kW	2.73	
		Heating		2.64	
	Max power consumption			6.40	
	Running current	Cooling	A	13.2 / 13.8	
		Heating		12.9 / 13.5	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	90	
		Heating		89	
	EER	Cooling		3.66	
	COP	Heating		4.26	
	Sound power level	Cooling	dB(A)	63	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 48 Hi : 39 Me : 37 Lo : 31	54
		Heating			56
	Silent mode sound pressure level			—	50/44 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	Unit 298 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 25 PANEL 5	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	140 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 37 Hi : 26 Me : 23 Lo : 17	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1(Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired : RC-EX3 , RC-E5 , RCH-E3 Wireless : RCN-T-5AW-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25 (O.D.32)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 850	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

PJF000Z425 G

Item			Model	FDT100VSAVG	
				Indoor unit **FDT100VG**	Outdoor unit **FDC100VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	Power consumption	Cooling	kW	2.73	
		Heating		2.63	
	Max power consumption			10.20	
	Running current	Cooling	A	4.2 / 4.4	
		Heating		4.1 / 4.3	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	94	
		Heating		93	
	EER	Cooling		3.66	
	COP	Heating		4.26	
	Sound power level	Cooling	dB(A)	63	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 48 Hi : 39 Me : 37 Lo : 31	54
		Heating			56
	Silent mode sound pressure level			—	50/44 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	Unit 298 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 25 PANEL 5	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	140 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 37 Hi : 26 Me : 23 Lo : 17	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1(Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired : RC-EX3 , RC-E5 , RCH-E3 Wireless : RCN-T-5AW-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25 (O.D.32)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 850	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

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Item				Model	FDT125VNAVG	
					Indoor unit **FDT125VG**	Outdoor unit **FDC125VNA**
Power source					1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)			kW	12.5 [5.0(Min.) ～ 14.0(Max.)]	
	Nominal heating capacity (range)			kW	14.0 [4.0(Min.) ～ 16.0(Max.)]	
	Power consumption		Cooling	kW	4.05	
			Heating		3.74	
	Max power consumption				6.40	
	Running current		Cooling	A	18.7 / 19.6	
			Heating		17.5 / 18.3	
	Inrush current, max current				5, 24	
	Power factor		Cooling	%	94	
			Heating		93	
	EER		Cooling		3.09	
	COP		Heating		3.74	
	Sound power level		Cooling	dB(A)	64	71
			Heating			
	Sound pressure level		Cooling		P-Hi : 49 Hi : 41 Me : 39 Lo : 32	55
			Heating			57
	Silent mode sound pressure level				—	51/45 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)				mm	Unit 298 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)					Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight				kg	UNIT 25 PANEL 5	80
Compressor type & Q'ty					—	RMT5126MCE3×1
Compressor motor (Starting method)				kW	—	Direct line start
Refrigerant oil (Amount, type)				ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)				kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger					Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control					Electronic expansion valve	
Fan type & Q'ty					Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)				W	140 < Direct line start >	86 < Direct line start >
Air flow			Cooling	m^3/min	P-Hi : 38 Hi : 28 Me : 25 Lo : 18	75
			Heating			73
Available external static pressure				Pa	0	—
Outside air intake					Possible	—
Air filter, Quality / Quantity					Pocket plastic net ×1(Washable)	—
Shock & vibration absorber					Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater				W	—	20 (Crankcase heater)
Operation control	Remote control				(Option) Wired : RC-EX3 , RC-E5 , RCH-E3 Wireless : RCN-T-5AW-E2	
	Room temperature control				Thermostat by electronics	
	Operation display				—	
Safety equipments					Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)			mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
					Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method				Flare piping	Flare piping
	Attached length of piping			m	—	—
	Insulation for piping				Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length			m	Max.50m	
	Vertical height diff. between O.U. and I.U.			m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose				Hose connectable with VP25 (O.D.32)	Hole size ϕ20 × 3pcs
Drain pump, max lift height				mm	Built-in drain pump , 850	—
Recommended breaker size				A	—	
L.R.A. (Locked rotor ampere)				A	5.0	
Interconnecting wires	Size × Core number				ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number					IPX0	IP24
Standard accessories					Mounting kit, Drain hose	—
Option parts					—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

Item			Model	FDT125VSAVG	
				Indoor unit **FDT125VG**	Outdoor unit **FDC125VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.) ~ 14.0(Max.)]	
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.) ~ 16.0(Max.)]	
	Power consumption	Cooling	kW	4.05	
		Heating		3.74	
	Max power consumption			10.20	
	Running current	Cooling	A	6.2 / 6.5	
		Heating		5.7 / 6.0	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	94 / 95	
		Heating		95	
	EER	Cooling		3.09	
	COP	Heating		3.74	
	Sound power level	Cooling	dB(A)	64	71
		Heating			
	Sound pressure level	Cooling		P-Hi : 49 Hi : 41 Me : 39 Lo : 32	55
		Heating			57
	Silent mode sound pressure level			—	51/45 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	Unit 298 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 25 PANEL 5	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	140 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 38 Hi : 28 Me : 25 Lo : 18	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1(Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired : RC-EX3 , RC-E5 , RCH-E3 Wireless : RCN-T-5AW-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8") Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25 (O.D.32)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 850	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

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Item			Model	FDT140VNAVG	
				Indoor unit **FDT140VG**	Outdoor unit **FDC140VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	4.84	
		Heating		4.43	
	Max power consumption			6.40	
	Running current	Cooling	A	21.7 / 22.7	
		Heating		19.7 / 20.5	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	97	
		Heating		98	
	EER	Cooling		2.81	
	COP	Heating		3.50	
	Sound power level	Cooling	dB(A)	64	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 49 Hi : 42 Me : 39 Lo : 33	57
		Heating			59
	Silent mode sound pressure level			—	53/47 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	Unit 298 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 25 PANEL 5	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	140 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 38 Hi : 29 Me : 26 Lo : 19	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1(Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired : RC-EX3 , RC-E5 , RCH-E3 Wireless : RCN-T-5AW-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25 (O.D.32)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 850	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

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Item			Model	FDT140VSAVG	
				Indoor unit **FDT140VG**	Outdoor unit **FDC140VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	4.84	
		Heating		4.43	
	Max power consumption			10.20	
	Running current	Cooling	A	7.4 / 7.8	
		Heating		7.0 / 7.4	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	94	
		Heating		91	
	EER	Cooling		2.81	
	COP	Heating		3.50	
	Sound power level	Cooling	dB(A)	64	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 49 Hi : 42 Me : 39 Lo : 33	57
		Heating			59
	Silent mode sound pressure level			—	53/47 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	Unit 298 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 25 PANEL 5	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	140 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 38 Hi : 29 Me : 26 Lo : 19	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1(Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired : RC-EX3 , RC-E5 , RCH-E3 Wireless : RCN-T-5AW-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ϕ9.52(3/8")x0.8 ϕ9.52(3/8")x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ϕ12.7(1/2")x0.8 ϕ15.88(5/8")x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25 (O.D.32)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 850	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

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(b) Twin type

Item			Model	FDT100VNAPVG	
				Indoor unit **FDT50VG (2 units)**	Outdoor unit **FDC100VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	Power consumption	Cooling	kW	2.82	
		Heating		2.90	
	Max power consumption			6.40	
	Running current	Cooling	A	12.4 / 12.9	
		Heating		12.7 / 13.3	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	99	
		Heating		99	
	EER	Cooling		3.55	
	COP	Heating		3.86	
	Sound power level	Cooling	dB(A)	54	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 38 Hi : 33 Me : 30 Lo : 27	54
		Heating			56
	Silent mode sound pressure level			—	50 / 44 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	Unit 236 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 19 PANEL 5	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	50 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 20 Hi : 16 Me : 13 Lo : 10	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3 , RC-E5 , RCH-E3 wireless : RCN-T-5AW-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52(3/8")x0.8 ①ϕ9.52(3/8")x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7(1/2")x0.8 ①ϕ15.88(5/8")x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25 (O.D.32)	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 850	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

Item			Model	FDT100VSAPVG	
				Indoor unit **FDT50VG (2 units)**	Outdoor unit **FDC100VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	Power consumption	Cooling	kW	2.82	
		Heating		2.9	
	Max power consumption			10.2	
	Running current	Cooling	A	4.1 / 4.4	
		Heating		4.3 / 4.5	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	99 / 97	
		Heating		97 / 98	
	EER	Cooling		3.55	
	COP	Heating		3.86	
	Sound power level	Cooling	dB(A)	54	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 38 Hi : 33 Me : 30 Lo : 27	54
		Heating			56
	Silent mode sound pressure level			—	50 / 44 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	Unit 236 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 19 PANEL 5	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg (Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	50 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 20 Hi : 16 Me : 13 Lo : 10	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3 , RC-E5 , RCH-E3 wireless : RCN-T-5AW-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52(3/8")x0.8 ①ϕ9.52(3/8")x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7(1/2")x0.8 ①ϕ15.88(5/8")x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25 (O.D.32)	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 850	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm x 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

Item			Model	FDT125VNAPVG	
				Indoor unit **FDT60VG (2 units)**	Outdoor unit **FDC125VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.) ～ 14.0(Max.)]	
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.) ～ 16.0(Max.)]	
	Power consumption	Cooling	kW	3.79	
		Heating		3.31	
	Max power consumption			6.40	
	Running current	Cooling	A	16.6 / 17.4	
		Heating		14.5 / 15.2	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	99	
		Heating		99	
	EER	Cooling		3.30	
	COP	Heating		4.23	
	Sound power level	Cooling	dB(A)	60	71
		Heating			
	Sound pressure level	Cooling		P-Hi : 44 Hi : 34 Me : 32 Lo : 28	55
		Heating			57
	Silent mode sound pressure level			—	51 / 45 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	Unit 236 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 21 PANEL 5	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	50 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 26 Hi : 17 Me : 14 Lo : 11	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3 , RC-E5 , RCH-E3 wireless : RCN-T-5AW-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52 (3/8") x0.8 ①ϕ9.52 (3/8") x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7 (1/2") x0.8 ②ϕ15.88 (5/8") x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25 (O.D.32)	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	Built-in drain pump, 850	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

Item			Model	FDT125VSAPVG	
				Indoor unit **FDT60VG (2 units)**	Outdoor unit **FDC125VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.) ～ 14.0(Max.)]	
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.) ～ 16.0(Max.)]	
	Power consumption	Cooling	kW	3.79	
		Heating		3.31	
	Max power consumption			10.20	
	Running current	Cooling	A	5.5 / 5.8	
		Heating		4.9 / 5.1	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	99	
		Heating		98 / 99	
	EER	Cooling		3.30	
	COP	Heating		4.23	
	Sound power level	Cooling	dB(A)	60	71
		Heating			
	Sound pressure level	Cooling		P-Hi : 44 Hi : 34 Me : 32 Lo : 28	55
		Heating			57
	Silent mode sound pressure level			—	51 / 45 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	Unit 236 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 21 PANEL 5	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	50 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 26 Hi : 17 Me : 14 Lo : 11	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3 , RC-E5 , RCH-E3 wireless : RCN-T-5AW-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52 (3/8") x0.8 ①ϕ9.52 (3/8") x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7 (1/2") x0.8 ①ϕ15.88 (5/8") x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25 (O.D.32)	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 850	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

Item				Model	FDT140VNAPVG	
					Indoor unit **FDT71VG (2 units)**	Outdoor unit **FDC140VNA**
Power source					1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)			kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)			kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption		Cooling	kW	4.22	
			Heating		3.29	
	Max power consumption				6.40	
	Running current		Cooling	A	18.5 / 19.4	
			Heating		14.4 / 15.1	
	Inrush current, max current				5, 24	
	Power factor		Cooling	%	99	
			Heating		99	
	EER		Cooling		3.22	
	COP		Heating		4.71	
	Sound power level		Cooling	dB(A)	62	73
			Heating			
	Sound pressure level		Cooling		P-Hi : 46 Hi : 35 Me : 34 Lo : 29	57
			Heating			59
	Silent mode sound pressure level				—	53 / 47 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)				mm	Unit 236 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)					Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight				kg	UNIT 21 PANEL 5	80
Compressor type & Q'ty					—	RMT5126MCE3×1
Compressor motor (Starting method)				kW	—	Direct line start
Refrigerant oil (Amount, type)				ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)				kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger					Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control					Electronic expansion valve	
Fan type & Q'ty					Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)				W	50 < Direct line start >	86 < Direct line start >
Air flow			Cooling	m^3/min	P-Hi : 28 Hi : 18 Me : 15 Lo : 12	75
			Heating			73
Available external static pressure				Pa	0	—
Outside air intake					Possible	—
Air filter, Quality / Quantity					Pocket plastic net ×1 (Washable)	—
Shock & vibration absorber					Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater				W	—	20 (Crankcase heater)
Operation control	Remote control				(Option) wired : RC-EX3, RC-E5, RCH-E3 wireless : RCN-T-5AW-E2	
	Room temperature control				Thermostat by electronics	
	Operation display				—	
Safety equipments					Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)			mm	Liquid line: I/U ϕ9.52 (3/8") ②ϕ9.52 (3/8") x0.8 ①ϕ9.52 (3/8") x0.8 O/U ϕ9.52 (3/8")	
					Gas line: I/U ϕ15.88 (5/8") ②ϕ15.88 (5/8") x1.0 ①ϕ15.88 (5/8") x1.0 O/U ϕ15.88 (5/8")	
	Connecting method				Flare piping	Flare piping
	Attached length of piping			m	—	—
	Insulation for piping				Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length			m	Max.50m	
	Vertical height diff. between O.U. and I.U.			m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose				Hose connectable with VP25 (O.D.32)	Hole size ϕ20 x 3pcs
Drain pump, max lift height				mm	Built-in drain pump, 850	—
Recommended breaker size				A	—	
L.R.A. (Locked rotor ampere)				A	5.0	
Interconnecting wires	Size × Core number				ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number					IPX0	IP24
Standard accessories					Mounting kit, Drain hose	—
Option parts					—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

Item				Model	FDT140VSAPVG	
					Indoor unit **FDT71VG (2 units)**	Outdoor unit **FDC140VSA**
Power source					3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)			kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)			kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption		Cooling	kW	4.22	
			Heating		3.29	
	Max power consumption				10.20	
	Running current		Cooling	A	6.2 / 6.5	
			Heating		4.8 / 5.1	
	Inrush current, max current				5, 15	
	Power factor		Cooling	%	98 / 99	
			Heating		99 / 98	
	EER		Cooling		3.22	
	COP		Heating		4.71	
	Sound power level		Cooling	dB(A)	62	73
			Heating			
	Sound pressure level		Cooling		P-Hi : 46 Hi : 35 Me : 34 Lo : 29	57
			Heating			59
	Silent mode sound pressure level				—	53 / 47 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)				mm	Unit 236 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)					Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight				kg	UNIT 21 PANEL 5	82
Compressor type & Q'ty					—	RMT5126MCE4×1
Compressor motor (Starting method)				kW	—	Direct line start
Refrigerant oil (Amount, type)				ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)				kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger					Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control					Electronic expansion valve	
Fan type & Q'ty					Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)				W	50 < Direct line start >	86 < Direct line start >
Air flow			Cooling	m^3/min	P-Hi : 28 Hi : 18 Me : 15 Lo : 12	75
			Heating			73
Available external static pressure				Pa	0	—
Outside air intake					Possible	—
Air filter, Quality / Quantity					Pocket plastic net ×1 (Washable)	—
Shock & vibration absorber					Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater				W	—	20 (Crankcase heater)
Operation control	Remote control				(Option) wired : RC-EX3, RC-E5, RCH-E3 wireless : RCN-T-5AW-E2	
	Room temperature control				Thermostat by electronics	
	Operation display				—	
Safety equipments					Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)			mm	Liquid line: I/U ϕ9.52 (3/8") ②ϕ9.52 (3/8") x0.8 ①ϕ9.52 (3/8") x0.8 O/U ϕ9.52 (3/8")	
					Gas line: I/U ϕ15.88 (5/8") ②ϕ15.88 (5/8") x1.0 ①ϕ15.88 (5/8") x1.0 O/U ϕ15.88 (5/8")	
	Connecting method				Flare piping	Flare piping
	Attached length of piping			m	—	—
	Insulation for piping				Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length			m	Max.50m	
	Vertical height diff. between O.U. and I.U.			m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose				Hose connectable with VP25 (O.D.32)	Hole size ϕ20 x 3pcs
Drain pump, max lift height				mm	Built-in drain pump, 850	—
Recommended breaker size				A	—	
L.R.A. (Locked rotor ampere)				A	5.0	
Interconnecting wires	Size × Core number				ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number					IPX0	IP24
Standard accessories					Mounting kit, Drain hose	—
Option parts					—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

PJF000Z425 G

(c) Triple type

Item			Model	FDT140VNATVG	
				Indoor unit **FDT50VG (3 units)**	Outdoor unit **FDC140VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	4.22	
		Heating		3.29	
	Max power consumption			6.40	
	Running current	Cooling	A	18.5 / 19.4	
		Heating		14.4 / 15.1	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	99	
		Heating		99	
	EER	Cooling		3.22	
	COP	Heating		4.71	
	Sound power level	Cooling	dB(A)	54	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 38 Hi : 33 Me : 30 Lo : 27	57
		Heating			59
	Silent mode sound pressure level			—	53 / 47 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	Unit 236 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 19 PANEL 5	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	50 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 20 Hi : 16 Me : 13 Lo : 10	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3, RC-E5, RCH-E3 wireless : RCN-T-5AW-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52 (3/8") x0.8 ①ϕ9.52 (3/8") x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7 (1/2") x0.8 ①ϕ15.88 (5/8") x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25 (O.D.32)	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	Built-in drain pump, 850	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(7) Branching pipe set "DIS-TB1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

Item			Model	FDT140VSATVG	
				Indoor unit **FDT50VG (3 units)**	Outdoor unit **FDC140VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	4.22	
		Heating		3.29	
	Max power consumption			10.20	
	Running current	Cooling	A	6.2 / 6.5	
		Heating		4.8 / 5.1	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	98 / 99	
		Heating		99 / 98	
	EER	Cooling		3.22	
	COP	Heating		4.71	
	Sound power level	Cooling	dB(A)	54	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 38 Hi : 33 Me : 30 Lo : 27	57
		Heating			59
	Silent mode sound pressure level			—	53 / 47 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	Unit 236 × 840 × 840 Panel 35 × 950 × 950	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 19 PANEL 5	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	50 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 20 Hi : 16 Me : 13 Lo : 10	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3, RC-E5, RCH-E3 wireless : RCN-T-5AW-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52 (3/8") x0.8 ①ϕ9.52 (3/8") x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7 (1/2") x0.8 ①ϕ15.88 (5/8") x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25 (O.D.32)	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	Built-in drain pump, 850	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(7) Branching pipe set "DIS-TB1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

(2) Ceiling cassette-4 way compact type (FDTC)

(a) Twin type

Item			Model	FDTC100VNAPVF	
				Indoor unit **FDTC50VF (2 units)**	Outdoor unit **FDC100VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	Power consumption	Cooling	kW	3.48	
		Heating		3.37	
	Max power consumption			6.40	
	Running current	Cooling	A	15.3 / 16.0	
		Heating		14.8 / 15.5	
	Inrush current, max current			5, 25	
	Power factor	Cooling	%	99	
		Heating		99	
	EER	Cooling		2.87	
	COP	Heating		3.32	
	Sound power level	Cooling	dB(A)	60	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 47 Hi : 42 Me : 36 Lo : 30	54
		Heating		P-Hi : 47 Hi : 42 Me : 36 Lo : 32	56
	Silent mode sound pressure level			—	50 / 44 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	Unit 248 × 570 × 570 Panel 35 × 700 × 700	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 15 PANEL 3.5	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	33 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 7	75
		Heating		P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 8	73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	0	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3, RC-E5, RCH-E3 wireless : RCN-TC-24W-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52 (3/8") x0.8 ①ϕ9.52 (3/8") x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7 (1/2") x0.8 ①ϕ15.88 (5/8") x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20 (O.D.26)	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	Built-in drain pump	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				TC-OAS-E, TC-OAD-E	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

Item				Model	FDTC100VSAPVF	
					Indoor unit **FDTC50VF (2 units)**	Outdoor unit **FDC100VSA**
Power source					3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)			kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)			kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	Power consumption		Cooling	kW	3.48	
			Heating		3.37	
	Max power consumption				10.20	
	Running current		Cooling	A	5.1 / 5.4	
			Heating		4.9 / 5.2	
	Inrush current, max current				5, 15	
	Power factor		Cooling	%	98	
			Heating		99 / 98	
	EER		Cooling		2.87	
	COP		Heating		3.32	
	Sound power level		Cooling	dB(A)	60	70
			Heating			
	Sound pressure level		Cooling		P-Hi : 47 Hi : 42 Me : 36 Lo : 30	54
			Heating		P-Hi : 47 Hi : 42 Me : 36 Lo : 32	56
	Silent mode sound pressure level				—	50 / 44 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)				mm	Unit 248 × 570 × 570 Panel 35 × 700 × 700	845 × 970 × 370
Exterior appearance (Munsell color)					Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight				kg	UNIT 15 PANEL 3.5	82
Compressor type & Q'ty					—	RMT5126MCE4×1
Compressor motor (Starting method)				kW	—	Direct line start
Refrigerant oil (Amount, type)				ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)				kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger					Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control					Electronic expansion valve	
Fan type & Q'ty					Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)				W	33 < Direct line start >	86 < Direct line start >
Air flow			Cooling	m^3/min	P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 7	75
			Heating		P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 8	73
Available external static pressure				Pa	0	—
Outside air intake					Not possible	—
Air filter, Quality / Quantity					Pocket plastic net ×1 (Washable)	—
Shock & vibration absorber					Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater				W	0	20 (Crankcase heater)
Operation control	Remote control				(Option) wired : RC-EX3, RC-E5, RCH-E3 wireless : RCN-TC-24W-E2	
	Room temperature control				Thermostat by electronics	
	Operation display				—	
Safety equipments					Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)			mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52 (3/8") x0.8 ①ϕ9.52 (3/8") x0.8 O/U ϕ9.52 (3/8")	
					Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7 (1/2") x0.8 ①ϕ15.88 (5/8") x1.0 O/U ϕ15.88 (5/8")	
	Connecting method				Flare piping	Flare piping
	Attached length of piping			m	—	—
	Insulation for piping				Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length			m	Max.50m	
	Vertical height diff. between O.U. and I.U.			m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose				Hose connectable with VP20 (O.D.26)	Hole size ϕ20 x 3pcs
Drain pump, max lift height				mm	Built-in drain pump	—
Recommended breaker size				A	—	
L.R.A. (Locked rotor ampere)				A	5.0	
Interconnecting wires	Size × Core number				ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number					IPX0	IP24
Standard accessories					Mounting kit, Drain hose	—
Option parts					TC-OAS-E, TC-OAD-E	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

PJA003Z401

Item			Model	FDTC125VNAPVF	
				Indoor unit **FDTC60VF (2 units)**	Outdoor unit **FDC125VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.) ～ 14.0(Max.)]	
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.) ～ 16.0(Max.)]	
	Power consumption	Cooling	kW	5.47	
		Heating		4.55	
	Max power consumption			6.40	
	Running current	Cooling	A	24.0 / 25.0	
		Heating		20.0 / 20.9	
	Inrush current, max current			5, 25	
	Power factor	Cooling	%	99	
		Heating		99	
	EER	Cooling		2.29	
	COP	Heating		3.08	
	Sound power level	Cooling	dB(A)	60	71
		Heating			
	Sound pressure level	Cooling		P-Hi : 47 Hi : 46 Me : 39 Lo : 30	55
		Heating		P-Hi : 47 Hi : 46 Me : 39 Lo : 32	57
	Silent mode sound pressure level			—	51 / 45 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	Unit 248 × 570 × 570 Panel 35 × 700 × 700	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 15 PANEL 3.5	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	33 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 13.5 Hi : 13.5 Me : 10 Lo : 7	75
		Heating		P-Hi : 13.5 Hi : 13.5 Me : 10 Lo : 8	73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	0	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3, RC-E5, RCH-E3 wireless : RCN-TC-24W-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52 (3/8") x0.8 ①ϕ9.52 (3/8") x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7 (1/2") x0.8 ①ϕ15.88 (5/8")x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20 (O.D.26)	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	Built-in drain pump	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				TC-OAS-E, TC-OAD-E	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

PJA003Z401 K

Item			Model	FDTC125VSAPVF	
				Indoor unit **FDTC60VF (2 units)**	Outdoor unit **FDC125VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.) ～ 14.0(Max.)]	
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.) ～ 16.0(Max.)]	
	Power consumption	Cooling	kW	5.47	
		Heating		4.55	
	Max power consumption			10.20	
	Running current	Cooling	A	8.0 / 8.4	
		Heating		6.7 / 7.0	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	99	
		Heating		99	
	EER	Cooling		2.29	
	COP	Heating		3.08	
	Sound power level	Cooling	dB(A)	60	71
		Heating			
	Sound pressure level	Cooling		P-Hi : 47 Hi : 46 Me : 39 Lo : 30	55
		Heating		P-Hi : 47 Hi : 46 Me : 39 Lo : 32	57
	Silent mode sound pressure level			—	51 / 45 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	Unit 248 × 570 × 570 Panel 35 × 700 × 700	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 15 PANEL 3.5	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	33 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 13.5 Hi : 13.5 Me : 10 Lo : 7	75
		Heating		P-Hi : 13.5 Hi : 13.5 Me : 10 Lo : 8	73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	0	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3, RC-E5, RCH-E3 wireless : RCN-TC-24W-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52 (3/8") x0.8 ①ϕ9.52 (3/8") x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7 (1/2") x0.8 ①ϕ15.88 (5/8") x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20 (O.D.26)	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	Built-in drain pump	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				TC-OAS-E, TC-OAD-E	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

PJA003Z401K

(b) Triple type

Item			Model	FDTC140VNATVF	
				Indoor unit **FDTC50VF (3 units)**	Outdoor unit **FDC140VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	5.45	
		Heating		4.64	
	Max power consumption			6.40	
	Running current	Cooling	A	23.9 / 25.0	
		Heating		20.4 / 21.3	
	Inrush current, max current			5, 25	
	Power factor	Cooling	%	99	
		Heating		99	
	EER	Cooling		2.50	
	COP	Heating		3.34	
	Sound power level	Cooling	dB(A)	60	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 47 Hi : 42 Me : 36 Lo : 30	57
		Heating		P-Hi : 47 Hi : 42 Me : 36 Lo : 32	59
	Silent mode sound pressure level			—	53 / 47 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	Unit 248 × 570 × 570 Panel 35 × 700 × 700	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 15 PANEL 3.5	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	33 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 7	75
		Heating		P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 8	73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	0	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3, RC-E5, RCH-E3 wireless : RCN-TC-24W-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52 (3/8") x0.8 ①ϕ9.52 (3/8") x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7 (1/2") x0.8 ①ϕ15.88 (5/8") x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20 (O.D.26)	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	Built-in drain pump	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				TC-OAS-E, TC-OAD-E	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(7) Branching pipe set "DIS-TA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

Item			Model	FDTC140VSATVF	
				Indoor unit **FDTC50VF (3 units)**	Outdoor unit **FDC140VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	5.45	
		Heating		4.64	
	Max power consumption			10.20	
	Running current	Cooling	A	8.0 / 8.4	
		Heating		6.8 / 7.1	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	98 / 99	
		Heating		98 / 99	
	EER	Cooling		2.50	
	COP	Heating		3.34	
	Sound power level	Cooling	dB(A)	60	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 47 Hi : 42 Me : 36 Lo : 30	57
		Heating		P-Hi : 47 Hi : 42 Me : 36 Lo : 32	59
	Silent mode sound pressure level			—	53 / 47 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	Unit 248 × 570 × 570 Panel 35 × 700 × 700	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	UNIT 15 PANEL 3.5	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	33 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 7	75
		Heating		P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 8	73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×1 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	0	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3, RC-E5, RCH-E3 wireless : RCN-TC-24W-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52 (3/8") x0.8 ①ϕ9.52 (3/8") x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7 (1/2") x0.8 ①ϕ15.88(5/8")x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20 (O.D.26)	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	Built-in drain pump	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				TC-OAS-E, TC-OAD-E	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(7) Branching pipe set "DIS-TA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

(3) Ceiling suspended type (FDE)

(a) Single type

Item			Model	FDE100VNAVG	
				Indoor unit **FDE100VG**	Outdoor unit **FDC100VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	Power consumption	Cooling	kW	2.85	
		Heating		2.70	
	Max power consumption			6.40	
	Running current	Cooling	A	13.8 / 14.4	
		Heating		13.2 / 13.8	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	90	
		Heating		89	
	EER	Cooling		3.51	
	COP	Heating		4.15	
	Sound power level	Cooling	dB(A)	64	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 48 Hi : 43 Me : 38 Lo : 34	54
		Heating			56
	Silent mode sound pressure level			—	50/44 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	250 × 1,620 × 690	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	43	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×4	Propeller fan ×1
Fan motor (Starting method)			W	80 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 32 Hi : 26 Me : 21 Lo : 16.5	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×2(Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	0	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired : RC-EX3,RC-E5,RCH-E3 Wireless : RCN-E-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20 (O.D.26)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

PFA004Z024

Item			Model	FDE100VSAVG	
				Indoor unit **FDE100VG**	Outdoor unit **FDC100VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	Power consumption	Cooling	kW	2.85	
		Heating		2.70	
	Max power consumption			10.20	
	Running current	Cooling	A	4.5 / 4.8	
		Heating		4.3 / 4.5	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	91 / 90	
		Heating		91	
	EER	Cooling		3.51	
	COP	Heating		4.15	
	Sound power level	Cooling	dB(A)	64	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 48 Hi : 43 Me : 38 Lo : 34	54
		Heating			56
	Silent mode sound pressure level			—	50/44 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	250 × 1,620 × 690	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	43	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×4	Propeller fan ×1
Fan motor (Starting method)			W	80 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 32 Hi : 26 Me : 21 Lo : 16.5	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×2(Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	0	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired : RC-EX3,RC-E5,RCH-E3 Wireless : RCN-E-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20 (O.D.26)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

PFA004Z024

Item			Model	FDE125VNAVG	
				Indoor unit **FDE125VG**	Outdoor unit **FDC125VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.) ～ 14.0(Max.)]	
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.) ～ 16.0(Max.)]	
	Power consumption	Cooling	kW	4.45	
		Heating		3.74	
	Max power consumption			6.40	
	Running current	Cooling	A	20.3 / 21.3	
		Heating		17.5 / 18.3	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	95	
		Heating		93	
	EER	Cooling		2.81	
	COP	Heating		3.74	
	Sound power level	Cooling	dB(A)	64	71
		Heating			
	Sound pressure level	Cooling		P-Hi : 48 Hi : 45 Me : 40 Lo : 35	55
		Heating			57
	Silent mode sound pressure level			—	51/45 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	250 × 1,620 × 690	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	43	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×4	Propeller fan ×1
Fan motor (Starting method)			W	80 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 32 Hi : 29 Me : 23 Lo : 17	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×2(Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	0	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired : RC-EX3,RC-E5,RCH-E3 Wireless : RCN-E-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20 (O.D.26)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

PFA004Z024

Item				Model	FDE125VSAVG	
					Indoor unit **FDE125VG**	Outdoor unit **FDC125VSA**
Power source					3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)			kW	12.5 [5.0(Min.) ～ 14.0(Max.)]	
	Nominal heating capacity (range)			kW	14.0 [4.0(Min.) ～ 16.0(Max.)]	
	Power consumption		Cooling	kW	4.45	
			Heating		3.74	
	Max power consumption				10.20	
	Running current		Cooling	A	6.9 / 7.3	
			Heating		5.9 / 6.2	
	Inrush current, max current				5, 15	
	Power factor		Cooling	%	93	
			Heating		91 / 92	
	EER		Cooling		2.81	
	COP		Heating		3.74	
	Sound power level		Cooling	dB(A)	64	71
			Heating			
	Sound pressure level		Cooling		P-Hi : 48 Hi : 45 Me : 40 Lo : 35	55
			Heating			57
	Silent mode sound pressure level				—	51/45 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)				mm	250 × 1,620 × 690	845 × 970 × 370
Exterior appearance (Munsell color)					Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight				kg	43	82
Compressor type & Q'ty					—	RMT5126MCE4×1
Compressor motor (Starting method)				kW	—	Direct line start
Refrigerant oil (Amount, type)				ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)				kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger					Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control					Electronic expansion valve	
Fan type & Q'ty					Centrifugal fan ×4	Propeller fan ×1
Fan motor (Starting method)				W	80 < Direct line start >	86 < Direct line start >
Air flow			Cooling	m^3/min	P-Hi : 32 Hi : 29 Me : 23 Lo : 17	75
			Heating			73
Available external static pressure				Pa	0	—
Outside air intake					Not possible	—
Air filter, Quality / Quantity					Pocket plastic net ×2(Washable)	—
Shock & vibration absorber					Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater				W	0	20 (Crankcase heater)
Operation control	Remote control				(Option) Wired : RC-EX3,RC-E5,RCH-E3 Wireless : RCN-E-E2	
	Room temperature control				Thermostat by electronics	
	Operation display				—	
Safety equipments					Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)			mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
					Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method				Flare piping	Flare piping
	Attached length of piping			m	—	—
	Insulation for piping				Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length			m	Max.50m	
	Vertical height diff. between O.U. and I.U.			m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose				Hose connectable with VP20 (O.D.26)	Hole size ϕ20 × 3pcs
Drain pump, max lift height				mm	—	—
Recommended breaker size				A	—	
L.R.A. (Locked rotor ampere)				A	5.0	
Interconnecting wires	Size × Core number				ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number					IPX0	IP24
Standard accessories					Mounting kit, Drain hose	—
Option parts					—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

PFA004Z024 L

Item			Model	FDE140VNAVG	
				Indoor unit **FDE140VG**	Outdoor unit **FDC140VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	5.21	
		Heating		4.42	
	Max power consumption			6.40	
	Running current	Cooling	A	22.9 / 23.9	
		Heating		19.4 / 20.3	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	99	
		Heating		99	
	EER	Cooling		2.61	
	COP	Heating		3.51	
	Sound power level	Cooling	dB(A)	65	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 49 Hi : 45 Me : 40 Lo : 36	57
		Heating			59
	Silent mode sound pressure level			—	53/47 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	250 × 1,620 × 690	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	43	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×4	Propeller fan ×1
Fan motor (Starting method)			W	90 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 34 Hi : 29 Me : 23 Lo : 18	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×2(Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	0	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired : RC-EX3,RC-E5,RCH-E3 Wireless : RCN-E-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20 (O.D.26)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27˚C	19˚C	35˚C	24˚C	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

PFA004Z024

Item			Model	FDE140VSAVG	
				Indoor unit **FDE140VG**	Outdoor unit **FDC140VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	5.21	
		Heating		4.42	
	Max power consumption			10.20	
	Running current	Cooling	A	8.0 / 8.4	
		Heating		6.8 / 7.2	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	94	
		Heating		94 / 93	
	EER	Cooling		2.61	
	COP	Heating		3.51	
	Sound power level	Cooling	dB(A)	65	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 49 Hi : 45 Me : 40 Lo : 36	57
		Heating			59
	Silent mode sound pressure level			—	53/47 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	250 × 1,620 × 690	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	43	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×4	Propeller fan ×1
Fan motor (Stating method)			W	90 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 34 Hi : 29 Me : 23 Lo : 18	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×2 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	0	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired : RC-EX3,RC-E5,RCH-E3 Wireless : RCN-E-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ 9.52 (3/8") Pipe ϕ 9.52(3/8")×0.8 O/U ϕ 9.52 (3/8")	
				Gas line: ϕ 15.88 (5/8") ϕ 15.88(5/8")×1.0 ϕ 15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20 (O.D.26)	Hole size ϕ 20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ 1.6mm × 3 cores (Including earth cable)/ Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27˚C	19˚C	35˚C	24˚C	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

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(b) Twin type

Item			Model	FDE100VNAPVG	
				Indoor unit **FDE50VG (2 units)**	Outdoor unit **FDC100VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	Power consumption	Cooling	kW	3.12	
		Heating		2.99	
	Max power consumption			6.40	
	Running current	Cooling	A	13.7 / 14.3	
		Heating		13.1 / 13.7	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	99	
		Heating		99	
	EER	Cooling		3.21	
	COP	Heating		3.75	
	Sound power level	Cooling	dB(A)	60	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 46 Hi : 38 Me : 36 Lo : 31	54
		Heating			56
	Silent mode sound pressure level			—	50 / 44 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	210 × 1,070 × 690	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	28	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×2	Propeller fan ×1
Fan motor (Starting method)			W	30 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 13 Hi : 10 Me : 9 Lo : 7	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×2(Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	0	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3, RC-E5, RCH-E3 wireless : RCN-E-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52 (3/8") x0.8 ①ϕ9.52 (3/8") x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7 (1/2") x0.8 ①ϕ15.88 (5/8") x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20 (O.D.26)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

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Item			Model	FDE100VSAPVG	
				Indoor unit **FDE50VG (2 units)**	Outdoor unit **FDC100VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ~ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ~ 12.5(Max.)]	
	Power consumption	Cooling	kW	3.12	
		Heating		2.99	
	Max power consumption			10.20	
	Running current	Cooling	A	4.6 / 4.8	
		Heating		4.4 / 4.6	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	98 / 99	
		Heating		98 / 99	
	EER	Cooling		3.21	
	COP	Heating		3.75	
	Sound power level	Cooling	dB(A)	60	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 46 Hi : 38 Me : 36 Lo : 31	54
		Heating			56
	Silent mode sound pressure level			—	50 / 44 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	210 × 1,070 × 690	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	28	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×2	Propeller fan ×1
Fan motor (Starting method)			W	30 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 13 Hi : 10 Me : 9 Lo : 7	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×2 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	0	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3,RC-E5,RCH-E3 wireless : RCN-E-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52 (3/8") x0.8 ①ϕ9.52 (3/8") x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7 (1/2") x0.8 ①ϕ15.88 (5/8") x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20 (O.D.26)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

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Item			Model	FDE125VNAPVG	
				Indoor unit **FDE60VG (2 units)**	Outdoor unit **FDC125VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.) ～ 14.0(Max.)]	
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.) ～ 16.0(Max.)]	
	Power consumption	Cooling	kW	4.16	
		Heating		3.54	
	Max power consumption			6.40	
	Running current	Cooling	A	18.3 / 19.1	
		Heating		15.6 / 16.3	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	99	
		Heating		99	
	EER	Cooling		3.00	
	COP	Heating		3.95	
	Sound power level	Cooling	dB(A)	60	71
		Heating			
	Sound pressure level	Cooling		P-Hi : 47 Hi : 41 Me : 37 Lo : 32	55
		Heating			57
	Silent mode sound pressure level			—	51 / 45 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	210 × 1,320 × 690	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	33	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×4	Propeller fan ×1
Fan motor (Starting method)			W	50 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 20 Hi : 16 Me : 13 Lo : 10	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×2 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	0	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3, RC-E5, RCH-E3 wireless : RCN-E-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52 (3/8") x0.8 ①ϕ9.52 (3/8") x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7 (1/2") x0.8 ①ϕ15.88 (5/8") x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20 (O.D.26)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

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Item			Model	FDE125VSAPVG	
				Indoor unit **FDE60VG (2 units)**	Outdoor unit **FDC125VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.) ～ 14.0(Max.)]	
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.) ～ 16.0(Max.)]	
	Power consumption	Cooling	kW	4.16	
		Heating		3.54	
	Max power consumption			10.20	
	Running current	Cooling	A	6.1 / 6.4	
		Heating		5.2 / 5.5	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	98 / 99	
		Heating		98	
	EER	Cooling		3.00	
	COP	Heating		3.95	
	Sound power level	Cooling	dB(A)	60	71
		Heating			
	Sound pressure level	Cooling		P-Hi : 47 Hi : 41 Me : 37 Lo : 32	55
		Heating			57
	Silent mode sound pressure level			—	51 / 45 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	210 × 1,320 × 690	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	33	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×4	Propeller fan ×1
Fan motor (Starting method)			W	50 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 20 Hi : 16 Me : 13 Lo : 10	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×2 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	0	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3, RC-E5, RCH-E3 wireless : RCN-E-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U φ6.35 (1/4") ②φ9.52 (3/8") x0.8 ①φ9.52 (3/8") x0.8 O/U φ9.52 (3/8")	
				Gas line: I/U φ12.7 (1/2") ②φ12.7 (1/2") x0.8 ①φ15.88 (5/8") x1.0 O/U φ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20 (O.D.26)	Hole size φ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			φ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

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Item			Model	FDE140VNAPVG	
				Indoor unit **FDE71VG (2 units)**	Outdoor unit **FDC140VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	4.74	
		Heating		4.21	
	Max power consumption			6.40	
	Running current	Cooling	A	20.8 / 21.8	
		Heating		18.5 / 19.3	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	99	
		Heating		99	
	EER	Cooling		2.87	
	COP	Heating		3.68	
	Sound power level	Cooling	dB(A)	60	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 47 Hi : 41 Me : 37 Lo : 32	57
		Heating			59
	Silent mode sound pressure level			—	53 / 47 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	210 × 1,320 × 690	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	33	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×4	Propeller fan ×1
Fan motor (Starting method)			W	50 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 20 Hi : 16 Me : 13 Lo : 10	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×2 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	0	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3, RC-E5, RCH-E3 wireless : RCN-E-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") ②ϕ9.52 (3/8") x0.8 ①ϕ9.52 (3/8") x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ15.88 (5/8") ②ϕ15.88 (5/8") x1.0 ①ϕ15.88 (5/8")x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20 (O.D.26)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

PFA004Z024

Item			Model	FDE140VSAPVG	
				Indoor unit **FDE71VG (2 units)**	Outdoor unit **FDC140VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	4.74	
		Heating		4.21	
	Max power consumption			10.20	
	Running current	Cooling	A	6.9 / 7.3	
		Heating		6.2 / 6.5	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	99	
		Heating		98	
	EER	Cooling		2.87	
	COP	Heating		3.68	
	Sound power level	Cooling	dB(A)	60	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 47 Hi : 41 Me : 37 Lo : 32	57
		Heating			59
	Silent mode sound pressure level			—	53 / 47 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	210 × 1,320 × 690	845 × 970 × 370
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	33	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×4	Propeller fan ×1
Fan motor (Starting method)			W	50 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 20 Hi : 16 Me : 13 Lo : 10	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Pocket plastic net ×2 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	0	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3, RC-E5, RCH-E3 wireless : RCN-E-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") ②ϕ9.52 (3/8") x0.8 ①ϕ9.52 (3/8") x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ15.88 (5/8") ②ϕ15.88 (5/8") x1.0 ①ϕ15.88 (5/8") x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20 (O.D.26)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

PFA004Z024

(c) Triple type

Item				Model	FDE140VNATVG	
					Indoor unit **FDE50VG (3 units)**	Outdoor unit **FDC140VNA**
Power source					1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)			kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)			kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption		Cooling	kW	4.74	
			Heating		4.21	
	Max power consumption				6.40	
	Running current		Cooling	A	20.8 / 21.8	
			Heating		18.5 / 19.3	
	Inrush current, max current				5, 24	
	Power factor		Cooling	%	99	
			Heating		99	
	EER		Cooling		2.87	
	COP		Heating		3.68	
	Sound power level		Cooling	dB(A)	60	73
			Heating			
	Sound pressure level		Cooling		P-Hi : 46 Hi : 38 Me : 36 Lo : 31	57
			Heating			59
	Silent mode sound pressure level				—	53 / 47 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)				mm	210 × 1,070 × 690	845 × 970 × 370
Exterior appearance (Munsell color)					Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight				kg	28	80
Compressor type & Q'ty					—	RMT5126MCE3×1
Compressor motor (Starting method)				kW	—	Direct line start
Refrigerant oil (Amount, type)				ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)				kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger					Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control					Electronic expansion valve	
Fan type & Q'ty					Centrifugal fan ×2	Propeller fan ×1
Fan motor (Starting method)				W	30 < Direct line start >	86 < Direct line start >
Air flow			Cooling	m^3/min	P-Hi : 13 Hi : 10 Me : 9 Lo : 7	75
			Heating			73
Available external static pressure				Pa	0	—
Outside air intake					Not possible	—
Air filter, Quality / Quantity					Pocket plastic net ×2 (Washable)	—
Shock & vibration absorber					Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater				W	0	20 (Crankcase heater)
Operation control	Remote control				(Option) wired : RC-EX3, RC-E5, RCH-E3 wireless : RCN-E-E2	
	Room temperature control				Thermostat by electronics	
	Operation display				—	
Safety equipments					Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)			mm	Liquid line: I/U φ6.35 (1/4") ②φ9.52(3/8")x0.8 ①φ9.52(3/8")x0.8 O/U φ9.52 (3/8")	
					Gas line: I/U φ12.7 (1/2") ②φ12.7(1/2")x0.8 ①φ15.88(5/8")x1.0 O/U φ15.88 (5/8")	
	Connecting method				Flare piping	Flare piping
	Attached length of piping			m	—	—
	Insulation for piping				Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length			m	Max.50m	
	Vertical height diff. between O.U. and I.U.			m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose				Hose connectable with VP20 (O.D.26)	Hole size φ20 × 3pcs
Drain pump, max lift height				mm	—	—
Recommended breaker size				A	—	
L.R.A. (Locked rotor ampere)				A	5.0	
Interconnecting wires	Size × Core number				φ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number					IPX0	IP24
Standard accessories					Mounting kit, Drain hose	—
Option parts					—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(7) Branching pipe set "DIS-TA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

PFA004Z024

Item				Model	FDE140VSATVG	
					Indoor unit **FDE50VG (3 units)**	Outdoor unit **FDC140VSA**
Power source					3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)			kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)			kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption		Cooling	kW	4.74	
			Heating		4.21	
	Max power consumption				10.20	
	Running current		Cooling	A	6.9 / 7.3	
			Heating		6.2 / 6.5	
	Inrush current, max current				5, 15	
	Power factor		Cooling	%	99	
			Heating		98	
	EER		Cooling		2.87	
	COP		Heating		3.68	
	Sound power level		Cooling	dB(A)	60	73
			Heating			
	Sound pressure level		Cooling		P-Hi : 46 Hi : 38 Me : 36 Lo : 31	57
			Heating			59
	Silent mode sound pressure level				—	53 / 47 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)				mm	210 × 1,070 × 690	845 × 970 × 370
Exterior appearance (Munsell color)					Plaster white (6.8Y8.9/0.2) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight				kg	28	82
Compressor type & Q'ty					—	RMT5126MCE4×1
Compressor motor (Starting method)				kW	—	Direct line start
Refrigerant oil (Amount, type)				ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)				kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger					Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control					Electronic expansion valve	
Fan type & Q'ty					Centrifugal fan ×2	Propeller fan ×1
Fan motor (Starting method)				W	30 < Direct line start >	86 < Direct line start >
Air flow			Cooling	m^3/min	P-Hi : 13 Hi : 10 Me : 9 Lo : 7	75
			Heating			73
Available external static pressure				Pa	0	—
Outside air intake					Not possible	—
Air filter, Quality / Quantity					Pocket plastic net ×2 (Washable)	—
Shock & vibration absorber					Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater				W	0	20 (Crankcase heater)
Operation control	Remote control				(Option) wired : RC-EX3, RC-E5, RCH-E3 wireless : RCN-E-E2	
	Room temperature control				Thermostat by electronics	
	Operation display				—	
Safety equipments					Internal thermostat for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)			mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52 (3/8") x0.8 ①ϕ9.52 (3/8") x0.8 O/U ϕ9.52 (3/8")	
					Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7 (1/2") x0.8 ①ϕ15.88 (5/8") x1.0 O/U ϕ15.88 (5/8")	
	Connecting method				Flare piping	Flare piping
	Attached length of piping			m	—	—
	Insulation for piping				Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length			m	Max.50m	
	Vertical height diff. between O.U. and I.U.			m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose				Hose connectable with VP20 (O.D.26)	Hole size ϕ20 × 3pcs
Drain pump, max lift height				mm	—	—
Recommended breaker size				A	—	
L.R.A. (Locked rotor ampere)				A	5.0	
Interconnecting wires	Size × Core number				ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number					IPX0	IP24
Standard accessories					Mounting kit, Drain hose	—
Option parts					—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(7) Branching pipe set "DIS-TA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

PFA004Z024 L

(4) Duct connected-High static pressure type (FDU)

Single type

Item				Model	FDU100VNAVF2	
					Indoor unit **FDU100VF2**	Outdoor unit **FDC100VNA**
Power source					1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)			kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)			kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	consumption Power		Cooling	kW	2.84	
			Heating		2.78	
	Max power consumption				6.40	
	Running current		Cooling	A	13.6 / 14.2	
			Heating		13.3 / 13.9	
	Inrush current, max current				5, 26	
	Power factor		Cooling	%	91	
			Heating		91	
	EER		Cooling		3.52	
	COP		Heating		4.03	
	Sound power level		Cooling	dB(A)	65	70
			Heating			
	Sound pressure level		Cooling		P-Hi : 44 Hi : 38 Me : 36 Lo : 30	54
			Heating			56
	Silent mode sound pressure level				—	50/44 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)				mm	280 × 1,370 × 740	845 × 970 × 370
Exterior appearance (Munsell color)					—	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight				kg	54	80
Compressor type & Q'ty					—	RMT5126MCE3×1
Compressor motor (Starting method)				kW	—	Direct line start
Refrigerant oil (Amount, type)				ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)				kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger					Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control					Electronic expansion valve	
Fan type & Q'ty					Centrifugal fan ×3	Propeller fan ×1
Fan motor (Stating method)				W	100 + 130 < Direct line start >	86 < Direct line start >
Air flow			Cooling	m^3/min	P-Hi : 36 Hi : 28 Me : 25 Lo : 19	75
			Heating			73
Available external static pressure				Pa	Standard : 60 Max : 200	0
Outside air intake					Possible	—
Air filter, Quality / Quantity					Procure locally	—
Shock & vibration absorber					Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater				W	—	20 (Crankcase heater)
Operation control	Remote control				(Option) Wired :RC-EX3, RC-E5,RCH-E3 Wireless : RCN-KIT4-E2	
	Room temperature control				Thermostat by electronics	
	Operation display				—	
Safety equipments					Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)			mm	Liquid line: I.U. ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O.U. ϕ9.52 (3/8")	
					Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method				Flare piping	Flare piping
	Attached length of piping			m	—	—
	Insulation for piping				Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length			m	Max.50m	
	Vertical height diff. between O.U. and I.U.			m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose				Hose connectable VP25 (I.D.25, O.D.32)	Hole size ϕ20 × 3pcs
Drain pump, max lift height				mm	Built-in drain pump,600	—
Recommended breaker size				A	—	
L.R.A. (Locked rotor ampere)				A	5/5	
Interconnecting wires	Size × Core number				ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number					IPX0	IP24
Standard accessories					Mounting kit, Drain hose	—
Option parts					—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27℃	19℃	35℃	24℃	60Pa	ISO5151-T1
Heating	20℃	—	7℃	6℃		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.
(7) The factory E.S.P. setting is set within the range of 80 - 150 Pa.If SW8-4 is turned to "ON", E.S.P. setting range can be changed to 10 - 200 Pa.(For RC-EX3 and RC-E5 only)

PJG000Z160 K

Item			Model	FDU100VSAVF2	
				Indoor unit **FDU100VF2**	Outdoor unit **FDC100VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	Power consumption	Cooling	kW	2.84	
		Heating		2.78	
	Max power consumption			10.20	
	Running current	Cooling	A	4.4 / 4.6	
		Heating		4.3 / 4.5	
	Inrush current, max current			5, 17	
	Power factor	Cooling	%	93 / 94	
		Heating		93 / 94	
	EER	Cooling		3.52	
	COP	Heating		4.03	
	Sound power level	Cooling	dB(A)	65	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 44 Hi : 38 Me : 36 Lo : 30	54
		Heating			56
	Silent mode sound pressure level			—	50/44 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	280 × 1,370 × 740	845 × 970 × 370
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	54	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×3	Propeller fan ×1
Fan motor (Stating method)			W	100 + 130 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 36 Hi : 28 Me : 25 Lo : 19	75
		Heating			73
Available external static pressure			Pa	Standard : 60 Max : 200	0
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired :RC-EX3, RC-E5,RCH-E3 Wireless : RCN-KIT4-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I.U. ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O.U. ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable VP25 (I.D.25, O.D.32)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	Built-in drain pump,600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5/5	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	60Pa	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.
(7) The factory E.S.P. setting is set within the range of 80 - 150 Pa.If SW8-4 is turned to "ON", E.S.P. setting range can be changed to 10 - 200 Pa.(For RC-EX3 and RC-E5 only)

PJG000Z160 k

Item			Model	FDU125VNAVF	
				Indoor unit **FDU125VF**	Outdoor unit **FDC125VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.) ～ 14.0(Max.)]	
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.) ～ 16.0(Max.)]	
	Power consumption	Cooling	kW	4.36	
		Heating		3.69	
	Max power consumption			6.40	
	Running current	Cooling	A	20.3 / 21.3	
		Heating		17.8 / 18.7	
	Inrush current, max current			5, 26	
	Power factor	Cooling	%	93	
		Heating		90	
	EER	Cooling		2.87	
	COP	Heating		3.79	
	Sound power level	Cooling	dB(A)	67	71
		Heating			
	Sound pressure level	Cooling		P-Hi : 45 Hi : 40 Me 34 Lo : 29	55
		Heating			57
	Silent mode sound pressure level			—	51/45 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	280 × 1,370 × 740	845 × 970 × 370
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	54	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×3	Propeller fan ×1
Fan motor (Stating method)			W	100 + 200 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 39 Hi : 32 Me : 26 Lo : 20	75
		Heating			73
Available external static pressure			Pa	Standard : 60 Max : 200	0
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired :RC-EX3, RC-E5,RCH-E3 Wireless : RCN-KIT4-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I.U. ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O.U. ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable VP25 (I.D.25, O.D.32)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	Built-in drain pump,600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5/5	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	60Pa	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.
(7) The factory E.S.P. setting is set within the range of 80 - 150 Pa.If SW8-4 is turned to "ON", E.S.P. setting range can be changed to 10 - 200 Pa.(For RC-EX3 and RC-E5 only)

PJG000Z160 k

Item			Model	FDU125VSAVF	
				Indoor unit **FDU125VF**	Outdoor unit **FDC125VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.) ～ 14.0(Max.)]	
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.) ～ 16.0(Max.)]	
	Power consumption	Cooling	kW	4.36	
		Heating		3.69	
	Max power consumption			10.20	
	Running current	Cooling	A	6.8 / 7.2	
		Heating		5.9 / 6.2	
	Inrush current, max current			5, 17	
	Power factor	Cooling	%	93 / 92	
		Heating		90	
	EER	Cooling		2.87	
	COP	Heating		3.79	
	Sound power level	Cooling	dB(A)	67	71
		Heating			
	Sound pressure level	Cooling		P-Hi : 45 Hi : 40 Me : 34 Lo : 29	55
		Heating			57
	Silent mode sound pressure level			—	51/45 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	280 × 1,370 × 740	845 × 970 × 370
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	54	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×3	Propeller fan ×1
Fan motor (Stating method)			W	100 + 200 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 39 Hi : 32 Me : 26 Lo : 20	75
		Heating			73
Available external static pressure			Pa	Standard : 60 Max : 200	0
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired :RC-EX3, RC-E5,RCH-E3 Wireless : RCN-KIT4-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I.U. ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O.U. ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable VP25 (I.D.25, O.D.32)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	Built-in drain pump,600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5/5	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	60Pa	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.
(7) The factory E.S.P. setting is set within the range of 80 - 150 Pa.If SW8-4 is turned to "ON", E.S.P. setting range can be changed to 10 - 200 Pa.(For RC-EX3 and RC-E5 only)

PJG000Z160 K

Item			Model	FDU140VNAVF	
				Indoor unit **FDU140VF**	Outdoor unit **FDC140VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	4.93	
		Heating		4.21	
	Max power consumption			6.40	
	Running current	Cooling	A	22.8 / 23.8	
		Heating		20.3 / 21.3	
	Inrush current, max current			5, 27	
	Power factor	Cooling	%	94	
		Heating		90	
	EER	Cooling		2.76	
	COP	Heating		3.68	
	Sound power level	Cooling	dB(A)	70	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 47 Hi : 40 Me : 35 Lo : 30	57
		Heating			59
	Silent mode sound pressure level			—	53/47 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	280 × 1,370 × 740	845 × 970 × 370
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	54	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×3	Propeller fan ×1
Fan motor (Stating method)			W	100 + 200 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 48 Hi : 35 Me : 28 Lo : 22	75
		Heating			73
Available external static pressure			Pa	Standard : 60 Max : 200	0
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired :RC-EX3, RC-E5,RCH-E3 Wireless : RCN-KIT4-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I.U. ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O.U. ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable VP25 (I.D.25, O.D.32)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	Built-in drain pump,600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5/5	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	60Pa	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.
(7) The factory E.S.P. setting is set within the range of 80 - 150 Pa.If SW8-4 is turned to "ON", E.S.P. setting range can be changed to 10 - 200 Pa.(For RC-EX3 and RC-E5 only)

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Item			Model	FDU140VSAVF	
				Indoor unit **FDU140VF**	Outdoor unit **FDC140VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	4.93	
		Heating		4.21	
	Max power consumption			10.20	
	Running current	Cooling	A	7.8 / 8.2	
		Heating		6.8 / 7.1	
	Inrush current, max current			5, 18	
	Power factor	Cooling	%	91	
		Heating		89 / 90	
	EER	Cooling		2.76	
	COP	Heating		3.68	
	Sound power level	Cooling	dB(A)	70	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 47 Hi : 40 Me : 35 Lo : 30	57
		Heating			59
	Silent mode sound pressure level			—	53/47 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	280 × 1,370 × 740	845 × 970 × 370
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	54	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×3	Propeller fan ×1
Fan motor (Stating method)			W	100 + 200 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 48 Hi : 35 Me : 28 Lo : 22	75
		Heating			73
Available external static pressure			Pa	Standard : 60 Max : 200	0
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired :RC-EX3, RC-E5,RCH-E3 Wireless : RCN-KIT4-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I.U. ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O.U. ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable VP25 (I.D.25, O.D.32)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	Built-in drain pump,600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5/5	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	60Pa	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote controller is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.
(7) The factory E.S.P. setting is set within the range of 80 - 150 Pa.If SW8-4 is turned to "ON", E.S.P. setting range can be changed to 10 - 200 Pa.(For RC-EX3 and RC-E5 only)

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(5) Duct connected-Low/Middle static pressure type (FDUM)

(a) Single type

Item			Model	FDUM100VNAVF2	
				Indoor unit **FDUM100VF2**	Outdoor unit **FDC100VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	Power consumption	Cooling	kW	2.84	
		Heating		2.78	
	Max power consumption			6.40	
	Running current	Cooling	A	13.6 / 14.2	
		Heating		13.3 / 13.9	
	Inrush current, max current			5, 26	
	Power factor	Cooling	%	91	
		Heating		91	
	EER	Cooling		3.52	
	COP	Heating		4.03	
	Sound power level	Cooling	dB(A)	65	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 44 Hi : 38 Me : 36 Lo : 30	54
		Heating			56
	Silent mode sound pressure level			—	50/44 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	280 × 1,370 × 740	845 × 970 × 370
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	54	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×3	Propeller fan ×1
Fan motor (Stating method)			W	100 + 130 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 36 Hi : 28 Me : 25 Lo : 19	75
		Heating			73
Available external static pressure			Pa	Standard : 60 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired : RC-EX3,RC-E5,RCH-E3 Wireless : RCN-KIT4-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25(O.D.32)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				UM-FL3EF	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	60Pa	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.
(6) Static pressure of option air filter "UM-FL3EF" is 5Pa initially.
(7) The external static pressure setting can be changed to 10-100Pa. (For RC-EX3 and RC-E5 only)

PJG000Z159 R1

Item			Model	FDUM100VSAVF2	
				Indoor unit **FDUM100VF2**	Outdoor unit **FDC100VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	Power consumption	Cooling	kW	2.84	
		Heating		2.78	
	Max power consumption			10.20	
	Running current	Cooling	A	4.4 / 4.6	
		Heating		4.3 / 4.5	
	Inrush current, max current			5, 17	
	Power factor	Cooling	%	93 / 94	
		Heating		93 / 94	
	EER	Cooling		3.52	
	COP	Heating		4.03	
	Sound power level	Cooling	dB(A)	65	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 44 Hi : 38 Me : 36 Lo : 30	54
		Heating			56
	Silent mode sound pressure level			—	50/44 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	280 × 1,370 × 740	845 × 970 × 370
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	54	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×3	Propeller fan ×1
Fan motor (Starting method)			W	100 + 130 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 36 Hi : 28 Me : 25 Lo : 19	75
		Heating			73
Available external static pressure			Pa	Standard : 60 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired : RC-EX3,RC-E5,RCH-E3 Wireless : RCN-KIT4-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25(O.D.32)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				UM-FL3EF	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	60Pa	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.
(6) Static pressure of option air filter "UM-FL3EF" is 5Pa initially.
(7) The external static pressure setting can be changed to 10-100Pa. (For RC-EX3 and RC-E5 only)

PJG000Z159 R

Item			Model	FDUM125VNAVF	
				Indoor unit **FDUM125VF**	Outdoor unit **FDC125VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.) ～ 14.0(Max.)]	
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.) ～ 16.0(Max.)]	
	Power consumption	Cooling	kW	4.36	
		Heating		3.69	
	Max power consumption			6.40	
	Running current	Cooling	A	20.3 / 21.3	
		Heating		17.8 / 18.7	
	Inrush current, max current			5, 26	
	Power factor	Cooling	%	93	
		Heating		90	
	EER	Cooling		2.87	
	COP	Heating		3.79	
	Sound power level	Cooling	dB(A)	67	71
		Heating			
	Sound pressure level	Cooling		P-Hi : 45 Hi : 40 Me : 34 Lo : 29	55
		Heating			57
	Silent mode sound pressure level			—	51/45 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	280 × 1,370 × 740	845 × 970 × 370
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	54	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×3	Propeller fan ×1
Fan motor (Stating method)			W	100 + 200 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 39 Hi : 32 Me : 26 Lo : 20	75
		Heating			73
Available external static pressure			Pa	Standard : 60 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired : RC-EX3,RC-E5,RCH-E3 Wireless : RCN-KIT4-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25(O.D.32)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				UM-FL3EF	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	60Pa	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.
(6) Static pressure of option air filter "UM-FL3EF" is 5Pa initially.
(7) The external static pressure setting can be changed to 10-100Pa. (For RC-EX3 and RC-E5 only)

PJG000Z159 R

Item			Model	FDUM125VSAVF	
				Indoor unit **FDUM125VF**	Outdoor unit **FDC125VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.) ～ 14.0(Max.)]	
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.) ～ 16.0(Max.)]	
	Power consumption	Cooling	kW	4.36	
		Heating		3.69	
	Max power consumption			10.20	
	Running current	Cooling	A	6.8 / 7.2	
		Heating		5.9 / 6.2	
	Inrush current, max current			5, 17	
	Power factor	Cooling	%	93 / 92	
		Heating		90	
	EER	Cooling		2.87	
	COP	Heating		3.79	
	Sound power level	Cooling	dB(A)	67	71
		Heating			
	Sound pressure level	Cooling		P-Hi : 45 Hi : 40 Me : 34 Lo : 29	55
		Heating			57
	Silent mode sound pressure level			—	51/45 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	280 × 1,370 × 740	845 × 970 × 370
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	54	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×3	Propeller fan ×1
Fan motor (Starting method)			W	100 + 200 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 39 Hi : 32 Me : 26 Lo : 20	75
		Heating			73
Available external static pressure			Pa	Standard : 60 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired : RC-EX3,RC-E5,RCH-E3 Wireless : RCN-KIT4-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25(O.D.32)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				UM-FL3EF	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		External static pressure of indoor unit	Standards
	DB	WB	DB	WB		
Cooling	27˚C	19˚C	35˚C	24˚C	60Pa	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.
(6) Static pressure of option air filter "UM-FL3EF" is 5Pa initially.
(7) The external static pressure setting can be changed to 10-100Pa. (For RC-EX3 and RC-E5 only)

PJG000Z159 R

Item			Model	FDUM140VNAVF	
				Indoor unit **FDUM140VF**	Outdoor unit **FDC140VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	4.93	
		Heating		4.21	
	Max power consumption			6.40	
	Running current	Cooling	A	22.8 / 23.8	
		Heating		20.3 / 21.3	
	Inrush current, max current			5, 27	
	Power factor	Cooling	%	94	
		Heating		90	
	EER	Cooling		2.76	
	COP	Heating		3.68	
	Sound power level	Cooling	dB(A)	70	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 47 Hi : 40 Me : 35 Lo : 30	57
		Heating			59
	Silent mode sound pressure level			—	53/47 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	280 × 1,370 × 740	845 × 970 × 370
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	54	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×3	Propeller fan ×1
Fan motor (Stating method)			W	100 + 200 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 48 Hi : 35 Me : 28 Lo : 22	75
		Heating			73
Available external static pressure			Pa	Standard : 60 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired : RC-EX3,RC-E5,RCH-E3 Wireless : RCN-KIT4-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25(O.D.32)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				UM-FL3EF	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	60Pa	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.
(6) Static pressure of option air filter "UM-FL3EF" is 5Pa initially.
(7) The external static pressure setting can be changed to 10-100Pa. (For RC-EX3 and RC-E5 only)

PJG000Z159

Item			Model	FDUM140VSAVF	
				Indoor unit **FDUM140VF**	Outdoor unit **FDC140VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	4.93	
		Heating		4.21	
	Max power consumption			10.20	
	Running current	Cooling	A	7.8 / 8.2	
		Heating		6.8 / 7.1	
	Inrush current, max current			5, 18	
	Power factor	Cooling	%	91	
		Heating		89 / 90	
	EER	Cooling		2.76	
	COP	Heating		3.68	
	Sound power level	Cooling	dB(A)	70	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 47 Hi : 40 Me : 35 Lo : 30	57
		Heating			59
	Silent mode sound pressure level			—	53/47 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	280 × 1,370 × 740	845 × 970 × 370
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	54	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×3	Propeller fan ×1
Fan motor (Starting method)			W	100 + 200 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 48 Hi : 35 Me : 28 Lo : 22	75
		Heating			73
Available external static pressure			Pa	Standard : 60 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired : RC-EX3,RC-E5,RCH-E3 Wireless : RCN-KIT4-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25(O.D.32)	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				UM-FL3EF	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	60Pa	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.
(6) Static pressure of option air filter "UM-FL3EF" is 5Pa initially.
(7) The external static pressure setting can be changed to 10-100Pa. (For RC-EX3 and RC-E5 only)

PJG000Z159 R

(b) Twin type

Item			Model	FDUM100VNAPVF	
				Indoor unit **FDUM50VF (2 units)**	Outdoor unit **FDC100VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	Power consumption	Cooling	kW	3.25	
		Heating		3.21	
	Max power consumption			6.40	
	Running current	Cooling	A	14.6 / 15.2	
		Heating		14.4 / 15.0	
	Inrush current, max current			5, 26	
	Power factor	Cooling	%	97	
		Heating		97	
	EER	Cooling		3.08	
	COP	Heating		3.49	
	Sound power level	Cooling	dB(A)	60	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 37 Hi : 32 Me : 29 Lo : 26	54
		Heating			56
	Silent mode sound pressure level			—	50 / 44 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	280 × 750 × 635	845 × 970 × 370
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1)near equivalent
Net weight			kg	29	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×1	Propeller fan ×1
Fan motor (Stating method)			W	100 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 13 Hi : 10 Me : 9 Lo : 8	75
		Heating			73
Available external static pressure			Pa	Standard : 35 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3,RC-E5,RCH-E3 wireless : RCN-KIT4-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52(3/8")x0.8 ①ϕ9.52(3/8")x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7(1/2")x0.8 ①ϕ15.88(5/8")x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25(O.D.32)	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				UM-FL1EF	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	35Pa	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U
(8) Static pressure of optional air filter "UM-FL1EF" is 5Pa initially.
(9) The external static pressure setting can be changed to 10-100Pa. (For RC-EX3 and RC-E5 only)

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Item			Model	FDUM100VSAPVF	
				Indoor unit **FDUM50VF (2 units)**	Outdoor unit **FDC100VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	Power consumption	Cooling	kW	3.25	
		Heating		3.21	
	Max power consumption			10.20	
	Running current	Cooling	A	4.8 / 5.1	
		Heating		4.8 / 5.0	
	Inrush current, max current			5, 17	
	Power factor	Cooling	%	98 / 97	
		Heating		97 / 98	
	EER	Cooling		3.08	
	COP	Heating		3.49	
	Sound power level	Cooling	dB(A)	60	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 37 Hi : 32 Me : 29 Lo : 26	54
		Heating			56
	Silent mode sound pressure level			—	50 / 44 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	280 × 750 × 635	845 × 970 × 370
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1)near equivalent
Net weight			kg	29	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×1	Propeller fan ×1
Fan motor (Stating method)			W	100 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 13 Hi : 10 Me : 9 Lo : 8	75
		Heating			73
Available external static pressure			Pa	Standard : 35 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3,RC-E5,RCH-E3 wireless : RCN-KIT4-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52(3/8")x0.8 ①ϕ9.52(3/8")x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7(1/2")x0.8 ①ϕ15.88(5/8")x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25(O.D.32)	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				UM-FL1EF	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	35Pa	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U
(8) Static pressure of optional air filter "UM-FL1EF" is 5Pa initially.
(9) The external static pressure setting can be changed to 10-100Pa. (For RC-EX3 and RC-E5 only)

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Item			Model	FDUM125VNAPVF	
				Indoor unit **FDUM60VF (2 units)**	Outdoor unit **FDC125VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.) ～ 14.0(Max.)]	
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.) ～ 16.0(Max.)]	
	Power consumption	Cooling	kW	4.53	
		Heating		3.75	
	Max power consumption			6.40	
	Running current	Cooling	A	20.3 / 21.2	
		Heating		16.8 / 17.6	
	Inrush current, max current			5, 26	
	Power factor	Cooling	%	97	
		Heating		97	
	EER	Cooling		2.76	
	COP	Heating		3.73	
	Sound power level	Cooling	dB(A)	60	71
		Heating			
	Sound pressure level	Cooling		P-Hi : 36 Hi : 31 Me : 28 Lo : 25	55
		Heating			57
	Silent mode sound pressure level			—	51 / 45 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	280 × 950 × 635	845 × 970 × 370
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1)near equivalent
Net weight			kg	34	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×2	Propeller fan ×1
Fan motor (Stating method)			W	130 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 20 Hi : 15 Me : 13 Lo : 10	75
		Heating			73
Available external static pressure			Pa	Standard : 35 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3,RC-E5,RCH-E3 wireless : RCN-KIT4-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52(3/8")x0.8 ①ϕ9.52(3/8")x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7(1/2")x0.8 ①ϕ15.88(5/8")x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25(O.D.32)	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable)/ Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				UM-FL2EF	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	35Pa	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U
(8) Static pressure of optional air filter "UM-FL2EF" is 5Pa initially.
(9) The external static pressure setting can be changed to 10-100Pa. (For RC-EX3 and RC-E5 only)

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Item			Model	FDUM125VSAPVF	
				Indoor unit **FDUM60VF (2 units)**	Outdoor unit **FDC125VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.) ～ 14.0(Max.)]	
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.) ～ 16.0(Max.)]	
	Power consumption	Cooling	kW	4.53	
		Heating		3.75	
	Max power consumption			10.20	
	Running current	Cooling	A	6.7 / 7.1	
		Heating		5.9 / 5.9	
	Inrush current, max current			5, 17	
	Power factor	Cooling	%	98 / 97	
		Heating		97	
	EER	Cooling		2.76	
	COP	Heating		3.73	
	Sound power level	Cooling	dB(A)	60	71
		Heating			
	Sound pressure level	Cooling		P-Hi : 36 Hi : 31 Me : 28 Lo : 25	55
		Heating			57
	Silent mode sound pressure level			—	51 / 45 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	280 × 950 × 635	845 × 970 × 370
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1)near equivalent
Net weight			kg	34	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×2	Propeller fan ×1
Fan motor (Stating method)			W	130 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 20 Hi : 15 Me : 13 Lo : 10	75
		Heating			73
Available external static pressure			Pa	Standard : 35 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3,RC-E5,RCH-E3 wireless : RCN-KIT4-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52(3/8")x0.8 ①ϕ9.52(3/8")x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7(1/2")x0.8 ①ϕ15.88(5/8")x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25(O.D.32)	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable)/ Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				UM-FL2EF	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	35Pa	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U
(8) Static pressure of optional air filter "UM-FL2EF" is 5Pa initially.
(9) The external static pressure setting can be changed to 10-100Pa. (For RC-EX3 and RC-E5 only)

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Item			Model	FDUM140VNAPVF1	
				Indoor unit **FDUM71VF1 (2 units)**	Outdoor unit **FDC140VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	5.02	
		Heating		4.20	
	Max power consumption			6.40	
	Running current	Cooling	A	22.5 / 23.5	
		Heating		18.8 / 19.7	
	Inrush current, max current			5, 27	
	Power factor	Cooling	%	97	
		Heating		97	
	EER	Cooling		2.71	
	COP	Heating		3.69	
	Sound power level	Cooling	dB(A)	65	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 38 Hi : 33 Me : 29 Lo : 25	57
		Heating			59
	Silent mode sound pressure level			—	53 / 47 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	280 × 950 × 635	845 × 970 × 370
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1)near equivalent
Net weight			kg	34	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×2	Propeller fan ×1
Fan motor (Stating method)			W	130 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 24 Hi : 19 Me : 15 Lo : 10	75
		Heating			73
Available external static pressure			Pa	Standard : 35 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3,RC-E5,RCH-E3 wireless : RCN-KIT4-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") ②ϕ9.52(3/8")x0.8 ①ϕ9.52(3/8")x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ15.88 (5/8") ②ϕ15.88(5/8")x1.0 ①ϕ15.88(5/8")x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25(O.D.32)	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable)/ Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				UM-FL2EF	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	35Pa	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U
(8) Static pressure of optional air filter "UM-FL2EF" is 5Pa initially.
(9) The external static pressure setting can be changed to 10-100Pa. (For RC-EX3 and RC-E5 only)

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Item			Model	FDUM140VSAPVF1	
				Indoor unit **FDUM71VF1 (2 units)**	Outdoor unit **FDC140VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	5.02	
		Heating		4.20	
	Max power consumption			10.20	
	Running current	Cooling	A	7.5 / 7.9	
		Heating		6.2 / 6.6	
	Inrush current, max current			5, 18	
	Power factor	Cooling	%	97	
		Heating		98 / 97	
	EER	Cooling		2.71	
	COP	Heating		3.69	
	Sound power level	Cooling	dB(A)	65	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 38 Hi : 33 Me : 29 Lo : 25	57
		Heating			59
	Silent mode sound pressure level			—	53 / 47 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	280 × 950 × 635	845 × 970 × 370
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	34	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×2	Propeller fan ×1
Fan motor (Stating method)			W	130 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 24 Hi : 19 Me : 15 Lo : 10	75
		Heating			73
Available external static pressure			Pa	Standard : 35 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(option) wired : RC-EX3,RC-E5,RCH-E3 wireless : RCN-KIT4-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") ②ϕ9.52(3/8")x0.8 ①ϕ9.52(3/8")x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ15.88 (5/8") ②ϕ15.88(5/8")x1.0 ①ϕ15.88(5/8")x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25(O.D.32)	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable)/ Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				UM-FL2EF	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	35Pa	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U
(8) Static pressure of optional air filter "UM-FL2EF" is 5Pa initially.
(9) The external static pressure setting can be changed to 10-100Pa. (For RC-EX3 and RC-E5 only)

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(c) Triple type

Item			Model	FDUM140VNATVF	
				Indoor unit **FDUM50VF (3 units)**	Outdoor unit **FDC140VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	5.02	
		Heating		4.20	
	Max power consumption			6.40	
	Running current	Cooling	A	22.5 / 23.5	
		Heating		18.8 / 19.7	
	Inrush current, max current			5, 27	
	Power factor	Cooling	%	97	
		Heating		97	
	EER	Cooling		2.71	
	COP	Heating		3.69	
	Sound power level	Cooling	dB(A)	60	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 37 Hi : 32 Me : 29 Lo : 26	57
		Heating			59
	Silent mode sound pressure level			—	53 / 47 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	280 × 750 × 635	845 × 970 × 370
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	29	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×1	Propeller fan ×1
Fan motor (Stating method)			W	100 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 13 Hi : 10 Me : 9 Lo : 8	75
		Heating			73
Available external static pressure			Pa	Standard : 35 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3,RC-E5,RCH-E3 wireless : RCN-KIT4-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52(3/8")x0.8 ①ϕ9.52(3/8")x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ2.7(1/2")x0.8 ①ϕ15.88(5/8")x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25(O.D.32)	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable)/ Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				UM-FL1EF	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	35Pa	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(7) Branching pipe set "DIS-TA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U
(8) Static pressure of optional air filter "UM-FL1EF" is 5Pa initially.
(9) The external static pressure setting can be changed to 10-100Pa. (For RC-EX3 and RC-E5 only)

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Item			Model	FDUM140VSATVF	
				Indoor unit **FDUM50VF (3 units)**	Outdoor unit **FDC140VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	5.02	
		Heating		4.20	
	Max power consumption			10.20	
	Running current	Cooling	A	7.5 / 7.9	
		Heating		6.2 / 6.6	
	Inrush current, max current			5, 18	
	Power factor	Cooling	%	97	
		Heating		98 / 97	
	EER	Cooling		2.71	
	COP	Heating		3.69	
	Sound power level	Cooling	dB(A)	60	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 37 Hi : 32 Me : 29 Lo : 26	57
		Heating			59
	Silent mode sound pressure level			—	53 / 47 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	280 × 750 × 635	845 × 970 × 370
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	29	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fin & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×1	Propeller fan ×1
Fan motor (Stating method)			W	100 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 13 Hi : 10 Me : 9 Lo : 8	75
		Heating			73
Available external static pressure			Pa	Standard : 35 Max : 100	—
Outside air intake				Possible	—
Air filter, Quality / Quantity				Procure locally	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3,RC-E5,RCH-E3 wireless : RCN-KIT4-E2	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52(3/8")x0.8 ①ϕ9.52(3/8")x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7(1/2")x0.8 ①ϕ15.88(5/8")x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP25(O.D.32)	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	Built-in drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable)/ Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Drain hose	—
Option parts				UM-FL1EF	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	External static pressure of indoor unit	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	35Pa	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C		

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(7) Branching pipe set "DIS-TA1G"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U
(8) Static pressure of optional air filter "UM-FL1EF" is 5Pa initially.
(9) The external static pressure setting can be changed to 10-100Pa. (For RC-EX3 and RC-E5 only)

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(6) Floor standing type (FDF)

(a) Single type

Item			Model	FDF100VNAVD2	
				Indoor unit **FDF100VD2**	Outdoor unit **FDC100VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	Power consumption	Cooling	kW	3.12	
		Heating		2.94	
	Max power consumption			6.40	
	Running current	Cooling	A	15.2 / 15.9	
		Heating		14.5 / 15.2	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	89	
		Heating		88	
	EER	Cooling		3.21	
	COP	Heating		3.81	
	Sound power level	Cooling	dB(A)	65	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 54 Hi : 50 Me : 48 Lo : 44	54
		Heating			56
	Silent mode sound pressure level			—	50/44 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	1,850 × 600 × 320	845 × 970 × 370
Exterior appearance (Munsell color)				Ceramic white (N8.0) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	52	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	157 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 29 Hi : 26 Me : 23 Lo : 19	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Plastic net ×1(Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			RC-E5 (Installed) / Wireless : RCN-KIT4-E2 (Option)	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote control is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

Item			Model	FDF100VSAVD2	
				Indoor unit **FDF100VD2**	Outdoor unit **FDC100VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	Power consumption	Cooling	kW	3.12	
		Heating		2.94	
	Max power consumption			10.20	
	Running current	Cooling	A	5.0 / 5.3	
		Heating		4.7 / 5.0	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	90 / 89	
		Heating		90 / 89	
	EER	Cooling		3.21	
	COP	Heating		3.81	
	Sound power level	Cooling	dB(A)	65	70
		Heating			
	Sound pressure level	Cooling		P-Hi : 54 Hi : 50 Me : 48 Lo : 44	54
		Heating			56
	Silent mode sound pressure level			—	50/44 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	1,850 × 600 × 320	845 × 970 × 370
Exterior appearance (Munsell color)				Ceramic white (N8.0) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	52	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×1	Propeller fan ×1
Fan motor (Stating method)			W	157 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 29 Hi : 26 Me : 23 Lo : 19	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Plastic net × 1 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			RC-E5 (Installed) / Wireless : RCN-KIT4-E2 (Option)	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6 ㎜ × 3 cores (Including earth cable)/ Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote control is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

PGA000Z812 K

Item			Model	FDF125VNAVD	
				Indoor unit **FDF125VD**	Outdoor unit **FDC125VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.) ～ 13.0(Max.)]	
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.) ～ 16.0(Max.)]	
	Power consumption	Cooling	kW	4.65	
		Heating		4.14	
	Max power consumption			6.40	
	Running current	Cooling	A	21.3 / 22.3	
		Heating		19.4 / 20.2	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	95	
		Heating		93	
	EER	Cooling		2.69	
	COP	Heating		3.38	
	Sound power level	Cooling	dB(A)	73	71
		Heating			
	Sound pressure level	Cooling		P-Hi : 54 Hi : 50 Me : 48 Lo : 44	55
		Heating			57
	Silent mode sound pressure level			—	51/45 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	1,850 × 600 × 320	845 × 970 × 370
Exterior appearance (Munsell color)				Ceramic white (N8.0) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	52	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×1	Propeller fan ×1
Fan motor (Stating method)			W	157 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 29 Hi : 26 Me : 23 Lo : 19	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Plastic net ×1 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			RC-E5 (Installed) / Wireless : RCN-KIT4-E2 (Option)	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6 ㎜ × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote control is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

PGA000Z812 K

Item			Model	FDF125VSAVD	
				Indoor unit **FDF125VD**	Outdoor unit **FDC125VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.) ～ 14.0(Max.)]	
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.) ～ 16.0(Max.)]	
	Power consumption	Cooling	kW	4.65	
		Heating		4.14	
	Max power consumption			10.20	
	Running current	Cooling	A	7.2 / 7.6	
		Heating		6.5 / 6.8	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	93	
		Heating		92	
	EER	Cooling		2.69	
	COP	Heating		3.38	
	Sound power level	Cooling	dB(A)	73	71
		Heating			
	Sound pressure level	Cooling		P-Hi : 54 Hi : 50 Me : 48 Lo : 44	55
		Heating			57
	Silent mode sound pressure level			—	51/45 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	1,850 × 600 × 320	845 × 970 × 370
Exterior appearance (Munsell color)				Ceramic white (N8.0) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	52	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×1	Propeller fan ×1
Fan motor (Stating method)			W	157 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 29 Hi : 26 Me : 23 Lo : 19	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Plastic net ×1 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			RC-E5 (Installed) / Wireless : RCN-KIT4-E2 (Option)	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6 ㎜ × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote control is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

PGA000Z812 K

Item			Model	FDF140VNAVD	
				Indoor unit **FDF140VD**	Outdoor unit **FDC140VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.0 [5.0(Min.) ～ 13.0(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	5.02	
		Heating		4.98	
	Max power consumption			6.40	
	Running current	Cooling	A	22.6 / 23.6	
		Heating		22.3 / 23.4	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	97	
		Heating		97	
	EER	Cooling		2.59	
	COP	Heating		3.11	
	Sound power level	Cooling	dB(A)	73	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 54 Hi : 50 Me : 48 Lo : 44	57
		Heating			59
	Silent mode sound pressure level			—	53/47 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	1,850 × 600 × 320	845 × 970 × 370
Exterior appearance (Munsell color)				Ceramic white (N8.0) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	52	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×1	Propeller fan ×1
Fan motor (Stating method)			W	157 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 29 Hi : 26 Me : 23 Lo : 19	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Plastic net ×1 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			RC-E5 (Installed) / Wireless : RCN-KIT4-E2 (Option)	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6 ㎜ × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote control is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

PGA000Z812 K

Item			Model	FDF140VSAVD	
				Indoor unit **FDF140VD**	Outdoor unit **FDC140VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	5.42	
		Heating		4.98	
	Max power consumption			10.20	
	Running current	Cooling	A	8.3 / 8.8	
		Heating		7.7 / 8.1	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	94	
		Heating		93	
	EER	Cooling		2.51	
	COP	Heating		3.11	
	Sound power level	Cooling	dB(A)	73	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 54 Hi : 50 Me : 48 Lo : 44	57
		Heating			59
	Silent mode sound pressure level			—	53/47 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	1,850 × 600 × 320	845 × 970 × 370
Exterior appearance (Munsell color)				Ceramic white (N8.0) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	52	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (Incl. the amount for the piping of : 30m)	
Heat exchanger				Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×1	Propeller fan ×1
Fan motor (Stating method)			W	157 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 29 Hi : 26 Me : 23 Lo : 19	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Plastic net ×1 (Washable)	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			RC-E5 (Installed) / Wireless : RCN-KIT4-E2 (Option)	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") Pipe ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: ϕ15.88 (5/8") ϕ15.88(5/8")×1.0 ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6 ㎜ × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote control is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

PGA000Z812 K

(b) Twin type

Item			Model	FDF140VNAPVD1	
				Indoor unit **FDF71VD1 (2 units)**	Outdoor unit **FDC140VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	5.15	
		Heating		4.35	
	Max power consumption			6.40	
	Running current	Cooling	A	22.9 / 23.9	
		Heating		19.3 / 20.2	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	98	
		Heating		98	
	EER	Cooling		2.64	
	COP	Heating		3.56	
	Sound power level	Cooling	dB(A)	61	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 42 Hi : 39 Me : 35 Lo : 33	57
		Heating			59
	Silent mode sound pressure level			—	53 / 47 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	1,850 × 600 × 320	845 × 970 × 370
Exterior appearance (Munsell color)				Ceramic white (N8.0) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	49	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×1	Propeller fan ×1
Fan motor (Stating method)			W	157 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 18 Hi : 16 Me : 14 Lo : 12	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Plastic net ×1(Washable)	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			RC-E5 (Installed) / wireless : RCN-KIT4-E2 (Option)	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") ②ϕ9.52(3/8")x0.8 ①ϕ9.52(3/8")x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ15.88 (5/8") ②ϕ15.88(5/8")x1.0 ①ϕ15.88(5/8")x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires		Size × Core number		ϕ1.6mm × 3 cores (Including earth cable)/ Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote control is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicate when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(7) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(8) Branching pipe set "DIS-WA1"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

PGA000Z812 K

Item			Model	FDF140VSAPVD1	
				Indoor unit **FDF71VD1 (2 units)**	Outdoor unit **FDC140VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	5.15	
		Heating		4.35	
	Max power consumption			10.20	
	Running current	Cooling	A	7.6 / 8.0	
		Heating		6.4 / 6.8	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	98	
		Heating		98 / 97	
	EER	Cooling		2.64	
	COP	Heating		3.56	
	Sound power level	Cooling	dB(A)	61	73
		Heating			
	Sound pressure level	Cooling		P-Hi : 42 Hi : 39 Me : 35 Lo : 33	57
		Heating			59
	Silent mode sound pressure level			—	53 / 47 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	1,850 × 600 × 320	845 × 970 × 370
Exterior appearance (Munsell color)				Ceramic white (N8.0) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	49	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fine & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×1	Propeller fan ×1
Fan motor (Stating method)			W	157 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 18 Hi : 16 Me : 14 Lo : 12	75
		Heating			73
Available external static pressure			Pa	0	—
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Plastic net ×1(Washable)	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			RC-E5 (Installed) / wireless : RCN-KIT4-E2 (Option)	
	Room temperature control			Thermostat by electronics	
	Operation display			—	
Safety equipments				Overload protection for fan motor Frost protection thermostat Internal thermostat for fan motor Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") ②ϕ9.52(3/8")x0.8 ①ϕ9.52(3/8")x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ15.88 (5/8") ②ϕ15.88(5/8")x1.0 ①ϕ15.88(5/8")x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable)/ Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27˚C	19˚C	35˚C	24˚C	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) When wireless remote control is used, fan is 3 speed setting (Hi-Me-Lo) only.
(6) The operation data indicate when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(7) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(8) Branching pipe set "DIS-WA1"×1(Option). ①: Pipe of O/U-Branch, ②: Pipe of Branch-I/U

PGA000Z812 K

(7) Wall mounted type (SRK)

(a) Single type

Item			Model	SRK100VNAZR	
				Indoor unit **SRK100ZR-S**	Outdoor unit **FDC100VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	Power consumption	Cooling	kW	3.19	
		Heating		2.78	
	Max power consumption			6.40	
	Running current	Cooling	A	14.3 / 14.9	
		Heating		12.5 / 13.0	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	97	
		Heating		97	
	EER	Cooling		3.13	
	COP	Heating		4.03	
	Sound power level	Cooling	dB(A)	63	70
		Heating			
	Sound pressure level	Cooling		Hi : 48 Me : 45 Lo : 40 ULo : 27	54
		Heating		Hi : 48 Me : 43 Lo : 38 ULo : 30	56
	Silent mode sound pressure level			—	50/44 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	339 × 1,197 × 262	845 × 970 × 370
Exterior appearance (Munsell color)				Fine snow (8.0Y 9.3/0.1) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	16.5	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger				Tangential fan × 1	Straight fin & inner grooved tubing
Refrigerant control				56 × 1 < Direct line start >	
Fan type & Q'ty				Hi : 24.5 Me : 21.3 Lo : 17.6 ULo : 10.4	Propeller fan ×1
Fan motor (Starting method)			W	Hi : 27.5 Me : 23.2 Lo : 19.1 ULo : 13.6	86 < Direct line start >
Air flow		Cooling	m^3/min	0	75
		Heating		Not possible	73
Available external static pressure			Pa	Polypropylene net (Washable) × 2	0
Outside air intake				Rubber sleeve (for fan motor)	—
Air filter, Quality / Quantity				—	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired : RC-EX3, RC-E5 , RCH-E3 Interface kit : SC-BIKN2-E	
	Room temperature control			Thermostat by electronics	
	Operation display			RUN: Green, TIMER: Yellow, ECO: Blue	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U φ9.52 (3/8") φ9.52(3/8")×0.8 O/U φ9.52 (3/8")	
				Gas line: I/U φ15.88 (5/8") ②φ15.88(5/8")×1.0 O/U φ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP16	Hole size φ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			φ1.6mm × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Clean filter	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

PCA001Z717 L

Item			Model	SRK100VSAZR	
				Indoor unit **SRK100ZR-S**	Outdoor unit **FDC100VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	Power consumption	Cooling	kW	3.19	
		Heating		2.78	
	Max power consumption			10.20	
	Running current	Cooling	A	4.8 / 5.1	
		Heating		4.2 / 4.4	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	96 / 95	
		Heating		96	
	EER	Cooling		3.13	
	COP	Heating		4.03	
	Sound power level	Cooling	dB(A)	63	70
		Heating			
	Sound pressure level	Cooling		Hi : 48 Me : 45 Lo : 40 ULo : 27	54
		Heating		Hi : 48 Me : 43 Lo : 38 ULo : 30	56
	Silent mode sound pressure level			—	50/44 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	339 × 1,197 × 262	845 × 970 × 370
Exterior appearance (Munsell color)				Fine snow (8.0Y 9.3/0.1) near equivalent	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	16.5	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg (Pre-charged up to the piping length of 30m) Outdoor unit	
Heat exchanger				Louver fins & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Tangential fan × 1	Propeller fan × 1
Fan motor (Starting method)			W	56 × 1 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	Hi : 24.5 Me : 21.3 Lo : 17.6 ULo : 10.4	75
		Heating		Hi : 27.5 Me : 23.2 Lo : 19.1 ULo : 13.6	73
Available external static pressure			Pa	0	0
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Polypropylene net (Washable) × 2	—
Shock & vibration absorber				Rubber sleeve (for fan motor)	Rubber sleeve (for compressor)
Electric heater			W	—	20 (Crankcase heater)
Operation control	Remote control			(Option) Wired : RC-EX3, RC-E5 , RCH-E3 Interface kit : SC-BIKN2-E	
	Room temperature control			Thermostat by electronics	
	Operation display			RUN: Green, TIMER: Yellow, ECO: Blue	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Abnormal discharge temperature protection.	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ9.52 (3/8") ϕ9.52 (3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ15.88 (5/8") ②ϕ15.88 (5/8")×1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP16	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6 ㎜ × 3 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Clean filter	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27°C	19°C	35°C	24°C	ISO5151-T1
Heating	20°C	—	7°C	6°C	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

PCA001Z717 L

(b) Twin type

Item			Model	SRK100VNAPZSX	
				Indoor unit **SRK50ZSX-S (2 units)**	Outdoor unit **FDC100VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	Power consumption	Cooling	kW	2.89	
		Heating		2.61	
	Max power consumption			6.40	
	Running current	Cooling	A	12.7 / 13.3	
		Heating		11.5 / 12.0	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	99	
		Heating		99	
	EER	Cooling		3.46	
	COP	Heating		4.29	
	Sound power level	Cooling	dB(A)	59	70
		Heating		62	
	Sound pressure level	Cooling		Hi : 44 Me : 39 Lo : 31 ULo: 22	54
		Heating		Hi : 46 Me : 41 Lo : 33 ULo: 23	56
	Silent mode sound pressure level			—	50 / 44 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	305 × 920 × 220	845 × 970 × 370
Exterior appearance (Munsell color)				Fine snow Munsell: (8.0Y 9.3/0.1), RAL: 9003	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	13	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fins & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Tangential fan × 1	Propeller fan ×1
Fan motor (Stating method)			W	42 × 1 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	Hi : 14.3 Me : 12.4 Lo : 7.8 ULo: 5.4	75
		Heating		Hi : 17.3 Me : 14.3 Lo : 9.8 ULo: 6.2	73
Available external static pressure			Pa	0	0
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Polypropylene net (Washable) × 2	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for compressor)
Electric heater			W	—	20(Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3, RC-E5 , RCH-E3 Interface kit : SC-BIKN2-E	
	Room temperature control			Thermostat by electronics	
	Operation display			RUN: Green, TIMER: Yellow, ECO: Blue	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52(3/8")×0.8 ①ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7(1/2")×0.8 ①ϕ15.88(5/8")×1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP16	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable)/ Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Clean filter	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27˚C	19˚C	35˚C	24˚C	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1"×1(Option). ①: Pipe of O/U-Branc, ②: Pipe of Branch-I/U

PCA001Z717

Item			Model	SRK100VSAPZSX	
				Indoor unit **SRK50ZSX-S (2 units)**	Outdoor unit **FDC100VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.) ～ 11.2(Max.)]	
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.) ～ 12.5(Max.)]	
	Power consumption	Cooling	kW	2.89	
		Heating		2.61	
	Max power consumption			10.20	
	Running current	Cooling	A	4.2 / 4.5	
		Heating		3.8 / 4.0	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	99 / 98	
		Heating		99	
	EER	Cooling		3.46	
	COP	Heating		4.29	
	Sound power level	Cooling	dB(A)	59	70
		Heating		62	
	Sound pressure level	Cooling		Hi : 44 Me : 39 Lo : 31 ULo: 22	54
		Heating		Hi : 46 Me : 41 Lo : 33 ULo: 23	56
	Silent mode sound pressure level			—	50 / 44 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	305 × 920 × 220	845 × 970 × 370
Exterior appearance (Munsell color)				Fine snow Munsell: (8.0Y 9.3/0.1), RAL: 9003	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	13	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fins & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Tangential fan × 1	Propeller fan ×1
Fan motor (Stating method)			W	42 × 1 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	Hi : 14.3 Me : 12.4 Lo : 7.8 ULo: 5.4	75
		Heating		Hi : 17.3 Me : 14.3 Lo : 9.8 ULo: 6.2	73
Available external static pressure			Pa	0	0
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Polypropylene net (Washable) × 2	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for compressor)
Electric heater			W	—	20(Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3, RC-E5 , RCH-E3 Interface kit : SC-BIKN2-E	
	Room temperature control			Thermostat by electronics	
	Operation display			RUN: Green, TIMER: Yellow, ECO: Blue	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52(3/8")×0.8 ①ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7(1/2")×0.8 ①ϕ15.88(5/8")×1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP16	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable)/ Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Clean filter	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1"×1(Option). ①: Pipe of O/U-Branc, ②: Pipe of Branch-I/U

PCA001Z717

Item			Model	SRK125VNAPZSX	
				Indoor unit **SRK60ZSX-S (2 units)**	Outdoor unit **FDC125VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.) ～ 14.0(Max.)]	
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.) ～ 16.0(Max.)]	
	Power consumption	Cooling	kW	4.65	
		Heating		3.58	
	Max power consumption			6.40	
	Running current	Cooling	A	20.0 / 20.9	
		Heating		15.7 / 16.4	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	99	
		Heating		99	
	EER	Cooling		2.69	
	COP	Heating		3.91	
	Sound power level	Cooling	dB(A)	62	71
		Heating		63	
	Sound pressure level	Cooling		Hi : 46 Me : 41 Lo : 33 ULo: 22	55
		Heating		Hi : 46 Me : 42 Lo : 34 ULo: 23	57
	Silent mode sound pressure level			—	51 / 45 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	305 × 920 × 220	845 × 970 × 370
Exterior appearance (Munsell color)				Fine snow Munsell: (8.0Y 9.3/0.1), RAL: 9003	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	13	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fins & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Tangential fan × 1	Propeller fan ×1
Fan motor (Stating method)			W	42 × 1 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	Hi : 16.3 Me : 13.4 Lo : 8.9 ULo: 5.4	75
		Heating		Hi : 17.8 Me : 13.7 Lo : 10.9 ULo: 6.2	73
Available external static pressure			Pa	0	0
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Polypropylene net (Washable) × 2	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for compressor)
Electric heater			W	—	20(Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3, RC-E5 , RCH-E3 Interface kit : SC-BIKN2-E	
	Room temperature control			Thermostat by electronics	
	Operation display			RUN: Green, TIMER: Yellow, ECO: Blue	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52(3/8")x0.8 ①ϕ9.52(3/8")x0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7(1/2")x0.8 ①ϕ15.88(5/8")x1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP16	Hole size ϕ20 x 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable)/ Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Clean filter	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1"×1(Option). ①: Pipe of O/U-Branc, ②: Pipe of Branch-I/U

PCA001Z717

Item			Model	SRK125VSAPZSX	
				Indoor unit **SRK60ZSX-S (2 units)**	Outdoor unit **FDC125VSA**
Power source				3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.) ～ 14.0(Max.)]	
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.) ～ 16.0(Max.)]	
	Power consumption	Cooling	kW	4.65	
		Heating		3.58	
	Max power consumption			10.20	
	Running current	Cooling	A	6.7 / 7.0	
		Heating		5.2 / 5.5	
	Inrush current, max current			5, 15	
	Power factor	Cooling	%	98 / 99	
		Heating		99	
	EER	Cooling		2.69	
	COP	Heating		3.91	
	Sound power level	Cooling	dB(A)	62	71
		Heating		63	
	Sound pressure level	Cooling		Hi : 46 Me : 41 Lo : 33 ULo: 22	55
		Heating		Hi : 46 Me : 42 Lo : 34 ULo: 23	57
	Silent mode sound pressure level			—	51 / 45 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	305 × 920 × 220	845 × 970 × 370
Exterior appearance (Munsell color)				Fine snow Munsell: (8.0Y 9.3/0.1), RAL: 9003	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	13	82
Compressor type & Q'ty				—	RMT5126MCE4×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fins & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Tangential fan × 1	Propeller fan ×1
Fan motor (Stating method)			W	42 × 1 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	Hi : 16.3 Me : 13.4 Lo : 8.9 ULo: 5.4	75
		Heating		Hi : 17.8 Me : 13.7 Lo : 10.9 ULo: 6.2	73
Available external static pressure			Pa	0	0
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Polypropylene net (Washable) × 2	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for compressor)
Electric heater			W	—	20(Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3, RC-E5 , RCH-E3 Interface kit : SC-BIKN2-E	
	Room temperature control			Thermostat by electronics	
	Operation display			RUN: Green, TIMER: Yellow, ECO: Blue	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52(3/8")×0.8 ①ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7(1/2")×0.8 ①ϕ15.88(5/8")×1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP16	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable)/ Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Clean filter	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is two indoor units are combined and run together.
(7) Branching pipe set "DIS-WA1"×1(Option). ①: Pipe of O/U-Branc, ②: Pipe of Branch-I/U

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(c) Triple type

Item			Model	SRK140VNATZSX	
				Indoor unit **SRK50ZSX-S (3 units)**	Outdoor unit **FDC140VNA**
Power source				1 Phase, 220-240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling	kW	4.62	
		Heating		3.74	
	Max power consumption			6.40	
	Running current	Cooling	A	20.3 / 21.2	
		Heating		16.4 / 17.2	
	Inrush current, max current			5, 24	
	Power factor	Cooling	%	99	
		Heating		99	
	EER	Cooling		2.94	
	COP	Heating		4.14	
	Sound power level	Cooling	dB(A)	59	73
		Heating		62	
	Sound pressure level	Cooling		Hi : 44 Me : 39 Lo : 31 ULo: 22	57
		Heating		Hi : 46 Me : 41 Lo : 33 ULo: 23	59
	Silent mode sound pressure level			—	53 / 47 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)			mm	305 × 920 × 220	845 × 970 × 370
Exterior appearance (Munsell color)				Fine snow Munsell: (8.0Y 9.3/0.1), RAL: 9003	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	13	80
Compressor type & Q'ty				—	RMT5126MCE3×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger				Louver fins & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve	
Fan type & Q'ty				Tangential fan × 1	Propeller fan ×1
Fan motor (Stating method)			W	42 × 1 < Direct line start >	86 < Direct line start >
Air flow		Cooling	m^3/min	Hi : 14.3 Me : 12.4 Lo : 7.8 ULo: 5.4	75
		Heating		Hi : 17.3 Me : 14.3 Lo : 9.8 ULo: 6.2	73
Available external static pressure			Pa	0	0
Outside air intake				Not possible	—
Air filter, Quality / Quantity				Polypropylene net (Washable) × 2	—
Shock & vibration absorber				Rubber sleeve(for fan motor)	Rubber sleeve(for compressor)
Electric heater			W	—	20(Crankcase heater)
Operation control	Remote control			(Option) wired : RC-EX3, RC-E5 , RCH-E3 Interface kit : SC-BIKN2-E	
	Room temperature control			Thermostat by electronics	
	Operation display			RUN: Green, TIMER: Yellow, ECO: Blue	
Safety equipments				Internal thermostat for fan motor Frost protection thermostat Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: I/U ϕ6.35 (1/4") ②ϕ9.52(3/8")×0.8 ①ϕ9.52(3/8")×0.8 O/U ϕ9.52 (3/8")	
				Gas line: I/U ϕ12.7 (1/2") ②ϕ12.7(1/2")×0.8 ①ϕ15.88(5/8")×1.0 O/U ϕ15.88 (5/8")	
	Connecting method			Flare piping	Flare piping
	Attached length of piping		m	—	—
	Insulation for piping			Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length		m	Max.50m	
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP16	Hole size ϕ20 × 3pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size × Core number			ϕ1.6mm × 3 cores (Including earth cable)/ Termainal block (Screw fixing type)	
IP number				IPX0	IP24
Standard accessories				Mounting kit, Clean filter	—
Option parts				—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 230V50Hz or 220V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(7) Branching pipe set "DIS-TA1"×1(Option). ①: Pipe of O/U-Branc, ②: Pipe of Branch-I/U

PCA001Z717

Item				Model	SRK140VSATZSX	
					Indoor unit **SRK50ZSX-S (3 units)**	Outdoor unit **FDC140VSA**
Power source					3 Phase, 380-415V, 50Hz / 380V, 60Hz	
Operation data	Nominal cooling capacity (range)			kW	13.6 [5.0(Min.) ～ 14.5(Max.)]	
	Nominal heating capacity (range)			kW	15.5 [4.0(Min.) ～ 16.5(Max.)]	
	Power consumption	Cooling		kW	4.26	
		Heating			3.74	
	Max power consumption				10.20	
	Running current	Cooling		A	6.8 / 7.1	
		Heating			5.5 / 5.8	
	Inrush current, max current				5, 15	
	Power factor	Cooling		%	98 / 99	
		Heating			98	
	EER	Cooling			2.94	
	COP	Heating			4.14	
	Sound power level	Cooling		dB(A)	59	73
		Heating			62	
	Sound pressure level	Cooling			Hi : 44 Me : 39 Lo : 31 ULo: 22	57
		Heating			Hi : 46 Me : 41 Lo : 33 ULo: 23	59
	Silent mode sound pressure level				—	53 / 47 (Normal / Silent)
Exterior dimensions (Height × Width × Depth)				mm	305 × 920 × 220	845 × 970 × 370
Exterior appearance (Munsell color)					Fine snow Munsell: (8.0Y 9.3/0.1), RAL: 9003	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight				kg	13	82
Compressor type & Q'ty					—	RMT5126MCE4×1
Compressor motor (Starting method)				kW	—	Direct line start
Refrigerant oil (Amount, type)				ℓ	—	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)				kg	R410A 3.8kg(Pre-charged up to the piping length of 30m)Outdoor unit	
Heat exchanger					Louver fins & inner grooved tubing	Straight fin & inner grooved tubing
Refrigerant control					Electronic expansion valve	
Fan type & Q'ty					Tangential fan × 1	Propeller fan × 1
Fan motor (Stating method)				W	42 × 1 < Direct line start >	86 < Direct line start >
Air flow		Cooling		m^3/min	Hi : 14.3 Me : 12.4 Lo : 7.8 ULo: 5.4	75
		Heating			Hi : 17.3 Me : 14.3 Lo : 9.8 ULo: 6.2	73
Available external static pressure				Pa	0	0
Outside air intake					Not possible	—
Air filter, Quality / Quantity					Polypropylene net (Washable) × 2	—
Shock & vibration absorber					Rubber sleeve(for fan motor)	Rubber sleeve(for compressor)
Electric heater				W	—	20(Crankcase heater)
Operation control	Remote control				(Option) wired : RC-EX3, RC-E5 , RCH-E3 Interface kit : SC-BIKN2-E	
	Room temperature control				Thermostat by electronics	
	Operation display				RUN: Green, TIMER: Yellow, ECO: Blue	
Safety equipments					Internal thermostat for fan motor Frost protection thermostat Abnormal discharge temperature protection	
Installation data	Refrigerant piping size (O.D.)			mm	Liquid line: I/U φ6.35 (1/4") ②φ9.52(3/8")×0.8 ①φ9.52(3/8")×0.8 O/U φ9.52 (3/8")	
					Gas line: I/U φ12.7 (1/2") ②φ12.7(1/2")×0.8 ①φ15.88(5/8")×1.0 O/U φ15.88 (5/8")	
	Connecting method				Flare piping	Flare piping
	Attached length of piping			m	—	—
	Insulation for piping				Necessary (both Liquid & Gas lines)	
	Refrigerant line (one way) length			m	Max.50m	
	Vertical height diff. between O.U. and I.U.			m	Max.50m (Outdoor unit is higher)	Max.15m (Outdoor unit is lower)
	Drain hose				Hose connectable with VP16	Hole size φ20 × 3pcs
Drain pump, max lift height				mm	—	—
Recommended breaker size				A	—	
L.R.A. (Locked rotor ampere)				A	5.0	
Interconnecting wires	Size × Core number				φ1.6mm × 3 cores (Including earth cable)/ Termainal block (Screw fixing type)	
IP number					IPX0	IP24
Standard accessories					Mounting kit, Clean filter	—
Option parts					—	

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5) The operation data indicate when the air-conditioner is operated at 400V50Hz or 380V60Hz.
(6) Indoor unit specifications for one unit. Capacity and operation data is three indoor units are combined and run together.
(7) Branching pipe set "DIS-TA1"×1(Option). ①: Pipe of O/U-Branc ②: Pipe of Branch-I/U

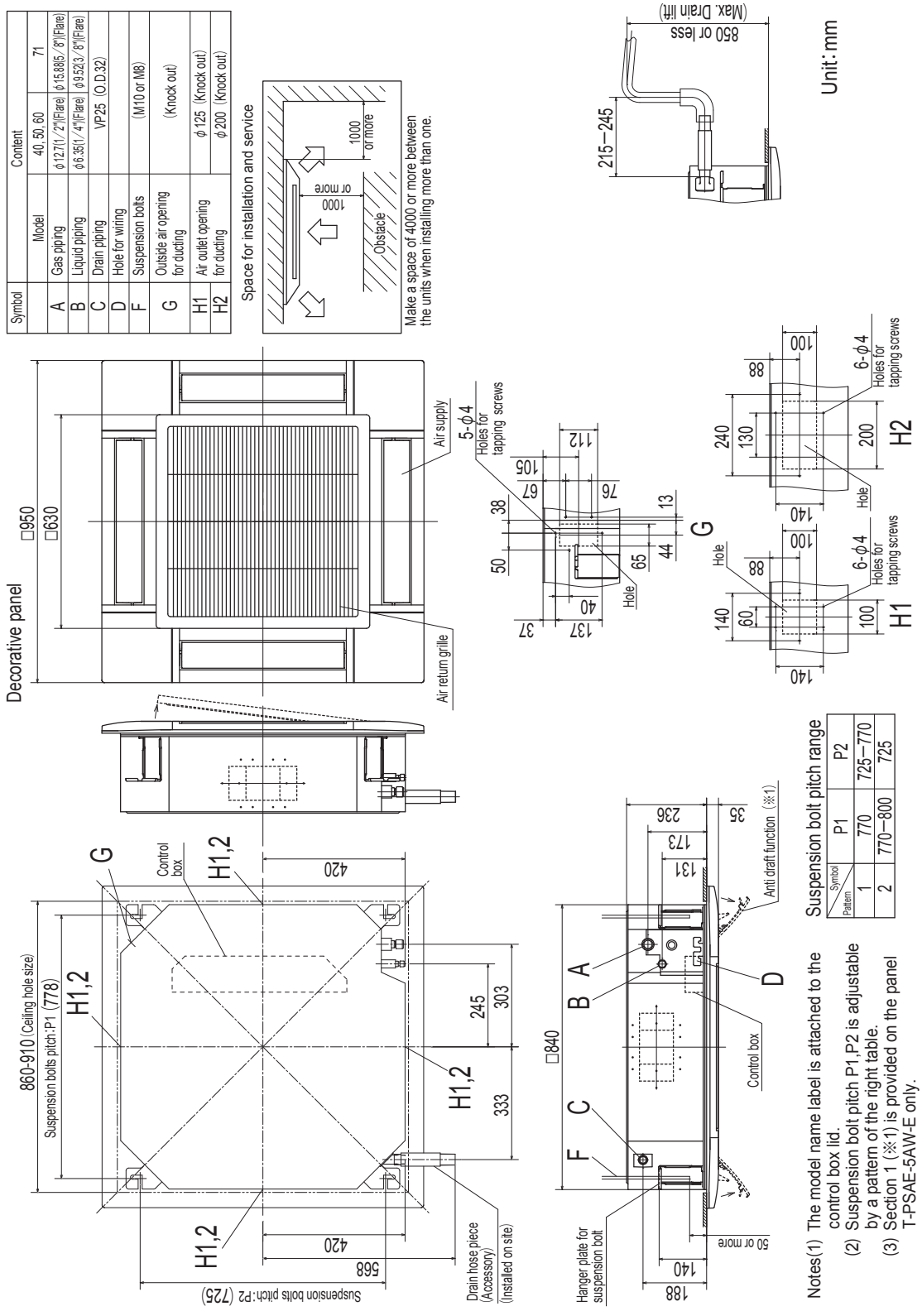
PCA001Z717

1.2 EXTERIOR DIMENSIONS

(1) Indoor units

(a) Ceiling cassette-4 way type (FDT)

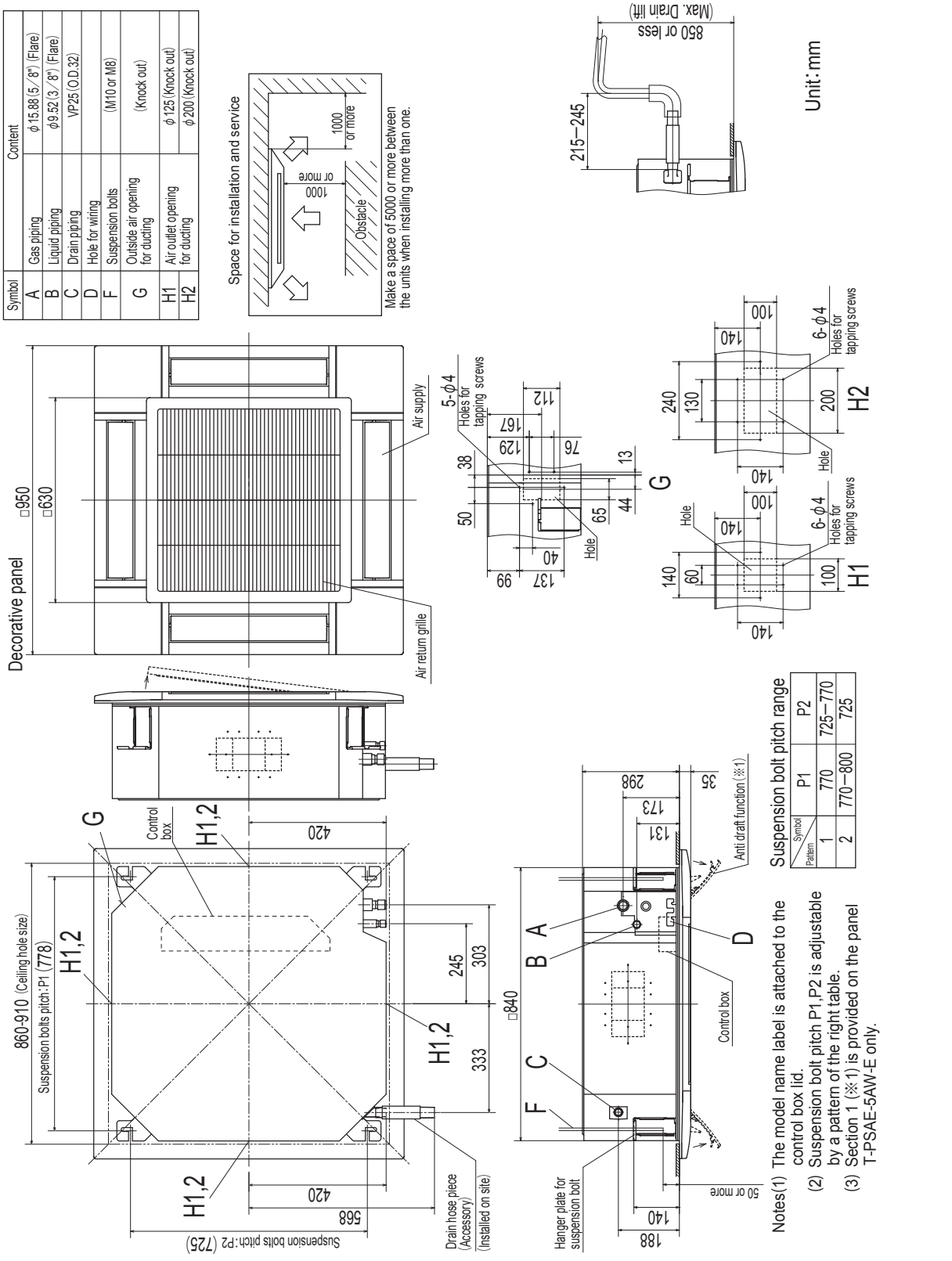
Models FDT50VG, 60VG, 71VG



PJF000Z426 B

Models FDT100VG, 125VG, 140VG

Symbol	Content	
A	Gas piping	ϕ15.88 (5/8") (Flare)
B	Liquid piping	ϕ9.52 (3/8") (Flare)
C	Drain piping	VP25 (O.D.32)
D	Hole for wiring	
F	Suspension bolts	(M10 or M8)
G	Outside air opening for ducting	(Knock out)
H1	Air outlet opening for ducting	ϕ125 (Knock out)
H2		ϕ200 (Knock out)



Suspension bolt pitch range

Symbol / Pattern	P1	P2
1	770	725–770
2	770–800	725

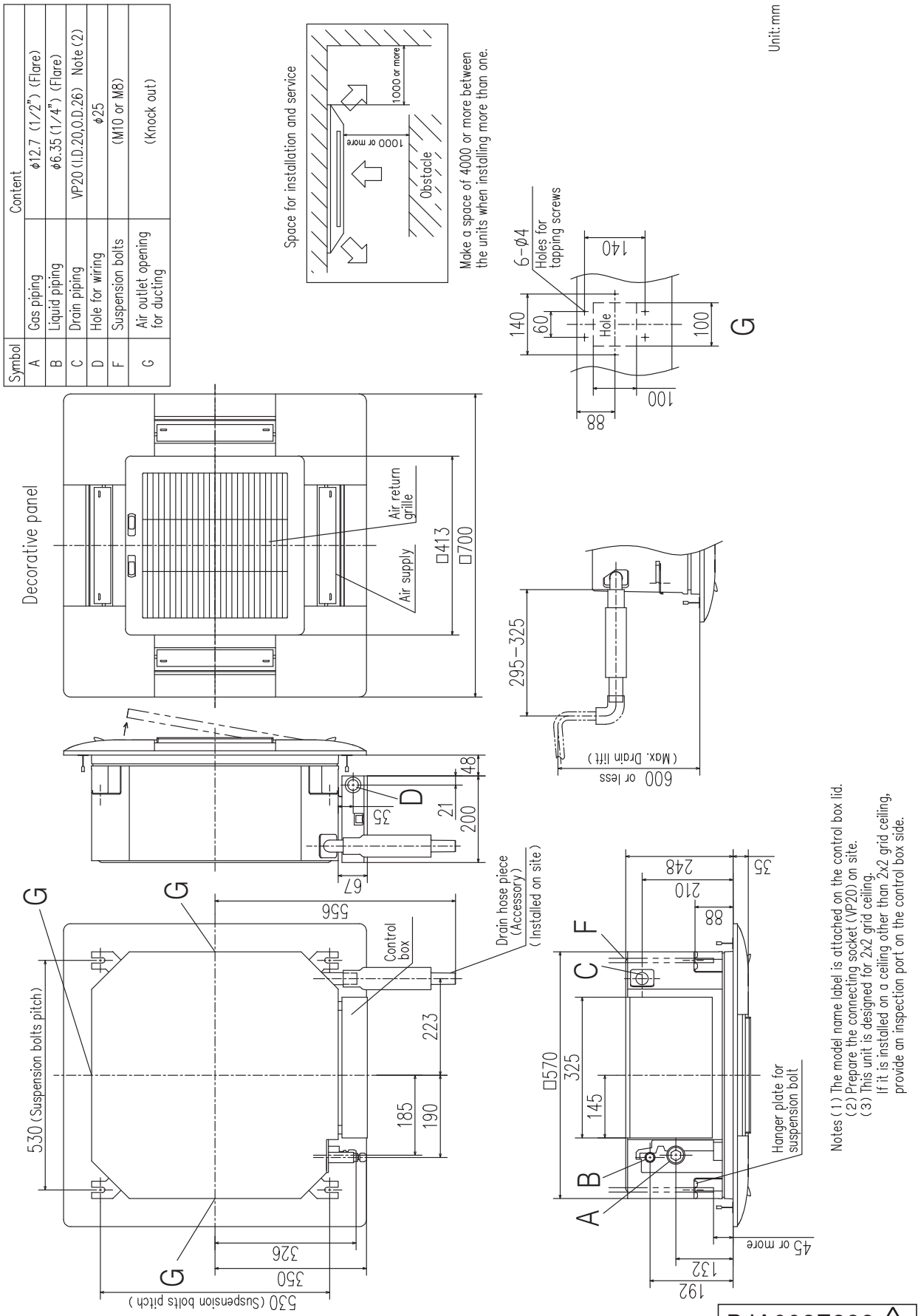
Notes(1) The model name label is attached to the control box lid.
(2) Suspension bolt pitch P1,P2 is adjustable by a pattern of the right table.
(3) Section 1 (※1) is provided on the panel T-PSAE-5AW-E only.

PJF000Z427 B

(b) Ceiling cassette-4 way compact type (FDTC)

Models FDTC50VF, 60VF

Symbol	Content	
A	Gas piping	φ12.7 (1/2") (Flare)
B	Liquid piping	φ6.35 (1/4") (Flare)
C	Drain piping	VP20 (I.D.20,O.D.26) Note (2)
D	Hole for wiring	φ25
F	Suspension bolts	(M10 or M8)
G	Air outlet opening for ducting	(Knock out)

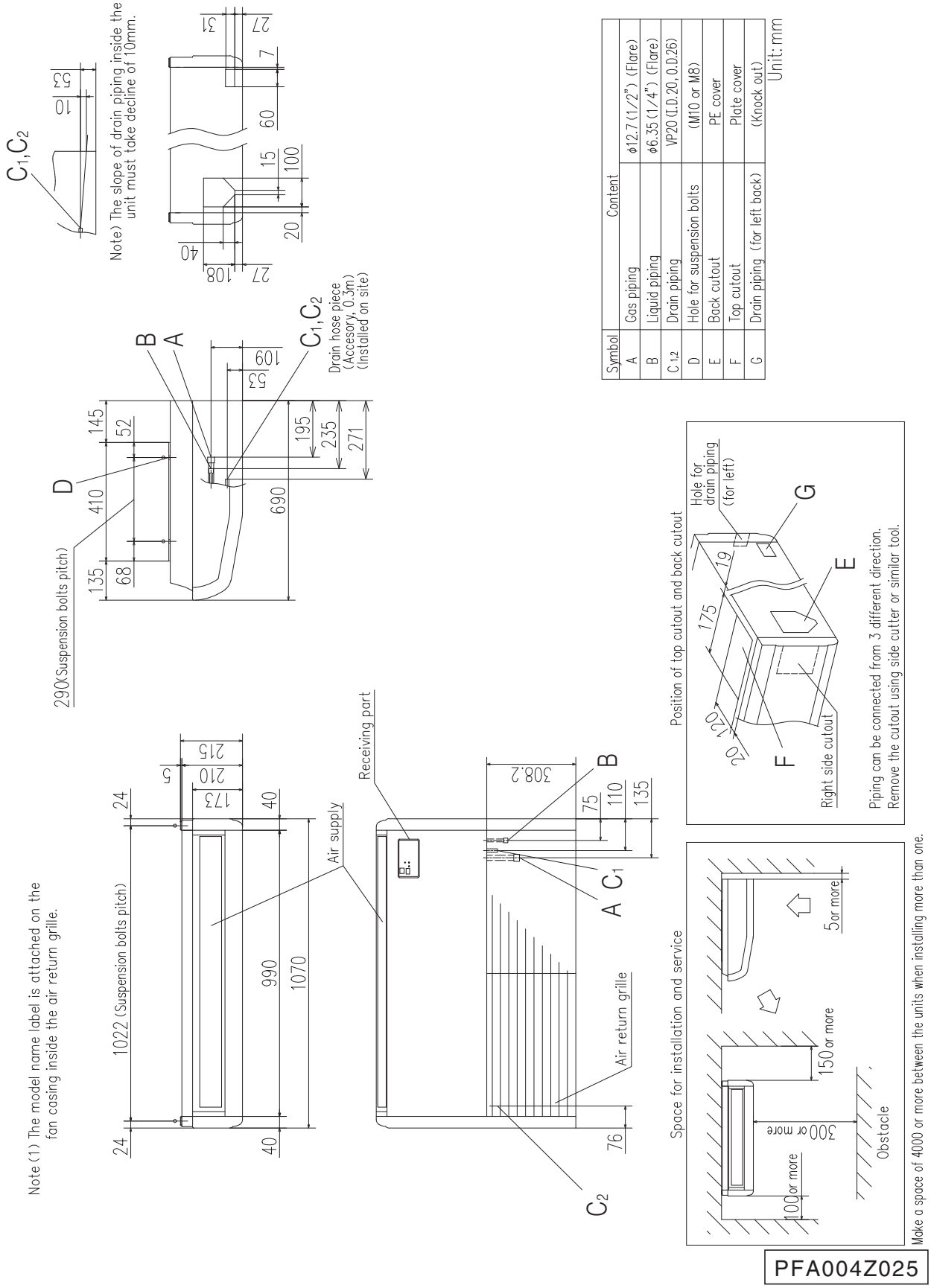


Notes (1) The model name label is attached on the control box lid.
(2) Prepare the connecting socket (VP20) on site.
(3) This unit is designed for 2x2 grid ceiling.
If it is installed on a ceiling other than 2x2 grid ceiling, provide an inspection port on the control box side.

PJA003Z338 Ⓓ

(c) Ceiling suspended type (FDE)

Model 50VG

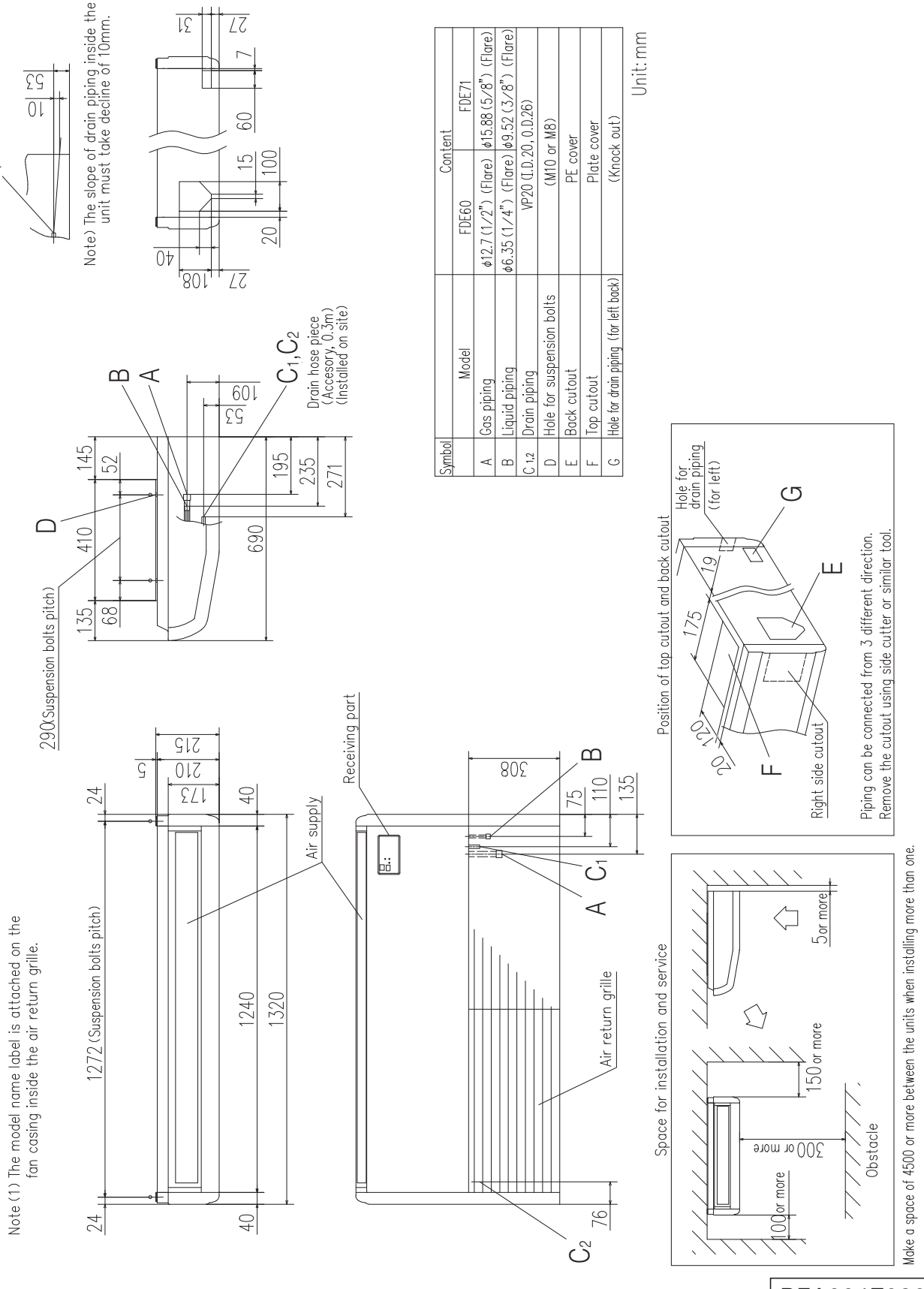


Symbol	Content	
A	Gas piping	ϕ12.7 (1/2") (Flare)
B	Liquid piping	ϕ6.35 (1/4") (Flare)
C1,2	Drain piping	VP20 (I.D.20, O.D.26)
D	Hole for suspension bolts	(M10 or M8)
E	Back cutout	PE cover
F	Top cutout	Plate cover
G	Drain piping (for left back)	(Knock out)

Unit: mm

PFA004Z025

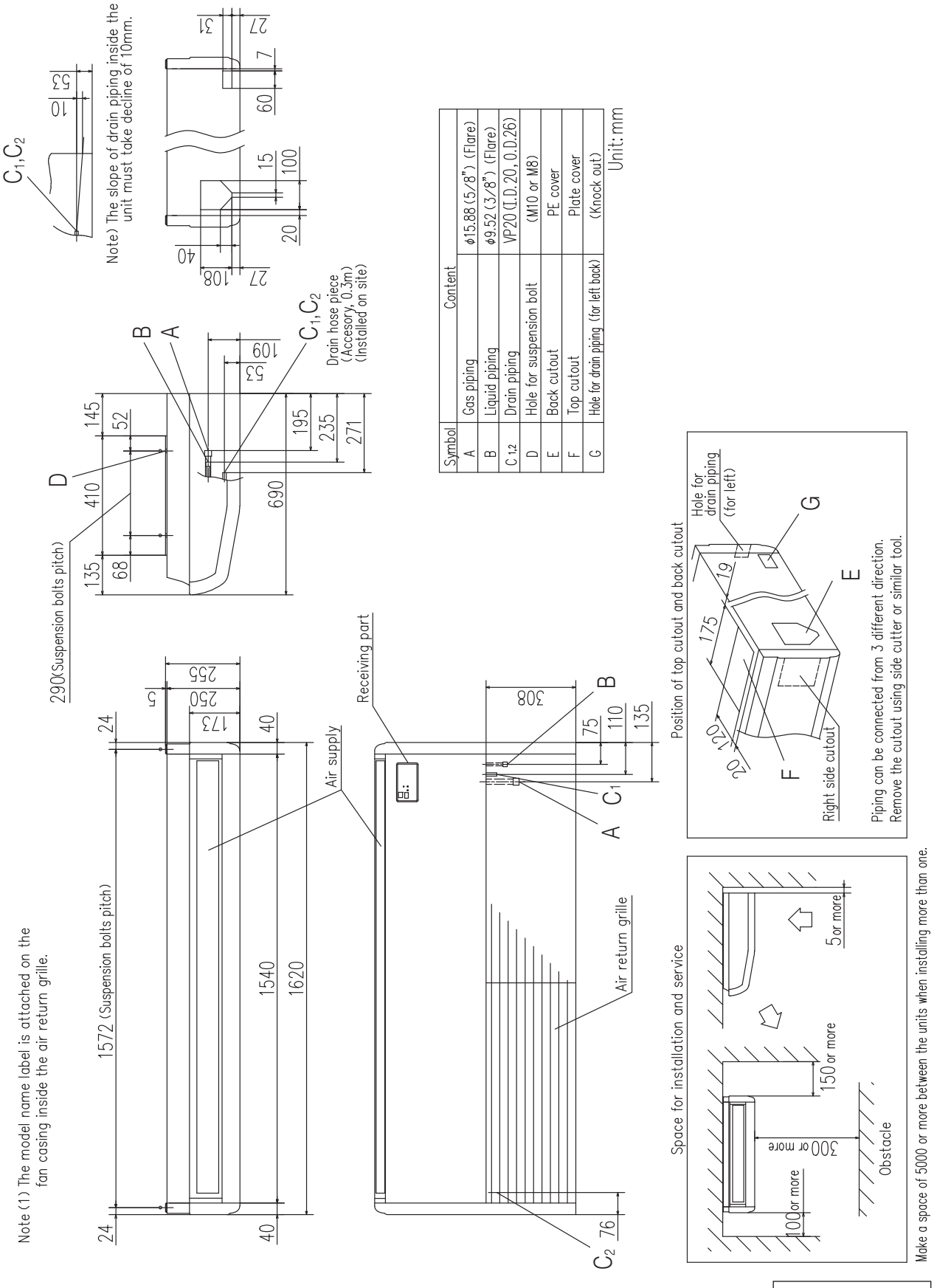
Models FDE60VG, 71VG



Symbol	Content		
	Model	FDE60	FDE71
A	Gas piping	ϕ12.7 (1/2") (Flare)	ϕ15.88 (5/8") (Flare)
B	Liquid piping	ϕ6.35 (1/4") (Flare)	ϕ9.52 (3/8") (Flare)
C 1,2	Drain piping	VP20 (I.D.20, O.D.26)	
D	Hole for suspension bolts	(M10 or M8)	
E	Back cutout	PE cover	
F	Top cutout	Plate cover	
G	Hole for drain piping (for left back)	(Knock out)	

PFA004Z026

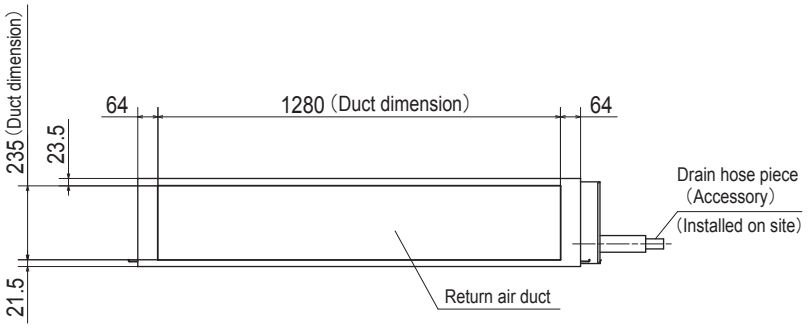
Models FDE100VG, 125VG, 140VG



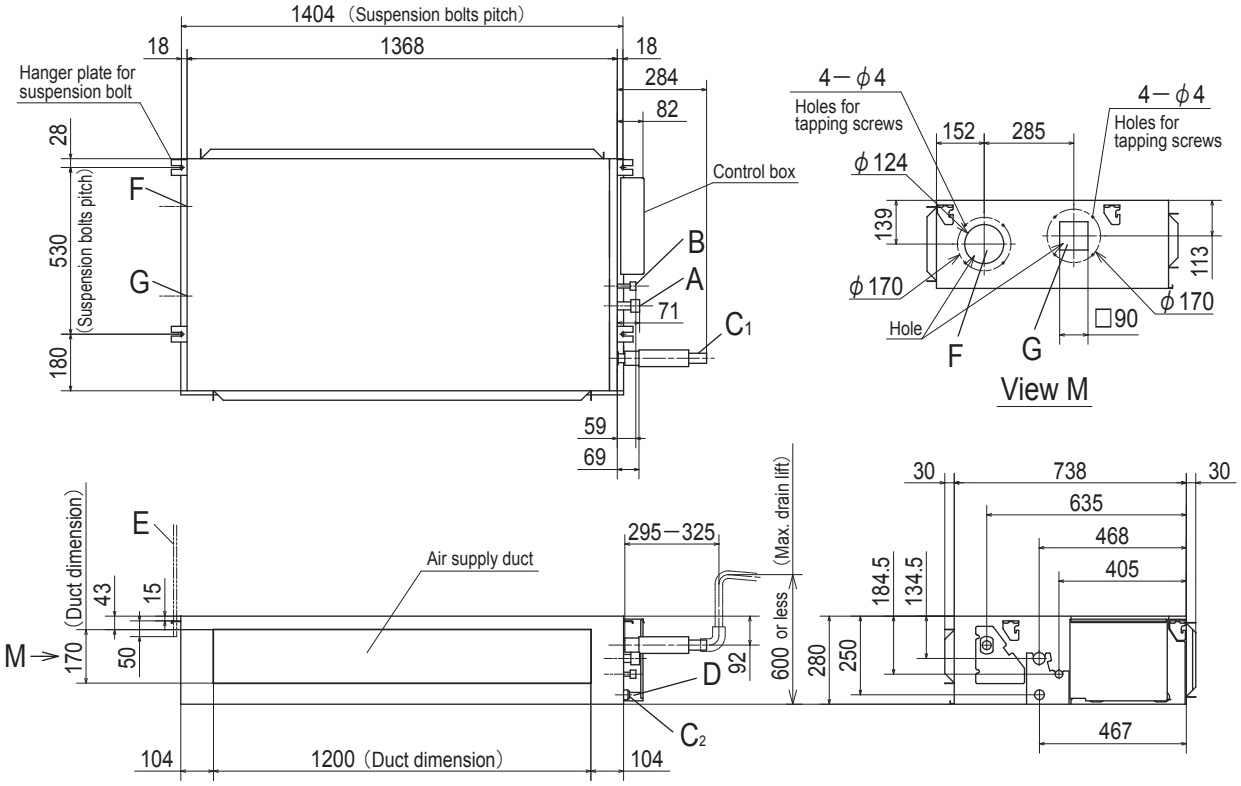
Symbol	Content	
A	Gas piping	ϕ15.88 (5/8") (Flare)
B	Liquid piping	ϕ9.52 (3/8") (Flare)
C 1,2	Drain piping	VP20 (I.D.20, O.D.26)
D	Hole for suspension bolt	(M10 or M8)
E	Back cutout	PE cover
F	Top cutout	Plate cover
G	Hole for drain piping (for left back)	(Knock out)

PFA004Z027

(d) Duct connected-High static pressure type (FDU)
Models FDU100VF2, 125VF, 140VF



Symbol	Content	
A	Gas piping	ϕ15.88 (5/8") (Flare)
B	Liquid piping	ϕ9.52 (3/8") (Flare)
C_1	Drain piping	VP25 (I.D.25,O.D.32)
C_2	Drain piping (Gravity drainage)	VP20 (I.D.20,O.D.26)
D	Hole for wiring	
E	Suspension bolts	(M10)
F	Outside air opening for ducting	(Knock out)
G	Air outlet opening for ducting	(Knock out)
H	Inspection hole	(450X450)

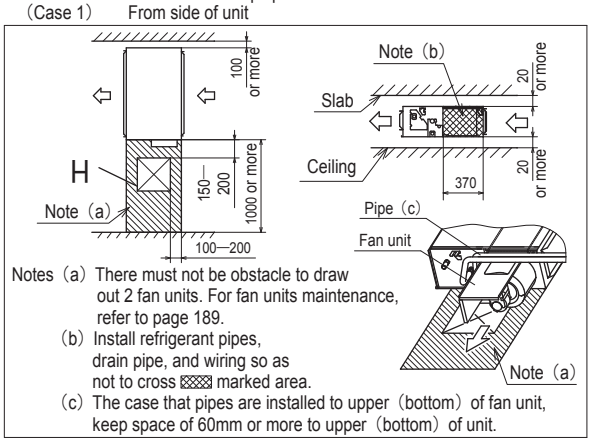


Unit:mm

Space for installation and service

Select either of two cases to keep space for installation and services.

(Case 1) From side of unit

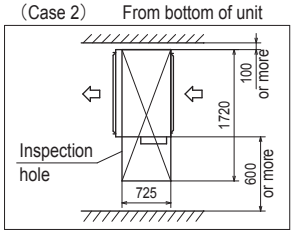


Notes (a) There must not be obstacle to draw out 2 fan units. For fan units maintenance, refer to page 189.

(b) Install refrigerant pipes, drain pipe, and wiring so as not to cross ▨ marked area.

(c) The case that pipes are installed to upper (bottom) of fan unit, keep space of 60mm or more to upper (bottom) of unit.

(Case 2) From bottom of unit

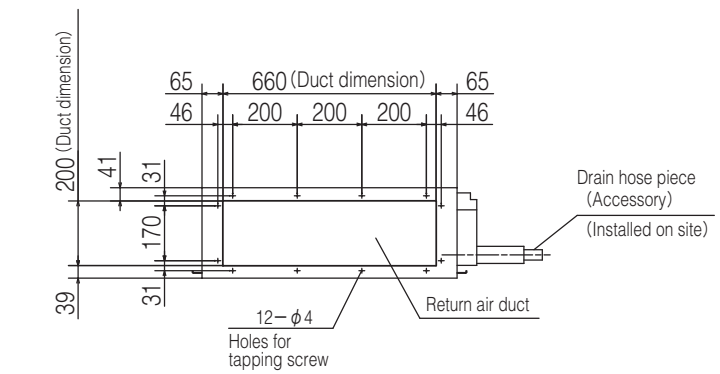


Notes (1) The model name label is attached on the lid of the control box.

PJG000Z048 B

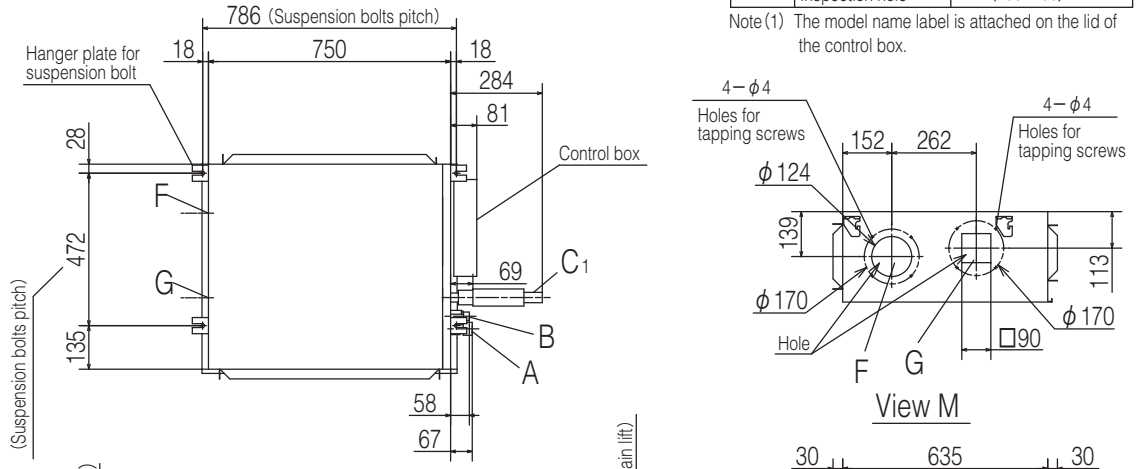
(e) Duct connected-Low / Middle static pressure type (FDUM)

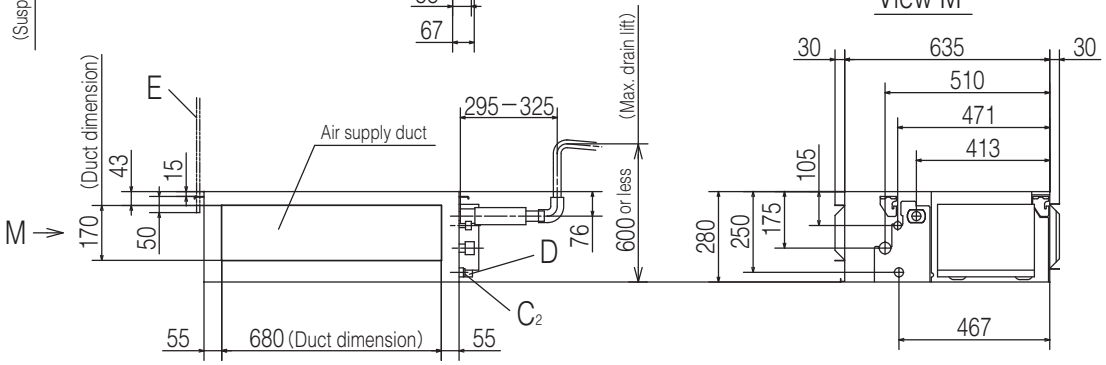
Model FDUM50VF



Symbol	Content	
A	Gas piping	φ12.7 (1/2") (Flare)
B	Liquid piping	φ6.35 (1/4") (Flare)
C1	Drain piping	VP25 (I.D.25, O.D.32)
C2	Drain piping (Gravity drainage)	VP20 (I.D.20, O.D.26)
D	Hole for wiring	
E	Suspension bolts	(M10)
F	Outside air opening for ducting	(φ150) (Knock out)
G	Air outlet opening for ducting	(φ125) (Knock out)
H	Inspection hole	(450X450)

Note (1) The model name label is attached on the lid of the control box.



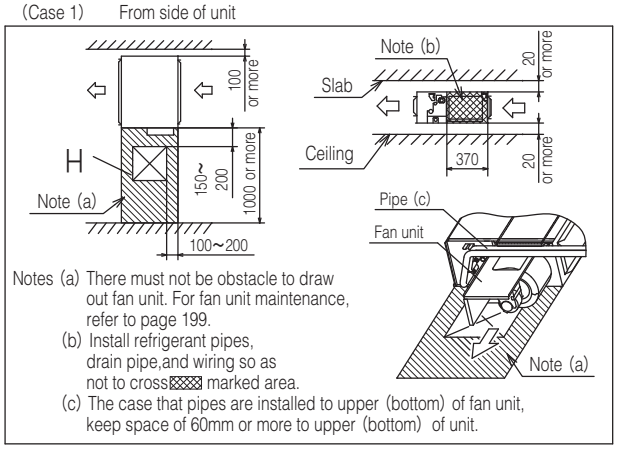


Unit:mm

Space for installation and service

Select either of two cases to keep space for installation and services.

(Case 1) From side of unit

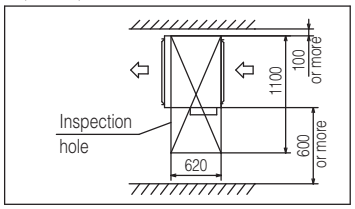


Notes (a) There must not be obstacle to draw out fan unit. For fan unit maintenance, refer to page 199.

(b) Install refrigerant pipes, drain pipe,and wiring so as not to cross marked area.

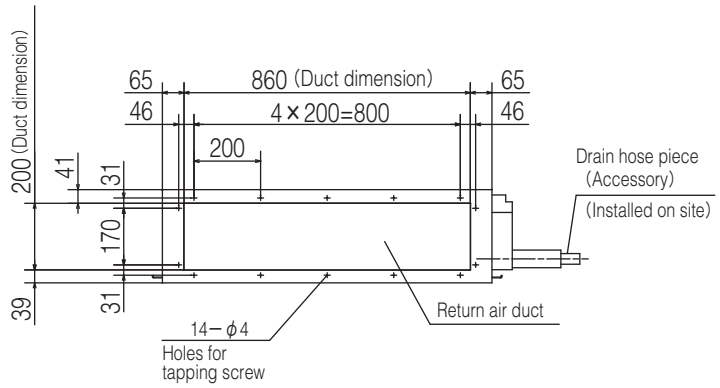
(c) The case that pipes are installed to upper (bottom) of fan unit, keep space of 60mm or more to upper (bottom) of unit.

(Case 2) From bottom of unit



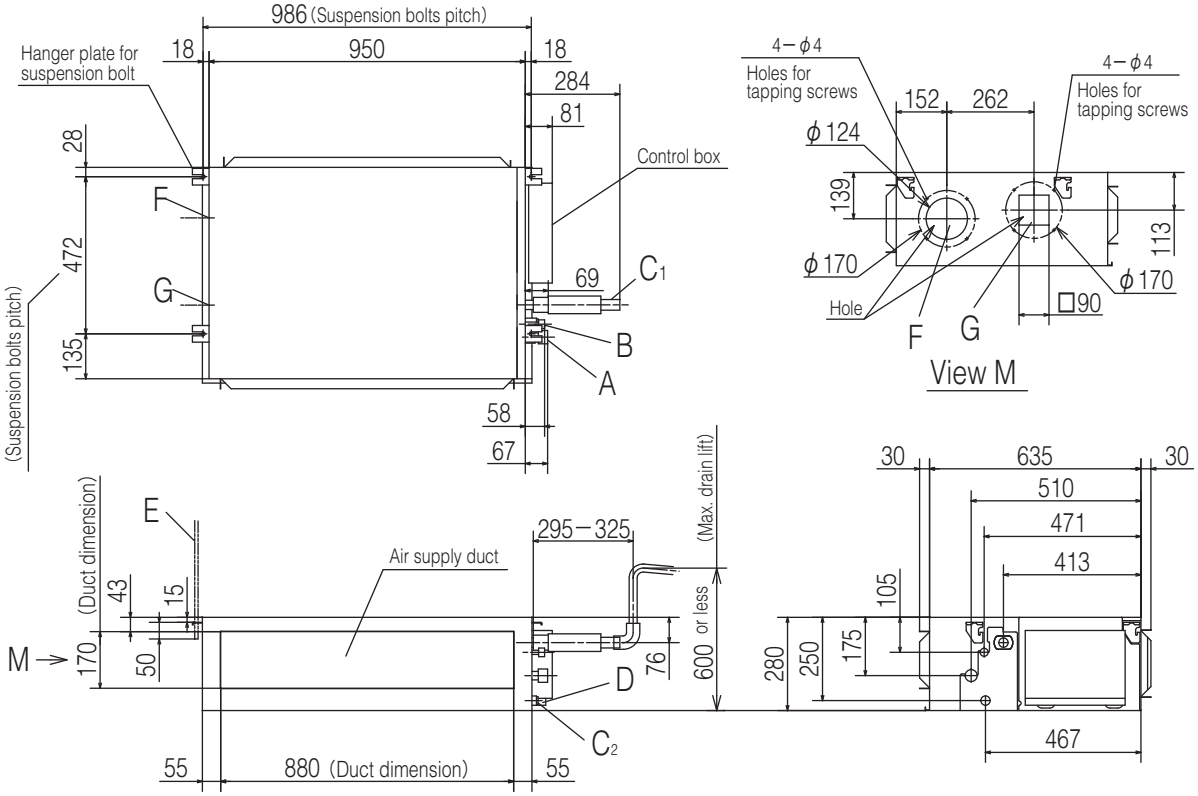
PJG000Z002 B

Model FDUM60VF



Symbol	Content	
A	Gas piping	φ12.7 (1／2") (Flare)
B	Liquid piping	φ6.35 (1／4") (Flare)
C1	Drain piping	VP25 (I.D.25, O.D.32)
C2	Drain piping (Gravity drainage)	VP20 (I.D.20, O.D.26)
D	Hole for wiring	
E	Suspension bolts	(M10)
F	Outside air opening for ducting	(φ150) (Knock out)
G	Air outlet opening for ducting	(φ125) (Knock out)
H	Inspection hole	(450X450)

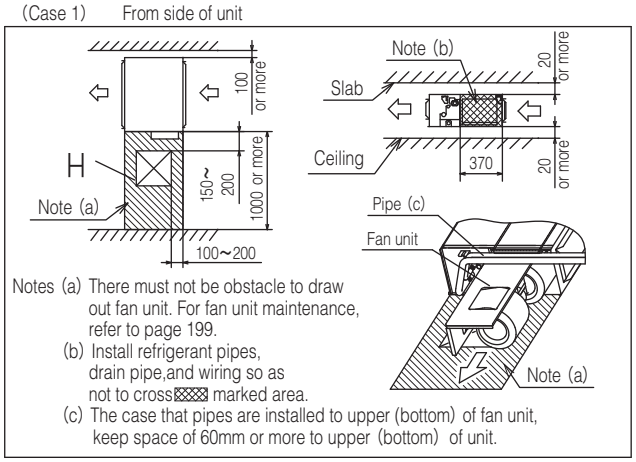
Note (1) The model name label is attached on the lid of the control box.



Space for installation and service

Select either of two cases to keep space for installation and services.

(Case 1) From side of unit

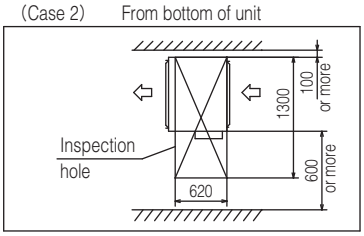


Notes (a) There must not be obstacle to draw out fan unit. For fan unit maintenance, refer to page 199.

(b) Install refrigerant pipes, drain pipe,and wiring so as not to cross ▨ marked area.

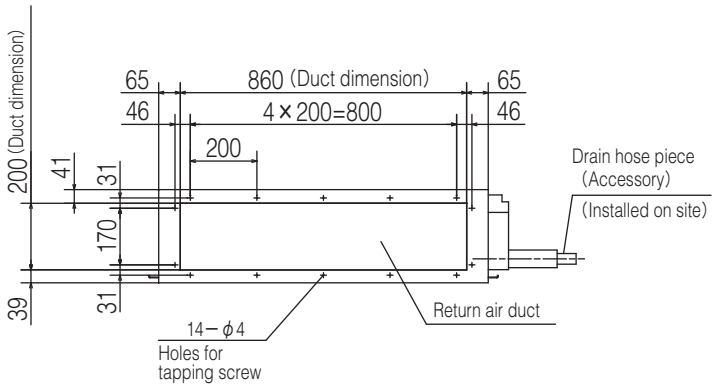
(c) The case that pipes are installed to upper (bottom) of fan unit, keep space of 60mm or more to upper (bottom) of unit.

(Case 2) From bottom of unit



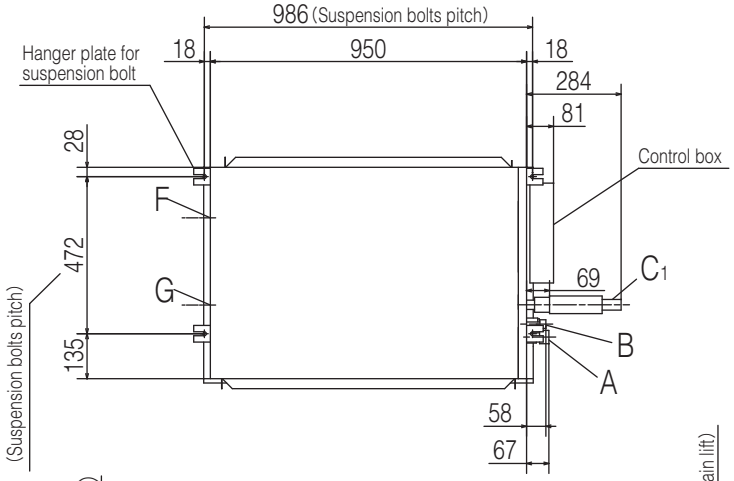
PJG000Z003 A

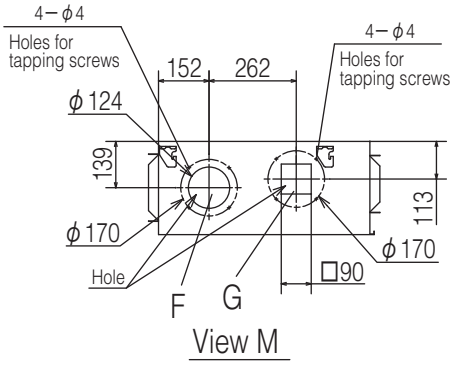
Model FDUM71VF1

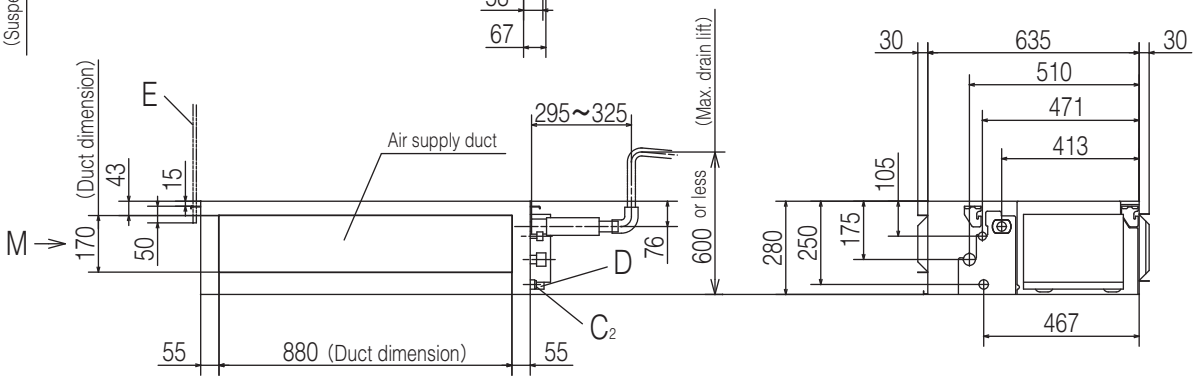


Symbol	Content	
A	Gas piping	φ15.88 (5/8") (Flare)
B	Liquid piping	φ9.52 (3/8") (Flare)
C1	Drain piping	VP25 (I.D.25, O.D.32)
C2	Drain piping (Gravity drainage)	VP20 (I.D.20, O.D.26)
D	Hole for wiring	
E	Suspension bolts	(M10)
F	Outside air opening for ducting	(φ150) (Knock out)
G	Air outlet opening for ducting	(φ125) (Knock out)
H	Inspection hole	(450X450)

Note (1) The model name label is attached on the lid of the control box.



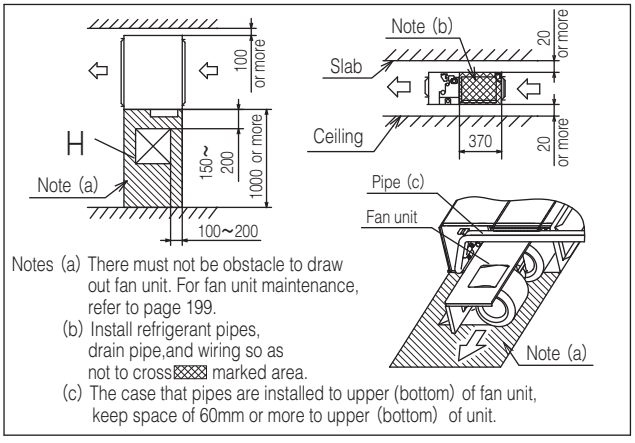




Space for installation and service

Select either of two cases to keep space for installation and services.

(Case 1) From side of unit

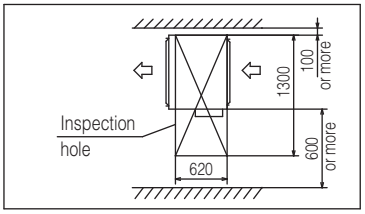


Notes (a) There must not be obstacle to draw out fan unit. For fan unit maintenance, refer to page 199.

(b) Install refrigerant pipes, drain pipe,and wiring so as not to cross ▨ marked area.

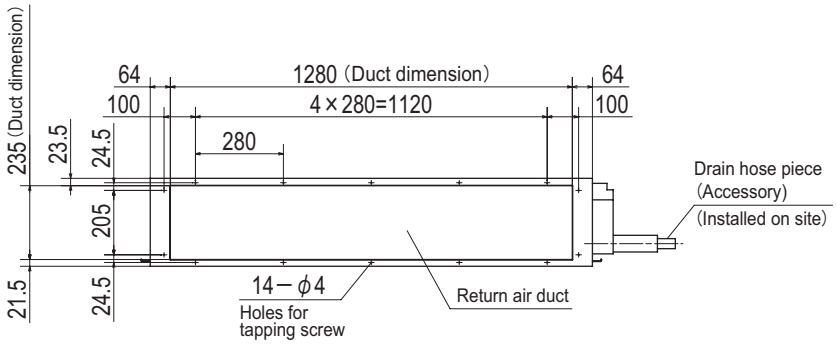
(c) The case that pipes are installed to upper (bottom) of fan unit, keep space of 60mm or more to upper (bottom) of unit.

(Case 2) From bottom of unit

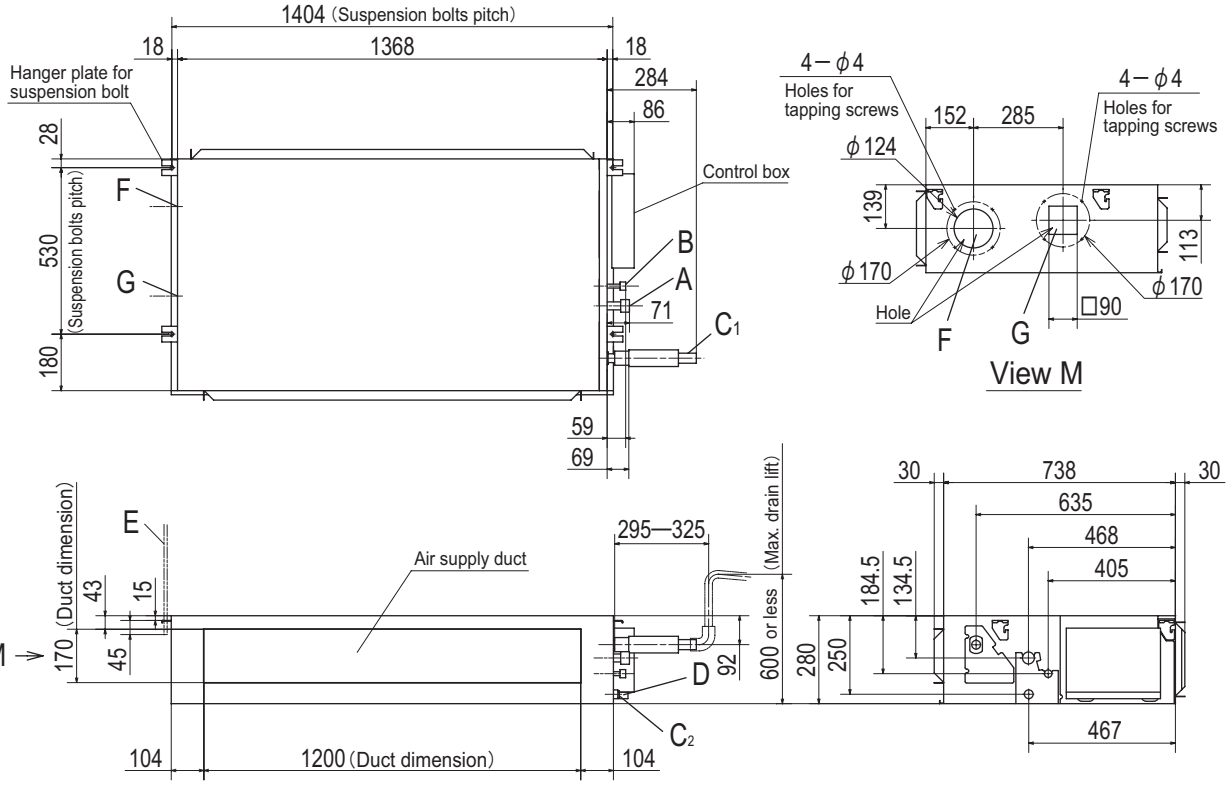


PJG000Z003 A

Models FDUM100VF2, 125VF, 140VF



Symbol	Content	
A	Gas piping	φ15.88 (5/8") (Flare)
B	Liquid piping	φ9.52 (3/8") (Flare)
C_1	Drain piping	VP25 (I.D.25,O.D.32)
C_2	Drain piping (Gravity drainage)	VP20 (I.D.20,O.D.26)
D	Hole for wiring	
E	Suspension bolts	(M10)
F	Outside air opening for ducting	(φ150) (Knock out)
G	Air outlet opening for ducting	(φ125) (Knock out)
H	Inspection hole	(450X450)

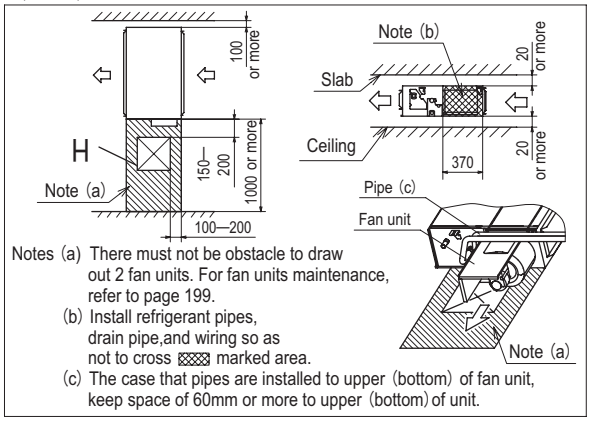


Unit:mm

Space for installation and service

Select either of two cases to keep space for installation and services.

(Case 1) From side of unit

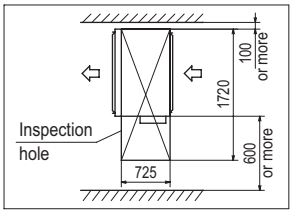


Notes (a) There must not be obstacle to draw out 2 fan units. For fan units maintenance, refer to page 199.

(b) Install refrigerant pipes, drain pipe,and wiring so as not to cross ▨ marked area.

(c) The case that pipes are installed to upper (bottom) of fan unit, keep space of 60mm or more to upper (bottom) of unit.

(Case 2) From bottom of unit

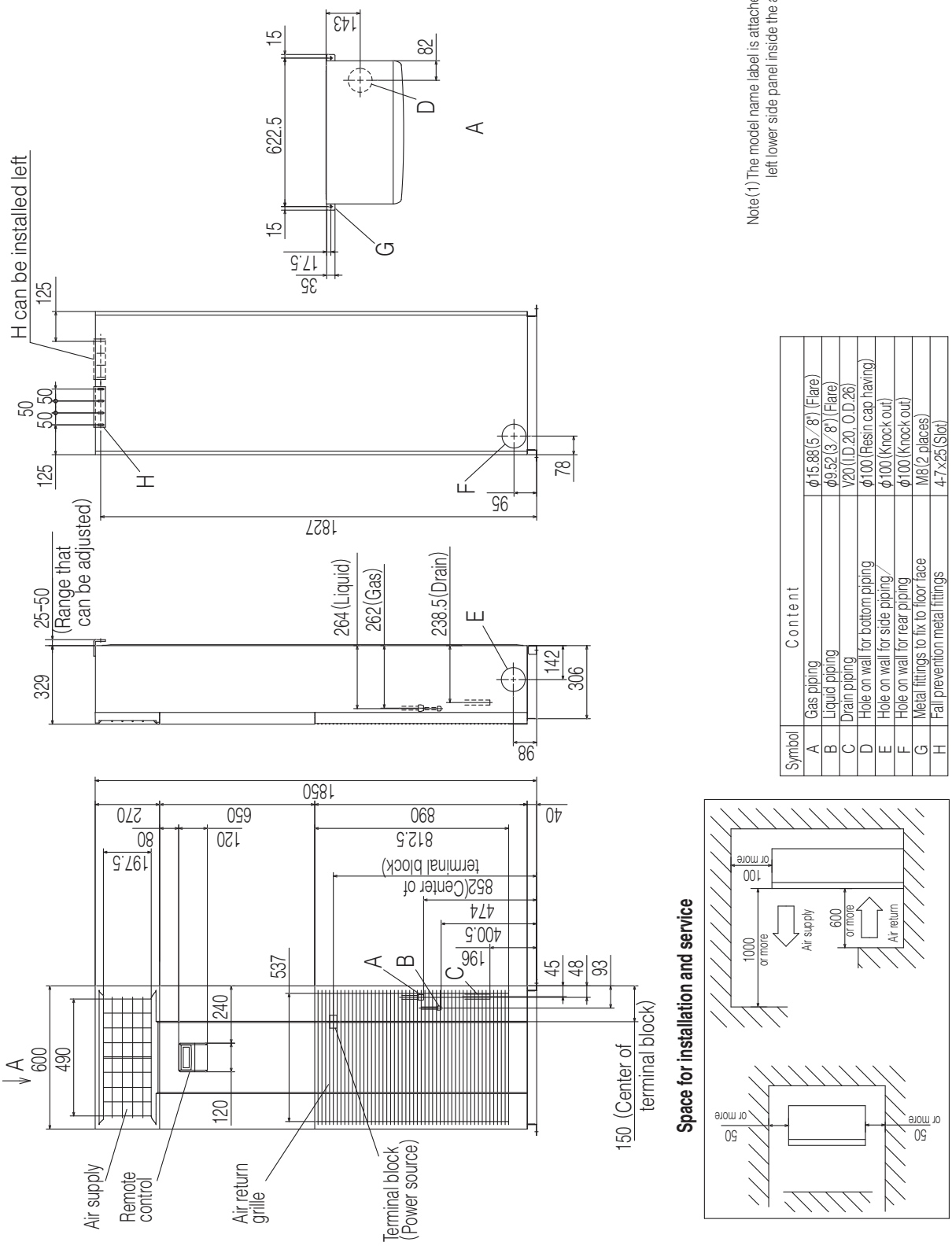


Note (1) The model name label is attached on the lid of the control box.

PJG000Z004 B

(f) Floor standing type (FDF)

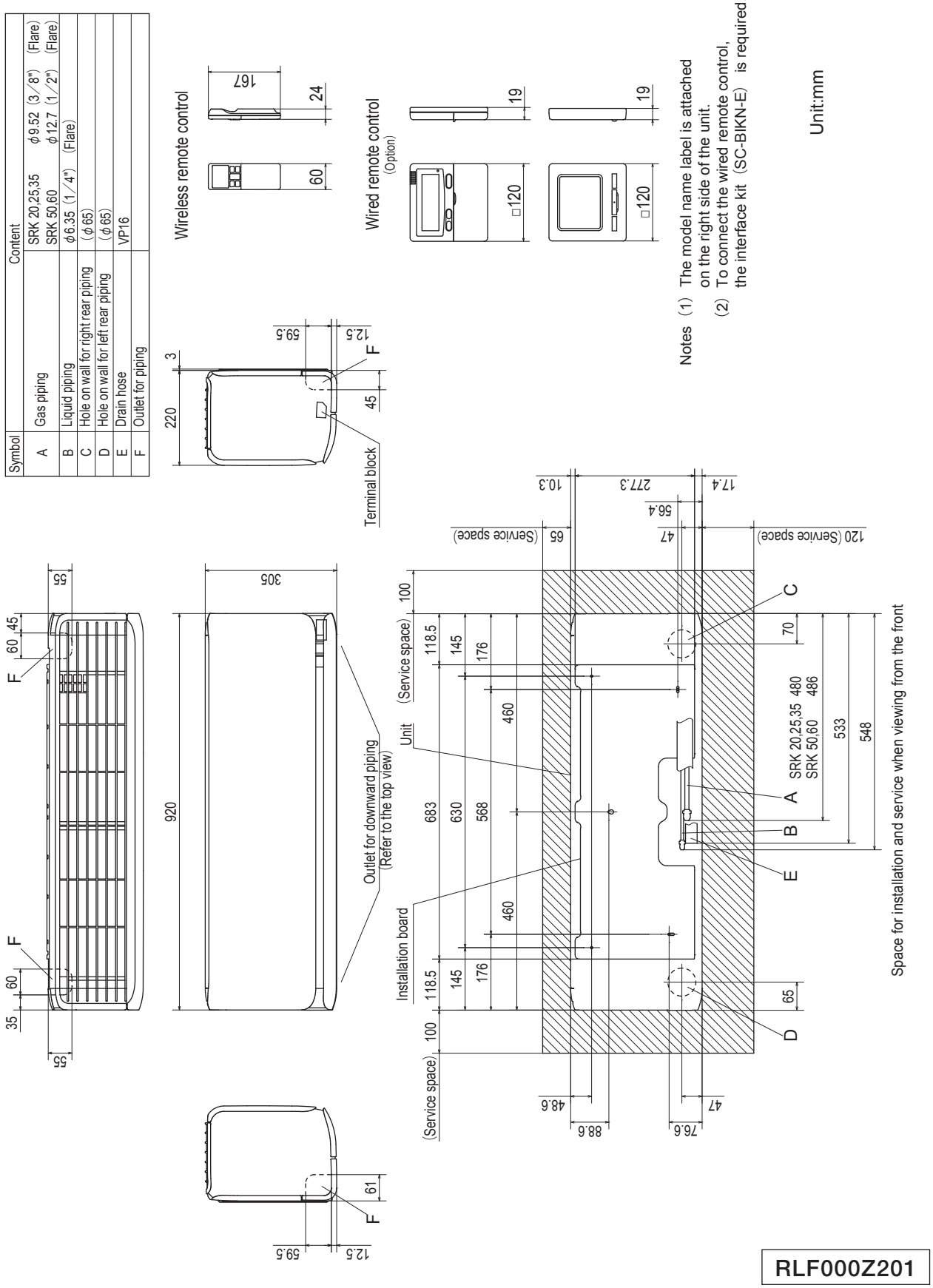
Models FDF71VD1, 100VD2, 125VD, 140VD



PGA000Z801 A

(g) Wall mounted type (SRK)

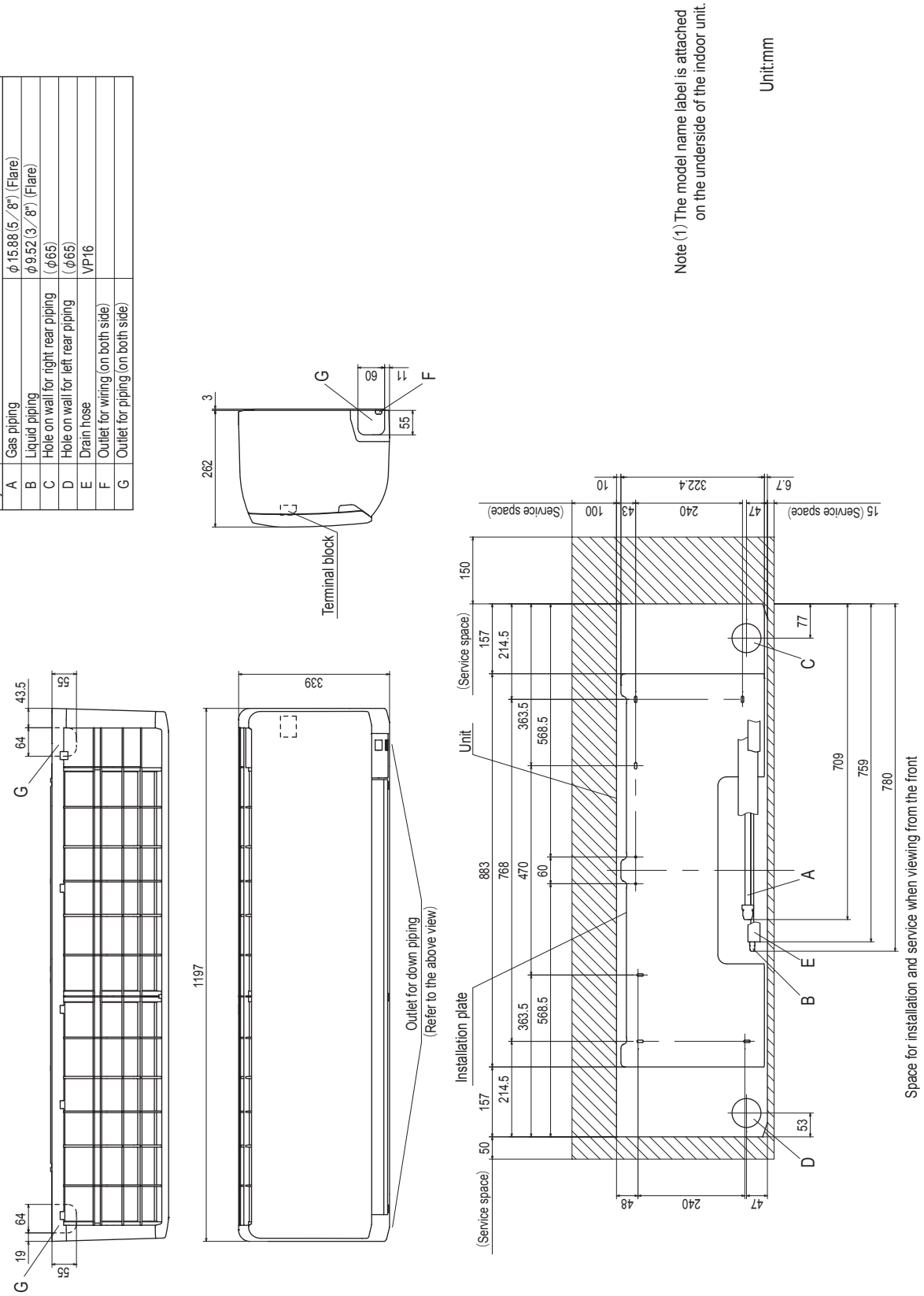
Models SRK50ZSX-S, 60ZSX-S



RLF000Z201

Model SRK100ZR-S

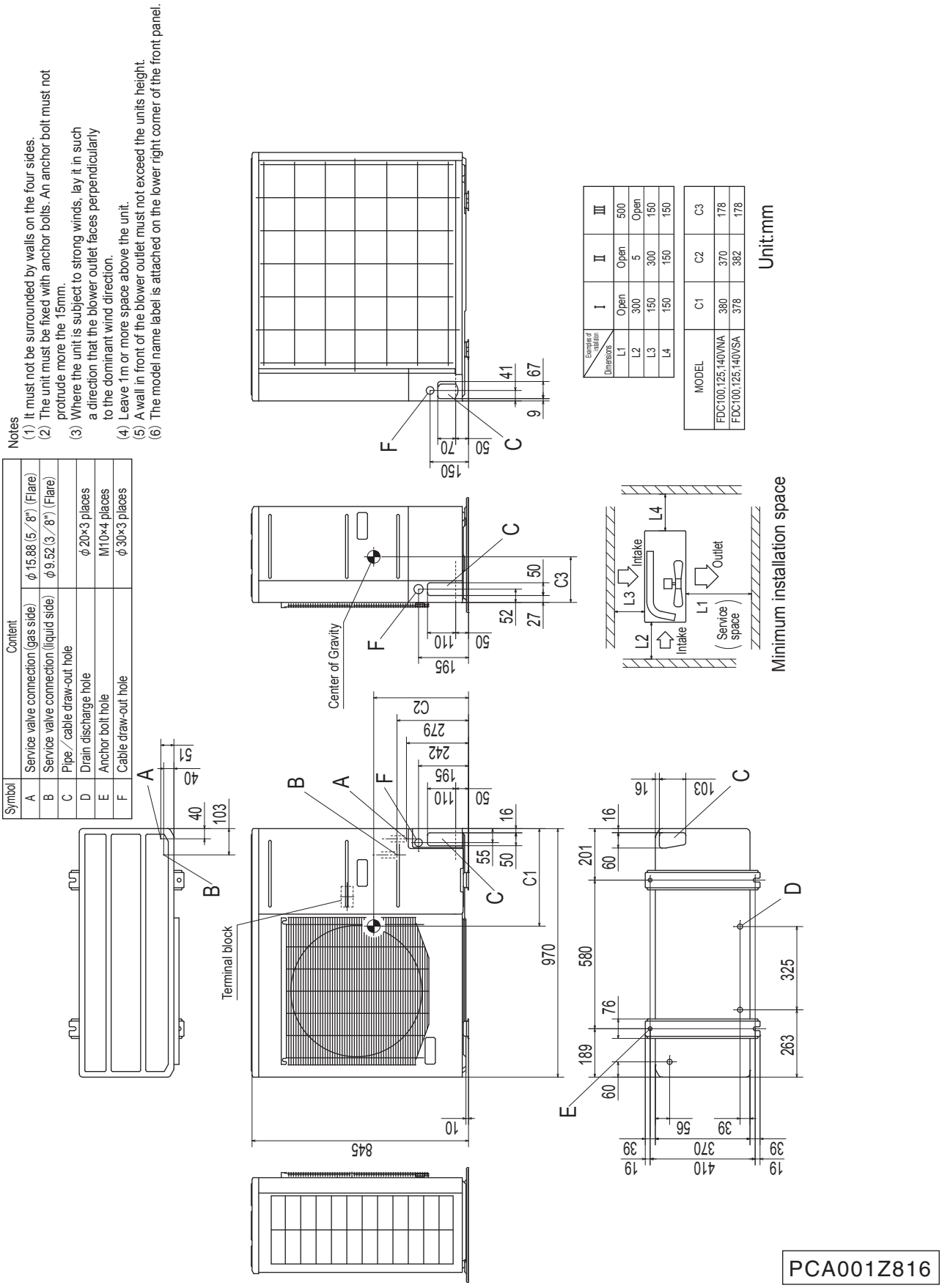
Symbol	Content	
A	Gas piping	ϕ15.88 (5/8") (Flare)
B	Liquid piping	ϕ9.52 (3/8") (Flare)
C	Hole on wall for right rear piping	(ϕ65)
D	Hole on wall for left rear piping	(ϕ65)
E	Drain hose	VP16
F	Outlet for wiring (on both side)	
G	Outlet for piping (on both side)	



RLD000Z002 A

(2) Outdoor units

Models FDC100VNA, 125VNA, 140VNA
100VSA, 125VSA, 140VSA



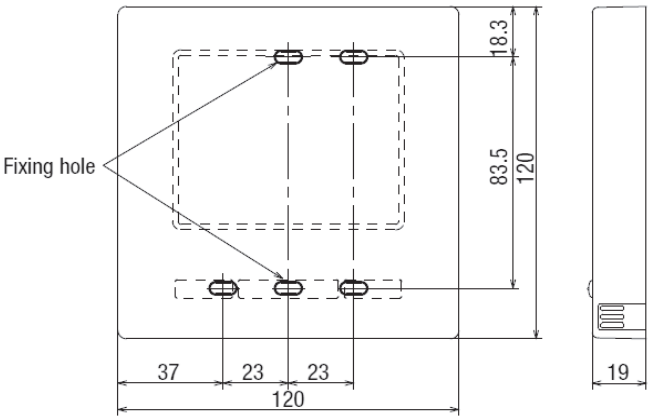
PCA001Z816

(3) Remote control (Option parts)

(a) Wired remote control

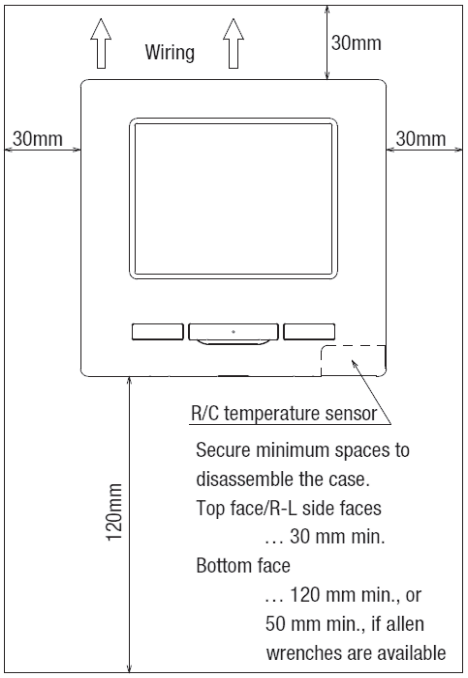
Model RC-EX3

Dimensions (Viewed from front)



Exterior appearance (Munsell color)	Pearl white (N8.5) near equivalent

Installation space



Cautions for selecting installation place

(1) Installation surface must be flat and sufficiently strong. R/C case must not be deformed.

(2) Where the R/C can detect room temperatures accurately
This is a must when detecting room temperatures with the temperature sensor of R/C.
- Install the R/C where it can detect the average temperature in the room.
- Install the R/C sufficiently separated from a heat source.
- Install the R/C where it will not be influenced by the turbulence of air when the door is opened or closed.

Select a place where the R/C is not exposed to direct sunlight or blown by winds from the air-conditioner or temperatures on the wall surface will not deviate largely from indoor air temperatures.

(3) When using the panel provided with the automatic filter elevating function, select a place where the movement of grill can be seen easily.

R/C cable: 0.3mm^2 × 2 cores

When the cable length is longer than 100 m, the max size for wires used in the R/C case is 0.5 mm^2. Connect them to wires of larger size near the outside of R/C. When wires are connected, take measures to prevent water, etc. from entering inside.

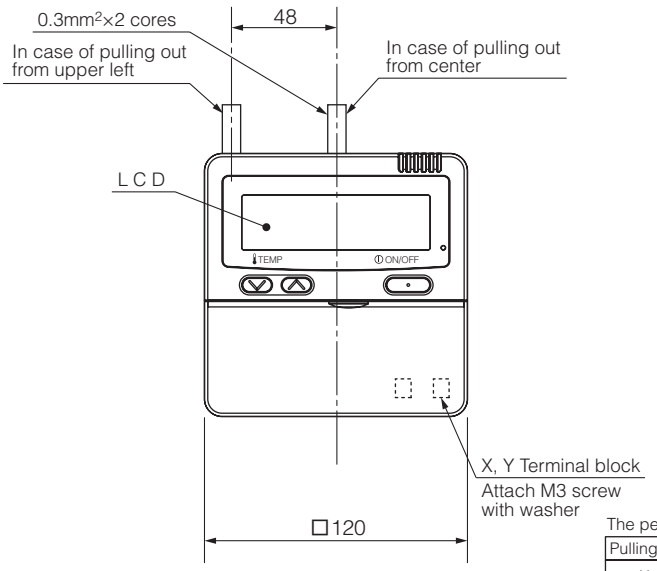
< 200 m	0.5 mm^2 x 2 cores
< 300 m	0.75 mm^2 x 2 cores
< 400 m	1.25 mm^2 x 2 cores
< 600 m	2.0 mm^2 x 2 cores

Adapted to RoHS directive

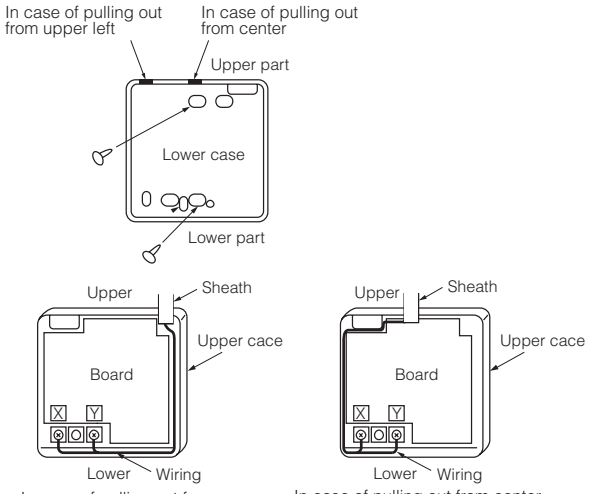
PJZ000Z321

Model RC-E5

Exposed mounting

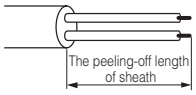


Wiring outlet
Cut off the upper thin part of remote control lower case with a nipper or knife, and grind burrs with a file etc.



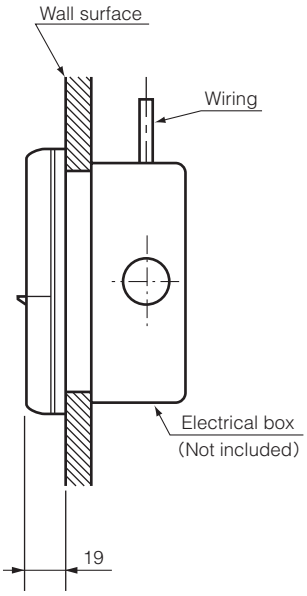
The peeling-off length of sheath

Pulling out from upper left	Pulling out from center
X wiring : 215mm Y wiring : 195mm	X wiring : 170mm Y wiring : 190mm

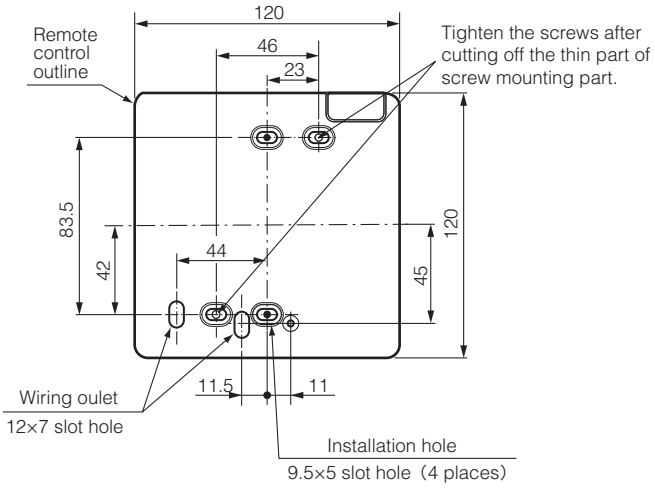


Exterior appearance (Munsell color)	Pearl white (N8.5) near equivalent

Embedded mounting



Remote control installation dimensions



(1) Installation screw for remote control
M4 screw (2 pieces)

Unit:mm

Wiring specifications

(1) If the prolongation is over 100m, change to the size below.
But, wiring in the remote control case should be under 0.5mm². Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.

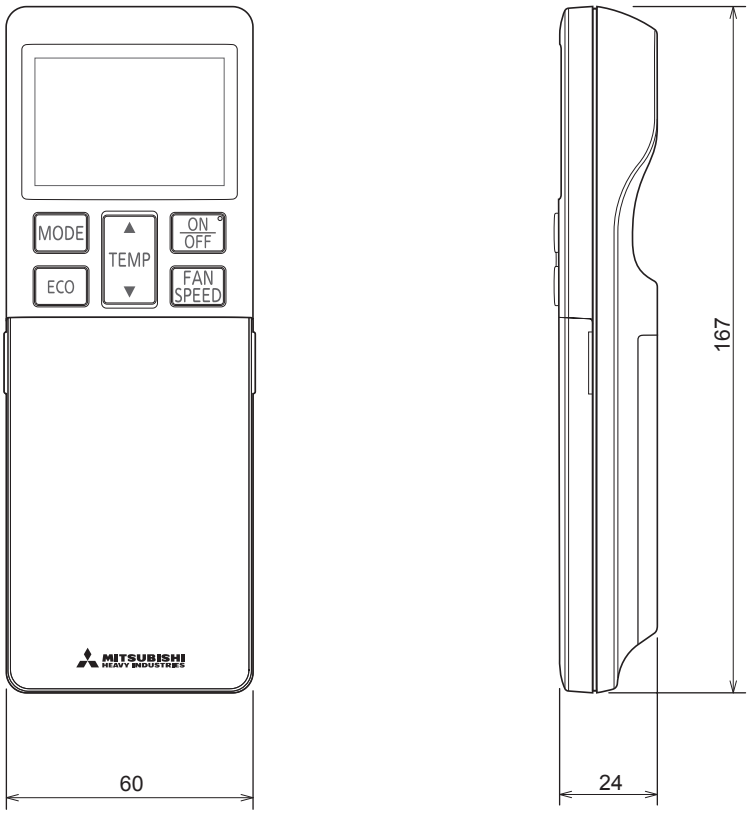
Length	Wiring thickness
100 to 200m	0.5mm²×2 cores
Under 300m	0.75mm²×2 cores
Under 400m	1.25mm²×2 cores
Under 600m	2.0mm²×2 cores

PJZ000Z295

(b) Wireless remote control

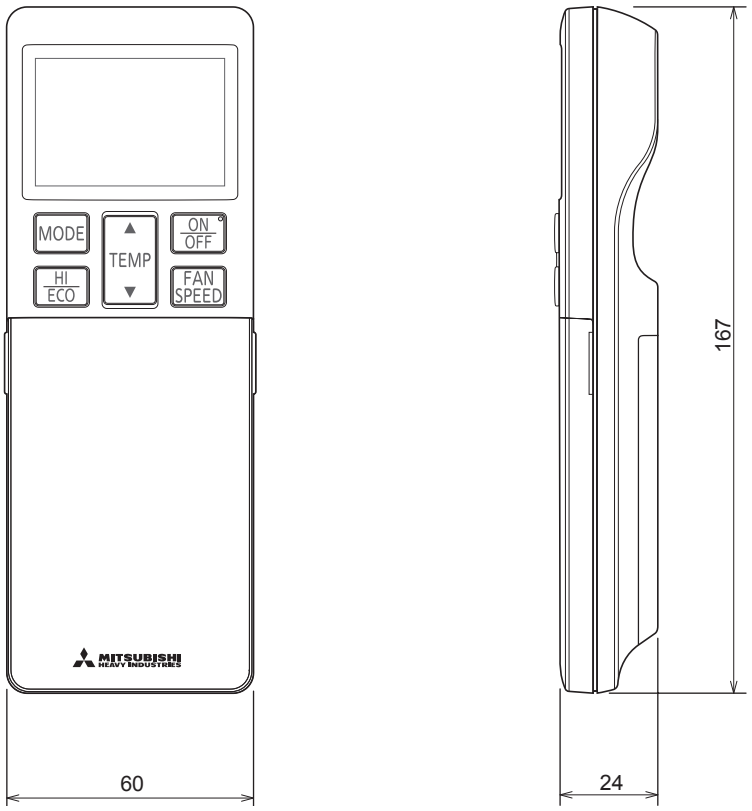
RCN-E2 (Option parts) (Except FDF & SRK serles)

Unit: mm



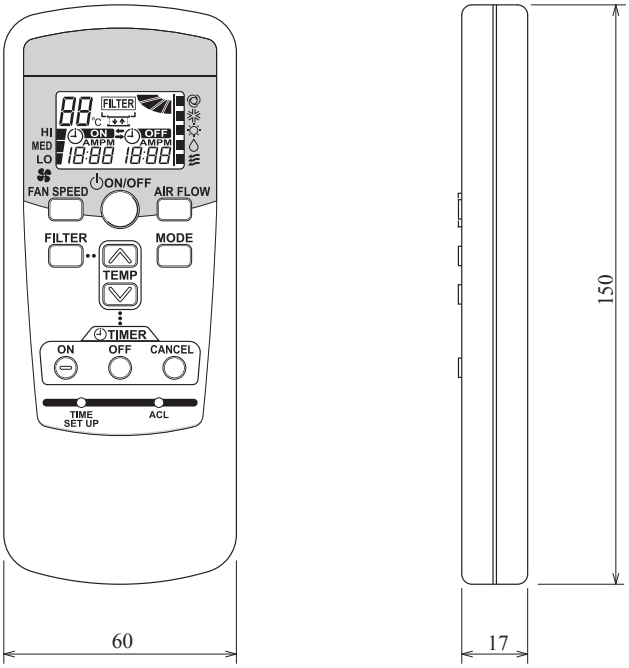
SRK series only (Standard accessory)

Unit : mm



RCN-E1R (Option parts) (FDF series only)

Unit: mm



1.3 ELECTRICAL WIRING

(1) Indoor units

(a) Ceiling cassette-4 way type (FDT)

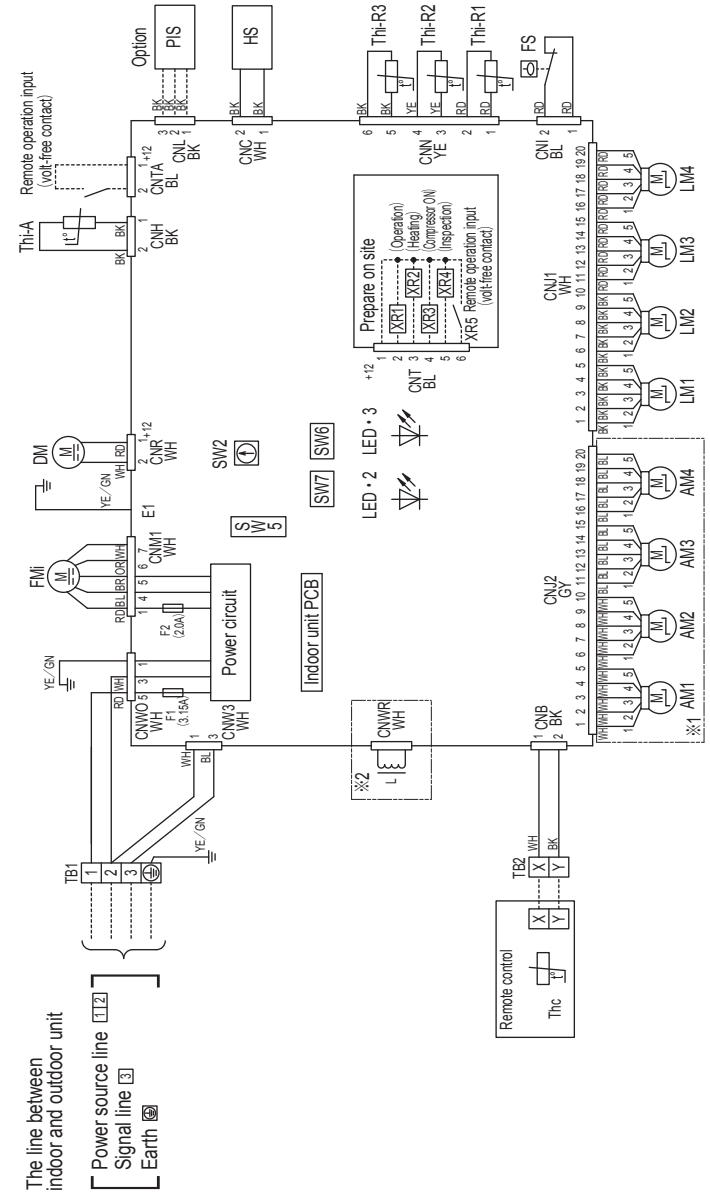
Models FDT50VG, 60VG, 71VG, 100VG, 125VG, 140VG

Meaing of marks

Item	Description
AM1−4	Anti draft motor
CNB−Z	Connector
DM	Drain motor
F1,2	Fuse
FMi	Fan motor
FS	Float switch
HS	Humidity sensor
L	Reactor
LED・2	Indication lamp (Green-Nomal operation)
LED・3	Indication lamp (Red-Inspection)
LM1−4	Louver motor
PIS	Motion sensor
SW2	Remote control communication address
SW5	Plural units Master／Slave setting
SW6	Model capacity setting
SW7-1	Operation check,drain motor test run
TB1	Terminal block (Power source)(□ mark)
TB2	Terminal block (Signal line)(□ mark)
Thc	Thermistor (Remote control)
Thi-A	Thermistor (Return air)
Thi-R1,2,3	Thermistor (Heat exchanger)

Color marks

Mark	Color	Mark	Color
BK	Black	WH	White
BL	Blue	YE	Yellow
BR	Brown	GY	Gray
OR	Orange	YE／GN	Yellow／Green
RD	Red		

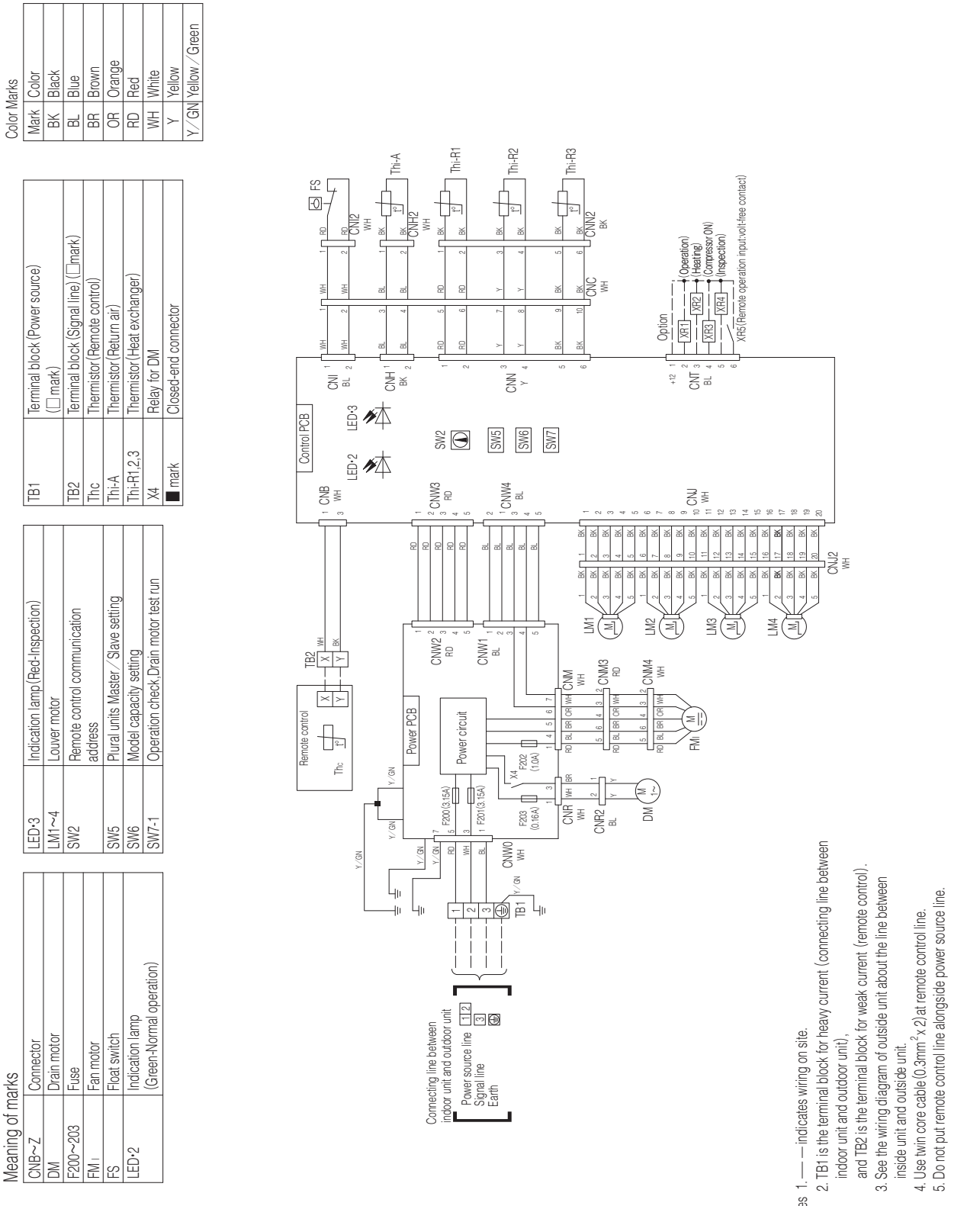


Notes 1. ------ indicates wiring on site.
2. See the wiring diagram of outside unit about the line between inside unit and outside unit.
3. Use twin core cord (0.3mm²) at remote control line. See spec sheet of remote control in case that the total length is more than 100m.
4. Do not put remote control line alongside power source line.
5. Section 1 (※1) is provided on the panel T-PSAE-5AW-E only.
6. Section 2 (※2) is provided on the models 100,125 only.

PJF000Z430

(b) Ceiling cassette-4 way compact type (FDTC)

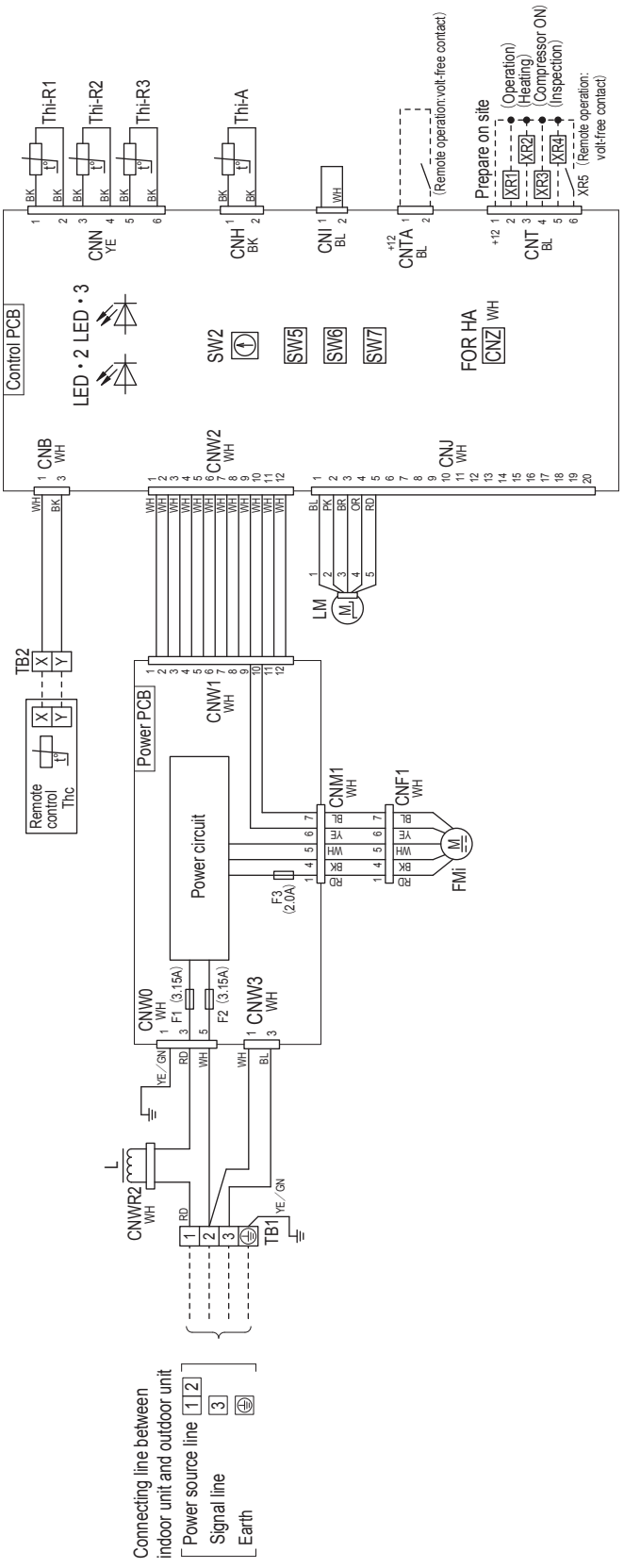
Models FDTC50VF, 60VF



PJA003Z340 D

(c) Ceiling suspended type (FDE)

Models FDE50VG, 60VG, 71VG, 100VG, 125VG, 140VG



Color marks

Mark	Color
BK	Black
BL	Blue
BR	Brown
OR	Orange
PK	Pink
RD	Red
WH	White
YE	Yellow
YE／GN	Yellow／Green

Meaning of marks

Mark	Parts name
CNB-Z	Connector
F1-3	Fuse（Power PCB）
FMi	Fan motor
LED • 2	Indication lamp（Green-Normal operation）
LED • 3	Indication lamp（Red-Inspection）
LM	Louver motor
SW2	Remote control communication address
SW5	Plural units Master／Slave setting
SW6	Model capacity setting
SW7-1	Operation check,drain motor test run
SW7-3	Powerful mode Valid／Invalid
TB1	Terminal block（Power source）
TB2	Terminal block（Signal line）
Thc	Thermistor（Remote control）
Thi-A	Thermistor（Return air）
Thi-R1,2,3	Thermistor（Heat exchanger）

Notes 1. - - - indicates wiring on site.
2. See the wiring diagram of outside unit about the line between indoor unit and outdoor unit.
3. Use twin core cable（0.3mm²×2）at remote control line. See spec sheet of remote control in case that the total length is more than 100m.
4. Do not put remote control line alongside power source line.

PFA004Z028

(d) Duct connected-High static pressure type (FDU)

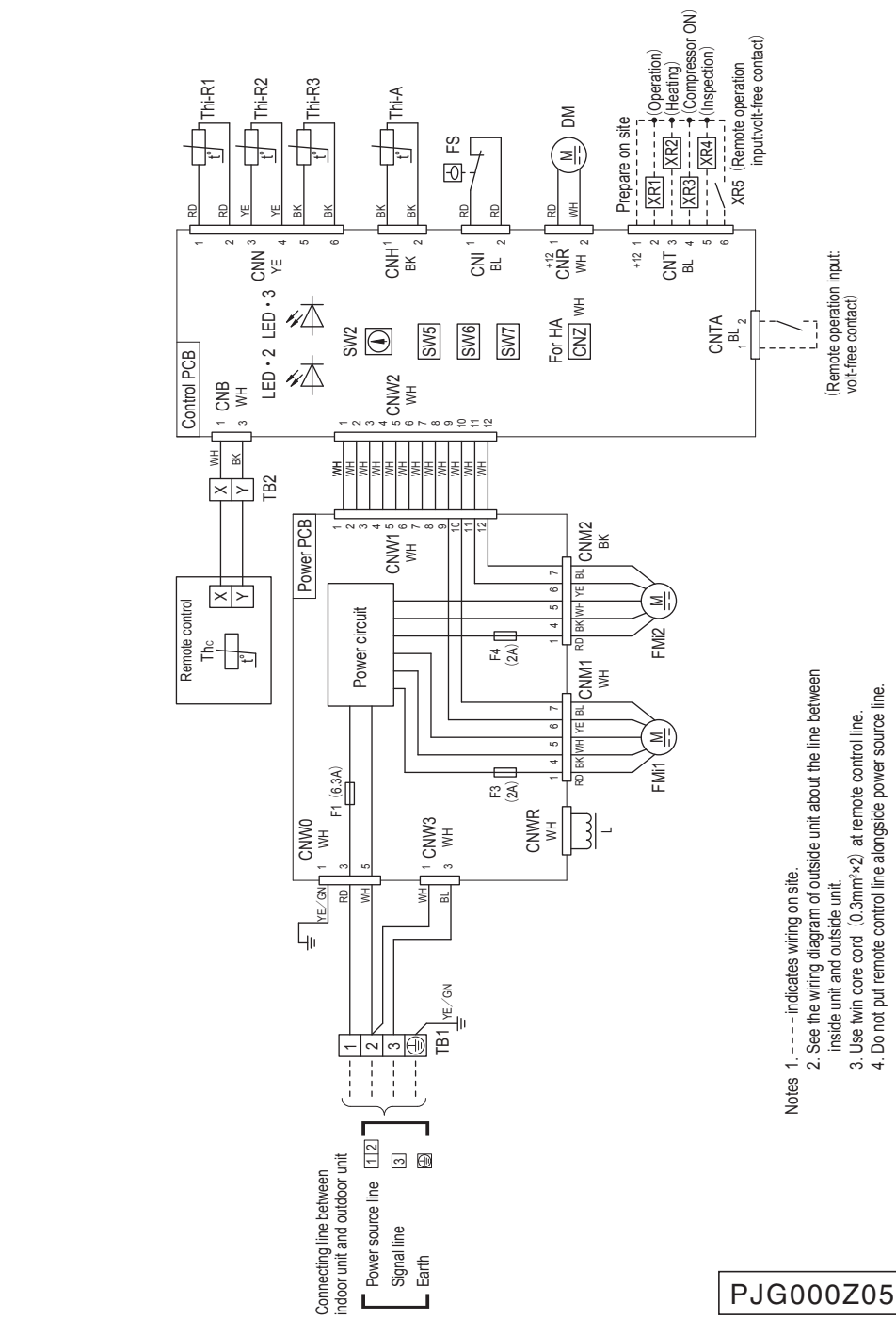
Models FDU100VF2, 125VF, 140VF

Meaning of marks

CNB-Z	Connector
DM	Drain motor
F1,3,4	Fuse
FMi1,2	Fan motor (with thermostat)
FS	Float switch
L	Reactor
LED・2	Indication lamp (Green-Normal operation)
LED・3	Indication lamp (Red-Inspection)
SW2	Remote control communication address
SW5	Plural units Master／Slave setting
SW6	Model capacity setting
SW7-1	Operation check, Drain motor test run
SW7-3	Powerful mode Valid／Invalid
TB1	Terminal block (Power source) (□mark)
TB2	Terminal block (Signal line) (□mark)
Thc	Thermistor (Remote control)
Thi-A	Thermistor (Return air)
Thi-R1,2,3	Thermistor (Heat exchanger)

Color marks

Mark	Color	Mark	Color
BK	Black	RD	Red
BL	Blue	WH	White
YE	Yellow	YE／GN	Yellow／Green



Notes 1. - - - - indicates wiring on site.
2. See the wiring diagram of outside unit about the line between inside unit and outside unit.
3. Use twin core cord (0.3mm²×2) at remote control line.
4. Do not put remote control line alongside power source line.

PJG000Z050 C

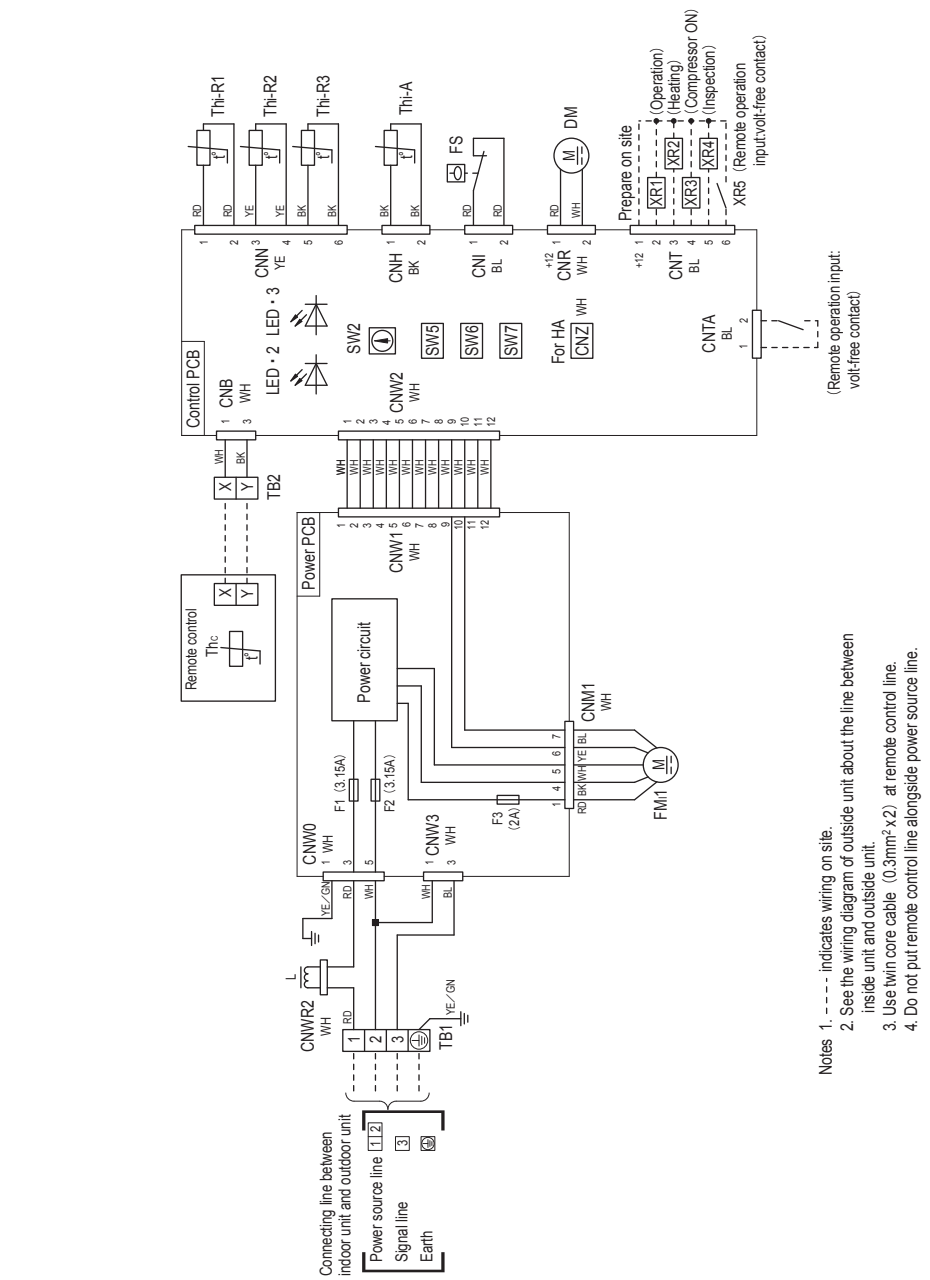
(e) Duct connected-Low / Middle static pressure type (FDUM)
Model FDUM50VF

Meaning of marks

CNB~Z	Connector
DM	Drain motor
F1~3	Fuse
FM1	Fan motor (with thermostat)
FS	Float switch
L	Reactor
LED・2	Indication lamp (Green-Normal operation)
LED・3	Indication lamp (Red-Inspection)
SW2	Remote control communication address
SW5	Plural units Master／Slave setting
SW6	Model capacity setting
SW7-1	Operation check, Drain motor test run
SW7-3	Powerful mode Valid／Invalid
TB1	Terminal block (Power source) (□mark)
TB2	Terminal block (Signal line) (□mark)
Thc	Thermistor (Remote control)
Thi-A	Thermistor (Return air)
Thi-R1,2,3	Thermistor (Heat exchanger)
■mark	Closed-end connector

Color Marks

Mark	Color	Mark	Color
BK	Black	RD	Red
BL	Blue	WH	White
BR	Brown	YE	Yellow
OR	Orange	YE／GN	Yellow／Green



Notes 1. - - - - indicates wiring on site.
2. See the wiring diagram of outside unit about the line between inside unit and outside unit.
3. Use twin core cable (0.3mm² x 2) at remote control line.
4. Do not put remote control line alongside power source line.

PJG000Z005 Ⓓ

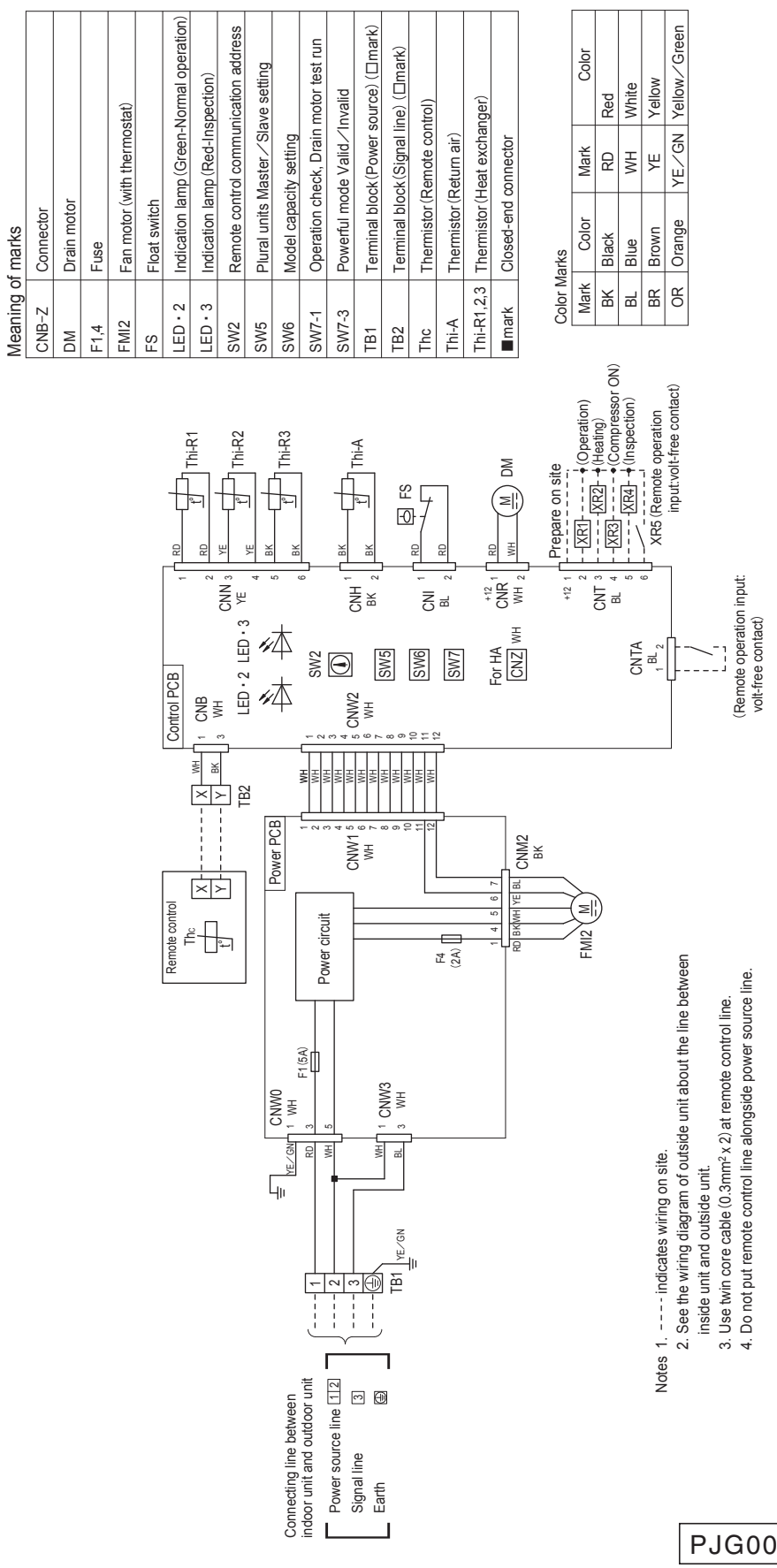
Model FDUM60VF

Meaning of marks

CNB−Z	Connector
DM	Drain motor
F1,4	Fuse
FMI2	Fan motor (with thermostat)
FS	Float switch
LED・2	Indication lamp (Green-Normal operation)
LED・3	Indication lamp (Red-Inspection)
SW2	Remote control communication address
SW5	Plural units Master／Slave setting
SW6	Model capacity setting
SW7-1	Operation check, Drain motor test run
SW7-3	Powerful mode Valid／Invalid
TB1	Terminal block (Power source) (□mark)
TB2	Terminal block (Signal line) (□mark)
Thc	Thermistor (Remote control)
Thi-A	Thermistor (Return air)
Thi-R1,2,3	Thermistor (Heat exchanger)
■mark	Closed-end connector

Color Marks

Mark	Color	Mark	Color
BK	Black	RD	Red
BL	Blue	WH	White
BR	Brown	YE	Yellow
OR	Orange	YE／GN	Yellow／Green



Notes 1. - - - - indicates wiring on site.
2. See the wiring diagram of outside unit about the line between inside unit and outside unit.
3. Use twin core cable (0.3mm² x 2) at remote control line.
4. Do not put remote control line alongside power source line.

PJG000Z028 B

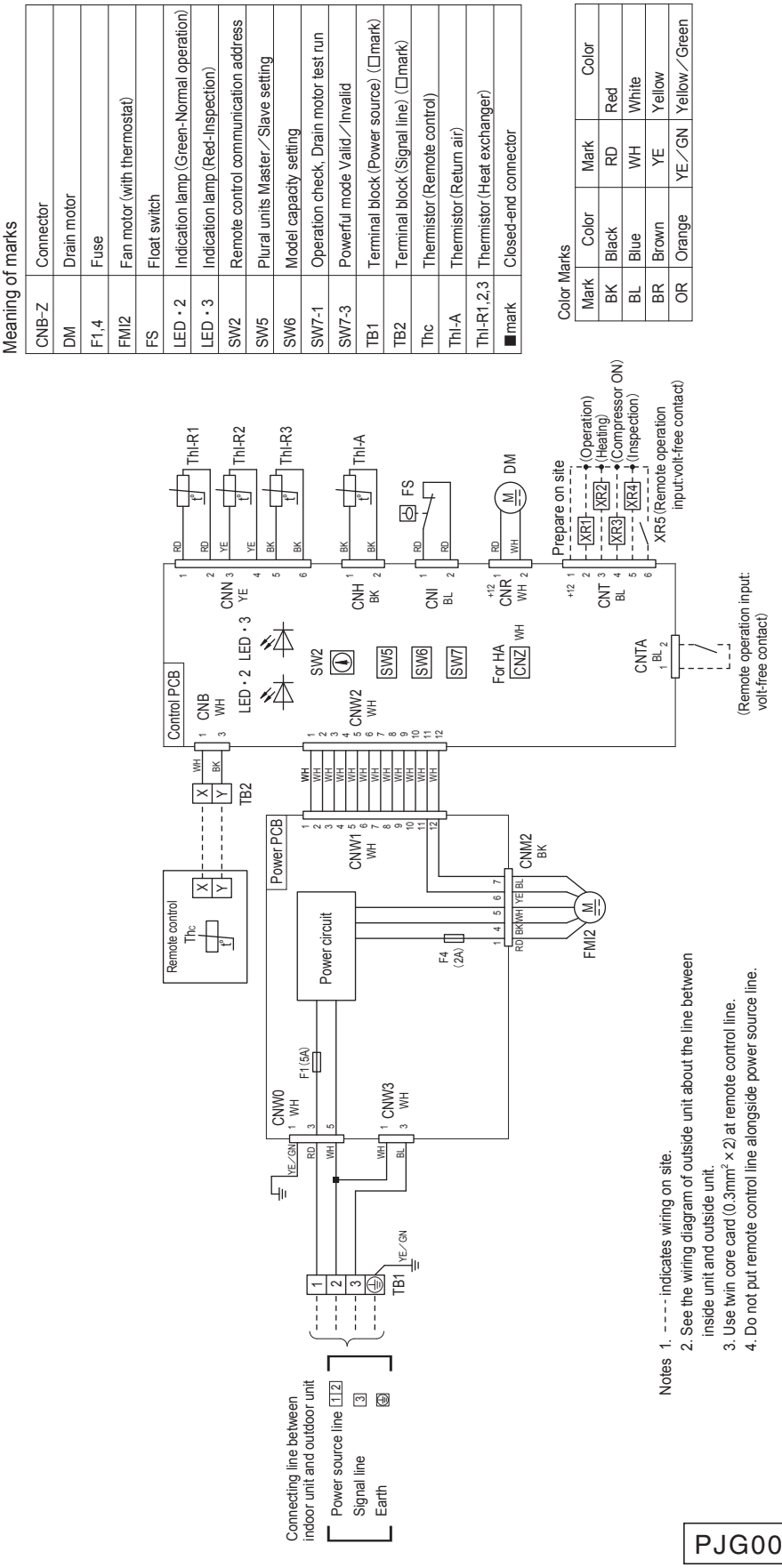
Model FDUM71VF1

Meaning of marks

CNB-Z	Connector
DM	Drain motor
F1,4	Fuse
FMI2	Fan motor (with thermostat)
FS	Float switch
LED・2	Indication lamp (Green-Normal operation)
LED・3	Indication lamp (Red-Inspection)
SW2	Remote control communication address
SW5	Plural units Master／Slave setting
SW6	Model capacity setting
SW7-1	Operation check, Drain motor test run
SW7-3	Powerful mode Valid／Invalid
TB1	Terminal block (Power source) (□mark)
TB2	Terminal block (Signal line) (□mark)
Thc	Thermistor (Remote control)
THI-A	Thermistor (Return air)
THI-R1,2,3	Thermistor (Heat exchanger)
■mark	Closed-end connector

Color Marks

Mark	Color	Mark	Color
BK	Black	RD	Red
BL	Blue	WH	White
BR	Brown	YE	Yellow
OR	Orange	YE／GN	Yellow／Green



Notes 1. - - - - indicates wiring on site.
2. See the wiring diagram of outside unit about the line between inside unit and outside unit.
3. Use twin core card (0.3mm² × 2) at remote control line.
4. Do not put remote control line alongside power source line.

PJG000Z028 B

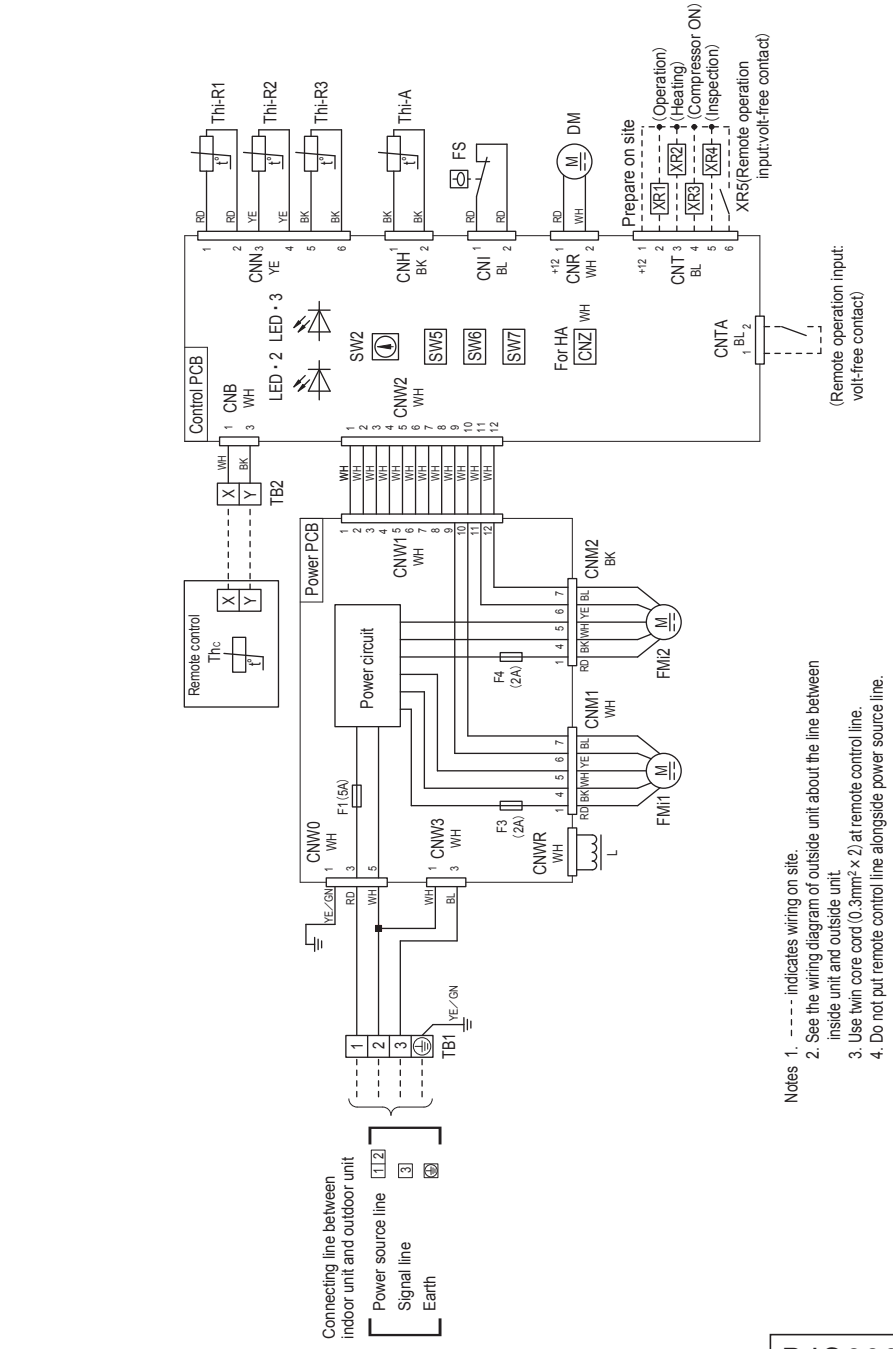
Models FDUM100VF2, 125VF, 140VF

Meaning of marks

CNB-Z	Connector
DM	Drain motor
F1,3,4	Fuse
FMi1,2	Fan motor (with thermostat)
FS	Float switch
L	Reactor
LED・2	Indication lamp (Green-Normal operation)
LED・3	Indication lamp (Red-Inspection)
SW2	Remote control communication address
SW5	Plural units Master／Slave setting
SW6	Model capacity setting
SW7-1	Operation check, Drain motor test run
SW7-3	Powerful mode Valid／Invalid
TB1	Terminal block (Power source) (□mark)
TB2	Terminal block (Signal line) (□mark)
Thc	Thermistor (Remote control)
Thi-A	Thermistor (Return air)
Thi-R1,2,3	Thermistor (Heat exchanger)
■mark	Closed-end connector

Color marks

Mark	Color	Mark	Color
BK	Black	RD	Red
BL	Blue	WH	White
BR	Brown	YE	Yellow
OR	Orange	YE／GN	Yellow／Green

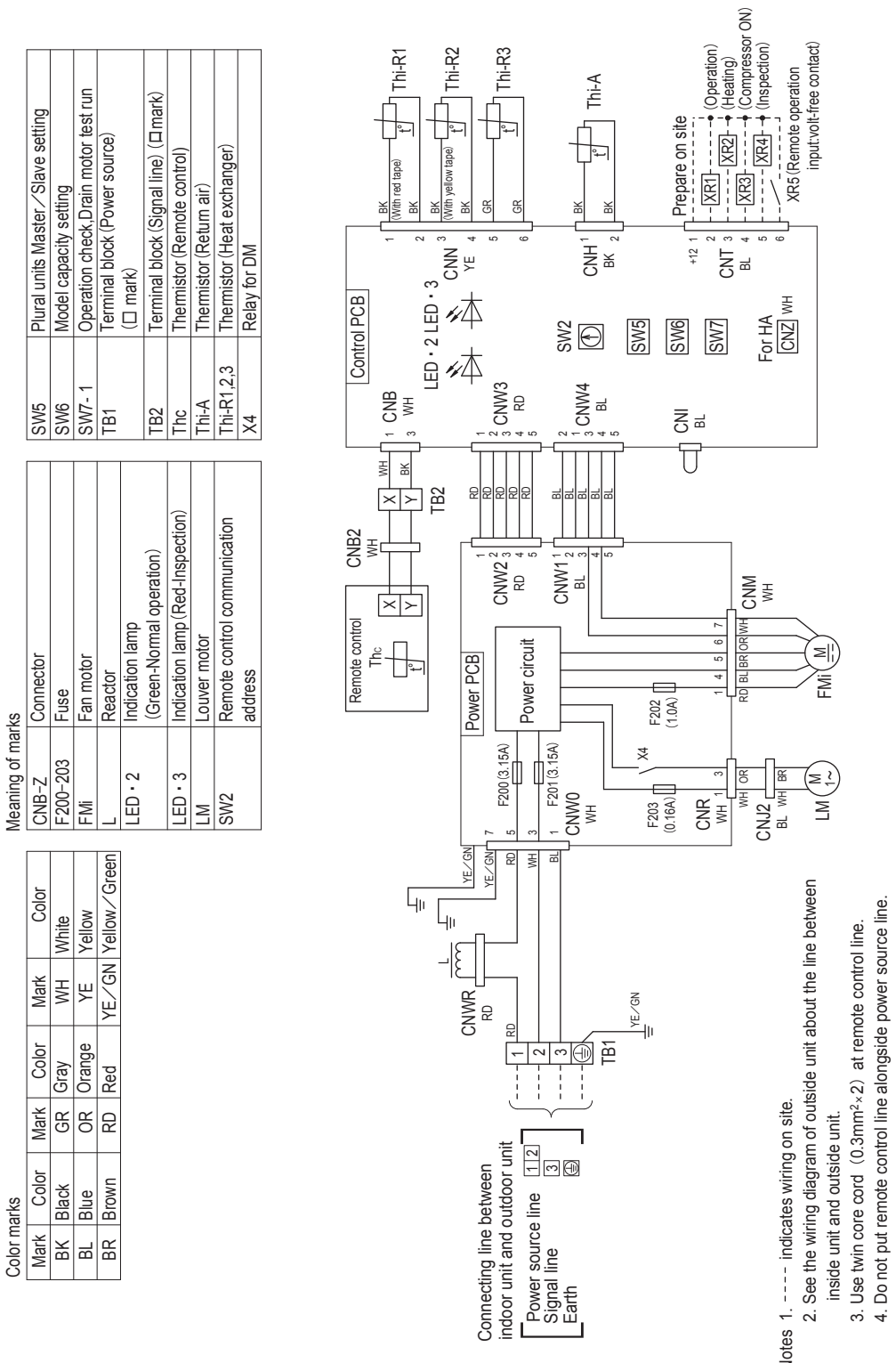


Notes 1. - - - - indicates wiring on site.
2. See the wiring diagram of outside unit about the line between inside unit and outside unit.
3. Use twin core cord (0.3mm² × 2) at remote control line.
4. Do not put remote control line alongside power source line.

PJG000Z029 C

(f) Floor standing type (FDF)

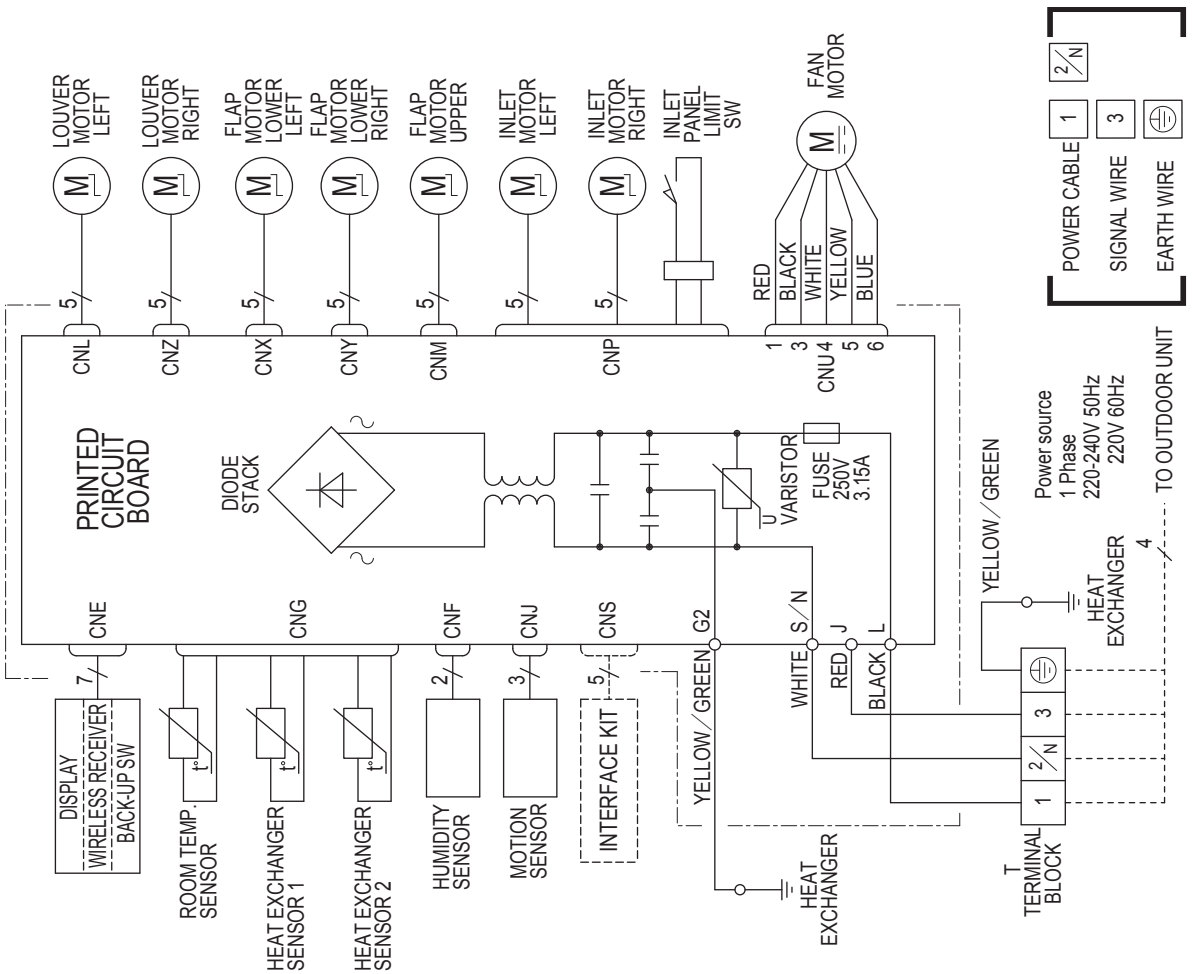
Models FDF71VD1, 100VD2, 125VD, 140VD



PGA000Z783 B

(g) Wall mounted type (SRK)
Models SRK50ZSX-S, 60ZSX-S

Item	Description
CNE	Connector
CNF	
CNG	
CNJ	
CNL	
CNM	
CNP	
CNS	
CNU	
CNX	
CNY	
CNZ	



RWA000Z412

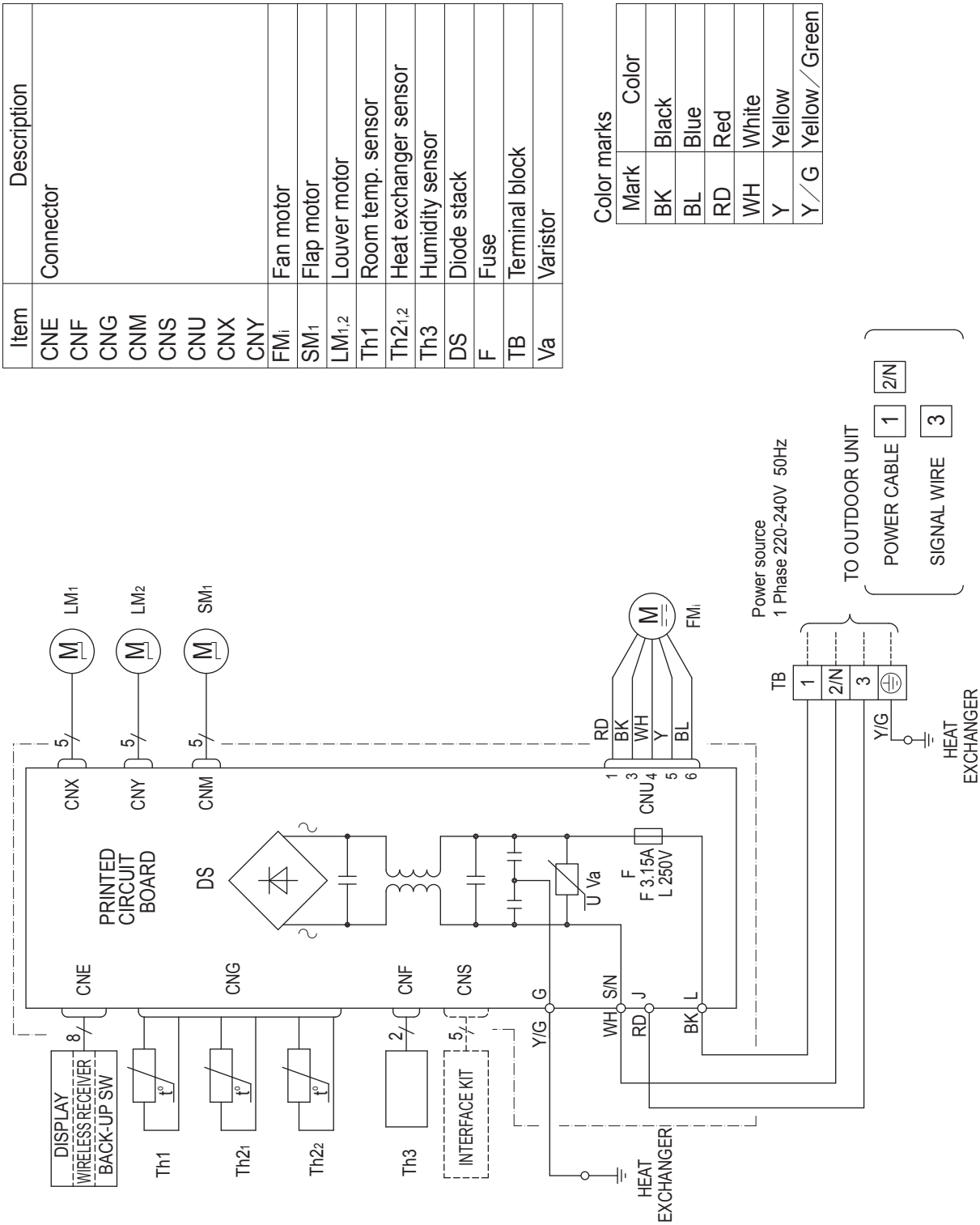
Model SRK100ZR-S

Meaning of marks

Item	Description
CNE	Connector
CNF	
CNG	
CNM	
CNS	
CNU	
CNX	
CNY	
FM_i	Fan motor
SM_1	Flap motor
$LM_{1,2}$	Louver motor
Th1	Room temp. sensor
$Th2_{1,2}$	Heat exchanger sensor
Th3	Humidity sensor
DS	Diode stack
F	Fuse
TB	Terminal block
Va	Varistor

Color marks

Mark	Color
BK	Black
BL	Blue
RD	Red
WH	White
Y	Yellow
Y／G	Yellow／Green



RWA000Z406A

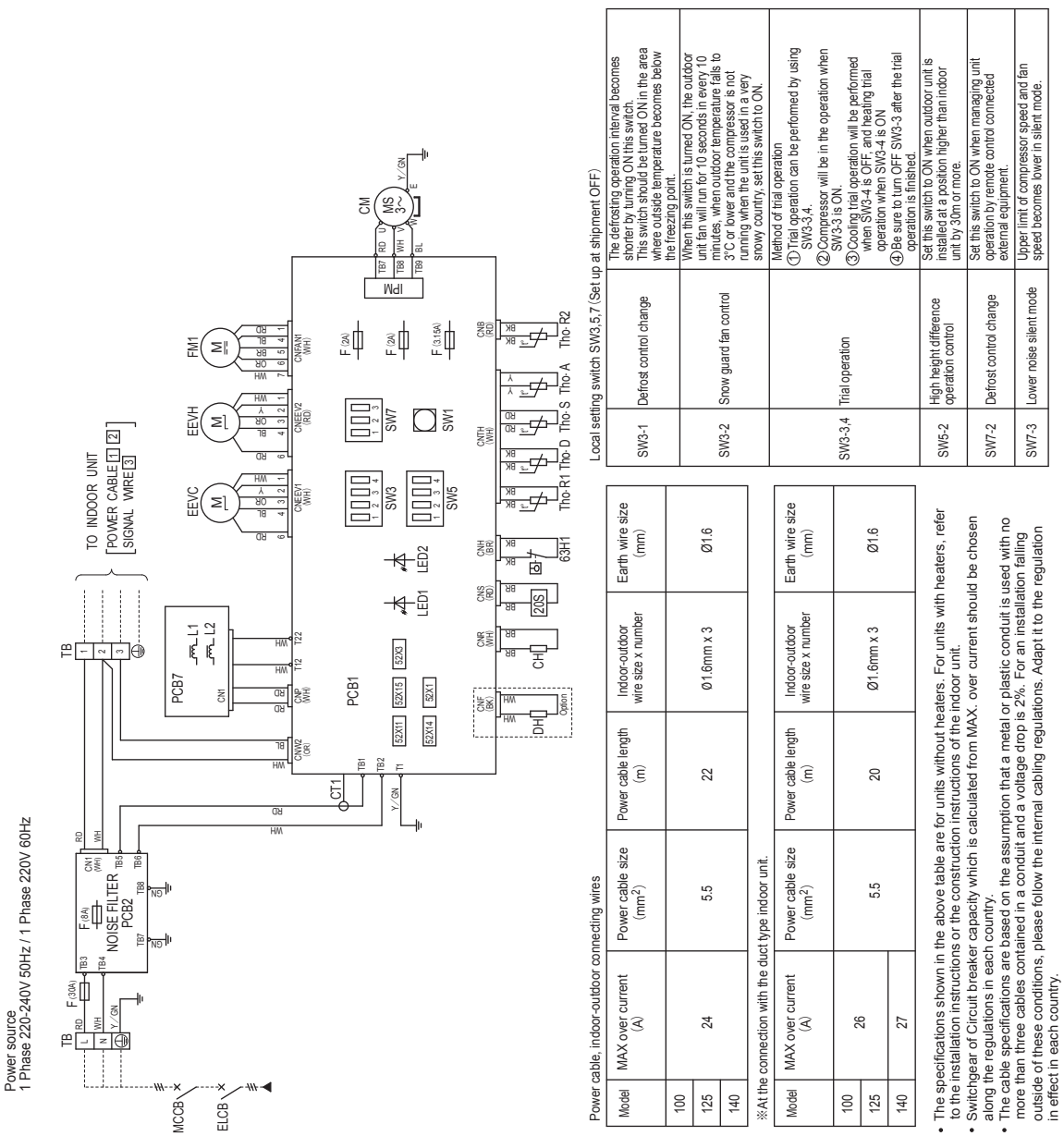
(2) Outdoor unit
Models FDC100VNA, 125VNA, 140VNA

Meaning of marks

ITEM	DESCRIPTION
CH	Crankcase heater
CM	Compressor motor
CN	Connector
CT1	Current sensor
DH	Drain pan heater
EEVC	Expansion valve for cooling
EEVH	Expansion valve for heating
F	Fuse
FM1	Fan motor
IPM	Intelligent power module
LED1	Indication lamp (GREEN)
LED2	Indication lamp (RED)
L1,2	Reactor
SW1	Switch
SW3,5,7	Local setting switch
TB	Terminal block
THo-A	Thermistor (Outdoor air temp.)
THo-D	Thermistor (Discharge pipe temp.)
THo-R1,R2	Thermistor (Heat exchanger temp.)
THo-S	Thermistor (Suction pipe temp.)
20S	Solenoid valve for 4 way valve
52X1	Auxiliary relay
52X3	Auxiliary relay
52X11	Auxiliary relay (for 20S)
52X14	Auxiliary relay (for CH)
52X15	Auxiliary relay (for DH)
63H1	High pressure switch

Color marks

Mark	Color
BK	Black
BL	Blue
BR	Brown
GN	Green
OR	Orange
RD	Red
WH	White
Y	Yellow
Y／GN	Yellow／Green



Power cable, indoor-outdoor connecting wires

Model	MAX over current (A)	Power cable size (mm^2)	Power cable length (m)	Indoor-outdoor wire size x number	Earth wire size (mm)
100	24	5.5	22	Ø1.6mm x 3	Ø1.6
125					
140					

※At the connection with the duct type indoor unit.

Model	MAX over current (A)	Power cable size (mm^2)	Power cable length (m)	Indoor-outdoor wire size x number	Earth wire size (mm)
100	26	5.5	20	Ø1.6mm x 3	Ø1.6
125					
140	27				

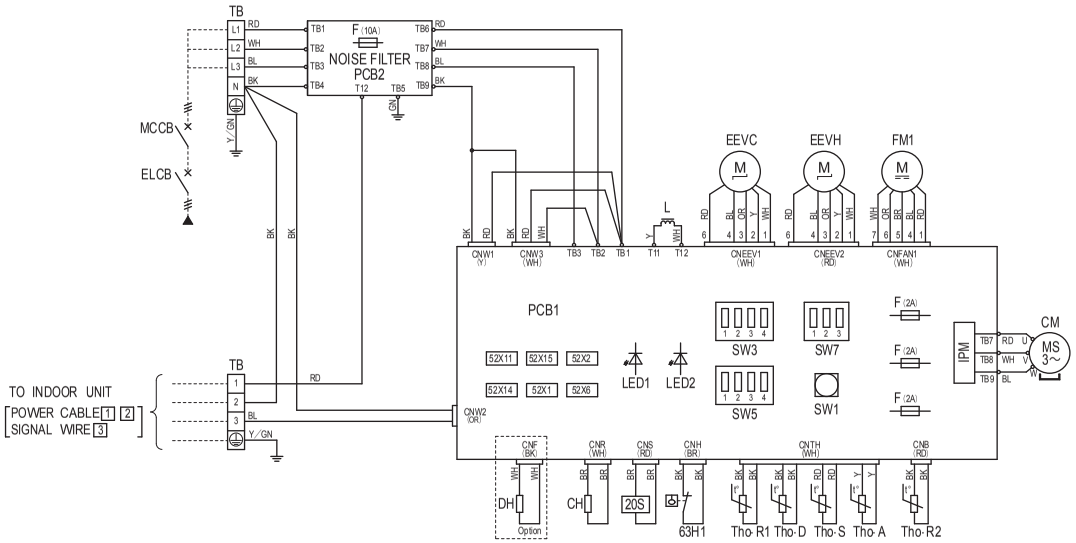
- The specifications shown in the above table are for units without heaters. For units with heaters, refer to the installation instructions or the construction instructions of the indoor unit.
- Switchgear of Circuit breaker capacity which is calculated from MAX. over current should be chosen along the regulations in each country.
- The cable specifications are based on the assumption that a metal or plastic conduit is used with no more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling outside of these conditions, please follow the internal cabling regulations. Adapt it to the regulation in effect in each country.

Local setting switch SW3,5,7 (Set up at shipment OFF)

SW3-1	Defrost control change	The defrosting operation interval becomes shorter by turning ON this switch. This switch should be turned ON in the area where outside temperature becomes below the freezing point.
SW3-2	Snow guard fan control	When this switch is turned ON, the outdoor unit fan will run for 10 seconds in every 10 minutes, when outdoor temperature falls to 3°C or lower and the compressor is not running when the unit is used in a very snowy country, set this switch to ON.
SW3-3,4	Trial operation	Method of trial operation ①Trial operation can be performed by using SW3-3,4. ②Compressor will be in the operation when SW3-3 is ON. ③Cooling trial operation will be performed when SW3-4 is OFF, and heating trial operation when SW3-4 is ON ④Be sure to turn OFF SW3-3 after the trial operation is finished.
SW5-2	High height difference operation control	Set this switch to ON when outdoor unit is installed at a position higher than indoor unit by 30m or more.
SW7-2	Defrost control change	Set this switch to ON when managing unit operation by remote control connected external equipment.
SW7-3	Lower noise silent mode	Upper limit of compressor speed and fan speed becomes lower in silent mode.

PCA001Z817

Power source
3 Phase 380-415V 50Hz



Power cable, indoor-outdoor connecting wires

Model	MAX over current (A)	Power cable size (mm^2)	Power cable length (m)	Indoor-outdoor wire size x number	Earth wire size (mm)
100	15	3.5	46	Ø1.6mm x 3	Ø1.6
125					
140					

※At the connection with the duct type indoor unit.

Model	MAX over current (A)	Power cable size (mm^2)	Power cable length (m)	Indoor-outdoor wire size x number	Earth wire size (mm)
100	17	3.5	40	Ø1.6mm x 3	Ø1.6
125					
140	18		38		

- The specifications shown in the above table are for units without heaters. For units with heaters, refer to the installation instructions or the construction instructions of the indoor unit.
- Switchgear of Circuit breaker capacity which is calculated from MAX. over current should be chosen along the regulations in each country.
- The cable specifications are based on the assumption that a metal or plastic conduit is used with no more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling outside of these conditions, please follow the internal cabling regulations. Adapt it to the regulation in effect in each country.

Local setting switch SW3,5,7 (Set up at shipment OFF)

SW3-1	Defrost control change	The defrosting operation interval becomes shorter by turning ON this switch. This switch should be turned ON in the area where outside temperature becomes below the freezing point.
SW3-2	Snow guard fan control	When this switch is turned ON, the outdoor unit fan will run for 10 seconds in every 10 minutes, when outdoor temperature falls to 3°C or lower and the compressor is not running when the unit is used in a very snowy country, set this switch to ON.
SW3-3,4	Trial operation	Method of trial operation ①Trial operation can be performed by using SW3-3,4. ②Compressor will be in the operation when SW3-3 is ON. ③Cooling trial operation will be performed when SW3-4 is OFF, and heating trial operation when SW3-4 is ON ④Be sure to turn OFF SW3-3 after the trial operation is finished.
SW5-2	High height difference operation control	Set this switch to ON when outdoor unit is installed at a position higher than indoor unit by 30m or more.
SW7-2	Defrost control change	Set this switch to ON when managing unit operation by remote control connected external equipment.
SW7-3	Lower noise silent mode	Upper limit of compressor speed and fan speed becomes lower in silent mode.

Meaning of marks

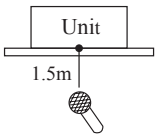
ITEM	DESCRIPTION
CH	Crankcase heater
CM	Compressor motor
CN	Connector
DH	Drain pan heater
EEVC	Expansion valve for cooling
EEVH	Expansion valve for heating
F	Fuse
FM1	Fan motor
IPM	Intelligent power module
L	Reactor
LED1	Indication lamp (GREEN)
LED2	Indication lamp (RED)
SW1	Switch
SW3,5,7	Local setting switch
TB	Terminal block
THo-A	Thermistor (Outdoor air temp.)
THo-D	Thermistor (Discharge pipe temp.)
THo-R1,R2	Thermistor (Heat exchanger temp.)
THo-S	Thermistor (Suction pipe temp.)
20S	Solenoid valve for 4 way valve
52X1	Auxilliary relay
52X2	Auxilliary relay
52X6	Auxiliary relay (for FM1)
52X11	Auxilliary relay (for 20S)
52X14	Auxilliary relay (for CH)
52X15	Auxilliary relay (for DH)
63H1	High pressure switch

Color marks

Mark	Color
BK	Black
BL	Blue
BR	Brown
GN	Green
OR	Orange
RD	Red
WH	White
Y	Yellow
Y／GN	Yellow／Green

1.4 NOISE LEVEL

Notes(1) The data are based on the following conditions.
Ambient air temperature: Indoor unit 27℃WB. Outdoor unit 35℃DB.
(2) The data in the chart are measured in an anechoic room.
(3) The noise levels measured in the field are usually higher than the data because of reflection.



Mike (in front & below unit)

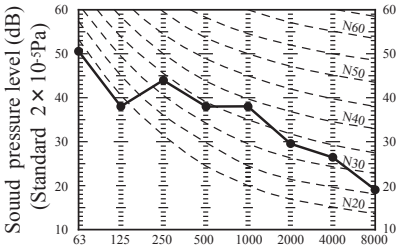
Measured based on JIS B 8616
Mike position as right

(1) Indoor units

(a) Ceiling cassette-4 way (FDT)

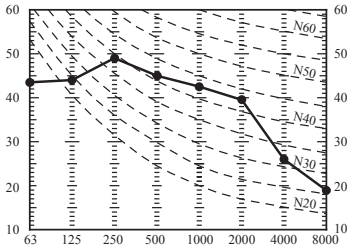
Model FDT50VG

Noise level 38 dB (A) at P-HIGH
33 dB (A) at HIGH
30 dB (A) at MEDIUM
27 dB (A) at LOW



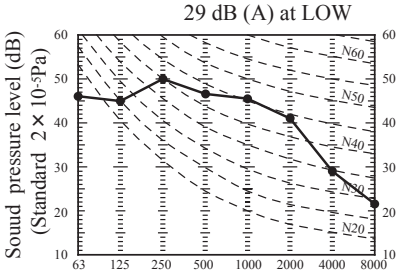
Model FDT60VG

Noise level 44 dB (A) at P-HIGH
34 dB (A) at HIGH
32 dB (A) at MEDIUM
28 dB (A) at LOW



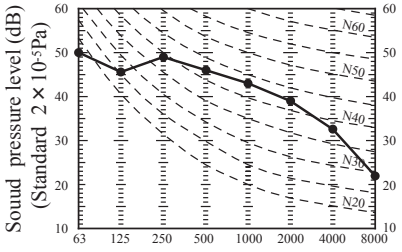
Model FDT71VG

Noise level 46 dB (A) at P-HIGH
35 dB (A) at HIGH
34 dB (A) at MEDIUM
29 dB (A) at LOW



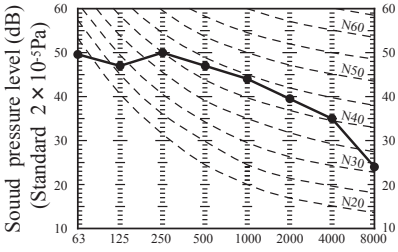
Model FDT100VG

Noise level 48 dB (A) at P-HIGH
39 dB (A) at HIGH
37 dB (A) at MEDIUM
31 dB (A) at LOW



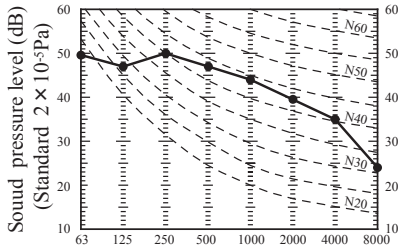
Model FDT125VG

Noise level 49 dB (A) at P-HIGH
41 dB (A) at HIGH
39 dB (A) at MEDIUM
32 dB (A) at LOW



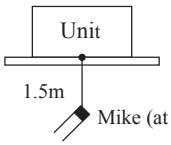
Model FDT140VG

Noise level 49 dB (A) at P-HIGH
42 dB (A) at HIGH
39 dB (A) at MEDIUM
33 dB (A) at LOW



(b) Ceiling cassette-4 way compact type (FDTC)

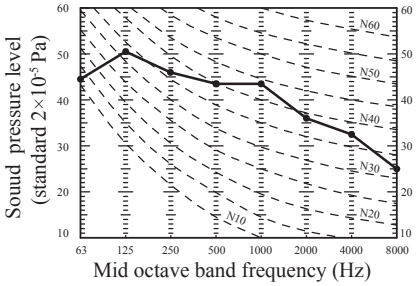
Measured based on JIS B 8616
Mike position as right



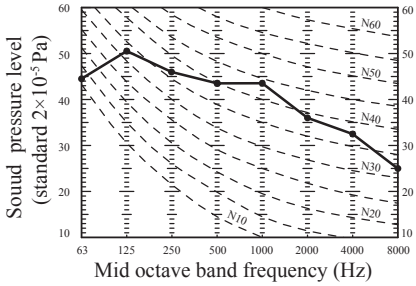
Mike (at center & below unit)

Model FDTC50VF

Cooling noise level 47 dB (A) at P-HIGH
42 dB (A) at HIGH
36 dB (A) at MEDIUM
30 dB (A) at LOW

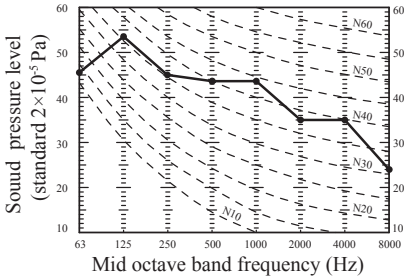


Heating noise level 47 dB (A) at P-HIGH
42 dB (A) at HIGH
36 dB (A) at MEDIUM
32 dB (A) at LOW

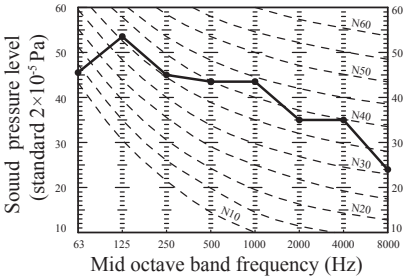


Model FDTC60VF

Cooling noise level 47 dB (A) at P-HIGH
46 dB (A) at HIGH
39 dB (A) at MEDIUM
30 dB (A) at LOW

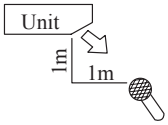


Heating noise level 47 dB (A) at P-HIGH
46 dB (A) at HIGH
39 dB (A) at MEDIUM
32 dB (A) at LOW



(c) Ceiling suspended type (FDE)

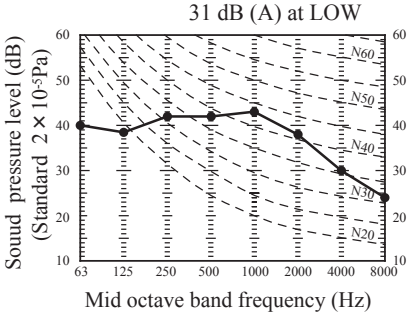
Measured based on JIS B 8616
Mike position as right



Mike (in front & below unit)

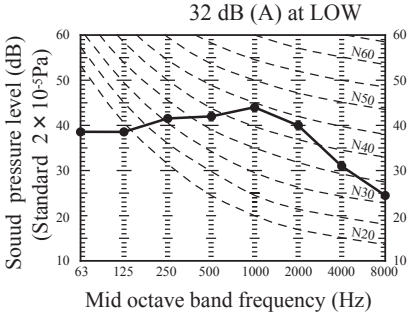
Model FDE50VG

Noise level 46 dB (A) at P-HIGH
38 dB (A) at HIGH
36 dB (A) at MEDIUM
31 dB (A) at LOW



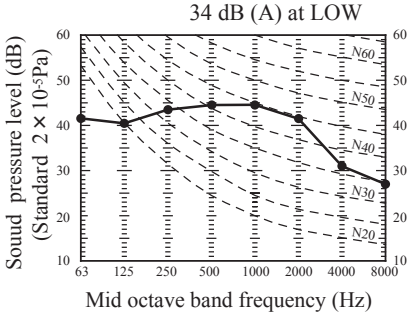
Models FDE60VG, 71VG

Noise level 47 dB (A) at P-HIGH
41 dB (A) at HIGH
37 dB (A) at MEDIUM
32 dB (A) at LOW



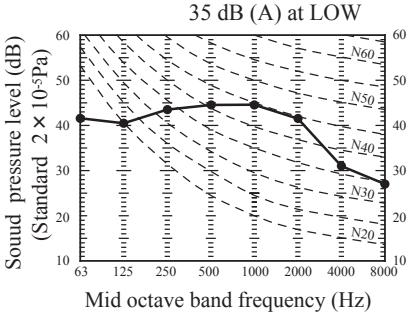
Model FDE100VG

Noise level 48 dB (A) at P-HIGH
43 dB (A) at HIGH
38 dB (A) at MEDIUM
34 dB (A) at LOW



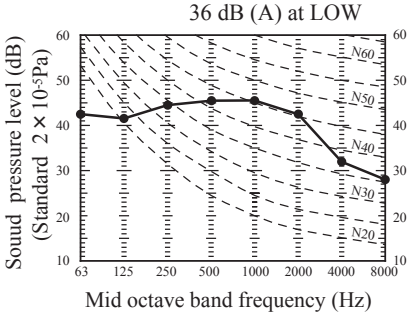
Model FDE125VG

Noise level 48 dB (A) at P-HIGH
45 dB (A) at HIGH
40 dB (A) at MEDIUM
35 dB (A) at LOW



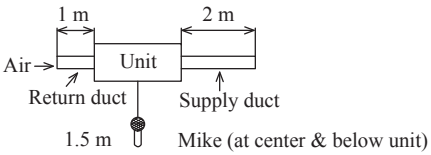
Model FDE140VG

Noise level 49 dB (A) at P-HIGH
45 dB (A) at HIGH
40 dB (A) at MEDIUM
36 dB (A) at LOW



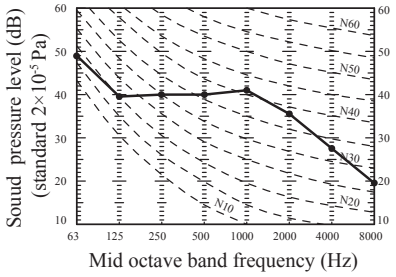
(d) Duct connected-High static pressure-type (FDU)

Measured based on JIS B 8616
Mike position as right



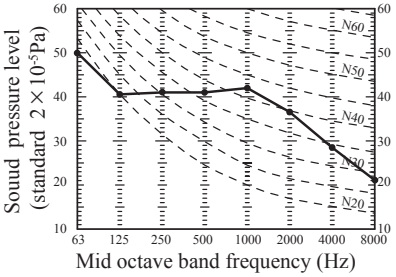
Model FDU100VF2

Noise level 44 dB (A) at P-Hi
38 dB (A) at Hi
36 dB (A) at Me
30 dB (A) at Lo



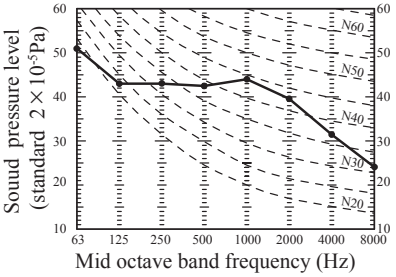
Model FDU125VF

Noise level 45 dB (A) at P-HIGH
40 dB (A) at HIGH
34 dB (A) at MEDIUM
29 dB (A) at LOW



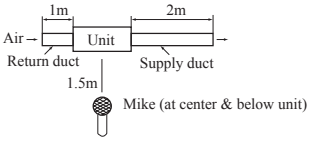
Model FDU140VF

Noise level 47 dB (A) at P-HIGH
40 dB (A) at HIGH
35 dB (A) at MEDIUM
30 dB (A) at LOW



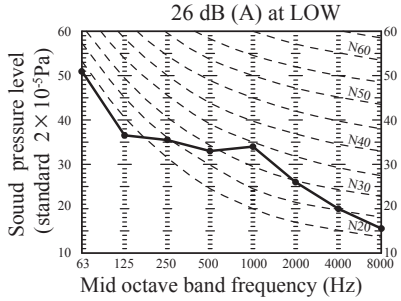
(e) Duct connected-Low/Middle static pressure type (FDUM)

Measured based on JIS B 8616
Mike position as right



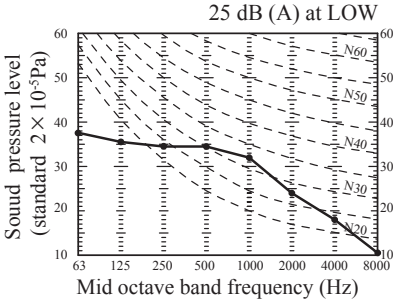
Model FDUM50VF

Noise level 37 dB (A) at P-HIGH
32 dB (A) at HIGH
29 dB (A) at MEDIUM
26 dB (A) at LOW



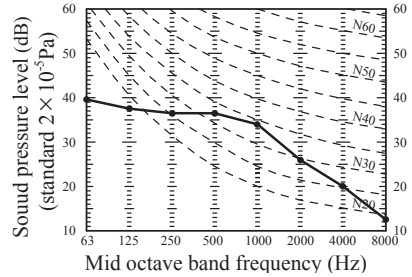
Model FDUM60VF

Noise level 36 dB (A) at P-HIGH
31 dB (A) at HIGH
28 dB (A) at MEDIUM
25 dB (A) at LOW



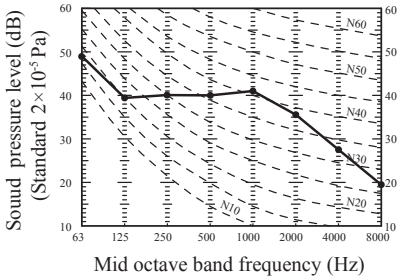
Model FDUM71VF1

Noise level 38 dB (A) at P-HIGH
33 dB (A) at HIGH
29 dB (A) at MEDIUM
25 dB (A) at LOW



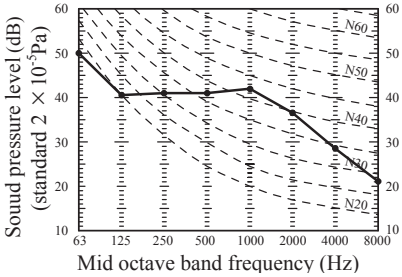
Model FDUM100VF2

Noise level 44 dB (A) at P-Hi
38 dB (A) at Hi
36 dB (A) at Me
30 dB (A) at Lo



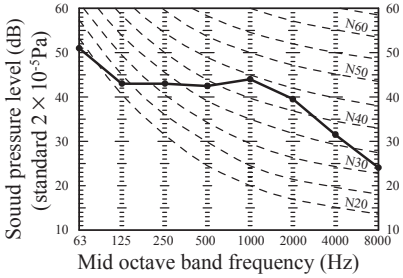
Model FDUM125VF

Noise level 45 dB (A) at P-HIGH
40 dB (A) at HIGH
34 dB (A) at MEDIUM
29 dB (A) at LOW



Model FDUM140VF

Noise level 47 dB (A) at P-HIGH
40 dB (A) at HIGH
35 dB (A) at MEDIUM
30 dB (A) at LOW



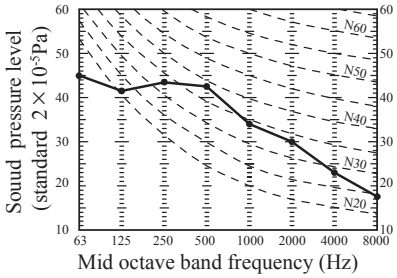
(f) Floor standing type (FDF)

Measured based on JIS B 8616
Mike position as right

Mike (1 m each at front face, forward & height)

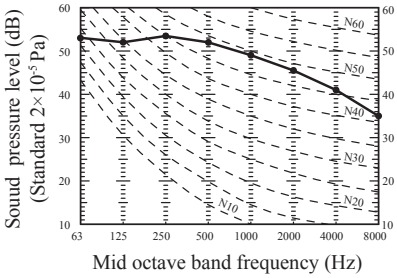
Model FDF71VD1

Noise level 42 dB (A) at P-HIGH
39 dB (A) at HIGH
35 dB (A) at MEDIUM
33 dB (A) at LOW



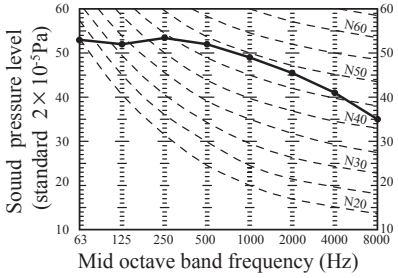
Model FDF100VD2

Noise level 54 dB (A) at P-HIGH
50 dB (A) at HIGH
48 dB (A) at MEDIUM
44 dB (A) at LOW



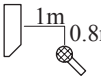
Models FDF125VD, 140VD

Noise level 54 dB (A) at P-HIGH
50 dB (A) at HIGH
48 dB (A) at MEDIUM
44 dB (A) at LOW



(g) Wall mounted type (SRK)

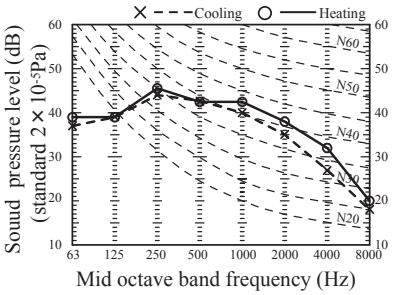
Measured based on JIS C 9612
Mike position as right



Mike position
(Center & low points)

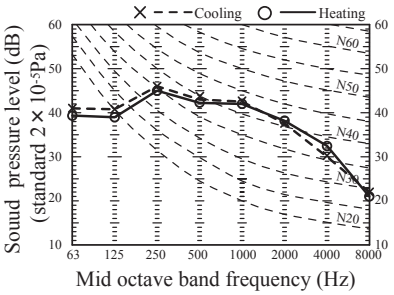
Model SRK50ZSX-S

Cooling noise level Hi : 44 dB (A)
Heating noise level Hi : 46 dB (A)



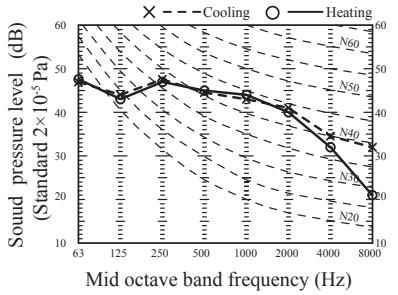
Model SRK60ZSX-S

Cooling noise level Hi : 46 dB (A)
Heating noise level Hi : 46 dB (A)



Model SRK100ZR-S

Cooling noise level Hi : 48 dB (A)
Heating noise level Hi : 48 dB (A)

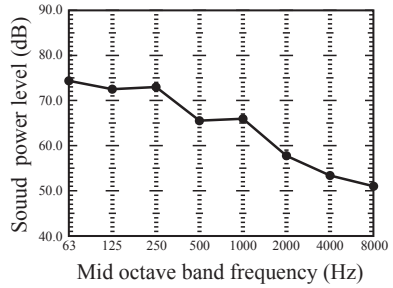


(2) Outdoor units

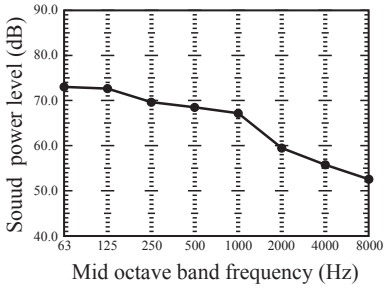
Measured based on JIS B 8616
Mike position: at highest noise level in position as mentioned below
Distance from front side 1m
Height 1m

(a) Sound power level

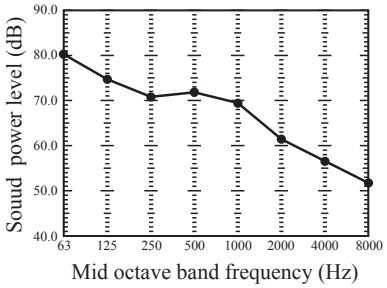
Models FDC100VNA,100VSA
Noise level 70 dB (A)



Models FDC125VNA,125VSA
Noise level 71 dB (A)



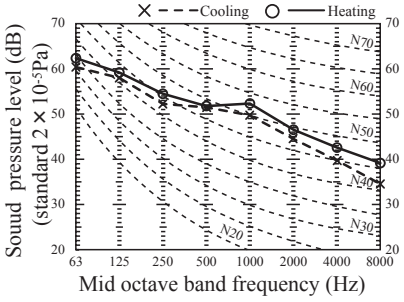
Models FDC140VNA,140VSA
Noise level 73 dB (A)



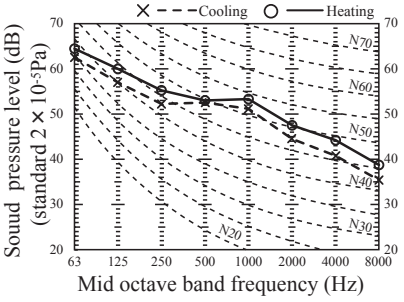
(b) Sound pressure level

(i) Rating mode

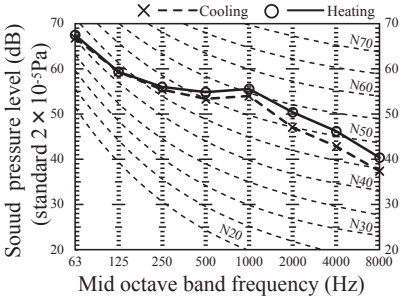
Models FDC100VNA,100VSA
Cooling noise level Hi : 54 dB (A)
Heating noise level Hi : 56 dB (A)



Models FDC125VNA,125VSA
Cooling noise level Hi : 55 dB (A)
Heating noise level Hi : 57 dB (A)

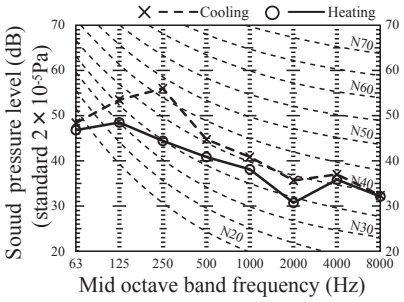


Models FDC140VNA,140VSA
Cooling noise level Hi : 57 dB (A)
Heating noise level Hi : 59 dB (A)

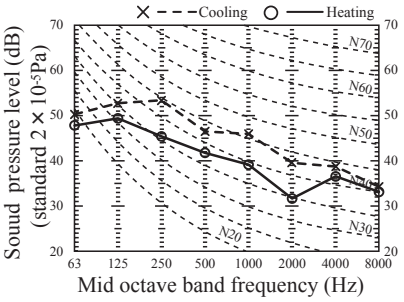


(ii) Silent mode

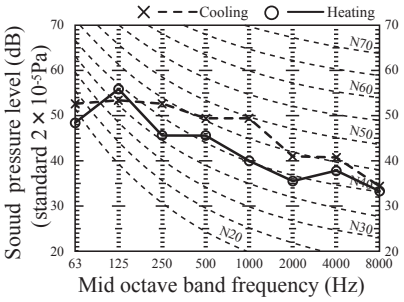
Models FDC100VNA,100VSA
Cooling noise level Hi : 50 dB (A)
Heating noise level Hi : 44 dB (A)



Models FDC125VNA,125VSA
Cooling noise level Hi : 51 dB (A)
Heating noise level Hi : 45 dB (A)



Models FDC140VNA,140VSA
Cooling noise level Hi : 53 dB (A)
Heating noise level Hi : 47 dB (A)



1.5 CHARACTERISTICS OF FAN

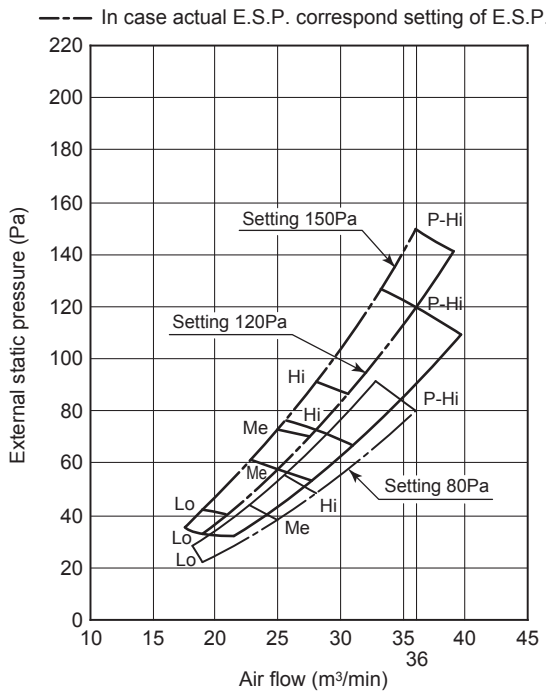
(1) Duct connected-High static static pressure type (FDU)

- Characteristic FAN (1) shows air flow vs. External Static Pressure (E.S.P.) range where settings of E.S.P. are maximum E.S.P. (SW8-4 OFF : 150Pa, SW8-4 ON : 200Pa) , rated E.S.P., and minimum E.S.P. (SW8-4 OFF : 80Pa, SW8-4 ON : 10Pa)
- Characteristic FAN (2) shows air flow vs E.S.P. curve when set fan tap is set P-Hi with each setting of E.S.P. by remote control.
- External Static Pressure (E.S.P.) can be set by wired remote control.
- You can set required E.S.P. by wired remote control which calculate it with the set air flow rate and pressure loss of the duct connected.

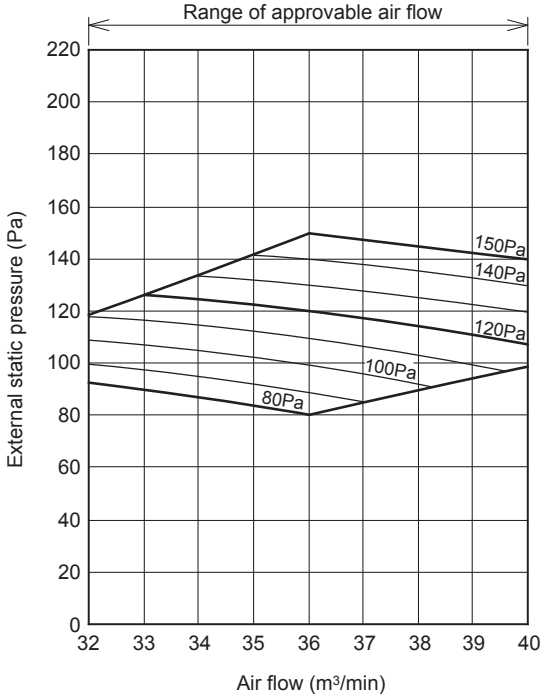
Model FDU100VF2

■SW8-4 : OFF (Range of use limitation : Setting 80Pa-150Pa)

Characteristic FAN (1)

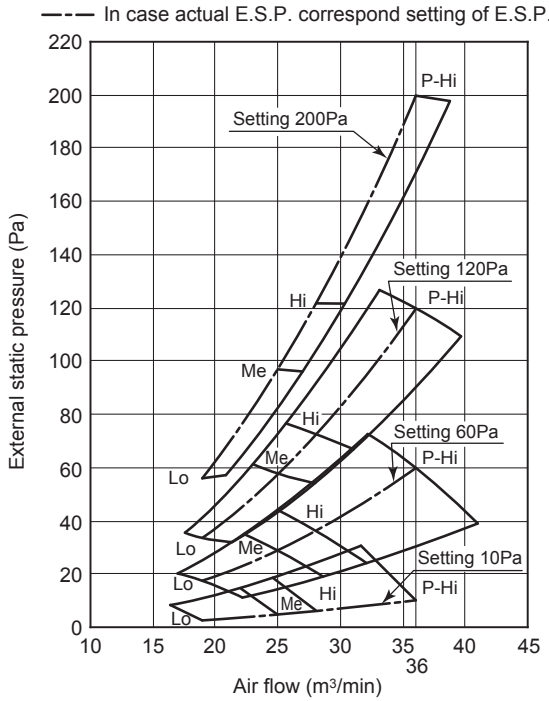


Characteristic FAN (2)

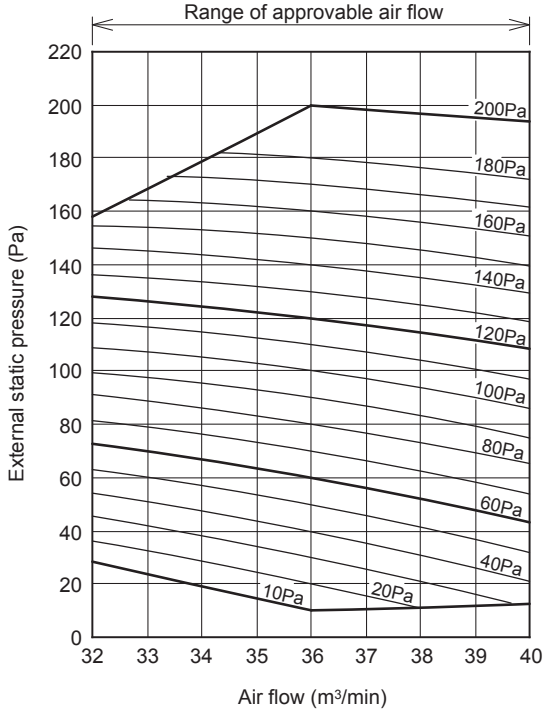


■SW8-4 : ON (Range of use limitation : Setting 10Pa-200Pa)

Characteristic FAN (1)



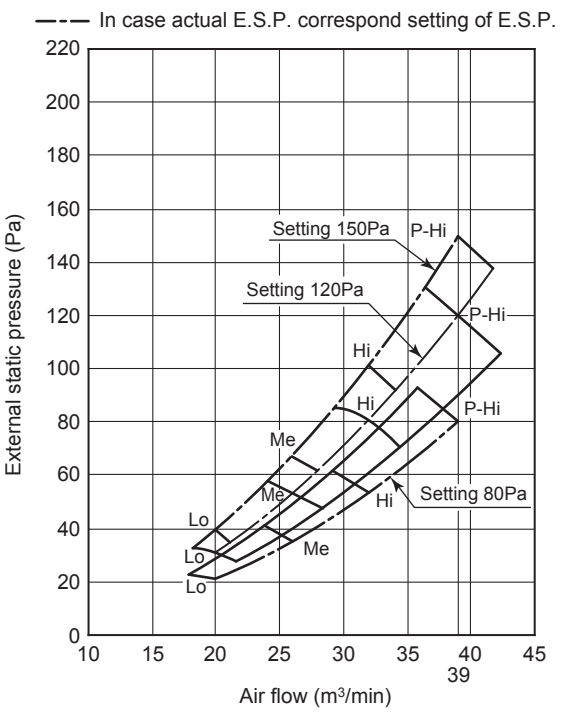
Characteristic FAN (2)



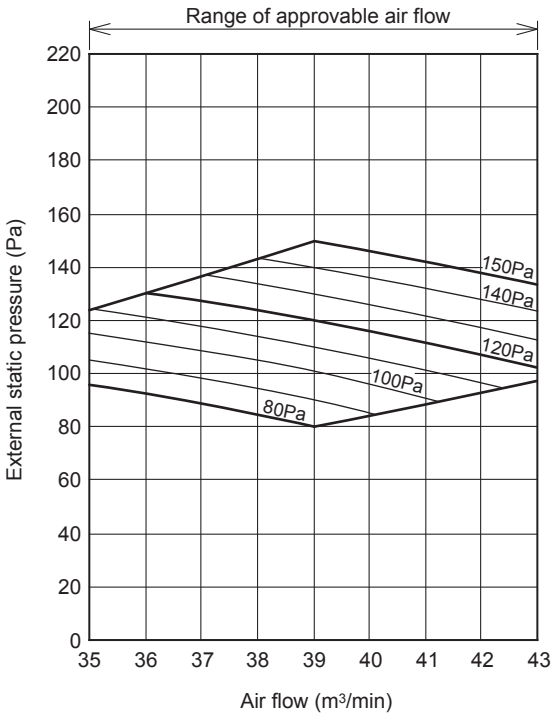
Model FDU125VF

■SW8-4 : OFF (Range of use limitation : Setting 80Pa-150Pa)

Characteristic FAN (1)

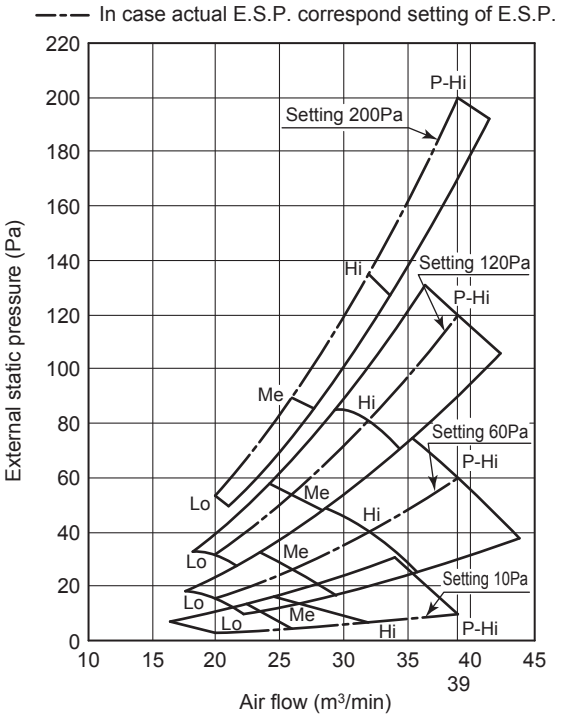


Characteristic FAN (2)

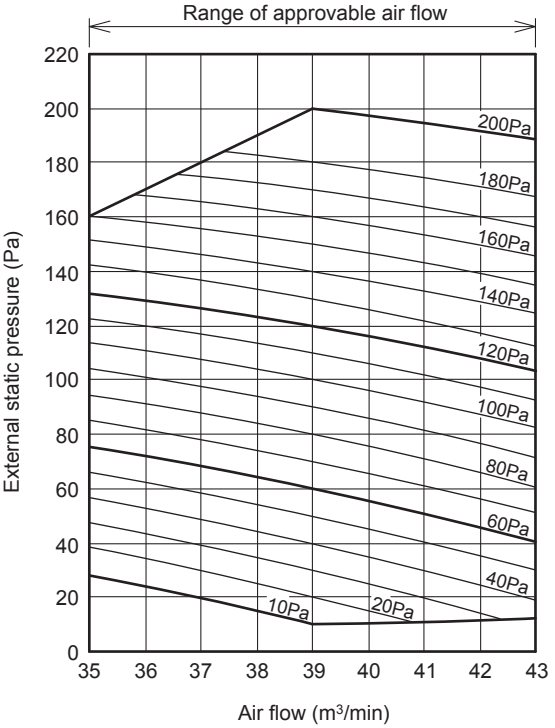


■SW8-4 : ON (Range of use limitation : Setting 10Pa-200Pa)

Characteristic FAN (1)



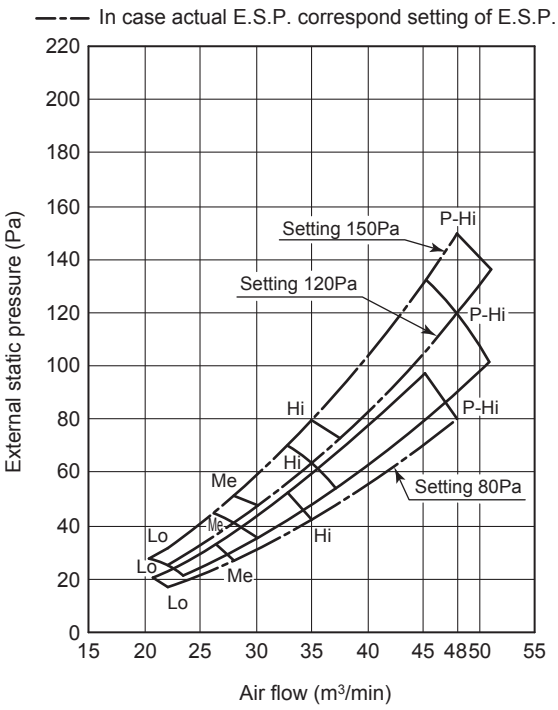
Characteristic FAN (2)



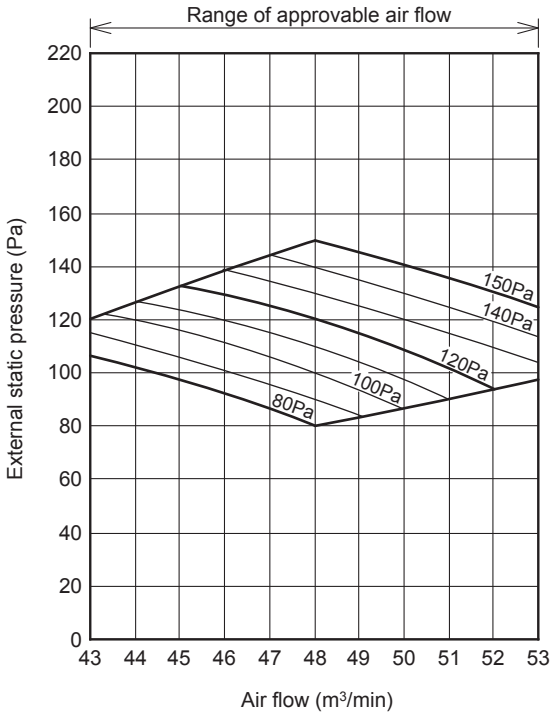
Model FDU140VF

■SW8-4 : OFF (Range of use limitation : Setting 80Pa-150Pa)

Characteristic FAN (1)

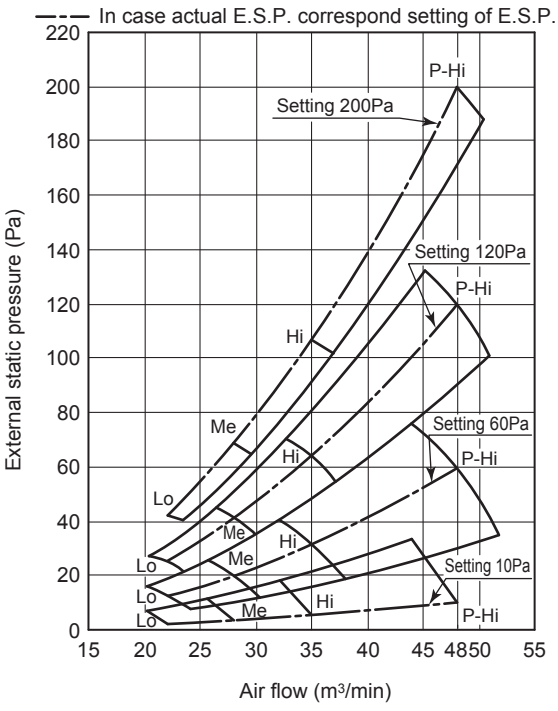


Characteristic FAN (2)

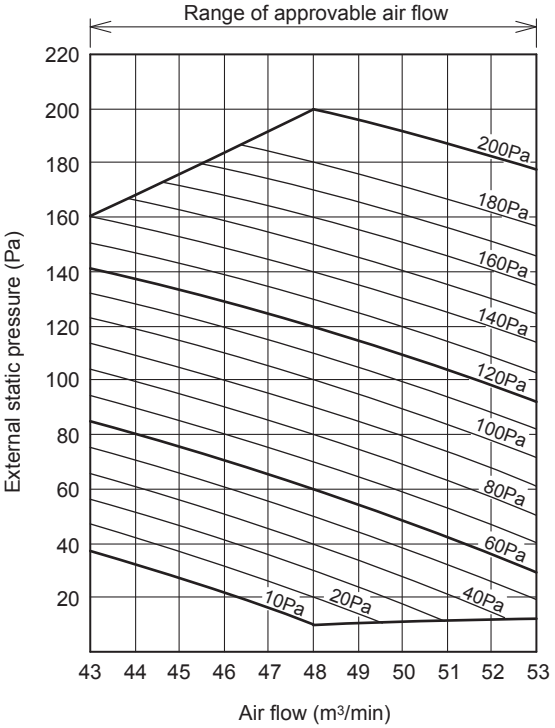


■SW8-4 : ON (Range of use limitation : Setting 10Pa-200Pa)

Characteristic FAN (1)



Characteristic FAN (2)

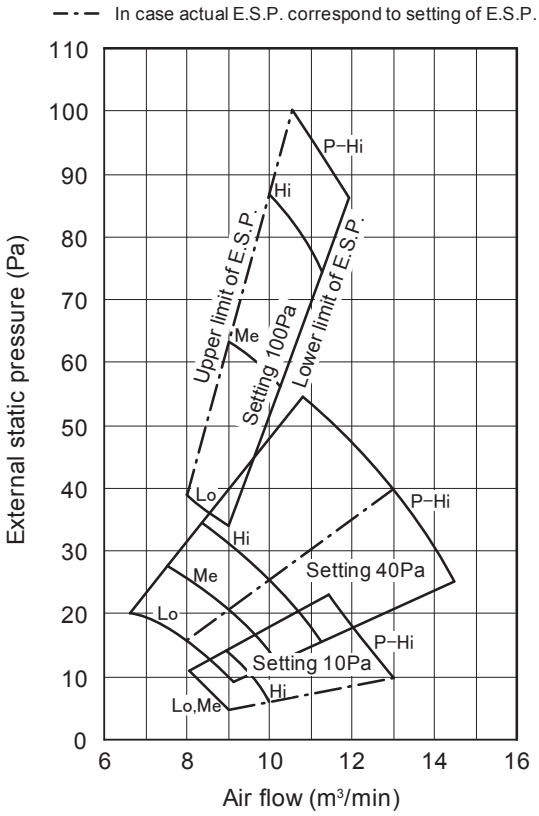


(2) Duct connected-Low / Middle static pressure type (FDUM)

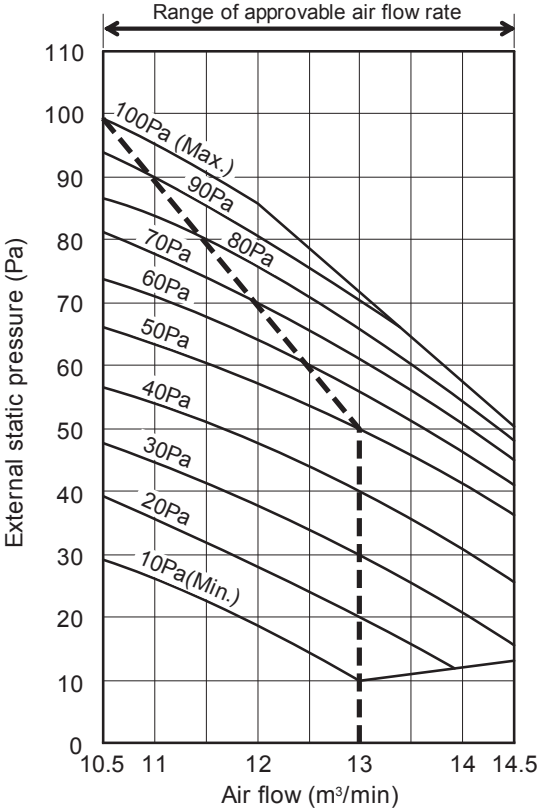
- Characteristic FAN (1) shows air flow vs. External Static Pressure (E.S.P.) range where settings of E.S.P. are maximum E.S.P. (100Pa) , rated E.S.P., and minimum E.S.P. (10Pa)
- Characteristic FAN (2) shows air flow vs E.S.P. curve when set fan tap is set P-Hi with each setting of E.S.P by remote control.
- External Static Pressure (E.S.P.) can be set by wired remote control.
- You can set required E.S.P. by wired remote control which calculate it with the set air flow rate and pressure loss of the duct connected.

Model FDUM50VF

Characteristic FAN(1)

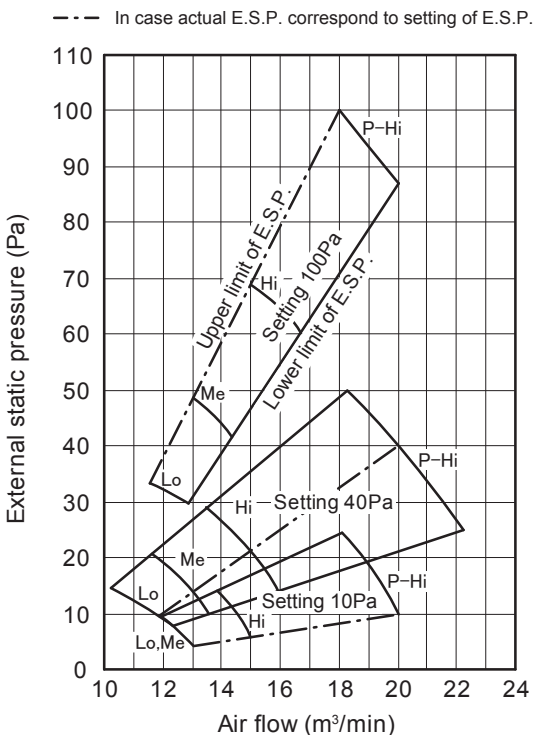


Characteristic FAN(2)

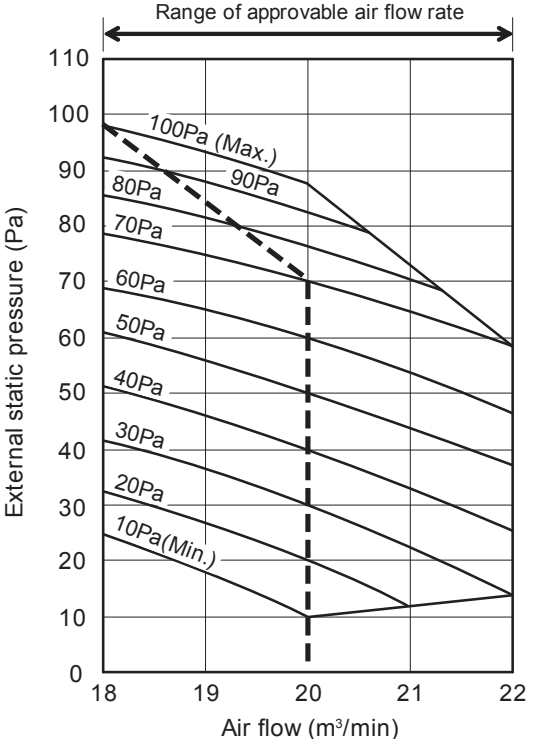


Model FDUM60VF

Characteristic FAN(1)

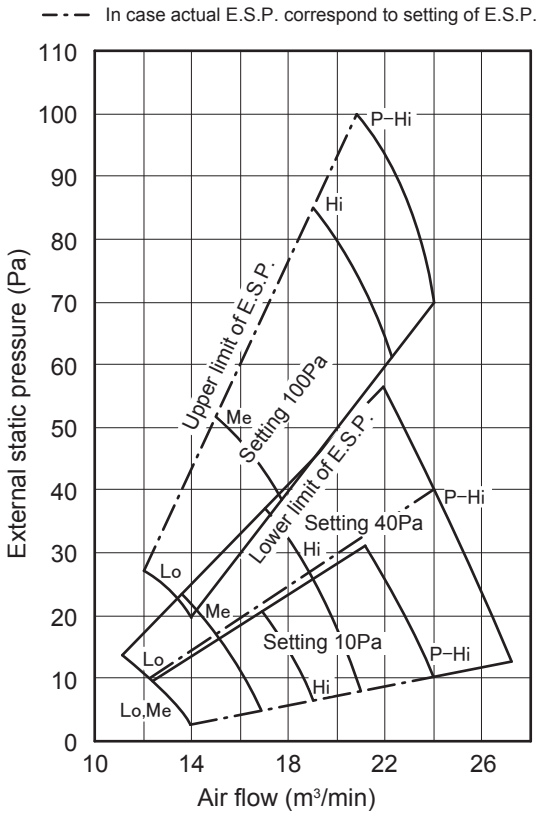


Characteristic FAN(2)

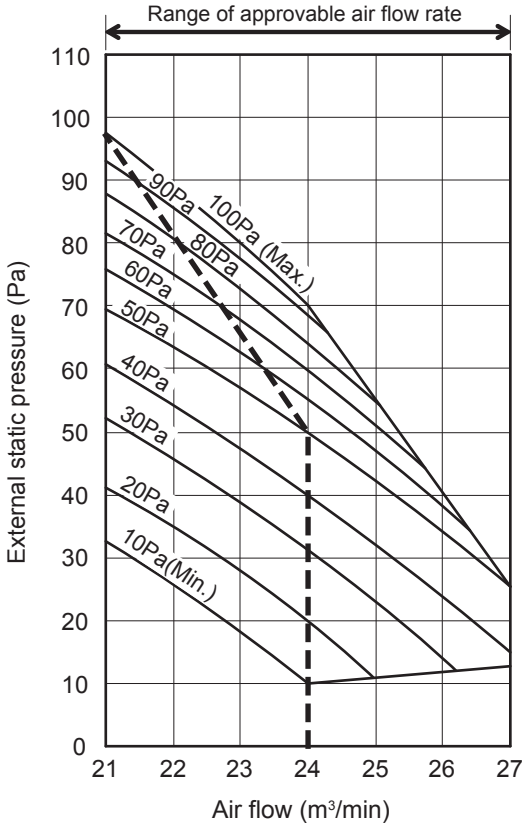


Model FDUM71VF1

Characteristic FAN(1)

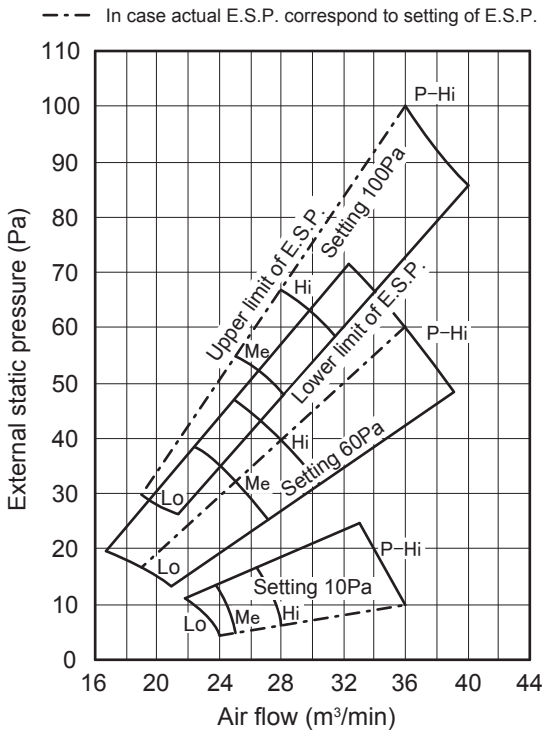


Characteristic FAN(2)

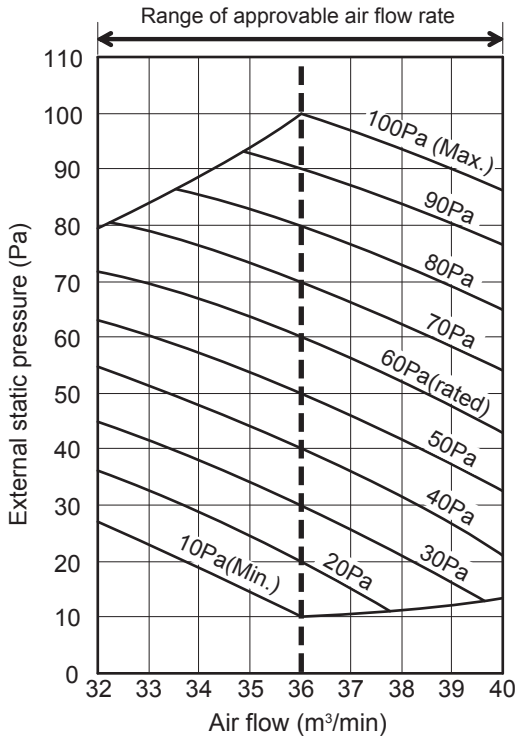


Model FDUM100VF2

Characteristic FAN(1)

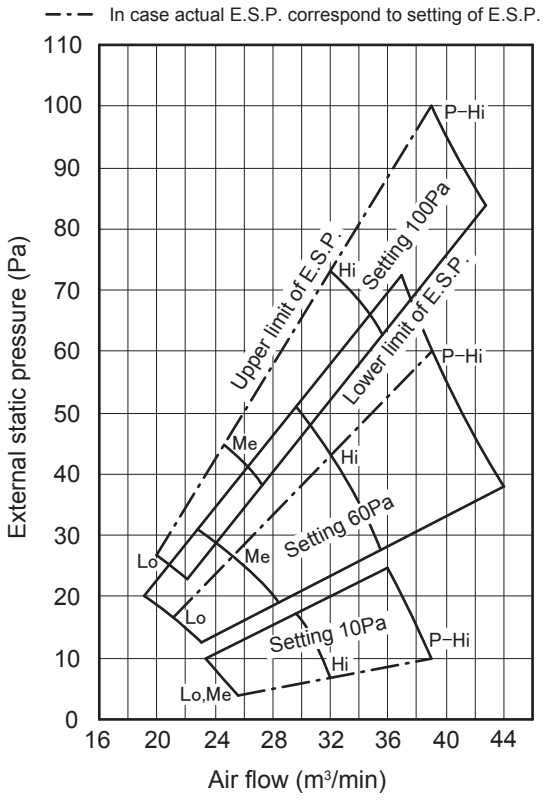


Characteristic FAN(2)

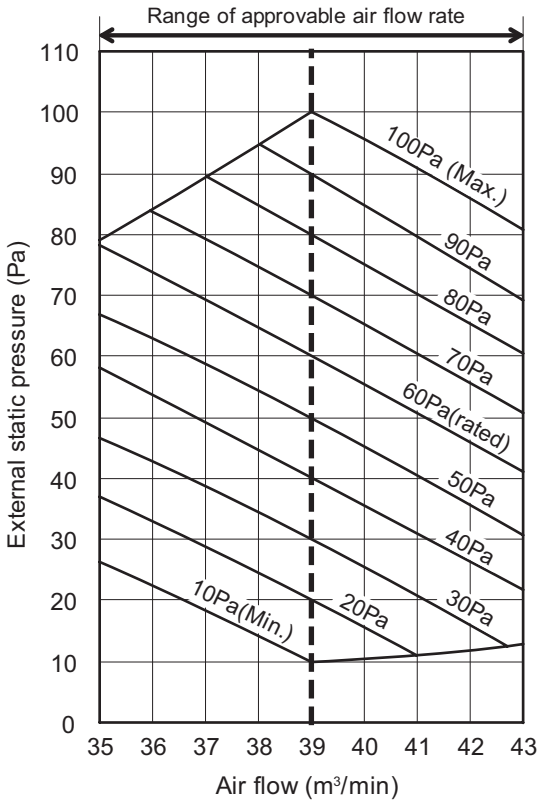


Model FDUM125VF

Characteristic FAN(1)

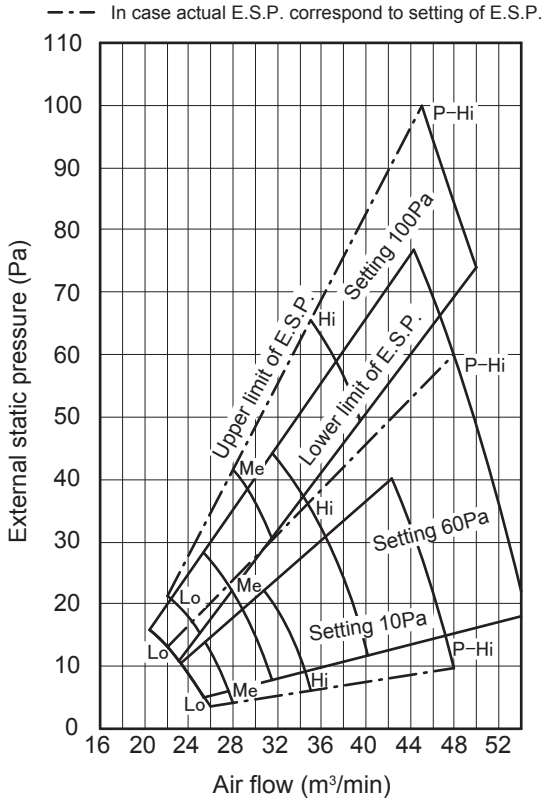


Characteristic FAN(2)

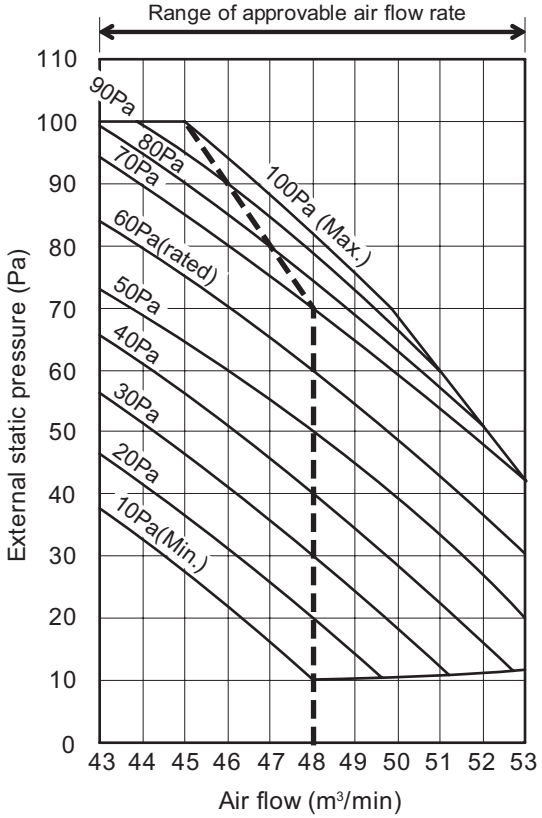


Model FDUM140VF

Characteristic FAN(1)



Characteristic FAN(2)



1.6 TEMPERATURE AND VELOCITY DISTRIBUTION

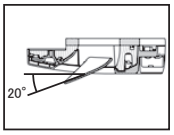
Indoor temperature
Cooling 27°CDB / 19°CWB
Heating 20°CDB
Note: These figures represent the typical main range of temperature and velocity distribution at the center of air outlet within the published conditions.
In the actual installation, they may differ from the typical figures under the influence of air temperature conditions, ceiling height, operation conditions and obstacles.

(1) Ceiling cassette-4 way type (FDT)

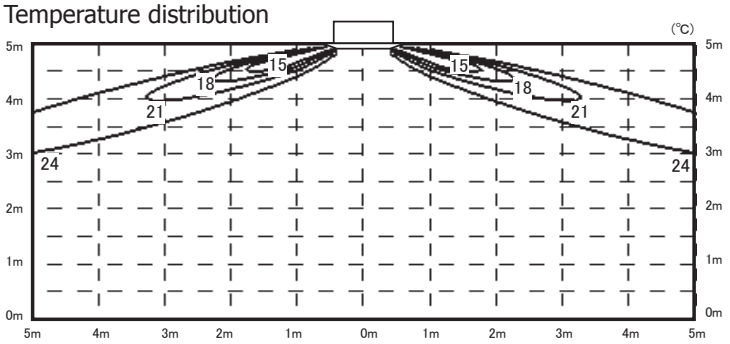
Model FDT50VG

Cooling Air flow: P-Hi

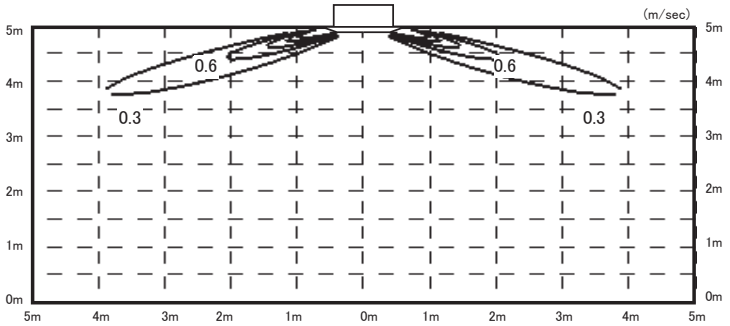
Louver position



Temperature distribution

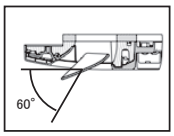


Velocity distribution

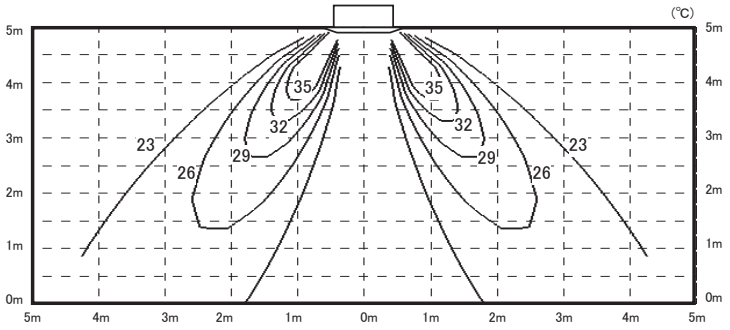


Heating Air flow: P-Hi

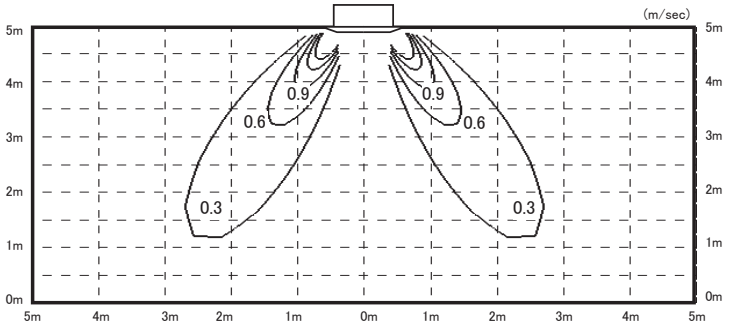
Louver position



Temperature distribution



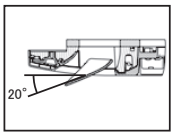
Velocity distribution



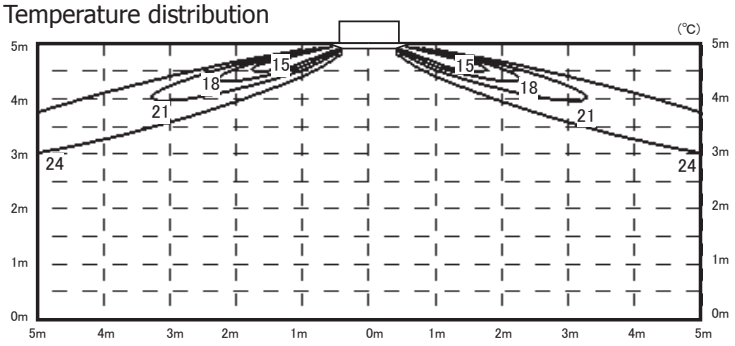
Models FDT60VG, 71VG

Cooling Air flow: P-Hi

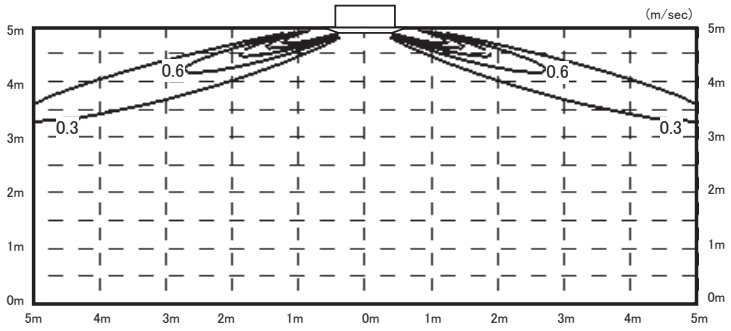
Louver position



Temperature distribution

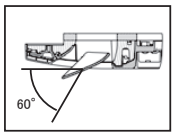


Velocity distribution

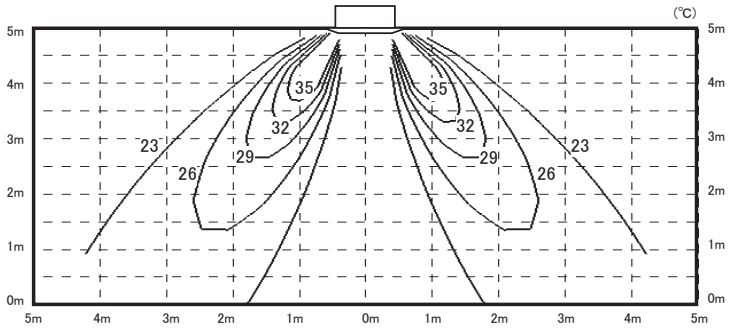


Heating Air flow: P-Hi

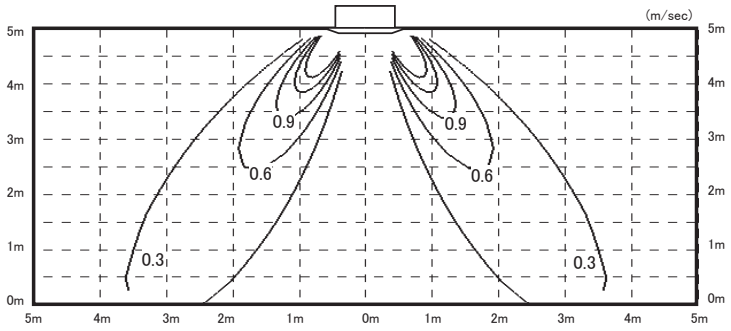
Louver position



Temperature distribution



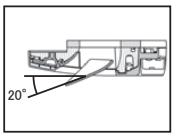
Velocity distribution



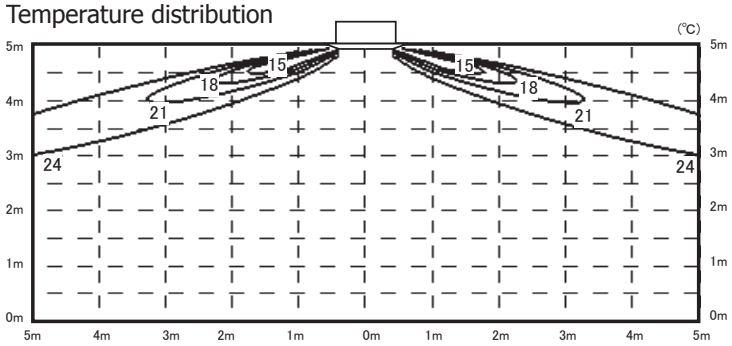
Models FDT100VG, 125VG, 140VG

Cooling Air flow: P-Hi

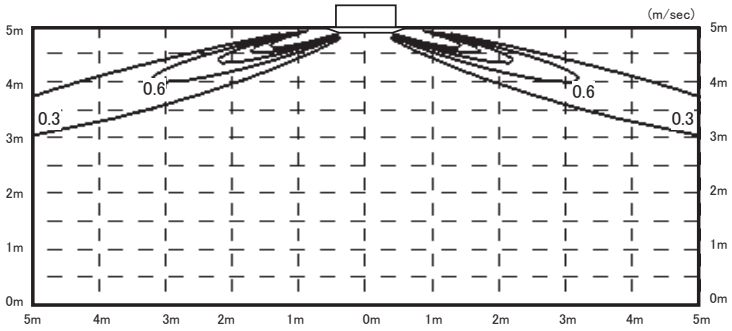
Louver position



Temperature distribution

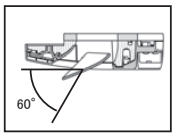


Velocity distribution

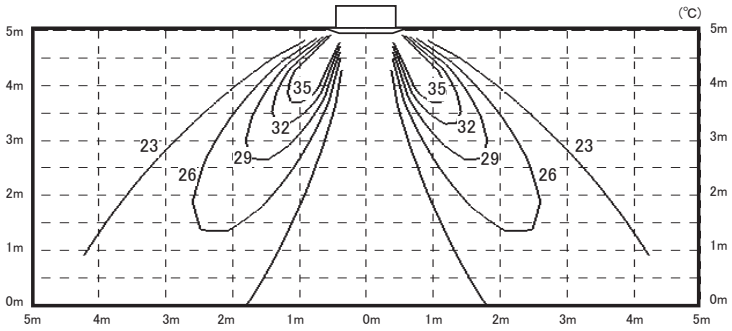


Heating Air flow: P-Hi

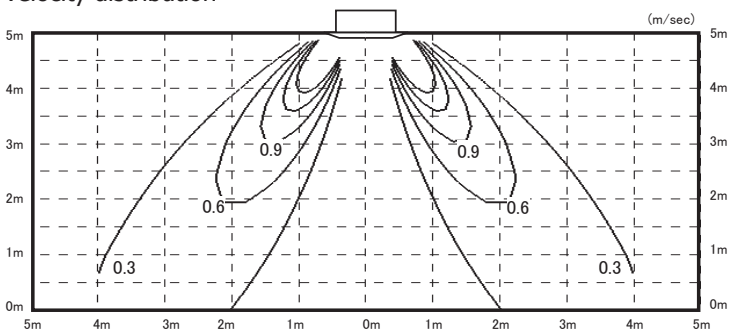
Louver position



Temperature distribution



Velocity distribution

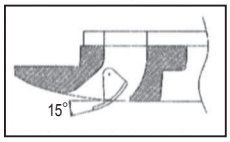


(2) Ceiling cassett-4 way compact type (FDTC)

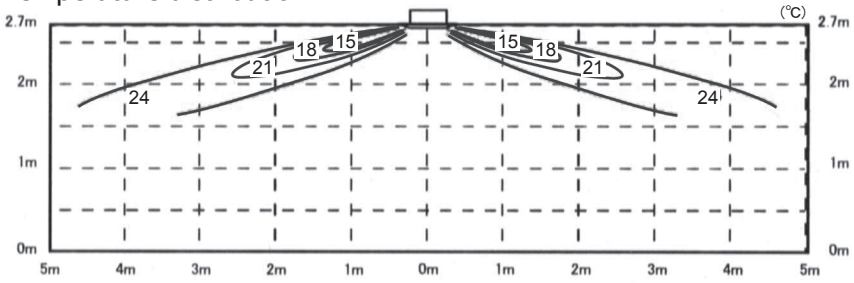
Models FDTC50VF, 60VF

Cooling Air flow: P-Hi

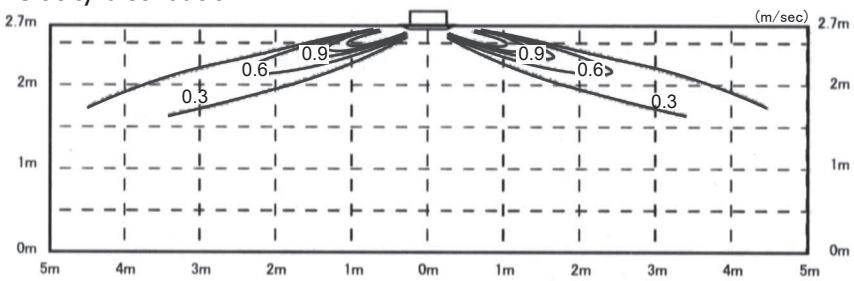
Louver position



Temperature distribution

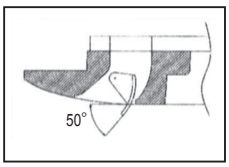


Velocity distribution

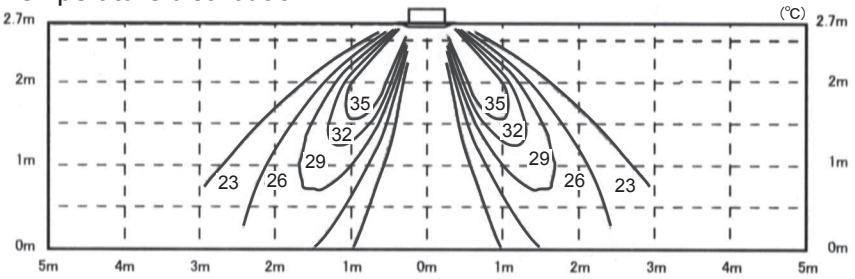


Heating Air flow: P-Hi

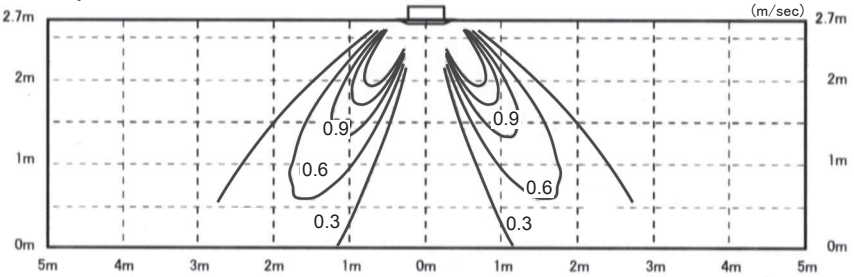
Louver position



Temperature distribution



Velocity distribution

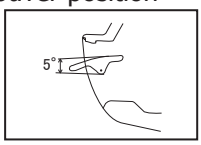


ISD09407

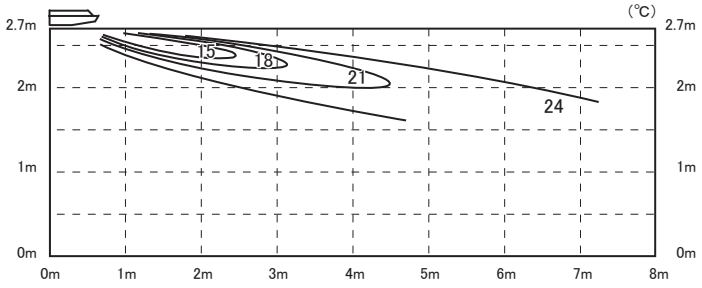
(3) Ceiling suspended type (FDE)
Model FDE50VG

Cooling Air flow: P-Hi

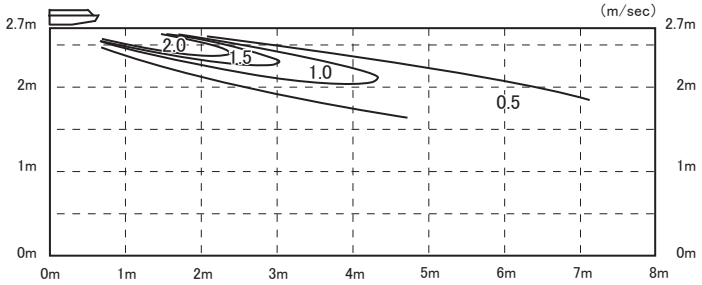
Louver position



Temperature distribution

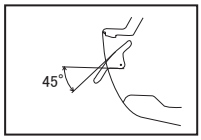


Velocity distribution

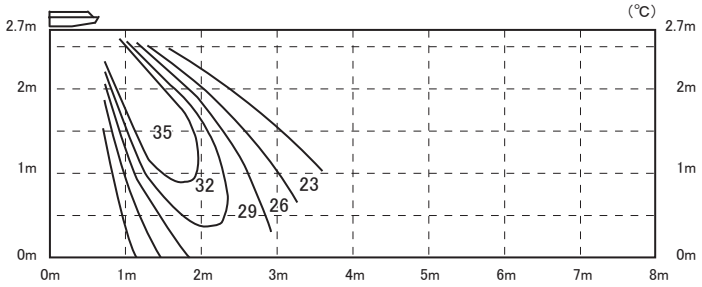


Heating Air flow: P-Hi

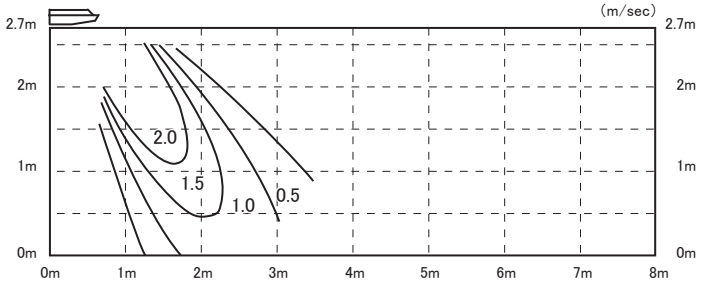
Louver position



Temperature distribution



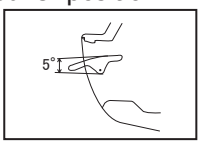
Velocity distribution



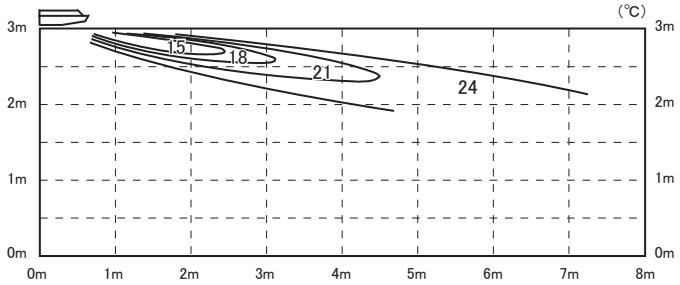
Models FDE60, 71VG

Cooling Air flow: P-Hi

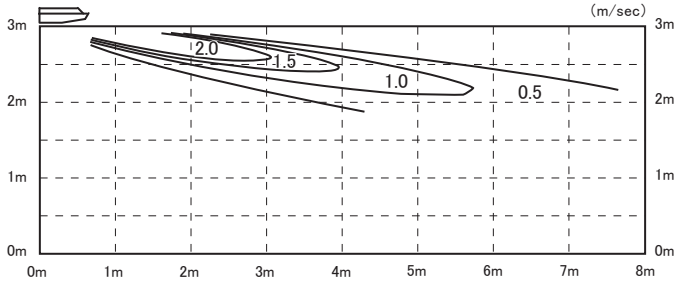
Louver position



Temperature distribution

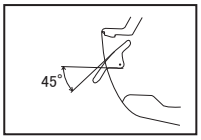


Velocity distribution

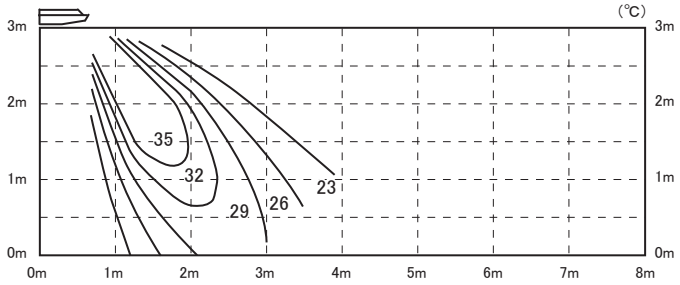


Heating Air flow: P-Hi

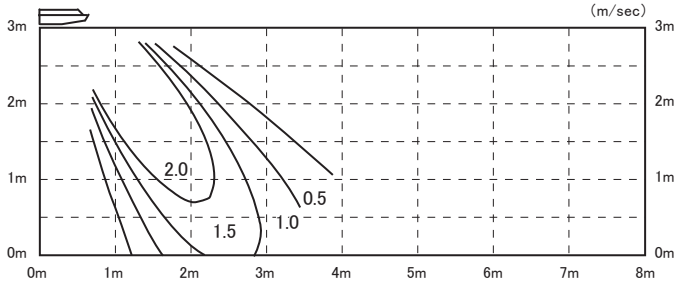
Louver position



Temperature distribution



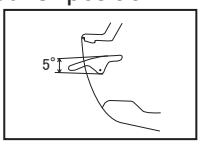
Velocity distribution



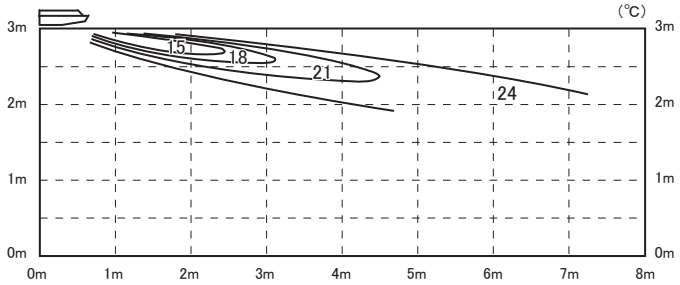
Models FDE100, 125VG

Cooling Air flow: P-Hi

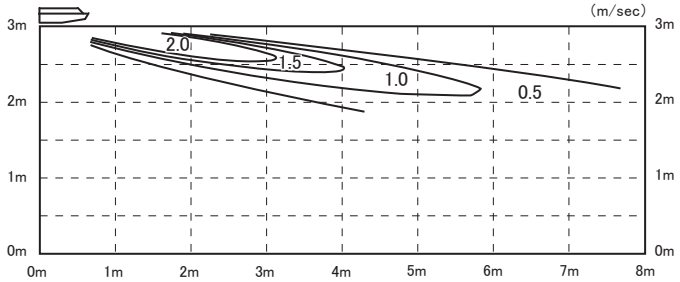
Louver position



Temperature distribution

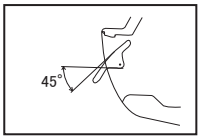


Velocity distribution

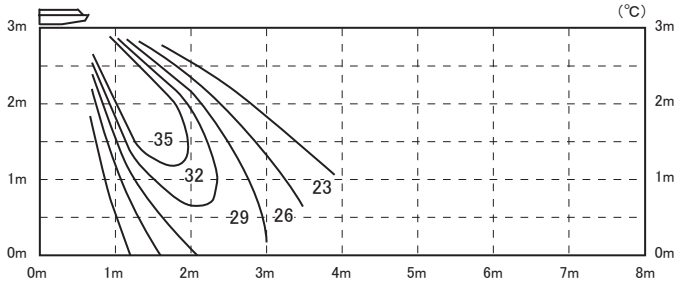


Heating Air flow: P-Hi

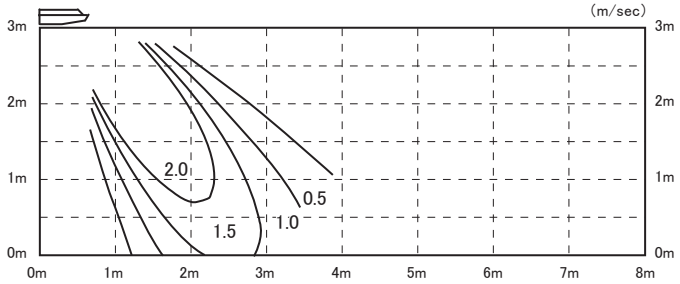
Louver position



Temperature distribution



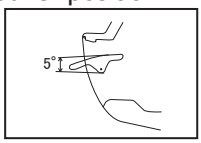
Velocity distribution



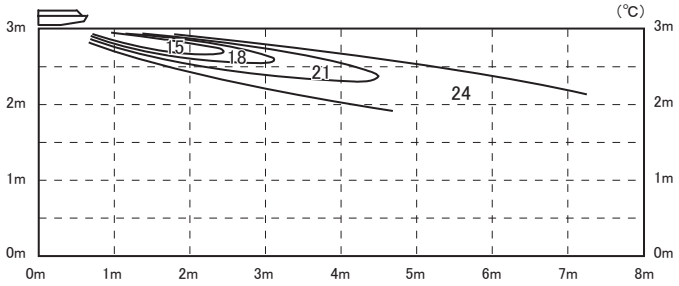
Model FDE140VG

Cooling Air flow: P-Hi

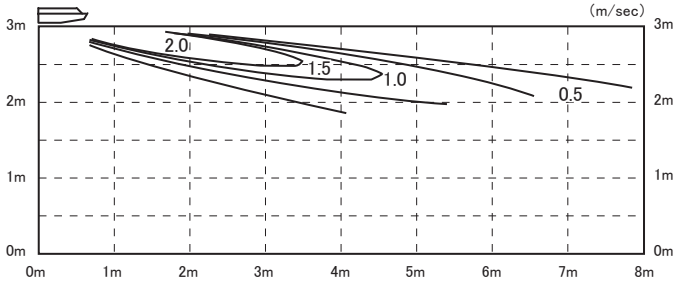
Louver position



Temperature distribution

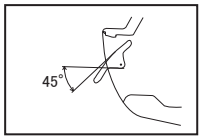


Velocity distribution

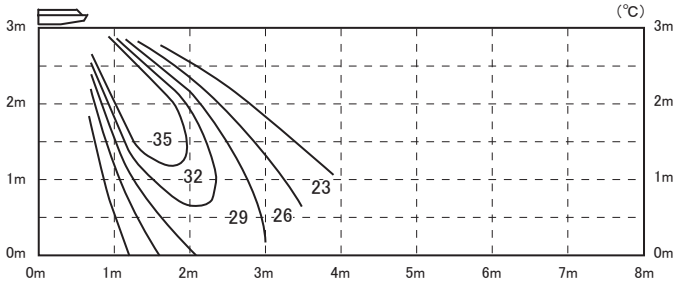


Heating Air flow: P-Hi

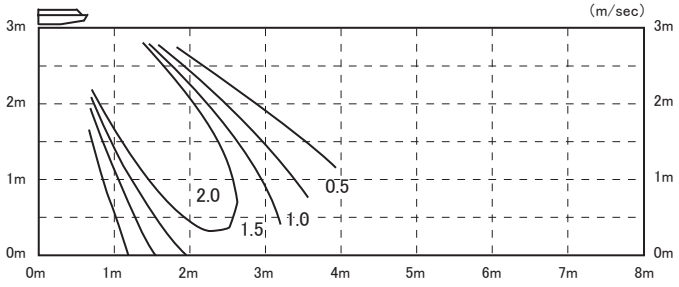
Louver position



Temperature distribution



Velocity distribution

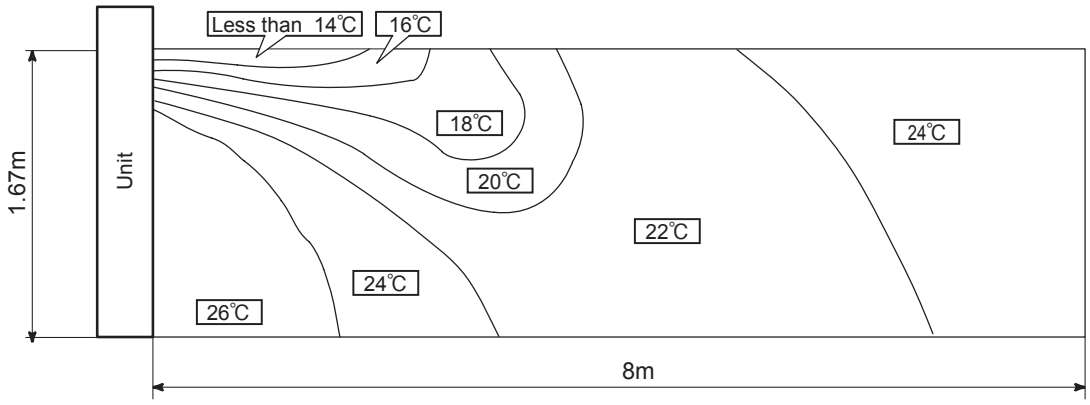


(4) Floor standing type (FDF)

Models FDF71VD1, 100VD2, 125VD, 140VD

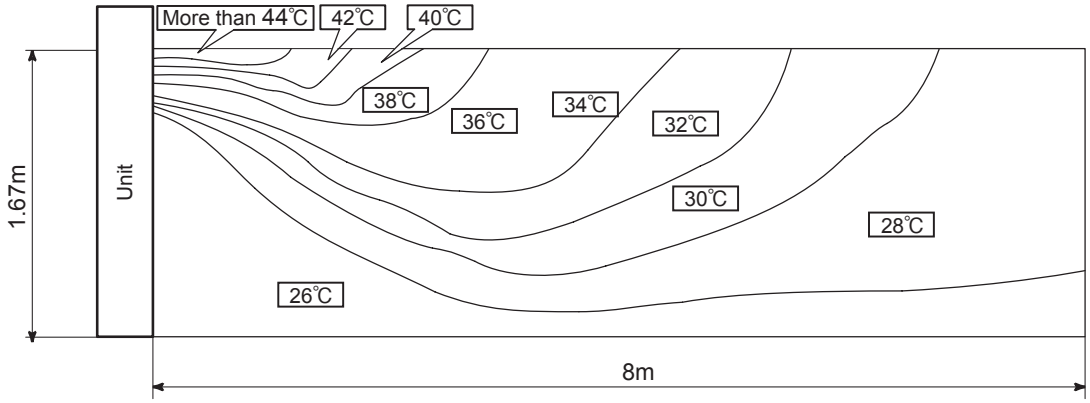
Cooling Air flow:Hi (Louver position:Horizontal)

Temperature distribution



Heating Air flow:Hi (Louver position:Horizontal)

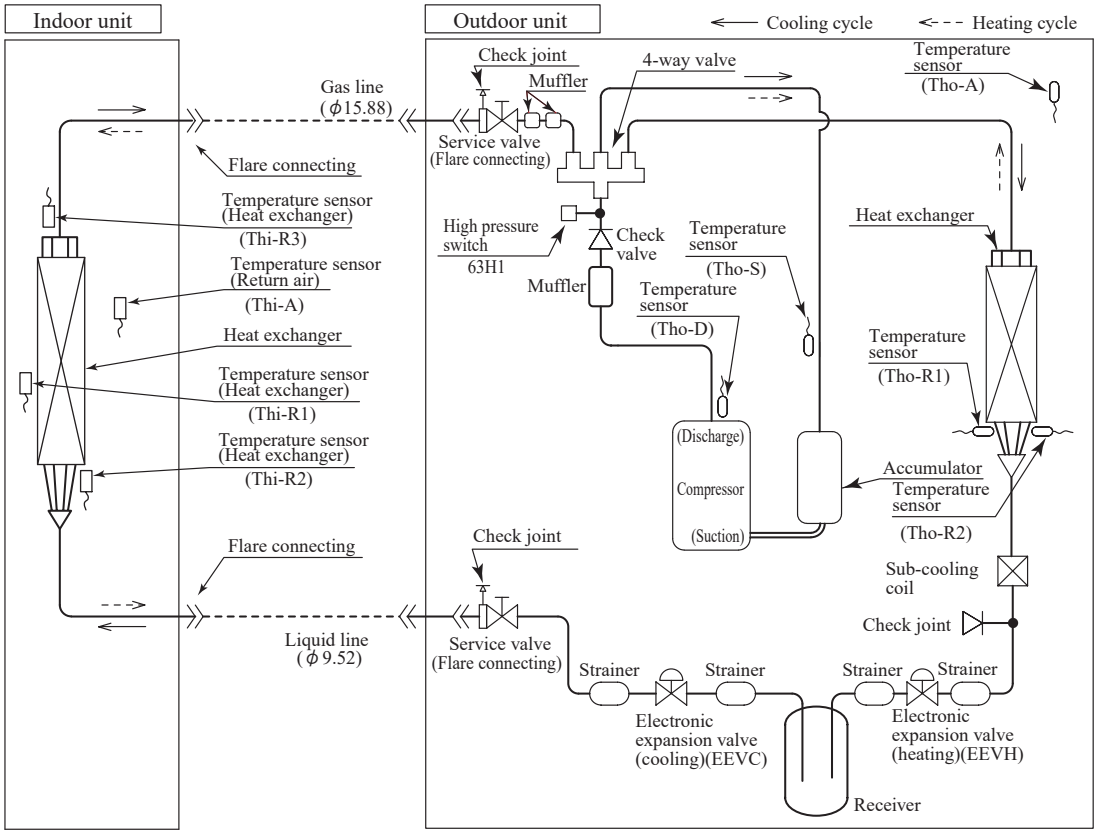
Temperature distribution



1.7 PIPING SYSTEM

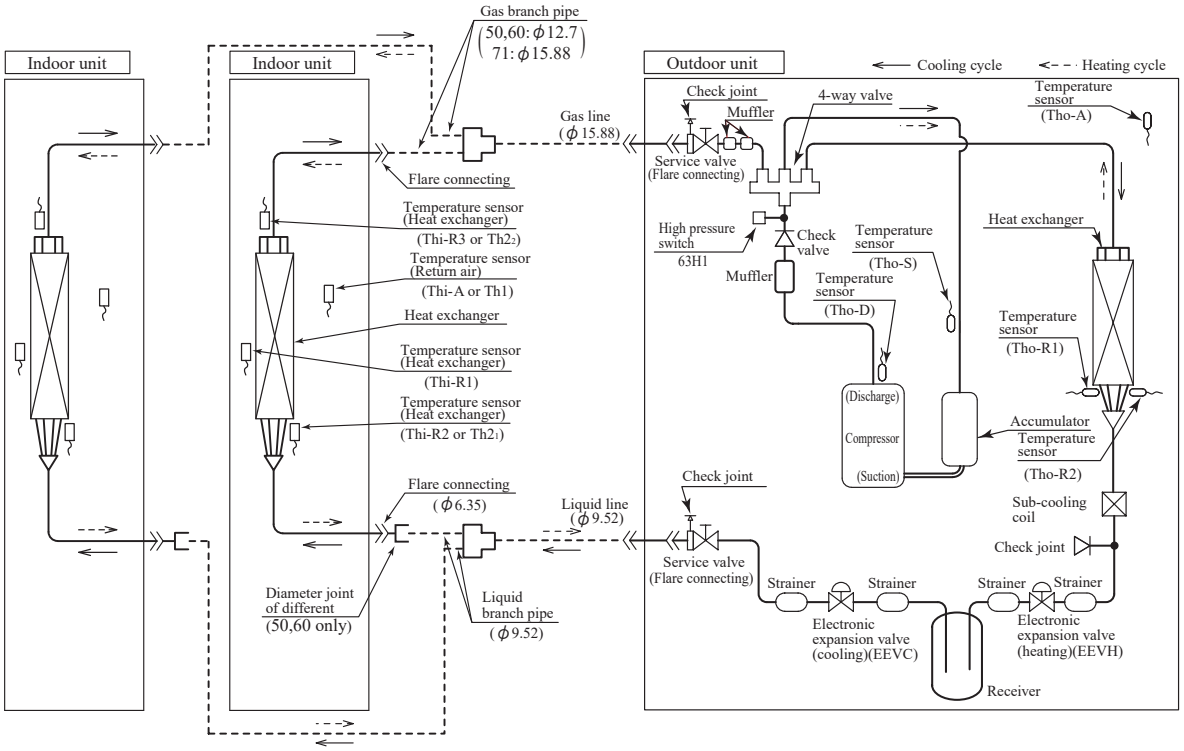
(1) Single type

Models 100, 125, 140



(2) Twin type

Models 100, 125, 140



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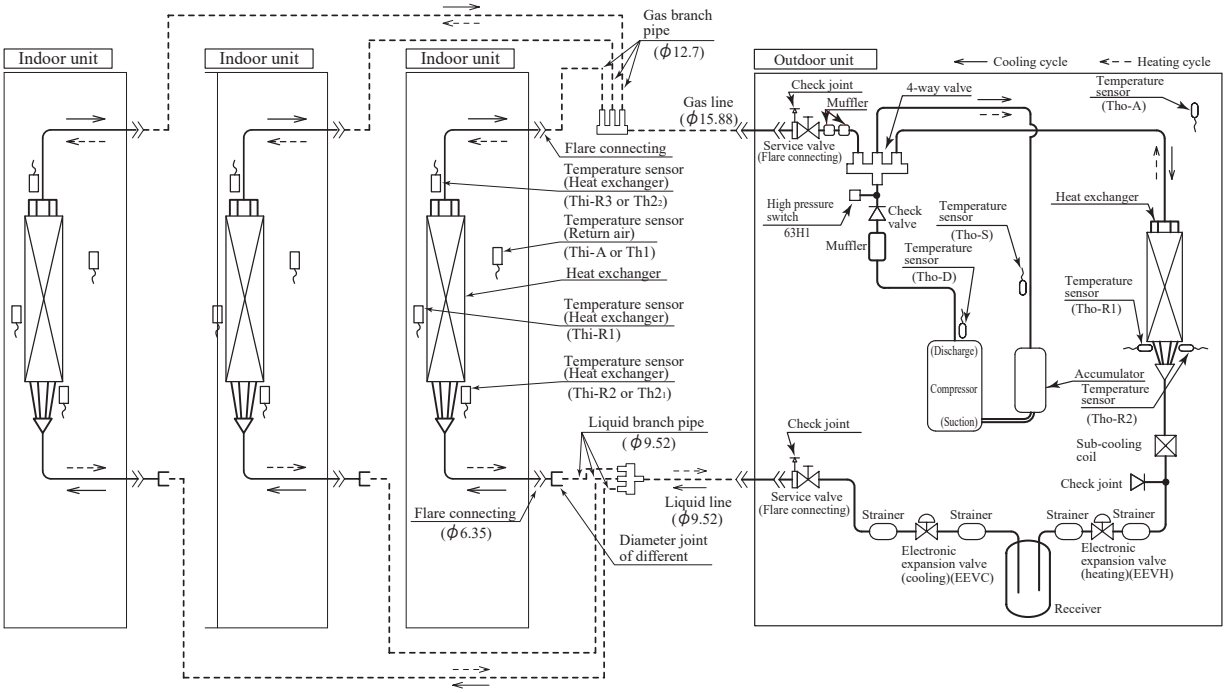
(3) Triple type

Model 140



Preset point of the protective devices

Parts name	Mark	Equipped unit	100, 125, 140 model
Thermistor (for protection over-loading in heating)	**Thi-R (TH1)**	Indoor unit	OFF 63˚C (OFF 16˚C) ON 56˚C (ON 17˚C)
Thermistor (for frost prevention)	**Thi-R (TH1)**		OFF 63˚C (OFF 8˚C) ON 56˚C (ON 2.5˚C)
Thermistor (for protection high pressure in cooling.)	**Tho-R**	Outdoor unit	OFF 51˚C ON 65˚C
Thermistor (for detecting dis-charge pipe temp.)	**Tho-D**	Outdoor unit	OFF 115˚C ON 85˚C
High pressure switch (for protection)	**63H1**	Outdoor unit	OFF 4.15MPa ON 3.15MPa

Note (1) Values in ( ) are for the SRK models.

#

1.8 RANGE OF USAGE & LIMITATIONS

Operating temperature range		See next page. When used below -5˚C, install a snow hood (option).
Recommendable area to install		Considering to get sufficient heating capacity, the area where the averaged lowest ambient air temperature in day time during winter is above 0˚C, and it has no accumulation of snow.
Installation site		The limitations of installation space are shown in the page for exterior dimensions. Install the indoor unit at least 2.5m higher than the floor surface.
Temperature and humidity conditions surrounding the indoor unit in the ceiling (Note 2)		Model FDE Dew point temperature : 23˚C or less, relative hummdity : 80% or less Other models Dew point temperature : 28˚C or less, relative hummdity : 80% or less
Limitations on unit and piping installation		See pages 132 and 133
Compressor ON-OFF cycling	Cycle Time	7 minutes or more (from OFF to OFF) or (from ON to ON)
	Stop Time	3 minutes or more
Power source	Voltage range	Rating ±10%
	Voltage drop at start-up	Min.85% of rating
	Phase-to-phase imbalance	3% or less

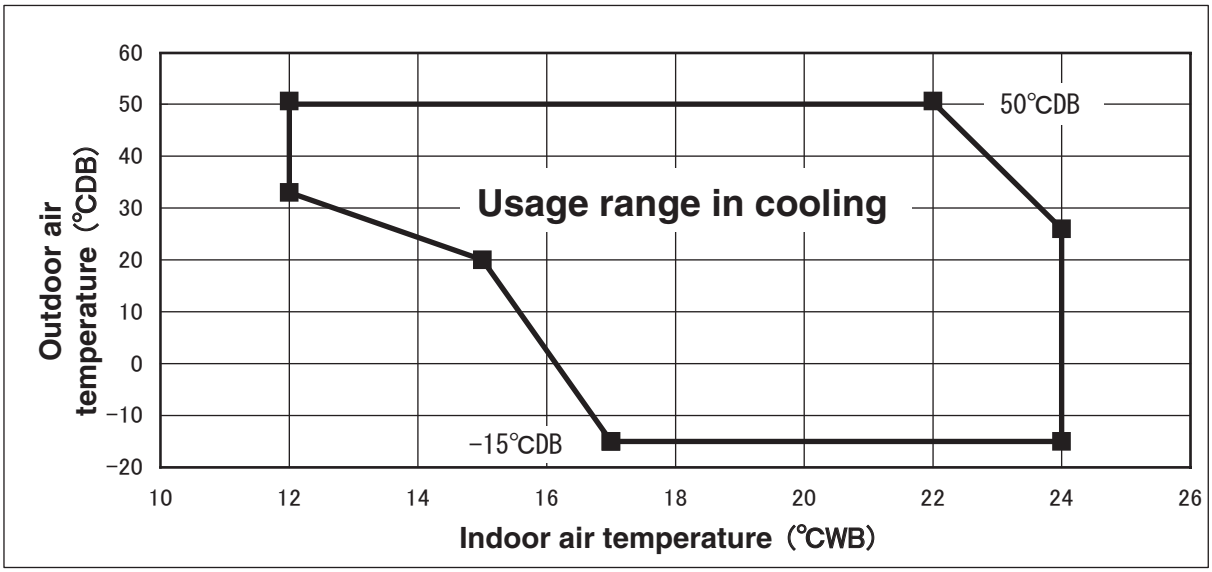
Note 1. Do not install the unit in places which :
1) Flammable gas may leak.
2) Carbon fiber, metal particles, powder, etc. are floating.
3) Cosmetic or special sprays are used frequently.
4) Exposed to oil splashes or steam (e.g. kitchen and machine plant).
5) Exposed to sea breeze (e.g. coastal area) or calcium chloride (e.g. snow melting agent).
6) Exposed to ammonia substance (e.g. organic fertilizer).
7) Matters affecting devices, such as sulfuric gas, chlorine gas, acid, alkali, etc. may generate or accumulate.
8) Chimney smoke is hanging.
9) Sucking the exhaust gas from heat exchanger.
10) Adjacent to equipment generating electromagnetic waves or high frequency waves.
11) There is light beams that affect the receiving device of indoor unit in case of the wireless specification.
12) Snow falls heavily.
13) At an elevation of 1000 meters or higher.
14) On mobile machine (e.g. vehicle, ship, etc.)
15) Splashed with water to indoor unit (e.g. laundry room).
16) Indoor units of twin and triple specifications separately in a room with partition.

Note 2. If ambient temperature and humidity exceed the above conditions, add polyurethane foam insulation (10mm or thicker) on the outer plate of indoor unit.

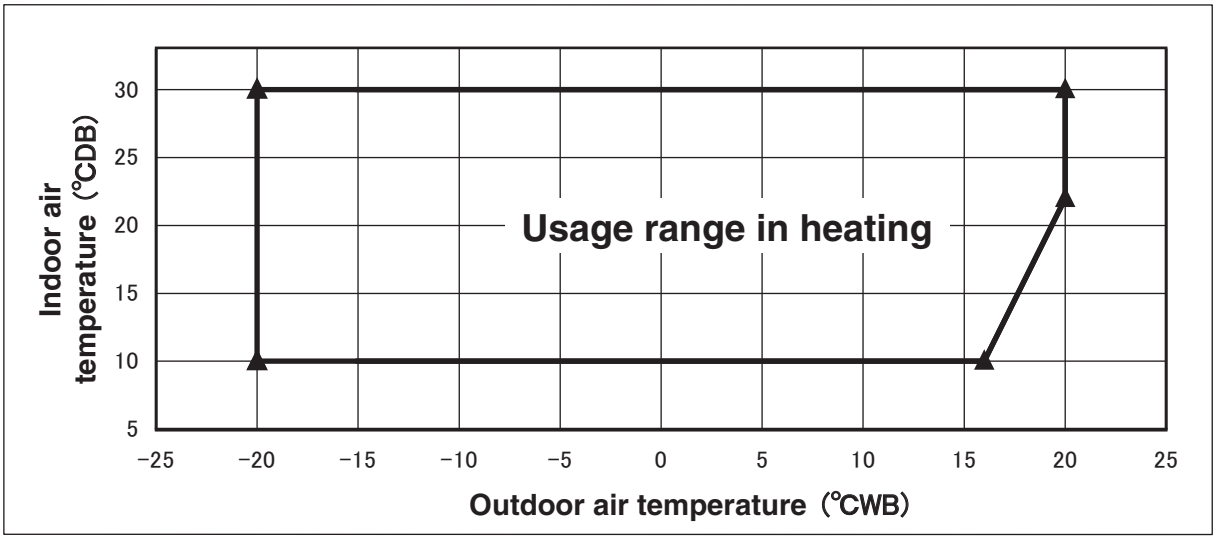
Note 3. Both gas and liquid pipes need to be coverd with 20mm or thicker heat insulation materials at the place where humidity exceeds 70%.

Operating temperature range

■ **Cooling**



■ **Heating**



Decline in cooling and heating capacity or operation stop may occur when the outdoor unit is installed in places where natural wind can increase or decrease its design air flow rate.

PCA001Z831 ⚠a

"CAUTION" Cooling operation under low outdoor air temperature conditions

PAC models can be operated in cooling mode at low outdoor air temperature condition within above temperature range. However in case of severely low temperature conditions if the following precaution is not observed, it may not be operated in spite of operable temperature range mentioned above and cooling capacity may not be established under certain conditions.

[Precaution]

In case of severely low temperature condition

1) Install the outdoor unit at the place where strong wind cannot blow directly into the outdoor unit.
2) If there is no installation place where can prevent strong wind from directly blowing into the outdoor unit, mount the flex flow adapter (prepared as option part) or like such devices onto the outdoor unit in order to divert the strong wind.

[Reason]

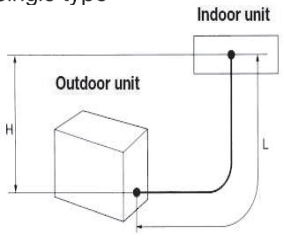
Under the low outdoor air temperature conditions of -5°C or lower, the outdoor fan is controlled at lower or lowest speed by outdoor fan control, but if strong wind directly blow into the outdoor unit, the outdoor heat exchanger temperature will drop more.

This makes high and low pressures to drop as well. This low pressure drop makes the indoor heat exchanger temperature to drop and will activate anti-frost control at indoor heat exchanger at frequent intervals, that cooling operation may not be established for any given time.

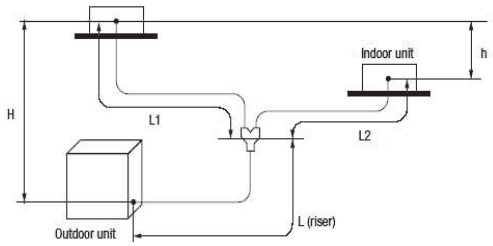
Limitation on unit and piping installation - single,twin.

Descriptions	Model for outdoor units		Dimensional limitations	Marks appearing in the drawing	
				Single type	Twin type
One-way pipe length	100V・125V・140V		≦ 50m	L	L＋L1+L2
Main pipe length	100V・125V・140V		≦ 50m		L
One-way pipe length after the first branching point	100V・125V・140V		≦ 30m		L1, L2
Difference of pipe length after the first branching point			≦ 10m		L1-L2 L2-L1
Total pipe length after the second branching point			≦ 15m		
Elevation difference between indoor and outdoor units	When the outdoor unit is positioned higher	100V・125V・140V	≦ 30m (≦50m) ＊	H	H
	When the outdoor unit is positioned lower	100V・125V・140V	≦ 15m		
Elevation difference among indoor units			≦ 0.5m		h

Single type



Twin type



Twin type

Model for outdoor units	Branch piping set(option)
100V・125V・140V	DIS-WA1G

Notes

(1) A riser pipe must be part of the main.
A branching pipe set should be installed horizontally at a point as close to an indoor unit as possible.

(2) Reduce refrigerant amount by according to table below from factory charge when refrigerant piping is shorter than 3m.

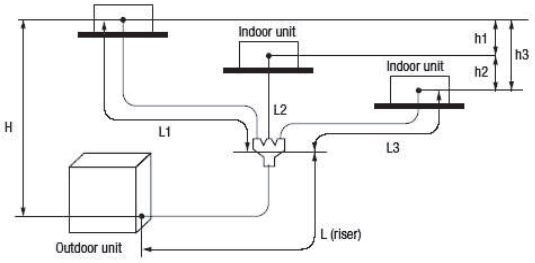
Model for outdoor units	refrigerant to be reduced
100V・125V・140V	-1.0kg

(3) In case of the outdoor unit is positioned higher, dimensional limitation change from 30m to 50m by changing SW5-2 of outdoor unit control PCB to ON.(＊ mark)

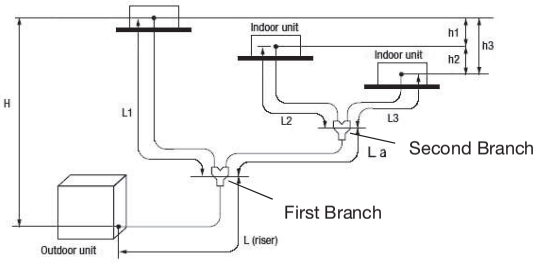
Limitation on unit and piping installation - triple.

Triple type (in case of 140V)	One-way pipe length difference from the first branching point to the indoor unit		Marks appearing in the drawing	
			＜ 3m	≧ 3m
Descriptions	Model for outdoor units	Dimensional limitations	Triple type A	Triple type B
One-way pipe length	140V	≦ 50m	L＋L1＋L2＋L3	L＋La＋L1＋L2＋L3 ※1
Main pipe length	140V	≦ 50m	L	L
Piping length between the first branching point and the second branching point		≦ 5m		La
One-way pipe length between the first branching point and indoor units		≦ 30m	L1, L2, L3	L1 ※1
One-way pipe length from the first branching point to indoor units through the second branching point		≦ 27m		La＋L2 , La＋L3 ※1
Piping length difference from the first branching point to indoor unit		＜ 3m	L1－L2, L1－L3, L2－L3	
		3m ≦ , ≦ 10m		L1－（La＋L2）, L1－（La＋L3） ※1
One-way pipe length difference from the second branching point to indoor unit		≦ 10m		L2－L3, L3－L2
Elevation difference between indoor and outdoor units	When the outdoor unit is positioned higher	≦ 30m (≦ 50m) ＊	H	H
	When the outdoor unit is positioned lower	≦ 15m		
Elevation difference among indoor units		≦ 0.5m	h1, h2, h3	h1, h2, h3

Triple type A



Triple type B



※1 Install the indoor units so that L＋L1 becomes the longest one-way pipe. Keep the pipe length difference between L1 and (La＋L2) or (La＋L3) within 10m.

Triple type

Model for outdoor units	Branch piping set(option)		
	Type A	Type B	
	Branch pipe	First Branch	Second Branch
140V	DIS-TA1G	DIS-WA1G	DIS-WA1G

Notes
(1) A riser pipe must be part of the main.
A branching pipe set should be installed horizontally at a point as close to an indoor unit as possible.
(2) Reduce refrigerant amount by 1.0kg from the factory charge when refrigerant piping is shorter than 3m.
(3) In case of the outdoor unit is positioned higher, dimensional limitation change from 30m to 50m by changing SW5-2 of outdoor unit control PCB to ON. (＊ mark)

1.9 SELECTION CHART

Correct the cooling and heating capacity in accordance with the operating conditions. The net cooling and heating capacity can be obtained in the following way.

Net capacity = Capacity shown in the capacity tables (1.9.1) × Correction factors shown in the table (1.9.2) (1.9.3) (1.9.4).

Caution: In case that the cooling operation during low outdoor air temperature below -5℃ is expected, install the outdoor unit where it is not influenced by natural wind. Otherwise protection control by low pressure will be activated much more frequently and it will cause insufficient capacity or breakdown of the compressor in worst case.

1.9.1 Capacity tables

(1) Ceiling cassette-4 way type (FDT)

(a) Single type

Model FDT100VNAVG Indoor unit FDT100VG Outdoor unit FDC100VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB 12 ℃CWB		21 ℃CDB 14 ℃CWB		23 ℃CDB 16 ℃CWB		26 ℃CDB 18 ℃CWB		27 ℃CDB 19 ℃CWB		28 ℃CDB 20 ℃CWB		31 ℃CDB 22 ℃CWB		33 ℃CDB 24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	7.73	8.59	8.42	8.82	8.38	9.07	8.30	9.56	8.84	10.06	8.65
13					8.50	7.87	9.00	8.59	9.26	8.51	9.52	8.43	10.06	8.97	10.60	8.78
15					8.88	8.01	9.42	8.73	9.69	8.65	9.98	8.57	10.56	9.11	11.14	8.91
17					9.26	8.15	9.84	8.87	10.12	8.79	10.43	8.71	11.05	9.24	11.67	9.04
19					9.46	8.22	10.05	8.94	10.34	8.86	10.65	8.77	11.29	9.31	11.92	9.10
21					9.65	8.29	10.25	9.01	10.56	8.93	10.88	8.84	11.52	9.37	12.16	9.16
23					9.65	8.29	10.28	9.02	10.59	8.94	10.91	8.85	11.56	9.38	12.21	9.17
25			8.93	8.50	9.64	8.29	10.31	9.03	10.62	8.95	10.95	8.87	11.61	9.40	12.27	9.19
27			8.86	8.47	9.64	8.29	10.34	9.04	10.65	8.96	10.96	8.87	11.57	9.39		
29			8.80	8.45	9.50	8.23	10.17	8.98	10.49	8.91	10.81	8.82	11.45	9.35		
31			8.73	8.42	9.35	8.18	9.99	8.92	10.32	8.85	10.66	8.78	11.32	9.32		
33	8.22	7.79	8.58	8.36	9.21	8.13	9.82	8.87	10.16	8.80	10.51	8.73	11.19	9.28		
35	8.05	7.72	8.44	8.27	9.06	8.07	9.64	8.81	10.00	8.75	10.36	8.68	11.07	9.25		
37	7.92	7.66	8.30	8.13	8.91	8.02	9.46	8.75	9.79	8.68	10.13	8.61	10.80	9.17		
39	7.78	7.60	8.16	8.00	8.75	7.96	9.28	8.69	9.59	8.62	9.90	8.55	10.53	9.10		
41	7.64	7.49	8.02	7.86	8.60	7.90	9.09	8.62	9.38	8.55	9.68	8.48	10.26	9.03		
43	7.50	7.35	7.88	7.72	8.45	7.85	8.91	8.56	9.18	8.49	9.45	8.41	9.99	8.96		
46	7.33	7.18	7.67	7.52	8.22	7.77	8.58	8.41	8.83	8.38	9.07	8.30	9.57	8.84		
50	7.09	6.95	7.39	7.24	7.91	7.66	8.19	8.03	8.35	8.18	8.51	8.14	8.83	8.65		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

PJF000Z451 A

Model FDT100VSAVG Indoor unit FDT100VG Outdoor unit FDC100VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB 12 ℃CWB		21 ℃CDB 14 ℃CWB		23 ℃CDB 16 ℃CWB		26 ℃CDB 18 ℃CWB		27 ℃CDB 19 ℃CWB		28 ℃CDB 20 ℃CWB		31 ℃CDB 22 ℃CWB		33 ℃CDB 24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	7.73	8.59	8.42	8.82	8.38	9.07	8.30	9.56	8.84	10.06	8.65
13					8.50	7.87	9.00	8.59	9.26	8.51	9.52	8.43	10.06	8.97	10.60	8.78
15					8.88	8.01	9.42	8.73	9.69	8.65	9.98	8.57	10.56	9.11	11.14	8.91
17					9.26	8.15	9.84	8.87	10.12	8.79	10.43	8.71	11.05	9.24	11.67	9.04
19					9.46	8.22	10.05	8.94	10.34	8.86	10.65	8.77	11.29	9.31	11.92	9.10
21					9.65	8.29	10.25	9.01	10.56	8.93	10.88	8.84	11.52	9.37	12.16	9.16
23					9.65	8.29	10.28	9.02	10.59	8.94	10.91	8.85	11.56	9.38	12.21	9.17
25			8.93	8.50	9.64	8.29	10.31	9.03	10.62	8.95	10.95	8.87	11.61	9.40	12.27	9.19
27			8.86	8.47	9.64	8.29	10.34	9.04	10.65	8.96	10.96	8.87	11.57	9.39		
29			8.80	8.45	9.50	8.23	10.17	8.98	10.49	8.91	10.81	8.82	11.45	9.35		
31			8.73	8.42	9.35	8.18	9.99	8.92	10.32	8.85	10.66	8.78	11.32	9.32		
33	8.22	7.79	8.58	8.36	9.21	8.13	9.82	8.87	10.16	8.80	10.51	8.73	11.19	9.28		
35	8.05	7.72	8.44	8.27	9.06	8.07	9.64	8.81	10.00	8.75	10.36	8.68	11.07	9.25		
37	7.92	7.66	8.30	8.13	8.91	8.02	9.46	8.75	9.79	8.68	10.13	8.61	10.80	9.17		
39	7.78	7.60	8.16	8.00	8.75	7.96	9.28	8.69	9.59	8.62	9.90	8.55	10.53	9.10		
41	7.64	7.49	8.02	7.86	8.60	7.90	9.09	8.62	9.38	8.55	9.68	8.48	10.26	9.03		
43	7.50	7.35	7.88	7.72	8.45	7.85	8.91	8.56	9.18	8.49	9.45	8.41	9.99	8.96		
46	7.33	7.18	7.67	7.52	8.22	7.77	8.58	8.41	8.83	8.38	9.07	8.30	9.57	8.84		
50	7.09	6.95	7.39	7.24	7.91	7.66	8.19	8.03	8.35	8.18	8.51	8.14	8.83	8.65		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDT125VNAVG Indoor unit FDT125VG Outdoor unit FDC125VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	8.75	10.74	9.49	11.03	9.41	11.34	9.32	11.96	9.86	12.57	9.65
13					10.63	8.94	11.26	9.68	11.57	9.59	11.91	9.51	12.58	10.05	13.25	9.83
15					11.10	9.13	11.78	9.87	12.11	9.78	12.47	9.69	13.20	10.23	13.92	10.01
17					11.58	9.32	12.29	10.06	12.65	9.97	13.04	9.88	13.82	10.42	14.59	10.20
19					11.82	9.42	12.56	10.16	12.92	10.06	13.32	9.98	14.11	10.51	14.90	10.29
21					12.06	9.51	12.82	10.25	13.19	10.16	13.60	10.07	14.40	10.60	15.20	10.37
23					12.06	9.51	12.85	10.26	13.23	10.17	13.64	10.09	14.45	10.62	15.27	10.39
25			11.16	9.71	12.06	9.51	12.89	10.28	13.27	10.19	13.68	10.10	14.51	10.64	15.34	10.41
27			11.08	9.68	12.05	9.51	12.92	10.29	13.31	10.20	13.69	10.10	14.47	10.62		
29			11.00	9.64	11.87	9.44	12.71	10.21	13.11	10.13	13.51	10.04	14.31	10.57		
31			10.92	9.61	11.69	9.36	12.49	10.13	12.90	10.06	13.32	9.98	14.15	10.52		
33	10.27	8.95	10.72	9.52	11.51	9.29	12.27	10.05	12.70	9.99	13.13	9.91	13.99	10.48		
35	10.07	8.86	10.55	9.45	11.33	9.22	12.06	9.97	12.50	9.91	12.94	9.85	13.83	10.43		
37	9.90	8.78	10.38	9.37	11.13	9.14	11.83	9.89	12.24	9.82	12.66	9.75	13.50	10.33		
39	9.72	8.70	10.20	9.29	10.94	9.06	11.60	9.80	11.99	9.74	12.38	9.66	13.16	10.22		
41	9.55	8.62	10.02	9.22	10.75	8.99	11.37	9.72	11.73	9.65	12.09	9.56	12.82	10.12		
43	9.38	8.54	9.85	9.15	10.56	8.91	11.14	9.64	11.47	9.56	11.81	9.47	12.48	10.02		
46	9.21	8.46	9.53	9.01	10.28	8.80	10.88	9.54	11.12	9.44	11.28	9.30	11.96	9.86		
50	7.43	7.28	7.63	7.48	8.25	8.03	8.67	8.50	8.78	8.60	8.80	8.52	9.05	8.87		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature				
		℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Model FDT125VSAVG Indoor unit FDT125VG Outdoor unit FDC125VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	8.75	10.74	9.49	11.03	9.41	11.34	9.32	11.96	9.86	12.57	9.65
13					10.63	8.94	11.26	9.68	11.57	9.59	11.91	9.51	12.58	10.05	13.25	9.83
15					11.10	9.13	11.78	9.87	12.11	9.78	12.47	9.69	13.20	10.23	13.92	10.01
17					11.58	9.32	12.29	10.06	12.65	9.97	13.04	9.88	13.82	10.42	14.59	10.20
19					11.82	9.42	12.56	10.16	12.92	10.06	13.32	9.98	14.11	10.51	14.90	10.29
21					12.06	9.51	12.82	10.25	13.19	10.16	13.60	10.07	14.40	10.60	15.20	10.37
23					12.06	9.51	12.85	10.26	13.23	10.17	13.64	10.09	14.45	10.62	15.27	10.39
25			11.16	9.71	12.06	9.51	12.89	10.28	13.27	10.19	13.68	10.10	14.51	10.64	15.34	10.41
27			11.08	9.68	12.05	9.51	12.92	10.29	13.31	10.20	13.69	10.10	14.47	10.62		
29			11.00	9.64	11.87	9.44	12.71	10.21	13.11	10.13	13.51	10.04	14.31	10.57		
31			10.92	9.61	11.69	9.36	12.49	10.13	12.90	10.06	13.32	9.98	14.15	10.52		
33	10.27	8.95	10.72	9.52	11.51	9.29	12.27	10.05	12.70	9.99	13.13	9.91	13.99	10.48		
35	10.07	8.86	10.55	9.45	11.33	9.22	12.06	9.97	12.50	9.91	12.94	9.85	13.83	10.43		
37	9.90	8.78	10.38	9.37	11.13	9.14	11.83	9.89	12.24	9.82	12.66	9.75	13.50	10.33		
39	9.72	8.70	10.20	9.29	10.94	9.06	11.60	9.80	11.99	9.74	12.38	9.66	13.16	10.22		
41	9.55	8.62	10.02	9.22	10.75	8.99	11.37	9.72	11.73	9.65	12.09	9.56	12.82	10.12		
43	9.38	8.54	9.85	9.15	10.56	8.91	11.14	9.64	11.47	9.56	11.81	9.47	12.48	10.02		
46	9.21	8.46	9.53	9.01	10.28	8.80	10.88	9.54	11.12	9.44	11.28	9.30	11.96	9.86		
50	7.43	7.28	7.63	7.48	8.25	8.03	8.67	8.50	8.78	8.60	8.80	8.52	9.05	8.87		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature				
		℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDT140VNAVG Indoor unit FDT140VG Outdoor unit FDC140VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	9.13	11.68	9.86	12.00	9.77	12.34	9.68	13.01	10.21	13.68	9.99
13					11.56	9.34	12.25	10.07	12.59	9.98	12.95	9.89	13.69	10.42	14.42	10.20
15					12.07	9.55	12.81	10.29	13.18	10.19	13.57	10.10	14.36	10.63	15.14	10.40
17					12.59	9.76	13.38	10.50	13.77	10.40	14.19	10.32	15.04	10.85	15.87	10.61
19					12.86	9.87	13.66	10.61	14.07	10.51	14.49	10.42	15.35	10.95	16.20	10.70
21					13.12	9.98	13.95	10.72	14.36	10.62	14.79	10.53	15.66	11.05	16.53	10.80
23					13.12	9.98	13.99	10.73	14.40	10.64	14.84	10.55	15.73	11.07	16.61	10.82
25			12.14	10.17	13.11	9.98	14.02	10.75	14.44	10.65	14.89	10.56	15.79	11.09	16.69	10.85
27			12.06	10.14	13.11	9.98	14.06	10.76	14.48	10.67	14.90	10.57	15.74	11.07		
29			11.97	10.10	12.91	9.89	13.82	10.67	14.26	10.59	14.70	10.49	15.56	11.01		
31			11.88	10.06	12.72	9.81	13.59	10.58	14.04	10.50	14.49	10.42	15.40	10.96		
33	11.18	9.41	11.67	9.96	12.52	9.73	13.36	10.49	13.82	10.43	14.29	10.35	15.22	10.91		
35	10.96	9.30	11.48	9.88	12.32	9.65	13.11	10.40	13.60	10.34	14.09	10.28	15.05	10.85		
37	10.76	9.21	11.29	9.79	12.11	9.56	12.87	10.31	13.32	10.24	13.77	10.17	14.69	10.74		
39	10.58	9.12	11.10	9.71	11.91	9.48	12.62	10.21	13.05	10.14	13.46	10.06	14.32	10.62		
41	10.39	9.03	10.91	9.63	11.70	9.39	12.37	10.12	12.76	10.04	13.16	9.96	13.95	10.50		
43	10.21	8.95	10.71	9.54	11.49	9.31	12.11	10.02	12.48	9.94	12.85	9.85	13.58	10.39		
46	10.03	8.86	10.47	9.44	11.13	9.17	11.73	9.88	12.10	9.81	12.27	9.66	13.01	10.22		
50	7.61	7.45	7.88	7.72	8.35	8.09	8.75	8.58	8.97	8.75	8.98	8.60	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature				
		℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Model FDT140VSAVG Indoor unit FDT140VG Outdoor unit FDC140VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	9.13	11.68	9.86	12.00	9.77	12.34	9.68	13.01	10.21	13.68	9.99
13					11.56	9.34	12.25	10.07	12.59	9.98	12.95	9.89	13.69	10.42	14.42	10.20
15					12.07	9.55	12.81	10.29	13.18	10.19	13.57	10.10	14.36	10.63	15.14	10.40
17					12.59	9.76	13.38	10.50	13.77	10.40	14.19	10.32	15.04	10.85	15.87	10.61
19					12.86	9.87	13.66	10.61	14.07	10.51	14.49	10.42	15.35	10.95	16.20	10.70
21					13.12	9.98	13.95	10.72	14.36	10.62	14.79	10.53	15.66	11.05	16.53	10.80
23					13.12	9.98	13.99	10.73	14.40	10.64	14.84	10.55	15.73	11.07	16.61	10.82
25			12.14	10.17	13.11	9.98	14.02	10.75	14.44	10.65	14.89	10.56	15.79	11.09	16.69	10.85
27			12.06	10.14	13.11	9.98	14.06	10.76	14.48	10.67	14.90	10.57	15.74	11.07		
29			11.97	10.10	12.91	9.89	13.82	10.67	14.26	10.59	14.70	10.49	15.56	11.01		
31			11.88	10.06	12.72	9.81	13.59	10.58	14.04	10.50	14.49	10.42	15.40	10.96		
33	11.18	9.41	11.67	9.96	12.52	9.73	13.36	10.49	13.82	10.43	14.29	10.35	15.22	10.91		
35	10.96	9.30	11.48	9.88	12.32	9.65	13.11	10.40	13.60	10.34	14.09	10.28	15.05	10.85		
37	10.76	9.21	11.29	9.79	12.11	9.56	12.87	10.31	13.32	10.24	13.77	10.17	14.69	10.74		
39	10.58	9.12	11.10	9.71	11.91	9.48	12.62	10.21	13.05	10.14	13.46	10.06	14.32	10.62		
41	10.39	9.03	10.91	9.63	11.70	9.39	12.37	10.12	12.76	10.04	13.16	9.96	13.95	10.50		
43	10.21	8.95	10.71	9.54	11.49	9.31	12.11	10.02	12.48	9.94	12.85	9.85	13.58	10.39		
46	10.03	8.86	10.47	9.44	11.13	9.17	11.73	9.88	12.10	9.81	12.27	9.66	13.01	10.22		
50	7.61	7.45	7.88	7.72	8.35	8.09	8.75	8.58	8.97	8.75	8.98	8.60	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature				
		℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

(b) Twin type

Model FDT100VNAPVG Indoor unit FDT50VG (2 units) Outdoor unit FDC100VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	7.81	8.59	8.42	8.82	8.47	9.07	8.37	9.56	8.93	10.06	8.70
13					8.50	7.93	9.00	8.68	9.26	8.59	9.52	8.48	10.06	9.04	10.60	8.80
15					8.88	8.05	9.42	8.81	9.69	8.70	9.98	8.60	10.56	9.15	11.14	8.91
17					9.26	8.18	9.84	8.93	10.12	8.82	10.43	8.72	11.05	9.26	11.67	9.01
19					9.46	8.24	10.05	8.99	10.34	8.88	10.65	8.77	11.29	9.32	11.92	9.06
21					9.65	8.30	10.25	9.05	10.56	8.94	10.88	8.83	11.52	9.37	12.16	9.11
23					9.65	8.30	10.28	9.06	10.59	8.95	10.91	8.84	11.56	9.38	12.21	9.12
25			8.93	8.58	9.64	8.30	10.31	9.07	10.62	8.96	10.95	8.85	11.61	9.39	12.27	9.13
27			8.86	8.55	9.64	8.30	10.34	9.08	10.65	8.97	10.96	8.86	11.57	9.38		
29			8.80	8.53	9.50	8.25	10.17	9.03	10.49	8.92	10.81	8.82	11.45	9.35		
31			8.73	8.50	9.35	8.21	9.99	8.97	10.32	8.88	10.66	8.78	11.32	9.32		
33	8.22	7.85	8.58	8.41	9.21	8.16	9.82	8.92	10.16	8.83	10.51	8.74	11.19	9.29		
35	8.05	7.78	8.44	8.27	9.06	8.11	9.64	8.87	10.00	8.79	10.36	8.70	11.07	9.27		
37	7.92	7.73	8.30	8.13	8.91	8.06	9.46	8.82	9.79	8.73	10.13	8.64	10.80	9.20		
39	7.78	7.62	8.16	8.00	8.75	8.01	9.28	8.77	9.59	8.68	9.90	8.58	10.53	9.14		
41	7.64	7.49	8.02	7.86	8.60	7.96	9.09	8.71	9.38	8.62	9.68	8.52	10.26	9.08		
43	7.50	7.35	7.88	7.72	8.45	7.91	8.91	8.66	9.18	8.56	9.45	8.46	9.99	9.02		
46	7.33	7.18	7.67	7.52	8.22	7.84	8.58	8.41	8.83	8.47	9.07	8.37	9.57	8.93		
50	7.09	6.95	7.39	7.24	7.91	7.74	8.19	8.03	8.35	8.18	8.51	8.23	8.83	8.65		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃DB				
℃DB	℃CWB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Model FDT100VSAPVG Indoor unit FDT50VG (2 units) Outdoor unit FDC100VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	7.81	8.59	8.42	8.82	8.47	9.07	8.37	9.56	8.93	10.06	8.70
13					8.50	7.93	9.00	8.68	9.26	8.59	9.52	8.48	10.06	9.04	10.60	8.80
15					8.88	8.05	9.42	8.81	9.69	8.70	9.98	8.60	10.56	9.15	11.14	8.91
17					9.26	8.18	9.84	8.93	10.12	8.82	10.43	8.72	11.05	9.26	11.67	9.01
19					9.46	8.24	10.05	8.99	10.34	8.88	10.65	8.77	11.29	9.32	11.92	9.06
21					9.65	8.30	10.25	9.05	10.56	8.94	10.88	8.83	11.52	9.37	12.16	9.11
23					9.65	8.30	10.28	9.06	10.59	8.95	10.91	8.84	11.56	9.38	12.21	9.12
25			8.93	8.58	9.64	8.30	10.31	9.07	10.62	8.96	10.95	8.85	11.61	9.39	12.27	9.13
27			8.86	8.55	9.64	8.30	10.34	9.08	10.65	8.97	10.96	8.86	11.57	9.38		
29			8.80	8.53	9.50	8.25	10.17	9.03	10.49	8.92	10.81	8.82	11.45	9.35		
31			8.73	8.50	9.35	8.21	9.99	8.97	10.32	8.88	10.66	8.78	11.32	9.32		
33	8.22	7.85	8.58	8.41	9.21	8.16	9.82	8.92	10.16	8.83	10.51	8.74	11.19	9.29		
35	8.05	7.78	8.44	8.27	9.06	8.11	9.64	8.87	10.00	8.79	10.36	8.70	11.07	9.27		
37	7.92	7.73	8.30	8.13	8.91	8.06	9.46	8.82	9.79	8.73	10.13	8.64	10.80	9.20		
39	7.78	7.62	8.16	8.00	8.75	8.01	9.28	8.77	9.59	8.68	9.90	8.58	10.53	9.14		
41	7.64	7.49	8.02	7.86	8.60	7.96	9.09	8.71	9.38	8.62	9.68	8.52	10.26	9.08		
43	7.50	7.35	7.88	7.72	8.45	7.91	8.91	8.66	9.18	8.56	9.45	8.46	9.99	9.02		
46	7.33	7.18	7.67	7.52	8.22	7.84	8.58	8.41	8.83	8.47	9.07	8.37	9.57	8.93		
50	7.09	6.95	7.39	7.24	7.91	7.74	8.19	8.03	8.35	8.18	8.51	8.23	8.83	8.65		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃DB				
℃DB	℃CWB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDT125VNAPVG Indoor unit FDT60VG (2 units) Outdoor unit FDC125VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	9.95	10.74	10.53	11.03	10.81	11.34	11.04	11.96	11.72	12.57	11.54
13					10.63	10.40	11.26	11.03	11.57	11.30	11.91	11.19	12.58	11.95	13.25	11.68
15					11.10	10.56	11.78	11.54	12.11	11.46	12.47	11.34	13.20	12.10	13.92	11.82
17					11.58	10.73	12.29	11.74	12.65	11.62	13.04	11.50	13.82	12.25	14.59	11.97
19					11.82	10.81	12.56	11.82	12.92	11.70	13.32	11.58	14.11	12.33	14.90	12.04
21					12.06	10.89	12.82	11.90	13.19	11.78	13.60	11.66	14.40	12.40	15.20	12.10
23					12.06	10.89	12.85	11.91	13.23	11.79	13.64	11.67	14.45	12.41	15.27	12.12
25			11.16	10.94	12.06	10.89	12.89	11.92	13.27	11.80	13.68	11.68	14.51	12.43	15.34	12.13
27			11.08	10.86	12.05	10.89	12.92	11.93	13.31	11.81	13.69	11.68	14.47	12.42		
29			11.00	10.78	11.87	10.83	12.71	11.87	13.11	11.75	13.51	11.63	14.31	12.38		
31			10.92	10.70	11.69	10.76	12.49	11.80	12.90	11.69	13.32	11.58	14.15	12.34		
33	10.27	10.06	10.72	10.51	11.51	10.70	12.27	11.73	12.70	11.63	13.13	11.53	13.99	12.30		
35	10.07	9.87	10.55	10.34	11.33	10.64	12.06	11.66	12.50	11.57	12.94	11.47	13.83	12.26		
37	9.90	9.70	10.38	10.17	11.13	10.57	11.83	11.59	12.24	11.50	12.66	11.40	13.50	12.17		
39	9.72	9.53	10.20	10.00	10.94	10.51	11.60	11.37	11.99	11.42	12.38	11.32	13.16	12.09		
41	9.55	9.36	10.02	9.82	10.75	10.44	11.37	11.14	11.73	11.35	12.09	11.24	12.82	12.01		
43	9.38	9.19	9.85	9.65	10.56	10.35	11.14	10.92	11.47	11.24	11.81	11.16	12.48	11.93		
46	9.21	9.03	9.53	9.34	10.28	10.07	10.88	10.66	11.12	10.90	11.28	11.02	11.96	11.72		
50	7.43	7.28	7.63	7.48	8.25	8.09	8.67	8.50	8.78	8.60	8.80	8.62	9.05	8.87		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Model FDT125VSAPVG Indoor unit FDT60VG (2 units) Outdoor unit FDC125VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	9.95	10.74	10.53	11.03	10.81	11.34	11.04	11.96	11.72	12.57	11.54
13					10.63	10.40	11.26	11.03	11.57	11.30	11.91	11.19	12.58	11.95	13.25	11.68
15					11.10	10.56	11.78	11.54	12.11	11.46	12.47	11.34	13.20	12.10	13.92	11.82
17					11.58	10.73	12.29	11.74	12.65	11.62	13.04	11.50	13.82	12.25	14.59	11.97
19					11.82	10.81	12.56	11.82	12.92	11.70	13.32	11.58	14.11	12.33	14.90	12.04
21					12.06	10.89	12.82	11.90	13.19	11.78	13.60	11.66	14.40	12.40	15.20	12.10
23					12.06	10.89	12.85	11.91	13.23	11.79	13.64	11.67	14.45	12.41	15.27	12.12
25			11.16	10.94	12.06	10.89	12.89	11.92	13.27	11.80	13.68	11.68	14.51	12.43	15.34	12.13
27			11.08	10.86	12.05	10.89	12.92	11.93	13.31	11.81	13.69	11.68	14.47	12.42		
29			11.00	10.78	11.87	10.83	12.71	11.87	13.11	11.75	13.51	11.63	14.31	12.38		
31			10.92	10.70	11.69	10.76	12.49	11.80	12.90	11.69	13.32	11.58	14.15	12.34		
33	10.27	10.06	10.72	10.51	11.51	10.70	12.27	11.73	12.70	11.63	13.13	11.53	13.99	12.30		
35	10.07	9.87	10.55	10.34	11.33	10.64	12.06	11.66	12.50	11.57	12.94	11.47	13.83	12.26		
37	9.90	9.70	10.38	10.17	11.13	10.57	11.83	11.59	12.24	11.50	12.66	11.40	13.50	12.17		
39	9.72	9.53	10.20	10.00	10.94	10.51	11.60	11.37	11.99	11.42	12.38	11.32	13.16	12.09		
41	9.55	9.36	10.02	9.82	10.75	10.44	11.37	11.14	11.73	11.35	12.09	11.24	12.82	12.01		
43	9.38	9.19	9.85	9.65	10.56	10.35	11.14	10.92	11.47	11.24	11.81	11.16	12.48	11.93		
46	9.21	9.03	9.53	9.34	10.28	10.07	10.88	10.66	11.12	10.90	11.28	11.02	11.96	11.72		
50	7.43	7.28	7.63	7.48	8.25	8.09	8.67	8.50	8.78	8.60	8.80	8.62	9.05	8.87		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDT140VNAPVG Indoor unit FDT71VG (2 units) Outdoor unit FDC140VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	10.82	11.68	11.44	12.00	11.76	12.34	12.09	13.01	12.75	13.68	12.67
13					11.56	11.33	12.25	12.00	12.59	12.34	12.95	12.27	13.69	13.11	14.42	12.84
15					12.07	11.57	12.81	12.56	13.18	12.57	13.57	12.45	14.36	13.28	15.14	13.00
17					12.59	11.76	13.38	12.87	13.77	12.75	14.19	12.63	15.04	13.46	15.87	13.17
19					12.86	11.85	13.66	12.96	14.07	12.84	14.49	12.72	15.35	13.54	16.20	13.25
21					13.12	11.95	13.95	13.05	14.36	12.93	14.79	12.81	15.66	13.62	16.53	13.33
23					13.12	11.95	13.99	13.06	14.40	12.94	14.84	12.82	15.73	13.64	16.61	13.34
25			12.14	11.90	13.11	11.94	14.02	13.07	14.44	12.95	14.89	12.84	15.79	13.66	16.69	13.36
27			12.06	11.81	13.11	11.94	14.06	13.09	14.48	12.97	14.90	12.84	15.74	13.64		
29			11.97	11.73	12.91	11.87	13.82	13.01	14.26	12.90	14.70	12.78	15.56	13.60		
31			11.88	11.64	12.72	11.80	13.59	12.93	14.04	12.83	14.49	12.72	15.40	13.55		
33	11.18	10.96	11.67	11.43	12.52	11.73	13.36	12.86	13.82	12.76	14.29	12.66	15.22	13.51		
35	10.96	10.74	11.48	11.25	12.32	11.66	13.11	12.78	13.60	12.70	14.09	12.60	15.05	13.46		
37	10.76	10.55	11.29	11.06	12.11	11.59	12.87	12.61	13.32	12.61	13.77	12.51	14.69	13.37		
39	10.58	10.37	11.10	10.88	11.91	11.51	12.62	12.37	13.05	12.53	13.46	12.42	14.32	13.27		
41	10.39	10.19	10.91	10.69	11.70	11.44	12.37	12.12	12.76	12.44	13.16	12.33	13.95	13.18		
43	10.21	10.01	10.71	10.50	11.49	11.26	12.11	11.87	12.48	12.23	12.85	12.24	13.58	13.08		
46	10.03	9.82	10.47	10.26	11.13	10.91	11.73	11.49	12.10	11.86	12.27	12.02	13.01	12.75		
50	7.61	7.45	7.88	7.72	8.35	8.19	8.75	8.58	8.97	8.79	8.98	8.80	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Model FDT140VSAPVG Indoor unit FDT71VG (2 units) Outdoor unit FDC140VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	10.82	11.68	11.44	12.00	11.76	12.34	12.09	13.01	12.75	13.68	12.67
13					11.56	11.33	12.25	12.00	12.59	12.34	12.95	12.27	13.69	13.11	14.42	12.84
15					12.07	11.57	12.81	12.56	13.18	12.57	13.57	12.45	14.36	13.28	15.14	13.00
17					12.59	11.76	13.38	12.87	13.77	12.75	14.19	12.63	15.04	13.46	15.87	13.17
19					12.86	11.85	13.66	12.96	14.07	12.84	14.49	12.72	15.35	13.54	16.20	13.25
21					13.12	11.95	13.95	13.05	14.36	12.93	14.79	12.81	15.66	13.62	16.53	13.33
23					13.12	11.95	13.99	13.06	14.40	12.94	14.84	12.82	15.73	13.64	16.61	13.34
25			12.14	11.90	13.11	11.94	14.02	13.07	14.44	12.95	14.89	12.84	15.79	13.66	16.69	13.36
27			12.06	11.81	13.11	11.94	14.06	13.09	14.48	12.97	14.90	12.84	15.74	13.64		
29			11.97	11.73	12.91	11.87	13.82	13.01	14.26	12.90	14.70	12.78	15.56	13.60		
31			11.88	11.64	12.72	11.80	13.59	12.93	14.04	12.83	14.49	12.72	15.40	13.55		
33	11.18	10.96	11.67	11.43	12.52	11.73	13.36	12.86	13.82	12.76	14.29	12.66	15.22	13.51		
35	10.96	10.74	11.48	11.25	12.32	11.66	13.11	12.78	13.60	12.70	14.09	12.60	15.05	13.46		
37	10.76	10.55	11.29	11.06	12.11	11.59	12.87	12.61	13.32	12.61	13.77	12.51	14.69	13.37		
39	10.58	10.37	11.10	10.88	11.91	11.51	12.62	12.37	13.05	12.53	13.46	12.42	14.32	13.27		
41	10.39	10.19	10.91	10.69	11.70	11.44	12.37	12.12	12.76	12.44	13.16	12.33	13.95	13.18		
43	10.21	10.01	10.71	10.50	11.49	11.26	12.11	11.87	12.48	12.23	12.85	12.24	13.58	13.08		
46	10.03	9.82	10.47	10.26	11.13	10.91	11.73	11.49	12.10	11.86	12.27	12.02	13.01	12.75		
50	7.61	7.45	7.88	7.72	8.35	8.19	8.75	8.58	8.97	8.79	8.98	8.80	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

(c) Triple type

Model FDT140VNATVG Indoor unit FDT50VG (3 units) Outdoor unit FDC140VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	10.82	11.68	11.44	12.00	11.76	12.34	12.09	13.01	12.75	13.68	12.79
13					11.56	11.33	12.25	12.00	12.59	12.34	12.95	12.39	13.69	13.25	14.42	12.92
15					12.07	11.68	12.81	12.56	13.18	12.69	13.57	12.54	14.36	13.40	15.14	13.06
17					12.59	11.84	13.38	12.99	13.77	12.84	14.19	12.70	15.04	13.55	15.87	13.20
19					12.86	11.93	13.66	13.07	14.07	12.93	14.49	12.78	15.35	13.61	16.20	13.26
21					13.12	12.01	13.95	13.16	14.36	13.01	14.79	12.85	15.66	13.68	16.53	13.32
23					13.12	12.01	13.99	13.17	14.40	13.02	14.84	12.87	15.73	13.70	16.61	13.34
25			12.14	11.90	13.11	12.01	14.02	13.18	14.44	13.03	14.89	12.88	15.79	13.71	16.69	13.35
27			12.06	11.81	13.11	12.01	14.06	13.19	14.48	13.04	14.90	12.88	15.74	13.70		
29			11.97	11.73	12.91	11.94	13.82	13.12	14.26	12.98	14.70	12.83	15.56	13.66		
31			11.88	11.64	12.72	11.88	13.59	13.05	14.04	12.92	14.49	12.78	15.40	13.63		
33	11.18	10.96	11.67	11.43	12.52	11.82	13.36	12.99	13.82	12.86	14.29	12.72	15.22	13.59		
35	10.96	10.74	11.48	11.25	12.32	11.75	13.11	12.85	13.60	12.80	14.09	12.67	15.05	13.55		
37	10.76	10.55	11.29	11.06	12.11	11.69	12.87	12.61	13.32	12.72	13.77	12.59	14.69	13.47		
39	10.58	10.37	11.10	10.88	11.91	11.62	12.62	12.37	13.05	12.65	13.46	12.52	14.32	13.39		
41	10.39	10.19	10.91	10.69	11.70	11.46	12.37	12.12	12.76	12.51	13.16	12.44	13.95	13.31		
43	10.21	10.01	10.71	10.50	11.49	11.26	12.11	11.87	12.48	12.23	12.85	12.37	13.58	13.23		
46	10.03	9.82	10.47	10.26	11.13	10.91	11.73	11.49	12.10	11.86	12.27	12.02	13.01	12.75		
50	7.61	7.45	7.88	7.72	8.35	8.19	8.75	8.58	8.97	8.79	8.98	8.80	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Model FDT140VSATVG Indoor unit FDT50VG (3 units) Outdoor unit FDC140VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	10.82	11.68	11.44	12.00	11.76	12.34	12.09	13.01	12.75	13.68	12.79
13					11.56	11.33	12.25	12.00	12.59	12.34	12.95	12.39	13.69	13.25	14.42	12.92
15					12.07	11.68	12.81	12.56	13.18	12.69	13.57	12.54	14.36	13.40	15.14	13.06
17					12.59	11.84	13.38	12.99	13.77	12.84	14.19	12.70	15.04	13.55	15.87	13.20
19					12.86	11.93	13.66	13.07	14.07	12.93	14.49	12.78	15.35	13.61	16.20	13.26
21					13.12	12.01	13.95	13.16	14.36	13.01	14.79	12.85	15.66	13.68	16.53	13.32
23					13.12	12.01	13.99	13.17	14.40	13.02	14.84	12.87	15.73	13.70	16.61	13.34
25			12.14	11.90	13.11	12.01	14.02	13.18	14.44	13.03	14.89	12.88	15.79	13.71	16.69	13.35
27			12.06	11.81	13.11	12.01	14.06	13.19	14.48	13.04	14.90	12.88	15.74	13.70		
29			11.97	11.73	12.91	11.94	13.82	13.12	14.26	12.98	14.70	12.83	15.56	13.66		
31			11.88	11.64	12.72	11.88	13.59	13.05	14.04	12.92	14.49	12.78	15.40	13.63		
33	11.18	10.96	11.67	11.43	12.52	11.82	13.36	12.99	13.82	12.86	14.29	12.72	15.22	13.59		
35	10.96	10.74	11.48	11.25	12.32	11.75	13.11	12.85	13.60	12.80	14.09	12.67	15.05	13.55		
37	10.76	10.55	11.29	11.06	12.11	11.69	12.87	12.61	13.32	12.72	13.77	12.59	14.69	13.47		
39	10.58	10.37	11.10	10.88	11.91	11.62	12.62	12.37	13.05	12.65	13.46	12.52	14.32	13.39		
41	10.39	10.19	10.91	10.69	11.70	11.46	12.37	12.12	12.76	12.51	13.16	12.44	13.95	13.31		
43	10.21	10.01	10.71	10.50	11.49	11.26	12.11	11.87	12.48	12.23	12.85	12.37	13.58	13.23		
46	10.03	9.82	10.47	10.26	11.13	10.91	11.73	11.49	12.10	11.86	12.27	12.02	13.01	12.75		
50	7.61	7.45	7.88	7.72	8.35	8.19	8.75	8.58	8.97	8.79	8.98	8.80	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

(2) Ceiling cassette-4 way compact type (FDTC)

(a) Twin type

Model FDTC100VNAPVF Indoor unit FDT50VF (2 units) Outdoor unit FDC100VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.48	8.59	6.95	8.82	6.90	9.07	6.85	9.56	7.20	10.06	7.07
13					8.50	6.64	9.00	7.12	9.26	7.08	9.52	7.02	10.06	7.38	10.60	7.25
15					8.88	6.81	9.42	7.30	9.69	7.25	9.98	7.20	10.56	7.55	11.14	7.42
17					9.26	6.99	9.84	7.48	10.12	7.42	10.43	7.38	11.05	7.73	11.67	7.60
19					9.46	7.08	10.05	7.57	10.34	7.51	10.65	7.46	11.29	7.82	11.92	7.68
21					9.65	7.17	10.25	7.65	10.56	7.60	10.88	7.56	11.52	7.90	12.16	7.77
23					9.65	7.17	10.28	7.66	10.59	7.62	10.91	7.57	11.56	7.92	12.21	7.78
25			8.93	7.25	9.64	7.16	10.31	7.68	10.62	7.63	10.95	7.58	11.61	7.94	12.27	7.80
27			8.86	7.21	9.64	7.16	10.34	7.69	10.65	7.64	10.96	7.59	11.57	7.92		
29			8.80	7.18	9.50	7.10	10.17	7.62	10.49	7.58	10.81	7.53	11.45	7.88		
31			8.73	7.15	9.35	7.03	9.99	7.54	10.32	7.51	10.66	7.47	11.32	7.83		
33	8.22	6.72	8.58	7.08	9.21	6.96	9.82	7.47	10.16	7.44	10.51	7.41	11.19	7.78		
35	8.05	6.63	8.44	7.01	9.06	6.90	9.64	7.39	10.00	7.37	10.36	7.35	11.07	7.74		
37	7.92	6.57	8.30	6.94	8.91	6.83	9.46	7.32	9.79	7.29	10.13	7.26	10.80	7.64		
39	7.78	6.49	8.16	6.87	8.75	6.76	9.28	7.24	9.59	7.21	9.90	7.17	10.53	7.54		
41	7.64	6.42	8.02	6.81	8.60	6.69	9.09	7.16	9.38	7.12	9.68	7.08	10.26	7.45		
43	7.50	6.35	7.88	6.74	8.45	6.62	8.91	7.09	9.18	7.04	9.45	7.00	9.99	7.35		
46	7.33	6.26	7.67	6.64	8.22	6.52	8.58	6.95	8.83	6.91	9.07	6.85	9.57	7.20		
50	7.09	6.14	7.39	6.51	7.91	6.38	8.19	6.79	8.35	6.72	8.51	6.64	8.83	6.95		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Model FDTC100VSAPVF Indoor unit FDT50VF (2 units) Outdoor unit FDC100VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.48	8.59	6.95	8.82	6.90	9.07	6.85	9.56	7.20	10.06	7.07
13					8.50	6.64	9.00	7.12	9.26	7.08	9.52	7.02	10.06	7.38	10.60	7.25
15					8.88	6.81	9.42	7.30	9.69	7.25	9.98	7.20	10.56	7.55	11.14	7.42
17					9.26	6.99	9.84	7.48	10.12	7.42	10.43	7.38	11.05	7.73	11.67	7.60
19					9.46	7.08	10.05	7.57	10.34	7.51	10.65	7.46	11.29	7.82	11.92	7.68
21					9.65	7.17	10.25	7.65	10.56	7.60	10.88	7.56	11.52	7.90	12.16	7.77
23					9.65	7.17	10.28	7.66	10.59	7.62	10.91	7.57	11.56	7.92	12.21	7.78
25			8.93	7.25	9.64	7.16	10.31	7.68	10.62	7.63	10.95	7.58	11.61	7.94	12.27	7.80
27			8.86	7.21	9.64	7.16	10.34	7.69	10.65	7.64	10.96	7.59	11.57	7.92		
29			8.80	7.18	9.50	7.10	10.17	7.62	10.49	7.58	10.81	7.53	11.45	7.88		
31			8.73	7.15	9.35	7.03	9.99	7.54	10.32	7.51	10.66	7.47	11.32	7.83		
33	8.22	6.72	8.58	7.08	9.21	6.96	9.82	7.47	10.16	7.44	10.51	7.41	11.19	7.78		
35	8.05	6.63	8.44	7.01	9.06	6.90	9.64	7.39	10.00	7.37	10.36	7.35	11.07	7.74		
37	7.92	6.57	8.30	6.94	8.91	6.83	9.46	7.32	9.79	7.29	10.13	7.26	10.80	7.64		
39	7.78	6.49	8.16	6.87	8.75	6.76	9.28	7.24	9.59	7.21	9.90	7.17	10.53	7.54		
41	7.64	6.42	8.02	6.81	8.60	6.69	9.09	7.16	9.38	7.12	9.68	7.08	10.26	7.45		
43	7.50	6.35	7.88	6.74	8.45	6.62	8.91	7.09	9.18	7.04	9.45	7.00	9.99	7.35		
46	7.33	6.26	7.67	6.64	8.22	6.52	8.58	6.95	8.83	6.91	9.07	6.85	9.57	7.20		
50	7.09	6.14	7.39	6.51	7.91	6.38	8.19	6.79	8.35	6.72	8.51	6.64	8.83	6.95		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDTC125VNAPVF Indoor unit FDT60VF (2 units) Outdoor unit FDC125VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	7.28	10.74	7.76	11.03	7.67	11.34	7.57	11.96	7.89	12.57	7.67
13					10.63	7.48	11.26	7.96	11.57	7.87	11.91	7.78	12.58	8.09	13.25	7.86
15					11.10	7.69	11.78	8.17	12.11	8.07	12.47	7.98	13.20	8.30	13.92	8.06
17					11.58	7.90	12.29	8.37	12.65	8.28	13.04	8.19	13.82	8.51	14.59	8.26
19					11.82	8.01	12.56	8.48	12.92	8.39	13.32	8.30	14.11	8.61	14.90	8.36
21					12.06	8.11	12.82	8.59	13.19	8.49	13.60	8.40	14.40	8.71	15.20	8.45
23					12.06	8.11	12.85	8.61	13.23	8.51	13.64	8.42	14.45	8.72	15.27	8.48
25			11.16	8.26	12.06	8.11	12.89	8.62	13.27	8.53	13.68	8.43	14.51	8.74	15.34	8.50
27			11.08	8.22	12.05	8.11	12.92	8.63	13.31	8.54	13.69	8.44	14.47	8.73		
29			11.00	8.18	11.87	8.03	12.71	8.55	13.11	8.46	13.51	8.37	14.31	8.67		
31			10.92	8.15	11.69	7.95	12.49	8.46	12.90	8.38	13.32	8.30	14.15	8.62		
33	10.27	7.71	10.72	8.05	11.51	7.87	12.27	8.37	12.70	8.30	13.13	8.22	13.99	8.56		
35	10.07	7.61	10.55	7.97	11.33	7.79	12.06	8.28	12.50	8.22	12.94	8.15	13.83	8.51		
37	9.90	7.52	10.38	7.89	11.13	7.70	11.83	8.19	12.24	8.12	12.66	8.05	13.50	8.40		
39	9.72	7.43	10.20	7.81	10.94	7.62	11.60	8.09	11.99	8.03	12.38	7.95	13.16	8.28		
41	9.55	7.35	10.02	7.72	10.75	7.54	11.37	8.00	11.73	7.93	12.09	7.84	12.82	8.17		
43	9.38	7.26	9.85	7.64	10.56	7.45	11.14	7.91	11.47	7.83	11.81	7.74	12.48	8.06		
46	9.21	7.18	9.53	7.50	10.28	7.34	10.88	7.81	11.12	7.70	11.28	7.55	11.96	7.89		
50	7.43	6.33	7.63	6.66	8.25	6.51	8.67	6.99	8.78	6.87	8.80	6.72	9.05	7.02		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Model FDTC125VSAPVF Indoor unit FDT60VF (2 units) Outdoor unit FDC125VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	7.28	10.74	7.76	11.03	7.67	11.34	7.57	11.96	7.89	12.57	7.67
13					10.63	7.48	11.26	7.96	11.57	7.87	11.91	7.78	12.58	8.09	13.25	7.86
15					11.10	7.69	11.78	8.17	12.11	8.07	12.47	7.98	13.20	8.30	13.92	8.06
17					11.58	7.90	12.29	8.37	12.65	8.28	13.04	8.19	13.82	8.51	14.59	8.26
19					11.82	8.01	12.56	8.48	12.92	8.39	13.32	8.30	14.11	8.61	14.90	8.36
21					12.06	8.11	12.82	8.59	13.19	8.49	13.60	8.40	14.40	8.71	15.20	8.45
23					12.06	8.11	12.85	8.61	13.23	8.51	13.64	8.42	14.45	8.72	15.27	8.48
25			11.16	8.26	12.06	8.11	12.89	8.62	13.27	8.53	13.68	8.43	14.51	8.74	15.34	8.50
27			11.08	8.22	12.05	8.11	12.92	8.63	13.31	8.54	13.69	8.44	14.47	8.73		
29			11.00	8.18	11.87	8.03	12.71	8.55	13.11	8.46	13.51	8.37	14.31	8.67		
31			10.92	8.15	11.69	7.95	12.49	8.46	12.90	8.38	13.32	8.30	14.15	8.62		
33	10.27	7.71	10.72	8.05	11.51	7.87	12.27	8.37	12.70	8.30	13.13	8.22	13.99	8.56		
35	10.07	7.61	10.55	7.97	11.33	7.79	12.06	8.28	12.50	8.22	12.94	8.15	13.83	8.51		
37	9.90	7.52	10.38	7.89	11.13	7.70	11.83	8.19	12.24	8.12	12.66	8.05	13.50	8.40		
39	9.72	7.43	10.20	7.81	10.94	7.62	11.60	8.09	11.99	8.03	12.38	7.95	13.16	8.28		
41	9.55	7.35	10.02	7.72	10.75	7.54	11.37	8.00	11.73	7.93	12.09	7.84	12.82	8.17		
43	9.38	7.26	9.85	7.64	10.56	7.45	11.14	7.91	11.47	7.83	11.81	7.74	12.48	8.06		
46	9.21	7.18	9.53	7.50	10.28	7.34	10.88	7.81	11.12	7.70	11.28	7.55	11.96	7.89		
50	7.43	6.33	7.63	6.66	8.25	6.51	8.67	6.99	8.78	6.87	8.80	6.72	9.05	7.02		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

PJA003Z383 C

Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

(b) Triple type

Model FDTC140VNATVF Indoor unit FDT50VF (3 units) Outdoor unit FDC140VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃DB		21 ℃DB		23 ℃DB		26 ℃DB		27 ℃DB		28 ℃DB		31 ℃DB		33 ℃DB	
	12 ℃WB		14 ℃WB		16 ℃WB		18 ℃WB		19 ℃WB		20 ℃WB		22 ℃WB		24 ℃WB	
℃DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	9.22	11.68	9.94	12.00	9.87	12.34	9.80	13.01	10.34	13.68	10.17
13					11.56	9.44	12.25	10.17	12.59	10.10	12.95	10.03	13.69	10.58	14.42	10.40
15					12.07	9.67	12.81	10.40	13.18	10.33	13.57	10.26	14.36	10.81	15.14	10.63
17					12.59	9.89	13.38	10.63	13.77	10.56	14.19	10.50	15.04	11.05	15.87	10.86
19					12.86	10.02	13.66	10.75	14.07	10.68	14.49	10.62	15.35	11.16	16.20	10.97
21					13.12	10.13	13.95	10.87	14.36	10.80	14.79	10.73	15.66	11.27	16.53	11.08
23					13.12	10.13	13.99	10.89	14.40	10.82	14.84	10.75	15.73	11.29	16.61	11.10
25			12.14	10.26	13.11	10.13	14.02	10.90	14.44	10.83	14.89	10.77	15.79	11.31	16.69	11.13
27			12.06	10.22	13.11	10.13	14.06	10.92	14.48	10.85	14.90	10.77	15.74	11.29		
29			11.97	10.18	12.91	10.04	13.82	10.82	14.26	10.76	14.70	10.70	15.56	11.23		
31			11.88	10.14	12.72	9.95	13.59	10.72	14.04	10.67	14.49	10.62	15.40	11.17		
33	11.18	9.49	11.67	10.04	12.52	9.86	13.36	10.63	13.82	10.59	14.29	10.54	15.22	11.11		
35	10.96	9.38	11.48	9.95	12.32	9.77	13.11	10.53	13.60	10.50	14.09	10.46	15.05	11.05		
37	10.76	9.28	11.29	9.86	12.11	9.68	12.87	10.43	13.32	10.39	13.77	10.34	14.69	10.92		
39	10.58	9.19	11.10	9.77	11.91	9.60	12.62	10.32	13.05	10.28	13.46	10.22	14.32	10.79		
41	10.39	9.09	10.91	9.68	11.70	9.50	12.37	10.22	12.76	10.17	13.16	10.11	13.95	10.67		
43	10.21	9.00	10.71	9.59	11.49	9.41	12.11	10.12	12.48	10.06	12.85	10.00	13.58	10.54		
46	10.03	8.91	10.47	9.48	11.13	9.26	11.73	9.96	12.10	9.91	12.27	9.78	13.01	10.34		
50	7.61	7.45	7.88	7.72	8.35	8.10	8.75	8.58	8.97	8.75	8.98	8.61	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃DB				
℃DB	℃WB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Model FDTC140VSATVF Indoor unit FDT50VF (3 units) Outdoor unit FDC140VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃DB		21 ℃DB		23 ℃DB		26 ℃DB		27 ℃DB		28 ℃DB		31 ℃DB		33 ℃DB	
	12 ℃WB		14 ℃WB		16 ℃WB		18 ℃WB		19 ℃WB		20 ℃WB		22 ℃WB		24 ℃WB	
℃DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	9.22	11.68	9.94	12.00	9.87	12.34	9.80	13.01	10.34	13.68	10.17
13					11.56	9.44	12.25	10.17	12.59	10.10	12.95	10.03	13.69	10.58	14.42	10.40
15					12.07	9.67	12.81	10.40	13.18	10.33	13.57	10.26	14.36	10.81	15.14	10.63
17					12.59	9.89	13.38	10.63	13.77	10.56	14.19	10.50	15.04	11.05	15.87	10.86
19					12.86	10.02	13.66	10.75	14.07	10.68	14.49	10.62	15.35	11.16	16.20	10.97
21					13.12	10.13	13.95	10.87	14.36	10.80	14.79	10.73	15.66	11.27	16.53	11.08
23					13.12	10.13	13.99	10.89	14.40	10.82	14.84	10.75	15.73	11.29	16.61	11.10
25			12.14	10.26	13.11	10.13	14.02	10.90	14.44	10.83	14.89	10.77	15.79	11.31	16.69	11.13
27			12.06	10.22	13.11	10.13	14.06	10.92	14.48	10.85	14.90	10.77	15.74	11.29		
29			11.97	10.18	12.91	10.04	13.82	10.82	14.26	10.76	14.70	10.70	15.56	11.23		
31			11.88	10.14	12.72	9.95	13.59	10.72	14.04	10.67	14.49	10.62	15.40	11.17		
33	11.18	9.49	11.67	10.04	12.52	9.86	13.36	10.63	13.82	10.59	14.29	10.54	15.22	11.11		
35	10.96	9.38	11.48	9.95	12.32	9.77	13.11	10.53	13.60	10.50	14.09	10.46	15.05	11.05		
37	10.76	9.28	11.29	9.86	12.11	9.68	12.87	10.43	13.32	10.39	13.77	10.34	14.69	10.92		
39	10.58	9.19	11.10	9.77	11.91	9.60	12.62	10.32	13.05	10.28	13.46	10.22	14.32	10.79		
41	10.39	9.09	10.91	9.68	11.70	9.50	12.37	10.22	12.76	10.17	13.16	10.11	13.95	10.67		
43	10.21	9.00	10.71	9.59	11.49	9.41	12.11	10.12	12.48	10.06	12.85	10.00	13.58	10.54		
46	10.03	8.91	10.47	9.48	11.13	9.26	11.73	9.96	12.10	9.91	12.27	9.78	13.01	10.34		
50	7.61	7.45	7.88	7.72	8.35	8.10	8.75	8.58	8.97	8.75	8.98	8.61	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃DB				
℃DB	℃WB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

(3) Ceiling susponded type (FDE)

(a) Single type

Model FDE100VNAVG Indoor unit FDE100VG Outdoor unit FDC100VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	7.37	8.59	8.01	8.82	7.95	9.07	7.89	9.56	8.38	10.06	8.23
13					8.50	7.52	9.00	8.17	9.26	8.11	9.52	8.05	10.06	8.53	10.60	8.38
15					8.88	7.67	9.42	8.32	9.69	8.26	9.98	8.20	10.56	8.69	11.14	8.54
17					9.26	7.83	9.84	8.48	10.12	8.42	10.43	8.36	11.05	8.85	11.67	8.69
19					9.46	7.91	10.05	8.56	10.34	8.50	10.65	8.44	11.29	8.92	11.92	8.77
21					9.65	7.99	10.25	8.64	10.56	8.58	10.88	8.52	11.52	9.00	12.16	8.84
23					9.65	7.99	10.28	8.65	10.59	8.59	10.91	8.53	11.56	9.01	12.21	8.85
25			8.93	8.14	9.64	7.99	10.31	8.66	10.62	8.60	10.95	8.54	11.61	9.03	12.27	8.87
27			8.86	8.11	9.64	7.99	10.34	8.68	10.65	8.61	10.96	8.55	11.57	9.01		
29			8.80	8.08	9.50	7.93	10.17	8.61	10.49	8.56	10.81	8.49	11.45	8.98		
31			8.73	8.05	9.35	7.87	9.99	8.54	10.32	8.49	10.66	8.44	11.32	8.93		
33	8.22	7.48	8.58	7.98	9.21	7.81	9.82	8.48	10.16	8.43	10.51	8.39	11.19	8.89		
35	8.05	7.40	8.44	7.92	9.06	7.75	9.64	8.41	10.00	8.38	10.36	8.34	11.07	8.85		
37	7.92	7.34	8.30	7.86	8.91	7.69	9.46	8.34	9.79	8.30	10.13	8.26	10.80	8.77		
39	7.78	7.27	8.16	7.80	8.75	7.62	9.28	8.27	9.59	8.23	9.90	8.18	10.53	8.68		
41	7.64	7.21	8.02	7.74	8.60	7.56	9.09	8.20	9.38	8.15	9.68	8.10	10.26	8.60		
43	7.50	7.14	7.88	7.67	8.45	7.50	8.91	8.13	9.18	8.08	9.45	8.02	9.99	8.51		
46	7.33	7.06	7.67	7.52	8.22	7.41	8.58	8.01	8.83	7.95	9.07	7.89	9.57	8.38		
50	7.09	6.95	7.39	7.24	7.91	7.28	8.19	7.87	8.35	7.79	8.51	7.70	8.83	8.15		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature				
		℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Model FDE100VSAVG Indoor unit FDE100VG Outdoor unit FDC100VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	7.37	8.59	8.01	8.82	7.95	9.07	7.89	9.56	8.38	10.06	8.23
13					8.50	7.52	9.00	8.17	9.26	8.11	9.52	8.05	10.06	8.53	10.60	8.38
15					8.88	7.67	9.42	8.32	9.69	8.26	9.98	8.20	10.56	8.69	11.14	8.54
17					9.26	7.83	9.84	8.48	10.12	8.42	10.43	8.36	11.05	8.85	11.67	8.69
19					9.46	7.91	10.05	8.56	10.34	8.50	10.65	8.44	11.29	8.92	11.92	8.77
21					9.65	7.99	10.25	8.64	10.56	8.58	10.88	8.52	11.52	9.00	12.16	8.84
23					9.65	7.99	10.28	8.65	10.59	8.59	10.91	8.53	11.56	9.01	12.21	8.85
25			8.93	8.14	9.64	7.99	10.31	8.66	10.62	8.60	10.95	8.54	11.61	9.03	12.27	8.87
27			8.86	8.11	9.64	7.99	10.34	8.68	10.65	8.61	10.96	8.55	11.57	9.01		
29			8.80	8.08	9.50	7.93	10.17	8.61	10.49	8.56	10.81	8.49	11.45	8.98		
31			8.73	8.05	9.35	7.87	9.99	8.54	10.32	8.49	10.66	8.44	11.32	8.93		
33	8.22	7.48	8.58	7.98	9.21	7.81	9.82	8.48	10.16	8.43	10.51	8.39	11.19	8.89		
35	8.05	7.40	8.44	7.92	9.06	7.75	9.64	8.41	10.00	8.38	10.36	8.34	11.07	8.85		
37	7.92	7.34	8.30	7.86	8.91	7.69	9.46	8.34	9.79	8.30	10.13	8.26	10.80	8.77		
39	7.78	7.27	8.16	7.80	8.75	7.62	9.28	8.27	9.59	8.23	9.90	8.18	10.53	8.68		
41	7.64	7.21	8.02	7.74	8.60	7.56	9.09	8.20	9.38	8.15	9.68	8.10	10.26	8.60		
43	7.50	7.14	7.88	7.67	8.45	7.50	8.91	8.13	9.18	8.08	9.45	8.02	9.99	8.51		
46	7.33	7.06	7.67	7.52	8.22	7.41	8.58	8.01	8.83	7.95	9.07	7.89	9.57	8.38		
50	7.09	6.95	7.39	7.24	7.91	7.28	8.19	7.87	8.35	7.79	8.51	7.70	8.83	8.15		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature				
		℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDE125VNAVG Indoor unit FDE125VG Outdoor unit FDC125VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	8.20	10.74	8.83	11.03	8.76	11.34	8.68	11.96	9.14	12.57	8.96
13					10.63	8.41	11.26	9.03	11.57	8.96	11.91	8.89	12.58	9.35	13.25	9.16
15					11.10	8.61	11.78	9.24	12.11	9.17	12.47	9.10	13.20	9.56	13.92	9.37
17					11.58	8.82	12.29	9.45	12.65	9.38	13.04	9.31	13.82	9.77	14.59	9.58
19					11.82	8.92	12.56	9.56	12.92	9.48	13.32	9.41	14.11	9.87	14.90	9.68
21					12.06	9.03	12.82	9.66	13.19	9.59	13.60	9.52	14.40	9.97	15.20	9.77
23					12.06	9.03	12.85	9.68	13.23	9.60	13.64	9.53	14.45	9.99	15.27	9.79
25			11.16	9.16	12.06	9.03	12.89	9.69	13.27	9.62	13.68	9.55	14.51	10.01	15.34	9.82
27			11.08	9.13	12.05	9.02	12.92	9.71	13.31	9.64	13.69	9.55	14.47	9.99		
29			11.00	9.09	11.87	8.94	12.71	9.62	13.11	9.56	13.51	9.48	14.31	9.94		
31			10.92	9.05	11.69	8.87	12.49	9.53	12.90	9.47	13.32	9.41	14.15	9.88		
33	10.27	8.49	10.72	8.96	11.51	8.79	12.27	9.44	12.70	9.40	13.13	9.34	13.99	9.83		
35	10.07	8.39	10.55	8.88	11.33	8.71	12.06	9.35	12.50	9.32	12.94	9.27	13.83	9.77		
37	9.90	8.30	10.38	8.80	11.13	8.62	11.83	9.26	12.24	9.22	12.66	9.17	13.50	9.66		
39	9.72	8.21	10.20	8.71	10.94	8.54	11.60	9.17	11.99	9.12	12.38	9.06	13.16	9.54		
41	9.55	8.13	10.02	8.63	10.75	8.46	11.37	9.08	11.73	9.02	12.09	8.96	12.82	9.43		
43	9.38	8.04	9.85	8.55	10.56	8.38	11.14	8.99	11.47	8.92	11.81	8.85	12.48	9.31		
46	9.21	7.96	9.53	8.41	10.28	8.26	10.88	8.89	11.12	8.79	11.28	8.66	11.96	9.14		
50	7.43	7.11	7.63	7.48	8.25	7.42	8.67	8.04	8.78	7.94	8.80	7.80	9.05	8.22		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Model FDE125VSAVG Indoor unit FDE125VG Outdoor unit FDC125VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	8.20	10.74	8.83	11.03	8.76	11.34	8.68	11.96	9.14	12.57	8.96
13					10.63	8.41	11.26	9.03	11.57	8.96	11.91	8.89	12.58	9.35	13.25	9.16
15					11.10	8.61	11.78	9.24	12.11	9.17	12.47	9.10	13.20	9.56	13.92	9.37
17					11.58	8.82	12.29	9.45	12.65	9.38	13.04	9.31	13.82	9.77	14.59	9.58
19					11.82	8.92	12.56	9.56	12.92	9.48	13.32	9.41	14.11	9.87	14.90	9.68
21					12.06	9.03	12.82	9.66	13.19	9.59	13.60	9.52	14.40	9.97	15.20	9.77
23					12.06	9.03	12.85	9.68	13.23	9.60	13.64	9.53	14.45	9.99	15.27	9.79
25			11.16	9.16	12.06	9.03	12.89	9.69	13.27	9.62	13.68	9.55	14.51	10.01	15.34	9.82
27			11.08	9.13	12.05	9.02	12.92	9.71	13.31	9.64	13.69	9.55	14.47	9.99		
29			11.00	9.09	11.87	8.94	12.71	9.62	13.11	9.56	13.51	9.48	14.31	9.94		
31			10.92	9.05	11.69	8.87	12.49	9.53	12.90	9.47	13.32	9.41	14.15	9.88		
33	10.27	8.49	10.72	8.96	11.51	8.79	12.27	9.44	12.70	9.40	13.13	9.34	13.99	9.83		
35	10.07	8.39	10.55	8.88	11.33	8.71	12.06	9.35	12.50	9.32	12.94	9.27	13.83	9.77		
37	9.90	8.30	10.38	8.80	11.13	8.62	11.83	9.26	12.24	9.22	12.66	9.17	13.50	9.66		
39	9.72	8.21	10.20	8.71	10.94	8.54	11.60	9.17	11.99	9.12	12.38	9.06	13.16	9.54		
41	9.55	8.13	10.02	8.63	10.75	8.46	11.37	9.08	11.73	9.02	12.09	8.96	12.82	9.43		
43	9.38	8.04	9.85	8.55	10.56	8.38	11.14	8.99	11.47	8.92	11.81	8.85	12.48	9.31		
46	9.21	7.96	9.53	8.41	10.28	8.26	10.88	8.89	11.12	8.79	11.28	8.66	11.96	9.14		
50	7.43	7.11	7.63	7.48	8.25	7.42	8.67	8.04	8.78	7.94	8.80	7.80	9.05	8.22		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDE140VNAVG Indoor unit FDE140VG Outdoor unit FDC140VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	8.83	11.68	9.49	12.00	9.41	12.34	9.33	13.01	9.81	13.68	9.62
13					11.56	9.05	12.25	9.71	12.59	9.63	12.95	9.55	13.69	10.04	14.42	9.84
15					12.07	9.27	12.81	9.94	13.18	9.86	13.57	9.78	14.36	10.27	15.14	10.07
17					12.59	9.49	13.38	10.17	13.77	10.09	14.19	10.02	15.04	10.50	15.87	10.29
19					12.86	9.61	13.66	10.28	14.07	10.21	14.49	10.13	15.35	10.61	16.20	10.40
21					13.12	9.73	13.95	10.40	14.36	10.32	14.79	10.25	15.66	10.72	16.53	10.51
23					13.12	9.73	13.99	10.42	14.40	10.34	14.84	10.26	15.73	10.74	16.61	10.53
25			12.14	9.87	13.11	9.73	14.02	10.43	14.44	10.35	14.89	10.28	15.79	10.76	16.69	10.56
27			12.06	9.83	13.11	9.73	14.06	10.45	14.48	10.37	14.90	10.29	15.74	10.75		
29			11.97	9.79	12.91	9.64	13.82	10.35	14.26	10.28	14.70	10.21	15.56	10.68		
31			11.88	9.75	12.72	9.55	13.59	10.26	14.04	10.20	14.49	10.13	15.40	10.63		
33	11.18	9.15	11.67	9.65	12.52	9.46	13.36	10.16	13.82	10.11	14.29	10.05	15.22	10.57		
35	10.96	9.04	11.48	9.56	12.32	9.37	13.11	10.06	13.60	10.02	14.09	9.98	15.05	10.50		
37	10.76	8.94	11.29	9.47	12.11	9.29	12.87	9.96	13.32	9.91	13.77	9.86	14.69	10.38		
39	10.58	8.85	11.10	9.38	11.91	9.20	12.62	9.86	13.05	9.81	13.46	9.74	14.32	10.25		
41	10.39	8.76	10.91	9.29	11.70	9.10	12.37	9.76	12.76	9.70	13.16	9.63	13.95	10.13		
43	10.21	8.67	10.71	9.20	11.49	9.02	12.11	9.66	12.48	9.59	12.85	9.52	13.58	10.00		
46	10.03	8.57	10.47	9.09	11.13	8.86	11.73	9.51	12.10	9.45	12.27	9.31	13.01	9.81		
50	7.61	7.42	7.88	7.72	8.35	7.72	8.75	8.38	8.97	8.31	8.98	8.16	9.33	8.64		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Model FDE140VSAVG Indoor unit FDE140VG Outdoor unit FDC140VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	8.83	11.68	9.49	12.00	9.41	12.34	9.33	13.01	9.81	13.68	9.62
13					11.56	9.05	12.25	9.71	12.59	9.63	12.95	9.55	13.69	10.04	14.42	9.84
15					12.07	9.27	12.81	9.94	13.18	9.86	13.57	9.78	14.36	10.27	15.14	10.07
17					12.59	9.49	13.38	10.17	13.77	10.09	14.19	10.02	15.04	10.50	15.87	10.29
19					12.86	9.61	13.66	10.28	14.07	10.21	14.49	10.13	15.35	10.61	16.20	10.40
21					13.12	9.73	13.95	10.40	14.36	10.32	14.79	10.25	15.66	10.72	16.53	10.51
23					13.12	9.73	13.99	10.42	14.40	10.34	14.84	10.26	15.73	10.74	16.61	10.53
25			12.14	9.87	13.11	9.73	14.02	10.43	14.44	10.35	14.89	10.28	15.79	10.76	16.69	10.56
27			12.06	9.83	13.11	9.73	14.06	10.45	14.48	10.37	14.90	10.29	15.74	10.75		
29			11.97	9.79	12.91	9.64	13.82	10.35	14.26	10.28	14.70	10.21	15.56	10.68		
31			11.88	9.75	12.72	9.55	13.59	10.26	14.04	10.20	14.49	10.13	15.40	10.63		
33	11.18	9.15	11.67	9.65	12.52	9.46	13.36	10.16	13.82	10.11	14.29	10.05	15.22	10.57		
35	10.96	9.04	11.48	9.56	12.32	9.37	13.11	10.06	13.60	10.02	14.09	9.98	15.05	10.50		
37	10.76	8.94	11.29	9.47	12.11	9.29	12.87	9.96	13.32	9.91	13.77	9.86	14.69	10.38		
39	10.58	8.85	11.10	9.38	11.91	9.20	12.62	9.86	13.05	9.81	13.46	9.74	14.32	10.25		
41	10.39	8.76	10.91	9.29	11.70	9.10	12.37	9.76	12.76	9.70	13.16	9.63	13.95	10.13		
43	10.21	8.67	10.71	9.20	11.49	9.02	12.11	9.66	12.48	9.59	12.85	9.52	13.58	10.00		
46	10.03	8.57	10.47	9.09	11.13	8.86	11.73	9.51	12.10	9.45	12.27	9.31	13.01	9.81		
50	7.61	7.42	7.88	7.72	8.35	7.72	8.75	8.38	8.97	8.31	8.98	8.16	9.33	8.64		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

(b) Twin type

Model FDE100VNAPVG Indoor unit FDE50VG (2 units) Outdoor unit FDC100VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.61	8.59	7.12	8.82	7.06	9.07	7.00	9.56	7.38	10.06	7.23
13					8.50	6.77	9.00	7.28	9.26	7.23	9.52	7.17	10.06	7.54	10.60	7.40
15					8.88	6.93	9.42	7.45	9.69	7.39	9.98	7.33	10.56	7.71	11.14	7.56
17					9.26	7.10	9.84	7.62	10.12	7.56	10.43	7.50	11.05	7.88	11.67	7.73
19					9.46	7.19	10.05	7.70	10.34	7.64	10.65	7.58	11.29	7.96	11.92	7.80
21					9.65	7.27	10.25	7.78	10.56	7.73	10.88	7.67	11.52	8.04	12.16	7.88
23					9.65	7.27	10.28	7.80	10.59	7.74	10.91	7.68	11.56	8.05	12.21	7.90
25			8.93	7.38	9.64	7.27	10.31	7.81	10.62	7.75	10.95	7.70	11.61	8.07	12.27	7.91
27			8.86	7.35	9.64	7.27	10.34	7.82	10.65	7.76	10.96	7.70	11.57	8.05		
29			8.80	7.32	9.50	7.20	10.17	7.75	10.49	7.70	10.81	7.64	11.45	8.01		
31			8.73	7.29	9.35	7.14	9.99	7.68	10.32	7.63	10.66	7.59	11.32	7.97		
33	8.22	6.83	8.58	7.22	9.21	7.08	9.82	7.61	10.16	7.57	10.51	7.53	11.19	7.92		
35	8.05	6.75	8.44	7.15	9.06	7.01	9.64	7.54	10.00	7.51	10.36	7.47	11.07	7.88		
37	7.92	6.68	8.30	7.09	8.91	6.95	9.46	7.46	9.79	7.43	10.13	7.39	10.80	7.79		
39	7.78	6.61	8.16	7.02	8.75	6.88	9.28	7.39	9.59	7.35	9.90	7.30	10.53	7.70		
41	7.64	6.54	8.02	6.96	8.60	6.81	9.09	7.32	9.38	7.27	9.68	7.22	10.26	7.61		
43	7.50	6.48	7.88	6.89	8.45	6.75	8.91	7.25	9.18	7.20	9.45	7.14	9.99	7.52		
46	7.33	6.39	7.67	6.80	8.22	6.65	8.58	7.12	8.83	7.07	9.07	7.00	9.57	7.38		
50	7.09	6.28	7.39	6.67	7.91	6.52	8.19	6.97	8.35	6.89	8.51	6.81	8.83	7.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Model FDE100VSAPVG Indoor unit FDE50VG (2 units) Outdoor unit FDC100VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.61	8.59	7.12	8.82	7.06	9.07	7.00	9.56	7.38	10.06	7.23
13					8.50	6.77	9.00	7.28	9.26	7.23	9.52	7.17	10.06	7.54	10.60	7.40
15					8.88	6.93	9.42	7.45	9.69	7.39	9.98	7.33	10.56	7.71	11.14	7.56
17					9.26	7.10	9.84	7.62	10.12	7.56	10.43	7.50	11.05	7.88	11.67	7.73
19					9.46	7.19	10.05	7.70	10.34	7.64	10.65	7.58	11.29	7.96	11.92	7.80
21					9.65	7.27	10.25	7.78	10.56	7.73	10.88	7.67	11.52	8.04	12.16	7.88
23					9.65	7.27	10.28	7.80	10.59	7.74	10.91	7.68	11.56	8.05	12.21	7.90
25			8.93	7.38	9.64	7.27	10.31	7.81	10.62	7.75	10.95	7.70	11.61	8.07	12.27	7.91
27			8.86	7.35	9.64	7.27	10.34	7.82	10.65	7.76	10.96	7.70	11.57	8.05		
29			8.80	7.32	9.50	7.20	10.17	7.75	10.49	7.70	10.81	7.64	11.45	8.01		
31			8.73	7.29	9.35	7.14	9.99	7.68	10.32	7.63	10.66	7.59	11.32	7.97		
33	8.22	6.83	8.58	7.22	9.21	7.08	9.82	7.61	10.16	7.57	10.51	7.53	11.19	7.92		
35	8.05	6.75	8.44	7.15	9.06	7.01	9.64	7.54	10.00	7.51	10.36	7.47	11.07	7.88		
37	7.92	6.68	8.30	7.09	8.91	6.95	9.46	7.46	9.79	7.43	10.13	7.39	10.80	7.79		
39	7.78	6.61	8.16	7.02	8.75	6.88	9.28	7.39	9.59	7.35	9.90	7.30	10.53	7.70		
41	7.64	6.54	8.02	6.96	8.60	6.81	9.09	7.32	9.38	7.27	9.68	7.22	10.26	7.61		
43	7.50	6.48	7.88	6.89	8.45	6.75	8.91	7.25	9.18	7.20	9.45	7.14	9.99	7.52		
46	7.33	6.39	7.67	6.80	8.22	6.65	8.58	7.12	8.83	7.07	9.07	7.00	9.57	7.38		
50	7.09	6.28	7.39	6.67	7.91	6.52	8.19	6.97	8.35	6.89	8.51	6.81	8.83	7.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDE125VNAPVG Indoor unit FDE60VG (2 units) Outdoor unit FDC125VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	9.21	10.74	10.02	11.03	9.94	11.34	9.87	11.96	10.47	12.57	10.29
13					10.63	9.40	11.26	10.21	11.57	10.13	11.91	10.06	12.58	10.67	13.25	10.48
15					11.10	9.59	11.78	10.41	12.11	10.33	12.47	10.25	13.20	10.86	13.92	10.67
17					11.58	9.79	12.29	10.60	12.65	10.52	13.04	10.45	13.82	11.06	14.59	10.87
19					11.82	9.89	12.56	10.70	12.92	10.62	13.32	10.55	14.11	11.15	14.90	10.96
21					12.06	9.99	12.82	10.80	13.19	10.72	13.60	10.65	14.40	11.25	15.20	11.05
23					12.06	9.99	12.85	10.81	13.23	10.74	13.64	10.66	14.45	11.26	15.27	11.07
25			11.16	10.17	12.06	9.99	12.89	10.83	13.27	10.75	13.68	10.68	14.51	11.28	15.34	11.09
27			11.08	10.13	12.05	9.99	12.92	10.84	13.31	10.77	13.69	10.68	14.47	11.27		
29			11.00	10.10	11.87	9.91	12.71	10.76	13.11	10.69	13.51	10.62	14.31	11.22		
31			10.92	10.06	11.69	9.84	12.49	10.68	12.90	10.62	13.32	10.55	14.15	11.17		
33	10.27	9.35	10.72	9.97	11.51	9.76	12.27	10.59	12.70	10.54	13.13	10.48	13.99	11.12		
35	10.07	9.25	10.55	9.90	11.33	9.69	12.06	10.51	12.50	10.47	12.94	10.42	13.83	11.06		
37	9.90	9.17	10.38	9.82	11.13	9.61	11.83	10.43	12.24	10.37	12.66	10.32	13.50	10.96		
39	9.72	9.09	10.20	9.75	10.94	9.53	11.60	10.34	11.99	10.28	12.38	10.22	13.16	10.85		
41	9.55	9.01	10.02	9.67	10.75	9.45	11.37	10.25	11.73	10.19	12.09	10.12	12.82	10.74		
43	9.38	8.93	9.85	9.59	10.56	9.37	11.14	10.17	11.47	10.10	11.81	10.03	12.48	10.64		
46	9.21	8.85	9.53	9.34	10.28	9.26	10.88	10.07	11.12	9.97	11.28	9.85	11.96	10.47		
50	7.43	7.28	7.63	7.48	8.25	8.09	8.67	8.50	8.78	8.60	8.80	8.62	9.05	8.87		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Model FDE125VSAPVG Indoor unit FDE60VG (2 units) Outdoor unit FDC125VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	9.21	10.74	10.02	11.03	9.94	11.34	9.87	11.96	10.47	12.57	10.29
13					10.63	9.40	11.26	10.21	11.57	10.13	11.91	10.06	12.58	10.67	13.25	10.48
15					11.10	9.59	11.78	10.41	12.11	10.33	12.47	10.25	13.20	10.86	13.92	10.67
17					11.58	9.79	12.29	10.60	12.65	10.52	13.04	10.45	13.82	11.06	14.59	10.87
19					11.82	9.89	12.56	10.70	12.92	10.62	13.32	10.55	14.11	11.15	14.90	10.96
21					12.06	9.99	12.82	10.80	13.19	10.72	13.60	10.65	14.40	11.25	15.20	11.05
23					12.06	9.99	12.85	10.81	13.23	10.74	13.64	10.66	14.45	11.26	15.27	11.07
25			11.16	10.17	12.06	9.99	12.89	10.83	13.27	10.75	13.68	10.68	14.51	11.28	15.34	11.09
27			11.08	10.13	12.05	9.99	12.92	10.84	13.31	10.77	13.69	10.68	14.47	11.27		
29			11.00	10.10	11.87	9.91	12.71	10.76	13.11	10.69	13.51	10.62	14.31	11.22		
31			10.92	10.06	11.69	9.84	12.49	10.68	12.90	10.62	13.32	10.55	14.15	11.17		
33	10.27	9.35	10.72	9.97	11.51	9.76	12.27	10.59	12.70	10.54	13.13	10.48	13.99	11.12		
35	10.07	9.25	10.55	9.90	11.33	9.69	12.06	10.51	12.50	10.47	12.94	10.42	13.83	11.06		
37	9.90	9.17	10.38	9.82	11.13	9.61	11.83	10.43	12.24	10.37	12.66	10.32	13.50	10.96		
39	9.72	9.09	10.20	9.75	10.94	9.53	11.60	10.34	11.99	10.28	12.38	10.22	13.16	10.85		
41	9.55	9.01	10.02	9.67	10.75	9.45	11.37	10.25	11.73	10.19	12.09	10.12	12.82	10.74		
43	9.38	8.93	9.85	9.59	10.56	9.37	11.14	10.17	11.47	10.10	11.81	10.03	12.48	10.64		
46	9.21	8.85	9.53	9.34	10.28	9.26	10.88	10.07	11.12	9.97	11.28	9.85	11.96	10.47		
50	7.43	7.28	7.63	7.48	8.25	8.09	8.67	8.50	8.78	8.60	8.80	8.62	9.05	8.87		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDE140VNAPVG Indoor unit FDE71VG (2 units) Outdoor unit FDC140VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	9.57	11.68	10.37	12.00	10.29	12.34	10.21	13.01	10.80	13.68	10.60
13					11.56	9.78	12.25	10.58	12.59	10.50	12.95	10.42	13.69	11.02	14.42	10.82
15					12.07	10.00	12.81	10.80	13.18	10.72	13.57	10.64	14.36	11.23	15.14	11.03
17					12.59	10.21	13.38	11.02	13.77	10.94	14.19	10.86	15.04	11.46	15.87	11.25
19					12.86	10.33	13.66	11.13	14.07	11.05	14.49	10.97	15.35	11.56	16.20	11.35
21					13.12	10.44	13.95	11.24	14.36	11.16	14.79	11.08	15.66	11.66	16.53	11.45
23					13.12	10.44	13.99	11.26	14.40	11.17	14.84	11.10	15.73	11.69	16.61	11.47
25			12.14	10.61	13.11	10.43	14.02	11.27	14.44	11.19	14.89	11.11	15.79	11.71	16.69	11.49
27			12.06	10.57	13.11	10.43	14.06	11.29	14.48	11.21	14.90	11.12	15.74	11.69		
29			11.97	10.53	12.91	10.35	13.82	11.19	14.26	11.12	14.70	11.04	15.56	11.63		
31			11.88	10.49	12.72	10.26	13.59	11.10	14.04	11.04	14.49	10.97	15.40	11.58		
33	11.18	9.79	11.67	10.40	12.52	10.18	13.36	11.01	13.82	10.96	14.29	10.90	15.22	11.52		
35	10.96	9.68	11.48	10.31	12.32	10.10	13.11	10.92	13.60	10.88	14.09	10.82	15.05	11.46		
37	10.76	9.59	11.29	10.23	12.11	10.01	12.87	10.82	13.32	10.77	13.77	10.71	14.69	11.34		
39	10.58	9.50	11.10	10.14	11.91	9.93	12.62	10.73	13.05	10.67	13.46	10.60	14.32	11.22		
41	10.39	9.41	10.91	10.06	11.70	9.84	12.37	10.63	12.76	10.57	13.16	10.50	13.95	11.10		
43	10.21	9.32	10.71	9.97	11.49	9.75	12.11	10.53	12.48	10.46	12.85	10.39	13.58	10.98		
46	10.03	9.23	10.47	9.87	11.13	9.61	11.73	10.39	12.10	10.33	12.27	10.18	13.01	10.80		
50	7.61	7.45	7.88	7.72	8.35	8.19	8.75	8.58	8.97	8.79	8.98	8.80	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Model FDE140VSAPVG Indoor unit FDE71VG (2 units) Outdoor unit FDC140VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	9.57	11.68	10.37	12.00	10.29	12.34	10.21	13.01	10.80	13.68	10.60
13					11.56	9.78	12.25	10.58	12.59	10.50	12.95	10.42	13.69	11.02	14.42	10.82
15					12.07	10.00	12.81	10.80	13.18	10.72	13.57	10.64	14.36	11.23	15.14	11.03
17					12.59	10.21	13.38	11.02	13.77	10.94	14.19	10.86	15.04	11.46	15.87	11.25
19					12.86	10.33	13.66	11.13	14.07	11.05	14.49	10.97	15.35	11.56	16.20	11.35
21					13.12	10.44	13.95	11.24	14.36	11.16	14.79	11.08	15.66	11.66	16.53	11.45
23					13.12	10.44	13.99	11.26	14.40	11.17	14.84	11.10	15.73	11.69	16.61	11.47
25			12.14	10.61	13.11	10.43	14.02	11.27	14.44	11.19	14.89	11.11	15.79	11.71	16.69	11.49
27			12.06	10.57	13.11	10.43	14.06	11.29	14.48	11.21	14.90	11.12	15.74	11.69		
29			11.97	10.53	12.91	10.35	13.82	11.19	14.26	11.12	14.70	11.04	15.56	11.63		
31			11.88	10.49	12.72	10.26	13.59	11.10	14.04	11.04	14.49	10.97	15.40	11.58		
33	11.18	9.79	11.67	10.40	12.52	10.18	13.36	11.01	13.82	10.96	14.29	10.90	15.22	11.52		
35	10.96	9.68	11.48	10.31	12.32	10.10	13.11	10.92	13.60	10.88	14.09	10.82	15.05	11.46		
37	10.76	9.59	11.29	10.23	12.11	10.01	12.87	10.82	13.32	10.77	13.77	10.71	14.69	11.34		
39	10.58	9.50	11.10	10.14	11.91	9.93	12.62	10.73	13.05	10.67	13.46	10.60	14.32	11.22		
41	10.39	9.41	10.91	10.06	11.70	9.84	12.37	10.63	12.76	10.57	13.16	10.50	13.95	11.10		
43	10.21	9.32	10.71	9.97	11.49	9.75	12.11	10.53	12.48	10.46	12.85	10.39	13.58	10.98		
46	10.03	9.23	10.47	9.87	11.13	9.61	11.73	10.39	12.10	10.33	12.27	10.18	13.01	10.80		
50	7.61	7.45	7.88	7.72	8.35	8.19	8.75	8.58	8.97	8.79	8.98	8.80	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

(c) Triple type

Model FDE140VNATVG Indoor unit FDE50VG (3 units) Outdoor unit FDC140VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	9.45	11.68	10.22	12.00	10.14	12.34	10.06	13.01	10.63	13.68	10.44
13					11.56	9.66	12.25	10.44	12.59	10.35	12.95	10.27	13.69	10.85	14.42	10.65
15					12.07	9.87	12.81	10.65	13.18	10.57	13.57	10.49	14.36	11.07	15.14	10.87
17					12.59	10.09	13.38	10.87	13.77	10.79	14.19	10.72	15.04	11.29	15.87	11.09
19					12.86	10.20	13.66	10.99	14.07	10.91	14.49	10.83	15.35	11.40	16.20	11.19
21					13.12	10.32	13.95	11.10	14.36	11.02	14.79	10.94	15.66	11.50	16.53	11.29
23					13.12	10.32	13.99	11.12	14.40	11.03	14.84	10.95	15.73	11.53	16.61	11.31
25			12.14	10.49	13.11	10.31	14.02	11.13	14.44	11.05	14.89	10.97	15.79	11.54	16.69	11.33
27			12.06	10.45	13.11	10.31	14.06	11.14	14.48	11.07	14.90	10.98	15.74	11.53		
29			11.97	10.41	12.91	10.23	13.82	11.05	14.26	10.98	14.70	10.90	15.56	11.47		
31			11.88	10.37	12.72	10.14	13.59	10.96	14.04	10.90	14.49	10.83	15.40	11.41		
33	11.18	9.68	11.67	10.27	12.52	10.06	13.36	10.87	13.82	10.81	14.29	10.75	15.22	11.36		
35	10.96	9.57	11.48	10.19	12.32	9.97	13.11	10.77	13.60	10.73	14.09	10.68	15.05	11.30		
37	10.76	9.48	11.29	10.10	12.11	9.89	12.87	10.68	13.32	10.62	13.77	10.57	14.69	11.18		
39	10.58	9.39	11.10	10.02	11.91	9.80	12.62	10.58	13.05	10.52	13.46	10.46	14.32	11.06		
41	10.39	9.30	10.91	9.93	11.70	9.71	12.37	10.48	12.76	10.42	13.16	10.35	13.95	10.94		
43	10.21	9.21	10.71	9.84	11.49	9.63	12.11	10.39	12.48	10.32	12.85	10.24	13.58	10.82		
46	10.03	9.12	10.47	9.73	11.13	9.48	11.73	10.24	12.10	10.18	12.27	10.04	13.01	10.64		
50	7.61	7.45	7.88	7.72	8.35	8.19	8.75	8.58	8.97	8.79	8.98	8.80	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Model FDE140VSATVG Indoor unit FDE50VG (3 units) Outdoor unit FDC140VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	9.45	11.68	10.22	12.00	10.14	12.34	10.06	13.01	10.63	13.68	10.44
13					11.56	9.66	12.25	10.44	12.59	10.35	12.95	10.27	13.69	10.85	14.42	10.65
15					12.07	9.87	12.81	10.65	13.18	10.57	13.57	10.49	14.36	11.07	15.14	10.87
17					12.59	10.09	13.38	10.87	13.77	10.79	14.19	10.72	15.04	11.29	15.87	11.09
19					12.86	10.20	13.66	10.99	14.07	10.91	14.49	10.83	15.35	11.40	16.20	11.19
21					13.12	10.32	13.95	11.10	14.36	11.02	14.79	10.94	15.66	11.50	16.53	11.29
23					13.12	10.32	13.99	11.12	14.40	11.03	14.84	10.95	15.73	11.53	16.61	11.31
25			12.14	10.49	13.11	10.31	14.02	11.13	14.44	11.05	14.89	10.97	15.79	11.54	16.69	11.33
27			12.06	10.45	13.11	10.31	14.06	11.14	14.48	11.07	14.90	10.98	15.74	11.53		
29			11.97	10.41	12.91	10.23	13.82	11.05	14.26	10.98	14.70	10.90	15.56	11.47		
31			11.88	10.37	12.72	10.14	13.59	10.96	14.04	10.90	14.49	10.83	15.40	11.41		
33	11.18	9.68	11.67	10.27	12.52	10.06	13.36	10.87	13.82	10.81	14.29	10.75	15.22	11.36		
35	10.96	9.57	11.48	10.19	12.32	9.97	13.11	10.77	13.60	10.73	14.09	10.68	15.05	11.30		
37	10.76	9.48	11.29	10.10	12.11	9.89	12.87	10.68	13.32	10.62	13.77	10.57	14.69	11.18		
39	10.58	9.39	11.10	10.02	11.91	9.80	12.62	10.58	13.05	10.52	13.46	10.46	14.32	11.06		
41	10.39	9.30	10.91	9.93	11.70	9.71	12.37	10.48	12.76	10.42	13.16	10.35	13.95	10.94		
43	10.21	9.21	10.71	9.84	11.49	9.63	12.11	10.39	12.48	10.32	12.85	10.24	13.58	10.82		
46	10.03	9.12	10.47	9.73	11.13	9.48	11.73	10.24	12.10	10.18	12.27	10.04	13.01	10.64		
50	7.61	7.45	7.88	7.72	8.35	8.19	8.75	8.58	8.97	8.79	8.98	8.80	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

(4) Duct connected-High static pressure type (FDU)

Model FDU100VNAVF2 Indoor unit FDU100VF2 Outdoor unit FDC100VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.88	8.59	7.50	8.82	7.38	9.07	7.26	9.56	7.69	10.06	7.42
13					8.50	6.99	9.00	7.61	9.26	7.48	9.52	7.36	10.06	7.78	10.60	7.49
15					8.88	7.10	9.42	7.71	9.69	7.58	9.98	7.45	10.56	7.87	11.14	7.57
17					9.26	7.21	9.84	7.82	10.12	7.69	10.43	7.56	11.05	7.96	11.67	7.65
19					9.46	7.27	10.05	7.88	10.34	7.74	10.65	7.60	11.29	8.01	11.92	7.69
21					9.65	7.33	10.25	7.93	10.56	7.80	10.88	7.66	11.52	8.06	12.16	7.73
23					9.65	7.33	10.28	7.94	10.59	7.80	10.91	7.66	11.56	8.06	12.21	7.74
25			8.93	7.64	9.64	7.33	10.31	7.95	10.62	7.81	10.95	7.67	11.61	8.07	12.27	7.75
27			8.86	7.62	9.64	7.33	10.34	7.95	10.65	7.82	10.96	7.68	11.57	8.06		
29			8.80	7.59	9.50	7.29	10.17	7.91	10.49	7.78	10.81	7.64	11.45	8.04		
31			8.73	7.57	9.35	7.24	9.99	7.86	10.32	7.74	10.66	7.61	11.32	8.02		
33	8.22	7.04	8.58	7.52	9.21	7.20	9.82	7.82	10.16	7.70	10.51	7.57	11.19	7.99		
35	8.05	6.98	8.44	7.47	9.06	7.15	9.64	7.77	10.00	7.66	10.36	7.54	11.07	7.97		
37	7.92	6.93	8.30	7.43	8.91	7.11	9.46	7.72	9.79	7.61	10.13	7.49	10.80	7.92		
39	7.78	6.88	8.16	7.38	8.75	7.06	9.28	7.68	9.59	7.56	9.90	7.44	10.53	7.87		
41	7.64	6.83	8.02	7.33	8.60	7.02	9.09	7.63	9.38	7.51	9.68	7.39	10.26	7.82		
43	7.50	6.77	7.88	7.29	8.45	6.97	8.91	7.58	9.18	7.46	9.45	7.34	9.99	7.77		
46	7.33	6.71	7.67	7.22	8.22	6.91	8.58	7.50	8.83	7.38	9.07	7.26	9.57	7.70		
50	7.09	6.63	7.39	7.13	7.91	6.82	8.19	7.41	8.35	7.28	8.51	7.14	8.83	7.57		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature				
		℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Model FDU100VSAVF2 Indoor unit FDU100VF2 Outdoor unit FDC100VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.88	8.59	7.50	8.82	7.38	9.07	7.26	9.56	7.69	10.06	7.42
13					8.50	6.99	9.00	7.61	9.26	7.48	9.52	7.36	10.06	7.78	10.60	7.49
15					8.88	7.10	9.42	7.71	9.69	7.58	9.98	7.45	10.56	7.87	11.14	7.57
17					9.26	7.21	9.84	7.82	10.12	7.69	10.43	7.56	11.05	7.96	11.67	7.65
19					9.46	7.27	10.05	7.88	10.34	7.74	10.65	7.60	11.29	8.01	11.92	7.69
21					9.65	7.33	10.25	7.93	10.56	7.80	10.88	7.66	11.52	8.06	12.16	7.73
23					9.65	7.33	10.28	7.94	10.59	7.80	10.91	7.66	11.56	8.06	12.21	7.74
25			8.93	7.64	9.64	7.33	10.31	7.95	10.62	7.81	10.95	7.67	11.61	8.07	12.27	7.75
27			8.86	7.62	9.64	7.33	10.34	7.95	10.65	7.82	10.96	7.68	11.57	8.06		
29			8.80	7.59	9.50	7.29	10.17	7.91	10.49	7.78	10.81	7.64	11.45	8.04		
31			8.73	7.57	9.35	7.24	9.99	7.86	10.32	7.74	10.66	7.61	11.32	8.02		
33	8.22	7.04	8.58	7.52	9.21	7.20	9.82	7.82	10.16	7.70	10.51	7.57	11.19	7.99		
35	8.05	6.98	8.44	7.47	9.06	7.15	9.64	7.77	10.00	7.66	10.36	7.54	11.07	7.97		
37	7.92	6.93	8.30	7.43	8.91	7.11	9.46	7.72	9.79	7.61	10.13	7.49	10.80	7.92		
39	7.78	6.88	8.16	7.38	8.75	7.06	9.28	7.68	9.59	7.56	9.90	7.44	10.53	7.87		
41	7.64	6.83	8.02	7.33	8.60	7.02	9.09	7.63	9.38	7.51	9.68	7.39	10.26	7.82		
43	7.50	6.77	7.88	7.29	8.45	6.97	8.91	7.58	9.18	7.46	9.45	7.34	9.99	7.77		
46	7.33	6.71	7.67	7.22	8.22	6.91	8.58	7.50	8.83	7.38	9.07	7.26	9.57	7.70		
50	7.09	6.63	7.39	7.13	7.91	6.82	8.19	7.41	8.35	7.28	8.51	7.14	8.83	7.57		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature				
		℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

PJG000Z046 C

Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDU125VNAVF Indoor unit FDU125VF Outdoor unit FDC125VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	9.23	10.74	10.04	11.03	9.97	11.34	9.90	11.96	10.51	12.57	10.34
13					10.63	9.44	11.26	10.24	11.57	10.17	11.91	10.11	12.58	10.72	13.25	10.55
15					11.10	9.63	11.78	10.44	12.11	10.37	12.47	10.31	13.20	10.92	13.92	10.75
17					11.58	9.84	12.29	10.64	12.65	10.58	13.04	10.52	13.82	11.13	14.59	10.96
19					11.82	9.94	12.56	10.75	12.92	10.68	13.32	10.62	14.11	11.23	14.90	11.06
21					12.06	10.04	12.82	10.86	13.19	10.79	13.60	10.73	14.40	11.33	15.20	11.15
23					12.06	10.04	12.85	10.87	13.23	10.80	13.64	10.74	14.45	11.35	15.27	11.17
25			11.16	10.20	12.06	10.04	12.89	10.88	13.27	10.82	13.68	10.76	14.51	11.37	15.34	11.20
27			11.08	10.16	12.05	10.04	12.92	10.90	13.31	10.83	13.69	10.76	14.47	11.35		
29			11.00	10.12	11.87	9.96	12.71	10.81	13.11	10.76	13.51	10.69	14.31	11.30		
31			10.92	10.09	11.69	9.88	12.49	10.72	12.90	10.67	13.32	10.62	14.15	11.24		
33	10.27	9.37	10.72	9.99	11.51	9.81	12.27	10.64	12.70	10.60	13.13	10.55	13.99	11.19		
35	10.07	9.28	10.55	9.92	11.33	9.73	12.06	10.55	12.50	10.52	12.94	10.48	13.83	11.14		
37	9.90	9.19	10.38	9.84	11.13	9.65	11.83	10.46	12.24	10.42	12.66	10.38	13.50	11.02		
39	9.72	9.11	10.20	9.76	10.94	9.57	11.60	10.37	11.99	10.33	12.38	10.28	13.16	10.91		
41	9.55	9.02	10.02	9.68	10.75	9.49	11.37	10.28	11.73	10.23	12.09	10.17	12.82	10.80		
43	9.38	8.94	9.85	9.60	10.56	9.41	11.14	10.19	11.47	10.13	11.81	10.07	12.48	10.68		
46	9.21	8.86	9.53	9.34	10.28	9.29	10.88	10.09	11.12	10.00	11.28	9.88	11.96	10.51		
50	7.43	7.28	7.63	7.48	8.25	8.09	8.67	8.50	8.78	8.60	8.80	8.62	9.05	8.87		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Model FDU125VSAVF Indoor unit FDU125VF Outdoor unit FDC125VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	9.23	10.74	10.04	11.03	9.97	11.34	9.90	11.96	10.51	12.57	10.34
13					10.63	9.44	11.26	10.24	11.57	10.17	11.91	10.11	12.58	10.72	13.25	10.55
15					11.10	9.63	11.78	10.44	12.11	10.37	12.47	10.31	13.20	10.92	13.92	10.75
17					11.58	9.84	12.29	10.64	12.65	10.58	13.04	10.52	13.82	11.13	14.59	10.96
19					11.82	9.94	12.56	10.75	12.92	10.68	13.32	10.62	14.11	11.23	14.90	11.06
21					12.06	10.04	12.82	10.86	13.19	10.79	13.60	10.73	14.40	11.33	15.20	11.15
23					12.06	10.04	12.85	10.87	13.23	10.80	13.64	10.74	14.45	11.35	15.27	11.17
25			11.16	10.20	12.06	10.04	12.89	10.88	13.27	10.82	13.68	10.76	14.51	11.37	15.34	11.20
27			11.08	10.16	12.05	10.04	12.92	10.90	13.31	10.83	13.69	10.76	14.47	11.35		
29			11.00	10.12	11.87	9.96	12.71	10.81	13.11	10.76	13.51	10.69	14.31	11.30		
31			10.92	10.09	11.69	9.88	12.49	10.72	12.90	10.67	13.32	10.62	14.15	11.24		
33	10.27	9.37	10.72	9.99	11.51	9.81	12.27	10.64	12.70	10.60	13.13	10.55	13.99	11.19		
35	10.07	9.28	10.55	9.92	11.33	9.73	12.06	10.55	12.50	10.52	12.94	10.48	13.83	11.14		
37	9.90	9.19	10.38	9.84	11.13	9.65	11.83	10.46	12.24	10.42	12.66	10.38	13.50	11.02		
39	9.72	9.11	10.20	9.76	10.94	9.57	11.60	10.37	11.99	10.33	12.38	10.28	13.16	10.91		
41	9.55	9.02	10.02	9.68	10.75	9.49	11.37	10.28	11.73	10.23	12.09	10.17	12.82	10.80		
43	9.38	8.94	9.85	9.60	10.56	9.41	11.14	10.19	11.47	10.13	11.81	10.07	12.48	10.68		
46	9.21	8.86	9.53	9.34	10.28	9.29	10.88	10.09	11.12	10.00	11.28	9.88	11.96	10.51		
50	7.43	7.28	7.63	7.48	8.25	8.09	8.67	8.50	8.78	8.60	8.80	8.62	9.05	8.87		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

PJG000Z046 C

Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDU140VNAVF Indoor unit FDU140VF Outdoor unit FDC140VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	9.86	11.68	10.75	12.00	10.63	12.34	10.50	13.01	11.15	13.68	10.85
13					11.56	10.03	12.25	10.93	12.59	10.79	12.95	10.66	13.69	11.31	14.42	11.00
15					12.07	10.21	12.81	11.10	13.18	10.97	13.57	10.83	14.36	11.47	15.14	11.15
17					12.59	10.38	13.38	11.27	13.77	11.14	14.19	11.00	15.04	11.64	15.87	11.31
19					12.86	10.48	13.66	11.36	14.07	11.23	14.49	11.09	15.35	11.71	16.20	11.38
21					13.12	10.57	13.95	11.45	14.36	11.31	14.79	11.17	15.66	11.79	16.53	11.45
23					13.12	10.57	13.99	11.47	14.40	11.33	14.84	11.19	15.73	11.81	16.61	11.47
25			12.14	10.90	13.11	10.57	14.02	11.48	14.44	11.34	14.89	11.20	15.79	11.82	16.69	11.49
27			12.06	10.86	13.11	10.57	14.06	11.49	14.48	11.35	14.90	11.20	15.74	11.81		
29			11.97	10.83	12.91	10.50	13.82	11.41	14.26	11.29	14.70	11.15	15.56	11.77		
31			11.88	10.80	12.72	10.43	13.59	11.34	14.04	11.22	14.49	11.09	15.40	11.73		
33	11.18	10.02	11.67	10.71	12.52	10.36	13.36	11.27	13.82	11.15	14.29	11.03	15.22	11.68		
35	10.96	9.93	11.48	10.64	12.32	10.29	13.11	11.19	13.60	11.09	14.09	10.97	15.05	11.64		
37	10.76	9.85	11.29	10.57	12.11	10.22	12.87	11.12	13.32	11.01	13.77	10.89	14.69	11.55		
39	10.58	9.77	11.10	10.50	11.91	10.15	12.62	11.04	13.05	10.93	13.46	10.80	14.32	11.46		
41	10.39	9.70	10.91	10.43	11.70	10.08	12.37	10.96	12.76	10.85	13.16	10.72	13.95	11.37		
43	10.21	9.62	10.71	10.36	11.49	10.01	12.11	10.89	12.48	10.76	12.85	10.64	13.58	11.29		
46	10.03	9.54	10.47	10.26	11.13	9.89	11.73	10.77	12.10	10.66	12.27	10.48	13.01	11.15		
50	7.61	7.45	7.88	7.72	8.35	8.19	8.75	8.58	8.97	8.79	8.98	8.80	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Model FDU140VSAVF Indoor unit FDU140VF Outdoor unit FDC140VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	9.86	11.68	10.75	12.00	10.63	12.34	10.50	13.01	11.15	13.68	10.85
13					11.56	10.03	12.25	10.93	12.59	10.79	12.95	10.66	13.69	11.31	14.42	11.00
15					12.07	10.21	12.81	11.10	13.18	10.97	13.57	10.83	14.36	11.47	15.14	11.15
17					12.59	10.38	13.38	11.27	13.77	11.14	14.19	11.00	15.04	11.64	15.87	11.31
19					12.86	10.48	13.66	11.36	14.07	11.23	14.49	11.09	15.35	11.71	16.20	11.38
21					13.12	10.57	13.95	11.45	14.36	11.31	14.79	11.17	15.66	11.79	16.53	11.45
23					13.12	10.57	13.99	11.47	14.40	11.33	14.84	11.19	15.73	11.81	16.61	11.47
25			12.14	10.90	13.11	10.57	14.02	11.48	14.44	11.34	14.89	11.20	15.79	11.82	16.69	11.49
27			12.06	10.86	13.11	10.57	14.06	11.49	14.48	11.35	14.90	11.20	15.74	11.81		
29			11.97	10.83	12.91	10.50	13.82	11.41	14.26	11.29	14.70	11.15	15.56	11.77		
31			11.88	10.80	12.72	10.43	13.59	11.34	14.04	11.22	14.49	11.09	15.40	11.73		
33	11.18	10.02	11.67	10.71	12.52	10.36	13.36	11.27	13.82	11.15	14.29	11.03	15.22	11.68		
35	10.96	9.93	11.48	10.64	12.32	10.29	13.11	11.19	13.60	11.09	14.09	10.97	15.05	11.64		
37	10.76	9.85	11.29	10.57	12.11	10.22	12.87	11.12	13.32	11.01	13.77	10.89	14.69	11.55		
39	10.58	9.77	11.10	10.50	11.91	10.15	12.62	11.04	13.05	10.93	13.46	10.80	14.32	11.46		
41	10.39	9.70	10.91	10.43	11.70	10.08	12.37	10.96	12.76	10.85	13.16	10.72	13.95	11.37		
43	10.21	9.62	10.71	10.36	11.49	10.01	12.11	10.89	12.48	10.76	12.85	10.64	13.58	11.29		
46	10.03	9.54	10.47	10.26	11.13	9.89	11.73	10.77	12.10	10.66	12.27	10.48	13.01	11.15		
50	7.61	7.45	7.88	7.72	8.35	8.19	8.75	8.58	8.97	8.79	8.98	8.80	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

(5) Duct connected-Low / Middle static pressure type (FDUM)

(a) Single type

Model FDUM100VNAVF2 Indoor unit FDUM100VF2 Outdoor unit FDC100VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.88	8.59	7.50	8.82	7.38	9.07	7.26	9.56	7.69	10.06	7.42
13					8.50	6.99	9.00	7.61	9.26	7.48	9.52	7.36	10.06	7.78	10.60	7.49
15					8.88	7.10	9.42	7.71	9.69	7.58	9.98	7.45	10.56	7.87	11.14	7.57
17					9.26	7.21	9.84	7.82	10.12	7.69	10.43	7.56	11.05	7.96	11.67	7.65
19					9.46	7.27	10.05	7.88	10.34	7.74	10.65	7.60	11.29	8.01	11.92	7.69
21					9.65	7.33	10.25	7.93	10.56	7.80	10.88	7.66	11.52	8.06	12.16	7.73
23					9.65	7.33	10.28	7.94	10.59	7.80	10.91	7.66	11.56	8.06	12.21	7.74
25			8.93	7.64	9.64	7.33	10.31	7.95	10.62	7.81	10.95	7.67	11.61	8.07	12.27	7.75
27			8.86	7.62	9.64	7.33	10.34	7.95	10.65	7.82	10.96	7.68	11.57	8.06		
29			8.80	7.59	9.50	7.29	10.17	7.91	10.49	7.78	10.81	7.64	11.45	8.04		
31			8.73	7.57	9.35	7.24	9.99	7.86	10.32	7.74	10.66	7.61	11.32	8.02		
33	8.22	7.04	8.58	7.52	9.21	7.20	9.82	7.82	10.16	7.70	10.51	7.57	11.19	7.99		
35	8.05	6.98	8.44	7.47	9.06	7.15	9.64	7.77	10.00	7.66	10.36	7.54	11.07	7.97		
37	7.92	6.93	8.30	7.43	8.91	7.11	9.46	7.72	9.79	7.61	10.13	7.49	10.80	7.92		
39	7.78	6.88	8.16	7.38	8.75	7.06	9.28	7.68	9.59	7.56	9.90	7.44	10.53	7.87		
41	7.64	6.83	8.02	7.33	8.60	7.02	9.09	7.63	9.38	7.51	9.68	7.39	10.26	7.82		
43	7.50	6.77	7.88	7.29	8.45	6.97	8.91	7.58	9.18	7.46	9.45	7.34	9.99	7.77		
46	7.33	6.71	7.67	7.22	8.22	6.91	8.58	7.50	8.83	7.38	9.07	7.26	9.57	7.70		
50	7.09	6.63	7.39	7.13	7.91	6.82	8.19	7.41	8.35	7.28	8.51	7.14	8.83	7.57		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature				
		℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Model FDUM100VSAVF2 Indoor unit FDUM100VF2 Outdoor unit FDC100VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.88	8.59	7.50	8.82	7.38	9.07	7.26	9.56	7.69	10.06	7.42
13					8.50	6.99	9.00	7.61	9.26	7.48	9.52	7.36	10.06	7.78	10.60	7.49
15					8.88	7.10	9.42	7.71	9.69	7.58	9.98	7.45	10.56	7.87	11.14	7.57
17					9.26	7.21	9.84	7.82	10.12	7.69	10.43	7.56	11.05	7.96	11.67	7.65
19					9.46	7.27	10.05	7.88	10.34	7.74	10.65	7.60	11.29	8.01	11.92	7.69
21					9.65	7.33	10.25	7.93	10.56	7.80	10.88	7.66	11.52	8.06	12.16	7.73
23					9.65	7.33	10.28	7.94	10.59	7.80	10.91	7.66	11.56	8.06	12.21	7.74
25			8.93	7.64	9.64	7.33	10.31	7.95	10.62	7.81	10.95	7.67	11.61	8.07	12.27	7.75
27			8.86	7.62	9.64	7.33	10.34	7.95	10.65	7.82	10.96	7.68	11.57	8.06		
29			8.80	7.59	9.50	7.29	10.17	7.91	10.49	7.78	10.81	7.64	11.45	8.04		
31			8.73	7.57	9.35	7.24	9.99	7.86	10.32	7.74	10.66	7.61	11.32	8.02		
33	8.22	7.04	8.58	7.52	9.21	7.20	9.82	7.82	10.16	7.70	10.51	7.57	11.19	7.99		
35	8.05	6.98	8.44	7.47	9.06	7.15	9.64	7.77	10.00	7.66	10.36	7.54	11.07	7.97		
37	7.92	6.93	8.30	7.43	8.91	7.11	9.46	7.72	9.79	7.61	10.13	7.49	10.80	7.92		
39	7.78	6.88	8.16	7.38	8.75	7.06	9.28	7.68	9.59	7.56	9.90	7.44	10.53	7.87		
41	7.64	6.83	8.02	7.33	8.60	7.02	9.09	7.63	9.38	7.51	9.68	7.39	10.26	7.82		
43	7.50	6.77	7.88	7.29	8.45	6.97	8.91	7.58	9.18	7.46	9.45	7.34	9.99	7.77		
46	7.33	6.71	7.67	7.22	8.22	6.91	8.58	7.50	8.83	7.38	9.07	7.26	9.57	7.70		
50	7.09	6.63	7.39	7.13	7.91	6.82	8.19	7.41	8.35	7.28	8.51	7.14	8.83	7.57		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature				
		℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDUM125VNAVF Indoor unit FDUM125VF Outdoor unit FDC125VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	9.23	10.74	10.04	11.03	9.97	11.34	9.90	11.96	10.51	12.57	10.34
13					10.63	9.44	11.26	10.24	11.57	10.17	11.91	10.11	12.58	10.72	13.25	10.55
15					11.10	9.63	11.78	10.44	12.11	10.37	12.47	10.31	13.20	10.92	13.92	10.75
17					11.58	9.84	12.29	10.64	12.65	10.58	13.04	10.52	13.82	11.13	14.59	10.96
19					11.82	9.94	12.56	10.75	12.92	10.68	13.32	10.62	14.11	11.23	14.90	11.06
21					12.06	10.04	12.82	10.86	13.19	10.79	13.60	10.73	14.40	11.33	15.20	11.15
23					12.06	10.04	12.85	10.87	13.23	10.80	13.64	10.74	14.45	11.35	15.27	11.17
25			11.16	10.20	12.06	10.04	12.89	10.88	13.27	10.82	13.68	10.76	14.51	11.37	15.34	11.20
27			11.08	10.16	12.05	10.04	12.92	10.90	13.31	10.83	13.69	10.76	14.47	11.35		
29			11.00	10.12	11.87	9.96	12.71	10.81	13.11	10.76	13.51	10.69	14.31	11.30		
31			10.92	10.09	11.69	9.88	12.49	10.72	12.90	10.67	13.32	10.62	14.15	11.24		
33	10.27	9.37	10.72	9.99	11.51	9.81	12.27	10.64	12.70	10.60	13.13	10.55	13.99	11.19		
35	10.07	9.28	10.55	9.92	11.33	9.73	12.06	10.55	12.50	10.52	12.94	10.48	13.83	11.14		
37	9.90	9.19	10.38	9.84	11.13	9.65	11.83	10.46	12.24	10.42	12.66	10.38	13.50	11.02		
39	9.72	9.11	10.20	9.76	10.94	9.57	11.60	10.37	11.99	10.33	12.38	10.28	13.16	10.91		
41	9.55	9.02	10.02	9.68	10.75	9.49	11.37	10.28	11.73	10.23	12.09	10.17	12.82	10.80		
43	9.38	8.94	9.85	9.60	10.56	9.41	11.14	10.19	11.47	10.13	11.81	10.07	12.48	10.68		
46	9.21	8.86	9.53	9.34	10.28	9.29	10.88	10.09	11.12	10.00	11.28	9.88	11.96	10.51		
50	7.43	7.28	7.63	7.48	8.25	8.09	8.67	8.50	8.78	8.60	8.80	8.62	9.05	8.87		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Model FDUM125VSAVF Indoor unit FDUM125VF Outdoor unit FDC125VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	9.23	10.74	10.04	11.03	9.97	11.34	9.90	11.96	10.51	12.57	10.34
13					10.63	9.44	11.26	10.24	11.57	10.17	11.91	10.11	12.58	10.72	13.25	10.55
15					11.10	9.63	11.78	10.44	12.11	10.37	12.47	10.31	13.20	10.92	13.92	10.75
17					11.58	9.84	12.29	10.64	12.65	10.58	13.04	10.52	13.82	11.13	14.59	10.96
19					11.82	9.94	12.56	10.75	12.92	10.68	13.32	10.62	14.11	11.23	14.90	11.06
21					12.06	10.04	12.82	10.86	13.19	10.79	13.60	10.73	14.40	11.33	15.20	11.15
23					12.06	10.04	12.85	10.87	13.23	10.80	13.64	10.74	14.45	11.35	15.27	11.17
25			11.16	10.20	12.06	10.04	12.89	10.88	13.27	10.82	13.68	10.76	14.51	11.37	15.34	11.20
27			11.08	10.16	12.05	10.04	12.92	10.90	13.31	10.83	13.69	10.76	14.47	11.35		
29			11.00	10.12	11.87	9.96	12.71	10.81	13.11	10.76	13.51	10.69	14.31	11.30		
31			10.92	10.09	11.69	9.88	12.49	10.72	12.90	10.67	13.32	10.62	14.15	11.24		
33	10.27	9.37	10.72	9.99	11.51	9.81	12.27	10.64	12.70	10.60	13.13	10.55	13.99	11.19		
35	10.07	9.28	10.55	9.92	11.33	9.73	12.06	10.55	12.50	10.52	12.94	10.48	13.83	11.14		
37	9.90	9.19	10.38	9.84	11.13	9.65	11.83	10.46	12.24	10.42	12.66	10.38	13.50	11.02		
39	9.72	9.11	10.20	9.76	10.94	9.57	11.60	10.37	11.99	10.33	12.38	10.28	13.16	10.91		
41	9.55	9.02	10.02	9.68	10.75	9.49	11.37	10.28	11.73	10.23	12.09	10.17	12.82	10.80		
43	9.38	8.94	9.85	9.60	10.56	9.41	11.14	10.19	11.47	10.13	11.81	10.07	12.48	10.68		
46	9.21	8.86	9.53	9.34	10.28	9.29	10.88	10.09	11.12	10.00	11.28	9.88	11.96	10.51		
50	7.43	7.28	7.63	7.48	8.25	8.09	8.67	8.50	8.78	8.60	8.80	8.62	9.05	8.87		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDUM140VNAVF Indoor unit FDUM140VF Outdoor unit FDC140VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	9.86	11.68	10.75	12.00	10.63	12.34	10.50	13.01	11.15	13.68	10.85
13					11.56	10.03	12.25	10.93	12.59	10.79	12.95	10.66	13.69	11.31	14.42	11.00
15					12.07	10.21	12.81	11.10	13.18	10.97	13.57	10.83	14.36	11.47	15.14	11.15
17					12.59	10.38	13.38	11.27	13.77	11.14	14.19	11.00	15.04	11.64	15.87	11.31
19					12.86	10.48	13.66	11.36	14.07	11.23	14.49	11.09	15.35	11.71	16.20	11.38
21					13.12	10.57	13.95	11.45	14.36	11.31	14.79	11.17	15.66	11.79	16.53	11.45
23					13.12	10.57	13.99	11.47	14.40	11.33	14.84	11.19	15.73	11.81	16.61	11.47
25			12.14	10.90	13.11	10.57	14.02	11.48	14.44	11.34	14.89	11.20	15.79	11.82	16.69	11.49
27			12.06	10.86	13.11	10.57	14.06	11.49	14.48	11.35	14.90	11.20	15.74	11.81		
29			11.97	10.83	12.91	10.50	13.82	11.41	14.26	11.29	14.70	11.15	15.56	11.77		
31			11.88	10.80	12.72	10.43	13.59	11.34	14.04	11.22	14.49	11.09	15.40	11.73		
33	11.18	10.02	11.67	10.71	12.52	10.36	13.36	11.27	13.82	11.15	14.29	11.03	15.22	11.68		
35	10.96	9.93	11.48	10.64	12.32	10.29	13.11	11.19	13.60	11.09	14.09	10.97	15.05	11.64		
37	10.76	9.85	11.29	10.57	12.11	10.22	12.87	11.12	13.32	11.01	13.77	10.89	14.69	11.55		
39	10.58	9.77	11.10	10.50	11.91	10.15	12.62	11.04	13.05	10.93	13.46	10.80	14.32	11.46		
41	10.39	9.70	10.91	10.43	11.70	10.08	12.37	10.96	12.76	10.85	13.16	10.72	13.95	11.37		
43	10.21	9.62	10.71	10.36	11.49	10.01	12.11	10.89	12.48	10.76	12.85	10.64	13.58	11.29		
46	10.03	9.54	10.47	10.26	11.13	9.89	11.73	10.77	12.10	10.66	12.27	10.48	13.01	11.15		
50	7.61	7.45	7.88	7.72	8.35	8.19	8.75	8.58	8.97	8.79	8.98	8.80	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Model FDUM140VSAVF Indoor unit FDUM140VF Outdoor unit FDC140VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	9.86	11.68	10.75	12.00	10.63	12.34	10.50	13.01	11.15	13.68	10.85
13					11.56	10.03	12.25	10.93	12.59	10.79	12.95	10.66	13.69	11.31	14.42	11.00
15					12.07	10.21	12.81	11.10	13.18	10.97	13.57	10.83	14.36	11.47	15.14	11.15
17					12.59	10.38	13.38	11.27	13.77	11.14	14.19	11.00	15.04	11.64	15.87	11.31
19					12.86	10.48	13.66	11.36	14.07	11.23	14.49	11.09	15.35	11.71	16.20	11.38
21					13.12	10.57	13.95	11.45	14.36	11.31	14.79	11.17	15.66	11.79	16.53	11.45
23					13.12	10.57	13.99	11.47	14.40	11.33	14.84	11.19	15.73	11.81	16.61	11.47
25			12.14	10.90	13.11	10.57	14.02	11.48	14.44	11.34	14.89	11.20	15.79	11.82	16.69	11.49
27			12.06	10.86	13.11	10.57	14.06	11.49	14.48	11.35	14.90	11.20	15.74	11.81		
29			11.97	10.83	12.91	10.50	13.82	11.41	14.26	11.29	14.70	11.15	15.56	11.77		
31			11.88	10.80	12.72	10.43	13.59	11.34	14.04	11.22	14.49	11.09	15.40	11.73		
33	11.18	10.02	11.67	10.71	12.52	10.36	13.36	11.27	13.82	11.15	14.29	11.03	15.22	11.68		
35	10.96	9.93	11.48	10.64	12.32	10.29	13.11	11.19	13.60	11.09	14.09	10.97	15.05	11.64		
37	10.76	9.85	11.29	10.57	12.11	10.22	12.87	11.12	13.32	11.01	13.77	10.89	14.69	11.55		
39	10.58	9.77	11.10	10.50	11.91	10.15	12.62	11.04	13.05	10.93	13.46	10.80	14.32	11.46		
41	10.39	9.70	10.91	10.43	11.70	10.08	12.37	10.96	12.76	10.85	13.16	10.72	13.95	11.37		
43	10.21	9.62	10.71	10.36	11.49	10.01	12.11	10.89	12.48	10.76	12.85	10.64	13.58	11.29		
46	10.03	9.54	10.47	10.26	11.13	9.89	11.73	10.77	12.10	10.66	12.27	10.48	13.01	11.15		
50	7.61	7.45	7.88	7.72	8.35	8.19	8.75	8.58	8.97	8.79	8.98	8.80	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

(b) Twin type

Model FDUM100VNAPVF Indoor unit FDUM50VF (2 units) Outdoor unit FDC100VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃DB		21 ℃DB		23 ℃DB		26 ℃DB		27 ℃DB		28 ℃DB		31 ℃DB		33 ℃DB	
	12 ℃WB		14 ℃WB		16 ℃WB		18 ℃WB		19 ℃WB		20 ℃WB		22 ℃WB		24 ℃WB	
℃DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.73	8.59	7.25	8.82	7.20	9.07	7.15	9.56	7.54	10.06	7.41
13					8.50	6.90	9.00	7.42	9.26	7.37	9.52	7.32	10.06	7.71	10.60	7.58
15					8.88	7.06	9.42	7.59	9.69	7.54	9.98	7.49	10.56	7.89	11.14	7.76
17					9.26	7.23	9.84	7.77	10.12	7.71	10.43	7.67	11.05	8.06	11.67	7.93
19					9.46	7.32	10.05	7.85	10.34	7.80	10.65	7.75	11.29	8.15	11.92	8.01
21					9.65	7.41	10.25	7.94	10.56	7.89	10.88	7.84	11.52	8.23	12.16	8.09
23					9.65	7.41	10.28	7.95	10.59	7.90	10.91	7.85	11.56	8.24	12.21	8.11
25			8.93	7.50	9.64	7.40	10.31	7.96	10.62	7.91	10.95	7.87	11.61	8.26	12.27	8.13
27			8.86	7.47	9.64	7.40	10.34	7.98	10.65	7.93	10.96	7.87	11.57	8.25		
29			8.80	7.44	9.50	7.34	10.17	7.90	10.49	7.86	10.81	7.81	11.45	8.20		
31			8.73	7.40	9.35	7.27	9.99	7.83	10.32	7.79	10.66	7.76	11.32	8.16		
33	8.22	6.94	8.58	7.33	9.21	7.21	9.82	7.76	10.16	7.73	10.51	7.70	11.19	8.11		
35	8.05	6.85	8.44	7.27	9.06	7.14	9.64	7.68	10.00	7.66	10.36	7.64	11.07	8.07		
37	7.92	6.78	8.30	7.20	8.91	7.08	9.46	7.61	9.79	7.58	10.13	7.55	10.80	7.97		
39	7.78	6.71	8.16	7.13	8.75	7.00	9.28	7.53	9.59	7.50	9.90	7.46	10.53	7.88		
41	7.64	6.64	8.02	7.07	8.60	6.94	9.09	7.46	9.38	7.42	9.68	7.38	10.26	7.78		
43	7.50	6.57	7.88	7.00	8.45	6.87	8.91	7.38	9.18	7.34	9.45	7.29	9.99	7.69		
46	7.33	6.49	7.67	6.90	8.22	6.77	8.58	7.25	8.83	7.21	9.07	7.15	9.57	7.54		
50	7.09	6.37	7.39	6.77	7.91	6.64	8.19	7.09	8.35	7.02	8.51	6.95	8.83	7.29		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃DB				
℃DB	℃WB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Model FDUM100VSAPVF Indoor unit FDUM50VF (2 units) Outdoor unit FDC100VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃DB		21 ℃DB		23 ℃DB		26 ℃DB		27 ℃DB		28 ℃DB		31 ℃DB		33 ℃DB	
	12 ℃WB		14 ℃WB		16 ℃WB		18 ℃WB		19 ℃WB		20 ℃WB		22 ℃WB		24 ℃WB	
℃DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.73	8.59	7.25	8.82	7.20	9.07	7.15	9.56	7.54	10.06	7.41
13					8.50	6.90	9.00	7.42	9.26	7.37	9.52	7.32	10.06	7.71	10.60	7.58
15					8.88	7.06	9.42	7.59	9.69	7.54	9.98	7.49	10.56	7.89	11.14	7.76
17					9.26	7.23	9.84	7.77	10.12	7.71	10.43	7.67	11.05	8.06	11.67	7.93
19					9.46	7.32	10.05	7.85	10.34	7.80	10.65	7.75	11.29	8.15	11.92	8.01
21					9.65	7.41	10.25	7.94	10.56	7.89	10.88	7.84	11.52	8.23	12.16	8.09
23					9.65	7.41	10.28	7.95	10.59	7.90	10.91	7.85	11.56	8.24	12.21	8.11
25			8.93	7.50	9.64	7.40	10.31	7.96	10.62	7.91	10.95	7.87	11.61	8.26	12.27	8.13
27			8.86	7.47	9.64	7.40	10.34	7.98	10.65	7.93	10.96	7.87	11.57	8.25		
29			8.80	7.44	9.50	7.34	10.17	7.90	10.49	7.86	10.81	7.81	11.45	8.20		
31			8.73	7.40	9.35	7.27	9.99	7.83	10.32	7.79	10.66	7.76	11.32	8.16		
33	8.22	6.94	8.58	7.33	9.21	7.21	9.82	7.76	10.16	7.73	10.51	7.70	11.19	8.11		
35	8.05	6.85	8.44	7.27	9.06	7.14	9.64	7.68	10.00	7.66	10.36	7.64	11.07	8.07		
37	7.92	6.78	8.30	7.20	8.91	7.08	9.46	7.61	9.79	7.58	10.13	7.55	10.80	7.97		
39	7.78	6.71	8.16	7.13	8.75	7.00	9.28	7.53	9.59	7.50	9.90	7.46	10.53	7.88		
41	7.64	6.64	8.02	7.07	8.60	6.94	9.09	7.46	9.38	7.42	9.68	7.38	10.26	7.78		
43	7.50	6.57	7.88	7.00	8.45	6.87	8.91	7.38	9.18	7.34	9.45	7.29	9.99	7.69		
46	7.33	6.49	7.67	6.90	8.22	6.77	8.58	7.25	8.83	7.21	9.07	7.15	9.57	7.54		
50	7.09	6.37	7.39	6.77	7.91	6.64	8.19	7.09	8.35	7.02	8.51	6.95	8.83	7.29		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃DB				
℃DB	℃WB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDUM125VNAPVF Indoor unit FDUM60VF (2 units) Outdoor unit FDC125VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	8.91	10.74	9.69	11.03	9.59	11.34	9.50	11.96	10.07	12.57	9.84
13					10.63	9.09	11.26	9.87	11.57	9.77	11.91	9.68	12.58	10.25	13.25	10.02
15					11.10	9.27	11.78	10.05	12.11	9.95	12.47	9.86	13.20	10.42	13.92	10.19
17					11.58	9.46	12.29	10.23	12.65	10.13	13.04	10.04	13.82	10.60	14.59	10.36
19					11.82	9.55	12.56	10.33	12.92	10.23	13.32	10.13	14.11	10.69	14.90	10.45
21					12.06	9.65	12.82	10.42	13.19	10.32	13.60	10.22	14.40	10.77	15.20	10.52
23					12.06	9.65	12.85	10.43	13.23	10.33	13.64	10.24	14.45	10.79	15.27	10.54
25			11.16	9.87	12.06	9.65	12.89	10.44	13.27	10.35	13.68	10.25	14.51	10.81	15.34	10.56
27			11.08	9.84	12.05	9.64	12.92	10.46	13.31	10.36	13.69	10.25	14.47	10.80		
29			11.00	9.80	11.87	9.57	12.71	10.38	13.11	10.29	13.51	10.19	14.31	10.75		
31			10.92	9.77	11.69	9.50	12.49	10.30	12.90	10.22	13.32	10.13	14.15	10.70		
33	10.27	9.09	10.72	9.68	11.51	9.43	12.27	10.22	12.70	10.15	13.13	10.07	13.99	10.65		
35	10.07	9.00	10.55	9.61	11.33	9.36	12.06	10.15	12.50	10.08	12.94	10.01	13.83	10.61		
37	9.90	8.92	10.38	9.54	11.13	9.29	11.83	10.07	12.24	9.99	12.66	9.92	13.50	10.51		
39	9.72	8.84	10.20	9.47	10.94	9.21	11.60	9.99	11.99	9.91	12.38	9.83	13.16	10.41		
41	9.55	8.76	10.02	9.39	10.75	9.14	11.37	9.91	11.73	9.82	12.09	9.74	12.82	10.31		
43	9.38	8.69	9.85	9.32	10.56	9.07	11.14	9.83	11.47	9.74	11.81	9.65	12.48	10.22		
46	9.21	8.61	9.53	9.19	10.28	8.96	10.88	9.74	11.12	9.62	11.28	9.48	11.96	10.07		
50	7.43	7.28	7.63	7.48	8.25	8.09	8.67	8.50	8.78	8.60	8.80	8.62	9.05	8.87		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Model FDUM125VSAPVF Indoor unit FDUM60VF (2 units) Outdoor unit FDC125VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	8.91	10.74	9.69	11.03	9.59	11.34	9.50	11.96	10.07	12.57	9.84
13					10.63	9.09	11.26	9.87	11.57	9.77	11.91	9.68	12.58	10.25	13.25	10.02
15					11.10	9.27	11.78	10.05	12.11	9.95	12.47	9.86	13.20	10.42	13.92	10.19
17					11.58	9.46	12.29	10.23	12.65	10.13	13.04	10.04	13.82	10.60	14.59	10.36
19					11.82	9.55	12.56	10.33	12.92	10.23	13.32	10.13	14.11	10.69	14.90	10.45
21					12.06	9.65	12.82	10.42	13.19	10.32	13.60	10.22	14.40	10.77	15.20	10.52
23					12.06	9.65	12.85	10.43	13.23	10.33	13.64	10.24	14.45	10.79	15.27	10.54
25			11.16	9.87	12.06	9.65	12.89	10.44	13.27	10.35	13.68	10.25	14.51	10.81	15.34	10.56
27			11.08	9.84	12.05	9.64	12.92	10.46	13.31	10.36	13.69	10.25	14.47	10.80		
29			11.00	9.80	11.87	9.57	12.71	10.38	13.11	10.29	13.51	10.19	14.31	10.75		
31			10.92	9.77	11.69	9.50	12.49	10.30	12.90	10.22	13.32	10.13	14.15	10.70		
33	10.27	9.09	10.72	9.68	11.51	9.43	12.27	10.22	12.70	10.15	13.13	10.07	13.99	10.65		
35	10.07	9.00	10.55	9.61	11.33	9.36	12.06	10.15	12.50	10.08	12.94	10.01	13.83	10.61		
37	9.90	8.92	10.38	9.54	11.13	9.29	11.83	10.07	12.24	9.99	12.66	9.92	13.50	10.51		
39	9.72	8.84	10.20	9.47	10.94	9.21	11.60	9.99	11.99	9.91	12.38	9.83	13.16	10.41		
41	9.55	8.76	10.02	9.39	10.75	9.14	11.37	9.91	11.73	9.82	12.09	9.74	12.82	10.31		
43	9.38	8.69	9.85	9.32	10.56	9.07	11.14	9.83	11.47	9.74	11.81	9.65	12.48	10.22		
46	9.21	8.61	9.53	9.19	10.28	8.96	10.88	9.74	11.12	9.62	11.28	9.48	11.96	10.07		
50	7.43	7.28	7.63	7.48	8.25	8.09	8.67	8.50	8.78	8.60	8.80	8.62	9.05	8.87		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDUM140VNAPVF1 Indoor unit FDUM71VF1 (2 units) Outdoor unit FDC140VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	10.16	11.68	11.08	12.00	10.97	12.34	10.86	13.01	11.55	13.68	11.29
13					11.56	10.34	12.25	11.27	12.59	11.16	12.95	11.04	13.69	11.73	14.42	11.46
15					12.07	10.53	12.81	11.46	13.18	11.34	13.57	11.23	14.36	11.91	15.14	11.64
17					12.59	10.72	13.38	11.65	13.77	11.53	14.19	11.42	15.04	12.10	15.87	11.81
19					12.86	10.82	13.66	11.74	14.07	11.63	14.49	11.51	15.35	12.18	16.20	11.89
21					13.12	10.92	13.95	11.84	14.36	11.72	14.79	11.60	15.66	12.27	16.53	11.97
23					13.12	10.92	13.99	11.85	14.40	11.73	14.84	11.62	15.73	12.29	16.61	11.99
25			12.14	11.20	13.11	10.91	14.02	11.86	14.44	11.75	14.89	11.63	15.79	12.30	16.69	12.01
27			12.06	11.16	13.11	10.91	14.06	11.88	14.48	11.76	14.90	11.64	15.74	12.29		
29			11.97	11.13	12.91	10.84	13.82	11.80	14.26	11.69	14.70	11.57	15.56	12.24		
31			11.88	11.09	12.72	10.76	13.59	11.72	14.04	11.62	14.49	11.51	15.40	12.19		
33	11.18	10.28	11.67	11.01	12.52	10.69	13.36	11.64	13.82	11.55	14.29	11.45	15.22	12.15		
35	10.96	10.19	11.48	10.93	12.32	10.62	13.11	11.56	13.60	11.48	14.09	11.39	15.05	12.10		
37	10.76	10.10	11.29	10.85	12.11	10.54	12.87	11.48	13.32	11.39	13.77	11.29	14.69	12.00		
39	10.58	10.02	11.10	10.78	11.91	10.47	12.62	11.39	13.05	11.30	13.46	11.20	14.32	11.90		
41	10.39	9.94	10.91	10.69	11.70	10.39	12.37	11.31	12.76	11.21	13.16	11.11	13.95	11.80		
43	10.21	9.86	10.71	10.50	11.49	10.32	12.11	11.23	12.48	11.12	12.85	11.02	13.58	11.70		
46	10.03	9.78	10.47	10.26	11.13	10.19	11.73	11.10	12.10	11.01	12.27	10.84	13.01	11.55		
50	7.61	7.45	7.88	7.72	8.35	8.19	8.75	8.58	8.97	8.79	8.98	8.80	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Model FDUM140VSAPVF1 Indoor unit FDUM71VF1 (2 units) Outdoor unit FDC140VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	10.16	11.68	11.08	12.00	10.97	12.34	10.86	13.01	11.55	13.68	11.29
13					11.56	10.34	12.25	11.27	12.59	11.16	12.95	11.04	13.69	11.73	14.42	11.46
15					12.07	10.53	12.81	11.46	13.18	11.34	13.57	11.23	14.36	11.91	15.14	11.64
17					12.59	10.72	13.38	11.65	13.77	11.53	14.19	11.42	15.04	12.10	15.87	11.81
19					12.86	10.82	13.66	11.74	14.07	11.63	14.49	11.51	15.35	12.18	16.20	11.89
21					13.12	10.92	13.95	11.84	14.36	11.72	14.79	11.60	15.66	12.27	16.53	11.97
23					13.12	10.92	13.99	11.85	14.40	11.73	14.84	11.62	15.73	12.29	16.61	11.99
25			12.14	11.20	13.11	10.91	14.02	11.86	14.44	11.75	14.89	11.63	15.79	12.30	16.69	12.01
27			12.06	11.16	13.11	10.91	14.06	11.88	14.48	11.76	14.90	11.64	15.74	12.29		
29			11.97	11.13	12.91	10.84	13.82	11.80	14.26	11.69	14.70	11.57	15.56	12.24		
31			11.88	11.09	12.72	10.76	13.59	11.72	14.04	11.62	14.49	11.51	15.40	12.19		
33	11.18	10.28	11.67	11.01	12.52	10.69	13.36	11.64	13.82	11.55	14.29	11.45	15.22	12.15		
35	10.96	10.19	11.48	10.93	12.32	10.62	13.11	11.56	13.60	11.48	14.09	11.39	15.05	12.10		
37	10.76	10.10	11.29	10.85	12.11	10.54	12.87	11.48	13.32	11.39	13.77	11.29	14.69	12.00		
39	10.58	10.02	11.10	10.78	11.91	10.47	12.62	11.39	13.05	11.30	13.46	11.20	14.32	11.90		
41	10.39	9.94	10.91	10.69	11.70	10.39	12.37	11.31	12.76	11.21	13.16	11.11	13.95	11.80		
43	10.21	9.86	10.71	10.50	11.49	10.32	12.11	11.23	12.48	11.12	12.85	11.02	13.58	11.70		
46	10.03	9.78	10.47	10.26	11.13	10.19	11.73	11.10	12.10	11.01	12.27	10.84	13.01	11.55		
50	7.61	7.45	7.88	7.72	8.35	8.19	8.75	8.58	8.97	8.79	8.98	8.80	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

(c) Triple type

Model FDUM140VNATVF Indoor unit FDUM50VF (3 units) Outdoor unit FDC140VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃DB		21 ℃DB		23 ℃DB		26 ℃DB		27 ℃DB		28 ℃DB		31 ℃DB		33 ℃DB	
	12 ℃WB		14 ℃WB		16 ℃WB		18 ℃WB		19 ℃WB		20 ℃WB		22 ℃WB		24 ℃WB	
℃DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	9.61	11.68	10.40	12.00	10.33	12.34	10.26	13.01	10.86	13.68	10.68
13					11.56	9.83	12.25	10.63	12.59	10.56	12.95	10.49	13.69	11.09	14.42	10.91
15					12.07	10.05	12.81	10.85	13.18	10.78	13.57	10.71	14.36	11.32	15.14	11.14
17					12.59	10.27	13.38	11.08	13.77	11.01	14.19	10.95	15.04	11.55	15.87	11.37
19					12.86	10.39	13.66	11.19	14.07	11.13	14.49	11.06	15.35	11.66	16.20	11.47
21					13.12	10.51	13.95	11.31	14.36	11.24	14.79	11.17	15.66	11.77	16.53	11.58
23					13.12	10.51	13.99	11.33	14.40	11.26	14.84	11.19	15.73	11.79	16.61	11.60
25			12.14	10.65	13.11	10.50	14.02	11.34	14.44	11.27	14.89	11.21	15.79	11.81	16.69	11.63
27			12.06	10.61	13.11	10.50	14.06	11.36	14.48	11.29	14.90	11.21	15.74	11.79		
29			11.97	10.57	12.91	10.41	13.82	11.26	14.26	11.20	14.70	11.14	15.56	11.73		
31			11.88	10.53	12.72	10.33	13.59	11.17	14.04	11.12	14.49	11.06	15.40	11.67		
33	11.18	9.82	11.67	10.43	12.52	10.24	13.36	11.07	13.82	11.03	14.29	10.98	15.22	11.61		
35	10.96	9.71	11.48	10.35	12.32	10.15	13.11	10.97	13.60	10.95	14.09	10.91	15.05	11.55		
37	10.76	9.62	11.29	10.26	12.11	10.07	12.87	10.88	13.32	10.84	13.77	10.79	14.69	11.43		
39	10.58	9.53	11.10	10.17	11.91	9.98	12.62	10.78	13.05	10.73	13.46	10.68	14.32	11.30		
41	10.39	9.43	10.91	10.08	11.70	9.89	12.37	10.67	12.76	10.62	13.16	10.56	13.95	11.18		
43	10.21	9.34	10.71	9.99	11.49	9.80	12.11	10.57	12.48	10.52	12.85	10.45	13.58	11.05		
46	10.03	9.25	10.47	9.88	11.13	9.65	11.73	10.42	12.10	10.37	12.27	10.24	13.01	10.86		
50	7.61	7.45	7.88	7.72	8.35	8.19	8.75	8.58	8.97	8.79	8.98	8.80	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃DB				
℃DB	℃WB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Model FDUM140VSATVF Indoor unit FDUM50VF (3 units) Outdoor unit FDC140VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃DB		21 ℃DB		23 ℃DB		26 ℃DB		27 ℃DB		28 ℃DB		31 ℃DB		33 ℃DB	
	12 ℃WB		14 ℃WB		16 ℃WB		18 ℃WB		19 ℃WB		20 ℃WB		22 ℃WB		24 ℃WB	
℃DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	9.61	11.68	10.40	12.00	10.33	12.34	10.26	13.01	10.86	13.68	10.68
13					11.56	9.83	12.25	10.63	12.59	10.56	12.95	10.49	13.69	11.09	14.42	10.91
15					12.07	10.05	12.81	10.85	13.18	10.78	13.57	10.71	14.36	11.32	15.14	11.14
17					12.59	10.27	13.38	11.08	13.77	11.01	14.19	10.95	15.04	11.55	15.87	11.37
19					12.86	10.39	13.66	11.19	14.07	11.13	14.49	11.06	15.35	11.66	16.20	11.47
21					13.12	10.51	13.95	11.31	14.36	11.24	14.79	11.17	15.66	11.77	16.53	11.58
23					13.12	10.51	13.99	11.33	14.40	11.26	14.84	11.19	15.73	11.79	16.61	11.60
25			12.14	10.65	13.11	10.50	14.02	11.34	14.44	11.27	14.89	11.21	15.79	11.81	16.69	11.63
27			12.06	10.61	13.11	10.50	14.06	11.36	14.48	11.29	14.90	11.21	15.74	11.79		
29			11.97	10.57	12.91	10.41	13.82	11.26	14.26	11.20	14.70	11.14	15.56	11.73		
31			11.88	10.53	12.72	10.33	13.59	11.17	14.04	11.12	14.49	11.06	15.40	11.67		
33	11.18	9.82	11.67	10.43	12.52	10.24	13.36	11.07	13.82	11.03	14.29	10.98	15.22	11.61		
35	10.96	9.71	11.48	10.35	12.32	10.15	13.11	10.97	13.60	10.95	14.09	10.91	15.05	11.55		
37	10.76	9.62	11.29	10.26	12.11	10.07	12.87	10.88	13.32	10.84	13.77	10.79	14.69	11.43		
39	10.58	9.53	11.10	10.17	11.91	9.98	12.62	10.78	13.05	10.73	13.46	10.68	14.32	11.30		
41	10.39	9.43	10.91	10.08	11.70	9.89	12.37	10.67	12.76	10.62	13.16	10.56	13.95	11.18		
43	10.21	9.34	10.71	9.99	11.49	9.80	12.11	10.57	12.48	10.52	12.85	10.45	13.58	11.05		
46	10.03	9.25	10.47	9.88	11.13	9.65	11.73	10.42	12.10	10.37	12.27	10.24	13.01	10.86		
50	7.61	7.45	7.88	7.72	8.35	8.19	8.75	8.58	8.97	8.79	8.98	8.80	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃DB				
℃DB	℃WB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

(6) Floor standing type (FDF)

(a) Single type

Model FDF100VNAVD2 Indoor unit FDF100VD2 Outdoor unit FDC100VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	7.02	8.59	7.61	8.82	7.55	9.07	7.49	9.56	7.93	10.06	7.79
13					8.50	7.18	9.00	7.77	9.26	7.71	9.52	7.65	10.06	8.09	10.60	7.95
15					8.88	7.34	9.42	7.93	9.69	7.87	9.98	7.82	10.56	8.25	11.14	8.11
17					9.26	7.50	9.84	8.09	10.12	8.03	10.43	7.98	11.05	8.42	11.67	8.27
19					9.46	7.59	10.05	8.18	10.34	8.12	10.65	8.06	11.29	8.50	11.92	8.35
21					9.65	7.67	10.25	8.26	10.56	8.20	10.88	8.15	11.52	8.57	12.16	8.42
23					9.65	7.67	10.28	8.27	10.59	8.21	10.91	8.16	11.56	8.59	12.21	8.44
25			8.93	7.79	9.64	7.67	10.31	8.28	10.62	8.23	10.95	8.17	11.61	8.61	12.27	8.46
27			8.86	7.76	9.64	7.67	10.34	8.29	10.65	8.24	10.96	8.17	11.57	8.59		
29			8.80	7.73	9.50	7.61	10.17	8.22	10.49	8.18	10.81	8.12	11.45	8.55		
31			8.73	7.70	9.35	7.54	9.99	8.15	10.32	8.11	10.66	8.06	11.32	8.51		
33	8.22	7.19	8.58	7.63	9.21	7.48	9.82	8.09	10.16	8.05	10.51	8.01	11.19	8.46		
35	8.05	7.10	8.44	7.57	9.06	7.42	9.64	8.01	10.00	7.99	10.36	7.95	11.07	8.42		
37	7.92	7.04	8.30	7.50	8.91	7.35	9.46	7.94	9.79	7.91	10.13	7.87	10.80	8.33		
39	7.78	6.97	8.16	7.44	8.75	7.29	9.28	7.87	9.59	7.83	9.90	7.79	10.53	8.24		
41	7.64	6.90	8.02	7.38	8.60	7.22	9.09	7.80	9.38	7.76	9.68	7.71	10.26	8.15		
43	7.50	6.84	7.88	7.32	8.45	7.16	8.91	7.73	9.18	7.68	9.45	7.63	9.99	8.07		
46	7.33	6.75	7.67	7.22	8.22	7.07	8.58	7.60	8.83	7.55	9.07	7.49	9.57	7.93		
50	7.09	6.64	7.39	7.10	7.91	6.94	8.19	7.46	8.35	7.38	8.51	7.30	8.83	7.69		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature				
		℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Model FDF100VSAVD2 Indoor unit FDF100VD2 Outdoor unit FDC100VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	7.02	8.59	7.61	8.82	7.55	9.07	7.49	9.56	7.93	10.06	7.79
13					8.50	7.18	9.00	7.77	9.26	7.71	9.52	7.65	10.06	8.09	10.60	7.95
15					8.88	7.34	9.42	7.93	9.69	7.87	9.98	7.82	10.56	8.25	11.14	8.11
17					9.26	7.50	9.84	8.09	10.12	8.03	10.43	7.98	11.05	8.42	11.67	8.27
19					9.46	7.59	10.05	8.18	10.34	8.12	10.65	8.06	11.29	8.50	11.92	8.35
21					9.65	7.67	10.25	8.26	10.56	8.20	10.88	8.15	11.52	8.57	12.16	8.42
23					9.65	7.67	10.28	8.27	10.59	8.21	10.91	8.16	11.56	8.59	12.21	8.44
25			8.93	7.79	9.64	7.67	10.31	8.28	10.62	8.23	10.95	8.17	11.61	8.61	12.27	8.46
27			8.86	7.76	9.64	7.67	10.34	8.29	10.65	8.24	10.96	8.17	11.57	8.59		
29			8.80	7.73	9.50	7.61	10.17	8.22	10.49	8.18	10.81	8.12	11.45	8.55		
31			8.73	7.70	9.35	7.54	9.99	8.15	10.32	8.11	10.66	8.06	11.32	8.51		
33	8.22	7.19	8.58	7.63	9.21	7.48	9.82	8.09	10.16	8.05	10.51	8.01	11.19	8.46		
35	8.05	7.10	8.44	7.57	9.06	7.42	9.64	8.01	10.00	7.99	10.36	7.95	11.07	8.42		
37	7.92	7.04	8.30	7.50	8.91	7.35	9.46	7.94	9.79	7.91	10.13	7.87	10.80	8.33		
39	7.78	6.97	8.16	7.44	8.75	7.29	9.28	7.87	9.59	7.83	9.90	7.79	10.53	8.24		
41	7.64	6.90	8.02	7.38	8.60	7.22	9.09	7.80	9.38	7.76	9.68	7.71	10.26	8.15		
43	7.50	6.84	7.88	7.32	8.45	7.16	8.91	7.73	9.18	7.68	9.45	7.63	9.99	8.07		
46	7.33	6.75	7.67	7.22	8.22	7.07	8.58	7.60	8.83	7.55	9.07	7.49	9.57	7.93		
50	7.09	6.64	7.39	7.10	7.91	6.94	8.19	7.46	8.35	7.38	8.51	7.30	8.83	7.69		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature				
		℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDF125VNAVD Indoor unit FDF125VD Outdoor unit FDC125VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	7.89	10.74	8.45	11.03	8.38	11.34	8.32	11.96	8.72	12.57	8.55
13					10.63	8.10	11.26	8.67	11.57	8.60	11.91	8.53	12.58	8.94	13.25	8.76
15					11.10	8.31	11.78	8.88	12.11	8.81	12.47	8.75	13.20	9.16	13.92	8.98
17					11.58	8.53	12.29	9.10	12.65	9.03	13.04	8.97	13.82	9.38	14.59	9.20
19					11.82	8.64	12.56	9.21	12.92	9.14	13.32	9.08	14.11	9.49	14.90	9.30
21					12.06	8.75	12.82	9.32	13.19	9.25	13.60	9.19	14.40	9.59	15.20	9.40
23					12.06	8.75	12.85	9.34	13.23	9.27	13.64	9.20	14.45	9.61	15.27	9.43
25			11.16	8.86	12.06	8.75	12.89	9.35	13.27	9.28	13.68	9.22	14.51	9.63	15.34	9.45
27			11.08	8.82	12.05	8.74	12.92	9.37	13.31	9.30	13.69	9.22	14.47	9.62		
29			11.00	8.78	11.87	8.66	12.71	9.28	13.11	9.22	13.51	9.15	14.31	9.56		
31			10.92	8.74	11.69	8.58	12.49	9.18	12.90	9.13	13.32	9.08	14.15	9.50		
33	10.27	8.22	10.72	8.64	11.51	8.49	12.27	9.09	12.70	9.05	13.13	9.00	13.99	9.44		
35	10.07	8.12	10.55	8.56	11.33	8.41	12.06	9.00	12.50	8.97	12.94	8.93	13.83	9.38		
37	9.90	8.03	10.38	8.48	11.13	8.32	11.83	8.90	12.24	8.86	12.66	8.82	13.50	9.26		
39	9.72	7.94	10.20	8.39	10.94	8.24	11.60	8.81	11.99	8.76	12.38	8.71	13.16	9.14		
41	9.55	7.85	10.02	8.30	10.75	8.15	11.37	8.71	11.73	8.66	12.09	8.60	12.82	9.02		
43	9.38	7.76	9.85	8.22	10.56	8.07	11.14	8.62	11.47	8.56	11.81	8.49	12.48	8.90		
46	9.21	7.68	9.53	8.07	10.28	7.94	10.88	8.51	11.12	8.42	11.28	8.29	11.96	8.72		
50	7.43	6.80	7.63	7.20	8.25	7.08	8.67	7.64	8.78	7.53	8.80	7.40	9.05	7.76		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Model FDF125VSAVD Indoor unit FDF125VD Outdoor unit FDC125VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	7.89	10.74	8.45	11.03	8.38	11.34	8.32	11.96	8.72	12.57	8.55
13					10.63	8.10	11.26	8.67	11.57	8.60	11.91	8.53	12.58	8.94	13.25	8.76
15					11.10	8.31	11.78	8.88	12.11	8.81	12.47	8.75	13.20	9.16	13.92	8.98
17					11.58	8.53	12.29	9.10	12.65	9.03	13.04	8.97	13.82	9.38	14.59	9.20
19					11.82	8.64	12.56	9.21	12.92	9.14	13.32	9.08	14.11	9.49	14.90	9.30
21					12.06	8.75	12.82	9.32	13.19	9.25	13.60	9.19	14.40	9.59	15.20	9.40
23					12.06	8.75	12.85	9.34	13.23	9.27	13.64	9.20	14.45	9.61	15.27	9.43
25			11.16	8.86	12.06	8.75	12.89	9.35	13.27	9.28	13.68	9.22	14.51	9.63	15.34	9.45
27			11.08	8.82	12.05	8.74	12.92	9.37	13.31	9.30	13.69	9.22	14.47	9.62		
29			11.00	8.78	11.87	8.66	12.71	9.28	13.11	9.22	13.51	9.15	14.31	9.56		
31			10.92	8.74	11.69	8.58	12.49	9.18	12.90	9.13	13.32	9.08	14.15	9.50		
33	10.27	8.22	10.72	8.64	11.51	8.49	12.27	9.09	12.70	9.05	13.13	9.00	13.99	9.44		
35	10.07	8.12	10.55	8.56	11.33	8.41	12.06	9.00	12.50	8.97	12.94	8.93	13.83	9.38		
37	9.90	8.03	10.38	8.48	11.13	8.32	11.83	8.90	12.24	8.86	12.66	8.82	13.50	9.26		
39	9.72	7.94	10.20	8.39	10.94	8.24	11.60	8.81	11.99	8.76	12.38	8.71	13.16	9.14		
41	9.55	7.85	10.02	8.30	10.75	8.15	11.37	8.71	11.73	8.66	12.09	8.60	12.82	9.02		
43	9.38	7.76	9.85	8.22	10.56	8.07	11.14	8.62	11.47	8.56	11.81	8.49	12.48	8.90		
46	9.21	7.68	9.53	8.07	10.28	7.94	10.88	8.51	11.12	8.42	11.28	8.29	11.96	8.72		
50	7.43	6.80	7.63	7.20	8.25	7.08	8.67	7.64	8.78	7.53	8.80	7.40	9.05	7.76		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model FDF140VNAVD Indoor unit FDF140VD Outdoor unit FDC140VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.56	8.07	11.16	8.63	11.47	8.56	11.79	8.49	12.43	8.89	13.07	8.71
13					11.05	8.29	11.71	8.85	12.03	8.78	12.38	8.71	13.08	9.12	13.78	8.93
15					11.54	8.51	12.25	9.08	12.60	9.01	12.97	8.94	13.72	9.35	14.48	9.16
17					12.03	8.73	12.79	9.31	13.16	9.24	13.57	9.18	14.37	9.58	15.17	9.39
19					12.29	8.86	13.06	9.42	13.45	9.36	13.85	9.29	14.67	9.69	15.49	9.50
21					12.55	8.97	13.33	9.55	13.72	9.47	14.14	9.41	14.97	9.80	15.80	9.61
23					12.55	8.97	13.37	9.56	13.76	9.49	14.19	9.42	15.03	9.83	15.88	9.63
25			11.61	9.08	12.54	8.97	13.40	9.57	13.80	9.51	14.24	9.44	15.09	9.85	15.95	9.66
27			11.52	9.03	12.54	8.97	13.44	9.59	13.85	9.53	14.24	9.45	15.04	9.83		
29			11.44	8.99	12.34	8.88	13.21	9.49	13.63	9.44	14.05	9.37	14.88	9.77		
31			11.36	8.95	12.16	8.79	12.99	9.40	13.42	9.35	13.85	9.29	14.72	9.71		
33	10.69	8.44	11.15	8.85	11.97	8.70	12.77	9.30	13.21	9.26	13.66	9.21	14.55	9.65		
35	10.47	8.33	10.98	8.76	11.77	8.62	12.54	9.20	13.00	9.17	13.46	9.13	14.38	9.59		
37	10.29	8.23	10.79	8.67	11.58	8.53	12.30	9.10	12.73	9.06	13.17	9.02	14.04	9.46		
39	10.11	8.14	10.61	8.59	11.38	8.44	12.06	9.00	12.47	8.96	12.87	8.90	13.69	9.33		
41	9.94	8.05	10.43	8.50	11.18	8.35	11.82	8.90	12.20	8.85	12.58	8.79	13.33	9.21		
43	9.76	7.96	10.24	8.41	10.99	8.26	11.58	8.80	11.93	8.74	12.29	8.67	12.98	9.08		
46	9.58	7.87	10.01	8.30	10.64	8.10	11.21	8.65	11.57	8.60	11.73	8.46	12.44	8.89		
50	7.27	6.73	7.53	7.16	7.99	6.97	8.37	7.52	8.57	7.46	8.58	7.32	8.91	7.72		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Model FDF140VSAVD Indoor unit FDF140VD Outdoor unit FDC140VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	8.28	11.68	8.84	12.00	8.77	12.34	8.69	13.01	9.09	13.68	8.90
13					11.56	8.52	12.25	9.08	12.59	9.01	12.95	8.93	13.69	9.33	14.42	9.14
15					12.07	8.75	12.81	9.32	13.18	9.25	13.57	9.18	14.36	9.58	15.14	9.38
17					12.59	8.99	13.38	9.56	13.77	9.49	14.19	9.43	15.04	9.83	15.87	9.63
19					12.86	9.12	13.66	9.69	14.07	9.62	14.49	9.55	15.35	9.94	16.20	9.75
21					13.12	9.25	13.95	9.82	14.36	9.74	14.79	9.67	15.66	10.06	16.53	9.86
23					13.12	9.25	13.99	9.83	14.40	9.76	14.84	9.69	15.73	10.09	16.61	9.89
25			12.14	9.35	13.11	9.24	14.02	9.85	14.44	9.78	14.89	9.71	15.79	10.11	16.69	9.91
27			12.06	9.30	13.11	9.24	14.06	9.87	14.48	9.80	14.90	9.72	15.74	10.09		
29			11.97	9.26	12.91	9.14	13.82	9.76	14.26	9.70	14.70	9.63	15.56	10.02		
31			11.88	9.21	12.72	9.05	13.59	9.66	14.04	9.61	14.49	9.55	15.40	9.96		
33	11.18	8.70	11.67	9.11	12.52	8.96	13.36	9.56	13.82	9.52	14.29	9.47	15.22	9.90		
35	10.96	8.58	11.48	9.01	12.32	8.87	13.11	9.45	13.60	9.42	14.09	9.38	15.05	9.83		
37	10.76	8.48	11.29	8.92	12.11	8.77	12.87	9.35	13.32	9.30	13.77	9.26	14.69	9.70		
39	10.58	8.38	11.10	8.83	11.91	8.68	12.62	9.24	13.05	9.19	13.46	9.13	14.32	9.56		
41	10.39	8.29	10.91	8.73	11.70	8.58	12.37	9.13	12.76	9.08	13.16	9.02	13.95	9.43		
43	10.21	8.19	10.71	8.64	11.49	8.49	12.11	9.02	12.48	8.96	12.85	8.89	13.58	9.29		
46	10.03	8.10	10.47	8.52	11.13	8.32	11.73	8.86	12.10	8.81	12.27	8.67	13.01	9.09		
50	7.61	6.89	7.88	7.31	8.35	7.12	8.75	7.67	8.97	7.60	8.98	7.46	9.33	7.85		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

(b) Twin type

Model FDF140VNAPVD1 Indoor unit FDF71VD1 (2 units) Outdoor unit FDC140VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃DB		21 ℃DB		23 ℃DB		26 ℃DB		27 ℃DB		28 ℃DB		31 ℃DB		33 ℃DB	
	12 ℃WB		14 ℃WB		16 ℃WB		18 ℃WB		19 ℃WB		20 ℃WB		22 ℃WB		24 ℃WB	
℃DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	8.94	11.68	9.66	12.00	9.54	12.34	9.42	13.01	9.94	13.68	9.65
13					11.56	9.12	12.25	9.85	12.59	9.73	12.95	9.60	13.69	10.11	14.42	9.82
15					12.07	9.31	12.81	10.04	13.18	9.91	13.57	9.79	14.36	10.29	15.14	9.99
17					12.59	9.51	13.38	10.23	13.77	10.10	14.19	9.98	15.04	10.48	15.87	10.17
19					12.86	9.61	13.66	10.32	14.07	10.20	14.49	10.07	15.35	10.56	16.20	10.25
21					13.12	9.71	13.95	10.43	14.36	10.30	14.79	10.17	15.66	10.65	16.53	10.33
23					13.12	9.71	13.99	10.44	14.40	10.31	14.84	10.18	15.73	10.67	16.61	10.35
25			12.14	9.97	13.11	9.70	14.02	10.45	14.44	10.32	14.89	10.20	15.79	10.68	16.69	10.37
27			12.06	9.94	13.11	9.70	14.06	10.46	14.48	10.34	14.90	10.20	15.74	10.67		
29			11.97	9.90	12.91	9.63	13.82	10.38	14.26	10.26	14.70	10.14	15.56	10.62		
31			11.88	9.87	12.72	9.55	13.59	10.30	14.04	10.19	14.49	10.07	15.40	10.58		
33	11.18	9.23	11.67	9.78	12.52	9.48	13.36	10.22	13.82	10.12	14.29	10.01	15.22	10.53		
35	10.96	9.13	11.48	9.70	12.32	9.40	13.11	10.14	13.60	10.05	14.09	9.95	15.05	10.48		
37	10.76	9.05	11.29	9.62	12.11	9.33	12.87	10.06	13.32	9.96	13.77	9.85	14.69	10.38		
39	10.58	8.96	11.10	9.55	11.91	9.25	12.62	9.97	13.05	9.87	13.46	9.76	14.32	10.28		
41	10.39	8.88	10.91	9.47	11.70	9.17	12.37	9.89	12.76	9.78	13.16	9.67	13.95	10.18		
43	10.21	8.80	10.71	9.39	11.49	9.10	12.11	9.80	12.48	9.69	12.85	9.57	13.58	10.09		
46	10.03	8.72	10.47	9.30	11.13	8.97	11.73	9.68	12.10	9.57	12.27	9.40	13.01	9.94		
50	7.61	7.45	7.88	7.72	8.35	8.00	8.75	8.58	8.97	8.65	8.98	8.49	9.33	9.04		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃DB				
℃DB	℃WB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Model FDF140VSAPVD1 Indoor unit FDF71VD1 (2 units) Outdoor unit FDC140VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃DB		21 ℃DB		23 ℃DB		26 ℃DB		27 ℃DB		28 ℃DB		31 ℃DB		33 ℃DB	
	12 ℃WB		14 ℃WB		16 ℃WB		18 ℃WB		19 ℃WB		20 ℃WB		22 ℃WB		24 ℃WB	
℃DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	8.94	11.68	9.66	12.00	9.54	12.34	9.42	13.01	9.94	13.68	9.65
13					11.56	9.12	12.25	9.85	12.59	9.73	12.95	9.60	13.69	10.11	14.42	9.82
15					12.07	9.31	12.81	10.04	13.18	9.91	13.57	9.79	14.36	10.29	15.14	9.99
17					12.59	9.51	13.38	10.23	13.77	10.10	14.19	9.98	15.04	10.48	15.87	10.17
19					12.86	9.61	13.66	10.32	14.07	10.20	14.49	10.07	15.35	10.56	16.20	10.25
21					13.12	9.71	13.95	10.43	14.36	10.30	14.79	10.17	15.66	10.65	16.53	10.33
23					13.12	9.71	13.99	10.44	14.40	10.31	14.84	10.18	15.73	10.67	16.61	10.35
25			12.14	9.97	13.11	9.70	14.02	10.45	14.44	10.32	14.89	10.20	15.79	10.68	16.69	10.37
27			12.06	9.94	13.11	9.70	14.06	10.46	14.48	10.34	14.90	10.20	15.74	10.67		
29			11.97	9.90	12.91	9.63	13.82	10.38	14.26	10.26	14.70	10.14	15.56	10.62		
31			11.88	9.87	12.72	9.55	13.59	10.30	14.04	10.19	14.49	10.07	15.40	10.58		
33	11.18	9.23	11.67	9.78	12.52	9.48	13.36	10.22	13.82	10.12	14.29	10.01	15.22	10.53		
35	10.96	9.13	11.48	9.70	12.32	9.40	13.11	10.14	13.60	10.05	14.09	9.95	15.05	10.48		
37	10.76	9.05	11.29	9.62	12.11	9.33	12.87	10.06	13.32	9.96	13.77	9.85	14.69	10.38		
39	10.58	8.96	11.10	9.55	11.91	9.25	12.62	9.97	13.05	9.87	13.46	9.76	14.32	10.28		
41	10.39	8.88	10.91	9.47	11.70	9.17	12.37	9.89	12.76	9.78	13.16	9.67	13.95	10.18		
43	10.21	8.80	10.71	9.39	11.49	9.10	12.11	9.80	12.48	9.69	12.85	9.57	13.58	10.09		
46	10.03	8.72	10.47	9.30	11.13	8.97	11.73	9.68	12.10	9.57	12.27	9.40	13.01	9.94		
50	7.61	7.45	7.88	7.72	8.35	8.00	8.75	8.58	8.97	8.65	8.98	8.49	9.33	9.04		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃DB				
℃DB	℃WB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

PGA000Z772 B

Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

(7) Wall mounted type (SRK)

(a) Single type

Model SRK100VNAZR Indoor unit SRK100ZR-S Outdoor unit FDC100VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.51	8.59	7.00	8.82	6.94	9.07	6.89	9.56	7.24	10.06	7.11
13					8.50	6.67	9.00	7.16	9.26	7.11	9.52	7.06	10.06	7.42	10.60	7.28
15					8.88	6.84	9.42	7.33	9.69	7.28	9.98	7.23	10.56	7.59	11.14	7.46
17					9.26	7.01	9.84	7.51	10.12	7.46	10.43	7.41	11.05	7.77	11.67	7.63
19					9.46	7.10	10.05	7.60	10.34	7.54	10.65	7.49	11.29	7.85	11.92	7.71
21					9.65	7.19	10.25	7.68	10.56	7.63	10.88	7.58	11.52	7.94	12.16	7.79
23					9.65	7.19	10.28	7.70	10.59	7.65	10.91	7.59	11.56	7.95	12.21	7.81
25			8.93	7.28	9.64	7.19	10.31	7.71	10.62	7.66	10.95	7.61	11.61	7.97	12.27	7.83
27			8.86	7.25	9.64	7.19	10.34	7.72	10.65	7.67	10.96	7.61	11.57	7.95		
29			8.80	7.22	9.50	7.12	10.17	7.65	10.49	7.61	10.81	7.56	11.45	7.91		
31			8.73	7.18	9.35	7.05	9.99	7.57	10.32	7.54	10.66	7.50	11.32	7.86		
33	8.22	6.75	8.58	7.11	9.21	6.99	9.82	7.50	10.16	7.47	10.51	7.44	11.19	7.82		
35	8.05	6.66	8.44	7.04	9.06	6.92	9.64	7.43	10.00	7.41	10.36	7.38	11.07	7.77		
37	7.92	6.59	8.30	6.98	8.91	6.86	9.46	7.35	9.79	7.32	10.13	7.29	10.80	7.68		
39	7.78	6.52	8.16	6.91	8.75	6.79	9.28	7.28	9.59	7.24	9.90	7.20	10.53	7.58		
41	7.64	6.45	8.02	6.84	8.60	6.72	9.09	7.20	9.38	7.16	9.68	7.12	10.26	7.49		
43	7.50	6.38	7.88	6.78	8.45	6.65	8.91	7.12	9.18	7.08	9.45	7.03	9.99	7.39		
46	7.33	6.30	7.67	6.68	8.22	6.55	8.58	6.99	8.83	6.94	9.07	6.89	9.57	7.25		
50	7.09	6.18	7.39	6.55	7.91	6.42	8.19	6.83	8.35	6.76	8.51	6.68	8.83	7.00		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature				
		℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Model SRK100VSAZR Indoor unit SRK100ZR-S Outdoor unit FDC100VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.51	8.59	7.00	8.82	6.94	9.07	6.89	9.56	7.24	10.06	7.11
13					8.50	6.67	9.00	7.16	9.26	7.11	9.52	7.06	10.06	7.42	10.60	7.28
15					8.88	6.84	9.42	7.33	9.69	7.28	9.98	7.23	10.56	7.59	11.14	7.46
17					9.26	7.01	9.84	7.51	10.12	7.46	10.43	7.41	11.05	7.77	11.67	7.63
19					9.46	7.10	10.05	7.60	10.34	7.54	10.65	7.49	11.29	7.85	11.92	7.71
21					9.65	7.19	10.25	7.68	10.56	7.63	10.88	7.58	11.52	7.94	12.16	7.79
23					9.65	7.19	10.28	7.70	10.59	7.65	10.91	7.59	11.56	7.95	12.21	7.81
25			8.93	7.28	9.64	7.19	10.31	7.71	10.62	7.66	10.95	7.61	11.61	7.97	12.27	7.83
27			8.86	7.25	9.64	7.19	10.34	7.72	10.65	7.67	10.96	7.61	11.57	7.95		
29			8.80	7.22	9.50	7.12	10.17	7.65	10.49	7.61	10.81	7.56	11.45	7.91		
31			8.73	7.18	9.35	7.05	9.99	7.57	10.32	7.54	10.66	7.50	11.32	7.86		
33	8.22	6.75	8.58	7.11	9.21	6.99	9.82	7.50	10.16	7.47	10.51	7.44	11.19	7.82		
35	8.05	6.66	8.44	7.04	9.06	6.92	9.64	7.43	10.00	7.41	10.36	7.38	11.07	7.77		
37	7.92	6.59	8.30	6.98	8.91	6.86	9.46	7.35	9.79	7.32	10.13	7.29	10.80	7.68		
39	7.78	6.52	8.16	6.91	8.75	6.79	9.28	7.28	9.59	7.24	9.90	7.20	10.53	7.58		
41	7.64	6.45	8.02	6.84	8.60	6.72	9.09	7.20	9.38	7.16	9.68	7.12	10.26	7.49		
43	7.50	6.38	7.88	6.78	8.45	6.65	8.91	7.12	9.18	7.08	9.45	7.03	9.99	7.39		
46	7.33	6.30	7.67	6.68	8.22	6.55	8.58	6.99	8.83	6.94	9.07	6.89	9.57	7.25		
50	7.09	6.18	7.39	6.55	7.91	6.42	8.19	6.83	8.35	6.76	8.51	6.68	8.83	7.00		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature				
		℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

(b) Twin type

Model SRK100VNAPZSX Indoor unit SRK50ZSX-S (2 units) Outdoor unit FDC100VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃DB		21 ℃DB		23 ℃DB		26 ℃DB		27 ℃DB		28 ℃DB		31 ℃DB		33 ℃DB	
	12 ℃WB		14 ℃WB		16 ℃WB		18 ℃WB		19 ℃WB		20 ℃WB		22 ℃WB		24 ℃WB	
℃DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.78	8.59	7.32	8.82	7.26	9.07	7.21	9.56	7.61	10.06	7.47
13					8.50	6.94	9.00	7.48	9.26	7.43	9.52	7.37	10.06	7.77	10.60	7.63
15					8.88	7.11	9.42	7.65	9.69	7.59	9.98	7.54	10.56	7.94	11.14	7.80
17					9.26	7.27	9.84	7.82	10.12	7.76	10.43	7.71	11.05	8.11	11.67	7.97
19					9.46	7.36	10.05	7.90	10.34	7.85	10.65	7.79	11.29	8.19	11.92	8.04
21					9.65	7.44	10.25	7.99	10.56	7.93	10.88	7.88	11.52	8.27	12.16	8.12
23					9.65	7.44	10.28	8.00	10.59	7.94	10.91	7.89	11.56	8.29	12.21	8.14
25			8.93	7.55	9.64	7.44	10.31	8.01	10.62	7.96	10.95	7.90	11.61	8.30	12.27	8.16
27			8.86	7.52	9.64	7.44	10.34	8.02	10.65	7.97	10.96	7.91	11.57	8.29		
29			8.80	7.49	9.50	7.38	10.17	7.95	10.49	7.91	10.81	7.85	11.45	8.25		
31			8.73	7.46	9.35	7.31	9.99	7.88	10.32	7.84	10.66	7.79	11.32	8.20		
33	8.22	6.98	8.58	7.39	9.21	7.25	9.82	7.81	10.16	7.78	10.51	7.74	11.19	8.16		
35	8.05	6.89	8.44	7.32	9.06	7.18	9.64	7.74	10.00	7.71	10.36	7.68	11.07	8.12		
37	7.92	6.83	8.30	7.26	8.91	7.12	9.46	7.67	9.79	7.63	10.13	7.60	10.80	8.02		
39	7.78	6.76	8.16	7.19	8.75	7.05	9.28	7.59	9.59	7.56	9.90	7.51	10.53	7.93		
41	7.64	6.69	8.02	7.13	8.60	6.99	9.09	7.52	9.38	7.48	9.68	7.43	10.26	7.84		
43	7.50	6.62	7.88	7.07	8.45	6.92	8.91	7.45	9.18	7.40	9.45	7.35	9.99	7.75		
46	7.33	6.54	7.67	6.97	8.22	6.83	8.58	7.32	8.83	7.27	9.07	7.21	9.57	7.61		
50	7.09	6.42	7.39	6.84	7.91	6.69	8.19	7.17	8.35	7.09	8.51	7.01	8.83	7.37		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃DB				
℃DB	℃WB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Model SRK100VSAPZSX Indoor unit SRK50ZSX-S (2 units) Outdoor unit FDC100VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃DB		21 ℃DB		23 ℃DB		26 ℃DB		27 ℃DB		28 ℃DB		31 ℃DB		33 ℃DB	
	12 ℃WB		14 ℃WB		16 ℃WB		18 ℃WB		19 ℃WB		20 ℃WB		22 ℃WB		24 ℃WB	
℃DB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					8.12	6.78	8.59	7.32	8.82	7.26	9.07	7.21	9.56	7.61	10.06	7.47
13					8.50	6.94	9.00	7.48	9.26	7.43	9.52	7.37	10.06	7.77	10.60	7.63
15					8.88	7.11	9.42	7.65	9.69	7.59	9.98	7.54	10.56	7.94	11.14	7.80
17					9.26	7.27	9.84	7.82	10.12	7.76	10.43	7.71	11.05	8.11	11.67	7.97
19					9.46	7.36	10.05	7.90	10.34	7.85	10.65	7.79	11.29	8.19	11.92	8.04
21					9.65	7.44	10.25	7.99	10.56	7.93	10.88	7.88	11.52	8.27	12.16	8.12
23					9.65	7.44	10.28	8.00	10.59	7.94	10.91	7.89	11.56	8.29	12.21	8.14
25			8.93	7.55	9.64	7.44	10.31	8.01	10.62	7.96	10.95	7.90	11.61	8.30	12.27	8.16
27			8.86	7.52	9.64	7.44	10.34	8.02	10.65	7.97	10.96	7.91	11.57	8.29		
29			8.80	7.49	9.50	7.38	10.17	7.95	10.49	7.91	10.81	7.85	11.45	8.25		
31			8.73	7.46	9.35	7.31	9.99	7.88	10.32	7.84	10.66	7.79	11.32	8.20		
33	8.22	6.98	8.58	7.39	9.21	7.25	9.82	7.81	10.16	7.78	10.51	7.74	11.19	8.16		
35	8.05	6.89	8.44	7.32	9.06	7.18	9.64	7.74	10.00	7.71	10.36	7.68	11.07	8.12		
37	7.92	6.83	8.30	7.26	8.91	7.12	9.46	7.67	9.79	7.63	10.13	7.60	10.80	8.02		
39	7.78	6.76	8.16	7.19	8.75	7.05	9.28	7.59	9.59	7.56	9.90	7.51	10.53	7.93		
41	7.64	6.69	8.02	7.13	8.60	6.99	9.09	7.52	9.38	7.48	9.68	7.43	10.26	7.84		
43	7.50	6.62	7.88	7.07	8.45	6.92	8.91	7.45	9.18	7.40	9.45	7.35	9.99	7.75		
46	7.33	6.54	7.67	6.97	8.22	6.83	8.58	7.32	8.83	7.27	9.07	7.21	9.57	7.61		
50	7.09	6.42	7.39	6.84	7.91	6.69	8.19	7.17	8.35	7.09	8.51	7.01	8.83	7.37		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃DB				
℃DB	℃WB	16	18	20	22	24
-19.8	-20	6.82	6.79	6.77	6.75	6.72
-17.7	-18	7.16	7.14	7.10	7.08	7.04
-15.7	-16	7.50	7.46	7.44	7.40	7.37
-13.5	-14	7.86	7.83	7.79	7.76	7.72
-11.5	-12	8.23	8.19	8.15	8.12	8.08
-9.5	-10	8.58	8.55	8.50	8.47	8.42
-7.5	-8	8.93	8.89	8.85	8.80	8.75
-5.5	-6	9.05	9.00	8.97	8.91	8.86
-3.0	-4	9.17	9.12	9.07	9.03	8.97
-1.0	-2	9.29	9.23	9.19	9.13	9.07
1.0	0	9.40	9.34	9.29	9.23	9.18
2.0	1	9.45	9.39	9.34	9.28	9.22
3.0	2	9.82	9.77	9.71	9.67	9.63
5.0	4	10.21	10.15	10.09	10.08	10.07
7.0	6	11.33	11.27	11.20	11.22	11.23
9.0	8	11.78	11.71	11.64	11.62	11.59
11.5	10	12.23	12.16	12.09	12.02	11.94
13.5	12	12.91	12.83	12.75	12.65	12.60
15.5	14	13.59	13.50	13.42	13.29	13.26
16.5	16	13.93	13.84	13.75	13.61	13.59

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

Model SRK125VNAPZSX Indoor unit SRK60ZSX-S (2 units) Outdoor unit FDC125VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	7.69	10.74	8.24	11.03	8.16	11.34	8.08	11.96	8.46	12.57	8.26
13					10.63	7.90	11.26	8.44	11.57	8.36	11.91	8.28	12.58	8.66	13.25	8.46
15					11.10	8.10	11.78	8.65	12.11	8.57	12.47	8.49	13.20	8.87	13.92	8.66
17					11.58	8.31	12.29	8.86	12.65	8.78	13.04	8.70	13.82	9.08	14.59	8.87
19					11.82	8.42	12.56	8.97	12.92	8.88	13.32	8.80	14.11	9.18	14.90	8.97
21					12.06	8.53	12.82	9.08	13.19	8.99	13.60	8.91	14.40	9.28	15.20	9.06
23					12.06	8.53	12.85	9.09	13.23	9.01	13.64	8.93	14.45	9.30	15.27	9.08
25			11.16	8.66	12.06	8.53	12.89	9.11	13.27	9.02	13.68	8.94	14.51	9.32	15.34	9.11
27			11.08	8.62	12.05	8.52	12.92	9.12	13.31	9.04	13.69	8.95	14.47	9.31		
29			11.00	8.59	11.87	8.44	12.71	9.03	13.11	8.96	13.51	8.88	14.31	9.25		
31			10.92	8.55	11.69	8.36	12.49	8.94	12.90	8.87	13.32	8.80	14.15	9.20		
33	10.27	8.06	10.72	8.45	11.51	8.28	12.27	8.85	12.70	8.80	13.13	8.73	13.99	9.14		
35	10.07	7.95	10.55	8.37	11.33	8.20	12.06	8.76	12.50	8.72	12.94	8.66	13.83	9.08		
37	9.90	7.87	10.38	8.29	11.13	8.12	11.83	8.67	12.24	8.62	12.66	8.56	13.50	8.97		
39	9.72	7.78	10.20	8.21	10.94	8.03	11.60	8.58	11.99	8.52	12.38	8.45	13.16	8.86		
41	9.55	7.69	10.02	8.13	10.75	7.95	11.37	8.49	11.73	8.42	12.09	8.35	12.82	8.74		
43	9.38	7.61	9.85	8.05	10.56	7.87	11.14	8.39	11.47	8.32	11.81	8.24	12.48	8.63		
46	9.21	7.52	9.53	7.90	10.28	7.75	10.88	8.29	11.12	8.19	11.28	8.05	11.96	8.46		
50	7.43	6.67	7.63	7.06	8.25	6.91	8.67	7.46	8.78	7.34	8.80	7.20	9.05	7.55		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Model SRK125VSAPZSX Indoor unit SRK60ZSX-S (2 units) Outdoor unit FDC125VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					10.15	7.69	10.74	8.24	11.03	8.16	11.34	8.08	11.96	8.46	12.57	8.26
13					10.63	7.90	11.26	8.44	11.57	8.36	11.91	8.28	12.58	8.66	13.25	8.46
15					11.10	8.10	11.78	8.65	12.11	8.57	12.47	8.49	13.20	8.87	13.92	8.66
17					11.58	8.31	12.29	8.86	12.65	8.78	13.04	8.70	13.82	9.08	14.59	8.87
19					11.82	8.42	12.56	8.97	12.92	8.88	13.32	8.80	14.11	9.18	14.90	8.97
21					12.06	8.53	12.82	9.08	13.19	8.99	13.60	8.91	14.40	9.28	15.20	9.06
23					12.06	8.53	12.85	9.09	13.23	9.01	13.64	8.93	14.45	9.30	15.27	9.08
25			11.16	8.66	12.06	8.53	12.89	9.11	13.27	9.02	13.68	8.94	14.51	9.32	15.34	9.11
27			11.08	8.62	12.05	8.52	12.92	9.12	13.31	9.04	13.69	8.95	14.47	9.31		
29			11.00	8.59	11.87	8.44	12.71	9.03	13.11	8.96	13.51	8.88	14.31	9.25		
31			10.92	8.55	11.69	8.36	12.49	8.94	12.90	8.87	13.32	8.80	14.15	9.20		
33	10.27	8.06	10.72	8.45	11.51	8.28	12.27	8.85	12.70	8.80	13.13	8.73	13.99	9.14		
35	10.07	7.95	10.55	8.37	11.33	8.20	12.06	8.76	12.50	8.72	12.94	8.66	13.83	9.08		
37	9.90	7.87	10.38	8.29	11.13	8.12	11.83	8.67	12.24	8.62	12.66	8.56	13.50	8.97		
39	9.72	7.78	10.20	8.21	10.94	8.03	11.60	8.58	11.99	8.52	12.38	8.45	13.16	8.86		
41	9.55	7.69	10.02	8.13	10.75	7.95	11.37	8.49	11.73	8.42	12.09	8.35	12.82	8.74		
43	9.38	7.61	9.85	8.05	10.56	7.87	11.14	8.39	11.47	8.32	11.81	8.24	12.48	8.63		
46	9.21	7.52	9.53	7.90	10.28	7.75	10.88	8.29	11.12	8.19	11.28	8.05	11.96	8.46		
50	7.43	6.67	7.63	7.06	8.25	6.91	8.67	7.46	8.78	7.34	8.80	7.20	9.05	7.55		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.77	7.73	7.70	7.67	7.65
-17.7	-18	8.16	8.13	8.11	8.06	8.03
-15.7	-16	8.57	8.53	8.50	8.46	8.42
-13.5	-14	9.02	8.98	8.94	8.90	8.86
-11.5	-12	9.46	9.41	9.37	9.33	9.28
-9.5	-10	9.90	9.84	9.80	9.76	9.70
-7.5	-8	10.32	10.28	10.23	10.17	10.12
-5.5	-6	10.50	10.45	10.39	10.33	10.28
-3.0	-4	10.66	10.61	10.55	10.49	10.43
-1.0	-2	10.82	10.77	10.71	10.65	10.58
1.0	0	10.99	10.93	10.87	10.80	10.73
2.0	1	11.07	11.01	10.94	10.88	10.81
3.0	2	11.92	11.85	11.78	11.73	11.68
5.0	4	12.76	12.69	12.61	12.60	12.58
7.0	6	14.16	14.08	14.00	14.02	14.04
9.0	8	14.72	14.64	14.56	14.52	14.49
11.5	10	15.28	15.20	15.11	15.02	14.93
13.5	12	16.13	16.04	15.94	15.82	15.75
15.5	14	16.98	16.88	16.77	16.62	16.58
16.5	16	17.41	17.30	17.19	17.02	16.99

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Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

(c) Triple type

Model SRK140VNATZSX Indoor unit SRK50ZSX-S (3 units) Outdoor unit FDC140VNA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	9.70	11.68	10.52	12.00	10.44	12.34	10.36	13.01	10.98	13.68	10.78
13					11.56	9.92	12.25	10.74	12.59	10.66	12.95	10.58	13.69	11.20	14.42	11.00
15					12.07	10.13	12.81	10.96	13.18	10.88	13.57	10.80	14.36	11.42	15.14	11.22
17					12.59	10.35	13.38	11.18	13.77	11.10	14.19	11.03	15.04	11.64	15.87	11.44
19					12.86	10.46	13.66	11.29	14.07	11.21	14.49	11.14	15.35	11.75	16.20	11.54
21					13.12	10.58	13.95	11.40	14.36	11.32	14.79	11.25	15.66	11.85	16.53	11.65
23					13.12	10.58	13.99	11.42	14.40	11.34	14.84	11.26	15.73	11.87	16.61	11.67
25			12.14	10.75	13.11	10.57	14.02	11.43	14.44	11.35	14.89	11.28	15.79	11.89	16.69	11.69
27			12.06	10.71	13.11	10.57	14.06	11.45	14.48	11.37	14.90	11.29	15.74	11.88		
29			11.97	10.67	12.91	10.48	13.82	11.35	14.26	11.29	14.70	11.21	15.56	11.82		
31			11.88	10.63	12.72	10.40	13.59	11.26	14.04	11.20	14.49	11.14	15.40	11.76		
33	11.18	9.90	11.67	10.53	12.52	10.32	13.36	11.17	13.82	11.12	14.29	11.06	15.22	11.70		
35	10.96	9.79	11.48	10.44	12.32	10.23	13.11	11.07	13.60	11.04	14.09	10.99	15.05	11.65		
37	10.76	9.70	11.29	10.36	12.11	10.15	12.87	10.98	13.32	10.93	13.77	10.88	14.69	11.53		
39	10.58	9.61	11.10	10.27	11.91	10.06	12.62	10.88	13.05	10.83	13.46	10.76	14.32	11.40		
41	10.39	9.52	10.91	10.19	11.70	9.97	12.37	10.78	12.76	10.72	13.16	10.66	13.95	11.28		
43	10.21	9.43	10.71	10.10	11.49	9.89	12.11	10.68	12.48	10.62	12.85	10.55	13.58	11.16		
46	10.03	9.34	10.47	9.99	11.13	9.74	11.73	10.54	12.10	10.48	12.27	10.34	13.01	10.98		
50	7.61	7.45	7.88	7.72	8.35	8.19	8.75	8.58	8.97	8.79	8.98	8.80	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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Model SRK140VSATZSX Indoor unit SRK50ZSX-S (3 units) Outdoor unit FDC140VSA

Cooling mode (kW)

Outdoor air temp.	Indoor air temperature															
	18 ℃CDB		21 ℃CDB		23 ℃CDB		26 ℃CDB		27 ℃CDB		28 ℃CDB		31 ℃CDB		33 ℃CDB	
	12 ℃CWB		14 ℃CWB		16 ℃CWB		18 ℃CWB		19 ℃CWB		20 ℃CWB		22 ℃CWB		24 ℃CWB	
℃CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
11					11.05	9.70	11.68	10.52	12.00	10.44	12.34	10.36	13.01	10.98	13.68	10.78
13					11.56	9.92	12.25	10.74	12.59	10.66	12.95	10.58	13.69	11.20	14.42	11.00
15					12.07	10.13	12.81	10.96	13.18	10.88	13.57	10.80	14.36	11.42	15.14	11.22
17					12.59	10.35	13.38	11.18	13.77	11.10	14.19	11.03	15.04	11.64	15.87	11.44
19					12.86	10.46	13.66	11.29	14.07	11.21	14.49	11.14	15.35	11.75	16.20	11.54
21					13.12	10.58	13.95	11.40	14.36	11.32	14.79	11.25	15.66	11.85	16.53	11.65
23					13.12	10.58	13.99	11.42	14.40	11.34	14.84	11.26	15.73	11.87	16.61	11.67
25			12.14	10.75	13.11	10.57	14.02	11.43	14.44	11.35	14.89	11.28	15.79	11.89	16.69	11.69
27			12.06	10.71	13.11	10.57	14.06	11.45	14.48	11.37	14.90	11.29	15.74	11.88		
29			11.97	10.67	12.91	10.48	13.82	11.35	14.26	11.29	14.70	11.21	15.56	11.82		
31			11.88	10.63	12.72	10.40	13.59	11.26	14.04	11.20	14.49	11.14	15.40	11.76		
33	11.18	9.90	11.67	10.53	12.52	10.32	13.36	11.17	13.82	11.12	14.29	11.06	15.22	11.70		
35	10.96	9.79	11.48	10.44	12.32	10.23	13.11	11.07	13.60	11.04	14.09	10.99	15.05	11.65		
37	10.76	9.70	11.29	10.36	12.11	10.15	12.87	10.98	13.32	10.93	13.77	10.88	14.69	11.53		
39	10.58	9.61	11.10	10.27	11.91	10.06	12.62	10.88	13.05	10.83	13.46	10.76	14.32	11.40		
41	10.39	9.52	10.91	10.19	11.70	9.97	12.37	10.78	12.76	10.72	13.16	10.66	13.95	11.28		
43	10.21	9.43	10.71	10.10	11.49	9.89	12.11	10.68	12.48	10.62	12.85	10.55	13.58	11.16		
46	10.03	9.34	10.47	9.99	11.13	9.74	11.73	10.54	12.10	10.48	12.27	10.34	13.01	10.98		
50	7.61	7.45	7.88	7.72	8.35	8.19	8.75	8.58	8.97	8.79	8.98	8.80	9.33	9.14		

Heating mode:HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20	7.94	7.91	7.88	7.85	7.82
-17.7	-18	8.44	8.41	8.37	8.34	8.30
-15.7	-16	8.94	8.90	8.86	8.82	8.79
-13.5	-14	9.50	9.46	9.41	9.37	9.33
-11.5	-12	10.07	10.02	9.98	9.93	9.88
-9.5	-10	10.64	10.59	10.54	10.49	10.44
-7.5	-8	11.21	11.15	11.10	11.04	10.99
-5.5	-6	11.51	11.45	11.39	11.33	11.27
-3.0	-4	11.80	11.74	11.68	11.62	11.55
-1.0	-2	12.11	12.05	11.98	11.91	11.84
1.0	0	12.42	12.35	12.28	12.20	12.13
2.0	1	12.58	12.50	12.43	12.35	12.28
3.0	2	13.35	13.27	13.20	13.13	13.08
5.0	4	14.12	14.05	13.96	13.95	13.93
7.0	6	15.68	15.59	15.50	15.52	15.55
9.0	8	16.30	16.21	16.11	16.07	16.03
11.5	10	16.91	16.83	16.73	16.63	16.53
13.5	12	17.86	17.76	17.65	17.52	17.44
15.5	14	18.80	18.69	18.57	18.40	18.36
16.5	16	19.28	19.15	19.03	18.84	18.81

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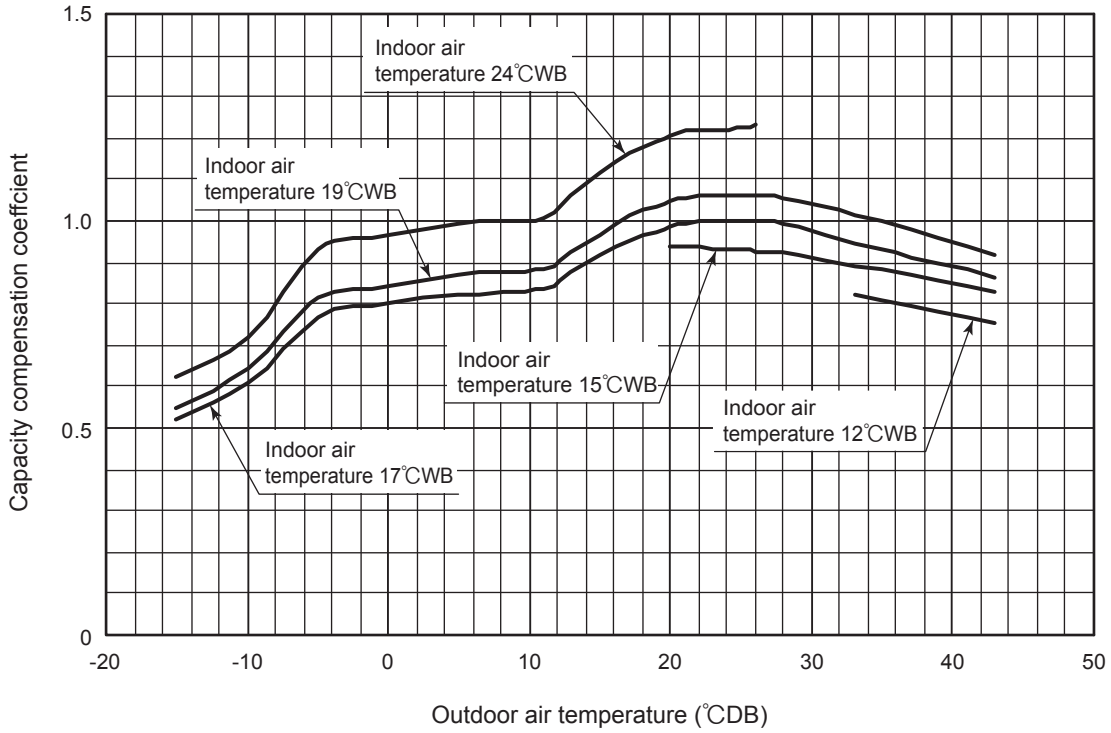
Notes (1) These data show average status.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed. (Cooling only)
In the heating mode in which the outside air temperature is 0℃DB or less, the compressor operates at maximum frequency.
(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length : 7.5m
Level difference of Zero.
(3) Symbols are as follows
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

[References data]

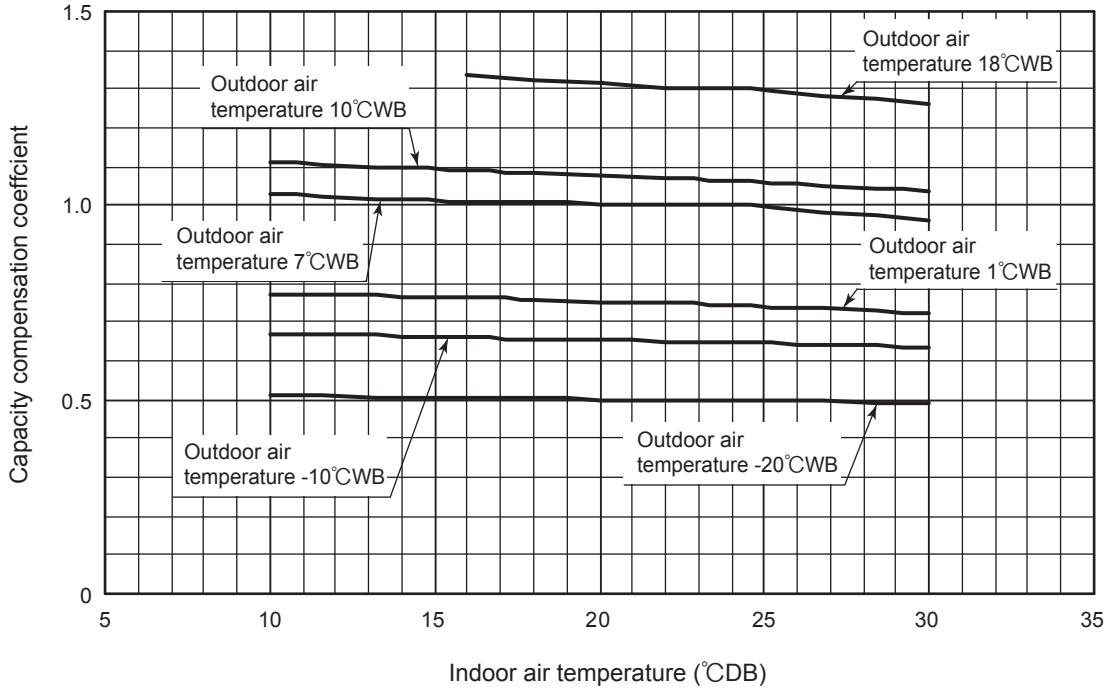
Capacity variation against outdoor and indoor temperature at rated capacity condition.

(I) **Models FDC100, 125, 140VNA, 100, 125, 140VSA**

① **Cooling**



② **Heating**



1.9.2 Correction of cooling and heating capacity in relation to air flow rate control (fan speed)

Fan speed	P-Hi	Me	Lo
Coefficient	1.00	0.97	0.95

1.9.3 Correction of cooling and heating capacity in relation to one way length of refrigerant piping

It is necessary to correct the cooling and heating capacity in relation to the one way equivalent piping length between the indoor and outdoor units.

Models 100 ~ 140

Equivalent piping length (1)(m)			7.5	10	15	20	25	30	35	40	45	50	55
Heating			1	1	1	1	1	0.998	0.998	0.993	0.993	0.988	0.988
Cooling	100 model	ϕ15.88	1	0.991	0.978	0.964	0.951	0.937	0.924	0.910	0.897	0.883	0.870
	125 model		1	0.986	0.968	0.950	0.932	0.914	0.896	0.878	0.860	0.842	0.824
	140 model		1	0.985	0.966	0.946	0.927	0.907	0.888	0.868	0.849	0.829	0.810
	100 model	ϕ19.05	1.016	1.013	1.007	1.002	0.996	0.991	0.985	0.980	0.974	0.969	0.963
	125 model		1.022	1.018	1.009	1.001	0.992	0.984	0.975	0.967	0.958	0.950	0.941
	140 model		1.026	1.021	1.011	1.002	0.992	0.983	0.973	0.964	0.954	0.945	0.935

Note (1) Calculate the equivalent length using the following formula.
However, install the piping so that the piping length is within +5 m of the limit length (actual length) for the respective types.

• Equivalent length =Actual length + (Equivalent bend length x number of bends in the piping.)
Equivalent length per bend.

Gas pipe diameter (mm)	ϕ12.7	ϕ15.88	ϕ19.05	ϕ22.22	ϕ25.4	ϕ28.58
Equivalent bend length	0.20	0.25	0.30	0.35	0.40	0.45

1.9.4 Height difference between the indoor unit and outdoor unit

When the outdoor unit is located below indoor units in cooling mode, or when the outdoor unit is located above indoor units in heating mode, the correction coefficient mentioned in the below table should be subtracted from the value in the above table.

Height difference between the indoor unit and outdoor unit in the vertical height difference	5m	10m	15m	20m	25m	30m
Adjustment coefficient	0.99	0.98	0.97	0.96	0.95	0.94

Piping length limitations

Item \ Model	100, 125, 140
Max. one way piping length	50m
Max. vertical height difference	Outdoor unit is higher 30m Outdoor unit is lower 15m

Note (1) Values in the table indicate the one way piping length between the indoor and outdoor units.

How to obtain the cooling and heating capacity

Example : The net cooling capacity of the model FDUM100VNAVF2 with the air flow "P-High", the piping length of 15m, the outdoor unit located 5m lower than the indoor unit, indoor wet-bulb temperature at 19.0℃ and outdoor dry-bulb temperature 35℃ is

Net cooling capacity = 10.0 × 1.00 × 0.978 × 0.99 ≒ 9.7kW

- 10.0: Net cooling total capacity of FDUM100VNAVF2 (Outdoor temp. : 35℃DB Indoor temp. : 19℃WB) shown in table 1.9.1
- 1.00: Air flow : P-Hi shown in table 1.9.2
- 0.978: Piping length :15m (Gas pipe size is ϕ15.88) shown in table 1.9.3
- 0.99: Height diff. :5m (Outdoor unit : below) shown in table 1.9.4

1.10 APPLICATION DATA

1.10.1 Installation of indoor unit

(1) Ceiling cassette-4 way type (FDT)

PJF012D029A

This manual is for the installation of the indoor unit.
For electrical wiring work (Indoor unit), refer to page 217. For remote control installation, refer to page 233. For wireless kit installation, refer to page 578. For electrical wiring work (Outdoor unit) and refrigerant pipe work installation for outdoor unit, refer to page 245. For motion sensor kit installation, refer to the installation manual attached to the motion sensor kit.
This unit must always be used with the panel.

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .
  ⚠WARNING : Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- The meanings of "Marks" used here are as shown on the right:
  ⃠ Never do it under any circumstances. | ❗ Always do it according to the instruction.
- After completing the installation, do commissioning to confirm there are no abnormalities, and explain to the customers about "SAFETY PRECAUTIONS", correct operation method and maintenance method (air filter cleaning, operation method and temperature setting method) with user's manual of this unit.
  Ask your customers to keep this installation manual together with the user's manual. Also, ask them to hand over the user's manual to the new user when the owner is changed.

⚠WARNING

- **Installation should be performed by the specialist.**
  If you install the unit by yourself, it may lead to serious trouble such as water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Install the system correctly according to these installation manuals.**
  Improper installation may cause explosion, injury, water leakage, electric shock, and fire.
- **Check the density refered by the foumula (accordance with ISO5149).**
  If the density exceeds the limit density, please consult the dealer and installate the ventilation system.
- **Use the genuine accessories and the specified parts for installation.**
  If parts unspecified by our company are used it could cause water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Ventilate the working area well in case the refrigerant leaks during installation.**
  If the refrigerant contacts the fire, toxic gas is produced.
- **Install the unit in a location that can hold heavy weight.**
  Improper installation may cause the unit to fall leading to accidents.
- **Install the unit properly in order to be able to withstand strong winds such as typhoons, and earthquakes.**
  Improper installation may cause the unit to fall leading to accidents.
- **Do not mix air in to the cooling cycle on installation or removal of the air-conditioner.**
  If air is mixed in, the pressure in the cooling cycle will rise abnormally and may cause explosion and injuries.
- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire.
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire.
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire.
- **Check for refrigerant gas leakage after installation is completed.**
  If the refrigerant gas leaks into the house and comes in contact with a fan heater, a stove, or an oven, toxic gas is produced.
- **Use the specified pipe, flare nut, and tools for R410A.**
  Using existing parts (R22) could cause the unit failure and serious accident due to explosion of the cooling cycle.
- **Tighten the flare nut according to the specified method by with torque wrench.**
  If the flare nut were tightened with excess torque, it could cause burst and refrigerant leakage after a long period.
- **Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulfide gas can occur.**
  Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.
- **Connect the pipes for refrigeration circuit securely in installation work before compressor is operated.**
  If the compressor is operated when the service valve is open without connecting the pipe, it could cause explosion and injuries due to abnormal high pressure in the system.
- **Stop the compressor before removing the pipe after shutting the service valve on pump down work.**
  If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.
- **Only use prescribed option parts. The installation must be carried out by the qualified installer.**
  If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire.
- **Consult the dealer or a specialist about removal of the air-conditioner.**
  Improper installation may cause water leakage, electric shock or fire.
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.
- **Do not run the unit when the panel or protection guard are taken off.**
  Touching the rotating equipment, hot surface, or high voltage section could cause an injury to be caught in the machine, to get burned, or electric shock.
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running.

⚠ CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock due to a short circuit.
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it can cause electric shocks.
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire.
- **Do not install the indoor unit near the location where there is possibility of flammable gas leakages.**
  If the gas leaks and gathers around the unit, it could cause fire.
- **Do not install and use the unit where corrosive gas (such as sulfurous acid gas etc.) or flammable gas (such as thinner, petroleum etc.) may be generated or accumulated, or volatile flammable substances are handled.**
  It could cause the corrosion of heat exchanger, breakage of plastic parts etc. And inflammable gas could cause fire.
- **Secure a space for installation, inspection and maintenance specified in the manual.**
  Insufficient space can result in accident such as personal injury due to falling from the installation place.
- **Do not use the indoor unit at the place where water splashes such as laundry.**
  Indoor unit is not waterproof. It could cause electric shock and fire.
- **Do not use the indoor unit for a special purpose such as food storage, cooling for precision instrument, preservation of animals, plants, and a work of art.**
  It could cause the damage of the items.
- **Do not install nor use the system near equipments which generate electromagnetic wave or high harmonics.**
  Equipments like inverter equipment, private power generator, high-frequency medical equipment, or telecommunication equipment might influence the air-conditioner and cause a malfunction and breakdown. Or the air-conditioner might influence medical equipments or telecommunication equipments, and obstruct their medical activity or cause jamming.
- **Do not install the remote control at the direct sunlight.**
  It could cause breakdown or deformation of the remote control.
- **Do not install the indoor unit at the place listed below.**
  - Places where flammable gas could leak.
  - Places where carbon fiber, metal powder or any powder is floated.
  - Place where the substances which affect the air conditioner are generated such as sulfide gas, chloride gas, acid, alkali or ammonic atmospheres.
  - Places exposed to oil mist or steam directly.
  - On vehicles and ships
  - Places where machinery which generates high harmonics is used.
  - Places where cosmetics or special sprays are frequently used.
  - Highly salted area such as beach.
  - Heavy snow area
  - Places where the system is affected by smoke from a chimney.
  - Altitude over 1000m
- **Do not install the indoor unit in the locations listed below (Be sure to install the indoor unit according to the installation manual for each model because each indoor unit has each limitation)**
  - Locations with any obstacles which can prevent inlet and outlet air of the unit
  - Locations where vibration can be amplified due to insufficient strength of structure.
  - Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam. (in case of the infrared specification unit)
  - Locations where an equipment affected by high harmonics is placed. (TV set or radio receiver is placed within 5m)
  - Locations where drainage cannot run off safely.

  It can affect performance or function and etc..
- **Do not put any valuables which will break down by getting wet under the air-conditioner.**
  Condensation could drop when the relative humidity is higher than 80% or drain pipe is clogged, and it damages user's belongings.
- **Do not use the base frame for the outdoor unit which is corroded or damaged after a long period of use.**
  It could cause the unit falling down and injury.
- **Pay attention not to damage the drain pan by weld sputter when brazing work is done near the unit.**
  If sputter entered into the unit during brazing work, it could cause damage (pinhole) of drain pan and leakage of water. To avoid damaging, keep the indoor unit packed or cover the indoor unit.
- **Install the drain pipe to drain the water surely according to the installation manual.**
  Improper connection of the drain pipe may cause dropping water into room and damaging user's belongings.
- **Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.**
  If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.
- **For drain pipe installation, be sure to make descending slope of greater than 1/100, not to make traps, and not to make air-bleeding.**
  Check if the drainage is correctly done during commissioning and ensure the space for inspection and maintenance.
- **Ensure the insulation on the pipes for refrigeration circuit so as not to condense water.**
  Incomplete insulation could cause condensation and it would wet ceiling, floor, and any other valuables.
- **Do not install the outdoor unit where is likely to be a nest for insects and small animals.**
  Insects and small animals could come into the electronic components and cause breakdown and fire. Instruct the user to keep the surroundings clean.
- **Pay extra attention, carrying the unit by hand.**
  Carry the unit with 2 people if it is heavier than 20kg. Do not use the plastic straps but the grabbing place, moving the unit by hand. Use protective gloves in order to avoid injury by the aluminum fin.
- **Make sure to dispose of the packaging material.**
  Leaving the materials may cause injury as metals like nail and woods are used in the package.
- **Do not operate the system without the air filter.**
  It may cause the breakdown of the system due to clogging of the heat exchanger.
- **Do not touch any button with wet hands.**
  It could cause electric shock.
- **Do not touch the refrigerant piping with bare hands when in operation.**
  The pipe during operation would become very hot or cold according to the operating condition, and it could cause a burn or frostbite.
- **Do not clean up the air-conditioner with water.**
  It could cause electric shock.
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown.
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.

①Before installation

●Install correctly according to the installation manual.

●Confirm the following points:

○Unit type/Power source specification ○Pipes/Wires/Small parts ○Accessory items

Accessory item

For unit hanging		For refrigerant pipe			For drain pipe			
Flat washer (M10)	Level gauge	Pipe cover(big)	Pipe cover (small)	Strap	Pipe cover(big)	Pipe cover(small)	Drain hose	Hose clamp
								
8	1	1	1	4	1	1	1	1
For unit hanging	For unit height position adjustment and hanging support	For heat insulation of gas pipe	For heat insulation of liquid tube	For pipe cover fixing	For heat insulation of drain socket	For heat insulation of drain socket	For drain pipe connecting	For drain hose mounting

②Selection of installation location for the indoor unit

① Select the suitable areas to install the unit under approval of the user.

- Areas where the indoor unit can deliver hot and cold wind sufficiently. Suggest to the user to use a circulator if the ceiling height is over 3m to avoid warm air being accumulated on the ceiling.
- Areas where there is enough space to install and service.
- Areas where it can be drained properly. Areas where drain pipe descending slope can be taken.
- Areas where there is no obstruction of airflow on both air return grille and air supply port.
- Areas where fire alarm will not be accidentally activated by the air-conditioner.
- Areas where the supply air does not short-circuit.
- Areas where it is not influenced by draft air.
- Areas not exposed to direct sunlight.
- Areas where dew point is lower than around 28°C and relative humidity is lower than 80%.

This indoor unit is tested under the condition of JIS (Japan Industrial Standard) high humidity condition and confirmed there is no problem. However, there is some risk of condensation drop if the air-conditioner is operated under the severer condition than mentioned above.
If there is a possibility to use it under such a condition, attach additional insulation of 10 to 20mm thick for entire surface of indoor unit, refrigeration pipe and drain pipe.

- Areas where TV and radio stays away more than 1m. (It could cause jamming and noise.)
- Areas where any items which will be damaged by getting wet are not placed such as food, table wares, server, or medical equipment under the unit.
- Areas where there is no influence by the heat which cookware generates.
- Areas where not exposed to oil mist, powder and/or steam directly such as above fryer.
- Areas where lighting device such as fluorescent light or incandescent light doesn't affect the operation.
(A beam from lighting device sometimes affects the infrared receiver for the wireless remote control and the air-conditioner might not work properly.)

②Check if the place where the air-conditioner is installed can hold the weight of the unit. If it is not able to hold, reinforce the structure with boards and beams strong enough to hold it. If the strength is not enough, it could cause injury due to unit falling.

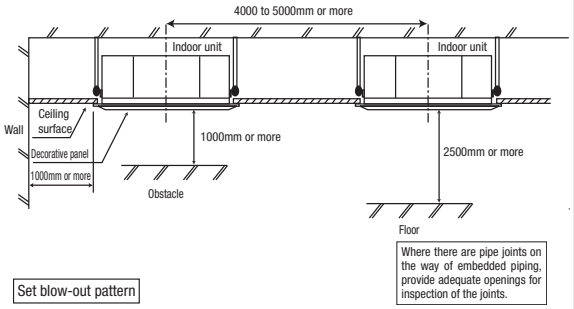
③If there are 2 units of wireless type, keep them away for more than 6m to avoid malfunction due to cross communication.

④When plural indoor units are installed nearby, keep them away for more than 4 to 5m.

Space for installation and service

●When it is not possible to keep enough space between indoor unit and wall or between indoor units, close the air supply port where it is not possible to keep space and confirm there is no short circuit of air flow.

●Install the indoor unit at a height of more than 2.5m above the floor.



Where there are pipe joints on the way of embedded piping, provide adequate openings for inspection of the joints.

Set blow-out pattern

●Select the most proper number of blow-out air supply port direction from 4 way, 3 way or 2 way according to the shape of the room and installation position. (1 way is not available.)

●If it is necessary to change the number of air supply port, prepare the covering materials. (sold as accessory)

●Instruct the user not to use low fan speed when 2way or 3way air supply is used.

●Do not use 2way air supply port under high temperature and humidity environment. (Otherwise it could cause condensation and leakage of water.)

●It is possible to set the air flow direction port by port independently. Refer to tne user's manual for details.

③Preparation before installation

●If suspension bolt becomes longer, do reinforcement of earthquake resistant.

○For grid ceiling

When suspension bolt length is over 500mm, or the gap between the ceiling and roof is over 700mm, apply earthquake resistant brace to the bolt.

○In case the unit is hanged directly from the slab and is installed on the ceiling plane which has enough strength.

When suspension bolt length is over 1000mm, apply the earthquake resistant brace to the bolt.

●Prepare four (4) sets of suspension bolt, nut and spring washer (M10 or M8) on site.

Ceiling opening, Suspension bolts pitch, Pipe position

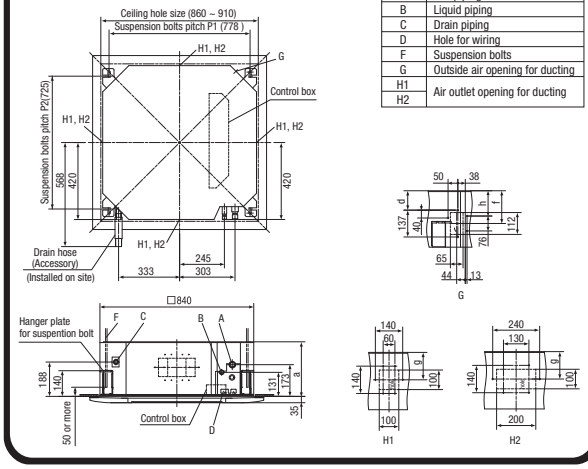
※It is possible the suspension bolts pitch to adjust accoding to the this table.

Type \ Mark	P1	P2
1	770	725~770
2	770~800	725

(mm)

Series	Type	a	d	f	g	h
Single Split (PAC) series	40 to 71 type	236	37	105	88	67
	100 to 140 type	298	99	167	140	129
VRF (KX) series	28 to 71 type	236	37	105	88	67
	90 to 160 type	298	99	167	140	129

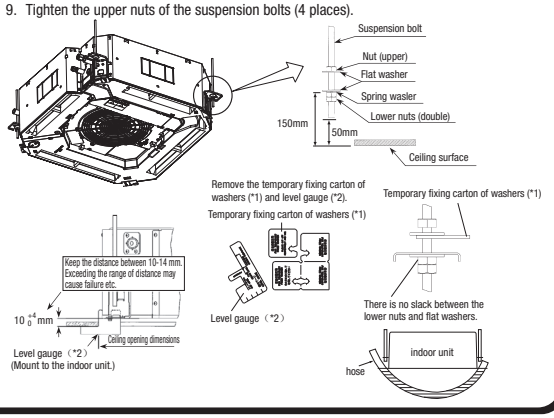
Symbol	
A	Gas piping
B	Liquid piping
C	Drain piping
D	Hole for wiring
F	Suspension bolts
G	Outside air opening for ducting
H1	Air outlet opening for ducting
H2	



④Installation of indoor unit

Work procedure

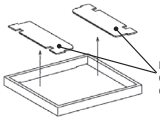
1. Set the suspension bolt length to about 50 mm from the ceiling.
2. Temporarily locate the lower nuts of the suspension bolts (4 places) at a position approximately 150 mm from the ceiling.
3. Temporarily locate the upper nuts of the suspension bolts (4 places) at positions sufficiently distance from the lower nuts so that they do not interfere with the suspension of the indoor unit and with its height adjustment.
4. Set the upper nuts of the suspension bolts and upper washers (4 places) at positions sufficiently distance from the lower nuts. Then, push and insert the temporary fixing carton of washers (*1) onto suspension bolts. Make sure that the upper washers do not slide down.
5. Suspend the indoor unit.
6. After suspending the indoor unit, mount the level gauge (*2) to the air outlet of the indoor unit, and adjust the suspension height of the indoor unit. Loosen the upper nuts (4 places), and adjust the suspension height using the lower nuts (4 places). Confirm there is no slack between the lower nuts and flat washers of the indoor unit hanger plate (4 places).
7. Remove the temporary fixing carton of washers (from all 4 places).
8. Make sure that the indoor unit is installed horizontally. Confirm the levelness of the indoor unit using a level gauge or transparent hose filled with water.
(Keep the height difference at both ends of the indoor unit within 3 mm.)
9. Tighten the upper nuts of the suspension bolts (4 places).

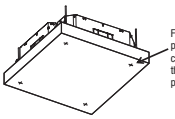


④Installation of indoor unit (continued)

Protection of the indoor unit

- If it is not possible to install the panel for a while or if attaching the ceiling board after installing the indoor unit, protect the indoor unit by using upper carton.





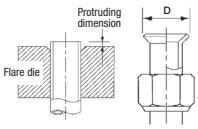
Caution

- Do not adjust the unit height by adjusting the upper nuts. Doing so will cause unexpected stress on the indoor unit and cause the unit to become deformed, prevent the panel from being installed, and be generated fan interference noise.
- Make sure that the indoor unit is installed horizontally and set the appropriate gap between the underside of the unit and the ceiling plane. Improper installation may cause air leakage, dew condensation, water leakage and noise.
- Even after the panel has been installed, the unit height can still be finely adjusted. Refer to the panel installation manual for details.
- Make sure there is no gap between the panel and the ceiling surface, and between the panel and the indoor unit. Any gap may cause air and/or water to leak, or condensation to form.

⑤Refrigerant pipe

Caution

- Be sure to use new pipes for the refrigerant pipes. Use the flare nut attached to the product or a nut compatible with JIS B 8607, Class 2.
  Regarding whether existing pipes can be reused or not, and the washing method, refer to the instruction manual of the outdoor unit, catalogue or technical data.
  1) In case of reuse: Do not use old flare nut, but use the nut attached to the unit or compatible with JIS B 8607, Class 2.
  2) In case of reuse: Flare the end of pipe replaced partially for R410A.



Pipe dia. d mm	Min. pipe wall thickness mm	Protruding dimension for flare, mm		Flare O.D. D mm	Flare nut tightening torque N-m
		Rigid (Clutch type)			
		For R410A	Conventional tool		
6.35	0.8	0 – 0.5	0.7 – 1.3	8.9 – 9.1	14 – 18
9.52	0.8			12.8 – 13.2	34 – 42
12.7	0.8			16.2 – 16.6	49 – 61
15.88	1			19.3 – 19.7	68 – 82
19.05	1.2			23.6 – 24.0	100 – 120

- Use phosphorus deoxidized copper alloy seamless pipe (C1220T specified in JIS H3300) for refrigeration pipe installation.
  In addition, make sure there is no damage both inside and outside of the pipe, and no harmful substances such as sulfur, oxide, dust or a contaminant stuck on the pipes.
- Do not use any refrigerant other than the designated refrigerant.
  Using other refrigerant except the designated refrigerant, may degrade inside refrigeration oil. And air getting into refrigeration circuit may cause over-pressure and resultant it may result in bursting, etc.
- Store the copper pipes indoors and seal the both end of them until they are brazed in order to avoid any dust, dirt or water getting into pipe. Otherwise it will cause degradation of refrigeration oil and compressor breakdown, etc.
- Use special tools for R410A refrigerant.

Work procedure

1. Remove the flare nut and blind flanges on the pipe of the indoor unit.
   ※ Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them. (Gas may come out at this time, but it is not abnormal.)
   - Pay attention whether the flare nut pops out. (as the indoor unit is sometimes pressured.)
2. Make a flare on liquid pipe and gas pipe, and connect the refrigeration pipes on the indoor unit.
   ※Bend radius of pipe must be 4D or larger. Once a pipe is bent, do not readjust the bending. Do not twist a pipe or collapse to 2/3D or smaller.
   ※Do a flare connection as follows:
   - Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them.
   - When fastening the flare nut, align the refrigeration pipe with the center of flare nut, screw the nut for 3-4 times by hand and then tighten it by spanner with the specified torque mentioned in the table above. Make sure to hold the pipe on the indoor unit securely by a spanner when tightening the nut in order to avoid unexpected stress on the copper pipe.
3. Cover the flare connection part of the indoor unit with attached insulation material after a gas leakage inspection, and tighten both ends with attached straps.
   - Make sure to insulate both gas pipes and liquid pipes completely.
     ※Incomplete insulation may cause dew condensation or water dropping.
   - Use heat-resistant (120 °C or more) insulations on the gas side pipes.
   - In case of using at high humidity condition, reinforce insulation of refrigerant pipes. Surface of insulation may cause dew condition or water dropping, if insulations are not reinfoced.
4. Refrigerant is charged in the outdoor unit.
   As for the additional refrigerant charge for the indoor unit and piping, refer to the installation manual attached to the outdoor unit.

⑤Refrigerant pipe (continued)

Caution:
Refrigerating machine oil should not be applied to the threads of union or external surface of flare. It is because, even if the same tightening torque is applied, the oil is likely to decrease the slide friction force on the threads and increase, in turn, the axial component force so that it could crack the flare by the stress corrosion.
Refrigerating machine oil may be applied to the internal surface of flare only.

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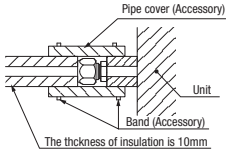

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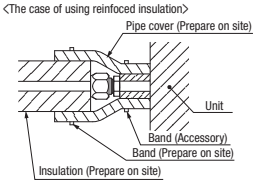


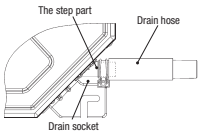
⑥Drain pipe

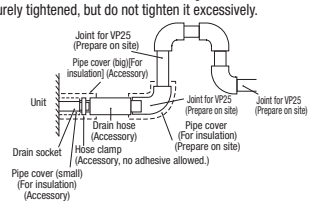
Caution

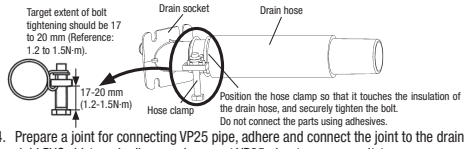
- Install the drain pipe according to the installation manual in order to drain properly.
  Imperfection in draining may cause flood indoors and wetting the household goods, etc.
- Do not put the drain pipe directly into the ditch where toxic gas such as sulfur, the other harmful and inflammable gas is generated. Toxic gas would flow into the room and it would cause serious damage to user's health and safety (some poisoning or deficiency of oxygen). In addition, it may cause corrosion of heat exchanger and bad smell.
- Connect the pipe securely to avoid water leakage from the joint.
- Insulate the pipe properly to avoid condensation drop.
- Check if the water can flow out properly from both the drain outlet on the indoor unit and the end of the drain pipe after installation.
- Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway. In addition, do not put air vent on the drain pipe. Check if water is drained out properly from the pipe during commissioning. Also, keep sufficient space for inspection and maintenance.

Work procedure

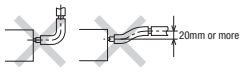
1. Make sure that the drain hose (the soft PVC side) is inserted into the end of the step part of the drain socket.
   Fix the hose clamp so that its bolt is located on the outside of the indoor unit, and the bolt are fastened in a vertical orientation.
   - Do not apply adhesives on this end.
2. Position the hose clamp so that it touches the insulation of the drain hose, and then tighten the bolt.
3. Turn the bolt several times until it is securely tightened, but do not tighten it excessively.



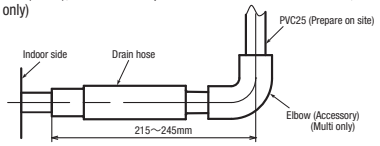




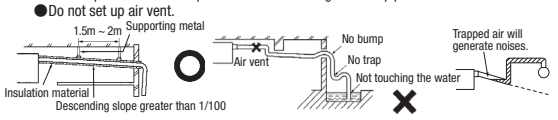
4. Prepare a joint for connecting VP25 pipe, adhere and connect the joint to the drain hose (the rigid PVC side), and adhere and connect VP25 pipe (prepare on site).
   ※As for drain pipe, apply VP25 made of rigid PVC which is on the market.
   - Make sure that the adhesive will not get into the supplied drain hose.
     It may cause the flexible part broken after the adhesive is dried up and gets rigid.
   - The flexible drain hose is intended to absorb a small difference at installation of the unit or drain pipes. Intentional bending, expanding may cause the flexible hose broken and water leakage.



   - As for drain pipe, apply VP25 (OD32).
     If apply PVC25 (OD25), connect the expanded connector to the drain hose, with adhesive. (Multi unit only)

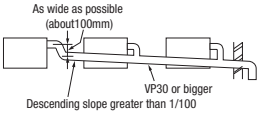


5. Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway.
   - Pay attention not to give stress on the pipe on the indoor unit side, and support and fix the pipe as close place to the unit as possible when connecting the drain pipe.
   - Do not set up air vent.



⑥Drain pipe (continued)

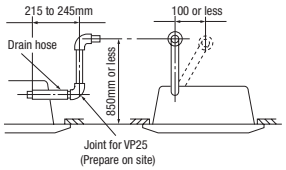
●When sharing a drain pipe for more than 1 unit, lay the main pipe 100mm below the drain outlet of the unit. In addition, select VP30 or bigger size for main drain pipe.



6. Insulate the drain pipe.
   ● Be sure to insulate the drain socket and rigid PVC pipe installed indoors otherwise it may cause dew condensation and water leakage.
   ※After drainage test implementation, cover the drain socket part with pipe cover (small size), then use the pipe cover (big size) to cover the pipe cover (small size), clamps and part of the drain hose, and fix and wrap it with tapes to wrap and make joint part gapless.

Drain up

● The position for drain pipe outlet can be raised up to 850mm above the ceiling. Use elbows for installation to avoid obstacles inside ceiling. If the horizontal drain pipe is too long before vertical pipe, the backflow of water will increase when the unit is stopped, and it may cause overflow of water from the drain pan on the indoor unit. In order to avoid overflow, keep the horizontal pipe length and offset of the pipe within the limit shown in the figure below.

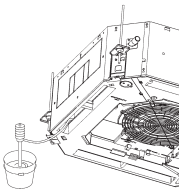


Drain test

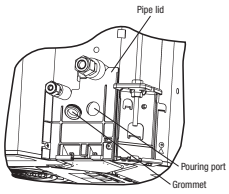
● After installing the drain pipe, make sure that drain system works correctly and that no water leaks from the joint and drain pan. Check whether the motor sound of the drain pump is normal.
● Conduct a drain test when installing, even during the heating season.
● In the case of new buildings, be sure to complete the test before fixing the ceiling.

1. Pour about 1,000 cc of test water into the drain pan of the indoor unit. Exercise care not to allow electrical equipment such as the drain pump and other components to become wet while filling water.
   Pour test water through the pouring port of the pipe lid using a feed water pump or a similar device, or through the refrigerant pipe joint.

●In case of pouring water from the air outlet



●In case of pouring water from the pouring port of the pipe lid



2. Make sure that water drains out completely and that no water leaks from any joints of the drain pipe during the test.
   Test to confirm that the water drains out correctly while listening to the drain pump motor operating sound. At the drain socket (transparent), it is possible to check whether the water drains out correctly.
3. Unplug the rubber plug on the indoor unit so that the remaining water drains from the drain pan after the draining test.
   After checking the water drainage, fix the drain plug correctly. Installation work for the drain pipe must be performed for the entire drain pipe up to the indoor unit.
   If the pipe lid has been removed in order to pour water, mount the pipe lid again.

Drain pump operation

●In case electrical wiring work completed
Drain pump can be operated by the wired remote control.
For the operation method, refer to Operation for drain pump in the installation manual for wiring work.

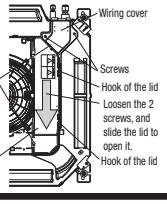
●In case electrical wiring work not completed
Drain pump will run continuously when the dip switch"SW7-1" on the indoor unit PCB is turned ON, the connector CnB is disconnected, and then the power source (230 VAC on the terminal block ① and ②) is turned ON.
Make sure to turn OFF "SW7-1" and reconnect the connector CnB after the test.

⑦Wiring-out position and wiring connection

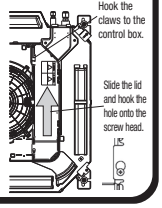
● Electrical installation work must be performed according to the installation manual by an electrical installation service provider qualified by a power provider of the country, and be executed according to the technical standards and other regulations applicable to electrical installation in the country.
Be sure to use an exclusive circuit.
● Use specified cord, fasten the wiring to the terminal securely, and hold the cord securely in order not to apply unexpected stress on the terminal.
● Do not put both power source line and signal line on the same route. It may cause miscommunication and malfunction.
● Be sure to do D type earth work.
● For the details of electrical wiring work, see attached instruction manual for electrical wiring work.

1. Loosen the 2 screws of the lid of the control box, and slide the lid in the direction of the arrow shown in the figure. It will then be possible to open the lid.
2. Unhook the lid from the control box, and remove the lid.
3. Remove the 2 screws from the wiring cover, and remove the wiring cover.
4. Hold each wire inside the unit, and securely fasten them to the terminal block.
5. Fix the wiring using clamps.
6. Install the wiring cover and the lid of the control box.

When opening the lid of the control box



When closin g the lid of the control box

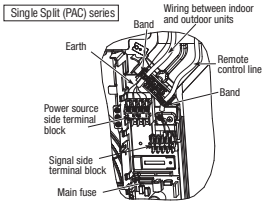


Main fuse specification

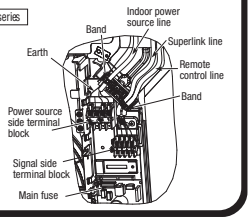
Specification	Part No.
T3.15A L250V	SSA564A149AF

⑦Wiring-out position and wiring connection (continued)

Single Split (PAC) series



VRF (KX) series



⑧Panel installation

●Install the panel on the indoor unit after electrical wiring work.
●Refer to the attached manual for panel installation for details.

⑨Check list after installation

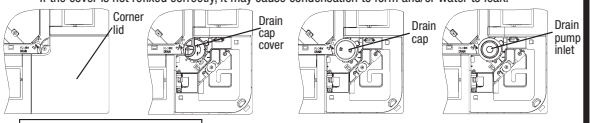
●Check the following items after all installation work completed.

Check if;	Expected trouble	Check
The indoor and outdoor units are fixed securely?	Falling, vibration, noise	
Inspection for leakage is done?	Insufficient capacity	
Insulation work is properly done?	Water leakage	
Water is drained properly?	Water leakage	
Supply voltage is same as mentioned in the model name plate?	PCB burnt out, not working at all	
There is mis-wiring or mis-connection of piping?	PCB burnt out, not working at all	
Earth wiring is connected properly?	Electric shock	
Cable size comply with specified size?	PCB burnt out, not working at all	
Any obstacle blocks air flow on air inlet and outlet?	Insufficient capacity	

⑩How to check the dirt of drain pan and cleanimg the inlet of the drain pump. (Maintenance)

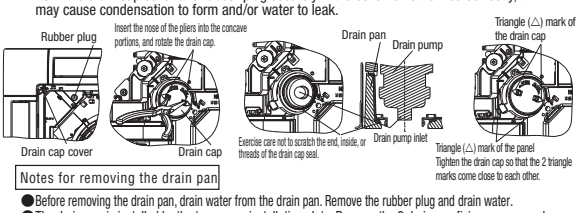
The method of checking the dirt of drain pan

●It is possible to check dirt on the drain pan and drain pump inlet without removing the panel.
1. Open the inlet grille and remove the corner lid on the drain pan side.
2. Remove the drain cap cover (1 screw) from the panel corner.
3. Check the dirt on the drain pan from the drain cap, and check the drain pump inlet. If the drain pan is very dirty, remove the drain pan and clean it.
4. After checking, refix the drain cap cover securely.
   If the cover is not refixed correctly, it may cause condensation to form and/or water to leak.



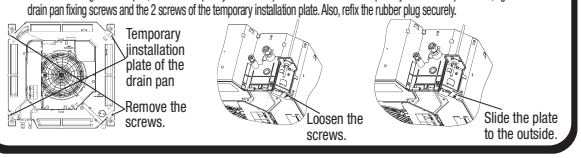
Cleaning of drain pump inlet

●It is possible to clean the drain pump inlet and surrounding area by removing the drain cap only; it is not necessary to remove the panel and drain pan.
●Before removing the drain cap, remove the rubber plug and drain water from the drain pan.
1. Remove the drain cap cover as described above.
2. Insert the nose of the pliers into the concave portions (2 places) of the drain cap, and rotate the pliers about 1 turn in the CCW direction. The drain cap is removed.
3. When cleaning the drain pump inlet, use a soft plastic tool. If a metallic tool is used, the drain cap mounting portion may be scratched and water may leak.
4. Before mounting the drain cap, rinse it and **remove any foreign material from the inside of the cap**. If the drain cap is installed with foreign material inside it, it may cause water to leak.
5. Insert the nose of the pliers into the concave portions of the drain cap and rotate the pliers to install the drain cap. Rotate the drain cap about 1 turn in the CW direction until it stops rotating. If the drain cap is not rotated for 1 or more turns, the cap will not have been installed correctly.
   Remove the drain cap, and then install it again correctly.
6. After tightening the drain cap, make sure the triangle (△) mark of the drain cap comes close to the triangle mark on the panel. If these triangle marks are not close to each other, tighten the drain cap further.
7. Refix the drain cap cover and rubber plug securely. If the cover is not refixed correctly, it may cause condensation to form and/or water to leak.



Notes for removing the drain pan

●Before removing the drain pan, drain water from the drain pan. Remove the rubber plug and drain water.
●The drain pan is installed by the temporary installation plate. Remove the 2 drain pan fixing screws, and loosen the 2 screws of the temporary installation plate.
Slide the temporary installation plate to the outside of the drain pan. And then,it is possible to remove the drain pan.
●When reinstalling the drain pan, slide the temporary installation plate to the inside and temporarily fix the drain pan. Then, tighten the 2 drain pan fixing screws and the 2 screws of the temporary installation plate. Also, refix the rubber plug securely.



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• Panel installation

Read this manual together with the indoor unit's installation manual.

⚠ WARNING

- **Fasten the wiring to the terminal securely and hold the cable securely so as not to apply unexpected stress on the terminal. Loose connection or hold will cause abnormal heat generation or fire.**
- **Make sure the power source is turned off when electric wiring work. Otherwise, electric shock, malfunction and improper running may occur.**

Function

The Anti draft panel has the anti draft mechanism. If the Anti draft panel is installed and the anti draft function is set, the anti draft function will be oprerated and reduce the draft feeling. (Refer to ⑩ Panel setting for details.)

- Standard panel : without the anti draft mechanism
- Anti draft panel : with the anti draft mechanism

① Before installation

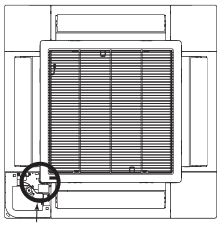
- Follow installation manual carefully, and install the panel properly.
- Check the following items.

○ Accessories

Accessories

Bolt		4 pieces	For panel installation
Strap		4 pieces	For avoiding the corner panel from falling
Screw		4 pieces	For fixing the corner panel

Note: Accessories are laid in the position removing the corner lid.



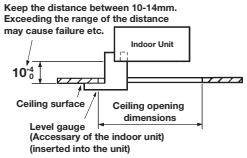
Accessories holding position

② Checking the indoor unit installation position

- Read this manual together with the air-conditioner installation manual carefully.
- Check if the opening size for the indoor unit is correct with the level gauge supplied in the indoor unit.
- Check if the gap between the plane and the indoor unit is correct by inserting the level gauge into the air outlet port of the indoor unit. (See below drawing)
- Adjust the installation elevation if necessary.
- Remove the level gauge before installing the panel.

Caution

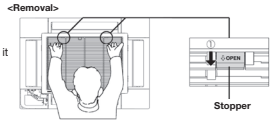
If there is a height difference beyond the design limit between the installation level of the indoor unit and the panel, the panel may be subject to excessive stress during installation and it may cause distortion and damage.



- The installation level of the indoor unit can be adjusted finely from the opening provided on the corner, even after panel is Installed. (Refer to ⑥ Installing the panel for details.)

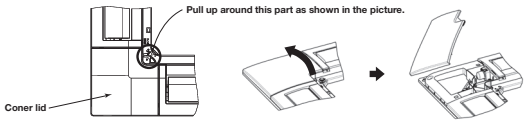
③ Removing the inlet grille

1. Hold the stoppers on the inlet grille (2 places) toward OPEN direction, open the inlet grille.
2. Remove the hooks of the inlet grille from the panel while it is in the open position.



④ Removing the corner lid

- Pull the corner lid toward the direction indicated by the arrow and remove it. (Same way for all 4 corner lids)



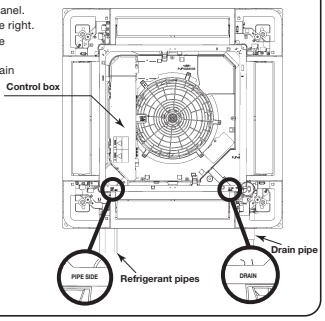
⑤ Orientation of the panel installation

Take note that there is an orientation to install the panel.

- Install the panel with the orientation shown on the right.
- Align the "PIPE SIDE" mark (on the panel) with the refrigerant pipes on the indoor unit.
- Align the "DRAIN" mark (on the panel) with the drain pipe on the indoor unit.

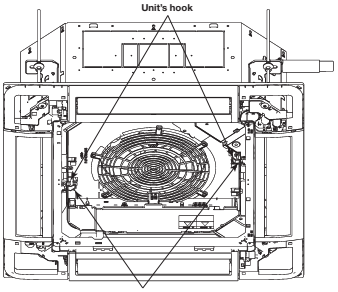
CAUTION

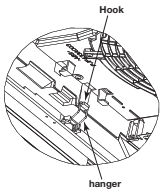
In case the orientation of the panel is not correct, it will lead to air leakage and also it is not possible to connect the flap motor wiring.

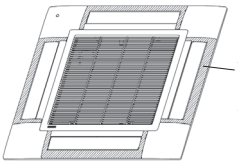


⑥ Installing the panel

1. Temporary hanging
   - Lift up the hanger (2 places) on the panel for temporary support.
   - Hang the panel on the hook on the indoor unit.







The Anti draft panel moves the parts of the anti draft mechanism (shaded area,4 places).Note that they may break if they are moved forcibly by hand. Although the parts (shaded area) of the Standard panel are separate parts from the body, they do not move.

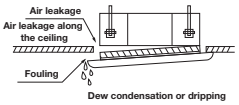
Caution

- The parts (shaded area), of the anti draft mechanism around the air outlet, are separate parts. Handle the panel with care. Especialy, the shaded area of the Anti draft panel move. Note that they may break if they are moved forcibly by hand.

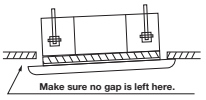
2. Fix the panel on the indoor unit
   - Fasten the panel on the indoor unit with the 4 bolts supplied with the panel.

Caution

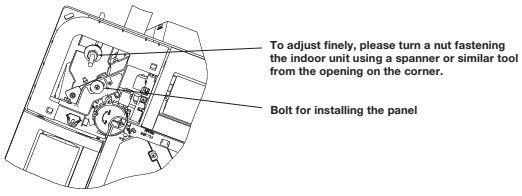
- Improperly tightened fixing bolts cause the problems listed below, so make sure that bolts are securely tightened.



- If there is a gap between the ceiling and the panel even after the fixing bolts are tightened, adjust the installation level of the indoor unit again.



- It is possible to adjust the installation height of the indoor unit with the panel installed as long as there is no influence on the drain pipe inclination and/or the indoor unit levelness.

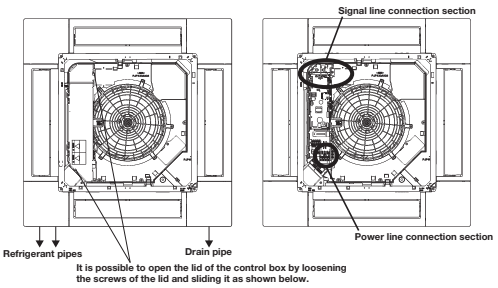


Caution

Do not give any stress on the panel when adjusting the height of the indoor unit to avoid unexpected distortion. It may cause the distortion of panel or failing to close the inlet grille, and the parts of the anti draft mechanism.

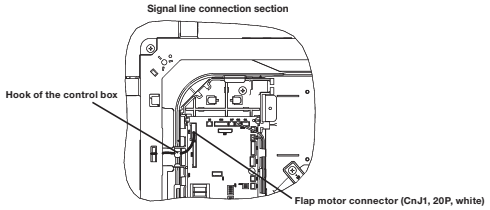
⑦ Electrical wiring

The wiring work varies depending on the panel type. Select the wiring work appropriate for the panel type.
The connection positions of the indoor unit are as shown below irrespective of the panel type.



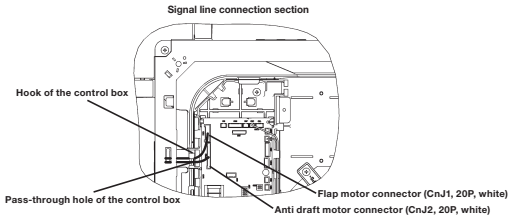
<For the Standard panel>
1. Loosen 2 screws on the control box lid of the indoor unit, and remove the lid by sliding it.
2. Pass the flap motor wiring (20-wire) through the hook of the control box, and connect to CnJ1 (20P, white).
3. Fix the control box lid of the indoor unit, and tighten 2 screws.

For the Standard panel



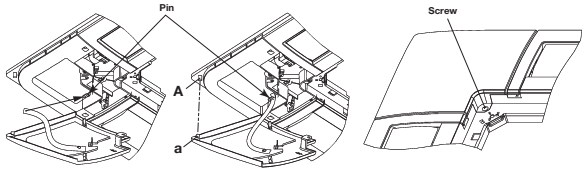
<For the Anti draft panel>
1. Loosen 2 screws on the control box lid of the indoor unit, and remove the lid by sliding it.
2. Pass the flap motor cable (20-wire) through the hook of the control box, and connect to CnJ1 (20P, white).
3. Pass the anti draft motor cable (20-wire) through the hook of the control box, and connect to CnJ2 (20P, white).
4. Fix the control box lid of the indoor unit, and tighten the 2 screws.

For the Anti draft panel



⑧ Installing a corner lid

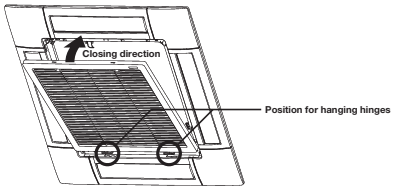
1. To avoid unexpected falling of the corner lid, put the strap onto the corner lid's pin with turning the strap up.
2. Then hang the strap of a corner lid onto the panel's pin.
3. First insert the part "a" of a corner lid into the part "A" of the panel, and then engage 2 hooks.
4. Fix with screw.



⑨ Installing the inlet grille

To attach the inlet grille, follow the procedure described in ⑤ Removing the inlet grille in the reverse order.
1. Hang the hooks of the inlet grille in the hole of the panel. (The hooks of the grille can be hanged in 4 side of the panel as following.)
2. After the grille is hanged, close the grille while the stoppers(2 places) on the grille are kept pressed to "OPEN" direction. When the grille comes to the original position, release the stoppers to hold the grille. Make sure to hear the sound of "CLICK" in both stoppers.

<Installation>



Caution

- Installing the inlet grille from the hinge side.
- Be careful in the inlet grille Installing, unstable installing may cause grille falling.
- Repair or replace the distorted, broken stopper at once, or the grille falling may occur.

⑩ Panel setting

<Flap swing range setting (Individual flap cotrol setting)>

It is possible to change the swing range of the flap by the wired remote control. Once the upper and lower limit positions are set, the flap will swing within the set range.It is also possible to set the different range to each flap.

<Anti draft setting>

The anti draft function will not be operated if the anti draft panel is installed and its wirings are only connected. To operate the anti draft function, enable the anti draft setting by using the wired or wireless remote control.

Note: It is not possible to set by the following remote control models or older.
Wired:RC-EX1A, RC-E5, RCH-E3
Wireless: RCN-E1R

Once you have enabled the settings in this mode, the anti draft function is operated when the air-conditioner is started, and the parts of the anti draft mechanism are always open when the air-conditioner is operating. When the air-conditioner is stopped, they are closed. It is possible to enabled or disabled the anti draft function for each air outlet.

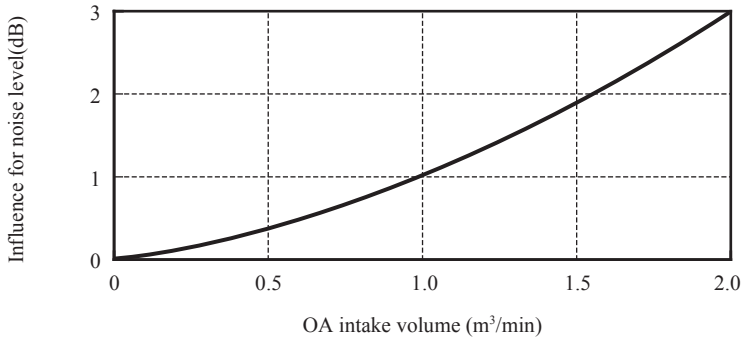
For the setting details, refer to the user's manual supplied with the remote control.

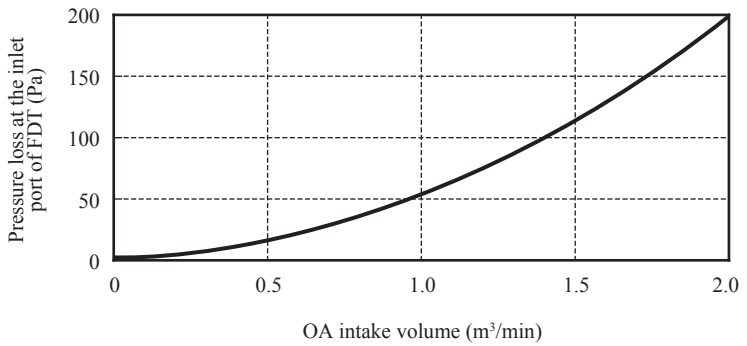
OUTDOOR AIR (OA) INTAKE FOR FDT

If it is required to intake OA through FDT unit, make sure to check following points carefully in order to conform to the requirement of customer.

If the OA intake volume through FDT unit is not satisfied with the required ventilation air volume, consider to install an indepemdent ventilation system.

1) Be sure to calculate cooling/heating load considering the ventilation heat load and to decide the air-conditioning system.
2) Be sure the OA intake volume to FDT unit should not exceed 20% of the supply air (SA) volume of FDT unit and it should be less than $2m^3$/min.
3) Be sure to decide the OA intake volume considering the mixed air temperature will be within the usage temperature range of FDT unit.
   Especially in following case, please consider to intake OA after processing OA or reducing the OA intake volume.
4) Be sure to equip a suitable filter for OA intaken in order to protect the dust.
   (Because OA does not pass through the filter equipped on FDT unit)
5) Be sure to insulate OA duct.
   (If not, it may have dew condensation.)
6) Be sure to interlock the booster fan for OA with the fan of FDT unit by using CnT connector.
   (If not, the dust trapped on the filter of FDT unit may be blown out to the room by the OA being intaken during the fan of FDT unit stopping)
7) Be sure to select a suitable booster fan for OA considering the pressure loss in the OA duct and the pressure loss at the inlet port of FDT with following diagram.
   (Please take into consideration the noise level as well)





<Selection of booster fan>

Booster fan should have a static pressure calculated with following formula

Static pressure of booster fan

= the pressure loss at the inlet port of FDT (from above diagram)

+ Pressure loss in the OA duct (In case of ϕ 100 duct, 5Pa/m is required)

Select the booster fan from the fan characteristic diagram

PJA012D786B B

(2) Ceiling cassette-4 way compact type (FDTC)

This manual is for the installation of an indoor unit.
For electrical wiring work (Indoor), refer to the electrical wiring work installation manual (page 221).
For remote control installation, refer to page 233. For wireless kit installation, refer to page 586.
For electrical wiring work (Outdoor) and refrigerant pipe work installation for outdoor unit, refer to page 245.
This unit must always be used with the panel.

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .
  ⚠WARNING : Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- The meanings of "Marks" used here are as shown on the right:
  ⃠ Never do it under any circumstances. | ❗ Always do it according to the instruction.
- After completing the installation, do commissioning to confirm there are no abnormalities, and explain to the customers about "SAFETY PRECAUTIONS", correct operation method and maintenance method (air filter cleaning, operation method and temperature setting method) with user's manual of this unit.
  Ask your customers to keep this installation manual together with the user's manual. Also, ask them to hand over the user's manual to the new user when the owner is changed.

⚠WARNING

- **Installation should be performed by the specialist.**
  If you install the unit by yourself, it may lead to serious trouble such as water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Install the system correctly according to these installation manuals.**
  Improper installation may cause explosion, injury, water leakage, electric shock, and fire.
- **Check the density refered by the foumula (accordance with ISO5149).**
  If the density exceeds the limit density, please consult the dealer and installate the ventilation system.
- **Use the genuine accessories and the specified parts for installation.**
  If parts unspecified by our company are used it could cause water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Ventilate the working area well in case the refrigerant leaks during installation.**
  If the refrigerant contacts the fire, toxic gas is produced.
- **Install the unit in a location that can hold heavy weight.**
  Improper installation may cause the unit to fall leading to accidents.
- **Install the unit properly in order to be able to withstand strong winds such as typhoons, and earthquakes.**
  Improper installation may cause the unit to fall leading to accidents.
- **Do not mix air in to the cooling cycle on installation or removal of the air-conditioner.**
  If air is mixed in, the pressure in the cooling cycle will rise abnormally and may cause explosion and injuries.
- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire.
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire.
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire.
- **Check for refrigerant gas leakage after installation is completed.**
  If the refrigerant gas leaks into the house and comes in contact with a fan heater, a stove, or an oven, toxic gas is produced.
- **Use the specified pipe, flare nut, and tools for R410A.**
  Using existing parts (R22) could cause the unit failure and serious accident due to explosion of the cooling cycle.
- **Tighten the flare nut according to the specified method by with torque wrench.**
  If the flare nut were tightened with excess torque, it could cause burst and refrigerant leakage after a long period.
- **Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulfide gas can occur.**
  Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.
- **Connect the pipes for refrigeration circuit securely in installation work before compressor is operated.**
  If the compressor is operated when the service valve is open without connecting the pipe, it could cause explosion and injuries due to abnormal high pressure in the system.
- **Stop the compressor before removing the pipe after shutting the service valve on pump down work.**
  If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.
- **Only use prescribed option parts. The installation must be carried out by the qualified installer.**
  If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire.
- **Consult the dealer or a specialist about removal of the air-conditioner.**
  Improper installation may cause water leakage, electric shock or fire.
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.
- **Do not run the unit when the panel or protection guard are taken off.**
  Touching the rotating equipment, hot surface, or high voltage section could cause an injury to be caught in the machine, to get burned, or electric shock.
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running.

⚠ CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock or fire due to a short circuit.
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it could cause electric shocks or fire.
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire.
- **Do not install the indoor unit near the location where there is possibility of flammable gas leakages.**
  If the gas leaks and gathers around the unit, it could cause fire.
- **Do not install and use the unit where corrosive gas (such as sulfurous acid gas etc.) or flammable gas (such as thinner, petroleum etc.) may be generated or accumulated, or volatile flammable substances are handled.**
  It could cause the corrosion of heat exchanger, breakage of plastic parts etc. And inflammable gas could cause fire.
- **Secure a space for installation, inspection and maintenance specified in the manual.**
  Insufficient space can result in accident such as personal injury due to falling from the installation place.
- **Do not use the indoor unit at the place where water splashes such as laundry.**
  Indoor unit is not waterproof. It could cause electric shock and fire.
- **Do not use the indoor unit for a special purpose such as food storage, cooling for precision instrument, preservation of animals, plants, and a work of art.**
  It could cause the damage of the items.
- **Do not install nor use the system near equipments which generate electromagnetic wave or high harmonics.**
  Equipments like inverter equipment, private power generator, high-frequency medical equipment, or telecommunication equipment might influence the air-conditioner and cause a malfunction and breakdown. Or the air-conditioner might influence medical equipments or telecommunication equipments, and obstruct their medical activity or cause jamming.
- **Do not install the remote control at the direct sunlight.**
  It could cause breakdown or deformation of the remote control.
- **Do not install the indoor unit at the place listed below.**
  · Places where flammable gas could leak.
  · Places where carbon fiber, metal powder or any powder is floated.
  · Place where the substances which affect the air-conditioner are generated such as sulfide gas, chloride gas, acid, alkali or ammonic atmospheres.
  · Places exposed to oil mist or steam directly.
  · On vehicles and ships
  · Places where machinery which generates high harmonics is used.
  · Places where cosmetics or special sprays are frequently used.
  · Highly salted area such as beach.
  · Heavy snow area
  · Places where the system is affected by smoke from a chimney.
  · Altitude over 1000m
- **Do not install the indoor unit in the locations listed below (Be sure to install the indoor unit according to the installation manual for each model because each indoor unit has each limitation)**
  · Locations with any obstacles which can prevent inlet and outlet air of the unit
  · Locations where vibration can be amplified due to insufficient strength of structure.
  · Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam. (in case of the infrared specification unit)
  · Locations where an equipment affected by high harmonics is placed. (TV set or radio receiver is placed within 5m)
  · Locations where drainage cannot run off safely.
  It can affect performance or function and etc..
- **Do not put any valuables which will break down by getting wet under the air-conditioner.**
  Condensation could drop when the relative humidity is higher than 80% or drain pipe is clogged, and it damages user's belongings.
- **Do not use the base frame for the outdoor unit which is corroded or damaged after a long period of use.**
  It could cause the unit falling down and injury.
- **Pay attention not to damage the drain pan by weld sputter when brazing work is done near the unit.**
  If sputter entered into the unit during brazing work, it could cause damage (pinhole) of drain pan and leakage of water. To avoid damaging, keep the indoor unit packed or cover the indoor unit.
- **Install the drain pipe to drain the water surely according to the installation manual.**
  Improper connection of the drain pipe may cause dropping water into room and damaging user's belongings.
- **Do not share the drain pipe for indoor unit and GHP (Gas Heat Pump system) outdoor unit.**
  Toxic exhaust gas would flow into room and it might cause serious damage (some poisoning or deficiency of oxygen) to user's health and safety.
- **Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.**
  If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.
- **For drain pipe installation, be sure to make descending slope of greater than 1/100, not to make traps, and not to make air-bleeding.**
  Check if the drainage is correctly done during commissioning and ensure the space for inspection and maintenance.
- **Ensure the insulation on the pipes for refrigeration circuit so as not to condense water.**
  Incomplete insulation could cause condensation and it would wet ceiling, floor, and any other valuables.
- **Do not install the outdoor unit where is likely to be a nest for insects and small animals.**
  Insects and small animals could come into the electronic components and cause breakdown and fire. Instruct the user to keep the surroundings clean.
- **Pay extra attention, carrying the unit by hand.**
  Carry the unit with 2 people if it is heavier than 20kg. Do not use the plastic straps but the grabbing place, moving the unit by hand. Use protective gloves in order to avoid injury by the aluminum fin.
- **Make sure to dispose of the packaging material.**
  Leaving the materials may cause injury as metals like nail and woods are used in the package.
- **Do not operate the system without the air filter.**
  It may cause the breakdown of the system due to clogging of the heat exchanger.
- **Do not touch any button with wet hands.**
  It could cause electric shock.
- **Do not touch the refrigerant piping with bare hands when in operation.**
  The pipe during operation would become very hot or cold according to the operating condition, and it could cause a burn or frostbite.
- **Do not clean up the air-conditioner with water.**
  It could cause electric shock.
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown.
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.

① Before installation

- Install correctly according to the installation manual.
- Confirm the following points:
  ○ Unit type/Power supply specification ○ Pipes/Wires/Small parts ○ Accessory items

Accessory itme

For unit hanging		For refrigerant pipe			For drain pipe			
Flat washer (M10)	Level gauge (Insulation)	Pipe cover(big)	Pipe cover (small)	Strap	Pipe cover(big)	Pipe cover(small)	Drain hose	Hose clamp
								
8	4	1	1	4	1	1	1	1
For unit hanging	For adjustment in hoisting in the unit's main body	For heat insulation of gas pipe	For heat insulation of liquid tube	For pipe cover fixing	For heat insulation of drain socket	For heat insulation of drain socket	For drain pipe connecting	For drain hose mounting

② Selection of installation location for the indoor unit

① Select the suitable areas to install the unit under approval of the user.
- Areas where the indoor unit can deliver hot and cold wind sufficiently. Suggest to the user to use a circulator if the ceiling height is over 3m to avoid warm air being accumulated on the ceiling.
- Areas where there is enough space to install and service.
- Areas where it can be drained properly. Areas where drain pipe descending slope can be taken.
- Areas where there is no obstruction of air flow on both air return grille and air supply port.
- Areas where fire alarm will not be accidentally activated by the air-conditioner.
- Areas where the supply air does not short-circuit.
- Areas where it is not influenced by draft air.
- Areas not exposed to direct sunlight.
- Areas where dew point is lower than around 28°C and relative humidity is lower than 80%.
  This indoor unit is tested under the condition of JIS (Japan Industrial Standard) high humidity condition and confirmed there is no problem. However, there is some risk of condensation drop if the air-conditioner is operated under the severer condition than mentioned above. If there is a possibility to use it under such a condition, attach additional insulation of 10 to 20mm thick for entire surface of indoor unit, refrigeration pipe and drain pipe.
- Areas where TV and radio stays away more than 1m. (It could cause jamming and noise.)
- Areas where any items which will be damaged by getting wet are not placed such as food, table wares, server, or medical equipment under the unit.
- Areas where there is no influence by the heat which cookware generates.
- Areas where not exposed to oil mist, powder and/or steam directly such as above fryer.
- Areas where lighting device such as fluorescent light or incandescent light doesn't affect the operation.
  (A beam from lighting device sometimes affects the infrared receiver for the wireless remote control and the air conditioner might not work properly.)

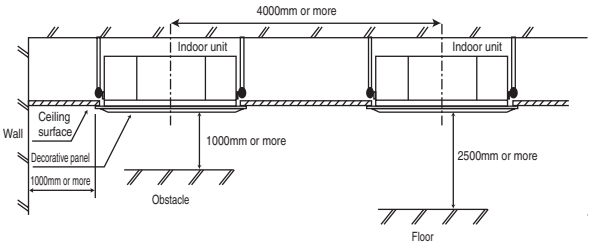
② Check if the place where the air-conditioner is installed can hold the weight of the unit. If it is not able to hold, reinforce the structure with boards and beams strong enough to hold it. If the strength is not enough, it could cause injury due to unit falling.

③ If there are 2 units of wireless type, keep them away for more than 5m to avoid malfunction due to cross communication.

④ When plural indoor units are installed nearby, keep them away for more than 4m.

Space for installation and service

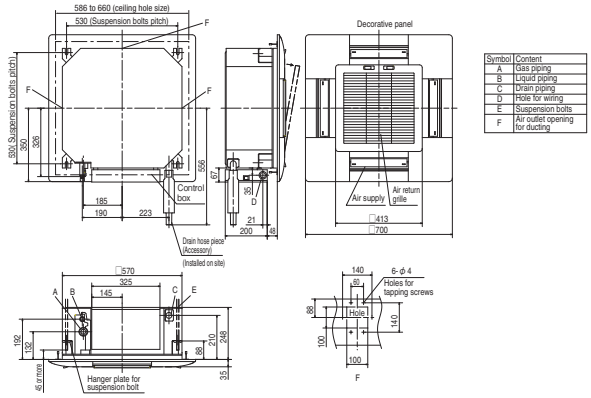
- When it is not possible to keep enough space between indoor unit and wall or between indoor units, close the air supply port where it is not possible to keep space and confirm there is no short circuit of air flow.
- Install the indoor unit at a height of more than 2.5m above the floor.



③ Preparation before installation

- If suspension bolt becomes longer, do reinforcement of earthquake resistant.
  ○ For grid ceiling
  When suspension bolt length is over 500mm, or the gap between the ceiling and roof is over 700mm, apply earthquake resistant brace to the bolt.
  ○ In case the unit is hanged directly from the slab and is installed on the ceiling plane which has enough strength.
  When suspension bolt length is over 1000mm, apply the earthquake resistant brace to the bolt.
- Prepare four (4) sets of suspension bolt, nut and spring washer (M10 or M8) on site.

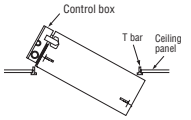
Ceiling opening, Suspension bolts pitch, Pipe position



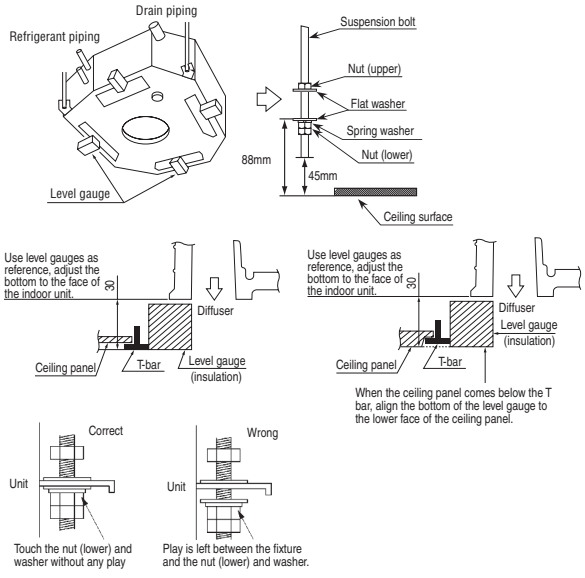
④ Installation of indoor unit

Work procedure

1. This units is designed for 2 x 2 grid ceiling.
   If necessary, please detach the T bar temporarily before you install it.
   If it is installed on a ceiling other than 2 x 2 grid ceiling, provide an inspection port on the control box side.
2. Arrange the suspension bolt at the right position (530mm×530mm).
3. Make sure to use four suspension bolts and fix them so as to be able to hold 500N load.
4. Ensure that the lower end of the suspension bolt should be 45mm above the ceiling plane.
   Temporarily put the four lower nuts 88mm above the ceiling plane and the upper nuts on distant place from the lower nuts in order not to obstruct hanging the indoor unit or adjust the indoor unit position, and then hang the indoor unit.

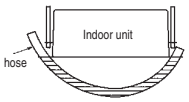


5. Adjust the indoor unit position after hanging it by inserting the level gauge attached on the package into the air supply port and checking if the gap between the ceiling plane and the indoor unit is appropriate. In order to adjust the indoor unit position, adjust the lower nuts while the upper nuts are put on distant place. Confirm there is no backlash between the hanger plate for suspension bolt and the lower nut and washer.



④ Installation of indoor unit (continued)

6. Make sure to install the indoor unit horizontally. Confirm the levelness of the indoor unit with a level gauge or transparent hose filled with water. Keep the height difference at both ends of the indoor unit within 3mm.
7. Tighten four upper nuts and fix the unit after height and levelness adjustment.



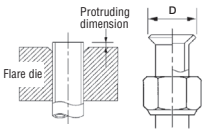
Caution

- Do not adjust the height by adjusting upper nuts. It will cause unexpected stress on the indoor unit and it will lead to deformation of the unit, failure of attaching a panel, and generating noise from the fan.
- Make sure to install the indoor unit horizontally and set the gap between the unit underside and the ceiling plane properly. Improper installation may cause air leakage, dew condensation, water leakage and noise.
- Even after decorative panel attached, still the unit height can be adjusted finely. Refer to the installation manual for decorative panel for details.
- Make sure there is no gap between decoration panel and ceiling surface, and between decoration panel and the indoor unit. The gap may cause air leakage, dew condensation and water leakage.
- In case decorative panel is not installed at the same time, or ceiling material is installed after the unit installed, put the cardboard template for installation attached on the package (packing material of cardboard box) on the bottom of the unit in order to avoid dust coming into the indoor unit.

⑤ Refrigerant pipe

Caution

- Be sure to use new pipes for the refrigerant pipes. Use the flare nut attached to the product or a nut compatible with JIS B 8607, Class 2.
  Regarding whether existing pipes can be reused or not, and the washing method, refer to the instruction manual of the outdoor unit, catalogue or technical data.
  1) In case of reuse: Do not use old flare nut, but use the one attached to the unit or compatible with JIS B 8607, Class 2.
  2) In case of reuse: Flare the end of pipe replaced partially for R410A.



Pipe dia. d mm	Min. pipe wall thickness mm	Protruding dimension for flare, mm		Flare O.D. D mm	Flare nut tightening torque N·m
		Rigid (Clutch type)			
		For R410A	Conventional tool		
6.35	0.8	0 ~ 0.5	0.7 ~ 1.3	8.9 ~ 9.1	14 ~ 18
9.52	0.8			12.8 ~ 13.2	34 ~ 42
12.7	0.8			16.2 ~ 16.6	49 ~ 61
15.88	1			19.3 ~ 19.7	68 ~ 82
19.05	1.2			23.6 ~ 24.0	100 ~ 120

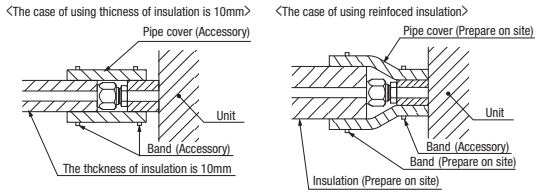
- Use phosphorus deoxidized copper alloy seamless pipe (C1220T specified in JIS H 3300) for refrigeration pipe installation.
  In addition, make sure there is no damage both inside and outside of the pipe, and no harmful substances such as sulfur, oxide, dust or a contaminant stuck on the pipes.
- Do not use any refrigerant other than R410A.
  Using other refrigerant except R410A (R22 etc.) may degrade inside refrigeration oil. And air getting into refrigeration circuit may cause over-pressure and resultant it may result in bursting, etc.
- Store the copper pipes indoors and seal the both end of them until they are brazed in order to avoid any dust, dirt or water getting into pipe. Otherwise it will cause degradation of refrigeration oil and compressor breakdown, etc.
- Use special tools for R410A refrigerant.

Work procedure

1. Remove the flare nut and blind flanges on the pipe of the indoor unit.
   ※ Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them.
   (Gas may come out at this time, but it is not abnormal.)
   ● Pay attention whether the flare nut pops out. (as the indoor unit is sometimes pressured.)
2. Make a flare on liquid pipe and gas pipe, and connect the refrigeration pipes on the indoor unit.
   ※ Bend radius of pipe must be 4D or larger. Once a pipe is bent, do not readjust the bending. Do not twist a pipe or collapse to 2/3D or smaller.
   ※ Do a flare connection as follows:
   ● Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them.
   ● When fastening the flare nut, align the refrigeration pipe with the center of flare nut, screw the nut for 3-4 times by hand and then tighten it by spanner with the specified torque mentioned in the table above. Make sure to hold the pipe on the indoor unit securely by a spanner when tightening the nut in order to avoid unexpected stress on the copper pipe.
3. Cover the flare connection part of the indoor unit with attached insulation material after a gas leakage inspection, and tighten both ends with attached straps.
   ● Make sure to insulate both gas pipes and liquid pipes completely.
   ※ Incomplete insulation may cause dew condensation or water dropping.
   ● Use heat-resistant (120 °C or more) insulations on the gas side pipes.
   ● In case of using at high humidity condition, reinforce insulation of refrigerant pipes.
   Surface of insulation may cause dew condition or water dropping, if insulations are not reinfoced.
4. Refrigerant is charged in the outdoor unit.
   As for the additional refrigerant charge for the indoor unit and piping, refer to the installation manual attached to the outdoor unit.

Caution:
Refrigerating machine oil should not be applied to the threads of union or external surface of flare. It is because, even if the same tightening torque is applied, the oil is likely to decrease the slide friction force on the threads and increase, in turn, the axial component force so that it could crack the flare by the stress corrosion.
Refrigerating machine oil may be applied to the internal surface of flare only.

⑤ Refrigerant pipe (continued)



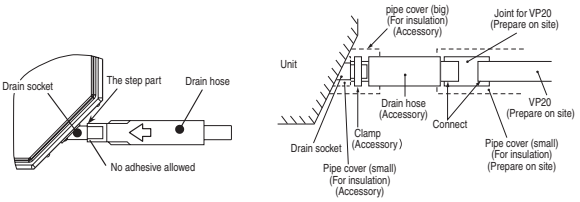
⑥ Drain pipe

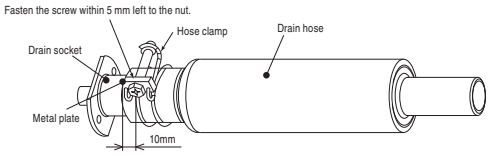
Caution

- Install the drain pipe according to the installation manual in order to drain properly. Imperfection in draining may cause flood indoors and wetting the household goods etc.
- Do not put the drain pipe directly into the ditch where toxic gas such as sulfur, the other harmful and inflammable gas is generated. Toxic gas would flow into the room and it would cause serious damage to user's health and safety (some poisoning or deficiency of oxygen). In addition, it may cause corrosion of heat exchanger and bad smell.
- Connect the pipe securely to avoid water leakage from the joint.
- Insulate the pipe properly to avoid condensation drop.
- Check if the water can flow out properly from both the drain outlet on the indoor unit and the end of the drain pipe after installation.
- Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway. In addition, do not put air vent on the drain pipe. Check if water is drained out properly from the pipe during commissioning. Also, keep sufficient space for inspection and maintenance.

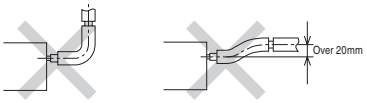
Work procedure

1. Make sure to insert the drain hose (the end mode of soft PVC) to the end of the step part of drain socket.
   Attach the hose clamp to the drain hose around 10mm from the end, and fasten the screw within 5mm left to the nut.
   ● Do not apply adhesives on this end.

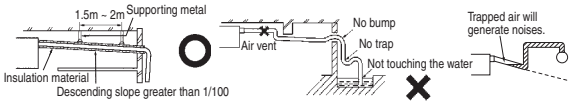




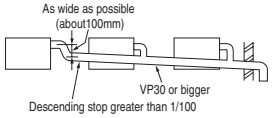
2. Prepare a joint for connecting VP20 pipe, adhere and connect the joint to the drain hose (the end made of rigid PVC), and adhere and connect VP20 pipe (prepare on site).
   ※ As for drain pipe, apply VP20 made of rigid PVC which is on the market.
   ● Make sure that the adhesive will not get into the supplied drain hose.
   It may cause the flexible part broken after the adhesive is dried up and gets rigid.
   ● Do not bend or make an excess offset on the drain hose as shown in the picture.
   Bend or excess offset will cause drain leakage.



3. Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway.
   ● Pay attention not to give stress on the pipe on the indoor unit side, and support and fix the pipe as close place to the unit as possible when connecting the drain pipe.
   ● Do not set up air vent.



- When sharing a drain pipe for more than one unit, lay the main pipe 100mm below the drain outlet of the unit. In addition, select VP30 or bigger size for main drain pipe.

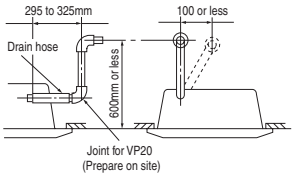


⑥ Drain pipe (continued)

4. Insulate the drain pipe.
   - Be sure to insulate the drain socket and rigid PVC pipe installed indoors otherwise it may cause dew condensation and water leakage.
     ※ After drainage test implementation, cover the drain socket part with pipe cover (small size), then use the pipe cover (big size) to cover the pipe cover (small size), clamps and part of the drain hose, and fix and wrap it with tapes to wrap and make joint part gapless.

Drain up

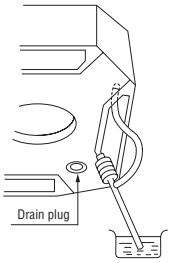
- The position for drain pipe outlet can be raised up to 600mm above the ceiling. Use elbows for installation to avoid obstacles inside ceiling. If the horizontal drain pipe is too long before vertical pipe, the backflow of water will increase when the unit is stopped, and it may cause overflow of water from the drain pan on the indoor unit. In order to avoid overflow, keep the horizontal pipe length and offset of the pipe within the limit shown in the figure below.



Drain test

- After installation of drain pipe, make sure that drain system work in good condition and no water leakage from joint and drain pan. Check if the motor sound of drain pump is normal or not.
- Do drain test even if installation of heating season.
- For new building cases, make sure to complete the test before hanging the ceiling.

1. Pour water of about 1000cc into the drain pan in the indoor unit by pump so as not to get the electrical component wet.
2. Make sure that water is drained out properly and there is no water leakage from any joints of the drain pipe at the test.
   Confirm that the water is properly drained out while the drain motor is operating. At the drain socket (transparent), it is possible to check if the water is drained out properly.
3. Unplug the drain plug on the indoor unit to remove remaining water on the drain pan after the test, and re-plug it. And insulate the drain pipe properly finally.



Drain pump operation

○ Drain pump can be operated by remote control (wired).
Drain pump can be operated by remote control (wired).
For the operation method, refer to Operation for drain pump in the installation manual for wiring work.

○ In case electrical wiring work not finished
Drain pump will run continuously when the dip switch"SW7-1" on the indoor unit PCB is turned ON, the Connector CnB is disconnected, and then the power supply (220-240VAC on the terminal block [① and ②] or [Ⓛ and Ⓝ]) is turned ON.
Make sure to turn OFF "SW7-1" and reconnect the Connector CnB after the test.

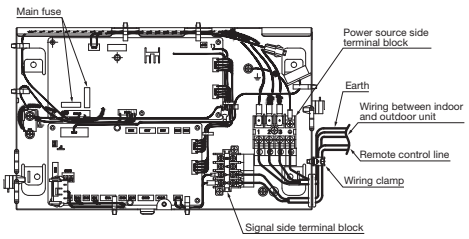
⑦ Wiring-out position and wiring connection

- Electrical installation work must be performed according to the installation manual by an electrical installation service provider qualified by a power provider of the country, and be executed according to the technical standards and other regulations applicable to electrical installation in the country. Be sure to use an exclusive circuit.
- Use specified cord, fasten the wiring to the terminal securely, and hold the cord securely in order not to apply unexpected stress on the terminal.
- Do not put both power source line and signal line on the same route. It may cause miscommunication and malfunction.
- Be sure to do D type earth work.
- For the details of electrical wiring work, see attached instruction manual for electrical wiring work.

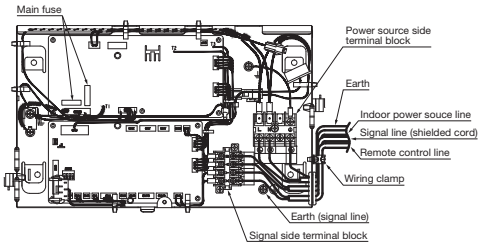
1. Remove a lid of the control box (1 screws).
2. Hold each wiring inside the unit and fasten them to terminal block securely.
3. Fix the wiring with clamp.
4. Install a lid of the control box back to original place.

⑦ Wiring-out position and wiring connection (continued)

Single split (PAC) series



VRF (KX) series



Main fuse specification

Specification	Part No.
T3.15A L250V	SSA564A149F

⑧ Panel installation

- After wiring work finished, install the panel on the indoor unit.
- Refer to attached panel installation manual for details.

Accessory items

1	Hook		1 piece	For fixing temporarily
2	Chain		2 pieces	
3	Bolt		4 pieces	For installing the panel
4	Screw		1 piece	For attaching a hook
5	Screw		2 pieces	For attaching a chain

- Attach the panel on the indoor unit after electrical wiring work.
- Refer to attached manual for panel installation for details.

⑨ Check list after installation

- Check the following items after all installation work completed.

Check if	Expected trouble	Check
The indoor and outdoor units are fixed securely?	Falling, vibration, noise	
Inspection for leakage is done?	Insufficient capacity	
Insulation work is properly done?	Water leakage	
Water is drained properly?	Water leakage	
Power source voltage is same as mentioned in the model name plate?	PCB burnt out, not working at all	
There is mis-wiring or mis-connection of piping?	PCB burnt out, not working at all	
Earth wiring is connected properly?	Electric shock	
Cable size comply with specified size?	PCB burnt out, not working at all	
Any obstacle blocks air flow on air inlet and outlet?	Insufficient capacity	

PANEL INSTALLATION MANUAL

PJA012D783

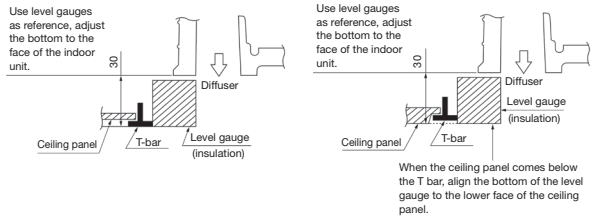
Please read this manual together with the indoor unit's installation manual.

⚠ WARNING

- **Fasten the wiring to the terminal securely and hold the cable securely so as not to apply unexpected stress on the terminal.**
  Loose connection or hold will cause abnormal heat generation or fire.
- **Make sure the power source is turned off when electric wiring work.**
  Otherwise, electric shock, malfunction and improper running may occur.

① Checking the indoor unit installation position

- Read this manual together with the air-conditioner installation manual carefully.
- Check if the gap between the ceiling plane and the indoor unit is correct by inserting the level gauge into the air outlet port of the indoor unit. (See below drawing)
- Adjust the installation elevation if necessary.
- Remove the level gauge before you attach the panel.

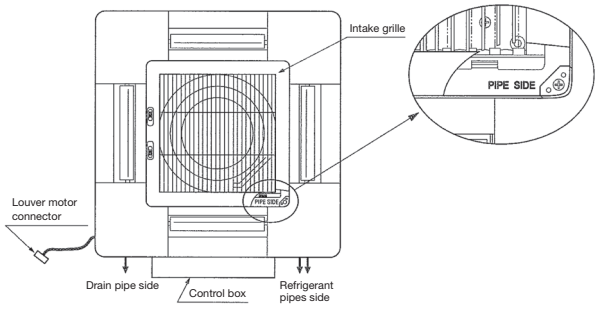


② Orientation of the panel and return air grille installation

1. Take note that there is an orientation to install the panel.
   - Attach the panel with the orientation shown on the below.
   - Align the "PIPE SIDE" mark (on the panel) with the refrigerant pipes on the indoor unit.
2. The intake grille can also be attached in a rotated position by 90 degrees.

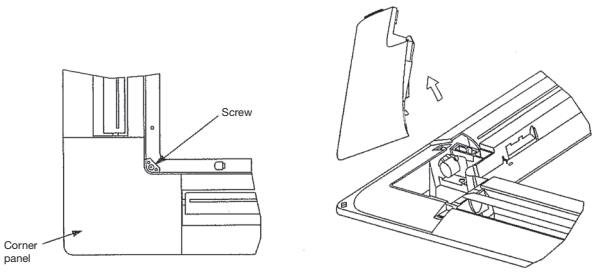
Caution

· In case the orientation of the panel is not correct, it will lead to air leakage and also it is not possible to connect the louver motor wiring.



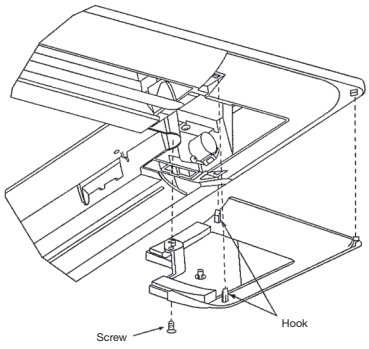
③ Removing a corner panel

- Unscrew the screw from the corner area, pull the corner panel toward the direction indicated by the arrow mark.



④ Attaching a corner panel

- First insert the part "a" of a corner panel into the part "A" of the cover panel, engage two hooks and tighten the screw.



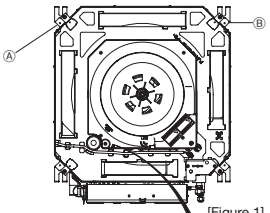
⑤ Panel installation

- Install the panel on the unit after completing the electrical wiring.

Accessories

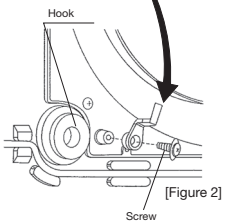
1	Hook		1 piece	For fixing temporarily
2	Chain		2 pieces	
3	Screw		4 pieces	For hoisting the panel
4	Screw		1 piece	For attaching a hook
5	Screw		2 pieces	For attaching a chain

1. Screw in two bolts out of the four supplied with the panel by about slightly less than 5mm. (● mark ⒶⒷ) [Figure 1]



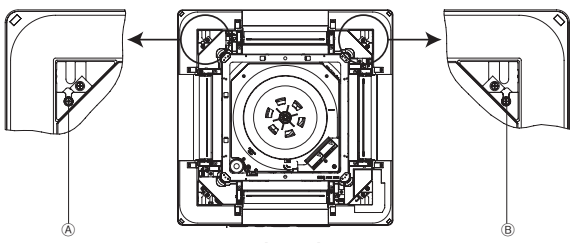
[Figure 1]

2. Attach the hook supplied with the panel to the main body with the hook fixing screw (1 screw). [Figure 2]
3. Open the intake grille.
4. Please remove the screw of a corner panel and remove a corner panel. (four places)



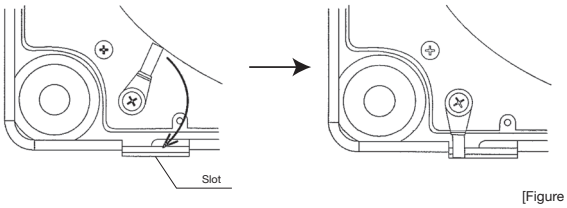
[Figure 2]

5. A panel is hooked on two bolts (● mark ⒶⒷ). [Figure 3]



[Figure 3]

6. Please rotate a hook, put in the slot on the panel, and carry out fixing the panel temporarily. [Figure 4]

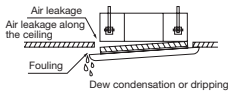


[Figure 4]

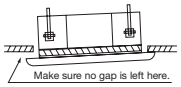
7. Tighten the two bolts used for fixing the panel temporarily and the other two.

Caution

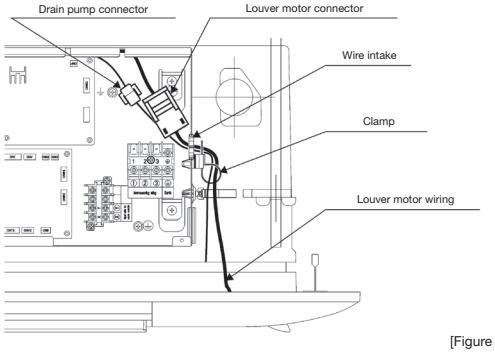
- Improperly tightened hanging bolts can cause the problems listed below, so make sure that you have tightened them securely.



- If there is a gap remaining between the ceiling and the decorative panel even after the hanging bolts are tightened, adjust the installation level of the indoor unit again.

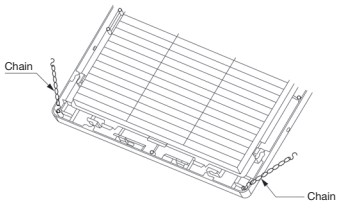


8. Please open the lid of a control box.
9. Like drain pump wiring, please band together by the clamp and put in louver motor wiring into a control box. [Figure 5]
10. Please connect a louver motor connector. [Figure 5]



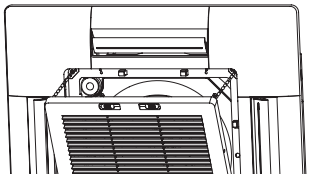
[Figure 5]

11. Attach two chains to the intake grille with two screws. [Figure 6]



[Figure 6]

12. Replace the corner panels. Please also close a chain with a screw together then. [Figure 7]
13. Close the intake grill.



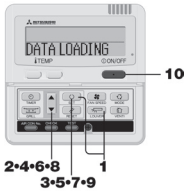
[Figure 7]

Caution

Make sure there is no stress given on the panel when adjusting the height of the indoor unit to avoid unexpected distortion. It may cause the distortion of panel or failing to close the air return grille.

⑦ How to set the air flow direction

It is possible to change the movable range of the louver on the air outlet from the wired remote control. Once the top and bottom position is set, the louver will swing within the range between the top and the bottom when swing operation is chosen. It is also possible to apply different setting to each louver.



1 Stop the air-conditioner and press SET button and LOUVER button simultaneously for three seconds or more.
The following is displayed if the number of the indoor units connected to the remote control is one. Go to step **4**.

"DATA LOADING "
↓
"No.1 ▲"

The following is displayed if the number of the indoor units connected to the remote control are more than one

"SELECT I/U"
↓
"I/U000 ▲"

2 Press ▲ or ▼ button. (selection of indoor unit)
Select the indoor unit of which the louver is set.
[EXAMPLE]
"I/U000 ▲"⇔"I/U001 ▼"⇔"I/U002 ▼"⇔"I/U003 ▼"

3 Press SET button. (determination of indoor unit)
Selected indoor unit is fixed.
[EXAMPLE]
"I/U001 " (displayed for two seconds)
↓
"DATA LOADING "
↓
"No.1 ▲"

4 Press ▲ or ▼ button. (selection of louver No.)
Select the louver No. to be set according to the right figure.
[EXAMPLE]
"No.1 ▲"⇔"No.2 ▼"⇔"No.3 ▼"⇔"No.4 ▼"

5 Press SET button. (Determination of louver No.)
The louver No. to be set is confirmed and the display shows the upper limit of the movable range.
[EXAMPLE] If No.1 louver is selected,
"No.1 UPPER2 ▼" ← current upper limit position

6 Press ▲ or ▼ button. (selection of upper limit position)
Select the upper limit of louver movable range.
"position 1" is the most horizontal, and "position 6" is the most downward.
"position --" is to return to the factory setting. If you need to change the setting to the default setting, use "position --".

"No.1 UPPER1 ▼" (the most horizontal)
⇔"No.1 UPPER2 ▼"
⇔"No.1 UPPER3 ▼"
⇔"No.1 UPPER4 ▼"
⇔"No.1 UPPER5 ▼"
⇔"No.1 UPPER6 ▼" (the most downwards)
⇔"No.1 UPPER-- ▲" (return to the default setting)

7 Press SET button. (Fixing of the upper limit position)
The upper limit position is fixed and the setting position is displayed for two seconds. Then proceed to lower limit position selection display.
[EXAMPLE]
No.1 UPPER2 (displayed for two seconds)
↓
No.1 LOWER5 ▼ (shows current setting)

8 Press ▲ or ▼ button. (Selection of lower limit position)
Select the lower limit position of louver.
"position 1" is the most horizontal, and "position 6" is the most downwards.
"position --" is to return to the factory setting. If you need to change the setting to the default setting, use "position --".

No.1 LOWER1 ▼ (the most horizontal)
No.1 LOWER2 ▼
No.1 LOWER3 ▼
No.1 LOWER4 ▼
No.1 LOWER5 ▼
No.1 LOWER6 ▼ (the most downwards)
No.1 LOWER-- ▲ (return to the default setting)

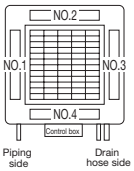
9 Press SET button. (Fixing of the lower limit position)
Upper limit position and lower limit position are fixed, and the set positions are displayed for two seconds, then setting is completed.
- After the setting is completed, the louver which was set moves from the original position to the lower limit position, and goes back to the original position again. (This operation is not performed if the indoor unit and/or indoor unit fan is in operation.)

[EXAMPLE]
No.1 U2 L6 (displayed for two seconds)
SET COMPLETE
No.1 ▲

10 Press ON/OFF button.
Louver adjusting mode ends and returns to the original display.

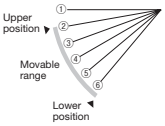
NOTICE

- In case the louver No to be set is uncertain, set any louver temporarily.
  The louver will swing once when the setting is completed and it is possible to confirm the louver No and the position.
  After that, choose the correct louver No and set the top and bottom position.



Louver No.

the position of the louver



Caution

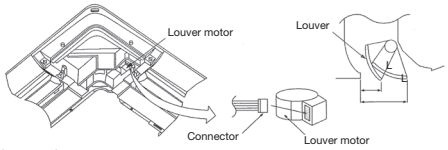
If the upper limit position number and the lower limit position number are set to the same position, the louver is fixed at that position auto swing does not function.

ATTENTION

If you press RESET button during settings, the display will return to previous display.
If you press ON/OFF button during settings, the mode will be ended and return to original display, and the settings that have not been completed will become invalid.

When plural remote controls are connected, louver setting operation cannot be set by slave remote control.

If it is necessary to fix the louver position manually, follow the procedure mentioned below.
1. Shut off the main power switch.
2. Unplug the connector of the louver motor which you want to fix the position.
   Make sure to insulate unplugged connectors electrically with a vinyl tape.
3. Adjust the louver position slowly by hand so as to be within the applicable range mentioned below table.



<Range of louver setting>

Vertical air flow direction	Horizontal 23°	Downwards 50°
Dimension L (mm)	40	24

※It can be set between 24-40mm freely.

Caution

- Any automatic control or operation from the remote control will be disabled on the louver whose position is fixed in the above way.
- Do not set a louver beyond the specified range. Failure to observe this instruction may result in dripping, dew condensation, the fouling of the ceiling and the malfunctioning of the unit.

PFA012D628

(3) Ceiling suspended type (FDE)

This manual is for the installation of an indoor unit.
For electrical wiring work (Indoor), refer to page 221. For remote control installation, refer to page 233. For wireless kit installation, refer to page 594. For electrical wiring work (Outdoor) and refrigerant pipe work installation for outdoor unit, refer to page 245.

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .
  ⚠WARNING: Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- The meanings of "Marks" used here are as shown as follows:
  ⃠ Never do it under any circumstances. | ❗ Always do it according to the instruction.
- After completing the installation, do commissioning to confirm there are no abnormalities, and explain to the customers about "SAFETY PRECAUTIONS", correct operation method and maintenance method (air filter cleaning, operation method and temperature setting method) with user's manual of this unit.
  Ask your customers to keep this installation manual together with the user's manual. Also, ask them to hand over the user's manual to the new user when the owner is changed.

⚠WARNING

- **Installation should be performed by the specialist.**
  If you install the unit by yourself, it may lead to serious trouble such as water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Install the system correctly according to these installation manuals.**
  Improper installation may cause explosion, injury, water leakage, electric shock, and fire.
- **When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage, referred by the formula (accordance with ISO5149).**
  If the density of refrigerant exceeds the limit, please consult the dealer and install the ventilation system, otherwise lack of oxygen can occur, which can cause serious accidents.
- **Use the genuine accessories and the specified parts for installation.**
  If parts unspecified by our company are used it could cause water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Ventilate the working area well in case the refrigerant leaks during installation.**
  If the refrigerant contacts the fire, toxic gas is produced.
- **Install the unit in a location that can hold heavy weight.**
  Improper installation may cause the unit to fall leading to accidents.
- **Install the unit properly in order to be able to withstand strong winds such as typhoons, and earthquakes.**
  Improper installation may cause the unit to fall leading to accidents.
- **Do not mix air in to the cooling cycle on installation or removal of the air-conditioner.**
  If air is mixed in, the pressure in the cooling cycle will rise abnormally and may cause explosion and injuries.
- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire.
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire.
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire.
- **Check for refrigerant gas leakage after installation is completed.**
  If the refrigerant gas leaks into the house and comes in contact with a fan heater, a stove, or an oven, toxic gas is produced.
- **Use the specified pipe, flare nut, and tools for R410A.**
  Using existing parts (R22) could cause the unit failure and serious accident due to explosion of the cooling cycle.
- **Tighten the flare nut according to the specified method by with torque wrench.**
  If the flare nut were tightened with excess torque, it could cause burst and refrigerant leakage after a long period.
- **Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulfide gas can occur.**
  Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.
- **Connect the pipes for refrigeration circuit securely in installation work before compressor is operated.**
  If the compressor is operated when the service valve is open without connecting the pipe, it could cause explosion and injuries due to abnormal high pressure in the system.
- **Stop the compressor before removing the pipe after shutting the service valve on pump down work.**
  If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.
- **Only use prescribed option parts. The installation must be carried out by the qualified installer.**
  If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire.
- **Consult the dealer or a specialist about removal of the air-conditioner.**
  Improper installation may cause water leakage, electric shock or fire.
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.
- **Do not run the unit when the panel or protection guard are taken off.**
  Touching the rotating equipment, hot surface, or high voltage section could cause an injury to be caught in the machine, to get burned, or electric shock.
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running.

⚠ CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure, electric shock and fire due to a short circuit.
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it can cause fire and electric shocks.
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire.
- **Do not install the indoor unit near the location where there is possibility of flammable gas leakages.**
  If the gas leaks and gathers around the unit, it could cause fire.
- **Do not install and use the unit where corrosive gas (such as sulfurous acid gas etc.) or flammable gas (such as thinner, petroleum etc.) may be generated or accumulated, or volatile flammable substances are handled.**
  It could cause the corrosion of heat exchanger, breakage of plastic parts etc. And inflammable gas could cause fire.
- **Secure a space for installation, inspection and maintenance specified in the manual.**
  Insufficient space can result in accident such as personal injury due to falling from the installation place.
- **Do not use the indoor unit at the place where water splashes such as laundry.**
  Indoor unit is not waterproof. It could cause electric shock and fire.
- **Do not use the indoor unit for a special purpose such as food storage, cooling for precision instrument, preservation of animals, plants, and a work of art.**
  It could cause the damage of the items.
- **Do not install nor use the system near equipments which generate electromagnetic wave or high harmonics.**
  Equipments like inverter equipment, private power generator, high-frequency medical equipment, or telecommunication equipment might influence the air-conditioner and cause a malfunction and breakdown. Or the air-conditioner might influence medical equipments or telecommunication equipments, and obstruct their medical activity or cause jamming.
- **Do not install the remote control at the direct sunlight.**
  It could cause breakdown or deformation of the remote control.
- **Do not install the indoor unit at the place listed below.**
  - Places where flammable gas could leak.
  - Places where carbon fiber, metal powder or any powder is floated.
  - Place where the substances which affect the air-conditioner are generated such as sulfide gas, chloride gas, acid, alkali or ammonic atmospheres.
  - Places exposed to oil mist or steam directly.
  - On vehicles and ships
  - Places where machinery which generates high harmonics is used.
  - Places where cosmetics or special sprays are frequently used.
  - Highly salted area such as beach.
  - Heavy snow area
  - Places where the system is affected by smoke from a chimney.
  - Altitude over 1000m
- **Do not install the indoor unit in the locations listed below (Be sure to install the indoor unit according to the installation manual for each model because each indoor unit has each limitation)**
  - Locations with any obstacles which can prevent inlet and outlet air of the unit
  - Locations where vibration can be amplified due to insufficient strength of structure.
  - Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam. (in case of the infrared specification unit)
  - Locations where an equipment affected by high harmonics is placed. (TV set or radio receiver is placed within 5m)
  - Locations where drainage cannot run off safely.

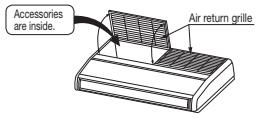
  It can affect performance or function and etc..
- **Do not put any valuables which will break down by getting wet under the air-conditioner.**
  Condensation could drop when the relative humidity is higher than 80% or drain pipe is clogged, and it damages user's belongings.
- **Do not use the base frame for the outdoor unit which is corroded or damaged after a long period of use.**
  It could cause the unit falling down and injury.
- **Pay attention not to damage the drain pan by weld sputter when brazing work is done near the unit.**
  If sputter entered into the unit during brazing work, it could cause damage (pinhole) of drain pan and leakage of water. To avoid damaging, keep the indoor unit packed or cover the indoor unit.
- **Install the drain pipe to drain the water surely according to the installation manual.**
  Improper connection of the drain pipe may cause dropping water into room and damaging user's belongings.
- **Do not share the drain pipe for indoor unit and GHP (Gas Heat Pump system) outdoor unit.**
  Toxic exhaust gas would flow into room and it might cause serious damage (some poisoning or deficiency of oxygen) to user's health and safety.
- **Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.**
  If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.
- **For drain pipe installation, be sure to make descending slope of greater than 1/100, not to make traps, and not to make air-bleeding.**
  Check if the drainage is correctly done during commissioning and ensure the space for inspection and maintenance.
- **Ensure the insulation on the pipes for refrigeration circuit so as not to condense water.**
  Incomplete insulation could cause condensation and it would wet ceiling, floor, and any other valuables.
- **Do not install the outdoor unit where is likely to be a nest for insects and small animals.**
  Insects and small animals could come into the electronic components and cause breakdown and fire. Instruct the user to keep the surroundings clean.
- **Pay extra attention, carrying the unit by hand.**
  Carry the unit with 2 people if it is heavier than 20kg. Do not use the plastic straps but the grabbing place, moving the unit by hand. Use protective gloves in order to avoid injury by the aluminum fin.
- **Make sure to dispose of the packaging material.**
  Leaving the materials may cause injury as metals like nail and woods are used in the package.
- **Do not operate the system without the air filter.**
  It may cause the breakdown of the system due to clogging of the heat exchanger.
- **Do not touch any button with wet hands.**
  It could cause electric shock.
- **Do not touch the refrigerant piping with bare hands when in operation.**
  The pipe during operation would become very hot or cold according to the operating condition, and it could cause a burn or frostbite.
- **Do not clean up the air-conditioner with water.**
  It could cause electric shock.
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown.
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.

①Before installation

- ●Install correctly according to the installation manual.
- ●Confirm the following points:
  - ○Unit type/Power source specification ○Pipes/Wires/Small parts ○Accessory items

Accessory item

For unit hanging		For refrigerant pipe			For drain pipe					For air return grille
Flat washer (M10)	Paper pattern	Pipe cover (large)	Pipe cover (small)	Strap	Drain hose (with clamp)	Hose clamp	Fixing bracket	Screw	Heay insulation	Screw
										
8	1	1	1	4	1	1	1	2	1	4
For unit hanging	For unit hanging and adjustment	For heat insulation of gas pipe	For heat insulation of liquid pipe	For fixing of pipe cover	For drain pipe connection	For drain hose mounting	For fixing of drain hose	For installing of fixing bracket	For drain hose	For fixing air return grille



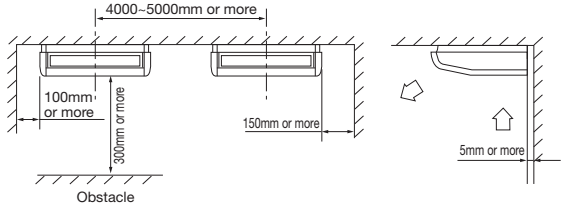
②Selection of installation location for the indoor unit

① Select the suitable areas to install the unit under approval of the user.
- ・Areas where the indoor unit can deliver hot and cold wind sufficiently. Suggest to the user to use a circulator if the ceiling height is over 3m to avoid warm air being accumulated on the ceiling.
- ・Areas where there is enough space to install and service.
- ・Areas where it can be drained properly. Areas where drain pipe descending slope can be taken.
- ・Areas where there is no obstruction of airflow on both air return grille and air supply port.
- ・Areas where fire alarm will not be accidentally activated by the air-conditioner.
- ・Areas where the supply air does not short-circuit.
- ・Areas where it is not influenced by draft air.
- ・Areas not exposed to direct sunlight.
- ・Areas where dew point is lower than around 23°C and relative humidity is lower than 80%. This indoor unit is tested under the condition of JIS (Japan Industrial Standard) high humidity condition and confirmed there is no problem. However, there is some risk of condensation drop if the air-conditioner is operated under the severer condition than mentioned above.
- ・Areas where TV and radio stays away more than 1m. (It could cause jamming and noise.)
- ・Areas where any items which will be damaged by getting wet are not placed such as food, table wares, server, or medical equipment under the unit.
- ・Areas where there is no influence by the heat which cookware generates.
- ・Areas where not exposed to oil mist, powder and/or steam directly such as above fryer.

② Check if the place where the air-conditioner is installed can hold the weight of the unit. If it is not able to hold, reinforce the structure with boards and beams strong enough to hold it. If the strength is not enough, it could cause injury due to unit falling.

③ When plural indoor units are installed nearby, keep them away for more than 4 to 5m.

Space for installation and service

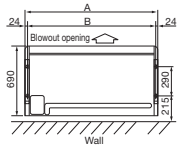


③Preparation before installation

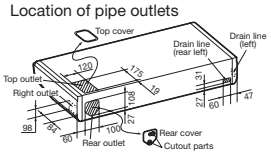
- ●If suspension bolt becomes longer, do reinforcement of earthquake resistant.
  - ○For grid ceiling
    When suspension bolt length is over 500mm, or the gap between the ceiling and roof is over 700mm, apply earthquake resistant brace to the bolt.
  - ○In case the unit is hanged directly from the slab and is installed on the ceiling plane which has enough strength.
    When suspension bolt length is over 1000mm, apply the earthquake resistant brace to the bolt.
- ●Prepare four (4) sets of suspension bolt, nut and spring washer (M10) on site.

Pitch of suspension bolts and pipe position

Pitch of suspension bolts



Location of pipe outlets

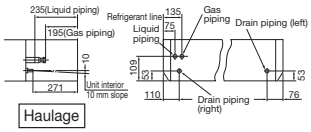


③Preparation before installation (continued)

(mm)

Series	type	A	B
Single Split (PAC) series	40 to 50type	1070	1022
	60 to 71type	1320	1272
	100 to 140type	1620	1572
VRF (KX) series	36 to 56type	1070	1022
	71type	1320	1272
	112 to 140type	1620	1572

Pipe position



※Pipes can be taken out in 3 directions (rear, right or top).
- ・Cut out holes using nippers, etc.
- ・Cut out holes to take out pipes along the cutoff line on the rear cover.
- ・Cut out the top face cover aligning to the piping position.
- ・When taking pipe out to right-hand side, cut out a hole along the groove at the inside of side panel.
- ・After installing pipes and wires, seal clearances around pipes and wires with putty, etc. to shut off dust.

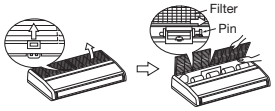
Make sure to install the covers at rear and top in order to protect the inside of unit from intrusion of dust or protect wires from damages by sharp edges. When taking them out to the right-hand side, remove burrs or sharp edges from the cutout.

Haulage

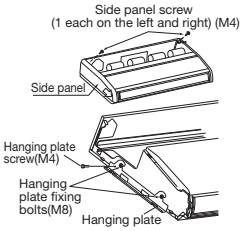
- ●Move the box as close to the installation area as possible packed.
- ●If it must be unpacked, wrap the unit with a nylon sling, and be careful not to damage the unit.
  - ※Do not hold fragile plastic parts, such as the side panel, blow louver, etc.
- ●If you need to lay the unit on a floor after unpacking, always put it with the intake grille facing upward.

Preparation before instalation

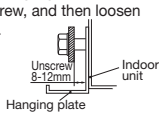
1. Remove the air return grille.
Slide stoppers (4 places) of the catches, then pull out the pins (4 or 6 places).



2. Remove the side panel.
Remove the screw and detach the side panel by sliding it toward the direction indicated by the arrow mark.



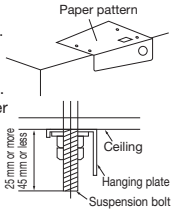
3. Remove the hanging plate.
Remove the screw, and then loosen the fixing bolts.



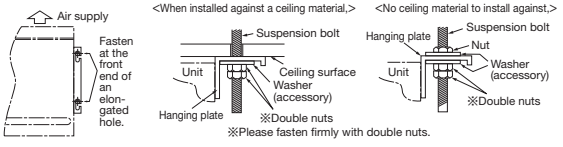
④Installation of indoor unit

Work procedure

1. Select the suspension bolt locations and the pipe hole location.
   (1) Use enclosed paper pattern as a reference, and drill the holes for the suspension bolts and pipe.
   ※Decide the locations based on direct measurements.
   (2) Once the locations are properly placed, the paper pattern can be removed.

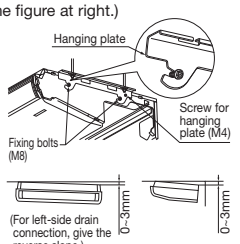


2. Install the suspension bolts in place.
3. Fix with 4 suspension bolts, which can endure load of 500N.
4. Check the measurements given at the right figure for the length of the suspension bolts.
5. Fasten the hanging plate onto the suspension bolts.



※Please fasten firmly with double nuts.

6. Install the unit to the hanging plate. (See the figure at right.)
   (1) Slide the unit in from front side to get it hanged on the hanging plate with the bolts.
   (2) Fasten the four fixing bolts (M8: 2 each on the left and right sides) firmly.
   (3) Fasten the two screws (M4: 1 each on the left and right sides).



⚠**WARNINIG** : Hang a side panel on from the panel side to the rear side and then fasten it securely onto the indoor unit with screws.

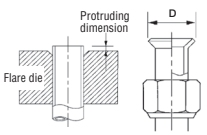
※To ensure smooth drain flow, install the unit with a descending slope toward the drain outlet.

⚠ **CAUTION** : Do not give the reversed slope, which may cause water leaks.

⑤Refrigerant pipe

Caution

●Be sure to use new pipes for the refrigerant pipes. Use the flare nut attached to the product or a nut compatible with JIS B 8607, Class 2.
Regarding whether existing pipes can be reused or not, and the washing method, refer to the instruction manual of the outdoor unit, catalogue or technical data.
1) In case of reuse: Do not use old flare nut, but use the one attached to the unit or compatible with JIS B 8607, Class 2.
2) In case of reuse: Flare the end of pipe replaced partially for R410A.



Pipe dia. d mm	Min. pipe wall thickness mm	Protruding dimension for flare, mm		Flare O.D. D mm	Flare nut tightening torque N-m
		Rigid (Clutch type)			
		For R410A	Conventional tool		
6.35	0.8	0 – 0.5	0.7 – 1.3	8.9 – 9.1	14 – 18
9.52	0.8			12.8 – 13.2	34 – 42
12.7	0.8			16.2 – 16.6	49 – 61
15.88	1			19.3 – 19.7	68 – 82
19.05	1.2			23.6 – 24.0	100 – 120

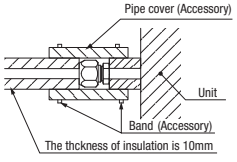
●Use phosphorus deoxidized copper alloy seamless pipe (C1220T specified in JIS H 3300) for refrigeration pipe installation. In addition, make sure there is no damage both inside and outside of the pipe, and no harmful substances such as sulfur, oxide, dust or a contaminant stuck on the pipes.
●Do not use any refrigerant other than R410A.
Using other refrigerant except R410A (R22 etc.) may degrade inside refrigeration oil. And air getting into refrigeration circuit may cause over-pressure and resultant it may result in bursting, etc.
●Store the copper pipes indoors and seal the both end of them until they are brazed in order to avoid any dust, dirt or water getting into pipe. Otherwise it will cause degradation of refrigeration oil and compressor breakdown, etc.
●Use special tools for R410A refrigerant.

Work procedure

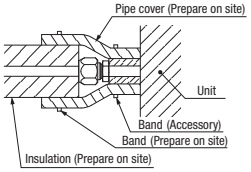
1. Remove the flare nut and blind flanges on the pipe of the indoor unit.
※ Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them. (Gas may come out at this time, but it is not abnormal.)
●Pay attention whether the flare nut pops out. (as the indoor unit is sometimes pressured.)
2. Make a flare on liquid pipe and gas pipe, and connect the refrigeration pipes on the indoor unit.
●When pulling out pipes backward or upward, install them passing through the attached cover together with the electrical cabling.
●Seal the gap with putty, or other, to protect from dust, etc.
※Bend radius of pipe must be 4D or larger. Once a pipe is bent, do not readjust the bending. Do not twist a pipe or collapse to 2/3D or smaller.
※Do a flare connection as follows:
● Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them.
● When fastening the flare nut, align the refrigeration pipe with the center of flare nut, screw the nut for 3-4 times by hand and then tighten it by spanner with the specified torque mentioned in the table above. Make sure to hold the pipe on the indoor unit securely by a spanner when tightening the nut in order to avoid unexpected stress on the copper pipe.
3. Cover the flare connection part of the indoor unit with attached insulation material after a gas leakage inspection, and tighten both ends with attached straps.
● Make sure to insulate both gas pipes and liquid pipes completely.
※Incomplete insulation may cause dew condensation or water dropping.
● Use heat-resistant (120 °C or more) insulations on the gas side pipes.
● In case of using at high humidity condition, reinforce insulation of refrigerant pipes.
Surface of insulation may cause dew condition or water dropping, if insulations are not reinforced.
4. Refrigerant is charged in the outdoor unit.
As for the additional refrigerant charge for the indoor unit and piping, refer to the installation manual attached to the outdoor unit.

Caution:
Refrigerating machine oil should not be applied to the threads of union or external surface of flare. It is because, even if the same tightening torque is applied, the oil is likely to decrease the slide friction force on the threads and increase, in turn, the axial component force so that it could crack the flare by the stress corrosion.
Refrigerating machine oil may be applied to the internal surface of flare only.

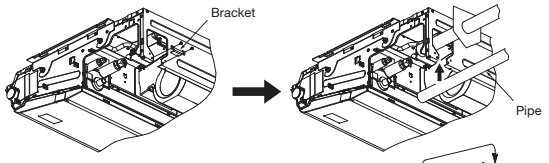
〈The case of using thicness of insulation is 10mm〉



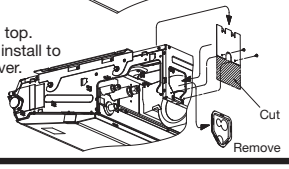
〈The case of using reinfoced insulation〉



The pipe can be connected from three different directions. (back, reight, top)
● When the pipe is routed through the back.
If the bracket is removed, piping work will become easy.
※After piping, reinstall the removed bracket.



● When the pipe is routed through the top.
Cut the removed top cover, and install to the rear panel instead of rear cover.



⑥Drain pipe

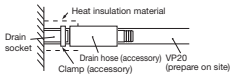
●The drain pipes may pull out either from back, right or left side.

Caution

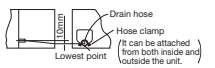
- Install the drain pipe according to the installation manual in order to drain properly. Imperfection in draining may cause flood indoors and wetting the household goods, etc.
- Do not put the drain pipe directly into the ditch where toxic gas such as sulfur, the other harmful andinflammable gas is generated. Toxic gas would flow into the room and it would cause serious damage to user's health and safety (some poisoning or deficiency of oxygen). In addition, it may cause corrosion of heat exchanger and bad smell.
- Connect the pipe securely to avoid water leakage from the joint.
- Insulate the pipe properly to avoid condensation drop.
- Check if the water can flow out properly from both the drain outlet on the indoor unit and the end of the drain pipe after installation.
- Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway. In addition, do not put air vent on the drain pipe. Check if water is drained out properly from the pipe during commissioning. Also, keep sufficient space for inspection and maintenance.

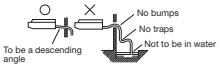
Work procedure

1. Insert drain hose completely to the base, and tighten the drain hose clamp securely. (adhesive must not be used.)
※When plumbing on the left side, move the rubber plug and the cylindrical insulating materials by the pipe connecting hole on the left side of the unit to the right side.



⚠ Beware of a possible outflow of water that may occur upon removal of a drain plug.
2. Fix the drain hose at the lowest point with a hose clamp supplied as an accessory.
※Give a drain hose a gradient of 10mm as illustrated in the right drawing by laying it without leaving a slack.





● Take head of electrical cables so that they may not run beneath the drain hose.
⚠ A drain hose must be clamped down with a hose clamp.
There is a possibility that drain water overflows.
3. Connect VP20(prepare on site) to drain hose. (adhesive must not be used.)
※ Use commercially available rigid PVC general pipe VP20 for drain pipe.
4. Do not to make the up-down bending and trap in the mid-way while assuming that the drain pipes is downhill. (more than 1/100)
● Never set up air vent.
5. Insulate the drain pipe.
● Insulate the drain hose clamp with the heat insulation supplied as accessories.
● When the unit is installed in a humid place, consider precautions against dew condensation such as heat insulation for the drain pipe.

Drain test

●After installation of drain pipe, make sure that drain system work in good condition and no water leakage from joint and drain pan.
●Do drain test even if installation of heating season.

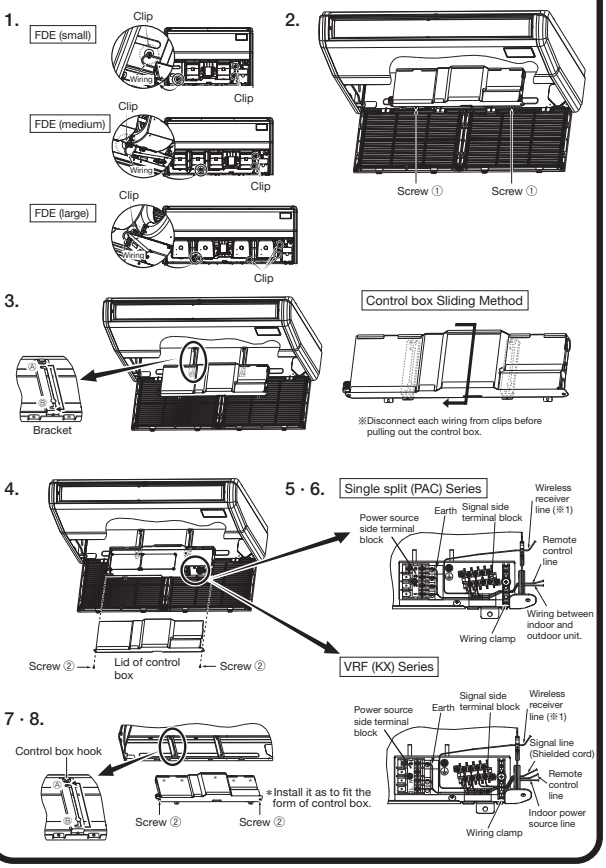
⑦Wiring-out position and wiring connection

- Electrical installation work must be performed according to the installation manual by an electrical installation service provider qualified by a power provider of the country, and be executed according to the technical standards and other regulations applicable to electrical installation in the country.
Be sure to use an exclusive circuit.
- Use specified cord, fasten the wiring to the terminal securely, and hold the cord securely in order not to apply unexpected stress on the terminal.
- Be sure to do D type earth work.
- For the details of electrical wiring work, see attached instruction manual for electrical wiring work.

1. Remove wiring from clips.
2. Remove the control box (Screw ①, ②pcs).
3. Pull out the control box by sliding along the groove on the bracket (Direction Ⓐ→Ⓑ).
4. Remove the lid of control box (Screw ②, ②pcs).
5. Hold each wiring inside the unit and connect to the terminal block surely.
6. Fix the wiring by clamp.
7. Install the lid of control box (Screw ②, ②pcs).
8. Return the control box to the original place by sliding along the groove on the bracket (Direction Ⓑ→Ⓐ).
9. Install the removed parts at their original places.

※1 Wiring for the signal receiving section of wireless kit (Optional) are connected to the X and Y terminals on the terminal block (the site connection side), when the indoor unit is shipped from the factory.
It is not necessary to disconnect these wiring when wired remote control is connected. When the wired/wireless kits are used together, it becomes necessary to set the slaves and remote control.

⑦Wiring-out position and wiring connection (continued)



⑧Control mode switching

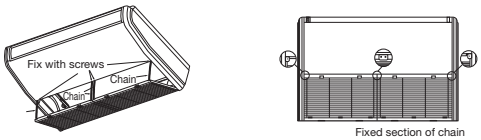
● The control content of indoor units can be switched in following way. (is the default setting)

Switch No.	Control Content	
SW8-4	ON	Indoor unit silent mode
	OFF	Normal operation

⑨Attaching the air return grille

● The air return grille must be attached when electrical cabling work is completed.

1. Fix the chains tied to the air return grille onto the indoor unit with screws supplied as accessories (4 pieces).
2. Close the air return grille. This completes the unit installtion work.



⑩Check list after installation

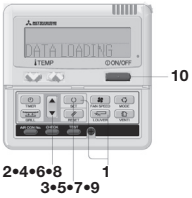
● Check the following items after all installation work completed.

Check if	Expected trouble	Check
The indoor and outdoor units are fixed securely?	Falling, vibration, noise	
Inspection for leakage is done?	Insufficient capacity	
Insulation work is properly done?	Water leakage	
Water is drained properly?	Water leakage	
Supply voltage is same as mentioned in the model name plate?	PCB burnt out, not working at all	
There is mis-wiring or mis-connection of piping?	PCB burnt out, not working at all	
Earth wiring is connected properly?	Electric shock	
Cable size comply with specified size?	PCB burnt out, not working at all	
Any obstacle blocks air flow on air inlet and outlet?	Insufficient capacity	

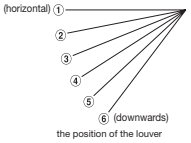
⑪How to set the air flow direction

It is possible to change the movable range of the louver on the air outlet from the wired remote control. Once the top and bottom position is set, the louver will swing within the range between the top and the bottom when swing operation is chosen. It is also possible to apply different setting to each louver.

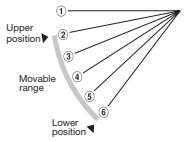
1. Stop the air-conditioner and press SET button and LOUVER button simultaneously for three seconds or more.
   - ● The following is displayed if the number of the indoor units connected to the remote control is one. Go to step 4.
     "DATA LOADING "
     ↓
     "No.1 ▲"
   - ● The following is displayed if the number of the indoor units connected to the remote control are more than one.
     "SELECT I/U"
     ↓
     "I/U000 ▲"



2. Press ▲or▼button.(selection of indoor unit) ●Select the indoor unit of which the louver is set.
   [EXAMPLE]
   "I/U000 ▲"⇨"I/U001 ⇕"⇨"I/U002 ⇕"⇨
   "I/U003 ⇕"
3. Press SET button.(determination of indoor unit) ●Selected indoor unit is fixed.
   [EXAMPLE]
   "I/U001 " (displayed for two seconds)
   ↓
   "DATA LOADING "
   ↓
   "No.1 ▲"
4. Press▲or▼button.(selection of louver No.) ●Select the louver No. to be set according to the right figure.
   [EXAMPLE]
   "No.1 ▲"⇨"No.2 ⇕"⇨"No.3 ⇕"⇨
   "No.4 ▼"
5. Press SET button.(Determination of louver No.)
   ●The louver No. to be set is confirmed and the display shows the upper limit of the movable range.
   [EXAMPLE] If No.1 louver is selected,
   "No.1 UPPER2 ⇕" ←current upper limit position
6. Press ▲or ▼button.(selection of upper limit position)
   ● Select the upper limit of louver movable range.
   "position 1" is the most horizontal, and "position 6" is the most downward.
   "position --" is to return to the factory setting.
   If you need to change the setting to the default setting, use "position --".
   ⇨"No.1 UPPER1 ▼" (the most horizotal)
   ⇨"No.1 UPPER2 ⇕"
   ⇨"No.1 UPPER3 ⇕"
   ⇨"No.1 UPPER4 ⇕"
   ⇨"No.1 UPPER5 ⇕"
   ⇨"No.1 UPPER6 ▲" (the most downwards)
   ⇨"No.1 UPPER-- ▲" (return to the default setting)



7. Press SET button.(Fixing of the upper limit position)
   ●The upper limit position is fixed and the setting position is displayed for two seconds. Then proceed to lower limit position selection display.
   [EXAMPLE]
   No.1 UPPER2 (displayed for two seconds)
   ↓
   No.1 LOWER5 ⇕ (shows current setting)
8. Press ▲or ▼button.(Selection of lower limit position)
   ●Select the lower limit position of louver.
   "position 1" is the most horizontal, and "position 6 "is the most downwards.
   "position --" is to return to the factory setting. If you need to change the setting to the default setting, use "position --".
   No.1 LOWER1 ▼ (the most horizontal)
   No.1 LOWER2 ⇕
   No.1 LOWER3 ⇕
   No.1 LOWER4 ⇕
   No.1 LOWER5 ⇕
   No.1 LOWER6 ⇕ (the most downwards)
   No.1 LOWER-- ▲ (return to the default setting)
9. Press SET button.(Fixing of the lower limit position)
   ●Upper limit position and lower limit position are fixed, and the set positions are displayed for two seconds, then setting is completed.
   • After the setting is completed, the louver which was set moves from the original position to the lower limit position, and goes back to the original position again. (This operation is not performed if the indoor unit and/or indoor unit fan is in operation.)
   [Example]
   No.1 U2 L6 (displayed for two seconds)
   SET COMPLETE
   No.1 ▲



10. Press ⏻ON/OFF button.
    ●Louver adjusting mode ends and returns to the original display.

Caution

If the upper limit position number and the lower limit position number are set to the same position, the louver is fixed at that position auto swing does not funtion.

ATTENTION

If you press RESET button during settings, the display will return to previous display.If you press ⏻ON/OFF button during settings, the mode will be ended and return to original display, and the settings that have not been completed will become invalid.

When plural remote controls are connected, louver setting operation cannot be set by slave remote control.

PJG012D004B D

(4) Duct connected-High static pressure type (FDU)

(a) Model FDU100VF2

・This munual is for instaration of an indoor unit and an outdoor air processing unit (FDU-F).
・This manual is for the installation of an indoor unit.
For electrical wiring work (Indoor), refer to page 255. For remote control installation, refer to page 233. For wireless kit installation, refer to page 602. For electrical wiring work (Outdoor) and refrigerant pipe work installation for outdoor unit, refer to page 245.

The case of FDU-F

- The total connection capacity of the other air-conditioner units and the outdoor air processing units must be from 50% to 100% (the total includes the outdoor air processing unit).
  The connection capacity of the outdoor air processing unit must not exceed 30% of the capacity of the outdoor unit.
- Single outdoor air processing unit can be used alone. The connection capacity of the outdoor air processing unit must be from 50% to 100% of the total capacity of the outdoor unit.
  Maximum number of outdoor air processing units that can be connected to the outdoor unit is 2units.
- Capacities of the suction air processing units can be calculated with the forllowing formulas.
  FDU850FKXEZ1 = 90, FDU1100FKXEZ1 = 140

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .
  ⚠WARNING : Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- The meanings of "Marks" used here are as shown on the right:
  ⃠ Never do it under any circumstances. ❗ Always do it according to the instruction.
- After completing the installation, do commissioning to confirm there are no abnormalities, and explain to the customers about "SAFETY PRECAUTIONS", correct operation method and maintenance method (air filter cleaning, operation method and temperature setting method) with user's manual of this unit.
  Ask your customers to keep this installation manual together with the user's manual. Also, ask them to hand over the user's manual to the new user when the owner is changed.

⚠WARNING

- **Installation should be performed by the specialist.**
  If you install the unit by yourself, it may lead to serious trouble such as water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Install the system correctly according to these installation manuals.**
  Improper installation may cause explosion, injury, water leakage, electric shock, and fire.
- **Check the density refered by the foumula (accordance with ISO5149).**
  If the density exceeds the limit density, please consult the dealer and installate the ventilation system.
- **Use the genuine accessories and the specified parts for installation.**
  If parts unspecified by our company are used it could cause water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Ventilate the working area well in case the refrigerant leaks during installation.**
  If the refrigerant contacts the fire, toxic gas is produced.
- **Install the unit in a location that can hold heavy weight.**
  Improper installation may cause the unit to fall leading to accidents.
- **Install the unit properly in order to be able to withstand strong winds such as typhoons, and earthquakes.**
  Improper installation may cause the unit to fall leading to accidents.
- **Do not mix air in to the cooling cycle on installation or removal of the air-conditioner.**
  If air is mixed in, the pressure in the cooling cycle will rise abnormally and may cause explosion and injuries.
- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire.
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire.
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire.
- **Check for refrigerant gas leakage after installation is completed.**
  If the refrigerant gas leaks into the house and comes in contact with a fan heater, a stove, or an oven, toxic gas is produced.
- **Use the specified pipe, flare nut, and tools for R410A.**
  Using existing parts (R22) could cause the unit failure and serious accident due to explosion of the cooling cycle.
- **Tighten the flare nut according to the specified method by with torque wrench.**
  If the flare nut were tightened with excess torque, it could cause burst and refrigerant leakage after a long period.
- **Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulfide gas can occur.**
  Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.
- **Connect the pipes for refrigeration circuit securely in installation work before compressor is operated.**
  If the compressor is operated when the service valve is open without connecting the pipe, it could cause explosion and injuries due to abnormal high pressure in the system.
- **Stop the compressor before removing the pipe after shutting the service valve on pump down work.**
  If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.
- **Only use prescribed option parts. The installation must be carried out by the qualified installer.**
  If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire.
- **Consult the dealer or a specialist about removal of the air-conditioner.**
  Improper installation may cause water leakage, electric shock or fire.
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.
- **Do not run the unit when the panel or protection guard are taken off.**
  Touching the rotating equipment, hot surface, or high voltage section could cause an injury to be caught in the machine, to get burned, or electric shock.
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running.

⚠CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock or fire due to a short circuit.
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it could cause electric shocks or fire.
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire.
- **Do not install the indoor unit near the location where there is possibility of flammable gas leakages.**
  If the gas leaks and gathers around the unit, it could cause fire.
- **Do not install and use the unit where corrosive gas (such as sulfurous acid gas etc.) or flammable gas (such as thinner, petroleum etc.) may be generated or accumulated, or volatile flammable substances are handled.**
  It could cause the corrosion of heat exchanger, breakage of plastic parts etc. And inflammable gas could cause fire.
- **Secure a space for installation, inspection and maintenance specified in the manual.**
  Insufficient space can result in accident such as personal injury due to falling from the installation place.
- **Do not use the indoor unit at the place where water splashes such as laundry.**
  Indoor unit is not waterproof. It could cause electric shock and fire.
- **Do not use the indoor unit for a special purpose such as food storage, cooling for precision instrument, preservation of animals, plants, and a work of art.**
  It could cause the damage of the items.
- **Do not install nor use the system near equipments which generate electromagnetic wave or high harmonics.**
  Equipments like inverter equipment, private power generator, high-frequency medical equipment, or telecommunication equipment might influence the air-conditioner and cause a malfunction and breakdown. Or the air-conditioner might influence medical equipments or telecommunication equipments, and obstruct their medical activity or cause jamming.
- **Do not install the remote control at the direct sunlight.**
  It could cause breakdown or deformation of the remote control.
- **Do not install the indoor unit at the place listed below.**
  · Places where flammable gas could leak.
  · Places where carbon fiber, metal powder or any powder is floated.
  · Place where the substances which affect the air-conditioner are generated such as sulfide gas, chloride gas, acid, alkali or ammonic atmospheres.
  · Places exposed to oil mist or steam directly.
  · On vehicles and ships
  · Places where machinery which generates high harmonics is used.
  · Places where cosmetics or special sprays are frequently used.
  · Highly salted area such as beach.
  · Heavy snow area
  · Places where the system is affected by smoke from a chimney.
  · Altitude over 1000m
- **Do not install the indoor unit in the locations listed below (Be sure to install the indoor unit according to the installation manual for each model because each indoor unit has each limitation)**
  · Locations with any obstacles which can prevent inlet and outlet air of the unit
  · Locations where vibration can be amplified due to insufficient strength of structure.
  · Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam. (in case of the infrared specification unit)
  · Locations where an equipment affected by high harmonics is placed. (TV set or radio receiver is placed within 5m)
  · Locations where drainage cannot run off safely.
  It can affect performance or function and etc..
- **Do not put any valuables which will break down by getting wet under the air-conditioner.**
  Condensation could drop when the relative humidity is higher than 80% or drain pipe is clogged, and it damages user's belongings.
- **Do not use the base frame for the outdoor unit which is corroded or damaged after a long period of use.**
  It could cause the unit falling down and injury.
- **Pay attention not to damage the drain pan by weld sputter when brazing work is done near the unit.**
  If sputter entered into the unit during brazing work, it could cause damage (pinhole) of drain pan and leakage of water. To avoid damaging, keep the indoor unit packed or cover the indoor unit.
- **Install the drain pipe to drain the water surely according to the installation manual.**
  Improper connection of the drain pipe may cause dropping water into room and damaging user's belongings.
- **Do not share the drain pipe for indoor unit and GHP (Gas Heat Pump system) outdoor unit.**
  Toxic exhaust gas would flow into room and it might cause serious damage (some poisoning or deficiency of oxygen) to user's health and safety.
- **Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.**
  If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.
- **For drain pipe installation, be sure to make descending slope of greater than 1/100, not to make traps, and not to make air-bleeding.**
  Check if the drainage is correctly done during commissioning and ensure the space for inspection and maintenance.
- **Ensure the insulation on the pipes for refrigeration circuit so as not to condense water.**
  Incomplete insulation could cause condensation and it would wet ceiling, floor, and any other valuables.
- **Do not install the outdoor unit where is likely to be a nest for insects and small animals.**
  Insects and small animals could come into the electronic components and cause breakdown and fire. Instruct the user to keep the surroundings clean.
- **Pay extra attention, carrying the unit by hand.**
  Carry the unit with 2 people if it is heavier than 20kg. Do not use the plastic straps but the grabbing place, moving the unit by hand. Use protective gloves in order to avoid injury by the aluminum fin.
- **Make sure to dispose of the packaging material.**
  Leaving the materials may cause injury as metals like nail and woods are used in the package.
- **Do not operate the system without the air filter.**
  It may cause the breakdown of the system due to clogging of the heat exchanger.
- **Do not touch any button with wet hands.**
  It could cause electric shock.
- **Do not touch the refrigerant piping with bare hands when in operation.**
  The pipe during operation would become very hot or cold according to the operating condition, and it could cause a burn or frostbite.
- **Do not clean up the air-conditioner with water.**
  It could cause electric shock.
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown.
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.

○This model is high static ducted type air-conditioner unit. Therefore, do not use this model for direct blow type air-conditioning unit.

①Before installation

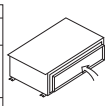
●Install correctly according to the installation manual.

●Confirm the following points:

○Unit type/Power source specification ○Pipes/Wires/Small parts ○Accessory items

Accessory item

For hanging	For refrigerant pipe			For drain pipe				
Flat washer (M10)	Pipe cover (big)	Pipe cover (small)	Strap	Pipe cover (big)	Pipe cover (small)	Drain hose	Hose clamp	Elbow (Multi only)
8	1	1	4	1	1	1	1	1
For unit hanging	For heat insulation of gas pipe	For heat insulation of liquid tube	For pipe cover fixing	For heat insulation of drain socket	For heat insulation of drain socket	For drain pipe connecting	For drain hose mounting	For drain pipe connecting



Accessory parts are stored inside this suction side.

②Selection of installation location for the indoor unit

① Select the suitable areas to install the unit under approval of the user.
- ·Areas where the indoor unit can deliver hot and cold wind sufficiently. Suggest to the user to use a circulator if the ceiling height is over 3m to avoid warm air being accumulated on the ceiling.
- ·Areas where there is enough space to install and service.
- ·Areas where it can be drained properly. Areas where drain pipe descending slope can be taken.
- ·Areas where there is no obstruction of air flow on both air return grille and air supply port.
- ·Areas where fire alarm will not be accidentally activated by the air-conditioner.
- ·Areas where the supply air does not short-circuit.
- ·Areas where it is not influenced by draft air.
- ·Areas not exposed to direct sunlight.
- ·Areas where dew point is lower than around 28°C and relative humidity is lower than 80%.

This indoor unit is tested under the condition of JIS (Japan Industrial Standard) high humidity condition and confirmed there is no problem. However, there is some risk of condensation drop if the air-conditioner is operated under the severer condition than mentioned above. If there is a possibility to use it under such a condition, attach additional insulation of 10 to 20mm thick for entire surface of indoor unit, refrigeration pipe and drain pipe.

- ·Areas where TV and radio stays away more than 1m. (It could cause jamming and noise.)
- ·Areas where any items which will be damaged by getting wet are not placed such as food, table wares, server, or medical equipment under the unit.
- ·Areas where there is no influence by the heat which cookware generates.
- ·Areas where not exposed to oil mist, powder and/or steam directly such as above fryer.
- ·Areas where lighting device such as fluorescent light or incandescent light doesn't affect the operation.

(A beam from lighting device sometimes affects the infrared receiver for the wireless remote control and the air-conditioner might not work properly.)

- ·When operating the suction air processing unit independently, it operates in the outdoor air processing mode.

Blowout temperatures are not same at the standard unit operation and the outdoor air processing mode operations.

Since the temperatures become higher during cooling or lower during heating, take care of the direction of blowout outlet.

Avoid directing the blowout outlet to the space where people are present.

② Check if the place where the air-conditioner is installed can hold the weight of the unit. If it is not able to hold, reinforce the structure with boards and beams strong enough to hold it. If the strength is not enough, it could cause injury due to unit falling.

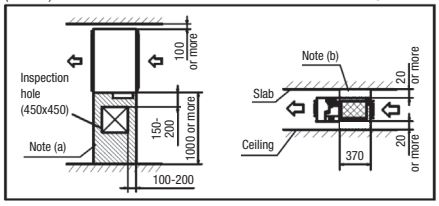
Space for installation and service

●Make installation altitude over 2.5m.

(Indoor Unit)

Select either of two cases to keep space for installation and services.

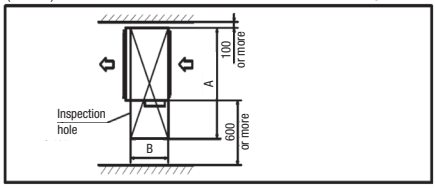
(Case 1) From side of unit UNIT: mm



Notes (a) There must not be obstacle to draw out fan motor. (marked area)

(b) Install refrigerant pipe, drain pipe, and wiring so as not to cross marked area.

(Case 2) From bottom of unit UNIT: mm

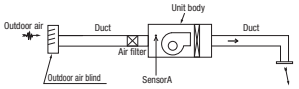


(Size of inspection hole) UNIT: mm

Single type	–	71	100-140
Multi type	45, 56	71, 90	112-160
FDU-F	–	650	1100
A	1100	1300	1720
B	620		725

③Cautions for the handling and installation place of outdoor air processing unit

①This unit monitors the outdoor air temperature at the position of sensor A in the figure, and controls the start and stop with the thermostat based on the value of sensor A and the setting temperature by the remote control.



Remote control's setting temperature indicates the outdoor air temperature that controls the start and stop of operation by the thermostat.

When the thermostat is turned off, the operation is changed to the fan mode so that the outdoor air is blown out directly into the room. For example if the remote control is set to 22°C in cooling operation, and if the outdoor air temperature is 22°C or lower at that time, the unit will go into fan operation.

②When there is a difference between the air-conditioner temperature in the room during cooling operation and the tempera - ture of air blown out from the outdoor air processing unit, dewing water may drip from the unit. To prevent the dewing, provide a sufficient heat insulation means at the air blow outlet.

③Since the air blow outlet on the outdoor air processing unit may blow out the outdoor air directly, orient the outlet in such a way that it will not blow air directly to persons in the room.

④Since the unit controls the thermostat start and stop by monitoring the outdoor air temperature, it is prohibited to monitor the room temperature by means of the room temperature monitoring by changing the thermostat setting at the remote control side and the optional remote thermistor. Otherwise, dewing water may drip from the unit at lower outdoor air temperatures during cooling operation.

⑤Install the remote control of the outdoor air processing unit at a place closer to the administrator to avoid the end user from using the remote control.

When handing over the unit to the end user, make sure to explain sufficiently about the foregoing cautions, the installation place of the remote control for the outdoor air processing unit and the position of air blow outlet.

④Preparation before installation

●If suspension bolt becomes longer, do reinforcement of earthquake resistant.

○For grid ceiling

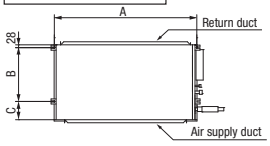
When the suspension bolt length is over 500mm, or the gap between the ceiling and roof is over 700mm, apply earthquake resistant brace to the bolt.

○In case the unit is hanged directly from the slab and is installed on the ceiling plane which has enough strength.

When suspension bolt length is over 1000mm, apply the earthquake resistant brace to the bolt.

●Prepare four (4) sets of suspension bolt, nut and spring washer (M10) on site.

Suspension Bolt Location

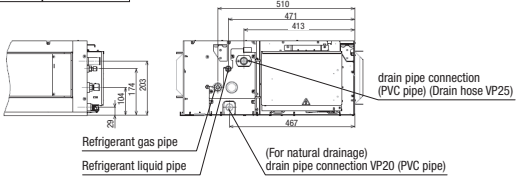


UNIT: mm

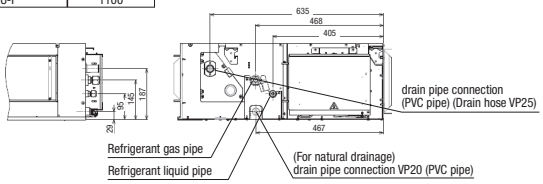
Single type	–	71	100-140
Multi type	45, 56	71, 90	112-160
FDU-F	–	650	1100
A	786	986	1720
B	472	472	725
C	135	135	180

Pipe locations UNIT: mm

Single type	71
Multi type	45-90
FDU-F	650



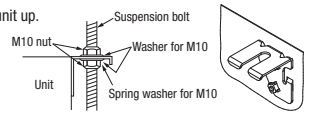
Single type	100-140
Multi type	112-160
FDU-F	1100



⑤Installation of indoor unit

Installation

[Hanging]
Hang the unit up.

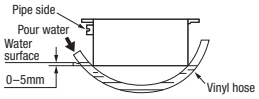


If the measurements between the unit and the ceiling hole do not match upon installation, it may be adjusted with the long holed installation tool.

Adjustment for horizontality

○Either use a level vial, or adjust the level according to the method below.

●Adjust so the bottom side of the unit will be leveled with the water surface as illustrated below.



Let the pipe side be slightly sloped.

○If the unit is not leveled, it may cause malfunctions or inoperation of the float switch.

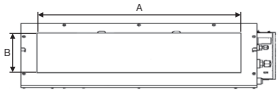
⑥Duct Work

①A corrugated board (for preventing sputtering) is attached to the main body of the air-conditioner (on the outlet port). Do not remove it until connecting the duct.
●An air filter can be provided on the main body of the air-conditioner (on the inlet port). Remove it when connecting the duct on the inlet port.

②Blowout duct
●Use rectangular duct to connect with unit.
●Duct size for each unit is as shown below.

UNIT: mm

Single type	—	71	100-140
Multi type	45, 56	71, 90	112-160
FDU-F	—	650	1100
A	682	882	1202
B	172	172	172

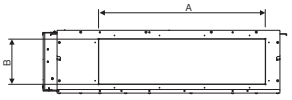


●Duct should be at their minimum length.
●We recommend to use sound and heat insulated duct to prevent it from condensation.
●Connect duct to unit before ceiling attachment.

③Inlet port
●When connecting the duct to the inlet port, remove the air filter if it is fitted to the inlet port.
●Inlet port size for each unit is as shown below.

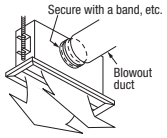
UNIT: mm

Single type	-	71	100-140
Multi Type	45, 56	71, 90	112-160
FDU-F	-	650	1100
A	582	742	1282
B	202	202	237



●Make sure to insulate the duct to prevent dewing on it.

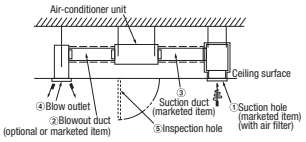
④Install the specific blowout duct in a location where the air will circulate to the entire room.
●Conduct the installation of the specific blowout hole and the connection of the duct before attaching them to the ceiling.
●Insulate the area where the duct is secured by a band for dew condensation prevention.



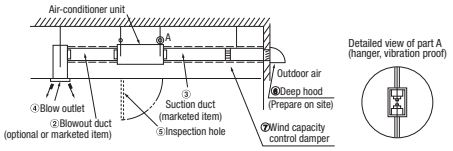
⑤Make sure provide an inspection hole on the ceiling. It is indispensable to service electric equipment, motor, functional components and cleaning of heat exchanger.

⑥Duct Work (continued)

FDU



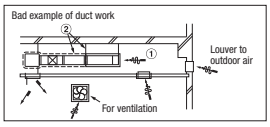
FDU-F



Bad example of duct work

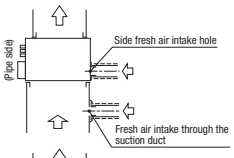
①If a duct is not provided at the suction side but it is substituted with the space over the ceiling, humidity in the space will increase by the influence of capacity of ventilation fan, strength of wind blowing against the out door air louver, weather (rainy day) and others.
a)Moisture in air is likely to condense over the external plates of the unit and to drip on the ceiling. Unit should be operated under the conditions as listed in the above table and within the limitation of wind volume. When the building is a concrete structure, especially immediately after the construction, humidity tends to rise even if the space over the ceiling is not substituted in place of a duct. In such occasion, it is necessary to insulate the entire unit with glass wool (25mm). (Use a wire net or equivalent to hold the glass wool in place.)
b)It may run out the allowable limit of unit operation（Example, the case of FDU: When outdoor air temperature is 35°CDB, suction air temperature is 27°CWB) and it could result in such troubles as compressor overload, etc..
c)There is a possibility that the blow air volume may exceed the allowable range of operation due to the capacity of ventilation fan or strength of wind blowing against external air louver so that drainage from be heat exchanger may fall to reach the drain pan but leak outside (Example: drip on to the ceiling) with consequential water leakage in the room.

②If vibration damping is not conducted between the unit and the duct, and between the unit and the slab, vibration will be transmitted to the duct and vibration noise may occur. Also, vibration may be transmitted from the unit to the slab. Vibration damping must be performed.

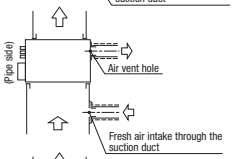


Connecting the air intake/vent ducts the case of FDU

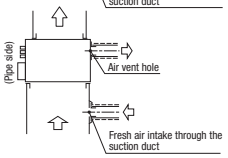
①Fresh Air Intake
[for air intake duct only]
○Use the side fresh air intake hole, or supply through a part of the suction duct.



[for simultaneous air intake/vent]
○Intake air through the suction duct.
(the side cannot be used)



②Air Vent
○Use the side air vent hole.
(always use together with the air intake)

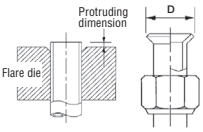


○Insulate the duct to protect it from dew condensation.

⑦Refrigerant pipe

Caution

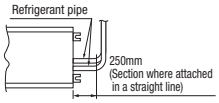
●Be sure to use new pipes for the refrigerant pipes. Use the flare nut attached to the product or a nut compatible with JIS B 8607, Class 2.
Regarding whether existing pipes can be reused or not, and the washing method, refer to the instruction manual of the outdoor unit, catalogue or technical data.
1) In case of reuse: Do not use old flare nut, but use the one attached to the unit or compatible with JIS B 8607, Class 2.
2) In case of reuse: Flare the end of pipe replaced partially for R410A.



Pipe dia. d mm	Min. pipe wall thickness mm	Protruding dimension for flare, mm		Flare O.D. D mm	Flare nut tightening torque N·m
		Rigid (Clutch type)			
		For R410A	Conventional tool		
6.35	0.8	0 − 0.5	0.7 − 1.3	8.9 − 9.1	14 − 18
9.52	0.8			12.8 − 13.2	34 − 42
12.7	0.8			16.2 − 16.6	49 − 61
15.88	1			19.3 − 19.7	68 − 82
19.05	1.2			23.6 − 24.0	100 − 120

●Use phosphorus deoxidized copper alloy seamless pipe (C1220T specified in JIS H 3300) for refrigeration pipe installation.
In addition, make sure there is no damage both inside and outside of the pipe, and no harmful substances such as sulfur, oxide, dust or a contaminant stuck on the pipes.
●Do not use any refrigerant other than R410A.
Using other refrigerant except R410A (R22 etc.) may degrade inside refrigeration oil. And air getting into refrigeration circuit may cause over-pressure and resultant it may result in bursting, etc.
●Store the copper pipes indoors and seal the both end of them until they are brazed in order to avoid any dust, dirt or water getting into pipe. Otherwise it will cause degradation of refrigeration oil and compressor breakdown, etc.
●Use special tools for R410A refrigerant.

Piping work



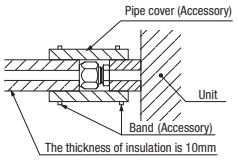
When conducting piping work, make sure to allow the pipes to be aligned in a straight line for at least 250 mm, as shown in the left illustration. (This is necessary for the drain pump to function)

Work procedure

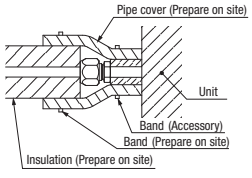
1. Remove the flare nut and blind flanges on the pipe of the indoor unit.
※ Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them. (Gas may come out at this time, but it is not abnormal.)
●Pay attention whether the flare nut pops out. (as the indoor unit is sometimes pressured.)
2. Make a flare on liquid pipe and gas pipe, and connect the refrigeration pipes on the indoor unit.
※Bend radius of pipe must be 4D or larger. Once a pipe is bent, do not readjust the bending. Do not twist a pipe or collapse to 2/3D or smaller.
※Do a flare connection as follows:
●Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them.
●When fastening the flare nut, align the refrigeration pipe with the center of flare nut, screw the nut for 3-4 times by hand and then tighten it by spanner with the specified torque mentioned in the table above. Make sure to hold the pipe on the indoor unit securely by a spanner when tightening the nut in order to avoid unexpected stress on the copper pipe.
3. Cover the flare connection part of the indoor unit with attached insulation material after a gas leakage inspection, and tighten both ends with attached straps.
●Make sure to insulate both gas pipes and liquid pipes completely.
※Incomplete insulation may cause dew condensation or water dropping.
●Use heat-resistant (120 °C or more) insulations on the gas side pipes.
●In case of using at high humidity condition, reinforce insulation of refrigerant pipes.
Surface of insulation may cause dew condition or water dropping, if insulations are not reinfoced.
4. Refrigerant is charged in the outdoor unit.
As for the additional refrigerant charge for the indoor unit and piping, refer to the installation manual attached to the outdoor unit.

Caution:
Refrigerating machine oil should not be applied to the threads of union or external surface of flare. It is because, even if the same tightening torque is applied, the oil is likely to decrease the slide friction force on the threads and increase, in turn, the axial component force so that it could crack the flare by the stress corrosion.
Refrigerating machine oil may be applied to the internal surface of flare only.

〈The case of using thickness of insulation is 10mm〉



〈The case of using reinfoced insulation〉



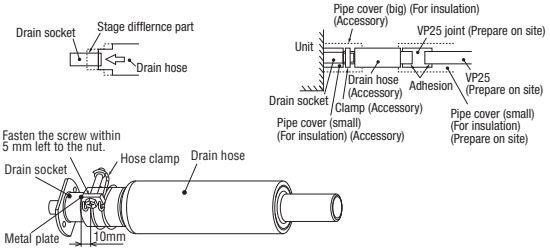
⑧Drain pipe

Caution

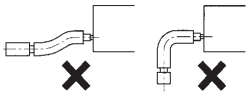
● Install the drain pipe according to the installation manual in order to drain properly.
Imperfection in draining may cause flood indoors and wetting the household goods, etc.
● Do not put the drain pipe directly into the ditch where toxic gas such as sulfur, the other harmful and inflammable gas is generated. Toxic gas would flow into the room and it would cause serious damage to user's health and safety (some poisoning or deficiency of oxygen).
In addition, it may cause corrosion of heat exchanger and bad smell.
● Connect the pipe securely to avoid water leakage from the joint.
● Insulate the pipe properly to avoid condensation drop.
● Check if the water can flow out properly from both the drain outlet on the indoor unit and the end of the drain pipe after installation.
● Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway. In addition, do not put air vent on the drain pipe. Check if water is drained out properly from the pipe during commissioning. Also, keep sufficient space for inspection and maintenance.

Work procedure

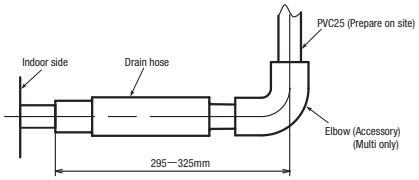
1. Make sure to insert the drain hose (the end mode of soft PVC) to the end of the step part of drain socket.
Attach the hose clamp to the drain hose around 10mm from the end, and fasten the screw within 5mm left to the nut.
●Do not apply adhesives on this end.
●Do not use acetone-based adhesives to connect to the drain socket.



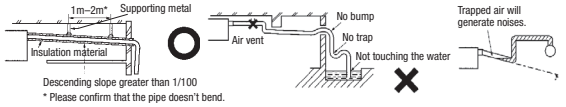
2. Prepare a joint for connecting VP25 pipe, adhere and connect the joint to the drain hose (the end made of rigid PVC), and adhere and connect VP25 pipe (prepare on site).
※As for drain pipe, apply VP25 made of rigid PVC which is on the market.
●Make sure that the adhesive will not get into the supplied drain hose.
It may cause the flexible part broken after the adhesive is dried up and gets rigid.
●The flexible drain hose is intended to absorb a small difference at installation of the unit or drain pipes. Intentional bending, expanding may cause the flexible hose broken and water leakage.



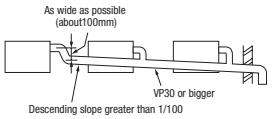
●As for drain pipe, apply VP25 (OD32).
If apply PVC25 (OD25), connect the expanded connector to the drain hose, with adhesive. (Multi unit only)



3. Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway.
●Pay attention not to give stress on the pipe on the indoor unit side, and support and fix the pipe as close place to the unit as possible when connecting the drain pipe.
●Do not set up air vent.



●When sharing a drain pipe for more than one unit, lay the main pipe 100mm below the drain outlet of the unit. In addition, select VP30 or bigger size for main drain pipe.



PJG012D004 D

(b) Models FDU125VF, 140VF

This manual is for the installation of an indoor unit.
For electrical wiring work (Indoor), refer to page 225. For remote control installation, refer to page 233. For wireless kit installation, refer to page 602. For electrical wiring work (Outdoor) and refrigerant pipe work installation for outdoor unit, refer to page 245.

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .
  ⚠WARNING : Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- The meanings of "Marks" used here are as shown on the right:
  ⃠ Never do it under any circumstances. | ❗ Always do it according to the instruction.
- After completing the installation, do commissioning to confirm there are no abnormalities, and explain to the customers about "SAFETY PRECAUTIONS", correct operation method and maintenance method (air filter cleaning, operation method and temperature setting method) with user's manual of this unit.
  Ask your customers to keep this installation manual together with the user's manual. Also, ask them to hand over the user's manual to the new user when the owner is changed.

⚠WARNING

- **Installation should be performed by the specialist.**
  If you install the unit by yourself, it may lead to serious trouble such as water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Install the system correctly according to these installation manuals.**
  Improper installation may cause explosion, injury, water leakage, electric shock, and fire.
- **Check the density refered by the foumula (accordance with ISO5149).**
  If the density exceeds the limit density, please consult the dealer and installate the ventilation system.
- **Use the genuine accessories and the specified parts for installation.**
  If parts unspecified by our company are used it could cause water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Ventilate the working area well in case the refrigerant leaks during installation.**
  If the refrigerant contacts the fire, toxic gas is produced.
- **Install the unit in a location that can hold heavy weight.**
  Improper installation may cause the unit to fall leading to accidents.
- **Install the unit properly in order to be able to withstand strong winds such as typhoons, and earthquakes.**
  Improper installation may cause the unit to fall leading to accidents.
- **Do not mix air in to the cooling cycle on installation or removal of the air-conditioner.**
  If air is mixed in, the pressure in the cooling cycle will rise abnormally and may cause explosion and injuries.
- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire.
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire.
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire.
- **Check for refrigerant gas leakage after installation is completed.**
  If the refrigerant gas leaks into the house and comes in contact with a fan heater, a stove, or an oven, toxic gas is produced.
- **Use the specified pipe, flare nut, and tools for R410A.**
  Using existing parts (R22) could cause the unit failure and serious accident due to explosion of the cooling cycle.
- **Tighten the flare nut according to the specified method by with torque wrench.**
  If the flare nut were tightened with excess torque, it could cause burst and refrigerant leakage after a long period.
- **Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulfide gas can occur.**
  Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.
- **Connect the pipes for refrigeration circuit securely in installation work before compressor is operated.**
  If the compressor is operated when the service valve is open without connecting the pipe, it could cause explosion and injuries due to abnormal high pressure in the system.
- **Stop the compressor before removing the pipe after shutting the service valve on pump down work.**
  If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.
- **Only use prescribed option parts. The installation must be carried out by the qualified installer.**
  If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire.
- **Consult the dealer or a specialist about removal of the air-conditioner.**
  Improper installation may cause water leakage, electric shock or fire.
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.
- **Do not run the unit when the panel or protection guard are taken off.**
  Touching the rotating equipment, hot surface, or high voltage section could cause an injury to be caught in the machine, to get burned, or electric shock.
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running.

⚠ CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock or fire due to a short circuit.
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it could cause electric shocks or fire.
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire.
- **Do not install the indoor unit near the location where there is possibility of flammable gas leakages.**
  If the gas leaks and gathers around the unit, it could cause fire.
- **Do not install and use the unit where corrosive gas (such as sulfurous acid gas etc.) or flammable gas (such as thinner, petroleum etc.) may be generated or accumulated, or volatile flammable substances are handled.**
  It could cause the corrosion of heat exchanger, breakage of plastic parts etc. And inflammable gas could cause fire.
- **Secure a space for installation, inspection and maintenance specified in the manual.**
  Insufficient space can result in accident such as personal injury due to falling from the installation place.
- **Do not use the indoor unit at the place where water splashes such as laundry.**
  Indoor unit is not waterproof. It could cause electric shock and fire.
- **Do not use the indoor unit for a special purpose such as food storage, cooling for precision instrument, preservation of animals, plants, and a work of art.**
  It could cause the damage of the items.
- **Do not install nor use the system near equipments which generate electromagnetic wave or high harmonics.**
  Equipments like inverter equipment, private power generator, high-frequency medical equipment, or telecommunication equipment might influence the air-conditioner and cause a malfunction and breakdown. Or the air-conditioner might influence medical equipments or telecommunication equipments, and obstruct their medical activity or cause jamming.
- **Do not install the remote control at the direct sunlight.**
  It could cause breakdown or deformation of the remote control.
- **Do not install the indoor unit at the place listed below.**
  - Places where flammable gas could leak.
  - Places where carbon fiber, metal powder or any powder is floated.
  - Place where the substances which affect the air-conditioner are generated such as sulfide gas, chloride gas, acid, alkali or ammonic atmospheres.
  - Places exposed to oil mist or steam directly.
  - On vehicles and ships
  - Places where machinery which generates high harmonics is used.
  - Places where cosmetics or special sprays are frequently used.
  - Highly salted area such as beach.
  - Heavy snow area
  - Places where the system is affected by smoke from a chimney.
  - Altitude over 1000m
- **Do not install the indoor unit in the locations listed below (Be sure to install the indoor unit according to the installation manual for each model because each indoor unit has each limitation)**
  - Locations with any obstacles which can prevent inlet and outlet air of the unit
  - Locations where vibration can be amplified due to insufficient strength of structure.
  - Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam. (in case of the infrared specification unit)
  - Locations where an equipment affected by high harmonics is placed. (TV set or radio receiver is placed within 5m)
  - Locations where drainage cannot run off safely.

  It can affect performance or function and etc..
- **Do not put any valuables which will break down by getting wet under the air-conditioner.**
  Condensation could drop when the relative humidity is higher than 80% or drain pipe is clogged, and it damages user's belongings.
- **Do not use the base frame for the outdoor unit which is corroded or damaged after a long period of use.**
  It could cause the unit falling down and injury.
- **Pay attention not to damage the drain pan by weld sputter when brazing work is done near the unit.**
  If sputter entered into the unit during brazing work, it could cause damage (pinhole) of drain pan and leakage of water. To avoid damaging, keep the indoor unit packed or cover the indoor unit.
- **Install the drain pipe to drain the water surely according to the installation manual.**
  Improper connection of the drain pipe may cause dropping water into room and damaging user's belongings.
- **Do not share the drain pipe for indoor unit and GHP (Gas Heat Pump system) outdoor unit.**
  Toxic exhaust gas would flow into room and it might cause serious damage (some poisoning or deficiency of oxygen) to user's health and safety.
- **Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.**
  If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.
- **For drain pipe installation, be sure to make descending slope of greater than 1/100, not to make traps, and not to make air-bleeding.**
  Check if the drainage is correctly done during commissioning and ensure the space for inspection and maintenance.
- **Ensure the insulation on the pipes for refrigeration circuit so as not to condense water.**
  Incomplete insulation could cause condensation and it would wet ceiling, floor, and any other valuables.
- **Do not install the outdoor unit where is likely to be a nest for insects and small animals.**
  Insects and small animals could come into the electronic components and cause breakdown and fire. Instruct the user to keep the surroundings clean.
- **Pay extra attention, carrying the unit by hand.**
  Carry the unit with 2 people if it is heavier than 20kg. Do not use the plastic straps but the grabbing place, moving the unit by hand. Use protective gloves in order to avoid injury by the aluminum fin.
- **Make sure to dispose of the packaging material.**
  Leaving the materials may cause injury as metals like nail and woods are used in the package.
- **Do not operate the system without the air filter.**
  It may cause the breakdown of the system due to clogging of the heat exchanger.
- **Do not touch any button with wet hands.**
  It could cause electric shock.
- **Do not touch the refrigerant piping with bare hands when in operation.**
  The pipe during operation would become very hot or cold according to the operating condition, and it could cause a burn or frostbite.
- **Do not clean up the air-conditioner with water.**
  It could cause electric shock.
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown.
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.

○This model is middle static ducted type air-conditioner unit. Therefore, do not use this model for direct blow type air-conditioner unit.

①Before installation

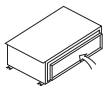
●Install correctly according to the installation manual.

●Confirm the following points:

○Unit type/Power source specification ○Pipes/Wires/Small parts ○Accessory items

Accessory item

For hanging	For refrigerant pipe			For drain pipe			
Flat washer (M10)	Pipe cover (big)	Pipe cover (small)	Strap	Pipe cover (big)	Pipe cover (small)	Drain hose	Hose clamp
							
8	1	1	4	1	1	1	1
For unit hanging	For heat insulation of gas pipe	For heat insulation of liquid tube	For pipe cover fixing	For heat insulation of drain socket	For heat insulation of drain socket	For drain pipe connecting	For drain hose mounting



Accessory parts are stored inside this suction side.

②Selection of installation location for the indoor unit

① Select the suitable areas to install the unit under approval of the user.

- Areas where the indoor unit can deliver hot and cold wind sufficiently. Suggest to the user to use a circulator if the ceiling height is over 3m to avoid warm air being accumulated on the ceiling.
- Areas where there is enough space to install and service.
- Areas where it can be drained properly. Areas where drain pipe descending slope can be taken.
- Areas where there is no obstruction of airflow on both air return grille and air supply port.
- Areas where fire alarm will not be accidentally activated by the air-conditioner.
- Areas where the supply air does not short-circuit.
- Areas where it is not influenced by draft air.
- Areas not exposed to direct sunlight.
- Areas where dew point is lower than around 28°C and relative humidity is lower than 80%.
  This indoor unit is tested under the condition of JIS (Japan Industrial Standard) high humidity condition and confirmed there is no problem. However, there is some risk of condensation drop if the air conditioner is operated under the severer condition than mentioned above. If there is a possibility to use it under such a condition, attach additional insulation of 10 to 20mm thick for entire surface of indoor unit, refrigeration pipe and drain pipe.
- Areas where TV and radio stays away more than 1m. (It could cause jamming and noise.)
- Areas where any items which will be damaged by getting wet are not placed such as food, table wares, server, or medical equipment under the unit.
- Areas where there is no influence by the heat which cookware generates.
- Areas where not exposed to oil mist, powder and/or steam directly such as above fryer.
- Areas where lighting device such as fluorescent light or incandescent light doesn't affect the operation.
  (A beam from lighting device sometimes affects the infrared receiver for the wireless remote control and the air-conditioner might not work properly.)

② Check if the place where the air-conditioner is installed can hold the weight of the unit. If it is not able to hold, reinforce the structure with boards and beams strong enough to hold it. If the strength is not enough, it could cause injury due to unit falling.

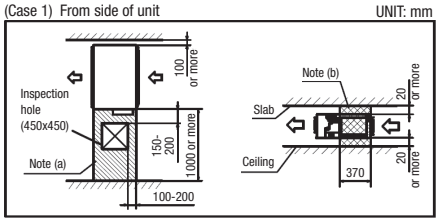
Space for installation and service

●Make installation altitude over 2.5m.

(Indoor Unit)

Select either of two cases to keep space for installation and services.

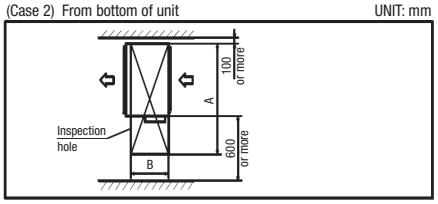
(Case 1) From side of unit UNIT: mm



Notes (a) There must not be obstacle to draw out fan motor. (marked area)

(b) Install refrigerant pipe, drain pipe, and wiring so as not to cross marked area.

(Case 2) From bottom of unit UNIT: mm



(Size of inspection hole) UNIT: mm

Single type	–	71	100-140
Multi type	45, 56	71, 90	112-160
A	1100	1300	1720
B	620		725

③Preparation before installation

●If suspension bolt becomes longer, do reinforcement of earthquake resistant.

○For grid ceiling

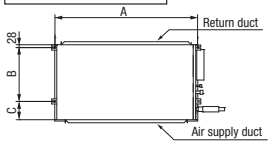
When the suspension bolt length is over 500mm, or the gap between the ceiling and roof is over 700mm, apply earthquake resistant brace to the bolt.

○In case the unit is hanged directly from the slab and is installed on the ceiling plane which has enough strength.

When suspension bolt length is over 1000mm, apply the earthquake resistant brace to the bolt.

●Prepare four (4) sets of suspension bolt, nut and spring washer (M10) on site.

Suspension Bolt Location

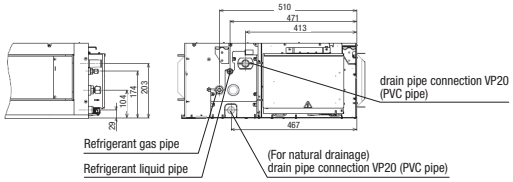


UNIT: mm

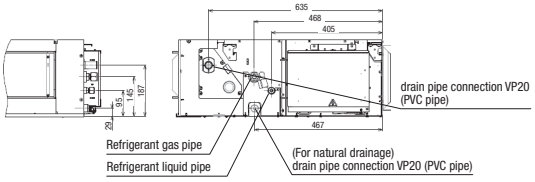
Single type	–	71	100-140
Multi type	45, 56	71, 90	112-160
A	786	986	1404
B	472	472	530
C	135	135	180

Pipe locations UNIT: mm

Single type	71
Multi type	45-90



Single type	100-140
Multi type	112-160

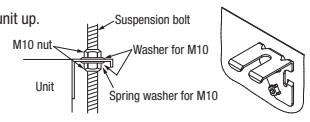


④Installation of indoor unit

Installation

[Hanging]

Hang the unit up.

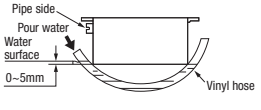


If the measurements between the unit and the ceiling hole do not match upon installation, it may be adjusted with the long holed installation tool.

Adjustment for horizontality

○Either use a level vial, or adjust the level according to the method below.

●Adjust so the bottom side of the unit will be leveled with the water surface as illustrated below.



Let the pipe side be slightly sloped.

○If the unit is not leveled, it may cause malfunctions or inoperation of the float switch.

⑤Duct work

①A corrugated board (for preventing sputtering) is attached to the main body of the air-conditioner (on the outlet port). Do not remove it until connecting the duct.

●An air filter can be provided on the main body of the air-conditioner (on the inlet port). Remove it when connecting the duct on the inlet port.

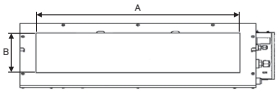
②Blowout duct

●Use rectangular duct to connect with unit.

●Duct size for each unit is as shown below.

UNIT: mm

Single type	—	71	100-140
Multi type	45, 56	71, 90	112-140
A	682	882	1202
B	172	172	172



●Duct should be at their minimum length.

●We recommend to use sound and heat insulated duct to prevent it from condensation.

●Connect duct to unit before ceiling attachment.

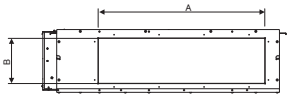
③Inlet port

●When connecting the duct to the inlet port, remove the air filter if it is fitted to the inlet port.

●Inlet port size for each unit is as shown below.

UNIT: mm

Single type	-	71	100-140
Multi Type	45, 56	71, 90	112-160
A	582	742	1282
B	202	202	237

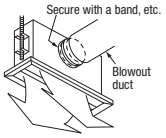


●Make sure to insulate the duct to prevent dewing on it.

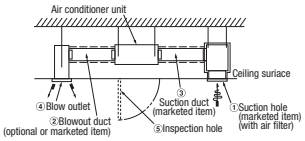
④Install the specific blowout duct in a location where the air will circulate to the entire room.

●Conduct the installation of the specific blowout hole and the connection of the duct before attaching them to the ceiling.

●Insulate the area where the duct is secured by a band for dew condensation prevention.



⑤Make sure provide an inspection hole on the ceiling. It is indispensable to service electric equipment, motor, functional components and cleaning of heat exchanger.



Bad example of duct work

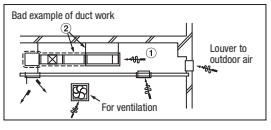
①If a duct is not provided at the suction side but it is substituted with the space over the ceiling, humidity in the space will increase by the influence of capacity of ventilation fan, strength of wind blowing against the out door air louver, weather (rainy day) and others.

a)Moisture in air is likely to condense over the external plates of the unit and to drip on the ceiling. Unit should be operated under the conditions as listed in the above table and within the limitation of wind volume. When the building is a concrete structure, especially immediately after the construction, humidity tends to rise even if the space over the ceiling is not substituted in place of a duct. In such occasion, it is necessary to insulate the entire unit with glass wool (25mm). (Use a wire net or equivalent to hold the glass wool in place.)

b)It may run out the allowable limit of unit operation (Example: When outdoor air temperature is 35°C DB, suction air temperature is 27°C WB) and it could result in such troubles as compressor overload, etc..

c)There is a possibility that the blow air volume may exceed the allowable range of operation due to the capacity of ventilation fan or strength of wind blowing against external air louver so that drainage from be heat exchanger may fall to reach the drain pan but leak outside (Example: drip on to the ceiling) with consequential water leakage in the room.

②If vibration damping is not conducted between the unit and the duct, and between the unit and the slab, vibration will be transmitted to the duct and vibration noise may occur. Also, vibration may be transmitted from the unit to the slab. Vibration damping must be performed.



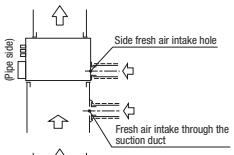
⑤Duct work (continued)

Connecting the air intake/vent ducts

①Fresh Air Intake

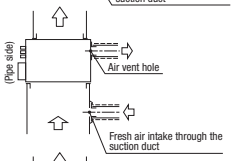
[for air intake duct only]

○Use the side fresh air intake hole, or supply through a part of the suction duct.



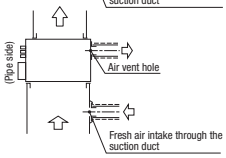
[for simultaneous air intake/vent]

○Intake air through the suction duct. (the side cannot be used)



②Air Vent

○Use the side air vent hole. (always use together with the air intake)



○Insulate the duct to protect it from dew condensation.

⑥Refrigerant pipe

Caution

●Use the new refrigerant pipe.

When re-using the existing pipe system for R22 or R407C, pay attention to the following items.

・Change the flare nuts with the attached ones (JIS category 2), and reprocess the flare parts.

・Do not use thin-walled pipes.

●Use phosphorus deoxidized copper alloy seamless pipe (C1220T specified in JIS H 3300) for refrigeration pipe installation. In addition, make sure there is no damage both inside and outside of the pipe, and no harmful substances such as sulfur, oxide, dust or a contaminant stuck on the pipes.

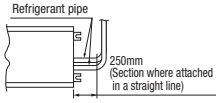
●Do not use any refrigerant other than R410A.

Using other refrigerant except R410A (R22 etc.) may degrade inside refrigeration oil. And air getting into refrigeration circuit may cause over-pressure and resultant it may result in bursting, etc.

●Store the copper pipes indoors and seal the both end of them until they are brazed in order to avoid any dust, dirt or water getting into pipe. Otherwise it will cause degradation of refrigeration oil and compressor breakdown, etc.

●Use special tools for R410A refrigerant.

Piping work

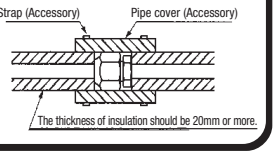


When conducting piping work, make sure to allow the pipes to be aligned in a straight line for at least 250 mm, as shown in the left illustration. (This is necessary for the drain pump to function)

Work procedure

1. Remove the flare nut and blind flanges on the pipe of the indoor unit.
   ※ Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them. (Gas may come out at this time, but it is not abnormal.)
   ● Pay attention whether the flare nut pops out. (as the indoor unit is sometimes pressured.)
2. Make a flare on liquid pipe and gas pipe, and connect the refrigeration pipes on the indoor unit.
   ※Bend the pipe with as big radius as possible and do not bend the pipe repeatedly. In addition, do not twist and crush the pipes.
   ※Do a flare connection as follows:
   ● Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them.
   ● When fastening the flare nut, align the refrigeration pipe with the center of flare nut, screw the nut for 3-4 times by hand and then tighten it by spanner with the specified torque mentioned in the table below. Make sure to hold the pipe on the indoor unit securely by a spanner when tightening the nut in order to avoid unexpected stress on the copper pipe.
3. Cover the flare connection part of the indoor unit with attached insulation material after a gas leakage inspection, and tighten both ends with attached straps.
   ●Make sure to insulate both gas pipes and liquid pipes completely.
   ※Incomplete insulation may cause dew condensation or water dropping.
4. Refrigerant is charged in the outdoor unit.
   As for the additional refrigerant charge for the indoor unit and piping, refer to the installation manual attached to the outdoor unit.

Pipe diameter	Tightening torque N·m
ϕ 6.35	14 to 18
ϕ 9.52	34 to 42
ϕ 12.7	49 to 61
ϕ 15.88	68 to 82



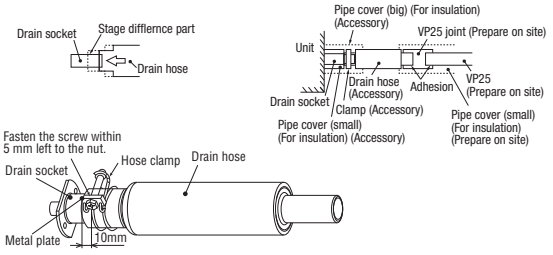
⑦Drain pipe

Caution

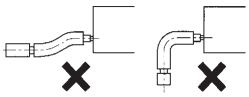
- Install the drain pipe according to the installation manual in order to drain properly. Imperfection in draining may cause flood indoors and wetting the household goods, etc.
- Do not put the drain pipe directly into the ditch where toxic gas such as sulfur, the other harmful and inflammable gas is generated. Toxic gas would flow into the room and it would cause serious damage to user's health and safety (some poisoning or deficiency of oxygen). In addition, it may cause corrosion of heat exchanger and bad smell.
- Connect the pipe securely to avoid water leakage from the joint.
- Insulate the pipe properly to avoid condensation drop.
- Check if the water can flow out properly from both the drain outlet on the indoor unit and the end of the drain pipe after installation.
- Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway. In addition, do not put air vent on the drain pipe. Check if water is drained out properly from the pipe during commissioning. Also, keep sufficient space for inspection and maintenance.

Work procedure

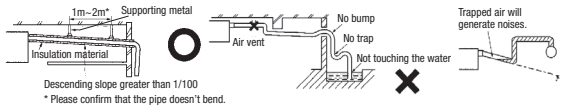
1. Make sure to insert the drain hose (the end mode of soft PVC) to the end of the step part of drain socket.
   Attach the hose clamp to the drain hose around 10mm from the end, and fasten the screw within 5mm left to the nut.
   - ●Do not apply adhesives on this end.
   - ●Do not use acetone-based adhesives to connect to the drain socket.



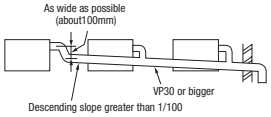
2. Prepare a joint for connecting VP25 pipe, adhere and connect the joint to the drain hose (the end made of rigid PVC), and adhere and connect VP25 pipe (prepare on site).
   ※As for drain pipe, apply VP25 made of rigid PVC which is on the market.
   - ●Make sure that the adhesive will not get into the supplied drain hose. It may cause the flexible part broken after the adhesive is dried up and gets rigid.
   - ●The flexible drain hose is intended to absorb a small difference at installation of the unit or drain pipes. Intentional bending, expanding may cause the flexible hose broken and water leakage.



3. Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway.
   - ●Pay attention not to give stress on the pipe on the indoor unit side, and support and fix the pipe as close place to the unit as possible when connecting the drain pipe.
   - ●Do not set up air vent.



- ●When sharing a drain pipe for more than one unit, lay the main pipe 100mm below the drain outlet of the unit. In addition, select VP30 or bigger size for main drain pipe.

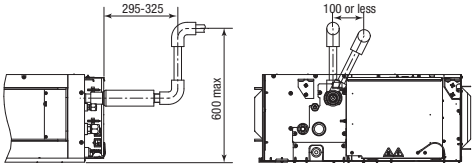


4. Insulate the drain pipe.
   - ●Be sure to insulate the drain socket and rigid PVC pipe installed indoors otherwise it may cause dew condensation and water leakage.
     ※After drainage test implementation, cover the drain socket part with pipe cover (small size), then use the pipe cover (big size) to cover the pipe cover (small size), clamps and part of the drain hose, and fix and wrap it with tapes to wrap and make joint part gapless.

⑦Drain pipe (continued)

Drain up

- The position for drain pipe outlet can be raised up to 600mm above the ceiling. Use elbows for installation to avoid obstacles inside ceiling. If the horizontal drain pipe is too long before vertical pipe, the backflow of water will increase when the unit is stopped, and it may cause overflow of water from the drain pan on the indoor unit. In order to avoid overflow, keep the horizontal pipe length and offset of the pipe within the limit shown in the figure below.



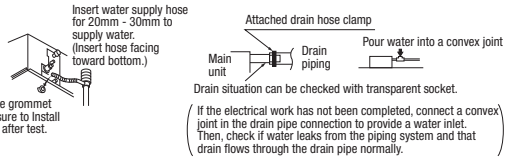
Otherwise, the construction point makes it same as drain pipe construction.

Drain test

1. Conduct a drain test after completion of the electrical work.
2. During the trail, make sure that drain flows properly through the piping and that no water leaks from connections.
3. In case of a new building, conduct the test before it is furnished with the ceiling.
4. Be sure to conduct this test even when the unit is installed in the heating season.

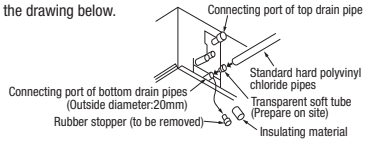
Procedures

1. Supply about 1000 cc of water to the unit through the air outlet by using a feed water pump.
2. Check the drain while cooling operation.



Outline of bottom drain piping work

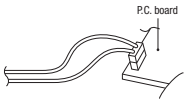
- If the bottom drain piping can be done with a descending gradient (1/50-1/100), it is possible to connect the pipes as shown in the drawing below.



Uncoupling the drain motor connector

- Uncouple the connector CnR for the drain motor as illustrated in the drawing on the right.

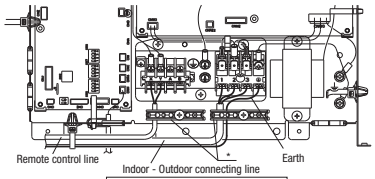
(Note: If the unit is run with the connector coupled, drain water will be discharged from the upper drain pipe joint, causing a water leak.)



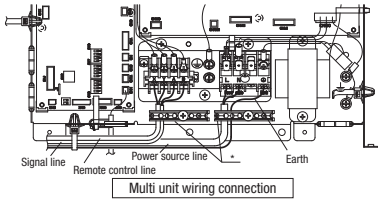
⑧Wiring-out position and wiring connection

- Electrical installation work must be performed according to the installation manual by an electrical installation service provider qualified by a power provider of the country, and be executed according to the technical standards and other regulations applicable to electrical installation in the country.
  Be sure to use an exclusive circuit.
- Use specified cord, fasten the wiring to the terminal securely, and hold the cord securely in order not to apply unexpected stress on the terminal.
- Do not put both power source line and signal line on the same route. It may cause miscommunication and malfunction.
- For the details of electrical wiring work, see attached instruction manual for electrical wiring work.

1. Remove a lid of the control box (2 screws).
2. Hold each wiring inside the unit and fasten them to terminal block securely.
3. Fix the wiring with clamps.
4. Install the removed parts back to original place.



Single unit wiring connection



Multi unit wiring connection

* Please fix the wiring in the band not to move even if it pulls.

⑨External static pressure setting

You can set External Static Pressure (E.S.P.) by method of MANUAL SETTING on remote control. Indoor unit will control fan-speed to keep rated air flow volume at each fan speed setting (Lo-Uhi)
You can set required E.S.P. by wired remote control that calculated with the set air flow rate and pressure loss of the duct connected.

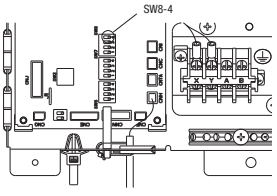
- How to set E.S.P. by wired remote control
  ① Push "◆" marked button(E.S.P. button).
  ② Select indoor unit No. by using ⬍ button.
  ③ Select setting No. by using ⬍ button and set E.S.P. by ⟲ button.
  See detailed procedure in technical manual.

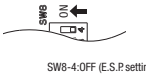
Notice
You can NOT set E.S.P. by wireless remote control.

With E.S.P. setting, confirm that actual E.S.P. agrees with E.S.P. setting.
When E.S.P. setting is higher than actual E.S.P., the air flow rate becomes excessively higher. This will cause water leakage if water splashes.
When E.S.P. setting is lower than actual E.S.P., the air flow rate becomes excessively lower and the cooling or heating may become ineffective.
In order to reduce the risk above the factory E.S.P. setting is set within the range of 80 – 150 Pa (E.S.P. setting No. 8 – 15). Be sure to use within the range of 80 – 150 Pa in actual operations. If actual E.S.P. is lower than 80 Pa, it may cause water leakage.

Setting No.	8	9	10	11	12	13	14	15
E.S.P (Pa)	80	90	100	110	120	130	140	150

※ If 1 – 7 is selected for the setting No. on the remote control, the setting No. shows No. 8.
If 16 – 20 is selected for the setting No. on the remote control, the setting No. shows No. 15.
Factory default is No. 8.





SW8-4:OFF (E.S.P. setting No. 8-15)

SW8-4:ON (E.S.P. setting No. 1-19)

If SW8-4 is turned to "ON", E.S.P. setting range can be changed to 10 – 200 Pa (E.S.P. setting No. 1 – 19). This should not be used when actual E.S.P. cannot be confirmed, because the risk above becomes higher.

Setting No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
E.S.P. (Pa)	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	200

※ If 20 is selected for the setting No. on the remote control, the setting No. shows No. 19.

⑩Check list after installation

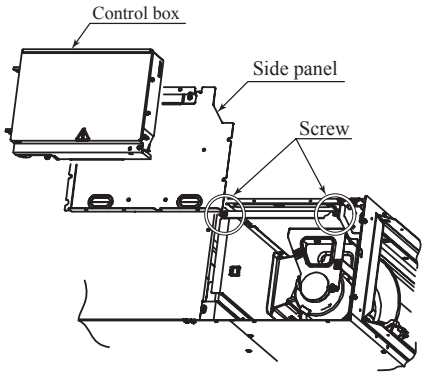
●Check the following items after all installation work completed.

Check if	Expected trouble	Check
The indoor and outdoor units are fixed securely?	Falling, vibration, noise	
Inspection for leakage is done?	Insufficient capacity	
Insulation work is properly done?	Water leakage	
Water is drained properly?	Water leakage	
Supply voltage is same as mentioned in the model name plate?	PCB burnt out, not working at all	
No mis-wiring or mis-connection of piping?	PCB burnt out, not working at all	
Earth wiring is connected properly?	Electric shock	
Cable size comply with specified size?	PCB burnt out, not working at all	
Any obstacle blocks air flow on air inlet and outlet?	Insufficient capacity	
Is setting of E.S.P finished?	Excessive air flow, water drop blow out	

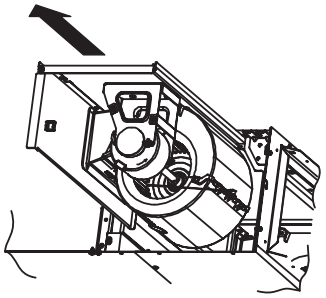
(c) Replacement procedure of the fan unit

Notes(1) The unit is a heavy item. It must be supported securely and handled with care not to drop when it is necessary to replace.
(2) For the maintenance space, refer to page 189.

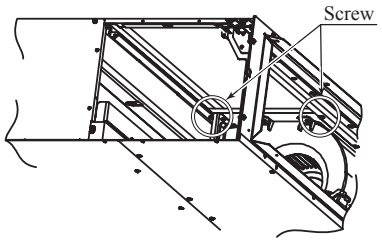
(i) Remove the control box and the side panel, and remove the screws marked in the circles (2 places) from the unit located at the near side.



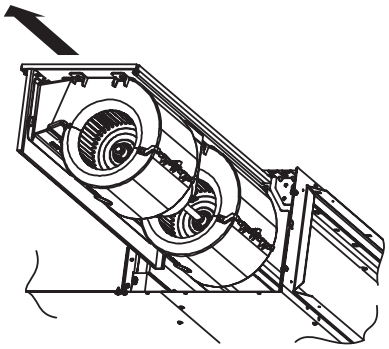
(ii) Take out the fan unit located at the near side in the arrow direction.



(iii) Remove the screws marked in the circles (2 places) from the fan unit located at the far side.



(iv) Take out the fan unit in the arrow direction.



(5) Duct connected-Low / Middle static pressure type (FDUM)

PJG012D008C F

(a) Indoor unit

This manual is for the installation of an indoor unit.
For electrical wiring work (Indoor), refer to page 221. For remote control installation, refer to page 233. For wireless kit installation, refer to page 602. For electrical wiring work (Outdoor) and refrigerant pipe work installation for outdoor unit, refer to page 245.

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .
  ⚠WARNING : Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- The meanings of "Marks" used here are as shown on the right:
  ⃠ Never do it under any circumstances. ❗ Always do it according to the instruction.
- After completing the installation, do commissioning to confirm there are no abnormalities, and explain to the customers about "SAFETY PRECAUTIONS", correct operation method and maintenance method (air filter cleaning, operation method and temperature setting method) with user's manual of this unit.
  Ask your customers to keep this installation manual together with the user's manual. Also, ask them to hand over the user's manual to the new user when the owner is changed.

⚠WARNING

- **Installation should be performed by the specialist.**
  If you install the unit by yourself, it may lead to serious trouble such as water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Install the system correctly according to these installation manuals.**
  Improper installation may cause explosion, injury, water leakage, electric shock, and fire.
- **Check the density refered by the foumula (accordance with ISO5149).**
  If the density exceeds the limit density, please consult the dealer and installate the ventilation system.
- **Use the genuine accessories and the specified parts for installation.**
  If parts unspecified by our company are used it could cause water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Ventilate the working area well in case the refrigerant leaks during installation.**
  If the refrigerant contacts the fire, toxic gas is produced.
- **Install the unit in a location that can hold heavy weight.**
  Improper installation may cause the unit to fall leading to accidents.
- **Install the unit properly in order to be able to withstand strong winds such as typhoons, and earthquakes.**
  Improper installation may cause the unit to fall leading to accidents.
- **Do not mix air in to the cooling cycle on installation or removal of the air-conditioner.**
  If air is mixed in, the pressure in the cooling cycle will rise abnormally and may cause explosion and injuries.
- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire.
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire.
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire.
- **Check for refrigerant gas leakage after installation is completed.**
  If the refrigerant gas leaks into the house and comes in contact with a fan heater, a stove, or an oven, toxic gas is produced.
- **Use the specified pipe, flare nut, and tools for R410A.**
  Using existing parts (R22) could cause the unit failure and serious accident due to explosion of the cooling cycle.
- **Tighten the flare nut according to the specified method by with torque wrench.**
  If the flare nut were tightened with excess torque, it could cause burst and refrigerant leakage after a long period.
- **Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulfide gas can occur.**
  Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.
- **Connect the pipes for refrigeration circuit securely in installation work before compressor is operated.**
  If the compressor is operated when the service valve is open without connecting the pipe, it could cause explosion and injuries due to abnormal high pressure in the system.
- **Stop the compressor before removing the pipe after shutting the service valve on pump down work.**
  If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.
- **Only use prescribed option parts. The installation must be carried out by the qualified installer.**
  If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire.
- **Consult the dealer or a specialist about removal of the air conditioner.**
  Improper installation may cause water leakage, electric shock or fire.
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.
- **Do not run the unit when the panel or protection guard are taken off.**
  Touching the rotating equipment, hot surface, or high voltage section could cause an injury to be caught in the machine, to get burned, or electric shock.
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running.

⚠ CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock or fire due to a short circuit.
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it could cause electric shocks or fire.
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire.
- **Do not install the indoor unit near the location where there is possibility of flammable gas leakages.**
  If the gas leaks and gathers around the unit, it could cause fire.
- **Do not install and use the unit where corrosive gas (such as sulfurous acid gas etc.) or flammable gas (such as thinner, petroleum etc.) may be generated or accumulated, or volatile flammable substances are handled.**
  It could cause the corrosion of heat exchanger, breakage of plastic parts etc. And inflammable gas could cause fire.
- **Secure a space for installation, inspection and maintenance specified in the manual.**
  Insufficient space can result in accident such as personal injury due to falling from the installation place.
- **Do not use the indoor unit at the place where water splashes such as laundry.**
  Indoor unit is not waterproof. It could cause electric shock and fire.
- **Do not use the indoor unit for a special purpose such as food storage, cooling for precision instrument, preservation of animals, plants, and a work of art.**
  It could cause the damage of the items.
- **Do not install nor use the system near equipments which generate electromagnetic wave or high harmonics.**
  Equipments like inverter equipment, private power generator, high-frequency medical equipment, or telecommunication equipment might influence the air conditioner and cause a malfunction and breakdown. Or the air conditioner might influence medical equipments or telecommunication equipments, and obstruct their medical activity or cause jamming.
- **Do not install the remote control at the direct sunlight.**
  It could cause breakdown or deformation of the remote control.
- **Do not install the indoor unit at the place listed below.**
  · Places where flammable gas could leak.
  · Places where carbon fiber, metal powder or any powder is floated.
  · Place where the substances which affect the air conditioner are generated such as sulfide gas, chloride gas, acid, alkali or ammonic atmospheres.
  · Places exposed to oil mist or steam directly.
  · On vehicles and ships
  · Places where machinery which generates high harmonics is used.
  · Places where cosmetics or special sprays are frequently used.
  · Highly salted area such as beach.
  · Heavy snow area
  · Places where the system is affected by smoke from a chimney.
  · Altitude over 1000m
- **Do not install the indoor unit in the locations listed below (Be sure to install the indoor unit according to the installation manual for each model because each indoor unit has each limitation)**
  · Locations with any obstacles which can prevent inlet and outlet air of the unit
  · Locations where vibration can be amplified due to insufficient strength of structure.
  · Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam. (in case of the infrared specification unit)
  · Locations where an equipment affected by high harmonics is placed. (TV set or radio receiver is placed within 5m)
  · Locations where drainage cannot run off safely.
  It can affect performance or function and etc..
- **Do not put any valuables which will break down by getting wet under the air conditioner.**
  Condensation could drop when the relative humidity is higher than 80% or drain pipe is clogged, and it damages user's belongings.
- **Do not use the base frame for the outdoor unit which is corroded or damaged after a long period of use.**
  It could cause the unit falling down and injury.
- **Pay attention not to damage the drain pan by weld sputter when brazing work is done near the unit.**
  If sputter entered into the unit during brazing work, it could cause damage (pinhole) of drain pan and leakage of water. To avoid damaging, keep the indoor unit packed or cover the indoor unit.
- **Install the drain pipe to drain the water surely according to the installation manual.**
  Improper connection of the drain pipe may cause dropping water into room and damaging user's belongings.
- **Do not share the drain pipe for indoor unit and GHP (Gas Heat Pump system) outdoor unit.**
  Toxic exhaust gas would flow into room and it might cause serious damage (some poisoning or deficiency of oxygen) to user's health and safety.
- **Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.**
  If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.
- **For drain pipe installation, be sure to make descending slope of greater than 1/100, not to make traps, and not to make air-bleeding.**
  Check if the drainage is correctly done during commissioning and ensure the space for inspection and maintenance.
- **Ensure the insulation on the pipes for refrigeration circuit so as not to condense water.**
  Incomplete insulation could cause condensation and it would wet ceiling, floor, and any other valuables.
- **Do not install the outdoor unit where is likely to be a nest for insects and small animals.**
  Insects and small animals could come into the electronic components and cause breakdown and fire. Instruct the user to keep the surroundings clean.
- **Pay extra attention, carrying the unit by hand.**
  Carry the unit with 2 people if it is heavier than 20kg. Do not use the plastic straps but the grabbing place, moving the unit by hand. Use protective gloves in order to avoid injury by the aluminum fin.
- **Make sure to dispose of the packaging material.**
  Leaving the materials may cause injury as metals like nail and woods are used in the package.
- **Do not operate the system without the air filter.**
  It may cause the breakdown of the system due to clogging of the heat exchanger.
- **Do not touch any button with wet hands.**
  It could cause electric shock.
- **Do not touch the refrigerant piping with bare hands when in operation.**
  The pipe during operation would become very hot or cold according to the operating condition, and it could cause a burn or frostbite.
- **Do not clean up the air conditioner with water.**
  It could cause electric shock.
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown.
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.

○This model is middle static ducted type air-conditioner unit. Therefore, do not use this model for direct blow type air-conditioner unit.

①Before installation

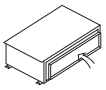
●Install correctly according to the installation manual.

●Confirm the following points:

○Unit type/Power source specification ○Pipes/Wires/Small parts ○Accessory items

Accessory item

For hanging	For refrigerant pipe			For drain pipe			
Flat washer (M10)	Pipe cover (big)	Pipe cover (small)	Strap	Pipe cover (big)	Pipe cover (small)	Drain hose	Hose clamp
							
8	1	1	4	1	1	1	1
For unit hanging	For heat insulation of gas pipe	For heat insulation of liquid tube	For pipe cover fixing	For heat insulation of drain socket	For heat insulation of drain socket	For drain pipe connecting	For drain hose mounting



Accessory parts are stored inside this suction side.

②Selection of installation location for the indoor unit

① Select the suitable areas to install the unit under approval of the user.

- Areas where the indoor unit can deliver hot and cold wind sufficiently. Suggest to the user to use a circulator if the ceiling height is over 3m to avoid warm air being accumulated on the ceiling.
- Areas where there is enough space to install and service.
- Areas where it can be drained properly. Areas where drain pipe descending slope can be taken.
- Areas where there is no obstruction of air flow on both air return grille and air supply port.
- Areas where fire alarm will not be accidentally activated by the air-conditioner.
- Areas where the supply air does not short-circuit.
- Areas where it is not influenced by draft air.
- Areas not exposed to direct sunlight.
- Areas where dew point is lower than around 28°C and relative humidity is lower than 80%.

This indoor unit is tested under the condition of JIS (Japan Industrial Standard) high humidity condition and confirmed there is no problem. However, there is some risk of condensation drop if the air-conditioner is operated under the severer condition than mentioned above. If there is a possibility to use it under such a condition, attach additional insulation of 10 to 20mm thick for entire surface of indoor unit, refrigeration pipe and drain pipe.

- Areas where TV and radio stays away more than 1m. (It could cause jamming and noise.)
- Areas where any items which will be damaged by getting wet are not placed such as food, table wares, server, or medical equipment under the unit.
- Areas where there is no influence by the heat which cookware generates.
- Areas where not exposed to oil mist, powder and/or steam directly such as above fryer.
- Areas where lighting device such as fluorescent light or incandescent light doesn't affect the operation.
  (A beam from lighting device sometimes affects the infrared receiver for the wireless remote control and the air-conditioner might not work properly.)

② Check if the place where the air-conditioner is installed can hold the weight of the unit. If it is not able to hold, reinforce the structure with boards and beams strong enough to hold it. If the strength is not enough, it could cause injury due to unit falling.

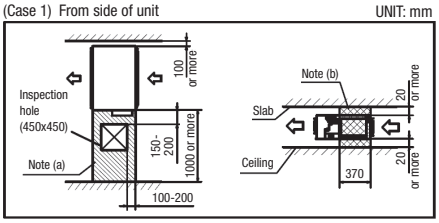
Space for installation and service

●Make installation altitude over 2.5m.

(Indoor Unit)

Select either of two cases to keep space for installation and services.

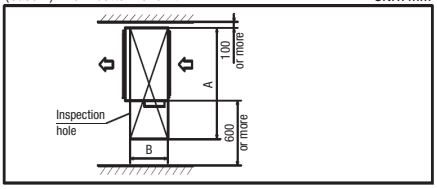
(Case 1) From side of unit UNIT: mm



Notes (a) There must not be obstacle to draw out fan motor. (marked area)

(b) Install refrigerant pipe, drain pipe, and wiring so as not to cross marked area.

(Case 2) From bottom of unit UNIT: mm



(Size of inspection hole) UNIT: mm

Single type	40-50	60-71	100-140
Multi type	22-56	71-90	112-160
A	1100	1300	1720
B	620		725

③Preparation before installation

●If suspension bolt becomes longer, do reinforcement of earthquake resistant.

○For grid ceiling

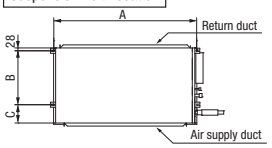
When the suspension bolt length is over 500mm, or the gap between the ceiling and roof is over 700mm, apply earthquake resistant brace to the bolt.

○In case the unit is hanged directly from the slab and is installed on the ceiling plane which has enough strength.

When suspension bolt length is over 1000mm, apply the earthquake resistant brace to the bolt.

●Prepare four (4) sets of suspension bolt, nut and spring washer (M10) on site.

Suspension Bolt Location

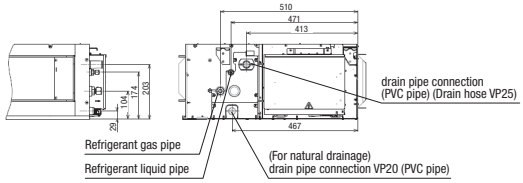


UNIT: mm

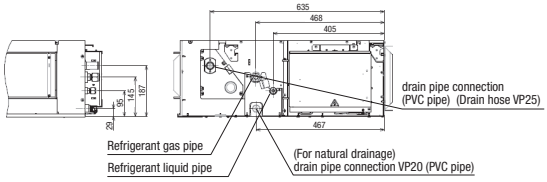
Multi type	22-56	71, 90	112-160
Single type	40-50	60, 71	100-140
A	786	986	1404
B	472	472	530
C	135	135	180

Pipe locations UNIT: mm

Multi type	22-90
Single type	40-71



Multi type	112-160
Single type	100-140

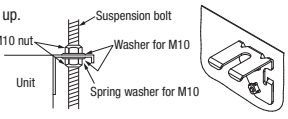


④Installation of indoor unit

Installation

[Hanging]

Hang the unit up.

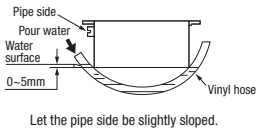


If the measurements between the unit and the ceiling hole do not match upon installation, it may be adjusted with the long holed installation tool.

Adjustment for horizontality

○Either use a level vial, or adjust the level according to the method below.

●Adjust so the bottom side of the unit will be leveled with the water surface as illustrated below.



Let the pipe side be slightly sloped.

○If the unit is not leveled, it may cause malfunctions or inoperation of the float switch.

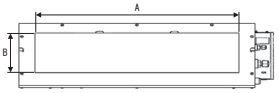
⑤Duct work

①A corrugated board (for preventing sputtering) is attached to the main body of the air-conditioner (on the outlet port). Do not remove it until connecting the duct.
- ●An air filter can be provided on the main body of the air-conditioner (on the inlet port). Remove it when connecting the duct on the inlet port.

②Blowout duct
- ●Use rectangular duct to connect with unit.
  Duct size for each unit is as shown below.

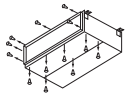
UNIT: mm

Single type	40-50	60-71	100-140
Multi type	22-56	71-90	112-140
A	682	882	1202
B	172	172	172

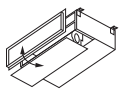


- ●Duct should be at their minimum length.
- ●We recommend to use sound and heat insulated duct to prevent it from condensation.
- ●Connect duct to unit before ceiling attachment.

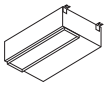
③Inlet port
- ●When shipped the inlet port lies on the back.
- ●When connecting the duct to the inlet port, remove the air filter if it is fitted to the inlet port.
- ●When placing the inlet port to carry out suction from the bottom side, use the following procedure to replace the suction duct joint and the bottom plate.



●Remove the screws which fasten the bottom plate and the duct joint on the inlet port side of the unit.

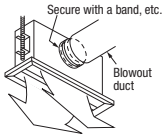


●Replace the removed bottom plate and duct joint.

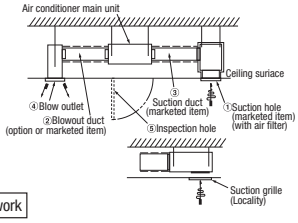


- ●Fit the duct join with a screw; fit the bottom plate.
- ●Make sure to insulate the duct to prevent dewing on it.

④Install the specific blowout duct in a location where the air will circulate to the entire room.
- ●Conduct the installation of the specific blowout hole and the connection of the duct before attaching them to the ceiling.
- ●Insulate the area where the duct is secured by a band for dew condensation prevention.



⑤Make sure provide an inspection hole on the ceiling. It is indispensable to service electric equipment, motor, functional components and cleaning of heat exchanger.



Bad example of duct work

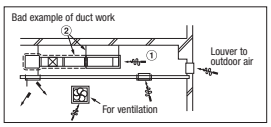
①If a duct is not provided at the suction side but it is substituted with the space over the ceiling, humidity in the space will increase by the influence of capacity of ventilation fan, strength of wind blowing against the out door air louver, weather (rainy day) and others.

a)Moisture in air is likely to condense over the external plates of the unit and to drip on the ceiling. Unit should be operated under the conditions as listed in the above table and within the limitation of wind volume. When the building is a concrete structure, especially immediately after the construction, humidity tends to rise even if the space over the ceiling is not substituted in place of a duct. In such occasion, it is necessary to insulate the entire unit with glass wool (25mm). (Use a wire net or equivalent to hold the glass wool in place.)

b)It may run out the allowable limit of unit operation (Example: When outdoor air temperature is 35°C DB, suction air temperature is 27°C WB) and it could result in such troubles as compressor overload, etc..

c)There is a possibility that the blow air volume may exceed the allowable range of operation due to the capacity of ventilation fan or strength of wind blowing against external air louver so that drainage from be heat exchanger may fall to reach the drain pan but leak outside (Example: drip on to the ceiling) with consequential water leakage in the room.

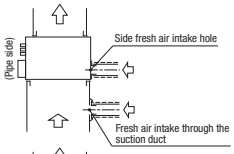
②If vibration damping is not conducted between the unit and the duct, and between the unit and the slab, vibration will be transmitted to the duct and vibration noise may occur. Also, vibration may be transmitted from the unit to the slab. Vibration damping must be performed.



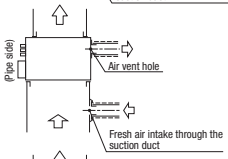
⑤Duct work (continued)

Connecting the air intake/vent ducts

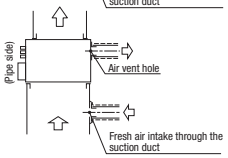
①Fresh Air Intake
[for air intake duct only]
○Use the side fresh air intake hole, or supply through a part of the suction duct.



[for simultaneous air intake/vent]
○Intake air through the suction duct.
(the side cannot be used)



②Air Vent
○Use the side air vent hole.
(always use together with the air intake)

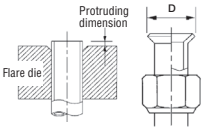


○Insulate the duct to protect it from dew condensation.

⑥Refrigerant pipe

Caution

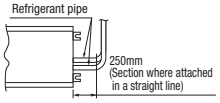
- ●Be sure to use new pipes for the refrigerant pipes. Use the flare nut attached to the product or a nut compatible with JIS B 8607, Class 2.
  Regarding whether existing pipes can be reused or not, and the washing method, refer to the instruction manual of the outdoor unit, catalogue or technical data.
  1) In case of reuse: Do not use old flare nut, but use the one attached to the unit or compatible with JIS B 8607, Class 2.
  2) In case of reuse: Flare the end of pipe replaced partially for R410A.



Pipe dia. d mm	Min. pipe wall thickness mm	Protruding dimension for flare, mm		Flare O.D. D mm	Flare nut tightening torque N·m
		Rigid (Clutch type)			
		For R410A	Conventional tool		
6.35	0.8	0-0.5	0.7-1.3	8.9 - 9.1	14 - 18
9.52	0.8			12.8 - 13.2	34 - 42
12.7	0.8			16.2 - 16.6	49 - 61
15.88	1			19.3 - 19.7	68 - 82
19.05	1.2			23.6 - 24.0	100 - 120

- ●Use phosphorus deoxidized copper alloy seamless pipe (C1220T specified in JIS H 3300) for refrigeration pipe installation.
  In addition, make sure there is no damage both inside and outside of the pipe, and no harmful substances such as sulfur, oxide, dust or a contaminant stuck on the pipes.
- ●Do not use any refrigerant other than R410A.
  Using other refrigerant except R410A (R22 etc.) may degrade inside refrigeration oil. And air getting into refrigeration circuit may cause over-pressure and resultant it may result in bursting, etc.
- ●Store the copper pipes indoors and seal the both end of them until they are brazed in order to avoid any dust, dirt or water getting into pipe. Otherwise it will cause degradation of refrigeration oil and compressor breakdown, etc.
- ●Use special tools for R410A refrigerant.

Piping work



When conducting piping work, make sure to allow the pipes to be aligned in a straight line for at least 250 mm, as shown in the left illustration. (This is necessary for the drain pump to function)

Work procedure

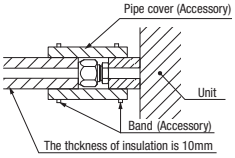
1. Remove the flare nut and blind flanges on the pipe of the indoor unit.
   ※ Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them. (Gas may come out at this time, but it is not abnormal.)
   - ●Pay attention whether the flare nut pops out. (as the indoor unit is sometimes pressured.)
2. Make a flare on liquid pipe and gas pipe, and connect the refrigeration pipes on the indoor unit.
   ※Bend radius of pipe must be 4D or larger. Once a pipe is bent, do not readjust the bending. Do not twist a pipe or collapse to 2/3D or smaller.
   ※Do a flare connection as follows:
   - ●Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them.
   - ●When fastening the flare nut, align the refrigeration pipe with the center of flare nut, screw the nut for 3-4 times by hand and then tighten it by spanner with the specified torque mentioned in the table above. Make sure to hold the pipe on the indoor unit securely by a spanner when tightening the nut in order to avoid unexpected stress on the copper pipe.
3. Cover the flare connection part of the indoor unit with attached insulation material after a gas leakage inspection, and tighten both ends with attached straps.
   - ●Make sure to insulate both gas pipes and liquid pipes completely.
     ※Incomplete insulation may cause dew condensation or water dropping.
   - ●Use heat-resistant (120 °C or more) insulations on the gas side pipes.
   - ●In case of using at high humidity condition, reinforce insulation of refrigerant pipes. Surface of insulation may cause dew condition or water dropping, if insulations are not reinfoced.

⑥Refrigerant pipe (continued)

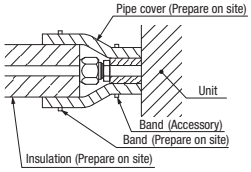
4. Refrigerant is charged in the outdoor unit.
   As for the additional refrigerant charge for the indoor unit and piping, refer to the installation manual attached to the outdoor unit.

Caution:
Refrigerating machine oil should not be applied to the threads of union or external surface of flare. It is because, even if the same tightening torque is applied, the oil is likely to decrease the slide friction force on the threads and increase, in turn, the axial component force so that it could crack the flare by the stress corrosion.
Refrigerating machine oil may be applied to the internal surface of flare only.

<The case of using thicness of insulation is 10mm>



<The case of using reinfoced insulation>



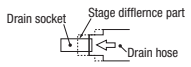
⑦Drain pipe

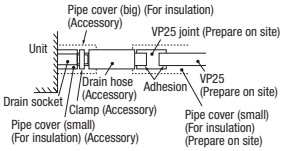
Caution

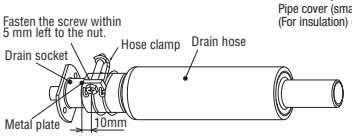
- Install the drain pipe according to the installation manual in order to drain properly. Imperfection in draining may cause flood indoors and wetting the household goods, etc.
- Do not put the drain pipe directly into the ditch where toxic gas such as sulfur, the other harmful and inflammable gas is generated. Toxic gas would flow into the room and it would cause serious damage to user's health and safety (some poisoning or deficiency of oxygen). In addition, it may cause corrosion of heat exchanger and bad smell.
- Connect the pipe securely to avoid water leakage from the joint.
- Insulate the pipe properly to avoid condensation drop.
- Check if the water can flow out properly from both the drain outlet on the indoor unit and the end of the drain pipe after installation.
- Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway. In addition, do not put air vent on the drain pipe. Check if water is drained out properly from the pipe during commissioning. Also, keep sufficient space for inspection and maintenance.

Work procedure

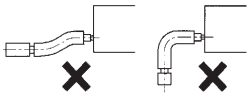
1. Make sure to insert the drain hose (the end mode of soft PVC) to the end of the step part of drain socket.
   Attach the hose clamp to the drain hose around 10mm from the end, and fasten the screw within 5mm left to the nut.
   ●Do not apply adhesives on this end.
   ●Do not use acetone-based adhesives to connect to the drain socket.



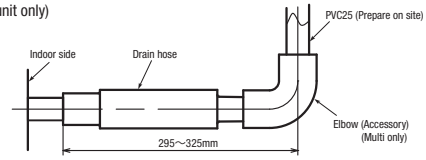




2. Prepare a joint for connecting VP25 pipe, adhere and connect the joint to the drain hose (the end made of rigid PVC), and adhere and connect VP25 pipe (prepare on site).
   ※As for drain pipe, apply VP25 made of rigid PVC which is on the market.
   ●Make sure that the adhesive will not get into the supplied drain hose. It may cause the flexible part broken after the adhesive is dried up and gets rigid.
   ●The flexible drain hose is intended to absorb a small difference at installation of the unit or drain pipes. Intentional bending, expanding may cause the flexible hose broken and water leakage.

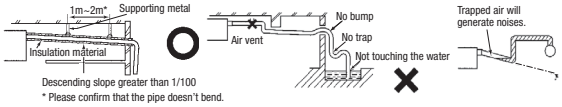


   ●As for drain pipe, apply VP25 (OD32).
   If apply PVC25 (OD25), connect the expanded connector to the drain hose, with adhesive. (Multi unit only)

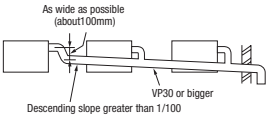


⑦Drain pipe (continued)

3. Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway.
   ●Pay attention not to give stress on the pipe on the indoor unit side, and support and fix the pipe as close place to the unit as possible when connecting the drain pipe.
   ●Do not set up air vent.



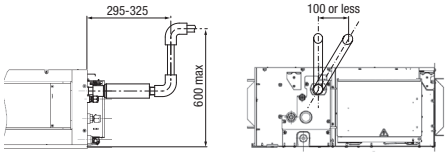
   ●When sharing a drain pipe for more than one unit, lay the main pipe 100mm below the drain outlet of the unit. In addition, select VP30 or bigger size for main drain pipe.



4. Insulate the drain pipe.
   ●Be sure to insulate the drain socket and rigid PVC pipe installed indoors otherwise it may cause dew condensation and water leakage.
   ※After drainage test implementation, cover the drain socket part with pipe cover (small size), then use the pipe cover (big size) to cover the pipe cover (small size), clamps and part of the drain hose, and fix and wrap it with tapes to wrap and make joint part gapless.

Drain up

- The position for drain pipe outlet can be raised up to 600mm above the ceiling. Use elbows for installation to avoid obstacles inside ceiling. If the horizontal drain pipe is too long before vertical pipe, the backflow of water will increase when the unit is stopped, and it may cause overflow of water from the drain pan on the indoor unit. In order to avoid overflow, keep the horizontal pipe length and offset of the pipe within the limit shown in the figure below.



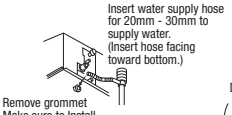
Otherwise, the construction point makes it same as drain pipe construction.

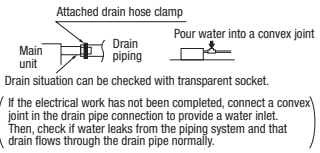
Drain test

1. Conduct a drain test after completion of the electrical work.
2. During the trail, make sure that drain flows properly through the piping and that no water leaks from connections.
3. In case of a new building, conduct the test before it is furnished with the ceiling.
4. Be sure to conduct this test even when the unit is installed in the heating season.

Procedures

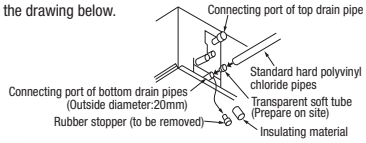
1. Supply about 1000 cc of water to the unit through the air outlet by using a feed water pump.
2. Check the drain while cooling operation.





Outline of bottom drain piping work

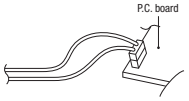
- If the bottom drain piping can be done with a descending gradient (1/50-1/100), it is possible to connect the pipes as shown in the drawing below.



Uncoupling the drain motor connector

- Uncouple the connector CnR for the drain motor as illustrated in the drawing on the right.

(Note: If the unit is run with the connector coupled, drain water will be discharged from the upper drain pipe joint, causing a water leak.)

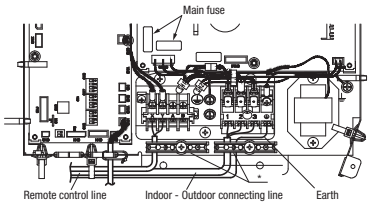


⑧Wiring-out position and wiring connection

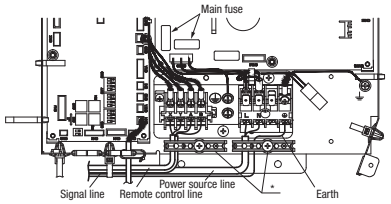
- Electrical installation work must be performed according to the installation manual by an electrical installation service provider qualified by a power provider of the country, and be executed according to the technical standards and other regulations applicable to electrical installation in the country.
  Be sure to use an exclusive circuit.
- Use specified cord, fasten the wiring to the terminal securely, and hold the cord securely in order not to apply unexpected stress on the terminal.
- Do not put both power source line and signal line on the same route. It may cause miscommunication and malfunction.
- For the details of electrical wiring work, see attached instruction manual for electrical wiring work.

1. Remove a lid of the control box (2 screws).
2. Hold each wiring inside the unit and fasten them to terminal block securely.
3. Fix the wiring with clamps.
4. Install the removed parts back to original place.

Single unit wiring connection



Multi unit wiring connection



* Please fix the wiring in the band not to move even if it pulls.

Main fuse specification

Model	Specification	Port No.
22-56	T3.15A L250V	SSA564A149AF
71-160	T5A L250V	SSA564A149AM

⑨External static pressure setting

You can set External Static Pressure (E.S.P.) by either method of MANUAL SETTING or AUTOMATIC SETTING by remote control.
Indoor unit will control fan-speed to keep rated air flow volume at each fan speed setting (Lo-Uhi)

1. MANUAL SETTING
   You can set required E.S.P. by wired remote control that calculated with the set air flow rate and pressure loss of the duct connected.
   Select No.1-10 (10Pa-100Pa) from following table according to calculation result.
   Refer to technical manual for details of air flow characteristic.

Setting No.	1	2	3	4	5	6	7	8	9	10
External Static Pressure (Pa)	10	20	30	40	50	60	70	80	90	100

※ When you set No.11-19 by remote control, unit will control fan-speed with setting of No.10 Factory default is at No.5.

- How to set E.S.P by wired remote control
  ① Push "◆" marked button(E.S.P button).
  ② Select indoor unit No. by using ⬍ button.
  ③ Select setting No. by using ⬍ button and set E.S.P. by ⊙ button.
  See detailed procedure in technical manual.

Notice
You can NOT set E.S.P. by wireless remote control.

Caution
Be sure to set E.S.P. according to actual duct connected.
Wrong settings causes excessive air flow volume or water drop blown out.

2. AUTOMATIC SETTING
   Indoor unit will recognize E.S.P. by itself automatically and select appropriate fan speed No.1-10.

⑨External static pressure setting (continued)

- How to start automatic setting
  ①, ②Same setting as MANUAL SETTING.
  ③ Select [AUT] by using ⬍ button and press ⊙ button .
  ② After setting E.S.P. at "AUT", operate unit in FAN mode with certain fan speed (Lo-Uhi).

Indoor unit fan will run automatically and recognize E.S.P. by itself.
The operation for automatic E.S.P. recognition will last about 6 minutes, and it will be stopped after recognition is completed.

Caution
· Be sure to execute AUTOMATIC SETTING by remote control AFTER ducting work is completed. When duct specification is changed after AUTOMATIC SETTING, be sure to execute AUTOMATIC SETTING again after power resetting and turning on again.
· Be sure to execute AUTOMATIC SETTING before trial cooling operation.
(See ELECTRICAL WIRING WORK INSTRUCTION about trial cooling operation)
· Before AUTOMATIC SETTING, be sure to check that return air filter in duct is installed and damper is opened.
Wrong procedure causes excessive air flow or water drop blown out.

Notice
· During operation for automatic recognition (the Auto Operation), fan rotates with certain speeds regardless of set fan speed by remote control.
· When duct is set with low static pressure (around 10-50Pa), even if indoor unit operate with higher air flow volume than rated one, but it is not abnormal.
· When you changed operation mode or stop operation with ON/OFF button during Auto Operation, the Auto operation will be canceled.
· In such case, be sure to execute AUTOMATIC SETTING again according to above procedure.

⑩Check list after installation

●Check the following items after all installation work completed.

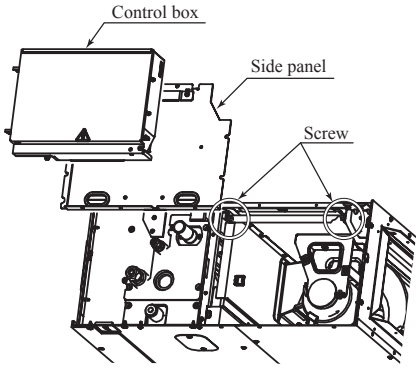
Check if	Expected trouble	Check
The indoor and outdoor units are fixed securely?	Falling, vibration, noise	
Inspection for leakage is done?	Insufficient capacity	
Insulation work is properly done?	Water leakage	
Water is drained properly?	Water leakage	
Power source voltage is same as mentioned in the model name plate?	PCB burnt out, not working at all	
No mis-wiring or mis-connection of piping?	PCB burnt out, not working at all	
Earth wiring is connected properly?	Electric shock	
Cable size comply with specified size?	PCB burnt out, not working at all	
Any obstacle blocks air flow on air inlet and outlet?	Insufficient capacity	
Is setting of E.S.P finished?	Excessive air flow, water drop blow out	

(b) Replacement procedure of the fan unit

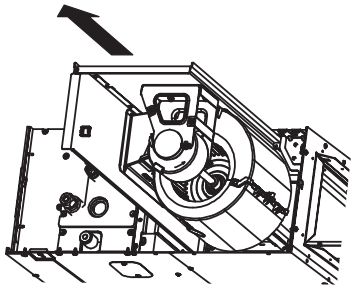
Notes(1) The unit is a heavy item. It must be supported securely and handled with care not to drop when it is necessary to replace.
(2) For the maintenance space, refer to page 199.

(i) Model FDUM50VF

1) Remove the control box and the side panel, and remove the screws marked in the circles (2 places) in the figure.

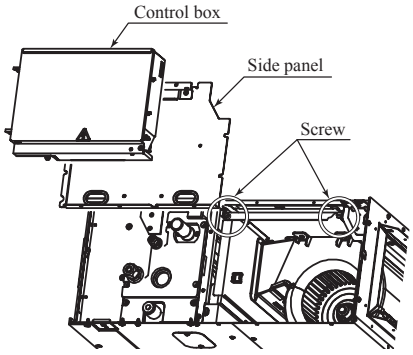


2) Take out the fan unit in the arrow direction.

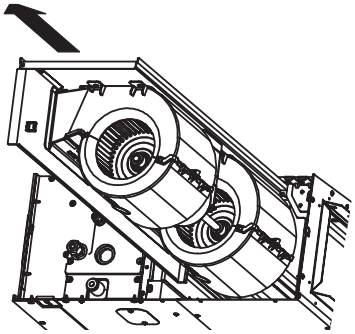


(ii) Models FDUM60VF, 71VF1

1) Remove the control box and the side panel, and remove the screws marked in the circles (2 places) in the figure.

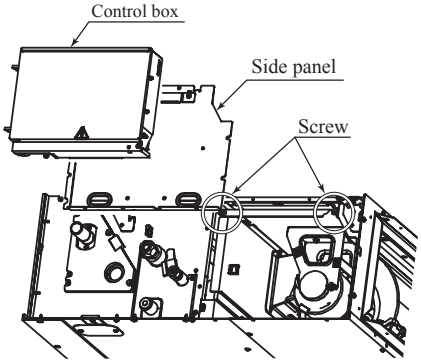


2) Take out the fan unit in the arrow direction.

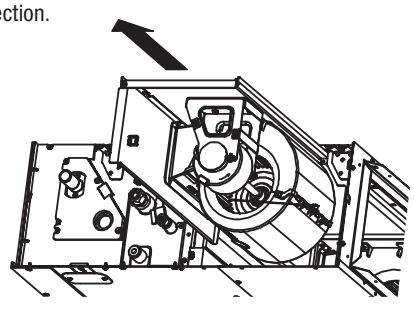


(iii) Models FDUM100VF2, 125VF, 140VF

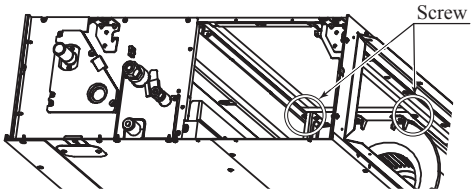
1) Remove the control box and the side panel, and remove the screws marked in the circles (2 places) from the unit located at the near side.



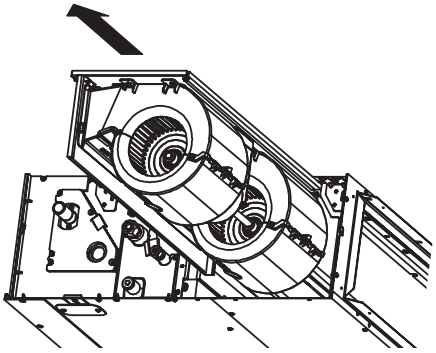
2) Take out the fan unit located at the near side in the arrow direction.



3) Remove the screws marked in the circles (2 places) from the fan unit located at the far side.



4) Take out the fan unit in the arrow direction.



(6) Floor standing type (FDF)

PGA012D404A A

This manual is for the installation of an indoor unit.
For electrical wiring work (Indoor), refer to the page 229. For remote control installation, refer to the page 240. For wireless kit installation, refer to the page 602. For electrical wiring work (Outdoor) and refrigerant pipe work installation for outdoor unit, refer to the page 245.

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .
  ⚠WARNING : Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- The meanings of "Marks" used here are as shown on the right:
  ⃠ Never do it under any circumstances. ❗ Always do it according to the instruction.
- After completing the installation, do commissioning to confirm there are no abnormalities, and explain to the customers about "SAFETY PRECAUTIONS", correct operation method and maintenance method (air filter cleaning, operation method and temperature setting method) with user's manual of this unit.
  Ask your customers to keep this installation manual together with the user's manual. Also, ask them to hand over the user's manual to the new user when the owner is changed.

⚠ WARNING

- **Installation should be performed by the specialist.**
  If you install the unit by yourself, it may lead to serious trouble such as water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Install the system correctly according to these installation manuals.**
  Improper installation may cause explosion, injury, water leakage, electric shock, and fire.
- **Check the density refered by the foumula (accordance with ISO5149).**
  If the density exceeds the limit density, please consult the dealer and installate the ventilation system.
- **Use the genuine accessories and the specified parts for installation.**
  If parts unspecified by our company are used it could cause water leakage, electric shock, fire, and injury due to overturn of the unit.
- **Ventilate the working area well in case the refrigerant leaks during installation.**
  If the refrigerant contacts the fire, toxic gas is produced.
- **Install the unit in a location that can hold heavy weight.**
  Improper installation may cause the unit to fall leading to accidents.
- **Install the unit properly in order to be able to withstand strong winds such as typhoons, and earthquakes.**
  Improper installation may cause the unit to fall leading to accidents.
- **Do not mix air in to the cooling cycle on installation or removal of the air-conditioner.**
  If air is mixed in, the pressure in the cooling cycle will rise abnormally and may cause explosion and injuries.
- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire.
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire.
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire.
- **Check for refrigerant gas leakage after installation is completed.**
  If the refrigerant gas leaks into the house and comes in contact with a fan heater, a stove, or an oven, toxic gas is produced.
- **Use the specified pipe, flare nut, and tools for R410A.**
  Using existing parts (R22) could cause the unit failure and serious accident due to explosion of the cooling cycle.
- **Tighten the flare nut according to the specified method by with torque wrench.**
  If the flare nut were tightened with excess torque, it could cause burst and refrigerant leakage after a long period.
- **Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulfide gas can occur.**
  Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.
- **Connect the pipes for refrigeration circuit securely in installation work before compressor is operated.**
  If the compressor is operated when the service valve is open without connecting the pipe, it could cause explosion and injuries due to abnormal high pressure in the system.
- **Stop the compressor before removing the pipe after shutting the service valve on pump down work.**
  If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.
- **Only use prescribed option parts. The installation must be carried out by the qualified installer.**
  If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire.
- **Consult the dealer or a specialist about removal of the air-conditioner.**
  Improper installation may cause water leakage, electric shock or fire.
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.
- **Do not run the unit when the panel or protection guard are taken off.**
  Touching the rotating equipment, hot surface, or high voltage section could cause an injury to be caught in the machine, to get burned, or electric shock.
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running.

⚠ CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Imperfect earth work (grounding) could cause an electric shock or fire if some trouble or earth leakage occurs.
- **Earth leakage breaker must be installed.**
  Unless the earth leakage circuit breaker is provided, if could cause a fire or electric shock.
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire.
- **Do not install the indoor unit near the location where there is possibility of flammable gas leakages.**
  If the gas leaks and gathers around the unit, it could cause fire.
- **Do not install and use the unit where corrosive gas (such as sulfurous acid gas etc.) or flammable gas (such as thinner, petroleum etc.) may be generated or accumulated, or volatile flammable substances are handled.**
  It could cause the corrosion of heat exchanger, breakage of plastic parts etc. And inflammable gas could cause fire.
- **Secure a space for installation, inspection and maintenance specified in the manual.**
  Insufficient space can result in accident such as personal injury due to falling from the installation place.
- **Do not use the indoor unit at the place where water splashes such as laundry.**
  Indoor unit is not waterproof. It could cause electric shock and fire.
- **Do not use the indoor unit for a special purpose such as food storage, cooling for precision instrument, preservation of animals, plants, and a work of art.**
  It could cause the damage of the items.
- **Do not install nor use the system near equipments which generate electromagnetic wave or high harmonics.**
  Equipments like inverter equipment, private power generator, high-frequency medical equipment, or telecommunication equipment might influence the air-conditioner and cause a malfunction and breakdown. Or the air-conditioner might influence medical equipments or telecommunication equipments, and obstruct their medical activity or cause jamming.
- **Do not install the remote control at the direct sunlight.**
  It could cause breakdown or deformation of the remote control.
- **Do not install the indoor unit at the place listed below.**
  - Places where flammable gas could leak.
  - Places where carbon fiber, metal powder or any powder is floated.
  - Place where the substances which affect the air-conditioner are generated such as sulfide gas, chloride gas, acid, alkali or ammonic atmospheres.
  - Places exposed to oil mist or steam directly.
  - On vehicles and ships
  - Places where machinery which generates high harmonics is used.
  - Places where cosmetics or special sprays are frequently used.
  - Highly salted area such as beach.
  - Heavy snow area
  - Places where the system is affected by smoke from a chimney.
  - Altitude over 1000m
- **Do not install the indoor unit in the locations listed below (Be sure to install the indoor unit according to the installation manual for each model because each indoor unit has each limitation)**
  - Locations with any obstacles which can prevent inlet and outlet air of the unit
  - Locations where vibration can be amplified due to insufficient strength of structure.
  - Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam. (in case of the infrared specification unit)
  - Locations where an equipment affected by high harmonics is placed. (TV set or radio receiver is placed within 5m)
  - Locations where drainage cannot run off safely.

  It can affect performance or function and etc..
- **Do not put any valuables which will break down by getting wet under the air-conditioner.**
  Condensation could drop when the relative humidity is higher than 80% or drain pipe is clogged, and it damages user's belongings.
- **Do not use the base frame for the outdoor unit which is corroded or damaged after a long period of use.**
  It could cause the unit falling down and injury.
- **Pay attention not to damage the drain pan by weld sputter when brazing work is done near the unit.**
  If sputter entered into the unit during brazing work, it could cause damage (pinhole) of drain pan and leakage of water. To avoid damaging, keep the indoor unit packed or cover the indoor unit.
- **Install the drain pipe to drain the water surely according to the installation manual.**
  Improper connection of the drain pipe may cause dropping water into room and damaging user's belongings.
- **Do not share the drain pipe for indoor unit and GHP (Gas Heat Pump system) outdoor unit.**
  Toxic exhaust gas would flow into room and it might cause serious damage (some poisoning or deficiency of oxygen) to user's health and safety.
- **Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.**
  If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.
- **For drain pipe installation, be sure to make descending slope of greater than 1/100, not to make traps, and not to make air-bleeding.**
  Check if the drainage is correctly done during commissioning and ensure the space for inspection and maintenance.
- **Ensure the insulation on the pipes for refrigeration circuit so as not to condense water.**
  Incomplete insulation could cause condensation and it would wet ceiling, floor, and any other valuables.
- **Do not install the outdoor unit where is likely to be a nest for insects and small animals.**
  Insects and small animals could come into the electronic components and cause breakdown and fire. Instruct the user to keep the surroundings clean.
- **Pay extra attention, carrying the unit by hand.**
  Carry the unit with 2 people if it is heavier than 20kg. Do not use the plastic straps but the grabbing place, moving the unit by hand. Use protective gloves in order to avoid injury by the aluminum fin.
- **Make sure to dispose of the packaging material.**
  Leaving the materials may cause injury as metals like nail and woods are used in the package.
- **Do not operate the system without the air filter.**
  It may cause the breakdown of the system due to clogging of the heat exchanger.
- **Do not touch any button with wet hands.**
  It could cause electric shock.
- **Do not touch the refrigerant piping with bare hands when in operation.**
  The pipe during operation would become very hot or cold according to the operating condition, and it could cause a burn or frostbite.
- **Do not clean up the air-conditioner with water.**
  It could cause electric shock.
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown.
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.

①Before installation

○ Install the unit properly according to this instruction manual.
○ Is it in accordance with the construction plan?

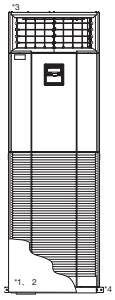
Model and power source specification
Check.
Pipes, wires and small parts
Accessory

(1) **For heat insulation of flare nut** *1

1	Pipe cover		1 pc	For gas side
2	Pipe cover		1 pc	For liquid side
3	Strap		4 pcs	

(2) **For installation** Note) Nos. 1 and 5 are used also as hardware for packing.

1	Fall-prevention fitting		1 pc	*3
2	Wood screw		2 pcs	For No. 1
3	Washer		2 pcs	For No. 2 wood screw
4	Rubber bushing		1 pc	For refrigerant and drain pipes
5	L fitting		2 pcs	*4



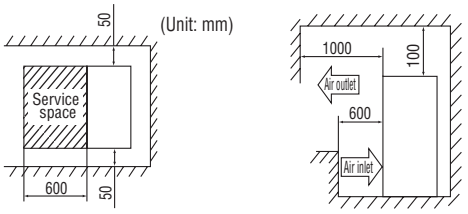
Where the accessories are put in

*1. Open the air inlet grill and Nos. (1) will be found in the unit.
*2. Nos. (2)-2-4 will be found at the same place as 1.
*3. Fall-prevention fitting is mounting on the top panel of the unit.
*4. L-fittings are mounted on the bottom part of the unit.

②Selection of installation place for the indoor unit

① Select the suitable areas to install the unit under approval of the user.
・Areas where the indoor unit can deliver hot and cold wind sufficiently. Suggest to the user to use a circulator if the ceiling height is over 3m to avoid warm air being accumulated on the ceiling.
・Areas where there is enough space to install and service.
・Areas where it can be drained properly. Areas where drain pipe descending slope can be taken.
・Areas where there is no obstruction of air flow on both air return grille and air supply port.
・Areas where fire alarm will not be accidentally activated by the air-conditioner.
・Areas where the supply air does not short-circuit.
・Areas where it is not influenced by draft air.
・Areas not exposed to direct sunlight.
・Areas where dew point is lower than around 23°C and relative humidity is lower than 80%.
This indoor unit is tested under the condition of JIS (Japan Industrial Standard) high humidity condition and confirmed there is no problem. However, there is some risk of condensation drop if the air -conditioner is operated under the severer condition than mentioned above.
If there is a possibility to use it under such a condition, attach additional insulation of 10 to 20mm thick for entire surface of indoor unit, refrigeration pipe and drain pipe.
・Areas where TV and radio stays away more than 1m. (It could cause jamming and noise.)
・Areas where any items which will be damaged by getting wet are not placed such as food, table wares, server, or medical equipment under the unit.
・Areas where there is no influence by the heat which cookware generates.
・Areas where not exposed to oil mist, powder and/or steam directly such as above fryer.
・Areas where lighting device such as fluorescent light or incandescent light doesn't affect the operation. (A beam from lighting device sometimes affects the infrared receiver for the wireless remote control and the air-conditioner might not work properly.)
・When operating the suction air processing unit independently, it operates in the outdoor air processing mode.
Blowout temperatures are not same at the standard unit operation and the outdoor air processing mode operations.
Since the temperatures become higher during cooling or lower during heating, take care of the direction of blowout outlet.
Avoid directing the blowout outlet to the space where people are present.
② Check if the place where the air-conditioner is installed can hold the weight of the unit. If it is not able to hold, reinforce the structure with boards and beams strong enough to hold it. If the strength is not enough, it could cause injury due to unit falling.

Space for installation and service



• Secure sufficient spaces for inspection and maintenance.

⚠WARNING
• Install the unit securely on a floor that can endure its weight sufficiently Insufficient strength or incorrect installation could result in injuries if the unit falls.

ATTENTION: Select a place for installation where the following conditions are fulfilled with customer's consent.
• Where cool or hot air can be blown sufficiently and widely.
• Where the piping and wiring work to outdoor unit can be done easily.
• Where drainage water can run off completely.
• Where the installation floor is strong enough.
• Where the unit its protected from direct exposure to sunlight.
• Where there is no obstacle at he air inlet and air outlet.
• Where the fire alarm apparatus will not be activated by malfunction.
Where There is no risk for short-circuit of air.

③Carrying-in and installation of the unit

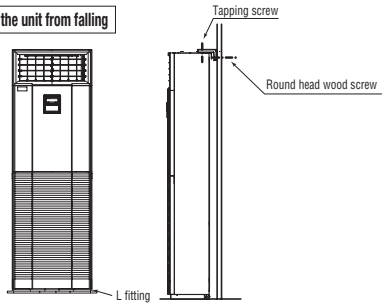
Carrying-in

Carry with the front face at top.

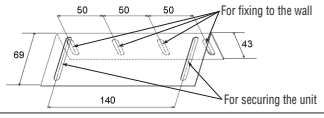
ATTENTION:
• Carry in the unit kept in a package as near as possible to the installation place.
• When it is necessary to unpack the unit before carrying in, sufficient care must be taken not to damage it by using nylon slings or the like.
Note) Do not hold on the air inlet grill, air outlet louver or other sections made of plastics.
• When placing the unit on the floor after unpacking, be sure to have its front face at the top.

ATTENTION:
• Be sure to fix the unit with L-fittings and the fall-prevention fitting.
・Since the unit is tall, secure the unit no sooner than setting it in place.

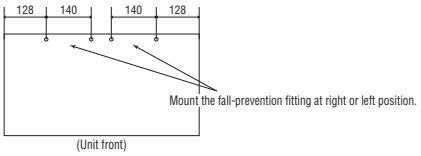
Procedure for preventing the unit from falling



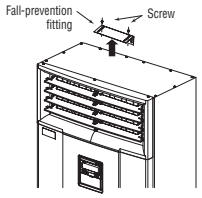
Fall-prevention fitting



Top panel

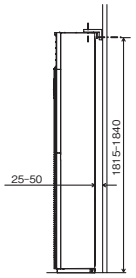
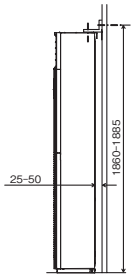


(1) Fixing the unit with the fall-prevention fitting



①Loosen screws (2 pcs) and remove the fall-prevention fitting.
②Select a position to fix the fall-prevention fitting as illustrated and fix it to the top of unit and the wall.
・The fixing positon of the fall-prevention fitting is as illastrated below.

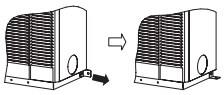
Fixing position (Fall-prevention fitting)

Fitting facing upward	Fitting facing downward
	

• Dimensions indicate the allowance for adjustment between the unit and the wall or floor.
• Fix the longer side of fitting to the unit.
• When the fitting is faced downward, fix it to the wall first.

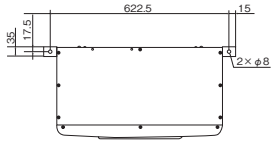
③Carrying-in and installation of the unit (Continued)

(2) Fixing the unit with the L-fittings



①Remove the L-fittings mounted on the unit with screws.
②Turn over the L-fitting and fix it to the unit and either the floor or the wall as illustrated.
• Fixing position of the L-fittings are as illustrated below.

Fixing position (L fitting)

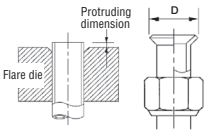


ATTENTION:
• Install the unit on the level.
Inclination must be less than 1°in fore-aft and right-left directions.

④Refrigerant piping

Caution

●Be sure to use new pipes for the refrigerant pipes. Use the flare nut attached to the product or a nut compatible with JIS B 8607, Class 2.
Regarding whether existing pipes can be reused or not, and the washing method, refer to the instruction manual of the outdoor unit, catalogue or technical data.
1) In case of reuse: Do not use old flare nut, but use the one attached to the unit or compatible with JIS B 8607, Class 2.
2) In case of reuse: Flare the end of pipe replaced partially for R410A.



Pipe dia. d mm	Min. pipe wall thickness mm	Protruding dimension for flare, mm		Flare O.D. D mm	Flare nut tightening torque N·m
		Rigid (Clutch type)			
		For R410A	Conventional tool		
6.35	0.8	0 − 0.5	0.7 − 1.3	8.9 − 9.1	14 − 18
9.52	0.8			12.8 − 13.2	34 − 42
12.7	0.8			16.2 − 16.6	49 − 61
15.88	1			19.3 − 19.7	68 − 82
19.05	1.2			23.6 − 24.0	100 − 120

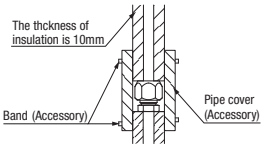
●Use phosphorus deoxidized copper alloy seamless pipe (C1220T specified in JIS H 3300) for refrigeration pipe installation.
In addition, make sure there is no damage both inside and outside of the pipe, and no harmful substances such as sulfur, oxide, dust or a contaminant stuck on the pipes.
●Do not use any refrigerant other than R410A.
Using other refrigerant except R410A (R22 etc.) may degrade inside refrigeration oil. And air getting into refrigeration circuit may cause over-pressure and resultant it may result in bursting, etc.
●Store the copper pipes indoors and seal the both end of them until they are brazed in order to avoid any dust, dirt or water getting into pipe. Otherwise it will cause degradation of refrigeration oil and compressor breakdown, etc.
●Use special tools for R410A refrigerant.

Work procedure

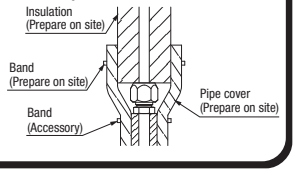
1. Remove the flare nut and blind flanges on the pipe of the indoor unit.
※ Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them. (Gas may come out at this time, but it is not abnormal.)
● Pay attention whether the flare nut pops out. (as the indoor unit is sometimes pressured.)
2. Make a flare on liquid pipe and gas pipe, and connect the refrigeration pipes on the indoor unit.
※Bend radius of pipe must be 4D or larger. Once a pipe is bent, do not readjust the bending. Do not twist a pipe or collapse to 2/3D or smaller.
※Do a flare connection as follows:
● Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them.
● When fastening the flare nut, align the refrigeration pipe with the center of flare nut, screw the nut for 3-4 times by hand and then tighten it by spanner with the specified torque mentioned in the table above. Make sure to hold the pipe on the indoor unit securely by a spanner when tightening the nut in order to avoid unexpected stress on the copper pipe.
3. Cover the flare connection part of the indoor unit with attached insulation material after a gas leakage inspection, and tighten both ends with attached straps.
● Make sure to insulate both gas pipes and liquid pipes completely.
※Incomplete insulation may cause dew condensation or water dropping.
● Use heat-resistant (120 °C or more) insulations on the gas side pipes.
● In case of using at high humidity condition, reinforce insulation of refrigerant pipes.
Surface of insulation may cause dew condition or water dropping, if insulations are not reinfoced.
4. Refrigerant is charged in the outdoor unit.
As for the additional refrigerant charge for the indoor unit and piping, refer to the installation manual attached to the outdoor unit.

Caution:
Refrigerating machine oil should not be applied to the threads of union or external surface of flare. It is because, even if the same tightening torque is applied, the oil is likely to decrease the slide friction force on the threads and increase, in turn, the axial component force so that it could crack the flare by the stress corrosion.
Refrigerating machine oil may be applied to the internal surface of flare only.

〈The case of using thicness of insulation is 10mm〉

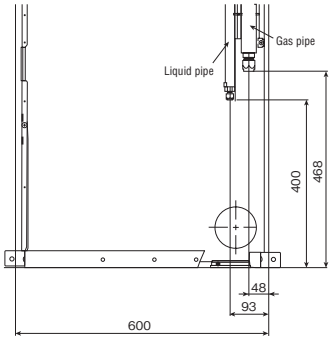


〈The case of using reinfoced insulation〉



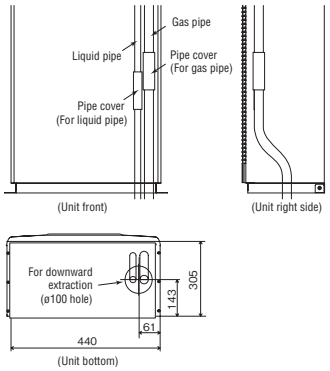
④Refrigerant piping (Continued)

◆ **Pipe and wire extracting position**

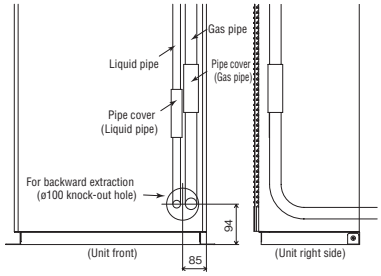


ATTENTION:
• Do not cut off the flange at the hole on the base plate for the downward extraction.

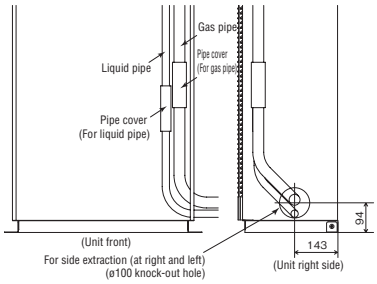
Downward extraction



Backward extraction



Sideward extraction



⑤Drain pipe

⚠WARNING

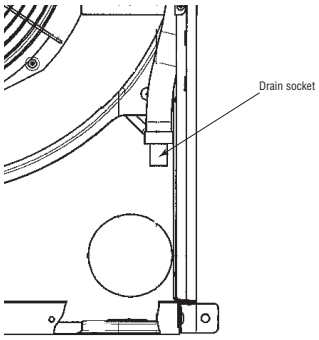
- Do not insert the drain pipe directly in the drain ditch where toxic gases such as sulffuric gas are produced.
  Toxic gas may flow into the room.

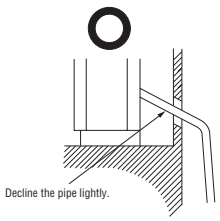
⚠CAUTION

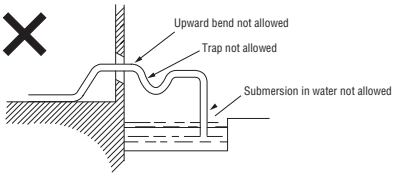
- Install the drain pipe properly according to the installation manual and insulate it to prevent from dew condensation.
  Improper installation of drain pipe may cause damage of furniture drainage water leaked or dew condensation.

Procedure

1. Connect the drain socket to the drain pipe (VP20) provided at site and fix the joint with adhesive tape, or the like.
2. When the pipe provided at site runs through a room, insulate the pipe with a commercial insulator (Polyethylene foam: Specific gravity 0.03, thickness 15 mm or more) to prevent dewing.







ATTENTION:

- Insulate the drain pipe to prevent dewing. (Especially in room and unit)
- Incline the drain pipe downward to the outlet (1/50 – 1/100). Upward bend or trap is not allowed on the way.
- Use a commercial hard polyvinyl chloride pipe, VP20, for the drain pipe.

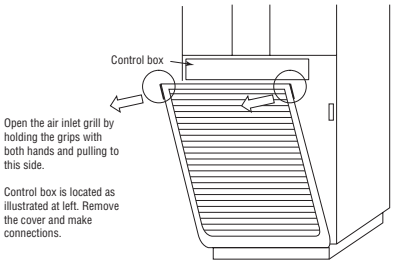
<Use of adhesive agent is prohibited.>

⑥Wire extracting position and wire connecton

Control box position and power cable connection

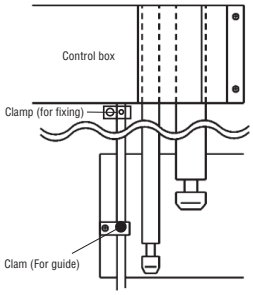
- Electric work must be made by qualified electricians according to the "Engineering standards concerning electric equipment", "Extension wiring regulations" and the electric wiring work manual. Be sure to use dedicated electric circuits.
- Make sure to use specified wires for wiring, and connect them securely. Clamp the wires to protect the terminal connection from external force.
- Make sure to protect the unit with the D-type grounding work.
- For details of wiring work, refer to the attached electric wiring work manual.

⑥Wire extracting position and wire connecton (Continued)

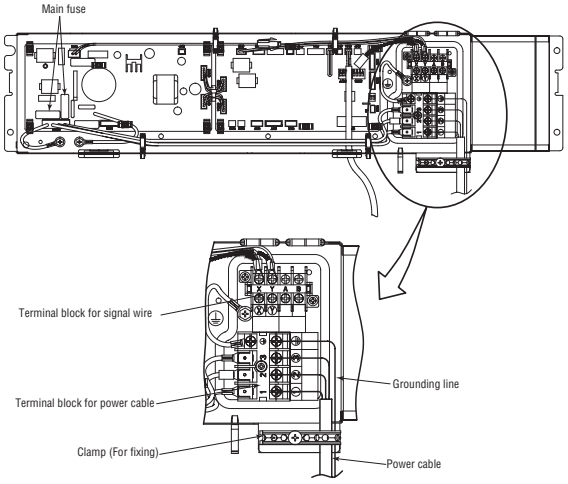


Procedure

①Remove the control box cover (fixed with a screw).
②Introduce wires in the unit and connect securely on the terminals.
③Fix each wire with a clamp (for fixing).
④Install removed parts as they were.



- Make sure to pass the power cable through the clamp (for guide).



Main fuse specification

Specification	Part No.
T3.15A L250V	SSA564A149AF

⑦Check list after installation

●Check the following items after all installation work completed.

Check if;	Expected trouble	Check
The indoor and outdoor units are fixed securely?	Falling, vibration, noise	
Inspection for gas leakage is done?	Insufficient capacity	
Insulation work is properly done?	Water leakage	
Water is drained properly?	Water leakage	
Power source voltage is same as mentioned in the model name plate?	PCB burnt out, not working at all	
There is mis-wiring or mis-connection of piping?	PCB burnt out, not working at all	
Earth wiring is connected properly?	Electric shock	
Cable size comply with specified size?	PCB burnt out, not working at all	
Any obstacle blocks air flow on air inlet and outlet?	Insufficient capacity	

(7) Wall mounted type (SRK)

(a) Models SRK50ZSX-S, 60ZSX-S

RLF012A200⚠

Model SRK20,25,35,50,60ZSX-S
R410A REFRIGERANT USED

• This installation manual deals with an indoor unit installation only. For an outdoor unit installation, refer to page 245.

SAFETY PRECAUTIONS

• Before installation, read the "SAFETY PRECAUTIONS" carefully and strictly follow it during the installation work in order to protect yourself.

• The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION.

⚠WARNING Indicates a potentially hazardous situation which, if not avoided, can result in serious consequences such as death or severe injury.

⚠CAUTION Indicates a potentially hazardous situation which, if not avoided, can result in personal injury or property damage.

Both mention the important items to protect your health and safety. Therefore, strictly follow them by any means.

• Be sure to confirm no operation problem on the equipment after completing the installation. If unusual noise can be heard during the test run, consult the dealer.

• Be sure to explain the operating methods as well as the maintenance methods of this equipment to the user according to the user's manual.

• Be sure to keep the installation manual together with user's manual at a place where it is easily accessible to the user any time. Moreover, ask the user to hand the manuals to a new user, whenever required.

⚠ WARNING

- **Be sure to use only for residential purpose.**
  If this unit is installed in inferior environment such as machine shop, vehicle (like ship), warehouse, etc., it can malfunction.
- **Installation must be carried out by the qualified installer completely in accordance with the installation manual.**
  Installation by non qualified person or incorrect installation can cause serious troubles such as water leak, electric shock, fire and personal injury.
- **Be sure to wear protective goggles and gloves while performing installation work.**
  Improper safety measures can result in personal injury.
- **Use the original accessories and the specified components for the installation.**
  Using parts other than those prescribed may cause water leak, electric shock, fire and personal injury.
- **Do not install the unit near the location where leakage of flammable gases can occur.**
  If leaked gases accumulate around the unit, it can cause fire resulting in property damage and personal injury.
- **When installing the unit in small rooms, make sure that refrigerant density does not exceed the limit (Reference: ISO5149) in the event of leakage.**
  If refrigerant density exceeds the limit, consult the dealer and install the ventilation system.
  Otherwise lack of oxygen can occur resulting in serious accident.
- **Install the unit in a location where unit will remain stable, horizontal and free of any vibration transmission.**
  Unsuitable installation location can cause the unit to fall resulting in material damage and personal injury.
- **Do not run the unit with removed panels or protections.**
  Touching rotating equipments, hot surfaces or high voltage parts can cause personal injury due to entrapment, burn or electric shock.
- **This unit is designed specifically for R410A.**
  Using any other refrigerant can cause unit failure and personal injury.
- **Do not vent R410A into atmosphere.**
  R410A is a fluorinated greenhouse gas with a Global Warming Potential(GWP)=2088.
- **Make sure that no air enters the refrigerant circuit when the unit is installed and removed.**
  If air enters the refrigerant circuit, the pressure in the refrigerant circuit will become too high, which can cause burst and personal injury.
- **Be sure to use the prescribed pipes, flare nuts and tools for R410A.**
  Using existing parts (for R22 or R407C) can cause refrigerant circuit burst resulting in unit failure and personal injury.
- **Be sure to connect both liquid and gas connecting pipes properly before operating the compressor.**
  Do not open the liquid and gas service valves before completing piping work, and evacuation.
  If the compressor is operated when connecting pipes are not connected and service valves are open, air can be sucked into the refrigerant circuit which can cause anomalous high pressure resulting in burst or personal injury.
- **Be sure to tighten the flare nuts to specified torque using the torque wrench.**
  Tightening flare nuts with excess torque can cause burst and refrigerant leakage after a long period.
- **During pump down work, be sure to stop the compressor before closing service valves and removing connecting pipes.**
  If the connecting pipes are removed when the compressor is in operation and service valves are open, air can be sucked into the refrigerant circuit which can cause anomalous high pressure resulting in burst or personal injury.
- **In the event of refrigerant leakage during installation, be sure to ventilate the working area properly.**
  If the refrigerant comes into contact with naked flames, poisonous gases will be produced.
- **Electrical work must be carried out by the qualified electrician, strictly in accordance with national or regional electricity regulations.**
  Incorrect installation can cause electric shock, fire or personal injury.
- **Make sure that earth leakage breaker and circuit breaker of appropriate capacities are installed.**
  Circuit breaker should be able to disconnect all poles under over current. Absence of appropriate breakers can cause electric shock, personal injury or property damage.
- **Be sure to switch off the power source in the event of installation, maintenance or service.**
  If the power source is not switched off, there is a risk of electric shock, unit failure or personal injury.
- **Be sure to tighten the cables securely in terminal block and relieve the cables properly to prevent overloading the terminal blocks.**
  Loose connections or cable mountings can cause anomalous heat production or fire.
- **Do not process, splice or modify the power cable, or share the socket with other power plugs.**
  Improper power cable or power plug can cause fire or electric shock due to poor connection, insufficient insulation or over-current.
- **Do not perform any change in protective device or its setup condition yourself.**
  Changing protective device specifications can cause electric shock, fire or burst.
- **Be sure to clamp the cables properly so that they do not touch any internal component of the unit.**
  If cables touch any internal component, it can cause overheating and fire.
- **Be sure to install service cover properly.**
  Improper installation can cause electric shock or fire due to intrusion of dust or water.
- **Be sure to use the prescribed power and connecting cables for electrical work.**
  Using improper cables can cause electric leak, anomalous heat production or fire.
- **This appliance must be connected to main power source by means of a circuit breaker or switch with a contact separation of at least 3mm.**
  Improper electrical work can cause unit failure or personal injury.
- **When plugging this unit, a plug conforming to the norm IEC60884-1 must be used.**
  Using improper plug can cause electric shock or fire.
- **Be sure to connect the power source cable with power source properly.**
  Improper connection can cause intrusion of dust or water resulting in electric shock or fire.

⚠ CAUTION

- **Take care when carrying the unit by hand.**
  If the unit weight is more than 20kg, it must be carried by two or more persons.
  Do not carry the unit by the plastic straps. Always use the carry handle.
- **Do not install the outdoor unit in a location where insects and small animals can inhabit.**
  Insects and small animals can enter the electrical parts and cause damage resulting in fire or personal injury. Instruct the user to keep the surroundings clean.
- **If the outdoor unit is installed at height, make sure that there is enough space for installation, maintenance and service.**
  Insufficient space can result in personal injury due to falling from the height.
- **Do not install the unit near the location where neighbours are bothered by noise or air generating from the unit.**
  It can affect surrounding environment and cause a claim.
- **Do not install in the locations where unit is directly exposed to corrosive gases (like sulphide gas, chloride gas), sea breeze or salty atmosphere.**
  It can cause corrosion of heat exchanger and damage to plastic parts.
- **Do not install the unit close to the equipments that generate electromagnetic waves and/or high-harmonic waves.**
  Equipment such as inverters, standby generators, medical high frequency equipments and telecommunication equipments can affect the system, and cause malfunctions and breakdowns.
  The system can also affect medical equipment and telecommunication equipment, and obstruct its function or cause jamming.
- **Do not install the unit in the locations where:**
  • There are heat sources nearby.
  • Unit is directly exposed to rain or sunlight.
  • There is any obstacle which can prevent smooth air circulation from inlet and outlet side of the unit.
  • Unit is directly exposed to oil mist and steam such as kitchen.
  • Chemical substances like ammonia (organic fertilizer), calcium chloride (snow melting agent) and acid (sulfurous acid etc.), which can harm the unit, will generate or accumulate.
  • Drain water can not be discharged properly.
  • TV set or radio receiver is placed within 1m.
  • Height above sea level is more than 1000m.
  It can cause performance degradation, corrosion and damage of components, unit malfunction and fire.
- **Dispose of all packing materials properly.**
  Packing materials contain nails and wood which can cause personal injury.
  Keep the polybag away from children to avoid the risk of suffocation.
- **Do not put anything on the outdoor unit.**
  Object may fall causing property damage or personal injury.
- **Do not touch the aluminum fin of the outdoor unit.**
  Aluminium fin temperature is high during heating operation. Touching fin can cause burn.
- **Do not touch any refrigerant pipe with your hands when the system is in operation.**
  During operation the refrigerant pipes become extremely hot or extremely cold depending on the operating condition. Touching pipes can cause personal injury like burn (hot/cold).
- **Install isolator or disconnect switch on the power source wiring in accordance with the local codes and regulations.**
  The isolator should be locked in OFF state in accordance with EN60204-1.

1. ACCESSORIES AND TOOLS

Standard accessories (supplied with indoor unit)

(1)	Installation board	1pc	(5)	Wood screws (for remote control holder ø3.5 X 16mm)		2pcs
(2)	Wireless remote control	1pc	(6)	Batteries [R03 (AAA, Micro) 1.5V]		2pcs
(3)	Remote control holder	1pc	(7)	Air-cleaning filters		2pcs
(4)	Tapping screws (for installation board ø4 X 25mm)	4pcs	(8)	Insulation (#486 50 X 100 t3)		1pc

Locally procured parts

(a)	Sleeve (1pc)
(b)	Sealing plate (1pc)
(c)	Inclination plate (1pc)
(d)	Putty
(e)	Connecting cable
(f)	Drain hose (extension hose)
(g)	Piping cover (for insulation of connection piping)
(h)	Clamp and screw (for finishing work)
(i)	Electrical tape

Tools for installation Work

Plus headed driver	Pipe cutter
Knife	Hole core drill (65mm in diameter)
Saw	Wrench key (Hexagon) [4mm]
Tape measure	Flaring tool set*
Torque wrench (14.0-62.0N·m (1.4-6.2kgf·m))	Gas leak detector*
	Pipe bender
Plier	Flare adjustment gauge

* Designed specifically for R410A

2. SELECTING INSTALLATION LOCATION

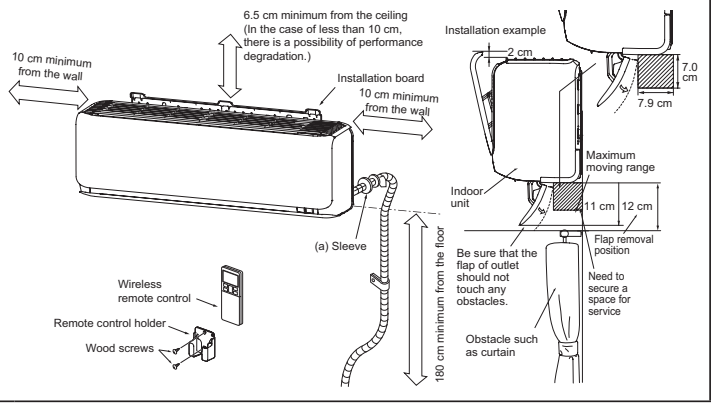
After getting customer's approval, select installation location according to following guidelines.

1. Indoor unit

- Where there is no obstruction to the airflow and where the cooled and heated air can be evenly distributed.
- A solid place where the unit or the wall will not vibrate.
- A place where there will be enough space for servicing. (Where space mentioned on the right side can be secured.)
- Where it is easy to conduct wiring and piping work.
- A place where unit is not directly exposed to sunlight or street light.
- A place where it can be easily drained.
- A place separated at least 1m away from the television or the radio. (To prevent interference to images and sounds.)
- A place where this unit is not affected by the high frequency equipment or electric equipment.
- Avoid installing this unit in place where there is much oil mist.
- A place where there is no electric equipment or household.
- Install the indoor unit on the wall where the height from the floor to the bottom of the unit is more than 180 cm.

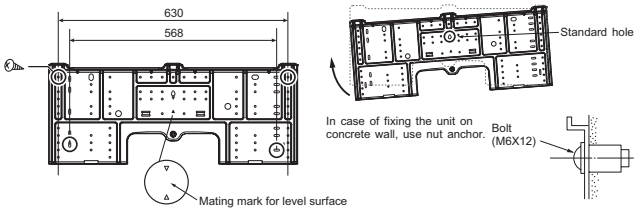
2. Wireless remote control

- A place where the air-conditioner can receive the signal surely during operating the wireless remote control.
- A place where it is not affected by the TV and radio etc.
- Do not place where it is exposed to direct sunlight or near heat devices such as a stove.



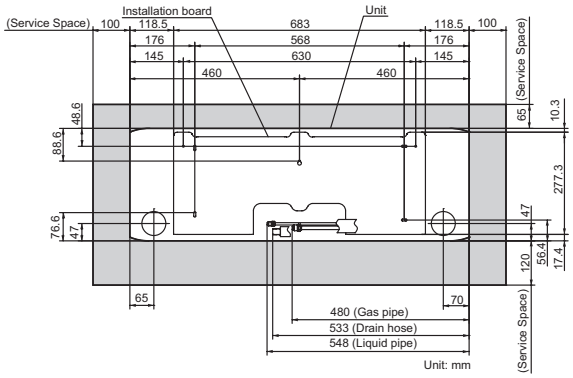
3. INSTALLING INSTALLATION BOARD

- Installation board should be installed on the wall which can support the weight of the indoor unit.
- Adjustment of the installation board in the horizontal direction is to be conducted with 4 screws in a temporary tightened state.
- With the standard hole as a center, adjust the board and level it.



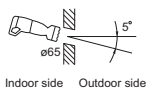
⚠ CAUTION

Improper adjustment of the installation board can cause water leakage.

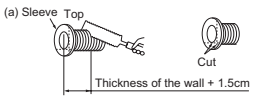


4. DRILLING HOLE AND FIXTURE OF SLEEVE

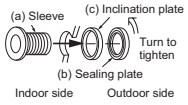
When drilling the wall that contains a metal lath, wire lath or metal plate, be sure to use sealing plate, sleeve and inclination plate (Locally procured parts).



(1) Drill a hole with hole core drill.



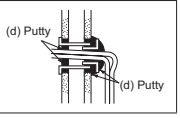
(2) Cut sleeve to adjust to wall thickness. In case of rear piping draw out, cut off the lower and the right side portions of the sleeve collar.



(3) Fix sealing plate, sleeve and inclination plate.

⚠ CAUTION

After passing the wirings and pipes through the hole, completely seal the hole on the wall with putty to prevent water leakage.



5. ELECTRICAL WIRING WORK

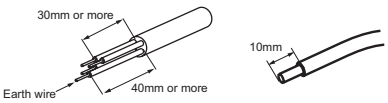
- Before installation, make sure that the power source complies with the air-conditioner's power specification.
- Carry out electrical wiring work according to following guidelines.

1. Preparing cable

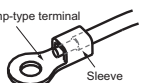
(1) Selecting cable
Select the connecting cable in accordance with the specifications mentioned below.
4-core* 1.5mm² conformed with 60245 IEC57 (CENELEC H05RN-F)
* 1 Earth wire is included (Yellow/Green).

(2) Arrange each wire length as shown below.
Make sure that each wire is stripped 10mm from the end.

<Connecting cable> <Wire end>



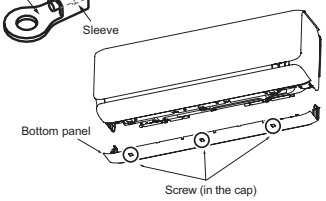
(3) Attach round crimp-type terminal to each wire as shown in the below.
Select the size of round crimp-type terminal after considering the specifications of terminal block and wire diameter.



2. Remove bottom panel

(1) Remove the 3 screws (in the cap).
(2) Remove the hooks of left and right side and then bottom panel can be removed.

NOTE
- Open the cap using a fine-tipped tool.
- When opening the cap, exercise care not to damage the design surface.

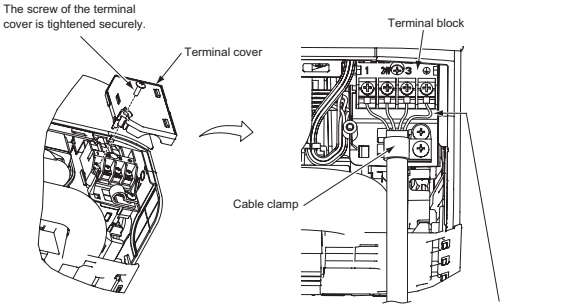


3. Connecting cable

(1) Remove the terminal cover.
(2) Remove the cable clamp.
(3) Connect the connecting wires to the terminal block.
(4) Fix the connecting cable by cable clamp.
(5) Fix the terminal cover.

NOTE

Take care not to confuse the terminal numbers for indoor and outdoor connections.



⚠ CAUTION

Incorrect wiring connection can cause malfunction or fire.

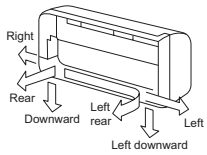
6. FORMING PIPING AND DRAIN HOSE

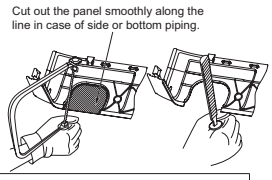
1. Forming piping

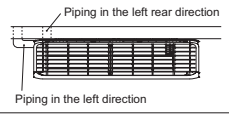
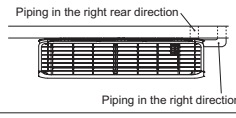
Piping is possible in the right, rear, downward, left, left rear or left downward direction.

NOTE

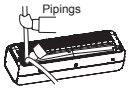
Sufficient care must be taken not to damage the panels when connecting pipes.





Left hand side piping	Right hand side piping
	

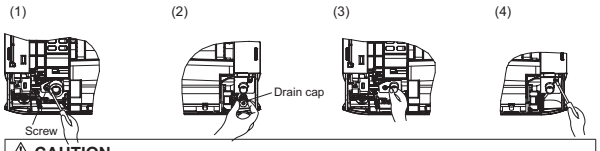
Forming of pipings
- Hold the bottom of the piping and fix direction before stretching it and shaping it.



Taping of the exterior
- Tape only the portion that goes through the wall.
- Always tape the wiring with the piping.

2. Drain change procedures

(1) Remove the screw and drain hose.
(2) Remove the drain cap by hand or pliers.
(3) Insert the drain cap which was removed at procedure (2) securely using a hexagonal wrench etc.
(4) Install the drain hose and screw securely.

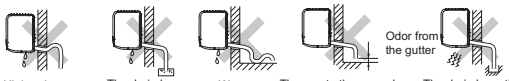


⚠ CAUTION

Incorrect installation of drain hose and cap can cause water leakage.

7. DRAINAGE WORK

- Arrange the drain hose in a downward angle.
- Avoid the following drain piping.

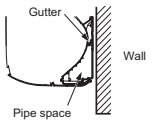


- Pour water to the drain pan located under the heat exchanger, and ensure that the water is discharged outdoor.
- When extended drain hose is present inside the room, insulate it securely with heat insulator available in the market.

Since this air-conditioner is designed to collect dew drops on the rear surface to the drain pan, do not install the connecting wire above the gutter.

⚠ CAUTION

Incorrect drainage work can cause water leakage.



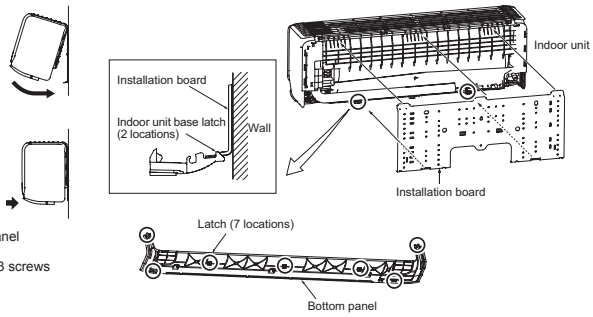
8. INSTALLING INDOOR UNIT

1. Installing the indoor unit to installation board

(1) Pass the pipe through the hole in the wall, and hook the upper part of the indoor unit to the installation board.

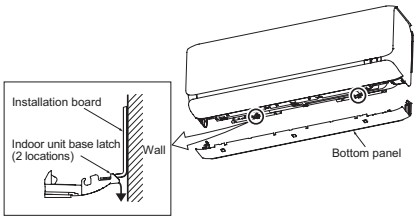
(2) Gently push the lower part to fix the indoor unit base lower latch to installation board.

(3) Install the latches of the bottom panel (7 locations).
Secure the bottom panel with the 3 screws (in the cap).



2. Removing the indoor unit from installation board

(1) Remove the bottom panel. (Refer to 5.2)
(2) Pull the indoor unit base latch downward. (both right and left hand sides). (The indoor unit base latch can be removed from the installation board.)
(3) Push up the indoor unit upward so that it can be removed from installation board.



9. CONNECTING PIPING WORK

1. Preparation of connecting pipe

1.1. Selecting connecting pipe

Select connecting pipe according to the following table.

	Model SRK20/25/35	Model SRK50/60
Gas pipe	ø9.52	ø12.7
Liquid pipe	ø6.35	ø6.35

- Pipe wall thickness must be greater than or equal to 0.8 mm.
- Pipe material must be O-type (Phosphorus deoxidized seamless copper pipe ICS 23.040.15, ICS 77.150.30).

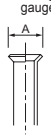
1.2. Cutting connecting pipe

(1) Cut the connecting pipe to the required length with pipe cutter.
(2) Hold the pipe downward and remove the burrs. Make sure that no foreign material enters the pipe.
(3) Cover the connecting pipe ends with the tape.

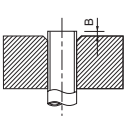
2. Piping work

2.1. Flaring pipe

(1) Take out flare nuts from the service valves of indoor unit and engage them onto connecting pipes.
(2) Flare the pipes according to table and figure shown below.
Flare dimensions for R410A are different from those for conventional refrigerant.
Although it is recommended to use the flaring tools designed specifically for R410A, conventional flaring tools can also be used by adjusting the measurement of protrusion B with a flare adjustment gauge.



Copper pipe outer diameter	A 0 −0.4
ø6.35	9.1
ø9.52	13.2
ø12.7	16.6

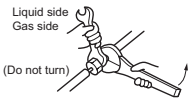


Copper pipe outer diameter	Rigid (clutch) type	
	R410A	Conventional
ø6.35	0 - 0.5	1.0 - 1.5
ø9.52		
ø12.7		

2.2 Connecting pipes

(1) Connect pipes on both liquid and gas sides.
(2) Tighten nuts to specified torque shown in the table below.

Operation valve size (mm)	Tightening torque (N·m)
ø6.35 (1/4")	14-18
ø9.52 (3/8")	34-42
ø12.7 (1/2")	49-61

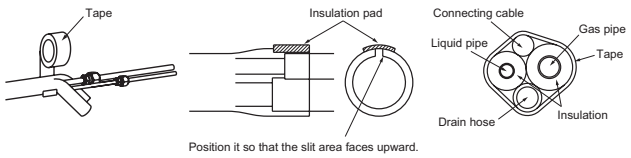


⚠ CAUTION

- Do not apply refrigerating machine oil to the flared surface. It can cause refrigerant leakage.
- Do not apply excess torque to the flared nuts. The flared nuts may crack resulting in refrigerant leakage.

3. Heating and condensation prevention

(1) Dress the connecting pipes (both liquid and gas pipes) with insulation to prevent it from heating and dew condensation.
Use the heat insulating material which can withstand 120°C or higher temperature. Make sure that insulation is wrapped tightly around the pipes and no gap is left between them.
(2) Wrap the refrigerant pipings of indoor unit with indoor unit heat insulation using tape.
(3) Cover the flare-connected joints (indoor side) with the indoor unit heat insulation and wrap it with an insulation pad (standard accessory provided with indoor unit).
(4) Wrap the connecting pipes, connecting cable and drain hose with the tape.



NOTE

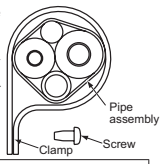
Locations where relative humidity exceeds 70%, both liquid and gas pipes need to be dressed with 20mm or thicker heat insulation materials.

⚠ CAUTION

- Improper insulation can cause condensate(water) formation during cooling operation. Condensate can leak or drip causing damage to household property.
- Poor heat insulating capacity can cause pipe outer surface to reach high temperature during heating operation. It can cause cable deterioration and personal injury.

4. Finishing work

(1) Make sure that the exterior portion of connecting pipes, connecting cable and drain hose is wrapped properly with tape. Shape the connecting pipes to match with the contours of the pipe assembly route.
(2) Fix the pipe assembly with the wall using clamps and screws. Pipe assembly should be anchored every 1.5m or less to isolate the vibration.
(3) Install the service cover securely. Water may enter the unit if service cover is not installed properly, resulting in unit malfunction and failure.



⚠ CAUTION

Make sure that the connecting pipes do not touch the components within the unit. If pipes touch the internal components, it may generate abnormal sounds and/or vibrations.

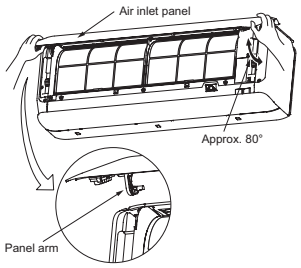
10. HOW TO OPEN, CLOSE, REMOVE AND INSTALL THE AIR INLET PANEL

1. Open
Pull the air inlet panel at both ends of lower part and release latches, then pull up the panel until you feel resistance.
(The panel stops at approx. 60° open position)

2. Close
Hold the panel at both ends of lower part, lower it downward slowly, then push it slightly until the latch works.

3. Removing
Open the panel by 80 degrees (as shown in the right illustration) and then pull it forward.

4. Installing
Insert the panel arm into the slot on the front panel from the position shown in right illustration, hold the panel at both ends of lower part, lower it downward slowly, then push it slightly until the latch works.



NOTE
- When carrying out maintenance, handle the air inlet panel with care.

11. HOW TO REMOVE AND INSTALL THE SIDE AND FRONT PANEL

1. Side panel (R/L)

1.1. Removing
(1) Remove the 2 screws.
(2) Remove the 3 latches and then side panel can be removed.

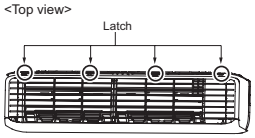
1.2. Installing
(1) Cover the unit with the side panel and fix 3 latches.
(2) Secure the side panel with the 2 screws.

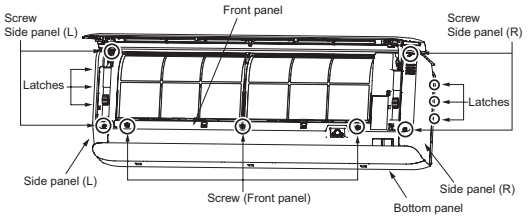
2. Front panel

2.1. Removing
(1) Remove the side panel (R/L), the air inlet panel, the air filters and the bottom panel.
(2) Remove the 3 screws.
(3) Remove the 4 upper latches and then front panel can be removed.

2.2. Installing
(1) Cover the unit with the front panel and fix 4 upper latches.
(2) Secure the front panel with the 3 screws.
(3) Install the bottom panel, the side panel (R/L), the air inlet panel and the air filters.

<Top view>

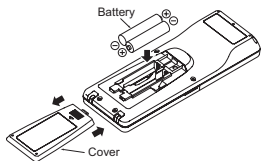




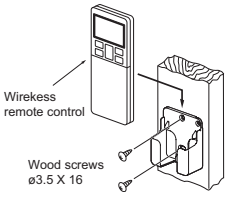
12. INSTALLING WIRELESS REMOTE CONTROL

Mount the batteries
(1) Slide and take out the cover of backside.
(2) Mount the batteries [R03 (AAA, Micro), ×2 pieces] in the body properly.
(Fit he poles with the indication marks + & −)
(3) Set the cover again.

NOTE
- Do not use new and old batteries together.
- In case the unit is not operated for a long time, take out the batteries



Installing remote control holder
(1) Select the place where the unit can receive signals.
(2) Fix the holder to pillar or wall with wood screws.

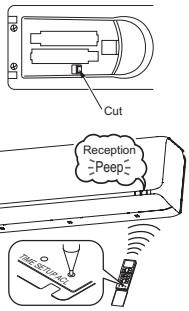


13. INSTALLING TWO AIR-CONDITIONERS IN THE SAME ROOM

In case two air-conditioners are installed in the same room, apply this setting so that one unit can be operated with only one wirelesss remote control.

Setting one wirelesss remote control
(1) Slide and take out the cover and batteries.
(2) Cut the switching line next to the battery with wire cutters.
(3) Set the batteries and cover again.

Setting one indoor unit
(1) Turn off the power source and turn it on after 1 minute.
(2) Send the signal by pressing the ACL switch on the wireless remote control that was set according to the procedure described on the above side.
(3) Check that the reception buzzer sound “peep” is emitted from the indoor unit. Since the signal is sent about 6 seconds after the ACL switch is pressed, point the wireless remote control to the indoor unit for a while.



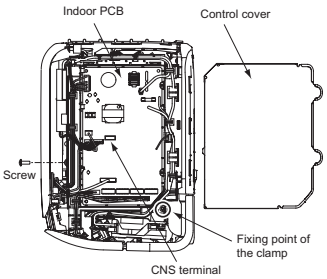
NOTE
If no reception buzzer is emitted, restart the setting from the beginning.

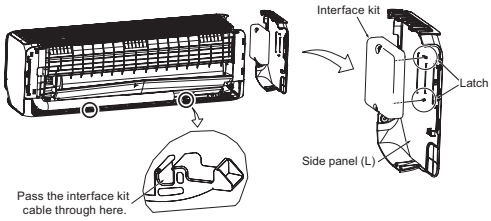
14. TERMINAL CONNECTION FOR AN INTERFACE

To install wired remote control, superlink etc., interface kit is needed.

(1) Remove the air inlet panel, bottom panel and side panel (R).
(2) Remove the control cover. (Remove the screw.)
(3) There is a terminal (respectively marked with CNS) for the indoor control board. While connecting an interface, connect to the respective terminal securely with the connection harness supplied with an option “Interface kit SC-BIKN-E” and fasten the connection harness onto the indoor control box with the clamp and screw supplied with the kit.
(4) Hook to fix the interface kit to the 2 latches on side panel (L).
For more details, refer to the user’s manual of “Interface kit SC-BIKN-E”.

<Right side>



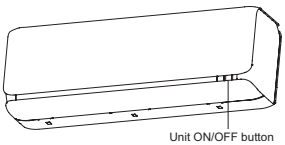


15. PUMP DOWN WORK

For the environmental protection, be sure to pump down when relocating or disposing of the unit. Pump down is the method of recovering refrigerant from the indoor unit to the outdoor unit before the connecting pipes are removed from the unit. When pump down is carried out, forced cooling operation is needed.

Forced cooling operation
(1) Turn off the power source and turn it on again after 1 minute. The air inlet panel and flap open and close.
(2) After the air inlet panel closes, press the ON/OFF button continuously for at least 5 seconds. Then operation will start.

For the detail of pump down, refer to the installation manual of outdoor unit.



16. INSTALLATION CHECK AND TEST RUN

After finishing the installation work, check the following points again before turning on the power. Conduct a test run and ensure that the unit operates properly.
At the same time, explain to the customer how to use the unit and how to take care of the unit following the user’s manual.

Before test run
Before test run, check following points.

Power source voltage complies with the rated voltage of air-conditioner.	
Earth leakage breaker and circuit breaker are installed.	
Power cable and connecting cable are securely fixed to the terminal block.	
Both liquid and gas service valves are fully open.	
No gas leaks from the joints of the service valves.	
Indoor and outdoor side pipe joints have been insulated.	
Hole on the wall is completely sealed with putty.	
Drain hose and cap are installed properly.	
Screw of the terminal cover is tightened securely.	

Test run
Check following points during test run.

Indoor unit receives signal of wireless remote control.	
Air-conditioning operation is normal.	
There is no abnormal noise.	
Water drains out smoothly.	
Display of wireless remote control is normal.	

After test run

Explain the operating and maintenance methods to the user according to the user’s manual.	
Keep this installation manual together with user’s manual.	

NOTE
During restart or change in operation mode, the unit will not start operating for approximately 3 minutes. This is to protect the unit and it is not malfunction.

RLD012A011 Ⓑ

- This installation manual illustrates the method of installing an indoor unit.
- For electrical wiring work, see instructions set out on the backside.
- For outdoor unit installation and refrigerant piping, refer to page 245.
- A wired remote control unit is supplied separately as an option part.
- While installing the unit, be sure to check the selection of installation place, power source specifications, usage limitation (piping length, height differences between indoor and outdoor units, power source voltage etc.) and installation spaces.

SAFETY PRECAUTIONS

- Before installation, read the "SAFETY PRECAUTIONS" carefully and strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION.
  ⚠WARNING : Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mention the important items to protect your health and safety so strictly follow them by any means.
- Be sure to confirm no anomaly on the equipment by commissioning after completed installation and explain the operating methods as well as the maintenance methods of this equipment to the user according to the owner's manual.
- Keep the installation manual together with owner's manual at a place where any user can read at any time. Moreover if necessary, ask to hand them to a new user.
- Before starting the installation work, proper precautions (using suitable protective clothing, groves etc.) should be taken by qualified installer.
- Pay attention not to fall down the tools, etc. when installing the unit at the high position.
- If unusual noise can be heard during operation, consult the dealer.
- The meanings of "Marks" used here are shown as follows:

⃠	Never do it under any circumstances.	❗ ⏚	Always do it according to the instruction.

⚠ WARNING

- **Installation must be carried out by the qualified installer.**
  If you install the system by yourself, it may cause serious trouble such as water leaks, electric shocks, fire and personal injury, as a result of a system malfunction. Do not carry out the installation and maintenance work except the by qualified installer.
- **Install the system in full accordance with the installation manual.**
  Incorrect installation may cause bursts, personal injury, water leaks, electric shocks and fire.
- **Be sure to use only for household and residence.**
  If this appliance is installed in inferior environment such as machine shop and etc., it can cause malfunction.
- **Use the original accessories and the specified components for installation.**
  If parts other than those prescribed by us are used, It may cause water leaks, electric shocks, fire and personal injury.
- **Install the unit in a location with good support.**
  Unsuitable installation locations can cause the unit to fall resulting in material damage and personal injury.
- **Ventilate the working area well in the event of refrigerant leakage during installation.**
  If the refrigerant comes into contact with naked flames, poisonous gas is produced.
- **When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage, referred by the formula (accordance with ISO5149).**
  If the density of refrigerant exceeds the limit, consult the dealer and install the ventilation system, otherwise lack of oxygen can occur, which can cause serious accident.
- **After completing installation, check that no refrigerant leaks from the system.**
  If refrigerant leaks into the room and comes into contact with an oven or other hot surface, poisonous gas is produced.
- **Use the prescribed pipes, flare nuts and tools for R410A.**
  Using existing parts (for R22 or R407C) can cause the unit failure and serious accidents due to burst of the refrigerant circuit.
- **Tighten the flare nut by torque wrench with specified method.**
  If the flare nuts were tightened with excess torque, this may cause burst and refrigerant leakage after a long period.
- **The electrical installation must be carried out by the qualified electrician in accordance with "the norm for electrical work" and "national wiring regulation", and the system must be connected to the dedicated circuit.**
  Power source with insufficient capacity and incorrect function done by improper work can cause electric shocks and fire.
- **Be sure to shut off the power before starting electrical work.**
  Failure to shut off the power can cause electric shocks, unit failure or incorrect function of equipment.
- **Be sure to use the cables conformed to safety standard and cable ampacity for power distribution work.**
  Unconformable cables can cause electric leak, anomalous heat production or fire.
- **This appliance must be connected to main power source by means of a circuit breaker or switch [fuse Model 63(21):16A, Model 71(24), 80(28), 92, 100:20A] with a contact separation of at least 3mm.**
- **When plugging this appliance, a plug conforming to the norm IEC60884-1 must be used.**
- **Use the prescribed cables for electrical connection, tighten the cables securely in terminal block and relieve the cables correctly to prevent overloading the terminal blocks.**
  Loose connections or cable mountings can cause anomalous heat production or fire.
- **Arrange the wiring in the control box so that it cannot be pushed up further into the box. Install the service panel correctly.**
  Incorrect installation may result in overheating and fire.
- **Be sure to switch off the power source in the event of installation, inspection or servicing.**
  If the power source is not shut off, there is a risk of electric shocks, unit failure or personal injury due to the unexpected start of fan.
- **Be sure to wear protective goggles and gloves while at work.**
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it can cause electric shocks.

- **Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulphide gas can occur.**
  Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.
- **Ensure that no air enters in the refrigerant circuit when the unit is installed and removed.**
  If air enters in the refrigerant circuit, the pressure in the refrigerant circuit becomes too high, which can cause burst and personal injury.
- **Do not process or splice the power cable, or share the socket with other power plugs.**
  This may cause fire or electric shock due to defecting contact, defecting insulation and over-current etc.
- **Do not bundle or wind or process the power cord. Do not deform the power cord by treading it.**
  This may cause fire or heating.
- **Do not vent R410A into the atmosphere : R410A is a fluorinated greenhouse gas, covered by the Kyoto Protocol with Groval Warming Potential (GWP)=1975.**
- **Do not run the unit with removed panels or protections.**
  Touching rotating equipments, hot surfaces or high voltage parts can cause personal injury due to entrapment, burn or electric shocks.
- **Do not perform any change of protective device itself or its setup condition.**
  The forced operation by short-circuiting protective device of pressure switch and temperature control or the use of non specified component can cause fire or burst.

⚠ CAUTION

- **Carry out the electrical work for ground lead with care.**
  Do not connect the ground lead to the gas line, water line, lightning conductor or telephone line's ground lead. Incorrect grounding can cause unit faults such as electric shocks due to short-circuiting.

- **Use the circuit breaker of correct capacity. Circuit breaker should be able to disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Install isolator or disconnect switch on the power source wiring in accordance with the local codes and regulations.**
  The isolator should be locked in OFF state in accordance with EN60204-1.
- **Be sure to install indoor unit properly according to instruction manual so that drainage can run off smoothly.**
  Improper installation of indoor unit can cause dropping water into the room and damaging personal property.
- **Install the drainage pipe to run off drainage securely according to the installation manual.**
  Incorrect installation of the drainage pipe can cause dropping water into the room and damaging personal property.
- **Be sure to install the drainage pipe with descending slope of 1/100 or more, and not to make traps and air-bleedings.**
  Check if the drainage runs off securely during commissioning and ensure the space for inspection and maintenance.
- **After maintenance, all wiring, wiring ties and the like, should be returned to their original state and wiring route, and the necessary clearance from all metal parts should be secured.**
- **Secure a space for installation, inspection and maintenance specified in the manual.**
  Insufficient space can result in accident such as personal injury due to falling from the installation place.
- **Take care when carrying the unit by hand.**
  If the unit weights more than 20kg, it must be carried by two or more persons. Do not carry by the plastic straps, always use the carry handle when carrying the unit by hand. Use gloves to minimize the risk of cuts by the aluminum fins.
- **Dispose of any packing materials correctly.**
  Any remaining packing materials can cause personal injury as it contains nails and wood. And to avoid danger of suffocation, be sure to keep the plastic wrapper away from children and to dispose after tear it up.
- **For installation work, be careful not to get injured with the heat exchanger, piping flare portion or screws etc.**
- **Be sure to insulate the refrigerant pipes so as not to condense the ambient air moisture on them.**
  Insufficient insulation can cause condensation, which can lead to moisture damage on the ceiling, floor, furniture and any other valuables.
- **When perform the air-conditioner operation (cooling or dehumidifying operation) in which ventilator is installed in the room. In this case, using the air-conditioner in parallel with the ventilator, there is the possibility that drain water may backflow in accordance with the room lapse into the negative pressure status. Therefore, set up the opening port such as incorporate the air into the room that may appropriate to ventilation (For example; Open the door a little). In addition, just as above, so set up the opening port if the room lapse into negative pressure status due to register of the wind for the high rise apartment etc.**
- **Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.**
  If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.

- **Do not install the unit in the locations listed below.**
  - Locations where carbon fiber, metal powder or any powder is floating.
  - Locations where any substances that can affect the unit such as sulphide gas, chloride gas, acid and alkaline can occur.
  - Vehicles and ships.
  - Locations where cosmetic or special sprays are often used.
  - Locations with direct exposure of oil mist and steam such as kitchen and machine plant.
  - Locations where any machines which generate high frequency harmonics are used.
  - Locations with salty atmospheres such as coastlines.
  - Locations with heavy snow (If installed, be sure to provide base flame and snow hood mentioned in the manual).
  - Locations where the unit is exposed to chimney smoke.
  - Locations at high altitude (more than 1000m high).
  - Locations with ammonic atmospheres (e.g. organic fertilizer).
  - Locations with calcium chloride (e.g. snow melting agent).
  - Locations where heat radiation from other heat source can affect the unit.
  - Locations without good air circulation.
  - Locations with any obstacles which can prevent inlet and outlet air of the unit.
  - Locations where short circuit of air can occur (in case of multiple units installation).
  - Locations where strong air blows against the air outlet of outdoor unit.
  - Locations where something located above the unit could fall.

  It can cause remarkable decrease in performance, corrosion and damage of components, malfunction and fire.
- **Do not install the indoor unit in the locations listed below (Be sure to install the indoor unit according to the installation manual for each model because each indoor unit has each limitation).**
  - Locations with any obstacles which can prevent inlet and outlet air of the unit.
  - Locations where vibration can be amplified due to insufficient strength of structure.
  - Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam (in case of the infrared specification unit).
  - Locations where an equipment affected by high harmonics is placed (TV set or radio receiver is placed within 1m).
  - Locations where drainage cannot run off safely.

  It can affect performance or function and etc.
- **Do not install the unit near the location where leakage of combustible gases can occur.**
  If leaked gases accumulate around the unit, it can cause fire.
- **Do not install the unit where corrosive gas (such as sulfurous acid gas etc.) or combustible gas (such as thinner and petroleum gases) can accumulate or collect, or where volatile combustible substances are handled.**
  Corrosive gas can cause corrosion of heat exchanger, breakage of plastic parts and etc. And combustible gas can cause fire.
- **Do not use the indoor unit at the place where water splashes may occur such as in laundries.**
  Since the indoor unit is not waterproof, it can cause electric shocks and fire.
- **Do not install nor use the system close to the equipment that generates electromagnetic fields or high frequency harmonics.**
  Equipment such as inverters, standby generators, medical high frequency equipments and telecommunication equipments can affect the system, and cause malfunctions and breakdowns. The system can also affect medical equipment and telecommunication equipment, and obstruct its function or cause jamming.
- **Do not place any variables which will be damaged by getting wet under the indoor unit.**
  When the relative humidity is higher than 80% or drainage pipe is clogged, condensation or drainage water can drop and it can cause the damage of valuables.
- **Do not install the remote control at the direct sunlight.**
  It can cause malfunction or deformation of the remote control.
- **Do not use the unit for special purposes such as storing foods, cooling precision instruments and preservation of animals, plants or art.**
  It can cause the damage of the items.
- **Do not use any materials other than a fuse with the correct rating in the location where fuses are to be used.**
  Connecting the circuit with copper wire or other metal thread can cause unit failure and fire.
- **Do not touch any buttons with wet hands.**
  It can cause electric shocks.
- **Do not touch any refrigerant pipes with your hands when the system is in operation.**
  During operation the refrigerant pipes become extremely hot or extremely cold depending the operating condition, and it can cause burn injury or frost injury.
- **Do not wash the inside of the air-conditioner.**
  Water leakage and permanent damage may result.
  Electrical hazard exists.

BEFORE INSTALLATION

○ Before installation check that the power source matches the air-conditioner.

Standard accessories (Installation kit) Accessories for indoor unit		Q'ty
①	Installation board (Attached to the rear of the indoor unit)	1
②	Wireless remote control	1
③	Remote control holder	1
④	Tapping screws (for installation board ø4 X 25mm)	10
⑤	Wood screws (for remote control holder ø3.5 X 16mm)	2
⑥	Battery [R03 (AAA, Micro) 1.5V]	2
⑦	Air-cleaning filters	2
⑧	Filter holders	2
⑨	Insulation (#486 50 x 100 t3)	1

Locally procured parts		Q'ty
ⓐ	Sealing plate	1
ⓑ	Sleeve	1
ⓒ	Inclination plate	1
ⓓ	Putty	1
ⓔ	Drain hose (extension hose)	1
ⓕ	Piping cover (for insulation of connection piping)	1

Necessary tools for the installation work	
1	Plus headed driver
2	Knife
3	Saw
4	Tape measure
5	Hammer
6	Spanner wrench
7	Torque wrench (14.0 - 82.0N·m (1.4 - 8.2kgf·m))
8	Hole core drill (65mm in diameter)
9	Wrench key (Hexagon) [4mm]
10	Flaring tool set (Designed specifically for R410A)
11	Gas leak detector (Designed specifically for R410A)
12	Gauge for projection adjustment (Used when flare is made by using conventional flare tool)
13	Pipe bender

SELECTION OF INSTALLATION LOCATION

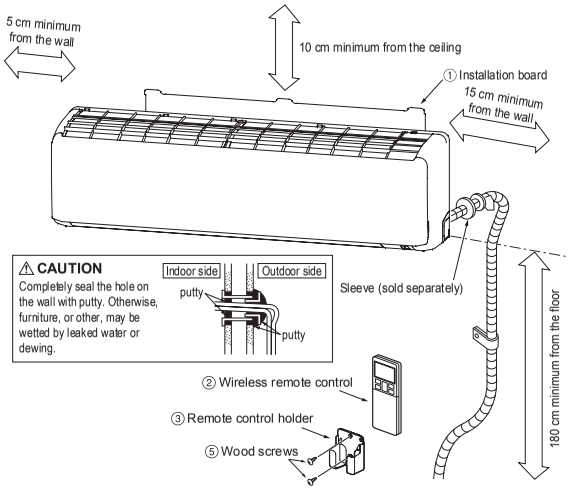
(Install at location that meets the following conditions, after getting approval from the customer)

Indoor unit

○ Where there is no obstructions to the air flow and where the cooled and heated air can be evenly distributed.
○ A solid place where the unit or the wall will not vibrate.
○ A place where there will be enough space for servicing. (Where space mentioned below can be secured)
○ Where wiring and the piping work will be easy to conduct.
○ The place where receiving part is not exposed to the direct rays of the sun or the strong rays of the street lighting.
○ A place where it can be easily drained.
○ A place separated at least 1m away from the television or the radio. (To prevent interference to images and sounds.)
○ Places where this unit is not affected by the high frequency equipment or electric equipment.
○ Avoid installing this unit in place where there is much oil mist.
○ Places where there is no electric equipment or household under the installing unit.
○ Install the indoor unit on the wall where the height from the floor to the bottom of the unit is more than 1.8m.

Wireless remote control

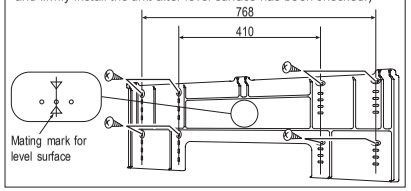
○ A place where the air-conditioner can be received the signal surely during operating the wireless remote control.
○ Places where there is no affected by the TV and radio etc.
○ Do not place where exposed to direct sunlight or near heat devices such as a stove.



INSTALLATION OF INDOOR UNIT

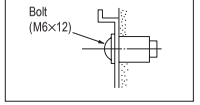
Installation of Installation board

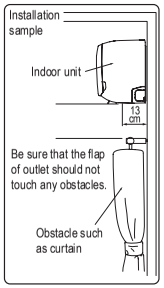
Look for the inside wall structures (Intermediate support or pillar and firmly install the unit after level surface has been checked.)

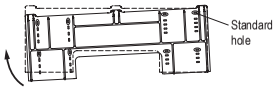


○ Adjustment of the installation board in the horizontal direction is to be conducted with eight screws in a temporary tightened state.
○ Adjust so the board will be level by turning the board with the standard hole as the center.

Fixing on concrete wall
Use of nut anchor

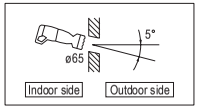




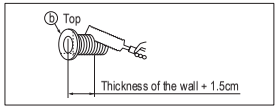


Drilling of hole and fixture of sleeve (Locally procured parts)

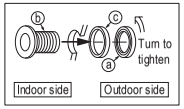
When drilling the wall that contains a metal lath, wire lath or metal plate, be sure to use pipe hole sleeve sold separately.

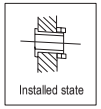


○ Drill a hole with whole core drill.



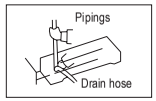
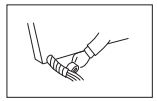
○ In case of rear piping draw out, cut off the lower and the right side portions of the sleeve collar.





Installing the support of piping

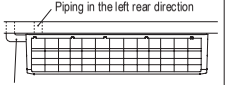
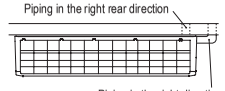
In case of piping in the right rear direction

Shaping of pipings	Taping of the exterior
	
○ Hold the bottom of the piping and fix direction before stretching it and shaping it.	○ Tape only the portion that goes through the wall. ○ Always tape the wiring with the piping.

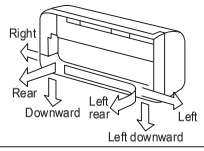
Sufficient care must be taken not to damage the panel when connecting pipes.

• Matters of special notice when piping from left or central/rear of the unit.

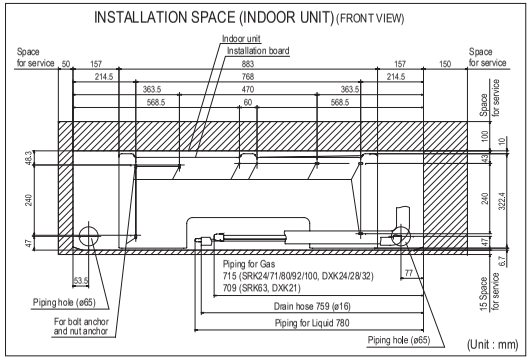
[Top view]

Left-hand-side piping	Right-hand-side piping
	

Piping is possible in the rear, left, left rear, left downward, right or downward direction.



Relation between setting plate and indoor unit

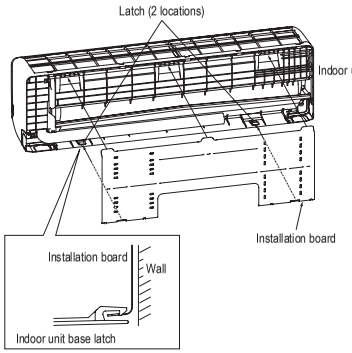


[Drain hose changing procedures]

1. Remove the drain hose	2. Remove the drain cap.
	
○ Remove the screw and drain hose, making it rotate.	○ Remove it with hand or pliers.

3. Insert the drain cap.	4. Connect the drain hose.
	
○ Insert the drain cap which was removed at procedure "2" securely using a hexagonal wrench etc. Note: Be careful that If it is not inserted securely, water leakage may occur.	○ Insert the drain hose securely, making rotate. And install the screw. Note: Be careful that If it is not inserted securely, water leakage may occur.

Fixing of indoor unit

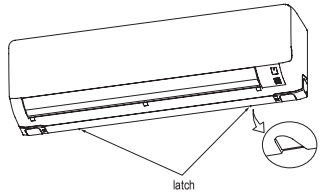


Installation Steps

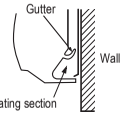
1. Pass the pipe through the hole in the wall, and hook the upper part of the indoor unit to the installation board.
2. Gently push the lower part to secure the unit.

• How to remove the indoor unit from the installation board

1. Push up at the marked portion of the indoor unit base lower latch, and slightly pull it toward you. (both right and left hand sides) (The indoor unit base lower latch can be removed from the installation board)
2. Push up the indoor unit upward so that it can be removed from installation board.



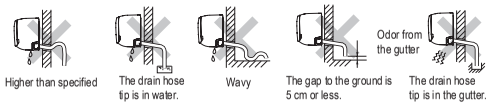
Since this air-conditioner has been designed to collect dew drops on the rear surface to the drain pan, do not attach the power cable above the gutter.



Drainage

○ Arrange the drain hose in a downward angle.
○ Avoid the following drain piping.

⚠CAUTION Go through all installation steps and check if the drainage is all right. Otherwise water leak may occur.

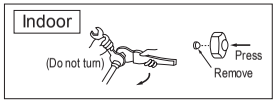


○ Pour water to the drain pan located under the heat exchanger, and ensure that the water is discharged outdoor.
○ When extended drain hose is present inside the room, insulate it securely with heat insulator available in the market.

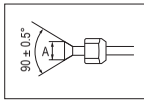
CONNECTION OF REFRIGERANT PIPINGS

Preparation

Keep the openings of the pipes covered with tapes etc. to prevent dust, sand, etc. from entering them.



○ Remove the flared nuts. (on both liquid and gas sides)



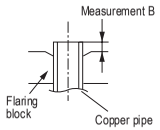
Dimension A	
Liquid side	ø6.35 : 9.1 (mm)
	ø9.52 : 13.2 (mm)
Gas side	ø9.52 : 13.2 (mm)
	ø12.7 : 16.6 (mm)
	ø15.88 : 19.7 (mm)

○ Install the removed flared nuts to the pipes to be connected, then flared the pipes.

⚠CAUTION

Do not apply refrigerating machine oil to the flared surface.

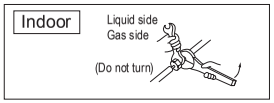
• Flaring work



Copper pipe diameter	Measurement B (mm)		
	Clutch type flare tool for R410A	Conventional (R22) flare tool	
		Clutch type	Wing nut type
ø6.35	0.0 - 0.5	1.0 - 1.5	1.5 - 2.0
ø9.52	0.0 - 0.5	1.0 - 1.5	1.5 - 2.0
ø12.7	0.0 - 0.5	1.0 - 1.5	2.0 - 2.5
ø15.88	0.0 - 0.5	1.0 - 1.5	2.0 - 2.5

Use a flare tool designed for R410A or a conventional flare tool.
Note that measurement B (protrusion from the flaring block) will vary depending on the type of a flare tool in use.
If a conventional flare tool is used, use a copper pipe gauge or a similar instrument to check protrusion so that you can keep measurement B to a correct value.

Connection



○ Connect the pipes on both liquid and gas sides.
○ Tighten the nuts to the following torque.

Liquid side	(ø6.35) : 14.0 - 18.0 N·m (1.4 - 1.8 kgf·m)
	(ø9.52) : 34.0 - 42.0 N·m (3.4 - 4.2 kgf·m)
Gas side	(ø9.52) : 34.0 - 42.0 N·m (3.4 - 4.2 kgf·m)
	(ø12.7) : 49.0 - 61.0 N·m (4.9 - 6.1 kgf·m)
	(ø15.88) : 68.0 - 82.0 N·m (6.8 - 8.2 kgf·m)

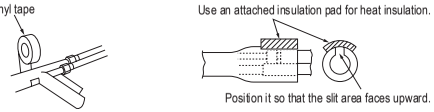
⚠CAUTION

Do not apply excess torque to the flared nuts. Otherwise, the flared nuts may crack.

If FDC71VNP is connected, use reducer at gas side of indoor unit to change the pipe size from ø15.88 to ø12.7. (Reducer is attached in the outdoor unit accessory)

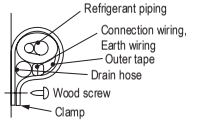
Insulation of the connection portion

Cover the coupling with insulator and then cover it with tapes.



• Cover the indoor unit's flare-connected joints, after they are checked for a gas leak, with an indoor unit heat insulating material and then wrap them with a tape with an attached insulation pad placed over the heat insulating material's slit area.

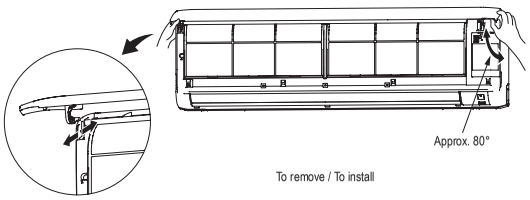
Finishing work and fixing



Cover the exterior portion with outer tape and shape the piping to match with the contours of the route that piping will take.
Also fix the wiring and pipings to the wall with clamps.

Open/close and detachment/attachment of the air inlet panel

○ To open, pull the panel at both ends of lower part and release latches, then pull up the panel until you feel resistance.
(The panel stops at approx. 60° open position)
○ To close, hold the panel at both ends of lower part to lower downward and push it slightly until the latch works.
○ To remove, pull up the panel to the position shown in right illustration and pull it toward you.
○ To install, insert the panel arm into the slot on the front panel from the position shown in right illustration, hold the panel at both ends of lower part, lower it downward slowly, then push it slightly until the latch works.

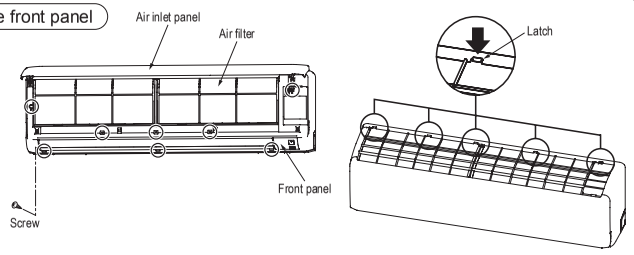


To remove / To install

How to remove and install the front panel

○ Removing
1. Remove the air inlet panel.
2. Remove the 8 screws fixing to the front panel.
3. Remove the 5 latches in the upper section of the front panel and then remove the front panel from the unit.

○ Installing
1. Remove the air filter.
2. Cover the unit with the front panel.
3. Tighten the 8 screws to fix the front panel.
4. Install the air filter.
5. Install the air inlet panel.



ELECTRICAL WIRING WORK

Preparation of indoor unit

Mounting of connecting wires

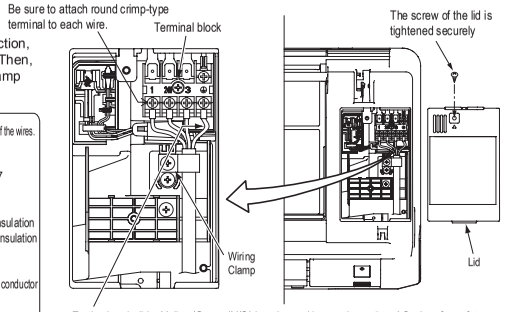
① Open the air inlet panel.
② Remove the lid.
③ Remove the wiring clamp.
④ Connect the connecting wire securely to the terminal block.
1) Connect the connection wire securely to the terminal block. If the wire is not affixed completely, contact will be poor, and it is dangerous as the terminal block may heat up and catch fire.
2) Take care not to confuse the terminal numbers for indoor and outdoor connections.
⑤ Fix the connecting wire by wiring clamp.
⑥ Attach the lid.
⑦ Close the air inlet panel.

○ In case of faulty wiring connection, indoor unit does not operate. Then, run lamp turns on and timer lamp blinks.

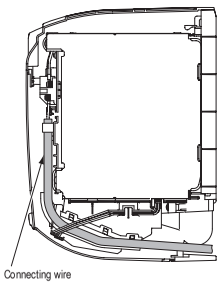
Use cables for interconnection wiring to avoid loosening of the wires.
CENELEC code for cables Required field cables.

H05RNR4G1.5 (example) or 245IEC57

H	Harmonized cable type
05	300/500 volts
R	Natural-and/or synth, rubber wire insulation
N	Polychloroprene rubber conductors insulation
R	Stranded core
4or5	Number of conductors
G	One conductor of the cable is the earth conductor (yellow/green)
1.5	Section of copper wire (mm²)



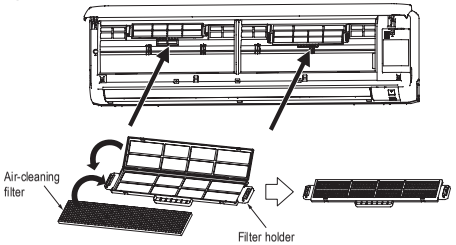
• Earth wire shall be Yellow/Green (Y/G) in color and longer than other AC wires for safety reason.



• Pass the connecting wire through the path from the bottom of the control box to the front part as shown in the illustration.

Installing the air-cleaning filters

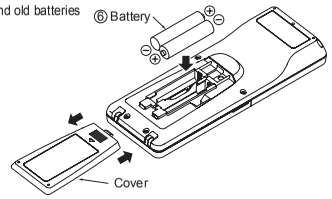
① Open the air inlet panel and remove the air filters.
② Install the air-cleaning filter in the filter holders, and then install the filter holders in the air-conditioner.
• Each air-cleaning filter can be installed in the left or right filter holder.
③ Install the air filters and close the inlet panel.



INSTALLATION OF WIRELESS REMOTE CONTROL

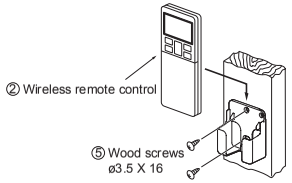
Mounting method of battery

○ Uncover the wireless remote control, and mount the batteries [R03 (AAA, Micro), ×2 pieces] in the body regularly.
(Fit the poles with the indication marks,⊕ & ⊖ without fail)
○ Do not use new and old batteries together.



Fixing to pillar or wall

○ Conventionally, operate the wireless remote control by holding in your hand.
○ Avoid installing it on a clay wall etc.

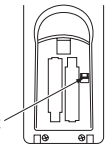


INSTALLING TWO AIR-CONDITIONERS IN THE SAME ROOM

When two air-conditioners are installed in the same room, use this setting when the two air-conditioners are not operated with one wireless remote control. Set the wireless remote control and indoor unit.

Setting the wireless remote control

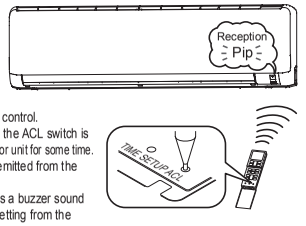
① Pull out the cover and take out batteries.
② Disconnect the switching line next to the battery with wire cutters.



③ Insert batteries. Close the cover.

Setting an indoor unit

① Turn off the power source, and turn it on after 1 minute.
② Point the wireless remote control that was set according to the procedure described on the left side at the indoor unit and send a signal by pressing the ACL switch on the wireless remote control.
Since the signal is sent in about 6 seconds after the ACL switch is pressed, point the wireless remote control at the indoor unit for some time.
③ Check that the reception buzzer sound "Pip" is emitted from the indoor unit.
At completion of the setting, the indoor unit emits a buzzer sound "Pip". (If no reception tone is emitted, start the setting from the beginning again.)

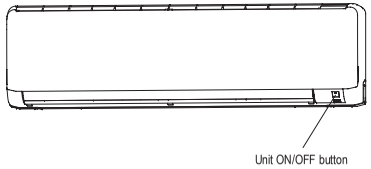


HOW TO RELOCATE OR DISPOSE OF THE UNIT

○ In order to protect the environment, be sure to pump down (recovery of refrigerant).
○ Pump down is the method of recovering refrigerant from the indoor unit to the outdoor unit when the pipes are removed from the unit.

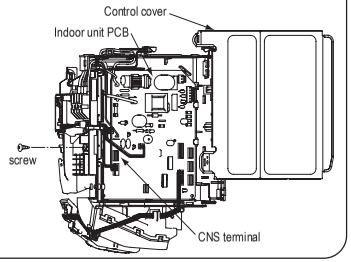
<How to pump down>
① Connect charge hose to check joint of outdoor unit.
② Liquid side : Close the liquid valve with hexagon wrench key.
Gas side : Fully open the gas valve.
Carry out cooling operation. (If indoor temperature is low, operate forced cooling operation.)
③ After low pressure gauge become 0.01MPa, stop cooling operation and close the gas valve.

• Forced cooling operation
Turn off power source. Turn on power source again after a while. Then, press the ON/OFF button continuously for at least 5 seconds. (The operation will start.)



TERMINAL CONNECTION FOR AN INTERFACE

① Remove the air inlet panel, lid and front panel.
② Remove the control cover. (Remove the screw.)
③ There is a terminal (respectively marked with CNS) for the indoor control board.
In connecting an interface, connect to the respective terminal securely with the connection harness supplied with an option "Interface connection kit SC-BIKN2-E" and fasten the connection harness onto the indoor control box with the clamp supplied with the kit.
For more details, refer to the user's manual of your "Interface connection kit SC-BIKN2-E".



INSTALLATION TEST CHECK POINTS

Check the following points again after completion of the installation, and before turning on the power. Conduct a test run again and ensure that the unit operates properly.
At the same time, explain to the customer how to use the unit and how to take care of the unit following the user's manual.

After installation

☐ The power source voltage is correct as the rating.
☐ No gas leaks from the joints of the service valve.
☐ Power cables and crossover wires are securely fixed to the terminal board.
☐ The screw of the lid is tightened securely.
☐ Service valve is fully open.
☐ The pipe joints for indoor and outdoor pipes have been insulated.

Test run

☐ Air-conditioning operation is normal.
☐ No abnormal noise.
☐ Water drains smoothly.
☐ Protective functions are not working.
☐ The wireless remote control is normal.
☐ Operation of the unit has been explained to the customer. (Three-minutes restart preventive timer)
When the air-conditioner is restarted or when changing the operation, the unit will not start operating for approximately 3 minutes. This is to protect the unit and it is not a malfunction.

(8) Effective range of cool/hot wind (Reference)

(a) FDT series

Guideline for ceiling height

Fan Speed Setting	Model			
	FDT50VG,60VG	FDT71VG	FDT100VG	FDT125VG,140VG
Hi	2.7m	3.0m	3.2m	3.6m
PHi	3.5m	3.8m	4.3m	4.5m

Notes (1) If the ceiling height is over 3m, please consider to add circulators.
This table shows reference values in case of four outlet.
If you shut some outlets, they are different.
Fan speed setting can be changed by using a wired remote control.

(b) FDE series

Model	Effective range
FDE50VG	7.5m
FDE60VG, 71VG	8.0m
FDE100VG, 125VG, 140VG	9.0m

[Conditions]
1. Height of unit: 2.4 – 3.0 (m) above floor level
2. Fan speed : Hi
3. Location: Free space without obstacles
4. The effective range means the horizontal distance for wind to reach the floor.
5. Wind speed at the effective range: 0.5 m/s

(c) FDF series

Model	Effective range
FDF71VD1	5m
FDF100VD2, 125VD, 140VD	8m

[Conditions]
1. Fan speed : Hi
2. Location: Free space without obstacles
3. The effective range means the horizontal distance for the wind to reach the floor.
4. Wind speed at the effective range: 0.5 m/s

1.10.2 Electric wiring work installation

PSC012D049

(1) FDT series

Electrical wiring work must be performed by an electrician qualified by a local power provider according to the electrical installation technical standards and interior wiring regulations applicable to the installation site.

Security instructions

- **Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.**
- **The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .**
  ⚠WARNING : Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- **The meanings of "Marks" used here are as shown on the right:**
  ⃠ Never do it under any circumstances. ❗ Always do it according to the instruction.
- **Accord with following items. Otherwise, there will be the risks of electric shock and fire caused by overheating or short circuit.**

⚠WARNING

- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire.
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire.
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire.
- **Use the genuine option parts. And installation should be performed by a specialist.**
  If you install the unit by yourself, it could cause water leakage, electric shock and fire.
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire.
- **Consult the dealer or a specialist about removal of the air-conditioner.**
  Improper installation may cause water leakage, electric shock or fire.
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running.

⚠CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock due to a short circuit.
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it can cause electric shocks.
- **Make sure to install earth leakage breaker on power source line. (countermeasure thing to high harmonics.)**
  Absence of breaker could cause electric shock.
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire.
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire.
- **Use power source line of correct capacity.**
  Using incorrect capacity one could cause electric leak, abnormal heat generation and fire.
- **Do not mingle solid cord and stranded cord on power source and signal side terminal block.**
  In addition, do not mingle difference capacity solid or stranded cord.
  Inappropriate cord setting could cause loosing screw on terminal block, bad electrical contact, smoke and fire.
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown.
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury.

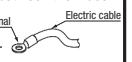
Control mode switching

● The control content of indoor units can be switched in following way. (☐ is the default setting)

Switch No.	Control Content	
SW2	Indoor unit address (0-Fh)	
SW5-1	Master/Slave Switching (plural /Slave unit Setting)	
SW5-2		
SW6-1–4	Model capacity setting	
SW7—1	ON	Operation check, Drain motor test run
	OFF	Normal operation

①Electrical Wiring Connection

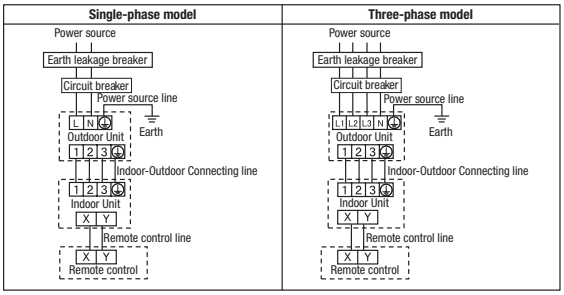
- Electrical wiring work must be performed by an electlician an qualified by a local power provider. These wiring specifications are determined on the assumption that the following instructions are observed:
  ① Do not use cords other than copper ones.
  Do not use any power source line lighter than one specified in parentheses for each type below.
  – braided cord (code designation 60245 IEC 51), if allowed in the relevant part 2;
  – ordinary tough rubber sheathed cord (code designation 60245 IEC 53);
  – flat twin tinsel cord (code designation 60227 IEC 41);
  – ordinary polyvinyl chloride sheathed cord (code designation 60227 IEC 53);
  ② Connect the power source to the outdoor unit.
  ③ Pay extra attention so as not to confuse signal line and power source line connection, because an error in their connection can be burn all the boards at once.
- Connect ground wires before connecting wires between the indoor and outdoor units and between indoor units. The ground wires need to be longer than the wires between the indoor and outdoor units, and protected from undue stress.
- Do not turn on the power source before completing the work.
- The ground wires must be connected by the Class D grounding connection.
- Use the round crimp terminals for connections to the terminal block.



- Use dedicated branch circuits, avoiding combination with other devices. Otherwise, it could trip the power source breaker, resulting in secondary accidents.
- Install the overcurrent and earth leakage breakers (sensitivity current: 30 mA) specified to respective models.
- Do not connect indoor and outdoor signal cables to extension cables on the way. If the joint is wetted with intruding water, it could cause a ground insulation failure or poor connection, resulting in communication errors. (If it is inevitable to connect cables on the way, make sure to prevent the water intrusion completely.)
- When running wires (wires for power source, remote control, connecting between indoor and outdoor units, or other) behind the ceiling, protect them using copper or other pipes against assault by rat, or other.
- It is up to 3.5 mm² the size of power source cables connected to indoor units. When using cables of 5.5 mm² or larger, provide a dedicated pull box for branching connection to indoor units.
- If signal and power source cables are connected mistakenly, it could burn down all PCBs.
  ① Even if the power source of AC 220/240/380/415 V is connected mistakenly to A-B signal cable, it is protected at initial occasion only.
  ② If the remote control fails to detect the unit No. (address) at 15 minutes after turning the power on, check and repair all signal cables for misconnection.
  ③ Cut the jumper wire J10SL1 of burnt PCB, and reconnect connectors CnK (yellow) and CnK1 (white) to CnK2 (black).
  ④ If any anomaly is found on wires between the A-B terminal block and the PCB, replace them.
- At the outside of indoor and outdoor units, take care to avoid direct contacts between remote control and power source cables.
- In no event connect the power source of AC 220/240/380/415 V to the remote control terminal block. It could cause failures.
- Connections of wiring between units, ground wire and remote control cable
  ① When connecting wires between units, ground wire or remote control wire, connect them according to the number of terminals on the power source terminal block or signal terminal block in the control box. Connect the ground wire to the ground terminal on the power source terminal block.
  ② Make sure to install an earth leakage breaker for the power source. Select a breaker for inverter circuit.
  ③ When the earth leakage breaker is exclusive for the earth leakage protection, it is necessary to connect also an isolating switch (Switch + Class B fuse) or wiring circuit breaker in series to the earth leakage breaker.
  ④ Install the isolating switch close to the unit.
- Connect wires securing by tightening screws firmly. Confirm also no connector or wire (from terminal) is disconnected in the control box.
- When installing an auxiliary electric heater, consult the electric heater manual or technical data.

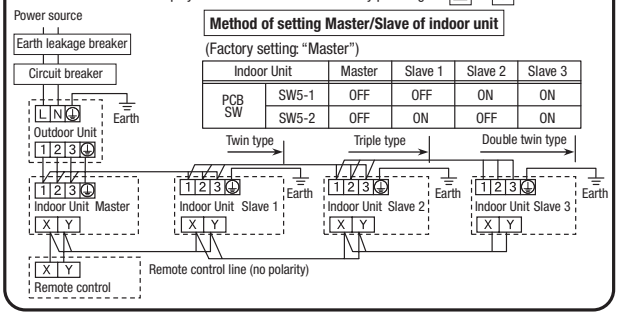
Cable connection for single unit installation

①As for connecting method of power source, select from following connecting patterns. In principle, do not directly connect power source line to inside unit.
※As for exceptional connecting method of power souce, discuss with the power provider of the country with referring to technical documents, and follow its instruction.
②For cable size and circuit breaker selection, refer to the outdoor unit installation manual.



Cable connection for a V multi configuration installation

①Connect the same pairs number of terminal block "①, ②, and ③"and "ⓧ and ⓨ" between master and slave indoor units.
②Do the same address setting of all inside units belong to same refrigerant system by rotary switch SW2 on indoor unit's PCB (Printed circuit board).
③Set slave indoor unit as "slave 1" through "slave 3" by address switch SW5-1, 5-2 on PCB.
④When the AIR CON No. button on the remote control unit is pressed after turning on the power, an indoor unit's address number will be displayed. Do not fail to confirm that the connected indoor unit's numbers are displayed on the remote control unit by pressing the ▲ or ▼ button.



Method of setting Master/Slave of indoor unit

(Factory setting: "Master")

Indoor Unit		Master	Slave 1	Slave 2	Slave 3
PCB SW	SW5-1	OFF	OFF	ON	ON
	SW5-2	OFF	ON	OFF	ON

②Remote control, wiring and functions

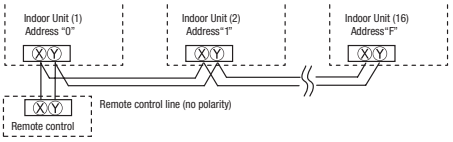
●Do not install it on the following places
①Places exposed to direct sunlight
②Places near heat devices
③High humidity places
④Hot surface or cold surface enough to generate condensation
⑤Places exposed to oil mist or steam directly.
⑥Uneven surface

Installation and wiring of remote control

①Install remote control referring to the attached installation manual.
②Wiring of remote control should use 0.3mm^2 ×2 core wires or cables.
The insulation thickness is 1mm or more. (on-site configuration)
③Maximum prolongation of remote control wiring is 600 m.
If the prolongation is over 100m, change to the size below.
But, wiring in the remote control case should be under 0.5mm^2 . Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.
100 - 200m ..... 0.5mm^2 × 2 cores
Under 300m ..... 0.75mm^2 × 2 cores
Under 400m ..... 1.25mm^2 × 2 cores
Under 600m ..... 2.0mm^2 × 2 cores
④Avoid using multi-core cables to prevent malfunction.
⑤Keep remote control line away from earth (frame or any metal of building).
⑥Make sure to connect remote control line to the remote control and terminal block of indoor unit. (No polarity)

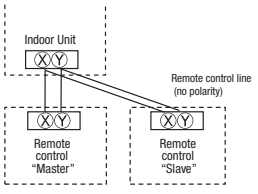
Control plural indoor units by a single remote control

①A remote control can control plural indoor units (Up to 16).
In above setting, all plural indoor units will operate under same mode and temperature setting.
②Connect all indoor units with 2 core remote control line.
③Set unique remote control communication address from "0" to "F" to each inside unit by the rotary switch SW2 on the indoor unit's PCB.



Master/ slave setting when more than one remote control unit are used

A maximum of two remote control units can be connected to one indoor unit (or one group of indoor units.)
The air-conditioner operation follows the last operation of the remote control regardless of the master/slave setting of it.
Acceptable combination is "two (2) wired remote controls", "one (1) wired remote control and one (1) wireless kit" or "two (2) wireless kits".
Set one to "Master" and the other to "Slave".
Note:The setting "Remote control unit sensor enabled" is only selectable with the master remote control unit in the position where you want to check room temperature.

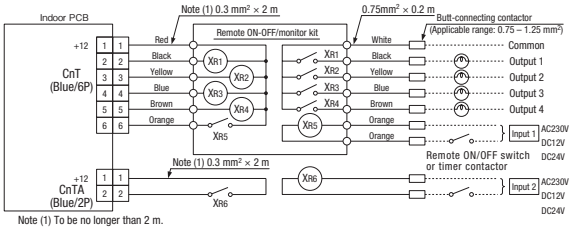


③Operation and confirmation from remote control

No.	Item	Operation from the eco touch remote control (RC-EX3)	Operation from the standard remote control (RC-E4, RC-E5)
1	Check the number of units connected in the multi remote control system.	[Menu] ⇒ [Service setting] ⇒ [Service & Maintenance] ⇒ [Service password] ⇒ [IU address]	① Press the AIR CON No. button to display the IU address. ② Press the ▲ or ▼ button and check addresses of connected indoor units one by one.
2	Check if each unit is connected properly in the remote control system.	[Menu] ⇒ [Service setting] ⇒ [Service & Maintenance] ⇒ [Service password] ⇒ [IU address] ⇒ [Check run mode]	① Press the AIR CON No. button to display the IU address. ② Press the ▲ or ▼ button and select one of IU addresses. ③ Press the (MODE) button. The unit starts to blow air.
3	Setting main/sub remote controls	[Menu] ⇒ [Service setting] ⇒ [R/C function settings] ⇒ [Service password] ⇒ [Main/Sub of R/C]	Set SW1 to "Sub" for the sub remote control unit.
4	Checking operation data	[Menu] ⇒ [Service setting] ⇒ [Service & Maintenance] ⇒ [Service password] ⇒ [Operation data]	Press the CHECK button. ⇒ "OPER DATA ▼" is displayed. ⇒ Press the (SET) button. ⇒ "DATA LOADING" is displayed. ⇒ Select one of addresses for connected indoor units by pressing the ▲ or ▼ button. ⇒ Press the (SET) button. ⇒ "DATA LOADING" is displayed. ⇒ Select data by pressing the ▲ or ▼ button.
5	Checking inspection display	[Menu] ⇒ [Service setting] ⇒ [Service & Maintenance] ⇒ [Service password] ⇒ [Error display]	Press the CHECK button. ⇒ "OPER DATA ▼" is displayed. ⇒ Press the ▼ button. ⇒ "ERROR DATA ▲" is displayed. ⇒ Press the (SET) button. ⇒ "DATA LOADING" is displayed. ⇒ Data is displayed.
6	Cooling test run from remote control	[Menu] ⇒ [Service setting] ⇒ [Installation settings] ⇒ [Service password] ⇒ [Test run] ⇒ [Cooling test run] ⇒ [Start]	① Start the system by pressing the ON/OFF button. ② Select "☼ (Cool)" with the (MODE) button. ③ Press the TEST button for 3 seconds or longer. The screen display will switch to "☼ TEST RUN ▼". ④ Pressing the (SET) button, while the "☼ TEST RUN ▼" is displayed, starts the cooling test run. The screen display will switch to "☼ TEST RUN".
7	Trial operation of drain pump from remote control	[Menu] ⇒ [Service setting] ⇒ [Installation settings] ⇒ [Service password] ⇒ [Test run] ⇒ [Drain pump test run] ⇒ [Run]	① Start the system by pressing the ON/OFF button. The display will change to "☼ TEST RUN ▼". ② Press the ▼ button once to display "DRAIN PUMP ▲". ③ Pressing the (SET) button starts the drain pump operation. The display will show "(C) TO STOP".

The menu configuration may vary depending on models of the remote control. If the model of your remote control is different, refer to the installation manual attached to the remote control.

④ Function of CnT connector of indoor printed circuit board



Note (1) To be no longer than 2 m.

●XR1-4 are DC 12 V relays. (Equivalent to Omron's LY2F)
●XR5 is a DC 12 V, 24 V or AC230 V relay. (Equivalent to Omron's MY2F)
●Maker and model of CnT connector (Site side)
Connector : Molex 5264-06
Terminal : Molex 5263T
●CnTA connector is used on FDT, or other. <Check with the specifications.> (Site side) Maker and model
Connector : J.S.T. Mfg. XAP02V-1-E
Terminal : J.S.T. Mfg. SXA-01T-P0.6
●Output 1 – 4 and input1/2 can be selected/set as required from following items.
Factory default is set as shown below.

Output

①	RUN output	⑧	Fan ON output 3
②	Heating output	⑨	Defrost/oil return output
③	Compressor ON output	⑩	Ventilation output
④	Inspection (error) output	⑪	Heater output
⑤	Cooling output	⑫	Free cleaning output
⑥	Fan ON output 1	⑬	Indoor overload error output
⑦	Fan ON output 2		

Input

①	RUN/STOP	⑤	Setting temp. shift
②	RUN permit prohibition	⑥	Compulsory thermostat OFF
③	Emergency stop	⑦	Temporary stop
④	Cooling/Heating	⑧	Silent mode

Factory default setting

CnT-2	Output 1	RUN output	CnT-5	Output 4	Inspection (error) output
CnT-3	Output 2	Heating output	CnT-6	Input 1	RUN/STOP
CnT-4	Output 3	Compressor ON output	CnTA	Input 2	RUN/STOP

●For the setting method, refer to the technical data.

⑤ Operation and setting from remote control

A : Refer to the instruction manual for RC-EX series
B : Refer to the installation manual for RC-EX series
C : Loading a utility software vie Internet

○ : Nearly same function setting and operations are possible.
△ : Similar function setting and opperations are possible.

Setting & display item			Description	RC-EX3	RC-E4 RC-E5
1.Remote control network					
1	Control plural indoor units by a single remote control		A remote control can control plural indoor units up to 16 (in one group of remote control network). An address is set to each indoor unit.		○
2	Main/sub setting of remote controls		A pair of remote controls (including optional wireless remote control) can be connected within the remote control network. Set one to "Main" and the other to "Sub".	B	○
2.TOP scrren, Switch manipulation					
1	Menu		"Control","State", or "Details" can be selected. (3-8)	A	
2	Operation mode		"Cooling","Heating","Fan","Dry" or "Auto" can be set.	A	○
3	Set temp.		"Set temperature" can be set by 0.5˚C interval.	A	○
4	Air flow direction		"Air flow direction" [Individual flap control] can be set. Select Enable or Disable for the "3D AUTO" (in case of FDK).	A	△
5	Fan speed		"Fan speed" can be set.	A	○
6	Timer setting		"Timer operation" can be set.	A	○
7	ON/OFF		"On/Off operation of the system" can be done.	A	○
8	F1 SW		The system operates and is controlled according to the function specified to the F1 switch.	A	
9	F2 SW		The system operates and is controlled according to the function specified to the F2 switch.	A	
3.Useful functions					
1	Individual flap control		The moving range (the positions of upper limit and lower limit) of the flap for individual flap can be set. Set also the left and right limit positions for FDK.	A	△
2	Anti draft setting When the panel with the anti-draft function is assembled.		When the panel with the anti draft function is assembled, select to Enable or Disable the anti draft setting for each operation mode and for each blow outlet.	A	
3	Timer settings	Set On timer by hour	The period of time to start operation after stopping can be set. • The period of set time can be set within range of 1hour-12houres (1hr interval). • The operation mode, set temp and fan speed at starting operation can be set.	A	△
		Set Off timer by hour	The period of time to stop operation after starting can be set. • The period of set time can be set within range of 1hour-12houres (1hr interval).	A	△
		Set On timer by clock	The clock time to start operation can be set. • The set clock time can be set by 5 minutes interval. • [Once (one time only)] or [Everyday] operation can be switched. • The operation mode, set temp and fan speed at starting operation can be set.	A	△
		Set Off timer by clock	The clock time to stop operation can be set. • The set clock time can be set by 5 minutes interval. • [Once (one time only)] or [Everyday] operation can be switched.	A	△
		Confirmation of timer settings	Status of timer settings can be seen.	A	
4	Favorite setting [Administrator password]		Set the operation mode, setting temperature, air flow capacity and air flow direction for the choice setting operations. Set them for the Favorite set 1 and the Favorite set 2 respectively.	A	
5	Weekly timer		On timer and Off timer on weekly basis can be set. • 8-operation patterns per day can be set at a maximum. • The setting clock time can be set by 5 minutes interval. • Holiday setting is available. • The operation mode, set temp and fan speed at starting operation can be set.	A	△
6	Home leave mode [Administrator password]		When leaving home for a long period like a vaction leave, the unit can be operated to maintain the room temperature not to be hotter in summer or not to be colder in winter. • The judgment to switch the operation mode (Cooring⇔Heating) is done by the both factors of the set temp. and outdoor air temp. • The set temp. and fan speed can be set.	A	
7	External Ventilation When the ventilator is combined.		On/Off operation of the external ventilator can be done. It is necessary to set from [Menu] ⇒ [Service setting] ⇒ [R/C function settings] ⇒ [Ventilation setting]. • If the "Independent" is selected for the ventilation setting, the ventilator can be operated or stopped.	A	○
8	Select the language		Select the language to display on the remote control. • Select from English, German, French, Spanish, Italian, Dutch, Turkish, Portuguese, Russian, Polish, Japanese and Chinese.	A	
4.Energy-saving setting			Administrator password		
1	Sleep timer		To prevent the timer from keeping ON, set hours to stop operation automatically with this timer. • The selectable range of setting time is from 30 to 240 minutes. (10 miuutes interval) • When setting is "Enable", this timer will activate whenever the ON timer is set.	A	△
2	Peak-cut timer		Power consumption can be reduced by restructing the maximum capacity. Set the [Start time], the [End time] and the capacity limit % (Peak-cut %). • 4-operation patterns per day can be set at maximum. • The setting time can be changed by 5-minutes interval. • The selectable range of capacity limit % (Peak-cut %) is from 0% to 40-80% (20% interval) • Holiday setting is available.	A	
3	Automatic temp set back		After the elapse of the set time period, the current set temp. will be set back to the [Set back time.] • The setting can be done in cooling and heating mode respectively. • Selectable range of the set time is from 20 min. to 120 min. (10 min. interval). • Set the [Set back temp.] by 1˚C interval.	A	△
4	Infrared sensor control (Motion sensor control) When the panel with the infrared sensor (motion sensor) is assembled.		When the infrared sensor (motion sensor) is used, it is necessary to set Enable or Disable for the "Power control" and the "Auto-off".	A	
5.Filter					
1	Filter sign reset	Filter sign reset	The filter sign can be reset.	A	
		Setting next cleaning date	The next cleaning date can be set.	A	
6.User setting					
1	Internal settings	Clock setting	The current date and time can be set or revised. • If a power failure continues no longer than 80 hours, the clock continues to tick by the built-in power source.	A	△
		Date and time display	[Display] or [Hide] the date and/or time can be set, and [12H] or [24H] display can be set.	A	
		Summer time	When select [Enable], the +1hour adjustment of current time can be set. When select [Disable], the [Summer time] adjustment can be reset.	A	
		Contrast	The contrast of LCD can be adjusted higher or lower.	A	
		Backlight	Switching on/off a light can be set and period of the lighting time can be set within the range of 5sec-90 sec (5sec interval).	A	
		Control sound	It can set with or without [Control sound (beep sound)] at touch panel.	A	
		Operation lamp luminance	This is used to adjust the luminance of operation lamp.	A	
2	Administrator settings [Administrator password]	Permission/Prohibition setting	• Permission/Prohibition setting of operation can be set. [On/Off] [Change set temp] [Change operation mode] [Change flap direction] [Change fan speed] [High power operation] [Energy-saving operation] [Timer] Request for administrator can be set. [Individual flap control] [Weekly timer] [Select the language] [Anti draft setting]	A	△
		Outdoor unit silent mode timer	The period of time to operate the outdoor unit by prioritizing the quiteness can be set. • The [Start time] and the [End time] for operating outdoor unit in silent mode can be set. • The period of the operation time can be set once aday by 5 minutes interal.	A	△
		Setting temp. range	The upper/lower limit of temp. setting range can be set. • The limitation of indoor temp. setting range can be set for each operation mode in cooling and heating.	A	△
		Temp increment setting	The temp. increment setting can be changed by 0.5˚C or 1.0˚C.	A	
		Set temp. display	Ways of displaying setting temperatures can be selected.	A	

⑤ Operation and setting from remote control (continued)

Setting & display item			Description	RC-EX3	RC-E4 RC-E5
2	Administrator settings [Administrator password]	R/C display setting	Register [Room name] [Name of I/U] Display [Indoor temp. display] or not. Display [Error code display] or not. Display [Heating stand-by display] [Defrost operation display] [Auto cooling/heating display] [Display temp of R/C, Room, Outdoor] or not	A	△
		Change administrator password	The administrator password can be changed. (Default setting is "0000")	A	
			The administrator password can be reset.	B	
		F1/F2 function setting	Functions can be set for F1 and F2. Selectable functions: [High power operation], [Energy-saving operation], [Silent mode cont.], [Home leave mode], [Favorite set 1], [Favorite set 2] and [Filter sign reset].	A	
7.Service setting					
1	Installer settings [Service password]	Installation date	The [Installation date] can be registed. • When registering the [Instaration date], the [Next service date] is displayed automatically. (For changing the [Next service date], please refer the item of [Service & Maintenance])	B	
		Company information	The [Company information] can be registed and can be displayed on the R/C. • The [Company] can be registered within 26 characters. • The [Phone No.] can be registed within 13 digits.	B	
		Test run	On/Off operation of the test run can be done.	B	○
		Cooling test run	The [Cooling test run] can be done at 5˚C of set temp. for 30 minutes.		
		Drain pump test run	Only drain pump can be operated.		
		Staric pressure adjustment	In case of combination with only the ducted indoor unit which has a function of static pressure adjustment, the static pressure is adjustable. • It can be set for each indoor unit individually.	B	
		Change auto-address	The set address of each indoor unit decided by auto-address setting method can be changed to any other address. (For multiple KX units only)	B	△
		Address setting of main IU	Main indoor unit address can be set. •Only the Main indoor unit can change operation mode and the Sub indoor units dominated by the Main indoor shall follow. • The Main indoor unit can domain 10 indoor units at a maximum.	B	△
		IU back-up function	When a pair of indoor units (2 groups) is connected to one unit of remote control, it can be set Enable or Disable for the [IU rotation], [IU capacity back-up] and [IU fault back-up]	B	
		Infrared sensor setting (Motion sensor setting) When the panel with the infrared sensor (motion sensor) is assembled.	Set Enable or Disable for the infrared sensor detectors of indoor units connected to the remote control. If Disable is selected, it cannot be control the infrared sensor control for the energy-saving setting.	B	
2	R/C function setting [Service password]	Main/Sub R/C	The R/C setting of [Main/Sub] can be changed.	B	○
		Return air temp.	When two or more indoor units are connected to one unit of remote control, suction sensors, which are used for the judgement by thermostat, can be selected. • It can be selected from [Individual], [Master IU] and [Average temp].	B	
		R/C sensor	It can be set the mode to switch to the remote control sensor. It can be selected from cooling and heating.	B	△
		R/C sensor adjustment	The offset value of [R/C sensor] sensing temp. can be set respectively in heating and cooling.	B	△
		Operation mode	Enable or Disable can be set for each operation mode.	B	△
		ºC / ºF	Set the unit for setting temperatures. • ˚C or ˚F can be selected.	B	
		Fan speed	Fan speeds can be selected.	B	○
		External input	When two or more indoor units are connected to one unit of remote control, the range to apply CnT inputs can be set.	B	○
		Upper/lower flap control	[Stop at fixed position] or [Stop at any position] can be selected for the upper and lower louvers.	B	○
		Left/right flap control	[Fixed position stop] or [Stop at any position] can be selected for the right and left louvers.	B	
		Ventilation setting	Combination control for ventilator can be set.	B	○
		Auto-restart	The operation control method after recovery of power failure happened during operation can be set.	B	○
		Auto temp setting	[Enable] or [Disable] of [Auto temp setting] can be selected.	B	
		Auto fan speed	[Enable] or [Disable] of [Auto fan speed] can be selected.	B	
3	IU settings [Service password]	Fan speed setting	The fan speed for indoor units can be set.	B	○
		Filter sign	The setting of filter sign display timer can be done from following patterns.	B	○
		External input 1	The connect of control by external input 1 can be changed.	B	○
		External input 1 signal	The type of external input 1 signal can be changed.	B	○
		External input 2	The connect of control by external input 2 can be changed.	B	
		External input 2 signal	The type of external input 2 signal can be changed.	B	
		Heating thermo-OFF temp adjustment	The judgement temp. of heating themo-off can be adjusted within the range from 0 to +3˚C (1˚C interval)	B	△
		Return temperature adjustment	The sensing temp. of return air temp. sensor built in the indoor unit can be adjusted within the range of ±2˚C.	B	△
		Fan control in cooling thermo-OFF	Fan control, when the cooling thermostat is turned OFF, can be changed.	B	○
		Fan control in heating thermo-OFF	Fan control, when the heating thermostat is turned OFF, can be changed.	B	○
		Anti-frost temp.	Judgment temperature for the anti-frost control during cooling can be changed.	B	○
		Anti-frost control	When the anti-frost control of indoor unit in cooling is activated, the fan speed can be changed.	B	○
		Drain pump operation	In any operation mode in addition to cooling and dry mode, the setting of drain pump operation can be done.	B	○
		Keep fan operating after cooling is stopped	The time period residual fan operation after stopping or thermo-off in cooling mode can be set.	B	○
		Keep fan operating after heating is stopped	The time period residual fan operation after stopping or thermo-off in heating mode can be set.	B	○
		Intermittent fan operation in heating	The fan operation rule following the residual fan operation after stopping or themo-off in heating mode can be set.	B	○
		Fan circulator operation	In case that the fan is operated as the circulator, the fan control rule can be set.	B	
		Control pressure adjust	When only the OA processing units are operated, control pressure value can be changed.	B	
		Auto operation mode	The [Auto rule selection] for switching the operation mode automatically can be selected from 3 patterns.	B	
		Thermo. rule setting	When selecting [Outdoor air temp. control], the judgment temp. can be offset by outdoor temp..	B	
		Auto fan speed control	Auto switching range for the auto fan speed control can be set.	B	
		IU overload alarm	If the difference between the setting temperature and the suction temperature becomes larger than the temperature difference set for the overload alarm, at 30 minutes after the start of operation, the overload alarm signal is transmitted from the external output (CnT-5).	B	
		External output setting	Functions assigned to the external outputs 1 to 4 can be changed.	B	
4	Service & Maintenance [Service password]	IU address	Max 16 indoor units can be connected to one remote control, and all address No. of the connected indoor units can be displayed. • The indoor unit conforming to the address No. can be identified by selecting the address No. and tapping [Check] to operate the indoor fan.	B	○
		Next service date	The [Next service date] can be registered. • The [Next service date] and [Company information] is displayed on the message screen.	A B	○
		Operation data	The [Operation data] for indoor unit and outdoor unit can be displayed.	B	○
		Error display		B	△
		Error history	The error history can be displayed.		
		Display anomaly data	The operation data just before the latest error stop can be displayed.		
		Erase anomaly data	Anomaly operation data can be erased.		
		Reset periodical check	The timer for the periodical check can be reset.		
		Saving IU settings	The I/U settings memorized in the indoor PCB connected to the remote control can be saved in the memory of the remote control.	B	
		Special settings	[Erase IU address] [CPU reset] [Restore of default setting] [Touch panel calibration]	B	△
		Indoor unit capacity display	Address No. and capacities of indoor units connected to the remote control are displayed.	B	
8.Contact company			Shows registered [Contact company] and [Contact phone].		
9.Inspection					
	Confirmation of Inspection		This is displayed when any error occurs.	A	△
10.PC connection					
	USB connection		Weekly timer setting and etc., can be set from PC.	C	

◆ Listed items may not function depending on the specifications of indoor and outdoor units which are combined.

PSB012D999

(2) FDTC, FDE, FDUM series

Electrical wiring work must be performed by an electrician qualified by a local power provider according to the electrical installation technical standards and interior wiring regulations applicable to the installation site.

Security instructions

- **Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.**
- **The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .**
  ⚠WARNING : Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- **The meanings of "Marks" used here are as shown on the right:**
  ⃠ Never do it under any circumstances. ❗ Always do it according to the instruction.
- **Accord with following items. Otherwise, there will be the risks of electric shock and fire caused by overheating or short circuit.**

⚠WARNING

- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire. ❗
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire. ❗
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire. ❗
- **Use the genuine option parts. And installation should be performed by a specialist.**
  If you install the unit by yourself, it could cause water leakage, electric shock and fire. ❗
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire. ⃠
- **Consult the dealer or a specialist about removal of the air-conditioner.**
  Improper installation may cause water leakage, electric shock or fire. ❗
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan. ❗
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running. ❗

⚠CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock due to a short circuit. ⏚
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it can cause electric shocks. ❗
- **Make sure to install earth leakage breaker on power source line. (countermeasure thing to high harmonics.)**
  Absence of breaker could cause electric shock. ❗
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire. ❗
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire. ⃠
- **Use power source line of correct capacity.**
  Using incorrect capacity one could cause electric leak, abnormal heat generation and fire. ❗
- **Do not mingle solid cord and stranded cord on power source and signal side terminal block.**
  In addition, do not mingle difference capacity solid or stranded cord.
  Inappropriate cord setting could cause loosing screw on terminal block, bad electrical contact, smoke and fire. ⃠
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown. ⃠
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury. ⃠

Control mode switching

- The control content of indoor units can be switched in following way. (▭ is the default setting)

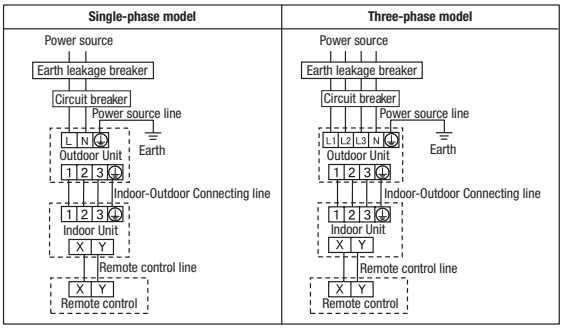
Switch No.	Control Content	
SW2	Indoor unit address (0-Fh)	
SW5-1	Master/Slave Switching (plural /Slave unit Setting)	
SW5-2		
SW6-1– 4	Model capacity setting	
SW7 — 1	ON	Operation check, Drain motor test run
	OFF	Normal operation

①Electrical Wiring Connection

- Electrical wiring work must be performed by an electlician an qualified by a local power provider. These wiring specifications are determined on the assumption that the following instructions are observed:
  ① Do not use cords other than copper ones.
  Do not use any supply line lighter than one specified in parentheses for each type below.
  – braided cord (code designation 60245 IEC 51), if allowed in the relevant part 2;
  – ordinary tough rubber sheathed cord (code designation 60245 IEC 53);
  – flat twin tinsel cord (code designation 60227 IEC 41);
  – ordinary polyvinyl chloride sheathed cord (code designation 60227 IEC 53);
  ② Connect the power supply to the outdoor unit.
  ③ Pay extra attention so as not to confuse signal line and power source line connection, because an error in their connection can be burn all the boards at once.
- Screw the line to terminal block without any looseness, certainly.
- Do not turn on the switch of power source, before all of line work is done.
- Provide a dedicated branching circuit and never share a branching circuit with other equipment. If shared, disconnection at the circuit breaker may occur, which can cause secondary damage.
- Use three-core cable as wiring between indoor and outdoor unit. As for detail, refer to "INSTALLATION MANUAL" of outdoor Unit.
- Set earth of D-type.
- Do not add cord in the middle of line (of indoor power source, remote control and signal) route on outside of unit. If connecting point is flooded, it could cause problem as for electric or communication.
  (In the case that it is necessary to set connecting point on the signal line way, perform thorough waterproof measurement.)
- Run the lines (power source, remote control and "between indoor and outdoor unit") upper ceiling through iron pipe or other tube protection to avoid the damage by mouse and so on.
- Keep "remote control line" and "power source line" away from each other on constructing of unit outside.
- Do not connect the power source line [220V/240V/380V/415V] to signal side terminal block. Otherwise, it could cause failure.
- Connection of the line ("Between indoor and outdoor unit", Earth and Remote control)
  ① Remove lid of control box before connect the above lines, and connect the lines to terminal block according to number pointed on label of terminal block.
  In addition, pay enough attention to confirm the number to lines, because there is electrical polarity except earth line.
  Furthermore, connect earth line to earth position of terminal block of power source.
  ② Install earth leakage breaker on power source line. In addition, select the type of breaker for inverter circuit as earth leakage breaker.
  ③ If the function of selected earth leakage breaker is only for earth-fault protection, hand switch (switch itself and type "B" fuse) or circuit breaker is required in series with the earth leakage breaker.
  ④ Install isolator or disconnect switch on the power source wiring in accordance with the local codes and regulations.
  The isolator should be set in the box with key to prevent touching by another person when servicing.

Cable connection for single unit installation

①As for connecting method of power source, select from following connecting patterns. In principle, do not directly connect power source line to inside unit.
※As for exceptional connecting method of power souce, discuss with the power provider of the country with referring to technical documents, and follow its instruction.
②For cable size and circuit breaker selection, refer to the outdoor unit installation manual.

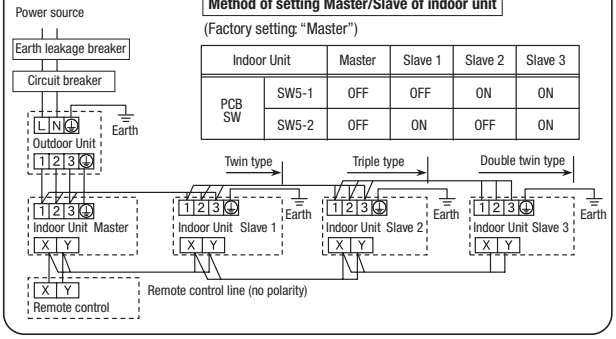


Cable connection for a V multi configuration installation

①Connect the same pairs number of terminal block "①, ②, and ③"and " Ⓧ and Ⓨ " between master and slave indoor units.
②Do the same address setting of all inside units belong to same refrigerant system by rotary switch SW2 on indoor unit's PCB (Printed circuit board).
③Set slave indoor unit as "slave 1" through "slave 3" by address switch SW5-1, 5-2 on PCB.
④When the AIR CON No. button on the remote control unit is pressed after turning on the power, an indoor unit's address number will be displayed. Do not fail to confirm that the connected indoor unit's numbers are displayed on the remote control unit by pressing the ▲ or ▼ button.

Method of setting Master/Slave of indoor unit
(Factory setting: "Master")

Indoor Unit		Master	Slave 1	Slave 2	Slave 3
PCB SW	SW5-1	OFF	OFF	ON	ON
	SW5-2	OFF	ON	OFF	ON



②Remote control, wiring and functions

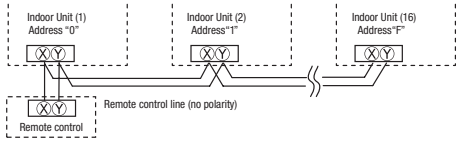
●Do not install it on the following places
①Places exposed to direct sunlight
②Places near heat devices
③High humidity places
④Hot surface or cold surface enough to generate condensation
⑤Places exposed to oil mist or steam directly.
⑥Uneven surface

Installation and wiring of remote control

①Install remote control referring to the attached installation manual.
②Wiring of remote control should use 0.3mm^2 ×2 core wires or cables.
The insulation thickness is 1mm or more. (on-site configuration)
③Maximum prolongation of remote control wiring is 600 m.
If the prolongation is over 100m, change to the size below.
But, wiring in the remote control case should be under 0.5mm^2 . Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.
100 - 200m ..... 0.5mm^2 × 2 cores
Under 300m ..... 0.75mm^2 × 2 cores
Under 400m ..... 1.25mm^2 × 2 cores
Under 600m ..... 2.0mm^2 × 2 cores
④Avoid using multi-core cables to prevent malfunction.
⑤Keep remote control line away from earth (frame or any metal of building).
⑥Make sure to connect remote control line to the remote control and terminal block of indoor unit. (No polarity)

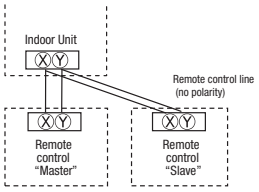
Control plural indoor units by a single remote control.

①A remote control can control plural indoor units (Up to 16).
In above setting, all plural indoor units will operate under same mode and temperature setting.
②Connect all indoor units with 2 cores remote control line.
③Set unique remote control communication address from "0" to "F" to each inside unit by the rotary switch SW2 on the indoor unit's PCB.



Master/ slave setting when more than one remote control unit are used

A maximum of two remote control units can be connected to one indoor unit (or one group of indoor units.)
The air-conditioner operation follows the last operation of the remote control regardless of the master/slave setting of it.
Acceptable combination is "two (2) wired remote controls", "one (1) wired remote control and one (1) wireless kit" or "two (2) wireless kits".
Set one to "Master" and the other to "Slave".
Note:The setting "Remote control unit sensor enabled" is only selectable with the master remote control unit in the position where you want to check room temperature.



③Operation and confirmation from remote control

Operation from RC-EX1A	Operation from RC-E5

1 Check the number of units connected in the remote control system.
It checks sub units of twin, triple or W-twin connection.

"Menu"⇒"Next"⇒"Service & Maintenance"⇒ "Input password"⇒"IU address"	Press AIR CON No. button to display the IU address. Press the ▼ or ▲ button and check addresses of connected indoor units one by one.

2 Check if each unit is connected properly in the remote control system.
It cannot check main and sub units of twin, triple or W-twin connection.

When the operation is stopped, "Menu"⇒ "Next"⇒"Service & Maintenance"⇒ "Input password"⇒"IU address"⇒"check run mode"	If AIR CON No. button is pressed when the operation is stopped, the indoor unit address is displayed. If you select one of addresses for connected indoor units by pressing the ▼ or ▲ button and press the (MODE) button, the unit starts to blow air.

3 Setting main/slave remote controls

"Menu"⇒"Next"⇒"R/C function settings"⇒ "Input password"⇒"Main/Sub of R/C"	Set SW1 to "Slave" for the slave remote control unit.

4 Checking operation data

"Menu"⇒"Next"⇒"Service & Maintenance"⇒ "Input password"⇒"Operation data"	Press the CHECK button. ⇒ "OPER DATA ▼" is displayed. ⇒ Press the (SET) button. ⇒ "DATA LOADING" is displayed. ⇒ Press the "SELECT I/U" button. ⇒ Select one of addresses for connected indoor units by pressing the ▲ or ▼ button. ⇒ Press the (SET) button. ⇒ "DATA LOADING" is displayed. ⇒ Select data by pressing the ▲ or ▼ button.

5 Checking inspection display

"Menu"⇒"Next"⇒"Service & Maintenance"⇒ "Input password"⇒"Inspection display"	Press the CHECK button. ⇒ ▼ button. ⇒ ERR DATA.⇒ Press the (SET) button. ⇒ "DATA LOADING" is displayed. ⇒ Data.

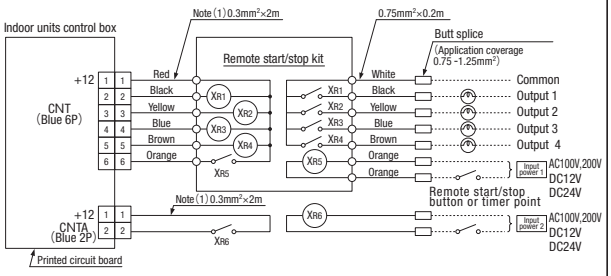
6 Cooling test run from remote control

"Menu"⇒"Next"⇒"Installation settings"⇒ "Input password"⇒"Test run"⇒ "Cooling test run"⇒"Start"	①Start the system by pressing the ON/OFF button. ②Select " (Cool)" with the (MODE) button. ③Press the TEST button for 3 seconds or longer. The screen display will switch "TEST RUN ▼ " ④When the (SET) button is pressed while " TEST RUN ▼" is indicated, a cooling test run will start. The screen display will switch "TEST RUN ".

7 Trial operation of drain pump from remote control

"Menu"⇒"Next"⇒"Installation settings"⇒ "Input password"⇒"Test run"⇒ "Drain pump test run"⇒"Run"	①Press the TEST button for three seconds or longer. The display will change " TEST RUN ▼" ②Press the ▼ button once and cause " DRAIN PUMP " to be displayed. ③When the (SET) button is pressed, a drain pump operation will start. Display: " TO STOP "

④ Function of CnT connector of indoor printed circuit board



Note (1): Do not use the length over 2 meter

●CnT connector (local) vendor model
Connector : Made by molex 5264-06
Terminals : Made by molex 5263 T

●Function

Output 1	Air-conditioner operation output (When the air-conditioner ON: X_{R1} = ON)	
Output 2	Heating output	
Output 3	Thermostat ON output (When the thermostat ON: X_{R3} = ON)	
Output 4	Air-conditioner check ON (When checking air-conditioner: X_{R4} = ON)	
Input	At shipping	X_{R5} OFF ⇒ ON: Air-conditioner oper ates.
		X_{R5} ON ⇒ OFF: Air-conditioner stops.
	*Functions and controls may vary depending on the switching at site.	
Input 2 (FDT etc.)	At shipping	X_{R6} OFF ⇒ ON: Air-conditioner oper ates.
		X_{R6} ON ⇒ OFF: Air-conditioner stops.
	*Functions and controls may vary depending on the switching at site.	

* Refer to I/U settings.

●CnTA connector is installed on FDT, etc. Refer to the spec. drawings.
CnTA connector (local) vendor model
Connector : Made by JST XAP02V-1-E
Terminals : Made by JST SXA-01T-P0.6

⑥Operation and setting from remote control

A: Refer to the instruction manual for RC-EX series.
B: Refer to the installation manual for RC-EX series.
C: Loading a utility software vie Internet
○: Nearly same function setting and operations are possible.
△: Similar function setting and operations are possible.

	Setting & display item	Description	RC-EX series	RC-E5
1. Remote Control network				
1	Control plural indoor units by a single remote control	A remote control can control plural indoor units up to 16 (in one group of remote control network). An address is set to each indoor unit.	○	○
2	Master/slave setting of remote controls	A maximum of two remote controls (include option wireless) can be connected to one indoor unit. Set one to "Master" and the other to "Slave".	B	○
2. TOP screen, Switch manipulation			A	
1	Menu	"Control", "Settings", or "Details" can be selected. (3.-19.)	A	
2	Operation mode	"Cooling", "Heating", "Fan", "Dry" or "Auto" can be set.	A	○
3	Set temp.	"Set temperature" can be set by 0.5℃ interval.	A	○
4	Air flow direction	"Air flow direction". [Individual flap control setting] can be set.	A	○
5	Fan speed	"Fan speed" can be set.	A	○
6	Timer setting	"Timer operation" can be set.	A	○
7	ON/OFF	"On/Off operation of the system" can be done.	A	○
8	High power SW	"High power operation" or "Normal operation" can be selected.	A	
9	Energy-saving SW	"Energy-saving operation" or "Normal operation" can be selected.	A	
3. Energy-saving settin			A	
1	Auto OFF timer [Administrator password]	For preventing the timer from keeping ON, set hours to stop operation automatically with this timer. ・The selectable range of setting time is from 30 to 240 minutes (10minutes interval) ・When setting is "Valid", this timer will activate whenever the ON timer is set.	A	△
2	Peak-cut timer [Administrator password]	Power consumption can be reduced by restricting the maximum capacity. Set the [Start time], the [End time] and the capacity limit % (Peak-cut %). ・4-operation patterns per day can be set at maximum. ・The setting time can be changed by 5-minutes interval. ・The selectable range of capacity limit % (Peak-cut %) is from 0% to 40-80% (20% interval). ・Holiday setting is available.	A	
3	Automatic temp. set back [Administrator password]	After the elapse of the set time period, the current set temp. will be set back to the [Set back temp.] ・The setting can be done in cooling and heating mode respectively. ・The selectable range of the set time is from 20 min. to 120 min. (10 min. interval). ・Set the [Set back temp.] by 1℃ interval.	A	△
4. Individual flap control setting			A	
	Individual flap control setting	The moving range (the positions of upper limit and lower limit) of the flap for individual air outlet port can be set.	A	○
5. Ventilation				
1	External ventilation (In combination with ventilator)	On/Off operation of the external ventilator can be done. ・The settings of [Interlock] with AC (air-conditioner), [Single operation] of ventilator or operation [invalid] of ventilation can be done through [Ventilation settings] in the [Remote control] menu.	A	○
6.Filter sign reset			A	○
1	Filter sign reset	The filter sign can be reset.	B	
2	Setting next cleaning date	The next cleaning date can be set.	A	
7.Initial settings				
1	Clock setting	The current date and time can be set or revised.	A	△
2	Date and time display	[Display] or [Hide] the date and/or time can be set, and the [12H] or [24H] display can be set.	A	
3	Summer time	When select [Valid], the +1hour adjustment of current time can be set.When select [Invalid], the [Summer time] adjustment can be reset.	A	
4	Contrast	The contrast of LCD can be adjusted higher or lower.	A	
5	Backlight	Switching on/off a light can be set and the period of the lighting time can be set within the range of 5sec-90sec (5sec interval).	A	
6	Control sound	It can set with or without [Control sound (beep sound)] at touching panel.	A	
8.Timer settings			A	
1	Set On timer by hour	The period of time to start operation after stopping can be set. ・The period of set time can be set within the range of 1hour-12hours (1hr interval). ・The operation mode, set temp and fan speed at starting operation can be set.	A	△
2	Set Off timer by hour	The period of time to stop operation after starting can be set. ・The period of set time can be set within the range of 1hour-12hours (1hr interval).	A	△
3	Set On timer by clock	The clock time to start operation can be set. ・The set clock time can be set by 5 minutes interval. ・[Once (one time only)] or [Everyday] operation can be switched. ・The operation mode, set temp. and fan speed at starting operation can be set.	A	△
4	Set Off timer by clock	The clock time to stop operation can be set. ・The set clock time can be set by 5 minutes interval. ・[Once (one time only)] or [Everyday] operation can be switched.	A	△
5	Confirmation of timer settings	Status of timer settings can be seen.	A	
9.Weekly timer				
1	Weekly timer [Administrator password]	On timer and Off timer on weekly basis can be set. ・8-operation patterns per day can be set at a maximum. ・The setting clock time can be set by 5 minutes interval. ・Holiday setting is available. ・The operation mode, set temp and fan speed at starting operation can be set.	A	△ △ △
10.Home leave mode				
1	Home leave mode [Administrator password]	When leaving home for a long period like a vacation leave, the unit can be operated to maintain the room temperature not to be hotter in summer or not to be colder in winter. ・The judgment to switch the operation mode (Cooling⇔Heating) is done by the both factors of the set temp. and outdoor air temp.. ・The set temp. and fan speed can be set.	A	

⑥Operation and setting from remote control (continued)

	Setting & display item	Description	RC-EX series	RC-E5
11. Administrator settings		[Administrator password]	A	
1	Enable/Disable setting	・Enable/Disable setting of operation can be set. [On/Off] [Change set temp.] [Change operation mode] [Change air flow direction] [Individual flap control setting][Fan speed] [High power operation] [Energy-saving operation] [Timer settings] [Weekly timer setting] ・Request for administrator password can be set. [Individual flap control setting][Weekly timer][Energy-saving setting][Home leave mode][Administrator settings]	A	△
2	Silent mode timer	The period of time to operate the outdoor unit by prioritizing the quietness can be set. ・The [Start time] and the [End time] for operating outdoor unit in silent mode can be set. ・The period of the operation time can be set once a day by 5 minutes interval.	A	△
3	Setting temp. range	The upper/lower limit of indoor temp. setting range can be set. ・The limitation of indoor temp. setting range can be set for each operation mode in cooling and heating.	A	△
4	Temp. increment setting	The temp. increment setting can be changed by 0.5℃ or 1.0℃.	A	
5	RC display setting	Register [Room name] [Name of I/U] Display [indoor temp.] or not. Display [inspection code] or not. Display [Heating stand-by] [Defrost operation] [Auto cooling/heating] or not	A	○ △ ○
6	Change administrator password	The administrator password can be changed. (Default setting is "0000") The administrator password can be reset.	A B	
12.Installer settings		[Service password]	B	
1	Installation date	The [Installation date] can be registered. ・When registering the [Installation date], the [Next service date] is displayed automatically. (For changing the [Next service date]. please refer the item of [Service & Maintenance].)	B	
2	Service contact	The [Service contact] can be registered and can be displayed on the RC. ・The [Contact company] can be registered within 10 characters. ・The [Contact phone] can be registered within 13 digits.	B	
3	Test run	On/Off operation of the test run can be done.	B	
	Cooling test run	The [Cooling test run] can be done at 5℃ of set temp. for 30 minutes.		○
	Drain pump test run	Only the drain pump can be operated.		○
	Compressor Hz fixed operation	The [Test run] operation can be done with fixed compressor Hz set by installer.		○
4	Static pressure adjustment	In case of combination with only the ducted indoor unit which has a function of static pressure adjustment, the static pressure is adjustable.	B	
5	Change auto-address	The set address of each indoor unit decided by auto-address setting method can be changed to any other address. (For multiple KX units only)	B	△
6	Address setting of Main IU	Main indoor unit address can be set. ・Only the Main indoor unit can change operation mode and the Sub indoor units dominated by the Main indoor unit shall follow. ・The Main indoor unit can domain 10 indoor units at a maximum.	B	△
13.RC function settings		[Service password]	B	
1	Main/Sub RC setting	The setting of [Main/Sub RC] can be changed.	B	○
2	RC sensor	The offset value of [RC sensor] sensing temp. can be set respectively in heating and cooling.	B	○
3	9 RC sensor adjustment	The offset value of [RC sensor] sensing temp. can be set respectively in heating and cooling. ・The setting range of offset value is ±3℃ both in cooling and heating.	B	△
4	12 Operation mode	The [Valid/Invalid] setting of [Auto][Cooling][Heating] and [Dry] can be done respectively.	B	○
5	13 Fan speed	The setting of [Fan speed] can be done from following patterns.・1-speed, 2-speeds (Hi-Me), 2-speeds (Hi-Lo), 3-speeds, 4-speeds.	B	○
6	14 External input	The applicable range ([Individual] or [All units]) of CnT input to the multiple indoor units connected in one control system. ・[Individual] : Only the unit received CnT input signal.・[All units] : All the units connected to one control system received CnT input signal.	B	○
7	15 Ventilation setting	The setting of [Invalid] operation of ventilator, [Interlock] with AC or [Independent] of ventilator can be selected. ・When setting [Interlock], the operation of external ventilator is interlocked with the operation of AC ・When setting [Independent], only the operation of external ventilator is available.	B	○
8	16 Flap control	The [Flap control] method can be switched to[Stop at fixed position] or [Stop at any position]・[Stop at fixed position] : Stop the flap at a certain position among the designated 4 positions.・[Stop at any position] : Stop the flap at any arbitrary position just after the stopping command from RC was sent.	B	○
9	17 Auto-restart	The operation control method after recovery of power blackout happened during operation can be set.	B	○
10	18 Auto temp. setting	[Valid] or [Invalid] of [Auto temp. setting] can be selected.	B	
11	19 Auto fan speed setting	[Valid] or [Invalid] of [Auto fan speed setting] can be selected.	B	
14. I/U settings		[Service password]	B	
1	High ceiling	The fan tap of indoor fan can be changed. ・[Standard] [High ceiling 1] [High ceiling 2] can be selected.	B	○
2	Filter sign	The setting of filter sign display timer can be done from following patterns.	B	○
3	External input 1	The content of control by external input can be changed.・The selectable contents of control are [On/Off] [Permission/Prohibition] [Cooling/heating] [Emergency stop]	B	○
4	External input 1 signal	The type of external input signal ([Level input]/[Pulse input]) can be changed.	B	○
5	External input 2	・The selectable contents of control are [On/Off] [Permission/Prohibition] [Cooling/heating] [Emergency stop]	B	
6	External input 2 signal	The type of external input signal ([Level input]/[Pulse input]) can be changed.	B	
7	Heating thermo-off temp. adjust.	The judgment temp. of heating thermo-off can be adjusted within the range from 0 to +3℃ (1℃ interval)	B	△
8	Return air sensor adjust.	The sensing temp. of return air temp. sensor built in the indoor unit can be adjusted within the range of ±2℃.	B	△
9	Fan control in heating thermo OFF	The fan control method at heating thermo-off can be changed.・The selectable fan control methods are [Low] [Set fan speed] [Intermittent] [Stop].	B	○
10	Anti-frost temp.	The judgment temp. of anti-frost control for the indoor unit in cooling can be changed to [Temp. High] or [Temp. Low].	B	○
11	Anti-frost control	When the anti-frost control of indoor unit in cooling is activated, the fan speed can be changed.	B	○
12	Drain pump operation	In any operation mode in addition to cooling and dry mode, the setting of drain pump operation can be done.	B	○
13	Residual fan operation in cooling	The time period of residual fan operation after stopping or thermo-off in cooling mode can be set.	B	○
14	Residual fan operation in heating	The time period of residual fan operation after stopping or thermo-off in heating mode can be set.	B	○
15	Intermittent fan operation in heating	The fan operation rule following the residual fan operation after stopping or thermo-off in heating mode can be set.	B	○
16	Fan circulator operation	In case that the fan is operated as the circulator, the fan control rule can be set.	B	
17	Control pressure adjust. (For OA processing unit only)	When only the OA processing units are operated, control pressure value can be changed.	B	○
18	Auto operation mode	The [Auto rule selection] for switching the operation mode automatically can be selected from 3 patterns.	B	
19	Thermo. rule setting	When selecting [Outdoor air temp. control], the judgment temp. can be offset by outdoor temp..	B	
20	Auto fan speed control	Under the [Auto fan speed control] mode, the switching range of fan speed can be selected from following 2 patterns [Auto 1] [Auto 2]. ・[Auto 1] : Hi ⇔Me⇔Lo・[Auto 2] : P-hi⇔Hi⇔Me⇔Lo	B	
15.Service & Maintenance		[Service password]	B	
1	IU address No.	Max. 16 indoor units can be connected to one remote control, and all address No. of the connected indoor units can be displayed. ・The indoor unit conforming to the address No. can be identified by selecting the address No. and tapping [Check] to operate the indoor fan.	B	○
2	Next service date	The [Next service date] can be registered.・The [Next service date] and [Service contact] is displayed on the [Periodical check] message screen.	AB	
3	Operation data	Total 39 items of [Operation data] for indoor unit and outdoor unit can be displayed.	B	○
4	Error history	[Date and time of error occurred] [I/U address] [Error code] for Max. 16 latest cases of error history can be displayed.	B	△
	Display anomaly data	The operation data just before the latest error stop can be displayed.	B	
	Reset periodical check	The timer for the periodical check can be reset.	B	○
5	Saving I/U settings	The I/U settings memorized in the indoor PCB connected to the remote control can be saved in the memory of the remote control.	B	
6	Special settings	[Erase I/U address] [CPU reset] [Initializing] [Touch panel calibration]	B	△
16.Inspection			A	△
	Confirmation of Inspection	The address No, of anomalous indoor/outdoor unit and error code are displayed.		
17.PC connection			C	
	USB connection	Weekly timer setting and etc., can be set from PC.		

PSB012D994

(3) FDU series

Electrical wiring work must be performed by an electrician qualified by a local power provider according to the electrical installation technical standards and interior wiring regulations applicable to the installation site.

Security instructions

- **Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.**
- **The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION .**
  ⚠WARNING : Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- **The meanings of "Marks" used here are as shown on the right:**
  ⃠ Never do it under any circumstances. ❗ Always do it according to the instruction.
- **Accord with following items. Otherwise, there will be the risks of electric shock and fire caused by overheating or short circuit.**

⚠WARNING

- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire. ❗
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire. ❗
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire. ❗
- **Use the genuine option parts. And installation should be performed by a specialist.**
  If you install the unit by yourself, it could cause water leakage, electric shock and fire. ❗
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire. ⃠
- **Consult the dealer or a specialist about removal of the air-conditioner.**
  Improper installation may cause water leakage, electric shock or fire. ❗
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan. ❗
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running. ❗

⚠CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock or fire due to a short circuit. ⏚
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it could cause electric shocks or fire. ❗
- **Make sure to install earth leakage breaker on power source line. (countermeasure thing to high harmonics.)**
  Absence of breaker could cause electric shock. ❗
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire. ❗
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire. ⃠
- **Use power source line of correct capacity.**
  Using incorrect capacity one could cause electric leak, abnormal heat generation and fire. ❗
- **Do not mingle solid cord and stranded cord on power source and signal side terminal block.**
  In addition, do not mingle difference capacity solid or stranded cord.
  Inappropriate cord setting could cause loosing screw on terminal block, bad electrical contact, smoke and fire. ⃠
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown. ⃠
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury. ⃠

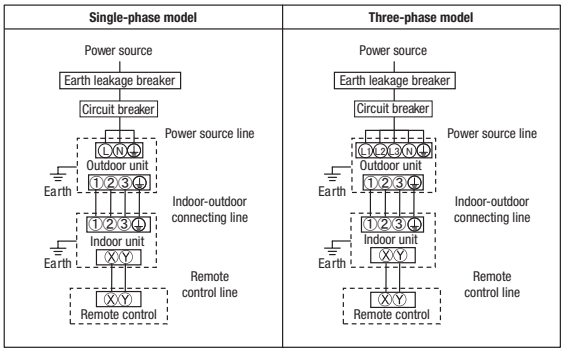
① Electrical Wiring Connection

- Use three-core cable as wiring between indoor and outdoor unit. As for detail, refer to "INSTALLATION MANUAL" of outdoor unit.
- Set earth of D-type.
- Keep "remote control line" and "power source line" away from each other on constructing of unit outside.
- Run the lines (power source, remote control and "between indoor and outdoor unit") upper ceiling through iron pipe or other tube protection to avoid the damage by mouse and so on.
- Do not add cord in the middle of line route (of power source, remote control and "between indoor and outdoor unit") on outside of unit. If connecting point is flooded, it could cause problem as for electric or communication. (In the case that it is necessary to set connecting point on the way, perform thorough waterproof measurement.)
- Do not connect the power source line [220V/240V/380V/415V] to signal side terminal block. Otherwise, it could cause failure.
- Screw the line to terminal block without any looseness, certainly.
- Do not turn on the switch of power source, before all of line work is done.
- Connection of the line ("Between indoor and outdoor unit", earth and remote control)

①Remove lid of control box before connect the above lines, and connect the lines to terminal block according to number pointed on label of terminal block.
In addition, pay enough attention to confirm the number to lines, because there is electrical polarity except earth line. Furthermore, connect earth line to earth position of terminal block of power source.
②Install earth leakage breaker on power source line. In addition, select the type of breaker for inverter circuit as earth leakage breaker.
③If the function of selected earth leakage breaker is only for earth-fault protection, hand switch (switch itself and type "B" fuse) or circuit breaker is required in series with the earth leakage breaker.
④Install isolator or disconnect switch on the power source wiring in accordance with the local codes and regulations.
The isolator should be set in the box with key to prevent touching by another person when servicing.

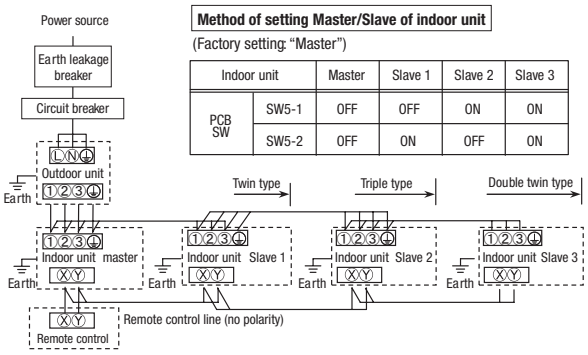
Cable connection for single unit installation

①As for connecting method of power source, select from following connecting patterns. In principle, do not directly connect power souce line to inside unit.
※As for exceptional connecting method of power souce, discuss with the power provider of the country with referring to technical documents, and follow its instruction.
②For cable size and circuit breaker selection, refer to the outdoor unit installation manual.



Cable connection for a V multi configuration installation

①Connect the same pairs number of terminal block "①, ②, and ③"and "ⓍandⓎ" between master and slave indoor units.
②Do the same address setting of all inside units belong to same refrigerant system by rotary switch SW2 on indoor unit's PCB (Printed circuit board).
③Set slave indoor unit as "slave 1" through "slave 3" by address switch SW5-1, 5-2 on PCB.
④When the AIR CON NO. button on the remote control unit is pressed after turning on the power, an indoor unit's address number will be displayed. Do not fail to confirm that the connected indoor unit's numbers are displayed on the remote control unit by pressing the ▲ or ▼ button.



Method of setting Master/Slave of indoor unit
(Factory setting: "Master")

Indoor unit		Master	Slave 1	Slave 2	Slave 3
PCB SW	SW5-1	OFF	OFF	ON	ON
	SW5-2	OFF	ON	OFF	ON

②Remote Control, Wiring and functions

●Do not install it on the following places
①Places exposed to direct sunlight
②Places near heat devices
③High humidity places
④Hot surface or cold surface enough to generate condensation
⑤Places exposed to oil mist or steam directly.
⑥Uneven surface

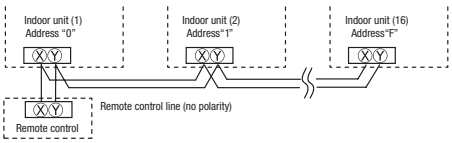
Installation and wiring of remote control

①Install remote control referring to the attached installation manual.
②Wiring of remote control should use 0.3mm² ×2 core wires or cables.
The insulation thickness is 1mm or more. (on-site configuration)
③Maximum prolongation of remote control wiring is 600 m.
If the prolongation is over 100m, change to the size below.
But, wiring in the remote control case should be under 0.5mm² . Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.
100 - 200m ..... 0.5mm² × 2 cores
Under 300m ..... 0.75mm² × 2 cores
Under 400m ..... 1.25mm² × 2 cores
Under 600m ..... 2.0mm² × 2 cores
④Avoid using multi-core cables to prevent malfunction.
⑤Keep remote control line away from earth (frame or any metal of building).
⑥Make sure to connect remote control line to the remote control and terminal block of indoor unit. (No polarity)

Control plural indoor units by a single remote control.

①A remote control can control plural indoor units (Up to 16).
In above setting, all plural indoor units will operate under same mode and temperature setting.
②Connect all indoor units with 2 core remote control line.
③Set unique remote control communication address from "0" to "F" to each inside unit by the rotary switch SW2 on the indoor unit's PCB.

After a unit is energized, it is possible to display an indoor unit address by pressing AIR CON NO. button on the remote control unit. Press the ▲ or ▼ button to make sure that all indoor units connected are displayed in order.



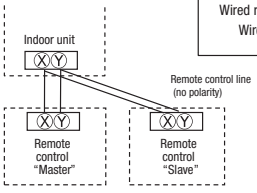
Confirming method of indoor units

When indoor unit address number is displayed on remote control, pushing the (MODE) button to make the indoor unit with that number blow air (Display example:" I/U001 ≋ ")
Push the (MODE) button again to stop the operation.
However, this operation is invalid on the air-conditioner running.

Master/ slave setting when more than one remote control unit are used

A maximum of two remote control units can be connected to one indoor unit (or one group of indoor units.)
The air-conditioner operation follows the last operation of the remote control regardless of the master/slave setting of it.
Acceptable combination is "two (2) wired remote controls", "one (1) wired remote control and one (1) wireless kit" or "two (2) wireless kits".
Set SW1 (wired remote control) or SW1-2 (wireless kit) to "Slave" for the slave remote control unit. It was factory set to "Master" for shipment.
Note:The setting "Remote control unit sensor enabled" is only selectable with the master remote control unit in the position where you want to check room temperature.

Switch	setting	contents
Wired remote control: SW1 Wireless kit: SW1-2	M	Master remote control
	S	Slave remote control



③Trial operation

The method of trial cooling operation

Operate the remote control unit as follows.
1. Starting a cooling test run.
①Start the system by pressing the ①ON/OFF button.
②Select " (Cool)" with the (MODE) button.
③Press the TEST button for 3 seconds or longer.
The screen display will switch to: " TEST RUN ▼ "
④When the (SET) button is pressed while " TEST RUN ▼ " is indicated, a cooling test run will start.
The screen display will switch to " TEST RUN ".
2. Ending a cooling test run.
Pressing the ①ON/OFF button, the (TEMP) button or (MODE) button will end a cooling test run. (Cooling test run will end after 30 minutes pass.)
" TEST RUN " shown on the screen will go off.

Checking operation data

Operation data can be checked with remote control unit operation.
1. Press the CHECK button.
The display change " OPERDATA ▼ "
2. Press the (SET) button while " OPERDATA ▼ " is displayed.
3. When only one indoor unit is connected to remote control, " DATA LOADING " is displayed (blinking indication during data loading).
Next, operation data of the indoor unit will be displayed. Skip to step 7.
4. When plural indoor units is connected, the smallest address number of indoor unit among all connected indoor unit is displayed.
[Example]:
"SELECT I/U" (blinking 1 seconds)→
"I/U000 ▲" blinking.
5. Select the indoor unit number you would like to have data displayed with the ▲ ▼ button.
6. Determine the indoor unit number with the (SET) button.
(The indoor unit number changes from blinking indication to continuous indication)
" I/U000 " (The address of selected indoor unit is blinking for 2 seconds.)
↓
" DATA LOADING " (A blinking indication appears while data loaded.)
Next, the operation data of the indoor unit is indicated.
7. Upon operation of the ▲ ▼ button, the current operation data is displayed in order from data number 01.
The items displayed are in the above table.
※Depending on models, the items that do not have corresponding data are not displayed.
8. To display the data of a different indoor unit, press the AIR CON No. button, which allows you to go back to the indoor unit selection screen.
9. Pressing the ①ON/OFF button will stop displaying data.
Pressing the (RESET) button during remote control unit operation will undo your last operation and allow you to go back to the previous screen.

Number	Data Item	
01		(Operation Mode)
02	SET TEMP.___℃	(Set Temperature)
03	RETURN AIR___℃	(Return Air Temperature)
04	SENSOR___℃	(Remote Control Thermistor Temperature)
05	THI-R1___℃	(Indoor Unit Heat Exchanger Thermistor / U Bend)
06	THI-R2___℃	(Indoor Unit Heat Exchanger Thermistor /Capillary)
07	THI-R3___℃	(Indoor Unit Heat Exchanger Thermistor /Gas Header)
08	I/U FANSPEED___	(Indoor Unit Fan Speed)
09	DEMAND___Hz	(Frequency Requirements)
10	ANSWER___Hz	(Response Frequency)
11	I/U EEV____P	(Pulse of Indoor Unit Expansion Valve)
12	TOTAL I/U RUN___H	(Total Running Hours of The Indoor Unit)
21	OUTDOOR___℃	(Outdoor Air Temperature)
22	THO-R1___℃	(Outdoor Unit Heat Exchanger Thermistor)
23	THO-R2___℃	(Outdoor Unit Heat Exchanger Thermistor)
24	COMP.___Hz	(Compressor Frequency)
25	HP____MPa	(High Pressure)
26	LP____MPa	(Low Pressure)
27	Td___℃	(Discharge Pipe Temperature)
28	COMP BOTTOM___℃	(Comp Bottom Temperature)
29	CT___AMP	(Current)
30	TARGET SH___℃	(Target Super Heat)
31	SH___℃	(Super Heat)
32	TDSH___℃	(Discharge Pipe Super Heat)
33	PROTECTION No.___	(Protection State No. of The Compressor)
34	O/U FANSPEED___	(Outdoor Unit Fan Speed)
35	63H1	(63H1 On/Off)
36	DEFROST	(Defrost Control On/Off)
37	TOTAL COMP RUN.___H	(Total Running Hours of The Compressor)
38	O/U EEV1____P	(Pulse of The Outdoor Unit Expansion Valve EEVC)
39	O/U EEV2____P	(Pulse of The Outdoor Unit Expansion Valve EEVH)

※Depending on outdoor unit model, there are data not shown.

◎If two (2) remote controls are connected to one (1) inside unit, only the master control is available for trial operation and confirmation of operation data. (The slave remote control is not available.)

Trail operation of drain pump

Drain pump operation from remote control unit is possible. Operate a remote control unit by following the steps described below.
1. To start a forced drain pump operation.
①Press the TEST button for three seconds or longer.
The display will change " TEST RUN ▼ "
②Press the ▼ button once and cause " DRAIN PUMP " to be displayed.
③When the (SET) button is pressed, a drain pump operation will start.
Display: " TO STOP "
2. To cancel a drain pump operation.
①If either (SET) or ①ON/OFF button is pressed, a forced drain pump operation will stop. The air-conditioning system will become OFF.

◎If two (2) remote controls are connected to one (1) inside unit, only the master control is available for trial operation and confirmation of operation data. (The slave remote control is not available.)

④ Function setting by remote control

The functional setting

● The initial function setting for typical using is performed automatically for a remote control unit and an indoor unit by the door unit connected, when remote control and inside unit are connected.
As long as they are used in a typical manner, there will be no need to change the initial settings.
If you would like to change the initial setting marked " ○ ", set your desired setting as for the selected item.
The procedure of functional setting is shown as the following diagram.
As for detail of setting, refer to the installation manual of remote control.

[Flow of function setting]

Start : While indoor unit do not operate, press " (SET) " (SET) and " (MODE) " (MODE) button for 3 seconds at the same time.
Finalize : Press " (SET) " (SET) button.
Reset : Press " (RESET) " (RESET) button.
Select : Press ▲ ▼ button.
End : Press ⏻ON/OFF button.
It is possible to finish above setting on the way, and unfinished change of setting is unavailable.
" ○ " : Initial settings
" ※ " : Automatic criterion
As for detail, refer to the installation manual of remote control.

During air-conditioner stopping push (SET) + (MODE) button simultaneously for 3 seconds

Consult the technical data etc for each control details

Record and save the setting

FUNCTION SET

FUNCTION (Remote control function)

Function	setting		
01 ESP SET	ESP VALID	○	Validate setting of ESP:External Static Pressure
	ESP INVALID		Invalidate setting of ESP
02 AUTO RUN SET			
	AUTO RUN ON	※	
	AUTO RUN OFF	※	Automatic operation is impossible
03 REMO TEMP SW			
	REMO VALID	○	
	REMO INVALID		Temperature setting button is not working
04 REMO MODE SW			
	REMO VALID	○	
	REMO INVALID		Mode button is not working
05 ON/OFF SW			
	ON/OFF VALID	○	
	ON/OFF INVALID		On/Off button is not working
06 FAN SPEED SW			
	FAN SET VALID	※	
	FAN SET INVALID	※	Fan speed button is not working
07 REMO LOUVER SW			
	REMO VALID	※	
	REMO INVALID	※	Louver button is not working
08 REMO TIMER SW			
	TIMER VALID	○	
	TIMER INVALID		Timer button is not working
09 SENSOR SET			
	SENSOR OFF	○	Remote thermistor is not working.
	SENSOR ON		Remote thermistor is working.
	SENSOR +3DEG		Remote thermistor is working, and to be set for producing +3.0°C increase in temperature.
	SENSOR +2DEG		Remote thermistor is working, and to be set for producing +2.0°C increase in temperature.
	SENSOR +1DEG		Remote thermistor is working, and to be set for producing +1.0°C increase in temperature.
	SENSOR -1DEG		Remote thermistor is working, and to be set for producing -1.0°C increase in temperature.
	SENSOR -2DEG		Remote thermistor is working, and to be set for producing -2.0°C increase in temperature.
	SENSOR -3DEG		Remote thermistor is working, and to be set for producing -3.0°C increase in temperature.
10 AUTO RESTART			
	INVALID	○	
	VALID		
11 VENT LINK SET			
	NO VENT	○	
	VENT LINK		Connect the single split series and the VRF series to the indoor board CNT and indoor board CND respectively. If a ventilation device is connected, been geared with the motion of indoor device, the ventilation device is operated/stopped. By connecting the ventilation device with the single split series device to indoor board CNT, the VRF series device to CND, you can operate/stop the ventilation device independently by the handling of ventilation button.
	NO VENT LINK		
12 TEMP RANGE SET			
	INDIV CHANGE	○	If you change the range of set temperature, the indication of set temperature will vary following the control.
	NO INDIV CHANGE		If you change the range of set temperature, the indication of set temperature will not vary following the control, and keep the set temperature.
13 I/U FAN			
	HI-MID-LO	※	Air flow of fan becomes the three speed of Hi and Mid and Lo or Hi and Mid and Lo .
	HI-LO	※	Air flow of fan becomes the two speed of Hi and Lo .
	HI-MID	※	Air flow of fan becomes the two speed of Hi and Mid .
	1 FAN SPEED	※	Air flow of fan is fixed at one speed.
14 POSITION			If you want to change the remote control function "14 POSITION", You must change the indoor function "04 POSITION" accordingly.
	4POSITION STOP	○	You can select the louver stop position in the four.
	FREE STOP		The louver can stop at any position.
15 MODEL TYPE			
	HEAT PUMP	※	
	COOLING ONLY	※	
16 EXTERNAL CONTROL SET			
	INDIVIDUAL	○	If you input into the indoor printed circuit board CNT from outside, the indoor device will be operated independently following the input from outside.
	FOR ALL UNITS		If you input into indoor printed circuit board CNT from outside, All units which share the same one remote control network work following the input from outside.
17 ROOM TEMP INDICATION SET			
	INDICATION OFF	○	
	INDICATION ON		In normal working indication, indoor unit temperature is indicated instead of air flow. (Only the master remote control can be indicated.)
18 HEATING INDICATION			
	INDICATION ON	○	
	INDICATION OFF		Heating preparation indication should not be indicated.
19 °C/°F SET			
	°C	○	Temperature indication is by degree C
	°F		Temperature indication is by degree F

(Indoor unit function) I/U FUNCTION

Only when plural indoor units are connected indoor No. selection (Note3)

If to change re-set with other indoor unit, push AIR CON NO. button, and indoor selection indication (for example: I/U 000) is set back.

Function	setting		
02 FAN SPEED SET	STANDARD	○	
	HIGH SPEED 1		(Note2)
	HIGH SPEED 2		
03 FILTER SIGN SET			
	INDICATION OFF		
	TYPE 1	○	The filter sign is indicated after running for 180 hours.
	TYPE 2		The filter sign is indicated after running for 600 hours.
	TYPE 3		The filter sign is indicated after running for 1000 hours.
	TYPE 4		The filter sign is indicated after running for 1000 hours, then it will be stopped by compulsion after 24 hours.
04 POSITION			If to change the indoor function "04 POSITION ", The remote control function "14 POSITION " should be changed accordingly.
	4POSITION STOP	○	Select the louver stop position in four.
	FREE STOP		The louver can stop at any positon.
05 EXTERNAL INPUT			
	LEVEL INPUT	○	
	PULSE INPUT		
06 PERMISSION/PROHIBITION			
	INVALID	○	
	VALID		Make permission/prohibition control of function be in effect.
07 EMERGENCY STOP			
	INVALID	○	
	VALID		With the VRF series, it is used to stop all indoor units connected with the same outdoor unit immediately. When stop signal is inputed from remote on-off terminal "CNT-6", all indoor units are stopped immediately.
08 SP OFFSET	OFFSET +3.0deg		To be reset for producing +3.0°C increase in temperature during heating.
	OFFSET +2.0deg		To be reset for producing +2.0°C increase in temperature during heating.
	OFFSET +1.0deg		To be reset for producing +1.0°C increase in temperature during heating.
	NO OFFSET	○	
09 RETURN AIR TEMP	OFFSET +2.0deg		To be reset producing +2.0°C increase in return air temperature of indoor unit.
	OFFSET +1.5deg		To be reset producing +1.5°C increase in return air temperature of indoor unit.
	OFFSET +1.0deg		To be reset producing +1.0°C increase in return air temperature of indoor unit.
	NO OFFSET	○	
	OFFSET -1.0deg		To be reset producing -1.0°C increase in return air temperature of indoor unit.
	OFFSET -1.5deg		To be reset producing -1.5°C increase in return air temperature of indoor unit.
	OFFSET -2.0deg		To be reset producing -2.0°C increase in return air temperature of indoor unit.
10 FAN CONTROL			
	LOW FAN SPEED	○	When heating thermostat is off, to be operated with low air flow.
	SET FAN SPEED		When heating thermostat is off, to be operated with set air flow.
	INTERMITTENCE		When heating thermostat is off, to be operated intermittently.
	FAN OFF		When heating thermostat is off, the fan stops. When the remote thermistor is working, "FAN OFF" is set automatically. Do not set when the indoor unit's thermistor is working.
11 FROST PREVENTION TEMP			Change of indoor heat exchanger temperature to start frost prevention control.
	TEMP HIGH		
	TEMP LOW	○	
12 FROST PREVENTION CONTROL			Working only with the single split series.
	FAN CONTROL ON	○	To control frost prevention, the indoor fan tap is raised.
	FAN CONTROL OFF		
13 DRAIN PUMP LINK			
	ON	○	Drain pump is on during cooling and dry.
	AND		Drain pump is on during cooling, dry and heating.
	AND		Drain pump is on during cooling, dry, heating and fan.
	AND		Drain pump is on during cooling, dry and fan.
14 FAN REMAINING			
	NO REMAINING	○	After cooling is stopped or cooling thermostat is off, the fan does not perform extra operation.
	0.5 HOUR		After cooling is stopped or cooling thermostat is off, the fan perform extra operation for half an hour.
	1 HOUR		After cooling is stopped or cooling thermostat is off, the fan perform extra operation for an hour.
	3 HOUR		After cooling is stopped or cooling thermostat is off, the fan perform extra operation for six hours.
15 FAN REMAINING			
	NO REMAINING	○	After heating is stopped or heating thermostat is off, the fan does not perform extra operation.
	0.5 HOUR		After heating is stopped or heating thermostat is off,the fan perform extra operation for half an hour.
	2 HOUR		After heating is stopped or heating thermostat is off,the fan perform extra operation for two hours.
	6 HOUR		After heating is stopped or heating thermostat is off, the fan perform extra operation for six hours.
16 FAN INTERMITTENCE			
	NO REMAINING	○	During heating is stopped or heating thermostat is off, the fan perform intermittent operation for five minutes after twenty minutes' off with low air flow.
	20min OFF 5min ON		
	5min OFF 5min ON		During heating is stopped or heating thermostat is off, the fan perform intermittent operation for five minutes after five minutes' off with low air flow.

⏻ON/OFF button (finished)

Note 1: The initial setting marked " ※ " is decided by connected indoor and outdoor unit, and is automatically defined as following table.

Function No.	Item	Default	Model
Function 02 of remote control	AUTO RUN SET	AUTO RUN ON	"Auto-RUN" mode selectable indoor unit.
		AUTO RUN OFF	Indoor unit without "Auto-RUN" mode
Function 06 of remote control	FAN SPEED SW	VALID	Indoor unit with two or three step of air flow setting
		INVALID	Indoor unit with only one of air flow setting
Function 07 of remote control	LOUVER SW	VALID	Indoor unit with automatically swing louver
		INVALID	Indoor unit without automatically swing louver
Function 13 of remote control	I/U FAN	HI-MID-LO	Indoor unit with three step of air flow setting
		HI-LO	Indoor unit with two step of air flow setting
		HI-MID	
		1 FAN SPEED	Indoor unit with only one of air flow setting
Function 15 of remote control	MODEL TYPE	HEAT PUMP	Heat pump unite
		COOLING ONLY	Exclusive cooling unite

Note 2: Fan setting of "HIGH SPEED"

Fan tap		Indoor unit air flow setting				
		20 and II - 20 and - 20 and - 20 and I	20 and - 20 and I - 20 and I - 20 and O	20 and - 20 and I - 20 and I	20 and - 20 and I	20 and - 20 and I
FAN SPEED SET	STANDARD	UH - Hi - Me - Lo	Hi - Me - Lo	Hi - Lo	Hi - Me	
	HIGH SPEED1, 2	UH - UH - Hi - Me	UH - Hi - Me	UH - Me	UH - Hi	

Initial function setting of some indoor unit is "HIGH SPEED"

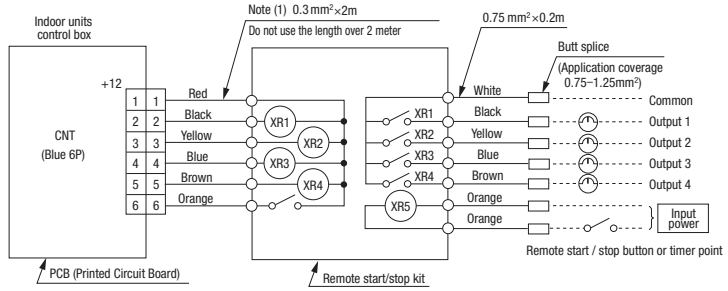
Note 3: As for plural indoor unit, set indoor functions to each master and slave indoor unit.
But only master indoor unit is received the setting change of indoor unit function "05 EXTERNAL INPUT" and "06 PERMISSION / PROHIBISHION".

⑤Control mode switching

●The control content of indoor units can be switched in following way. (▭ is the default setting)

Switch No.	Control content	
SW2	Indoor unit address (0-Fh)	
SW5-1	Master/Slave switching (plural /Slave unit setting)	
SW5-2		
SW6-1～4	Model capacity setting	
SW7－1	ON	Operation check, drain motor test run
	OFF	Normal operation

⑥Function of CNT connector of indoor printed circuit board



●CnT connector (local) vendor model
Connector : Made by molex 5264 - 06
Terminals : Made by molex 5263T

●Function

Output 1	Operation output (there is output when unit is in operation.)
Output 2	Heating output (there is output when operation MODE is HEATING.)
Output 3	Compressor ON output (there is output when compressor is in operation.)
Output 4	Inspection output (there is output when unit is stopped by error.)
Input 5	Remote operation input (Volt-free contact) (Inputted to operate unit)

⑦Troubleshooting

The operation data is saved when the situation of abnormal operation happen, and the data can be confirmed by remote control.
[Operating procedure]

1. Press the CHECK button.
   The display change " OPER DATA ▼ "
2. Once, press the ▼ button, and the display change " ERROR DATA ♟ ".
3. Press the ○ (SET) button and abnormal operation data mode is started.
4. When only one indoor unit is connected to remote control, following is displayed.
   ①The case that there is history of abnormal operation.
   → Error code and " DATA LOADING " is displayed.
   [Example]: [E8] (ERROR CODE)
   " DATA LOADING " is displayed (blinking indication during data loading).
   Next, the abnormal operation data of the indoor unit will be displayed.
   Skip to step 8.
   ②The case that there is not history of abnormal operation.
   → " NO ERROR " is displayed for 3 seconds and this mode is closed.
5. When plural indoor units is connected, following is displayed.
   ①The case that there is history of abnormal operation.
   → Error code and the smallest address number of indoor unit among all connected indoor unit is displayed.
   [Example]: [E8] (ERROR CODE)
   " I/U000 ♟ " blinking
   ②The case that there is not history of abnormal operation.
   → Only address number is displayed.
6. Select the indoor unit number you would like to have data displayed with the ▲ ▼ button.
7. Determine the indoor unit number with the ○ (SET) button.
   [Example]: [E8] (ERROR CODE)
   " I/U000 ♟ " (The address of selected indoor unit is blinking for 2 seconds.)
   ↓
   [E8] " DATA LOADING " (A blinking indication appears while data loaded.)
   Next, the abnormal operation data is indicated.
   If the indoor unit doing normal operation is selected, " NO ERROR " is displayed for 3 seconds and address of indoor unit is displayed.
8. By the ▲ ▼ button, the abnormal operation data is displayed.
   Displayed data item is based on ③Trial operation .
   ※Depending on models, the items that do not have corresponding data are not displayed.
9. To display the data of a different indoor unit, press the AIR CON No. button, which allows you to go back to the indoor unit slection screen.
10. Pressing the ①ON/OFF button will stop displaying data.

Pressing the ◇ (RESET) button during remote control unit operation will undo your last operation and allow you to go back to the previous screen.

◎If two (2) remote controls are connected to one (1) indoor unit, only the master control is available for trial operation and confirmation of operation data. (The slave remote control is not available.)

Error Code of indoor unit

Display on remote control	LED on indoor circuit board		Content
	red (checking)	green (normal)	
Off	Off	Continuous blinking	Normal
	Off	Off	Fault on power, indoor power off or lack phase
E1	Off	Continuous blinking	Fault on the transmission between indoor circuit board and remote control
	Not sure	Not sure	Indoor computer abnormal
E5	Blinking twice	Continuous blinking	Fault on outdoor-indoor transmission
E6	Blinking once	Continuous blinking	Indoor heat exchange sensor interrupted or short-circuit
E7	Blinking once	Continuous blinking	Indoor air inhaling sensor broken or short-circuit
E8	Blinking once	Continuous blinking	The temperature of heat exchange abnormal
E9	Blinking once	Continuous blinking	Float switch actions (only with FS)
	Blinking twice	Continuous blinking	Drain pump over current
E10	Off	Continuous blinking	Excess number of remote control connections
E14	Blinking for three times	Continuous blinking	The communication fault for master/slave indoor units
E16	Blinking once	Continuous blinking	Fan motor (1) abnormal
	Blinking twice	Continuous blinking	Fan motor (2) abnormal
E19	Blinking once	Continuous blinking	Configuration fault on running checking model
E20	Blinking once	Continuous blinking	Fan motor (1) abnormal rotation
	Blinking twice	Continuous blinking	Fan motor (2) abnormal rotation
E28	Off	Continuous blinking	Remote control sensor interrupted
Over E30	Off	Continuous blinking	Outdoor unit checking (outdoor circuit board LED checking)

(4) FDF series

PGA012D405

Electrical wiring work must be performed by an electrician qualified by a local power provider according to the electrical installation technical standards and interior wiring regulations applicable to the installation site.

Security instructions

- **Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.**
- **The precautionary items mentioned below are distinguished into two levels, ⚠WARNING and ⚠CAUTION.**
  ⚠WARNING : Wrong installation would cause serious consequences such as injuries or death.
  ⚠CAUTION : Wrong installation might cause serious consequences depending on circumstances.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.
- **The meanings of "Marks" used here are as shown on the right:**
  ⃠ Never do it under any circumstances. ❗ Always do it according to the instruction.
- **Accord with following items. Otherwise, there will be the risks of electric shock and fire caused by overheating or short circuit.**

⚠WARNING

- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient capacity and improper work can cause electric shock and fire. ❗
- **Use specified wire for electrical wiring, fasten the wiring to the terminal securely, and hold the cable securely in order not to apply unexpected stress on the terminal.**
  Loose connections or hold could result in abnormal heat generation or fire. ❗
- **Arrange the electrical wires in the control box properly to prevent them from rising. Fit the lid of the services panel property.**
  Improper fitting may cause abnormal heat and fire. ❗
- **Use the genuine option parts. And installation should be performed by a specialist.**
  If you install the unit by yourself, it could cause water leakage, electric shock and fire. ❗
- **Do not repair by yourself. And consult with the dealer about repair.**
  Improper repair may cause water leakage, electric shock or fire. ⃠
- **Consult the dealer or a specialist about removal of the air-conditioner.**
  Improper installation may cause water leakage, electric shock or fire. ❗
- **Turn off the power source during servicing or inspection work.**
  If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan. ❗
- **Shut off the power before electrical wiring work.**
  It could cause electric shock, unit failure and improper running. ❗

⚠CAUTION

- **Perform earth wiring surely.**
  Do not connect the earth wiring to the gas pipe, water pipe, lightning rod and telephone earth wiring. Improper earth could cause unit failure and electric shock due to a short circuit. ⏚
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it can cause electric shocks. ❗
- **Make sure to install earth leakage breaker on power source line. (countermeasure thing to high harmonics.)**
  Absence of breaker could cause electric shock. ❗
- **Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
  Using the incorrect one could cause the system failure and fire. ❗
- **Do not use any materials other than a fuse of correct capacity where a fuse should be used.**
  Connecting the circuit by wire or copper wire could cause unit failure and fire. ⃠
- **Use power source line of correct capacity.**
  Using incorrect capacity one could cause electric leak, abnormal heat generation and fire. ❗
- **Do not mingle solid cord and stranded cord on power source and signal side terminal block.**
  In addition, do not mingle difference capacity solid or stranded cord.
  Inappropriate cord setting could cause loosing screw on terminal block, bad electrical contact, smoke and fire. ⃠
- **Do not turn off the power source immediately after stopping the operation.**
  Be sure to wait for more than 5 minutes. Otherwise it could cause water leakage or breakdown. ⃠
- **Do not control the operation with the circuit breaker.**
  It could cause fire or water leakage. In addition, the fan may start operation unexpectedly and it may cause injury. ⃠

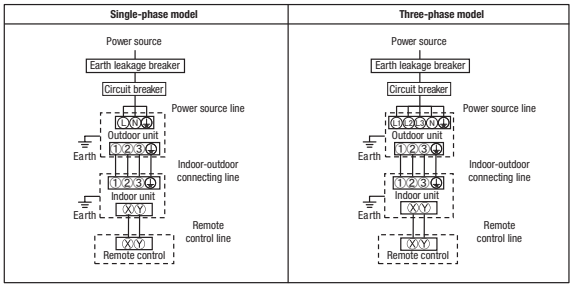
①Electrical wiring connection

- Use three-core cable as wiring between indoor and outdoor unit. As for detail, refer to "INSTALLATION MANUAL" of outdoor Unit.
- Set earth of D-type.
- Keep "remote control line" and "power source line" away from each other on constructing of unit outside.
- Run the lines (power source, remote control and "between indoor and outdoor unit") upper ceiling through iron pipe or other tube protection to avoid the damage by mouse and so on.
- Do not add cord in the middle of line route (of power source, remote control and "between indoor and outdoor unit") on outside of unit. If connecting point is flooded, it could cause problem as for electric or communication. (In the case that it is necessary to set connecting point on the way, perform thorough waterproof measurement.)
- Do not connect the power source line [220V/240V/380V/415V] to signal side terminal block. Otherwise, it could cause failure.
- Screw the line to terminal block without any looseness, certainly.
- Do not turn on the switch of power source, before all of line work is done.
- Connection of the line ("Between indoor and outdoor unit", earth and remote control)

①Remove lid of control box before connect the above lines, and connect the lines to terminal block according to number pointed on label of terminal block.
In addition, pay enough attention to confirm the number to lines, because there is electrical polarity except earth line. Furthermore, connect earth line to earth position of terminal block of power source.
②Install earth leakage breaker on power source line. In addition, select the type of breaker for inverter circuit as earth leakage breaker.
③If the function of selected earth leakage breaker is only for earth-fault protection, hand switch (switch itself and type "B" fuse) or circuit breaker is required in series with the earth leakage breaker.
④Install the local switch near the unit.

Cable connection for single unit installation

①As for connecting method of power source, select from following connecting patterns. In principle, do not directly connect power souce line to inside unit.
※ As for exceptional connecting method of power souce, discuss with the power provider of the country with referring to technical documents, and follow its instruction.
②For cable size and circuit breaker selection, refer to the outdoor unit installation manual.

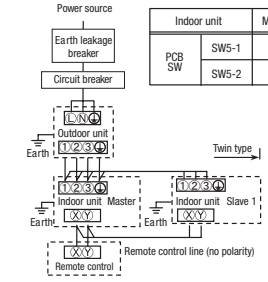


Cable connection for a V multi configuration installation

①Connect the same pairs number of terminal block "①, ②, and ③"and "ⓍandⓎ" between master and slave indoor units.
②Do the same address setting of all inside units belong to same refrigerant system by rotary switch SW2 on indoor unit's PCB (Printed circuit board).
③Set slave indoor unit as "slave 1" through "slave 3" by address switch SW5-1, 5-2 on PCB.
④When the AIR CON NO. button on the remote control unit is pressed after turning on the power, an indoor unit's address number will be displayed. Do not fail to confirm that the connected indoor unit's numbers are displayed on the remote control unit by pressing the ▲ or ▼ button.

Method of setting Master/Slave of indoor unit

(Factory setting: "Master")



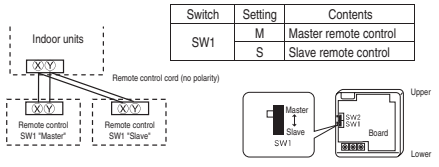
Indoor unit		Master	Slave 1	Slave 2	Slave 3
PCB SW	SW5-1	OFF	OFF	ON	ON
	SW5-2	OFF	ON	OFF	ON

Switch and wiring specification

Refer to the installation manual attached to the outdoor unit.

②Wiring for the remote control

- For each indoor unit, one more remote control can be connected in addition to the one which is built in the main unit.



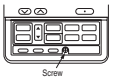
Switch	Setting	Contents
SW1	M	Master remote control
	S	Slave remote control

Set SW1 to "Slave" for the slave remote control. It was factory set to "Master" for shipment.
Note: The setting "Remote control thermistor enabled" is only selectable with the master remote control in the position where you want to check room temperature.
The air-conditioner operation follows the last operation of the remote control regardless of the master/ slave setting of it.

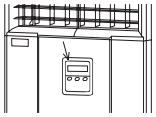
* When setting the remote control built in the main unit to the "Slave":
Remove the cover and change the setting of switch as follows.

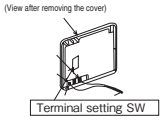
②Wiring for the remote control (Continued)

① Open the remote control cover and remove the screw without fail.



② Remove the upper case of remote control. Attach a flat head screwdriver at the upper part of remote control and pry lightly. It will come off easily.
Use some cushion to protect the center panel.





③Function setting by remote control

Installation and wiring of remote control

①Wiring of remote control should use 0.3mm² × 2 core wires or cables. (on-site configuration)
②Maximum prolongation of remote control wiring is 600 m.
If the prolongation is over 100m, change to the size below.
But, wiring in the remote control case should be under 0.5mm² . Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.

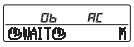
100 - 200m.....0.5mm² × 2 cores
Under 300m .....0.75mm² × 2 cores
Under 400m .....1.25mm² × 2 cores
Under 600m .....2.0mm² × 2 cores

The indication when power source is supplied

When power source is turned on, the following is displayed on the remote control until the communication between the remote control and indoor unit settled.

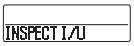
Master remote control : " WAIT "M
Slave remote control : " WAIT "S

At the same time, a mark or a number will be displayed for two seconds first.
This is the software's administration number of the remote control, not an error cord.



※The left mark is only an example. Other marks may appear.

When remote control cannot communicate with the indoor unit for half an hour, the below indication willappear.
Check wiring of the indoor unit and the outdoor unit etc.

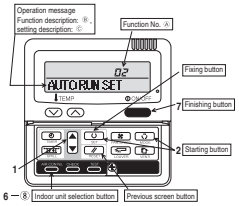


How to set function

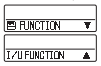
1. Stop air-conditioner and press (SET) , (MODE) buttons at the same time for over three seconds, and the "FUNCTION SET ▼" will be displayed.

2. Press (SET) button.

3. Make sure which do you want to set, "FUNCTION ▼" (remote control function) or "I/U FUNCTION ▲" (indoor unit function).



4. Press or button.
Select "FUNCTION ▼" (remote control function) or "I/U FUNCTION▲" (indoor unit function).



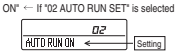
5. Press (SET) button.

6.【On the occasion of remote control function selection】

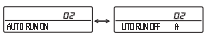
① "DATA LOADING" (Indication with blinking) → Display is changed to "01 GRILLE ↑↓SET".

② Press ▲ or ▼ button.
"No. and function"are indicated by turns on the remote control function table, then you can select from them.
(For example)

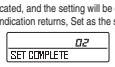
③ Press (SET) button.
The current setting of selected function is indicated.
(for example) "AUTO RUN ON" ← If "02 AUTO RUN SET" is selected



④ Press ▲ or ▼ button.
Select the setting.



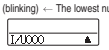
⑤ Press (SET) button.
"SET COMPLETE" will be indicated, and the setting will be completed.
Then after "No. and function" indication returns, Set as the same procedure if you want to set continuously ,and if to finish, go to 7.



【On the occasion of indoor unit function selection】

① "DATA LOADING" (Blinking for 2 to 23 seconds to read the data)
↓
Indication is changed to "02 FAN SPEED SET". Go to ②.

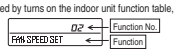
[Note]
(1) If plural indoor units are connected to a remote control, the indication is "I/U 000" (blinking) ← The lowest number of the indoor unit connected is indicated.



(2) Press ▲ or ▼ button.
Select the number of the indoor unit you are to set
If you select "ALL UNIT ▼", you can set the same setting with all unites.

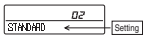
(3) Press (SET) button.

② Press ▲ or ▼ button.
"No. and function" are indicated by turns on the indoor unit function table, then you can select from them.
(For example)



③Function setting by remote control (Continued)

③ Press (SET) button.
The current setting of selected function is indicated.
(For example) "STANDARD" ← If "02 FAN SPEED SET" is selected



④ Press ▲ or ▼ button.
Select the setting.

⑤ Press (SET) button.
"SET COMPLETE" will be indicated, and the setting will be completed.
Then after "No. and function" indication returns, set as the same procedure if you want to set continuously , and if to finish, go to 7.

※ When plural indoor units are connected to a remote control, press the AIR CON No. button, which allows you to go back to the indoor unit selection screen. (example "I/U 000 ") ▲

7. Press ON/OFF button.
Setting is finished.

- It is possible to finish by pressing ON/OFF button on the way, but unfinished change of setting is unavailable.
- During setting, if you press (RESET) button, you return to the previous screen.
- Setting is memorized in the control and it is saved independently of power failure.

【How to check the current setting】
When you select from "No. and funcion" and press set button by the previous operation, the "Setting" displayed first is the current setting.
(But, if you select "ALL UNIT ▼ ", the setting of the lowest number indoor unit is displayed.)

The functional setting

●The initial function setting for typical using is performed automatically by the indoor unit connected, when remote control and indoor unit are connected.
As long as they are used in a typical manner, there will be no need to change the initial settings.
If you would like to change the initial setting marked " ◯ ", set your desired setting as for the selected item.
The procedure of functional setting is shown as the following diagram.

Sequence of the function setting is as follows.

The range of temperature setting

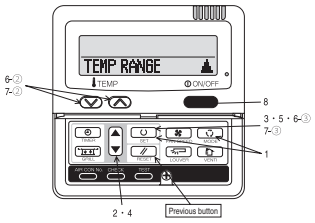
When shipped, the range of set temperature differs depending on the operation mode as below.
Heating : 16~30ûC (55~86ûF)
Except heating (cooling, fan, dry, automatic) : 18~30ûC (62~86ûF)

●Upper limit and lower limit of set temperature can be changed with remote control.
Upper limit setting: valid during heating operation. Possible to set in the range of 20 to 30ûC (68 to 86ûF).
Lower limit setting: valid except heating (automatic, cooling, fan, dry) Possible to set in the range of 18 to 26ûC (62 to 79ûF).
When you set upper and lower limit by this function, control as below.

1. When ⑫TEMP RANGE SET, remote control function of function setting mode is "INDN CHANGE" (factory setting),
【If upper limit value is set】
During heating, you cannot set the value exceeding the upper limit.
【If lower limit value is set 】
During operation mode except heating, you cannot set the value below the lower limit.
2. When ⑫TEMP RANGE SET, remote control function of function setting mode is "NO INDN CHANGE"
【If upper limit value is set】
During heating, even if the value exceeding the upper limit is set, upper limit value will be sent to the indoor unit. But, the indication is the same as the temperature set.
【If lower limit value is set 】
During except heating, even if the value lower than the lower limit is set, lower limit value will be sent to the indoor unit. But, the indication is the same as the temperature set.

●How to set upper and lower limit value
1. Stop the air-conditioner, and press (SET) and (MODE) button at the same time for over three seconds .
The indication changes to "FUNCTION SET ▼".
2. Press ▼ button once, and change to the "TEMP RANGE ▲ " indication.
3. Press (SET) button, and enter the temperature range setting mode.
4. Select "UPPER LIMIT ▼" or "LOWER LIMIT ▲" by using ▲ ▼ button.
5. Press (SET) button to fix.
6. When "UPPER LIMIT ▼" is selected (valid during heating)
① Indication: " ∨ ∧ SET UP" → "UPPER 30ûC ∨ "
② Select the upper limit value with temperature setting button ∨ ∧ . Indication example: "UPPER 26ûC ∨ ∧" (blinking)
③ Press (SET) button to fix. Indication example: "UPPER 26ûC" (Displayed for two seconds)
After the fixed upper limit value displayed for two seconds, the indication will return to "UPPER LIMIT ▼".
7. When "LOWER LIMIT ▲" is selected (valid during cooling, dry, fan, automatic)
① Indication: " ∨ ∧ SET UP" → "LOWER 18ûC ∧ "
② Select the lower limit value with temperature setting button ∨ ∧ . Indication example: "LOWER 24ûC ∨ ∧" (blinking)
③ Press (SET) button to fix. Indication for example: "LOWER 24ûC" (Displayed for two seconds)
After the fixed lower limit value displayed for two seconds, the indication will return to "LOWER LIMIT ▼".
8. Press ON/OFF button to finish.

- It is possible to finish by pressing ON/OFF button on the way, but unfinished change of setting is unavailable.
- During setting, if you press (RESET) button, you return to the previous screen.



Note 1: Fan setting of "HIGH SPEED"

Fan tap		Indoor unit air flow setting			
FAN SPEED SET	STANDARD	UH - Hi - Me - Lo	Hi - Me - Lo	Hi - Lo	Hi - Me
	HIGH SPEED1, 2	UH - UH - Hi - Me	UH - Hi - Me	UH - Me	UH - Hi

Initial function setting of some indoor unit is "HIGH SPEED"

Note 2: As for plural indoor unit, set indoor functions to each master and slave indoor unit.
But only master indoor unit is received the setting change of indoor unit function "05 EXTERNAL INPUT" and "06 PERMISSION / PROHIBISHION".

③Function setting by remote control (Continued)

[Flow of function setting]

Start : While indoor unit do not operate, press " (SET) " (SET) and " (MODE) " (MODE) button for 3 seconds at the same time.
Finalize : Press " (SET) " (SET) button.
Reset : Press " (RESET) " (RESET) button.
Select : Press ▲ ▼ button.
End : Press ⓘON/OFF button.

It is possible to finish above setting on the way, and unfinished change of setting is unavailable.
" ○ " : Initial settings
" ※ " : Automatic criterion
As for detail, refer to the installation manual of remote control.

During air-conditioner stopping push (SET) + (MODE) button simultaneously for 3 seconds → FUNCTION SET ▼

Consult the technical data etc for each control details

Record and save the setting

FUNCTION ▼ (Remote control function)

Function	setting		
01 GRILLE ↑↓ SET	↑↓ INVALID	○	
	50Hz ZONE ONLY		When you use at 50Hz area
	60Hz ZONE ONLY		When you use at 60Hz area
02 AUTO RUN SET	AUTO RUN ON	★	
	AUTO RUN OFF	○	Automatic operation is impossible
03 TEMP SW	VALID	○	
	INVALID		Temperature setting button is not working
04 MODE SW	VALID	○	
	INVALID		Mode button is not working
05 ON/OFF SW	VALID	○	
	INVALID		On/Off button is not working
06 FAN SPEED SW	VALID	※	
	INVALID	※	Fan speed button is not working
07 LOUVER SW	VALID	○	
	INVALID	★	Louver button is not working
08 TIMER SW	VALID	○	
	INVALID		Timer button is not working
09 SENSOR SET	SENSOR OFF	○	Remote thermistor is not working.
	SENSOR ON		Remote thermistor is working.
	SENSOR +3.0℃		Remote thermistor is working, and to be set for producing +3.0°C increase in temperature.
	SENSOR +2.0℃		Remote thermistor is working, and to be set for producing +2.0°C increase in temperature.
	SENSOR +1.0℃		Remote thermistor is working, and to be set for producing +1.0°C increase in temperature.
	SENSOR -1.0℃		Remote thermistor is working, and to be set for producing -1.0°C increase in temperature.
	SENSOR -2.0℃		Remote thermistor is working, and to be set for producing -2.0°C increase in temperature.
	SENSOR -3.0℃		Remote thermistor is working, and to be set for producing -3.0°C increase in temperature.
10 AUTO RESTART	INVALID	○	
	VALID		
11 VENT LINK SET	NO VENT	○	
	VENT LINK		Connect the Single split series and the VRF series to the indoor board CNT and indoor board CND respectively. If a ventilation device is connected, been geared with the motion of indoor device, the ventilation device is operated/stopped.
	NO VENT LINK		By connecting the ventilation device with the Single split series device to indoor board CNT, the VRF series device to CND, you can operate/stop the ventilation device independently by the handling of ventilation button.
12 TEMP RANGE SET	INDN CHANGE	○	If you change the range of set temperature, the indication of set temperature will vary following the control.
	NO INDN CHANGE		If you change the range of set temperature, the indication of set temperature will not vary following the control, and keep the set temperature.
13 I/U FAN	HI-MID-LO	○	Air flow of fan becomes the three speed of -- or ---.
	HI-LO	★	
	HI-MID	★	
	1 FAN SPEED	★	
14 POSITION	4POSITION STOP	★	
	FREE STOP	○	The louver can stop at any position.
15 MODEL TYPE	HEAT PUMP	※	
	COOLING ONLY	※	
16 EXTERNAL CONTROL SET	INDIVIDUAL	○	If you input into the indoor printed circuit board CNT from outside, the indoor device will be operated independently following the input from outside.
	FOR ALL UNITS		If you input into indoor printed circuit board CNT from outside, All units which share the same one remote control network work following the input from outside.
17 ROOM TEMP INDICATION SET	INDICATION OFF	○	
	INDICATION ON		In normal working indication, indoor unit temperature is indicated instead of air flow. (Only the master remote control can be indicated.)
18 INDICATION	INDICATION ON	○	
	INDICATION OFF		Heating preparation indication should not be indicated.
19 ℃/℉ SET	℃	○	Temperature indication is by degree C
	℉		Temperature indication is by degree F

(Indoor unit function) I/U FUNCTION ▲

Only when plural indoor units are connected Indoor No. selection (Note3): I/U000 ▲, I/U001 ◆, I/U002 ◆, I/U003 ◆, I/U004 ◆

If to change re-set with other indoor unit, push AIR CON NO. button, and indoor selection indication (for example: I/U 000) is set back.

Function	setting		
02 FAN SPEED SET	STANDARD	※	
	HIGH SPEED 1	※	(Note2)
	HIGH SPEED 2		
03 FILTER SIGN SET	INDICATION OFF		
	TYPE 1	○	The filter sign is indicated after running for 180 hours.
	TYPE 2		The filter sign is indicated after running for 600 hours.
	TYPE 3		The filter sign is indicated after running for 1000 hours.
	TYPE 4		The filter sign is indicated after running for 1000 hours, then it will be stopped by compulsion after 24 hours.
04 POSITION	4POSITION STOP	★	
	FREE STOP	○	The louver can stop at any positon.
05 EXTERNAL INPUT	LEVEL INPUT	○	
	PULSE INPUT		
06 OPERATION PERMISSION/PROHIBITION	INVALID	○	
	VALID		Make permission/prohibition control of function be in effect.
07 EMERGENCY STOP	INVALID	○	
	VALID		With the VRF series, it is used to stop all indoor units connected with the same outdoor unit immediately. When stop signal is inputed from remote on-off terminal "CNT-6", all indoor units are stopped immediately.
08 SP OFFSET	OFFSET +3.0℃		To be reset for producing +3.0°C increase in temperature during heating.
	OFFSET +2.0℃		To be reset for producing +2.0°C increase in temperature during heating.
	OFFSET +1.0℃		To be reset for producing +1.0°C increase in temperature during heating.
	NO OFFSET	○	
09 RETURN AIR TEMP	OFFSET +2.0℃		To be reset producing +2.0°C increase in return air temperature of indoor unit.
	OFFSET +1.5℃		To be reset producing +1.5°C increase in return air temperature of indoor unit.
	OFFSET +1.0℃		To be reset producing +1.0°C increase in return air temperature of indoor unit.
	NO OFFSET	○	
	OFFSET -1.0℃		To be reset producing -1.0°C increase in return air temperature of indoor unit.
	OFFSET -1.5℃		To be reset producing -1.5°C increase in return air temperature of indoor unit.
	OFFSET -2.0℃		To be reset producing -2.0°C increase in return air temperature of indoor unit.
10 FAN CONTROL	LOW FAN SPEED	○	When heating thermostat is off, to be operated with low fan speed. (or with ultra low fan speed in case of some models)
	SET FAN SPEED		When heating thermostat is off, to be operated with set fan speed.
	INTERMITTENCE		When heating thermostat is off, to be operated intermittently.
	FAN OFF		When heating thermostat is off, the fan stops. When the remote thermistor is working, "FAN OFF" is set automatically. Do not set when the indoor unit's thermistor is working.
11 FROST PREVENTION TEMP	TEMP HIGH		Change of indoor heat exchanger temperature to start frost prevention control.
	TEMP LOW	○	
12 FROST PREVENTION CONTROL	FAN CONTROL ON	○	Working only with the single split series. To control frost prevention, the indoor fan tap is raised.
	FAN CONTROL OFF		
13 DRAIN PUMP LINK	(cool)(dry)	○	Drain pump is on during cooling and dry.
	(cool)(dry) AND (heat)		Drain pump is on during cooling, dry and heating.
	(cool)(dry) AND (heat) AND (fan)		Drain pump is on during cooling, dry, heating and fan.
	(cool)(dry) AND (fan)		Drain pump is on during cooling, dry and fan.
14 FAN REMAINING (cooling)	NO REMAINING	○	After cooling is stopped or cooling thermostat is off, the fan does not perform extra operation.
	0.5 HOUR		After cooling is stopped or cooling thermostat is off, the fan perform extra operation for half an hour.
	1 HOUR		After cooling is stopped or cooling thermostat is off, the fan perform extra operation for an hour.
	6 HOUR		After cooling is stopped or cooling thermostat is off, the fan perform extra operation for six hours.
15 FAN REMAINING (heating)	NO REMAINING	○	After heating is stopped or heating thermostat is off, the fan does not perform extra operation.
	0.5 HOUR		After heating is stopped or heating thermostat is off,the fan perform extra operation for half an hour.
	2 HOUR		After heating is stopped or heating thermostat is off,the fan perform extra operation for two hours.
	6 HOUR		After heating is stopped or heating thermostat is off, the fan perform extra operation for six hours.
16 FAN INTERMITTENCE	NO REMAINING	○	
	20minOFF 5minON		During heating is stopped or heating thermostat is off, the fan perform intermittent operation for five minutes after twenty minutes' off with low air flow.
	5minOFF 5minON		During heating is stopped or heating thermostat is off, the fan perform intermittent operation for five minutes after five minutes' off with low air flow.

ON/OFF button (finished)

Items marked with ★ are not available on the floor standing FDF.
Do not change the initial setting

④Trial operation

The method of trial cooling operation

Operate the remote control unit as follows.

1. Starting a cooling test run.

①Start the system by pressing the ⓘON/OFF button.

②Select " (Cool)" with the (MODE) button.

③Press the TEST button for 3 seconds or longer.

The screen display will switch to" TEST RUN ▼ "

④When the (SET) button is pressed while " TEST RUN ▼ " is indicated, a cooling test run will start.

The screen display will switch to" TEST RUN ".

2. Ending a cooling test run.

Pressing the ⓘON/OFF button, the (TEMP) button or (MODE) button will end a cooling test run. (Cooling test run will end after 30 minutes pass.)

" TEST RUN " shown on the screen will go off.

④Trial operation (Continued)

Checking operation data

Operation data can be checked with remote control unit operation.

1. Press the CHECK button.
   The display change " OPER DATA ▼ "
2. Press the (SET) button while
   OPER DATA ▼ " is displayed.
3. When only one indoor unit is connected to remote control, " DATA LOADING " is displayed (blinking indication during data loading).
   Next, operation data of the indoor unit will be displayed. Skip to step 7.
4. When plural indoor units is connected, the smallest address number of indoor unit among all connected indoor unit is displayed.
   [Example]:
   SELECT I/U " (blinking 1 seconds)
   I/U000 ▲ " blinking.
5. Select the indoor unit number you would like to have data displayed with the ▲ ▼ button.
6. Determine the indoor unit number with the (SET) button.
   (The indoor unit number changes from blinking indication to continuous indication)
   I/U000 " (The address of selected indoor unit is blinking for 2 seconds.)
   ↓
   " DATA LOADING " (A blinking indication appears while data loaded.)
   Next, the operation data of the indoor unit is indicated.
7. Upon operation of the ▲ ▼ button, the current operation data is displayed in order from data number 01.
   The items displayed are in the above table.
   ※Depending on models, the items that do not have corresponding data are not displayed.
8. To display the data of a different indoor unit, press the AIR CON No. button, which allows you to go back to the indoor unit selection screen.
9. Pressing the ⏻ON/OFF button will stop displaying data.
   Pressing the (RESET) button during remote control unit operation will undo your last operation and allow you to go back to the previous screen.

◎If two (2) remote control are connected to one (1) inside unit, only the master control is available for trial operation and confirmation of operation data. (The slave remote control is not available.)

Number	Data Item	
01	✻	(Operation Mode)
02	SET TEMP.___℃	(Set Temperature)
03	RETURN AIR___℃	(Return Air Temperature)
04	SENSOR___℃	(Remote Control Thermistor Temperature)
05	THI-R1___℃	(Indoor Unit Heat Exchanger Thermistor / U Bend)
06	THI-R2___℃	(Indoor Unit Heat Exchanger Thermistor /Capillary)
07	THI-R3___℃	(Indoor Unit Heat Exchanger Thermistor /Gas Header)
08	I/U FANSPEED___	(Indoor Unit Fan Speed)
09	DEMAND___Hz	(Frequency Requirements)
10	ANSWER___Hz	(Response Frequency)
11	I/U EEV_____P	(Pulse of Indoor Unit Expansion Value)
12	TOTAL I/U RUN_____H	(Total Running Hours of The Indoor Unit)
21	OUTDOOR___℃	(Outdoor Air Temperature)
22	THO-R1___℃	(Outdoor Unit Heat Exchanger Thermistor)
23	THO-R2___℃	(Outdoor Unit Heat Exchanger Thermistor)
24	COMP.___Hz	(Compressor Frequency)
25	HP___MPa	(High Pressure)
26	LP___MPa	(Low Pressure)
27	Td___℃	(Discharge Pipe Temperature)
28	COMP BOTTOM___℃	(Comp Bottom Temperature)
29	CT___AMP	(Current)
30	TARGET SH___℃	(Target Super Heat)
31	SH___℃	(Super Heat)
32	TDSH___℃	(Discharge Pipe Super Heat)
33	PROTECTION No.___	(Protection State No. of The Compressor)
34	O/U FANSPEED___	(Outdoor Unit Fan Speed)
35	63H1	(63H1 On/Off)
36	DEFROST	(Defrost Control On/Off)
37	TOTAL COMP RUN___H	(Total Running Hours of The Compressor)
38	O/U EEV1_____P	(Pulse of The Outdoor Unit Expansion Valve EEVC)
39	O/U EEV2_____P	(Pulse of The Outdoor Unit Expansion Valve EEVH)

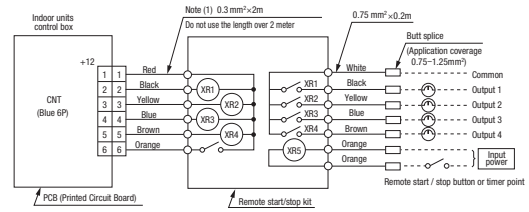
※Depending on outdoor unit model, there are data not shown.

⑤Control mode switching

●The control content of indoor units can be switched in following way.
(▭ is the default setting)

Switch No.	Control content	
SW2	Indoor unit address (0-Fh)	
SW5-1	Master/Slave switching (plural /Slave unit setting)	
SW5-2		
SW6-1～4	Model capacity setting	
SW7－1	ON	Operation check, drain motor test run
	OFF	Normal operation

⑥Function of CnT connector of indoor printed circuit board



●CnT connector (local) vendor model
Connector : Made by molex 5264 - 06
Terminals : Made by molex 5263T

●Function

Output 1	Operation output (there is output when unit is in operation.)
Output 2	Heating output (there is output when operation MODE is HEATING.)
Output 3	Compressor ON output (there is output when compressor is in operation.)
Output 4	Inspection output (there is output when unit is stopped by error.)
Input 5	Remote operation input (Volt-free contact) (Inputted to operate unit)

⑦Troubleshooting

The operation data is saved when the situation of abnormal operation happen, and the data can be confirmed by remote control.

Error Code of indoor unit

Display on remote control	LED on indoor circuit board		Content
	red (checking)	green (normal)	
Off	Off	Continuous blinking	Normal
	Off	Off	Fault on power, indoor power off or lack phase
E1	Off	Continuous blinking	Fault on the transmission between indoor circuit board and remote control
	Not sure	Not sure	Indoor computer abnormal
E5	Blinking twice	Continuous blinking	Fault on outdoor-indoor transmission
E6	Blinking once	Continuous blinking	Indoor heat exchange sensor interrupted or short-circuit
E7	Blinking once	Continuous blinking	Indoor air inhaling sensor broken or short-circuit
E8	Blinking once	Continuous blinking	The temperature of heat exchange abnormal
E9	Blinking once	Continuous blinking	Float switch actions (only with FS)
E10	Off	Continuous blinking	Excess number of remote control connections
E14	Blinking for three times	Continuous blinking	The communication fault for master/slave indoor units
E16	Blinking once	Continuous blinking	Fan motor abnormal
E19	Blinking once	Continuous blinking	Configuration fault on running checking model
E28	Off	Continuous blinking	Remote control sensor interrupted
Over E30	Off	Continuous blinking	Outdoor unit checking (outdoor circuit board LED checking)

[Operating procedure]

1. Press the CHECK button.
   The display change " OPER DATA ▼ "
2. Once, press the ▼ button, and the display change
   ERROR DATA ▲ ".
3. Press the (SET) button and abnormal operation data mode is started.
4. When only one indoor unit is connected to remote control, following is displayed.
   ①The case that there is history of abnormal operation.
   → Error code and " DATA LOADING " is displayed.
   [Example]: [E8] (ERROR CODE)
   " DATA LOADING" is displayed (blinking indication during data loading).
   Next, the abnormal operation data of the indoor unit will be displayed. Skip to step 8.
   ②The case that there is not history of abnormal operation.
   → " NO ERROR " is displayed for 3 seconds and this mode is closed.
5. When plural indoor units is connected, following is displayed.
   ①The case that there is history of abnormal operation.
   → Error code and the smallest address number of indoor unit among all connected indoor unit is displayed.
   [Example]: [E8] (ERROR CODE)
   " I/U000 ▲ " blinking
   ②The case that there is not history of abnormal operation.
   → Only address number is displayed.
6. Select the indoor unit number you would like to have data displayed with the ▲ ▼ button.
7. Determine the indoor unit number with the (SET) button.
   [Example]: [E8] (ERROR CODE)
   " I/U000 ▲ " (The address of selected indoor unit is blinking for 2 seconds.)
   ↓
   [E8] " DATA LOADING " (A blinking indication appears while data loaded.)
   Next, the abnormal operation data is indicated.
   If the indoor unit doing normal operation is selected, " NO ERROR " is displayed for 3 seconds and address of indoor unit is displayed.
8. By the ▲ ▼ button, the abnormal operation data is displayed.
   Displayed data item is based on ③ Trial operation .
   ※Depending on models, the items that do not have corresponding data are not displayed.
9. To display the data of a different indoor unit, press the AIR CON No. button, which allows you to go back to the indoor unit slection screen.
10. Pressing the ⏻ON/OFF button will stop displaying data.

Pressing the (RESET) button during remote control unit operation will undo your last operation and allow you to go back to the previous screen.

◎If two (2) remote control are connected to one (1) indoor unit, only the master control is available for trial operation and confirmation of operation data. (The slave remote control is not available.)

1.10.3 Installation of wired remote control (Option parts)

(1) Model RC-EX3

PJZ012A131 B

1. Safety precautions

●Please read this manual carefully before starting installation work to install the unit properly.
Every one of the followings is important information to be observed strictly.

⚠WARNING	Failure to follow these instructions properly may result in serious consequences such as death, severe injury, etc.
⚠CAUTION	Failure to follow these instructions properly may cause injury or property damage.

It could have serious consequences depending on the circumstances.

●The following pictograms are used in the text.

⃠	Never do.	❗	Always follow the instructions given.

●Keep this manual at a safe place where you can consult with whenever necessary. Show this manual to installers when moving or repairing the unit. When the ownership of the unit is transferred, this manual should be given to a new owner.

⚠WARNING

❗ **Consult your dealer or a professional contractor to install the unit.**
Improper installation made on your own may cause electric shocks, fire or dropping of the unit.

❗ **Installation work should be performed properly according to this installation manual.**
Improper installation work may result in electric shocks, fire or break-down.

❗ **Be sure to use accessories and specified parts for installation work.**
Use of unspecified parts may result in drop, fire or electric shocks.

❗ **Install the unit properly to a place with sufficient strength to hold the weight.**
If the place is not strong enough, the unit may drop and cause injury.

❗ **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
Power source with insufficient and improper work can cause electric shock and fire.

❗ **Shut OFF the main power source before starting electrical work.**
Otherwise, it could result in electric shocks, break-down or malfunction.

⃠ **Do not modify the unit.**
It could cause electric shocks, fire, or break-down.

❗ **Be sure to turn OFF the power circuit breaker before repairing/ inspecting the unit.**
Repairing/inspecting the unit with the power circuit breaker turned ON could cause electric shocks or injury.

⚠WARNING

Do not install the unit in appropriate environment or where inflammable gas could generate, flow in, accumulate or leak.

If the unit is used at places where air contains dense oil mist, steam, organic solvent vapor, corrosive gas (ammonium, sulfuric compound, acid, etc) or where acidic or alkaline solution, special spray, etc. are used, it could cause electric shocks, break-down, smoke or fire as a result of significant deterioration of its performance or corrosion.

Do not install the unit where water vapor is generated excessively or condensation occurs.

It could cause electric shocks, fire, or break-down.

Do not use the unit in a place where it gets wet, such as laundry room.

It could cause electric shocks, fire, or break-down.

Do not operate the unit with wet hands.

It could cause electric shocks.

Do not wash the unit with water.

It could cause electric shocks, fire, or break-down.

Use the specified cables for wiring, and connect them securely with care to protect electronic parts from external forces.

Improper connections or fixing could cause heat generation, fire, etc.

Seal the inlet hole for remote control cable with putty.

If dew, water, insect, etc. enters through the hole, it could cause electric shocks, fire or break-down.

If dew or water enters the unit, it may cause screen display anomalies.

When installing the unit at a hospital, telecommunication facility, etc., take measures to suppress electric noises.

It could cause malfunction or break-down due to hazardous effects on the inverter, private power generator, high frequency medical equipment, radio communication equipment, etc.

The influences transmitted from the remote control to medical or communication equipment could disrupt medical activities, video broadcasting or cause noise interference.

Do not leave the remote control with its upper case removed.

If dew, water, insect, etc. enters through the hole, it could cause electric shocks, fire or break-down.

⚠CAUTION

Do not install the remote control at following places.

(1) It could cause break-down or deformation of remote control.
- Where it is exposed to direct sunlight
- Where the ambient temperature becomes 0 °C or below, or 40 °C or above
- Where the surface is not flat
- Where the strength of installation area is insufficient

(2) Moisture may be attached to internal parts of the remote control, resulting in a display failure.
- Place with high humidity where condensation occurs on the remote control
- Where the remote control gets wet

(3) Accurate room temperature may not be detected using the temperature sensor of the remote control.
- Where the average room temperature cannot be detected
- Place near the equipment to generate heat
- Place affected by outside air in opening/closing the door
- Place exposed to direct sunlight or wind from air-conditioner
- Where the difference between wall and room temperature is large

To connect to a personal computer via USB, use the dedicated software.
Do not connect other USB devices and the remote control at the same time.

It could cause malfunction or break-down of the remote control/personal computer.

2 . Accessories & Prepare on site

Following parts are provided.

Accessories	R/C main unit, wood screw (ø3.5 x 16) 2 pcs, Quick reference

Following parts are arranged at site. Prepare them according to the respective installation procedures.

Item name	Q'ty	Remark
Switch box For 1 piece or 2 pieces (JIS C 8340 or equivalent)	1	These are not required when installing directly on a wall.
Thin wall steel pipe for electric appliance directly on a wall. (JIS C 8305 or equivalent)	As required	
Lock nut, bushing (JIS C 8330 or equivalent)	As required	
Lacing (JIS C 8425 or equivalent)	As required	Necessary to run R/C cable on the wall.
Putty	Suitably	For sealing gaps
Molly anchor	As required	
R/C cable (0.3 mm^2 x 2 pcs)	As required	See right table when longer than 100 m

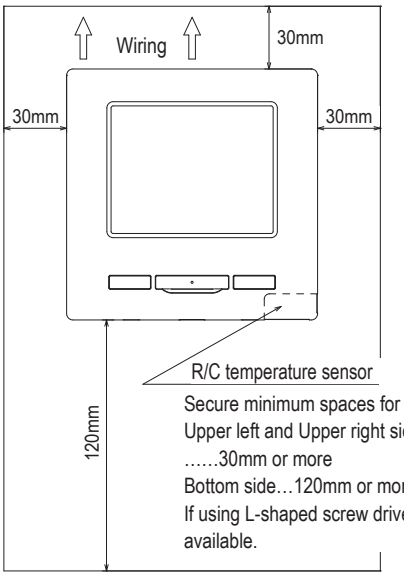
When the cable length is longer than 100 m, the max size for wires used in the R/C case is 0.5 mm^2 . Connect them to wires of larger size near the outside of R/C. When wires are connected, take measures to prevent water, etc. from entering inside.

≦ 200 m	0.5 mm^2 x 2 cores
≦ 300m	0.75 mm^2 x 2 cores
≦ 400m	1.25 mm^2 x 2 cores
≦ 600m	2.0 mm^2 x 2 cores

3 . Installation place

Secure the installation space shown in the figure.
For the installation method, “embedding wiring” or “exposing wiring” can be selected.
For the wiring direction, “Backward”, “Upper center” or “Upper left” can be selected.
Determine the installation place in consideration of the installation method and wiring direction.

Installation space

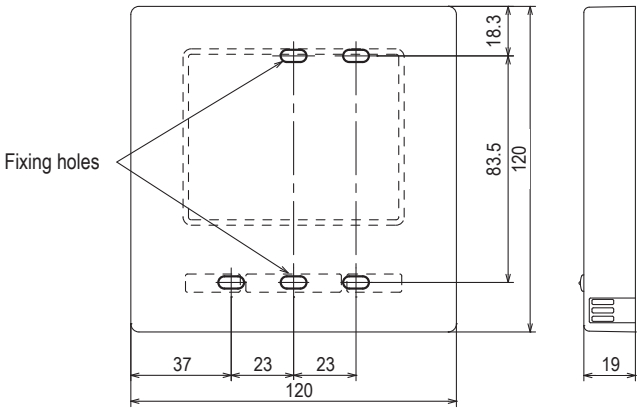


Secure minimum spaces for disassembling the case.
Upper left and Upper right sides
……30mm or more
Bottom side…120mm or more
If using L-shaped screw driver, 50mm or more is available.

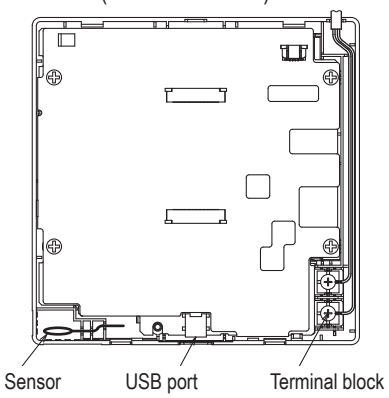
4 . Installation procedure

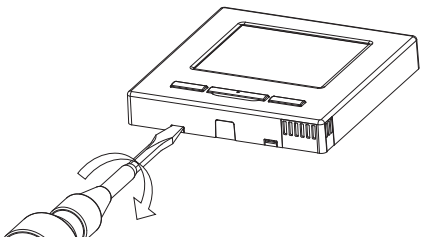
Perform installation and wiring work for the remote control according to the following procedure.

Dimensions (Viewed from front)



PCB side (Viewed from rear)





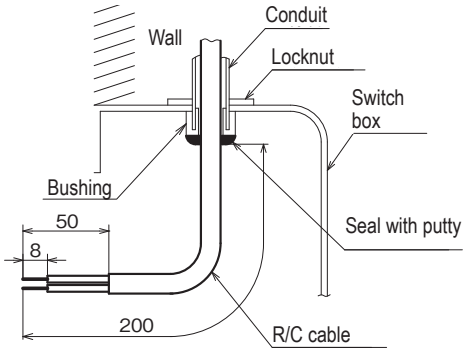
To remove the upper case from the bottom cases of R/C

· Insert the tip of flat head screw driver or the like in the recess at the lower part of R/C and twist it lightly to remove. It is recommended that the tip of the screw driver be wrapped with tape to avoid damaging the case.
Take care to protect the removed upper case from moisture or dust.

In case of embedding wiring

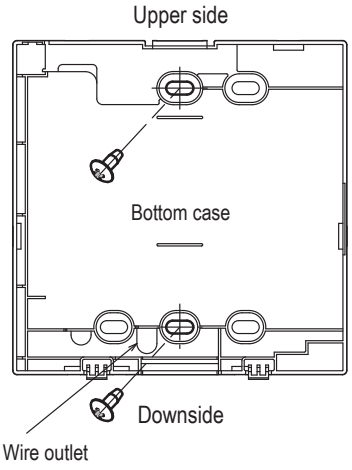
(When the wiring is retrieved "Backward")

① Embed the switch box and the R/C wires beforehand.
Seal the inlet hole for the R/C wiring with putty.

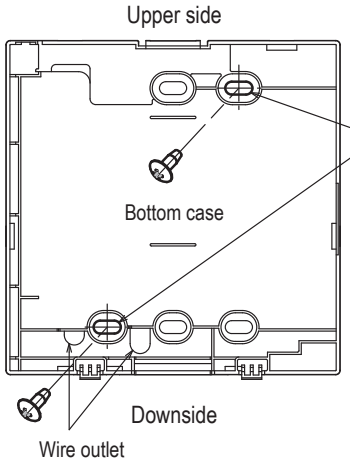


② When wires are passed through the bottom case, fix the bottom case at 2 places on the switch box.

Switch box for 1 pcs



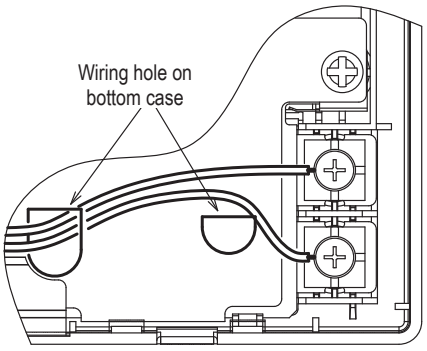
Switch box for 2 pcs



Cut out the thin wall part at the screw mounting section with a knife or the like before tightening the screw.

③ Connect wires from X and Y terminals of R/C to X and Y terminals of indoor unit. R/C wires (X, Y) have no polarity. Fix wires such that the wires will run around the terminal screws on the top case of R/C.

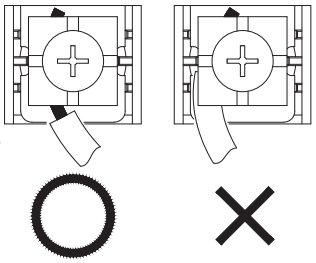
④ Install the upper case with care not to pinch wires of R/C.



Cautions for wire connection

Use wires of no larger than 0.5 mm^2 for wiring running through the remote control case. Take care not to pinch the sheath.

Tighten by hand (0.7 N·m or less) the wire connection. If the wire is connected using an electric driver, it may cause failure or deformation.

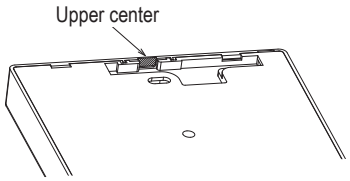


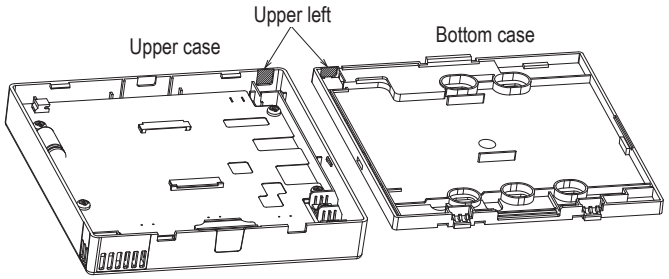
In case of exposing wiring

(When the wiring is taken out from the "upper center" or "upper left" of R/C)

① Cut out the thin wall sections on the cases for the size of wire.

When taking the wiring out from the upper center, open a hole before separating the upper and bottom cases. This will reduce risk of damaging the PCB and facilitate subsequent work.
When taking the wiring out from the upper left, take care not to damage the PCB and not to leave any chips of cut thin wall inside.





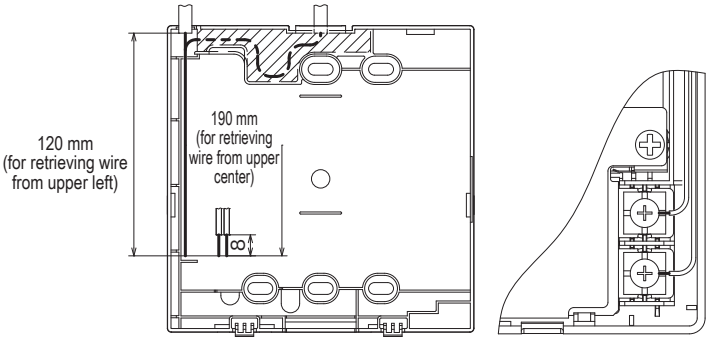
② Fix the bottom R/C case on a flat surface with two wood screws.

③ In case of the upper center, pass the wiring behind the bottom case. (Hatched section)

④ Connect wires from X and Y terminals of R/C to X and Y terminals of indoor unit. R/C wires (X, Y) have no polarity. Fix wires such that the wires will run around the terminal screws on the top case of R/C.

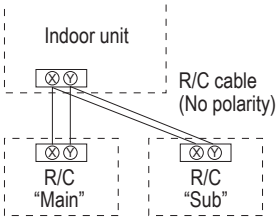
⑤ Install the top case with care not to pinch wires of R/C.

⑥ Seal the area cut in ① with putty.



5 . Main/Sub setting when more than one remote control are used

Up to two units of R/C can be used at the maximum for 1 indoor unit or 1 group.
One is main R/C and the other is sub R/C.
Operating range is different depending on the main or sub R/C.



Set the "Main" and "Sub" as described at Section 8.

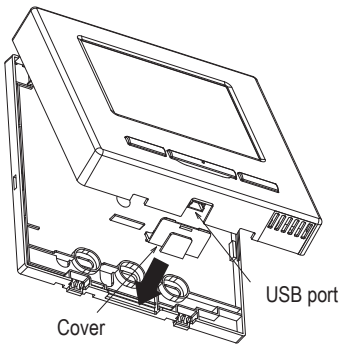
○: operable ×: not operable

R/C operations			Main	Sub
Run/Stop, Change set temp, Change flap direction, Auto swing, Change fan speed operations			○	○
High power operation, Energy-saving operation			○	○
Silent mode control			○	×
Useful functions	Individual flap control		○	×
	Anti draft setting		○	×
	Timer		○	○
	Favorite setting		○	○
	Weekly timer		○	×
	Home leave mode		○	×
	External ventilation		○	○
	Select the language		○	○
Energy-saving setting			○	×
Filter	Filter sign reset		○	○
User setting	Initial settings		○	○
	Administrator settings	Permission/ Prohibition setting	○	×
		Outdoor unit silent mode timer	○	×
		Setting temp. range	○	×
		Temp. increment setting	○	×
		Set temp. display	○	○
		R/C display setting	○	○
		Change administrator password	○	○
		F1/F2 function setting	○	○

R/C operations				Main	Sub
Service setting	Installation settings	Installation date		○	×
		Company information		○	○
		Test run		○	×
		Static pressure adjustment		○	×
		Change auto-address		○	×
		Address setting of main IU		○	×
		IU back-up function		○	×
		Infrared sensor (motion sensor) setting		○	×
	R/C function settings	Main/Sub of R/C		○	○
		Return air temp.		○	×
		R/C sensor		○	×
		R/C sensor adjustment		○	×
		Operation mode		○	×
		ºC / ºF		○	×
		Fan speed		○	×
		External input		○	×
		Upper/lower flap control		○	×
		Left/right flap control		○	×
		Ventilation setting		○	×
		Auto-restart		○	×
		Auto temp. setting		○	×
		Auto fan speed		○	×
	IU settings			○	×
	Service & Maintenance	IU address		○	○
		Next service date		○	×
		Operation data		○	×
		Error display	Error history	○	○
			Display/erase anomaly data	○	×
			Reset periodical check	○	○
		Saving IU settings		○	×
		Special settings	Erase IU address	○	×
			CPU reset	○	○
			Restore of default setting	○	×
			Touch panel calibration	○	○
		Indoor unit capacity display		○	×

Advice: Connection to personal computer

It can be set from a personal computer via the USB port (mini-B).
Connect after removing the cover for USB port of upper case.
Replace the cover after use.
Special software is necessary for the connection.
For details, view the web site or refer to the engineering data.

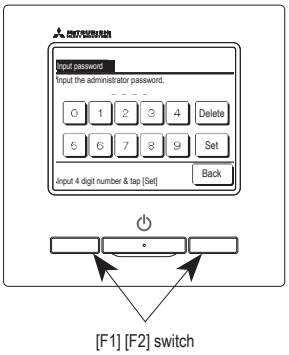


Advice: Initializing of password

Administrator password (for daily setting items) and
service password (for installation, test run and maintenance) are used.

○The administrator password at factory default is "0000". This setting can be changed (Refer to User's Manual).
If the administrator password is forgotten, it can be initialized by holding down the [F1] and [F2] switches together for five seconds on the administrator password input screen.

○Service password is "9999", which cannot be changed.
When the administrator password is input, the service password is also accepted.



PJA012D730B

(2) Model RC-E5

Read together with indoor unit's installation manual.

⚠WARNING

- Fasten the wiring to the terminal securely and hold the cable securely so as not to apply unexpected stress on the terminal.
  Loose connection or hold will cause abnormal heat generation or fire.
- Make sure the power source is turned off when electric wiring work.
  Otherwise, electric shock, malfunction and improper running may occur.

⚠CAUTION

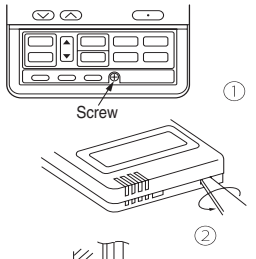
- Do not install the remote control at the following places in order to avoid malfunction.
  (1) Places exposed to direct sunlight
  (2) Places near heat devices
  (3) High humidity places
  (4) Hot surface or cold surface enough to generate condensation
  (5) Places exposed to oil mist or steam directly
  (6) Uneven surface
- Do not leave the remote control without the upper case.
  In case the upper cace needs to be detached, protect the remote control with a packaging box or bag in order to keep it away from water and dust.

Accessories	Remote control, wood screw (ø3.5×16) 2 pieces
Prepare on site	Remote control cord (2 cores) the insulated thickness in 1mm or more. [In case of embedding cord] Erectrical box, M4 screw (2 pieces) [In case of exposing cord] Cord clamp (if needed)

Installation procedure

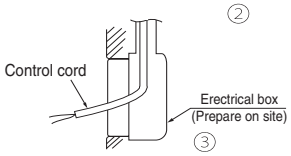
① Open the cover of remote control, and remove the screw under the buttons without fail.

② Remove the upper case of remote control.
Insert a flat-blade screwdriver into the dented part of the upper part of the remote control, and wrench slightly.

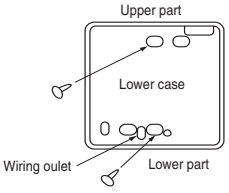


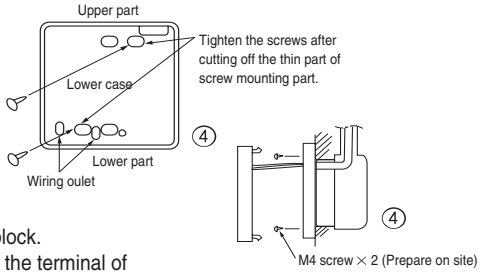
[In case of embedding cord]

③ Embed the erectrical box and remote control cord beforehand.



④ Prepare two M4 screws (recommended length is 12-16mm) on site, and install the lower case to erectrical box.
Choose either of the following two positions in fixing it with screws.





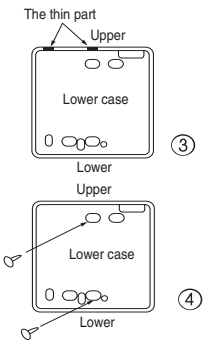
⑤ Connect the remote control cord to the terminal block.
Connect the terminal of remote control (X,Y) with the terminal of indoor unit (X,Y). (X and Y are no polarity)

⑥ Install the upper case as before so as not to catch up the remote control cord, and tighten with the screws.

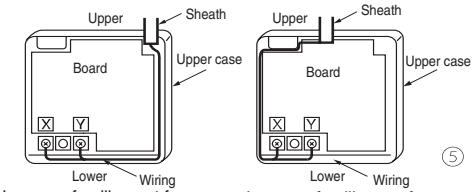
[In case of exposing cord]

③ You can pull out the remote control cord from left upper part or center upper part.
Cut off the upper thin part of remote control lower case with a nipper or knife, and grind burrs with a file etc.

④ Install the lower case to the flat wall with attached two wooden screws.



⑤ Connect the remote control cord to the terminal block.
Connect the terminal of remote control (X,Y) with the terminal of indoor unit (X,Y).
(X and Y are no polarity)
Wiring route is as shown in the right diagram depending on the pulling out direction.

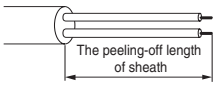


In case of pulling out from upper left

In case of pulling out from upper center

The wiring inside the remote control case should be within 0.3mm^2 (recommended) to 0.5mm^2.
The sheath should be peeled off inside the remote control case.
The peeling-off length of each wire is as below.

Pulling out from upper left	Pulling out from upper center
X wiring : 215mm Y wiring : 195mm	X wiring : 170mm Y wiring : 190mm



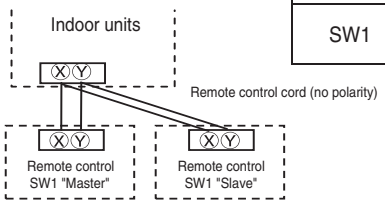
⑥ Install the upper case as before so as not to catch up the remote control cord, and tighten with the screws.
⑦ In case of exposing cord, fix the cord on the wall with cord clamp so as not to slack.

Installation and wiring of remote control

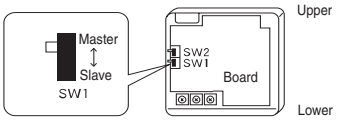
① Wiring of remote control should use 0.3mm^2 × 2 cores wires or cables. (on-site configuration)
② Maximum prolongation of remote control wiring is 600 m.
If the prolongation is over 100m, change to the size below.
But, wiring in the remote control case should be under 0.5mm^2 . Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.
100 - 200m·····0.5mm^2 × 2 cores
Under 300m·····0.75mm^2 × 2 cores
Under 400m·····1.25mm^2 × 2 cores
Under 600m·····2.0mm^2 × 2 cores

Master/ slave setting when more than one remote controls are used

A maximum of two remote controls can be connected to one indoor unit (or one group of indoor units.)



Switch	Setting	Contents
SW1	M	Master remote control
	S	Slave remote control

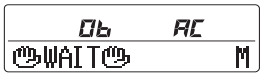


Set SW1 to "Slave" for the slave remote control. It was factory set to "Master" for shipment.
Note: The setting "Remote control sensor enabled" is only selectable with the master remote control in the position where you want to check room temperature.
The air-conditioner operation follows the last operation of the remote control regardless of the master/ slave setting of it.

The indication when power source is supplied

When power source is turned on, the following is displayed on the remote control until the communication between the remote control and indoor unit settled.
Master remote control : " WAIT M"
Slave remote control : " WAIT S"

At the same time, a mark or a number will be displayed for two seconds first.
This is the software's administration number of the remote control, not an error cord.



※ The left mark is only an example. Other marks may appear.

When remote control cannot communicate with the indoor unit for half an hour, the below indication will appear.
Check wiring of the indoor unit and the outdoor unit etc.

The range of temperature setting

When shipped, the range of set temperature differs depending on the operation mode as below.

Heating : 16-30˚C (55-86˚F)

Except heating (cooling, fan, dry, automatic) : 18-30˚C (62-86˚F)

●Upper limit and lower limit of set temperature can be changed with remote control.

Upper limit setting: valid during heating operation. Possible to set in the range of 20 to 30˚C (68 to 86˚F).

Lower limit setting: valid except heating (automatic, cooling, fan, dry) Possible to set in the range of 18 to 26˚C (62 to 79˚F).

When you set upper and lower limit by this function, control as below.

1. When ⑫TEMP RANGE SET, remote control function of function setting mode is "INDN CHANGE" (factory setting),
   【If upper limit value is set】
   During heating, you cannot set the value exceeding the upper limit.

   【If lower limit value is set 】
   During operation mode except heating, you cannot set the value below the lower limit.

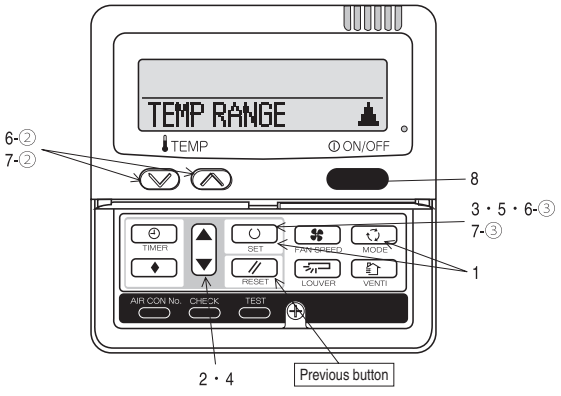
2. When ⑫TEMP RANGE SET, remote control function of function setting mode is "NO INDN CHANGE"
   【If upper limit value is set】
   During heating, even if the value exceeding the upper limit is set, upper limit value will be sent to the indoor unit. But, the indication is the same as the temperature set.

   【If lower limit value is set 】
   During except heating, even if the value lower than the lower limit is set, lower limit value will be sent to the indoor unit. But, the indication is the same as the temperature set.

●How to set upper and lower limit value

1. Stop the air-conditioner, and press (SET) and (MODE) button at the same time for over three seconds .
   The indication changes to "FUNCTION SET ▼".
2. Press ▼ button once, and change to the "TEMP RANGE ▲ " indication.
3. Press (SET) button, and enter the temperature range setting mode.
4. Select "UPPER LIMIT ▼" or "LOWER LIMIT ▲" by using ▲ ▼ button.
5. Press (SET) button to fix.
6. When "UPPER LIMIT ▼" is selected (valid during heating)
   ① Indication: "☝ ∨ ∧ SET UP" → "UPPER 30˚C ∨"
   ② Select the upper limit value with temperature setting button ▽ △. Indication example: "UPPER 26˚C ∨ ∧" (blinking)
   ③ Press (SET) button to fix. Indication example: "UPPER 26˚C" (Displayed for two seconds)
   After the fixed upper limit value displayed for two seconds, the indication will return to "UPPER LIMIT ▼".
7. When "LOWER LIMIT ▲" is selected (valid during cooling, dry, fan, automatic)
   ① Indication: "☝ ∨ ∧ SET UP" → "LOWER 18˚C ∧"
   ② Select the lower limit value with temperature setting button ▽ △. Indication example: "LOWER 24˚C ∨ ∧" (blinking)
   ③ Press (SET) button to fix. Indication for example: "LOWER 24˚C" (Displayed for two seconds)
   After the fixed lower limit value displayed for two seconds, the indication will return to "LOWER LIMIT ▼".
8. Press ON/OFF button to finish.

- It is possible to finish by pressing ON/OFF button on the way, but unfinished change of setting is unavailable.
- During setting, if you press (RESET) button, you return to the previous screen.



The functional setting

●The initial function setting for typical using is performed automatically by the indoor unit connected, when remote control and indoor unit are connected.
As long as they are used in a typical manner, there will be no need to change the initial settings.
If you would like to change the initial setting marked " ○ ", set your desired setting as for the selected item.
The procedure of functional setting is shown as the following diagram.

[Flow of function setting]

Start : Stop air-conditioner and press " ○ " (SET) and " ▽ " (MODE) buttons at the same time for over three seconds.
Finalize : Press " ○ " (SET) button.
Reset : Press " ✎ " (RESET) button.
Select : Press ▲ ▼ button.
End : Press ON/OFF button.
It is possible to finish above setting on the way, and unfinished change of setting is unavailable.
" ○ " : Initial settings
" ※ " : Automatic criterion

Record and keep the setting

Consult the technical data etc. for each control details

Stop air-conditioner and press (SET) + (MODE) buttons at the same time for over three seconds.

FUNCTION SET ▼

FUNCTION ▼ (Remote control function)

Function	setting		
01 ESP SET	ESP VALID	○	Validate setting of ESP:External Static Pressure
	ESP INVALID		Invalidate setting of ESP
02 AUTO RUN SET	AUTO RUN ON	※	
	AUTO RUN OFF	※	Automatical operation is impossible
03 TEMP SW	VALID	○	
	INVALID		Temperature setting button is not working
04 MODE SW	VALID	○	
	INVALID		Mode button is not working
05 ON/OFF SW	VALID	○	
	INVALID		On/Off button is not working
06 FAN SPEED SW	VALID	※	
	INVALID	※	Fan speed button is not working
07 LOUVER SW	VALID	※	
	INVALID	※	Louver button is not working
08 TIMER SW	VALID	○	
	INVALID		Timer button is not working
09 SENSOR SET	SENSOR OFF	○	Remote thermistor is not working.
	SENSOR ON		Remote thermistor is working.
	SENSOR +3.0℃		Remote thermistor is working, and to be set for producing +3.0˚C increase in temperature.
	SENSOR +2.0℃		Remote thermistor is working, and to be set for producing +2.0˚C increase in temperature.
	SENSOR +1.0℃		Remote thermistor is working, and to be set for producing +1.0˚C increase in temperature.
	SENSOR -1.0℃		Remote thermistor is working, and to be set for producing -1.0˚C increase in temperature.
	SENSOR -2.0℃		Remote thermistor is working, and to be set for producing -2.0˚C increase in temperature.
	SENSOR -3.0℃		Remote thermistor is working, and to be set for producing -3.0˚C increase in temperature.
10 AUTO RESTART	INVALID	○	
	VALID		
11 VENT LINK SET	NO VENT	○	
	VENT LINK		In case of Single split series, by connecting ventilation device to CNT of the indoor printed circuit board (in case of VRF series, by connecting it to CND of the indoor printed circuit board), the operation of ventilation device is linked with the operation of indoor unit.
	NO VENT LINK		In case of Single split series, by connecting ventilation device to CNT of the indoor printed circuit board (in case of VRF series, by connecting it to CND of the indoor printed circuit board), you can operate /stop the ventilation device independently by (VENT) button.
12 TEMP RANGE SET	INDIN CHANGE	○	If you change the range of set temperature, the indication of set temperature will vary following the control.
	NO INDIN CHANGE		If you change the range of set temperature, the indication of set temperature will not vary following the control, and keep the set temperature.
13 I/U FAN	HI-MID-LO	※	Air flow of fan becomes the three speed of ※ - ※ or ※ - ※ - ※.
	HI-LO	※	Air flow of fan becomes the two speed of ※ - ※.
	HI-MID		Air flow of fan becomes the two speed of ※ - ※.
	1 FAN SPEED	※	Air flow of fan is fixed at one speed.
14 POSITION			If you change the remote controller function "14 POSITION", you must change the indoor function "04 POSITION" accordingly.
	4POSITION STOP	○	You can select the louver stop position in the four.
	FREE STOP		The louver can stop at any position.
15 MODEL TYPE	HEAT PUMP	※	
	COOLING ONLY	※	
16 EXTERNAL CONTROL SET	INDIVIDUAL	○	If you input signal into CnT of the indoor printed circuit board from external, the indoor unit will be operated independently according to the input from external.
	FOR ALL UNITS		If you input into CnT of the indoor printed circuit board from external, all units which connect to the same remote control are operated according to the input from external.
17 ROOM TEMP INDICATION SET	INDICATION OFF	○	
	INDICATION ON		In normal working indication, indoor unit temperature is indicated instead of airflow. (Only the master remote control can be indicated.)
18 ※ INDICATION	INDICATION ON	○	
	INDICATION OFF		Heating preparation indication should not be indicated.
19 ℃/℉ SET	℃	○	Temperature indication is by degree C
	℉		Temperature indication is by degree F

(Indoor unit function) I/U FUNCTION ▲

Indoor unit No. are indicated only when plural indoor units are connected.

I/U000 ▲
I/U001 ◆
I/U002 ◆
I/U003 ◆
I/U004 ◆

To set other indoor unit, press AIR CON No. button, which allows you to go back to the indoor unit selection screen (for example: I/U 000 ▲).

Function	setting		
02 FAN SPEED SET	STANDARD	※	
	HIGH SPEED 1	※	
	HIGH SPEED 2		
03 FILTER SIGN SET	INDICATION OFF		
	TYPE 1	○	The filter sign is indicated after running for 180 hours.
	TYPE 2		The filter sign is indicated after running for 600 hours.
	TYPE 3		The filter sign is indicated after running for 1000 hours.
	TYPE 4		The filter sign is indicated after running for 1000 hours, then the indoor unit will be stopped by compulsion after 24 hours.
04 POSITION			If you change the indoor function "04 POSITION", you must change the remote control function "14 POSITION" accordingly.
	4POSITION STOP	○	You can select the louver stop position in the four.
	FREE STOP		The louver can stop at any position.
05 EXTERNAL INPUT	LEVEL INPUT	○	
	PULSE INPUT		
06 OPERATION PERMISSION/PROHIBITION	INVALID	○	
	VALID		Permission/prohibition control of operation will be valid.
07 EMERGENCY STOP	INVALID	○	
	VALID		With the VRF series, it is used to stop all indoor units connected with the same outdoor unit immediately. When stop signal is inputed from remote on-off terminal "CNT-6", all indoor units are stopped immediately.
08 ※ SP OFFSET	OFFSET +3.0℃		To be reset for producing +3.0˚C increase in temperature during heating.
	OFFSET +2.0℃		To be reset for producing +2.0˚C increase in temperature during heating.
	OFFSET +1.0℃		To be reset for producing +1.0˚C increase in temperature during heating.
	NO OFFSET	○	
09 RETURN AIR TEMP	OFFSET +2.0℃		To be reset producing +2.0˚C increase in return air temperature of indoor unit.
	OFFSET +1.5℃		To be reset producing +1.5˚C increase in return air temperature of indoor unit.
	OFFSET +1.0℃		To be reset producing +1.0˚C increase in return air temperature of indoor unit.
	NO OFFSET	○	
	OFFSET -1.0℃		To be reset producing -1.0˚C increase in return air temperature of indoor unit.
	OFFSET -1.5℃		To be reset producing -1.5˚C increase in return air temperature of indoor unit.
	OFFSET -2.0℃		To be reset producing -2.0˚C increase in return air temperature of indoor unit.
10 ※ FAN CONTROL	LOW FAN SPEED	○	When heating thermostat is OFF, fan speed is low speed.
	SET FAN SPEED		When heating thermostat is OFF, fan speed is set speed.
	INTERMITTENCE		When heating thermostat is OFF, fan speed is operated intermittently.
	FAN OFF		When heating thermostat is OFF, the fan is stopped. When the remote thermistor is working, "FAN OFF" is set automatically. Do not set "FAN OFF" when the indoor unit's thermistor is working.
11 FROST PREVENTION TEMP	TEMP HIGH		Change of indoor heat exchanger temperature to start frost prevention control.
	TEMP LOW	○	
12 FROST PREVENTION CONTROL			Working only with the Single split series.
	FAN CONTROL ON	○	To control frost prevention, the indoor fan tap is raised.
	FAN CONTROL OFF		
13 DRAIN PUMP LINK	○	○	Drain pump is run during cooling and dry.
	○ AND ※		Drain pump is run during cooling, dry and heating.
	○ AND ※ AND ≡		Drain pump is run during cooling, dry, heating and fan.
	○ AND ≡		Drain pump is run during cooling, dry and fan.
14 ※ FAN REMAINING	NO REMAINING	○	After cooling is stopped is OFF, the fan does not perform extra operation.
	0.5 HOUR		After cooling is stopped is OFF, the fan perform extra operation for half an hour.
	1 HOUR		After cooling is stopped is OFF, the fan perform extra operation for an hour.
	6 HOUR		After cooling is stopped is OFF, the fan perform extra operation for six hours.
15 ※ FAN REMAINING	NO REMAINING	○	After heating is stopped or heating thermostat is OFF, the fan does not perform extra operation.
	0.5 HOUR		After heating is stopped or heating thermostat is OFF,the fan perform extra operation for half an hour.
	2 HOUR		After heating is stopped or heating thermostat is OFF,the fan perform extra operation for two hours.
	6 HOUR		After heating is stopped or heating thermostat is OFF, the fan perform extra operation for six hours.
16 ※ FAN INTERMITTENCE	NO REMAINING	○	
	2min OFF 5min ON		During heating is stopped or heating thermostat is OFF, the fan perform intermittent operation for five minutes with low fan speed after twenty minutes' OFF.
	5min OFF 5min ON		During heating is stopped or heating thermostat is OFF, the fan perform intermittent operation for five minutes with low fan speed after five minutes' OFF.
17 PRESSURE CONTROL	STANDARD	※	
	TYPE I	※	Connected "OA Processing" type indoor unit, and is automatically defined.

ON/OFF button (finished)

Note 1: The initial setting marked " ※ " is decided by connected indoor and outdoor unit, and is automatically defined as following table.

Function No.	Item	Default	Model
Remote control function02	AUTO RUN SET	AUTO RUN ON	"Auto-RUN" mode selectable indoor unit.
		AUTO RUN OFF	Indoor unit without "Auto-RUN" mode
Remote control function06	FAN SPEED SW	VALID	Indoor unit with two or three step of air flow setting
		INVALID	Indoor unit with only one of air flow setting
Remote control function07	LOUVER SW	VALID	Indoor unit with automatically swing louver
		INVALID	Indoor unit without automatically swing louver
Remote control function13	I/U FAN	HI-MID-LO	Indoor unit with three step of air flow setting
		HI-LO	Indoor unit with two step of air flow setting
		HI-MID	
		1 FAN SPEED	Indoor unit with only one of air flow setting
Remote control function15	MODEL TYPE	HEAT PUMP	Heat pump unit
		COOLING ONLY	Exclusive cooling unit

Note 3: As for plural indoor unit, set indoor functions to each master and slave indoor unit.
But only master indoor unit is received the setting change of indoor unit function "05 EXTERNAL INPUT" and "06 PERMISSION / PROHIBISHION".

Note2: Fan setting of "HIGH SPEED"

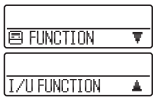
Fan tap		Indoor unit air flow setting				
		※ - ※ - ※ - ※	※ - ※ - ※ - ※	※ - ※ - ※	※ - ※	※ - ※
FAN SPEED SET	STANDARD	UH - Hi - Me - Lo	Hi - Me - Lo	Hi - Lo	Hi - Me	
	HIGH SPEED1, 2	UH - UH - Hi - Me	UH - Hi - Me	UH - Me	UH - Hi	

Initial function setting of some indoor unit is "HIGH SPEED".

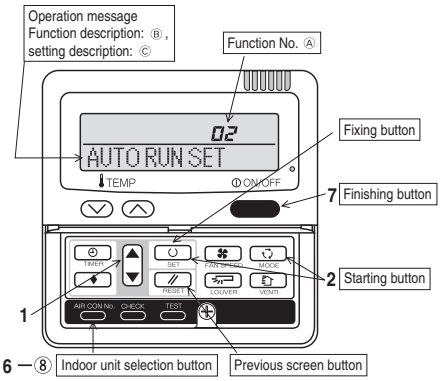
How to set function

1. **Stop air-conditioner and press (SET) (MODE) buttons at the same time for over three seconds, and the "FUNCTION SET ▼" will be displayed.**

2. **Press (SET) button.**
3. **Make sure which do you want to set, "FUNCTION ▼" (remote control function) or "I/U FUNCTION ▲" (indoor unit function).**
4. **Press ▲ or ▼ button.**
   Selecct "FUNCTION ▼" (remote control function) or "I/U FUNCTION ▲" (indoor unit function).



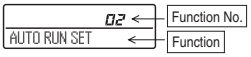
5. **Press (SET) button.**



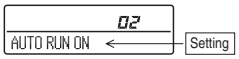
6. **【On the occasion of remote control function selection】**

① "DATA LOADING" (Indication with blinking)
↓
Display is changed to "01 ESP SET".

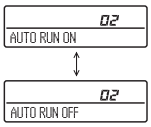
② Press ▲ or ▼ button.
"No. and function"are indicated by turns on the remote control function table, then you can select from them.
(For example)



③ Press (SET) button.
The current setting of selected function is indicated.
(for example) "AUTO RUN ON" ← If "02 AUTO RUN SET" is selected



④ Press ▲ or ▼ button.
Select the setting.



⑤ Press (SET)
"SET COMPLETE" will be indicated, and the setting will be completed.
Then after "No. and function" indication returns, Set as the same procedure if you want to set continuously ,and if to finish, go to 7.

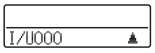
7. **Press ON/OFF button.**
   Setting is finished.

【On the occasion of indoor unit function selection】

① "DATA LOADING" (Blinking for 2 to 23 seconds to read the data)
↓
Indication is changed to "02 FAN SPEED SET".
Go to ②.

[Note]

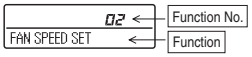
(1) If plural indoor units are connected to a remote control, the indication is "I/U 000" (blinking) ← The lowest number of the indoor unit connected is indicated.



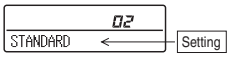
(2) Press ▲ or ▼ button.
Select the number of the indoor unit you are to set
If you select "ALL UNIT ▼", you can set the same setting with all unites.

(3) Press (SET) button.

② Press ▲ or ▼ button.
"No. and function" are indicated by turns on the indoor unit function table, then you can select from them.
(For example)



③ Press (SET) button.
The current setting of selected function is indicated.
(For example) "STANDARD" ← If "02 FAN SPEED SET" is selected.



④ Press ▲ or ▼ button.
Select the setting.

⑤ Press (SET) button.
"SET COMPLETE" will be indicated, and the setting will be completed.
Then after "No. and function" indication returns, set as the same procedure if you want to set continuously , and if to finish, go to 7.

※ When plural indoor units are connected to a remote control, press the AIR CON No. button, which allows you to go back to the indoor unit selection screen. (example "I/U 000 ▲")

- It is possible to finish by pressing ON/OFF button on the way, but unfinished change of setting is unavailable.
- During setting, if you press (RESET) button, you return to the previous screen.
- Setting is memorized in the control and it is saved independently of power failure.

【How to check the current setting】

When you select from "No. and funcion" and press set button by the previous operation, the "Setting" displayed first is the current setting.
(But, if you select "ALL UNIT ▼", the setting of the lowest number indoor unit is displayed.)

1.10.4 Installation of outdoor unit
Models FDC100-140VNA, 100-140VSA

PSC012D106

Inverter driven split PAC

100VNA–140VNA,100VSA–140VSA

Designed for R410A refrigerant

◎This installation manual deals with outdoor units and general installation specifications only. For indoor units, refer to the respective installation manuals supplied with the units.
◎When install the unit, be sure to check whether the selection of installation place, power source specifications, usage limitation (piping length, height differences between indoor and outdoor units, power source voltage and etc.) and installation spaces.

SAFETY PRECAUTIONS

- We recommend you to read this "SAFETY PRECAUTIONS" carefully before the installation work in order to gain full advantage of the functions of the unit and to avoid malfunction due to mishandling.
- The precautions described below are divided into ⚠**WARNING** and ⚠**CAUTION**. The matters with possibilities leading to serious consequences such as death or serious personal injury due to erroneous handling are listed in the ⚠**WARNING** and the matters with possibilities leading to personal injury or damage of the unit due to erroneous handling including probability leading to serious consequences in some cases are listed in ⚠**CAUTION**. **These are very important precautions for safety. Be sure to observe all of them without fail.**
- The meaning of "Marks" used here are as shown below.

⃠	Never do it under any circumstance.	❗ ⏚	Always do it according to the instruction

- For 3 phase power source outdoor unit,EN61000-3-2 is not applicable if consent by the utility company or nortification to the utility company is given before usage.
- 3 phase power source unit, both indoor and outdoor, is suitable for installation in a commercial and light industrial environment. If installed as a house-hold appliance it could cause electromagnetic interference.
- 5 and 6 HP units of single phase power source are equipment complying with IEC 61000-3-12.
- Be sure to confirm no anomaly on the equipment by commissioning after completed installation and explain the operating methods as well as the maintenance methods of this equipment to the user according to the owner's manual.
- Keep the installation manual together with owner's manual at a place where any user can read at any time. Moreover if necessary, ask to hand them to a new user.

Check before installation work

- Model name and power source
- Refrigerant piping length
- Piping, wiring and miscellaneous small parts
- Indoor unit installation manual

⚠ WARNING

- **Installation must be carried out by the qualified installer.**
  If you install the system by yourself, it may cause serious trouble such as water leaks, electric shocks, fire and personal injury, as a result of a system malfunction.
- **Install the system in full accordance with the instruction manual.**
  Incorrect installation may cause bursts, personal injury, water leaks, electric shocks and fire.
- **Use the original accessories and the specified components for installation.**
  If parts other than those prescribed by us are used, it may cause fall of the unit, water leaks, electric shocks, fire, refrigerant leak, substandard performance, control failure and personal injury.
- **When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage accordance with ISO5149.**
  Consult the expert about prevention measures. If the density of refrigerant exceeds the limit in the event of leakage, lack of oxygen can occur, which can cause serious accidents.
- **Ventilate the working area well in the event of refrigerant leakage during installation.**
  If the refrigerant comes into contact with naked flames, poisonous gas is produced.
- **After completed installation, check that no refrigerant leaks from the system.**
  If refrigerant leaks into the room and comes into contact with an oven or other hot surface, poisonous gas is produced.
- **Hang up the unit at the specified points with ropes which can support the weight in lifting for portage. And to avoid jotting out of alignment, be sure to hang up the unit at 4-point support.**
  An improper manner of portage such as 3-point support can cause death or serious personal injury due to falling of the unit
- **Install the unit in a location with good support.**
  Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury.
- **Ensure the unit is stable when installed, so that it can withstand earthquakes and strong winds.**
  Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury.
- **The electrical installation must be carried out by the qualified electrician in accordance with "the norm for electrical work" and "national wiring regulation", and the system must be connected to the dedicated circuit.**
  Power source with insufficient capacity and incorrect function done by improper work can cause electric shocks and fire.
- **Be sure to shut off the power before starting electrical work.**
  Failure to shut off the power can cause electric shocks, unit failure or incorrect function of equipment.
- **Be sure to use the cables conformed to safety standard and cable ampacity for power distribution work.**
  Uncomformable cables can cause electric leak, anomalous heat production or fire.
- **Use the prescribed cables for electrical connection, tighten the cables securely in terminal block and relieve the cables correctly to prevent overloading the terminal blocks.**
  Loose connections or cable mountings can cause anomalous heat production or fire.
- **Arrange the wiring in the control box so that it cannot be pushed up further into the box. Install the service panel correctly.**
  Incorrect installation may result in overheating and fire.
- **Do not perform brazing work in the airtight room**
  It can cause lack of oxygen.
- **Use the prescribed pipes, flare nuts and tools for R410A.**
  Using existing parts (for R22 or R407C) can cause the unit failure and serious accidents due to burst of the refrigerant circuit.
- **Tighten the flare nut by using double spanners and torque wrench according to prescribed method. Be sure not to tighten the flare nut too much.**
  Loose flare connection or damage on the flare part by tightening with excess torque can cause burst or refrigerant leaks which may result in lack of oxygen.
- **Do not open the service valves for liquid line and gas line until completed refrigerant piping work, air tightness test and evacuation.**
  If the compressor is operated in state of opening service valves before completed connection of refrigerant piping work, you may incur frost bite or injury from an abrupt refrigerant outflow and air can be sucked into refrigerant circuit, which can cause burst or personal injury due to anomalously high pressure in the refrigerant.
- **Only use prescribed optional parts. The installation must be carried out by the qualified installer.**
  If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.
- **Do not perform any change of protective device itself or its setup condition.**
  The forced operation by short-circuiting protective device of pressure switch and temperature control or the use of non specified component can cause fire or burst.
- **Be sure to switch off the power source in the event of installation, inspection or servicing.**
  If the power source is not shut off, there is a risk of electric shocks, unit failure or personal injury due to the unexpected start of fan.
- **Consult the dealer or an expert regarding removal of the unit.**
  Incorrect installation can cause water leaks, electric shocks or fire.
- **Stop the compressor before closing valve and disconnecting refrigerant pipes in case of pump down operation.**
  If disconnecting refrigerant pipes in state of opening service valves before compressor stopping, you may incur frost bite or injury from an abrupt refrigerant outflow and air can be sucked, which can cause burst or personal injury due to anomalously high pressure in the refrigerant circuit.
- **Be sure to wear protective goggles and gloves while at work.**
- **Ensure that no air enters in the refrigerant circuit when the unit is installed and removed.**
  If air enters in the refrigerant circuit, the pressure in the refrigerant circuit becomes too high, which can cause burst and personal injury.
- **Do not run the unit with removed panels or protections.**
  Touching rotating equipments, hot surfaces or high voltage parts can cause personal injury due to entrapment, burn or electric shocks.
- **Be sure to fix up the service panels.**
  Incorrect fixing can cause electric shocks or fire due to intrusion of dust or water.
- **Do not perform any repairs or modifications by yourself. Consult the dealer if the unit requires repair.**
  If you repair or modify the unit, it can cause water leaks, electric shocks or fire.
- **Do not process or splice the power cord, or share the socket with other power plugs.**
  This may cause fire or electric shock due to defecting contact, defecting insulation and over-current etc.
- **Do not bundle or wind or process the power cord. Do not deform the power cord by treading it.**
  This may cause fire or heating.

⚠ CAUTION

- **Carry out the electrical work for ground lead with care.**
  Do not connect the ground lead to the gas line, water line, lightning conductor or telephone line's ground lead. Incorrect grounding can cause unit faults such as electric shocks due to short-circuiting. Never connect the grounding wire to a gas pipe because if gas leaks,it could cause explosion or ignition.
- **Use the circuit breaker for all pole with correct capacity.**
  Using the incorrect circuit breaker, it can cause the unit malfunction and fire.
- **Install isolator or disconnect switch on the power source wiring in accordance with the local codes and regulations.**
  The isolator should be locked in accordanced with EN60204-1.
- **Take care when carrying the unit by hand.**
  If the unit weights more than 20kg, it must be carried by two or more persons. Do not carry by the plastic straps, always use the carry handle when carrying the unit by hand. Use gloves to minimize the risk of cuts by the aluminum fins.
- **Dispose of any packing materials correctly.**
  Any remaining packing materials can cause personal injury as it contains nails and wood. And to avoid danger of suffocation, be sure to keep the plastic wrapper away from children and to dispose after tear it up.
- **Pay attention not to damage the drain pan by weld spatter when welding work is done near the indoor unit.**
  If weld spatter entered into the indoor unit during welding work, it can cause pin-hole in drain pan and result in water leakage. To prevent such damage, keep the indoor unit in its packing or cover it.
- **Be sure to insulate the refrigerant pipes so as not to condense the ambient air moisture on them.**
  Insufficient insulation can cause condensation, which can lead to moisture damage on the ceiling, floor, furniture and any other valuables.
- **Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.**
  If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.
- **Perform installation work properly according to this installation manual.**
  Improper installation can cause abnormal vibrations or increased noise generation.
- **After maintenance, all wiring, wiring ties and the like, should be returned to their original state and wiring route, and the necessary clearance from all metal parts should be secured.**
- **Earth leakage breaker must be installed.**
  If the earth leakage breaker is not installed, it can cause fire or electric shocks.
- **Do not use any materials other than a fuse with the correct rating in the location where fuses are to be used.**
  Connecting the circuit with copper wire or other metal thread can cause unit failure and fire.
- **Do not install the unit near the location where leakage of combustible gases can occur.**
  If leaked gases accumulate around the unit, it can cause fire.
- **Do not install the unit where corrosive gas (such as sulfurous acid gas etc.) or combustible gas (such as thinner and petroleum gases) can accumulate or collect, or where volatile combustible substances are handled.**
  Corrosive gas can cause corrosion of heat exchanger, breakage of plastic parts and etc. And combustible gas can cause fire.
- **Secure a space for installation, inspection and maintenance specified in the manual.**
  Insufficient space can result in accident such as personal injury due to falling from the installation place..
- **When the outdoor unit is installed on a roof or a high place, provide permanent ladders and handrails along the access route and fences and handrails around the outdoor unit.**
  If safety facilities are not provided, it can cause personal injury due to falling from the installation place.
- **Do not install nor use the system close to the equipment that generates electromagnetic fields or high frequency harmonics**
  Equipment such as inverters, standby generators, medical high frequency equipments and telecommunication equipments can affect the system, and cause malfunctions and breakdowns. The system can also affect medical equipment and telecommunication equipment, and obstruct its function or cause jamming.
- **Do not install the outdoor unit in a location where insects and small animals can inhabit.**
  Insects and small animals can enter the electric parts and cause damage or fire. Instruct the user to keep the surroundings clean.
- **Do not use the base flame for outdoor unit which is corroded or damaged due to long periods of operation.**
  Using an old and damage base flame can cause the unit falling down and cause personal injury.

- **Do not install the unit in the locations listed below.**
  ·Locations where carbon fiber, metal powder or any powder is floating.
  ·Locations where any substances that can affect the unit such as sulphide gas, chloride gas, acid and alkaline can occur.
  ·Vehicles and ships
  ·Locations where cosmetic or special sprays are often used.
  ·Locations with direct exposure of oil mist and steam such as kitchen and machine plant.
  ·Locations where any machines which generate high frequency harmonics are used.
  ·Locations with salty atmospheres such as coastlines
  ·Locations with heavy snow (If installed, be sure to provide base flame and snow hood mentioned in the manual)
  ·Locations where the unit is exposed to chimney smoke
  ·Locations at high altitude (more than 1000m high)
  ·Locations with ammonic atmospheres (e.g. organic fertilizer).
  ·Locations with calcium chloride (e.g. snow melting agent).
  ·Locations where heat radiation from other heat source can affect the unit
  ·Locations without good air circulation.
  ·Locations with any obstacles which can prevent inlet and outlet air of the unit
  ·Locations where short circuit of air can occur (in case of multiple units installation)
  ·Locations where strong air blows against the air outlet of outdoor unit
  ·Locations where something located above the unit could fall.
  It can cause remarkable decrease in performance, corrosion and damage of components, malfunction and fire.
- **Do not install the outdoor unit in the locations listed below.**
  ·Locations where discharged hot air or operating sound of the outdoor unit can bother neighborhood.
  ·Locations where outlet air of the outdoor unit blows directly to an animal or plants. The outlet air can affect adversely to the plant etc.
  ·Locations where vibration can be amplified and transmitted due to insufficient strength of structure.
  ·Locations where vibration and operation sound generated by the outdoor unit can affect seriously. (on the wall or at the place near bed room)
  ·Locations where an equipment affected by high harmonics is placed. (TV set or radio receiver is placed within 5m)
  ·Locations where drainage cannot run off safely.
  It can affect surrounding environment and cause a claim.
- **Do not use the unit for special purposes such as storing foods, cooling precision instruments and preservation of animals, plants or art.**
  It can cause the damage of the items.
- **Do not touch any buttons with wet hands.**
  It can cause electric shocks.
- **Do not touch any refrigerant pipes with your hands when the system is in operation.**
  During operation the refrigerant pipes become extremely hot or extremely cold depending the operating condition, and it can cause burn injury or frost injury.
- **Do not clean up the unit with water.**
  It can cause electric shocks.
- **Do not operate the outdoor unit with any article placed on it.**
  You may incur property damage or personal injure from a fall of the article.
- **Do not step onto the outdoor unit.**
  You may incur injury from a drop or fall.
- **Do not touch the suction or aluminum fin on the outdoor unit.**
  This may cause injury.
- **Do not put anything on the outdoor unit and operating unit.**
  This may cause damage the objects or injury due to falling to the object.

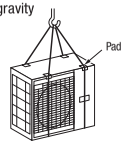
Notabilia as a unit designed for R410A

- Do not use any refrigerant other than R410A. R410A will rise to pressure about 1.6 times higher than that of a conventional refrigerant. A cylinder containing R410A has a pink indication mark on the top.
- A unit designed for R410A has adopted a different size indoor unit operation valve charge port and a different size check joint provided in the unit to prevent the charging of a wrong refrigerant by mistake. The processed dimension of the flared part of a refrigerant pipe and a flare nut's parallel side measurement have also been altered to raise strength against pressure. Accordingly, you are required to arrange dedicated R410A tools listed in the table on the right before installing or servicing this unit.
- Do not use a charge cylinder. The use of a charge cylinder will cause the refrigerant composition to change, which results in performance degradation.
- In charging refrigerant, always take it out from a cylinder in the liquid phase.
- All indoor units must be models designed exclusively for R410A. Check connectable indoor unit models in a catalog, etc. (A wrong indoor unit, if connected into the system, will impair proper system operation)

	Dedicated R410A tools
a)	Gauge manifold
b)	Charge hose
c)	Electronic scale for refrigerant charging
d)	Torque wrench
e)	Flare tool
f)	Protrusion control copper pipe gauge
g)	Vacuum pump adapter
h)	Gas leak detector

1. HAULAGE AND INSTALLATION (Take particular care in carrying in or moving the unit, and always perform such an operation with two or more persons.)

⚠CAUTION When a unit is hoisted with slings for haulage, take into consideration the offset of its gravity center position.
If not properly balanced, the unit can be thrown off-balance and fall.

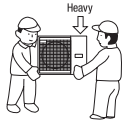


1) Delivery

- Deliver the unit as close as possible to the installation site before removing it from the packaging.
- When some compelling reason necessitates the unpacking of the unit before it is carried in, use nylon slings or protective wood pieces so as not to damage the unit by ropes lifting it.

2) Portage

- The right hand side of the unit as viewed from the front (diffuser side) is heavier. A person carrying the right hand side must take heed of this fact. A person carrying the left hand side must hold with his right hand the handle provided on the front panel of the unit and with his left hand the corner column section.



3) Selection of installation location for the outdoor unit

Be sure to select a suitable installation place in consideration of following conditions.

- ○ A place where it is horizontal, stable and can endure the unit weight and will not allow vibration transmittance of the unit.
- ○ A place where it can be free from possibility of bothering neighbors due to noise or exhaust air from the unit
- ○ A place where the unit is not exposed to oil splashes.
- ○ A place where it can be free from danger of flammable gas leakage.
- ○ A place where drain water can be disposed without any trouble.
- ○ A place where the unit will not be affected by heat radiation from other heat source.
- ○ A place where snow will not accumulate.
- ○ A place where the unit can be kept away 5m or more from TV set and/or radio receiver in order to avoid any radio or TV interference.
- ○ A place where good air circulation can be secured, and enough service space can be secured for maintenance and service of the unit safely.
- ○ A place where the unit will not be affected by electromagnetic waves and/or high-harmonic waves generated by other equipment.
- ○ A place where chemical substances like sulfuric gas, chloric gas, acid and alkali (including ammonia), which can harm the unit, will not be generated and not remain.
- ○ A place where strong wind will not blow against the outlet air blow of the unit.

Do not install the unit in places which exposed to sea breeze (e.g. coastal area) or calcium chloride (e.g. snow melting agent), exposed to ammonia substance (e.g. organic fertilizer).

4) Caution about selection of installation location

(1) If the unit is installed in the area where the snow will accumulate, following measures are required.
The bottom plate of unit and intake, outlet may be blocked by snow.

1. Install the unit on the base so that the bottom is higher than snow cover surface.

2. Provide a snow hood to the outdoor unit on site.
Regarding outline of a snow hood, refer to our technical manual.

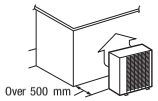
3. Install the unit under eaves or providen the roof on site.

Since drain water generated by defrost control may freeze, following measures are required.

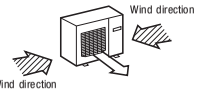
- Don't execute drain piping work by using a drain elbow and drain grommets (optional parts). [Refer to Drain piping work.]
- Recommend setting Defrost Control (SW3-1) and Snow Guard Fan Control (SW3-2). [Refer to Setting SW3-1, SW3-2.]
- Attach heater on a base plate on site, if there is possibility to freeze drain water.
  In case that the product has a corrective drainage system, the drainage paths should have suitable measure against freezing but be sure not to melt the material of drainage paths with heat.

(2) If the unit can be affected by strong wind, following measures are required.
Strong wind can cause damage of fan (fan motor), or can cause performance degradation, or can trigger anomalous stop of the unit due to rising of high pressure.

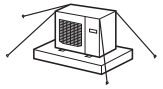
1. Install the outlet air blow side of the unit to face a wall of building, or provide a fence or a windbreak screen.



2. Install the outlet air blow side of the unit in a position perpendicular to the direction of wind.



3. The unit should be installed on the stable and level foundation. If the foundation is not level, tie down the unit with wires.

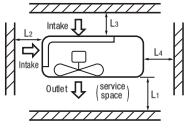


5) Installation space

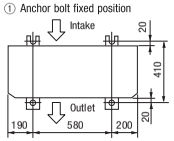
- Walls surrounding the unit in the four sides are not acceptable.
- There must be a 1-meter or larger space in the above.
- Where a danger of short-circuiting exists, install guide louvers.
- When more than one unit are installed, provide sufficient intake space consciously so that short-circuiting may not occur.
- Where piling snow can bury the outdoor unit, provide proper snow guards.
- A barrier wall placed in front of the exhaust diffuser must not be higher than the unit.

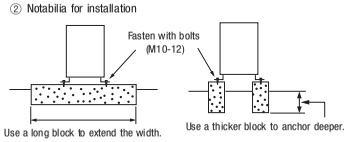
(mm)

Size \ Example installation	I	II	III
L1	Open	Open	500
L2	300	5	Open
L3	150	300	150
L4	150	150	150



6) Installation





- In installing the unit, fix the unit's legs with bolts specified on the left.
- The protrusion of an anchor bolt on the front side must be kept within 15 mm.
- Securely install the unit so that it does not fall over during earthquakes or strong winds, etc.
- Refer to the left illustrations for information regarding concrete foundations.
- Install the unit in a level area. (With a gradient of 5 mm or less.)
  Improper installation can result in a compressor failure, broken piping within the unit and abnormal noise generation.

7) To run the unit for a cooling operation, when the outdoor temperature is –5°C or lower.

- When the outdoor air temperature is -5°C or lower, provide a snow hood to the outdoor unit on site.
  So that strong wind will not blow against the outdoor heat exchanger directly. Regarding outline of a snow hood, refer to our technical manual.

2. REFRIGERANT PIPING WORK

1) Restrictions on unit installation and use

- Check the following points in light of the indoor unit specifications and the installation site.
- Observe the following restrictions on unit installation and use. Improper installation can result in a compressor failure or performance degradation.

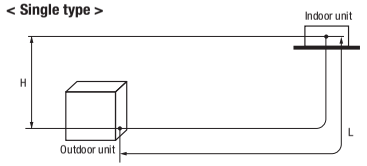
Restrictions				Marks appearing in the drawing			
	One-way pipe length difference from the first branching point to the indoor unit					< 3m	≧ 3m
	Model for outdoor units		Dimensional restrictions	Single type	Twin type	Triple type A	Triple type B
One-way pipe length of refrigerant piping	100VNA,125VNA,100VSA,125VSA 140VNA, 140VSA		≦ 50m	L	L+L1+L2	L+L1+L2+L3	L+L1+L2+L3
Main pipe length	100VNA,125VNA,100VSA,125VSA 140VNA, 140VSA		≦ 50m	—	L	— L	— L
One-way pipe length between the first branching point from to the second branching point	Triple type	140VNA, 140VSA	≦ 5m	—	—	—	La
One-way pipe length after the first branching point	Twin type	All Models	≦ 30m	—	L1,L2	—	—
	Triple type	140VNA, 140VSA			—	L1, L2, L3	L1 (1)
One-way pipe length from the first branching point to indoor units through the second branching point	Triple type	140VNA, 140VSA	≦ 27m	—	—	—	La+L2, La+L3 (1)
One-way pipe length difference from the first branching point to the indoor unit	Twin type	All Models	≦ 10m	—	|L1-L2|	—	—
	Triple type	140VNA, 140VSA	≦ 3m		—	| L1-L2 | , | L2-L3 | , | L3-L1 |	
			≦ 10m		—	—	L1-(La+L2),L1-(La+L3) (1)
One way pipe length difference from the second branching point to the indoor unit	Triple type	140VNA, 140VSA	≦ 10m	—	—	—	| L2-L3 |
Elevation difference between indoor and outdoor units	When the outdoor unit is positioned higher,		≦ 50m (2)	H	H	H	H
	When the outdoor unit is positioned lower,		≦ 15m				
Elevation difference between indoor units			≦ 0.5m	—	h	h1,h2,h3	h1,h2,h3

⚠CAUTION

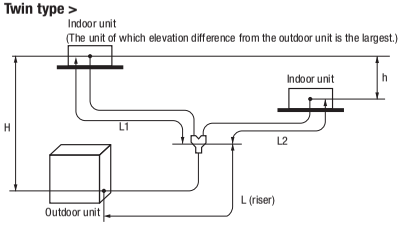
- The use restrictions appearing in the table above are applicable to the standard pipe size combinations shown in the table below. Where an existing pipe system is utilized, different one-way pipe length restrictions should apply depending on its pipe size. For more information, see " 6. UTILIZATION OF EXISTING PIPING."
- With the triple pipe connection, the way of use is different when the difference of one-way pipe length after the first branching point is 3m to 10m. For details, refer to the above table and right figure.

Note (1) Install the indoor units so that L + L1 becomes the longest one-way pipe.
Keep the pipe length difference between L1 and (La + L2) or (La + L3) within 10m.
(2) When the outdoor unit is installed at a position higher than the indoor unit by 30m or more, set SW5-2 on the control PCB to ON.

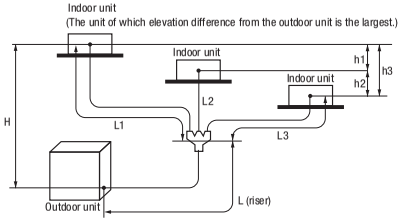
< Single type >



< Twin type >



< Triple type A >



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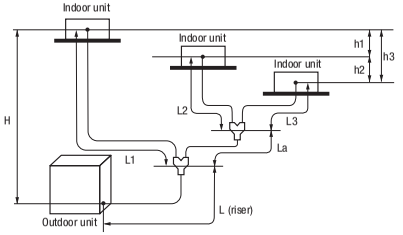


2) Determination of pipe size

- Determine refrigerant pipe size pursuant to the following guidelines based on the indoor unit specifications.

		Model 100V		Model 125V		Model 140V	
		Gas pipe	Liquid pipe	Gas pipe	Liquid pipe	Gas pipe	Liquid pipe
Outdoor unit connected		ϕ15.88	ϕ9.52	ϕ15.88	ϕ9.52	ϕ15.88	ϕ9.52
		Flare	Flare	Flare	Flare	Flare	Flare
Refrigerant piping (Main pipe L)		ϕ15.88	ϕ9.52	ϕ15.88	ϕ9.52	ϕ15.88	ϕ9.52
In the case of a single type	Indoor unit connected	ϕ15.88	ϕ9.52	ϕ15.88	ϕ9.52	ϕ15.88	ϕ9.52
	Capacity of indoor unit	Model 100V		Model 125V		Model 140V	
In the case of a twin type	Branching pipe set	DIS-WA1G		DIS-WA1G		DIS-WA1G	
	Refrigerant piping (branch pipe L1,L2)	ϕ12.7	ϕ9.52	ϕ12.7	ϕ9.52	ϕ15.88	ϕ9.52
	Indoor unit connected	ϕ12.7	ϕ6.35	ϕ12.7	ϕ6.35	ϕ15.88	ϕ9.52
	Capacity of indoor unit	Model 50V×2		Model 60V×2		Model 71V×2	
In the case of a triple type A	Branching pipe set	—		—		DIS-TA1G	
	Refrigerant piping (branch pipe L1,L2,L3)					ϕ12.7	ϕ9.52
	Indoor unit connected					ϕ12.7	ϕ6.35
	Capacity of indoor unit					Model 50Vx3	
In the case of a triple type B	Branching pipe set	—		—		DIS-WA1G	
	Refrigerant piping (branch pipe La)					ϕ15.88	ϕ9.52
	Refrigerant piping (branch pipe L1)					ϕ12.7	ϕ9.52
	Branching pipe set (After branch pipe La)					DIS-WA1G	
	Refrigerant piping (branch pipe L2,L3)					ϕ12.7	ϕ9.52
	Indoor unit connected					ϕ12.7	ϕ6.35
	Capacity of indoor unit					Model 50V×3	

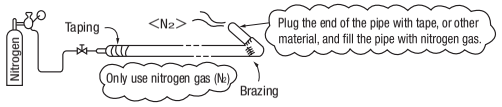
⚠CAUTION

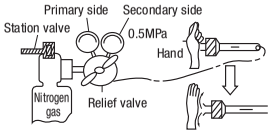
- When the 50V or 60V model is connected as an indoor unit, always use a ϕ9.52 liquid pipe for the branch (branching pipe – indoor unit) and a different diameter joint supplied with the branching pipe set for connection with the indoor unit (ϕ6.35 on the liquid pipe side).
  If a ϕ6.35 pipe is used for connection with a branching pipe, a refrigerant distribution disorder may occur, causing one of the indoor units to fall short of the rated capacity.
- A riser pipe must be a part of the main. A branching pipe set should be installed horizontally at a point as close to an indoor unit as possible.
  A branching part must be dressed with a heat-insulation material supplied as an accessory.
- For the details of installation work required at and near a branching area, see the installation manual supplied with your branching pipe set.

About brazing

Brazing must be performed under a nitrogen gas flow.

Without nitrogen gas, a large quantity of foreign matters (oxidized film) are created, causing a critical failure from capillary tube or expansion valve clogging.





3) Refrigerant pipe wall thickness and material

- Select refrigerant pipes of the table shown on the right wall thickness and material as specified for each pipe size.
- This unit uses R410A. Always use 1/2H pipes having a 1.0mm or thicker wall for φ19.05 or larger pipes, because O-type pipes do not meet the pressure resistance requirement.

Pipe diameter [mm]	6.35	9.52	12.7	15.88	22.22	25.4	28.58
Minimum pipe wall thickness [mm]	0.8	0.8	0.8	1.0	1.0	1.0	1.0
Pipe material*	O-type pipe	O-type pipe	O-type pipe	O-type pipe	1/2H-type pipe	1/2H-type pipe	1/2H-type pipe

*Phosphorus deoxidized seamless copper pipe C1220T, JIS H 3300

NOTE

- Select pipes having a wall thickness larger than the specified minimum pipe thickness.

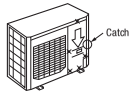
4) On-site piping work

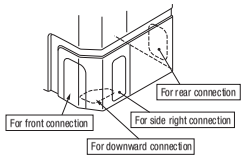
⚠IMPORTANT

- Take care so that installed pipes may not touch components within a unit. If touching with an internal component, it will generate abnormal sounds and/or vibrations.

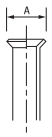
How to remove the service panel

First remove the five screws (× mark) of the service panel and push it down into the direction of the arrow mark and then remove it by pulling it toward you.



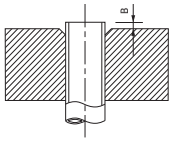


- The pipe can be laid in any of the following directions: side right, front, rear and downward.
- Remove a knock-out plate provided on the pipe penetration to open a minimum necessary area and attach an edging material supplied as an accessory by cutting it to an appropriate length before laying a pipe.
- Carry out the on site piping work with the operation valve fully closed.
- Give sufficient protection to a pipe end (compressed and blazed, or with an adhesive tape) so that water or foreign matters may not enter the piping.
- Bend a pipe to a radius as large as practical.(R100–R150) Do not bend a pipe repeatedly to correct its form.
- Flare connection is used between the unit and refrigerant pipe. Flare a pipe after engaging a flare nut onto it. Flare dimensions for R410A are different from those for conventional R407C. Although we recommend the use of flaring tools designed specifically for R410A, conventional flaring tools can also be used by adjusting the measurement of protrusion B with a protrusion control gauge.
- The pipe should be anchored every 1.5m or less to isolate the vibration.



Flared pipe end: A (mm)

Copper pipe outer diameter	A $^{0}_{-0.4}$
φ6.35	9.1
φ9.52	13.2
φ12.7	16.6
φ15.88	19.7



Copper pipe protrusion for flaring: B (mm)

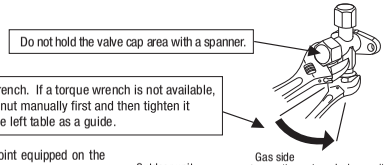
Copper pipe outer diameter	In the case of a rigid (clutch) type	
	With an R410A tool	With a conventional tool
φ6.35	0–0.5	0.7–1.3
φ9.52		
φ12.7		
φ15.88		

- Tighten a flare joint securely with a double spanner.

⚠ CAUTION **Do not apply force beyond proper fastening torque in tightening the flare nut.**

Fix both liquid and gas service valves at the valve main bodies as illustrated on the right, and then fasten them, applying appropriate fastening torque.

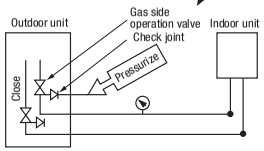
Operation valve size (mm)	Tightening torque (N·m)	Tightening angle (°)	Recommended length of a tool handle (mm)
φ6.35 (1/4")	14–18	45–60	150
φ9.52 (3/8")	34–42	30–45	200
φ12.7 (1/2")	49–61	30–45	250
φ15.88 (5/8")	68–82	15–20	300



5) Air tightness test

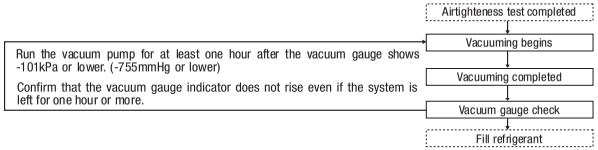
① Although outdoor and indoor units themselves have been tested for air tightness at the factory, check the connecting pipes after the installation work for air tightness from the operation valve's check joint equipped on the outdoor unit side. While conducting a test, keep the operation valve shut all the time.
- a) Raise the pressure to 0.5 MPa, and then stop. Leave it for five minutes to see if the pressure drops.
- b) Then raise the pressure to 1.5 MPa, and stop. Leave it for five more minutes to see if the pressure drops.
- c) Then raise the pressure to the specified level (4.15 MPa), and record the ambient temperature and the pressure.
- d) If no pressure drop is observed with an installation pressurized to the specified level and left for about one day, it is acceptable. When the ambient temperature fall 1℃, the pressure also fall approximately 0.01 MPa. The pressure, if changed, should be compensated for.
- e) If a pressure drop is observed in checking e) and a) – d), a leak exists somewhere. Find a leak by applying bubble test liquid to welded parts and flare joints and repair it. After repair, conduct an air-tightness test again.

② In conducting an air-tightness test, use nitrogen gas and pressurize the system with nitrogen gas from the gas side. Do not use a medium other than nitrogen gas under any circumstances.



6) Evacuation

<Work flow> When the system has remaining moisture inside or a leaky point, the vacuum gauge indicator will rise.
Check the system for a leaky point and then draw air to create a vacuum again.



Pay attention to the following points in addition to the above for the R410A and compatible machines.

- ○To prevent a different oil from entering, assign dedicated tools, etc. to each refrigerant type. Under no circumstances must a gauge manifold and a charge hose in particular be shared with other refrigerant types (R22, R407C, etc.).
- ○Use a counterflow prevention adapter to prevent vacuum pump oil from entering the refrigerant system.

7) Additional refrigerant charge

(1) Calculate a required refrigerant charge volume from the following table.

<Single type>

Item / Capacity	Standard refrigerant charge volume (kg)	Pipe length for standard refrigerant charge volume (m)	Additional charge volume (kg) per meter of refrigerant piping (liquid pipe)	Refrigerant volume charged for shipment at the factory (kg)	Installation's pipe length (m) covered without additional refrigerant charge
100VNA–140VNA 100VSA–140VSA	2.0	0	0.06	3.8	30

<Twin, triple type>

Item / Capacity	Standard refrigerant charge volume (kg)	Pipe length for standard refrigerant charge volume (m)	Additional charge volume (kg) per meter of refrigerant piping (liquid pipe)		Refrigerant volume charged for shipment at the factory (kg)	Installation's pipe length (m) covered without additional refrigerant charge
			Main pipe	Branch pipe		
100VNA–140VNA 100VSA–140VSA	2.0	0	0.06		3.8	30

- A standard refrigerant charge volume means a refrigerant charge volume for an installation with 0m long refrigerant piping.
- This unit contains factory charged refrigerant covering 30m of refrigerant piping and additional refrigerant charge on the installation site is not required for an installation with up to 30m refrigerant piping. When refrigerant piping exceeds 30m, additionally charge an amount calculated from the pipe length and the above table for the portion in excess of 30m.
- When refrigerant piping is shorter than 3m, reduce refrigerant by 1kg from the factory charged volume and adjust to 2.8kg.
- If an existing pipe system is used, a required refrigerant charge volume will vary depending on the liquid pipe size. For further information, see "6. UTILIZATION OF EXISTING PIPING."

Formula to calculate the volume of additional refrigerant required

Additional charge volume (kg) = { Main pipe length (m) – Length covered without additional charge 30 (m) } x 0.06 (kg/m) + Total length of branch pipes (m) x 0.06 (kg/m)

*When an additional charge volume calculation result is negative, it is not necessary to charge refrigerant additionally.

- **To charge refrigerant again, recover refrigerant from the system first and then charge the volume calculated from the above table (Standard refrigerant charge volume + additional charge volume for total pipe length.)**

(2) Charging refrigerant

- Since R410A refrigerant must be charged in the liquid phase, you should charge it, keeping the container cylinder upside down or using a refrigerant cylinder equipped with a siphon tube.
- Charge refrigerant always from the liquid side service port with the operation valve shut. When you find it difficult to charge a required amount, fully open the outdoor unit valves on both liquid and gas sides and charge refrigerant from the gas (suction) side service port, while running the unit in the cooling mode. In doing so, care must be taken so that refrigerant may be discharged from the cylinder in the liquid phase all the time. When the cylinder valve is throttled down or a dedicated conversion tool to change liquid-phase refrigerant into mist is used to protect the compressor, however, adjust charge conditions so that refrigerant will gasify upon entering the unit.
- In charging refrigerant, always charge a calculated volume by using a scale to measure the charge volume.
- When refrigerant is charged with the unit being run, complete a charge operation within 30 minutes. Running the unit with an insufficient quantity of refrigerant for a long time can cause a compressor failure.

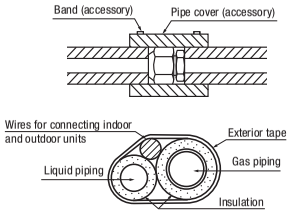
NOTE Put down the refrigerant volume calculated from the pipe length onto the caution label attached on the back side of the service panel.

8) Heating and condensation prevention

(1) Dress refrigerant pipes (both gas and liquid pipes) for heat insulation and prevention of dew condensation.

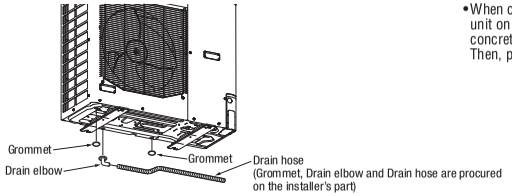
(2) Use a heat insulating material that can withstand 120°C or a higher temperature. Poor heat insulating capacity can cause heat insulation problems or cable deterioration.

- Improper heat insulation/anti-dew dressing can result in a water leak or dripping causing damage to household effects, etc.
- All gas pipes must be securely heat insulated in order to prevent damage from dripping water that comes from the condensation formed on them during a cooling operation or personal injury from burns because their surface can reach quite a high temperature due to discharged gas flowing inside during a heating operation.
- Wrap indoor units' flare joints with heat insulating parts (pipe cover) for heat insulation (both gas and liquid pipes).
- Give heat insulation to both gas and liquid side pipes. Bundle a heat insulating material and a pipe tightly together so that no gaps may be left between them and wrap them together with a connecting cable by a dressing tape.
- Although it is verified in a test that this air-conditioner unit shows satisfactory performance under JIS condensation test conditions, **both gas and liquid pipes need to be dressed with 20 mm or thicker heat insulation materials above the ceiling where relative humidity exceeds 70%.**

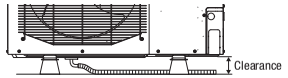


3. DRAIN PIPING WORK

- Execute drain piping by using a drain elbow and drain grommets supplied separately as optional parts, where water drained from the outdoor unit is a problem.
- Water may drip where there is a larger amount of drain water. Seal around the drain elbow and drain grommets with putty or adequate caulking material.
- Condensed water may flow out from vicinity of operation valve or connected pipes.
- Where you are likely to have several days of sub-zero temperatures in a row, do not use a drain elbow and drain grommets. (There is a risk of drain water freezing inside and blocking the drain.)
- Do not use drain elbow and grommet made of plastic for drain piping when base heater for outdoor unit is used. Plastic grommet and elbow will be damaged and burnt in worst case.
- Prepare another drain tray made of metallic material for collecting drain when base heater is used.



- When condensed water needs to be led to a drain, etc., install the unit on a flat base (supplied separately as an optional part) or concrete blocks.
  Then, please secure space for the drain elbow and the drain hose.

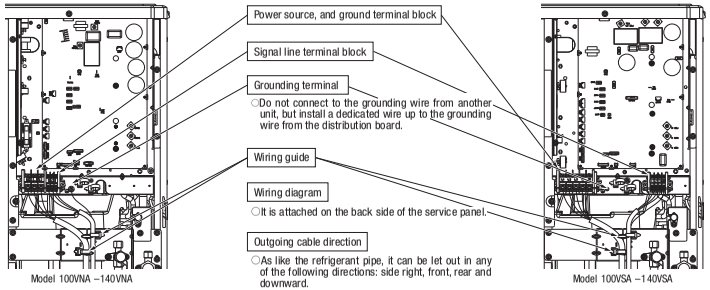


4. ELECTRICAL WIRING WORK For details of electrical cabling, refer to the indoor unit installation manual.

Electrical installation work must be performed by an electrical installation service provider qualified by a power provider of the country.
Electrical installation work must be executed according to the technical standards and other regulations applicable to electrical installations in the country.

- Do not use any supply cord lighter than one specified in parentheses for each type below.
  - braided cord (code designation 60245 IEC 51),
  - ordinary tough rubber sheathed cord (code designation 60245 IEC 53)
  - flat twin tinsel cord (code designation 60227 IEC 41);

  Do not use anything lighter than polychloroprene sheathed flexible cord (code designation 60245 IEC57) for supply cords of parts of appliances for outdoor use.
- Ground the unit. Do not connect the grounding wire to a gas pipe, water pipe, lightning rod or telephone grounding wire. If impropery grounded, an electric shock or malfunction may result.
- A grounding wire must be connected before connecting the power cable. Provide a grounding wire longer than the power cable.
- The installation of an impulse withstanding type earth leakage breaker is necessary. A failure to install an earth leakage breaker can result in an acccident such as an electric shock or a fire.

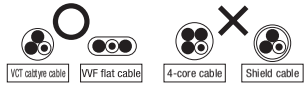


Model	Power source	Power cable thickness(mm²)	MAX. over current (A)	Cable length (m)	Grounding wire thickness	Indoor-outdoor wire thickness × number
100VNA–140VNA	Single phase 3 wire 220-240V 50Hz 220V 60Hz	5.5	24	22	φ1.6mm	φ1.6mm x 3
100VSA–140VSA	3 phase 4 wire 380-415V 50Hz 380V 60Hz	3.5	15	46		

- The specifications shown in the above table are for units without heaters. For units with heaters, refer to the installation instructions or the construction instructions of the indoor unit.
- Switchgear or Circuit breaker capacity which is calculated from MAX. over current should be chosen along the regulations in each country.
- The cable specifications are based on the assumption that a metal or plastic conduit is used with no more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling outside of these conditions, follow the internal cabling regulations. Adapt it to the regulation in effect in each country.

- Do not turn on the power until the electrical work is completeted .
- Do not use a condensive capacitor for power factor improvement under any circumstances. (It dose not improve power factor, while it can cause an abnormal overheat accident.)
- For power source cables, use conduits.
- Do not lay electronic control cables (remote control and signaling wires) and other cables together outside the unit. Laying them together can result in the malfunctioning or a failure of the unit due to electric noises.
- Fasten cables so that may not touch the piping, etc.
- When cables are connected, make sure that all electrical components within the electrical component box are free of loose connector coupling or terminal connection and then attach the cover securely. (Improper cover attachment can result in malfunctioning or a failure of the unit, if water penetrates into the box.)
- Always use a three-core cable for an indoor-outdoor connecting cable. Never use a shield cable.

● Connect a pair bearing a common terminal number with an indoor-outdoor connecting wire.
● In cabling, fasten cables securely with cable clamps so that no external force may work on terminal connections.
● Grounding terminals are provided in the control box.



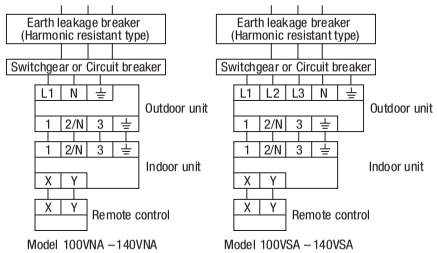
Main fuse specification

Model	Specification	Part No.
100VNA~140VNA	250V 30A	PCA006A092
100VSA~140VSA	—	—

Power cable, indoor-outdoor connecting wires

● Always perform grounding system installation work with the power cord unplugged.

⚠ CAUTION Always use an earth leakage circuit breaker designed for inverter circuits to prevent a faulty operation.



※At the connection with the duct type indoor unit.

Model	Power source	Power cable thickness(mm²)	MAX. over current (A)	Cable length (m)	Grounding wire thickness	Indoor-outdoor wire thickness × number
100VNA,125VNA	Single phase 3 wire 220-240V 50Hz 220V 60Hz	5.5	26	20	φ1.6mm	φ1.6mm x 3
140VNA			27			
100VS,125VSA	3 phase 4 wire 380-415V 50Hz 380V 60Hz	3.5	17	40		
140VSA			18	38		

5. TEST RUN

⚠ WARNING
- Before conduct a test run, make sure that the operation valves are open.
- Turn on power 6 hours prior to a test run to energize the crankcase heater.
- In case of the first operation after turning on power, even if the unit does not move for 30 minutes, it is not a breakdown.
- Always give a 3-minute or longer interval before you start the unit again whenever it is stopped.
- Removing the service panel will expose high-voltage live parts and high-temperature parts, which are quite dangerous. Take utmost care not to incur an electric shock or burns. Do not leave the unit with the service panel open.

} A failure to observe these instructions can result in a compressor breakdown.

⚠ CAUTION
- When you operate switches (SW3, SW5) for on-site setting, be careful not to touch a live part.
- You cannot check discharge pressure from the liquid operation valve charge port.
- The 4-way valve (20S) is energized during a heating operation.
- When power source is cut off to reset the unit, give 3 or more minutes before you turn on power again after power is cut off. If this procedure is not observed in turning on power again, "Communication error between outdoor and indoor unit" may occur.

1) Test run method

(1) A test run can be initiated from an outdoor unit by using SW3-3 and SW3-4 for on-site setting.
(2) Switching SW3-3 to ON will start the compressor.
(3) The unit will start a cooling operation, when SW3-4 is OFF, or a heating operation, when SW3-4 is ON.
(4) **Do not fail to switch SW3-3 to OFF when a test run is completed.**

SW-3-3	SW-3-4	
ON	OFF	Cooling during a test run
	ON	Heating during a test run
OFF	—	Normal or after the test operation

2) Checking the state of the unit in operation

Use check joints provided on the piping before and after the four-way valve installed inside the outdoor unit for checking discharge pressure and suction pressure.
As indicated in the table shown on the right, pressure detected at each point will vary depending on whether a cooling or heating operation has been selected.

	Check joint of the pipe	Charge port of the gas operation valve
Cooling operation	Discharge pressure (High pressure)	Suction pressure (Low pressure)
Heating operation	Suction pressure (Low pressure)	Discharge pressure (High pressure)

3) Setting SW3-1, SW3-2, SW5-2, SW7-3, on-site

(1) Defrost control switching (SW3-1)
・When this switch is turned ON, the unit will run in the defrost mode more frequently.
・Set this switch to ON, when installed in a region where outdoor temperature falls below zero during the season the unit is run for a heating operation.
(2) Snow guard fan control (SW3-2)
・When this switch is turned ON, the outdoor unit fan will run for 10 seconds in every 10 minutes, when outdoor temperature falls to 3℃ or lower and the compressor is not running.
・When the unit is used in a very snowy country, set this switch to ON.
(3) High height difference operation control (SW5-2)
・Set this switch to ON when outdoor unit is installed at a position higher than indoor unit by 30m or more.
(4) Lower noise silent mode (SW7-3)
・Upper limit of compressor speed and fan speed becomes lower in silent mode

4) Failure diagnosis in a test run

Error indicated on the remote control unit	Printed circuit board LED(The cycles of 5 seconds)		Failure event	Action
	Red LED	Green LED		
E34	Blinking once	Blinking continuously	Open phase	Check power cables for loose contact or disconnection.
E40	Blinking once	Blinking continuously	63H1 actuation or operation with operation valves shut (occurs mainly during a heating operation)	1. Check whether the operation valves are open. 2. If an error has been canceled when 3 minutes have elapsed since a compressor stop, you can restart the unit by effecting Check Reset from the remote control unit.
E57	Blinking once	Blinking continuously	Short of refrigerant error or operation with operation valves shut (occurs mainly during a cooling operation)	

● If an error code other than those listed above is indicated, refer to the wiring diagram of the outdoor unit and the indoor unit.

5) The state of the electronic expansion valve.

The following table illustrates the steady states of the electronic expansion valve.

	When power is turned on	When the unit comes to a normal stop		When the unit comes to an abnormal stop	
		During a cooling operation	During a heating operation	During a cooling operation	During a heating operation
Valve for a cooling operation	Complete shut position	Complete shut position	Full open position	Full open position	Full open position
Valve for a heating operation	Full open position	Full open position	Complete shut position	Full open position	Full open position

6) Heed the following on the first operation after turning on the circuit breaker.

This outdoor unit may start in the standby mode (waiting for a compressor startup), which can continue up to 30 minutes, to prevent the oil level in the compressor from lowering on the first operation after turning on the circuit breaker. If that is the case, do not suspect a unit failure.

Items to check before a test run

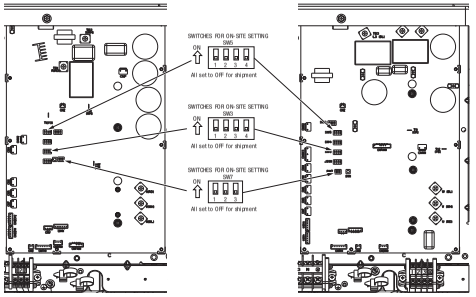
● When you leave the outdoor unit with power supplied to it, be sure to close the panel.

Item No.used in the installation manual	Item	Check item	Check
2	Refrigerant plumbing	If brazed, was it brazed under a nitrogen gas flow?	
		Were air-tightness test and vacuum extraction surely performed?	
		Are heat insulation materials installed on both liquid and gas pipes?	
		Are operation valves surely opened for both liquid and gas systems?	
		Have you recorded the additional refrigerant charge volume and refrigerant pipe length on the panel's label?	
4	Electric wiring	Is the unit free of cabling errors such as uncompleted connection, an absent or reversed phase?	
		Are properly rated electrical equipments used for circuit breakers and cables?	
		Doesn't cabling cross-connect between units, where more than one unit are installed?	
		Aren't indoor-outdoor signal wires connected to remote control wires?	
		Do indoor-outdoor connecting cables connect between the same terminal numbers?	
		Are either VCT cabtyre cables or WF flat cables used for indoor-outdoor connecting cables?	
		Does grounding satisfy the D type grounding (type III grounding) requirements?	
		Is the unit grounded with a dedicated grounding wire not connected to another unit's grounding wire?	
		Are cables free of loose screws at their connection points?	
		Are cables held down with cable clamps so that no external force works onto terminal connections?	
—	Indoor unit	Is indoor unit installation work completed?	
		Where a face cover should be attached onto an indoor unit, is the face cover attached to the indoor unit?	

Test run procedure

● Always carry out a test run and check the following in order as listed.

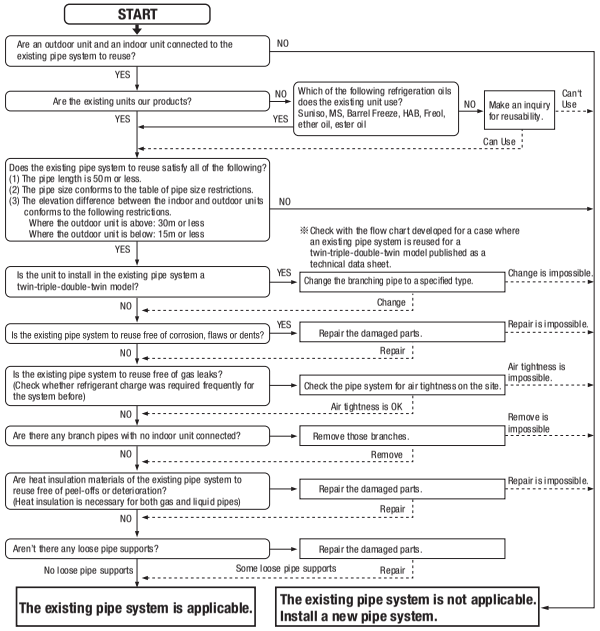
Turn	The contents of operation	Check
①	Open the gas side operation valve fully.	
②	Open the liquid side operation valve fully.	
③	Close the panel.	
④	Where a remote control unit is used for unit setup on the installation site, follow instructions for unit setup on the installation site with a remote control unit.	
⑤	SW3-3 ON / SW3-4 OFF: the unit will start a cooling operation.	
	SW3-3 ON / SW3-4 ON: the unit will start a heating operation.	
⑥	When the unit starts operation, press the wind direction button provided on the remote control unit to check its operation.	
⑦	Place your hand before the indoor unit's diffuser to check whether cold (warm) winds come out in a cooling (heating) operation.	
⑧	Make sure that a red LED is not blinking.	
⑨	When you complete the test run, do not forget to turn SW3-3 to the OFF position.	
⑩	Where options are used, check their operation according to the respective instruction manuals.	



Model 100VNA – 140VNA　　Model 100VSA – 140VSA

6. UTILIZATION OF EXISTING PIPING

Check whether an existing pipe system is reusable or not by using the following flow chart.



⚠ WARNING <Where the existing unit can be run for a cooling operation.>

Carry out the following steps with the existing unit (in the order of (1), (2), (3) and (4))

(1) Run the unit for 30 minutes for a cooling operation.
(2) Stop the indoor fan and run the unit for 3 minutes for a cooling operation (returning liquid)
(3) Close the liquid side operation valve of the outdoor unit and pump down (refrigerant recovery)
(4) Blow with nitrogen gas. ※ If discolored refrigeration oil or any foreign matters is discharged by the blow, wash the pipe system or install a new pipe system.
- For the flare nut, do not use the old one, but use the one supplied with the outdoor unit. Process a flare to the dimensions specified for R410A.
- **Turn on-site setting switch SW5-1** to the ON position. (Where the gas pipe size is ϕ19.05)

<Where the existing unit cannot be run for a cooling operation.>

Wash the pipe system or install a new pipe system.
- If you choose to wash the pipe system, contact our distributor in the area.

<Table of pipe size restrictions>

◎:Standard pipe size ○:Applicable
△:Restricted to shorter pipe length limits ×:Not applicable

Additional charging amount of refrigerant per 1m		0.06kg/m		0.08kg/m	
Pipe size	Liquid pipe	ϕ9.52	ϕ9.52	ϕ12.7	ϕ12.7
	Gas pipe	ϕ15.88	ϕ19.05	ϕ15.88	ϕ19.05
100V	Usability	◎	○※1	△	△※1
	Maximum one-way pipe length	50	50	25	25
	Length covered without additional charge	30	30	15	15
125V	Usability	◎	○※1	△	△※1
	Maximum one-way pipe length	50	50	25	25
	Length covered without additional charge	30	30	15	15
140V	Usability	◎	○※1	△	△※1
	Maximum one-way pipe length	50	50	25	25
	Length covered without additional charge	30	30	15	15

<Pipe system after the branching pipe>

			After 1st branch ※4			After 2nd branch		
Additional charging amount of refrigerant per 1m			0.06kg/m			0.06kg/m		
Pipe size	Liquid pipe		ϕ9.52			ϕ9.52		
	Gas pipe		ϕ12.7	ϕ15.88	ϕ19.05※1	ϕ12.7	ϕ15.88	ϕ19.05※1
Model	Combination type	Combination of capacity						
100V	Twin	50+50	◎	○	×	–	–	–
125V	Twin	60+60	◎	○	×	–	–	–
140V	Twin	71+71	×	◎	○	–	–	–
	Triple A	50+50+50	◎	○	×	–	–	–
	Triple B	50+50+50	×	◎※5	○※5	◎	○	×

※1 Because of its insufficient pressure resistance, **turn the dip switch SW5-1** provided on the outdoor unit board to the ON position for ϕ19.05 × t1.0. (In the case of a twin-triple-double-twin model, this also applies to the case where ϕ19.05 × t1.0 is used in a pipe system after the first branching point.) However, you need not turn the dip switch SW5-1 to the ON position, if 1/2H pipes or pipes having 1.2 or thicker walls are used.
※2 When the main pipe length exceeds 40m, a significant capacity drop may be experienced due to pressure loss in the liquid pipe system. Use ϕ12.7 for the liquid main.
※3 Keep the total pipe length, not one-way pipe length, below the specified maximum pipe length.
※4 Piping size after branch should be equal or smaller than main pipe size.
※5 Piping size from first branch to indoor unit should be ϕ9.52 (Liquid) / ϕ12.7 (Gas).
- When refrigerant piping is shoter than 3m, reduce refrigerant by 1kg from factory charged volume.
- Any combinations of pipe sizes not listed in the table or marked with × in the table are not usable.

<The model types of existing units of which branching pipes are reusable.>

Models later than Type 8.
- FDC ＊ ＊ ＊ 8 □ □ □
- FDCP ＊ ＊ ＊ 8 □ □ □

The branching pipes used with models other than those listed above are not reusable because of their insufficient pressure resistance. Please use our genuine branching pipes for R410A.

- ＊ ＊ ＊ are numbers representing horsepower. □□□ is an alphanumeric letter.

Formula to calculate additional charge volume

Additional charge volume (kg) = {Main pipe length (m) − Length covered without additional charge shown in the table (m)} × Additional charge volume per meter of pipe shown in the table (kg/m) + Total length of branch pipes (m) × Additional charge volume per meter of pipe shown in the table (kg/m)

※ If you obtain a negative figure as a result of calculation, no additional refrigerant needs to be charged.
Example) When an 140V (single installation) is installed in a 20m long existing pipe system (liquid ϕ12.7, gas ϕ19.05), the quantity of refrigerant to charge additionally should be (20m-15m) x 0.08kg/m = 0.4 kg.

1.10.5 Instructions for branching pipe set (DIS-WA1, WB1, TA1, TB1)

For R410A

PSB012D865 G

⚠ WARNING / CAUTION

- This set is for R410A refrigerant.
- Select a branching pipe set correctly rated for the combined total capacity of connected indoor units and install it according to this manual.
  An improperly installed branching pipe set can cause degraded performance or an abnormal unit stop.
- Provide good heat insulation to the pipes by following instructions contained in this manual.
  Improper heat insulation can result in degraded performance or a water leak accident from condensation.
- Please make sure that only parts supplied as accessories or the manufacturer's approved parts are used in installing the unit, because a leak of refrigerant can result in a lack-of-oxygen accident, if it reaches a concentration beyond the tolerable limit.

This manual explains how to use a branching pipe set that is indispensable in connecting pipes for a twin/triple/double-twin configuration installation (system). For the details of piping work, unit installation work and electrical installation work, please refer to the installation manuals and installation guides supplied with your outdoor and indoor units.

1. Branching pipe set specifications

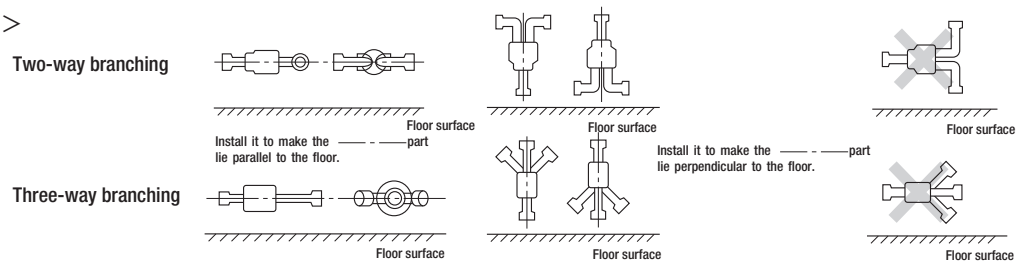
(1) Please make sure that you have chosen the right branching pipe set and the specifications of the parts contained in it by checking with the table below.
(2) Connect pipes as illustrated in the table below. The pipe from an outdoor unit must be brazed to the pipe connection port "①" and the pipes from indoor units to "②," "③" and "④."

Branching pipe set type	Supported outdoor/indoor unit combinations		Part lists			
	Outdoor unit model	Indoor unit model	Branching pipe set for a liquid pipe	Branching pipe set for a gas pipe	Different diameter pipe joint	Heat insulation material
DIS-WA1 (Two-way branching set)	3HP	1.5HP＋1.5HP	ID9.52 ① ② ③ ID9.52 ID9.52 1 piece	ID15.88 ① ② ③ ID15.88 ID15.88 1 piece	Joint A ID9.52 2 pieces Flare joint (for indoor unit side connection) Joint B OD15.88 2 pieces ID12.7	One each for liquid and gas
	4HP	2HP＋2HP				
		1.5HP＋2.5HP				
	5HP	2.5HP＋2.5HP				
		2HP＋3HP				
	6HP	3HP＋3HP				
		2HP＋4HP				
DIS-WB1 (Two-way branching set)	8HP	4HP＋4HP	ID9.52 ① ② ③ ID12.7 ID9.52 1 piece	ID15.88 ① ② ③ ID25.4 ID15.88 1 piece	Joint C OD12.7 1 piece ID9.52	One each for liquid and gas
		3HP＋5HP				
	10HP	5HP＋5HP				
DIS-TA1 (Three-way branching set)	6HP	2HP＋2HP＋2HP	ID9.52 ① ② ③ ④ ID9.52 1 piece	ID12.7 ① ② ③ ④ ID15.88 1 piece	Joint A ID9.52 3 pieces Flare joint (for indoor unit side connection)	One each for liquid and gas
DIS-TB1 (Three-way branching set)	8HP	3HP＋3HP＋3HP	ID9.52 ① ② ③ ④ ID9.52 1 piece	ID15.88 ① ② ③ ④ ID25.4 1 piece	Joint A ID9.52 2 pieces Flare joint (for indoor unit side connection) Joint B OD15.88 1 piece ID12.7 Joint D ID12.7 1 piece OD9.52	One each for liquid and gas

(3) To connect pipes for a Double Twin installation (involving 4 indoor units), please see 2-7. "Double Twin configuration."
(4) A branching pipe set must always be installed into the posture as illustrated in the drawing below.

ID stands for inner diameter and OD, outer diameter.

＜Posture to install into＞

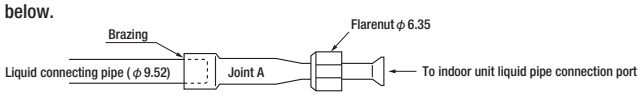


2. Pipe connecting procedure

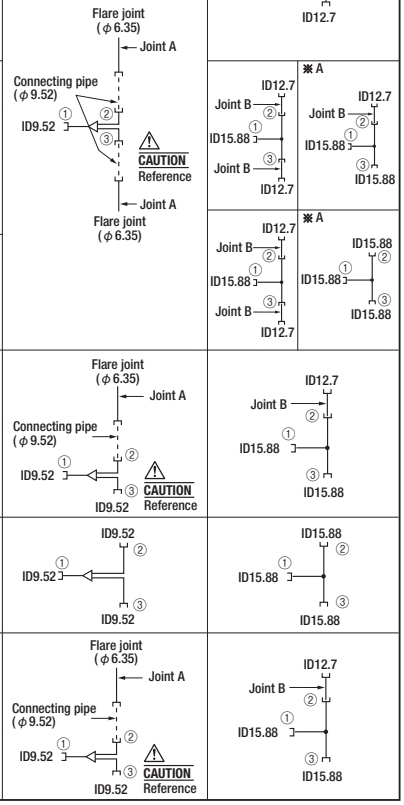
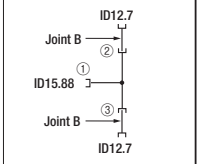
Braze the different diameter pipe joint found in the set matching the connected outdoor and indoor unit capacities according to the instructions set out below.

⚠ CAUTION

In connecting an indoor unit of which capacity is 1.5HP, 2HP or 2.5HP, always use a φ9.52 liquid pipe to connect to the branching pipe (branching pipe – indoor unit).
In connecting to an indoor unit (liquid pipe side: φ6.35), use the different diameter pipe joint A supplied with the set and follow the procedure set out below.

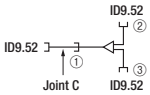
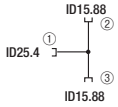
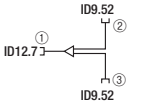
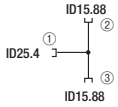


2-1 DIS-WA1

Supported combinations		Liquid branching pipe	Gas branching pipe
Outdoor unit model	Indoor unit model		
3HP	1.5HP＋1.5HP		
4HP	2HP＋2HP		
	1.5HP＋2.5HP		※A
5HP	2.5HP＋2.5HP		※A
	2HP＋3HP		
6HP	3HP＋3HP		
	2HP＋4HP		

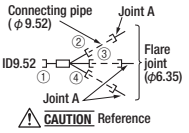
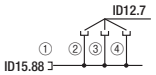
Note When connect the indoor unit of an old model that is shown in the model list, use the joint supplied with the branch piping set like ※A

2-2 DIS-WB1

Supported combinations		Liquid branching pipe	Gas branching pipe
Outdoor unit model	Indoor unit model		
8HP	3HP＋5HP		
	4HP＋4HP		
10HP	5HP＋5HP		

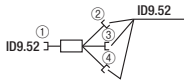
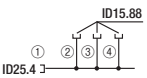
2-3 DIS-TA1

Applicable to the difference in length of pipes after the branch being less than 3 m
* Connection is not allowed when the difference in length of pipes is larger than 3 m.

Supported combinations		Liquid branching pipe	Gas branching pipe
Outdoor unit model	Indoor unit model		
6HP	2HP＋2HP＋2HP		

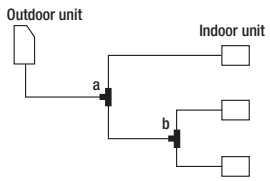
2-4 DIS-TB1

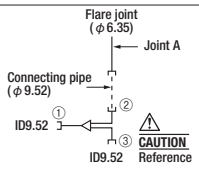
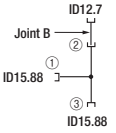
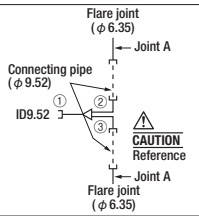
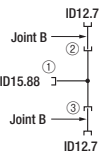
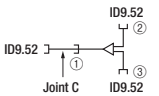
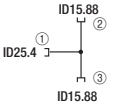
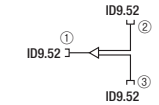
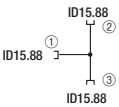
Applicable to the difference in length of pipes after the branch being less than 3 m
* Connection is not allowed when the difference in length of pipes is larger than 3 m.

Supported combinations		Liquid branching pipe	Gas branching pipe
Outdoor unit model	Indoor unit model		
8HP	3HP＋3HP＋3HP		

2-5. Triple type for same model/same capacity or different model/same capacity

When the difference in length of pipes after the branch is longer than 3 m and shorter than 10 m

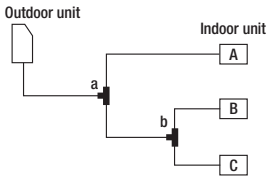


Outdoor unit model	Indoor unit model	Branching pipe	Branching pipe set type	Liquid branching pipe	Gas branching pipe
6HP	2HP＋2HP＋2HP	a	DIS-WA1		
		b			
8HP	3HP＋3HP＋3HP	a	DIS-WB1		
		b	DIS-WA1		

2-6. Triple type for same model/different capacity or different model/different capacity

Applicable to the difference in length of pipes after the branch being less than 3 m

* Connection is not allowed when the difference in length of pipes is larger than 3 m.



Connecting position

Outdoor unit model	Indoor unit model	A	B	C
10HP	2.5HP+2.5HP+5HP	5HP	2.5HP	2.5HP
	3HP+3HP+4HP	4HP	3HP	3HP

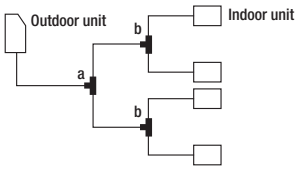
Outdoor unit model	Indoor unit model	Branching pipe	Branching pipe set type	Liquid branching pipe	Gas branching pipe
10HP	2.5HP+2.5HP+5HP	a	DIS-WB1	ID9.52 ② / ① ID12.7 / ③ ID9.52	ID15.88 ② / ① ID25.4 / ③ ID15.88
		b	DIS-WA1	Flare joint (φ6.35) Joint A / Connecting pipe (φ9.52) / ② ID9.52 ③ ① / ⚠ CAUTION Reference / Joint A Flare joint (φ6.35)	ID12.7 Joint B ① ② ID15.88 ③ Joint B ID12.7 / ※A: ID15.88 ② ① ID15.88 ③ ID15.88
10HP	3HP+3HP+4HP	a	DIS-WB1	ID9.52 ② / ① ID12.7 / ③ ID9.52	ID15.88 ② / ① ID25.4 / ③ ID15.88
		b	DIS-WA1	ID9.52 ② / ① ID9.52 / ③ ID9.52	ID15.88 ② / ① ID15.88 / ③ ID15.88

Note When connect the indoor unit of an old model that is shown in the model list, use the joint supplied with the branch piping set like※ A.

2-7. Double Twin type

Pipes should be connected as follows for a Double Twin installation (4 connected indoor units. The capacity of an outdoor unit available for this configuration is either 8HP or 10HP only):

Outdoor unit capacity	Indoor unit capacity
8HP	2HP×4 units
10HP	2.5HP×4 units



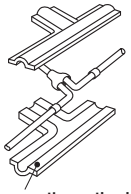
Branching pipe	Branching pipe set type	Outdoor unit model	Liquid branching pipe	Gas branching pipe
a	DIS-WB1	8HP	ID9.52 ② / ① ID9.52 Joint C / ③ ID9.52	ID15.88 ② / ① ID25.4 / ③ ID15.88
		10HP	ID9.52 ② / ① ID12.7 / ③ ID9.52	
b	DIS-WA1	8HP	Flare joint (φ6.35) Joint A / Connecting pipe (φ9.52) / ② ID9.52 ③ ① / ⚠ CAUTION Reference / Joint A Flare joint (φ6.35)	ID12.7 Joint B ① ② ID15.88 ③ Joint B ID12.7
		10HP		※A: ID15.88 ② ① ID15.88 ③ ID15.88 / ID12.7 Joint B ① ② ID15.88 ③ Joint B ID12.7

Note When connect the indoor unit of an old model that is shown in the model list, use the joint supplied with the branch piping set like※ A.

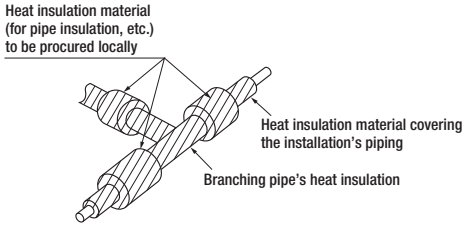
3. Heat insulation work

(1) Condensation can also occur on liquid pipes with this model. Please provide good heat insulation to both liquid and gas pipes.

(2) For the heat insulation of a branching pipe, always use the heat insulation material supplied with the set and provide heat insulation according to the instructions set out below.



1. It has an adhesive layer on the entire inner face. Remove a separator and wrap it around the branching pipe.



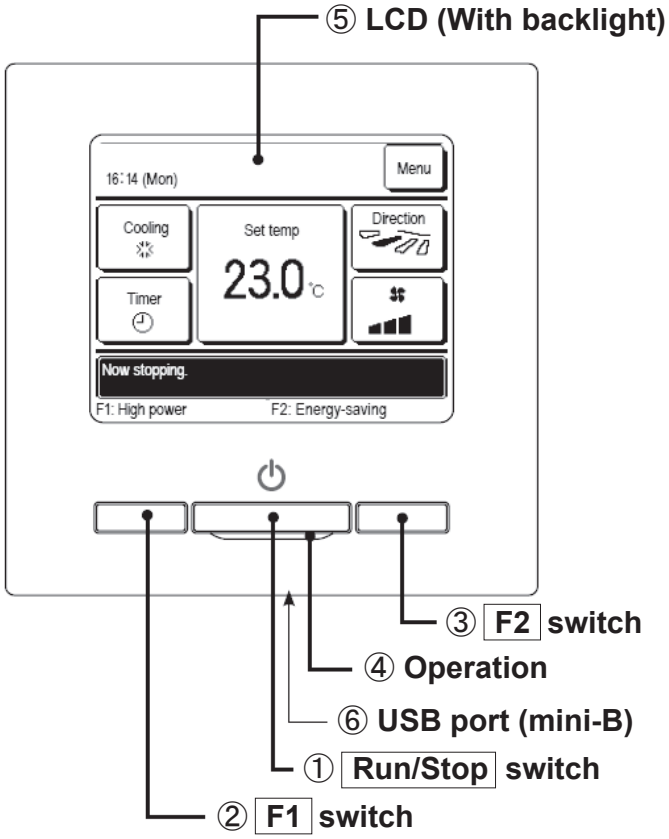
2. Apply a heat insulation material (to be procured locally) to the joint between the branching pipe's heat insulation and the heat insulation material covering the installation's piping as described above and wrap a tape over the gap shown as a hatched (///) area to complete dressing of the piping.

1.11 OUTLINE OF OPERATION CONTROL BY MICROCOMPUTER

1.11.1 Remote control

(1) Wired remote control

Model RC-EX3



Touch panel system, which is operated by tapping the LCD screen with a finger, is employed for any operations other than the ①Run/Stop, ②F1 and ③F2 switches.

① Run/Stop switch

One push on the button starts operation and another push stops operation.

② F1 switch③ F2 switch

This switch starts operation that is set in switch function change.

④ Operation

This lamp lights in green(yellow-green) during operation. It changes to red(orange) if any error occurs.
Operation lamp luminance can be changed.

⑤ LCD (With backlight)

A tap on the LCD lights the backlight.
The backlight turns off automatically if there is no operation for certain period of time.
Lighting period of the backlight lighting can be changed.
If the backlight is ON setting, when the screen is tapped while the backlight is turned off,the backlight only is turned on.(Operations with switches ①,② and ③are excluded.)

⑥ USB port

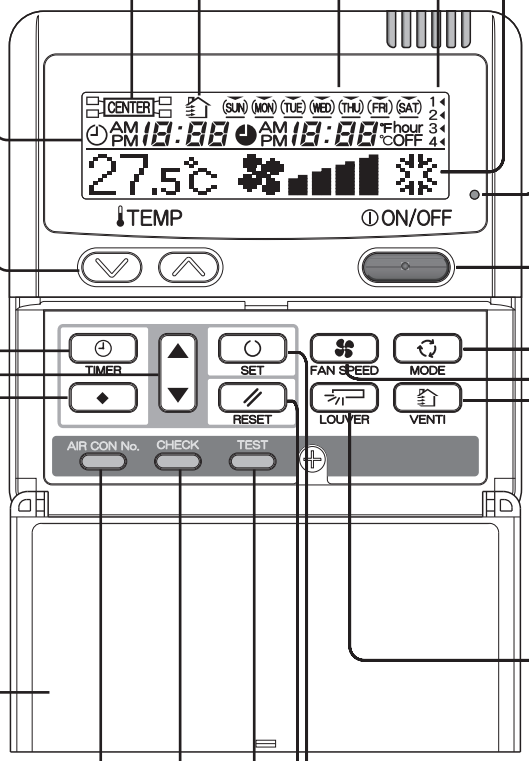
USB connector (mini-B) allows connecting to a personal computer.
For operating methods, refer to the instruction manual attached to the software for personal computer (eco-touch remote control utility software).

Note(1) When connecting to a personal computer, do not connect simultaneously with other USB devices.
Please be sure to connect to the computer directly,without going through a hub, etc.

Model RC-E5

The figure below shows the remote control with the cover opened. Note that all the items that may be displayed in the liquid crystal display area are shown in the figure for the sake of explanation
Characters displayed with dots in the liquid crystal display area are abbreviated.

The figure below shows the remote control with the cover opened.



Ventilaion display
Displayed during ventilation operation

Central control display
Displayed when the air-conditioning system is controlled by central control.

Timer operation display
Displays the timer operation setting.

Temperature setting buttons
These buttons are used to set the temperature of the room.

Timer button
This button is used to set the timer mode.

Timer setting buttons
These buttons are used to set the timer mode and the time.

ESP button
This button is used to select the auto static pressure adjustment mode.

Cover

AIR CON No. button
Display the indoor unit number connected to this remote control.

CHECK button
This button is used at servicing.

TEST button
This button is used during test operation.

Weekly timer display
Displays the settings of the weekly timer.

Operation setting display area
Displays setting temperature, air flow volume, operation mode and oparation message.

Operation/check indicator light
During oparation: Lit in green
In case of error: Flashing in red

Operation/stop button
This button is used to operate and stop the air-conditioning system.
Press the button once to operate the system and press it once again to stop the system.

MODE button
This button is used to change the operation mode.

FAN SPEED button
This button is used to set the air flow volume.

VENT button
This button is used to operate external ventilator.

LOUVER button
This button is used to operate/stop the swing louver.

SET button
•This button is used to fix the setting.
•This button is used to set the silent mode.

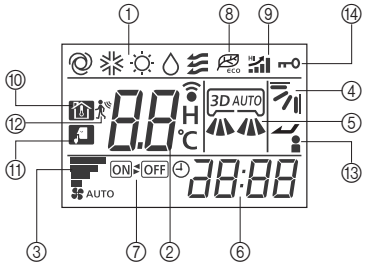
RESET button
•Press this button while making settings to go back to the previous operation.
•This button is also used to reset the "**FILTER CLEANING**" display. (Press it after cleaning the air filter)

∗ All displays are described in the liguid crystal display for explanation.

(2) Wireless remote control

RCN-E2 (Except FDF & SRK series)

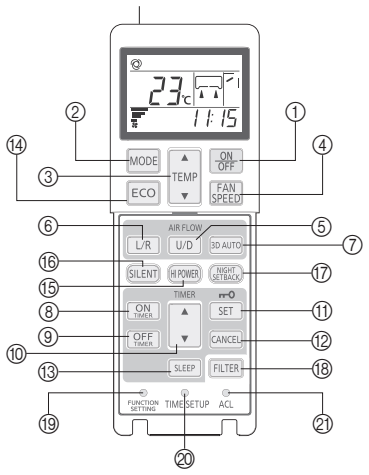
Indication section



①	OPERATION MODE display	Indicates selected operation mode.
②	SET TEMP display	Indicates set temperature.
	SLEEP TIMER time display	Indicates the amount of time remaining on the sleep timer.
	Indoor function setting number display	Indicates the setting number of the indoor function setting.
③	FAN SPEED display	Indicates the selected air flow volume.
④	UP/DOWN AIR FLOW display	Indicates the up/down louver position.
⑤	LEFT/RIGHT AIR FLOW display	Indicates the left/right louver position.(RCN-EK2 only)
⑥	Clock display	Indicates the current time. If the timer is set, the ON TIMER and OFF TIMER setting times are indicated.
⑦	ON/OFF TIMER display	Displayed when the timer is set.
⑧	ECO mode display	Displayed when the energy-saving operation is active.
⑨	HI POWER display	Displayed when the high power operation is active.
⑩	NIGHT SETBACK display	Displayed when the home leave mode is active.
⑪	SILENT display	Displayed when the silent mode control is active.
⑫	Motion sensor display	Displayed when the infrared sensor control(motion sensor control) is enabled.
⑬	Anti draft setting display	Displayed when anti draft setting is enabled.
⑭	Child lock display	Displayed when child lock is enabled.

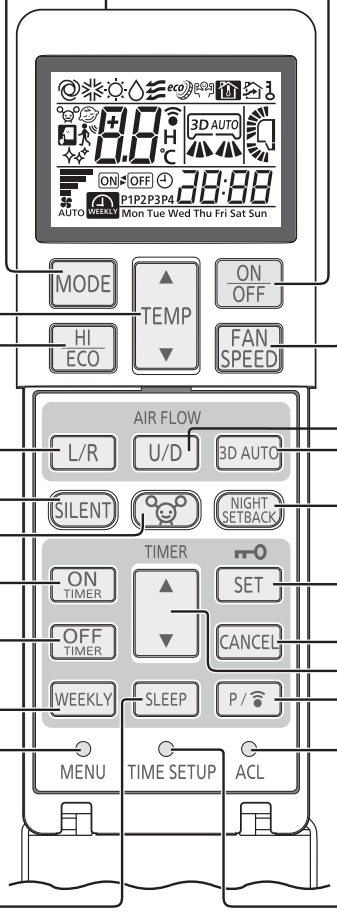
Operation section

Transmitter:Sends signal to the air conditioner.



①	ON/OFF button	When this is pressed once, the air-conditioner starts to operate and when this is pressed once again, it stops operating.
②	MODE button	Every time this button is pressed, displays switch as below (AUTO) → (COOL) → (HEAT) → (FAN) → (DRY) →
③	TEMP button	Change the set temperature by pressing ▲ or ▼ button.
④	FAN SPEED button	The fan speed is switched in the following order: 1-speed → 2-speed → 3-speed → 4-speed → AUTO → 1-speed.
⑤	U/D button	Used to determine the up/down louver position.
⑥	L/R button	Used to determine the left/right louver position. (RCN-EK2 only)
⑦	3D AUTO button	Used to switch whether or not to enable or disable 3D AUTO mode. (RCN-EK2 only)
⑧	ON TIMER button	Used to set the ON TIMER.
⑨	OFF TIMER button	Used to set the OFF TIMER.
⑩	SELECT button	Used to switch the time when setting the timer or adjusting the time. Used to switch the settings of the indoor function.
⑪	SET button	Used to determine the setting when setting the timer or adjusting the time. Used to determine the settings of the indoor function. When press and hold SET button ,Child Lock is enabled.
⑫	CANCEL button	Used to cancel the timer setting.
⑬	SLEEP button	Used to set the sleep timer.
⑭	ECO button	Pressing this button starts the energy-saving operation. Pressing this button again cancels it.
⑮	HI POWER button	Pressing this button starts the high power operation. Pressing this button again cancels it.
⑯	SILENT button	Pressing this button starts the silent mode control. Pressing this button again cancels it.
⑰	NIGHT SETBACK button	Pressing this button starts the home leave mode. Pressing this button again cancels it.
⑱	FILTER button	Pressing this button resets FILTER SIGN.
⑲	FUNCTION SETTING switch	Used to set the indoor function.
⑳	TIME SETUP switch	Used to set the current time.
㉑	ACL switch	Used to reset the microcomputer.

SRK series only



[View with the cover opened]

Transmission section

OPERATION MODE select button
Each time the button is pressed, the mode changes.

ON/OFF (luminous) button
Press to start operation, press again to stop.

TEMPERATURE button
This button sets the room temperature.

FAN SPEED button
Each time the button is pressed, the fan speed changes.

HI/ECO button
This button changes the HIGH POWER/ ECO operation.

AIR FLOW (UP/DOWN) button
This button changes the air flow (up/ down) direction.

AIR FLOW (LEFT/RIGHT) button
This button changes the airflow (left/ right) direction.

3D AUTO button
This button sets 3D AUTO operation.

SILENT button
This button sets the SILENT operation.

NIGHT SETBACK button
This button sets NIGHT SETBACK operation.

ALLERGEN CLEAR button
This button selects ALLERGEN CLEAR operation.

SET/Child lock button
Use this button to set the timer and Child lock.

ON TIMER button
This button selects ON TIMER operation.

CANCEL button
This button cancels the ON timer, OFF timer, and SLEEP operation.

OFF TIMER button
This button selects OFF TIMER operation.

TIMER button
This button is used for setting the current time and timer function.

WEEKLY button
This button switches the WEEKLY TIMER to ON/OFF.

PROGRAM button
This button sets WEEKLY TIMER.

MENU switch
This switch selects the brightness adjustment, AUTO OFF operation, SELF CLEAN operation and PRESET operation.

ACL switch
This switch resets the program to default state.

SLEEP button
This button selects SLEEP operation.

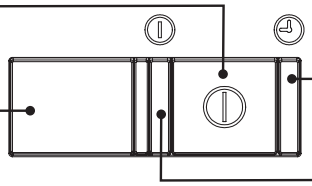
TIME SET UP switch
This switch is used for setting the time.

The above illustration shows all controls, but in practice only the relevant parts are shown.

Unit display section

Unit ON/OFF button
This button can be used for turning on/off the unit when a remote control is not available.

Wireless remote control signal receiver



TIMER light (yellow)
Illuminates during TIMER operation.

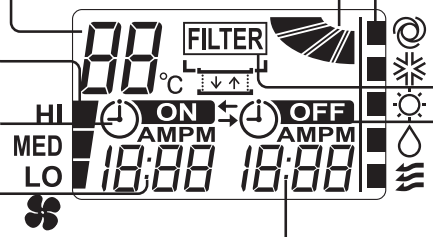
RUN light (green)

- Illuminates during operation.
- Blinks slowly when SELF CLEAN operation (3 seconds ON, 1 second OFF).
- Blinks when airflow is stopped to prevent blowing out of cold air in heating operation. (1.5 seconds ON, 0.5 seconds OFF)
- Blinks slowly when AUTO OFF operation during stand by (3.5 seconds ON, 0.5 second OFF).

- RUN lights blink quickly during invalid operation mode.

RCN-EIR (FDF series only)

Indication section



ROOM TEMP display
Indicates set temperature.

FAN SPEED display
Indicates the selected air flow volume.

ON-TIMER display
Indicates when ON-TIMER is set.

ON TIMER setting time display
Indicates the ON-TIMER setting time. Nothing displayed when ON-TIMER is not set.

AIR FLOW display
Indicates the status of swing louver.

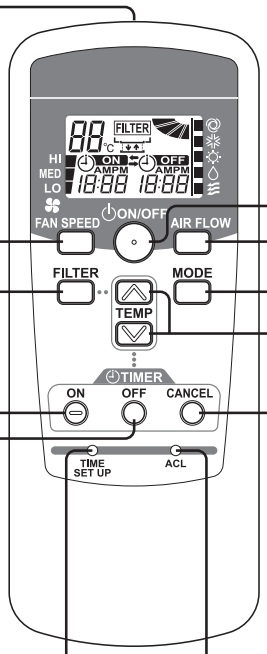
OPERATION MODE display
Indicates selected operation with ■.

FILTER display
Indicates for two seconds when FILTER button is pressed.

OFF-TIMER display
Indicates when OFF-TIMER is set.

OFF-TIMER setting time display
Indicates OFF-TIMER setting time. Indicates the current time when the OFF-TIMER is not set.

Operation section



Transmitter
Sends signal to the air-conditioner.

FAN SPEED button
Every time this button is pressed, the mode is switched as below.

→HI→MED→LO

FILTER button
Used to reset (turn off) the filter sign. Press the button only after completing the filter cleaning.

ON TIMER button
Sets ON TIMER operation.

OFF TIMER button
Sets OFF TIMER operation.

TIME SET UP switch
Sets current time.

ON/OFF button
When this is pressed once, the unit starts to operate and when this is pressed once again, it stops operating.

AIR FLOW button
Used to swing the louver.

OPERATION MODE select button
Every time this button is pressed, ■ displays switch as below.

→ (AUTO) → (COOL) → (HEAT)
(FAN) ← (DRY) ←

ROOM TEMP/TIME SETTING button
Sets room temperature by pressing ▲ or ▼ button. Sets time when setting the time.

TIMER CANCEL button
Used to cancel the TIMER SETTINGS.

RESET switch
Used to reset the microcomputer.

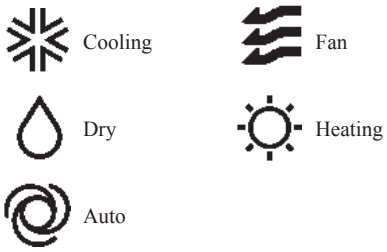
* All displays are described in the liquid crystal display for explanation.

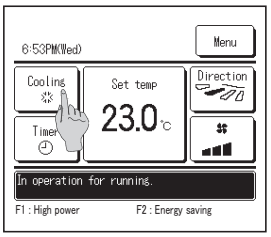
1.11.2 Operation control function by the wired remote control

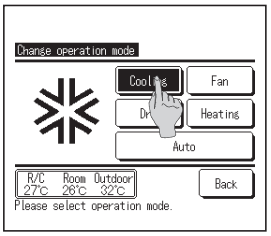
Model RC-EX3

(1) Switching sequence of the operation mode switches of remote control

(a) Tap the change operation mode button on the TOP screen.
(b) When the change operation mode screen is displayed, tap the button of desired mode.
(c) When the operation mode is selected, the display returns to the TOP screen.
Icons displayed have the following meanings.





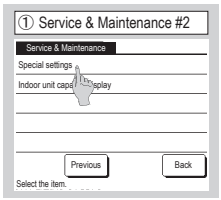


Notes(1) Operation modes which cannot be selected depending on combinations of indoor unit and outdoor unit are not displayed.
(2) When the Auto is selected,the cooling and heating switching operation is performed automatically according to indoor and outdoor temperatures.

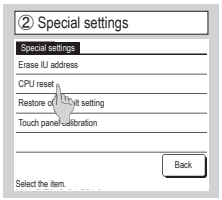
(2) CPU reset

Reset CPU from the remote control as follows.

TOP screen [Menu] ⇒ [Service setting] ⇒ [Service & Maintenance] ⇒ [Service password]



The selected screen is displayed.



The selected screen is displayed.

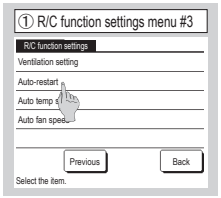
[CPU reset]

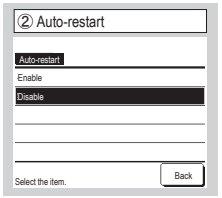
Microcomputers of indoor unit and outdoor unit connected are reset (State of restoration after power failure).

(3) Power failure compensation function (Electric power source failure)

Enable the Auto-restart function from the remote control as follows.

TOP screen [Menu] ⇒ [Service setting] ⇒ [R/C function settings] ⇒ [Service password]





If the unit stops during operation,

[Enable]

It returns to the state before the power failure as soon as the power source is restored (After the end of the primary control at the power on).

[Disable]

It stops after the restoration of power source.

●Since the status of remote control is retained in memory always, it restarts operations according to the contents of memory as soon as the power source is restored. Although the timer mode is cancelled, the weekly timer, peak cut timer and silent mode timer operate according to the following contents:
・When the clock setting is valid : These timer settings are also valid.
・When the clock setting is invalid : These timer settings become "Invalid" since the clock setting is invalid.
These timer settings have to be changed to "Valid" after the timer setting.

●Content memorized with the power failure compensation are as follows.

Note(1) Items (f) and (g) are memorized regardless whether the power failure compensation is effective or not while the setting of silent mode is cancelled regardless whether the power failure compensation is effective or not.

(a) At power failure – Operating/stopped
If it had been operating under the off timer mode, sleep timer mode, the state of stop is memorized.

(b) Operation mode

(c) Air flow volume mode

(d) Room temperature setting

(e) Louver auto swing/stop
However, the stop position (4-position) is cancelled so that it returns to Position (1).

(f) "Remote control function items" which have been set with the administrator or installation function settings ("Indoor function items" are saved in the memory of indoor unit.)

(g) Weekly timer, peak-cut timer or silent mode timer settings

(h) Remote control function setting

(4) Alert displays

If the following (a) to (c) appear, check and repair as follows.

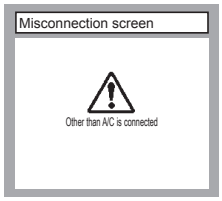
(a) Communication check between indoor unit and remote control

●This appears if communications cannot be established between the remote control and the indoor unit.
Check whether the system is correctly connected (indoor unit, outdoor unit, remote control) and whether the power source for the outdoor unit is connected.

(b) Clock setting check

●This appears when the timer settings are done without clock setting.
Set the clock setting before the timer settings.

(c) Misconnection



●This appears when something other than the air-conditioner has been connected to the remote control.
Check the location to which the remote control is connected.

Model RC-E5

(1) Switching sequence of the operation mode switches of remote control

(2) CPU reset

This functions when "CHECK" and "ESP" buttons on the remote control are pressed simultaneously. Operation is same as that of the power source reset.

(3) Power failure compensation function (Electric power source failure)

- This becomes effective if "Power failure compensation effective" is selected with the setting of remote control function.
- Since it memorizes always the condition of remote control, it starts operation according to the contents of memory no sooner than normal state is recovered after the power failure. Although the auto swing stop position and the timer mode are cancelled, the weekly timer setting is restored with the holiday setting for all weekdays.
  After recovering from the power failure, it readjusts the clock and resets the holiday setting for each weekday so that the setting of weekly timer becomes effective.
- Content memorized with the power failure compensation are as follows.

Note (1) Items (f), (g) and (h) are memorized regardless whether the power failure compensation is effective or not while the setting of silent mode is cancelled regardless whether the power failure compensation is effective or not.

(a) At power failure – Operating/stopped
If it had been operating under the off timer mode, sleep timer mode, the state of stop is memorized. (Although the timer mode is cancelled at the recovery from power failure, the setting of weekly timer is changed to the holiday setting for all weekdays.)

(b) Operation mode

(c) Air flow volume mode

(d) Room temperature setting

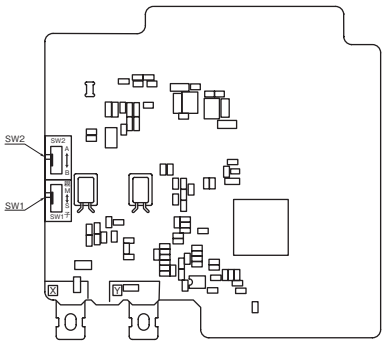
(e) Louver auto swing/stop
However, the stop position (4-position) is cancelled so that it returns to Position (1).

(f) "Remote control function items" which have been set with the remote control function setting ("Indoor function items" are saved in the memory of indoor unit.)

(g) Upper limit value and lower limit value which have been set with the temperature setting control

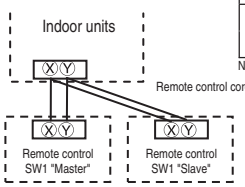
(h) Sleep timer and weekly timer settings (Other timer settings are not memorized.)

[Parts layout on remote control PCB]



Master/ slave setting when more than one remote controls are used

A maximum of two remote controls can be connected to one indoor unit (or one group of indoor units.)



Switch	Setting	Contents
SW1	M	Master remote control
	S	Slave remote control

Note (1) Don't change SW2 because it is not used normally.

Caution

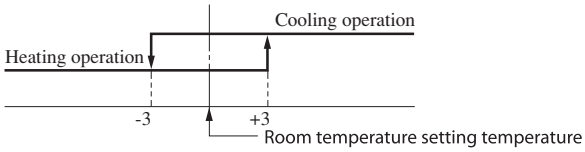
When using multiple remote controls, the following dispiays or settings cannot be done with the slave remote control. It is available only with the master remote control.

①Louver position setting (set upper or lower limit of swinging range)
②Setting indoor unit functions
③Setting temperature range
④Operation data display
⑤Error data display
⑥Silent mode setting
⑦Test operation of drain pump
⑧Remote control sensor setting

1.11.3 Operation control function by the indoor control
(Ⅰ) FDT, FDTC, FDE, FDU, FDUM, FDF series

(1) Auto operation

(a) If “Auto” mode is selected by the remote control, the heating and the cooling are automatically switched according to the difference between outdoor air temperature and setting temperature and the difference between setting temperature and return air temperature. (When the switching of cooling mode ↔ heating mode takes place within 3 minutes, the compressor does not operate for 3 minutes by the control of 3-minute timer.) This will facilitate the cooling/heating switching operation in intermediate seasons and the adaptation to unmanned operation at stores, etc (ATM corner of bank).

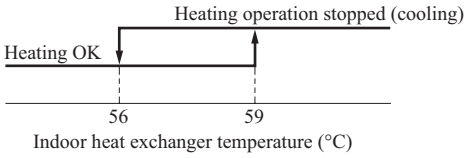


Room temperature (detected with Thi-A) [deg]

Notes (1) Temperature range of switching cooling/heating mode can be changed by RC-EX3 from ±1.0 ～ ±4.0.

(2) Room temperature control during auto cooling/auto heating is performed according to the room temperature setting temperature. (DIFF: ±1 deg)

(3) If the indoor heat exchanger temperature rises to 59°C or higher during heating operation, it is switched automatically to cooling operation. In addition, for 1 hour after this switching, the heating operation is not performed, regardless of the temperature shown at right.



(b) The following automatic controls are performed other than (a) above.

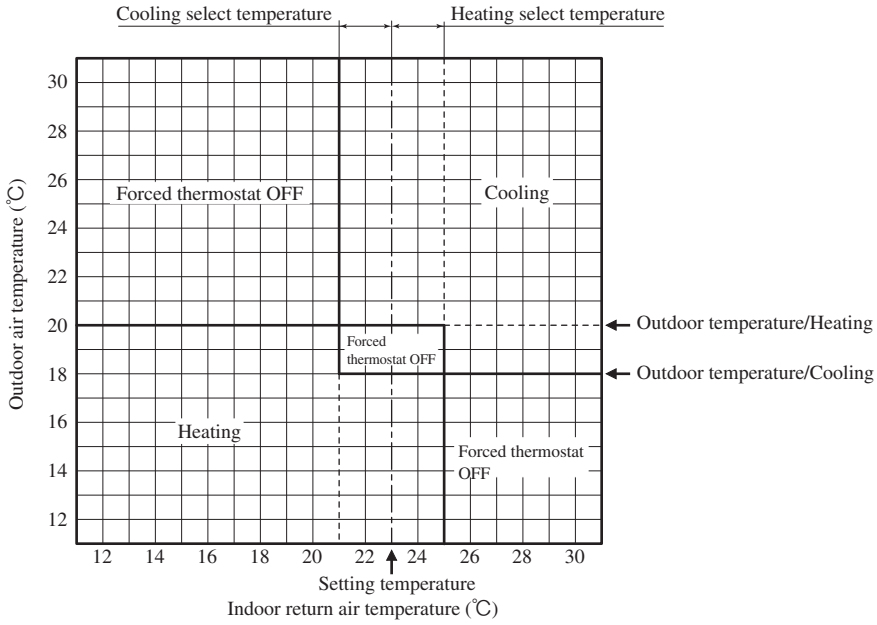
(i) Cooling or heating operation mode is judged according to the conditions of the "Judgment based on Setting temperature + Cooling select temperature and Indoor return air temperature" and the "Judgment based on Outdoor temperature".

1) In "Setting temperature - Cooling select temperature < Indoor return air temperature" and "Outdoor temperature/Cooling < Outdoor return air temperature" ⇒ Operation mode: Cooling

2) "Setting temperature + Heating select temperature > Indoor return air temperature" and "Outdoor temperature/Heating > Outdoor air temperature" ⇒ Operation mode: Heating

3) The outdoor air temperature of the above judgment conditions is sampled at every 10 minutes.

4) In the range where the above cooling and heating zones are overlapped ⇒ Forced thermostat OFF



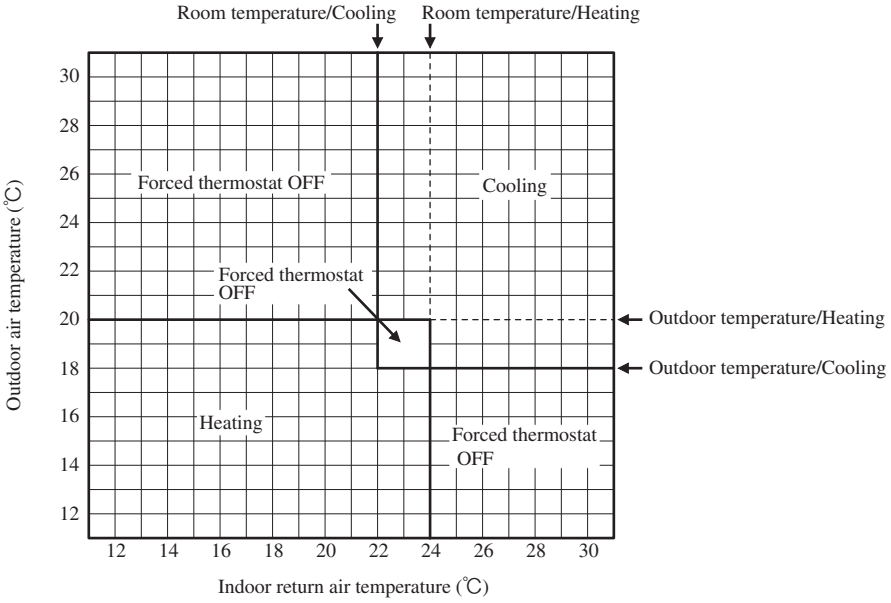
(ii) Regardless of the setting temperature, the cooling or heating operation mode is judged according to the "Judgment based on Room temperature/Cooling or Heating and Outdoor temperature/Cooling or Heating".

1) In case of "Room temperature/Cooling < Indoor return air temperature" and "Outdoor temperature/Cooling < Outdoor air temperature" ⇒ Operation mode: Cooling

2) In case of "Room temperature/Heating > Indoor return air temperature" and "Outdoor temperature /Heating > Outdoor air temperature" ⇒ Operation mode: Heating

3) The outdoor air temperature of the above judgment conditions is sampled at every 10 minutes.

4) In the range where the above cooling and heating zones are overlapped ⇒ Forced thermostat OFF



(2) Operations of functional items during cooling/heating

Operation / Functional item	Cooling		Fan	Heating			Dehumidifying
	Thermostat ON	Thermostat OFF		Thermostat ON	Thermostat OFF	Hot start (Defrost)	
Compressor	○	×	×	○	×	○	○/×
4-way valve	×	×	×	○	○	○(×)	×
Outdoor unit fan	○	×	×	○	×	○(×)	○/×
Indoor unit fan	○	○	○	○/×	○/×	○/×	○/×
Drain pump (3)	○	×(2)	×(2)	○/×(2)			Thermostat ON: ○ Thermostat OFF: ×(2)

Notes (1) ○: Operation ×: Stop ○/×: Turned ON/OFF by the control other than the room temperature control.
(2) ON during the drain motor delay control.
(3) Drain pump ON setting may be selected with the indoor unit function setting of the wired remote control.

(3) Dehumidifying (DRY) operation

(a) FDT series

Indoor ambient temperatures and humidity are controlled simultaneously with the relative humidity sensor (HS) and the suction temperature sensor [Thi-A (or the remote control sensor when it is activated)], which are installed at the suction inlet.

(i) When the operation has been started with cooling, if there is a difference of 2°C or less between the suction and setting temperatures, the tap of indoor fan is lowered by one tap. This tap is retained for 3 minutes after changing the tap.

(ii) After the above condition, when a difference between suction and setting temperature is lower than 3°C, and the relative humidity is high, the tap of indoor unit fan is lowered by one tap.
When the difference between suction and setting temperature is larger than 3°C, the fan of indoor unit fan is raised by one tap. This tap is retained for 3 minutes after changing the tap.

(iii) When relative humidity becomes lower, the indoor unit fan tap is retained.

(iv) In case of the thermostat OFF, the indoor unit fan tap at the thermostat ON is retained.

(b) Except FDT series

Return air temperature thermistor [Thi-A (by the remote control when the remote control thermistor is enabled)] controls the indoor temperature environment simultaneously.

(i) Operation is started in the cooling mode. When the difference between the return air temperature and the setting temperature is 2°C or less, the indoor unit fan tap is brought down by one tap. That tap is retained for 3 minutes after changing the indoor unit fan tap.

(ii) If the return air temperature exceeds the setting temperature by 3°C during dehumidifying operation, the indoor unit fan tap is raised. That tap is retained for 3 minutes after changing the indoor unit fan tap.

(iii) If the thermostat OFF is established during the above control, the indoor unit fan tap at the thermostat ON is retained so far as the thermostat is turned OFF.

(4) Timer operation

(a) RC-EX3

(i) Sleep timer

Set the time from the start to stop of operation. The time can be selected in the range from 30 to 240 minutes (in the unit of 10-minute).

Note (1) Enable the "Sleep timer" setting from the remote control. If the setting is enabled, the timer operates at every time.

(ii) Set OFF timer by hour

Set the time to stop the unit after operation, in the range from 1 to 12 hours (in the unit of hour).

(iii) Set ON timer by hour

Set the time to start the unit after the stop of operation, in the range from 1 to 12 hours (in the unit of hour). It is allowed also to set simultaneously the indoor temperature, operation mode, air flow rate and warm-up enabled/disabled.

(iv) Set ON timer by clock

Set the time to start operation. The time can be set in the unit of 5-minute. This setting can be activated only once or at every time. It is allowed also to set simultaneously the indoor temperature, operation mode, air flow rate and warm-up enabled/disabled.

Note (1) It is necessary to set the clock to use this timer.

(v) Set OFF timer by clock

Set the time to stop operation. The time can be set in the unit of 5-minute. This setting can be activated only once or at every time.

Note (1) It is necessary to set the clock to use this timer.

(vi) Weekly timer

Set the ON or OFF timer for a week. Up to 8 patterns can be set for a day. The day-off setting is provided for holidays and non-business days.

Note (1) It is necessary to set the clock to use the weekly timer.

(vii) **Combination of patterns which can be set for the timer operations**

	Sleep time	Set OFF timer by hour	Set ON timer by hour	Set OFF timer by clock	Set ON timer by clock	Weekly timer
Sleep time		×	×	○	○	○
Set OFF timer by hour	×		×	×	×	×
Set ON timer by hour	×	×		×	×	×
Set OFF timer by clock	○	×	×		○	×
Set ON timer by clock	○	×	×	○		×
Weekly timer	○	×	×	×	×	

Note (1) ○: Allowed ×: Not

(b) RC-E5

(i) Sleep timer

Set the duration of time from the present to the time to turn off the air-conditioner.

It can be selected from 10 steps in the range from "OFF 1 hour later" to "OFF 10 hours later". After the sleep timer setting, the remaining time is displayed with progress of time in the unit of hour.

(ii) OFF timer

Time to turn OFF the air-conditioner can be set in the unit of 10 minutes.

(iii) ON timer

Time to turn ON the air-conditioner can be set. Indoor temperature can be set simultaneously.

(iv) Weekly timer

Timer operation (ON timer, OFF timer) can be set up to 4 times a day for each weekday.

(v) Timer operations which can be set in combination

Item \ Item	Timer	OFF timer	ON timer	Weekly timer
Timer		×	○	×
OFF timer	×		○	×
ON timer	○	○		×
Weekly timer	×	×	×	

Notes (1) ○: Allowed ×: Not

(2) Since the ON timer, sleep timer and OFF timer are set in parallel, when the times to turn ON and OFF the airconditioner are duplicated, the setting of the OFF timer has priority.

(5) Remote control display during the operation stop

When the operation is stopped (the power source is turned ON), it displays preferentially the “Room temperature”, “Center/Remote”, “Filter sign”, “Inspection” and “Timer operation”.

(6) Hot start (Cold draft prevention at heating)

(a) Operating conditions

When either one of following conditions is satisfied, the hot start control is performed.

(i) From stop to heating operation

(ii) From cooling to heating operation

(iii) Form heating thermostat OFF to ON

(iv) After completing the defrost operation (only on units with thermostat ON)

(b) Contents of operation

(i) Indoor fan motor control at hot start

1) Within 7 minutes after starting heating operation, the fan mode is determined depending on the condition of thermostat (fan control with heating thermostat OFF).

a) Thermostat OFF

i) Operates according to the fan control setting at heating thermostat OFF.

ii) Even if it changes from thermostat OFF to ON, the fan continues to operate with the fan control at thermostat OFF till the heat exchanger thermistor (Thi-R1 or R2, whichever higher) detects 35°C or higher.

iii) When the heat exchanger thermistor (Thi-R1 or R2, whichever higher) detects 35°C or higher, the fan operates with the set air flow volume.

b) Thermostat ON

i) When the heat exchanger thermistor (Thi-R1 or R2, whichever higher) detects 25°C or lower, the fan is turned OFF and does not operate.

ii) When the heat exchanger thermistor (Thi-R1 or R2, whichever higher) detects 25°C or higher, the fan operates with the fan control at heating thermostat OFF.

iii) When the heat exchanger thermistor (Thi-R1 or R2, whichever higher) detects 35°C or higher, the fan operates with the set air flow volume.

c) If the fan control at heating thermostat OFF is set at the “Set air flow volume” (from the remote control), the fan operates with the set air flow volume regardless of the thermostat ON/OFF.

2) Once the fan motor is changed from OFF to ON during the thermostat ON, the indoor fan motor is not turned OFF even if the heat exchanger thermistor detects lower than 25°C.

Note (1) When the defrost control signal is received, it complies with the fan control during defrost operation.

3) Once the hot start is completed, it will not restart even if the temperature on the heat exchanger thermistor drops.

(ii) During the hot start, the louver is kept at the horizontal position.

(iii) When the fan motor is turned OFF for 7 minutes continuously after defrosting, the fan motor is turned ON regardless of the temperatures detected with the indoor heat exchanger thermistors (Thi-R1, R2).

(c) Ending condition

(i) If one of following conditions is satisfied during the hot start control, this control is terminated, and the fan is operated with the set air flow volume.

1) Heat exchanger thermistor (Thi-R1 or R2, whichever higher) detects 35°C or higher.

2) It has elapsed 7 minutes after starting the hot start control.

(7) Hot keep

Hot keep control is performed at the start of the defrost operation.

(a) Control

(i) When the indoor heat exchanger temperature (detected with Thi-R1 or R2) drops to 35°C or lower, the speed of indoor fan is changed to the lower tap at each setting.

(ii) During the hot keep, the louver is kept at the horizontal position.

(b) Ending condition

When the indoor fan is at the lower tap at each setting, it returns to the set air flow volume as the indoor heat exchanger temperature rises to 45°C or higher.

(8) Auto swing control (FDT, FDTC, FDE, FDF only)

Note Even if [Auto Swing] is selected, the louver position with anit draft function is fixed to position 1.

(a) RC-EX3

(i) Louver control

1) To operate the swing louver when the air-conditioner is operating, press the "Direction" button on the TOP screen of remote control. The wind direction select screen will be displayed.

2) To swing the louver, touch the "Auto swing" button. The lover will move up and down. To fix the swing louver at a position, touch one of [1] - [4] buttons. The swing lover will stop at the selected position.

3) Louver operation at the power on with a unit having the louver 4-position control function

The louver swings one time automatically (without operating the remote control) at the power on.

This allows the microcomputer recognizing and inputting the louver motor (LM) position.

(ii) Automatic louver level setting during heating

At the hot start and the heating thermostat OFF, regardless whether the auto swing switch is operated or not (auto swing or louver stop), the louver takes the level position (in order to prevent blowing of cool wind). The louver position display LCD continues to show the display which has been shown before entering this control.

(iii) Louver free stop control

If you touch the "Menu" → "Next" → "R/C settings" buttons one after another on the TOP screen of remote control, the "Flap control" screen is displayed. If the free stop is selected on this screen, the louver motor stops upon receipt of the stop signal from the remote control. If the auto swing signal is received from the remote control, the auto swing will start from the position before the stop.

(b) RC-E5

(i) Louver control

1) Press the "LOUVER" button to operate the swing louver when the air-conditioner is operating.

"SWING" is displayed for 3 seconds and then the swing louver moves up and down continuously.

2) To fix the swing louver at a position, press one time the "LOUVER" button while the swing louver is moving so that four stop positions are displayed one after another per second.

When a desired stop position is displayed, press the "LOUVER" button again. The display stops, changes to show the "STOP 1" for 5 seconds and then the swing louver stops.

3) Louver operation at the power on with a unit having the louver 4-position control function

The louver swings one time automatically (without operating the remote control) at the power on.

This allows inputting the louver motor (LM) position, which is necessary for the microcomputer to recognize the louver position.

Note (1) If you press the "LOUVER" button, the swing motion is displayed on the louver position LCD for 10 second. The display changes to the "SWING" display 3 seconds later.

(ii) Automatic louver level setting during heating

At the hot start with the heating thermostat OFF, regardless whether the auto swing switch is operated or not (auto swing or louver stop), the louver takes the level position (In order to prevent the cold start). The louver position display LCD continues to show the display which has been shown before entering this control.

(iii) Louver-free stop control

When the louver-free stop has been selected with the indoor function of wired remote control "POSITION", the louver motor stops when it receives the stop signal from the remote control. If the auto swing signal is received from the remote control, the auto swing will start from the position where it was before the stop.

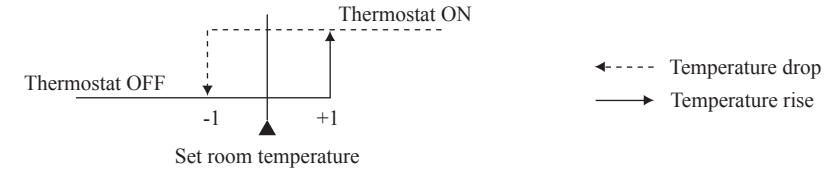
Note (1) When the indoor function of wired remote control "POSITION" has been switched, switch also the remote control function "POSITION" in the same way.

(9) Thermostat operation

(a) Cooling

(i) Thermostat is operated with the room temperature control.

(ii) Thermostat is turned ON or OFF relative to the set room temperature as shown below.

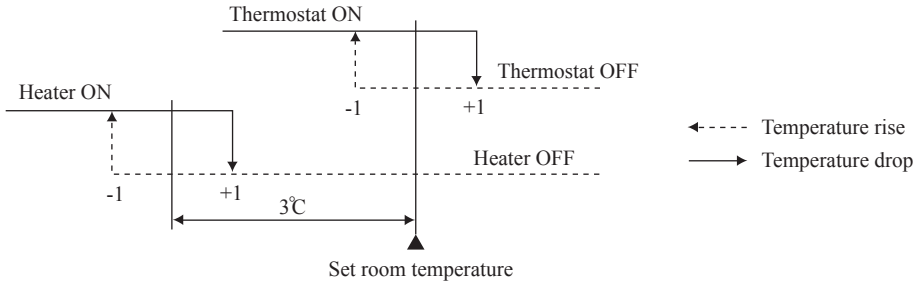


(iii) Thermostat is turned ON when the room temperature is in the range of -1 < Set temperature < +1 at the start of cooling operation (including from heating to cooling).

(b) Heating

(i) Thermostat is operated with the room temperature control.

(ii) Thermostat is turned ON or OFF relative to the set room temperature as shown below.



(iii) Thermostat is turned ON when the room temperature is in the range of -1 < Set point < +1 at the start of heating operation (including from cooling to heating).

(c) Fan control during heating thermostat OFF

(i) Following fan controls during the heating thermostat OFF can be selected with the indoor function setting of the wired remote control.

① Low fan speed (Factory default), ② Set fan speed, ③ Intermittence, ④ Fan OFF

(ii) When the "Low fan speed (Factory default)" is selected, the following taps are used for the indoor fans.

・For AC motor : Lo tap

・For DC motor : ULo tap

(iii) When the "Set fan speed" is selected, it is operated with the set fan speed also in the thermostat OFF condition.

(iv) If the "Intermittence" is selected, following controls are performed:

1) If the thermostat is turned OFF during the heating operation, the indoor unit moves to the hot control and turns OFF the indoor fan if the heat exchanger thermistors (both Thi-R1 and R2) detect 25°C or lower.
2) Indoor fan OFF is fixed for 5 minutes. After the 5 minutes, the indoor fan is operated at Lo or ULo for 2 minutes. In the meantime the louver is controlled at level.
3) After operating at Lo or ULo for 2 minutes, the indoor fan moves to the state of 1) above.
4) If the thermostat is turned ON, it moves to the hot start control.
5) When the heating thermostat is turned OFF, the remote control displays the temperature detected at the fan stop and revises the temperature later when the indoor fan changes from Lo or ULo to stop.
   The remote control uses the operation data display function to display temperatures and updates values of temperature even when the indoor fan is turned OFF.
6) When the defrosting starts while the heating thermostat is turned OFF or the thermostat is turned OFF during defrosting, the indoor fan is turned OFF. (Hot keep or hot start control takes priority.) However, the suction temperature is updated at every 7-minute.
7) When the heating thermostat is turned ON or the operation is changed to another mode (including stop), this control is stopped immediately, and the operating condition is restored.

(v) When the "Fan OFF" is selected, the fan on the indoor unit of which the thermostat has been turned OFF, is turned OFF. The same occurs also when the remote control sensor is effective.

(d) Fan control during cooling thermostat OFF

(i) Following fan controls during the cooling thermostat OFF can be selected with the indoor function setting of the wired remote control.

① Low fan speed, ② Set fan speed (Factory default), ③ Intermittence, ④ Fan OFF

(ii) When the "Low fan speed" is selected, the following taps are used for the indoor fans.

・For AC motor : Lo tap

・For DC motor : ULo tap

(iii) When the "Set fan speed" is selected, it is operated with the set fan speed also in the thermostat OFF condition.

(iv) If the "Intermittence" is selected, following controls are performed:

1) If the thermostat is turned OFF during the cooling operation, the indoor unit fan motor stope.

2) Indoor fan OFF is fixed for 5 minutes. After the 5 minutes, the indoor fan is operated at Lo or ULo for 2 minutes. In the meantime the louver is controlled at level.

3) After operating at Lo or ULo for 2 minutes, the indoor fan moves to the state of 1) above.

4) If the thermostat is turned ON, the fan starts operation at set fan speed.

5) When the cooling thermostat is turned OFF, the remote control displays the temperature detected at the fan stop and revises the temperature later when the indoor fan changes from Lo or ULo to stop.

By using operation data display function at wireless remote control, the tempenature as displayad and the value is updated including the fan stops.

6) When the cooling thermostat is turned ON or the operation is changed to another mode (including stop), this control is stopped immediately, and the operating condition is restored.

(v) When the "Fan OFF" is selected, the fan on the indoor unit of which the thermostat has been turned OFF, is turned OFF. The same occurs also when the remote control sensor is effective.

(10) Filter sign

As the operation time (Total ON time of ON/OFF switch) accumulates to 180 hours (1), "FILTER CLEANING" is displayed on the remote control. (This is displayed when the unit is in trouble and under the centralized control, regardless of ON/OFF)

Notes (1) Time setting for the filter sign can be made as shown below using the indoor function of wired remote control "Filter sign". (It is set at setting 1 at the shipping from factory.)

Filter sign setting	Function
Setting **1**	Setting time: 180 hrs (Factory default)
Setting **2**	Setting time: 600 hrs
Setting **3**	Setting time: 1,000 hrs
Setting **4**	Setting time: 1,000 hrs (Unit stop) (2)

(2) After the setting time has elapsed, the "FILTER CLEANING" is displayed and, after operating for 24 hours further (counted also during the stop), the unit stops.

(11) Compressor inching prevention control

(a) 3-minute timer

When the compressor has been stopped by the thermostat, remote control operation switch or anomalous condition, its restart will be inhibited for 3 minutes. However, the 3-minute timer is invalidated at the power on the electric power source for the unit.

(b) 3-minute forced operation timer

(i) Compressor will not stop for 3 minutes after the compressor ON. However, it stops immediately when the unit is stopped by means of the ON/OFF switch or by when the thermister turned OFF the change of operation mode.

(ii) If the thermostat is turned OFF during the forced operation control of heating compressor, the louver position (with the auto swing) is returned to the level position.

Note (1) The compressor stops when it has entered the protective control.

(12) Drain pump control

(a) This control is operated when the inverter frequency is other than 0 Hz during the cooling operation and automatic cooling and dehumidifying operations.

(b) Drain pump ON condition continues for 5 minutes even when it enters the OFF range according to (i) above after turning the drain pump ON, and then stops. The 5-minute delay continues also in the event of anomalous stop.

(c) The drain pump is operated with the 5-minute delay operation when the compressor is changed from ON to OFF.

(d) Even in conditions other than the above (such as heating, fan, stop, cooling thermostat OFF), the drain pump control is performed by the drain detection.

(e) Following settings can be made using the indoor function setting of the wired remote control.

(i) ❄ 〔Standard (in cooling & dry)〕: Drain pump is run during cooling and dry.

(ii) ❄ AND ☼ 〔Operate in standard & heating〕: Drain pump is run during cooling, dry and heating.

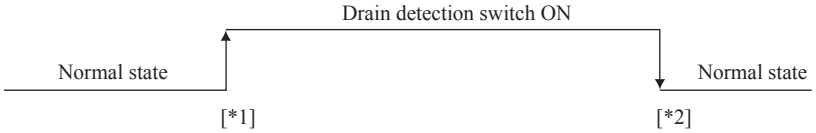
(iii) ❄ AND ☼ AND ≡ 〔Operate in heating & fan〕: Drain pump is run during cooling, dry, heating and fan.

(iv) ❄ AND ≡ 〔Operate in standard & fan〕: Drain pump is run during cooling, dry and fan.

Note (1) Values in 〔 〕 are for the RC-EX3 model.

(13) Drain motor (DM) control

(a) Drain detection switch is turned ON or OFF with the float switch (FS) and the timer.



[∗1] Drain detection switch is turned "ON" when the float switch "Open" is detected for 3 seconds continuously in the drain detectable space.

[∗2] Drain detection switch is turned "OFF" when the float switch "Close" is detected for 10 seconds continuously.

(i) It detects always from 30 seconds after turning the power ON.

1) There is no detection of anomalous draining for 10 seconds after turning the drain pump OFF.

2) Turning the drain detection switch "ON" causes to turn ON the drain pump forcibly.

3) Turning the drain detection switch "OFF" releases the forced drain pump ON condition.

(b) Indoor unit performs the control A or B depending on each operating condition.

	Indoor unit operation mode				
	Stop (1)	Cooling	Dry	Fan (2)	Heating
Compressor ON		Control A			
Compressor OFF	Control B				

Notes (1) Including the stop from the cooling, dehumidifying, fan and heating, and the anomalous stop
(2) Including the "Fan" operation according to the mismatch of operation modes

(i) Control A

1) If the float switch detects any anomalous draining condition, the unit stops with the anomalous stop (displays E9) and the drain pump starts. After detecting the anomalous condition, the drain motor continues to be ON.

2) It keeps operating while the float switch is detecting the anomalous condition.

(ii) Control B

If the float switch detects any anomalous drain condition, the drain motor is turned ON for 5 minutes, and at 10 seconds after the drain motor OFF it checks the float switch. If it is normal, the unit is stopped under the normal mode or, if there is any anomalous condition, E9 is displayed and the drain motor is turned ON. (The ON condition is maintained during the drain detection.)

(14) Operation check/drain pump test run operation mode

(a) If the power is turned on by the dip switch (SW7-1) on the indoor PCB when electric power source is supplied, it enters the mode of operation check/drain pump test run. It is ineffective (prohibited) to change the switch after turning power on.

(b) When the communication with the remote control has been established within 60 seconds after turning power on by the dip switch (SW7-1) ON, it enters the operation check mode. Unless the remote control communication is established, it enters the drain pump test run mode.

Note (1) To select the drain pump test run mode, disconnect the remote control connector (CNB) on the indoor PCB to shut down the remote control communication.

(c) Operation check mode

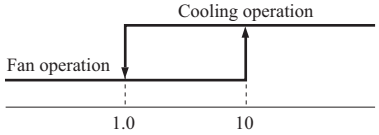
There is no communication with the outdoor unit but it allows performing operation in respective modes by operating the remote control.

(d) Drain pump test run mode

As the drain pump test run is established, the drain pump only operates and during the operation protective functions by the microcomputer of indoor unit become ineffective.

(15) Cooling, dehumidifying frost protection

(a) To prevent frosting during cooling mode or dehumidifying mode operation, the of compressor speed is reduced if the indoor heat exchanger temperature (detected with Thi-R) drops to 1.0°C or lower at 4 minutes after the start of compressor operation. If the indoor unit heat exchanger temperature is 1.0°C or lower after 1 minutes, the compressor speed is reduced further. If it becomes 2.5°C or higher, the control terminates. When the indoor heat exchanger temperature has become as show below after reducing the compressor speed, it is switched to the fan operation. For the selection of indoor fan speed, refer to item 2).



(b) Selection of indoor fan speed

If it enters the frost prevention control during cooling operation (excluding dehumidifying), the indoor unit fan speed is switched.

(i) In the case of FDUM only.

1) When the indoor return air detection temperature (detected with Thi-A) is 23°C or higher and the indoor heat exchanger temperature (detected with Thi-R) detects the compressor frequency drop start temperature A°C+1°C, of indoor unit fan speed is increased by 20 min^{-1}.

2) If the phenomenon of 1) above is detected again after the acceleration of indoor unit fan, indoor unit fan speed is increased further by 20 min^{-1}.

Note (1) Indoor unit fan speed can be increased by up to 2 taps.

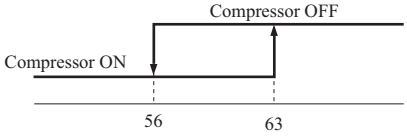
• Compressor frequency drop start temperature

Item \ Symbol	A
Temperature - Low (Factory default)	1.0
Temperature - High	2.5

Note (1) Frost prevention temperature setting can be selected with the indoor unit function setting of the wired remote control.

(16) Heating overload protection

(a) If the indoor heat exchanger temperature (detected with Thi-R) at 63°C or higher is detected for 2 seconds continuously, the compressor stops. When the compressor is restarted after a 3-minute delay, if a temperature at 63°C or higher is detected for 2 seconds continuously within 60 minutes after initial detection and if this is detected 5 times consecutively, the compressor stops with the anomalous stop (E8). Anomalous stop occurs also when the indoor heat exchanger temperature at 63°C or higher is detected for 6 minutes continuously.



(b) Indoor unit fan speed selection

If, after second detection of heating overload protection up to fourth, the indoor fan is set at Me and Lo taps when the compressor is turned ON, the indoor fan speed is increased by 1 tap.

(17) Anomalous fan motor

(a) After starting the fan motor, if the fan motor speed is 200 min^{-1} or less is detected for 30 seconds continuously and 4 times within 60 minutes, then fan motor stops with the anomalous stop (E16).

(b) If the fan motor fails to reach at -50 min^{-1} less than the required speed, it stops with the anomalous stop (E20).

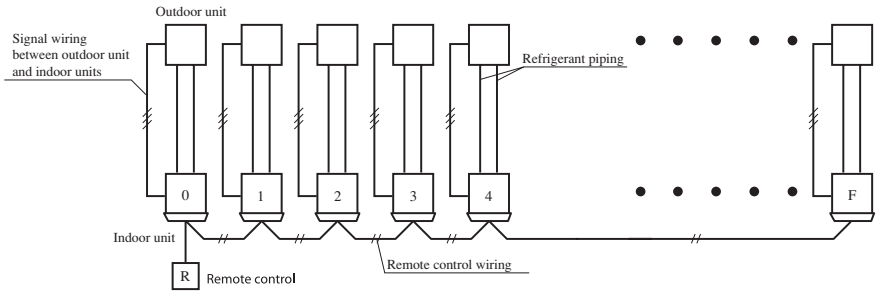
(18) Plural unit control – Control of 16 units group by one remote control

(a) Function

One remote control switch can control a group of multiple number of unit (Max. 16 indoor units). "Operation mode" which is set by the remote control switch can operate or stop all units in the group one after another in the order of unit No.(1). Thermostat and protective function of each unit function independently.

Notes (1) Unit No. is set by SW2 on the indoor unit control PCB. Unit No. setting by SW2 is necessary for the indoor unit only.

SW2: For setting of 0 – 9, A – F



(2) Unit No. may be set at random unless duplicated, it should be better to set orderly like 0, 1, 2…, F to avoid mistake.

(b) Display to the remote control

(i) Center or each remote control basis, heating preparation: the youngest unit No. among the operating units in the remote mode (or the center mode unless the remote mode is available) is displayed.

(ii) Inspection display, filter sign: Any of unit that starts initially is displayed.

(iii) Confirmation of connected units

1) In case of RC-EX3 remote control

If you touch the buttons in the order of "Menu" → "Next" → "Service & Maintenance" → "IU address" on the TOP screen of remote control, the indoor units which are connected are displayed.

2) In case of RC-E5 remote control

Pressing "AIR CON No." button on the remote control displays the indoor unit address. If "▲" "▼" button is pressed at the next, it is displayed orderly starting from the unit of youngest No.

(iv) In case of anomaly

1) If any anomaly occurs on a unit in a group (a protective function operates), that unit stops with the anomalous stop but any other normal units continue to run as they are.

2) Signal wiring procedure

Signal wiring between indoor and outdoor units should be made on each unit same as the normal wiring. For the group control, lay connect with sires wiring between rooms using terminal blocks (X, Y) of remote control.

Connect the remote control communication wire separately from the power source wire or wires of other electric devices (AC220V or higher).

(19) High ceiling control

When sufficient air flow rate cannot be obtained from the indoor unit which is installed at a room with high ceiling, the air flow rate can be increased by changing the fan tap. To change the fan tap, use the indoor unit function "FAN SPEED SET" on the wired remote control.

Fan tap		Indoor unit air flow setting			
		■■■ - ■■ - ■■ - ■■	■■ - ■■ - ■■	■■ - ■■	■■ - ■■
FAN SPEED SET	STANDARD	PHi - Hi - Me - Lo	Hi - Me - Lo	Hi - Lo	Hi - Me
	HIGH SPEED1, 2	PHi - PHi - Hi - Me	PHi - Hi - Me	PHi - Me	PHi - Hi

Notes (1) Factory default is STANDARD.

(2) At the hot-start and heating thermostat OFF, or other, the indoor unit fan is operated at the low speed tap of each setting.

(3) This function is not able to be set with wireless remote controls or simple remote control (RCH-E3)

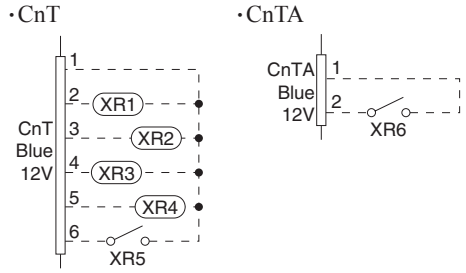
(20) Abnormal temperature thermistor (return air/indoor heat exchanger) broken wire/short-circuit detection

(a) Broken wire detection
When the return air temperature thermistor detects -55°C or lower or the heat exchanger temperature thermistor detect -55°C or lower for 5 seconds continuously, the compressor stops. After a 3-minute delay, the compressor restarts but, if it is detected again within 60 minutes after the initial detection for 6 minutes continuously, stops again (the return air temperature thermistor: E7, the heat exchanger temperature thermistor: E6).

(b) Short-circuit detection
If the heat exchanger temperature thermistor detects 70°C or higher for 5 seconds continuously at 2 minutes and 20 seconds after the compressor ON during cooling operation, the compressor stops (E6).

(21) External input/output control (CnT or CnTA)

External input/output connectors are provided on the indoor unit control PCB, and each input/output is possible to be changed by RC-EX3.
Be sure to connect the wired remote control to the indoor unit. Remote operation with CnT/CnTA only is not possible.



Input/Output	Connector	Factory default setting	RC-EX3 function name
Output	CnT-2 (XR1)	Operation output	External output 1
	CnT-3 (XR2)	Heating output	External output 2
	CnT-4 (XR3)	Compressor ON output	External output 3
	CnT-5 (XR4)	Inspection(Error) output	External output 4
"Input (Volt-free contact)"	CnT-6 (XR5)	Remote operation input	External input 1
	CnTA (XR6)	Remote operation input	External input 2

■ Priority order for combinations of CnT and CnTA input.

		CnTA					
		① Operation stop level	② Operation stop pulse	③ Operation permission/prohibition level	④ Operation permission/prohibition pulse	⑤ Cooling/heating selection level	⑥ Cooling/heating selection pulse
CnT	① Operation stop level	CnT ①	CnT ①	CnT ① +CnTA ②	CnT ①	CnT ① /CnTA ⑤	CnT ① /CnTA ⑥
	② Operation stop pulse	CnT ②	CnT ②	CnT ② +CnTA ③	CnT ②	CnT ② /CnTA ⑤	CnT ② /CnTA ⑥
	③ Operation permission/prohibition level	CnT ③ >CnTA ①	CnT ③ >CnTA ②	CnT ③ +CnTA ③	CnT ③	CnT ③ /CnTA ⑤	CnT ③ /CnTA ⑥
	④ Operation permission/prohibition pulse	CnT ④	CnT ④	CnT ④ +CnTA ③※	CnT ④	CnT ④ /CnTA ⑤	CnT ④ /CnTA ⑥
	⑤ Cooling/heating selection level	CnT ⑤ /CnTA ①	CnT ⑤ /CnTA ②	CnT ⑤ /CnTA ③※	CnT ⑤ /CnTA ④	CnT ⑤	CnT ⑤
	⑥ Cooling/heating selection pulse	CnT ⑥ /CnTA ①	CnT ⑥ /CnTA ②	CnT ⑥ /CnTA ③	CnT ⑥ /CnTA ④	CnT ⑥	CnT ⑥

Note (1) Following operation commands are accepted when the operation prohibition is set with CnTA as indicated with *.
Individual operation command from remote control, test run command from outdoor unit and operation command from option device, CnT input.

Reference: Explanation on the codes and the combinations of codes in the table above
1. In case of CnT "Number", the CnT "Number" is adopted and CnTA is invalidated.
2. In case of CnTA "Number", the CnTA "Number" is adopted and CnT is invalidated.
3. In case of CnT "Number"/CnTA "Number", the CnT "Number" and the CnTA "Number" become independent functions each other.
4. In case of CnT "Number" + CnTA "Number", the CnT "Number" and the CnTA "Number" become competing functions each other.
5. In case of CnT "Number" > CnTA "Number", the function of CnT "Number" supersedes that of CnTA "Number".
6. In case of CnT "Number" < CnTA "Number", the function of CnTA "Number" supersedes that of CnT "Number".

(The "Number" above means ① - ⑥ in the table.)

(a) Output for external control (remote display)

Indoor unit outputs the following signal for operation status monitoring.

	Output name	Condition
1	Operation output	During operation
2	Heating output	During heating operation
3	Compressor ON output	During compressor operation
4	Inspection(Error) output	When anomalous condition occurs.
5	Cooling output	During cooling operation
6	Fan operation output 1	When indoor unit's fan is operating
7	Fan operation output 2	When indoor unit's fan is operating, and fan speed is higher than Hi speed.
8	Fan operation output 3	When indoor unit's fan is operating, and fan speed is Lower than Me speed.
9	Defrost/oil return output	When indoor unit receive defrost/oil return signal from the outdoor unit.
10	Ventilation output	When "Venti.ON" is selected from remote control
11	Free cooling output	When the ambient temp. is between 10 - 18 C in cooling and fan operation
12	Indoor unit overload alrm output	Refer to "IU overload alarm"

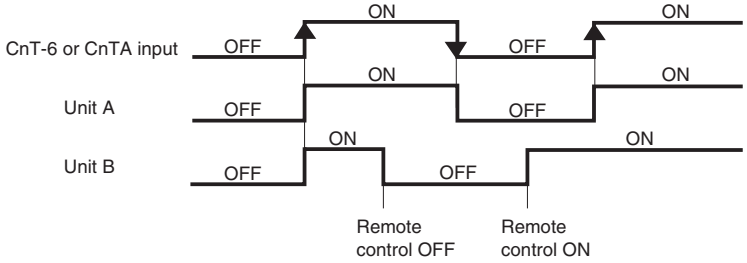
(b) Input for external control

The external input for the indoor unit can be selected from the following input.

	Input name	Content
1	Run/Stop	Refer to [(21) (c) Remote operation input]
2	Premission/Prohibition	Refer to [(22) Operation permission/prohibition]
3	Cooling/Heating	Refer to [(24) Selection of cooling/heating external input function]
4	Emergency stop	Indoor/outdoor units stop the operation, and [E63] is displayed.
5	Setting temperature shift	Set temperature is shifted by +2/-2C in cooling/heating.
6	Forced thermo-OFF	Unit goes thermo off.
7	Temporary stop	Refer to [(23) Temporary stop input]
8	Silent mode	Outdoor unit silent mode is avtivate.

(i) In case of "Level input" setting (Factory default)

Input signal to CnT-6 or CnTA is OFF→ON …… unit ON
Input signal to CnT-6 or CnTA is ON→OFF …… unit OFF
Operation is not inverted.

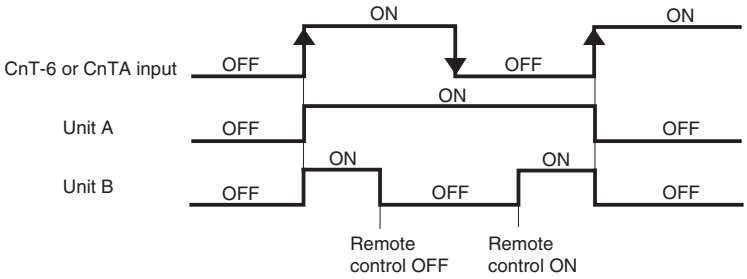


Note: The latest operation has priority

It is available to operate/stop by remote control or central control.

(ii) In case of "Pulse input" setting (Local setting)

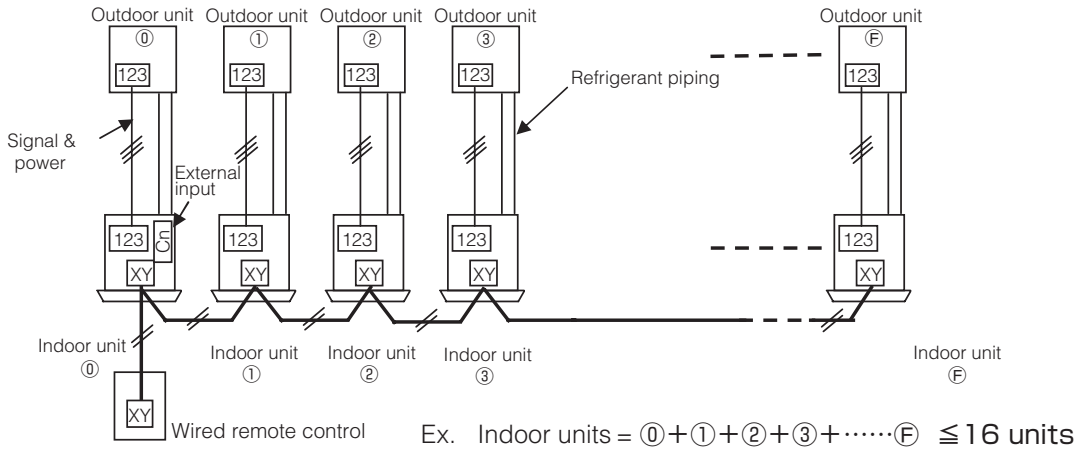
It is effective only when the input signal to CnT-6 or CnTA is changed OFF→ON, and at that time unit operation [ON/OFF] is inverted.



(c) Remote operation

(i) In case of multiple units (Max. 16 indoor units group) are connected to one wired remote control

When the indoor function setting of wired remote control for "External control set" is changed from "Individual (Factory default)" to " For all units", all units connected in one wired remote control system can be controlled by external operation input.



	Individual operation (Factory default)		All units operation (Local setting)	
CnT-6 or CnTA	ON	OFF	ON	OFF
	Only the unit directly connected to the remote control can be operated.	Only the unit directly connected to the remote control can be stopped opeartion.	All units in one remote control system can be operated.	All units in one remote control system can be stopped operation.
	Unit ① only	Unit ① only	Units ① – Ⓕ	Units ① – Ⓕ

When more than one indoor unit (Max. 16 indoor units) are connected in one wired remote control system:

(1) With the factory default, external input to CnT-6 or CnTA is effective for only the unit ①.

(2) When setting "For all unit" (Local setting), all units in one remote control system can be controlled by external input to CnT-6 or CnTA on the indoor unit ①.

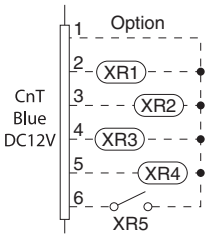
(3) External input to CnT-6 or CnTA on the other indoor unit than the unit ① is not effective.

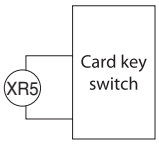
(22) Operation permission/prohibition

(In case of adopting card key switches or commercially available timers)

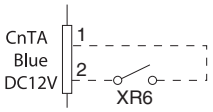
When the indoor function setting of wired remote control for "Operation permission/prohibition" is changed from "Invalid (Factory default)" to " Valid", following control becomes effective.

・CnT





・CnTA (FDUM only)



Note (1) CnTA function can be changed by RC-EX3.

	Normal operation (Factory default)		Operation permission/prohibition mode "Valid" (Local setting)	
CnT-6 or CnTA	ON	OFF	ON	OFF
	Operation	Stop	Operation permission*1	Operation prohibition (Unit stops)

*1 **Only the "LEVEL INPUT" is acceptable for external input**, however when the indoor function setting of "Level input (Factory default)" or "Pulse input" is selected by the function for "External input" of the wired remote control, operation status will be changed as follows.

In case of "Level input" setting	In case of "Pulse input" setting
Unit operation from the wired remote control becomes available*(1)	Unit starts operation *(2)

*(1) In case that "Operation permission/prohibition mode" setting is "Valid" and "External input" setting is "Level input (Factory default)";

① When card key switch is ON (CnT-6 or CnTA ON: Operation permission), start/stop operation of the unit from the wired remote control becomes available.

② When card key switch is OFF (CnT-6 or CnTA OFF: Operation prohibition), the unit stops operation in conjunction with OFF signal, and start/stop operation of the unit from the wired remote control becomes unavailable.

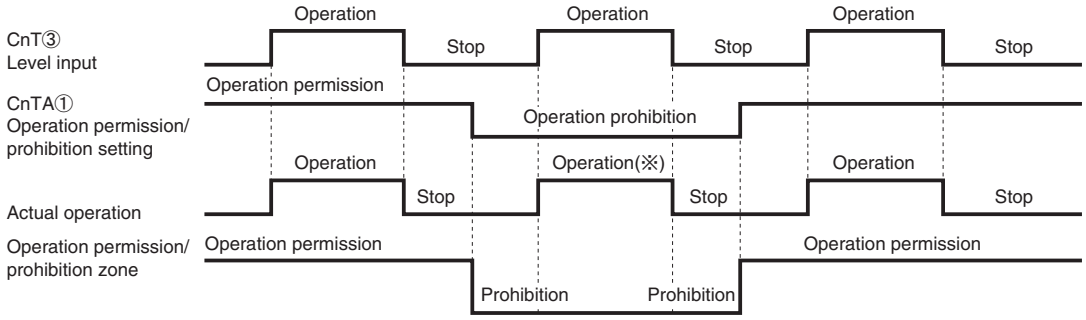
*(2) In case that "Operation permission/prohibition mode" setting is "Valid" and "External input" setting is "Pulse input (Local setting)";

① When card key switch is ON (Operation permission), the unit starts operation in conjunction with ON signal. and also start/stop operation of the unit from the wired remote control becomes available.

② When card key switch is OFF (Operation prohibition), the unit stops operation in conjunction with OFF signal, and start/stop operation of the unit from the wired remote control becomes unavailable.

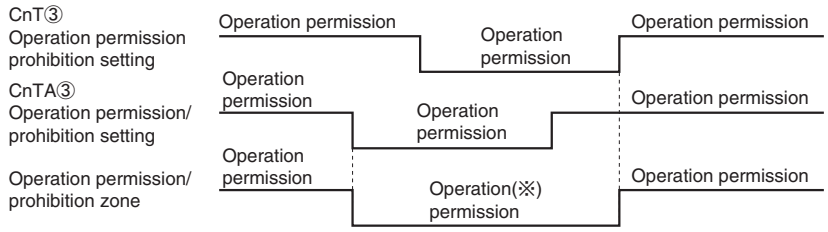
(3) This function is invalid only at "Center mode" setting done by central control.

(a) In case of CnT ③ Operation stop level > CnTA ① Operation permission/prohibition level



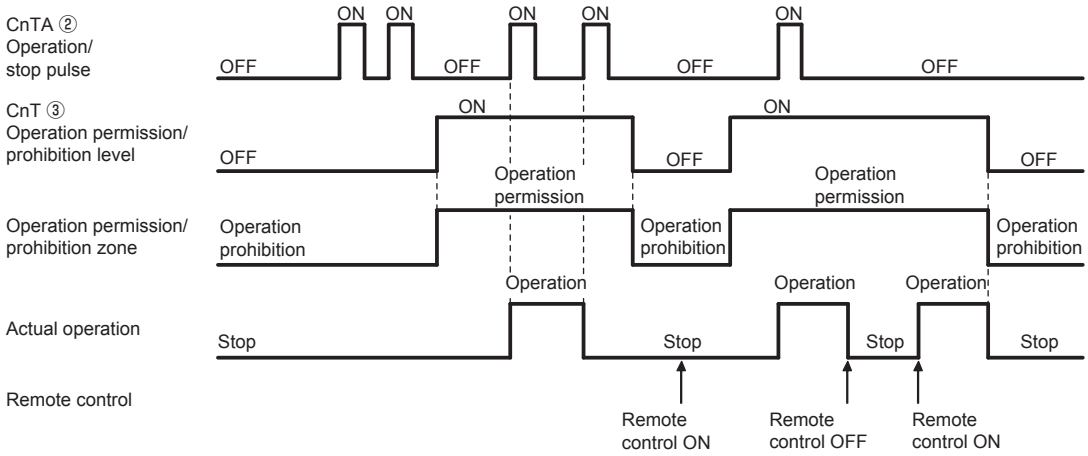
(※) CnT level input supersedes CnTA operation prohibition.

(b) In case of CnT ③ operation permission/prohibition level + CnTA ③ operation permission/prohibition level



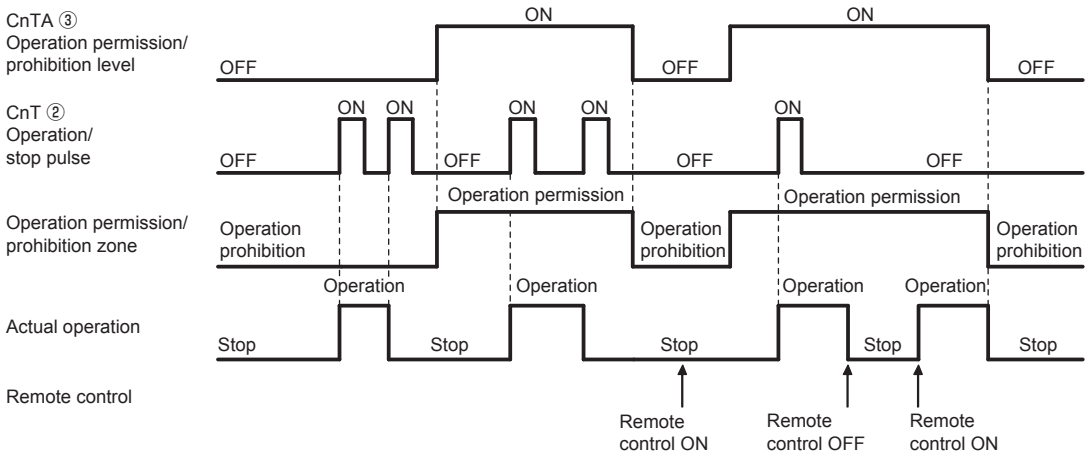
(※) Operation prohibition zone is determined by the OR judgment between CnT operation prohibition zone and CnTA operation prohibition zone.

(c) In case of CnT ③ operation permission/prohibition level > CnTA ② operation/stop pulse



Note (1) If it is prohibited by CnT, all "Operation" and "Stop" commands are not accepted.

(d) In case of CnT ② operation/stop pulse + CnTA ③ operation permission/prohibition level

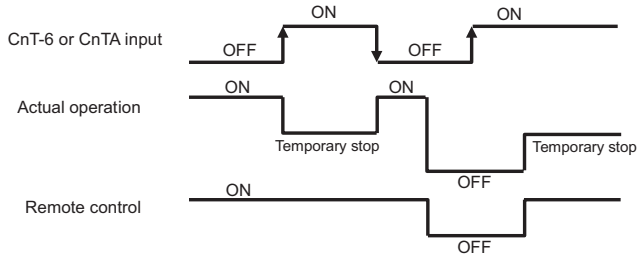


(23) Temporary stop input

In case of temporary stop, operation lamp of remote control lights, but indoor/outdoor unit stop the operation.

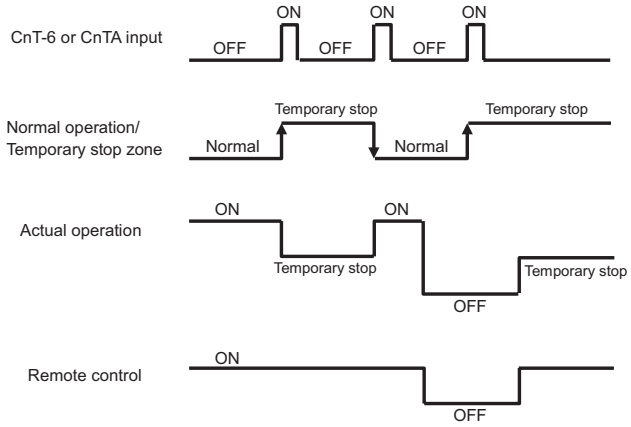
(a) In case of "level input" setting (Factory default)

Input signal to CnT-6 or CnTA is OFF → ON : Temporary stop
Input signal to CnT-6 or CnTA is OFF → ON : Normal operation



(b) In case of "pulse input" setting (Local setting)

It is effective only when the input signal is changed OFF→ON, and "temporary stop/normal operation" is inverted.



(24) Selection of cooling/heating external input function

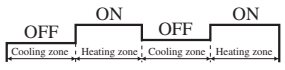
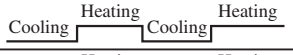
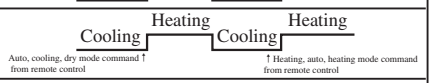
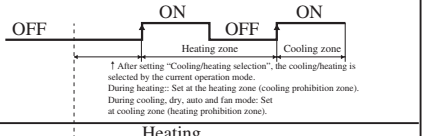
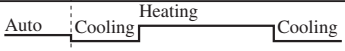
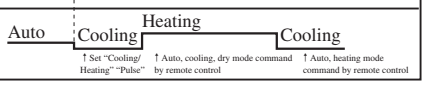
(a) When "External input 1 setting: Cooling/heating" is set by the indoor unit function from remote control, the cooling or heating is selected with CnT-6 or CnTA.

(b) When the external input 1 method selection: Level input is set by the indoor unit function:
・CnT-6 or CnTA: OPEN → Cooling operation mode
・CnT-6 or CnTA: CLOSE → Heating operation mode

(c) When the external input 1 method selection: Pulse input is set by the indoor unit function:
If the external input is changed OPEN → CLOSE, operation modes are inverted (Cooling → Heating or Heating → Cooling).

(d) If the cooling/heating selection signal is given by the external input, the operation mode is transmitted to the remote control.

■ Selection of cooling/heating external input function

External input selection	External input method	Operation	
External input selection Cooling/heating selection	⑤ Level	External terminal input (CnT or CnTA)	
		Cooling/heating	
		Cooling/heating (Competitive)	
	⑥ Pulse	External terminal input (CnT or CnTA)	
		Cooling/heating	
		Cooling/heating (Competitive)	

Note (1) Regarding the priority order for combinations of CnT and CnTA, refer to Page 275.

(25) Fan control at heating startup

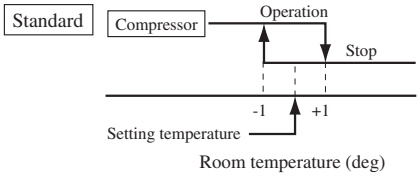
(a) Starting conditions
At the start of heating operation, if the difference of setting temperature and return air temperature is 5°C or higher after the end of hot start control, this control is performed.

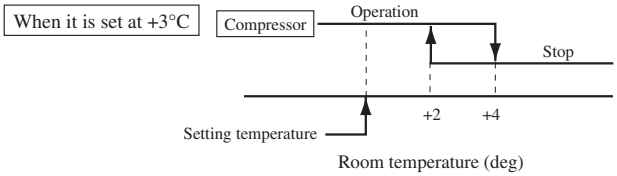
(b) Contents of control
(i) Sampling is made at each minute and, when the indoor unit heat exchanger temperature (detected with Thi-R) is 37°C or higher, present number of revolutions of indoor unit fan speed is increased by 10 min^{-1}.
(ii) If the indoor unit heat exchanger temperature drops below 37°C at next sampling, present number of revolutions of indoor unit fan speed is reduced by 10 min^{-1}.

(c) Ending conditions
Indoor fan speed is reduced to the setting airflow volume when the compressor OFF is established and at 30 minutes after the start of heating operation.

(26) Room temperature detection temperature compensation during heating

With the standard specification, the compressor is turned ON/OFF with the thermostat setting temperature. When the thermostat is likely to turn OFF earlier because the unit is installed at the ceiling where warm air tends to accumulate, the setting can be changed with the wired remote control indoor unit function "SP OFFSET". The compressor and the heater are turned ON/OFF at one of the setting temperature +3, +2 or +1°C in order to improve the feeling of heating. The setting temperature, however, has the upper limit of 30°C.





(27) Return air temperature compensation

This is the function to compensate the deviation between the detection temperature by the return air temperature thermistor and the measured temperature after installing the unit.

(a) It is adjustable in the unit of 0.5°C with the wired remote control indoor unit function "RETURN AIR TEMP".
• +1.0°C, +1.5°C, +2.0°C • -1.0°C, -1.5°C, -2.0°C

(b) Compensated temperature is transmitted to the remote control and the compressor to control them.
Note (1) The detection temperature compensation is effective on the indoor unit thermistor only.

(28) High power operation (RC-EX3 only)

It operates at with the set temperature. fixed at 16°C for cooling, 30°C for heating and maximum indoor fan speed for 15 minutes maximum.

(29) Energy-saving operation (RC-EX3 only)

It operates with the setting temperature fixed at 28°C for cooling, 22°C for heating or 25°C for auto. When fan control in cooling/heating thermo-OFF setting is "Set fan speed", fan speed during thermo-OFF is changed to "Low"(Maximum capacity is restricted at 80%.)

(30) Warm-up control (RC-EX3 only)

Operation will be started 5 to 60 minutes before use according to the forecast made by the microcomputer which calculates when the operation should be started in order to warm up the indoor temperature near the setting temperature at the setting time of operation start.

(31) Home leave mode (RC-EX3 only)

When the unit is not used for a long period of time, the room temperature is maintained at a moderate level, avoiding extremely hot or cool temperature.

(a) Cooling or heating is operated according to the outdoor temperature (factory setting 35°C for cooling, 0°C for heating) and the setting temperature. (factory setting 33°C for cooling, 10°C for heating)

(b) Setting temperature and indoor fan speed can be set by RC-EX3.

(32) Auto temp. setting (RC-EX3 only)

Setting temperature is adjusted automatically at the adequate temperature the center setting temperature. is 24°C by correcting the outdoor air temperature.

(33) Fan circulator operation (RC-EX3 only)

When the fan is used for circulation, the unit is operated as follows depending on the setting with the remote control.

(a) If the invalid is selected with the remote control, the fan is operated continuously during the fan operation. (mormal fan mode)

(b) If the valid is selected with the remote control, the fan is operated or stopped when on the difference of the remote control temperature sensor and the return air temperature sensor becomes bigger than 3°C.

(34) The operation judgment is executed every 5 minutes (RC-EX3 only)

Setting temperature Ts is changed according to outdoor temperature

This control is valid with cooling and heating mode. (Not auto mode)

(a) Operate 5 minutes forcedly.

(b) Setting temperature is adjusted every 10 minutes.

(i) Cooling mode.
Ts = outdoor temperature − offset value

(ii) Heating mode.
Ts = outdoor temperature − offset value

(c) If the return air temperature lower than 18°C in cooling or return air temperature becomes higher than 25°C in heating, unit goes thermostat OFF.

(35) Auto fan speed control (RC-EX3 only)

In order to reach the room temperature to the set temperature as quickly as possible, the air flow rate is increased when the set temperature of thermostat differs largely from the return air temperature. According to temperature difference between set temperature and return air temperature, indoor fan tap are controlled automalically.

・Auto 1: Changes the indoor fan tap within the range of Hi ↔ Me ↔ Lo.

・Auto 2: Changes the indoor fan tap within the range of PHi ↔ Hi ↔ Me ↔ Lo.

(36) IU overload alarm (RC-EX3 only)

If the following condition is satisfied at 30 minutes after starting operation, RC-EX3 shows maintenance code "M07" and the signal is transmitted to the external output (CnT-2-5).

・Cooling, Dry, Auto(Cooling) : Indoor air temperature = Set room temperature by remote control + Alarm temperature difference

・Heating, Auto(Heating) : Indoor air temperature = Set room temperature by remote control - Alarm temperature difference

Alarm temperature difference is selectable between 5 to 10°C.

If the following condition is satisfied or unit is stopped, the signal is disappeared.

・Cooling, Dry, Auto(Cooling) : Indoor air temperature = Set room temperature + Alarm temperature difference -2°C

・Heating, Auto(Heating) : Indoor air temperature = Set room temperature - Alarm temperature difference +2°C

(37) Peak-cut timer (RC-EX3 only)

Power consumption can be reduced by restricting the maximum capacity.

Set the [Start time], the [End time] and the capacity limit % (Peak-cut %).

・4-operation patterns per day can be set at maximum.

・The setting time can be changed by 5-minutes interval.

・The selectable range of capacity limit % (Peak-cut %) is from 0% to 40-80% (20% interval).

・Holiday setting is available.

(Ⅱ) SRK series

(1) Unit ON/OFF button

When the wireless remote control batteries become weak, or if the wireless remote control is lost or malfunctioning, this button may be used to turn the unit on and off.

(a) Operation

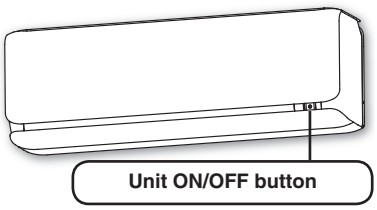
Push the button once to place the unit in the automatic mode. Push it once more to turn the unit off.

(b) Details of operation

The unit will go into the automatic mode in which it automatically determines, from room temperature (as detected by sensor), whether to go into the COOL, DRY or HEAT modes.

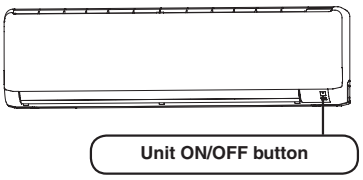
(i) SRK-ZSX series

Function / Operation mode	Room temperature setting	Fan speed	Flap/Louver	Timer switch
Cooling	About 24ºC	Auto	Auto	Continuous
DRY	About 25ºC			
Heating	About 26ºC			



(ii) SRK-ZR series

Function / Operation mode	Roon temperature setting	Fan speed	Swing contral	Timer switch
Cooling	About 24ºC	Auto	Auto	Continuous
DRY				
Heating				



(2) Auto restart function

(a) Auto restart function records the operational status of the air-conditioner immediately prior to be switched off by a power cut, and then automatically resumes operations after the power has been restored.

(b) The following settings will be cancelled:

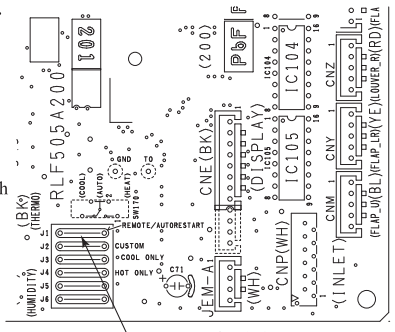
(i) Timer settings

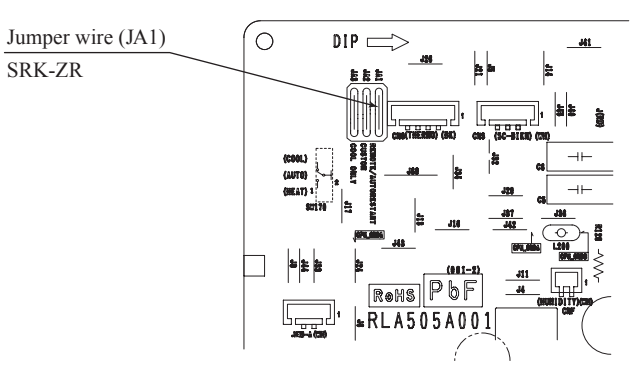
(ii) HIGH POWER operation (Only SRK-ZSX series)

Notes (1) Auto restart function is set at on when the air-conditioner is shipped from the factory. Consult with your dealer if this function needs to be switched off.

(2) When power failure ocurrs, the timer setting is cancelled. Once power is resumed, reset the timer.

(3) If the jumper wire (J1 : SRK-ZSX, JA1:SRK-ZR) “AUTO RESTART” is cut, auto restart is disabled. (See the diagram at right)





(3) Auto swing control

Note Even if [Auto Swing] is selected, the louver position with anti draft function is fixed to position 1.

(a) RC-EX3

(i) Louver control

1) To operate the swing louver when the air-conditioner is operating, press the "Direction" button on the TOP screen of remote control. The wind direction select screen will be displayed.
2) To swing the louver, touch the "Auto swing" button. The lover will move up and down. To fix the swing louver at a position, touch one of [1] - [4] buttons. The swing lover will stop at the selected position.
3) Louver operation at the power on with a unit having the louver 4-position control function
   The louver swings one time automatically (without operating the remote control) at the power on.
   This allows the microcomputer recognizing and inputting the louver motor (LM) position.

(ii) Automatic louver level setting during heating

At the hot start and the heating thermostat OFF, regardless whether the auto swing switch is operated or not (auto swing or louver stop), the louver takes the level position (in order to prevent blowing of cool wind). The louver position display LCD continues to show the display which has been shown before entering this control.

(iii) Louver free stop control

If you touch the "Menu" → "Service setting" → "R/C settings" buttons one after another on the TOP screen of remote control, the "Flap control" screen is displayed. If the free stop is selected on this screen, the louver motor stops upon receipt of the stop signal from the remote control. If the auto swing signal is received from the remote control, the auto swing will start from the position before the stop.

(b) RC-E5

(i) Louver control

1) Press the "LOUVER" button to operate the swing louver when the air-conditioner is operating.
   "SWING" is displayed for 3 seconds and then the swing louver moves up and down continuously.
2) To fix the swing louver at a position, press one time the "LOUVER" button while the swing louver is moving so that four stop positions are displayed one after another per second.
   When a desired stop position is displayed, press the "LOUVER" button again. The display stops, changes to show the "STOP 1" for 5 seconds and then the swing louver stops.
3) Louver operation at the power on with a unit having the louver 4-position control function
   The louver swings one time automatically (without operating the remote control) at the power on.
   This allows inputting the louver motor (LM) position, which is necessary for the microcomputer to recognize the louver position.

   Note (1) If you press the "LOUVER" button, the swing motion is displayed on the louver position LCD for 10 second. The display changes to the "SWING" display 3 seconds later.

(ii) Automatic louver level setting during heating

At the hot start with the heating thermostat OFF, regardless whether the auto swing switch is operated or not (auto swing or louver stop), the louver takes the level position (In order to prevent the cold start). The louver position display LCD continues to show the display which has been shown before entering this control.

(iii) Louver free stop control

When the louver-free stop has been selected with the indoor function of wired remote control "POSITION", the louver motor stops when it receives the stop signal from the remote control. If the auto swing signal is received from the remote control, the auto swing will start from the position where it was before the stop.

Note (1) When the indoor function of wired remote control "POSITION" has been switched, switch also the remote control function "POSITION" in the same way.

(4) Timer operation

(a) RC-EX3

(i) Sleep timer

Set the time from the start to stop of operation. The time can be selected in the range from 30 to 240 minutes (in the unit of 10-minute).

Note (1) Enable the "Sleep timer" setting from the remote control. If the setting is enabled, the timer operates at every time.

(ii) Set OFF timer by hour

Set the time to stop the unit after operation, in the range from 1 to 12 hours (in the unit of hour).

(iii) Set ON timer by hour

Set the time to start the unit after the stop of operation, in the range from 1 to 12 hours (in the unit of hour). It is allowed also to set simultaneously the indoor temperature, operation mode, air flow rate and warm-up enabled/disabled.

(iv) Set ON timer by clock

Set the time to start operation. The time can be set in the unit of 5-minute. This setting can be activated only once or at every time. It is allowed also to set simultaneously the indoor temperature, operation mode, air flow rate and warm-up enabled/disabled.

Note (1) It is necessary to set the clock to use this timer.

(v) Set OFF timer by clock

Set the time to stop operation. The time can be set in the unit of 5-minute. This setting can be activated only once or at every time.

Note (1) It is necessary to set the clock to use this timer.

(vi) Weekly timer

Set the ON or OFF timer for a week. Up to 8 patterns can be set for a day. The day-off setting is provided for holidays and non-business days.

Note (1) It is necessary to set the clock to use the weekly timer.

(vii) **Combination of patterns which can be set for the timer operations**

	Sleep time	Set OFF timer by hour	Set ON timer by hour	Set OFF timer by clock	Set ON timer by clock	Weekly timer
Sleep time		×	×	○	○	○
Set OFF timer by hour	×		×	×	×	×
Set ON timer by hour	×	×		×	×	×
Set OFF timer by clock	○	×	×		○	×
Set ON timer by clock	○	×	×	○		×
Weekly timer	○	×	×	×	×	

Note (1) ○: Allowed ×: Not

(b) RC-E5

(i) Sleep timer

Set the duration of time from the present to the time to turn off the air-conditioner.

It can be selected from 10 steps in the range from "OFF 1 hour later" to "OFF 10 hours later". After the sleep timer setting, the remaining time is displayed with progress of time in the unit of hour.

(ii) OFF timer

Time to turn OFF the air-conditioner can be set in the unit of 10 minutes.

(iii) ON timer

Time to turn ON the air-conditioner can be set. Indoor temperature can be set simultaneously.

(iv) Weekly timer

Timer operation (ON timer, OFF timer) can be set up to 4 times a day for each weekday.

(v) Timer operations which can be set in combination

Item / Item	Timer	OFF timer	ON timer	Weekly timer
Timer		×	○	×
OFF timer	×		○	×
ON timer	○	○		×
Weekly timer	×	×	×	

Notes (1) ○: Allowed ×: Not

(2) Since the ON timer, sleep timer and OFF timer are set in parallel, when the times to turn ON and OFF the air-conditioner are duplicated, the setting of the OFF timer has priority.

(5) Remote control display during the operation stop

When the operation is stopped (the power source is turned ON), it displays preferentially the "Room temperature", "Center/ Remote", "Filter sign", "Inspection" and "Timer operation".

(6) Outline of heating or cooling operation

(a) Operation of major functional components in heating mode

	Heating		
	Thermostat ON	**Thermostat OFF**	**Failure**
Compressor	ON	OFF	OFF
Indoor fan	ON	ON(HOT KEEP)	OFF
Outdoor fan	ON	OFF (few minutes ON)	OFF
4-way valve	ON	ON	OFF (3 minutes ON)

(b) Operation of major functional components in Cooling mode

	Cooling		
	Thermostat ON	**Thermostat OFF**	**Failure**
Compressor	ON	OFF	OFF
Indoor fan	ON	ON	OFF
Outdoor fan	ON	OFF (few minutes ON)	OFF (few minutes ON)
4-way valve	OFF	OFF	OFF

(7) Indoor fan motor protection

When the air-conditioner is operating and the indoor fan motor is turned ON, if the indoor fan motor has operated at 300 min^{-1} or under for more than 30 seconds, the unit enters first in the stop mode and then stops the entire system.

(8) Serial signal transmission error protection (Only SRK-ZSX series)

(a) Purpose:

Prevents malfunction resulting from error on the indoor ↔ outdoor signals.

(b) Detail of operation:

If the compressor is operating and a serial signal cannot be received from the indoor control with outdoor control having serial signals continues for 7 minute and 35 seconds, the compressor is stopped. After the compressor has been stopped, it will be restarted after the compressor start delay if a serial signal can be received again from the indoor control.

(9) Plural unit control – Control of 16 units group by one remote control

(a) Function

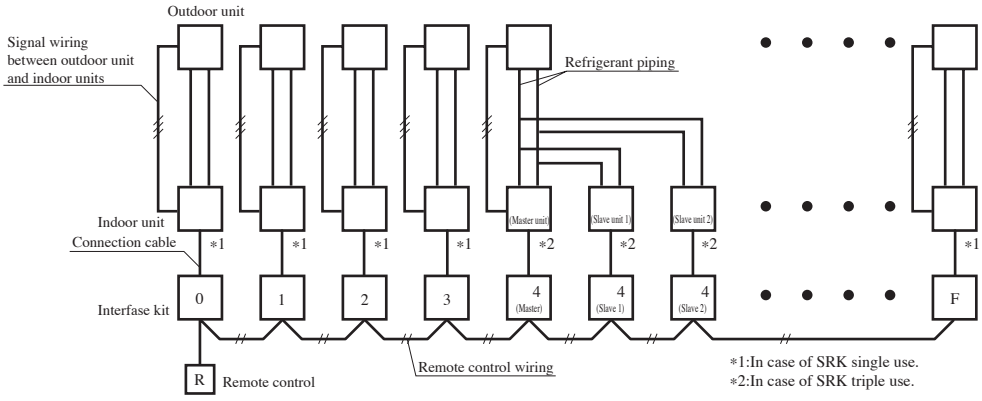
One remote control switch can control a group of multiple number of unit (Max. 16 indoor units). "Operation mode" which is set by the remote control switch can operate or stop all units in the group one after another in the order of unit No.(1). Thermostat and protective function of each unit function independently.

Note (1) Unit No. is set by SW1 on the interface PCB. Unit No. setting by SW1 is necessary for the interface only. In cases of the twin and triple specification, it is necessary set for the master and the slave units. This can be selected by SW3. (All are set for the master unit at the shipping from factory.)

SW1: For setting of 0 – 9, A – F
SW3: For setting of master and slave units
(See table shown at right.)

SW3 setting (For interface PCB)

Switch / Unit	SW3-1	SW3-2
Master	OFF	OFF
Slave1	OFF	ON
Slave2	ON	OFF



(2) Unit No. may be set at random unless duplicated, it should be better to set orderly like 0, 1, 2…, F to avoid mistake.

(b) Display to the remote control

(i) Central or each remote control basis, heating preparation: the youngest unit No. among the operating units in the remote mode (or the center mode unless the remote mode is available) is displayed.

(ii) Inspection display, filter sign: Any of unit that starts initially is displayed.

(iii) Confirmation of connected units

1) In case of RC-EX3 remote control

If you touch the buttons in the order of "Menu" → "Service setting" → "Service & Maintenance" → "IU address" on the TOP screen of remote control, the indoor units which are connected are displayed.

2) In case of RC-E5 remote control

Pressing "AIR CON No." button on the remote control displays the indoor unit address. If "▲" "▼" button is pressed at the next, it is displayed orderly starting from the unit of youngest No.

(c) In case of anomaly

i) If any anomaly occurs on a unit in a group (a protective function operates), that unit stops with the anomalous stop but any other normal units continue to run as they are.

ii) Signal wiring procedure

Signal wiring between indoor and outdoor units should be made on each unit same as the normal wiring. For the group control, lay connect with sires wiring between rooms using terminal blocks (X, Y) of interface kit.

Connect the remote control communication wire separately from the power supply wire or wires of other electric devices (AC220V or higher).

(10) Filter sign

As the operation time (Total ON time of ON/OFF switch) accumulates to 180 hours (1), "Filter cleaning" is displayed on the remote control. (This is displayed when the unit is in trouble and under the centralized control, regardless of ON/OFF)

Note (1)Time setting for the filter sign can be made as shown below using the indoor function of wired remote control "FILTER SIGN SET". (It is set at 1 at the shipping from factory.)

Filter sign setting	Function
Setting 1	Setting time: 180 hrs (Factory default)
Setting 2	Setting time: 600 hrs
Setting 3	Setting time: 1,000 hrs
Setting 4	Setting time: 1,000 hrs (Unit stop) (2)

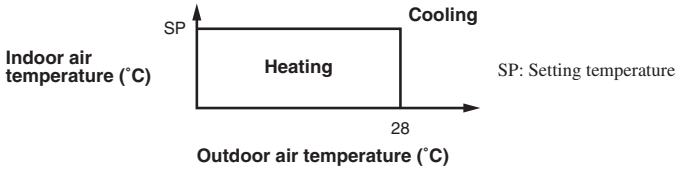
(2) After the setting time has elapsed, the "FILTER CLEANING" is displayed and, after operating for 24 hours further (counted also during the stop), the unit stops.

(11) Outline of automatic operation

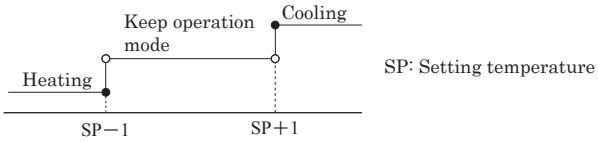
(a) SRK-ZSX series

(i) Determination of operation mode

Operation mode is determined by indoor air temperature and outdoor air temperature as following.



(ii) Operation mode is changes when keep cooling and heating thermostat off 20 minutes and be satisfied following conditions. If the setting temperature is changed with the remote control, the operation mode is judged immediately.



※It can not be changed to heating mode if outdoor air temperature is 28℃ or higher.

(iii) When the unit is started again within one hour after the stop of automatic operation or when the automatic operation is selected during heating, cooling or dehumidifying operation, the unit is operated in the previous operation mode.

(iv) Setting temperature can be adjusted within the following range. There is the relationship as shown below between the signals of the wireless remote control and the setting temperature.

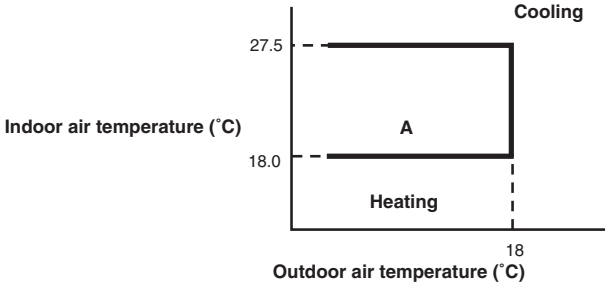
Unit : ℃

		Signals of wireless remote control (Display)												
		18	19	20	21	22	23	24	25	26	27	28	29	30
Setting temperature	Cooling	18	19	20	21	22	23	24	25	26	27	28	29	30
	Heating	18	19	20	21	22	23	24	25	26	27	28	29	30

(b) SRK-ZR series

(i) Determination of operation mode

The unit checks the indoor air temperature and the outdoor air temperature, determines the operation mode, and then begins in the automatic operation.



(ii) The unit checks the temperature every hour after the start of operation and, if the result of check is not same as the previous operation mode, changes the operation mode.

1) If the setting temperature is changed with the remote control, the operation mode is judged immediately.
2) When both the indoor and the outdoor air temperatures are in the range "A", cooling or heating is switched depending on the difference between the setting temperature and the indoor air temperature.
3) When the operation mode has been judged following the change of setting temperature with the remote control, the hourly judgment of operation mode is cancelled.

(iii) When the unit is started again within one hour after the stop of automatic operation or when the automatic operation is selected during heating or cooling operation, the unit is operated in the previous operation mode.

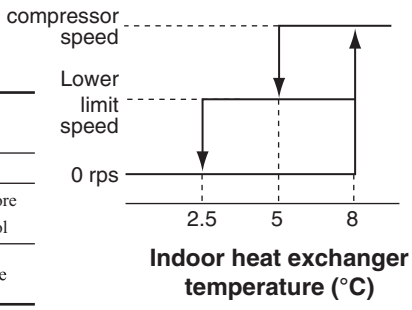
(12) Frost prevention control (During cooling or dehumidifying)

(a) SRK-ZSX series

(i) Operating conditions

1) Indoor heat exchanger temperature (Th2) is lower than 5ºC.

2) 5 minutes after reaching the compressor speed except 0 rps.



(ii) Detail of anti-frost operation

Item \ Indoor heat exchanger temperature	5°C or lower	2.5°C or lower
Lower limit of compressor command speed	25 rps	0 rps
Indoor fan	Depends on operation mode	Keep the fan speed before frost prevention control
Outdoor fan	Depends on compressor speed	Depends on stop mode
4-way valve	OFF	

Notes (1) When the indoor heat exchanger temperature is in the range of 2.5–5ºC, the speed is reduced by 4 rps at each 20 seconds.
(2) When the temperature is lower than 2.5ºC, the compressor is stopped.
(3) When the indoor heat exchanger temperature is in the range of 5–8ºC, the compressor speed is been maintained.

(iii) Reset conditions

When either of the following condition is satisfied.

1) The indoor heat exchanger temperature (Th2) is 8ºC or highe

2) The compressor speed is 0 rps.

(b) SRK-ZR series

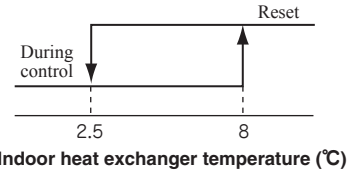
(i) Operating conditions

1) More than 8 minutes after starting the compressor.

2) Indoor heat exchanger temperature (detected with Th2) is lower than 2.5℃.

(ii) Contents of frosting operation

	During this control	Reset
Compressor ON/OFF command	Forced stop	Operation command
Indoor fan motor	Depending on the air flow setting with the remote control	



(iii) Resetting condition: Indoor heat exchanger temperature (Th2) is higher than 8℃.

(13) Dew prevention control (During cooling or dehumidifying)

(a) SRK-ZSX series

Prevents dewing on the indoor unit.

(i) Operating conditions

When the following conditions have been satisfied for more than 30 minutes after starting operation

1) Compressor's speed is 22 rps or higher.

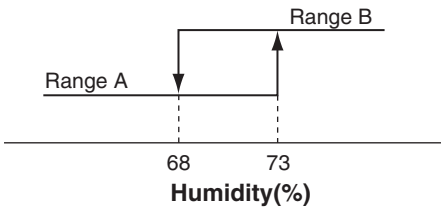
2) Detected value of humidity is 68% or higher.

(ii) Contents of operation

1) Air capacity control

Item \ Model			SRK50, 60ZSX-S
Twin type	ULO	Upper limit of compressor's speed	RangeA: 30 rps, RangeB: 24 rps
		Indoor fan	4th speed
	AUTO, LO	Upper limit of compressor's speed	RangeA: 40 rps, RangeB: 24 rps
		Indoor fan	Adaptable to compressor speed
	ME	Upper limit of compressor's speed	RangeA: 50 rps, RangeB: 30 rps
		Indoor fan	Adaptable to compressor speed
	HI	Upper limit of compressor's speed	RangeA: 50 rps, RangeB: 30 rps
		Indoor fan	Adaptable to compressor speed
Triple type	ULO	Upper limit of compressor's speed	RangeA: 30 rps, RangeB: 24 rps
		Indoor fan	4th speed
	AUTO, LO	Upper limit of compressor's speed	RangeA: 50 rps, RangeB: 24 rps
		Indoor fan	Adaptable to compressor speed
	ME	Upper limit of compressor's speed	RangeA: 50 rps, RangeB: 30 rps
		Indoor fan	Adaptable to compressor speed
	HI	Upper limit of compressor's speed	RangeA: 70 rps, RangeB: 30 rps
		Indoor fan	Adaptable to compressor speed

Note (1) Ranges A and B are as shown below.



2) When this control has continued for more than 30 minutes continuously,the following wind direction control is performed.

a) When the vertical wind direction is set at other than the vertical swing,the flaps change to the horizontal position.

b) When the horizontal wind direction is set at other than the horizontal swing,the louver changes to the vertical position.

(iii) Reset condition

Humidity is less than 63%.

(b) SRK-ZR series

(i) Operating conditions: When the following conditions have been satisfied for more than 30 minutes after starting operation

1) Compressor's command speed is 20 rps or higher.

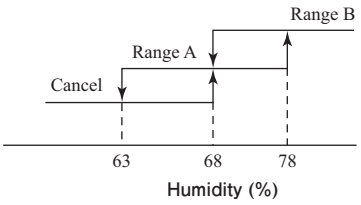
2) Detected value of humidity is 68% or higher.

(ii) Contents of operation

1) Air capacity control

Item \ Model	SRK100ZR-S
Upper limit of compressor's command speed (1)	Range A: As per following table, Range B: 40 rps

Note (1) Ranges A and B are as shown below.



● Condition for range A
Compressor's command speed is controlled according to the indoor unit heat exchanger temperature (Th2) and the indoor unit room temperature (Th1).

Condition	Compressor's command speed
Th2 ≦ Th1−10	・Decreases the compressor's target max speed by 4 rps. ・If the condition is met still 20 seconds later, the speed is decreased further by 4 rps. This process is repeated further so far as the condition is satisfied. 〔Lower limit is 20 rps.〕
Th1−10 < Th2 ≦ Th1−6	Compressor's target max. speed or changed value of the same is maintained.
Th2−6 < Th1	Changed compressor's target max. speed is increased at a rate of 1 rps/20 seconds.

2) When this control has continued for more than 30 minutes continuously, the following wind direction control is performed.

When the vertical wind direction is set at other than the vertical swing, the flaps change to the horizontal position.

(iii) Reset conditions: When either of the following conditions is satisfied.

1) Compressor's command speed is less than 20 rps.

2) Detected value of humidity is less than 63%.

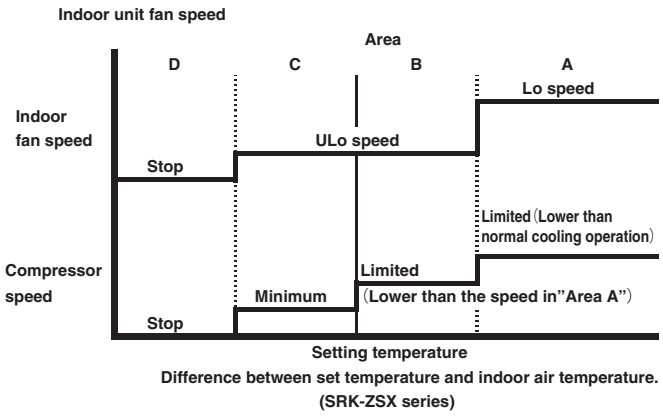
(14) Outline of dehumidifying (DRY) operation

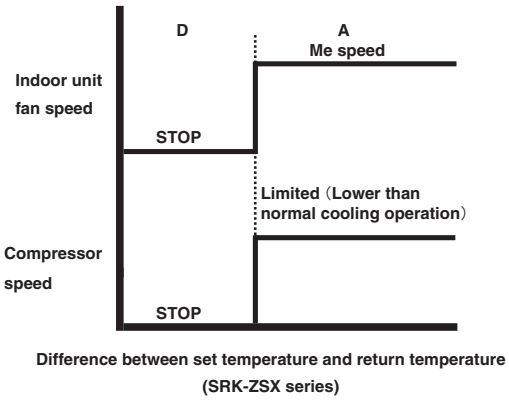
(a) Purpose of DRY mode

The purpose is "Dehumidification", and not to control the humidity to the target condition.
Indoor/outdoor unit control the operation condition to reduce the humidity, and also prevent over cooling.

(b) Outline of control

(i) Indoor unit fan speed and compressor are controlled by the area which is selected by the temperature difference.





(ii) The indoor unit check the current area by every 5 minutes, and operate by the next checking.

1.11.4 Operation control function by the outdoor control

(1) Determination of compressor speed (frequency)

Required frequency

(a) Cooling/dehumidifying operation

Unit: rps

Model			100	125	140
Max. required frequency	Usual operation		90	105	105
	Silent mode, outdoor temperature ≦ 15°C	SW7-3 OFF	60	80	85
		SW7-3 ON	47	50	53
Min. required frequency			15	15	15

(b) Heating operation

Unit: rps

Model			100	125	140
Max. required frequency	Usual operation		90	105	110
	Silent mode	SW7-3 OFF	60	80	85
		SW7-3 ON	47	50	53
Min. required frequency			15	15	15

(c) If the indoor unit fan speed becomes "Me" or "Lo", Max required frequentcy goes down accordingly depending on indoor unit model.

(d) Max. required frequency under high outdoor air temperature in cooling mode

Maximum required frequency is selected according to the outdoor air temperature (Tho-A).

Unit: rps

Model		100	125	140
Max. required frequency	Outdoor air temperature is 40°C or higher	75	90	96
	Outdoor air temperature is 46°C or higher	75	75	75

(e) Max. required frequency under outdoor air temperature in heating mode

Maximum required frequency is selected according to the outdoor air temperature (Tho-A).

Unit: rps

Model		100	125	140
Max. required frequency	Outdoor air temperature is 18°C or higher	60	80	85

(f) Selection of max. required frequency by heat exchanger temperature

1) Maximum required frequency is selected according to the outdoor unit heat exchanger temperature (Tho-R) during cooling/dehumidifying or according to the indoor unit heat exchanger temperature (Thi-R) during heating mode.

2) When there are 3 indoor unit heat exchanger temperatures (Thi-R), whichever the highest applies.

Unit: rps

Model			100	125	140
Max. required frequency	Cooling/ dehumidifying	Outdoor unit heat exchanger temperature is 56°C or higher	90	100	100
	Heating	Indoor unit heat exchanger temperature is 56°C or higher	90	100	100

(g) When any of the controls from (a) to (f) above may duplicate, whichever the smallest value among duplicated controls is taken as the maximum required frequency.

(h) During heating, it is operated with the maximum required frequency until the indoor unit heat exchanger temperature becomes 40°C or higher.

(2) Compressor start control

(a) Compressor starts upon receipt of the thermostat ON signal from the indoor unit.

(b) However, at initial start after turning the power source breaker, it may enter the standby state for maximum 30 minutes ("✋ PREPARATION" is displayed on the remote control) in order to prevent the oil loss in the compressor.

If the cooling/dehumidifying/heating operation is selected from the remote control when the outdoor unit is in the standby state, "✋ PREPARATION" is displayed for 3 seconds on the remote control.

(3) Compressor soft start control

(a) Compressor protection start I

[Control condition] Normally, the compressor operation frequency is raised in this start pattern.

[Control contents] a) Starts with the compressor's target frequency at **A** rps.
However, when the ambient air temperature (Tho-A) is 35°C or higher during cooling/dehumidifying or the indoor return air temperature (Thi-A) is 25°C or higher during heating, it starts at **C** rps.

b) At 30 seconds after the start of compressor, its target frequency changes to **B** rps and the compressor is operated for 2 - 4 minutes with its operation frequency fixed at **B** rps.

Model	Operation mode	A rps	B rps	C rps
100-140	Cooling/Dehumidifying	55	55	30
	Heating	55	55	30

(b) Compressor protection start III

[Control condition] Number of compressor starts is only 1 counted after the power source breaker ON.

[Control contents] Operates by selecting one of following start patterns according to the operation mode and the outdoor air temperature (Tho-A).

1) Low frequency operation control during cooling/dehumidifying

[Control condition] Upon establishing the conditions of compressor protection start III, the low frequency operation control is performed during cooling/dehumidifying.

[Control contents] ① Starts with the compressor's target frequency at **A** rps. When the outdoor air temperature (Tho-A) is 35°C or higher, it starts at **C** rps.
② At 30 seconds after the compressor start, the compressor's target frequency is changed to **B** rps and the compressor's operation frequency is fixed for 10 minutes.

Model	Operation mode	A rps	B rps	C rps
100-140	Cooling/Dehumidifying	55	55	30

2) Low frequency operation control during heating

[Control condition] When the conditions of compressor protection start III are established and the following condition is satisfied, the low number of revolutions operation control is performed during heating.
① At 30 minutes or more after turning the power source breaker on

[Control contents] ① Starts the compressor with its target frequency at **A** rps. However, when the indoor unit return air temperature (Thi-A) is 25°C or higher, it start at **C** rps.
② At 30 seconds after the start of compressor, the compressor's target frequency is changed to **B** rps and the compressor's operation frequency is fixed for 10 minutes.

Model	Operation mode	A rps	B rps	C rps
100-140	Heating	55	55	30

(4) Outdoor unit fan control

(a) Outdoor unit fan tap and fan motor speed

Unit: min^{-1}

Model	Mode	Fan motor tap						
		① speed	② speed	③ speed	④ speed	⑤ speed	⑥ speed	⑦ speed
100-140	Cooling/Dehumidifying	200	350	600(1)	740	820	870	950
	Heating	200	350	600(1)	740	820	870	950

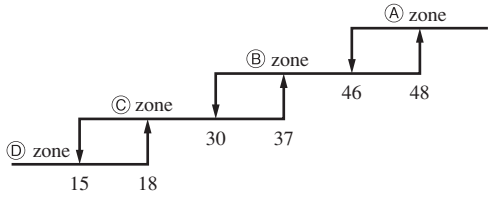
Note (1) If the "silent mode start" signal is received from the remote control, the speed changes from 600 to 500.

(b) Fan tap control during Cooling/Defumidifying operation

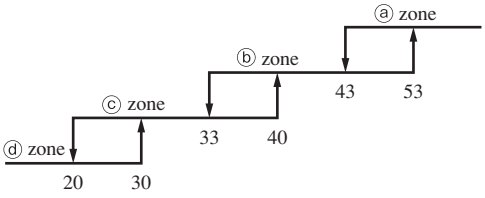
Fan taps are selected depending on the outdoor unit heat exchanger temperature (Tho-R1, R2) and the outdoor air temperature (Tho-A).
Note (1) It is detected by Tho-R1 or R2, whichever the higher.

	Ⓐ zone	Ⓑ zone	Ⓒ zone	Ⓓ zone
ⓐ zone	Tap 5	Tap 5	Tap 5	Tap 4
ⓑ zone	Tap 5	Tap 5	Tap 4(1)	Tap 3
ⓒ zone	Tap 4	Tap 4(1)	Tap 3	Tap 2
ⓓ zone	Tap 3	Tap 3	Tap 2	Tap 1

Note (1) If the "silent mode start" signal is received from the remote control, the speed changes from Tap 4 to Tap 3.



Outdoor air temperature (°C)



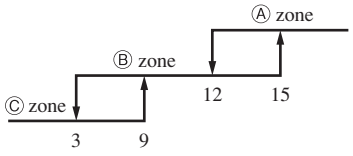
Outdoor unit heat exchanger temperature (°C)

(c) Fan tap control during heating operation

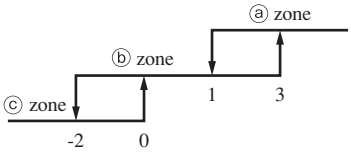
Fan taps are selected depending on the outdoor unit heat exchanger temperature (Tho-R1, R2) and the outdoor air temperature (Tho-A).
Note (1) It is detected by Tho-R1 or R2, whichever the lower.

	Ⓐ zone	Ⓑ zone	Ⓒ zone
ⓐ zone	Tap 3	Tap 3	Tap 4
ⓑ zone	Tap 3	Tap 4(1)	Tap 5
ⓒ zone	Tap 4	Tap 5	Tap 6

Note (1) If the "silent mode start" signal is received from the remote control, the speed changes from Tap 4 to Tap 3.



Outdoor air temperature (°C)

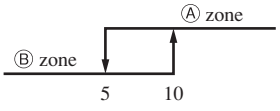


Outdoor unit heat exchanger temperature (°C)

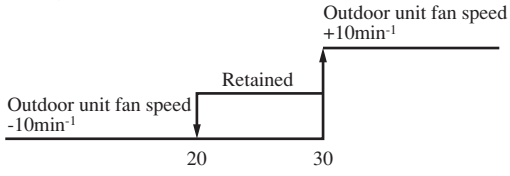
(d) Outdoor unit fan control at cooling low outdoor air

1) When all the following conditions are established after the start of compressor, the following control is implemented. If the outdoor air temperature (Tho-A) is in the zone Ⓑ in the cooling/dehumidifying mode, it has elapsed 20 seconds from the start of outdoor unit fan and the outdoor unit fan is at the tap 1 speed, the outdoor unit fan speed is controlled according to the outdoor unit heat exchanger temperature (Tho-R1, R2).

Note (1) It is detected with Tho-R1 or R2, whichever the higher.



Outdoor air temperature (°C)



Outdoor unit heat exchanger temperature (°C)

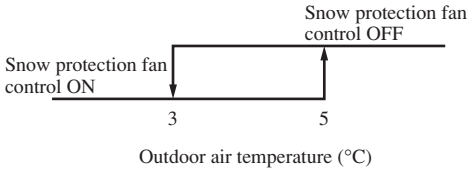
2) The outdoor unit heat exchanger temperature is detected always and, when the number of revolutions of the outdoor fan speed has been increased or decreased, there is no change of fan speed for 20 seconds.
3) Rage of the outdoor unit fan speed under this control is as follows.
   a) Lower limit: 130min^{-1}
   b) Upper limit: 500min^{-1}
4) As any of the following conditions is established, this control terminates.
   a) When the outdoor air temperature is in the zone Ⓐ and the outdoor unit heat exchanger temperature at 30°C or higher is established for 40 seconds or more continuously.
   b) When the outdoor fan speed is 500rpm and the outdoor unit heat exchanger temperature at 30°C or higher is established for 40 seconds or more continuously.
   c) When the outdoor unit heat changer temperature at 45°C or higher is established for 40 seconds or more.

(e) Caution at the outdoor unit fan start control (3 phase models only)

When the outdoor unit fan is running at 400min^{-1} before operating the compressor, it may operate with the compressor only, without starting up the outdoor fan. This is normal.

(f) Snow protection fan control

If the dip switch (SW3-2) on the outdoor unit control PCB is turned ON, the outdoor unit fan is operated for 30 seconds at 4 tap speed once in every 10 minutes depending on the outdoor air temperature (detected with Tho-A) in the stop mode or anomalous stop mode.

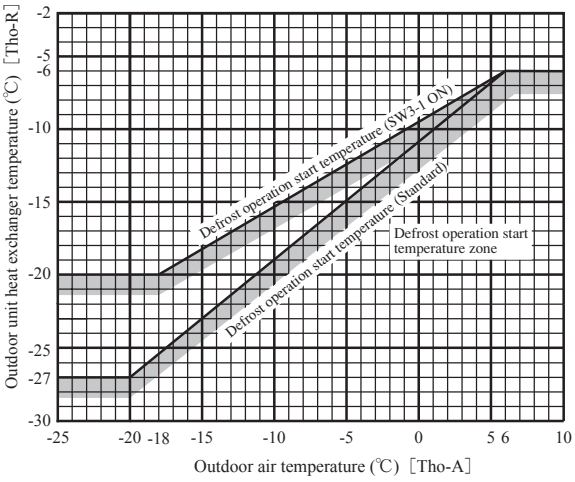


(5) Defrost operation

(a) Starting conditions

If all of the following defrosting conditions A or conditions B are met, the defrost operation starts.

1) Defrost conditions A
   a) Cumulative compressor operation time after the end of defrosting has elapsed 37 minutes, and the cumulative compressor operation time after the start of heating operation (remote control ON) has elapsed 30 minutes.
   b) After 5 minutes from the compressor ON
   c) After 5 minutes from the start of outdoor unit fan
   d) After satisfying all above conditions, if temperatures of the outdoor unit heat exchanger temperature thermistor (Tho-R1, R2) and the outdoor air temperature thermistor (Tho-A) become lower than the defrost operation start temperature as shown by the right figure for 15 seconds continuously.



2) Defrost conditions B
   a) When previous defrost ending condition is the time out of defrost operation and it is in the heating operation after the cumulative compressor operation time after the end of defrost operation has become 30 minutes.
   b) After 5 minutes from the start of compressor
   c) After 5 minutes from the start of outdoor unit fan

(b) Ending conditions

When any of the following conditions is satisfied, the heating operation starts.

1) When it has elapsed 8 minutes and 20 seconds after the start of defrost operation.
2) When the outdoor unit heat exchanger temperatures (Tho-R1, R2), whichever the lower, becomes 7°C or higher for 10 seconds continuously.

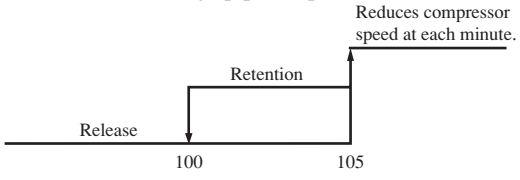
(c) Switching of defrost operation with SW3-1

1) If SW3-1 on the outdoor unit control PCB is turned to ON, it becomes easier to enter the defrost operation. Use this when installing a unit at snowing regions.
2) Control contents
   a) It allows entering the defrost operation under the defrost condition A when the cumulative heating operation time becomes 30 minutes. It is 37 minutes at SW3-1 OFF (Factory default).
   b) It allows entering the defrost operation under the defrost condition B when the cumulative heating operation time becomes 25 minutes. It is 30 minutes at SW3-1 OFF (Factory default).
   c) It allows the defrost operation with the outdoor unit heat exchanger temperature (Tho-R).

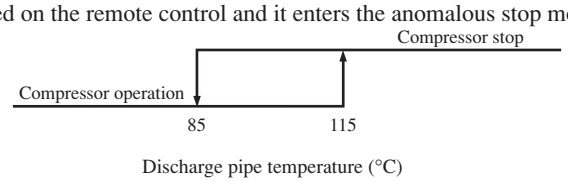
(6) Protective control/anomalous stop control by compressor's number of revolutions

(a) Compressor discharge pipe temperature protection

1) Protective control
As the discharge pipe temperature (detected with Tho-D) exceeds the setting value, the compressor speed (frequency) is controlled to suppress the rise of discharge pipe temperature.



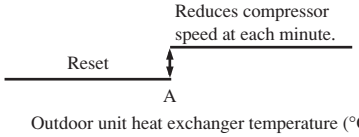
2) Anomalous stop control
   a) If the discharge pipe temperature (detected with Tho-D) exceeds the setting value, the compressor stops.
   b) When it is detected 2 times within 60 minutes or after continuous 60 minutes, including the stop of compressor, E36 is displayed on the remote control and it enters the anomalous stop mode.



3) Reset of anomalous stop mode
As it drops to the reset value of 85°C or lower for 45 minutes continuously, it becomes possible to restart from the remote control.

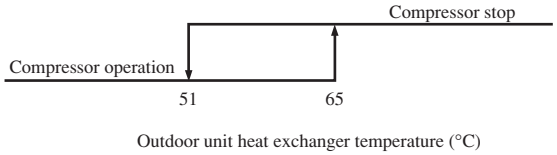
(b) Cooling high pressure protection

1) Protective control
   a) When the outdoor air temperature (Tho-A) is 40°C or higher and the outdoor unit heat exchanger temperature (Tho-R) exceeds the setting value, the compressor speed (frequency) is controlled to suppress the rise of high pressure.
   b) Control value A is updated to an optimum value automatically according to the operating conditions.



Control value A
54-60°C

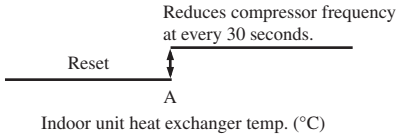
2) Anomalous stop control
   a) As the outdoor unit heat exchanger temperature (Tho-R) exceeds the setting value, the compressor stops.
   b) If it is detected 5 times within 60 minutes or 65°C or higher continues for 60 minutes, including the stop of compressor, E35 is displayed on the remote control and it enters the anomalous stop mode.



3) Reset of anomalous stop mode
As it reaches the reset value of 51°C or lower, it becomes possible to restart from the remote control.

(c) Heating high pressure protection

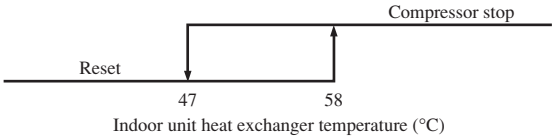
1) Protective control
   a) As the indoor unit heat exchanger temperature (Thi-R) exceeds the setting value, the compressor speed (frequency) is controlled to suppress the rise of high pressure.
   b) Control value A is updated to an optimum value automatically according to the operating conditions.



Model	Existing piping adaptation switch: SW5-1	
	OFF (Shipping)	ON
	Control value A (°C)	
100-140	48-54	46-52

Note (1) Adaptation to existing piping is at ON.

2) Anomalous stop control
   Operation control function by the indoor unit control - See the heating overload protection, page 273.
3) Adaptation to existing piping, stop control
   If the existing piping adaptation switch, SW5-1, is turned ON, the compressor stops to protect existing piping when the indoor unit heat exchanger temperature (Thi-R) exceeds the setting value.

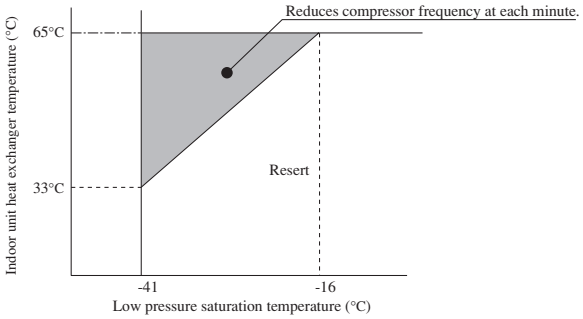


(d) Anomaly detection control by the high pressure switch (63H1)

1) If the pressure rises and operates the high pressure switch (opens at 4.15MPA/closes at 3.15MPa), the compressor stops.
2) Under any of the following conditions, E40 is displayed and it enters the anomalous stop mode.
   a) When it occurs 5 times within 60 minutes that pressure rises and the compressor is stopped by 63H1.
   b) When 63H1 has been in the open state for 60 minutes continuously, including the stop of compressor.

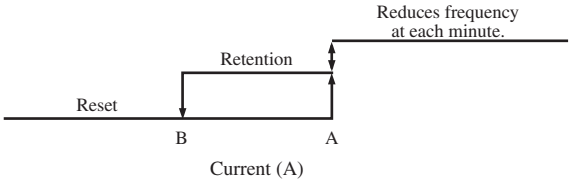
(e) Compressor pressure ratio protection control

1) During heating operation, if the indoor unit heat exchanger temperature (Thi-R) and the low pressure saturation temperature (SST) exceed the setting values at 10 minutes after the start of compressor, the compressor speed (frequency) is controlled to protect the compressor.
2) This control is not performed during the outdoor fan ON and for 10 minutes from the start of outdoor unit fan.
3) This control is not performed during defrost operation and at 10 minutes after the reset of defrost operation.
4) When there are 3 indoor unit heat exchanger temperatures (Thi-R), the highest temperature is detected.

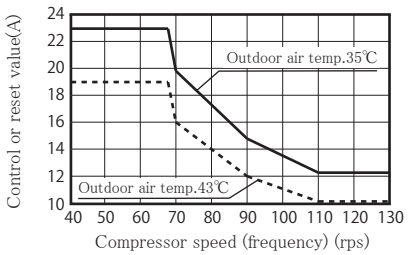


(f) Over-current protection current safe controls I, II

Detecting the outdoor unit inverter input (primary) current and the output (secondary) current, if the current values exceed setting values, the compressor speed (frequency) is controlled to protect the inverter.



(Fig. C) The control value "A" and the reset value vary depending on the compressor speed.



Model		Cooling		Heating	
		Control value A	Reset value B	Control value A	Reset value B
Primary current side	100	13.5 (23.0)	12.5 (22.0)	13.5 (23.0)	12.5 (22.0)
	125, 140	13.5 (23.0)	12.5 (22.0)	13.5 (23.0)	12.5 (22.0)
Secandary current side	100	12.0 (Fig.C)	11.0 (A-1)	12.0 (23)	11.0 (22)
	125, 140	12.0 (Fig.C)	11.0 (A-1)	12.0 (23)	11.0 (22)

Note (1) Value in ( ) are for the single phase models.

(g) Power transistor temperature protection

Anomalous stop control

1) If the power transistor drops supply voltage, the protective switch in the power transistor operates to protect the compressor and the power transistor.
2) Under any of the following condition, E41 is displayed and it enters the anomalous stop mode.
   i) When the protective switch in the power transistor operates 5 times within 60 minutes and the compressor stops.

(h) Anomalous power transistor current

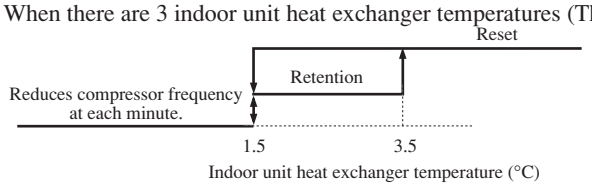
1) Prevents over-current on the inverter. If the current value in the power transistor exceeds the setting value, the compressor stops.
2) If the current value in the power transistor exceeds the specified value and the compressor stops 4 times within 30 minutes, E42 is displayed on the remote control and it enters the anomalous stop mode.

(i) Anomalous inverter PCB

If the power transistor detects any anomaly for 15 minutes, including the stop of compressor, E51 is displayed on the remote control and it enters the anomalous stop mode.

(j) Anti-frost control by the compressor frequency control

1) If the indoor unit heat exchanger temperature (detected with Thi-R) exceeds the setting value at 4 minutes after the start of compressor, the compressor speed (frequency) is controlled to initiate the anti-frost control of indoor unit heat exchanger.
2) When there are 3 indoor unit heat exchanger temperatures (Thi-R), the lowest temperature is detected.



3) Regarding the anti-frost control by the operation stop, refer to the operation control function by the indoor unit control and the cooling, dehumidifying frost prevention of page 273.

(k) Dewing prevention control

[Control condition] During cooling and dehumidifying operation, if all the following conditions are established, the compressor speed (frequency) is reduced to prevent dewing and water splash.

① Cooling electronic expansion valve aperture (EEVC) is 500 pulses.

② Suction overheat is 10°C or higher.

③Compressor speed (frequency) is 60 rps or higher.

[Control contents] ① When the suction overheat is 10°C or higher, the compressor speed (frequency) is reduced at each 1 minute.

② Compressor speed (frequency) does not rise till the cooling expansion valve becomes 460 pulses.

③ This control takes 60 rps as its lower limit so that compressor speed is not controlled when it is less than 60 rps.

(l) Refrigerant quantity shortage protection

Under the compressor protection start III control during cooling and dehumidifying operations, the following control is performed by detecting the indoor unit heat exchanger temperature (Thi-R) and the indoor unit return air temperature (Thi-A).

[Control condition] When the state that the indoor unit heat exchanger temperature (Thi-R) does not become lower than the indoor unit return air temperature (Thi-A) by 4°C or more continues for 1 minute.

[Control contents] It judges that the flowing of refrigerant in to the indoor unit is insufficient so that the compressor is stopped and E57 is displayed on the remote control.

(m) Broken wire detection on temperature thermistor

1) Outdoor unit heat exchanger thermistor and outdoor air thermistor
If the following is detected for 5 second continuously within 2 minutes to 2 minutes and 20 seconds after the compressor ON, the compressor stops. After a delay of 3 minutes, it restarts but, if the same is detected repeatedly 3 times within 40 minutes, the compressor stops with the anomalous stop.
Note (1) During defrost operation and for 3 minutes after the end of defrost operation, it is not detected.
• Outdoor unit heat exchanger thermistor: -50°C or lower
• Outdoor air temperature thermistor: -45 or lower

2) Discharge pipe temperature thermistor and suction pipe temperature thermistor
If the following is detected for 5 second continuously within 10 minutes to 10 minutes and 20 seconds after the compressor ON, the compressor stops. After a delay of 3 minutes, it restarts but, if the same is detected repeatedly 3 times within 40 minutes, the compressor stops with the anomalous stop.
Note (1) During defrost operation and for 3 minutes after the end of defrost operation, it is not detected.
• Discharge pipe temperature thermistor: -10°C or lower
• Suction pipe temperature thermistor: -50 or lower

(n) Fan motor error

1) If the fan speed of 100rpm or under is detected for 30 second continuously under the outdoor unit fan control (with the operation command of fan tap at ① speed or higher), the compressor stops.
2) When the fan motor speed drops to 100rpm or under 5 times within 60 minutes and the compressor stops, it enters the anomalous stop mode with E48 displayed on the remote control.

(o) Anomalous stop by the compressor start stop

1) When it fails to shift to the compressor DC motor's rotor position defection operation at 5 seconds after establishing the compressor start condition, the compressor stops temporarily and restarts 3 minutes later.
2) If it fails to shift to the position detection operation again at second time, it judges the anomalous compressor start and stops the compressor by the anomalous stop (E59).

(7) Silent mode

(a) As "Silent mode start" signal is received from the remote control, it operates by dropping the outdoor unit fan tap and the compressor speed (frequency).
(b) For details, refer to items (1) and (4) above.

(8) Test run

(a) It is possible to operate from the outdoor unit using the dip switch on the outdoor unit control PCB.

SW3-3	ON	SW3-4	OFF	Cooling test run
			ON	Heating test run
	OFF	Normal and end of test run		

Make sure to turn SW3-3 to OFF after the end of operation.

(b) Test run control

1) Operation is performed at the maximum compressor speed (frequency), which is determined for each model.
2) Each protective control and error detection control are effective.
3) If SW3-4 is switched during test run, the compressor is stoped for once by the stop control and the cooling/heating operation is switched.
4) Setting and display of remote control during test run

Item / Mode	Contents of remote control setting/display
Cooling test run	Setting temperature of cooling is 5°C.
Heating test run	Setting temperature of heating (preparation) is 30°C.

(9) Pump-down control

When SW7-1 is OFF, turning ON the pump-down switch SW1 for 2 seconds during the operation stop or anomalous stop (excluding the thermostat OFF), the pump-down operation is performed. (This is invalid when the indoor unit is operating. This is effective even when the indoor unit is stopped by the anomalous stop or the power source is turned OFF.)

(a) Control contents

1) Close the service valve at the liquid side. (It is left open at the gas side.)
2) Compressor is started with the target speed (frequency) at 55 rps in the cooling mode.
3) Red and green lamps (LED) flash continuously on the outdoor unit control PCB.
4) Each of protection and error detection controls, excluding the low pressure control, anti-frost control and dewing prevention control, is effective.
5) Outdoor unit fan is controlled as usual.
6) Electronic expansion valve is fully opened.

(b) Ending conditions

Stop control is initiated depending on any of the following conditions.

1) Suction pipe temperature of -36°C or lower is detected for 5 seconds continuously.
   a) Red LED: Light, Green LED: Flashing, Remote control: Displays stop.
   b) It is possible to restart when the suction pipe temperature of -36°C or higher.
   c) Electronic expansion valve (cooling/heating) is kept fully open.
2) Stop by the error detection control
   a) Red LED: Flashing, Green LED: Flashing
   b) Restart is prohibited. To return to normal operation, reset the power source.
   c) Electronic expansion valve (cooling/heating) is left fully open.
3) When the cumulative operation time of compressor under the pump-down control becomes 5 minutes.
   a) Red LED: OFF, Green LED: Flashing, Remote control: Stop
   b) It is possible to pump-down again.
   c) Electronic expansion valve (cooling/heating) is left fully open.

   Note (1) After the stop of compressor, close the service valve at the gas side.

Caution: Since pressing the pump-down switch cancels communications with the indoor unit, the indoor unit and the remote control display “Transmission error – E5”. This is normal.

(10) Base heater ON/OFF output control (Option)

(a) Base heater ON conditions

When all of following conditions are satisfied, the base heater is turned ON.

- When power source is turned ON
- During the compressor stop and when “heater OFF condition” indicated in the following (c) isn't formed
- For 5 minutes from the compressor start

  But, when the compressor ON condition is formed and when it's heater OFF by the following (c) item, the heater isn't tured ON.
- During defrost operation

(b) Base heater OFF conditions

When all of following conditions are satisfied, the base heater is turned OFF.

- When it has passed for 5 minutes or more from the compressor start
- After it passed for 5 minutes from defrost operation return
- When “heater OFF condition” indicated in the following (c) is formed

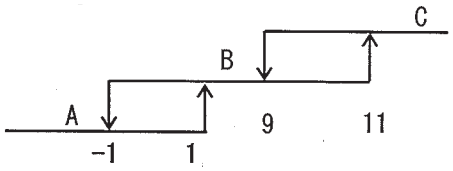
(c) Base heater ON/OFF condition

After the compressor stop, the base heater ON/OFF changes the control method by the outdoor air temperature〔Tho-A〕.

(i) When the outdoor air temperature is A territory
After the compressor stop, the base heater is always turned ON.

(ii) When the outdoor air temperature is B territory
(ii-1) After it passed for 8 minutes 30 seconds from the compressor stop, the base heater is turned OFF.
(ii-2) (ii-1) later, after it passed for 8 hours from the compressor stop, the base heater is always turned ON.

(iii) When the outdoor air temperature is C territory
After the compressor stop, the base heater is always turned OFF.



Outdoor air temperature (°C)〔Tho-A〕

1.12 MAINTENANCE DATA

1.12.1 Diagnosing of microcomputer circuit

(1) Selfdiagnosis function

(a) Check indicator table

Whether a failure exists or not on the indoor unit and outdoor unit can be know by the contents of remote control error code, indoor/outdoor unit green LED (power pilot lamp and microcomputer normality pilot lamp) or red LED (check pilot lamp).

Note (1) SRK series only.

At the indoor unit side, errors are displayed with the combination of RUN light and TIMER light on the display panel.

(i) Indoor unit

1) FDT, FDTC, FDE, FDU, FDUM, FDF series

Remote control		Indoor control PCB		Outdoor control PCB		Location of trouble	Description of trouble	Repair method	Reference page
Error code	Red LED	Red LED	Green LED (1)	Red LED	Green LED (1)				
No-indication	Stays OFF	Stays OFF	Keeps flashing	Stays OFF	Keeps flashing	—	**• Normal operation**	—	—
		Stays OFF	Stays OFF	2-time flash	Stays OFF	Indoor unit power source	• Power OFF, broken wire/blown fuse, broken transformer wire	Repair	345
		* 3-time flash	Keeps flashing	Stays OFF	Keeps flashing	Remote control wires	• Poor connection, breakage of remote control wire * For wire breaking at power ON, the LED is OFF.	Repair	346
						Remote control	• Defective remote control PCB	Replacement of remote control	
WAIT or INSPECT I/U		Stays OFF	Keeps flashing	2-time flash	Keeps flashing	Indoor-outdoor units connection wire	• Poor connection, breakage of indoor-outdoor units connection wire	Repair	347-351
						Remote control	• Improper setting of master and slave by remote control		
E 1	Keeps flashing	Stays OFF	* Keeps flashing	Stays OFF	Keeps flashing	Remote control wires (Noise)	**• Poor connection of remote control signal wire (White)** * For wire breaking at power ON, the LED is OFF **• Intrusion of noise in remote control wire**	Repair	353
						Remote control indoor control PCB	*• Defective remote control or indoor control PCB (defective communication circuit)?	Replacement of remote control or PCB	
E 5		2-time flash	Keeps flashing	2-time flash	Keeps flashing	Indoor-outdoor units connection wire	**• Poor connection of wire between indoor-outdoor units during operation (disconnection, loose connection)** **• Anomalous communication between indoor-outdoor units by noise, etc.**	Repair	354
		2-time flash	Keeps flashing	Stays OFF	Keeps flashing	(Noise)	**• CPU-runaway on outdoor control PCB**	Power reset or Repair	
						Outdoor control PCB	*• Occurrence of defective outdoor control PCB on the way of power source (defective communication circuit)?	Replacement of PCB	
		2-time flash	Keeps flashing	Stays OFF	Keeps flashing	Outdoor control PCB	**• Defective outdoor control PCB on the way of power source**	Replacement	
						Fuse	**• Blown fuse**		
E 6		1-time flash	Keeps flashing	Stays OFF	Keeps flashing	Indoor heat exchanger temperature thermistor	**• Defective indoor heat exchanger temperature thermistor** (defective element, broken wire, short-circuit) • Poor contact of temperature thermistor connector	Replacement, repair of temperature thermistor	355
						Indoor control PCB	***• Defective indoor control PCB (Defective temperature thermistor input circuit)?**	Replacement of PCB	
E 7		1-time flash	Keeps flashing	Stays OFF	Keeps flashing	Indoor return air temperature thermistor	**• Defective indoor return air temperature thermistor** (defective element, broken wire, short-circuit) • Poor contact of temperature thermistor connector	Replacement, repair of temperature thermistor	356
						Indoor control PCB	***• Defective indoor control PCB (Defective temperature thermistor input circuit)?**	Replacement of PCB	
E 8		1-time flash	Keeps flashing	Stays OFF	Keeps flashing	Installation or operating condition	**• Heating over-load** (Anomalously high indoor heat exchanger temperature)	Repair	357
						Indoor heat exchanger temperature thermistor	**• Defective indoor heat exchanger temperature thermistor (short-circuit)**	Replacement of temperature thermistor	
						Indoor control PCB	***• Defective indoor control PCB** (Defective temperature thermistor input circuit)?	Replacement of PCB	
E 9		1-time flash	Keeps flashing	Stays OFF	Keeps flashing	Drain trouble	**• Defective drain pump (DM), broken drain pump wire**, disconnected connector	Replacement, repair of DM	358
						Float switch	**• Anomalous float switch operation** (malfunction)	Repair	
						Indoor control PCB	***• Defective indoor control PCB** (Defective float switch input circuit) ***• Defective indoor control PCB** (Defective DM drive output circuit)?	Replacement of PCB	
						Option	**• Defective optional parts** (At optional anomalous input setting)	Repair	
E 10		Stays OFF	Keeps flashing	Stays OFF	Keeps flashing	Number of connected indoor units	**• When multi-unit control by remote control is performed, the number of units is over**	Repair	359
E 14		3-time flash	Keeps flashing	Stays OFF	Keeps flashing	Indoor unit No. setting	•No master is assigned to slaves.	Repair	360
						Remote control wires	•Anomalous remote control wire connection, broken wire between master and slave units		
E 16		1(2)-time flash	Keeps flashing	Stays OFF	Keeps flashing	Fan motor	**• Defective fan motor**	Replacement, repair	361
						Indoor power PCB	**• Defective indoor power PCB**	Replacement	
E 18		1-time flash	Keeps flashing	Stays OFF	Keeps flashing	Address setting error	• Address setting error of master and slave indoor units	Repair	362
E 19		1-time flash	Keeps flashing	Stays OFF	Keeps flashing	Indoor control PCB	**• Improper operation mode setting**	Repair	363

Remote control		Indoor control PCB		Outdoor control PCB		Location of trouble	Description of trouble	Repair method	Reference page
Error code	Red LED	Red LED	Green LED (1)	Red LED	Green LED (1)				
E20		1(2)-time flash	Keeps flashing	Stays OFF	Keeps flashing	Fan motor	• Indoor fan motor rotation speed anomaly	Replacement, repair	364
						Indoor power PCB	• Defective indoor power PCB	Replacement	
E28		Stays OFF	Keeps flashing	Stays OFF	Keeps flashing	Remote control temperature thermistor	• Broken wire of remote control temperature thermistor	Repair	365

Notes (1) **Normal indicator lamp (Indoor, outdoor units: Green) extinguishes (or lights continuously) only when CPU is anomalous. It keeps flashing in any trouble other than anomalous CPU.**

(2) * mark in the description of trouble means that, in ordinary diagnosis, it cannot identify the cause definitely, and, if the trouble is repaired by replacing the part, it is judged consequently that the replaced part was defective.

2) SRK series

Remote control		Indoor unit display		Outdoor control PCB		Location of trouble	Description of trouble	Repair method	Reference page
Error code	Red LED	RUN light	TIMER light	Red LED	Green LED				
No-indication	Stays OFF	ON	Stays OFF	Stays OFF	Keeps flashing	—	**•Normal operation**	—	—
		—	—	2-time flash	Stays OFF	Indoor unit power source	•Power OFF, broken wire/blown fuse, broken transformer wire	Repair	387
		—	—	Stays OFF	Keeps flashing	Remote control wires	•Poor connection, breakage of remote control wire * For wire breaking at power ON, the LED is OFF.	Repair	388
						Remote control	• Defective remote control PCB	Replacement of remote control	
		Stays OFF	Keeps flashing	Stays OFF	Keeps flashing	Limit switch, air inlet panel	**•Limit switch operate** **•Defective limit switch** (Poor contact of limit switch connector) **•Set is defective air inlet panel**	Replacement, repair	389
						Indoor control PCB	**•Defective indoor control PCB (Defective limit switch input circuit)?**	Replacement of PCB	
WAIT or INSPECT I/U		—	—	2-time flash	Keeps flashing	Indoor-outdoor units connection wire	• Poor connection, breakage of indoor-outdoor units connection wire	Repair	390−394
						Remote control	• Improper setting of master and slave by remote control		
E1	Keeps flashing	—	—	Stays OFF	Keeps flashing	Remote control wires (Noise)	**•Poor connection of remote control signal wire (White)** * For wire breaking at power ON, the LED is OFF **•Intrusion of noise in remote control wire**	Repair	396
						Remote control indoor control PCB	*• Defective remote control or indoor control PCB (defective communication circuit)?	Replacement of remote control or PCB	
E5		ON	6-time flash	2-time flash	Keeps flashing	Indoor-outdoor units connection wire	**•Poor connection of wire between indoor-outdoor units during operation (disconnection, loose connection)** **•Anomalous communication between indoor-outdoor units by noise, etc.**	Repair	397
		ON	6-time flash	Stays OFF	Keeps flashing	(Noise)	**•CPU-runaway on outdoor control PCB**	Power reset or Repair	
						Outdoor control PCB	*•Occurrence of defective outdoor control PCB on the way of power source (defective communication circuit)?	Replacement of PCB	
		ON	6-time flash	Stays OFF	Keeps flashing	Outdoor control PCB	**•Defective outdoor control PCB on the way of power source**	Replacement	
						Fuse	**•Blown fuse**		
E6		1-time flash	ON	Stays OFF	6-time flash	Indoor heat exchanger temperature sensor 1	**•Defective indoor heat exchanger temperature sensor 1** (defective element, broken wire, short-circuit) • Poor contact of temperature sensor 1 connector	Replacement, repair of temperature sensor 1	398
						Indoor control PCB	**•Defective indoor control PCB (Defective temperature thermistor input circuit)?**	Replacement of PCB	
		3-time flash	ON	Stays OFF	Keeps flashing	Indoor heat exchanger temperature sensor 2	**•Defective indoor heat exchanger temperature sensor 2** (defective element, broken wire, short-circuit) • Poor contact of temperature sensor 2 connector	Replacement, repair of temperature sensor 2	
						Indoor control PCB	**•Defective indoor control PCB (Defective temperature thermistor input circuit)?**	Replacement of PCB	
No-indication		2-time flash	ON	Stays OFF	Keeps flashing	Indoor room temperature sensor	**•Defective indoor room temperature sensor**(defective element, broken wire, short-circuit) •Poor contact of temperature sensor connector	Replacement, repair of temperature sensor	399
						Indoor control PCB	**•Defective indoor control PCB (Defective temperature sensor input circuit)?**	Replacement of PCB	
E10		—	—	Stays OFF	Keeps flashing	Number of connected indoor units	**•When multi-unit control by remote control is performed, the number of units is over**	Repair	400
E14		3-time flash	Keeps flashing	Stays OFF	Keeps flashing	Indoor unit No. setting	•No master is assigned to slaves.	Repair	401
						Rcmote control wires	•Anomalous remote control wire connection, broken wire between master and slave units		
E16		6-time flash	ON	Stays OFF	Keeps flashing	Fan motor	**•Defective fan motor**	Replacement, repair	402
						Indoor control PCB	**•Defective indoor control PCB**	Replacement	
E28		—	—	Stays OFF	Keeps flashing	Remote control temperature thermistor	• Broken wire of remote control temperature thermistor	Repair	403

Note (1) *mark in the Description of trouble means that, in ordinary diagnosis, it cannot identify the cause definitely, and, if the trouble is repaired by replacing the part, it is judged consequently that the replaced part was defective.

(ii) Outdoor unit

1) FDT, FDTC, FDE, FDU, FDUM, FDF series

Remote control		Indoor control PCB		Outdoor control PCB		Location of trouble	Description of trouble	Repair method	Reference page
Error code	Red LED	Red LED	Green LED (1)	Red LED	Green LED (1)				
E35		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	Installation or operating condition	• Higher outdoor heat exchanger temperature	Repair	366
						Outdoor heat exchanger temperature thermistor	• Defective outdoor heat exchanger temperature thermistor	Replacement of temperature thermistor	
						Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E36		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	Installation or operating condition	• Higher discharge temperature	Repair	367
						Discharge pipe temperature thermistor	• Defective discharge pipe temperature thermistor	Replacement, repair of temperature thermistor	
						Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E37		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	Outdoor heat exchanger temperature thermistor	• Defective outdoor heat exchanger temperature thermistor, broken wire or poor connector connection	Replacement, repair of temperature thermistor	368
						Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E38		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	Outdoor air temperature thermistor	• Defective Outdoor air temperature thermistor, broken wire or poor connector connection	Replacement, repair of temperature thermistor	369
						Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E39		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	Discharge pipe temperature thermistor	• Defective discharge pipe temperature thermistor, broken wire or poor connector connection	Replacement, repair of temperature thermistor	370
						Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E40		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	Installation or operating condition	• Rising high pressure (Operation of 63H1) • Service valve closing operation	Repair	371
						Outdoor control PCB	*• Defective outdoor control PCB (Defective 63H1 input circuit)?	Replacement of PCB	
E42		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	Outdoor control PCB compressor	• Current cut (Anomalous compressor over-current)	Replacement of PCB	372•373
						Installation or operating condition	• Service valve closing operation	Repair	
E47		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	Outdoor control PCB	• Defective outdoor control PCB	Replacement of PCB	373-1
						active filter	• Defective active filter of control		
E48		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	Outdoor fan motor	• Anomalous outdoor fan motor	Replacement, repair	374
						Outdoor control PCB	*• Defective outdoor control PCB (Defective motor input circuit)?	Replacement of PCB	
E51		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	Main PCB	• Anomalous main PCB	Replacement of PCB	375
E53		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	Suction pipe temperature thermistor	• Defective suction pipe temperature thermistor, broken wire or poor connector connection	Replacement, repair of temperature thermistor	376
						Outdoor control PCB	*• Defective outdoor PCB (Defective thermistor input circuit)?	Replacement of control PCB	
E57		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	Operation status	• Shortage in refrigerant quantity	Repair	377
						Installation status	• Service valve closing operation	Service valve opening check	
E58		Stays OFF	Keeps flashing	1 time flash	Keeps flashing	Compressor PCB	• Anomalous compressor by loss of synchronism	Replacement	377-1
E59		Stays OFF	Keeps flashing	5 times flash	Keeps flashing	Compressor inverter PCB	• Anomalous compressor startup	Replacement	378•379

Note (1) * mark in the description of trouble means that, in ordinary diagnosis, it cannot identify the cause definitely, and, if the trouble is repaired by replacing the part, it is judged consequently that the replaced part was defective.

#

2) SRK series

Remote control		Indoor unit display		Outdoor control PCB		Location of trouble	Description of trouble	Repair method	Reference page
Error code	Red LED	RUN light	TIMER light	Red LED	Green LED				
E35	Keeps flashing	ON	Keeps flashing	1-time flash	Keeps flashing	Installation or operating condition	• Higher outdoor heat exchanger temperature	Repair	404
						Outdoor heat exchanger temperature thermistor	• Defective outdoor heat exchanger temperature thermistor	Replacement of temperature thermistor	
						Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E36		ON	5-time flash	1-time flash	Keeps flashing	Installation or operating condition	• Higher discharge temperature	Repair	405
						Temperature thermistor	• Defective discharge pipe temperature thermistor	Replacement, repair of temperature thermistor	
						Outdoor control PCB	*• Discharge pipe Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E37		Keeps flashing	2-time flash	1-time flash	Keeps flashing	Outdoor heat exchanger temperature thermistor	• Defective outdoor heat exchanger temperature thermistor, broken wire or poor connector connection	Replacement, repair of temperature thermistor	406
						Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E38		Keeps flashing	1-time flash	1-time flash	Keeps flashing	Outdoor air temperature thermistor	• Defective Outdoor air temperature thermistor, broken wire or poor connector connection	Replacement, repair of temperature thermistor	409
						Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E39		Keeps flashing	4-time flash	1-time flash	Keeps flashing	Discharge pipe temperature thermistor	• Defective discharge pipe temperature thermistor, broken wire or poor connector connection	Replacement, repair of temperature thermistor	408
						Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature thermistor input circuit)?	Replacement of PCB	
E40	Keeps flashing	–	–	1-time flash	Keeps flashing	Installation or operating condition	• Rising high pressure (Operation of 63H1) • Service valve closing operation	Repair	409
						Outdoor control PCB	*• Defective outdoor control PCB (Defective 63H1 input circuit)?	Replacement of PCB	
E42		ON	1-time flash	1-time flash	Keeps flashing	Outdoor control PCB compressor	• Current cut (Anomalous compressor over-current)	Replacement of PCB	410 • 411
						Installation or operating condition	• Service valve closing operation	Repair	
E47		5-time flash	ON	1 time flash	Keeps flashing	Outdoor control PCB	• Defective outdoor control PCB	Replacement of PCB	411-1
						active filter	• Defective active filter of control		
E48		ON	7-time flash	1 time flash	Keeps	Outdoor fan motor	• Anomalous outdoor fan motor	Replacement, repair	412
						Outdoor control PCB	*• Defective outdoor control PCB (Defective motor input circuit)?	Replacement of PCB	
E51		ON	4-time flash	1-time flash	Keeps flashing	Inverter PCB	• Anomalous inverter PCB	Replacement of PCB Replacement, repair of	413
E53		Keeps flashing	5-time flash	1-time flash	Keeps flashing	Suction pipe temperature thermistor	• Defective suction pipe temperature thermistor, broken wire or poor connector connection	temperature thermistor Replacement of control	414
						Outdoor control PCB	*• Defective outdoor PCB (Defective thermistor input circuit)?	PCB	
E57		7-time flash	ON	1-time flash	Keeps flashing	Operation status	• Shortage in refrigerant quantity	Repair	415
						Installation status	• Service valve closing operation	Service valve opening check	
E59		–	–	5-time flash	Keeps flashing	Compressor, inverter PCB	•Anomalous compressor startup	Replacement	416 • 417

Note (1) * mark in the description of trouble means that, in ordinary diagnosis, it cannot identify the cause definitely, and, if the trouble is repaired by replacing the part, it is judged consequently that the replaced part was defective.

(iii) Option control in-use

1) FDT, FDTC, FDE, FDU, FDUM, FDF series

		Indoor unit control PCB		Outdoor unit control PCB		Description of trouble	Repair method
Error code	Red LED	Red LED	Green LED	Red LED	Green LED		
E75	Keeps flashing	Stays OFF	Keeps flashing	Stays OFF	Keeps flashing	• Communication error (Defective communication circuit on the main unit of SC-SL2N-E or SC-SL4) ete.	Replacement

2) SRK series

		Indoor unit display panel		Outdoor unit control PCB		Description of trouble	Repair method
Error code	Red LED	RUN light	TIMER light	Red LED	Green LED		
E75	Keeps flashing	–	–	Stays OFF	Keeps flashing	• Communication error (Defective communication circuit on the main unit of SC-SL2N-E or SC-SL4) ete.	Replacement

#

(iv) Display sequence of error codes or inspection indicator lamps

■ **Occurrence of one kind of error**

Displays are shown respectively according to errors.

■ **Occurrence of plural kinds of error**

Section	Category of display
Error code on remote control	• Displays the error of higher priority (When plural errors are persisting)
Red LED on indoor control PCB	E1 > E5 > ····· > E10 > E35 > ····· Eb0
Red LED on outdoor control PCB	• Displays the present errors. (When a new error has occurred after the former error was reset.)

■ **Error detecting timing**

Section	Error description	Error code	Error detecting timing
Indoor	Drain trouble (Float switch activated)	E9	Whenever float switch is activated after 30 second had past since power ON.
	Communication error at initial operation	"WAIT"	No communication between indoor and outdoor units is established at initial operation.
	Remote control communication circuit error	E1	Communication between indoor unit and remote control is interrupted for mote than 2 minutes continuously after initial communication was established.
	Communication error during operation	E5	Communication between indoor and outdoor units is interrupted for mote than 2 minutes continuously after initial communication was established.
	Excessive number of connected indoor units by controlling with one remote control	E10	Whenever excessively connected indoor units is detected after power ON.
	Return air temperature thermistor anomaly	E7	-50 (-45) °C or lower is detected for 5 (15) seconds continuously within 60 minutes after initial detection of this anomalous temperature.
	Indoor heat exchanger temperature thermistor anomaly	E6	-50 (-28) °C or lower is detected for 5 (15) seconds continuously within 60 minutes after initial detection of this anomalous temperature. Or 70°C or higher is detected for 5 seconds continuously. (SRK series removes)
Outdoor	Outdoor air temperature thermistor anomaly	E38	-45°C or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. Or -45°C or higher is detected for 5 seconds continuously within 20 seconds after compressor ON.
	Outdoor heat exchanger temperature thermistor anomaly	E37	-50°C or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. Or -50°C or lower is detected for 5 seconds continuously within 20 seconds after compressor ON.
	Discharge pipe temperature thermistor anomaly	E39	-10°C or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature.
	Suction pipe temperature thermistor anomaly	E53	-50°C or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature.

Note (1) Value in ( ) are for the SRK series.

■ **Error log and reset**

Error indicator	Memorized error log	Reset
Remote control display	• Higher priority error is memorized.	• Stop the unit by pressing the ON/OFF switch of remote control. • If the unit has recovered from anomaly, it can be operated.
Red LED on indoor control PCB	• Not memorized.	
Red LED on outdoor control PCB	• Memorizes a mode of higher priority.	

■ **Resetting the error log**

• Resetting the memorized error log in the remote control

Holding down "CHECK" button, press "TIMER" button to reset the error log memorized in the remote control.

• Resetting the memorized error log in the indoor unit

The remote control transmits error log erase command to the indoor unit when "VENTI" button is pressed while holding down "CHECK" button.

Receiving the command, the indoor unit erase the log and answer the status of no error.

(2) Troubleshooting procedure

When any trouble has occurred, inspect as follows. Details of respective inspection method will be described on later pages.

Trouble → Confirmation of power source (Indoor/ outdoor unit) → Confirmation of remote control and LEDs on the PCB of indoor unit and outdoor unit (Indoor/ outdoor unit, remote control) → Check of the anomalous operation data on the remote control → Inspection of the unit/ control → Replacement/ repair of faulty part, test run, adjustment

(3) Troubleshooting at the indoor unit

(a) FDT, FDTC, FDE, FDU, FDUM, FDF series

With the troubleshooting, find out any defective part by checking the voltage (AC, DC), resistance, etc. at respective connectors at around the indoor PCB, according to the inspection display or operation status of unit (the compressor does not run, fan does not run, the 4-way valve does not switch, etc.), and replace or repair in the unit of following part.

(i) Replacement part related to indoor PCB's

Control PCB, power source PCB, temperature thermistor (return air, indoor heat exchanger), remote control switch, limit switch, transformer and fuse

Note (1) With regard to parts of high voltage circuits and refrigeration cycle, judge it according to ordinary inspection methods.

(ii) Instruction of how to replace indoor control PCB

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the replacement in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, WARNING and CAUTION.
  Both mentions the important items to protect your health and safety so strictly follow them by any means.

⚠ WARNING	Wrong installation would cause serious consequences such as injuries or death.
⚠ CAUTION	Wrong installation might cause serious consequences depending on circumstances.

- After completing the replacement, do commissioning to confirm there are no anomaly.

⚠ WARNING

- Replacement should be performed by the specialist.
  If you replace the PCB by yourself, it may lead to serious trouble such as electric shock or fire.
- Replace the PCB correctly according to these instructions.
  Improper replacement may cause electric shock or fire.
- Shut off the power before electrical wiring work.
  Replacement during the applying the current would cause the electric shock, unit failure or improper running.
  It would cause the damage of connected equipment such as fan motor,etc.
- Fasten the wiring to the terminal securely, and hold the cable securely so as not to apply unexpected stress on the terminal.
  Loose connections or hold could result in abnormal heat generation or fire.
- Check the connection of wiring to PCB correctly before turning on the power, after replacement.
  Defectiveness of replacement may cause electric shock or fire.

⚠ CAUTION

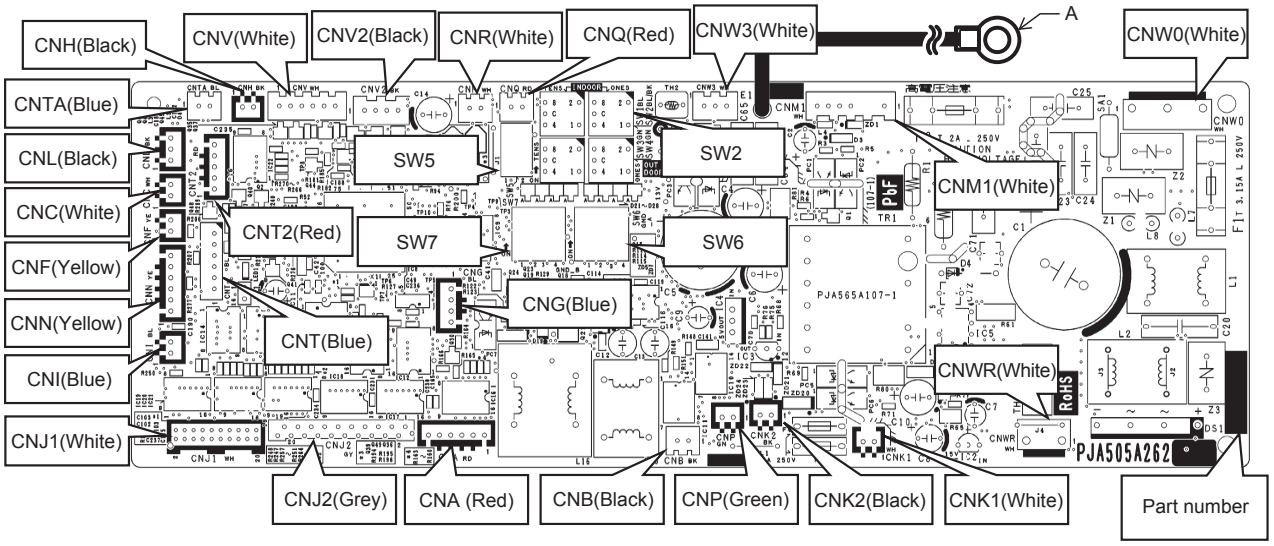
- In connecting connector onto the PCB, connect not to deform the PCB. It may cause breakage or malfunction.
- Insert connecter securely, and hook stopper. It may cause fire or improper running.
- Bundle the cables together so as not to be pinched or be tensioned. It may cause malfunction or electric shock for disconnection or deformation.

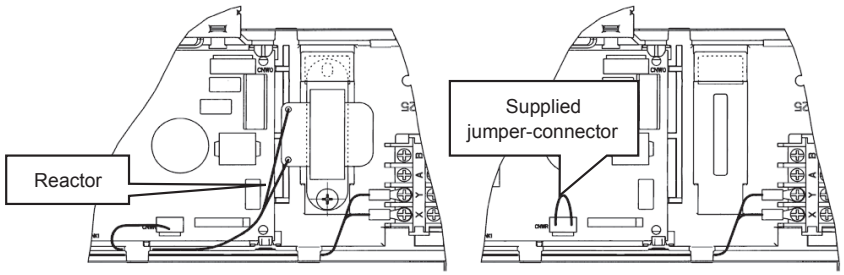
1) Model FDT series

a) Replace the control PCB

i) Unscrew terminal (Arrow A) of the "E1" wiring (yellow/green) that is connected to PCB.
ii) Replace the PCB only after all the wirings connected to the connector are removed.
iii) Fix the board such that it will not pinch any of the wires.
iv) Switch setting must be same setting as that of the removed PCB.
v) Reconnect the all wirngs to the PCB, that was removed in 2.
vi) Rescrew the terminal (Arrow A) of the "E1" wiring, that was removed in 1.
vii) When there is no wire to connect to CNWR, connect the supplied jumper-connector. (Refer to Fig.2) If nothing is connected to CNWR, it doesn't work even when power is turned on.

b) Control PCB (※Parts mounting are different by the kind of PCB.)





Equipped with reactor Fig.2 Equipped without reactor

PSC012D050A B

PSB012D976C G

2) Model FDTC series

a) Control PCB

Replace and set up the PCB according to this instruction.

i) Set to an appropriate address and function using switch on PCB.

Select the same setting with the removed PCB.

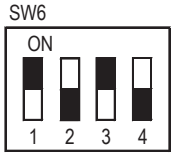
item	switch	Content of control			
Address	SW2	Plural indoor units control by 1 remote control			
Master / Slave setting		Master	Slave 1	Slave 2	Slave 3
	SW5-1	—	—	○	○
	SW5-2	—	○	—	○
Test run	SW7-1	—	Normal		
		○	Operation check/drain motor test run		

○:ON —:OFF

ii) Set to an appropriate capacity using the model selector switch(SW6).

Select the same capacity with the PCB removed from the unit.

SW6	-1	-2	-3	-4
50VF	○	—	○	—
60VF	○	○	○	—



Example setting for 50VF

iii) Replace the PCB

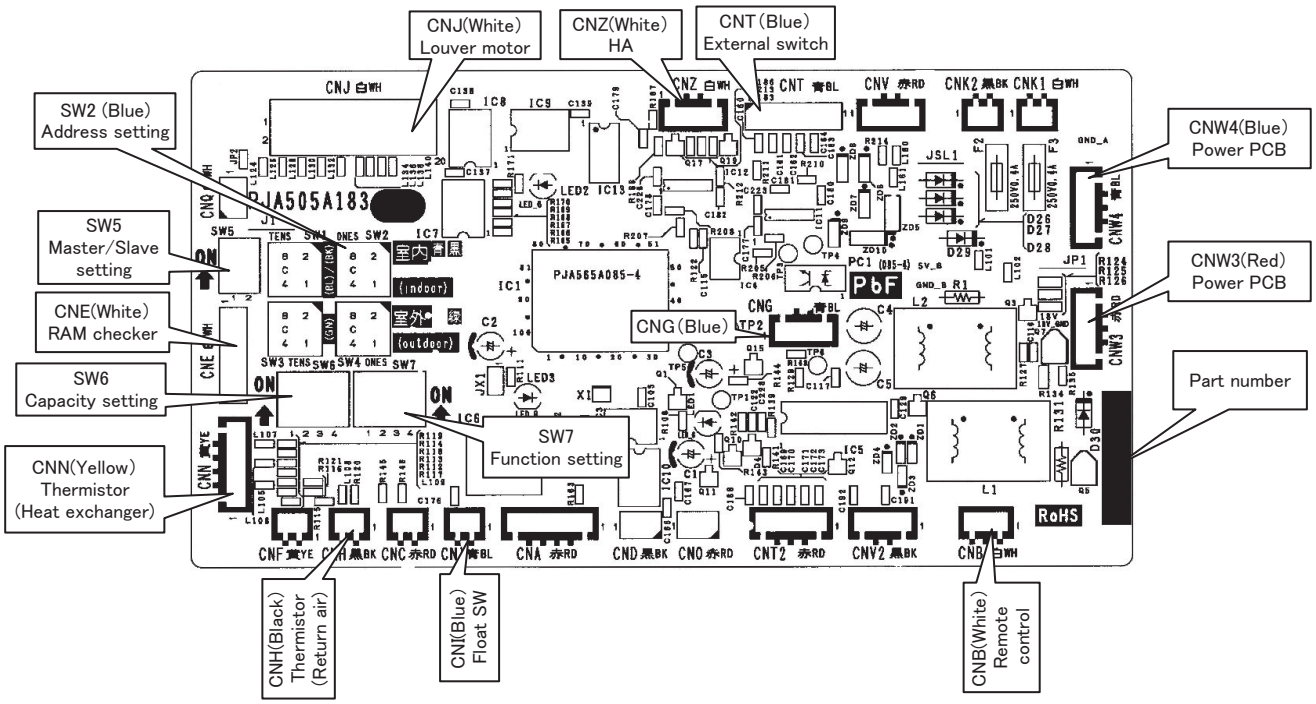
① Fix the PCB so as not to pitch the cords.

② Connect connectors to the PCB. Connect a cable connector with the PCB connector of the same color.

③ Do not pass CPU surrounding about wirings.

iv) Control PCB

Parts mounting are different by the kind of PCB.



b) Power PCB

PSB012D953A C

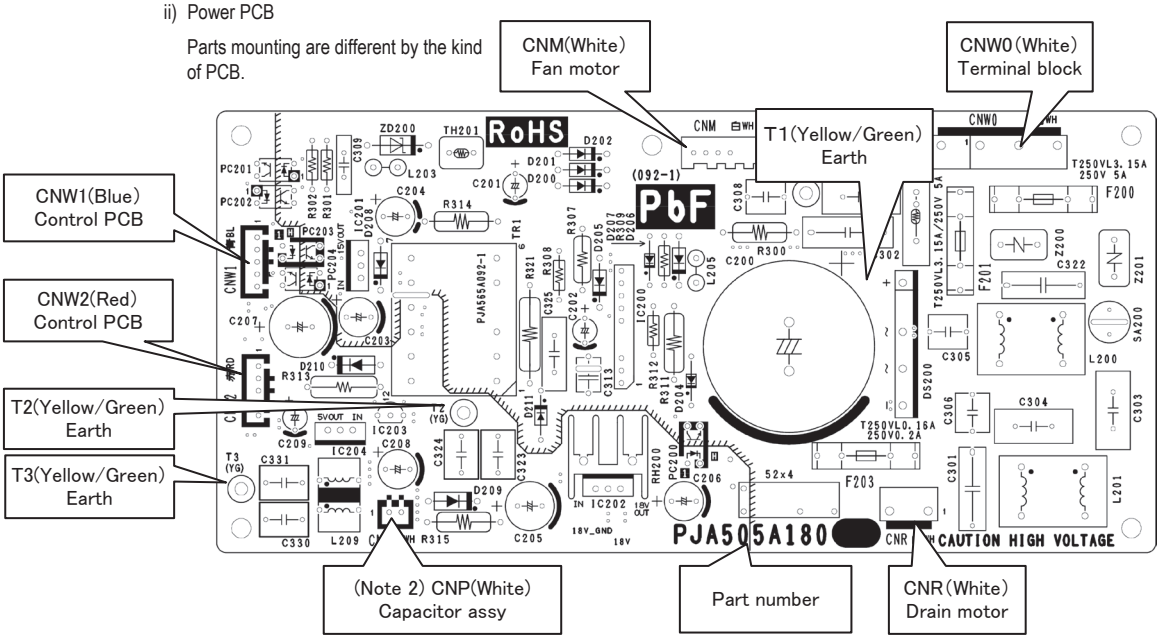
This PCB is a general PCB. Replace the PCB according to this instruction.

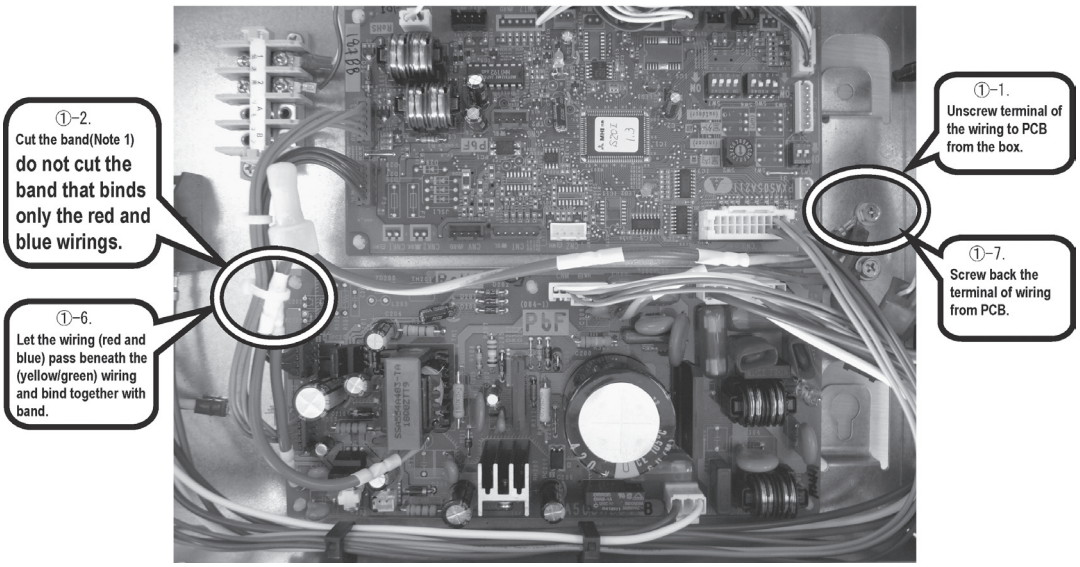
i) Replace the PCB (refer to right dwg.)

① Unscrew terminal of the wiring(yellow/green) soldered to PCB from the box.
② Cut the band that binds the wiring (red and blue) from connector CNW1 and CNW2, and the wiring (yellow/green) from PCB (T2/T3) . (Note 1) (However, do not cut the band that binds only the red and blue wirings.)
③ Replace the PCB only after all the wirings connected to the connector are removed.
④ Fix the board such that it will not pinch any of the wires.
⑤ Reconnect the wirings to the PCB. Wiring connector color should match with the color of connector of the PCB. (Note 2)
⑥ Let the wiring (red and blue) pass beneath the (yellow/green) wiring and bind together with band.
⑦ Screw back the terminal of wiring (yellow/green) from PCB(T1, T2/T3), that was removed in 1.
In that case, do not place the crimping part of the wiring under the PCB.
(Note 1): It might not be applicable on some models.
(Note 2): After replacing PCB, connection between capacitor assy and connector CNP is **no longer needed.**

ii) Power PCB

Parts mounting are different by the kind of PCB.





3) Models FDE, FDU, FDUM series

PSB012D990 Ⓓ
PSB012D990B Ⓓ

a) Control PCB

Replace and set up the PCB according to this instruction.

i) Set to an appropriate address and function using switch on PCB.

Select the same setting with the removed PCB.

item	switch	Content of control			
Address	SW2	Plural indoor units control by 1 remote control			
Master /Slave setting		Master	Slave1	Slave2	Slave3
	SW5-1	—	—	○	○
	SW5-2	—	○	—	○
Test run	SW7-1	—	Normal		
		○	Operation check/drain motor test run		

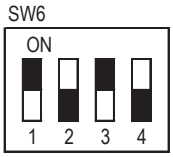
○:ON —:OFF

ii) Set to an appropriate capacity using the model selector switch(SW6).

Select the same capacity with the PCB removed from the unit.

SW6	-1	-2	-3	-4
50V	○	—	○	—
60V	○	○	○	—
71V	○	—	—	○

SW6	-1	-2	-3	-4
100V	○	○	—	○
125V	—	—	○	○
140V	○	—	○	○



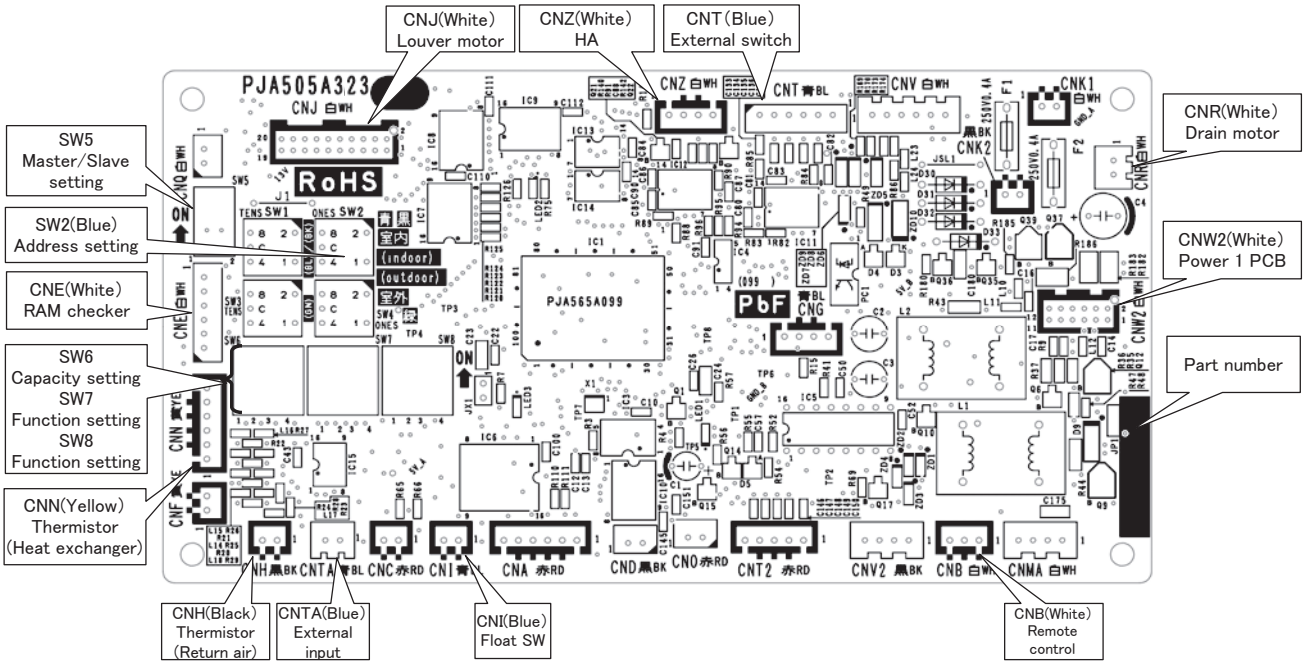
Example setting for 50V

iii) Replace the PCB

① Exchange PCB after detaching all connectors connected with the PCB.
② Fix the PCB so as not to pitch the wiring.
③ Connect connectors to the PCB. Match the wiring connector to the connector color on the PCB and connect it.

iv) Control PCB

Parts mounting are different by the kind of PCB.



b) Power PCB

This PCB is a general PCB. Replace the PCB according to this instruction.

i) Replace the PCB

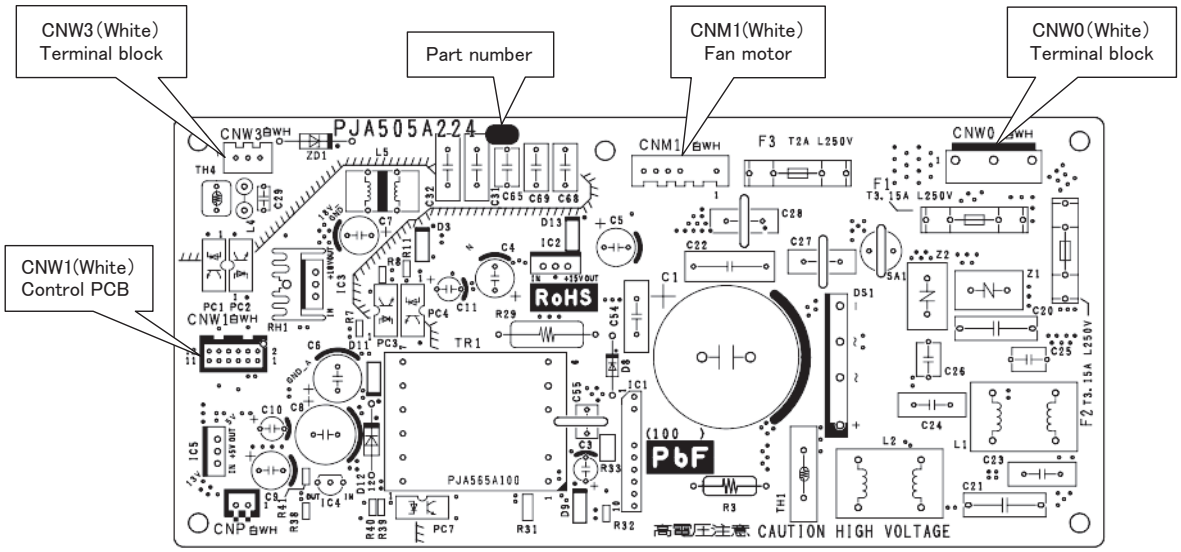
① Unscrew terminal of the wiring(yellow/green) connected to Terminal block (CNWO) from the box.
② Replace the PCB only after all the wirings connected to the connector are removed.
③ Fix the board such that it will not pinch any of the wires.
④ Reconnect the wirings to the PCB. Wiring connector color should match with the color of connector of the PCB.
⑤ Screw back the terminal of wiring, that was removed in 1.

ii) Power PCB

Parts mounting are different by the kind of PCB.

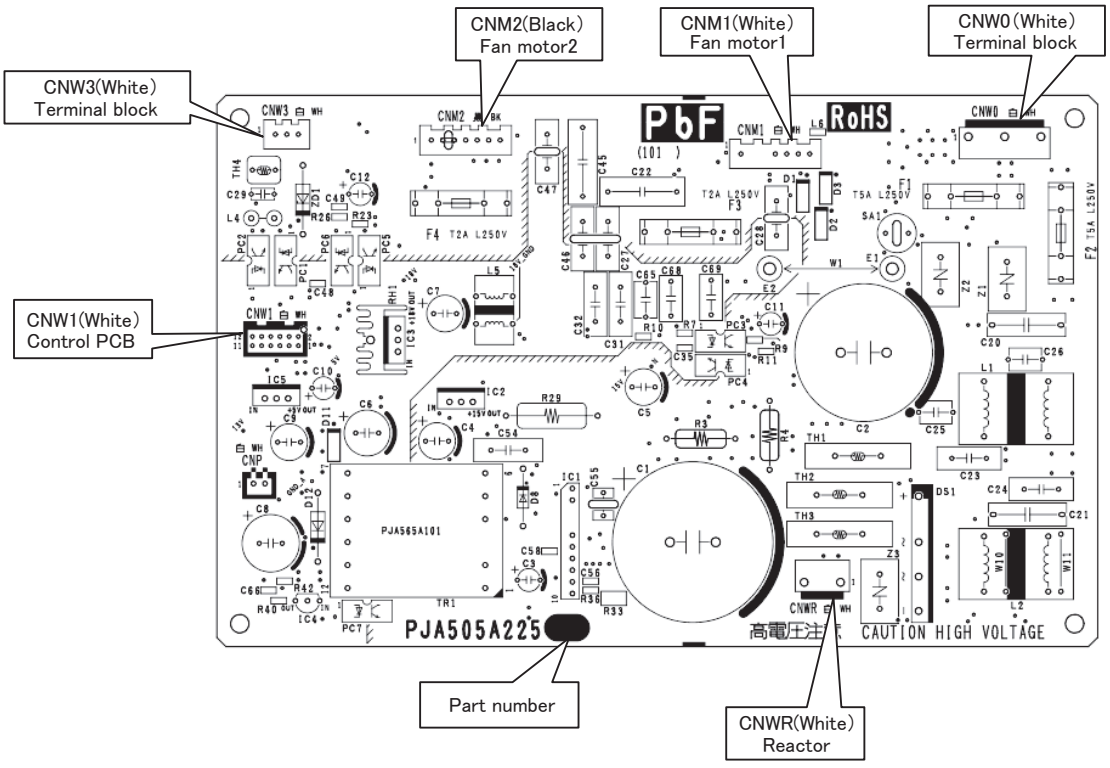
• Models FDE50-140VG, FDUM50VF

PSB012D992



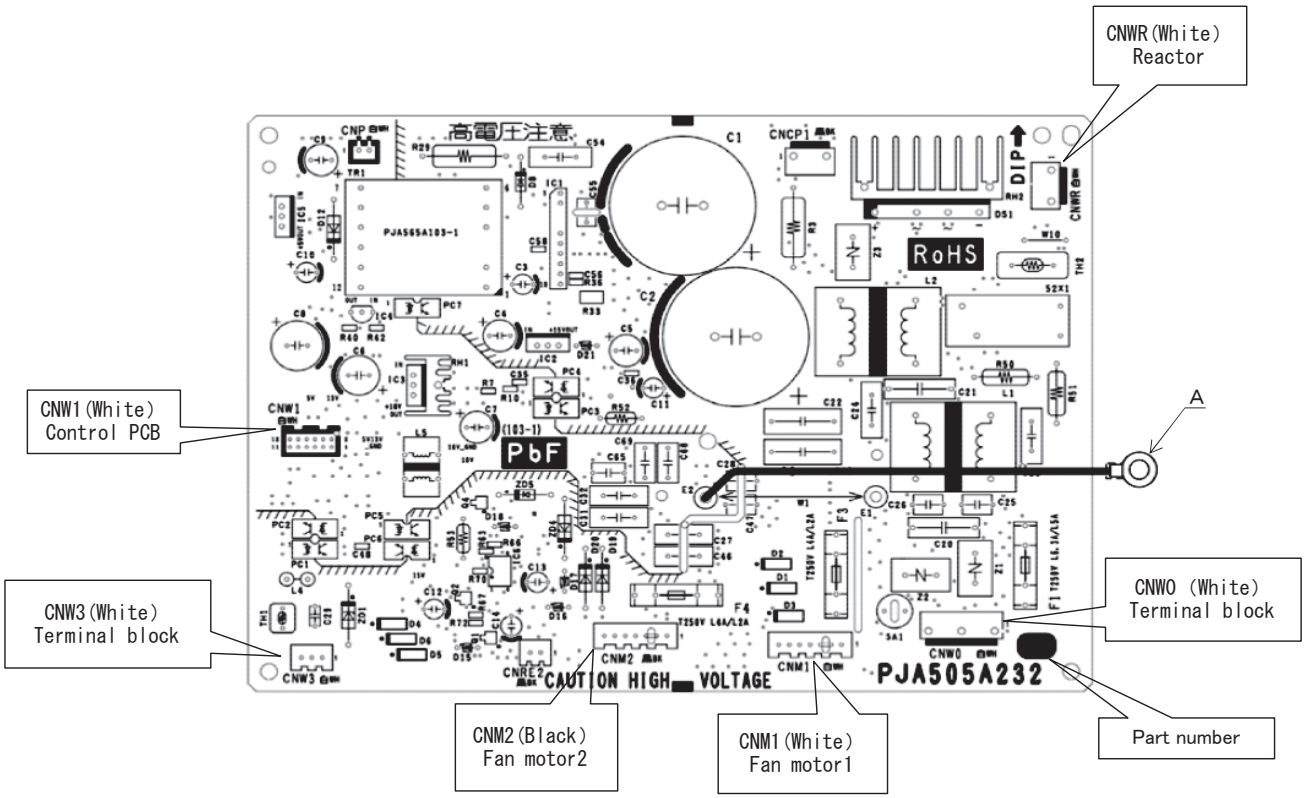
• Models FDUM60VF, 71VF1, 100VF2, 125VF, 140VF

PSB012D993



• Models FDU100VF2, 125VF, 140VF

PSC012D021 B



PSB012D976C G

4) Model FDF series

a) Control PCB

Replace and set up the PCB according to this instruction.

i) Set to an appropriate address and function using switch on PCB.

Select the same setting with the removed PCB.

item	switch	Content of control			
Address	SW2	Plural indoor units control by 1 remote control			
Master /Slave setting		Master	Slave1	Slave2	Slave3
	SW5-1	—	—	○	○
	SW5-2	—	○	—	○
Test run	SW7-1	—	Normal		
		○	Operation check/drain motor test run		

ii) Set to an appropriate capacity using the model selector switch(SW6).

Select the same capacity with the PCB removed from the unit.

SW6	-1	-2	-3	-4
71V	○	—	—	○
100V	○	○	—	○
125V	—	—	○	○
140V	○	—	○	○

Example setting for 71V

iii) Replace the PCB

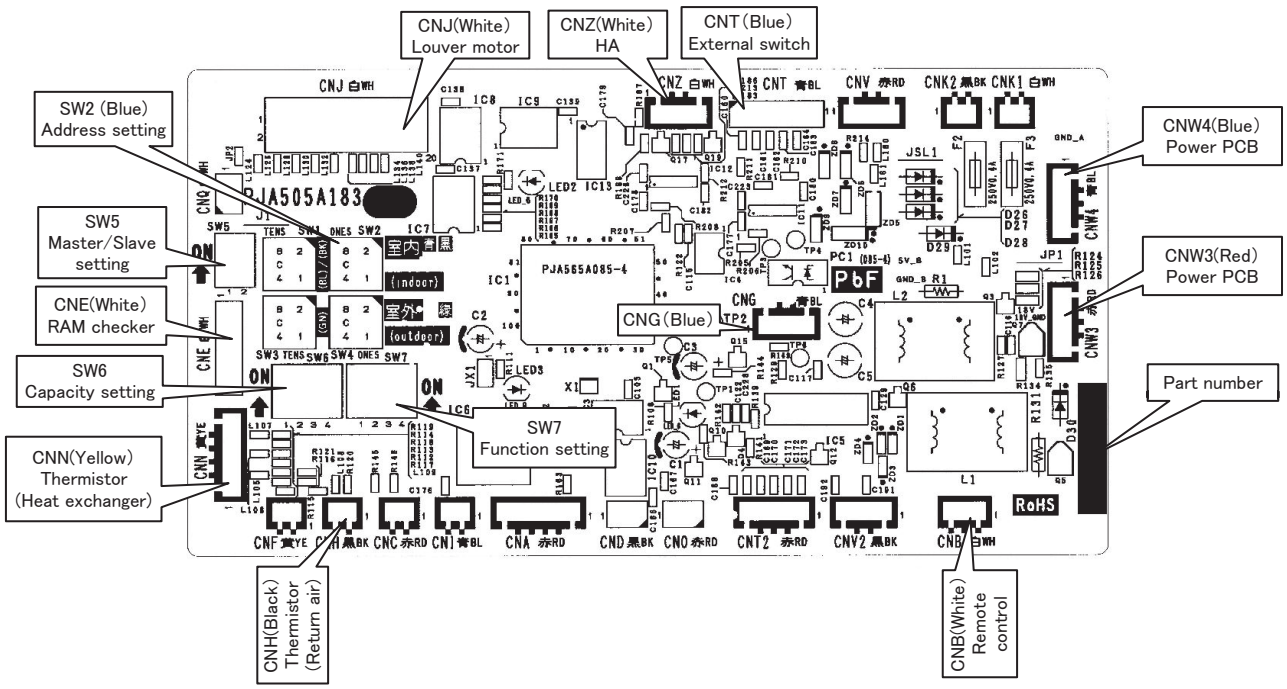
① Fix the PCB so as not to pitch the cords.

② Connect connectors to the PCB. Connect a cable connector with the PCB connector of the same color.

③ Do not pass CPU surrounding about wirings.

iv) Control PCB

Parts mounting are different by the kind of PCB.



b) Power PCB

PSB012D953C△C

This PCB is a general PCB. Replace the PCB according to this instruction.

Replace the PCB

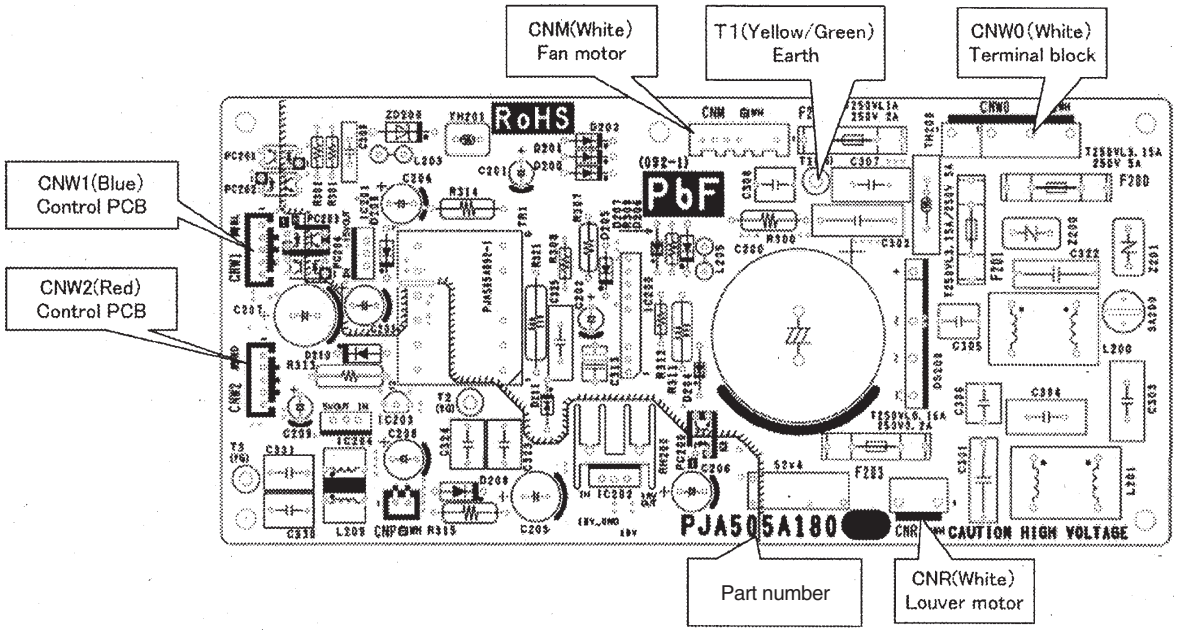
i) Unscrew terminal of the wining (yellow/green) soldered to PCB from the box.

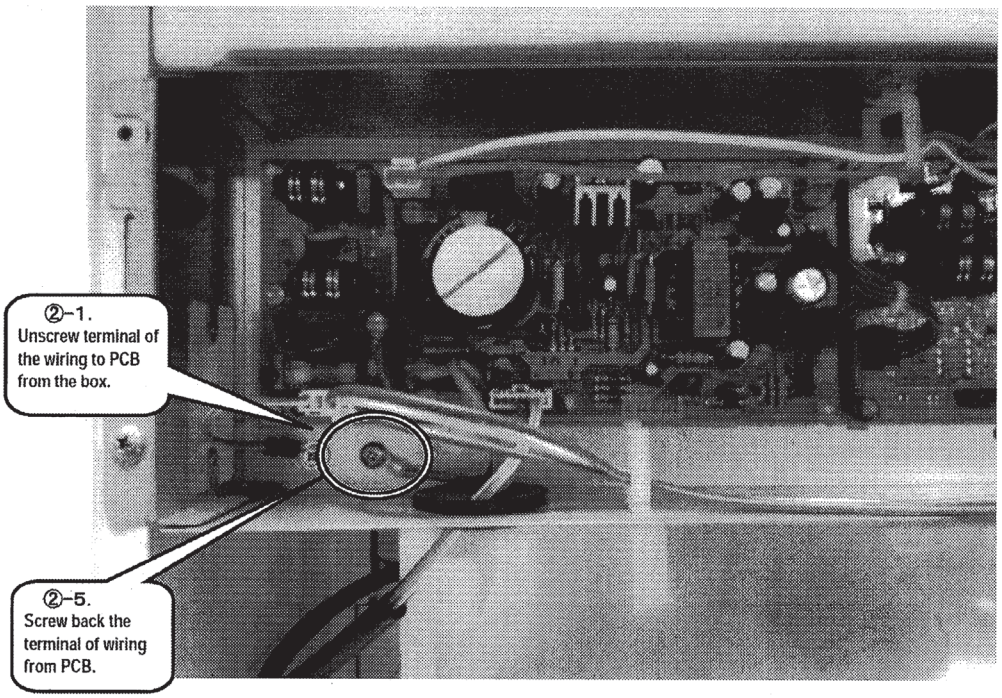
ii) Replace the PCB only after all the wirings connected to the connector are removed.

iii) Fix the board such that it will not pinch any of the wires.

iv) Reconnect the wirings to the PCB. Wiring connector color should match with the color of connector of the PCB.

v) Screw back the terminal of wiring (yellow/green) from PCB(T1), that was removed in 1.
In that case, do not place the crimping part of the wiring under the PCB.





●DIP switch setting list

Switches	Description		Default setting		Remarks
SW2	Address No. setting at plural indoor units control by 1 R/C		0		0-F
SW5-1	Master/Slave setting	Master*/Slave	OFF		See table 2
SW5-2			OFF		
SW6-1	Model selection		As per model		See table 1
SW6-2					
SW6-3					
SW6-4					
SW7-1	Test run, drain motor	Normal*/Test run	OFF	Normal	
SW7-2	Reserved		OFF		Keep OFF
SW7-3	Reserved		OFF		Keep OFF
SW7-4	Reserved		OFF		Keep OFF
JSL1	Superlink terminal spare	Normal*/switch to spare	With		

* Default setting

Table 1: Indoor unit model selection with SW6-1-SW6-4

Switches	50V	60V	71V	100V	125V	140V
SW6-1	ON	ON	ON	ON	OFF	ON
SW6-2	OFF	ON	OFF	ON	OFF	OFF
SW6-3	ON	ON	OFF	OFF	ON	ON
SW6-4	OFF	OFF	ON	ON	ON	ON

Table 2: Indoor unit Master/Slave setting with SW5-1,SW5-2

Switches	SW5-1	SW5-2
Master	OFF	OFF
Slave1	OFF	ON
Slave2	ON	OFF
Slave3	ON	ON

(b) SRK series

(i) Cautions

1) If you are disassembling and checking an air-conditioner, be sure to turn off the power before beginning. When working on indoor units, let the unit sit for about 1 minute after turning off the power before you begin work.
2) When taking out printed circuit boards, be sure to do so without exerting force on the circuit boards or package components.
3) When disconnecting and connecting connectors, take hold of the connector housing and do not pull on the lead wires.

(ii) Items to check before troubleshooting

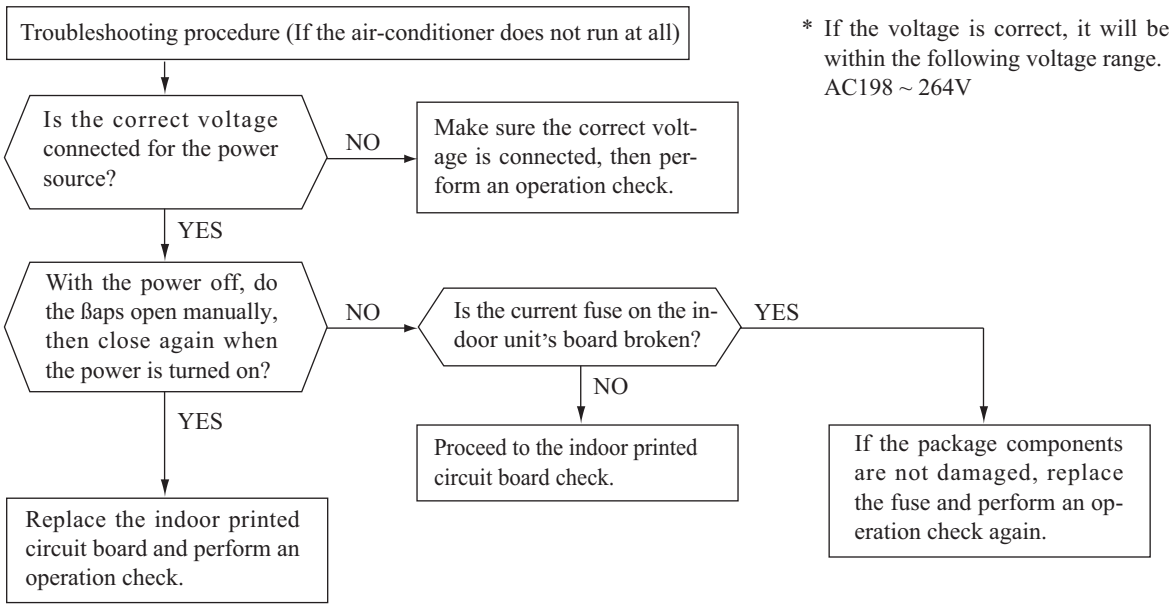
1) Is the air-conditioner running? Is it displaying any self-diagnosis information?
2) Is a power source with the correct voltage connected?
3) Are the control lines connecting the indoor and outdoor units wired correctly and connected securely?
4) Is the outdoor unit's service valve open?

(iii) Troubleshooting procedure (If the air-conditioner does not run at all)

If the air-conditioner does not run at all, diagnose the trouble using the following troubleshooting procedure.

Important When all the following conditions are satisfied, we say that the air-conditioner will not run at all.

1) The RUN light does not light up.
2) The flaps do not open.

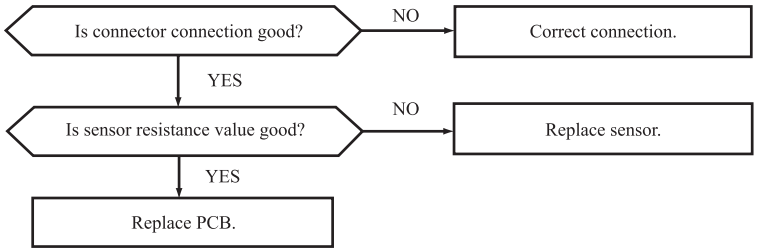


* If the voltage is correct, it will be within the following voltage range.
AC198 ~ 264V

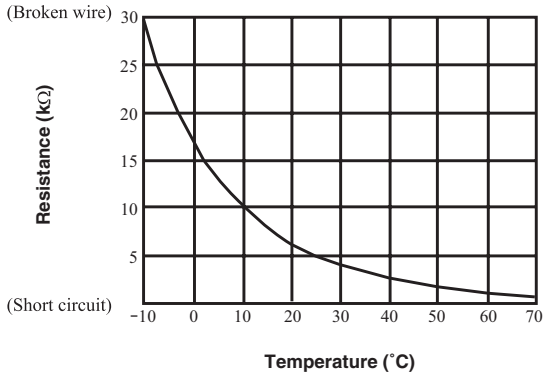
(iv) Inspection procedures corresponding to detail of trouble

Sensor error

[Broken sensor wire, connector poor connection]

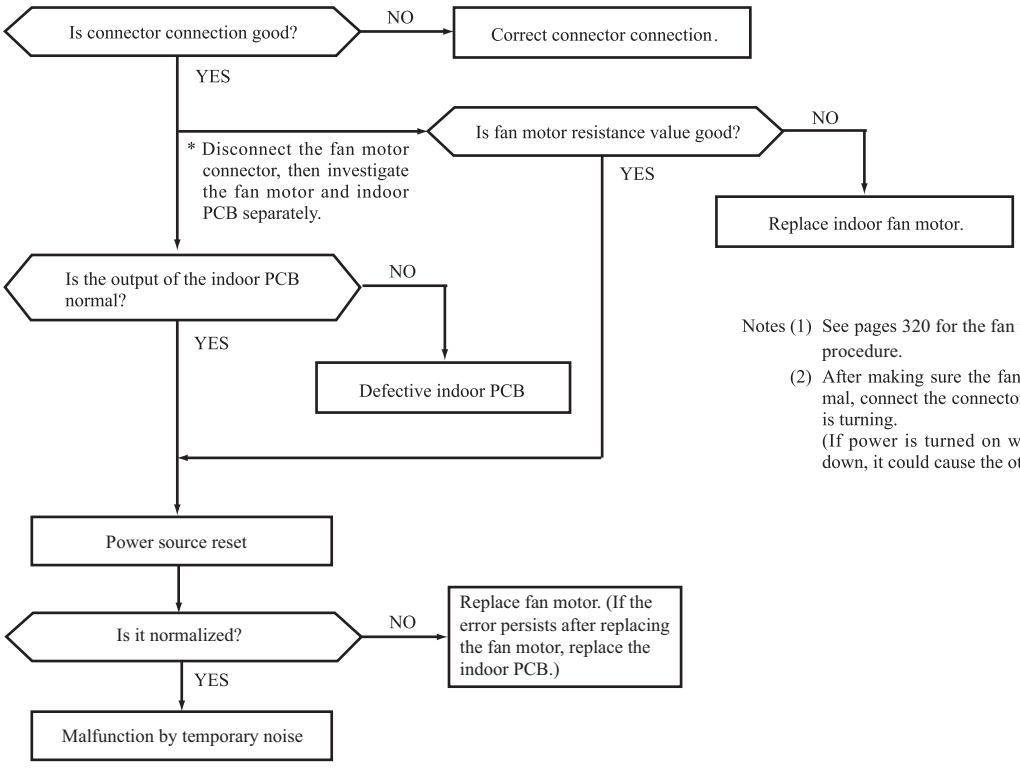


◆ **Sensor temperature characteristics (Room temp., indoor heat exchanger temp.)**



Indoor fan motor error

[Defective fan motor, connector poor connection, defective indoor PCB]

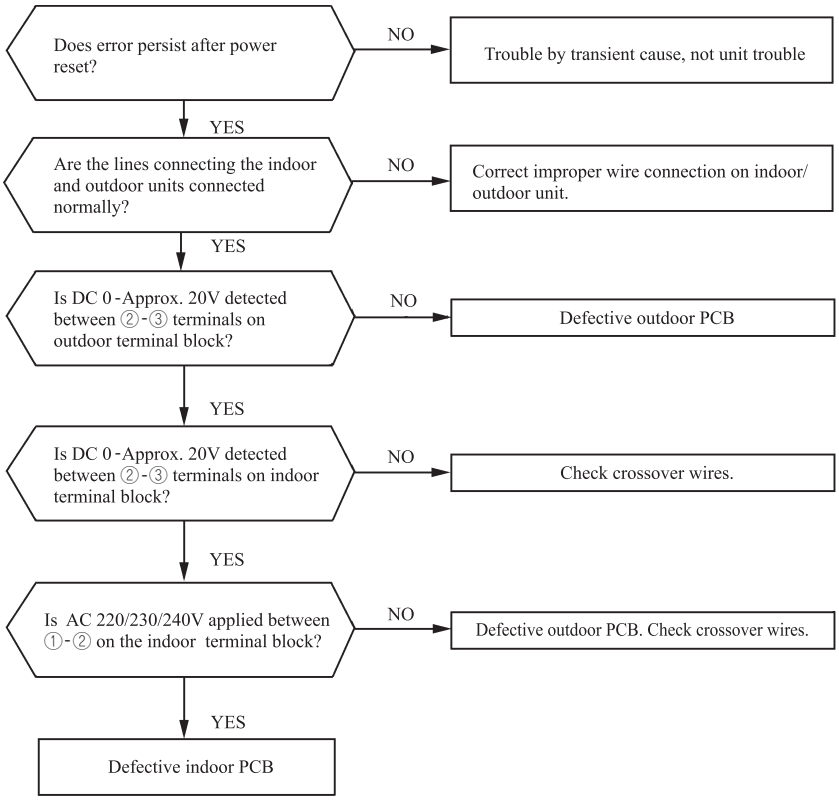


Notes (1) See pages 320 for the fan motor and indoor PCB check procedure.

(2) After making sure the fan motor and indoor PCB are normal, connect the connectors and confirm that the fan motor is turning.
(If power is turned on while one or the other is broken down, it could cause the other to break down also.)

Error of signal transmission

[Wiring error including power cable, defective indoor/ outdoor PCB]



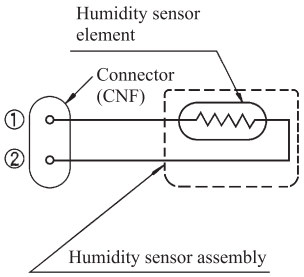
(v) Phenomenon observed after shortcircuit, wire breakage on sensor

Sensor	Operation mode	Phenomenon	
		Shortcircuit	Disconnected wire
Room temperature sensor	Cooling	Release of continuous compressor operation command.	Continuous compressor operation command is not released.
	Heating	Continuous compressor operation command is not released.	Release of continuous compressor operation command.
Heat exchanger sensor	Cooling	Freezing cycle system protection trips and stops the compressor.	Continiuous compressor operation command is not released. (Anti-frosting)
	Heating	High pressure control mode (Compressor stop command)	Hot keep (Indoor fan stop)
Humidity sensor	Cooling	Refer to the table below.	Refer to the table below.
	Heating	Normal system operation is possible.	

■ Humidity sensor operation

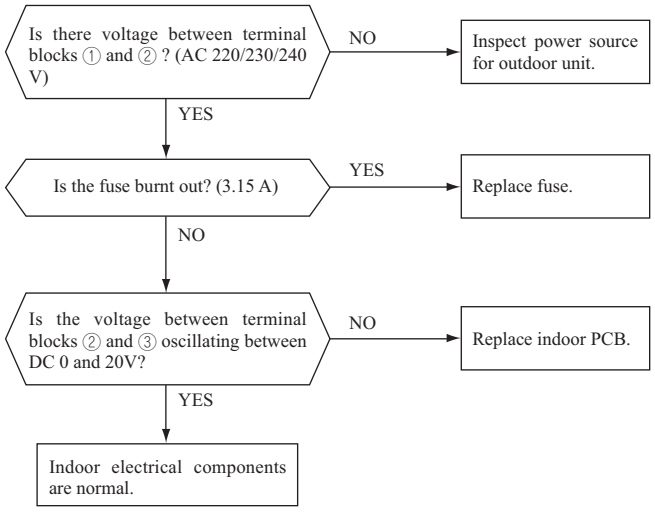
Failure mode		Control input circuit resding	Air-conditioning system operation
Disconnected wire	① Disconnected wire	Humidity reading is 0%	Anti-condensation control is not done.
	② Disconnected wire		
	①② Disconnected wire		
Short circuit	① and ② are shot circuited	Humidity reading is 100%	Anti-condensation control keep doing.

Remark: Do not perform a continuity check of the humidity sensor with a tester. If DC current is applied, it could damage the sensor.



(vi) Checking the indoor electrical equipment

1) Indoor PCB check procedure



2) Indoor unit fan motor check procedure

This is a diagnostic procedure for determining if the indoor unit's fan motor or the indoor PCB is broken down.

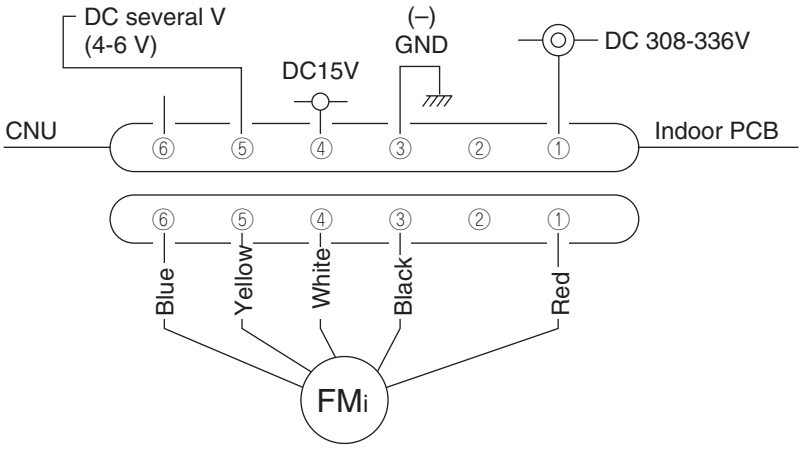
a) Indoor PCB output check

i) Turn off the power.

ii) Remove the front panel, then disconnect the fan motor lead wire connector.

iii) Turn on the power. If the unit operates when the ON/OFF button is pressed, if trouble is detected after the voltages in the following figure are output for approximately 30 seconds, it means that the indoor PCB is normal and the fan motor is broken down.

If the voltages in the following figure are not output at connector pins No. ①, ④ and ⑤, the indoor PCB has failed and the fan motor is normal.



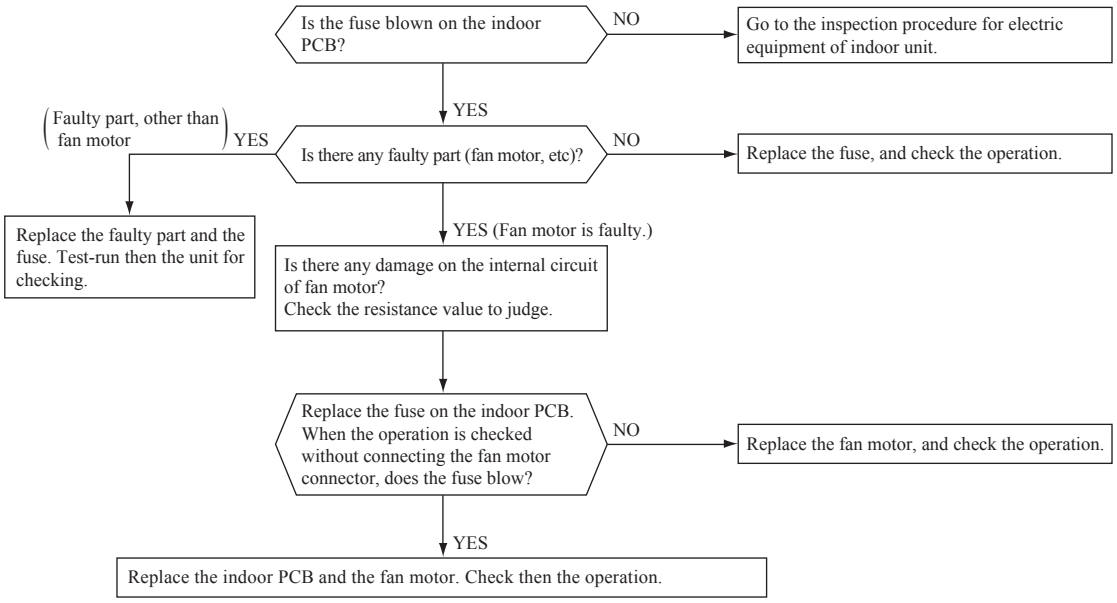
Measuring point	Voltage range when normal
① - ③	DC 308 - 336V
④ - ③	DC 15V
⑤ - ③	DC several V (4 - 6V)

b) Fan motor resistance check

Measuring point	Resistance when normal
① - ③ (Red - Black)	20 MΩ or higher
④ - ③ (White - Black)	20 kΩ or higher

Notes (1) Remove the fan motor and measure it without power connected to it.
(2) If the measured value is below the value when the motor is normal, it means that the fan motor is faulty.

(vii) Inspection procedure for blown fuse on the indoor PCB



(4) Troubleshooting at the outdoor unit

When troubleshooting the outdoor unit, firstly assess the overview of malfunction and try to presume the cause and the faulty part by checking the error code dispalyed on the remote control and flashing pattern of indicator lamps (Red LED and Green LED), and then proceed further inspection and remedy it.

Self-diagnosis system by microcomputer on indoor and outdoor PCB can assist to find the cause of malfunction smoothly by making a diagnosis of not only the anomaly of microcomuter, but also the anomaly in power source system, installation space, overload resulting from improper charging amount of refrigerant and etc.

Unless the power is reset, the error log is saved in memory and the inspection indicator lamps on outdoor PCB keep flashing after automatical recovering from malfunction.

After automatical recovering from malfunction, if any another error mode which has a higher priority than the previous error saved in memory occurs, it is overwritten in memory and is displayed.

[Reset of power source]

Be sure to avoid electrical shock, when replacing or checking the outdoor control PCB, because some voltage is still retained in the electrolytic capacitor on the PCB even after shutting down the power source to the outdoor unit.

Be sure to start repairing work, after confirming that the Green LED on the PCB has been extiguished for more than 10 seconds after more than 3 minutes had been passed since power shut down, and reconfirming that voltage has been discharged sufficiently by measuring the voltage (DC) between both terminals of electrolytic capacitor (C58) (Measurment of voltage may be disturbed by the moisture-proof coating. In such case, remove the coating and measure it by taking care of avoiding electrical shock.)

(a) Module of part to be replaced for outdoor unit control

Outdoor control PCB, temperature thermistor (of outdoor heat exchanger, discharge pipe, outdoor air and suction pipe), Fuses (for power source and control PCB), Noise filter and Reactor.

(b) Replacement procedure of outdoor control PCB

Precautions for Safety

- Since the following precaution is the important contents for safety, be sure to observe them.
  WARNING and CAUTION are described as follows:

⚠WARNING	Indicates an imminently hazardous situation which will result in death or serious injury if proper safety procedures and instructions are not adhered to.
⚠CAUTION	Indicates a potentially hazardous situation which may result in minor or moderate injury if proper safety procedures and instructions are not adhered to.

⚠ WARNING

- Securely replace the PCB according to this procedure.
  If the PCB is incorrectly replaced, it will cause an electric shock or fire.
- Be sure to check that the power source for the outdoor unit is turned OFF before replacing the PCB. The PCB replacement under current-carrying will cause an electric shock or fire.
- After finishing the PCB replacement, check that wiring is correctly connected with the PCB before power distribution. If the PCB is incorrectly replaced, it will cause an electric shock or fire.

⚠ CAUTION

- Band the wiring so as not to tense because it will cause an electric shock.

(i) Models FDC100VNA, 125VNA, 140VNA

PCA012D083

1) Disassembly

a) After the breaker is shut down, remove the service panel, top panel and rear panel. (Refer to Fig.1).

b) Don't touch the main PCB until three minutes have passed after the breaker is shut doun.
(After having shut down the breaker, some capacitor is held by high voltage. It is very dangerous to touch the main PCB in this condition.)
In the situation that hamesses are connected to main PCB, **be sure to measure voltage (DC)** on main PCB, and **check that the voltage is discharged sufficientlv (DC voltage 30 V or less).** (Refer to Fig.2)

c) Disconnect the connectors, faston terminals and round terminals from the main PCB as shown in Fig.2.
And then remove the fixing screws (3 places) as shown in Fig.3.
After removing the main PCB, wipe off the heat conduction sheet neatly from the copper plate.

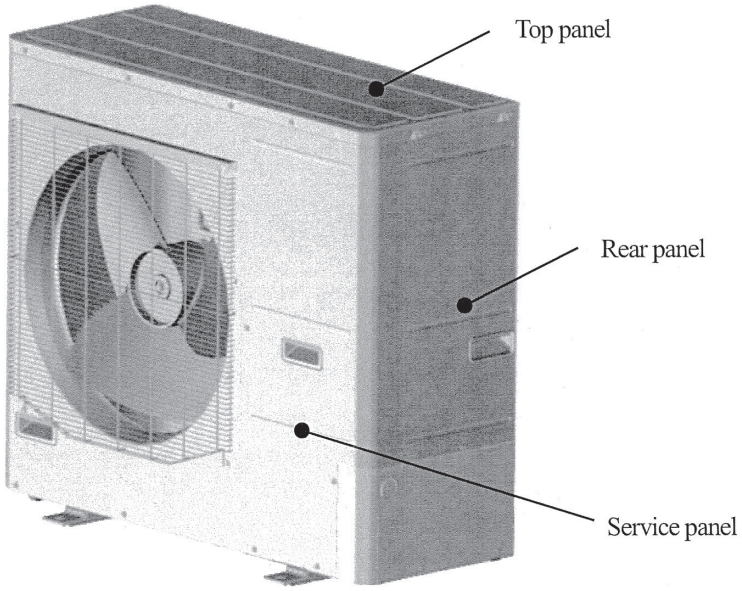


Fig.1 Outdoor unit overall view

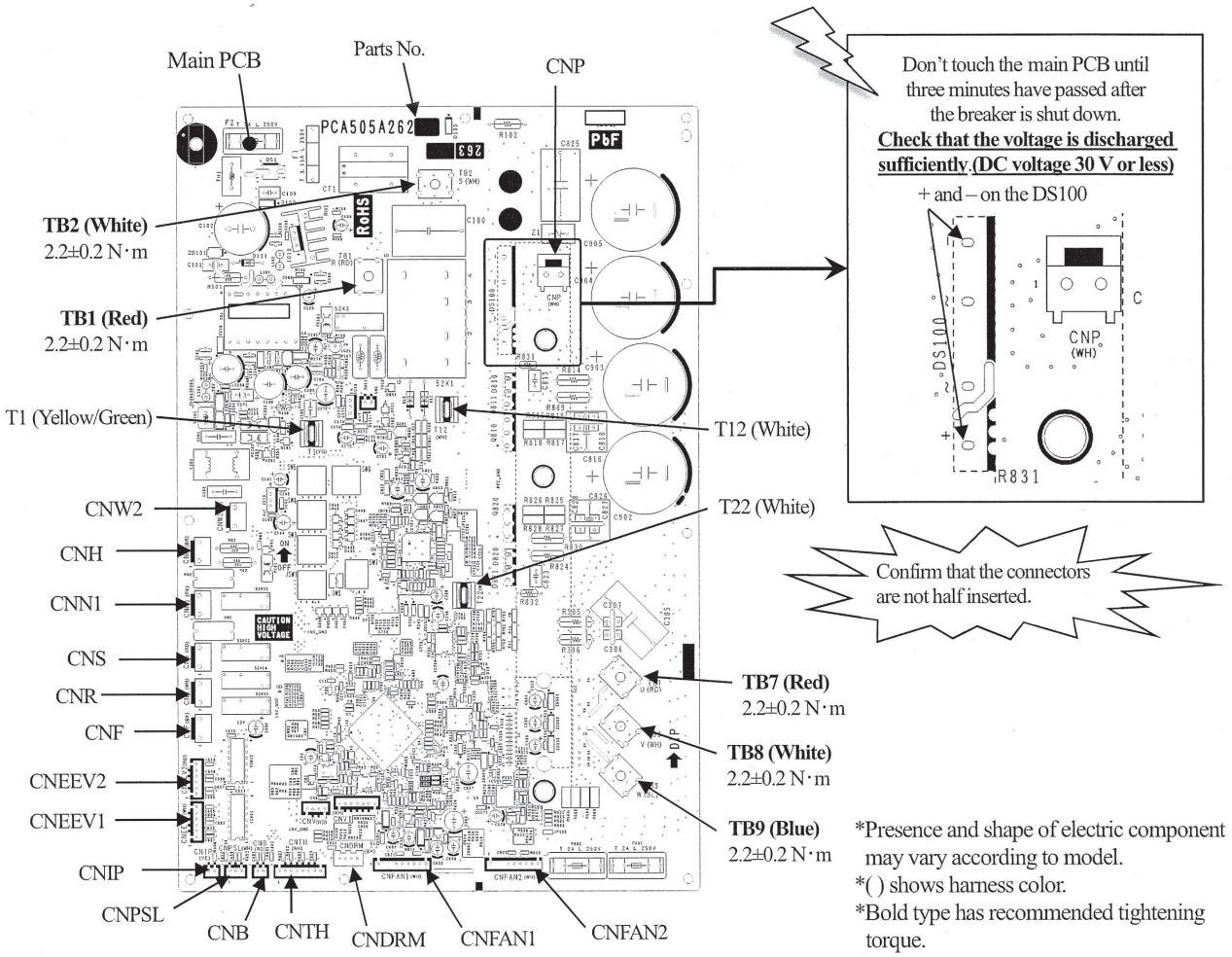


Fig.2 Parts arrangement view of main PCB and voltage measurement points

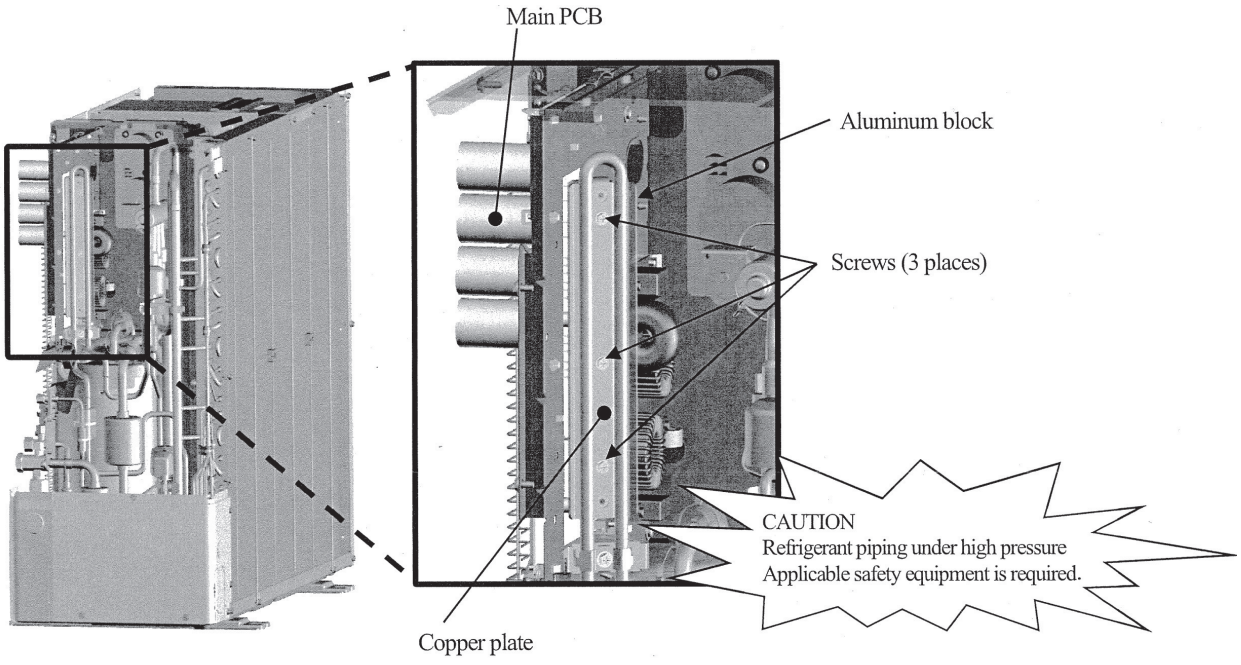


Fig.3 Outdoor unit side view

2) Exchange

a) Match the setting of new main PCB switches (JSW1, SW3-7) with former main PCB. (Refer to Fig.4)

b) Tum over the separator of new heat conduction sheet and paste the heat conduction sheet on the aluminum block. (Refer to Fig.5)

c) Install the attached hamess clip on the new main PCB as shown in Fig.6.

3) Installation

a) Install the new main PCB on the control and tighten the screw as shown in Fig.7.

b) Reconnect the connectors, faston terminals and round terminals to the main PCB as before. (Refer to Fig.2) (Confirm that the **connectors are not half inserted**.)

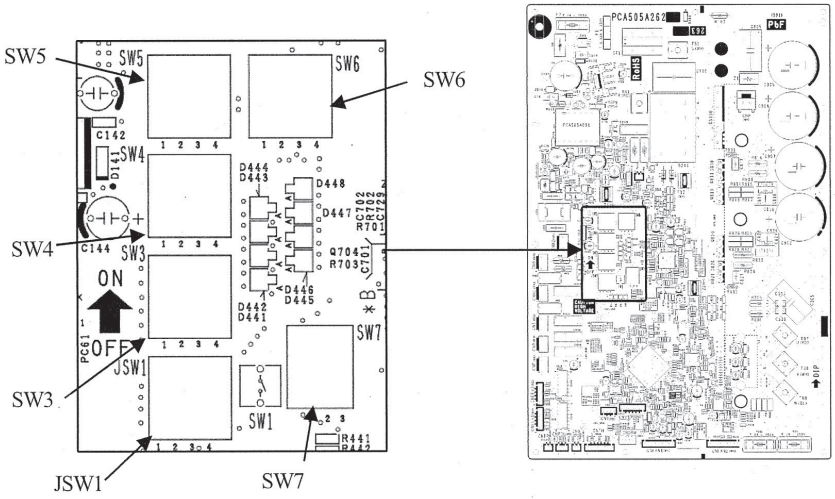


Fig.4 Switch position of main PCB

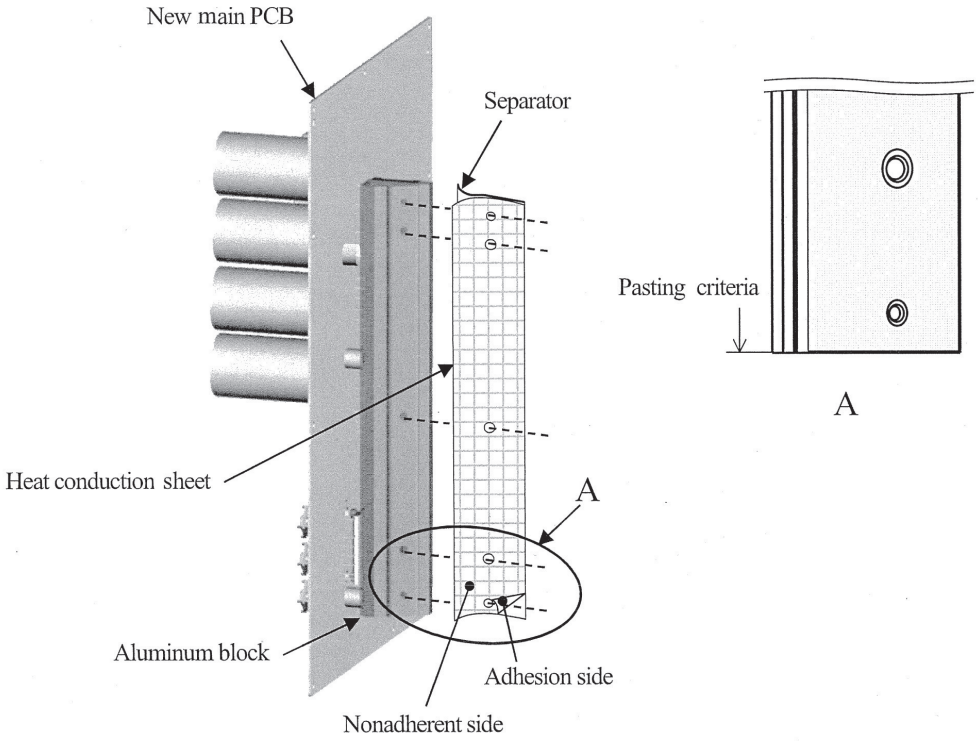


Fig.5 Detail of paste for the heat conduction sheet

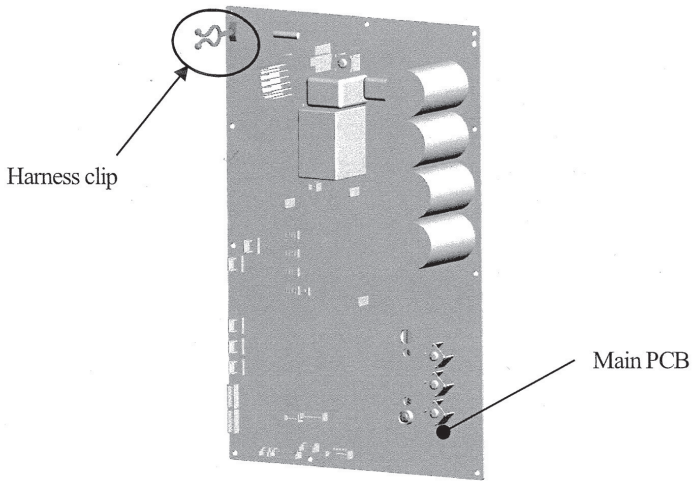


Fig.6 Install of the harness clip

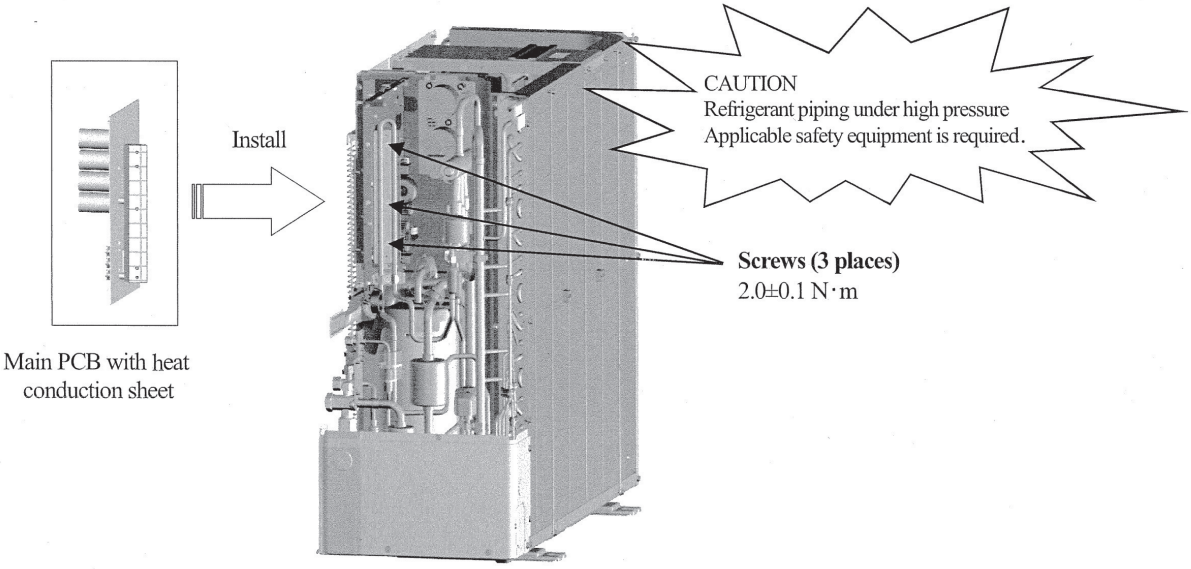
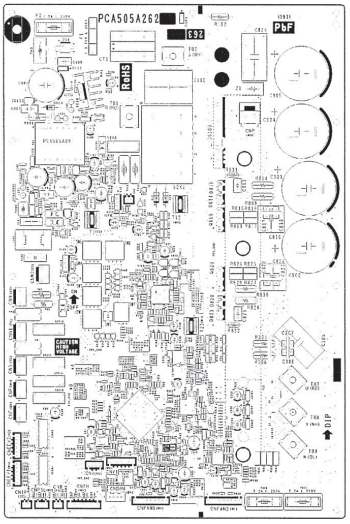


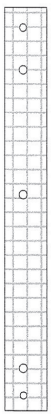
Fig.7 Install of the main PCB

●Accessories

Check the following accessories are packed in. (Except this manual)



Main PCB ×1



Heat conduction sheet
×1

Harness clip
×1

(ii) Models FDC100VSA, 125VSA, 140VSA

PCA012D084

1) Disassembly

a) After the breaker is shut down, remove the service panel, top panel and rear panel. (Refer to Fig.1).

b) Don't touch the main PCB until three minutes have passed after the breaker is shut doun.
(After having shut down the breaker, some capacitor is held by high voltage. It is very dangerous to touch the main PCB in this condition.)
In the situation that hamesses are connected to main PCB, **be sure to measure voltage (DC)** on main PCB, and **check that the voltage is discharged sufficientlv (DC voltage 30 V or less).** (Refer to Fig.2)

c) Disconnect the connectors, faston terminals and round terminals from the main PCB as shown in Fig.2.
And then remove the fixing screws (3 places) as shown in Fig.3.
After removing the main PCB, wipe off the heat conduction sheet neatly from the copper plate.

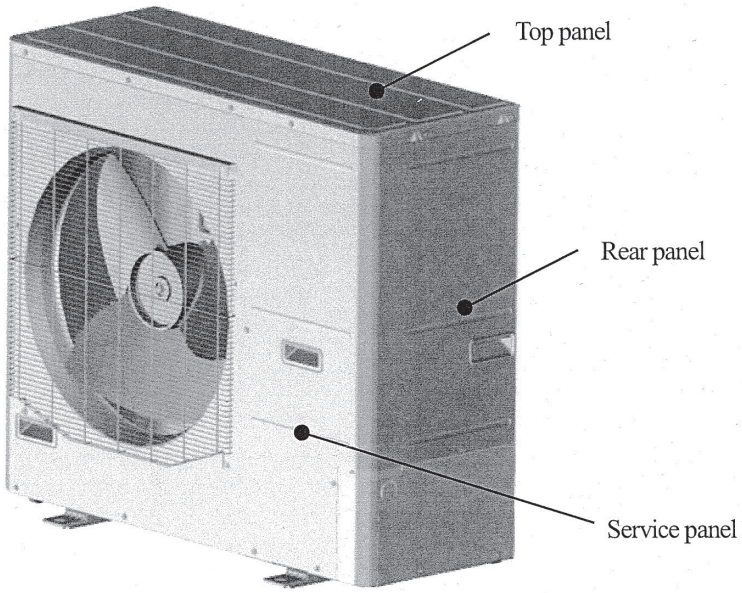


Fig.1 Outdoor unit overall view

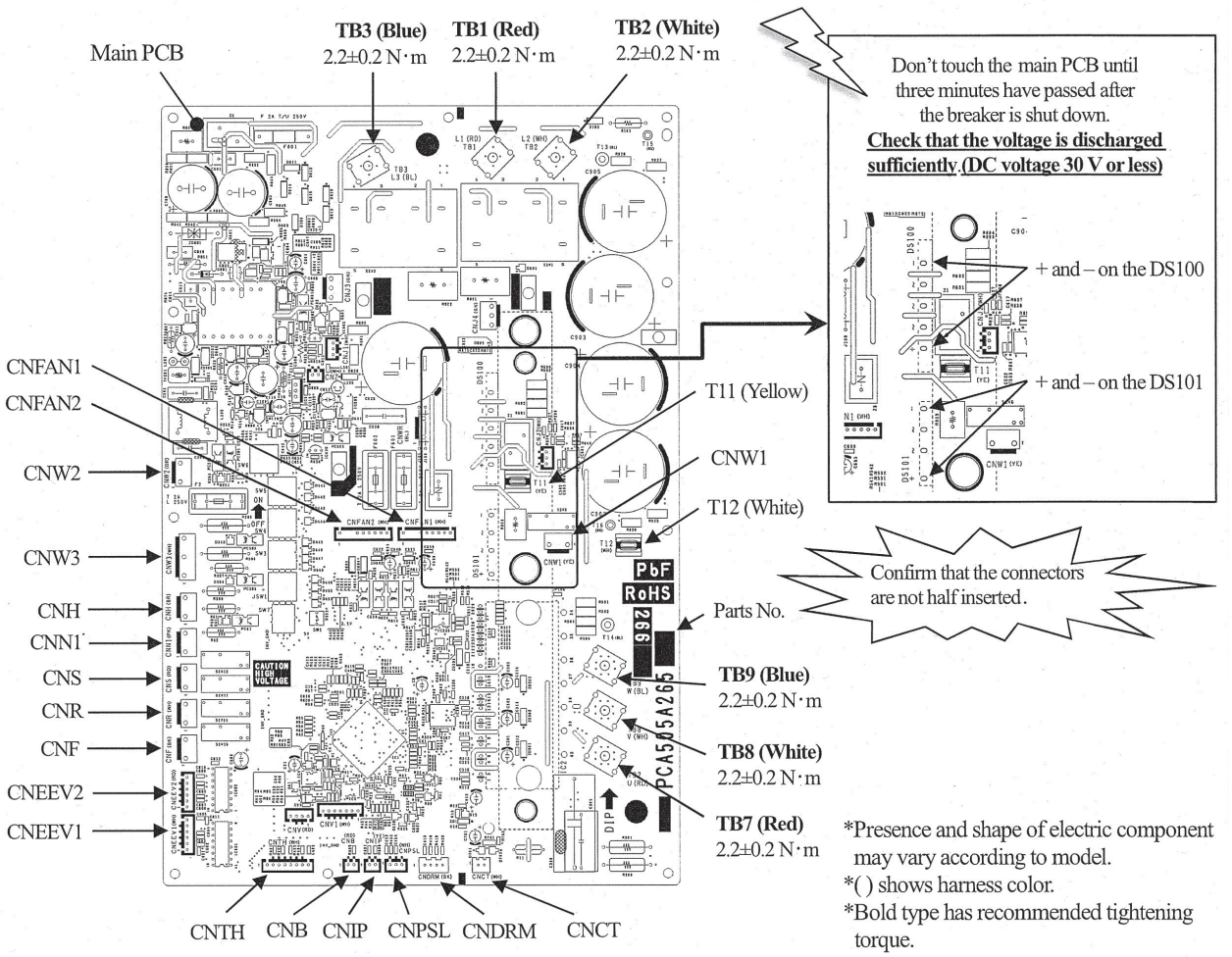


Fig.2 Parts arrangement view of main PCB and voltage measurement points

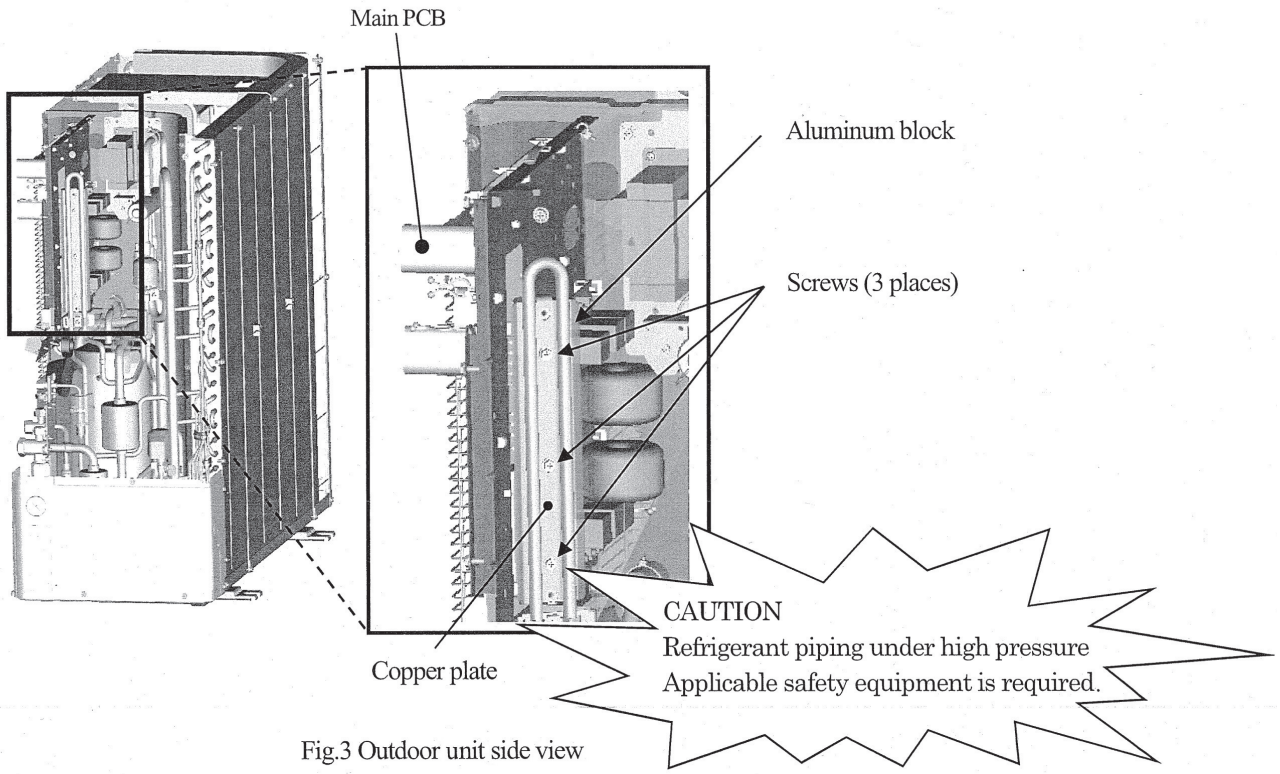


Fig.3 Outdoor unit side view

2) Exchange

a) Match the setting of new main PCB switches (JSW1, SW3-7) with former main PCB. (Refer to Fig.4)

b) Tum over the separator of new heat conduction sheet and paste the heat conduction sheet on the aluminum block. (Refer to Fig.5)

3) Installation

a) Install the new main PCB on the control and tighten the screw as shown in Fig.6.

b) After the new Main PCB is installed on the control, reconnect the connectors, faston terminals, and round terminals to the main PCB as before. (Refer to Fig.2)
(Confirm that the **connectors are not half inserted**.)

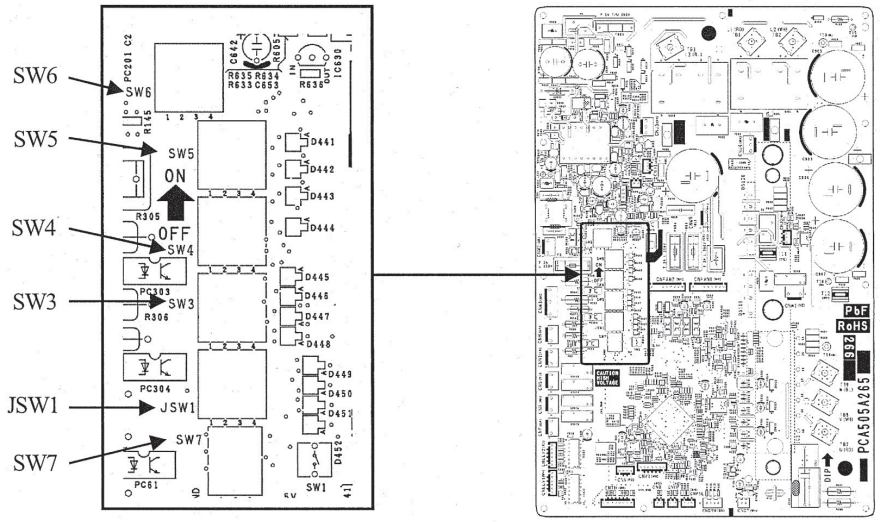


Fig.4 Switch position of main PCB

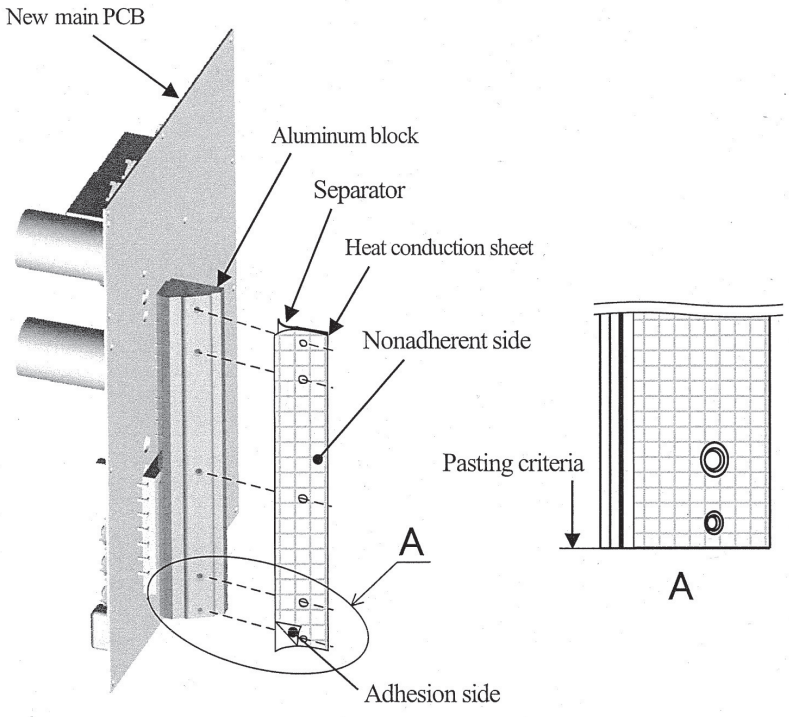


Fig.5 Detail of paste for the heat conduction sheet

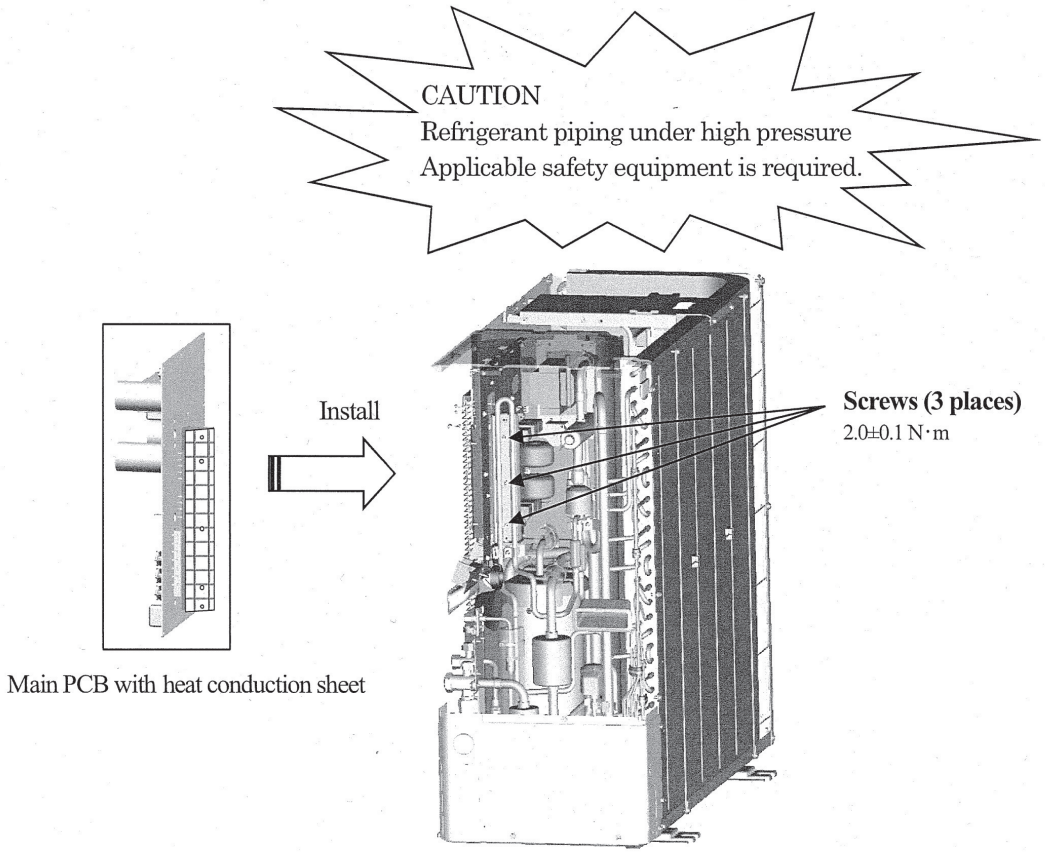
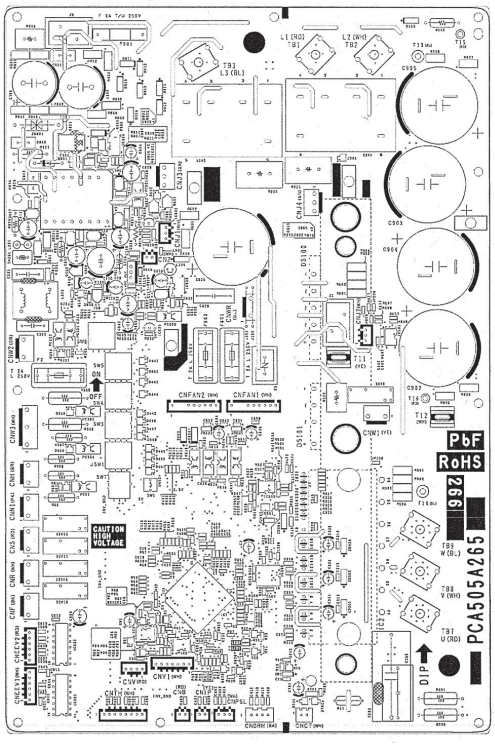


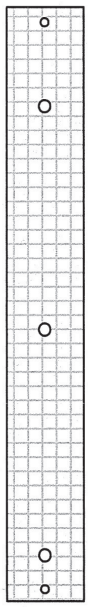
Fig.6 Installation of the main PCB

●Accessories

Check following accessories are packed in. (Except this manual)



Main PCB ×1



Heat conduction sheet ×1

●DIP switch setting list (Outdoor unit)

Switches	Description		Default setting		Remarks
SW1	(See table 1)		OFF		
JSW1-1 JSW1-2 JSW1-3	Model selection		As per model		See table 2
JSW1-4	Reserved		OFF		Keep OFF
SW3-1	Defrost condition	Normal*/Cold region	OFF	Normal	Refer to page 295
SW3-2	Snow protection control	Normal*/Snow protection	OFF	Normal	Refer to page 294
SW3-3	Test run SW	Normal*/Test run	OFF	Normal	Refer to page 298
SW3-4	Test run mode	Cooling*/Heating	OFF	Cooling	Refer to page 298
SW4-1	Reserved		OFF		Keep OFF
SW4-2	Cancel measuring of refrigerant leak	Normal*/Cancel	OFF	Normal	Detection function of error in E57 refrigeration system protection (OFF: Detection / ON: Cancel to detect)
SW4-3	Reserved		OFF		Keep OFF
SW4-4	Reserved		OFF		Keep OFF
SW5-1	Utilization of existing piping control	Normal*/Existing piping control	OFF	Normal	See Note 1
SW5-2	Hight difference of IU and OU control	Normal*/High head control	OFF	Normal	When the outdoor unit is positioned higher than 30m (OFF : Normal / ON : high head)
SW5-3	Reserved		OFF		Keep OFF
SW5-4	Reserved		OFF		Keep OFF
SW6-1	Reserved		OFF		Keep OFF
SW6-2	Reserved		OFF		Keep OFF
SW6-3	Reserved		OFF		Keep OFF
SW6-4	Inverter checker mode	Normal*/Check INV	OFF	Normal	Refer to page 333
SW7-1	SW1 function selection		OFF		See table1
SW7-2	Frost protection by frequent external ON/OFF	Normal*/connected external device	OFF	Normal	In case external device switches ON/OFF frequently, switch to ON to start defrost operation even though short operation time.
SW7-3	Silent mode selection	Normal*/Silent mode	OFF	Normal	Refer to page 298

* Default setting

Table 1: SW1 fuction selection

0: OFF 1:ON

SW7-1	SW1 function	Remarks
0	Pump down operation	Refer to page 299
1	Reset cumulative time of compressor operation	Reset of operation time after replacing a compressor

Table 2: Outdoor unit model selection with JSW1-1-JSW1-3

0: OFF 1:ON

	100VN	100VS	125VN	125VS	140VN	140VS
JSW1-1	0	0	1	1	0	0
JSW1-2	0	0	0	0	1	1
JSW1-3	0	0	0	0	0	0

Note 1: Utilization of existing pipe

1 In case of reusing annealed pipe ø19.05 × t1.0, be sure to turn the dip switch on the outdoor PCB ON as shown in the table because of its insufficient strength. If its material is 1/2H or its thickness is 1.2mm or more it is no necessary.

2 If bendng radius of existing pipe is less than R70mm, be sure to turn the dip switch on the outdoor PCB shown in the table due to its insufficient strength.

(5) Check of anomalous operation data with the remote control

(a) In case of RC-E5 remote control

Operation data can be checked with remote control unit operation.

① Press the CHECK button.
The display change " OPER DATA ▼ "

② Press the ○ (SET) button while " OPER DATA ▼ " is displayed.

③ When only one indoor unit is connected to remote control, " DATA LOADING " is displayed (blinking indication during data loading).
Next, operation data of the indoor unit will be displayed. Skip to step ⑦.

④ When plural indoor units is connected, the smallest address number of indoor unit among all connected indoor unit is displayed.
[Example]:
" SELECT I/U " (blinking 1 seconds) → " I/U000 ▲ " blinking.

⑤ Select the indoor unit number you would like to have data displayed with the ▲ ▼ button.

⑥ Determine the indoor unit number with the ○ (SET) button.
(The indoor unit number changes from blinking indication to continuous indication)
" I/U000 " (The address of selected indoor unit is blinking for 2 seconds.)
↓
" DATA LOADING " (A blinking indication appears while data loaded.)
Next, the operation data of the indoor unit is indicated.

⑦ Upon operation of the ▲ ▼ button, the current operation data is displayed in order from data number 01.
The items displayed are in the above table.
*Depending on models, the items that do not have corresponding data are not displayed.

Number		Data Item
01		(Operation Mode)
02	SET TEMP ___℃	(Set Temperature)
03	RETURN AIR ___℃	(Return Air Temperature)
04	SENSOR ___℃	(Remote Controller Thermistor Tempeature)
05	THI-R1 ___℃	(Indoor Heat Exchanger Thermistor / U Bend)
06	THI-R2 ___℃	(Indoor Heat Exchanger Thermistor /Capillary)
07	THI-R3 ___℃	(Indoor Heat Exchanger Thermistor /Gas Header)
08	I/U FANSPEED ___	(Indoor Unit Fan Speed)
09	DEMAND ___Hz	(Frequency Requirements)
10	ANSWER ___Hz	(Response Frequency)
11	I/U EEV ____P	(Pulse of Indoor Unit Expansion Value)
12	TOTAL I/U RUN ____H	(Total Running Hours of The Indoor Unit)
21	OUTDOOR ___℃	(Outdoor Air Temperature)
22	THO-R1 ___℃	(Outdoor Heat Exchanger Thermistor)
23	THO-R2 ___℃	(Outdoor Heat Exchanger Thermistor)
24	COMP ___Hz	(Compressor Frequency)
25	HP ___MPa	(High Pressure)
26	LP ____MPa	(Low Pressure)
27	Td ___℃	(Discharge Pipe Temperature)
28	COMP BOTTOM ___℃	(Comp Bottom Temperature)
29	CT ___AMP	(Current)
30	TARGET SH ___℃	(Target Super Heat)
31	SH ___℃	(Super Heat)
32	TDSH ___℃	(Discharge Pipe Super Heat)
33	PROTECTION No.	(Protection State No. of The Compressor)
34	O/U FANSPEED ___	(Outdoor Unit Fan Speed)
35	63H1	(63H1 On/Off)
36	DEFROST	(Defrost Control On/Off)
37	TOTAL COMP RUN ___H	(Total Running Hours of The Compressor)
38	O/U EEV1 ____P	(Pulse of The Outdoor Unit Expansion Valve EEVC)
39	O/U EEV2 ____P	(Pulse of The Outdoor Unit Expansion Valve EEVH)

⑧ To display the data of a different indoor unit, press the AIR CON No. button, which allows you to go back to the indoor unit selection screen.

⑨ Pressing the ①ON/OFF button will stop displaying data.
Pressing the ⁄⁄ (RESET) button during remote control unit operation will undo your last operation and allow you to go back to the previous screen.

⊙If two (2) remote controls are connected to one (1) inside unit, only the master control is available for trial operation and confirmation of operation data. (The slave remote control is not available.)

●Details of compressor protection status No. 33

No.	Contents of display	In case of FDC100-140 refer to
"0"	Normal	
"1"	Discharge pipe temperature protection control	Page295, (6).(a).1)
"2"	Discharge pipe temperature anomaly	Page295, (6).(a).2)
"3"	Current safe control of inverter primary current	Page296, (6).(f)
"4"	High pressure protection control	Page295, (6).(b).1), (c).1)
"5"	High pressure anomaly	Page295, (6).(b).2)
"8"	Anti-frost prevention control	Page297, (6).(j)
"9"	Current cut	Page296, (6).(f)
"11"	Power transistor anomaly (Overheat)	Page297, (6).(h)
"12"	Compression ratio control	Page296, (6).(e)
"13"	Spare	
"14"	Dewing prevention control	Page297, (6).(k)
"15"	Current safe control of inverter secondary current	Page296, (6).(f)
"16"	Stop by compressor rotor lock	
"17"	Stop by compressor startup failure	Page298, (6).(o)
"18"	Active filter anomaly	

Note(1) Operation data display on the remote control.
・Data is dispalyed until canceling the protection control.
・In case of multiple protections controlled, only the younger No. is displayed.
Note(2) Common item
① In heating mode.
During protection control by the command signal for reducing compressor frequency from indoor unit, No. "4" is displayed.
② In cooling and dehumidifying mode
During protection control by the command signal for reducing compressor frequency from indoor unit, No. "8" is displayed.

#

(b) In case of RC-EX3 remote control

[Operating procedure]

① On the TOP screen, touch the buttons in the order of "Menu" → "Service setting" → "Service & Maintenance" → "Service password" → "Set" → "Error display" → "Error history".

② When only one indoor unit is connected to the remote control, followings will be displayed.

1. When there is any anomaly: "Loading. Wait a while" is displayed, followed by the operation data at the occurrence of anomaly.Contents of display
   - Error code
   - Number and data item
2. When there is no anomaly: "No anomaly" is displayed, and this mode is terminated.

③ When two or more indoor units are connected to the remote control, followings will be displayed.

1. When there is any anomaly: If the unit having anomaly is selected on the "Select IU" screen, "Loading. Wait a while" is displayed, followed by the operation data at the occurrence of anomaly.

Contents of display
- Indoor unit No.
- Error code
- Number and data item

2. When there is no anomaly: "No anomaly" is displayed, ant this mode is terminated.

Note (1) When the number of connected units cannot be shown in a page, select "Next".

④ If you press [RUN/STOP] button, the display returns to the TOP screen.

◎ **If you touch "Back" button on the way of setting, the display returns to the last precious screen.**

Note (1) When two remote controls are used to control indoor units, the check of anomaly operation data can be made on the master remote control only. (It cannot be operated from the slave remote control.)

■ Anomaly operation data (Corresponding data may not be provided depending on models. Such items will not be displayed.)

Number		Data Item
01	❄	(Operation Mode)
02	SET TEMP___℃	(Set Temperature)
03	RETURN AIR___℃	(Return Air Temperature)
04	SENSOR___℃	(Remote Controller Thermistor Tempeature)
05	THI-R1___℃	(Indoor Heat Exchanger Thermistor / U Bend)
06	THI-R2___℃	(Indoor Heat Exchanger Thermistor /Capillary)
07	THI-R3___℃	(Indoor Heat Exchanger Thermistor /Gas Header)
08	I/U FANSPEED___	(Indoor Unit Fan Speed)
09	DEMAND___Hz	(Frequency Requirements)
10	ANSWER___Hz	(Response Frequency)
11	I/U EEV____P	(Pulse of Indoor Unit Expansion Value)
12	TOTAL I/U RUN____H	(Total Running Hours of The Indoor Unit)
21	OUTDOOR___℃	(Outdoor Air Temperature)
22	THO-R1___℃	(Outdoor Heat Exchanger Thermistor)
23	THO-R2___℃	(Outdoor Heat Exchanger Thermistor)
24	COMP___Hz	(Compressor Frequency)
25	HP___MPa	(High Pressure)
26	LP____MPa	(Low Pressure)
27	Td___℃	(Discharge Pipe Temperature)
28	COMP BOTTOM___℃	(Comp Bottom Temperature)
29	CT___AMP	(Current)
30	TARGET SH___℃	(Target Super Heat)
31	SH___℃	(Super Heat)
32	TDSH___℃	(Discharge Pipe Super Heat)
33	PROTECTION No.__	(Protection State No. of The Compressor)
34	O/U FANSPEED____	(Outdoor Unit Fan Speed)
35	63H1	(63H1 On/Off)
36	DEFROST	(Defrost Control On/Off)
37	TOTAL COMP RUN___H	(Total Running Hours of The Compressor)
38	O/U EEV1____P	(Pulse of The Outdoor Unit Expansion Valve EEVC)
39	O/U EEV2____P	(Pulse of The Outdoor Unit Expansion Valve EEVH)

●Details of compressor protection status No. 33

No.	Contents of display	In case of FDC100-140 refer to
"0"	Normal	
"1"	Discharge pipe temperature protection control	Page295, (6).(a).1)
"2"	Discharge pipe temperature anomaly	Page295, (6).(a).2)
"3"	Current safe control of inverter primary current	Page295, (6).(f)
"4"	High pressure protection control	Page295, (6).(b).1), (c).1)
"5"	High pressure anomaly	Page295, (6).(b).2)
"8"	Anti-frost prevention control	Page297, (6).(j)
"9"	Current cut	Page296, (6).(f)
"11"	Power transistor anomaly (Overheat)	Page297, (6).(h)
"12"	Compression ratio control	Page296, (6).(e)
"13"	Spare	
"14"	Dewing prevention control	Page297, (6).(k)
"15"	Current safe control of inverter secondary current	Page296, (6).(f)
"16"	Stop by compressor rotor lock	
"17"	Stop by compressor startup failure	Page298, (6).(o)
"18"	Active filter anomaly	

Note(1) Operation data display on the remote control.
- Data is dispalyed until canceling the protection control.
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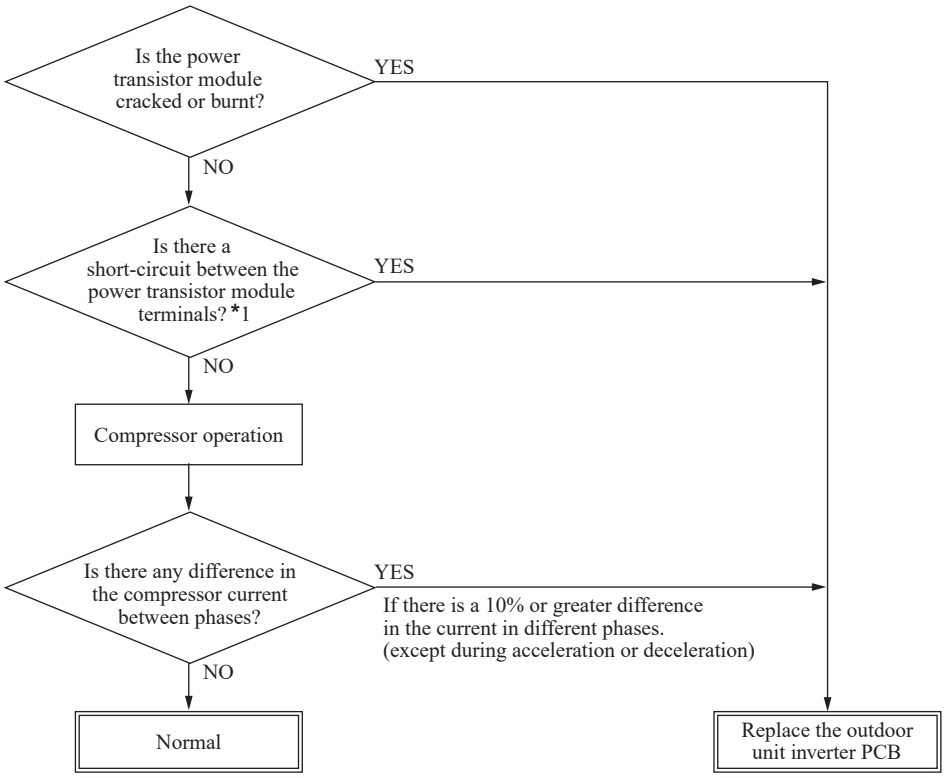
Note(2) Common item
① In heating mode.
During protection control by the command signal for reducing compressor frequency from indoor unit, No. "4" is displayed.
② In cooling and dehumidifying mode
During protection control by the command signal for reducing compressor frequency from indoor unit, No. "8" is displayed.

#

Power transistor module (Including the driver PCB) inspection procedure



***1 Power transistor module terminal short-circuit check procedure**

Disconnect the compressor wiring, then conduct a short-circuit check.

P-U, P-V, P-W

N-U, N-V, N-W

Check between the P-N terminals.

Bring the tester probes in contact with the following places on each terminal.

P: Power transistor P terminal

N: Power transistor N terminal

U: End of red harness to compressor

V: End of white harness to compressor

W: End of black or blue harness to compressor

Check for a power transistor short-circuit.

- When you do not have a diagnostic checker for judging if the inverter is defective, measure between the terminals of the power transistor parts, judge whether the power transistor is defective or not.
- Disconnect the compressor, then measure with the control incorporated.

Models FDC100-140VNA, 100-140VSA

Tester		Normal value (Ω)	
Terminal (+)	Terminal (-)	Models FDC100 -140VNA	Models FDC100 -140VSA
P	N	Approx. 750 k	Approx. 200 k
N	P	Approx. 400 k	
P	U	Approx. 950 k	Approx. 450 k
P	V		
P	W		
N	U	Approx. 240 k	Approx. 250 k
N	V		
N	W		
U	P	Approx. 890 k	Approx. 250 k
V	P		
W	P		
U	N	Approx. 240 k	Approx. 450 k
V	N		
W	N		

If the measured values range from 0 - several kW, there is a possibility that the elements are damaged, so replace the power transistor parts.

#

(6) Inverter checker for diagnosis of inverter output

●Checking method

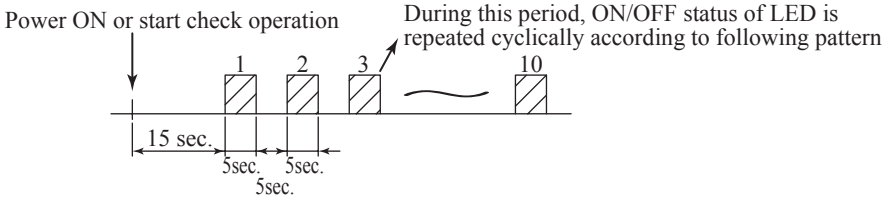
(a) Setup procedure of checker.

1) Power OFF (Turn off the breaker).
2) Remove the terminal cover of compressor and disconnect the wires (U, V, W) from compressor.
3) Connect the wires U (Red) , V (White) and W (Black) of checker to the terminal of disconnected wires (U, V, W) from compressor respectively.

(b) Operation for judgment.

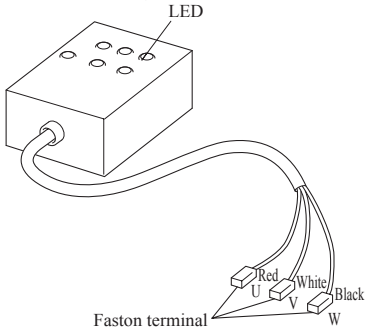
1) Power ON after SW6-4 on outdoor inverter PCB was turned ON.
2) After 15 seconds since power has turned ON, LED start ON/OFF for 5 seconds cyclically and it repeats 10 times.
3) Check ON/OFF status of 6 LED's on the checker.
4) Judge the PCB by ON/OFF status of 6 LED's on the checker.

ON/OFF status of LED	If all of LED are ON/OFF according to following pattern	If all of LED stay OFF or some of LED are ON/OFF
Inverter PCB	Normal	Anomalous



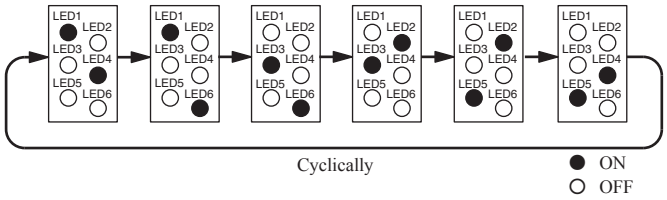
5) Be sure to turn off SW6-4 on outdoor inverter PCB, after finishing the check operation.

〈**Inverter Checker**〉

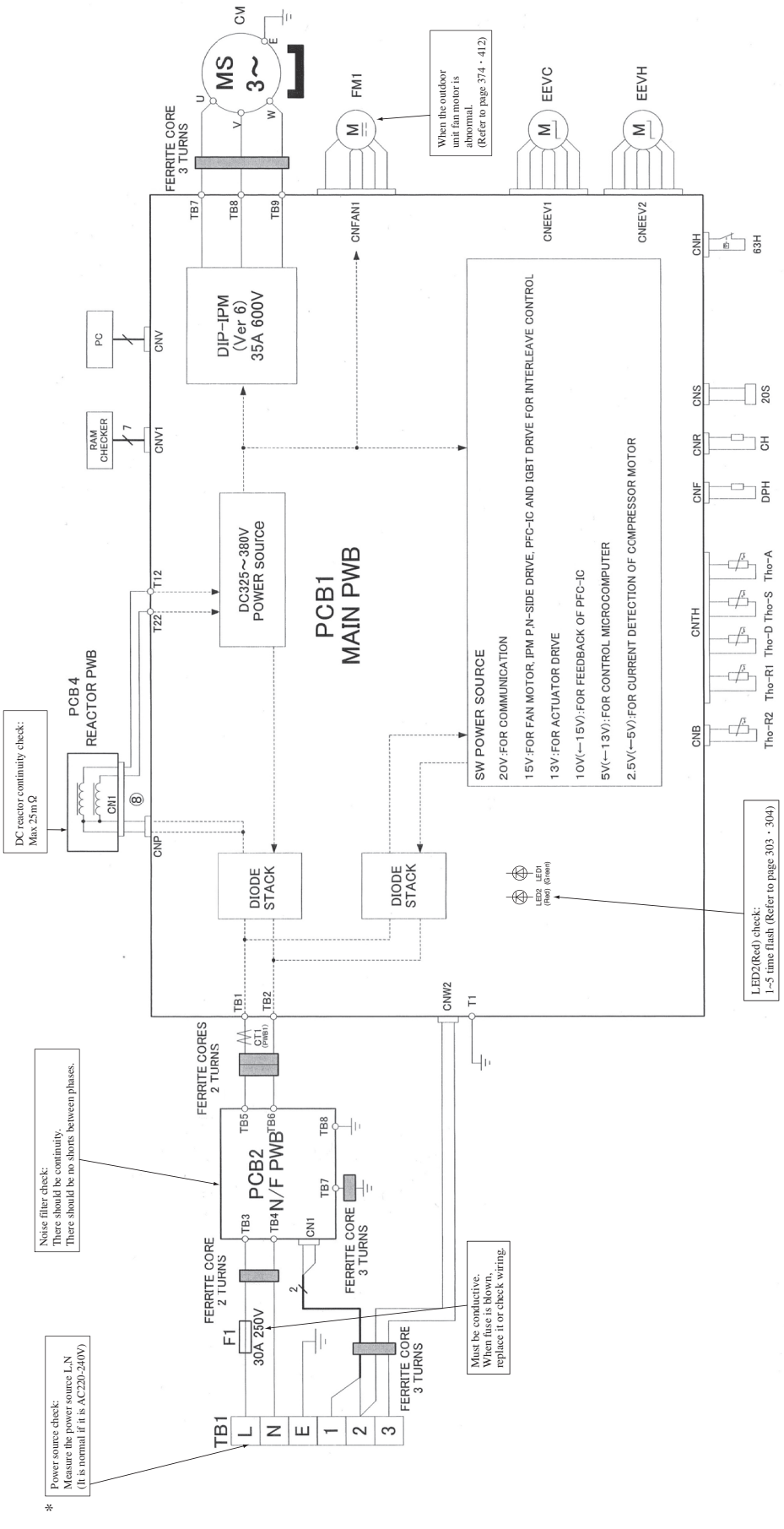


Connect to the terminal of the wires which are disconnected from compressor.

LED ON/OFF pattern



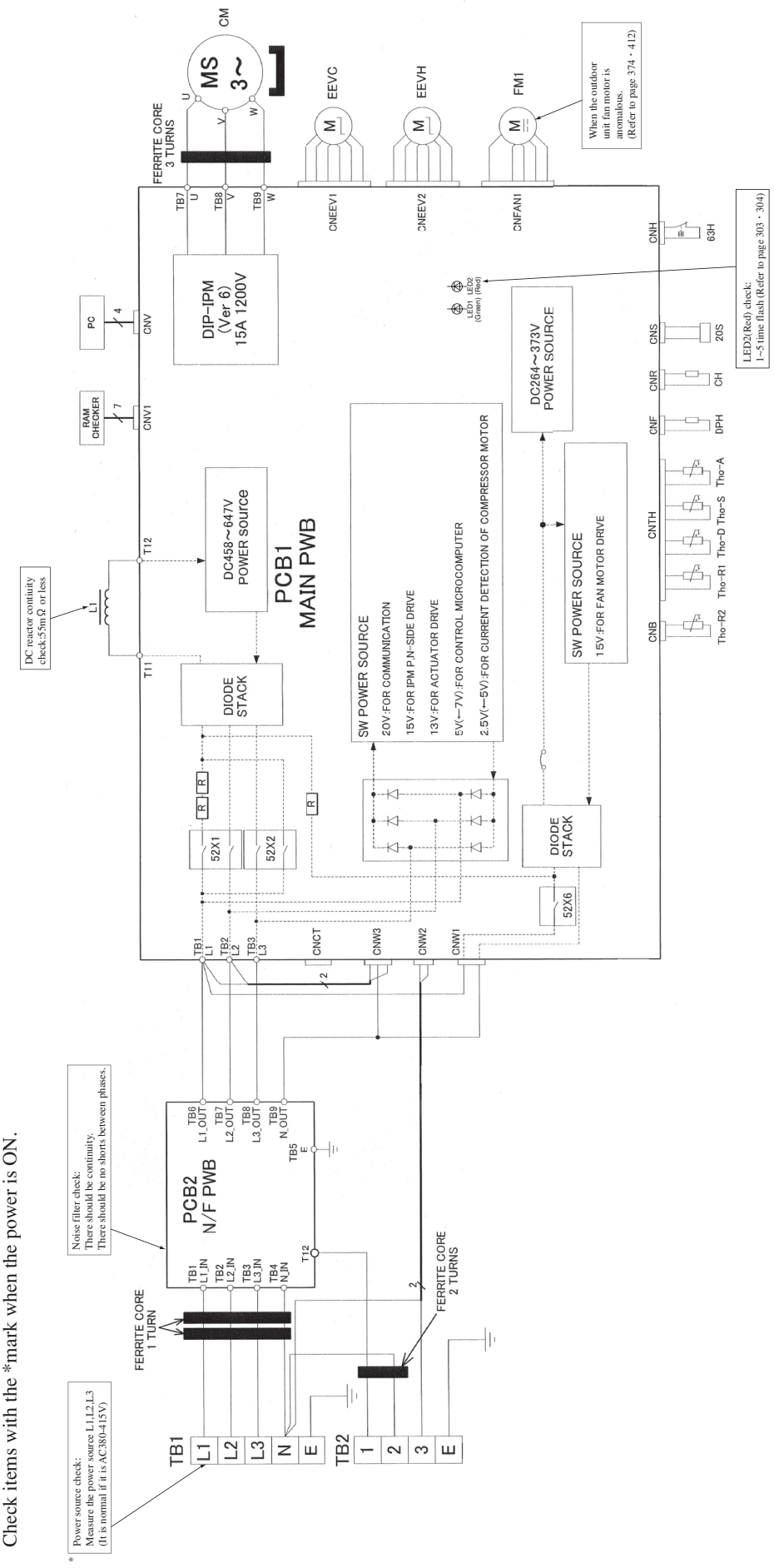
(7) Outdoor unit control failure diagnosis circuit diagram



FDC100,125,140VSA

●Outdoor unit check points

Check items with the *mark when the power is ON.



1.12.2 Troubleshooting flow

(1) List of troubles

(a) FDT, FDTC, FDE, FDU, FDUM, FDF series

Remote control display	Description of trouble	Reference page
None	Operates but does not cool.	338
None	Operates but does not heat.	339
None	Earth leakage breaker activated	340
None	Excessive noise/vibration (1/3)	341
None	Excessive noise/vibration (2/3)	342
None	Excessive noise/vibration (3/3)	343
None	Louver motor failure (FDT, FDTC, FDE, FDF series)	344
None	Power source system error (Power source to indoor unit control PCB)	345
None	Power source system error (Power source to remote control)	346
INSPECT I/U	INSPECT I/U (When 1 or 2 remote controls are connected)	347
INSPECT I/U	INSPECT I/U (Connection of 3 units or more remote controls)	348
WAIT	Communication error at initial operation	349-351
None	No display	352
E1	Remote control communication circuit error	353
E5	Communication error during operation	354
E6	Indoor heat exchanger temperature thermistor anomaly	355
E7	Return air temperature thermistor anomaly	356
E8	Heating overload operation	357
E9	Drain trouble (FDT, FDTC, FDU, FDUM series)	358
E10	Excessive number of connected indoor units (more than 17 units) by controlling with one remote control	359
E14	Communication error between master and slave indoor units	360
E16	Indoor fan motor anomaly	361
E18	Address setting error of master and slave indoor unit	362
E19	Indoor unit operation check, drain motor check setting error	363
E20	Indoor fan motor rotation speed anomaly	364
E28	Remote control temperature thermistor anomaly	365
E35	Cooling overload operation	366
E36	Discharge pipe temperature error	367
E37	Outdoor heat exchanger temperature thermistor anomaly	368
E38	Outdoor air temperature thermistor anomaly	369
E39	Discharge pipe temperature thermistor anomaly	370
E40	High pressure error (63H1 activated)	371
E42	Current cut	372 • 373
E47	Active filter anomaly	373-1
E48	Outdoor fan motor anomaly	374
E51	Inverter and fan motor anomaly	375
E53	Suction pipe temperature thermistor anomaly	376
E57	Insufficient refrigerant amount or detection of service valve closure	377
E58	Anomalous compressor by loss of syncronism	377-1
E59	Compressor startup failure	378 • 379

#

(b) SRK series

Remote control display	Description of trouble	Reference page
None	Operates but does not cool.	380
None	Operates but does not heat.	381
None	Earth leakage breaker activated	382
None	Excessive noise/vibration (1/3)	383
None	Excessive noise/vibration (2/3)	384
None	Excessive noise/vibration (3/3)	385
None	Louver motor failure	386
None	Power source system error (Power source to indoor unit control PCB)	387
None	Power source system error (Power source to remote control)	388
None	Limit switch anomaly	389
INSPECT I/U	INSPECT I/U (When 1 or 2 remote controls are connected)	390
INSPECT I/U	INSPECT I/U (Connection of 3 units or more remote controls)	391
✋WAIT✋	Communication error at initial operation	392-394
None	No display	395
E1	Remote control communication circuit error	396
E5	Communication error during operation	397
E6	Indoor heat exchanger temperature sensor anomaly	398
None	Room temperature sensor anomaly	399
E10	Excessive number of connected indoor units (more than 17 units) by controlling with one remote control	400
E14	Communication error between master and slave indoor units	401
E16	Indoor fan motor anomaly	402
E28	Remote control temperature thermistor anomaly	403
E35	Cooling overload operation	404
E36	Discharge pipe temperature error	405
E37	Outdoor heat exchanger temperature thermistor anomaly	406
E38	Outdoor air temperature thermistor anomaly	407
E39	Discharge pipe temperature thermistor anomaly	408
E40	High pressure error (63H1 activated)	409
E42	Current cut	410・411
E47	Active filter anomaly	411-1
E48	Outdoor fan motor anomaly	412
E51	Inverter and fan motor anomaly	413
E53	Suction pipe temperature thermistor anomaly	414
E57	Insufficient refrigerant amount or detection of service valve closure	415
E59	Compressor startup failure	416・417

(2) Troubleshooting

(a) FDT, FDTC, FDE, FDU, FDUM, FDF series

Error code	LED	Green	Red	Content
Remote control: None	Indoor	Keeps flashing	Stays OFF	Operates but does not cool
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

All models

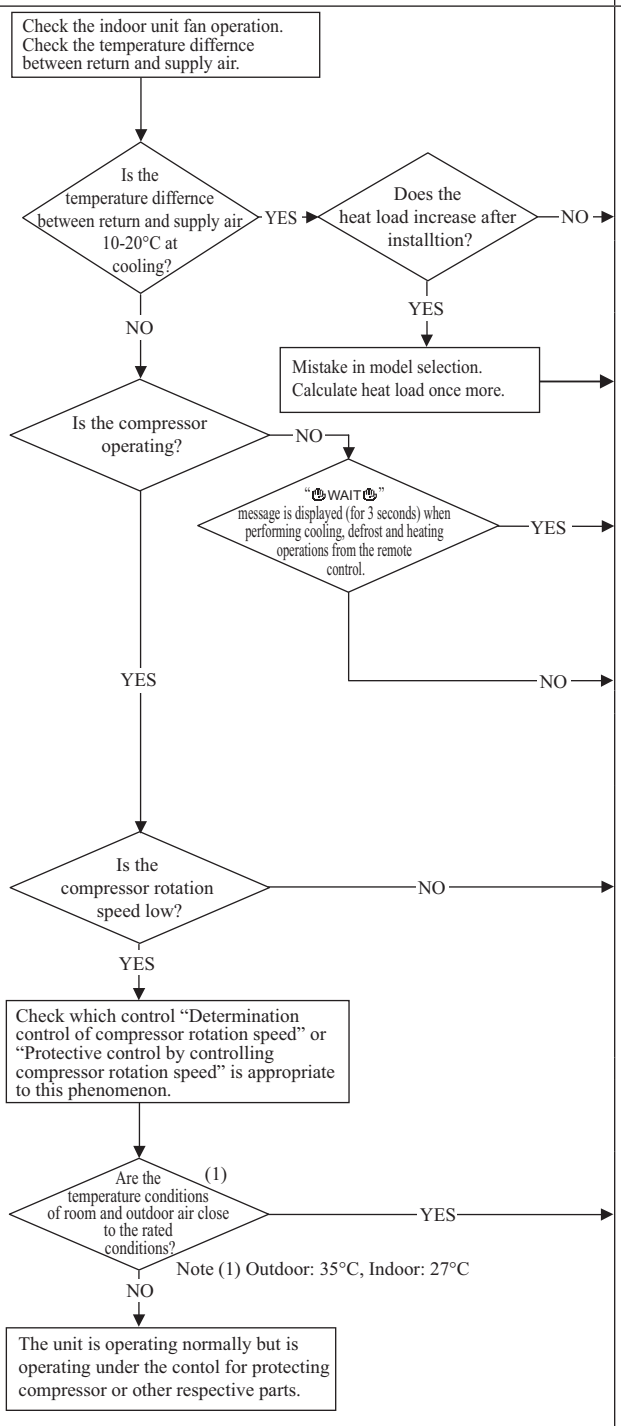
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Poor compression of compressor
- Faulty expansion valve operation

5. Troubleshooting



Note:

Error code	LED	Green	Red	Content
Remote control: None	Indoor	Keeps flashing	Stays OFF	Operates but does not heat
	Outdoor	Keeps flashing	Stays OFF	

1.Applicable model

All models

2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Faulty 4-way valve operation
- Poor compression of compressor
- Faulty expansion valve operation

5.Troubleshooting

Diagnosis	Countermeasure
Check the indoor unit fan operation. Check the temperature differnce between return and supply air.	
Is the temperature differnce between return and supply air 10-30°C at heating? YES → Does the heat load increase after installtion? NO →	It is normal. (This unit is designed to start in the soft start mode by detecting the under dome temperature of compressor when it restart after power reset.
YES → Mistake in model selection. Calculate heat load once again.	It is necessary to replace to higher capacity one or to install additional unit.
NO → Is the compressor operating? NO → "WAIT" message is displayed (for 3 seconds) when performing cooling, defrost and heating operations from the remote control. YES →	Compressor refrigerant oil protection control at starting is activated. For the contents of control, refer to the compressor start control of the microcomputer control functions.
NO →	Compressor may be stopped by the error detection control. For the contents of control, refer to anomalous stop control by controlling compressor rotation speed of microcomputor control functions.
YES → Is the compressor rotation speed low? NO →	Inspect the followings. • Minor clogging of filter • Minor clogging of heat exchanger • Minor short-circuit • Minor shortage of refrigerant amount • Poor compression of compressor
YES → Check which control "Determination control of compressor rotation speed" or "Protective control by controlling compressor rotation speed" is appropriate to this phenomenon.	
Are the temperature conditions of room and outdoor air close to the rated conditions? (1) YES → Note (1) Outdoor: 7°C, Indoor: 20°C	Considering appropriate operation control, check suspicious points. Inspect the followings for reference. • Major clogging of filter • Major clogging of heat exchanger • Major short-circuit • Major shortage of refrigerant amount • Compressor protection ON • Indoor fan tap • Valid setting of silent mode
NO → The unit is operating normally but is operating under the contol for protecting compressor or other respective parts.	

Note:

Error code	LED	Green	Red	Content
Remote control: None	Indoor	Stays OFF	Stays OFF	Earth leakage breaker activated
	Outdoor	Stays OFF	Stays OFF	

1. Applicable model

All models

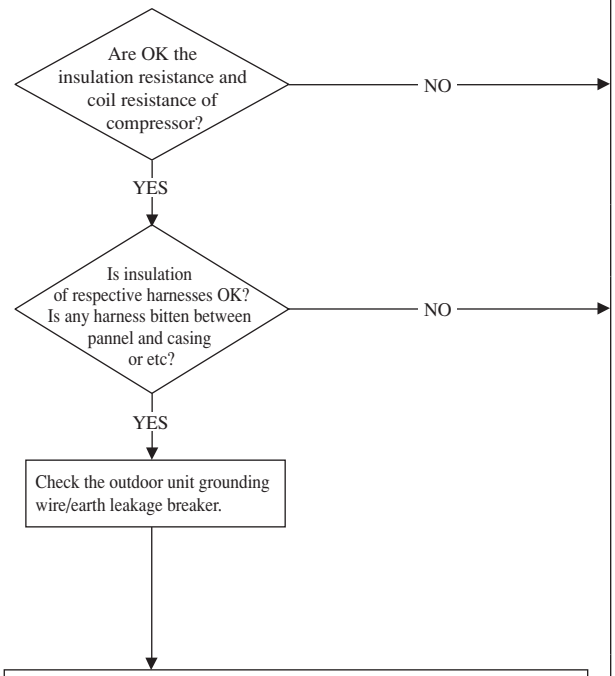
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Defective compressor
- Noise

5. Troubleshooting



Check of the outdoor unit grounding wire/earth leakage breaker

① Run an independent grounding wire from the grounding screw of outdoor unit to the grounding terminal on the distribution panel. (Do not connect to another grounding wire.)
② In order to prevent malfunction of the earth leakage breaker itself, confirm that it is conformed to higher harmonic regulation.

* Insulation resistance of compressor
- Immediately after installation or when the unit has been left for long time without power source, the insulation resistance may drop to a few MΩ because of refrigerant migrated in the compressor.
  When the earth breaker is activated at lower insulation resistance, check the following points.
① 6 hours after power ON, check if the insulation resistance recovers to normal.
  When power ON, crankcase heater heat up compressor and evaporate the refrigerant migrated in the compressor.
② Check if the earth leakage breaker is conformed to higher harmonic regulation or not.
  Since the unit is equipped with inverter, it is necessary to use components conformed to higher harmonic regulation in order to prevent malfunction of earth leakage breaker.

Note:

Error code	LED	Green	Red	Content
Remote control: None	Indoor	–	–	Excessive noise/vibration (1/3)
	Outdoor	–	–	

1. Applicable model

All models

2. Error detection method

3. Condition of error displayed

4. Presumable cause

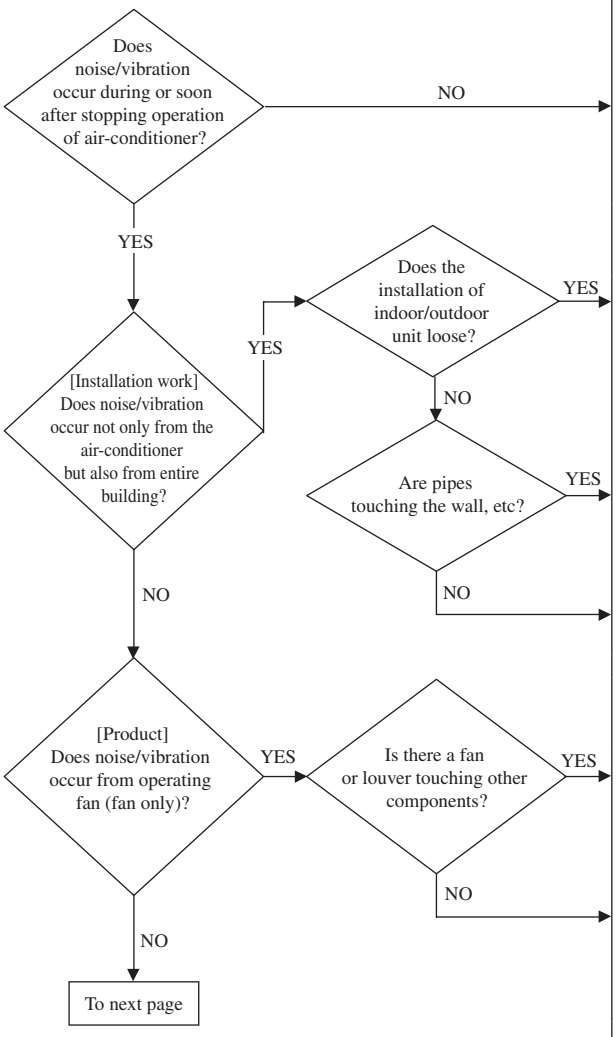
① Improper installation work
- Improper anti-vibration work at instllation
- Insufficient strength of mounting face

② Defective product
- Before/after shipping from factory

③ Improper adjustment during commissioning
- Excess/shortage of refrigerant, etc.

5. Troubleshooting

Diagnosis



Countermeasure

If excessive noise/vibration persists when sufficient time has elapsed after stopping the unit, it is considered that the air-conditioner is not the source.

Check the installed condition carefully, and correct the position or insert rubber cushions or others into the gap, if necessary.

Prevent the vibration from transmitting to wall and etc by fixing pipes on the wall or wrapping rubber cushion around the pipe which goes through the hole in the wall or applying other appropriate means.

Strength of ceiling wall, floor, etc. may be insufficient. Review the installing position or reinforce it.

Check for leaning of installed unit or anomalous mounting of fan, louver or motor and specify the contacting point and correct it.

When the heat exchanger or filter is clogged, clean them. In case that the unit is installed at the site where background noise is very low, small noise from indoor unit can be heard, but it is normal. Before installation, check for background noise. If backgound noise is very low, convince client prior to installation.

Note:

Error code	LED	Green	Red	Content
Remote control: None	Indoor	–	–	Excessive noise/vibration (2/3)
	Outdoor	–	–	

1.Applicable model

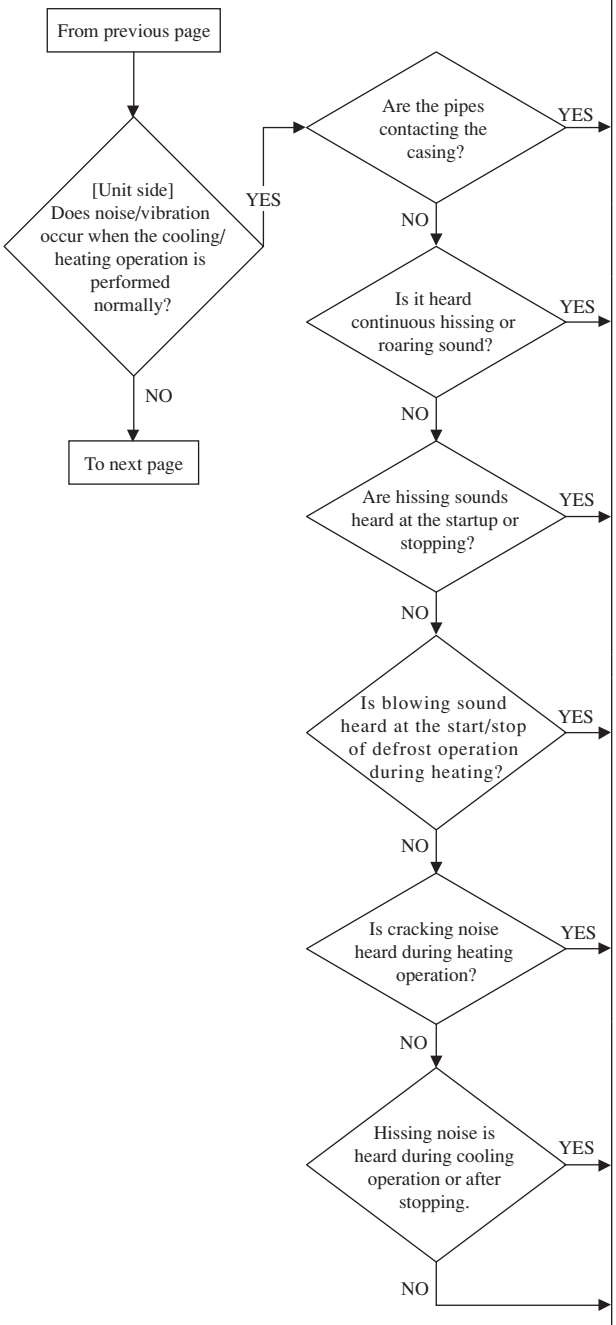
All models

2.Error detection method

3. Condition of error displayed

4.Presumable cause

5.Troubleshooting



Diagnosis	Countermeasure
Are the pipes contacting the casing? YES	Rearrange the piping to avoid contact with the casing.
Is it heard continuous hissing or roaring sound? YES	It is noise/vibration that is generated when the refrigerant gas or liquid flow through inside of piping of air-conditioner. It is likely to occur particularly during cooling or defrost operation in the heating mode. It is normal.
Are hissing sounds heard at the startup or stopping? YES	The noise/vibration occurs when the refrigerant starts or stops flowing. It is normal.
Is blowing sound heard at the start/stop of defrost operation during heating? YES	When the defrost operation starts or stops during heating, the refrigerant flow is reversed due to switching 4-way valve. This causes a large change in pressure which produces a blowing sound. It may accompany also the hissing sounds as mentioned above. They are normal.
Is cracking noise heard during heating operation? YES	After the start or stop of heating operation or during defrost operation, abrupt changes in temperature cause resin parts to shrink or expand. This is normal.
Hissing noise is heard during cooling operation or after stopping. YES	It is the sound produced by the drain pump that discharges drain from the indoor unit. The pump continues to run for 5 minutes after stopping the cooling operation. This is normal.
NO	Apply the damper sealant at places considered to be the sources such as the pressure reducing mechanism (expansion valve), capillary, etc.

Note:

Error code	LED	Green	Red	Content
Remote control: None	Indoor	–	–	Excessive noise/vibration (3/3)
	Outdoor	–	–	

1. Applicable model

All models

2. Error detection method

3. Condition of error displayed

4. Presumable cause

5. Troubleshooting

Diagnosis	Countermeasure
From previous page ↓ Adjustment during commissioning Does noise/vibration occur when the cooling/heating operation is in anomalous condition? YES →	If insufficient cooling/heating problem happens due to anomalous operating conditions at cooling/heating, followings are suspicious. • Overcharge of refrigerant • Insufficient charge of refrigerant • Intrusion of air, nitrogen, etc. In such occasion, it is necessary to recover refrigerant, vacuum-dry and recharge refrigerant. * Since there could be many causes of noise/vibration, the above do not cover all. In such case, check the conditions when, where, how the noise/vibration occurs according to following check point. • Indoor/outdoor unit • Cooling/heating/fan mode • Startup/stop/during operation • Operating condition (Indoor/outdoor temperatures, pressure) • Time it occurred • Operation data retained by the remote control such as compressor rotation speed, heat exchanger temperature, EEV opening degree, etc. • Tone (If available, record the noise) • Any other anomalies

Note:

Error code	LED	Green	Red	Content
Remote control: None	Indoor	Keeps flashing	Stays OFF	Louver motor failure (FDT, FDTC, FDE, FDF series)
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

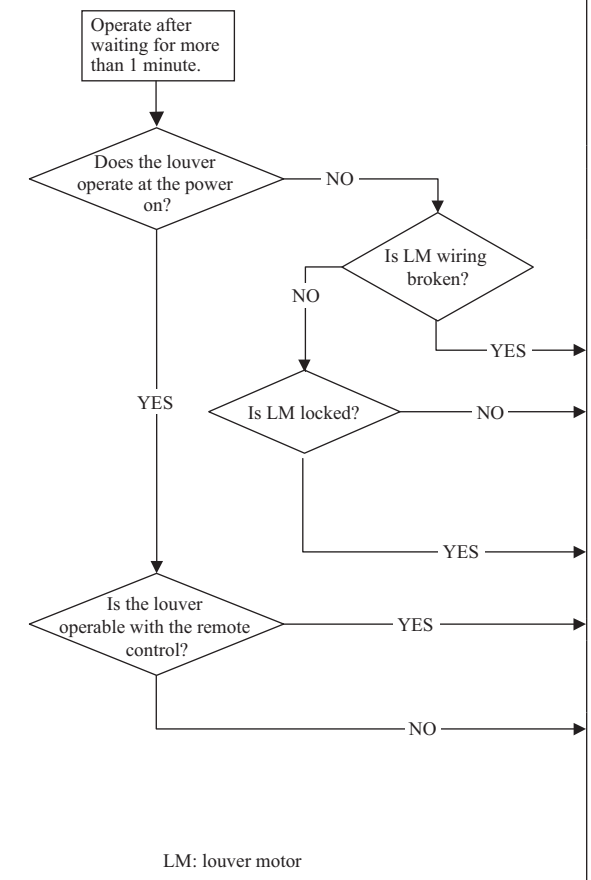
3. Condition of error displayed

4. Presumable cause

- Defective LM
- LM wire breakage
- Faulty indoor unit control PCB

5. Troubleshooting

Diagnosis	Countermeasure
▲ Check at the indoor unit side.	



LM: louver motor

Note:

Error code

Remote control: None

LED	Green	Red
Indoor	Stays OFF	Stays OFF
Outdoor	Stays OFF	2-time flash

Content

Power source system error (Power source to indoor unit control PCB)

1. Applicable model

All models

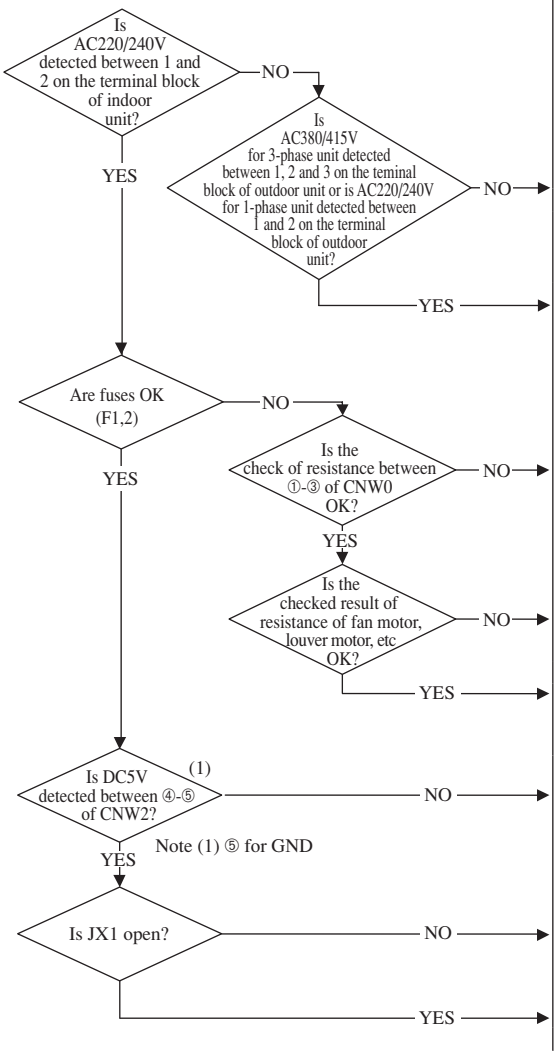
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Misconnection or breakage of connecting wires
- Blown fuse
- Faulty transformer
- Faulty indoor control or power PCB
- Broken harness
- Faulty outdoor unit main PCB (Noise filter)

5. Troubleshooting



Note:

Error code	LED	Green	Red	Content
Remote control: None	Indoor	Keeps flashing	3-time flash	Power source system error (Power source to remote control)
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

All models

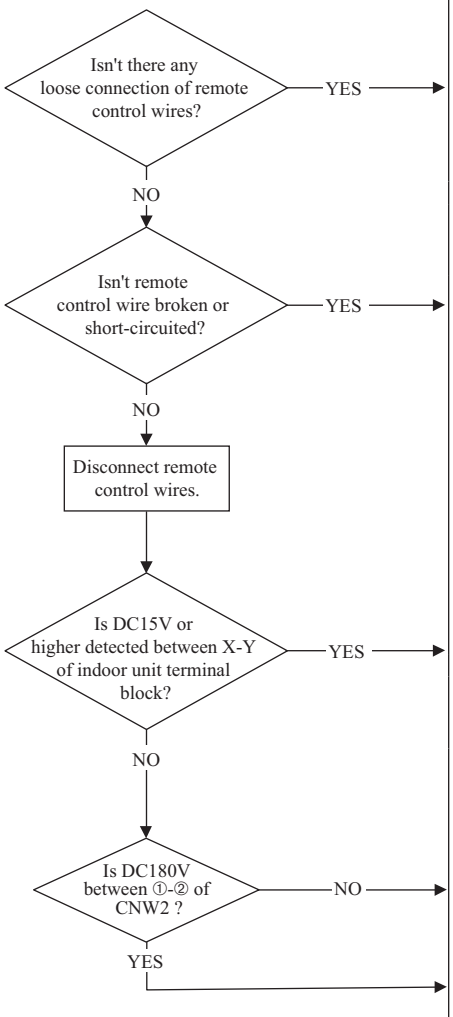
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Remote control wire breakage/short-circuit
- Defective remote control
- Malfunction by noise
- Faulty indoor power PCB
- Broken harness
- Faulty indoor unit control PCB

5. Troubleshooting



Note:

Error code	LED	Green	Red	Content
Remote control: INSPECT I/U	Indoor	Keeps flashing	Stays OFF	INSPECT I/U (When 1 or 2 remote controls are connected)
	Outdoor	Keeps flashing	2-time flash	

1. Applicable model

All models

2. Error detection method

Communication between indoor unit and remote control is disabled for more than 30 minutes after the power on.

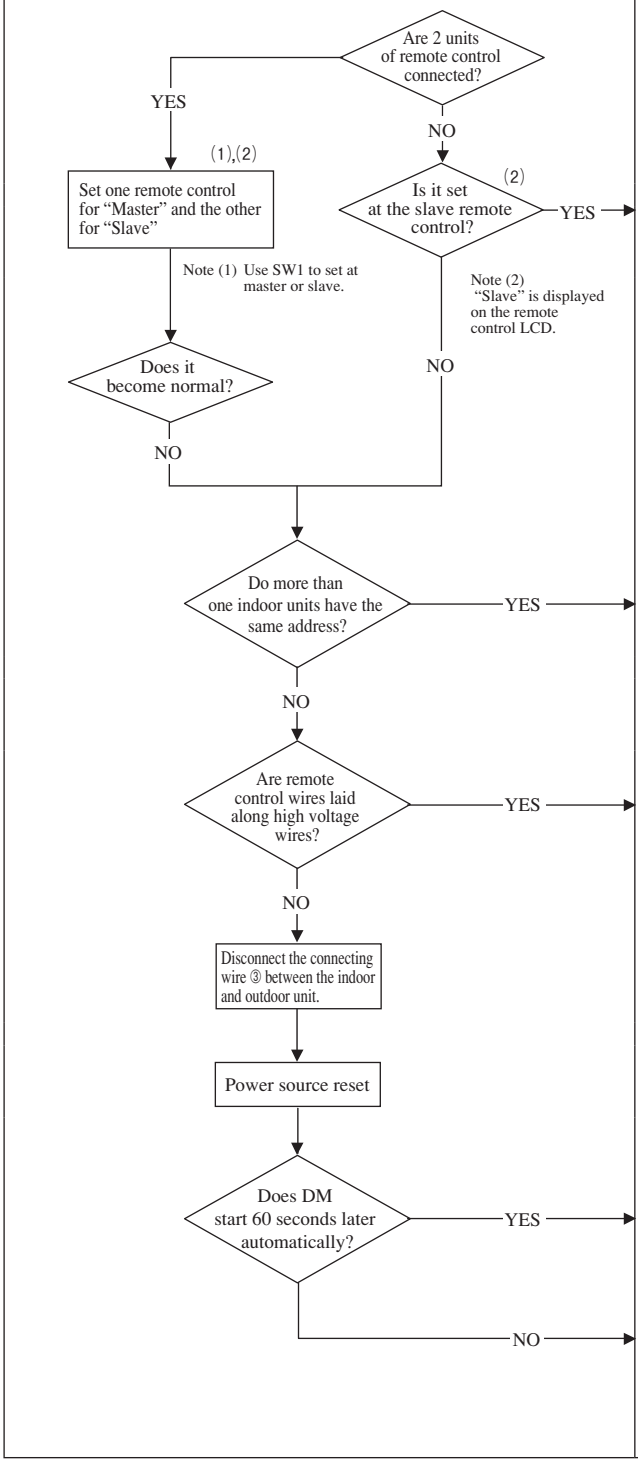
3. Condition of error displayed

Same as above

4. Presumable cause

- Improper setting
- Surrounding environment
- Defective remote control communication circuit
- Faulty indoor unit control PCB

5. Troubleshooting



Note: If any error is detected 30 minutes after displaying "WAIT" on the remote control, the display changes to "INSPECT I/U".

Error code	LED	Green	Red	Content
Remote control: INSPECT I/U	Indoor	Keeps flashing	Stays OFF	INSPECT I/U (Connection of 3 units or more remote control)
	Outdoor	Keeps flashing	2-time flash	

1. Applicable model

All models

2. Error detection method

Indoor unit cannot communicate for more than 30 minutes after the power on with remote control.

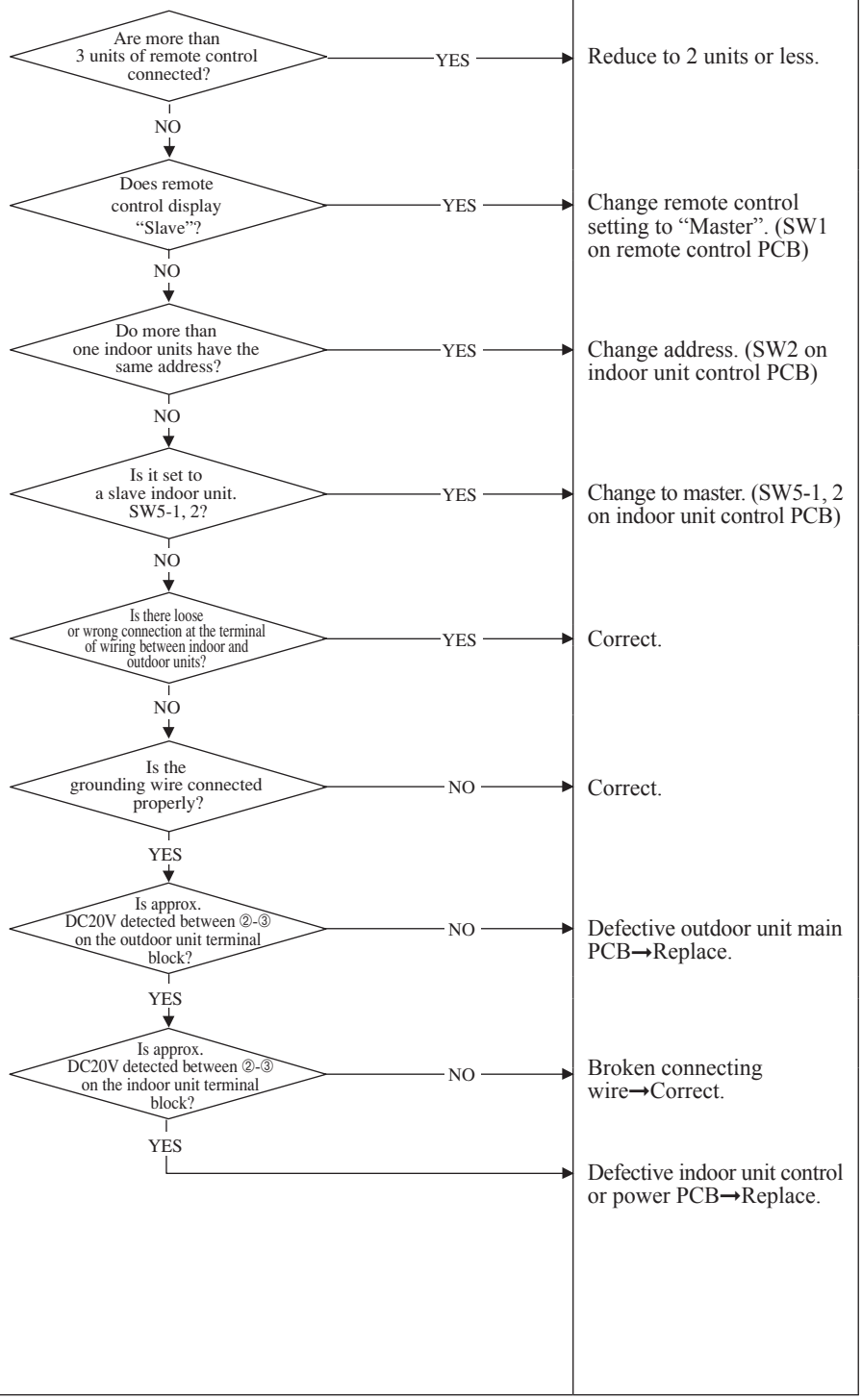
3. Condition of error displayed

Same as above

4. Presumable cause

- Improper setting
- Surrounding environment
- Defective remote control communication circuit
- Faulty indoor unit control or power PCB
- Faulty outdoor unit main PCB

5. Troubleshooting



Note: If any error is detected 30 minutes after displaying "WAIT" on the remote control, the display changes to "INSPECT I/U".

Error code

Remote control: WAIT

LED	Green	Red
Indoor	Keeps flashing	Stays OFF
Outdoor	Keeps flashing	2-time flash

Content

Communication error at initial operation (1/3)

(Models FDC100-140 VNA/VSA only)

1. Applicable model

Models FDC100-140 VNA
100-140 VSA

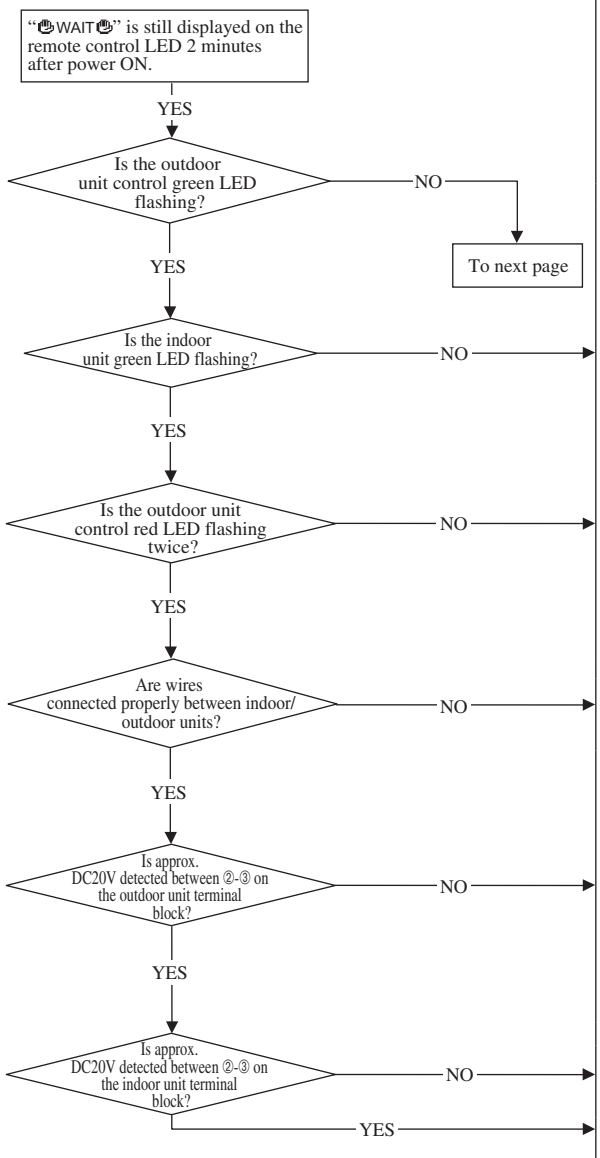
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Faulty indoor unit control or power PCB
- Defective remote control
- Broken remote control wire
- Faulty outdoor unit main PCB
- Broken connection wires

5. Troubleshooting



Note:

Error code

Remote control: WAIT

LED	Green	Red
Indoor	Keeps flashing	Stays OFF
Outdoor	Keeps flashing	2-time flash

Content

Communication error at initial operation (2/3)

(Models FDC100-140 VNA/VSA only)

1. Applicable model

Models FDC100-140 VNA
100-140 VSA

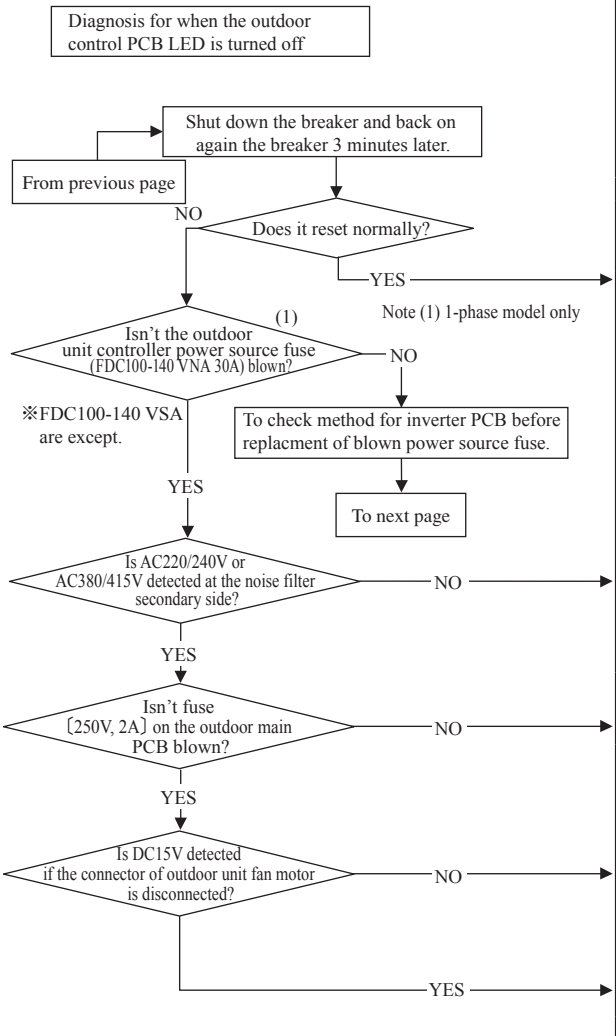
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Faulty noise filter
- Faulty indoor unit control PCB
- Faulty outdoor unit main PCB
- Faulty fan motor

5. Troubleshooting

Diagnosis	Countermeasure
	Normal (Malfunction by noise) Replace noise filter. Defective outdoor unit main PCB→Replace. Defective outdoor fan motor Defective outdoor unit main PCB→Replace.

Note:

Error code

Remote control: WAIT

LED	Green	Red
Indoor	Keeps flashing	Stays OFF
Outdoor	Keeps flashing	2-time flash

Content

Communication error at initial operation (3/3)

(Models FDC100-140 VNA/VSA only)

1. Applicable model

Models FDC100-140 VNA
100-140 VSA

2. Error detection method

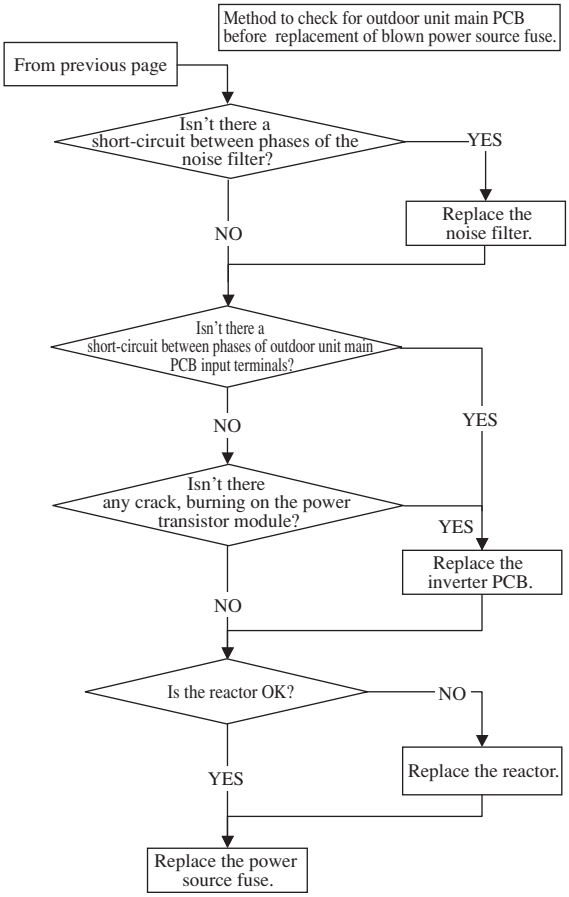
3. Condition of error displayed

4. Presumable cause

- Blown fuse
- Faulty noise filter
- Faulty outdoor unit main PCB
- Faulty reactor

5. Troubleshooting

Diagnosis	Countermeasure



Note:

Error code	LED	Green	Red	Content
Remote control: None	Indoor	Stays OFF	Stays OFF	No display
	Outdoor	Stays OFF	Stays OFF	

1. Applicable model

All models

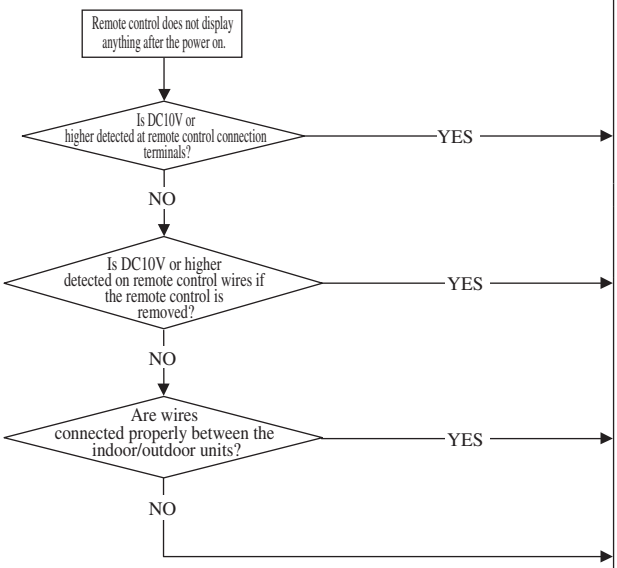
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Faulty indoor unit control PCB
- Defective remote control
- Broken remote control wire

5. Troubleshooting



Note:

Error code	LED	Green	Red	Content
Remote control: E1	Indoor	Keeps flashing	Stays OFF	Remote control communication circuit error
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

When normal communication between the remote control and the indoor unit is interrupted for more than 2 minutes. (Detectable only with the remote control)

3. Condition of error displayed

Same as above

4. Presumable cause

- Defective communication circuit between remote control-indoor unit
- Noise
- Defective remote control
- Faulty indoor unit control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is it possible to reset normally by the power reset? — YES	Malfunction by noise Check peripheral environment.
NO → Turn SW7-1 to OFF. → ON Remove the wire ③ connecting between indoor/outdoor units. → Power source reset	
Note (1) Only indoor unit with drain pump (1) Does the drain pump restart automatically 1 minute later? — YES	Defective indoor unit control PCB → Replace.
NO → Connect the wire ③ connecting between indoor/outdoor units.	Move to E5. (Communication error during operation) check.

Note: If the indoor unit cannot communicate normally with the remote control for 180 seconds, the indoor unit PCB starts to reset automatically.

Error code	LED	Green	Red	Content
Remote control: E5	Indoor	Keeps flashing	2-time flash	Communication error during operation
	Outdoor	Keeps flashing	See below	

1. Applicable model

All models

2. Error detection method

When normal communication between indoor and outdoor unit is interrupted for more than 2 minutes.

3. Condition of error displayed

Same as above is detected during operation.

4. Presumable cause

- Unit No. setting error
- Broken remote control wire
- Faulty remote control wire connection
- Faulty outdoor unit main PCB

5. Troubleshooting

Diagnosis	Countermeasure
In case that the outdoor unit red LED flashes 2-time	
Note (1) Inspect faulty connections (disconnection, looseness) on the outdoor unit terminal block. Is the connection of signal wires at the outdoor unit side OK? — NO	Repair signal wires.
YES Note (2) Check for faulty connection or breakage of signal wires between indoor-outdoor units. Is the connection of signal wires between indoor-outdoor units OK? — NO	Repair signal wires.
YES Power source reset	
Has the remote control LCD returned to normal state? — NO	To the diagnosis of "WAIT"
YES	Unit is normal. (Malfunction by temporary noise, etc.)

Note: Pressing the pump-down switch cancels communications between indoor and outdoor unit so that "communication error-E5" is displayed on indoor unit and remote control, but it is normal.

Error code	LED	Green	Red	Content
Remote control: E6	Indoor	Keeps flashing	1-time flash	Indoor heat exchanger temperature thermistor anomaly
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

Anomalously low temperature or high temperature (resistance) is detected on the indoor heat exchanger thermistor (Thi-R1, R2 or R3).

3. Condition of error displayed

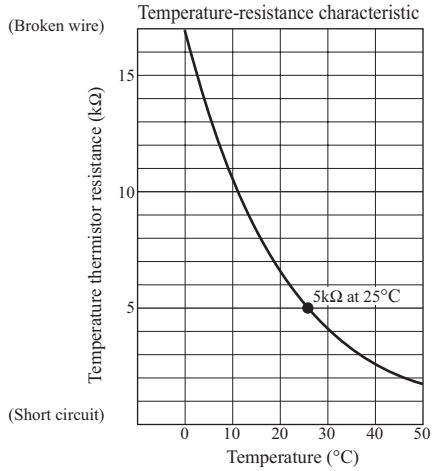
- When the temperature thermistor detects -50°C or lower for 5 seconds continuously, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.
- Or if 70°C or higher is detected for 5 seconds continuously.

4. Presumable cause

- Defective indoor heat exchanger thermistor connector
- Indoor heat exchanger temperature thermistor anomaly
- Faulty indoor unit control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the connection of indoor heat exchanger temperature thermistor connector OK? — NO	Correct. → Insert connector securely.
YES → Are characteristics of indoor heat exchanger temperature thermistor OK? — NO	Defective indoor heat exchanger temperature thermistor → Replace.
YES	Defective indoor unit control PCB → Replace. (Defective indoor unit heat exchanger temperature thermistor input circuit)



Note:

Error code	LED	Green	Red	Content
Remote control: E7	Indoor	Keeps flashing	1-time flash	Return air temperature thermistor anomaly
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

Anomalously low temperature or high temperature (resistance) is detected by indoor return air temperature thermistor (Thi-A)

3. Condition of error displayed

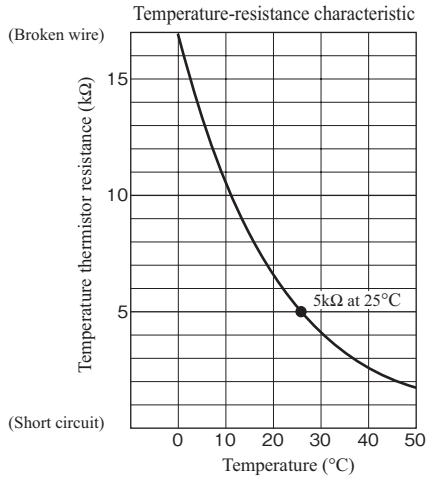
- When the temperature thermistor detects -50°C or lower for 5 seconds continuously, the compressor stops. After 3-minute delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.

4. Presumable cause

- Defective return air temperature thermistor connector
- Defective return air temperature thermistor
- Faulty indoor unit control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the connection of return air temperature thermistor connector OK? — NO	Correct. → Connect connector.
YES → Are the characteristics of return air temperature thermistor OK? — NO	Defective return air temperature thermistor → Replace.
YES	Defective indoor unit control PCB → Replace. (Defective return air temperature thermistor input circuit)



Note:

Error code	LED	Green	Red	Content
Remote control: E8	Indoor	Keeps flashing	1-time flash	Heating overload operation
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

Indoor heat exchanger temperature thermistor (Thi-R1, R2, R3)

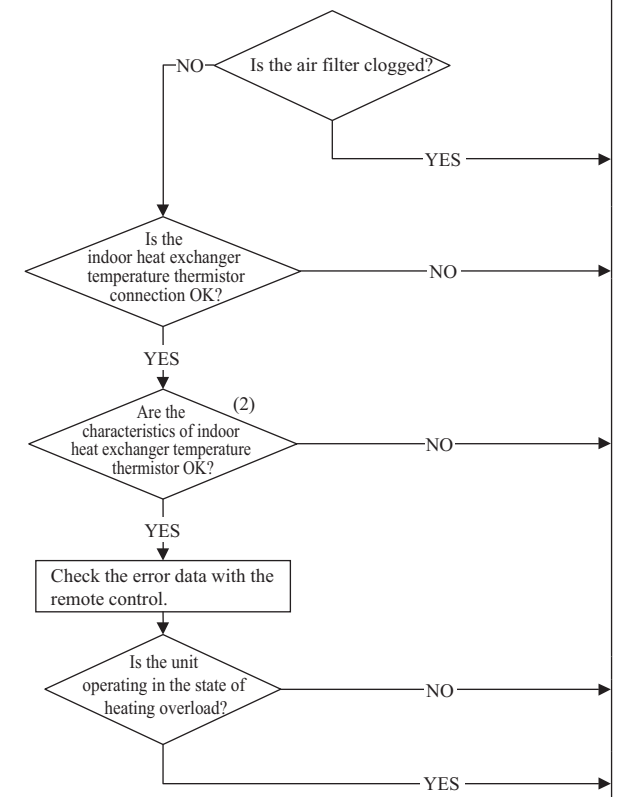
3. Condition of error displayed

When it is detected 5 times within 60 minutes from initial detection or when the overload condition is detected for 6 minutes continuously.

4. Presumable cause

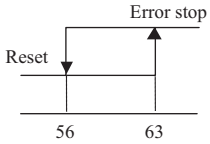
- Clogged air filter
- Defective indoor heat exchanger temperature thermistor connector
- Defective indoor heat exchanger temperature thermistor
- Anomalous refrigerant system

5. Troubleshooting



Note (1) Judge if it is in the state of overload or not as follows.
- Is there any short-circuit of air?
- Isn't there any fouling or clogging on the indoor heat exchanger?
- Is the outdoor fan control normal?
- Isn't the room and outdoor air temperature too high?

Note (2) For characteristics of indoor heat exchanger temperature thermistor, see the error display E6.



Note: During heating operation; After starting compressor, compressor rotation speed is decreased by detecting indoor heat exchanger temperature (Thi-R) in order to control high pressure.

Error code	LED	Green	Red	Content
Remote control: E9	Indoor	Keeps flashing	1-time flash	Drain trouble (FDT, FDTC, FDU, FDUM series)

1. Applicable model

FDT, FDTC, FDU, FDUM series only

2. Error detection method

Float switch is activated

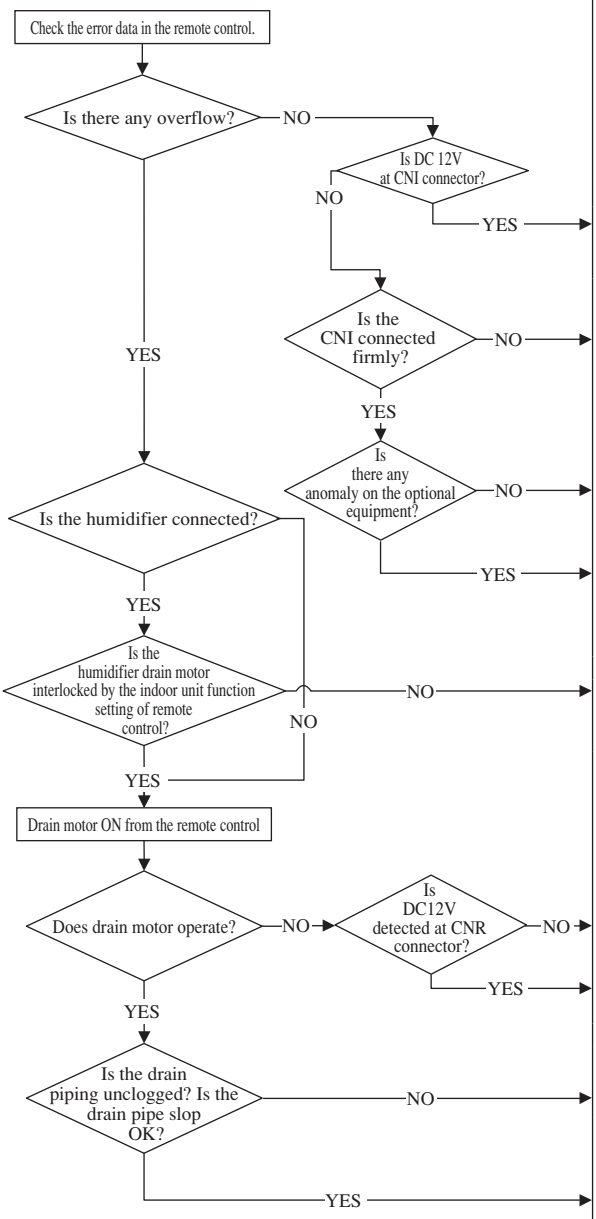
3. Condition of error displayed

If the float switch OPEN is detected for 3 seconds continuously or if float switch connector or wire is disconnected.

4. Presumable cause

- Defective indoor unit control or power PCB
- Float switch setting error
- Humidifier drain motor interlock setting error
- Optional equipment setting error
- Drain piping error
- Defective drain motor
- Disconnection of drain motor wiring

5. Troubleshooting



Note: When this error occurred at power ON, disconnection of wire or connector of the float switch is suspected. Check and correct it (or replace it, if necessary).

Error code	LED	Green	Red	Content
Remote control: E10	Indoor	Keeps flashing	Stays OFF	Excessive number of connected indoor units (more than 17 units) by controlling with one remoto control
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

When it detects more than 17 of indoor units connected to one remote contorl

3. Condition of error displayed

Same as above

4. Presumable cause

- Excessive number of indoor units connected
- Defective remote control

5. Troubleshooting

Diagnosis	Countermeasure
Aren't more than 17 indoor units connected to one remote control? → NO	Defective remote control → Replace.
YES	Reduce to 16 or less units.

Note:

Error code	LED	Green	Red	Content
Remote control: E14	Indoor	Keeps flashing	3-time flash	Communication error between master and slave indoor units
	Outdoor	Keeps flashing	Stays Off	

1. Applicable model

All models

2. Error detection method

When communication error between master and slave indoor units occurs

3. Condition of error displayed

Same as above

4. Presumable cause

- Unit address setting error
- Broken remote control wire
- Defective remote control wire connection
- Defective indoor unit control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is it OK the unit address setting for master and slave indoor units? → NO	Correct unit address setting.
Isn't the remote control wiring between indoor units defective? → YES	Correct wiring.
Is it restored by resetting the power source? → NO	Defective indoor unit control PCB → Replace.
→ YES	• Malfunction by noise • Check surrounding environment.

Note (1) Set dip switches SW5-1 and SW5-2 as shown in the following table.
(Factory default setting – "Master")

		Indoor unit		
		Master	Slave-a	Slave-b
Dip switch	SW5-1	OFF	OFF	ON
	SW5-2	OFF	ON	OFF

Note:

Error code

Remote control: E16

LED	Green	Red
Indoor	Keeps flashing	1-time flash
Outdoor	Keeps flashing	Stays OFF

Content

Indoor fan motor anomaly

1. Applicable model

All models

2. Error detection method

Detected by rotation speed of indoor fan motor

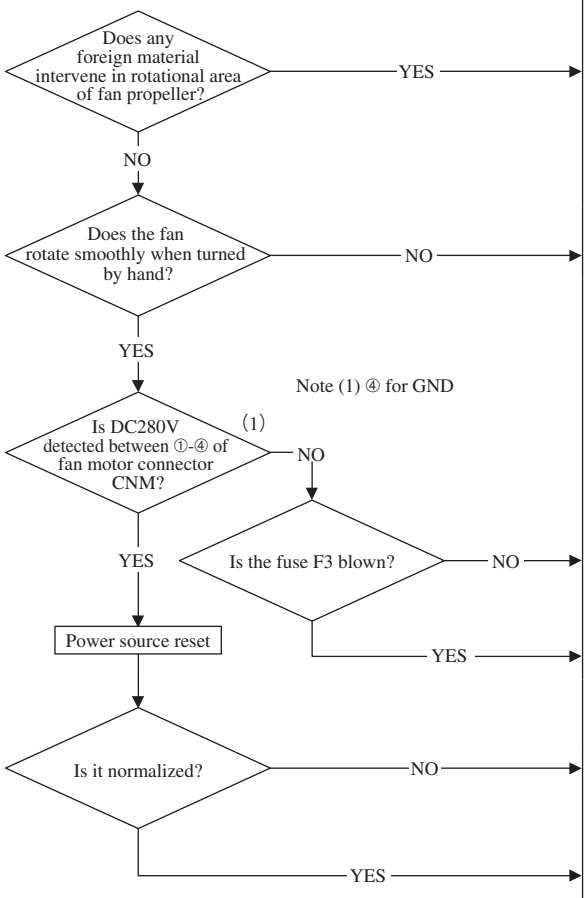
3. Condition of error displayed

- When actual rotation speed of indoor fan motor drops to lower than 200min^{-1} for 30 seconds continuously, the compressor and the indoor fan motor stop.
- After 2-seconds, it starts again automatically, but if this error occurs 4 times within 60 minutes after the initial detection.

4. Presumable cause

- Defective indoor unit power (control) PCB
- Foreign material at rotational area of fan propeller
- Defective fan motor
- Dust on control PCB
- Blown fuse
- External noise, surge

5. Troubleshooting



Note:

Error code	LED	Green	Red	Content
Remote control: E18	Indoor	Keeps flashing	1-time flash	Address setting error of master and slave indoor units
	Outdoor	Keeps flashing	Stays Off	

1. Applicable model

All models

2. Error detection method

IU address has been set using the “Master IU address set” function of remote control.

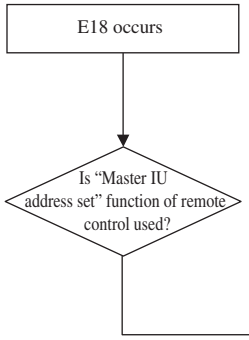
3. Condition of error displayed

Same as above

4. Presumable cause

Same as above

5. Troubleshooting

Diagnosis	Countermeasure
	Return address No. to “IU …” using [▲] or [▲] button.

Note:

Error code	LED	Green	Red	Content
Remote control: E19	Indoor	Keeps flashing	1-time flash	Indoor unit operation check, drain motor check setting error
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

After indoor operation check, when the communication between indoor and outdoor unit is established and SW7-1 is still kept ON.

3. Condition of error displayed

Same as above

4. Presumable cause

Mistake in SW7-1 setting
(Due to forgetting to turn OFF SW7-1 after indoor operation check)

5. Troubleshooting

Diagnosis	Countermeasure
E19 occurs when the power ON → Is SW7-1 on the indoor control PCB ON ?	
NO	Defective indoor unit control PCB (Defective SW7) →Replace.
YES	Turn SW7-1 on the indoor unit control PCB OFF and reset the power.

Note:

Error code	LED	Green	Red	Content
Remote control: E20	Indoor	Keeps flashing	1-time flash	Indoor fan motor rotation speed anomaly
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

Detected by rotation speed of indoor fan motor

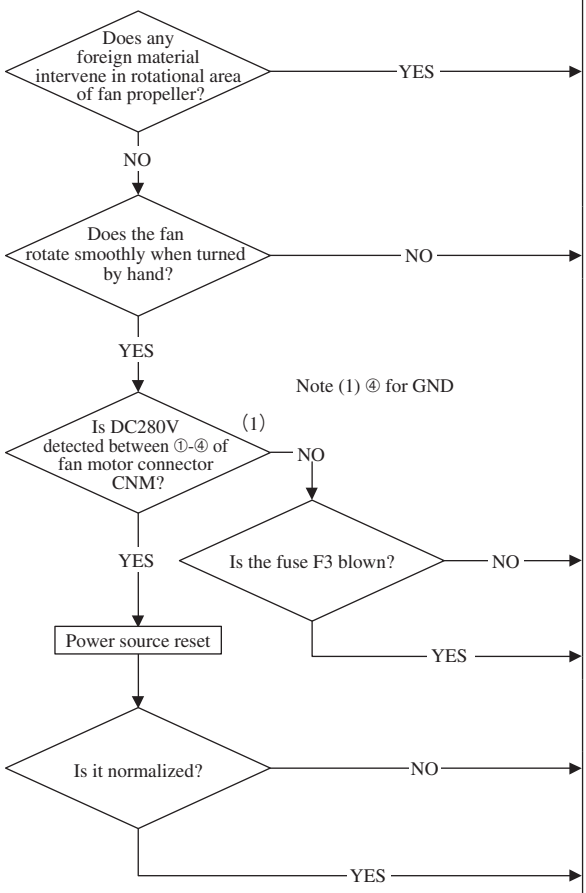
3. Condition of error displayed

When the actual fan rotation speed does not reach to the speed of [required speed -50 min^{-1}] after 2 minutes have been elapsed since the fan motor rotation speed command was output, the unit stops by detecting indoor fan motor anomaly.

4. Presumable cause

- Defective indoor power (control) PCB
- Foreign material at rotational area of fan propeller
- Defective fan motor
- Dust on control PCB
- Blown fuse
- External noise, surge

5. Troubleshooting



Note:

Error code	LED	Green	Red	Content
Remote control: E28	Indoor	Keeps flashing	Stays OFF	Remote control temperature thermistor anomaly
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) of remote control temperature thermistor (Thc)

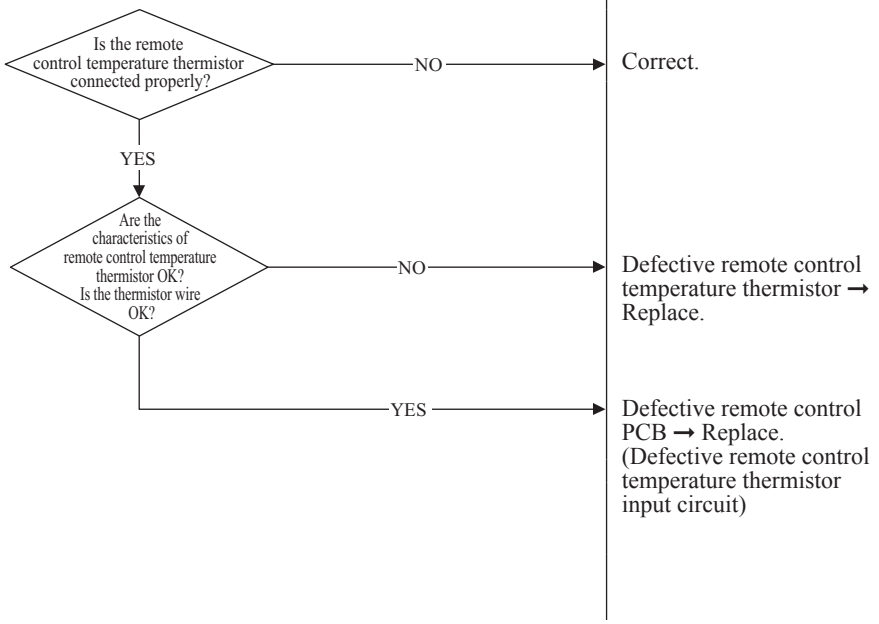
3. Condition of error displayed

When the temperature thermistor detects -50°C or lower for 5 seconds continuously, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.

4. Presumable cause

- Faulty connection of remote control temperature thermistor
- Defective remote control temperature thermistor
- Defective remote control PCB

5. Troubleshooting



Resistance-temperature characteristics of remote control temperature thermistor (Thc)

Temperature (°C)	Resistance value (kΩ)	Temperature (°C)	Resistance value (kΩ)
0	65	30	16
1	62	32	15
2	59	34	14
4	53	36	13
6	48	38	12
8	44	40	11
10	40	42	9.9
12	36	44	9.2
14	33	46	8.5
16	30	48	7.8
18	27	50	7.3
20	25	52	6.7
22	23	54	6.3
24	21	56	5.8
26	19	58	5.4
28	18	60	5.0

Note: After 10 seconds has passed since remote control thermistor was switched from valid to invalid, E28 will not be displayed even if the thermistor harness is disconnected. At same time the thermistor, which is effective, is switched from remote control thermistor to indoor return air temperature thermistor. Even though the remote control thermistor is set to be Effective, the return air temperature displayed on remote control for checking still shows the value detected by indoor return air temperature thermistor, not by remote control temperature thermistor.

Error code	LED	Green	Red	Content
Remote control: E35	Indoor control PCB	Keeps flashing	Stays OFF	Cooling overload operation (Models FDC100-140 VNA/VSA only)
	Outdoor control PCB	Keeps flashing	1-time flash	

1. Applicable model

Models FDC100-140 VNA
100-140 VSA

2. Error detection method

For the error detection method, refer to the protective control by controlling compressor rotation speed and cooling high pressure protective control of micro-computer control function for corresponding models.

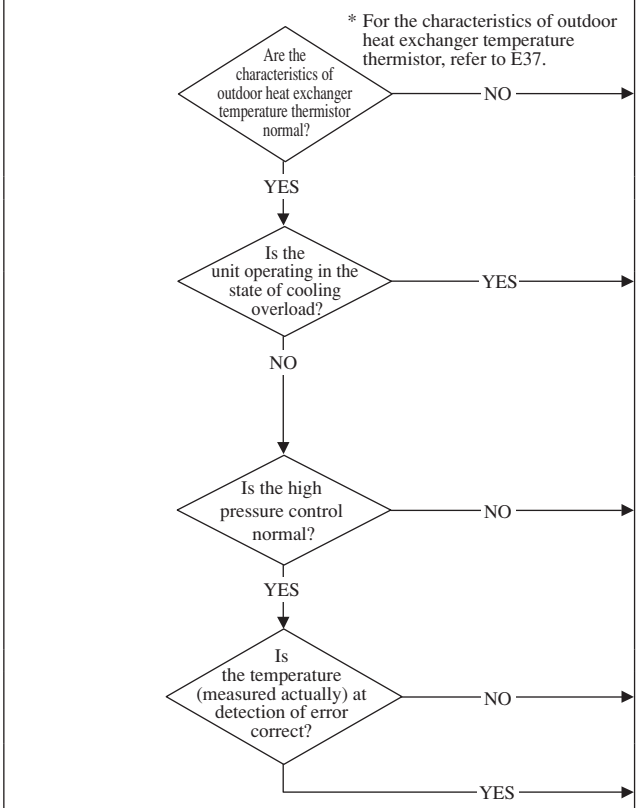
3. Condition of error displayed

When outdoor heat exchanger temperature anomaly is detected 5 times within 60 minutes or this anomalous state is detected 60 minutes continuously including compressor stop.

4. Presumable cause

- Defective outdoor heat exchanger temperature thermistor
- Defective outdoor unit main PCB
- Indoor, outdoor unit installation spaces
- Short-circuit of air on indoor, outdoor units
- Fouling, clogging of heat exchanger
- Excessive refrigerant amount

5. Troubleshooting



* For the contents of control, refer to the protective control by controlling compressor rotation speed and cooling high pressure protective control of microcomputer control function for corresponding models.

Note:

Error code	LED	Green	Red	Content
Remote control: E36	Indoor control PCB	Keeps flashing	Stays OFF	Discharge pipe temperature error
	Outdoor control PCB	Keeps flashing	1-time flash	

1. Applicable model

All models

2. Error detection method

For the error detection method, refer to the protective control by controlling compressor rotation speed and cooling high pressure protective control of micro-computer control function for corresponding models.

3. Condition of error displayed

When discharge pipe temperature anomaly is detected 2 times within 60 minutes or this anomalous state is detected 60 minutes continuously including compressor stop.

4. Presumable cause

- Defective outdoor unit main PCB
- Defective discharge pipe temperature thermistor
- Clogged filter
- Indoor, outdoor unit installation spaces
- Short-circuit of air on indoor, outdoor units
- Fouling, clogging of heat exchanger

5. Troubleshooting

Diagnosis	Countermeasure
* For the characteristics of discharge pipe temperature, refer to E39. Are the characteristics of discharge pipe temperature thermistor normal? — NO →	Replace discharge pipe temperature thermistor.
YES ↓ Is the discharge pipe temperature error persisted during cooling operation? — YES →	Insufficient refrigerant amount : Recharge refrigerant by weighing proper amount on a scale.
NO ↓ Is the discharge pipe temperature control normal? — NO →	Control operation check *
YES ↓ Is the temperature (measured actually) at detection of error correct? — NO →	Defective outdoor unit main PCB→Replace.
YES →	Check unit side: • Isn't filter clogged? • Are adequate indoor, outdoor unit installation spaces? • Isn't there any short-circuit of air? • Isn't there any fouling, clogging on indoor heat exchanger?

* For the contents of control, refer to the protective control by controlling compressor rotation speed and cooling high pressure protective control of microcomputer control function for corresponding models.

Note:

Error code	LED	Green	Red	Content
Remote control: E37	Indoor control PCB	Keeps flashing	Stays OFF	Outdoor heat exchanger temperature themistor anomaly
	Outdoor control PCB	Keeps flashing	1-time flash	

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) on the outdoor heat exchanger temperature thermistor

3. Condition of error displayed

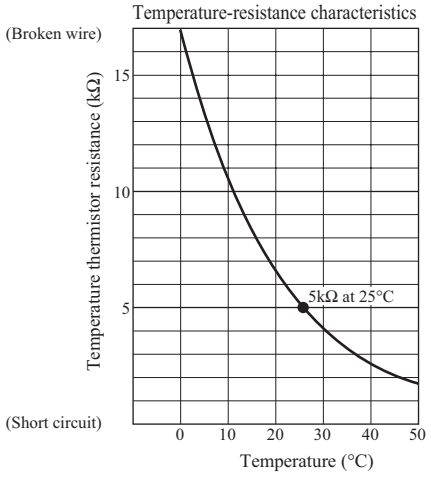
- When the temperature thermistor detects -50°C or lower for 20 seconds continuously within 2 minutes to 2 minutes 20 seconds after the compressor ON, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this anomalous temperature is detected 3 times within 40 minutes.
- When -50°C or lower is detected for 5 seconds continuously within 20 second after compressor ON.

4. Presumable cause

- Defective outdoor unit main PCB
- Broken thermistor harness or temperature sensing section
- Disconnected wire connection (connector)

5. Troubleshooting

Diagnosis	Countermeasure
Is the outdoor heat exchanger temperature thermistor connector connected properly? → NO	Correct connector.
YES	
For the characteristics of outdoor heat exchanger temperature thermistor, see the following graph.	
Are the characteristics of outdoor heat exchanger temperature thermistor OK? → NO	Defective outdoor heat exchanger temperature thermistor→Replace.
YES	Defective outdoor unit main PCB→Replace. (Defective outdoor heat exchanger temperature thermistor input circuit)



Note:

Error code	LED	Green	Red	Content
Remote control: E38	Indoor control PCB	Keeps flashing	Stays OFF	Outdoor air temperature thermistor anomaly
	Outdoor control PCB	Keeps flashing	1-time flash	

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) on outdoor air temperature thermistor

3. Condition of error displayed

- When the temperature thermistor detects -45°C or lower for 5 seconds continuously within 2 minutes to 2 minutes 20 seconds after the compressor ON, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this anomalous temperature is detected 3 times within 40 minutes.
- When -45°C or lower is detected for 5 seconds continuously within 20 second after compressor ON.

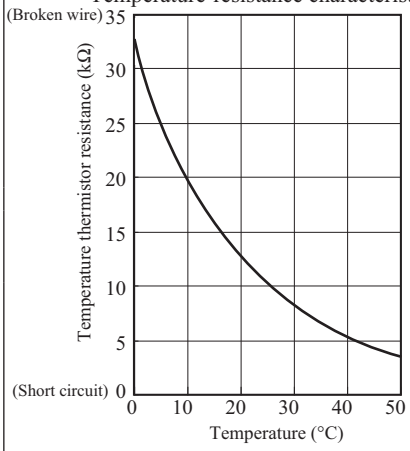
4. Presumable cause

- Defective outdoor unit main PCB
- Broken thermistor harness or temperature sensing section (Check molding.)
- Disconnected wire connection (connector)

5. Troubleshooting

Diagnosis	Countermeasure
Is the outdoor air temperature thermistor connector connected properly? NO	Correct connector.
YES → Is the characteristics of the outdoor air temperature thermistor OK? (For the characteristics of outdoor air temperature thermistor, see the following graph.) NO	Defective outdoor air temperature thermistor→Replace.
YES	Defective outdoor unit main PCB→Replace. (Defective outdoor air temperature thermistor input circuit)

Temperature-resistance characteristics



Note:

Error code	LED	Green	Red	Content
Remote control: E39	Indoor control PCB	Keeps flashing	Stays OFF	Discharge pipe temperature thermistor anomaly
	Outdoor control PCB	Keeps flashing	1-time flash	

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) on the discharge pipe temperature thermistor

3. Condition of error displayed

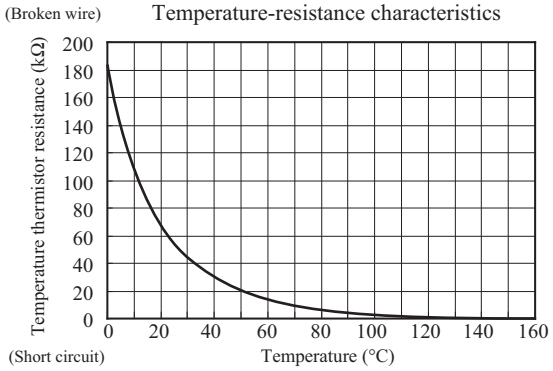
When the temperature thermistor detects -10°C or lower for 5 seconds continuously within 10 minutes to 10 minutes 20 seconds after the compressor ON, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this anomalous temperature is detected 3 times within 40 minutes.

4. Presumable cause

- Defective outdoor unit main PCB
- Broken thermistor harness or temperature sensing section (Check molding.)
- Disconnected wire connection (connector)

5. Troubleshooting

Diagnosis	Countermeasure
Is the discharge pipe temperature thermistor connector connected properly? → NO	Correct connector.
YES → Are the characteristics of discharge pipe temperature thermistor OK? (For the characteristics of discharge pipe temperature thermistor, see the following graph.) → NO	Defective discharge pipe temperature thermistor→Replace.
YES	Defective outdoor unit main PCB→Replace. (Defective temperature thermistor input circuit)



Note:

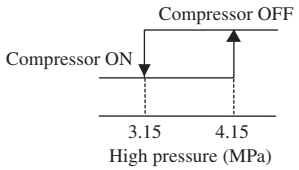
Error code	LED	Green	Red	Content
Remote control: E40	Indoor control PCB	Keeps flashing	Stays OFF	High pressure error (63H1 activated) (Models FDC100-140 VNA/VSA only)
	Outdoor control PCB	Keeps flashing	1-time flash	

1. Applicable model

Models FDC100-140 VNA
100-140 VSA

2. Error detection method

When the high pressure switch 63H1 is activated.



3. Condition of error displayed

If 63H1 turns OFF (opened), the compressor stops. After 3-minutes delay, the compressor restarts. If this anomaly occurs 5 times within 60 minutes or continues for 60 minutes continuously.

4. Presumable cause

- Short circuit of air flow, disturbance of air flow and clogging filter at outdoor heat exchanger/Breakdown of fan motor
- Defective outdoor unit main PCB
- Defective 63H1 connector
- Defective electronic expansion valve connector
- Closed service valve
- Mixing of non-condensing gas (nitrogen, etc.)

5. Troubleshooting

Diagnosis	Countermeasure
If the power source breaker is turned OFF and ON too quickly, E40 may be displayed. (This is normal.)	
Is the service valve fully opened? — NO	Open the service valve.
YES	
Has 63H1 activated? — NO	
On operation of 63H1 — YES	
1. During cooling ・ Is the outdoor fan motor running? ・ Isn't any short-circuit of air on the outdoor unit? ・ Are sufficient return air/supply air space secured? 2. During heating ・ Isn't the indoor heat exchanger temperature thermistor disconnected from the thermistor casing? ・ Isn't the filter clogged? * Under the condition of overcharging refrigerant, 63H1 may activate due to delay of starting the preventive control by compressor speed control, because detected heat exhanger temperature, which conducts compressor speed control, becomes lower than normal condition due to excess sub-cooling degree.	
Is 63H1 connector connected properly? — NO	Correct 63H1 connector.
YES	
Is the electronic expansion valve connector connection OK? — NO	Correct electronic expansion valve connector.
If any anomaly exists on the electronic expansion valve connector connection, the power source must be reset.	
YES	Defective outdoor unit main PCB→Replace. (Defective 63H1 input circuit)

Note: In the protective control range for compressor startup (initial startup after power ON), even if 63H1 is activated only once (63H1turns OFF), immediately the error is displayed.

Error code	LED	Green	Red	Content
Remote control: E42	Indoor control PCB	Keeps flashing	Stays OFF	Current cut (1/2)
	Outdoor control PCB	Keeps flashing	1-time flash	

1. Applicable model

All models

2. Error detection method

In order to prevent from overcurrent of inverter, if the current exceeds the specifications, it makes the compressor stopping.

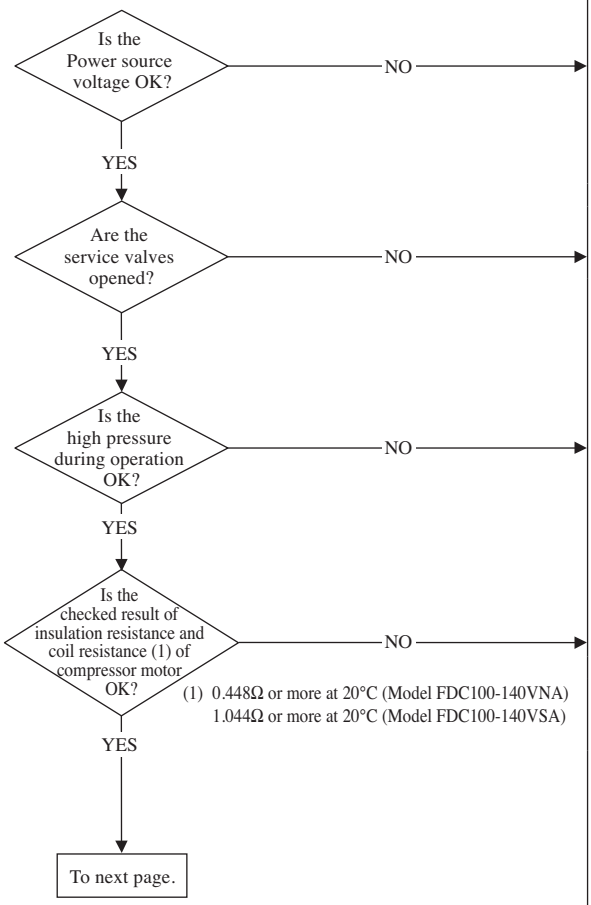
3. Condition of error displayed

- If the output current of inveter exceeds the specifications, it makes the compressor stopping.
- After 3-minute delay, the compressor restarts, but if this amonaly occurs 4 times within 30 minute after the initial detection.

4. Presumable cause

- The service valves closed
- Faulty power source
- Insufficient refrigerant amount
- Faulty compressor
- Faulty power transistor module

5. Troubleshooting



Note:

Error code	LED	Green	Red	Content
Remote control: E47	Indoor	Keeps flashing	Stays OFF	Control PCB A/F module anomaly (Model FDC100-140VNA only)
	Outdoor control PCB	Keeps flashing	1-time flash	

1. Applicable model

Model FDC100-140VNA

2. Error detection method

In order to avoid an unexpected trouble, if the protective circuit defect unexpected voltage, current and movement of the power element, it makes the compressor stopping.

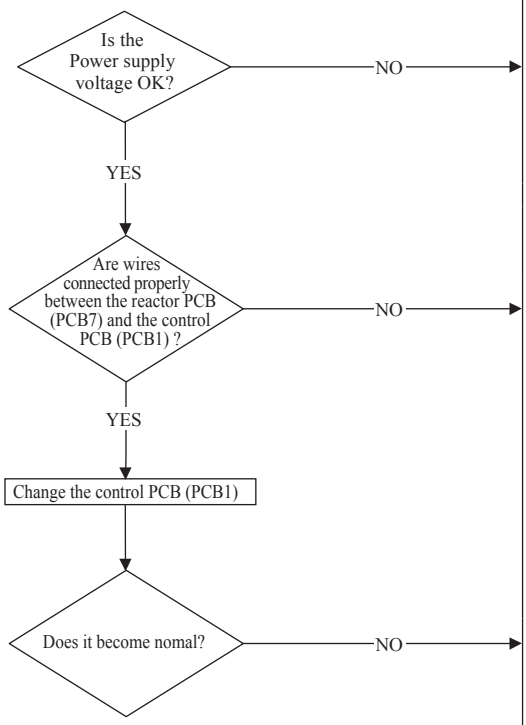
3. Condition of error displayed

- If the A/F anomaly occurs, it makes the compressor stopping.
- After 3-minutes delay, the compressor restarts if this anomaly occurs 4 times within 30minutes or continues for 15minutes continuously.

4. Presumable cause

- Defective control PCB
- Defective reactor PCB

5. Troubleshooting



Note:

#

Error code	LED	Green	Red	Content
Remote control: E42	Indoor	Keeps flashing	Stays OFF	Current cut (2/2)
	Outdoor control PCB	Keeps flashing	1-time flash	

1. Applicable model

All models

2. Error detection method

In order to prevent from overcurrent of inverter, if the current exceeds the specifications, it makes the compressor stopping.

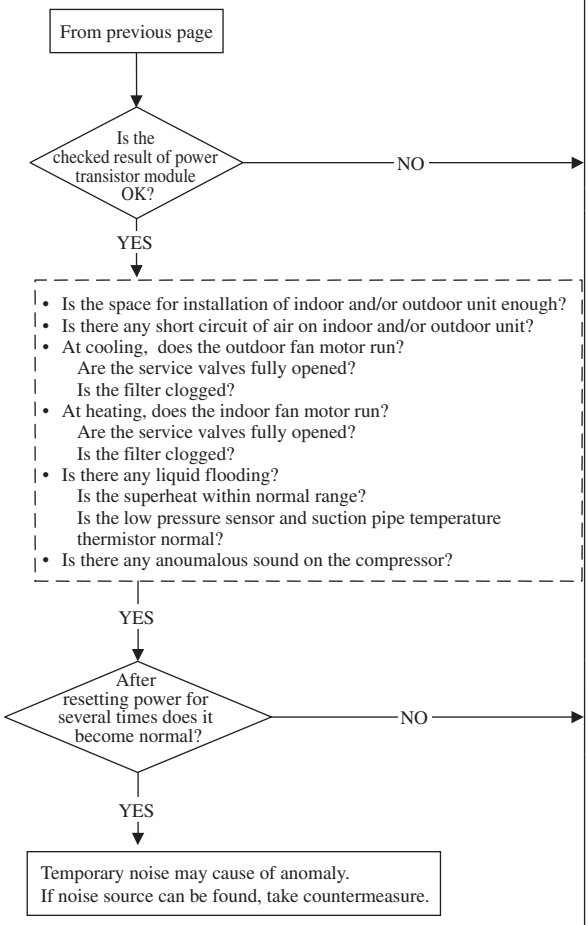
3. Condition of error displayed

- If the output current of inveter exceeds the specifications, it makes the compressor stopping.
- After 3-minute delay, the compressor restarts, but if this amonaly occurs 4 times within 30 minute after the initial detection.

4. Presumable cause

- Defective outdoor unit main PCB
- Faulty power source
- Insufficient refrigerant amount
- Faulty compressor
- Faulty power transistor module

5. Troubleshooting



Note:

Error code	LED	Green	Red	Content
Remote control: E48	Indoor control PCB	Keeps flashing	Stays OFF	Outdoor fan motor anomaly (Models FDC100-140 VNA/VSA only)
	Outdoor control PCB	Keeps flashing	1-time flash	

1. Applicable model

Models FDC100-140 VNA
100-140 VSA

2. Error detection method

Detected by rotation speed of outdoor fan motor

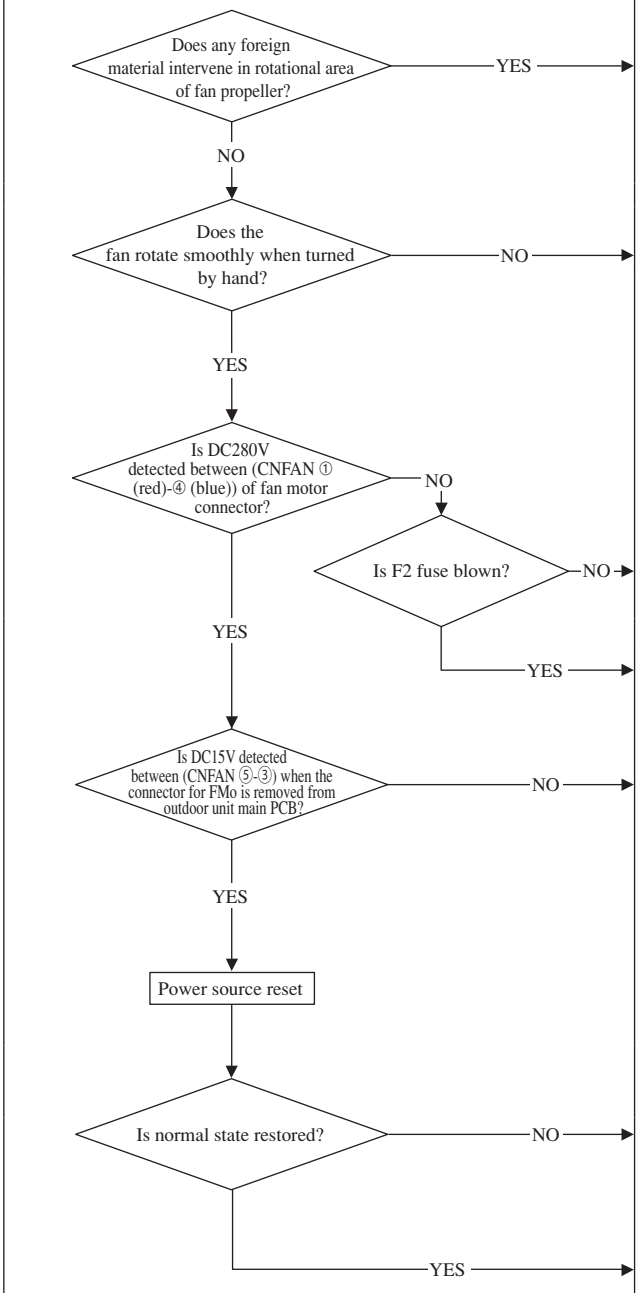
3. Condition of error displayed

When actual rotation speed of outdoor fan motor (FMo1) drops to 100min^{-1} or lower for 30 minutes continuously, the compressor and the outdoor fan motor stop. After 3-minutes delay, it starts again automatically, but if this anomaly occurs 5 times within 60 minutes after the initial detection.

4. Presumable cause

- Defective outdoor unit main PCB
- Foreign material at rotational area of fan propeller
- Defective fan motor
- Dust on outdoor unit main PCB
- Blow fuse
- External noise, surge

5. Troubleshooting



Note: When E48 error occurs, in almost cases F2 fuse (4A) on the outdoor control PCB is blown. There are a lot of cases that fuse is blown and E48 occurs due to defective fan motor. And even though only the outdoor control PCB (or fuse) is replaced, another trouble (*1) could occur. Therefore when fuse is blown, check whether the fan motor is OK or not.
After confirming the fan motor normal, check by power ON. (Don't power ON without confirming the fan motor normal.)
*1 The error which does not seem to relate E48 may occur like as "WAIT", Stay OFF of LED on outdoor control PCB, inverter communication error (E45) and etc.

Error code	LED	Green	Red	Content
Remote control: E51	Indoor control PCB	Keeps flashing	Stays OFF	Inverter and fan motor anomaly (Models FDC100-140 VNA/VSA only)
	Outdoor control PCB	Keeps flashing	1-time flash	

1. Applicable model

Models FDC100-140 VNA
100-140 VSA

2. Error detection method

When power transistor anomaly is detected for 15 minutes continuously

3. Condition of error displayed

Same as above

4. Presumable cause

- Outdoor fan motor anomaly
- Outdoor unit main PCB anomaly

5. Troubleshooting

Diagnosis	Countermeasure
• **Models FDC100-140VNA/VSA** Replace immediately the main PCB.	

Note:

Error code	LED	Green	Red	Content
Remote control: E53	Indoor control PCB	Keeps flashing	Stays OFF	Suction pipe temperature thermistor anomaly (Models FDC100-140 VNA/VSA only)
	Outdoor control PCB	Keeps flashing	1-time flash	

1. Applicable model

Models FDC100-140 VNA
100-140 VSA

2. Error detection method

When the suction pipe temperature thermistor detects anomalously low temperature

3. Condition of error displayed

If the temperature thermistor detects -50°C or lower for 5 seconds continuously within 10 minutes to 10 minutes 20 seconds after compressor ON, the compressor stops. When the compressor is restarted automatically after 3-minutes delay, if this anomaly ocuurs 3 times within 40 minute.

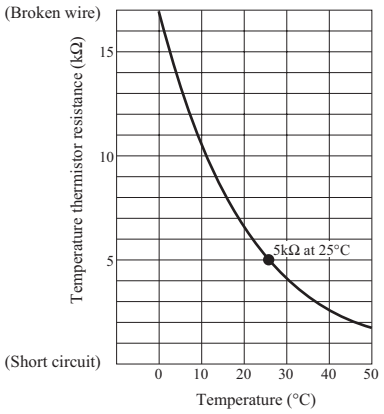
4. Presumable cause

- Defective suction pipe temperature thermistor connection
- Defective suction pipe temperature thermistor
- Defective outdoor unit main PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the connection of suction pipe temperature thermistor connector OK? — NO	Correct connection of suction pipe temperature thermistor connector.
YES → Are the characteristics of suction pipe temperature thermistor OK? — NO	Defective suction pipe temperature thermistor→Replace.
YES	Defective outdoor unit main PCB→Replace. (Defective suction pipe temperature thermistor input circuit)

Temperature-resistance characteristics



Note:

Error code	LED	Green	Red	Content
Remote control: E57	Indoor control PCB	Keeps flashing	Stays OFF	Insufficient refrigerant amount or detection of service valve closure (Models FDC100-140 VNA/VSA only)
	Outdoor control PCB	Keeps flashing	1-time flash	

1. Applicable model

Models FDC100-140 VNA
100-140 VSA

2. Error detection method

- Judge insufficient refrigerant amount by detecting the temperature differnce between indoor heat exchanger (Thi-R) and indoor return air (Thi-A).
- It detects at initial startup in cooling or dehumidifying mode after power ON.

3. Condition of error displayed

Anomalous stop at initial detection

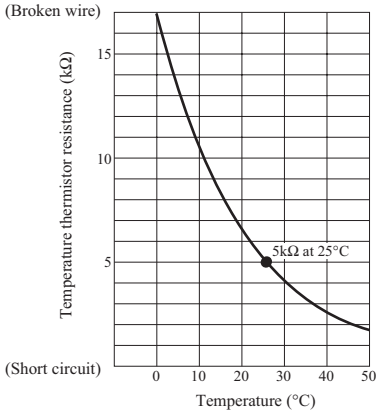
4. Presumable cause

- Defective indoor heat exchanger temperature thermistor
- Defective indoor return air temperature thermistor
- Defective indoor unit control PCB
- Insufficient refrigerant amount

5. Troubleshooting

Diagnosis	Countermeasure
Is the service valve fully opened? NO	Open fully.
YES → Are the connections of indoor heat exchanger and/or return air temperature thermistor connectors OK? NO	Correct indoor heat exchanger, return air temperature thermistor connector connections.
YES → Are the characteristics of indoor heat exchanger and/or return air temperature thermistor OK? NO	Defective indoor heat exchanger, return air temperature thermistor →Replace.
YES → Is the low pressure during operation normal? NO	Charge refrigerant.
YES	Defective indoor unit control PCB→Replace. (Defective indoor heat exchanger, return air temperature thermistor input circuits)

Indoor heat exchanger, return air temperature thermistor
Temperature-resistance characteristics



Note: Insufficient refrigerant amount preventive control makes compressor stopped, if it judges insufficient refrigerant amount by detecting the temperature difference between indoor heat exchanger (Thi-R) and return air temperature (Thi-A) for 1 minute after compressor ON in cooling or dehumidifying mode and for 9 minutes after compressor ON in heating mode. [in cooling mode: (Thi-A)-(Thi-R)>4degC, in heating mode: (Thi-R)-(Thi-A)<4degC]

Error code	LED	Green	Red	Content
Remote control: E58	Indoor	Keeps flashing	Stays OFF	Anomalous compressor by loss of synchronism
	Outdoor	Keeps flashing	1-time flash	

1. Applicable model

FDC100-140VNA
FDC100-140VSA
FDC100-140VNA-W
FDC100-140VSA-W

2. Error detection method

E58

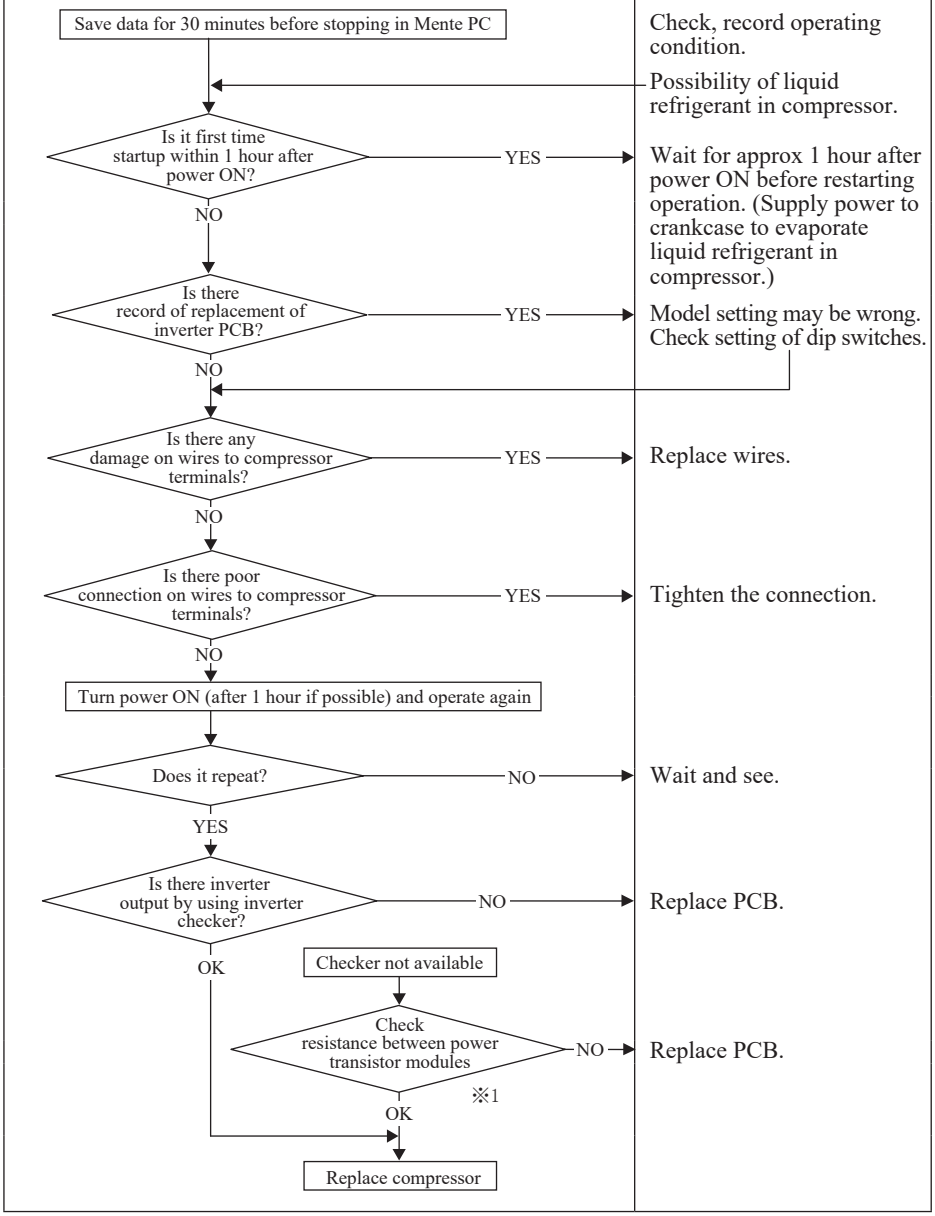
3. Condition of error displayed

This anomaly is established 4 times within 15 minutes.

4. Presumable cause

- Insufficient time elapsed after the power supplied before compressor startup. (Startup the compressor without crankcase heater ON)
- Compressor anomaly
- PCB anomaly

5. Troubleshooting



Note: 1. ※1 Measurement position: Check resistance between P-U, P-V, P-W, N-U, N-V, N-W, P-N
(Disconnect wires from compressor beforehand.)

2. Measurement position to check power transistor (Refer to page 332-1)

Model name	P	N	U	V	W	Note
FDC100-140VNA	IC2 24 or 25 pin	IC2 18, 19 or 20 pin	U(RD) TB7	V(WH) TB8	W(BL) TB9	IC2:Power transistor
FDC100-140VNA-W						
FDC100-140VSA	T12	IC2 34, 35 or 36 pin	U(RD) TB7	V(WH) TB8	W(BL) TB9	IC2:Power transistor
FDC100-140VSA-W						

3. If it fails to repeat, connect the Mente PC, and continue to collect data.

#

Error code	LED	Green	Red	Content
Remote control: E59	Indoor control PCB	Keeps flashing	Stays OFF	Compressor startup failure (1/2) (Models FDC100-140 VNA/VSA only)
	Outdoor control PCB	Keeps flashing	5-time flash	

1. Applicable model

Models FDC100-140 VNA
100-140 VSA

2. Error detection method

When it fails to change over to the operation for rotor position detection of compressor motor

3. Condition of error displayed

If the compressor fails to startup for 20 times (10 patterns x2 times) continuously.

4. Presumable cause

- Outdoor fan motor anomaly
- Outdoor unit main PCB anomaly
- Anomalous power source voltage
- Insufficient or Excessive refrigerant amount
- Faulty component for refrigerant circuit
- Compressor anomaly (Motor or bearing)

5. Troubleshooting

Diagnosis	Countermeasure
In case that the compressor does not start at all and no sound or vibration exists	
Is power source voltage OK? — NO	Check the power source voltage and correct it.
YES (For FDC100-140VSA / For FDC100-140VNA)	
Is DC15V detected after disconnecting outdoor fan motor? — YES	Replace outdoorfan motor.
NO	
Replace outdoor unit main PCB	
Can compressor startup? — YES	OK
NO	
Is the pressure equalized at starting OK? — NO	Check refrigerant amount and refrigerant circuit.
YES	
Is the insulation resistance and coil resistance of compressor OK? — NO	Replace compressor.
YES	
To next page	

Note: Insulation resistance
- The unit is left for long period without power source or soon after installation, insulation resistance may decrease to several MΩ or lower due to the liquid refrigerant migrated in the refrigerant oil in compressor. If the electric leakage breaker is activated due to low insulation resistance, check followings.
  ① Check whether the insulation resistance can recover or not, after 6 hours has passed since power ON.
  (By energize the crankcase heater, liquid refrigerant migrated in the refrigerant oil in compressor can be evaporated)
  ② Check whether the electric leakage breaker conforms to high-harmonic specifications
  (As inverter PAC units has inverter, in order to prevent from improper operation, be sure to use the breaker of high-harmonic type)

Error code	LED	Green	Red	Content
Remote control: E59	Indoor control PCB	Keeps flashing	Stays OFF	Compressor startup failure (2/2) (Models FDC100-140 VNA/VSA only)
	Outdoor control PCB	Keeps flashing	5-time flash	

1. Applicable model

Models FDC100-140 VNA
100-140 VSA

2. Error detection method

When it fails to change over to the operation for rotor position detection of compressor motor

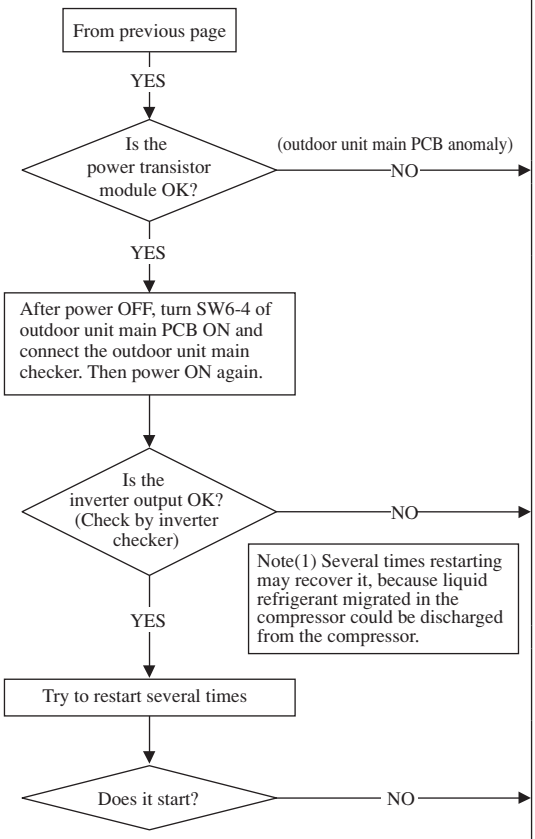
3. Condition of error displayed

If the compressor fails to startup for 20 times (10 patterns x2 times) continuously.

4. Presumable cause

- Outdoor fan motor anomaly
- Outdoor unit main PCB anomaly
- Anomalous power source voltage
- Insufficient or Excessive refrigerant amount
- Faulty component for refrigerant circuit
- Compressor anomaly (Motor or bearing)

5. Troubleshooting

Diagnosis	Countermeasure
	

Note:

(b) SRK series

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: None		–	–	Operates but does not cool
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model

All models

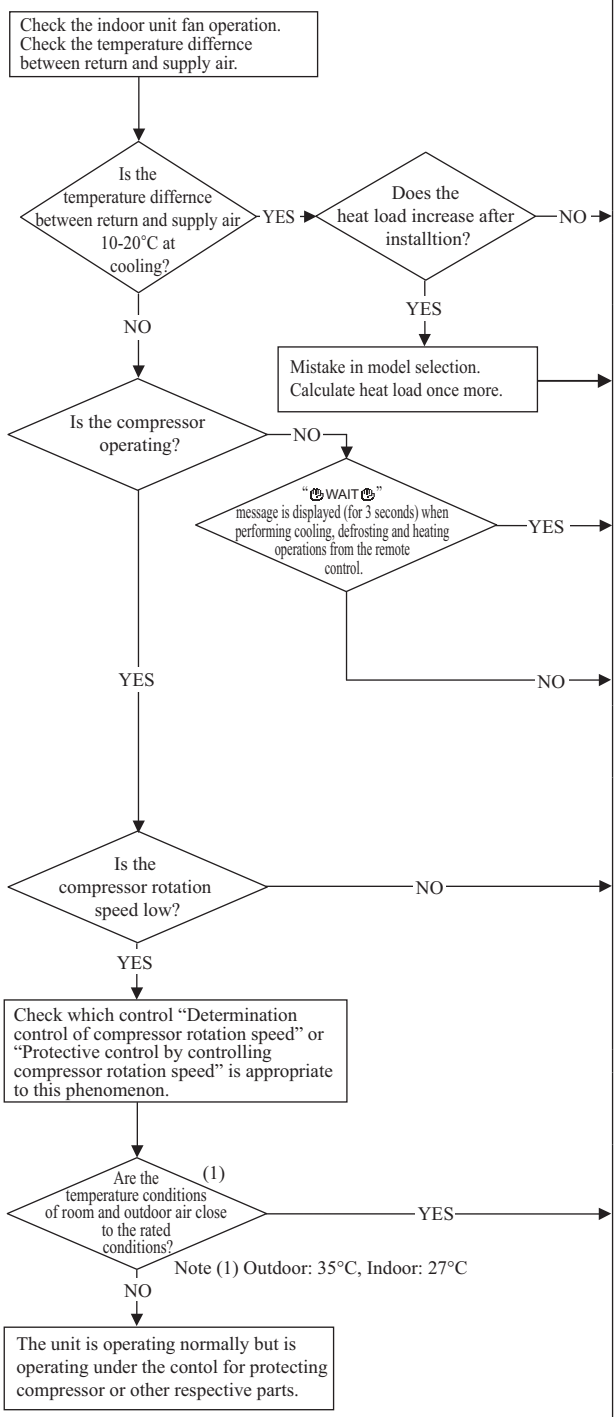
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Poor compression of compressor
- Faulty expansion valve operation

5. Troubleshooting



Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: None		–	–	Operates but does not heat
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model

All models

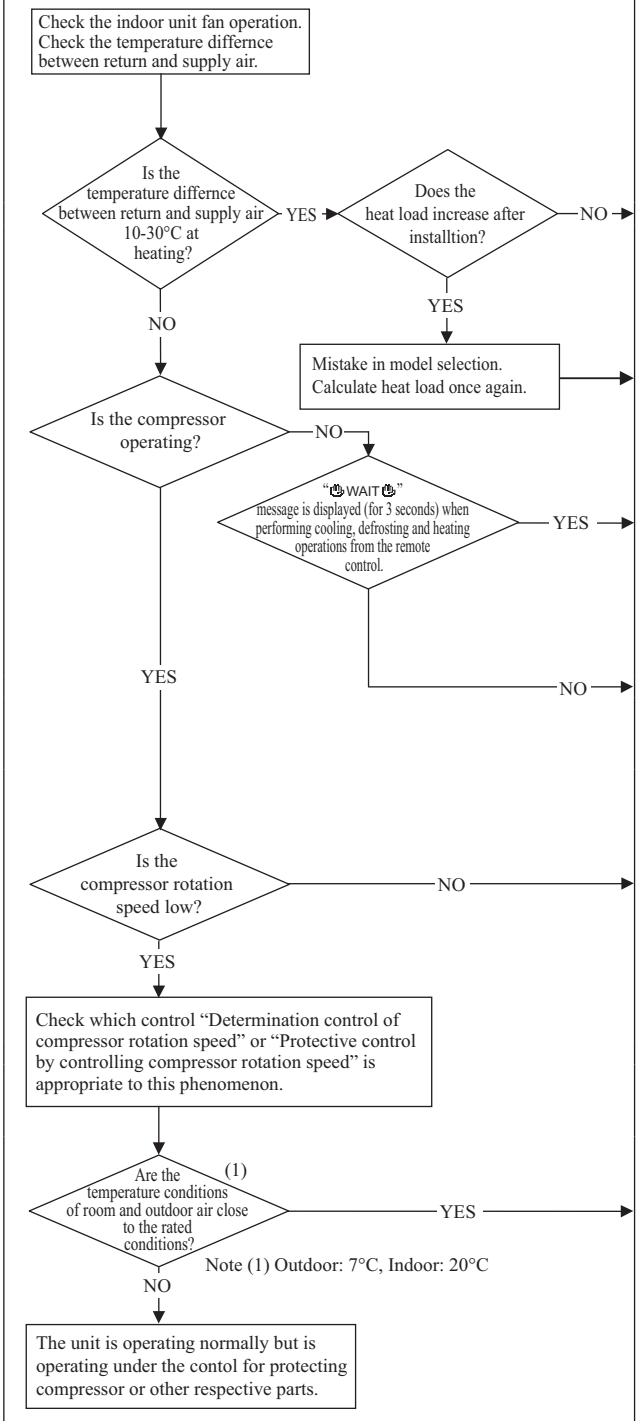
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Faulty 4-way valve operation
- Poor compression of compressor
- Faulty expansion valve operation

5. Troubleshooting



Countermeasure

It is normal.
(This unit is designed to start in the soft start mode by detecting the under dome temperature of compressor when it restart after power reset.

It is necessary to replace to higher capacity one or to install additional unit.

Compressor refrigerant oil protection control at starting is activated. For the contents of control, refer to the compressor start control of the microcomputer control functions.

Compressor may be stopped by the error detection control.
For the contents of control, refer to anomalous stop control by controlling compressor rotation speed of microcomputor control functions.

Inspect the followings.
- Minor clogging of filter
- Minor clogging of heat exchanger
- Minor short-circuit
- Minor shortage of refrigerant amount
- Poor compression of compressor

Considering appropriate operation control, check suspicious points.
Inspect the followings for reference.
- Major clogging of filter
- Major clogging of heat exchanger
- Major short-circuit
- Major shortage of refrigerant amount
- Compressor protection ON
- Indoor fan tap
- Valid setting of silent mode

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: None		–	–	Earth leakage breaker activated
	Outdoor unit control PCB	Green LED	Red LED	
		Stays OFF	Stays OFF	

1. Applicable model

All models

2. Error detection method

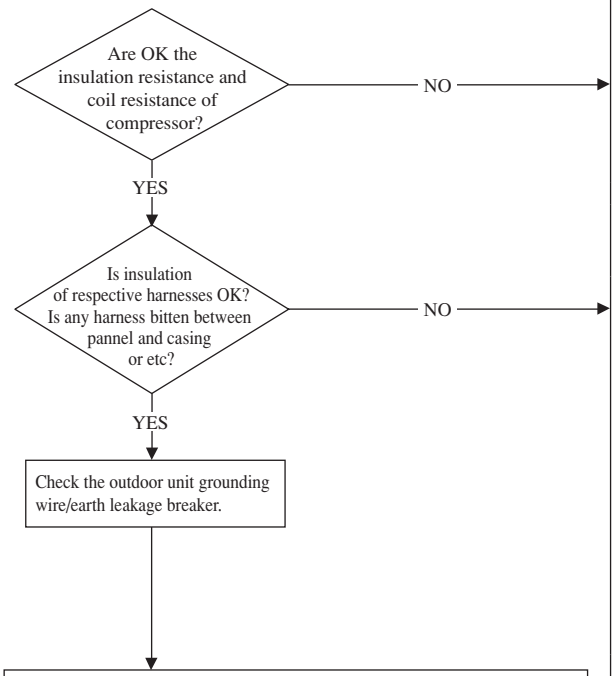
3. Condition of error displayed

4. Presumable cause

• Defective compressor
• Noise

5. Troubleshooting

Diagnosis	Countermeasure



Check of the outdoor unit grounding wire/earth leakage breaker

① Run an independent grounding wire from the grounding screw of outdoor unit to the grounding terminal on the distribution panel. (Do not connect to another grounding wire.)
② In order to prevent malfunction of the earth leakage breaker itself, confirm that it is conformed to higher harmonic regulation.

* Insulation resistance of compressor
• Immediately after installation or when the unit has been left for long time without power source, the insulation resistance may drop to a few MΩ because of refrigerant migrated in the compressor.
When the earth breaker is activated at lower insulation resistance, check the following points.
① 6 hours after power ON, check if the insulation resistance recovers to normal.
When power ON, crankcase heater heat up compressor and evaporate the refrigerant migrated in the compressor.
② Check if the earth leakage breaker is conformed to higher harmonic regulation or not.
Since the unit is equipped with inverter, it is necessary to use components conformed to higher harmonic regulation in order to prevent malfunction of earth leakage breaker.

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: None		–	–	Excessive noise/vibration (1/3)
	Outdoor unit control PCB	Green LED	Red LED	
		–	–	

1. Applicable model

All models

2. Error detection method

3. Condition of error displayed

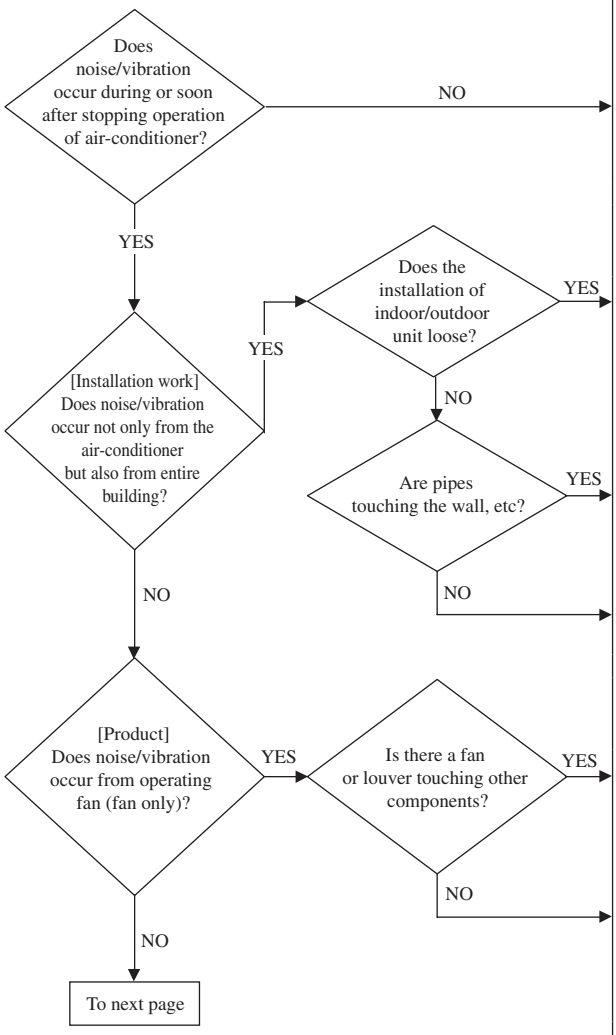
4. Presumable cause

① Improper installation work
- Improper anti-vibration work at instllation
- Insufficient strength of mounting face

② Defective product
- Before/after shipping from factory

③ Improper adjustment during commissioning
- Excess/shortage of refrigerant, etc.

5. Troubleshooting

Diagnosis	Countermeasure
	If excessive noise/vibration persists when sufficient time has elapsed after stopping the unit, it is considered that the air-conditioner is not the source. Check the installed condition carefully, and correct the position or insert rubber cushions or others into the gap, if necessary. Prevent the vibration from transmitting to wall and etc by fixing pipes on the wall or wrapping rubber cushion around the pipe which goes through the hole in the wall or applying other appropriate means. Strength of ceiling wall, floor, etc. may be insufficient. Review the installing position or reinforce it. Check for leaning of installed unit or anomalous mounting of fan, louver or motor and specify the contacting point and correct it. When the heat exchanger or filter is clogged, clean them. In case that the unit is installed at the site where background noise is very low, small noise from indoor unit can be heard, but it is normal. Before installation, check for background noise. If backgound noise is very low, convince client prior to installation.

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: None		–	–	Excessive noise/vibration (2/3)
	Outdoor unit control PCB	Green LED	Red LED	
		–	–	

1. Applicable model

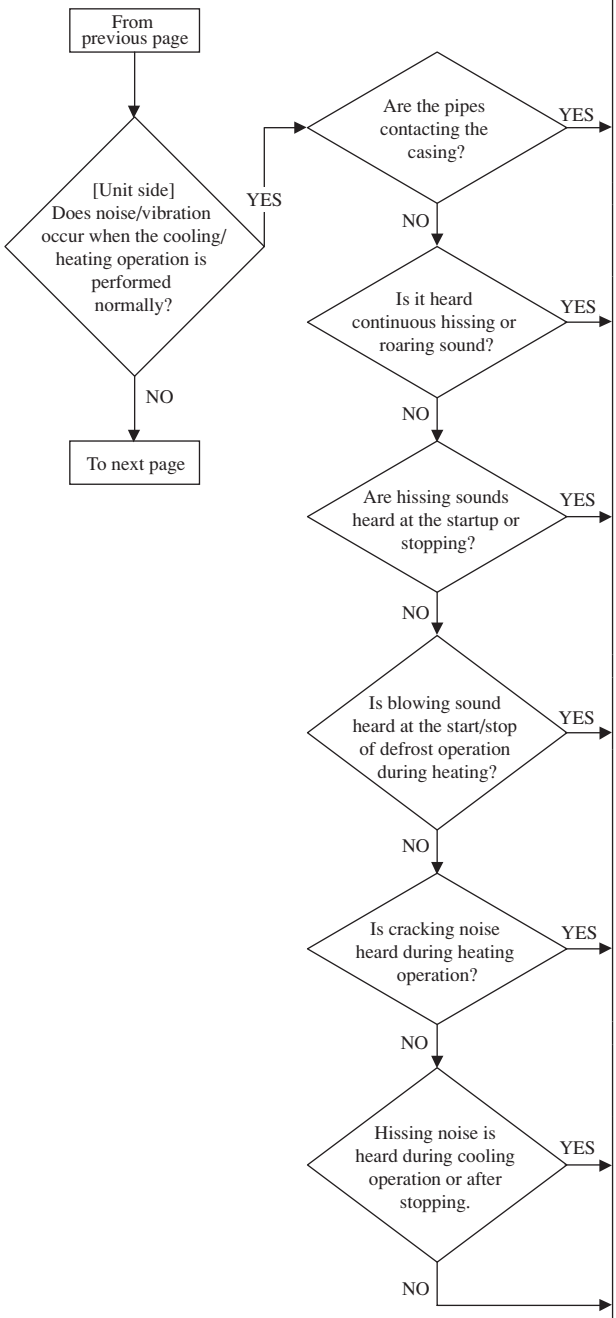
All models

2. Error detection method

3. Condition of error displayed

4. Presumable cause

5. Troubleshooting



Diagnosis	Countermeasure
Are the pipes contacting the casing? YES	Rearrange the piping to avoid contact with the casing.
Is it heard continuous hissing or roaring sound? YES	It is noise/vibration that is generated when the refrigerant gas or liquid flow through inside of piping of air-conditioner. It is likely to occur particularly during cooling or defrost operation in the heating mode. It is normal.
Are hissing sounds heard at the startup or stopping? YES	The noise/vibration occurs when the refrigerant starts or stops flowing. It is normal.
Is blowing sound heard at the start/stop of defrost operation during heating? YES	When the defrost operation starts or stops during heating, the refrigerant flow is reversed due to switching 4-way valve. This causes a large change in pressure which produces a blowing sound. It may accompany also the hissing sounds as mentioned above. They are normal.
Is cracking noise heard during heating operation? YES	After the start or stop of heating operation or during defrost operation, abrupt changes in temperature cause resin parts to shrink or expand. This is normal.
Hissing noise is heard during cooling operation or after stopping. YES	It is the sound produced by the drain pump that discharges drain from the indoor unit. The pump continues to run for 5 minutes after stopping the cooling operation. This is normal.
NO	Apply the damper sealant at places considered to be the sources such as the pressure reducing mechanism (expansion valve), capillary, etc.

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: None		–	–	Excessive noise/vibration (3/3)
	Outdoor unit control PCB	Green LED	Red LED	
		–	–	

1. Applicable model

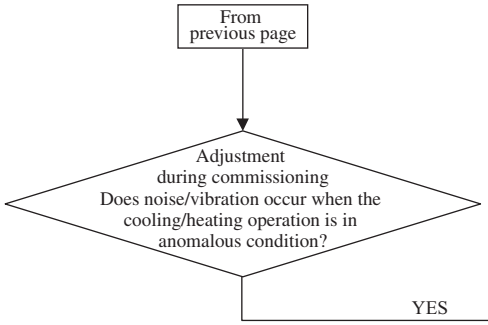
All models

2. Error detection method

3. Condition of error displayed

4. Presumable cause

5. Troubleshooting

Diagnosis	Countermeasure
	If insufficient cooling/heating problem happens due to anomalous operating conditions at cooling/heating, followings are suspicious. • Overcharge of refrigerant • Insufficient charge of refrigerant • Intrusion of air, nitrogen, etc. In such occasion, it is necessary to recover refrigerant, vacuum-dry and recharge refrigerant. * Since there could be many causes of noise/vibration, the above do not cover all. In such case, check the conditions when, where, how the noise/vibration occurs according to following check point. • Indoor/outdoor unit • Cooling/heating/fan mode • Startup/stop/during operation • Operating condition (Indoor/outdoor temperatures, pressure) • Time it occurred • Operation data retained by the remote control such as compressor rotation speed, heat exchanger temperature, EEV opening degree, etc. • Tone (If available, record the noise) • Any other anomalies

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: None		–	–	Louver motor failure
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Defective LM
- LM wire breakage
- Faulty indoor unit control PCB

5. Troubleshooting

Diagnosis	Countermeasure
▲ Check at the indoor unit side.	
Operate after waiting for more than 1 minute.	
Does the louver operate at the power on? NO → Is LM wiring broken? YES	Repair wiring.
Is LM wiring broken? NO → Is LM locked? NO	Defective indoor unit control PCB → Replace.
Is LM locked? YES	Replace LM.
Does the louver operate at the power on? YES → Is the louver operable with the remote control? YES	Normal
Is the louver operable with the remote control? NO	Adjust LM lever and then check again.
LM: louver motor	

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: None		–	–	Power source system error (Power source to indoor unit control PCB)
	Outdoor unit control PCB	Green LED	Red LED	
		Stays OFF	2-time flash	

1. Applicable model

All models

2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Misconnection or breakage of connecting wires
- Blown fuse
- Faulty indoor unit control PCB
- Broken harness
- Faulty outdoor unit main PCB (Noise filter)

5. Troubleshooting

Diagnosis	Countermeasure
Is AC220/240V detected between 1 and 2 on the terminal block of indoor unit? → NO → Is AC380/415V for 3-phase unit detected between 1, 2 and 3 on the teminal block of outdoor unit or is AC220/240V for 1-phase unit detected between 1 and 2 on the terminal block of outdoor unit? → NO	Defective outdoor unit main PCB (Noise filter)
Is AC220/240V detected between 1 and 2 on the terminal block of indoor unit? → NO → Is AC380/415V for 3-phase unit detected between 1, 2 and 3 on the teminal block of outdoor unit or is AC220/240V for 1-phase unit detected between 1 and 2 on the terminal block of outdoor unit? → YES	Misconnection or breakage of connecting wires
Is AC220/240V detected between 1 and 2 on the terminal block of indoor unit? → YES → Are fuse OK (250V 3.15A)? → NO	Replace fuse.
Is AC220/240V detected between 1 and 2 on the terminal block of indoor unit? → YES → Are fuse OK (250V 3.15A)? → YES	Defective indoor unit control PCB → Replace.

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: None		–	–	Power source system error (Power source to remote control)
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model

All models

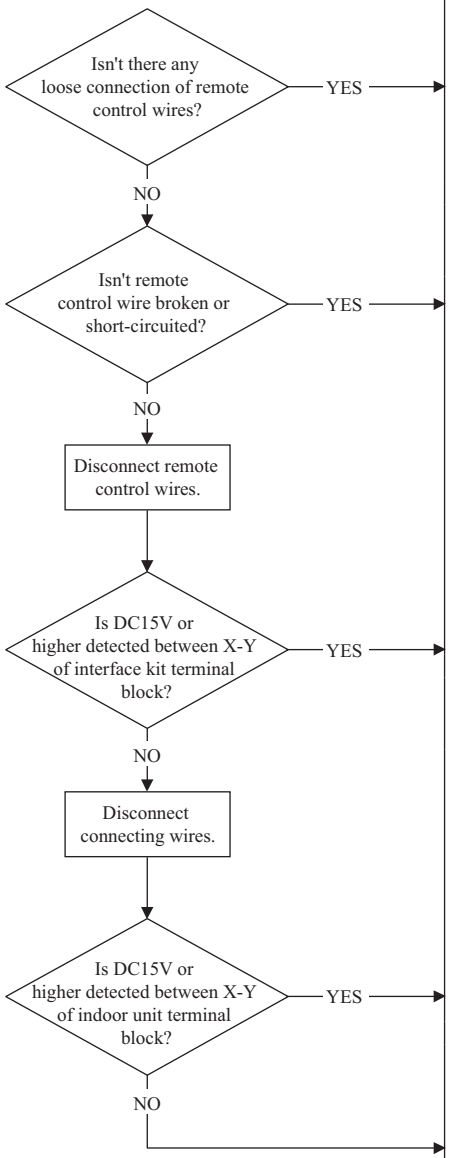
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Remote control wire breakage/short-circuit
- Defective remote control
- Malfunction by noise
- Broken harness
- Faulty indoor unit control PCB
- Faulty interface kit

5. Troubleshooting



Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: None		Stays OFF	Keeps flashing	Limit switch anomaly
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

The limit switch operates when the indoor unit is stopped.

3. Condition of error displayed

Same as above

4. Presumable cause

- Defective limit switch
- Faulty indoor unit control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the inlet panel set correctly? — NO	Correction, re-set
YES	
(1) Are limit switch OK? — NO	Defective limit switch → Replace.
YES	Defective indoor unit control PCB → Replace. (Defective limit switch input circuit)

Note (1) Check the operation of limit switch by checking if the error can be rest or not by pushing the limit switch by finger when the inlet panel is removed.

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: INSPECT I/U		–	–	INSPECT I/U (When 1 or 2 remote controls are connected)
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	2-time flash	

1. Applicable model

All models

2. Error detection method

Communication between indoor unit and remote control is disabled for more than 30 minutes after the power on.

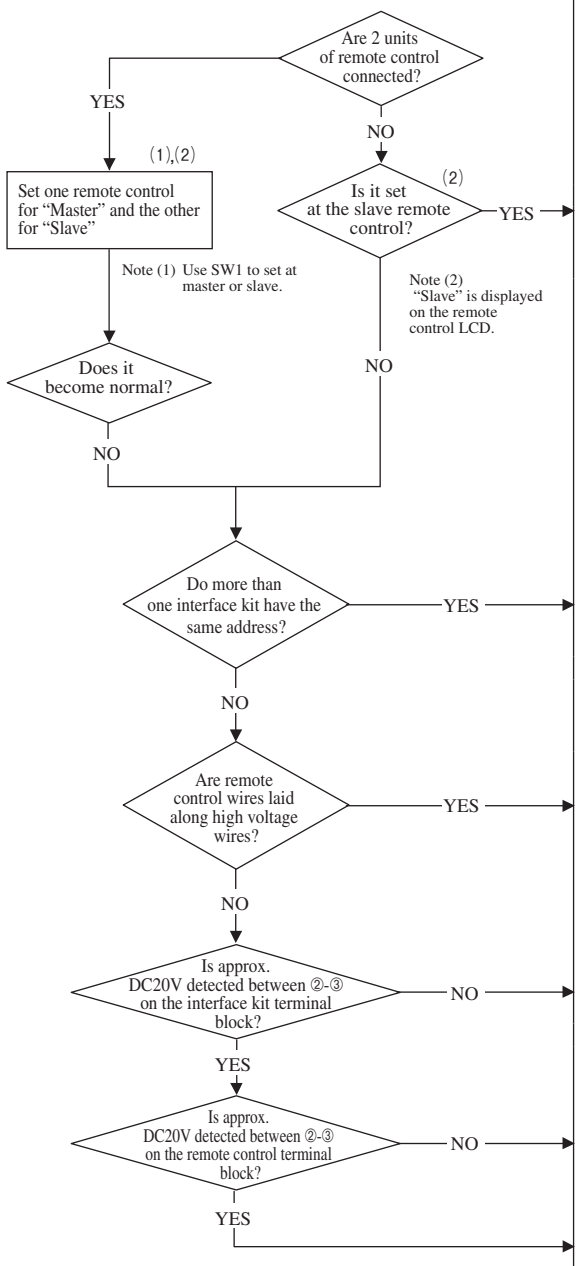
3. Condition of error displayed

Same as above

4. Presumable cause

- Improper setting
- Surrounding environment
- Defective remote control communication circuit
- Faulty interface kit PCB

5. Troubleshooting



Note: If any error is detected 30 minutes after displaying "WAIT" on the remote control, the display changes to "INSPECT I/U".

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: INSPECT I/U		–	–	INSPECT I/U (Connection of 3 units or more remote control)
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	2-time flash	

1. Applicable model

All models

2. Error detection method

Indoor unit cannot communicate for more than 30 minutes after the power on with remote control.

3. Condition of error displayed

Same as above

4. Presumable cause

- Improper setting
- Surrounding environment
- Defective remote control communication circuit
- Faulty indoor unit control PCB
- Faulty outdoor unit main PCB
- Faulty interface kit PCB

5. Troubleshooting

Diagnosis	Countermeasure
Are more than 3 units of remote control connected? YES	Reduce to 2 units or less.
NO → Does remote control display "Slave"? YES	Change remote control setting to "Master". (SW1 on remote control PCB)
NO → Do more than one interface kit have the same address? YES	Set address again. (SW1 on interface kit PCB)
NO → Is it set to a slave interface kit. SW3-1, 2? YES	Change to master. (SW3-1, 2 on interface kit PCB)
NO → Is there loose or wrong connection at the terminal of wiring between indoor and outdoor units? YES	Correct.
NO → Is the grounding wire connected properly? NO	Correct.
YES → Is approx. DC20V detected between ②-③ on the outdoor unit terminal block? NO	Defective outdoor unit main PCB→Replace.
YES → Is approx. DC20V detected between ②-③ on the indoor unit terminal block? NO	Defective indoor unit control PCB→Replace.
YES → Is approx. DC20V detected between ②-③ on the interface kit terminal block? NO	Broken connecting wire→ Correct.
YES	Defective interface kit PCB→Replace.

Note: If any error is detected 30 minutes after displaying "✋WAIT✋" on the remote control, the display changes to "INSPECT I/U".

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: WAIT		–	–	Communication error at initial operation (1/3)
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	2-time flash	

1. Applicable model

All models

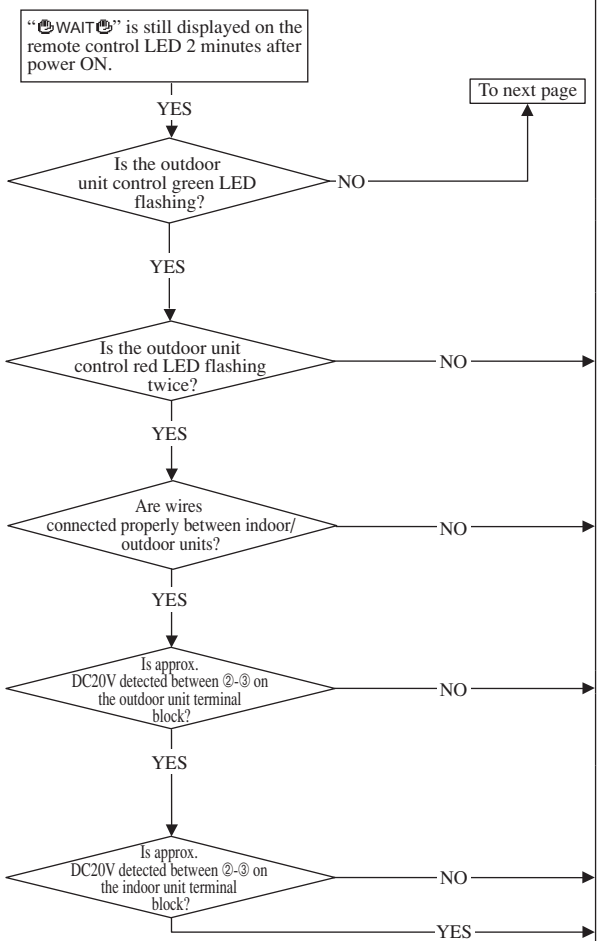
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Faulty indoor unit control PCB
- Defective remote control
- Broken remote control wire
- Faulty outdoor unit main PCB
- Broken connection wires

5. Troubleshooting



Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: WAIT		–	–	Communication error at initial operation (2/3)
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	2-time flash	

1. Applicable model

All models

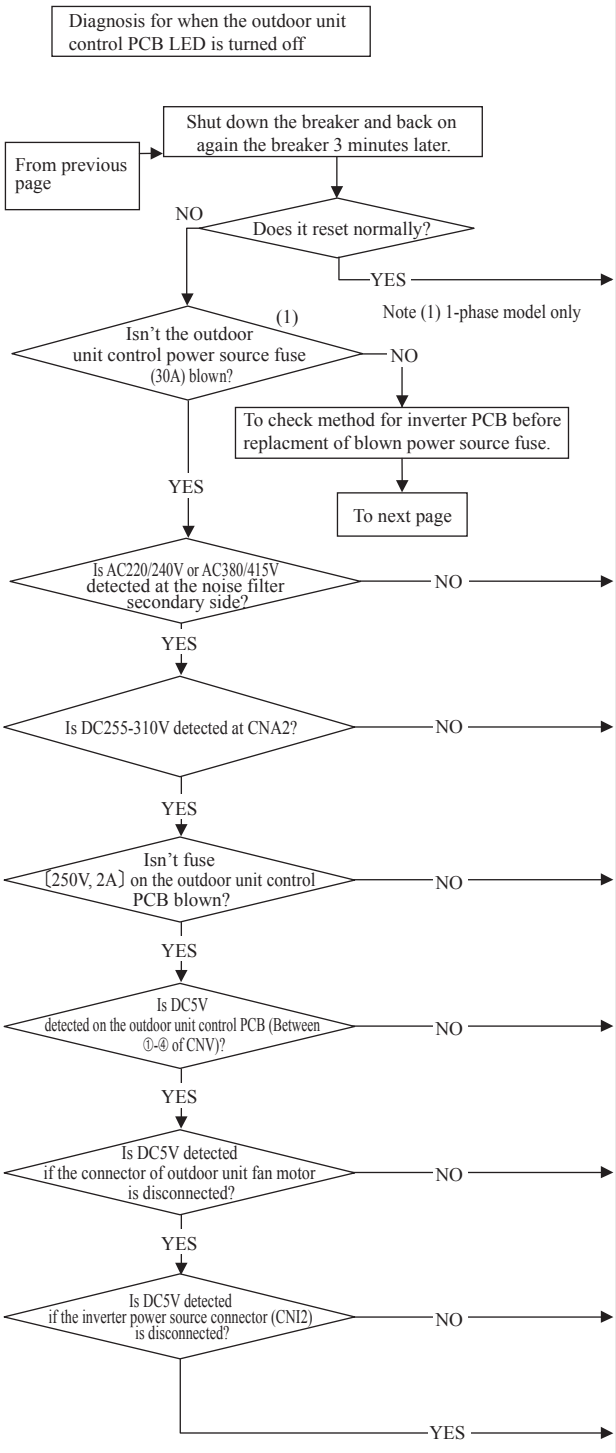
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Faulty noise filter
- Faulty indoor unit control PCB
- Faulty outdoor unit main PCB
- Faulty fan motor

5. Troubleshooting

Diagnosis	Countermeasure
	

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: WAIT		–	–	Communication error at initial operation (3/3)
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	2-time flash	

1. Applicable model

All models

2. Error detection method

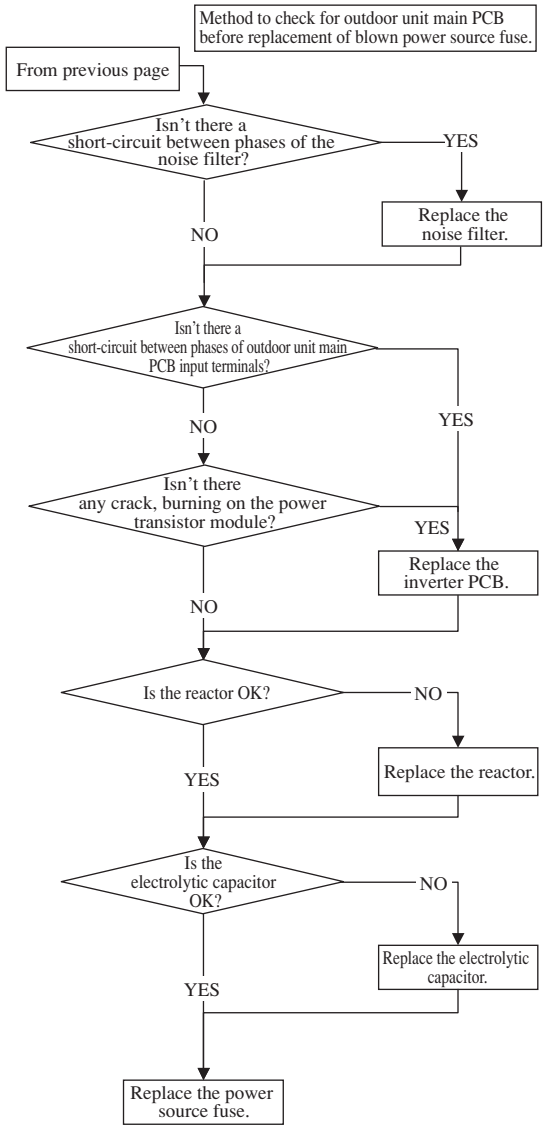
3. Condition of error displayed

4. Presumable cause

- Blown fuse
- Faulty noise filter
- Faulty outdoor unit main PCB
- Faulty reactor

5. Troubleshooting

Diagnosis



Countermeasure

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: None		–	–	No display
	Outdoor unit control PCB	Green LED	Red LED	
		Stays OFF	Stays OFF	

1. Applicable model

All models

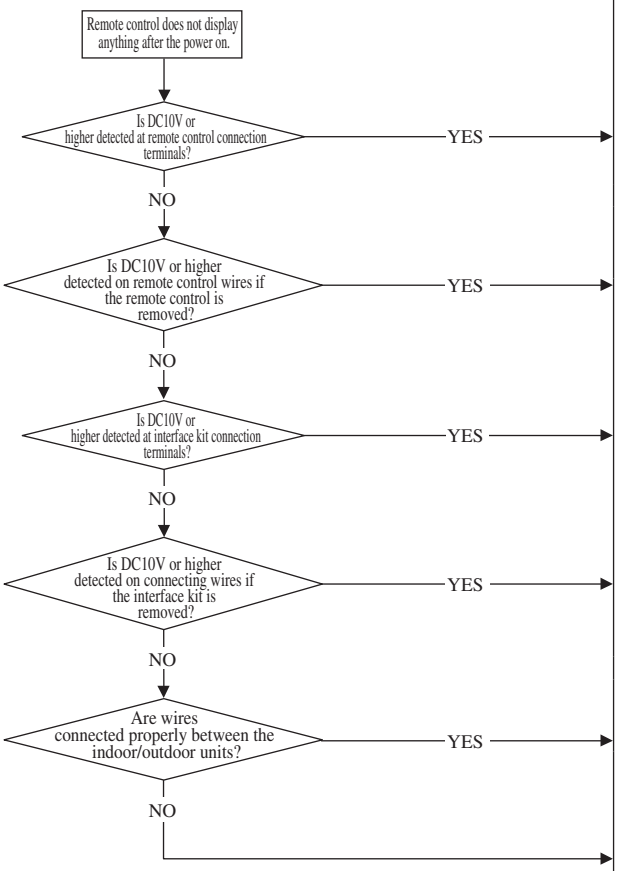
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Faulty indoor unit control PCB
- Defective remote control
- Broken remote control wire
- Defective interface kit

5. Troubleshooting



Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E1		–	–	Remote control communication circuit error
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

When normal communication between the remote control and the indoor unit is interrupted for more than 2 minutes. (Detectable only with the remote control)

3. Condition of error displayed

Same as above

4. Presumable cause

- Defective communication circuit between remote control-indoor unit
- Noise
- Defective remote control
- Faulty indoor unit control PCB
- Defective interface kit

5. Troubleshooting

Diagnosis	Countermeasure
Is it possible to reset normally by the power reset? YES	Malfunction by noise Check peripheral environment.
NO → Is DC10V or higher detected at remote control connection terminals? YES	Defective remote control
NO → Is DC10V or higher detected on remote control wires if the remote control is removed? YES	Defective remote control
NO → Is DC10V or higher detected at interface kit connection terminals? YES	Defective interface kit
NO → Is DC10V or higher detected on connecting wires if the interface kit is removed? YES	Defective interface kit
NO → Are wires connected properly between the indoor/outdoor units? YES	Defective connecting wire. Defective remote control wire (Short-circuit, etc.)
NO	Defective indoor unit control PCB→Replace.

Note (2) Does the remote control still display "WAIT" even after 3 minutes?

Note: If the indoor unit cannot communicate normally with the remote control for 180 seconds, the indoor unit PCB starts to reset automatically.

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E5		ON	6-time flash	Communication error during operation
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	See below	

1. Applicable model

All models

2. Error detection method

When normal communication between indoor and outdoor unit is interrupted for more than 2 minutes.

3. Condition of error displayed

Same as above is detected during operation.

4. Presumable cause

- Unit No. setting error
- Broken remote control wire
- Faulty remote control wire connection
- Faulty outdoor unit main PCB

5. Troubleshooting

Diagnosis

In case that the outdoor unit red LED flashes 2-times

Note (1) Inspect faulty connections (disconnection, looseness) on the outdoor unit terminal block.

Is the connection of signal wires at the outdoor unit side OK?

NO → Repair signal wires.

YES

Note (2) Check for faulty connection or breakage of signal wires between indoor-outdoor units.

Is the connection of signal wires between indoor-outdoor units OK?

NO → Repair signal wires.

YES

Power source reset

Has the remote control LCD returned to normal state?

NO → To the diagnosis of "WAIT"

YES → Unit is normal. (Malfunction by temporary noise, etc.)

In case that the outdoor unit red LED stays OFF

Power source reset

NO

Has the remote control LCD returned to normal state?

NO → Defective outdoor unit main PCB (Defective network communication circuit) → Replace.

YES → Unit is normal. (Malfunction by temporary noise, etc.)

Note: Pressing the pump-down switch cancels communications between indoor and outdoor unit so that "communication error-E5" is displayed on indoor unit and remote control, but it is normal.

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E6		1(3)-time flash(1)	ON	Indoor heat exchanger temperature sensor anomaly
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

Note(1) Value in ( ) are the $Th2_2$.

1. Applicable model

All models

2. Error detection method

Anomalously low temperature or high temperature (resistance) is detected on the indoor heat exchanger sensor ($Th2_1$, $Th2_2$).

3. Condition of error displayed

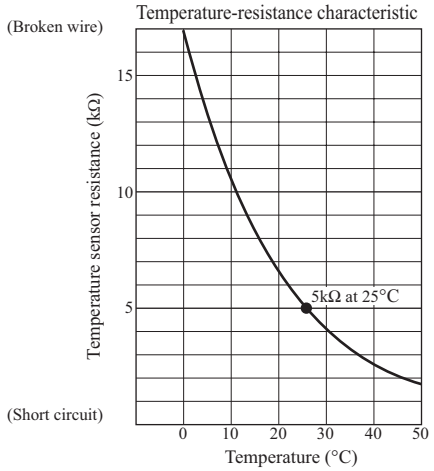
- When the temperature sensor detects -28°C or lower for 15 seconds continuously, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.

4. Presumable cause

- Defective indoor heat exchanger sensor connector
- Indoor heat exchanger temperature sensor anomaly
- Faulty indoor unit control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the connection of indoor heat exchanger temperature sensor connector OK? — NO	Correct. → Insert connector securely.
YES → Are characteristics of indoor heat exchanger temperature sensor OK? — NO	Defective indoor heat exchanger temperature sensor → Replace.
YES	Defective indoor unit control PCB → Replace. (Defective indoor unit heat exchanger temperature sensor input circuit)



Note:

Error code	Indoor display	RUN light	TIMER light	Content	Room temperature sensor anomaly
Remote control: None		2-time flash	ON		
	Outdoor unit control PCB	Green LED	Red LED		
		Keeps flashing	Stays OFF		

1. Applicable model

All models

2. Error detection method

Anomalously low temperature or high temperature (resistance) is detected by indoor room temperature sensor (Th1)

3. Condition of error displayed

- When the temperature sensor detects -45°C or lower for 15 seconds continuously, the compressor stops. After 3-minute delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.

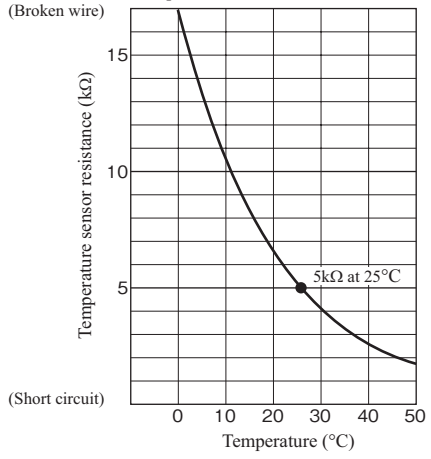
4. Presumable cause

- Defective room temperature sensor connector
- Defective room temperature sensor
- Faulty indoor unit control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the connection of room temperature sensor connector OK? — NO	Correct. → Connect connector.
YES → Are the characteristics of room temperature sensor OK? — NO	Defective room temperature sensor → Replace.
YES	Defective indoor unit control PCB → Replace. (Defective room temperature sensor input circuit)

Temperature-resistance characteristic



Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E10		–	–	Excessive number of connected indoor units (more than 17 units) by controlling with one remote control
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

When it detects more than 17 of indoor units connected to one remote contorl

3. Condition of error displayed

Same as above

4. Presumable cause

- Excessive number of indoor units connected
- Defective remote control

5. Troubleshooting

Diagnosis	Countermeasure
Aren't more than 17 indoor units connected to one remote control?	
NO	Defective remote control → Replace.
YES	Reduce to 16 or less units.

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E14		–	–	Communication error between master and slave indoor units
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

When communication error between master and slave indoor units occurs

3. Condition of error displayed

Same as above

4. Presumable cause

- Unit address setting error
- Broken remote control wire
- Defective remote control wire connection
- Broken interface kit wire
- Defective interface kit wire connection
- Defective indoor unit control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is it OK the unit address setting for master and slave interface kit? → NO	Correct unit address setting.
YES → Isn't the remote control wiring between interface kit defective? → YES	Correct wiring.
NO → Isn't the interface kit wiring between indoor units defective? → YES	Correct wiring.
NO → Is it restored by resetting the power source? → NO	Defective indoor unit control PCB → Replace.
YES	• Malfunction by noise • Check surrounding environment.

Note (1) Set dip switches SW3-1 and SW3-2 as shown in the following table.
(Factory default setting – "Master")

		Interface kit		
		Master	Slave1	Slave2
Dip switch	SW3-1	OFF	OFF	ON
	SW3-2	OFF	ON	OFF

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E16		6-time flash	ON	Indoor fan motor anomaly
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

Detected by rotation speed of indoor fan motor

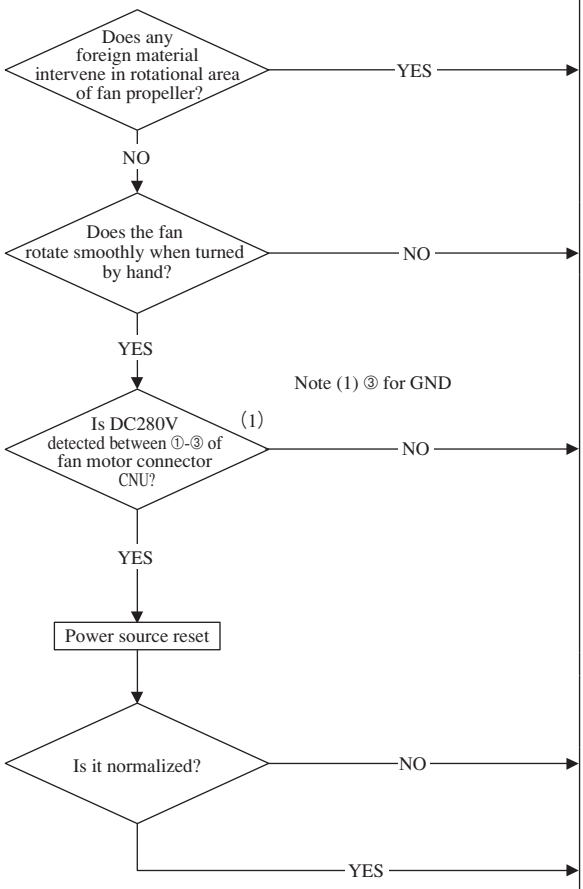
3. Condition of error displayed

- When actual rotation speed of indoor fan motor drops to lower than 300min^{-1} for 30 seconds continuously, the compressor and the indoor fan motor stop.

4. Presumable cause

- Defective indoor unit control PCB
- Foreign material at rotational area of fan propeller
- Defective fan motor
- Dust on indoor unit control PCB
- External noise, surge

5. Troubleshooting



Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E28		–	–	Remote control temperature thermistor anomaly
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) of remote control temperature thermistor (Thc)

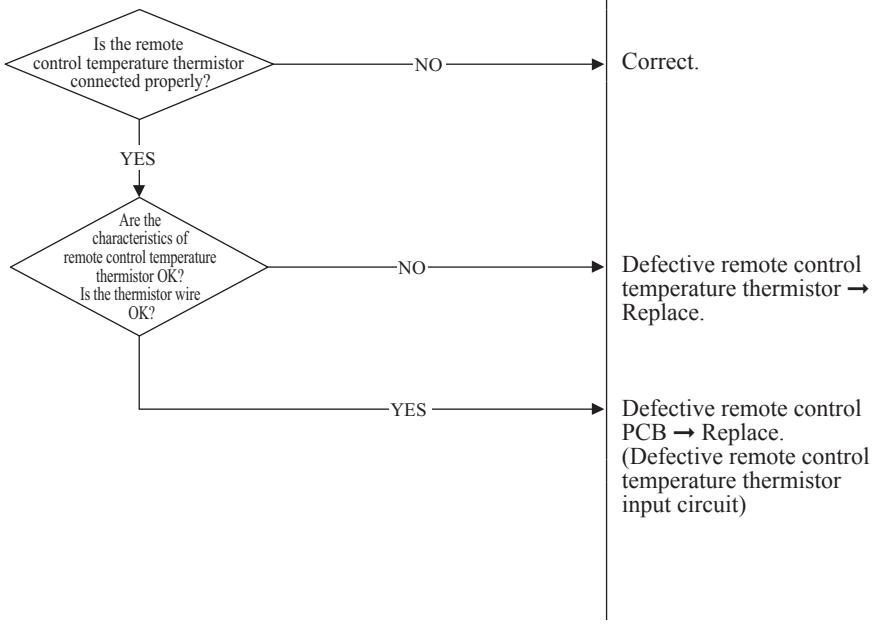
3. Condition of error displayed

When the temperature thermistor detects -50°C or lower for 5 seconds continuously, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.

4. Presumable cause

- Faulty connection of remote control temperature thermistor
- Defective remote control temperature thermistor
- Defective remote control PCB

5. Troubleshooting



Resistance-temperature characteristics of remote control temperature thermistor (Thc)

Temperature (°C)	Resistance value (kΩ)	Temperature (°C)	Resistance value (kΩ)
0	65	30	16
1	62	32	15
2	59	34	14
4	53	36	13
6	48	38	12
8	44	40	11
10	40	42	9.9
12	36	44	9.2
14	33	46	8.5
16	30	48	7.8
18	27	50	7.3
20	25	52	6.7
22	23	54	6.3
24	21	56	5.8
26	19	58	5.4
28	18	60	5.0

Note: After 10 seconds has passed since remote control thermistor was switched from valid to invalid, E28 will not be displayed even if the thermistor harness is disconnected. At same time the thermistor, which is effective, is switched from remote control thermistor to indoor return air temperature thermistor. Even though the remote control thermistor is set to be Effective, the return air temperature displayed on remote control for checking still shows the value detected by indoor return air temperature thermistor, not by remote control temperature thermistor.

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E35		ON	Keeps flashing	Cooling overload operation
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	1-time flash	
	Outdoor unit inverter PCB	Yellow LED		
		Keeps flashing		

1. Applicable model

All models

2. Error detection method

For the error detection method, refer to the protective control by controlling compressor rotation speed and cooling high pressure protective control of micro-computer control function for corresponding models.

3. Condition of error displayed

When outdoor heat exchanger temperature anomaly is detected 5 times within 60 minutes or this anomalous state is detected 60 minutes continuously including compressor stop.

4. Presumable cause

- Defective outdoor heat exchanger temperature thermistor
- Defective outdoor unit main PCB
- Indoor, outdoor unit installation spaces
- Short-circuit of air on indoor, outdoor units
- Fouling, clogging of heat exchanger
- Excessive refrigerant amount

5. Troubleshooting

Diagnosis	Countermeasure
* For the characteristics of outdoor heat exchanger temperature thermistor, refer to E37. Are the characteristics of outdoor heat exchanger temperature thermistor normal? NO	Replace outdoor heat exchanger temperature thermistor.
YES Is the unit operating in the state of cooling overload? YES	Check unit side. • Isn't the air circulation of outdoor unit short-circuited? • Are installation spaces adequate? • Isn't there any fouling or clogging on heat exchanger?
NO Is the high pressure control normal? NO	Control operation check *
YES Is the temperature (measured actually) at detection of error correct? NO	Defective outdoor unit main PCB→Replace.
YES	Excessive refrigerant amount : Recharge refrigerant by weighting proper amount on a scale.

* For the contents of control, refer to the protective control by controlling compressor rotation speed and cooling high pressure protective control of microcomputer control function for corresponding models.

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E36		ON	5-time flash	Discharge pipe temperature error
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	1-time flash	
	Outdoor unit inverter PCB	Yellow LED		
		Keeps flashing		

1. Applicable model

All models

2. Error detection method

For the error detection method, refer to the protective control by controlling compressor rotation speed and cooling high pressure protective control of micro-computer control function for corresponding models.

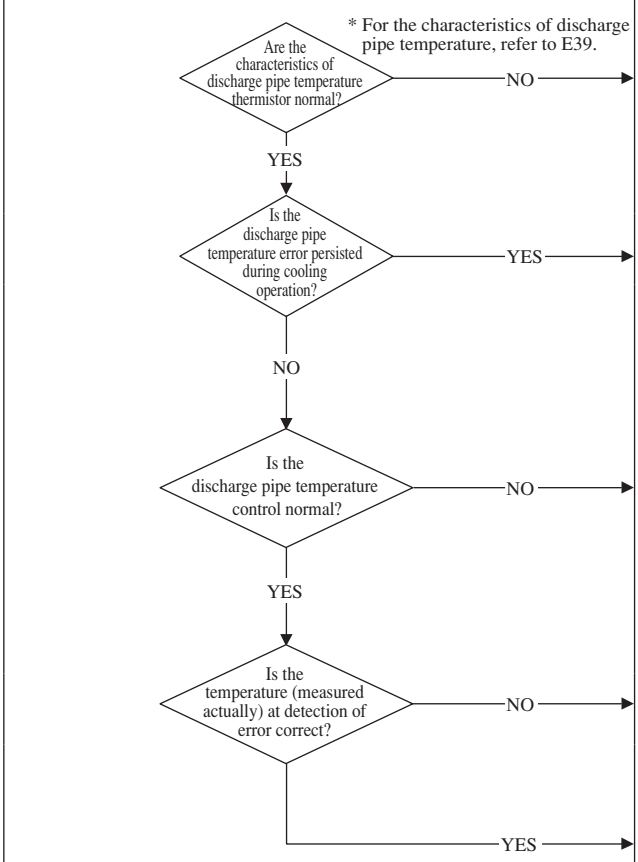
3. Condition of error displayed

When discharge pipe temperature anomaly is detected 2 times within 60 minutes or this anomalous state is detected 60 minutes continuously including compressor stop.

4. Presumable cause

- Defective outdoor unit main PCB
- Defective discharge pipe temperature thermistor
- Clogged filter
- Indoor, outdoor unit installation spaces
- Short-circuit of air on indoor, outdoor units
- Fouling, clogging of heat exchanger

5. Troubleshooting



* For the contents of control, refer to the protective control by controlling compressor rotation speed and cooling high pressure protective control of microcomputer control function for corresponding models.

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E37		Keeps flashing	2-time flash	Outdoor heat exchanger temperature thermistor anomaly
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	1-time flash	
	Outdoor unit inverter PCB	Yellow LED		
		Keeps flashing		

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) on the outdoor heat exchanger temperature thermistor

3. Condition of error displayed

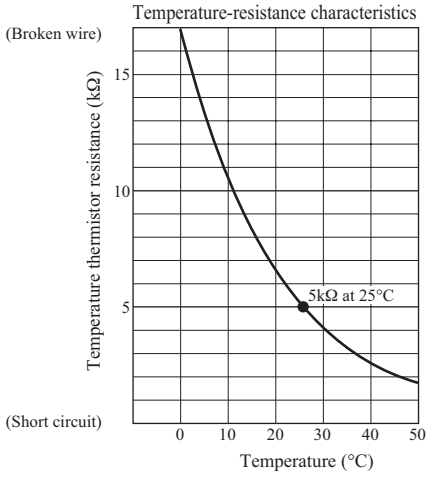
- When the temperature thermistor detects -50°C or lower for 20 seconds continuously within 2 minutes to 2 minutes 20 seconds after the compressor ON, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this anomalous temperature is detected 3 times within 40 minutes.
- When -50°C or lower is detected for 5 seconds continuously within 20 second after compressor ON.

4. Presumable cause

- Defective outdoor unit main PCB
- Broken thermistor harness or temperature sensing section
- Disconnected wire connection (connector)

5. Troubleshooting

Diagnosis	Countermeasure
Is the outdoor heat exchanger temperature thermistor connector connected properly? → NO	Correct connector.
YES → For the characteristics of outdoor heat exchanger temperature thermistor, see the following graph. Are the characteristics of outdoor heat exchanger temperature thermistor OK? → NO	Defective outdoor heat exchanger temperature thermistor→Replace.
YES	Defective outdoor unit main PCB→Replace. (Defective outdoor heat exchanger temperature thermistor input circuit)



Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E38		Keeps flashing	1-time flash	Outdoor air temperature thermistor anomaly
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	1-time flash	
	Outdoor unit inverter PCB	Yellow LED		
		Keeps flashing		

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) on outdoor air temperature thermistor

3. Condition of error displayed

- When the temperature thermistor detects -45°C or lower for 5 seconds continuously within 2 minutes to 2 minutes 20 seconds after the compressor ON, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this anomalous temperature is detected 3 times within 40 minutes.
- When -45°C or lower is detected for 5 seconds continuously within 20 second after compressor ON.

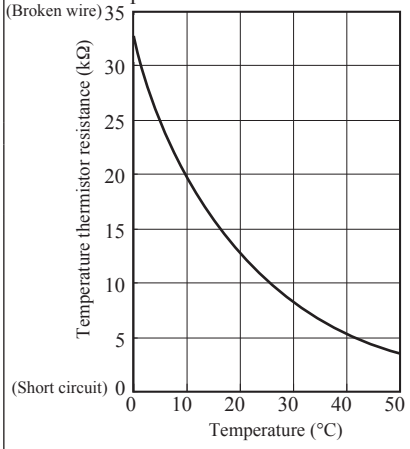
4. Presumable cause

- Defective outdoor unit main PCB
- Broken thermistor harness or temperature sensing section (Check molding.)
- Disconnected wire connection (connector)

5. Troubleshooting

Diagnosis	Countermeasure
Is the outdoor air temperature thermistor connector connected properly? → NO	Correct connector.
YES → For the characteristics of outdoor air temperature thermistor, see the following graph. Is the characteristics of the outdoor air temperature thermistor OK? → NO	Defective outdoor air temperature thermistor→ Replace.
YES	Defective outdoor unit main PCB→Replace. (Defective outdoor air temperature thermistor input circuit)

Temperature-resistance characteristics



Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E39		Keeps flashing	4-time flash	Discharge pipe temperature thermistor anomaly
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	1-time flash	
	Outdoor unit inverter PCB	Yellow LED		
		Keeps flashing		

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) on the discharge pipe temperature thermistor

3. Condition of error displayed

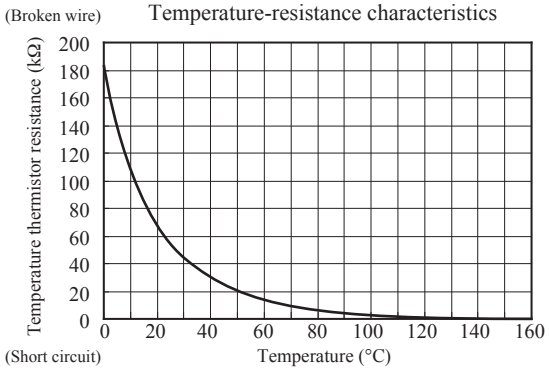
When the temperature thermistor detects -10°C or lower for 5 seconds continuously within 10 minutes to 10 minutes 20 seconds after the compressor ON, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this anomalous temperature is detected 3 times within 40 minutes.

4. Presumable cause

- Defective outdoor unit main PCB
- Broken thermistor harness or temperature sensing section (Check molding.)
- Disconnected wire connection (connector)

5. Troubleshooting

Diagnosis	Countermeasure
Is the discharge pipe temperature thermistor connector connected properly? → NO	Correct connector.
YES → Are the characteristics of discharge pipe temperature thermistor OK? (For the characteristics of discharge pipe temperature thermistor, see the following graph.) → NO	Defective discharge pipe temperature thermistor→ Replace.
YES	Defective outdoor unit main PCB→Replace. (Defective temperature thermistor input circuit)



Note:

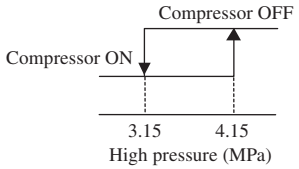
Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E40		–	–	High pressure error (63H1 activated)
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	1-time flash	
	Outdoor unit inverter PCB	Yellow LED		
		Keeps flashing		

1. Applicable model

All models

2. Error detection method

When the high pressure switch 63H1 is activated.



3. Condition of error displayed

If 63H1 turns OFF (opened), the compressor stops. After 3-minutes delay, the compressor restarts. If this anomaly occurs 5 times within 60 minutes or continues for 60 minutes continuously.

4. Presumable cause

- Short circuit of air flow, disturbance of air flow and clogging filter at outdoor heat exchanger/Breakdown of fan motor
- Defective outdoor unit main PCB
- Defective 63H1 connector
- Defective electronic expansion valve connector
- Closed service valve
- Mixing of non-condensing gas (nitrogen, etc.)

5. Troubleshooting

Diagnosis	Countermeasure
If the power source breaker is turned OFF and ON too quickly, E40 may be displayed. (This is normal.)	
Is the service valve fully opened? — NO	Open service valve.
YES	
Has 63H1 activated? — NO	
On operation of 63H1 — YES	
1. During cooling ・ Is the outdoor fan motor running? ・ Isn't any short-circuit of air on the outdoor unit? ・ Are sufficient return air/supply air space secured? 2. During heating ・ Isn't the indoor heat exchanger temperature thermistor disconnected from the thermistor casing? ・ Isn't the filter clogged? * Under the condition of overcharging refirgerant, 63H1 may activate due to delay of starting the preventive control by compressor speed control, because detected heat exhanger temperature, which conducts compressor speed control, becomes lower than normal condition due to excess sub-cooling degree.	
Is 63H1 connector connected properly? — NO	Correct 63H1 connector.
YES	
Is the electronic expansion valve connector connection OK? — NO	Correct electronic expansion valve connector.
If any anomaly exists on the electronic expansion valve connector connection, the power source must be reset.	
YES	Defective outdoor unit main PCB→Replace. (Defective 63H1 input circuit)

Note: In the protective control range for compressor startup (initial startup after power ON), even if 63H1 is activated only once (63H1turns OFF), immediately the error is displayed.

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E42		ON	1-time flash	Current cut (1/2)
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	1-time flash	
	Outdoor unit inverter PCB	Yellow LED		
		1-time flash		

1. Applicable model

All models

2. Error detection method

In order to prevent from overcurrent of inverter, if the current exceeds the specifications, it makes the compressor stopping.

3. Condition of error displayed

- If the output current of inveter exceeds the specifications, it makes the compressor stopping.
- After 3-minute delay, the compressor restarts, but if this amonaly occurs 4 times within 30 minute after the initial detection.

4. Presumable cause

- The valves closed
- Faulty power source
- Insufficient refrigerant amount
- Faulty compressor
- Faulty power transistor module

5. Troubleshooting

Diagnosis	Countermeasure
Is the Power source voltage OK? — NO	Check power source.
YES → Are the service valves opened? — NO	Open the valves.
YES → Is the high pressure during operation OK? — NO	Check refrigerant amount and refrigerant circuit. *In case of transitional increase of high pressure and/or test run, several times restarting may recover it, because liquid refrigerant (migrated) in the compresser is discharged from the compressor.
YES → Is the checked result of insulation resistance and coil resistance (1) of compressor motor OK? — NO	Replace compressor.
(1) 0.448Ω or more at 20°C (Model FDC100-140VNA) 1.044Ω or more at 20°C (Model FDC100-140VSA)	
YES → To next page.	

Note:

#

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E42		ON	1-time flash	Current cut (2/2)
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	1-time flash	
	Outdoor unit inverter PCB	Yellow LED		
		1-time flash		

1. Applicable model

All models

2. Error detection method

In order to prevent from overcurrent of inverter, if the current exceeds the specifications, it makes the compressor stopping.

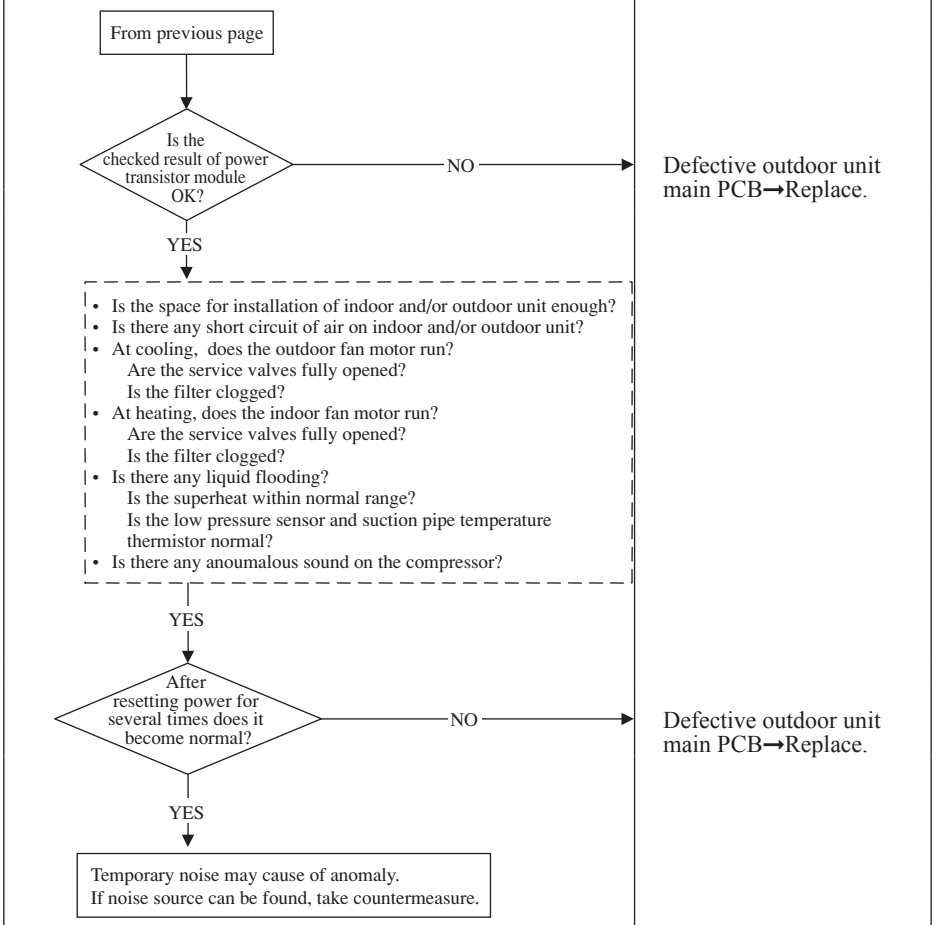
3. Condition of error displayed

- If the output current of inveter exceeds the specifications, it makes the compressor stopping.
- After 3-minute delay, the compressor restarts, but if this amonaly occurs 4 times within 30 minute after the initial detection.

4. Presumable cause

- Defective outdoor unit main PCB
- Faulty power source
- Insufficient refrigerant amount
- Faulty compressor
- Faulty power transistor module

5. Troubleshooting



Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E47		5-time flash	ON	Control PCB A/F module anomaly (Model FDC100-140VNA only)
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	1-time flash	

1. Applicable model

Model FDC100-140VNA

2. Error detection method

In order to avoid an unexpected trouble, if the protective circuit defect unexpected voltage, current and movement of the power element, it makes the compressor stopping.

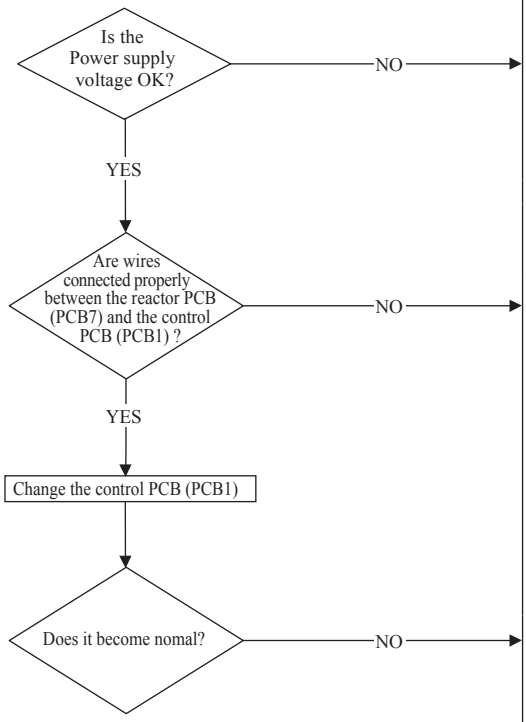
3. Condition of error displayed

- If the A/F anomaly occurs, it makes the compressor stopping.
- After 3-minutes delay, the compressor restarts if this anomaly occurs 4 times within 30minutes or continues for 15minutes continuously.

4. Presumable cause

- Defective control PCB
- Defective reactor PCB

5. Troubleshooting



Note:

#

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E48		ON	7-time flash	Outdoor fan motor anomaly
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	1-time flash	
	Outdoor unit inverter PCB	Yellow LED		
		Keeps flashing		

1. Applicable model

All models

2. Error detection method

Detected by rotation speed of outdoor fan motor

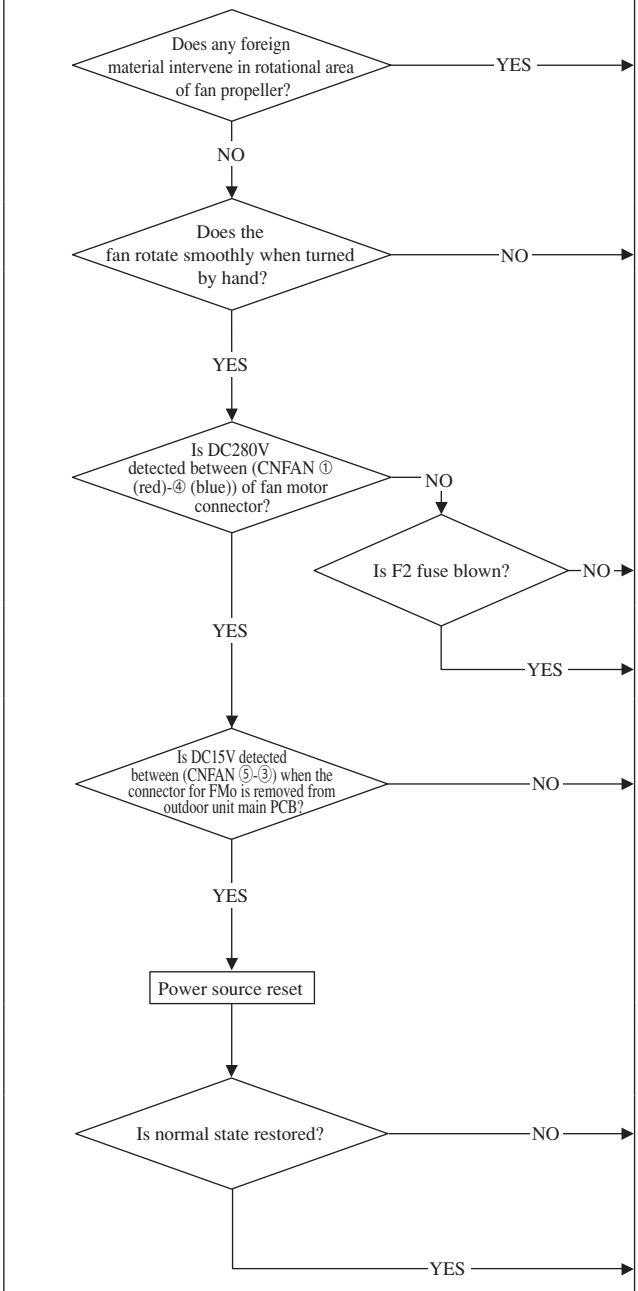
3. Condition of error displayed

When actual rotation speed of outdoor fan motor (FMo1) drops to 100min^{-1} or lower for 30 minutes continuously, the compressor and the outdoor fan motor stop. After 3-minutes delay, it starts again automatically, but if this anomaly occurs 5 times within 60 minutes after the initial detection.

4. Presumable cause

- Defective outdoor unit main PCB
- Foreign material at rotational area of fan propeller
- Defective fan motor
- Dust on outdoor unit main PCB
- Blow fuse
- External noise, surge

5. Troubleshooting



Note: When E48 error occurs, in almost cases F2 fuse (4A) on the outdoor unit control PCB is blown. There are a lot of cases that fuse is blown and E48 occurs due to defective fan motor. And even though only the outdoor unit control PCB (or fuse) is replaced,, another trouble (*1) could occur. Therefore when fuse is blown, check whether the fan motor is OK or not.
After confirming the fan motor normal, check by power ON. (Don't power ON without confirming the fan motor normal.)
*1 The error which does not seem to relate E48 may occur like as "WAIT", Stay OFF of LED on outdoor unit control PCB, inverter communication error (E45) and etc.

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E51		ON	4-time flash	Inverter and fan motor anomaly
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	1-time flash	
	Outdoor unit inverter PCB	Yellow LED		
		6-time flash		

1. Applicable model

All models

2. Error detection method

When power transistor anomaly is detected for 15 minutes continuously

3. Condition of error displayed

Same as above

4. Presumable cause

- Defective outdoor fan motor
- Defective outdoor unit main PCB

5. Troubleshooting

Diagnosis	Countermeasure
• **Models FDC100-140VNA/VSA** Replace immediately the main PCB.	

Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E53		Keeps flashing	5-time flash	Suction pipe temperature thermistor anomaly
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	1-time flash	
	Outdoor unit inverter PCB	Yellow LED		
		Keeps flashing		

1. Applicable model

All models

2. Error detection method

When the suction pipe temperature thermistor detects anomalously low temperature

3. Condition of error displayed

If the temperature thermistor detects -50°C or lower for 5 seconds continuously within 10 minutes to 10 minutes 20 seconds after compressor ON, the compressor stops. When the compressor is restarted automatically after 3-minutes delay, if this anomaly ocuurs 3 times within 40 minute.

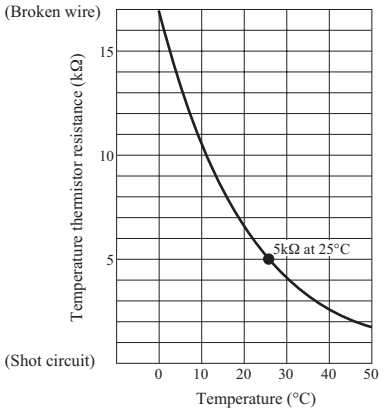
4. Presumable cause

- Defective suction pipe temperature thermistor connection
- Defective suction pipe temperature thermistor
- Defective outdoor unit main PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the connection of suction pipe temperature thermistor connector OK? — NO	Correct connection of suction pipe temperature thermistor connector.
YES → Are the characteristics of suction pipe temperature thermistor OK? — NO	Defective suction pipe temperature thermistor→ Replace.
YES	Defective outdoor unit main PCB→Replace. (Defective suction pipe temperature thermistor input circuit)

Temperature-resistance characteristics



Note:

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E57		7-time flash	ON	Insufficient refrigerant amount or detection of service valve closure
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	1-time flash	
	Outdoor unit inverter PCB	Yellow LED		
		Keeps flashing		

1. Applicable model

All models

2. Error detection method

- Judge insufficient refrigerant amount by detecting the temperature differnce between indoor heat exchanger (Th2) and indoor room (Th1).
- It detects at initial startup in cooling or dehumidifying mode after power ON.

3. Condition of error displayed

Anomalous stop at initial detection

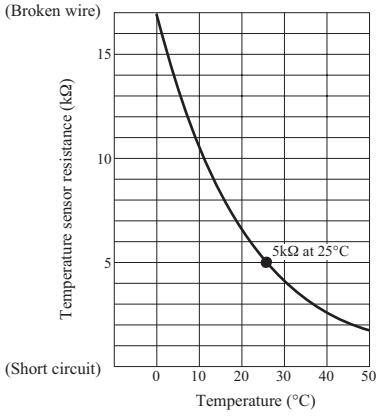
4. Presumable cause

- Defective indoor heat exchanger temperature sensor
- Defective indoor room temperature sensor
- Defective indoor unit control PCB
- Insufficient refrigerant amount

5. Troubleshooting

Diagnosis	Countermeasure
Is the service valve fully opened? NO	Open fully.
YES → Are the connections of indoor heat exchanger and/or room temperature sensor connectors OK? NO	Correct indoor heat exchanger, room temperature sensor connector connections.
YES → Are the characteristics of indoor heat exchanger and/or room temperature sensor OK? NO	Defective indoor heat exchanger, room temperature sensor → Replace.
YES → Is the low pressure during operation normal? NO	Charge refrigerant.
YES	Defective indoor control PCB→Replace. (Defective indoor heat exchanger, room temperature sensor input circuits)

Indoor heat exchanger, room temperature sensor
Temperature-resistance characteristics



Note: Insufficient refrigerant amount preventive control makes compressor stopped, if it judges insufficient refrigerant amount by detecting the temperature difference between indoor heat exchanger (Th2) and room temperature (Th1) for 1 minute after compressor ON in cooling or dehumidifying mode and for 9 minutes after compressor ON in heating mode. [in cooling mode: (Th1)-(Th2)>4degC, in heating mode: (Th2)-(Th1)<4degC]

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E59		–	–	Compressor startup failure (1/2)
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	5-time flash	
	Outdoor unit inverter PCB	Yellow LED		
		Stays OFF		

1. Applicable model

All models

2. Error detection method

When it fails to change over to the operation for rotor position detection of compressor motor

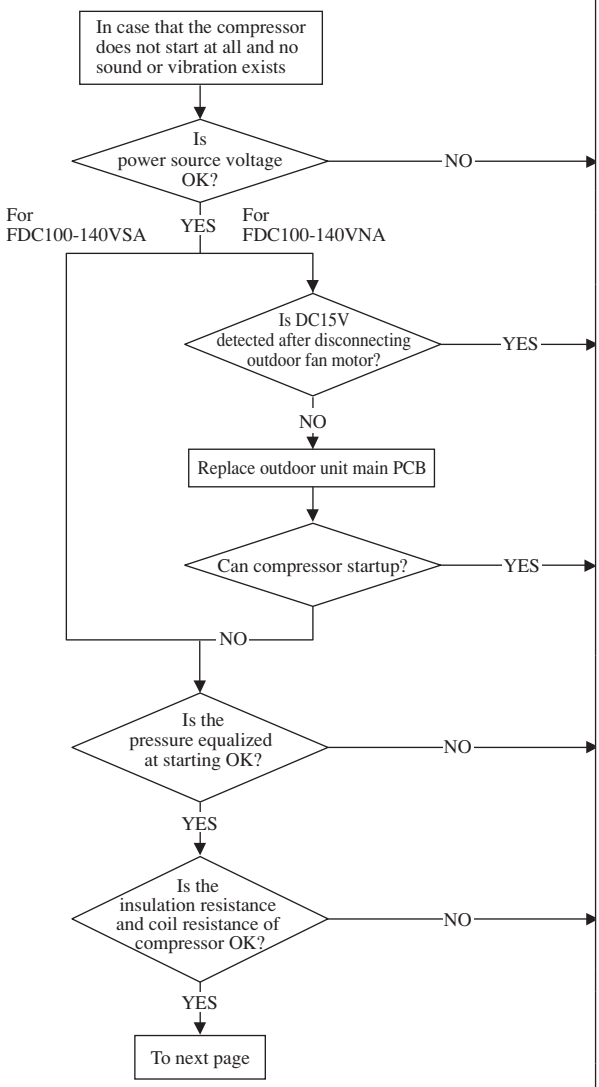
3. Condition of error displayed

If the compressor fails to startup for 20 times (10 patterns x2 times) continuously.

4. Presumable cause

- Faulty outdoor fan motor
- Faulty outdoor unit main PCB
- Anomalous power source voltage
- Insufficient or Excessive refrigerant amount
- Faulty component for refrigerant circuit
- Compressor anomaly (Motor or bearing)

5. Troubleshooting



Note: Insulation resistance
- The unit is left for long period without power source or soon after installation, insulation resistance may decrease to several MΩ or lower due to the liquid refrigerant migrated in the refrigerant oil in compressor. If the electric leakage breaker is activated due to low insulation resistance, check followings.
  ① Check whether the insulation resistance can recover or not, after 6 hours has passed since power ON.
  (By energize the crankcase heater, liquid refrigerant migrated in the refrigerant oil in compressor can be evaporated)
  ② Check whether the electric leakage breaker conforms to high-harmonic specifications
  (As INVERTR PAC units has inverter, in order to prevent from improper operation, be sure to use the breaker of high-harmonic type)

Error code	Indoor display	RUN light	TIMER light	Content
Remote control: E59		–	–	Compressor startup failure (2/2)
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	5-time flash	
	Outdoor unit inverter PCB	Yellow LED		
		Stays OFF		

1. Applicable model

All models

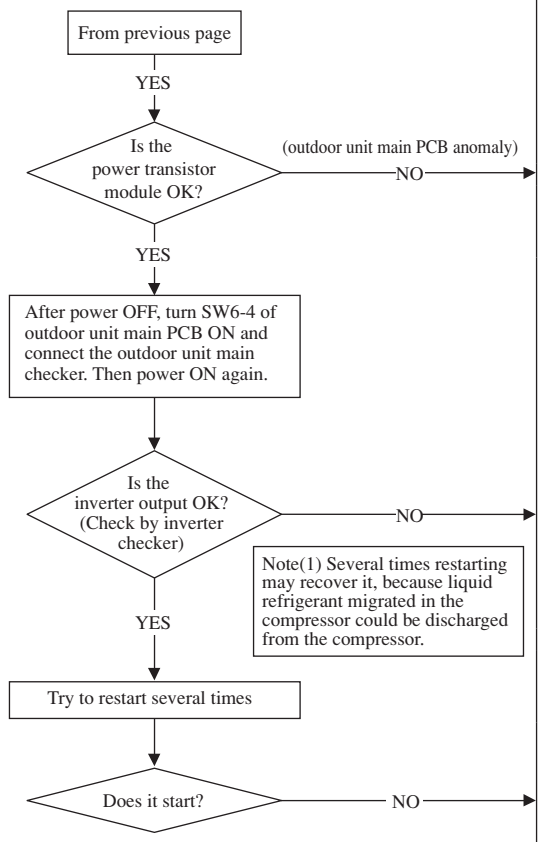
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Faulty outdoor fan motor
- Faulty outdoor unit main PCB
- Anomalous power source voltage
- Insufficient or Excessive refrigerant amount
- Faulty component for refrigerant circuit
- Compressor anomaly (Motor or bearing)

5. Troubleshooting



Note:

1.13 DISASSEMBLY PROCEDURE

⚠WARNING Precautions for safety

- **Read these "Precautions for safety" carefully before starting disassembly work and do it in the proper way.**
- **When disassembling, be sure to turn off the power. When disassembling the electrical components, check the electrical wiring diagram.**
- **The electrical components are under high voltage by the operation of the booster capacitor. Fully discharge the capacitor before commencing a repair work. Failure to observe this warning could result in electric shock.**
- **When parts of refrigerant cycle is disassembled by welding, be sure to work after collecting a refrigerant, if the refrigerant isn't collected, the unit might explode.**
- **Be sure to collect refrigerant without spreading it in the air.**
- **These contents are an example. Please refer to a similar part of actual unit.**

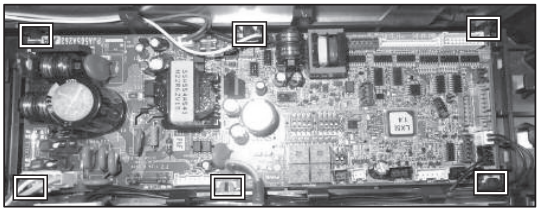
(1) Indoor unit

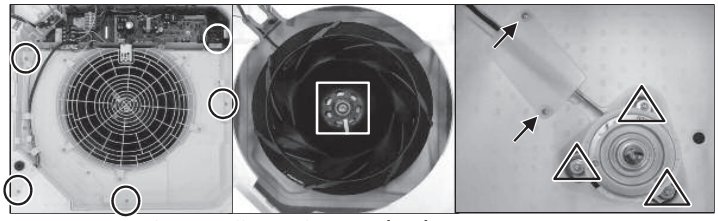
(a) FDT series

PJF012D045

1. To remove the lid of control box
(1) Remove 2 lid fixing screws and remove it.

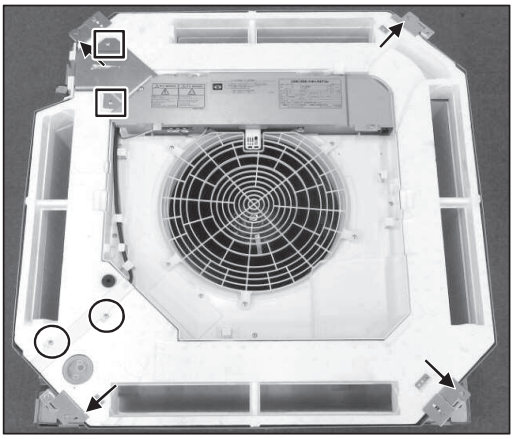
2. To remove the printed circuit board (PCB)
(1) Remove the lid of control box.(See No.1)
(2) Pull off all the inserted connectors.
(3) Take off 6 fixing hooks and remove it.

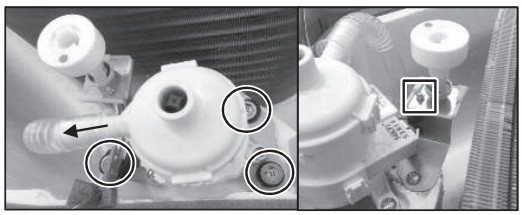




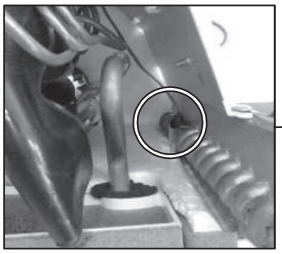
3. To remove the impeller and motor (FM)
(1) Remove the lid of control box.(See No.1)
(2) Disconnect the motor connector(CNMx) on PCB in control box.
(3) Remove 5 bellmouth fixing screws and remove it.(○ mark)
(4) Remove the impeller fixing nut and remove it.(□ mark)
(5) Remove 2 plate fixing screws and remove it.(← mark)
(6) Remove 3 motor fixing nuts and remove it.(△ mark)

4. To remove the drain pan
(1) Remove the lid of control box.(See No.1)
(2) Pull off all the inserted connectors.
(3) Remove 2 plate fixing screws and remove it. (○ mark)
(4) Remove 2 lid fixing screws and remove it. (□ mark)
(5) Remove 4 drain pan fixing screws and remove it. (← mark)

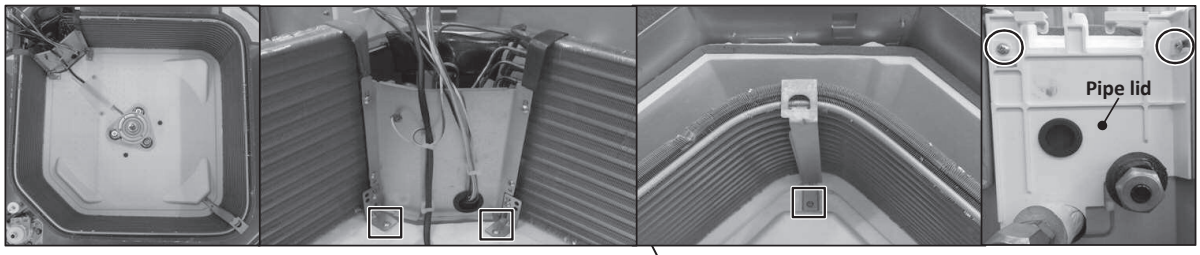




5. To remove drain pump (DM) and flot switch (FS)
(1) Remove the drain pan.(See No.4)
(2) Pull the hose to the arrow direction and remove it.
(3) Remove 3 drain pump fixing screws and remove it.(○ mark)
(4) Remove the flot switch fixing screw and remove it.(□ mark)

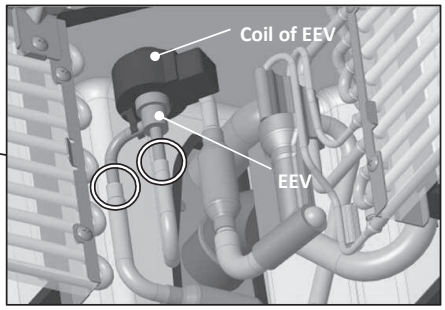


6. To remove the thermistors (example"Thi-R1")
(1) Remove the drain pan.(See No.4)
(2) Pull out the thermistor"Thi-R1" from the sensor holder.



7. To remove the heat exchanger assembly
(1) Remove the drain pan.(See No.4)
(2) Remove 2 pipe lid fixing screws and remove it.(○ mark)
(3) Remove 3 heat exchanger assembly fixing screws and remove it.(□ mark)

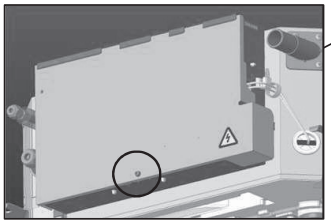
8. To remove the Electronic Expansion Valve (EEV)
(1) Remove the heat exchanger assembly.(See No.7)
(2) Remove the coil of EEV by pull out on the top.
(3) Remove welded part of EEV by welding.(○ mark)



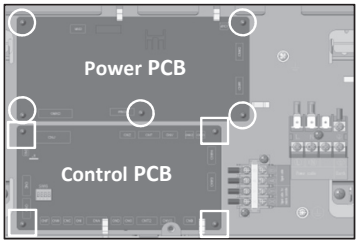
General view

(b) FDTC series

PJA012D792

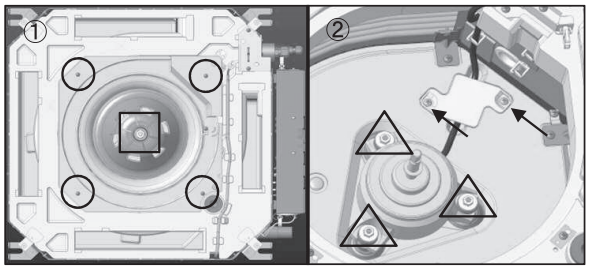


1. To remove the lid of control box
(1) Remove the lid fixing screw and remove it.

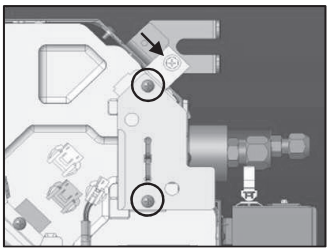


2. To remove the printed circuit board (PCB)
(1) Remove the lid of control box.(See No.1)
(2) Pull off all the inserted connectors.
- **Power PCB**
(3) Take off 5 power PCB fixing locking supports and remove it.(○ mark)
- **Control PCB**
(4) Take off 4 control PCB fixing locking supports and remove it.(□ mark)

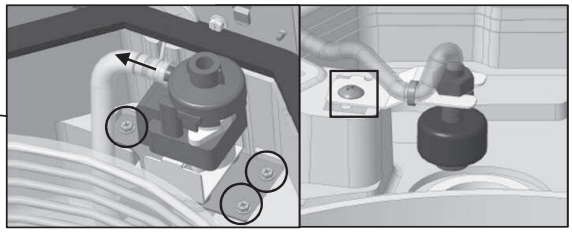
3. To remove the impeller and motor (FM)
(1) Remove the lid of control box.(See No.1)
(2) Disconnect the motor connector(CNMx) in the middle of wiring.
(3) Remove 4 bellmouth fixing screws and remove it.(○ mark)
(4) Remove the impeller fixing nut and remove it.(□ mark)
(5) Remove 2 plate fixing screws and remove it.(← mark)
(6) Remove 3 motor fixing nuts and remove it.(△ mark)

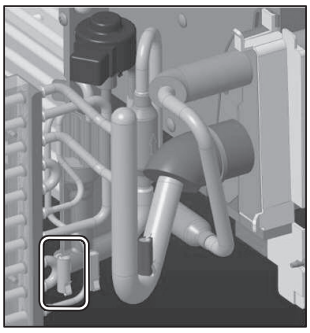


4. To remove the drain pan
(1) Remove 2 plate fixing screws and remove it. (○ mark)
(2) Remove 4 drain pan fixing screws and remove it. (← mark, Four corners)

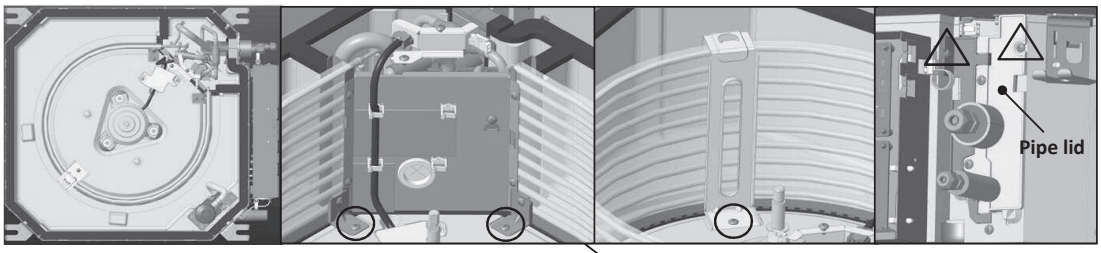


5. To remove drain pump (DM) and flot switch (FS)
(1) Remove the lid of control box.(See No.1)
(2) Disconnect the drain pump connector(CNRx) and flot switch connector(CNIx) in the middle of wiring.
(4) Remove the drain pan.(See No.4)
(5) Pull the hose to the arrow direction and remove it.
(6) Remove 3 drain pump fixing screws and remove it.(○ mark)
(7) Remove the flot switch fixing screw and remove it.(□ mark)



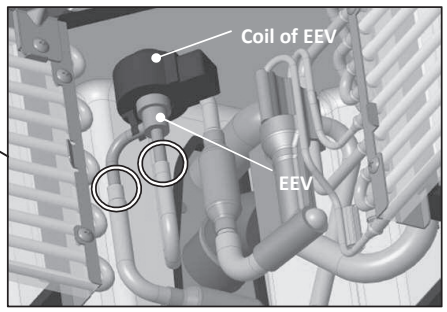


6. To remove the thermistors (example"Thi-R1")
(1) Remove the lid of control box.(See No.1)
(2) Disconnect the Tho-R1 connector(CNNx) in the middle of wiring.
(3) Remove the drain pan.(See No.3)
(4) Pull out the thermistor"Thi-R1" from the sensor holder.



7. To remove the heat exchanger assembly
(1) Remove the drain pan.(See No.4)
(2) Remove 2 plate fixing screws and remove it.(△ mark)
(3) Remove 3 heat exchanger assembly fixing screws and remove it.(○ mark)

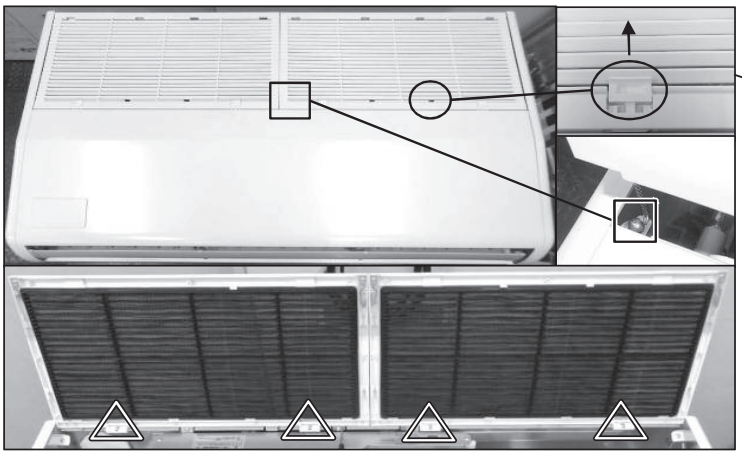
8. To remove the Electronic Expansion Valve (EEV)
(1) Remove the heat exchanger assembly.(See No.7)
(2) Remove the coil of EEV by pull out on the top.
(3) Remove welded part of EEV by welding.(○ mark)



General view

(c) FDE series

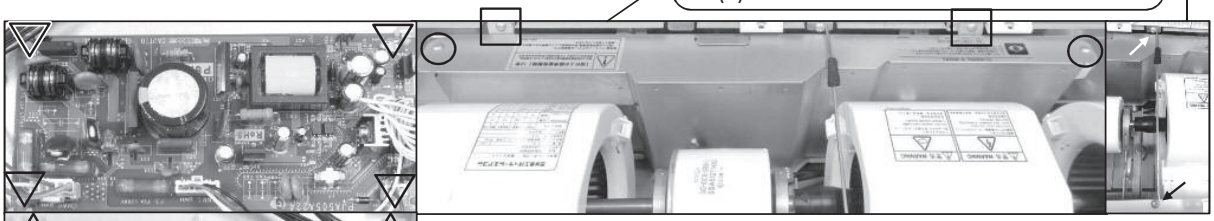
PFA012D631

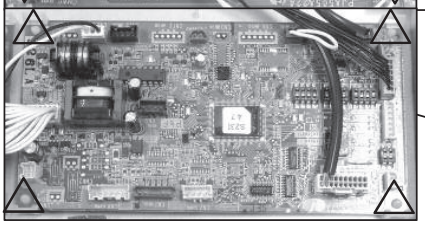


1. To remove air inlet grille.
(1) Slide the hook in the direction of the arrow.(○ mark)
(2) Remove 4 wire fixing screws.(□ mark)
(3) Remove 4 air inlet grille fixing screws. (△ mark)

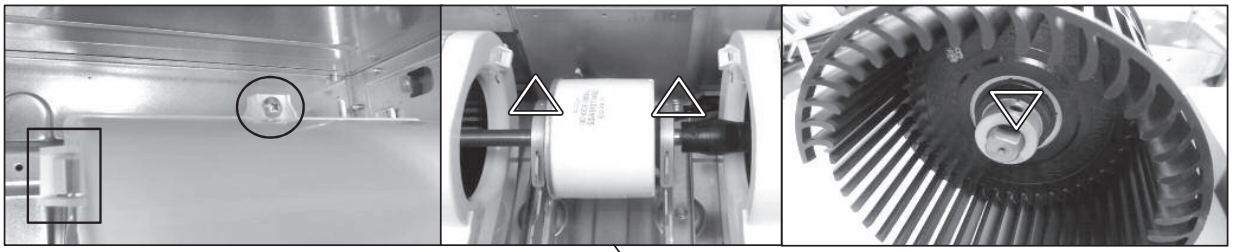
2. To remove the lid of control box
(1) To remove air inlet grille.(See.No.1)
(2) Remove 2 wire fixing screws and remove it. (← mark)
(3) Remove 2 lid fixing screws and remove it. (○ mark)

3. To remove the control box
(1) Remove the lid of control box.(See No.2)
(2) Pull off all the inserted connectors.
(3) Remove 2 control box fixing screws and remve it.(□ mark)
(4) Pull out the control box.

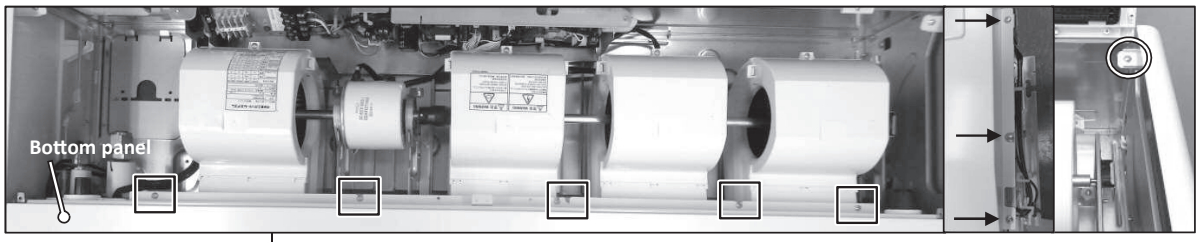




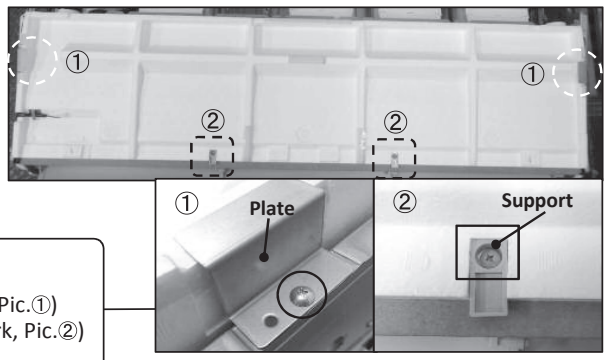
4. To remove the printed circuit board (PCB)
(1) Remove the lid of control box.(See No.2)
(2) Pull off all the inserted connectors.
- **Control PCB**
(3) Take off 4 control PCB fixing locking supports and remove it.(△ mark)
- **Power PCB**
(4) Take off 4 power PCB fixing locking supports and remove it.(▽ mark)



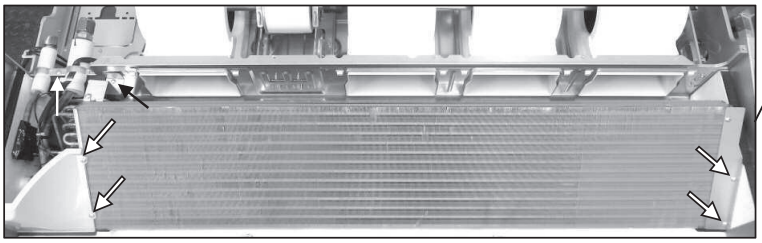
5. To remove the impeller and motor (FM)
(1) Remove the lid of control box.(See No.1)
(2) Disconnect the motor connector(CNFx) in the middle way of wiring.
(3) Remove the fan casing fixing screw.(○ mark) Take off the fan casing fixing hook and remove it.(□ mark)
(4) Remove the impeller fixing screw and remove it.(▽ mark) (5) Remove 2 motor fixing screws and remove it.(△ mark)



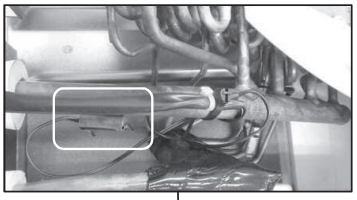
6. To remove side panel and bottom panel
(1) Remove air inlet grille.(See No.1)
(2) Remove the right and left side panel fixing screws and remove it.(○ mark)
(3) Remove 5 bottom panel fixing screws.(□ mark) Remove 6 bottom panel fixing screws and remove it. (← mark, left and right side)

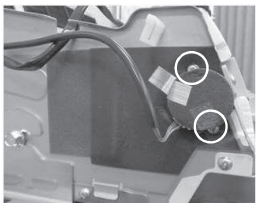


7. To remove drain pan
(1) Remove side panel and bottom panel.(See No.5)
(2) Remove 2 plate fixing screws and remove it.(○ mark, Pic.①)
(3) Remove 2 support fixing screws and remove it.(□ mark, Pic.②)
(4) Pull out the drain pan.



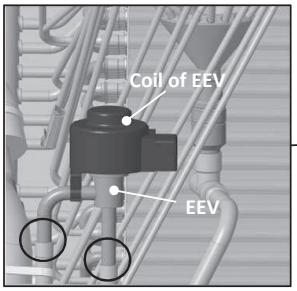
8. To remove the heat exchanger assembly
(1) Remove the drain pan.(See No.6)
(2) Remove 6 heat exchanger assy fixing screws and remove it.(← mark)





9. To remove the louver motor (LM)
(1) Remove the lid of control box.(See No.1)
(2) Disconnect the louver motor connector (CNJ) on PCB in control box.
(3) Remove side panel.(See No.5)
(4) Remove 2 louver motor fixing screws and remove it.

10. To remove the thermistors (example"Thi-R3")
(1) Remove the lid of control box.(See No.1)
(2) Disconnect the Tho-R3 connector(CNNx) on PCB in control box.
(3) Remove the drain pan.(See No.3)
(4) Pull out the thermistor"Thi-R1" from the sensor holder.



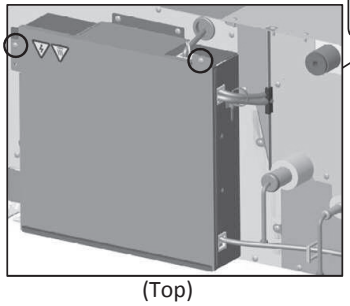
11. To remove the Electronic Expansion Valve (EEV)
(1) Remove the heat exchanger assembly.(See No.9)
(2) Remove the coil of EEV by pull out on the top.
(3) Remove welded part of EEV by welding.(○ mark)

General view

(d) FDU, FDUM series

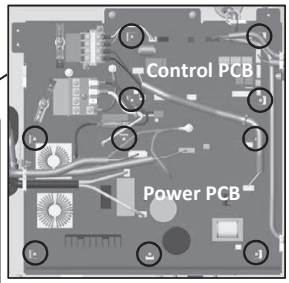
PJG012D019

(Bottom)

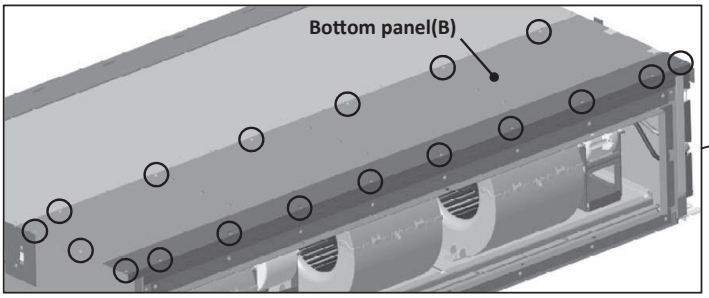


(Top)

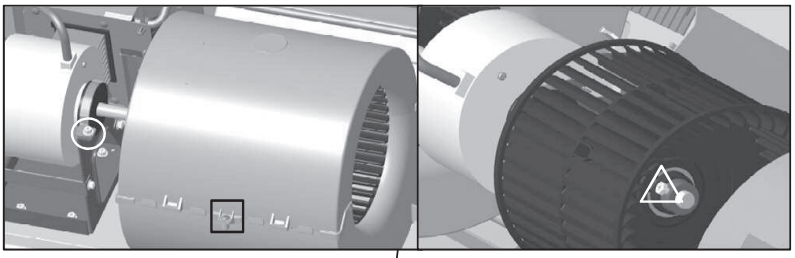
1. To remove the lid of control box
(1) Remove 2 lid fixing screws and remove it.



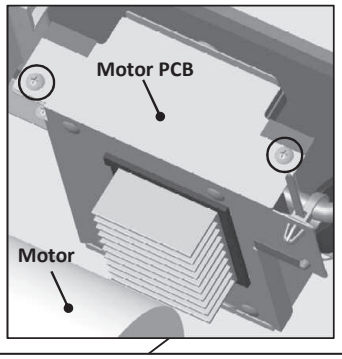
2. To remove the printed circuit board (PCB)
(1) Remove the lid of control box.(See No.1)
(2) Pull off all the inserted connectors.
- **Control PCB**
(3) Take off 4 control PCB fixing locking supports(○ mark) and remove it.
- **Power PCB**
(4) Take off 6 power PCB fixing locking supports(○ mark) and remove it.



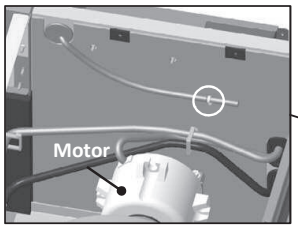
3. To remove the bottom panel(B)
(1) Remove 18 panel fixing screws and remove it.



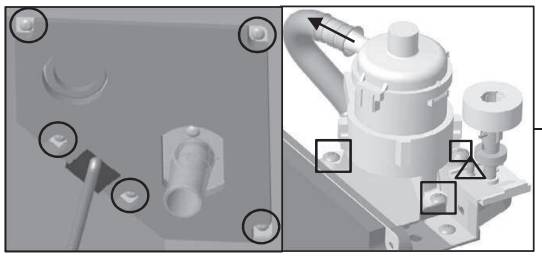
4. To remove the impellers and motors(FM)
(1) Remove the lid of control box.(See No.1)
(2) Remove the bottom panel(B).(See No.3)
(3) Disconnect the motor connector(CNFMx or CNMx) on PCB in control box.
(4) Remove the motor fixing screw and remove it. (○ mark/right and left side)
(5) Remove the fan casing fixing screw and remove it.(□ mark)
(6) Remove the sirocco fan fixing bolt and remove it.(△ mark)



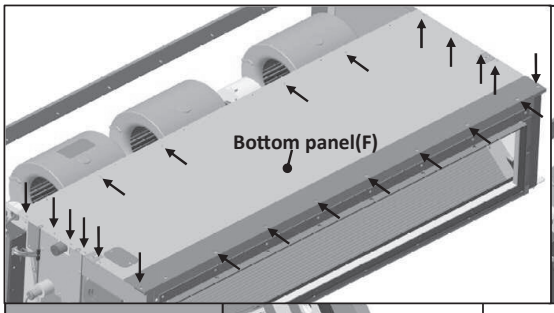
5. To remove the motor PCB
(1) Remove the lid of control box. (See No.1)
(2) Remove the bottom panel(B). (See No.3)
(3) Disconnect the motor PCB connector (CNFMx or CNMx)on PCB in control box.
(4) Remove 2 motor PCB fixing screws and remove it.

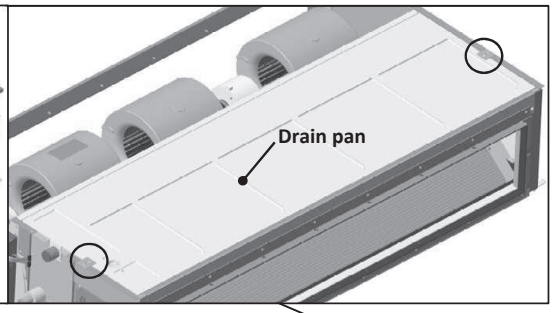


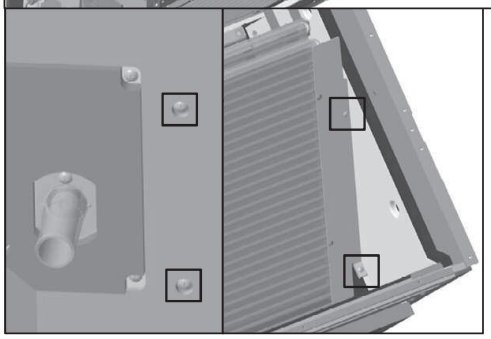
6. To remove the thermistors (example"Thi-A")
(1) Remove the lid of control box.(See No.1)
(2) Remove the bottom panel(B).(See No.3)
(3) Disconnect the Thi-A connector(CNH) on PCB in control box.
(4) Pull the thermistor fixing clip and remove it.(○ mark)



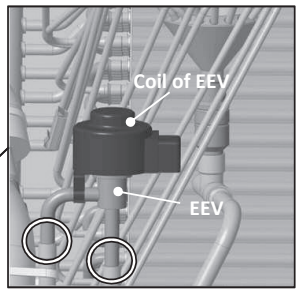
7. To remove the drain pump(DM) and flot switch(FS)
(1) Remove the lid of control box.(See No.1)
(2) Remove 5 drain pump assembly fixing screws and remove it. (○ mark)
(3) Disconnect the drain pump connector(CNR) on PCB in control box.
(4) Pull a hose to the arrow direction and remove it.
(5) Remove 3 drain pump fixing screws and remove it.(□ mark)
(6) Disconnect the flot switch connector(CNI) on PCB in control box.
(7) Remove the flot switch fixing screw and remove it.(△ mark)



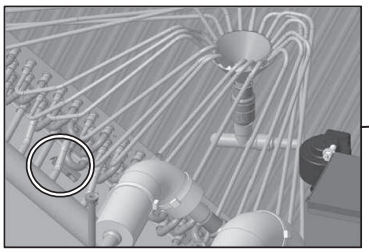




8. To remove the heat exchanger assembly
(1) Remove the bottom panel(B).(See No.3)
(2) Remove 22 bottom panel(F) fixing screws and remove it.(← mark)
(3) Remove 2 drain pan fixing screws and remove it.(○ mark)
(4) Remove 4 heat exchanger assy fixing screws and remove it.(□ mark)



9. To remove the Electronic Expansion Valve (EEV)
(1) Remove the heat exchanger assembly.(See No.8)
(2) Remove the coil of EEV by pull out on the top.
(3) Remove welded part of EEV by welding.(○ mark)

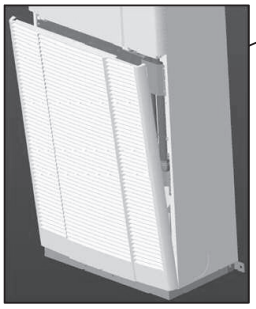


10. To remove the thermistors (example"Thi-R3")
(1) Remove the lid of control box.(See No.1)
(2) Disconnect the Thi-R3 connector(CNN) on PWB in control box.
(3) Remove the drain pan.(See No.8)
(4) Pull out the thermistor"Thi-R3" from the sensor holder.

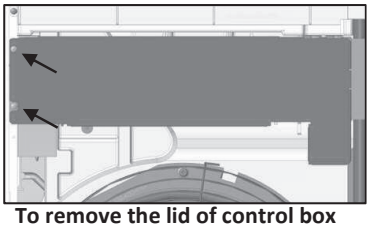
General view

(e) FDF series

PGA012D410

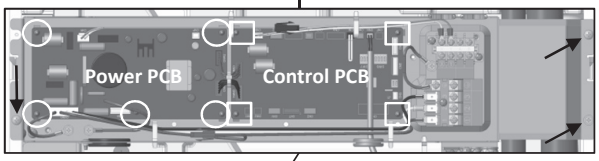


1. To remove the air inlet grille (1) Pull the air inlet grille forward and remove it.



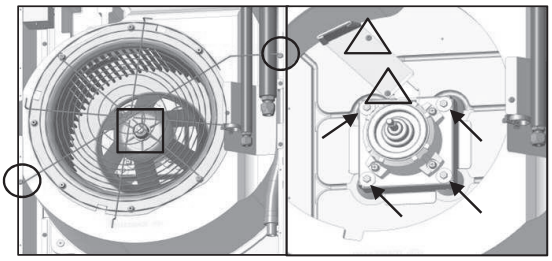
2. To remove the lid of control box
(1) Remove the air inlet grille(See No.1)
(2) Remove 2 the lid fixing screw and remove it.

3. To remove the control box
(1) Remove the lid of control box.(See No.2)
(2) Pull off all the inserted connectors.
(3) Remove 3 control box fixing screws and remove it. (← mark)

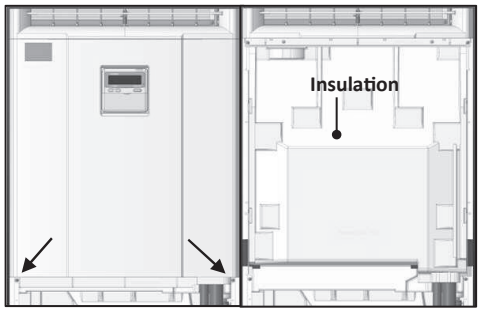


4. To remove the printed circuit board (PCB)
(1) Remove the lid of control box.(See No.2)
(2) Pull off all the inserted connectors.
- **Power PCB**
(3) Take off 5 power PCB fixing locking supports and remove it.(○ mark)
- **Control PCB**
(4) Take off 4 control PCB fixing locking supports and remove it.(□ mark)

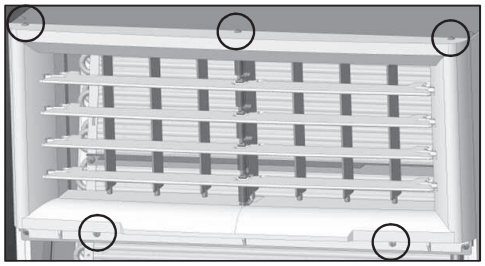
5. To remove the impeller and motor (FM)
(1) Remove the lid of control box.(See No.2)
(2) Disconnect the motor connector(CNM) on PCB in control box.
(3) Remove 2 fan guard fixing screws and remove it.(○ mark)
(4) Remove the impeller fixing nut and remove it.(□ mark)
(5) Remove 2 plate fixing screws and remove it.(△ mark)
(6) Remove 4 motor fixing nuts and remove it.(← mark)

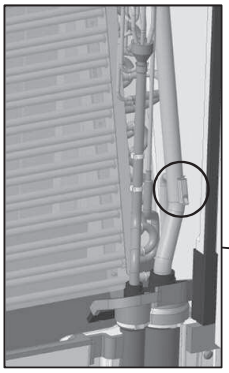


6. To remove the center panel assembly
(1) Remove the air inlet grille.(See No.1)
(2) Remove 2 center panel fixing screws and remove it.(← mark)
(3) Pull the insulation out.

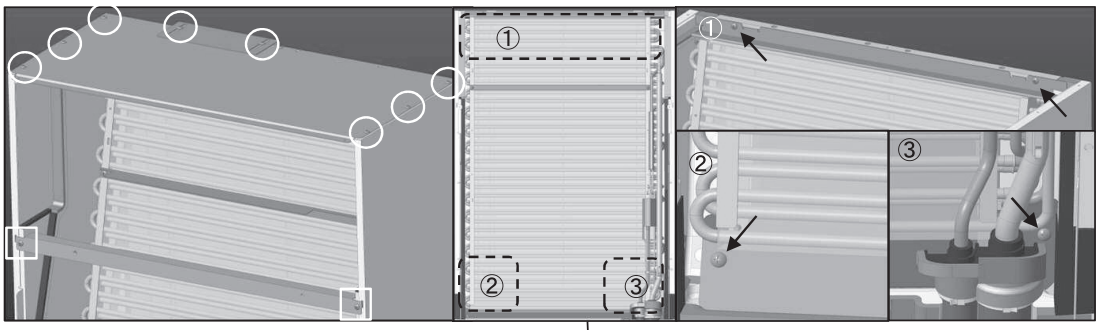


7. To remove the air outlet grille
(1) Remove the lid of control box.(See No.2)
(2) Disconnect the luover motor connector(CNJ2) in the middle of wiring.
(3) Remove the center panel assembly.(See No.6)
(4) Remove 5 air outlet grille fixing screws and remove it.

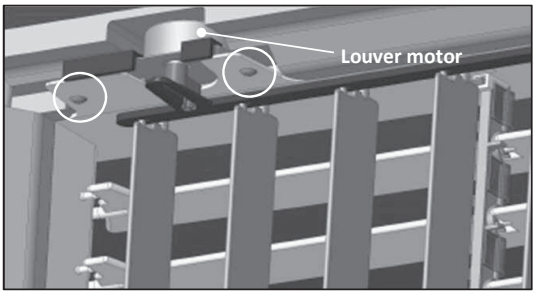




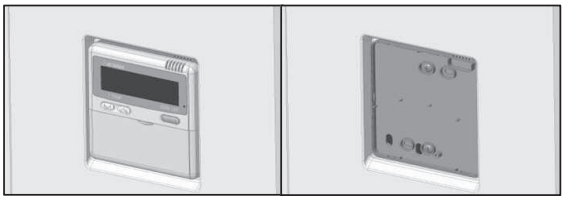
8. To remove the thermistors (example"Thi-R3")
(1) Remove the lid of control box.(See No.2)
(2) Disconnect the Tho-R3 connector(CNN) on PCB in control box.
(3) Remove the center panel assembly.(See No.6)
(4) Pull out the thermistor"Thi-R3" from the sensor holder.



9. To remove the heat exchanger assembly
(1) Remove the center panel assembly.(See No.6)
(2) Remove 8 top panel fixing screws and remove it.(○ mark)
(3) Remove 2 support fixing screws and remove it.(□ mark)
(4) Remove 4 heat exchanger assy fixing screws and remove it.(← mark)



10. To remove the louver motor
(1) Remove the air outlet grille.(See No.7)
(2) Remove 2 louver motor fixing screws and remove it.(○ mark)

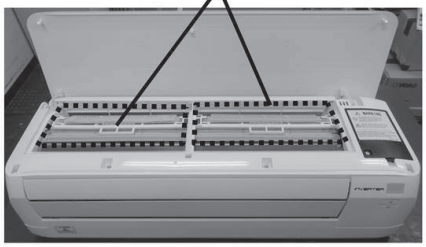
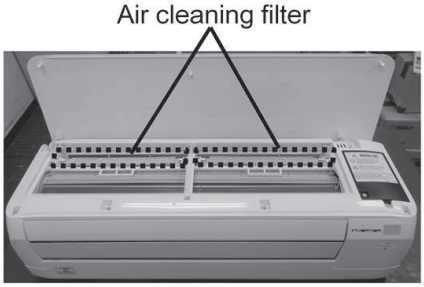


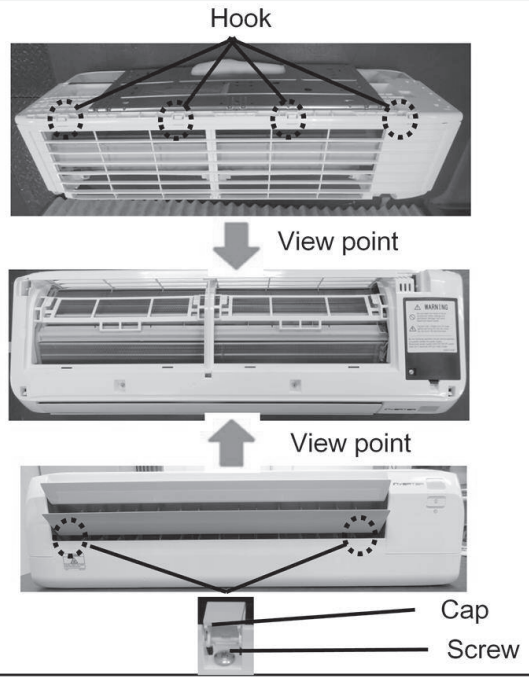
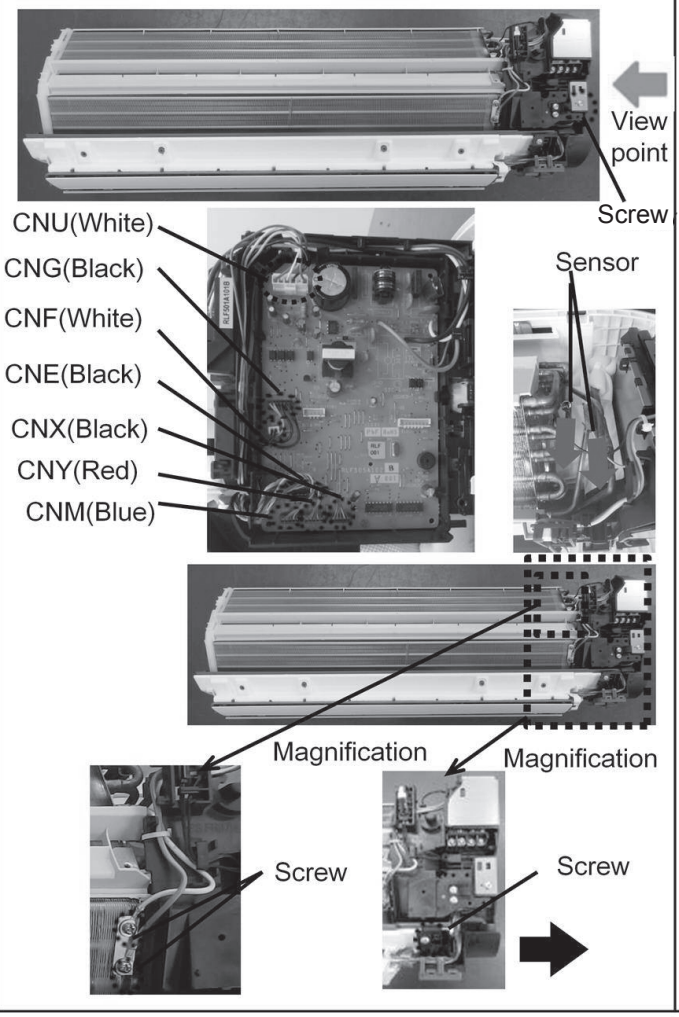
11. To remove the remote controller
(1) Take off the remote controller case hooks and remove it.

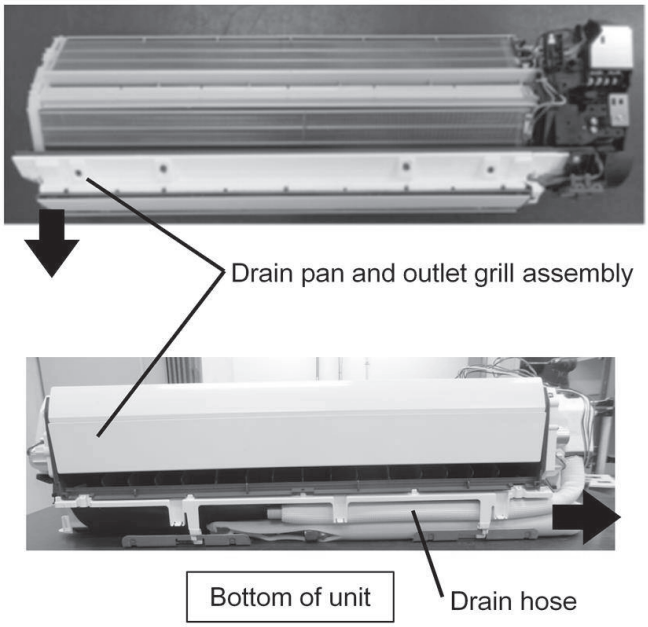
General view

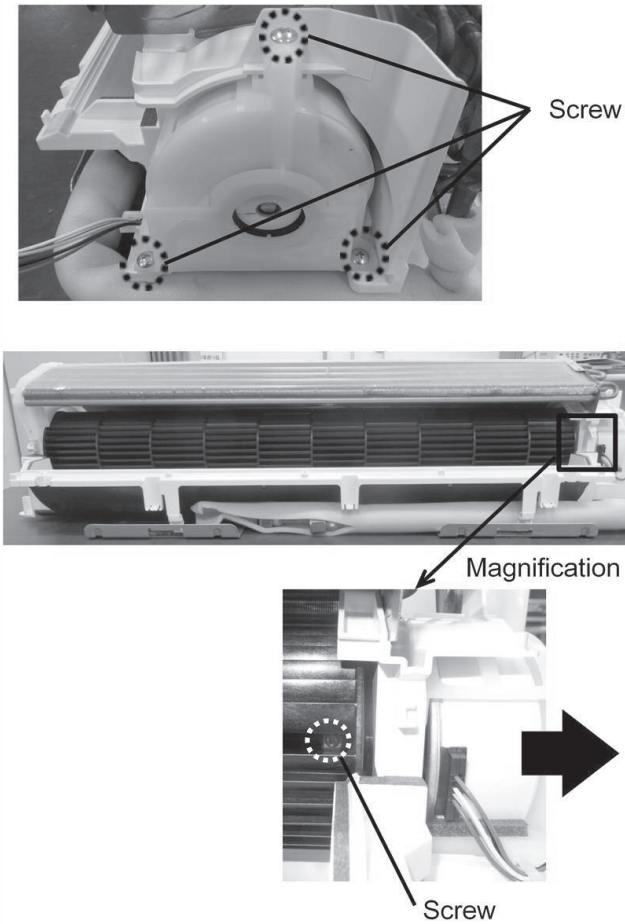
(f) SRK series

PHA012D402

Item		Illustration	Operating procedure
①	Removing the front panel	Air inlet panel 	[Removing the air inlet panel] 1.Hold lower edge of the air inlet panel, and then open it to about 80°.
②		Air filter  Air cleaning filter 	[Removing the filter] 1.Remove the air filter ×2. 2.Remove the air-cleaning filter ×2 3.Holding both sides of the air inlet panel, pull the left and right sides forward at the same time to remove the panel.

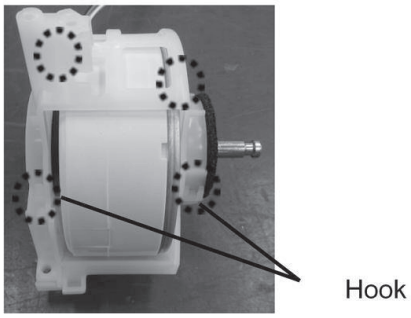
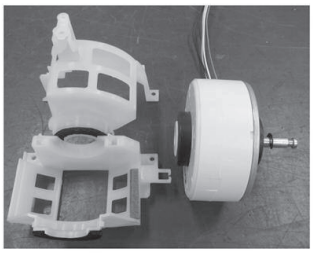
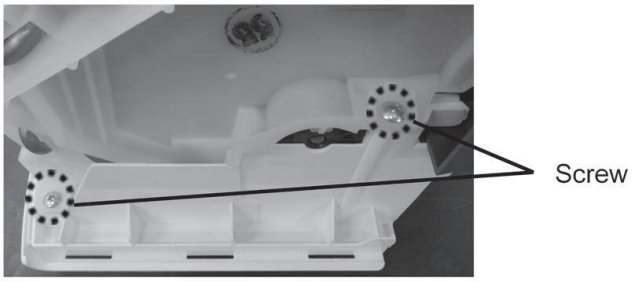
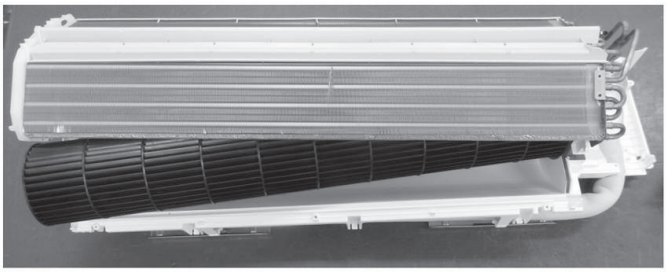
Item		Illustration	Operating procedure
③	Removing the front panel		1.Open the caps, and then remove the screw ×2 (circled in the illustration below) 2. Draw the front panel above after removing 4 hooks Caution ・ Be sure to use a fine-tipped tool (such as a precision screwdriver) to open the cap. ・ Be careful not to damage the panel surface when opening the caps.
④	Removing the electrical controller and peripheral parts		[Removing the Controller] 1.Remove screw x1 so as to remove a metal lid. 2.Remove a metal lid then unplug the following connector x7 CNU(White) CNG(Black) CNF(White) CNE(Black) CNX(Black) CNY(Red) CNW(Blue) 3. Pull the each sensor out from the case into the indicated directions in red arrows. 4. Remove screw x3 then draw the controller toward right direction.

<table>
<tr><th colspan="2">Item</th><th>Illustration</th><th>Operating procedure</th></tr>
<tr><td>⑤</td><td>Removing drain pan & outlet grill assembly</td><td> 
</td><td>[Removing the drain pan]
1.Draw the left of the drain pan and outlet grill assembly toward lower side so as to come off it from heat exchanger assembly.

2. Draw the drain pan and outlet grill assembly toward the right with drawing the drain hose.</td></tr>
<tr><td>⑥</td><td>Removing fan & motor</td><td> 
</td><td>[Removing fan & motor]
1.Remove screw x3

2. Look into the area surrounded the black rectangle, adjust the screw position with rotating the cross flow fan, then remove a screw.

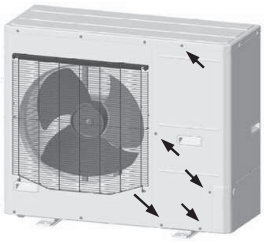
3.Draw the motor and its bracket toward the right.</td></tr>
</table>

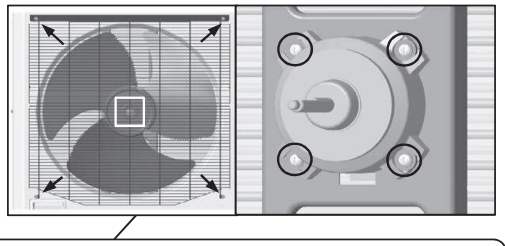
Item		Illustration	Operating procedure
⑦	Disassemble the motor	 	[Removing the motor case] 1.Release the hook ×4 (circled in the illustration), and then remove the motor case (U).
⑧	Removing the fan and heat exchanger	 	1.Remove the screw ×2 (circled in the illustration) on the left side of the heat exchanger. 2.While lifting up and supporting the left side of the heat exchanger, pull out the fan to the left, keeping it angled down.

(2) Outdoor unit

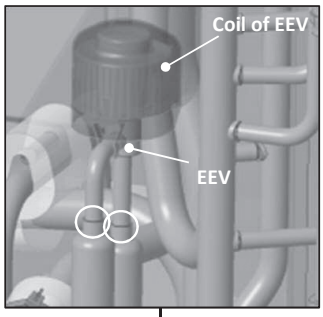
PCA012D089

1. To remove the service panel
(1) Remove 5 service panel fixing screws and remove it.

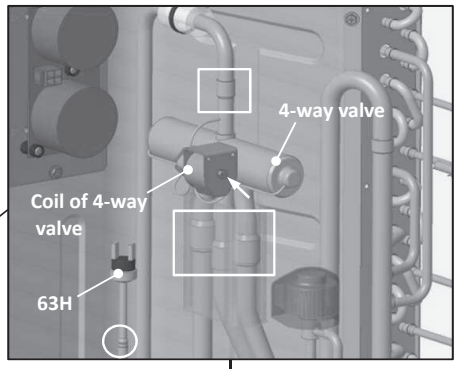




2. To remove the fan motor (FM)
(1) Remove the service panel.(See No.1)
(2) Disconnect the motor connector(FMxx or CNFxx) on PCB in control box.
(3) Remove 4 fan guard fixing screws and remove it.(← mark)
(4) Remove the propeller fan fixing nut and remove it.(☐ mark)
(5) Remove 4 fan motor fixing nuts and remove it.(○ mark)

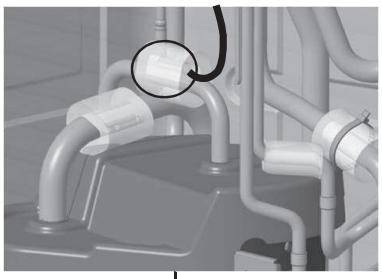


3. To remove the electronic expantion valve (EEV)
(1) Remove the service panel.(See No.1)
(2) Disconnect the EEV connector(CNEEVx) on PCB in control box.
(3) Remove the coil of EEV by pull out on the top.
(4) Remove welded part of EEV by welding. (○ mark)



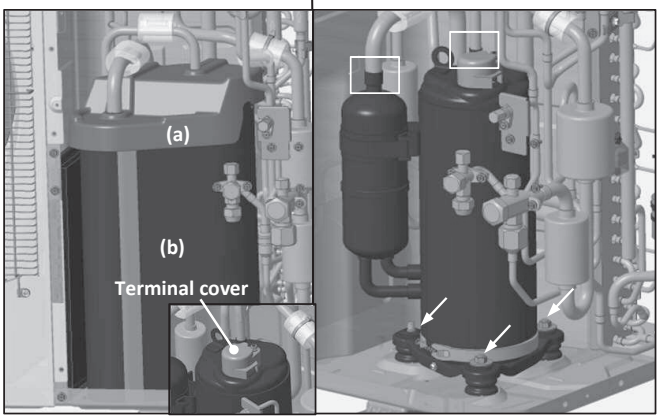
4. To remove the high pressure switch (63H)
(1) Remove the service panel.(See No.1)
(2) Disconnect the 63H connector(CNH) on PCB in control box.
(3) Remove welded part of high pressure switch by welding.(○ mark)

5. To remove the 4-way valve (20S)
(1) Remove the service panel.(See No.1)
(2) Disconnect the coil of 4-way valve connector (CNS) on PCB in control box.
(3) Remove the coil of 4-way valve fixing screw and remove it.(← mark)
(4) Remove welded part of 4-way valve by welding. (☐ mark)

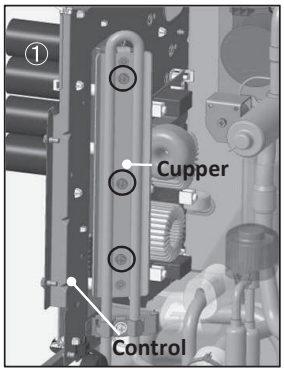


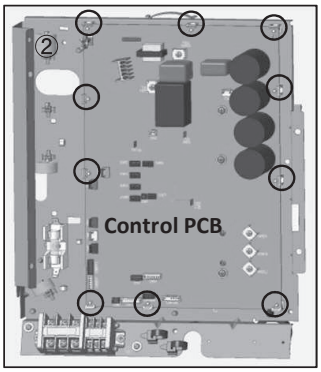
6. To remove the thermistors (example"Tho-D1")
(1) Remove the service panel.(See No.1)
(2) Disconnect the Tho-D1 connector(CNTH) on PCB in control box.
(3) Pull out the thermistor"Tho-D1" from the sensor holder.

7. To remove the compressor (CM)
(1) Remove the service panel.(See No.1)
(2) Remove the insulation which covers compressor. (Strings (a)～(b) should be loosen.)
(3) Remove the terminal cover fixing bolt and remove it, and disconnect the power wiring.
(4) Remove welded part of compressor by welding. (☐ mark)
(5) Remove 3 compressor fixing nuts(← mark) using spaner or adjustable wrench.

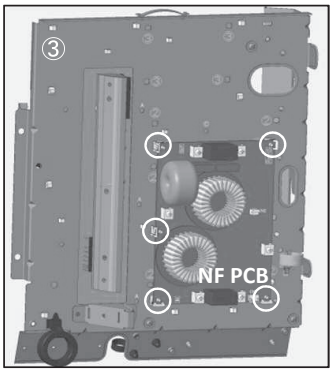


8. To remove the printed circuit board (PCB)
(1) Remove the service panel and rear panel, top panel.
(2) Remove 3 cupper plate fixing screws.(○ mark, Pic.①)
(3) Pull off all the inserted connectors of control PCB.(Pic.②)
(4) Take off 10 control PCB fixing locking supports and remove it.(○ mark, Pic.②)
(5) Pull off all the inserted connectors of NF PCB.(Pic.③)
(6) Take off 5 NF PCB fixing locking supports and remove it.(○ mark, Pic.③)





Front of controller



Rear of controller

1.14 TECHNICAL INFORMATION

(1) Ceiling cassette - 4 way type (FDT)
Model FDT100VNAVG

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDT100VG**
Outdoor unit model name	**FDC100VNA**

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.78**	A++
heating / Average	SCOP/A	**4.52**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.5**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW

Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.0**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.55**	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.66**	-
Tj=30℃	EERd	**5.20**	-
Tj=25℃	EERd	**8.95**	-
Tj=20℃	EERd	**12.3**	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.77**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.5**	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.34**	-
Tj=2℃	COPd	**4.22**	-
Tj=7℃	COPd	**5.92**	-
Tj=12℃	COPd	**6.93**	-
Tj=bivalent temperature	COPd	**2.51**	-
Tj=operating limit	COPd	**2.84**	-

Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW

Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-

Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW

Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-

Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃

Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃

Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW

Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-

Degradation coefficient			
cooling	Cdc	**0.25**	-

Degradation coefficient			
heating	Cdh	**0.25**	-

Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**20**	W
crankcase heater mode	Pck	**8**	W

Annual electricity consumption			
cooling	Qce	**516**	kWh/a
heating / Average	Qhe	**2631**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a

Capacity control(indicate one of three options)	
fixed	**No**
staged	**No**
variable	**Yes**

Other items			
Sound power level(indoor)	Lwa	**63**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**2220**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative.
	Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PJF000Z425A

Model FDT100VSAVG

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDT100VG**
Outdoor unit model name	**FDC100VSA**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.5**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.0**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.55**	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.77**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.5**	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW
Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃
Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW
Degradation coefficient			
cooling	Cdc	**0.25**	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**20**	W
crankcase heater mode	Pck	**8**	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.78**	A++
heating / Average	SCOP/A	**4.52**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.66**	-
Tj=30℃	EERd	**5.20**	-
Tj=25℃	EERd	**8.95**	-
Tj=20℃	EERd	**12.3**	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.34**	-
Tj=2℃	COPd	**4.22**	-
Tj=7℃	COPd	**5.92**	-
Tj=12℃	COPd	**6.93**	-
Tj=bivalent temperature	COPd	**2.51**	-
Tj=operating limit	COPd	**2.84**	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-
Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃
Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-
Degradation coefficient			
heating	Cdh	**0.25**	-
Annual electricity consumption			
cooling	Qce	**516**	kWh/a
heating / Average	Qhe	**2631**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a

Capacity control(indicate one of three options)	
fixed	**No**
staged	**No**
variable	**Yes**

Other items			
Sound power level(indoor)	Lwa	**63**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**2220**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PJF000Z425

Model FDT100VNAPVG

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDT50VG (x2 units)**
Outdoor unit model name	**FDC100VNA**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.5**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.0**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.55**	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.77**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.5**	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW
Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃
Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW
Degradation coefficient			
cooling	Cdc	**0.25**	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**20**	W
crankcase heater mode	Pck	**8**	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.89**	A++
heating / Average	SCOP/A	**4.47**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.55**	-
Tj=30℃	EERd	**5.02**	-
Tj=25℃	EERd	**9.27**	-
Tj=20℃	EERd	**13.57**	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.13**	-
Tj=2℃	COPd	**4.22**	-
Tj=7℃	COPd	**5.92**	-
Tj=12℃	COPd	**7.04**	-
Tj=bivalent temperature	COPd	**2.37**	-
Tj=operating limit	COPd	**2.65**	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-
Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃
Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-
Degradation coefficient			
heating	Cdh	**0.25**	-
Annual electricity consumption			
cooling	Qce	**508**	kWh/a
heating / Average	Qhe	**2662**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a

Capacity control(indicate one of three options)	
fixed	**No**
staged	**No**
variable	**Yes**

Other items			
Sound power level(indoor)	Lwa	**54**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**1200**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PJF000Z425

Model FDT100VSAPVG

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDT50VG (x2 units)**
Outdoor unit model name	**FDC100VSA**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.89**	A++
heating / Average	SCOP/A	**4.47**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.5**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW

Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.0**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.55**	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.55**	-
Tj=30℃	EERd	**5.02**	-
Tj=25℃	EERd	**9.27**	-
Tj=20℃	EERd	**13.57**	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.77**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.5**	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.13**	-
Tj=2℃	COPd	**4.22**	-
Tj=7℃	COPd	**5.92**	-
Tj=12℃	COPd	**7.04**	-
Tj=bivalent temperature	COPd	**2.37**	-
Tj=operating limit	COPd	**2.65**	-

Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW

Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-

Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW

Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-

Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃

Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃

Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW

Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-

Degradation coefficient			
cooling	Cdc	**0.25**	-

Degradation coefficient			
heating	Cdh	**0.25**	-

Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**20**	W
crankcase heater mode	Pck	**8**	W

Annual electricity consumption			
cooling	Qce	**508**	kWh/a
heating / Average	Qhe	**2662**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a

Capacity control(indicate one of three options)	
fixed	**No**
staged	**No**
variable	**Yes**

Other items			
Sound power level(indoor)	Lwa	**54**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**1200**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PJF000Z425

Model FDT125VNAVG

Model(s) : FDC125VNA / FDT125VG							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**258.0**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**309.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**475.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**775.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1270.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.020**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJF000Z425

Information to identify the model(s) to which the information relates :	FDC125VNA / FDT125VG
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW
Seasonal space heating energy efficiency ηs,h		**172.1**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**8.7**	kW
T_j=+2℃	Pdh	**5.3**	kW
T_j=+7℃	Pdh	**3.4**	kW
T_j=+12℃	Pdh	**2.7**	kW
T_{biv}=bivalent temperature	Pdh	**9.8**	kW
T_{OL}=operation limit	Pdh	**7.7**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**310.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**415.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**579.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**643.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**257.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**235.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.035**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**71.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger		**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJF000Z425

Model FDT125VSAVG

Model(s) : FDC125VSA / FDT125VG							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**258.0**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**309.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**475.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**775.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1270.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.020**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJF000Z425

Information to identify the model(s) to which the information relates :	FDC125VSA / FDT125VG
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW
Seasonal space heating energy efficiency ηs,h		**172.1**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

				Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
T_j=-7℃	Pdh	**8.7**	kW	T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**310.0**	%
T_j=+2℃	Pdh	**5.3**	kW	T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**415.0**	%
T_j=+7℃	Pdh	**3.4**	kW	T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**579.0**	%
T_j=+12℃	Pdh	**2.7**	kW	T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**643.0**	%
T_{biv}=bivalent temperature	Pdh	**9.8**	kW	T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**257.0**	%
T_{OL}=operation limit	Pdh	**7.7**	kW	T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**235.0**	%
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW	For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
Bivalent temperature	T_{biv}	**-10.0**	℃	For water-to-air heat pumps:Operation limit T_{oi} temperature		**-**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-				

Power consumpiton in modes other than 'active mode'

				Supplementary heater back-up heating capacity	elbu	**-**	kW
Off mode	P_{OFF}	**0.008**	kW				
Thermostat-off mode	P_{TO}	**0.035**	kW	Type of energy input Standby mode	P_{SB}	**0.008**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW				

Other items

Capacity control		**variable**		For air-to-air heat pumps: air flow-rate,outdoor measured	**4380**	m3/h
Sound power level, outdoor measured	L_{WA}	**71.0**	dB	For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger	**-**	m3/h
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV			
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)			

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJF000Z425

Model FDT140VNAVG

Model(s) : FDC140VNA / FDT140VG							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**243.6**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**281.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**450.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**695.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1310.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.020**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJF000Z425

Information to identify the model(s) to which the information relates :	FDC140VNA / FDT140VG
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**168.0**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

	Symbol	Value	Unit
T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.6**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**7.9**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

		Value	Unit
T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**228.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**433.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**583.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**688.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**268.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**230.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

	Symbol	Value	Unit
Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.035**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

		Value	Unit
Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

		Value	Unit
Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

	Value	Unit
For air-to-air heat pumps: air flow-rate,outdoor measured	**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water flow-rate, outdoor side heat exchanger	**-**	m3/h

		Value	Unit
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJF000Z425

Model FDT140VSAVG

Model(s) : FDC140VSA / FDT140VG							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**243.6**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**281.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**450.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**695.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1310.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.020**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJF000Z425

Information to identify the model(s) to which the information relates :	FDC140VSA / FDT140VG
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**168.0**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.6**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**7.9**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**228.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**433.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**583.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**688.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**268.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**230.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.035**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**-**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured	**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger	**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

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Model FDT125VNAPVG

Model(s) : FDC125VNA / FDT60VG (x2 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**315.5**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**338.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**587.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**925.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1667.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJF000Z425

Information to identify the model(s) to which the information relates :	FDC125VNA / FDT60VG (x2 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW
Seasonal space heating energy efficiency ηs,h		**205.1**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	Pdh	**8.7**	kW	T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**350.0**	%
T_j=+2℃	Pdh	**5.3**	kW	T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**503.0**	%
T_j=+7℃	Pdh	**3.4**	kW	T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**678.0**	%
T_j=+12℃	Pdh	**2.7**	kW	T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**794.0**	%
T_{biv}=bivalent temperature	Pdh	**9.8**	kW	T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**292.0**	%
T_{OL}=operation limit	Pdh	**7.7**	kW	T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**261.0**	%
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW	For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
Bivalent temperature	T_{biv}	**-10.0**	℃	For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-				

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**71.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured	**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger	**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

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Model FDT125VSAPVG

Model(s) : FDC125VSA / FDT60VG (x2 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**315.5**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**338.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**587.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**925.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1667.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJF000Z425

Information to identify the model(s) to which the information relates :	FDC125VSA / FDT60VG (x2 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW
Seasonal space heating energy efficiency ηs,h		**205.1**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**8.7**	kW
T_j=+2℃	Pdh	**5.3**	kW
T_j=+7℃	Pdh	**3.4**	kW
T_j=+12℃	Pdh	**2.7**	kW
T_{biv}=bivalent temperature	Pdh	**9.8**	kW
T_{OL}=operation limit	Pdh	**7.7**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**350.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**503.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**678.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**794.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**292.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**261.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**71.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger		**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJF000Z425

Model FDT140VNAPVG

Model(s) : FDC140VNA / FDT71VG (x2 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**297.5**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**330.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**545.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**815.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1750.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJF000Z425

Information to identify the model(s) to which the information relates :	FDC140VNA / FDT71VG (x2 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW	Seasonal space heating energy efficiency ηs,h		**192.6**	%
Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj				Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
T_j=-7℃	Pdh	**9.3**	kW	T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**326.0**	%
T_j=+2℃	Pdh	**5.7**	kW	T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**466.0**	%
T_j=+7℃	Pdh	**3.7**	kW	T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**640.0**	%
T_j=+12℃	Pdh	**2.6**	kW	T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**813.0**	%
T_{biv}=bivalent temperature	Pdh	**10.5**	kW	T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**277.0**	%
T_{OL}=operation limit	Pdh	**7.9**	kW	T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**246.0**	%
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW	For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
Bivalent temperature	T_{biv}	**-10.0**	℃	For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-				
Power consumpiton in modes other than 'active mode'				Supplementary heater back-up heating capacity	elbu	**-**	kW
Off mode	P_{OFF}	**0.008**	kW				
Thermostat-off mode	P_{TO}	**0.015**	kW	Type of energy input Standby mode	P_{SB}	**0.008**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW				
Other items							
Capacity control		**variable**		For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
Sound power level, outdoor measured	L_{WA}	**73.0**	dB	For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger		**-**	m3/h
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJF000Z425

Model FDT140VSAPVG

Model(s) : FDC140VSA / FDT71VG (x2 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**297.5**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**330.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**545.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**815.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1750.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJF000Z425

Information to identify the model(s) to which the information relates :	FDC140VSA / FDT71VG (x2 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**192.6**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.6**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**7.9**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**326.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**466.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**640.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**813.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**277.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**246.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured	**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger	**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJF000Z425

Model FDT140VNATVG

Model(s) : FDC140VNA / FDT50VG (x3 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**297.5**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**330.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**545.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**815.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1750.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJF000Z425

Information to identify the model(s) to which the information relates :	FDC140VNA / FDT50VG (x3 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**192.6**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.6**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**7.9**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**326.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**466.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**640.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**813.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**277.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**246.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured	**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger	**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJF000Z425

Model FDT140VSATVG

Model(s) : FDC140VSA / FDT50VG (x3 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**297.5**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**330.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**545.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**815.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1750.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJF000Z425

Information to identify the model(s) to which the information relates :	FDC140VSA / FDT50VG (x3 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**192.6**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.6**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**7.9**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**326.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**466.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**640.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**813.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**277.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**246.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured	**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger	**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJF000Z425

Models FDT50VG, 60VG, 71VG, 100VG, 125VG, 140VG

Model(s) : FDT50VG

Item	Symbol	Vaiue	Unit	Item	Symbol	Vaiue	Unit
Cooling capacity (sensible)	$P_{rated,c}$	4.4	kW	Total electric power input	P_{elec}	0.040	kW
Cooling capacity (latent)	$P_{rated,c}$	0.6	kW	Sound power level (per speed setting,if applicable)	L_{WA}	54.0	dB
Heating capacity	$P_{rated,h}$	5.4	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDT60VG

Item	Symbol	Vaiue	Unit	Item	Symbol	Vaiue	Unit
Cooling capacity (sensible)	$P_{rated,c}$	5.5	kW	Total electric power input	P_{elec}	0.070	kW
Cooling capacity (latent)	$P_{rated,c}$	0.1	kW	Sound power level (per speed setting,if applicable)	L_{WA}	60.0	dB
Heating capacity	$P_{rated,h}$	6.7	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDT71VG

Item	Symbol	Vaiue	Unit	Item	Symbol	Vaiue	Unit
Cooling capacity (sensible)	$P_{rated,c}$	6.4	kW	Total electric power input	P_{elec}	0.080	kW
Cooling capacity (latent)	$P_{rated,c}$	0.7	kW	Sound power level (per speed setting,if applicable)	L_{WA}	62.0	dB
Heating capacity	$P_{rated,h}$	8.0	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDT100VG

Item	Symbol	Vaiue	Unit	Item	Symbol	Vaiue	Unit
Cooling capacity (sensible)	$P_{rated,c}$	8.8	kW	Total electric power input	P_{elec}	0.130	kW
Cooling capacity (latent)	$P_{rated,c}$	1.2	kW	Sound power level (per speed setting,if applicable)	L_{WA}	63.0	dB
Heating capacity	$P_{rated,h}$	11.2	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDT125VG

Item	Symbol	Vaiue	Unit	Item	Symbol	Vaiue	Unit
Cooling capacity (sensible)	$P_{rated,c}$	9.9	kW	Total electric power input	P_{elec}	0.140	kW
Cooling capacity (latent)	$P_{rated,c}$	2.6	kW	Sound power level (per speed setting,if applicable)	L_{WA}	64.0	dB
Heating capacity	$P_{rated,h}$	14.0	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDT140VG

Item	Symbol	Vaiue	Unit	Item	Symbol	Vaiue	Unit
Cooling capacity (sensible)	$P_{rated,c}$	10.5	kW	Total electric power input	P_{elec}	0.140	kW
Cooling capacity (latent)	$P_{rated,c}$	3.5	kW	Sound power level (per speed setting,if applicable)	L_{WA}	64.0	dB
Heating capacity	$P_{rated,h}$	16.0	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

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(2) Ceiling cassette - 4 way compact type (FDTC)
Model FDTC100VNAPVF

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDTC50VF (x2 units)**
Outdoor unit model name	**FDC100VNA**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.5**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.0**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.55**	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.75**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.5**	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW
Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃
Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW
Degradation coefficient			
cooling	Cdc	**0.25**	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**25**	W
crankcase heater mode	Pck	**8**	W
Capacity control(indicate one of three options)			
fixed		**No**	
staged		**No**	
variable		**Yes**	

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**5.48**	A
heating / Average	SCOP/A	**3.93**	A
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**2.87**	-
Tj=30℃	EERd	**4.19**	-
Tj=25℃	EERd	**6.72**	-
Tj=20℃	EERd	**10.82**	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**2.87**	-
Tj=2℃	COPd	**3.73**	-
Tj=7℃	COPd	**4.97**	-
Tj=12℃	COPd	**6.19**	-
Tj=bivalent temperature	COPd	**2.20**	-
Tj=operating limit	COPd	**2.41**	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-
Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃
Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-
Degradation coefficient			
heating	Cdh	**0.25**	-
Annual electricity consumption			
cooling	Qce	**640**	kWh/a
heating / Average	Qhe	**3029**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a
Other items			
Sound power level(indoor)	Lwa	**60**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**810**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative.
	Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PJA003Z401⚠

Model FDTC100VSAPVF

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDTC50VF (x2 units)**
Outdoor unit model name	**FDC100VSA**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.5**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.0**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.55**	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.75**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.5**	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW
Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃
Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW
Degradation coefficient			
cooling	Cdc	**0.25**	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**25**	W
crankcase heater mode	Pck	**8**	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**5.48**	A
heating / Average	SCOP/A	**3.93**	A
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**2.87**	-
Tj=30℃	EERd	**4.19**	-
Tj=25℃	EERd	**6.72**	-
Tj=20℃	EERd	**10.82**	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**2.87**	-
Tj=2℃	COPd	**3.73**	-
Tj=7℃	COPd	**4.97**	-
Tj=12℃	COPd	**6.19**	-
Tj=bivalent temperature	COPd	**2.20**	-
Tj=operating limit	COPd	**2.41**	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-
Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃
Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-
Degradation coefficient			
heating	Cdh	**0.25**	-
Annual electricity consumption			
cooling	Qce	**640**	kWh/a
heating / Average	Qhe	**3029**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a

Capacity control(indicate one of three options)	
fixed	**No**
staged	**No**
variable	**Yes**

Other items			
Sound power level(indoor)	Lwa	**60**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**810**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative.
	Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PJA003Z401⚠

Model FDTC125VNAPVF

Model(s) :	FDC125VNA / FDTC60VF (x2 units)						
Outdoor side heat exchanger of air conditioner :	air						
Indoor side heat exchanger of air conditioner :	air						
Type :	vapour compression						
if applicable :	electric motor						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**218.5**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**232.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**399.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**617.0**	%
Tj=+20℃	Pdc	**3.4**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1259.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJA003Z401⚠

Information to identify the model(s) to which the information relates :	FDC125VNA / FDTC60VF (x2 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW
Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj			
T_j=-7℃	Pdh	**8.7**	kW
T_j=+2℃	Pdh	**5.3**	kW
T_j=+7℃	Pdh	**3.4**	kW
T_j=+12℃	Pdh	**2.7**	kW
T_{biv}=bivalent temperature	Pdh	**9.8**	kW
T_{OL}=operation limit	Pdh	**7.7**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-
Power consumpiton in modes other than 'active mode'			
Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW
Other items			
Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**71.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency ηs,h		**171.2**	%
Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**295.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**409.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**584.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**730.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**242.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**226.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃
Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW
For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger		**-**	m3/h

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJA003Z401

Model FDTC125VSAPVF

Model(s) :	FDC125VSA / FDTC60VF (x2 units)						
Outdoor side heat exchanger of air conditioner :	air						
Indoor side heat exchanger of air conditioner :	air						
Type :	vapour compression						
if applicable :	electric motor						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**218.5**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**232.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**399.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**617.0**	%
Tj=+20℃	Pdc	**3.4**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1259.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJA003Z401⚠

Information to identify the model(s) to which the information relates :	FDC125VSA / FDTC60VF (x2 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW
Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj			
T_j=-7℃	Pdh	**8.7**	kW
T_j=+2℃	Pdh	**5.3**	kW
T_j=+7℃	Pdh	**3.4**	kW
T_j=+12℃	Pdh	**2.7**	kW
T_{biv}=bivalent temperature	Pdh	**9.8**	kW
T_{OL}=operation limit	Pdh	**7.7**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-
Power consumpiton in modes other than 'active mode'			
Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW
Other items			
Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**71.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency ηs,h		**171.2**	%
Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**295.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**409.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**584.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**730.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**242.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**226.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃
Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW
For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger		**-**	m3/h

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJA003Z401

Model FDTC140VNATVF

Model(s) : FDC140VNA / FDTC50VF (x3 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**266.3**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**255.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**453.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**708.0**	%
Tj=+20℃	Pdc	**3.6**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**2250.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJA003Z401⚠

Information to identify the model(s) to which the information relates :	FDC140VNA / FDTC50VF (x3 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**195.8**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**8.1**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**304.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**473.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**676.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**982.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**243.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**233.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger		**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJA003Z401

Model FDTC140VSATVF

Model(s) : FDC140VSA / FDTC50VF (x3 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**266.3**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**255.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**453.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**708.0**	%
Tj=+20℃	Pdc	**3.6**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**2250.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJA003Z401⚠

Information to identify the model(s) to which the information relates :	FDC140VSA / FDTC50VF (x3 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**195.8**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**8.1**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**304.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**473.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**676.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**982.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**243.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**233.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger		**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJA003Z401⚠

Models FDTC50VF, 60VF

Model(s) : FDTC50VF							
Item	**Symbol**	**Vaiue**	**Unit**	**Item**	**Symbol**	**Vaiue**	**Unit**
Cooling capacity (sensible)	$P_{rated,c}$	3.7	kW	Total electric power input	P_{elec}	0.050	kW
Cooling capacity (latent)	$P_{rated,c}$	1.3	kW	Sound power level (per speed setting,if applicable)	L_{WA}	60.0	dB
Heating capacity	$P_{rated,h}$	5.4	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDTC60VF							
Item	**Symbol**	**Vaiue**	**Unit**	**Item**	**Symbol**	**Vaiue**	**Unit**
Cooling capacity (sensible)	$P_{rated,c}$	3.9	kW	Total electric power input	P_{elec}	0.050	kW
Cooling capacity (latent)	$P_{rated,c}$	1.7	kW	Sound power level (per speed setting,if applicable)	L_{WA}	60.0	dB
Heating capacity	$P_{rated,h}$	6.7	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

PJA003Z401⚠

(3) Ceiling suspended type (FDE)
Model FDE100VNAVG

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDE100VG**
Outdoor unit model name	**FDC100VNA**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.5**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.00**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.48**	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.78**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.50**	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW
Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃
Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW
Degradation coefficient			
cooling	Cdc	**0.25**	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**30**	W
crankcase heater mode	Pck	**8**	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.35**	A++
heating / Average	SCOP/A	**4.31**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.51**	-
Tj=30℃	EERd	**5.00**	-
Tj=25℃	EERd	**7.80**	-
Tj=20℃	EERd	**12.40**	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.22**	-
Tj=2℃	COPd	**4.04**	-
Tj=7℃	COPd	**5.58**	-
Tj=12℃	COPd	**6.46**	-
Tj=bivalent temperature	COPd	**2.42**	-
Tj=operating limit	COPd	**2.75**	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-
Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃
Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-
Degradation coefficient			
heating	Cdh	**0.25**	-
Annual electricity consumption			
cooling	Qce	**552**	kWh/a
heating / Average	Qhe	**2762**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a

Capacity control(indicate one of three options)	
fixed	**No**
staged	**No**
variable	**Yes**

Other items			
Sound power level(indoor)	Lwa	**64**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**1920**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative.
	Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PFA004Z024 ⚠

Model FDE100VSAVG

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDE100VG**
Outdoor unit model name	**FDC100VSA**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.5**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.00**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.48**	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.78**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.50**	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW
Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃
Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW
Degradation coefficient			
cooling	Cdc	**0.25**	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**30**	W
crankcase heater mode	Pck	**8**	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.35**	A++
heating / Average	SCOP/A	**4.31**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.51**	-
Tj=30℃	EERd	**5.00**	-
Tj=25℃	EERd	**7.80**	-
Tj=20℃	EERd	**12.40**	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.22**	-
Tj=2℃	COPd	**4.04**	-
Tj=7℃	COPd	**5.58**	-
Tj=12℃	COPd	**6.46**	-
Tj=bivalent temperature	COPd	**2.42**	-
Tj=operating limit	COPd	**2.75**	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-
Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃
Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-
Degradation coefficient			
heating	Cdh	**0.25**	-
Annual electricity consumption			
cooling	Qce	**552**	kWh/a
heating / Average	Qhe	**2762**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a

Capacity control(indicate one of three options)	
fixed	**No**
staged	**No**
variable	**Yes**

Other items			
Sound power level(indoor)	Lwa	**64**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**1920**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PFA004Z024 ⚠

Model FDE100VNAPVG

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDE50VG (x2 units)**
Outdoor unit model name	**FDC100VNA**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.5**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.00**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.30**	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.70**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.50**	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW
Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃
Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW
Degradation coefficient			
cooling	Cdc	**0.25**	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**30**	W
crankcase heater mode	Pck	**8**	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**5.71**	A+
heating / Average	SCOP/A	**4.10**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.21**	-
Tj=30℃	EERd	**4.49**	-
Tj=25℃	EERd	**6.63**	-
Tj=20℃	EERd	**11.69**	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.01**	-
Tj=2℃	COPd	**3.84**	-
Tj=7℃	COPd	**5.29**	-
Tj=12℃	COPd	**6.48**	-
Tj=bivalent temperature	COPd	**2.28**	-
Tj=operating limit	COPd	**2.62**	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-
Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃
Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-
Degradation coefficient			
heating	Cdh	**0.25**	-
Annual electricity consumption			
cooling	Qce	**613**	kWh/a
heating / Average	Qhe	**2904**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a

Capacity control(indicate one of three options)	
fixed	**No**
staged	**No**
variable	**Yes**

Other items			
Sound power level(indoor)	Lwa	**60**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**780**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PFA004Z024 ⚠

Model FDE100VSAPVG

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDE50VG (x2 units)**
Outdoor unit model name	**FDC100VSA**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.5**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.00**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.30**	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.70**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.50**	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW
Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃
Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW
Degradation coefficient			
cooling	Cdc	**0.25**	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**30**	W
crankcase heater mode	Pck	**8**	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**5.71**	A+
heating / Average	SCOP/A	**4.10**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.21**	-
Tj=30℃	EERd	**4.49**	-
Tj=25℃	EERd	**6.63**	-
Tj=20℃	EERd	**11.69**	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.01**	-
Tj=2℃	COPd	**3.84**	-
Tj=7℃	COPd	**5.29**	-
Tj=12℃	COPd	**6.48**	-
Tj=bivalent temperature	COPd	**2.28**	-
Tj=operating limit	COPd	**2.62**	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-
Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃
Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-
Degradation coefficient			
heating	Cdh	**0.25**	-
Annual electricity consumption			
cooling	Qce	**613**	kWh/a
heating / Average	Qhe	**2904**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a

Capacity control(indicate one of three options)	
fixed	**No**
staged	**No**
variable	**Yes**

Other items			
Sound power level(indoor)	Lwa	**60**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**780**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PFA004Z024 ⚠

Model FDE125VNAVG

Model(s) : FDC125VNA / FDE125VG							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**238.1**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**281.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**448.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**735.0**	%
Tj=+20℃	Pdc	**3.4**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1097.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.030**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items				For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Capacity control		**variable**					
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PFA004Z024⚠

Information to identify the model(s) to which the information relates :	FDC125VNA / FDE125VG
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW
Seasonal space heating energy efficiency ηs,h		**169.1**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

	Symbol	Value	Unit
T_j=-7℃	Pdh	**8.7**	kW
T_j=+2℃	Pdh	**5.3**	kW
T_j=+7℃	Pdh	**3.4**	kW
T_j=+12℃	Pdh	**2.7**	kW
T_{biv}=bivalent temperature	Pdh	**9.8**	kW
T_{OL}=operation limit	Pdh	**7.7**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

		Value	Unit
T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**298.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**412.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**567.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**639.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**247.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**214.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

	Symbol	Value	Unit
Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.043**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

		Value	Unit
Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

		Value	Unit
Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**71.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV
For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water flow-rate, outdoor side heat exchanger		**-**	m3/h
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PFA004Z024 ⚠

Model FDE125VSAVG

Model(s) : FDC125VSA / FDE125VG							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**238.1**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**281.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**448.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**735.0**	%
Tj=+20℃	Pdc	**3.4**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1097.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.030**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PFA004Z024⚠

Information to identify the model(s) to which the information relates :	FDC125VSA / FDE125VG
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW
Seasonal space heating energy efficiency ηs,h		**169.1**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

	Symbol	Value	Unit
T_j=-7℃	Pdh	**8.7**	kW
T_j=+2℃	Pdh	**5.3**	kW
T_j=+7℃	Pdh	**3.4**	kW
T_j=+12℃	Pdh	**2.7**	kW
T_{biv}=bivalent temperature	Pdh	**9.8**	kW
T_{OL}=operation limit	Pdh	**7.7**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

		Value	Unit
T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**298.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**412.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**567.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**639.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**247.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**214.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

	Symbol	Value	Unit
Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.043**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

		Value	Unit
Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

		Value	Unit
Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**71.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV
For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water flow-rate, outdoor side heat exchanger		**-**	m3/h
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PFA004Z024 ⚠

Model FDE140VNAVG

Model(s) : FDC140VNA / FDE140VG							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**227.6**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**261.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**435.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**635.0**	%
Tj=+20℃	Pdc	**3.4**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1230.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.030**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PFA004Z024⚠

Information to identify the model(s) to which the information relates :	FDC140VNA / FDE140VG
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**162.8**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

	Symbol	Value	Unit
T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**7.9**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

		Value	Unit
T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**290.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**390.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**550.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**650.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**250.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**220.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

	Symbol	Value	Unit
Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.045**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

		Value	Unit
Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

		Value	Unit
Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV
For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water flow-rate, outdoor side heat exchanger		**-**	m3/h
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PFA004Z024 ⚠

Model FDE140VSAVG

Model(s) : FDC140VSA / FDE140VG							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**227.6**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**261.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**435.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**635.0**	%
Tj=+20℃	Pdc	**3.4**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1230.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.030**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PFA004Z024⚠

Information to identify the model(s) to which the information relates :	FDC140VSA / FDE140VG
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**162.8**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**7.9**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**290.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**390.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**550.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**650.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**250.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**220.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.045**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

For air-to-air heat pumps: air flow-rate,outdoor measured	**4380** m3/h
For water-/brine-to-air heat pumps : Rated brine or water flow-rate, outdoor side heat exchanger	**-** m3/h

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PFA004Z024 ⚠

Model FDE125VNAPVG

Model(s) : FDC125VNA / FDE60VG (x2 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**294.7**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**308.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**532.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**846.0**	%
Tj=+20℃	Pdc	**3.7**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1762.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PFA004Z024⚠

Information to identify the model(s) to which the information relates :	FDC125VNA / FDE60VG (x2 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**8.7**	kW
T_j=+2℃	Pdh	**5.3**	kW
T_j=+7℃	Pdh	**3.4**	kW
T_j=+12℃	Pdh	**2.7**	kW
T_{biv}=bivalent temperature	Pdh	**9.8**	kW
T_{OL}=operation limit	Pdh	**7.7**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**71.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency ηs,h		**198.8**	%

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**343.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**467.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**692.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**871.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**275.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**248.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water flow-rate, outdoor side heat exchanger		**-**	m3/h

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PFA004Z024 ⚠

Model FDE125VSAPVG

Model(s) : FDC125VSA / FDE60VG (x2 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**294.7**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**308.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**532.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**846.0**	%
Tj=+20℃	Pdc	**3.7**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1762.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items				For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Capacity control		**variable**					
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PFA004Z024⚠

Information to identify the model(s) to which the information relates :	FDC125VSA / FDE60VG (x2 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW
Seasonal space heating energy efficiency ηs,h		**198.8**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**8.7**	kW
T_j=+2℃	Pdh	**5.3**	kW
T_j=+7℃	Pdh	**3.4**	kW
T_j=+12℃	Pdh	**2.7**	kW
T_{biv}=bivalent temperature	Pdh	**9.8**	kW
T_{OL}=operation limit	Pdh	**7.7**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**343.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**467.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**692.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**871.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**275.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**248.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**71.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water flow-rate, outdoor side heat exchanger		**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PFA004Z024 ⚠

Model FDE140VNAPVG

Model(s) : FDC140VNA / FDE71VG (x2 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**268.9**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**293.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**468.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**740.0**	%
Tj=+20℃	Pdc	**3.7**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1762.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	-	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PFA004Z024⚠

Information to identify the model(s) to which the information relates :	FDC140VNA / FDE71VG (x2 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**8.3**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency ηs,h		**188.8**	%

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**316.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**447.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**652.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**875.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**258.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**236.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water flow-rate, outdoor side heat exchanger		**-**	m3/h

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PFA004Z024 ⚠

Model FDE140VSAPVG

Model(s) : FDC140VSA / FDE71VG (x2 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**268.9**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**293.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**468.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**740.0**	%
Tj=+20℃	Pdc	**3.7**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1762.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	-	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PFA004Z024 ⚠

Information to identify the model(s) to which the information relates :	FDC140VSA / FDE71VG (x2 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**188.8**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**8.3**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**316.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**447.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**652.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**875.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**258.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**236.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water flow-rate, outdoor side heat exchanger		**-**	m3/h

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PFA004Z024 ⚠

Model FDE140VNATVG

Model(s) : FDC140VNA / FDE50VG (x3 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**268.9**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**293.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**468.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**740.0**	%
Tj=+20℃	Pdc	**3.7**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1762.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PFA004Z024 ⚠

Information to identify the model(s) to which the information relates :	FDC140VNA / FDE50VG (x3 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**8.3**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency ηs,h		**188.8**	%

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**316.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**447.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**652.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**875.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**258.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**236.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water flow-rate, outdoor side heat exchanger		**-**	m3/h

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

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Model FDE140VSATVG

Model(s) : FDC140VSA / FDE50VG (x3 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**268.9**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**293.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**468.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**740.0**	%
Tj=+20℃	Pdc	**3.7**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1762.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PFA004Z024 ⚠

Information to identify the model(s) to which the information relates :	FDC140VSA / FDE50VG (x3 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**8.3**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency ηs,h		**188.8**	%

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**316.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**447.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**652.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**875.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**258.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**236.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water flow-rate, outdoor side heat exchanger		**-**	m3/h

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

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Models FDE50VG, 60VG, 71VG, 100VG, 125VG, 140VG

Model(s) : FDE50VG

Item	Symbol	Vaiue	Unit	Item	Symbol	Vaiue	Unit
Cooling capacity (sensible)	$P_{rated,c}$	3.8	kW	Total electric power input	P_{elec}	0.050	kW
Cooling capacity (latent)	$P_{rated,c}$	1.2	kW	Sound power level (per speed setting,if applicable)	L_{WA}	60.0	dB
Heating capacity	$P_{rated,h}$	5.4	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDE60VG

Item	Symbol	Vaiue	Unit	Item	Symbol	Vaiue	Unit
Cooling capacity (sensible)	$P_{rated,c}$	5.0	kW	Total electric power input	P_{elec}	0.080	kW
Cooling capacity (latent)	$P_{rated,c}$	0.6	kW	Sound power level (per speed setting,if applicable)	L_{WA}	60.0	dB
Heating capacity	$P_{rated,h}$	6.7	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDE71VG

Item	Symbol	Vaiue	Unit	Item	Symbol	Vaiue	Unit
Cooling capacity (sensible)	$P_{rated,c}$	5.6	kW	Total electric power input	P_{elec}	0.080	kW
Cooling capacity (latent)	$P_{rated,c}$	1.5	kW	Sound power level (per speed setting,if applicable)	L_{WA}	60.0	dB
Heating capacity	$P_{rated,h}$	8.0	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDE100VG

Item	Symbol	Vaiue	Unit	Item	Symbol	Vaiue	Unit
Cooling capacity (sensible)	$P_{rated,c}$	8.4	kW	Total electric power input	P_{elec}	0.130	kW
Cooling capacity (latent)	$P_{rated,c}$	1.6	kW	Sound power level (per speed setting,if applicable)	L_{WA}	64.0	dB
Heating capacity	$P_{rated,h}$	11.2	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDE125VG

Item	Symbol	Vaiue	Unit	Item	Symbol	Vaiue	Unit
Cooling capacity (sensible)	$P_{rated,c}$	9.3	kW	Total electric power input	P_{elec}	0.130	kW
Cooling capacity (latent)	$P_{rated,c}$	3.2	kW	Sound power level (per speed setting,if applicable)	L_{WA}	64.0	dB
Heating capacity	$P_{rated,h}$	14.0	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDE140VG

Item	Symbol	Vaiue	Unit	Item	Symbol	Vaiue	Unit
Cooling capacity (sensible)	$P_{rated,c}$	10.2	kW	Total electric power input	P_{elec}	0.140	kW
Cooling capacity (latent)	$P_{rated,c}$	3.8	kW	Sound power level (per speed setting,if applicable)	L_{WA}	65.0	dB
Heating capacity	$P_{rated,h}$	16.0	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

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(4) Duct connected-High static pressure type (FDU)
Model FDU100VNAVF2

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDU100VF2**
Outdoor unit model name	**FDC100VNA**

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.5**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.0**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.54**	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.83**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.5**	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW
Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃
Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW
Degradation coefficient			
cooling	Cdc	**0.25**	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**65**	W
crankcase heater mode	Pck	**8**	W
Capacity control(indicate one of three options)			
fixed		**No**	
staged		**No**	
variable		**Yes**	

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.11**	A++
heating / Average	SCOP/A	**4.19**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.52**	-
Tj=30℃	EERd	**4.83**	-
Tj=25℃	EERd	**7.73**	-
Tj=20℃	EERd	**11.60**	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.21**	-
Tj=2℃	COPd	**3.91**	-
Tj=7℃	COPd	**5.42**	-
Tj=12℃	COPd	**6.23**	-
Tj=bivalent temperature	COPd	**2.40**	-
Tj=operating limit	COPd	**2.70**	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-
Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃
Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-
Degradation coefficient			
heating	Cdh	**0.25**	-
Annual electricity consumption			
cooling	Qce	**573**	kWh/a
heating / Average	Qhe	**2843**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a
Other items			
Sound power level(indoor)	Lwa	**65**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**2160**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PJG000Z160⚠

Model FDU100VSAVF2

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDU100VF2**
Outdoor unit model name	**FDC100VSA**

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.5**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.0**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.54**	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.83**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.5**	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW
Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃
Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW
Degradation coefficient			
cooling	Cdc	**0.25**	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**65**	W
crankcase heater mode	Pck	**8**	W
Capacity control(indicate one of three options)			
fixed		**No**	
staged		**No**	
variable		**Yes**	

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.11**	A++
heating / Average	SCOP/A	**4.19**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.52**	-
Tj=30℃	EERd	**4.83**	-
Tj=25℃	EERd	**7.73**	-
Tj=20℃	EERd	**11.60**	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.21**	-
Tj=2℃	COPd	**3.91**	-
Tj=7℃	COPd	**5.42**	-
Tj=12℃	COPd	**6.23**	-
Tj=bivalent temperature	COPd	**2.40**	-
Tj=operating limit	COPd	**2.70**	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-
Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃
Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-
Degradation coefficient			
heating	Cdh	**0.25**	-
Annual electricity consumption			
cooling	Qce	**573**	kWh/a
heating / Average	Qhe	**2843**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a
Other items			
Sound power level(indoor)	Lwa	**65**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**2160**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PJG000Z160

Model FDU125VNAVF

Model(s) : FDC125VNA / FDU125VF							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**207.3**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**287.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**409.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**650.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**865.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.010**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.075**	kW	Standby mode	P_{SB}	**0.010**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z160 ⚠

Information to identify the model(s) to which the information relates :	FDC125VNA / FDU125VF
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW
Seasonal space heating energy efficiency ηs,h		**162.1**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**8.7**	kW
T_j=+2℃	Pdh	**5.3**	kW
T_j=+7℃	Pdh	**3.4**	kW
T_j=+12℃	Pdh	**2.9**	kW
T_{biv}=bivalent temperature	Pdh	**9.8**	kW
T_{OL}=operation limit	Pdh	**7.8**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**311.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**391.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**530.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**600.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**260.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**231.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.010**	kW
Thermostat-off mode	P_{TO}	**0.090**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.010**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**71.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water flow-rate, outdoor side heat exchanger		**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z160 ⚠

Model FDU125VSAVF

Model(s) : FDC125VSA / FDU125VF							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**207.3**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**287.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**409.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**650.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**865.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.010**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.075**	kW	Standby mode	P_{SB}	**0.010**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z160 ⚠

Information to identify the model(s) to which the information relates :	FDC125VSA / FDU125VF
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW
Seasonal space heating energy efficiency ηs,h		**162.1**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**8.7**	kW
T_j=+2℃	Pdh	**5.3**	kW
T_j=+7℃	Pdh	**3.4**	kW
T_j=+12℃	Pdh	**2.9**	kW
T_{biv}=bivalent temperature	Pdh	**9.8**	kW
T_{OL}=operation limit	Pdh	**7.8**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**311.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**391.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**530.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**600.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**260.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**231.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.010**	kW
Thermostat-off mode	P_{TO}	**0.090**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.010**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**71.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water flow-rate, outdoor side heat exchanger		**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z160 ⚠

Model FDU140VNAVF

Model(s) : FDC140VNA / FDU140VF							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**200.0**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**276.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**383.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**588.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**970.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.090**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	-	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z160 ⚠

Information to identify the model(s) to which the information relates :	FDC140VNA / FDU140VF
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**157.4**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**7.9**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**300.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**380.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**518.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**567.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**256.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**229.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.100**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured	**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger	**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z160 ⚠

Model FDU140VSAVF

Model(s) : FDC140VSA / FDU140VF							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**200.0**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**276.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**383.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**588.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**970.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.090**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z160 ⚠

Information to identify the model(s) to which the information relates :	FDC140VSA / FDU140VF
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**157.4**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**7.9**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**300.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**380.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**518.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**567.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**256.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**229.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.100**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured	**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water flow-rate, outdoor side heat exchanger	**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z160 ⚠

Models FDU100VF2, 125VF, 140VF

Model(s) : FDU100VF2							
Item	**Symbol**	**Vaiue**	**Unit**	**Item**	**Symbol**	**Vaiue**	**Unit**
Cooling capacity (sensible)	$P_{rated,c}$	7.7	kW	Total electric power input	P_{elec}	0.350	kW
Cooling capacity (latent)	$P_{rated,c}$	2.3	kW	Sound power level (per speed setting,if applicable)	L_{WA}	65.0	dB
Heating capacity	$P_{rated,h}$	11.2	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDU125VF							
Item	**Symbol**	**Vaiue**	**Unit**	**Item**	**Symbol**	**Vaiue**	**Unit**
Cooling capacity (sensible)	$P_{rated,c}$	10.5	kW	Total electric power input	P_{elec}	0.400	kW
Cooling capacity (latent)	$P_{rated,c}$	2.0	kW	Sound power level (per speed setting,if applicable)	L_{WA}	67.0	dB
Heating capacity	$P_{rated,h}$	14.0	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDU140VF							
Item	**Symbol**	**Vaiue**	**Unit**	**Item**	**Symbol**	**Vaiue**	**Unit**
Cooling capacity (sensible)	$P_{rated,c}$	11.2	kW	Total electric power input	P_{elec}	0.550	kW
Cooling capacity (latent)	$P_{rated,c}$	2.8	kW	Sound power level (per speed setting,if applicable)	L_{WA}	70.0	dB
Heating capacity	$P_{rated,h}$	16.0	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

PJG000Z160 ⚠

(5) Duct connected-Low / Middle static pressure type (FDUM)
Model FDUM100VNAVF2

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDUM100VF2**
Outdoor unit model name	**FDC100VNA**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.11**	A++
heating / Average	SCOP/A	**4.19**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.5**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW

Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.0**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.54**	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.52**	-
Tj=30℃	EERd	**4.83**	-
Tj=25℃	EERd	**7.73**	-
Tj=20℃	EERd	**11.60**	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.83**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.5**	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.21**	-
Tj=2℃	COPd	**3.91**	-
Tj=7℃	COPd	**5.42**	-
Tj=12℃	COPd	**6.23**	-
Tj=bivalent temperature	COPd	**2.40**	-
Tj=operating limit	COPd	**2.70**	-

Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW

Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-

Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW

Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-

Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃

Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃

Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW

Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-

Degradation coefficient			
cooling	Cdc	**0.25**	-

Degradation coefficient			
heating	Cdh	**0.25**	-

Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**65**	W
crankcase heater mode	Pck	**8**	W

Annual electricity consumption			
cooling	Qce	**573**	kWh/a
heating / Average	Qhe	**2843**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a

Capacity control(indicate one of three options)	
fixed	**No**
staged	**No**
variable	**Yes**

Other items			
Sound power level(indoor)	Lwa	**65**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**2160**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative.
	Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PJG000Z159⚠

Model FDUM100VSAVF2

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDUM100VF2**
Outdoor unit model name	**FDC100VSA**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.11**	A++
heating / Average	SCOP/A	**4.19**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.50**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW

Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.00**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.54**	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.52**	-
Tj=30℃	EERd	**4.83**	-
Tj=25℃	EERd	**7.73**	-
Tj=20℃	EERd	**11.60**	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.83**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.50**	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.21**	-
Tj=2℃	COPd	**3.91**	-
Tj=7℃	COPd	**5.42**	-
Tj=12℃	COPd	**6.23**	-
Tj=bivalent temperature	COPd	**2.40**	-
Tj=operating limit	COPd	**2.70**	-

Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW

Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-

Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW

Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-

Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃

Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃

Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW

Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-

Degradation coefficient			
cooling	Cdc	**0.25**	-

Degradation coefficient			
heating	Cdh	**0.25**	-

Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**65**	W
crankcase heater mode	Pck	**8**	W

Annual electricity consumption			
cooling	Qce	**573**	kWh/a
heating / Average	Qhe	**2843**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a

Capacity control(indicate one of three options)	
fixed	**No**
staged	**No**
variable	**Yes**

Other items			
Sound power level(indoor)	Lwa	**65**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**2160**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative.
	Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PJG000Z159

Model FDUM100VNAPVF

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDUM50VF (x2 units)**
Outdoor unit model name	**FDC100VNA**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.5**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.0**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.30**	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.70**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.5**	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW
Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃
Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW
Degradation coefficient			
cooling	Cdc	**0.25**	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**45**	W
crankcase heater mode	Pck	**8**	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**5.50**	A
heating / Average	SCOP/A	**3.94**	A
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.08**	-
Tj=30℃	EERd	**4.24**	-
Tj=25℃	EERd	**6.60**	-
Tj=20℃	EERd	**11.05**	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**2.93**	-
Tj=2℃	COPd	**3.74**	-
Tj=7℃	COPd	**4.93**	-
Tj=12℃	COPd	**6.18**	-
Tj=bivalent temperature	COPd	**2.23**	-
Tj=operating limit	COPd	**2.47**	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-
Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃
Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-
Degradation coefficient			
heating	Cdh	**0.25**	-
Annual electricity consumption			
cooling	Qce	**637**	kWh/a
heating / Average	Qhe	**3022**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a

Capacity control(indicate one of three options)	
fixed	**No**
staged	**No**
variable	**Yes**

Other items			
Sound power level(indoor)	Lwa	**60**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**780**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PJG000Z159

Model FDUM100VSAPVF

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDUM50VF (x2 units)**
Outdoor unit model name	**FDC100VSA**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.50**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.00**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.30**	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.70**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.50**	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW
Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃
Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW
Degradation coefficient			
cooling	Cdc	**0.25**	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**45**	W
crankcase heater mode	Pck	**8**	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**5.50**	A
heating / Average	SCOP/A	**3.94**	A
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.08**	-
Tj=30℃	EERd	**4.24**	-
Tj=25℃	EERd	**6.60**	-
Tj=20℃	EERd	**11.05**	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**2.93**	-
Tj=2℃	COPd	**3.74**	-
Tj=7℃	COPd	**4.93**	-
Tj=12℃	COPd	**6.18**	-
Tj=bivalent temperature	COPd	**2.23**	-
Tj=operating limit	COPd	**2.47**	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-
Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃
Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-
Degradation coefficient			
heating	Cdh	**0.25**	-
Annual electricity consumption			
cooling	Qce	**637**	kWh/a
heating / Average	Qhe	**3022**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a

Capacity control(indicate one of three options)	
fixed	**No**
staged	**No**
variable	**Yes**

Other items			
Sound power level(indoor)	Lwa	**60**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**780**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PJG000Z159 ⚠

Model FDUM125VNAVF

Model(s) : FDC125VNA / FDUM125VF							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**207.3**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**287.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**409.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**650.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**865.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.010**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.075**	kW	Standby mode	P_{SB}	**0.010**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z159

Information to identify the model(s) to which the information relates :	FDC125VNA / FDUM125VF
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW
Seasonal space heating energy efficiency ηs,h		**162.1**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

	Symbol	Value	Unit
T_j=-7℃	Pdh	**8.7**	kW
T_j=+2℃	Pdh	**5.3**	kW
T_j=+7℃	Pdh	**3.4**	kW
T_j=+12℃	Pdh	**2.9**	kW
T_{biv}=bivalent temperature	Pdh	**9.8**	kW
T_{OL}=operation limit	Pdh	**7.8**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

		Value	Unit
T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**311.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**391.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**530.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**600.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**260.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**231.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

	Symbol	Value	Unit
Off mode	P_{OFF}	**0.010**	kW
Thermostat-off mode	P_{TO}	**0.090**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

		Value	Unit
Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.010**	kW

Other items

		Value	Unit
Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**71.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV
For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger		**-**	m3/h
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z159 ⚠

Model FDUM125VSAVF

Model(s) : FDC125VSA / FDUM125VF							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**207.3**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**287.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**409.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**650.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**865.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.010**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.075**	kW	Standby mode	P_{SB}	**0.010**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z159 ⚠

Information to identify the model(s) to which the information relates :	FDC125VSA / FDUM125VF
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**8.7**	kW
T_j=+2℃	Pdh	**5.3**	kW
T_j=+7℃	Pdh	**3.4**	kW
T_j=+12℃	Pdh	**2.9**	kW
T_{biv}=bivalent temperature	Pdh	**9.8**	kW
T_{OL}=operation limit	Pdh	**7.8**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.010**	kW
Thermostat-off mode	P_{TO}	**0.090**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**71.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency ηs,h		**162.1**	%

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**311.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**391.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**530.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**600.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**260.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**231.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.010**	kW

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger		**-**	m3/h

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z159 ⚠

Model FDUM140VNAVF

Model(s) : FDC140VNA / FDUM140VF							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**200.0**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**276.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**383.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**588.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**970.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.090**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z159 A

Information to identify the model(s) to which the information relates :	FDC140VNA / FDUM140VF
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**157.4**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

	Symbol	Value	Unit
T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**7.9**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

		Value	Unit
T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**300.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**380.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**518.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**567.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**256.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**229.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

	Symbol	Value	Unit
Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.100**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

		Value	Unit
Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

		Value	Unit
Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV
For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water flow-rate, outdoor side heat exchanger		**-**	m3/h
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z159 ⚠

Model FDUM140VSAVF

Model(s) : FDC140VSA / FDUM140VF							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**200.0**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**276.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**383.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**588.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**970.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.090**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items				For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Capacity control		**variable**					
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

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Information to identify the model(s) to which the information relates :	FDC140VSA / FDUM140VF
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**157.4**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

	Symbol	Value	Unit
T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**7.9**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

		Value	Unit
T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**300.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**380.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**518.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**567.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**256.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**229.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

	Symbol	Value	Unit
Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.100**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

		Value	Unit
Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

		Value	Unit
Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV
For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water flow-rate, outdoor side heat exchanger		**-**	m3/h
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

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Model FDUM125VNAPVF

Model(s) : FDC125VNA / FDUM60VF (x2 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**248.7**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**286.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**458.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**688.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1400.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items				For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Capacity control		**variable**					
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z159 A

Information to identify the model(s) to which the information relates :	FDC125VNA / FDUM60VF (x2 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW
Seasonal space heating energy efficiency ηs,h		**188.3**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**8.7**	kW
T_j=+2℃	Pdh	**5.3**	kW
T_j=+7℃	Pdh	**3.4**	kW
T_j=+12℃	Pdh	**2.7**	kW
T_{biv}=bivalent temperature	Pdh	**9.8**	kW
T_{OL}=operation limit	Pdh	**7.7**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**333.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**459.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**605.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**771.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**276.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**248.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**71.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured	**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger	**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

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Model FDUM125VSAPVF

Model(s) : FDC125VSA / FDUM60VF (x2 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**248.7**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**286.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**458.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**688.0**	%
Tj=+20℃	Pdc	**3.5**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1400.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

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Information to identify the model(s) to which the information relates :	FDC125VSA / FDUM60VF (x2 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW
Seasonal space heating energy efficiency ηs,h		**188.3**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

	Symbol	Value	Unit
T_j=-7℃	Pdh	**8.7**	kW
T_j=+2℃	Pdh	**5.3**	kW
T_j=+7℃	Pdh	**3.4**	kW
T_j=+12℃	Pdh	**2.7**	kW
T_{biv}=bivalent temperature	Pdh	**9.8**	kW
T_{OL}=operation limit	Pdh	**7.7**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

		Value	Unit
T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**333.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**459.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**605.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**771.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**276.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**248.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

	Symbol	Value	Unit
Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

		Value	Unit
Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

		Value	Unit
Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**71.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

	Value	Unit
For air-to-air heat pumps: air flow-rate,outdoor measured	**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger	**-**	m3/h

	Value	Unit
GWP of the refrigerant	**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

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Model FDUM140VNAPVF1

Model(s) : FDC140VNA / FDUM71VF1 (x2 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**288.0**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**286.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**504.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**740.0**	%
Tj=+20℃	Pdc	**3.6**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**2400.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z159

Information to identify the model(s) to which the information relates :	FDC140VNA / FDUM71VF1 (x2 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**208.8**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

	Symbol	Value	Unit
T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**8.3**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

		Value	Unit
T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**329.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**507.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**702.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**1037.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**265.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**246.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

	Symbol	Value	Unit
Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

		Value	Unit
Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

		Value	Unit
Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

	Value	Unit
For air-to-air heat pumps: air flow-rate,outdoor measured	**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water flow-rate, outdoor side heat exchanger	**-**	m3/h

	Value	Unit
GWP of the refrigerant	**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z159 ⚠

Model FDUM140VSAPVF1

Model(s) : FDC140VSA / FDUM71VF1 (x2 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**288.0**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**286.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**504.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**740.0**	%
Tj=+20℃	Pdc	**3.6**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**2400.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

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Information to identify the model(s) to which the information relates :				FDC140VSA / FDUM71VF1 (x2 units)			
Outdoor side heat exchanger of heat pump :				air			
Indoor side heat exchanger of heat pump :				air			
Indication if the heater is equipped with a supplementary heater :				No			
if applicable :				electric motor			
Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW	Seasonal space heating energy efficiency ηs,h		**208.8**	%
Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj				Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
T_j=-7℃	Pdh	**9.3**	kW	T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**329.0**	%
T_j=+2℃	Pdh	**5.7**	kW	T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**507.0**	%
T_j=+7℃	Pdh	**3.7**	kW	T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**702.0**	%
T_j=+12℃	Pdh	**2.8**	kW	T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**1037.0**	%
T_{biv}=bivalent temperature	Pdh	**10.5**	kW	T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**265.0**	%
T_{OL}=operation limit	Pdh	**8.3**	kW	T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**246.0**	%
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW	For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
Bivalent temperature	T_{biv}	**-10.0**	℃	For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-				
Power consumpiton in modes other than 'active mode'				Supplementary heater back-up heating capacity	elbu	**-**	kW
Off mode	P_{OFF}	**0.008**	kW	Type of energy input Standby mode	P_{SB}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW				
Crankcase heater mode	P_{CK}	**0.008**	kW				
Other items							
Capacity control		**variable**		For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
Sound power level, outdoor measured	L_{WA}	**73.0**	dB	For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger		**-**	m3/h
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z159 ⚠

Model FDUM140VNATVF

Model(s) : FDC140VNA / FDUM50VF (x3 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**288.0**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**286.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**504.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**740.0**	%
Tj=+20℃	Pdc	**3.6**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**2400.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z159 A

Information to identify the model(s) to which the information relates :	FDC140VNA / FDUM50VF (x3 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**208.8**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**8.3**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**329.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**507.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**702.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**1037.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**265.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**246.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger		**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z159 ⚠

Model FDUM140VSATVF

Model(s) : FDC140VSA / FDUM50VF (x3 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**288.0**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**286.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**504.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**740.0**	%
Tj=+20℃	Pdc	**3.6**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**2400.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z159 A

Information to identify the model(s) to which the information relates :	FDC140VSA / FDUM50VF (x3 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**208.8**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**8.3**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**329.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**507.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**702.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**1037.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**265.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**246.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger		**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PJG000Z159 ⚠

Models FDUM50VF, 60VF, 71VF1, 100VF2, 125VF, 140VF

Model(s) : FDUM50VF

Item	Symbol	Vaiue	Unit	Item	Symbol	Vaiue	Unit
Cooling capacity (sensible)	$P_{rated,c}$	3.7	kW	Total electric power input	P_{elec}	0.100	kW
Cooling capacity (latent)	$P_{rated,c}$	1.3	kW	Sound power level (per speed setting,if applicable)	L_{WA}	60.0	dB
Heating capacity	$P_{rated,h}$	5.4	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDUM60VF

Item	Symbol	Vaiue	Unit	Item	Symbol	Vaiue	Unit
Cooling capacity (sensible)	$P_{rated,c}$	3.9	kW	Total electric power input	P_{elec}	0.160	kW
Cooling capacity (latent)	$P_{rated,c}$	1.7	kW	Sound power level (per speed setting,if applicable)	L_{WA}	60.0	dB
Heating capacity	$P_{rated,h}$	6.7	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDUM71VF1

Item	Symbol	Vaiue	Unit	Item	Symbol	Vaiue	Unit
Cooling capacity (sensible)	$P_{rated,c}$	5.8	kW	Total electric power input	P_{elec}	0.200	kW
Cooling capacity (latent)	$P_{rated,c}$	1.3	kW	Sound power level (per speed setting,if applicable)	L_{WA}	65.0	dB
Heating capacity	$P_{rated,h}$	8.0	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDUM100VF2

Item	Symbol	Vaiue	Unit	Item	Symbol	Vaiue	Unit
Cooling capacity (sensible)	$P_{rated,c}$	7.7	kW	Total electric power input	P_{elec}	0.290	kW
Cooling capacity (latent)	$P_{rated,c}$	2.3	kW	Sound power level (per speed setting,if applicable)	L_{WA}	65.0	dB
Heating capacity	$P_{rated,h}$	11.2	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDUM125VF

Item	Symbol	Vaiue	Unit	Item	Symbol	Vaiue	Unit
Cooling capacity (sensible)	$P_{rated,c}$	10.5	kW	Total electric power input	P_{elec}	0.330	kW
Cooling capacity (latent)	$P_{rated,c}$	2.0	kW	Sound power level (per speed setting,if applicable)	L_{WA}	67.0	dB
Heating capacity	$P_{rated,h}$	14.0	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDUM140VF

Item	Symbol	Vaiue	Unit	Item	Symbol	Vaiue	Unit
Cooling capacity (sensible)	$P_{rated,c}$	11.2	kW	Total electric power input	P_{elec}	0.450	kW
Cooling capacity (latent)	$P_{rated,c}$	2.8	kW	Sound power level (per speed setting,if applicable)	L_{WA}	70.0	dB
Heating capacity	$P_{rated,h}$	16.0	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

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(6) Floor standing type (FDF)
Model FDF100VNAVD2

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDF100VD2**
Outdoor unit model name	**FDC100VNA**

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.50**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.00**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.41**	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.86**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.50**	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW
Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃
Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW
Degradation coefficient			
cooling	Cdc	**0.25**	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**80**	W
crankcase heater mode	Pck	**8**	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**5.70**	A+
heating / Average	SCOP/A	**4.00**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.21**	-
Tj=30℃	EERd	**4.40**	-
Tj=25℃	EERd	**7.70**	-
Tj=20℃	EERd	**9.90**	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.11**	-
Tj=2℃	COPd	**3.76**	-
Tj=7℃	COPd	**5.06**	-
Tj=12℃	COPd	**5.96**	-
Tj=bivalent temperature	COPd	**2.30**	-
Tj=operating limit	COPd	**2.57**	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-
Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃
Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-
Degradation coefficient			
heating	Cdh	**0.25**	-
Annual electricity consumption			
cooling	Qce	**614**	kWh/a
heating / Average	Qhe	**2978**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a

Capacity control(indicate one of three options)	
fixed	**No**
staged	**No**
variable	**Yes**

Other items			
Sound power level(indoor)	Lwa	**65**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**1740**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PGA000Z812 ⚠

Model FDF100VSAVD2

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDF100VD2**
Outdoor unit model name	**FDC100VSA**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.50**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.00**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.41**	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.86**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.50**	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW
Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃
Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW
Degradation coefficient			
cooling	Cdc	**0.25**	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**80**	W
crankcase heater mode	Pck	**8**	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**5.70**	A+
heating / Average	SCOP/A	**4.00**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.21**	-
Tj=30℃	EERd	**4.40**	-
Tj=25℃	EERd	**7.70**	-
Tj=20℃	EERd	**9.90**	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.11**	-
Tj=2℃	COPd	**3.76**	-
Tj=7℃	COPd	**5.06**	-
Tj=12℃	COPd	**5.96**	-
Tj=bivalent temperature	COPd	**2.30**	-
Tj=operating limit	COPd	**2.57**	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-
Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃
Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-
Degradation coefficient			
heating	Cdh	**0.25**	-
Annual electricity consumption			
cooling	Qce	**614**	kWh/a
heating / Average	Qhe	**2978**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a

Capacity control(indicate one of three options)	
fixed	**No**
staged	**No**
variable	**Yes**

Other items			
Sound power level(indoor)	Lwa	**65**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**1740**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative. Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PGA000Z812 ⚠

Model FDF125VNAVD

Model(s) : FDC125VNA / FDF125VD							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**211**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**269.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**410.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**670.0**	%
Tj=+20℃	Pdc	**3.4**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**920.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.010**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.070**	kW	Standby mode	P_{SB}	**0.010**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PGA000Z812 ⚠

Information to identify the model(s) to which the information relates :	FDC125VNA / FDF125VD
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable :	electric motor

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**8.7**	kW
T_j=+2℃	Pdh	**5.3**	kW
T_j=+7℃	Pdh	**3.4**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**9.8**	kW
T_{OL}=operation limit	Pdh	**7.8**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.010**	kW
Thermostat-off mode	P_{TO}	**0.085**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**71.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency ηs,h		**155**	%

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**295.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**377.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**505.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**578.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**243.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**223.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.010**	kW

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger		**-**	m3/h

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PGA000Z812 ⚠

Model FDF125VSAVD

Model(s) : FDC125VSA / FDF125VD							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**211**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**269.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**410.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**670.0**	%
Tj=+20℃	Pdc	**3.4**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**920.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.010**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.070**	kW	Standby mode	P_{SB}	**0.010**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PGA000Z812 ⚠

Information to identify the model(s) to which the information relates :	FDC125VSA / FDF125VD
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW
Seasonal space heating energy efficiency ηs,h		**155**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**8.7**	kW
T_j=+2℃	Pdh	**5.3**	kW
T_j=+7℃	Pdh	**3.4**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**9.8**	kW
T_{OL}=operation limit	Pdh	**7.8**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**295.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**377.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**505.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**578.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**243.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**223.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.010**	kW
Thermostat-off mode	P_{TO}	**0.085**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.010**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**71.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured	**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger	**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PGA000Z812 ⚠

Model FDF140VNAVD

Model(s) : FDC140VNA / FDF140VD							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.0**	kW	Seasonal space cooling energy efficiency ηs,c		**200.8**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.0**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**259.0**	%
Tj=+30℃	Pdc	**9.6**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**372.0**	%
Tj=+25℃	Pdc	**6.2**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**625.0**	%
Tj=+20℃	Pdc	**3.4**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**945.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.077**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PGA000Z812 ⚠

Information to identify the model(s) to which the information relates :	FDC140VNA / FDF140VD
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**163.6**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.9**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**7.9**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**292.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**412.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**512.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**618.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**240.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**220.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.085**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger		**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PGA000Z812 ⚠

Model FDF140VSAVD

Model(s) : FDC140VSA / FDF140VD							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**198.1**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**251.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**368.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**608.0**	%
Tj=+20℃	Pdc	**3.4**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**945.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.077**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PGA000Z812 ⚠

Information to identify the model(s) to which the information relates :	FDC140VSA / FDF140VD
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**163.6**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.9**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**7.9**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**292.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**412.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**512.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**618.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**240.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**220.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.085**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger		**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PGA000Z812 ⚠

Model FDF140VNAPVD1

Model(s) : FDC140VNA / FDF71VD1 (x2 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**271.6**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**269.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**470.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**724.0**	%
Tj=+20℃	Pdc	**3.6**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**2118.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PGA000Z812 ⚠

Information to identify the model(s) to which the information relates :	FDC140VNA / FDF71VD1 (x2 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**196.4**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**8.1**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**311.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**473.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**676.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**948.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**252.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**235.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger		**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PGA000Z812 △

Model FDF140VSAPVD1

Model(s) : FDC140VSA / FDF71VD1 (x2 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**271.6**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**269.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**470.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**724.0**	%
Tj=+20℃	Pdc	**3.6**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**2118.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PGA000Z812 ⚠

Information to identify the model(s) to which the information relates :	FDC140VSA / FDF71VD1 (x2 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**196.4**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**8.1**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**311.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**473.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**676.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**948.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**252.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**235.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water flow-rate, outdoor side heat exchanger		**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PGA000Z812 A

Models FDF71VD1, 100VD2, 125VD, 140VD

Model(s) : FDF71VD1							
Item	**Symbol**	**Vaiue**	**Unit**	**Item**	**Symbol**	**Vaiue**	**Unit**
Cooling capacity (sensible)	$P_{rated,c}$	5.1	kW	Total electric power input	P_{elec}	0.050	kW
Cooling capacity (latent)	$P_{rated,c}$	2.0	kW	Sound power level (per speed setting,if applicable)	L_{WA}	61.0	dB
Heating capacity	$P_{rated,h}$	8.0	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDF100VD2							
Item	**Symbol**	**Vaiue**	**Unit**	**Item**	**Symbol**	**Vaiue**	**Unit**
Cooling capacity (sensible)	$P_{rated,c}$	8.0	kW	Total electric power input	P_{elec}	0.200	kW
Cooling capacity (latent)	$P_{rated,c}$	2.0	kW	Sound power level (per speed setting,if applicable)	L_{WA}	65.0	dB
Heating capacity	$P_{rated,h}$	11.2	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDF125VD							
Item	**Symbol**	**Vaiue**	**Unit**	**Item**	**Symbol**	**Vaiue**	**Unit**
Cooling capacity (sensible)	$P_{rated,c}$	9.0	kW	Total electric power input	P_{elec}	0.200	kW
Cooling capacity (latent)	$P_{rated,c}$	3.5	kW	Sound power level (per speed setting,if applicable)	L_{WA}	73.0	dB
Heating capacity	$P_{rated,h}$	14.0	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : FDF140VD							
Item	**Symbol**	**Vaiue**	**Unit**	**Item**	**Symbol**	**Vaiue**	**Unit**
Cooling capacity (sensible)	$P_{rated,c}$	9.6	kW	Total electric power input	P_{elec}	0.200	kW
Cooling capacity (latent)	$P_{rated,c}$	4.4	kW	Sound power level (per speed setting,if applicable)	L_{WA}	73.0	dB
Heating capacity	$P_{rated,h}$	16.0	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

(7) Wall mounted type (SRK)
Model SRK100VNAZR

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**SRK100ZR-S**
Outdoor unit model name	**FDC100VNA**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.5**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.0**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.48**	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.78**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.5**	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW
Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃
Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW
Degradation coefficient			
cooling	Cdc	**0.25**	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**30**	W
crankcase heater mode	Pck	**8**	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.26**	A++
heating / Average	SCOP/A	**4.33**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.13**	-
Tj=30℃	EERd	**4.98**	-
Tj=25℃	EERd	**7.80**	-
Tj=20℃	EERd	**12.40**	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.22**	-
Tj=2℃	COPd	**4.04**	-
Tj=7℃	COPd	**5.58**	-
Tj=12℃	COPd	**6.85**	-
Tj=bivalent temperature	COPd	**2.42**	-
Tj=operating limit	COPd	**2.78**	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-
Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃
Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-
Degradation coefficient			
heating	Cdh	**0.25**	-
Annual electricity consumption			
cooling	Qce	**560**	kWh/a
heating / Average	Qhe	**2750**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a

Capacity control(indicate one of three options)	
fixed	**No**
staged	**No**
variable	**Yes**

Other items			
Sound power level(indoor)	Lwa	**63**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**1470**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative.
	Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PCA001Z717⚠

Model SRK100VSAZR

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**SRK100ZR-S**
Outdoor unit model name	**FDC100VSA**

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.5**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.0**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.48**	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.78**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.5**	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW
Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃
Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW
Degradation coefficient			
cooling	Cdc	**0.25**	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**30**	W
crankcase heater mode	Pck	**8**	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.26**	A++
heating / Average	SCOP/A	**4.33**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.13**	-
Tj=30℃	EERd	**4.98**	-
Tj=25℃	EERd	**7.80**	-
Tj=20℃	EERd	**12.40**	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.22**	-
Tj=2℃	COPd	**4.04**	-
Tj=7℃	COPd	**5.58**	-
Tj=12℃	COPd	**6.85**	-
Tj=bivalent temperature	COPd	**2.42**	-
Tj=operating limit	COPd	**2.78**	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-
Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃
Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-
Degradation coefficient			
heating	Cdh	**0.25**	-
Annual electricity consumption			
cooling	Qce	**560**	kWh/a
heating / Average	Qhe	**2750**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a

Capacity control(indicate one of three options)	
fixed	**No**
staged	**No**
variable	**Yes**

Other items			
Sound power level(indoor)	Lwa	**63**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**1470**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative.
	Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PCA001Z717⚠

Model SRK100VNAPZSX

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**SRK50ZSX-S (x2 units)**
Outdoor unit model name	**FDC100VNA**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.5**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.0**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.70**	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.75**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.5**	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW
Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃
Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW
Degradation coefficient			
cooling	Cdc	**0.25**	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**25**	W
crankcase heater mode	Pck	**8**	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.55**	A++
heating / Average	SCOP/A	**4.47**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.46**	-
Tj=30℃	EERd	**4.79**	-
Tj=25℃	EERd	**8.42**	-
Tj=20℃	EERd	**13.67**	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.32**	-
Tj=2℃	COPd	**4.25**	-
Tj=7℃	COPd	**5.54**	-
Tj=12℃	COPd	**7.05**	-
Tj=bivalent temperature	COPd	**2.44**	-
Tj=operating limit	COPd	**2.81**	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-
Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃
Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-
Degradation coefficient			
heating	Cdh	**0.25**	-
Annual electricity consumption			
cooling	Qce	**535**	kWh/a
heating / Average	Qhe	**2665**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a

Capacity control(indicate one of three options)	
fixed	**No**
staged	**No**
variable	**Yes**

Other items			
Sound power level(indoor)	Lwa	**59**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**858**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative.
	Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PCA001Z717⚠

Model SRK100VSAPZSX

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**SRK50ZSX-S (x2 units)**
Outdoor unit model name	**FDC100VSA**

Function(indicate if present)	
cooling	**Yes**
heating	**Yes**

If function includes heating: Indicate the heating season the information relates to. Indicated values should relate to one heating season at a time. Include at least the heating season 'Average'.

Average(mandatory)	**Yes**
Warmer(if designated)	**No**
Colder(if designated)	**No**

Item	symbol	value	unit
Design load			
cooling	Pdesignc	**10.0**	kW
heating / Average	Pdesignh	**8.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW
Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**8.5**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW
Declared capacity for cooling, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	Pdc	**10.0**	kW
Tj=30℃	Pdc	**7.37**	kW
Tj=25℃	Pdc	**4.74**	kW
Tj=20℃	Pdc	**3.70**	kW
Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**7.52**	kW
Tj=2℃	Pdh	**4.58**	kW
Tj=7℃	Pdh	**2.94**	kW
Tj=12℃	Pdh	**2.75**	kW
Tj=bivalent temperature	Pdh	**6.77**	kW
Tj=operating limit	Pdh	**8.5**	kW
Declared capacity for heating / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Declared capacity for heating / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**-**	kW
Tj=2℃	Pdh	**-**	kW
Tj=7℃	Pdh	**-**	kW
Tj=12℃	Pdh	**-**	kW
Tj=bivalent temperature	Pdh	**-**	kW
Tj=operating limit	Pdh	**-**	kW
Tj=-15℃	Pdh	**-**	kW
Bivalent temperature			
heating / Average	Tbiv	**-10**	℃
heating / Warmer	Tbiv	**-**	℃
heating / Colder	Tbiv	**-**	℃
Cycling interval capacity			
for cooling	Pcycc	**-**	kW
for heating	Pcych	**-**	kW
Degradation coefficient			
cooling	Cdc	**0.25**	-
Electric power input in power modes other than 'active mode'			
off mode	Poff	**8**	W
standby mode	Psb	**8**	W
thermostat-off mode	Pto	**25**	W
crankcase heater mode	Pck	**8**	W

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.55**	A++
heating / Average	SCOP/A	**4.47**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-
			unit
Back up heating capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	elbu	**0**	kW
heating / Warmer (2℃)	elbu	**-**	kW
heating / Colder (-22℃)	elbu	**-**	kW
Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.46**	-
Tj=30℃	EERd	**4.79**	-
Tj=25℃	EERd	**8.42**	-
Tj=20℃	EERd	**13.67**	-
Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.32**	-
Tj=2℃	COPd	**4.25**	-
Tj=7℃	COPd	**5.54**	-
Tj=12℃	COPd	**7.05**	-
Tj=bivalent temperature	COPd	**2.44**	-
Tj=operating limit	COPd	**2.81**	-
Declared coefficient of performance / Warmer season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Declared coefficient of performance / Colder season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**-**	-
Tj=2℃	COPd	**-**	-
Tj=7℃	COPd	**-**	-
Tj=12℃	COPd	**-**	-
Tj=bivalent temperature	COPd	**-**	-
Tj=operating limit	COPd	**-**	-
Tj=-15℃	COPd	**-**	-
Operating limit temperature			
heating / Average	Tol	**-20**	℃
heating / Warmer	Tol	**-**	℃
heating / Colder	Tol	**-**	℃
Cycling interval efficiency			
for cooling	EERcyc	**-**	-
for heating	COPcyc	**-**	-
Degradation coefficient			
heating	Cdh	**0.25**	-
Annual electricity consumption			
cooling	Qce	**535**	kWh/a
heating / Average	Qhe	**2665**	kWh/a
heating / Warmer	Qhe	**-**	kWh/a
heating / colder	Qhe	**-**	kWh/a

Capacity control(indicate one of three options)	
fixed	**No**
staged	**No**
variable	**Yes**

Other items			
Sound power level(indoor)	Lwa	**59**	dB(A)
Sound power level(outdoor)	Lwa	**70**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**858**	m3/h
Rated air flow(outdoor)	-	**4500**	m3/h

Contact details for obtaining more information	Name and address of the manufacturer or of its authorised representative.
	Mitsubishi Heavy Industries Air-Conditioning Europe, Ltd. 5 The Square, Stockley Park, Uxbridge, Middlesex, UB11 1ET, United Kingdom

PCA001Z717△

Model SRK125VNAPZSX

Model(s) : FDC125VNA / SRK60ZSX-S (x2 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**257.7**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**273.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**456.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**759.0**	%
Tj=+20℃	Pdc	**3.7**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1480.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PCA001Z717⚠

Information to identify the model(s) to which the information relates :	FDC125VNA / SRK60ZSX-S (x2 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW
Seasonal space heating energy efficiency ηs,h		**192.5**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**8.7**	kW
T_j=+2℃	Pdh	**5.3**	kW
T_j=+7℃	Pdh	**3.4**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**9.8**	kW
T_{OL}=operation limit	Pdh	**7.9**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**337.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**459.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**652.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**800.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**278.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**246.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**71.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger		**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PCA001Z717⚠

Model SRK125VSAPZSX

Model(s) : FDC125VSA / SRK60ZSX-S (x2 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**12.5**	kW	Seasonal space cooling energy efficiency ηs,c		**257.7**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**12.5**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**273.0**	%
Tj=+30℃	Pdc	**9.2**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**456.0**	%
Tj=+25℃	Pdc	**5.9**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**759.0**	%
Tj=+20℃	Pdc	**3.7**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**1480.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**71.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PCA001Z717⚠

Information to identify the model(s) to which the information relates :	FDC125VSA / SRK60ZSX-S (x2 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**14.0**	kW
Seasonal space heating energy efficiency ηs,h		**192.5**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**8.7**	kW
T_j=+2℃	Pdh	**5.3**	kW
T_j=+7℃	Pdh	**3.4**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**9.8**	kW
T_{OL}=operation limit	Pdh	**7.9**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**337.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**459.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**652.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**800.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**278.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**246.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**71.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured	**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger	**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PCA001Z717⚠

Model SRK140VNATZSX

Model(s) : FDC140VNA / SRK50ZSX-S (x3 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**311.5**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**300.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**533.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**859.0**	%
Tj=+20℃	Pdc	**3.9**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**2438.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PCA001Z717⚠

Information to identify the model(s) to which the information relates :	FDC140VNA / SRK50ZSX-S (x3 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**219.6**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**8.0**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**336.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**531.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**760.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**1100.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**274.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**252.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger		**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PCA001Z717 ⚠

Model SRK140VSATZSX

Model(s) : FDC140VSA / SRK50ZSX-S (x3 units)							
Outdoor side heat exchanger of air conditioner : air							
Indoor side heat exchanger of air conditioner : air							
Type : vapour compression							
if applicable : electric motor							
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated cooling capacity	Prated,c	**13.6**	kW	Seasonal space cooling energy efficiency ηs,c		**311.5**	%
Declared cooling capacity for part load at given outdoor temperatures Tj and indoor 27℃/19℃(dry/wet bulb)				Declared energy efficiency ratio or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj			
Tj=+35℃	Pdc	**13.6**	kW	Tj=+35℃	EERd or GUEc,bin / AEFc,bin	**300.0**	%
Tj=+30℃	Pdc	**10.0**	kW	Tj=+30℃	EERd or GUEc,bin / AEFc,bin	**533.0**	%
Tj=+25℃	Pdc	**6.4**	kW	Tj=+25℃	EERd or GUEc,bin / AEFc,bin	**859.0**	%
Tj=+20℃	Pdc	**3.9**	kW	Tj=+20℃	EERd or GUEc,bin / AEFc,bin	**2438.0**	%
Degradation coefficient for air conditioners**	Cdc	**0.25**	-				
Power consumpiton in other than 'active mode'							
Off mode	P_{OFF}	**0.008**	kW	Crankcase heater mode	P_{CK}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.000**	kW	Standby mode	P_{SB}	**0.008**	kW
Other items							
Capacity control		**variable**		For air-to-air air conditioner: air flow-rate,outdoor measured		**4500**	m3/h
Sound power level, outdoor	L_{WA}	**73.0**	dB				
If engine driven: Emissions of nitrogen oxides	NOx ***	**-**	mg/kWh fuel input GCV				
GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

** If Cdc is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

PCA001Z717⚠

Information to identify the model(s) to which the information relates :	FDC140VSA / SRK50ZSX-S (x3 units)
Outdoor side heat exchanger of heat pump :	air
Indoor side heat exchanger of heat pump :	air
Indication if the heater is equipped with a supplementary heater :	No
if applicable : electric motor	

Parameters shall be declared for the average heating season , parameters for the warmer and colder heating seasons are optional.

Item	Symbol	Value	Unit
Rated heating capacity	Prated,h	**15.5**	kW
Seasonal space heating energy efficiency ηs,h		**219.6**	%

Declared heating capacity for part load at indoor temperature 20℃ and outdoor temperature Tj

T_j=-7℃	Pdh	**9.3**	kW
T_j=+2℃	Pdh	**5.7**	kW
T_j=+7℃	Pdh	**3.7**	kW
T_j=+12℃	Pdh	**2.8**	kW
T_{biv}=bivalent temperature	Pdh	**10.5**	kW
T_{OL}=operation limit	Pdh	**8.0**	kW
For air-to-water heat pumps : T_j=-15℃ (if T_{OL}＜-20℃)	Pdh	**-**	kW
Bivalent temperature	T_{biv}	**-10.0**	℃
Degradation coefficient heat pumps**	C_{dh}	**0.25**	-

Declared coefficient of performance or gas utilization efficiency / auxiliary energy factor for part load at given outdoor temperatures Tj

T_j=-7℃	COPd or GUEh,bin / AEFh,bin	**336.0**	%
T_j=+2℃	COPd or GUEh,bin / AEFh,bin	**531.0**	%
T_j=+7℃	COPd or GUEh,bin / AEFh,bin	**760.0**	%
T_j=+12℃	COPd or GUEh,bin / AEFh,bin	**1100.0**	%
T_{biv}=bivalent temperature	COPd or GUEh,bin / AEFh,bin	**274.0**	%
T_{OL}=operation limit	COPd or GUEh,bin / AEFh,bin	**252.0**	%
For air-to-water heat pumps:T_j=-15℃ (if T_{OL}＜-20℃)	COPd or GUEh,bin / AEFh,bin	**-**	%
For water-to-air heat pumps:Operation limit T_{ol} temperature		**-**	℃

Power consumpiton in modes other than 'active mode'

Off mode	P_{OFF}	**0.008**	kW
Thermostat-off mode	P_{TO}	**0.015**	kW
Crankcase heater mode	P_{CK}	**0.008**	kW

Supplementary heater back-up heating capacity	elbu	**-**	kW
Type of energy input Standby mode	P_{SB}	**0.008**	kW

Other items

Capacity control		**variable**	
Sound power level, outdoor measured	L_{WA}	**73.0**	dB
Emissions of nitrogen oxides(if applicable)	NOx ***	**-**	mg/kWh fuel input GCV

For air-to-air heat pumps: air flow-rate,outdoor measured		**4380**	m3/h
For water-/brine-to-air heat pumps : Rated brine or water fiow-rate, outdoor side heat exchanger		**-**	m3/h

GWP of the refrigerant		**2088**	kg CO_{2eq} (100years)

Contact details	Mitsubishi heavy industries thermal systems,LTD

** If Cdh is not determined by measurement then the default degradation coefficient air conditioners shall be 0,25.

*** from 26 September 2018

Where information relates to multi-spilt air conditioners,the test result and performance data be obtained on the basis of the performance of the outdoor unit, with a combination of indoor unit(s) recommended by the manufacturer or importer.

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Models SRK50ZSX-S, 60ZSX-S, 100ZR-S

Model(s) : SRK50ZSX-S							
Item	**Symbol**	**Vaiue**	**Unit**	**Item**	**Symbol**	**Vaiue**	**Unit**
Cooling capacity (sensible)	$P_{rated,c}$	4.0	kW	Total electric power input	P_{elec}	0.030	kW
Cooling capacity (latent)	$P_{rated,c}$	1.0	kW	Sound power level (per speed setting,if applicable)	L_{WA}	59.0	dB
Heating capacity	$P_{rated,h}$	6.0	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : SRK60ZSX-S							
Item	**Symbol**	**Vaiue**	**Unit**	**Item**	**Symbol**	**Vaiue**	**Unit**
Cooling capacity (sensible)	$P_{rated,c}$	4.7	kW	Total electric power input	P_{elec}	0.040	kW
Cooling capacity (latent)	$P_{rated,c}$	1.4	kW	Sound power level (per speed setting,if applicable)	L_{WA}	62.0	dB
Heating capacity	$P_{rated,h}$	6.8	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

Model(s) : SRK100ZR-S							
Item	**Symbol**	**Vaiue**	**Unit**	**Item**	**Symbol**	**Vaiue**	**Unit**
Cooling capacity (sensible)	$P_{rated,c}$	7.4	kW	Total electric power input	P_{elec}	0.060	kW
Cooling capacity (latent)	$P_{rated,c}$	2.6	kW	Sound power level (per speed setting,if applicable)	L_{WA}	63.0	dB
Heating capacity	$P_{rated,h}$	11.2	kW				
Contact details	Mitsubishi heavy industries thermal systems,LTD						

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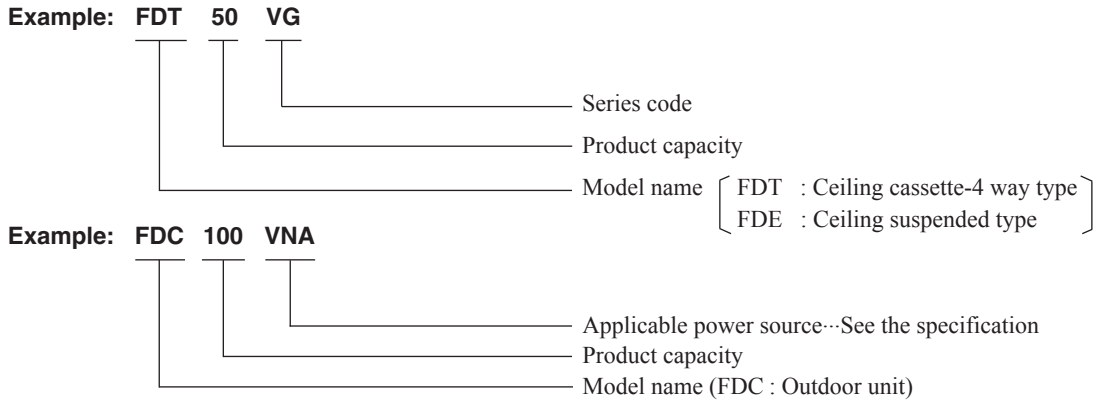
2. V MULTI SYSTEM

CONTENTS

2.1 GENERAL INFORMATION

2.1.1 How to read the model name



2.1.2 Table of models

Model \ Capacity	50	60	71
Ceiling cassette-4 way type (FDT)	○	○	○
Ceiling suspended type (FDE)	○	○	○
Outdoor unit to be combined (FDC)	FDC100VNA FDC100VSA (4 Horse Power)	FDC125VNA FDC125VSA (5 Horse Power)	FDC140VNA FDC140VSA (6 Horse Power)

2.1.3 Table of system combinations

Outdoor unit	Type	Indoor unit assembly capacity	Branch pipe set (Option)
FDC100VNA FDC100VSA	Twin	50+50	DIS-WA1G
FDC125VNA FDC125VSA		60+60 50+71	
FDC140VNA FDC140VSA	Twin	71+71	
	Triple	50+50+50	DIS-TA1G or DIS-WA1G × 2set

Notes(1) Always use the branch piping set (option) at branches in the refrigerant piping.
(2) If wireless specifications are used, use 1 wireless indoor unit in combination with wired indoor units.
(3) The combinations except the above table forbids.

2.2 SPECIFICATIONS

(1) Indoor units

(a) Ceiling cassette-4 way type (FDT)

Item \ Model				FDT50VG
Power source				1 Phase 220-240V 50Hz / 220V 60Hz
Operation data	Sound power level	Cooling	dB(A)	54
		Heating		
	Sound pressure level	Cooling		P-Hi : 38 Hi : 33 Me : 30 Lo : 27
		Heating		
	Silent mode sound pressure level			—
Exterior dimensions (Height × Width × Depth)			mm	Unit 236 × 840 × 840 Panel 35 × 950 × 950
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent
Net weight			kg	UNIT 19 PANEL 5
Heat exchanger				Louver fin & inner grooved tubing
Fan type & Q'ty				Turbo fan ×1
Fan motor (Starting method)			W	50 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 20 Hi : 16 Me : 13 Lo : 10
		Heating		
Available external static pressure			Pa	0
Outside air intake				Possible
Air filter, Quality / Quantity				Pocket plastic net ×1(Washable)
Shock & vibration absorber				Rubber sleeve (for fan motor)
Operation control	Remote control			(option) wired : RC-EX3 , RC-E5 , RCH-E3 wireless : RCN-T-5AW-E2
	Room temperature control			Thermostat by electronics
	Operation display			—
Safety equipments				Overload protection for fan motor Frost protection thermostat
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: ϕ6.35(1/4")
				Gas line: ϕ12.7 (1/2")
	Connecting method			Flare piping
	Attached length of piping		m	—
	Insulation for piping			Necessary (both Liquid & Gas lines)
	Drain hose			Hose connectable VP25 (O.D.32)
Drain pump, max lift height			mm	Built-in drain pump, 850
IP number				IPX0
Standard accessories				Mounting kit, Drain hose
Option parts				—

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

PJF000Z425 G

Item \ Model				FDT60VG
Power source				1 Phase 220-240V 50Hz / 220V 60Hz
Operation data	Sound power level	Cooling	dB(A)	60
		Heating		
	Sound pressure level	Cooling		P-Hi : 44 Hi : 34 Me : 32 Lo : 28
		Heating		
	Silent mode sound pressure level			—
Exterior dimensions (Height × Width × Depth)			mm	Unit 236 × 840 × 840 Panel 35 × 950 × 950
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent
Net weight			kg	UNIT 21 PANEL 5
Heat exchanger				Louver fin & inner grooved tubing
Fan type & Q'ty				Turbo fan ×1
Fan motor (Starting method)			W	50 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 26 Hi : 17 Me : 14 Lo : 11
		Heating		
Available external static pressure			Pa	0
Outside air intake				Possible
Air filter, Quality / Quantity				Pocket plastic net ×1(Washable)
Shock & vibration absorber				Rubber sleeve (for fan motor)
Operation control	Remote control			(option) wired : RC-EX3 , RC-E5 , RCH-E3 wireless : RCN-T-5AW-E2
	Room temperature control			Thermostat by electronics
	Operation display			—
Safety equipments				Overload protection for fan motor Frost protection thermostat
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: ϕ6.35(1/4")
				Gas line: ϕ12.7 (1/2")
	Connecting method			Flare piping
	Attached length of piping		m	—
	Insulation for piping			Necessary (both Liquid & Gas lines)
	Drain hose			Hose connectable VP25 (O.D.32)
Drain pump, max lift height			mm	Built-in drain pump, 850
IP number				IPX0
Standard accessories				Mounting kit, Drain hose
Option parts				—

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

PJF000Z425 G

Item \ Model				FDT71VG
Power source				1 Phase 220-240V 50Hz / 220V 60Hz
Operation data	Sound power level	Cooling	dB(A)	62
		Heating		
	Sound pressure level	Cooling		P-Hi : 46 Hi : 35 Me : 34 Lo : 29
		Heating		
	Silent mode sound pressure level			—
Exterior dimensions (Height × Width × Depth)			mm	Unit 236 × 840 × 840 Panel 35 × 950 × 950
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent
Net weight			kg	UNIT 21 PANEL 5
Heat exchanger				Louver fin & inner grooved tubing
Fan type & Q'ty				Turbo fan ×1
Fan motor (Starting method)			W	50 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 28 Hi : 18 Me : 15 Lo : 12
		Heating		
Available external static pressure			Pa	0
Outside air intake				Possible
Air filter, Quality / Quantity				Pocket plastic net ×1(Washable)
Shock & vibration absorber				Rubber sleeve (for fan motor)
Operation control	Remote control			(option) wired : RC-EX3 , RC-E5 , RCH-E3 wireless : RCN-T-5AW-E2
	Room temperature control			Thermostat by electronics
	Operation display			—
Safety equipments				Overload protection for fan motor Frost protection thermostat
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: ϕ 9.52(3/8")
				Gas line: ϕ 15.88 (5/8")
	Connecting method			Flare piping
	Attached length of piping		m	—
	Insulation for piping			Necessary (both Liquid & Gas lines)
	Drain hose			Hose connectable VP25 (O.D.32)
Drain pump, max lift height			mm	Built-in drain pump, 850
IP number				IPX0
Standard accessories				Mounting kit, Drain hose
Option parts				—

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

PJF000Z425 G

(b) Ceiling suspended type (FDE)

Item \ Model				FDE50VG
Power source				1 Phase 220-240V 50Hz / 220V 60Hz
Operation data	Sound power level	Cooling	dB(A)	60
		Heating		
	Sound pressure level	Cooling		P-Hi : 46 Hi : 38 Me : 36 Lo : 31
		Heating		
	Silent mode sound pressure level			—
Exterior dimensions (Height × Width × Depth)			mm	210 × 1,070 × 690
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent
Net weight			kg	28
Heat exchanger				Louver fin & inner grooved tubing
Fan type & Q'ty				Centrifugal fan ×2
Fan motor (Starting method)			W	30 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 13 Hi : 10 Me : 9 Lo : 7
		Heating		
Available external static pressure			Pa	0
Outside air intake				Not possible
Air filter, Quality / Quantity				Pocket plastic net ×2 (Washable)
Shock & vibration absorber				Rubber sleeve (for fan motor)
Operation control	Remote control			(option) wired : RC-EX3 , RC-E5 , RCH-E3 wireless : RCN-E-E2
	Room temperature control			Thermostat by electronics
	Operation display			—
Safety equipments				Internal thermostat for fan motor Frost protection thermostat
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: ϕ6.35 (1/4")
				Gas line: ϕ12.7 (1/2")
	Connecting method			Flare piping
	Attached length of piping		m	—
	Insulation for piping			Necessary (both Liquid & Gas lines)
	Drain hose			Hose connectable VP20 (O.D.26)
Drain pump, max lift height			mm	—
IP number				IPX0
Standard accessories				Mounting kit, Drain hose
Option parts				—

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

PFA004Z024

Item \ Model				FDE60VG
Power source				1 Phase 220-240V 50Hz / 220V 60Hz
Operation data	Sound power level	Cooling	dB(A)	60
		Heating		
	Sound pressure level	Cooling		P-Hi : 47 Hi : 41 Me : 37 Lo : 32
		Heating		
	Silent mode sound pressure level			—
Exterior dimensions (Height × Width × Depth)			mm	210 × 1,320 × 690
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent
Net weight			kg	33
Heat exchanger				Louver fin & inner grooved tubing
Fan type & Q'ty				Centrifugal fan ×4
Fan motor (Starting method)			W	50 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 20 Hi : 16 Me : 13 Lo : 10
		Heating		
Available external static pressure			Pa	0
Outside air intake				Not possible
Air filter, Quality / Quantity				Pocket plastic net ×2 (Washable)
Shock & vibration absorber				Rubber sleeve (for fan motor)
Operation control	Remote control			(option) wired : RC-EX3 , RC-E5 , RCH-E3 wireless : RCN-E-E2
	Room temperature control			Thermostat by electronics
	Operation display			—
Safety equipments				Internal thermostat for fan motor Frost protection thermostat
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: ϕ6.35 (1/4")
				Gas line: ϕ12.7 (1/2")
	Connecting method			Flare piping
	Attached length of piping		m	—
	Insulation for piping			Necessary (both Liquid & Gas lines)
	Drain hose			Hose connectable VP20 (O.D.26)
Drain pump, max lift height			mm	—
IP number				IPX0
Standard accessories				Mounting kit, Drain hose
Option parts				—

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

PFA004Z024

Item \ Model				FDE71VG
Power source				1 Phase 220-240V 50Hz / 220V 60Hz
Operation data	Sound power level	Cooling	dB(A)	60
		Heating		
	Sound pressure level	Cooling		P-Hi : 47 Hi : 41 Me : 37 Lo : 32
		Heating		
	Silent mode sound pressure level			—
Exterior dimensions (Height × Width × Depth)			mm	210 × 1,320 × 690
Exterior appearance (Munsell color)				Plaster white (6.8Y8.9/0.2) near equivalent
Net weight			kg	33
Heat exchanger				Louver fin & inner grooved tubing
Fan type & Q'ty				Centrifugal fan ×4
Fan motor (Starting method)			W	50 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 20 Hi : 16 Me : 13 Lo : 10
		Heating		
Available external static pressure			Pa	0
Outside air intake				Not possible
Air filter, Quality / Quantity				Pocket plastic net ×2 (Washable)
Shock & vibration absorber				Rubber sleeve (for fan motor)
Operation control	Remote control			(option) wired : RC-EX3 , RC-E5 , RCH-E3 wireless : RCN-E-E2
	Room temperature control			Thermostat by electronics
	Operation display			—
Safety equipments				Internal thermostat for fan motor Frost protection thermostat
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: ϕ 9.52 (3/8")
				Gas line: ϕ 15.88 (5/8")
	Connecting method			Flare piping
	Attached length of piping		m	—
	Insulation for piping			Necessary (both Liquid & Gas lines)
	Drain hose			Hose connectable VP20 (O.D.26)
Drain pump, max lift height			mm	—
IP number				IPX0
Standard accessories				Mounting kit, Drain hose
Option parts				—

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27˚C	19˚C	35˚C	24˚C	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

PFA004Z024

(2) Outdoor units

Item \ Model				FDC100VNA
Power source				1 Phase 220-240V 50Hz / 220V 60Hz
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.)-11.2(Max.)]
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.)-12.5(Max.)]
	Sound power level	Cooling	dB(A)	70
		Heating		
	Sound pressure level	Cooling		54
		Heating		56
	Silent mode sound pressure level			50/44 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	845×970×370
Exterior appearance (Munsell color)				Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	80
Compressor type & Q'ty				RMT5126MCE3×1
Compressor motor (Starting method)			kW	Direct line start
Refrigerant oil (Amount, type)			ℓ	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)
Heat exchanger				Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve
Fan type & Q'ty				Propeller fan ×1
Fan motor (Starting method)			W	86 < Direct line start >
Air flow		Cooling	m^3/min	75
		Heating		73
Shock & vibration absorber				Rubber sleeve (for compressor)
Electric heater			W	20 (Crankcase heater)
Safety equipments				Internal thermostat for fan motor Abnormal discharge temperature protection
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: ϕ9.52 (3/8")
				Gas line: ϕ15.88 (5/8")
	Connecting method			Flare piping
	Attached length of piping		m	—
	Insulation for piping			Necessary (both Liquid & Gas lines)
	Refrigerant line (one way) length		m	Max.50m
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)
	Drain hose			Hole size ϕ20 × 3pcs
IP number				IP24
Standard accessories				—
Option parts				—

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

PJF000Z425 G

Item \ Model				FDC100VSA
Power source				3 Phase 380-415V 50Hz / 380V 60Hz
Operation data	Nominal cooling capacity (range)		kW	10.0 [4.0(Min.)-11.2(Max.)]
	Nominal heating capacity (range)		kW	11.2 [4.0(Min.)-12.5(Max.)]
	Sound power level	Cooling	dB(A)	70
		Heating		
	Sound pressure level	Cooling		54
		Heating		56
	Silent mode sound pressure level			50/44 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	845×970×370
Exterior appearance (Munsell color)				Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	82
Compressor type & Q'ty				RMT5126MCE4×1
Compressor motor (Starting method)			kW	Direct line start
Refrigerant oil (Amount, type)			ℓ	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)
Heat exchanger				Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve
Fan type & Q'ty				Propeller fan ×1
Fan motor (Starting method)			W	86 < Direct line start >
Air flow		Cooling	m^3/min	75
		Heating		73
Shock & vibration absorber				Rubber sleeve (for compressor)
Electric heater			W	20 (Crankcase heater)
Safety equipments				Internal thermostat for fan motor Abnormal discharge temperature protection
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: ϕ9.52 (3/8")
				Gas line: ϕ15.88 (5/8")
	Connecting method			Flare piping
	Attached length of piping		m	—
	Insulation for piping			Necessary (both Liquid & Gas lines)
	Refrigerant line (one way) length		m	Max.50m
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)
	Drain hose			Hole size ϕ20 × 3pcs
IP number				IP24
Standard accessories				—
Option parts				—

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

PJF000Z425 G

Item \ Model				FDC125VNA
Power source				1 Phase 220-240V 50Hz / 220V 60Hz
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.)-14.0(Max.)]
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.)-16.0(Max.)]
	Sound power level	Cooling	dB(A)	71
		Heating		
	Sound pressure level	Cooling		55
		Heating		57
	Silent mode sound pressure level			51/45 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	845×970×370
Exterior appearance (Munsell color)				Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	80
Compressor type & Q'ty				RMT5126MCE3×1
Compressor motor (Starting method)			kW	Direct line start
Refrigerant oil (Amount, type)			ℓ	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)
Heat exchanger				Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve
Fan type & Q'ty				Propeller fan ×1
Fan motor (Starting method)			W	86 < Direct line start >
Air flow		Cooling	m^3/min	75
		Heating		73
Shock & vibration absorber				Rubber sleeve (for compressor)
Electric heater			W	20 (Crankcase heater)
Safety equipments				Internal thermostat for fan motor Abnormal discharge temperature protection
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: ϕ9.52 (3/8")
				Gas line: ϕ15.88 (5/8")
	Connecting method			Flare piping
	Attached length of piping		m	—
	Insulation for piping			Necessary (both Liquid & Gas lines)
	Refrigerant line (one way) length		m	Max.50m
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)
	Drain hose			Hole size ϕ20 × 3pcs
IP number				IP24
Standard accessories				—
Option parts				—

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

PJF000Z425 G

Item \ Model				FDC125VSA
Power source				3 Phase 380-415V 50Hz / 380V 60Hz
Operation data	Nominal cooling capacity (range)		kW	12.5 [5.0(Min.)-14.0(Max.)]
	Nominal heating capacity (range)		kW	14.0 [4.0(Min.)-16.0(Max.)]
	Sound power level	Cooling	dB(A)	71
		Heating		
	Sound pressure level	Cooling		55
		Heating		57
	Silent mode sound pressure level			51/45 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	845×970×370
Exterior appearance (Munsell color)				Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	82
Compressor type & Q'ty				RMT5126MCE4×1
Compressor motor (Starting method)			kW	Direct line start
Refrigerant oil (Amount, type)			ℓ	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)
Heat exchanger				Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve
Fan type & Q'ty				Propeller fan ×1
Fan motor (Starting method)			W	86 < Direct line start >
Air flow		Cooling	m^3/min	75
		Heating		73
Shock & vibration absorber				Rubber sleeve (for compressor)
Electric heater			W	20 (Crankcase heater)
Safety equipments				Internal thermostat for fan motor Abnormal discharge temperature protection
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: ϕ9.52 (3/8")
				Gas line: ϕ15.88 (5/8")
	Connecting method			Flare piping
	Attached length of piping		m	—
	Insulation for piping			Necessary (both Liquid & Gas lines)
	Refrigerant line (one way) length		m	Max.50m
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)
	Drain hose			Hole size ϕ20 × 3pcs
IP number				IP24
Standard accessories				—
Option parts				—

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

PJF000Z425 G

Item \ Model				FDC140VNA
Power source				1 Phase 220-240V 50Hz / 220V 60Hz
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.)-14.5(Max.)]
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.)-16.5(Max.)]
	Sound power level	Cooling	dB(A)	73
		Heating		
	Sound pressure level	Cooling		57
		Heating		59
	Silent mode sound pressure level			53/47 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	845×970×370
Exterior appearance (Munsell color)				Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	80
Compressor type & Q'ty				RMT5126MCE3×1
Compressor motor (Starting method)			kW	Direct line start
Refrigerant oil (Amount, type)			ℓ	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)
Heat exchanger				Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve
Fan type & Q'ty				Propeller fan ×1
Fan motor (Starting method)			W	86 < Direct line start >
Air flow		Cooling	m^3/min	75
		Heating		73
Shock & vibration absorber				Rubber sleeve (for compressor)
Electric heater			W	20 (Crankcase heater)
Safety equipments				Internal thermostat for fan motor Abnormal discharge temperature protection
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: ϕ9.52 (3/8")
				Gas line: ϕ15.88 (5/8")
	Connecting method			Flare piping
	Attached length of piping		m	—
	Insulation for piping			Necessary (both Liquid & Gas lines)
	Refrigerant line (one way) length		m	Max.50m
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)
	Drain hose			Hole size ϕ20 × 3pcs
IP number				IP24
Standard accessories				—
Option parts				—

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27℃	19℃	35℃	24℃	ISO5151-T1
Heating	20℃	—	7℃	6℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) The operation data indicate when the air-conditioner is operated at 230V 50Hz or 220V 60Hz.

PJF000Z425 G

Item \ Model				FDC140VSA
Power source				3 Phase 380-415V 50Hz / 380V 60Hz
Operation data	Nominal cooling capacity (range)		kW	13.6 [5.0(Min.)-14.5(Max.)]
	Nominal heating capacity (range)		kW	15.5 [4.0(Min.)-16.5(Max.)]
	Sound power level	Cooling	dB(A)	73
		Heating		
	Sound pressure level	Cooling		57
		Heating		59
	Silent mode sound pressure level			53/47 (Normal/Silent)
Exterior dimensions (Height × Width × Depth)			mm	845×970×370
Exterior appearance (Munsell color)				Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	82
Compressor type & Q'ty				RMT5126MCE4×1
Compressor motor (Starting method)			kW	Direct line start
Refrigerant oil (Amount, type)			ℓ	0.9 M-MA68
Refrigerant (Type, amount, pre-charge length)			kg	R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)
Heat exchanger				Straight fin & inner grooved tubing
Refrigerant control				Electronic expansion valve
Fan type & Q'ty				Propeller fan ×1
Fan motor (Starting method)			W	86 < Direct line start >
Air flow		Cooling	m^3/min	75
		Heating		73
Shock & vibration absorber				Rubber sleeve (for compressor)
Electric heater			W	20 (Crankcase heater)
Safety equipments				Internal thermostat for fan motor. Abnormal discharge temperature protection.
Installation data	Refrigerant piping size (O.D.)		mm	Liquid line: ϕ9.52 (3/8")
				Gas line: ϕ15.88 (5/8")
	Connecting method			Flare piping
	Attached length of piping		m	—
	Insulation for piping			Necessary (both Liquid & Gas lines)
	Refrigerant line (one way) length		m	Max.50m
	Vertical height diff. between O.U. and I.U.		m	Max.50m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)
	Drain hose			Hole size ϕ20 × 3pcs
IP number				IP24
Standard accessories				—
Option parts				—

Notes (1) The data are measured at the following conditions. The pipe length is 7.5m.

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27˚C	19˚C	35˚C	24˚C	ISO5151-T1
Heating	20˚C	—	7˚C	6˚C	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
(4) The operation data indicate when the air-conditioner is operated at 400V 50Hz or 380V 60Hz.

PJF000Z425 G

(3) Operation chart

The V Multi is a system that allows for different models and capacities of indoor units to be connected so the individual operating characteristics of the indoor and outdoor are provided. Use the procedure shown in item (c) to calculate the combined operating characteristics.

(a) Operating characteristic of outdoor unit

(220-240V 50Hz/220V 60Hz)

Item \ Model		FDC100VNA	FDC125VNA	FDC140VNA
Cooling power consumption	kW	2.60/2.62	3.91/3.91	4.70/4.70
Heating power consumption		2.51/2.51	3.60/3.60	4.29/4.29
Cooling running current	A	12.8-11.7/12.8	18.5-16.9/18.5	21.6-19.8/21.6
Heating running current		12.5-11.4/12.5	17.2-15.8/17.2	19.4-17.8/19.4
Inrush current (L.R.A) <Max. running current>	A	5 <24>		

(380-415V 50Hz/380V 60Hz)

Item \ Model		FDC100VSA	FDC125VSA	FDC140VSA
Cooling power consumption	kW	2.60/2.62	3.91/3.91	4.70/4.70
Heating power consumption		2.51/2.51	3.60/3.60	4.29/4.29
Cooling running current	A	3.8-3.5/3.8	5.9-5.4/5.9	7.2-6.6/7.2
Heating running current		3.7-3.3/3.7	5.4-4.9/5.4	6.8-6.2/6.8
Inrush current (L.R.A) <Max. running current>	A	5 <15>		

Note(1) This packaged air-conditioner is manufactured and tested in conformity with the following standard.
ISO-T1 "UNITARY AIR-CONDITIONERS"

(b) Operating characteristic of indoor unit

FDT Series

(220-240V 50Hz/220V 60Hz)

Item \ Model		FDT50VG	FDT60VG	FDT71VG
Cooling power consumption	kW	0.04-0.04/0.04	0.07-0.07/0.07	0.08-0.08/0.08
Heating power consumption		0.04-0.04/0.04	0.07-0.07/0.07	0.08-0.08/0.08
Cooling running current	A	0.20-0.19/0.20	0.35-0.32/0.35	0.40-0.37/0.40
Heating running current		0.20-0.19/0.20	0.35-0.32/0.35	0.40-0.37/0.40

FDE Series

(220-240V 50Hz/220V 60Hz)

Item \ Model		FDE50VG	FDE60VG	FDE71VG
Cooling power consumption	kW	0.05-0.06/0.06	0.10-0.11/0.11	0.11-0.12/0.14
Heating power consumption		0.05-0.06/0.06	0.09-0.10/0.10	0.10-0.11/0.13
Cooling running current	A	0.25-0.26/0.29	0.46-0.48/0.50	0.50-0.53/0.67
Heating running current		0.23-0.25/0.28	0.42-0.44/0.46	0.46-0.48/0.63

Notes(1) This packaged air-conditioner is manufactured and tested in conformity with the following standard.
ISO-T1 "UNITARY AIR-CONDITIONERS"
(2) The values shown in the above table are common to both cooling and heating operations.

(c) Calculation of total operation characteristics

Since the operation characteristics of V Multi system depend on combination of indoor unit, calculate the total operation characteristics of the system by using the formulas below according to speciations of each indoor unit or outdoor unit.

(i) 1 Phase models

1) Total power consumption

Total power consumption (kW) = Power consumption of outdoor unit + ∑ (Power consumption of indoor unit)

2) Total running current

Total running current (A) = Running current of outdoor unit + ∑ (Running current of indoor unit)

3) Total power factor

Total power factor (%) = [Total power consumption (W) / Total running current (A) × Power source] × 100

Total operation characteristics = Operation characteristic value of outdoor unit + Operation characteristic value of indoor unit

[Example]

(Conditions) Operation voltage ····· Indoor unit: 220 V, 50 Hz
Outdoor unit: 220 V, 50 Hz
Operation mode ····· Cooling and Heating
Unit····· Outdoor unit: FDC140VNA × 1 unit
Indoor unit: FDT71VG × 2 units

Operation characteristics of each unit (Cooling/Heating)

Item \ Model	FDC140VNA	FDT71VG
Power consumption (kW)	4.70/4.29	0.08/0.08
Running current (A)	21.6/19.4	0.40/0.40

① Total power consumption (kW)

(Cooling) 4.70 + (0.08 × 2) = 4.86

(Heating) 4.29 + (0.08 × 2) = 4.45

② Total running current (A)

(Cooling) 21.6 + (0.40 × 2) = 22.4

(Heating) 19.4 + (0.40 × 2) = 20.2

③ Total power factor (%)

(Cooling) $\frac{4.86 \times 1000}{22.4 \times 220} \times 100 \fallingdotseq 99\ \%$

(Heating) $\frac{4.45 \times 1000}{20.2 \times 220} \times 100 \fallingdotseq 100\ \%$

(ii) 3 Phase models

1) Total power consumption

Total power consumption (kW) = Power consumption of outdoor unit + ∑ (Power consumption of indoor unit)

2) Total running current

Total running current (A) = Running current of outdoor unit + [∑ (Running current of indoor unit) × 1/3]

3) Total power factor

Total power factor (%) = [Total power consumption (W) / $\sqrt{3}$ × Total running current (A) × Power source] × 100

Total operation characteristics = Operation characteristic value of outdoor unit + Operation characteristic value of indoor unit

[Example]

(Conditions) Operation voltage ····· Indoor unit: 220 V, 50 Hz
Outdoor unit: 380 V, 50 Hz
Operation mode ····· Cooling and Heating
Unit····· Outdoor unit: FDC125VSA × 1 unit
Indoor unit: FDT50VG × 1 unit, FDT71VG × 1 unit

Operation characteristics of each unit

(Cooling/Heating)

Item \ Model	FDC125VSA	FDT50VG	FDT71VG
Power consumption (kW)	3.91/3.60	0.04/0.04	0.08/0.08
Running current (A)	5.9/5.4	0.20/0.20	0.40/0.04

① Total power consumption (kW)

(Cooling) 3.91 + 0.04 + 0.08 = 4.03 (kW)

(Heating) 3.60 + 0.04 + 0.08 = 3.72 (kW)

② Total running current (A)

(Cooling) $5.9 + \left[(0.20 + 0.40) \times \frac{1}{3})\right] = 6.1$ (A)

(Heating) $5.4 + \left[(0.20 + 0.40) \times \frac{1}{3})\right] = 5.6$ (A)

③ Total power factor (%)

(Cooling) $\frac{4.03 \times 1000}{\sqrt{3} \times 6.1 \times 380} \times 100 \fallingdotseq 100$ %

(Heating) $\frac{3.72 \times 1000}{\sqrt{3} \times 5.6 \times 380} \times 100 \fallingdotseq 100$ %

3. OPTION PARTS

CONTENTS

3.1 WIRELESS KIT

3.1.1 FDT series (RCN-T-5AW-E2)

Notes:
Following function of FDT indoor unit series are not able to be set with this wireless remote control (RCN-T-5AW-E2).
1. Individual flap control system

PJF012D035Ⓐ

Safety precautions

●Please read this manual carefully before starting installation work to install the unit properly.
Every one of the followings is important information to be observed strictly.
⚠WARNING Failure to follow these instructions properly may result in serious consequences such as death, severe injury, etc.
⚠CAUTION Failure to follow these instructions properly may cause injury or property damage. It could have serious consequences depending on the circumstances.
●The following pictograms are used in the text.

⃠	Never do.	❗	Always follow the instructions given.

●Keep this manual at a safe place where you can consult with whenever necessary. Show this manual to installers when moving or repairing the unit. When the ownership of the unit is transferred, this manual should be given to a new owner.

⚠WARNING

- **Consult your dealer or a professional contractor to install the unit.**
  Improper installation made on your own may cause electric shocks, fire or dropping of the unit.
- **Installation work should be performed properly according to this installation manual.**
  Improper installation work may result in electric shocks, fire or break-down.
- **Be sure to use accessories and specified parts for installation work.**
  Use of unspecified parts may result in drop, fire or electric shocks.
- **Install the unit properly to a place with sufficient strength to hold the weight.**
  If the place is not strong enough, the unit may drop and cause injury.
- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient and improper work can cause electric shock and fire.
- **Shut OFF the main power source before starting electrical work.**
  Otherwise, it could result in electric shocks, break-down or malfunction.
- **Do not modify the unit.**
  It could cause electric shocks, fire, or break-down.
- **Be sure to turn OFF the power circuit breaker before repairing/inspecting the unit.**
  Repairing/inspecting the unit with the power circuit breaker turned ON could cause electric shocks or injury.
- **Do not install the unit in appropriate environment or where inflammable gas could generate, flow in, accumulate or leak.**
  If the unit is used at places where air contains dense oil mist, steam, organic solvent vapor, corrosive gas (ammonium, sulfuric compound, acid, etc) or where acidic or alkaline solution, special spray, etc. are used, it could cause electric shocks, break-down, smoke or fire as a result of significant deterioration of its performance or corrosion.
- **Do not install the unit where water vapor is generated excessively or condensation occurs.**
  It could cause electric shocks, fire, or break-down.
- **Do not use the unit in a place where it gets wet, such as laundry room.**
  It could cause electric shocks, fire, or break-down.
- **Do not operate the unit with wet hands.**
  It could cause electric shocks.

⚠WARNING

- **Do not wash the unit with water.**
  It could cause electric shocks, fire, or break-down.
- **Use the specified cables for wiring, and connect them securely with care to protect electronic parts from external forces.**
  Improper connections or fixing could cause heat generation, fire, etc.
- **When installing the unit at a hospital, telecommunication facility, etc., take measures to suppress electric noises.**
  It could cause malfunction or break-down due to hazardous effects on the inverter, private power generator, high frequency medical equipment, radio communication equipment, etc.
  The influences transmitted from the remote control to medical or communication equipment could disrupt medical activities, video broadcasting or cause noise interference.
- **Do not leave the remote control with its PCB case removed.**
  If dew, water, insect, etc. enters through the hole, it could cause electric shocks, fire or break-down.

⚠CAUTION

- Do not install the wireless kit at the following places in order to avoid malfunction.
  It could cause break-down or deformation of remote control.
  (1) Places exposed to direct sunlight
  (2) Places near heat devices
  (3) High humidity places
  (4) Hot surface or cold surface enough to generate condensation
  (5) Places exposed to oil mist or steam directly
  (6) Uneven surface
  (7) Places affected by the direct air flow of the AC unit
  (8) Places where the receiver is influenced by the fluorescent lamp (especially inverter type) or sunlight
  (9) Places where the receiver is affected by infrared rays of any other communication devices
  (10) Places where some object may obstruct the communication with the remote control

①Accessories

Please make sure that you have all of the following accessories.

① Receiver		1
② Parts set (A)		1
③ Installation manual		1

① Wireless remote control		1
② Remote control holder		1
③ Screw for holder		2
④ AAA dry cell battery (LR03)		2
⑤ User's manual		1

②Preparation before installation

Setting on site

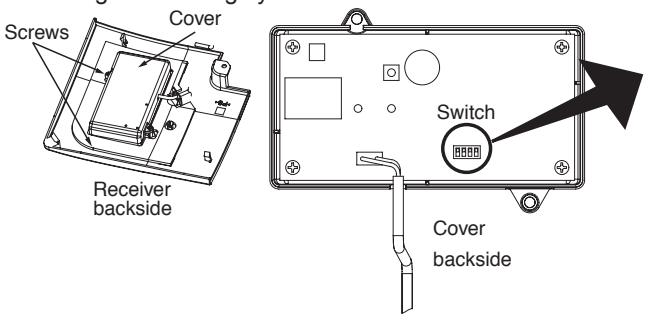
PCB on the receiver has the following switches to set the function.
Default setting is shown with [ ] mark.

SW1	Prevents interference during plural setting	[ON : Normal]	OFF : Customized
SW2	Receiver master/ slave setting	[ON : Master]	OFF : Slave
SW3	Buzzer	[ON : Valid]	OFF : Invalid
SW4	Auto restart	ON : Valid	[OFF : Invalid]

② Preparation before installation (continued)

To change setting

1. Remove the cover by unscrewing two screws from the back of receiver.
2. Change the setting by the switch on PCB.



Master/Slave setting when using plural remote controls

Up to two receiver or wired remote control can be installed in one indoor unit group.
When two receiver or wired remote control are used, it is necessary to change SW on the PCB to set it as slave.

3. When SW1 is turned to OFF position, change the wireless remote control setting.
   For the method of changing the setting, refer to Setting to avoid mixed communication of ④ Wireless remote control .

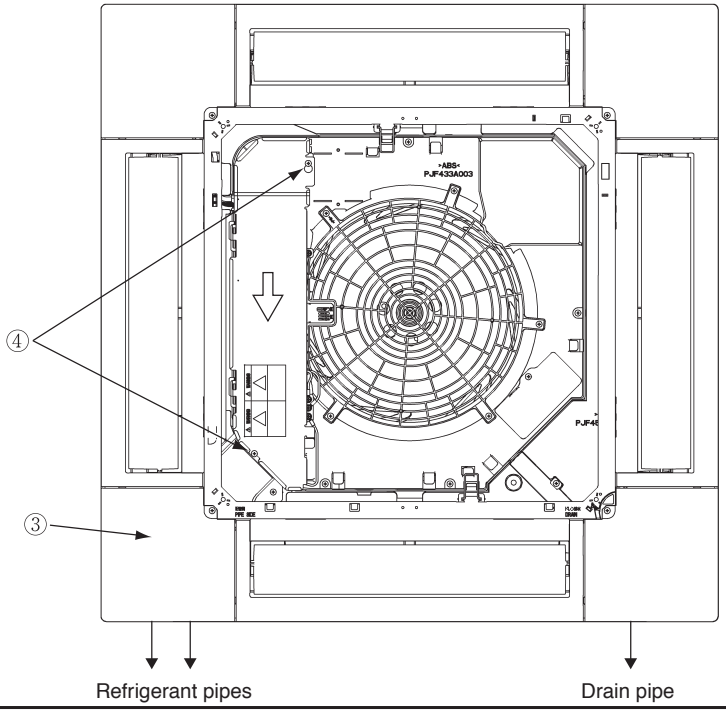
   *The receivable area of the signal refer to ⑤ Receiver .

③ How to install the receiver

The receiver can be installed by replacing with a corner panel on the applicable decorative panel.

Preparation before installation

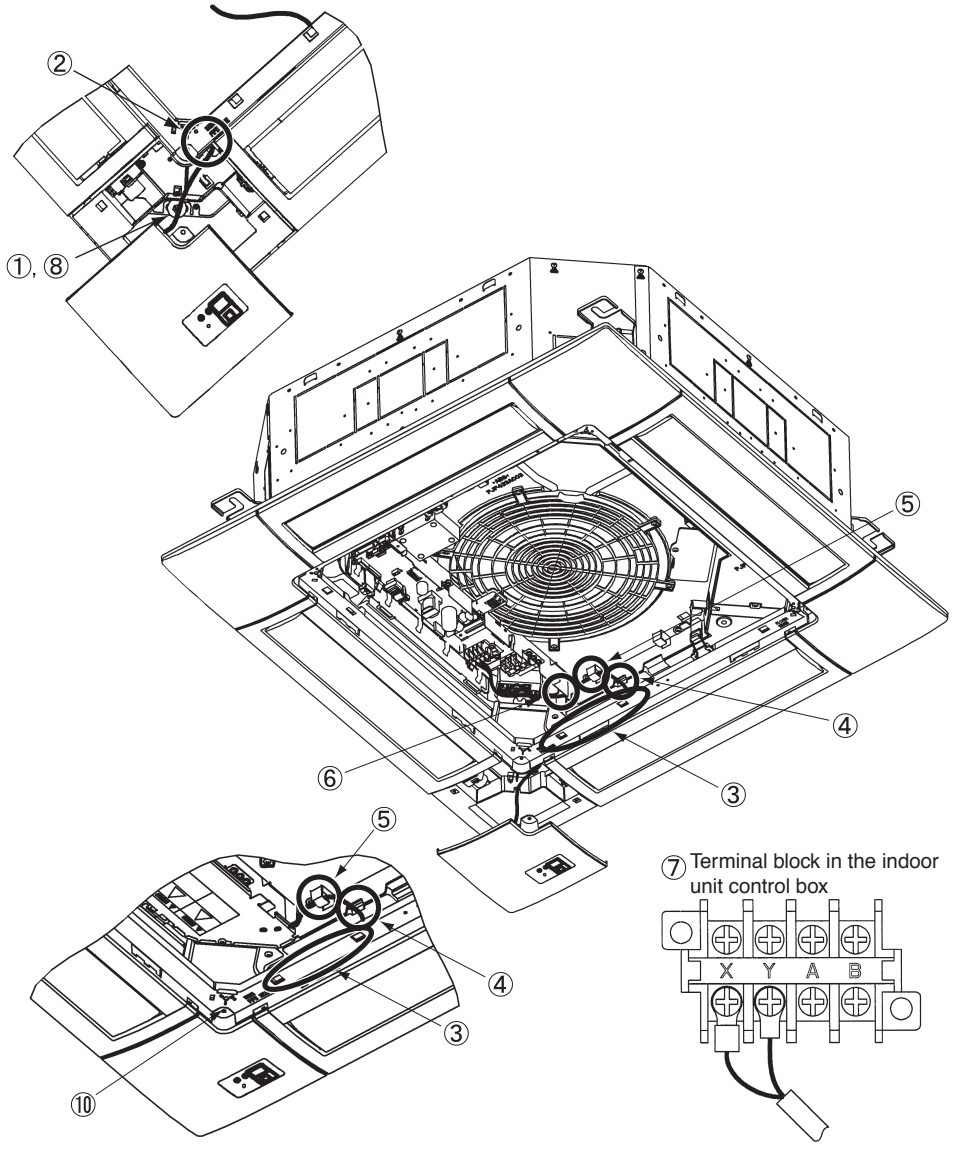
① Attach the decorative panel onto the air-conditioner according to the installation manual for the panel.
② Remove the air return grille.
③ Remove a corner panel located on the refrigerant pipes side.
④ Remove three screws and detach the cover (indicated as shadowed area) from the control box of the air- conditioner.



③ How to install the receiver(continued)

Installation of the receiver

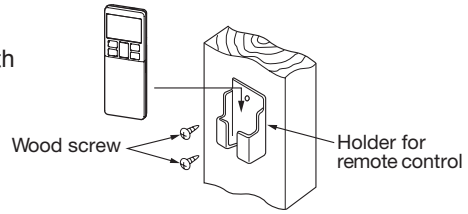
① Loosen the bolts which fix the panel and make a gap between the panel and the indoor unit.
② Put the wiring of the receiver through the opening.
③ Put the wiring on the notch on the control box so as not to be pinched by the control box and lid as shown below.
④ Connect the wiring to the terminal block provided in the control box. (No polarity)
⑤ Attach the receiver to the panel according to the panel installation manual.
⑥ Fix the wiring with the clamp so that the wiring do not contact the edge of control box's metal sheet.
⑦ Reattach the control box lid with 3 screws removed.



④ Wireless remote control

Installation tips for the remote control holder

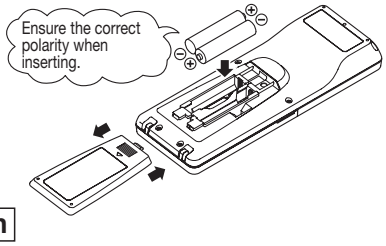
Fix the remote control holder using the screws supplied with this product.



* Precautions for installing the holder
- Adjust the position so that it is upright.
- Ensure that the screw heads are not protruding.
- Do not attach the holder on plaster wall

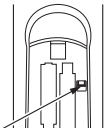
How to insert batteries

1. Detach the back lid.
2. Insert the batteries. (two AAA batteries)
3. Reattach the back lid.



Setting to avoid mixed communication

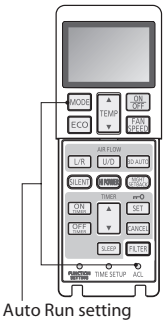
1. Detach the back lid, and remove the batteries.
2. Cut off the switching wire in the battery compartment using nippers.
3. Insert the batteries, and attach the back lid.



Changing the remote control setting

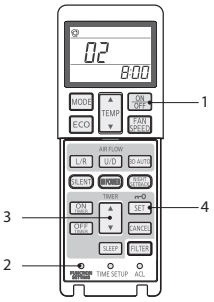
How to change the Auto Run setting
The Auto Run mode is not available on the building air-conditioning and gas heat pump series (excluding the cooling/heating free multi system).
When using the remote control to operate those models, set the remote control to disable the Auto Run mode.
To disable the Auto Run mode, press the ACL switch while holding down the MODE button, or insert batteries while holding down the MODE button.

* Note: Once the batteries are removed, the setting is reset to the factory default.
When the batteries are removed, repeat the steps described above.



Indoor function settings

1. How to set indoor functions
   ① Press the ON/OFF button to stop the unit.
   ② Press the desired one of the buttons shown item **2.** while holding down the FUNCTION SETTING switch.
   ③ Use the selection buttons, ▲ and ▼, to change the setting.
   ④ Press the SET button.
   The buzzer on the remote control signal receiver beeps twice, and the LED lamp flashes four times at two-second intervals.



④ Wireless remote control (continued)

2. Setting details
   The following functions can be set.

Button	Number indicator	Function setting
FAN SPEED	00	Fun speed setting : Standard
	01	Fun speed setting : Setting 1 *
	02	Fun speed setting : Setting 2 *
MODE	00	Room heating temperature adjustment : Disable
	01	Room heating temperature adjustment : +1°C
	02	Room heating temperature adjustment : +2°C
	03	Room heating temperature adjustment : +3°C
FILTER	00	Filter sign display : OFF
	01	Filter sign display : 180 hours
	02	Filter sign display : 600 hours
	03	Filter sign display : 1000 hours
	04	Filter sign display : Operation stop after 1000 hours have elapsed
U/P	00	Anti draft setting : Disable
	01	Anti draft setting : Enable
SILENT	00	Infrared sensor setting (Motion sensor setting) : Disable
	01	Infrared sensor setting (Motion sensor setting) : Enable
HI POWER	00	Infrared sensor control (Motion sensor control) : Disable
	01	Infrared sensor control (Motion sensor control) : Power control only
	02	Infrared sensor control (Motion sensor control) : Auto OFF only
	03	Infrared sensor control (Motion sensor control) : Power control and Auto OFF
ON TIMER	00	Cooling fan residual-period running : Disable
	01	Cooling fan residual-period running : 0.5 hours
	02	Cooling fan residual-period running : 2 hours
	03	Cooling fan residual-period running : 6 hours
OFF TIMER	00	Heating fan residual-period running : Disable
	01	Heating fan residual-period running : 0.5 hours
	02	Heating fan residual-period running : 2 hours
	03	Heating fan residual-period running : 6 hours
NIGHT SETBACK	00	Remote control signal receiver LED : Brightness High
	01	Remote control signal receiver LED : Brightness Low
	02	Remote control signal receiver LED : OFF

* Refer to technical data.

⑤ Receiver

1 Control plural indoor units with one remote control

Up to 16 indoor units can be connected.

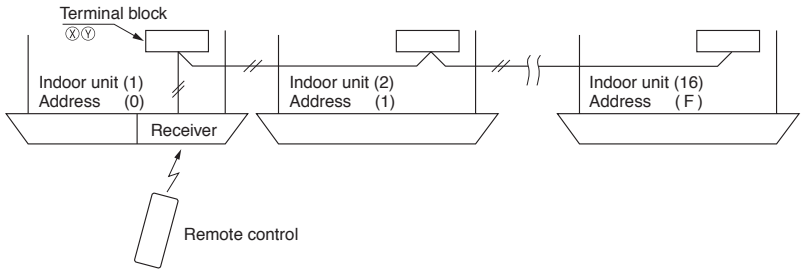
1. Connect the XY terminal with 2 cores wire. As for the size, refer to the following note.
2. For Packaged air-conditioner series, set the indoor unit address with SW2 on the indoor unit PCB from [0] to [F] so as not to duplicate.

Restrictions on the thickness and length of wire (Maximun total extension 600m.)

Standard	Within 0.3 mm² × 100m
	Within 0.5 mm² × 200m
	Within 0.75mm² × 300m
	Within 1.25mm² × 400m
	Within 2.0 mm² × 600m

For the shop series

For VRF series, set the indoor unit address with SW1, SW2 and SW5-2 on the indoor unit PCB from [000] to [127] so as not to duplicate.

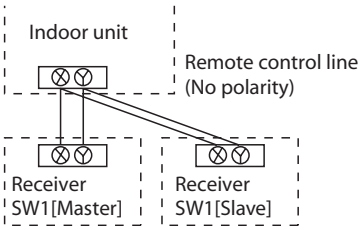


For the building air-conditioning and gas heat pump series

Set the indoor unit and outdoor unit numbers by manually specifying the addresses.
Use the rotary switchs SW1 and SW2 provided on the indoor unit PCB (printed circuit board) to set the indoor unit numbers so that they are not duplicated.

Master/Slave setting when using plural remote control

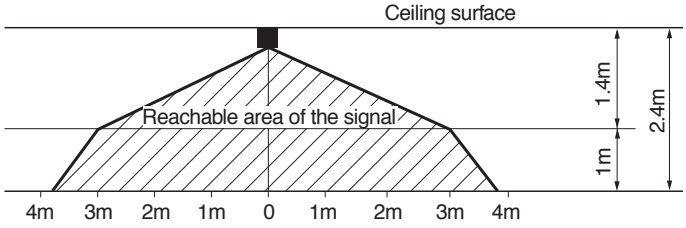
Up to two receivers can be installed in one indoor unit group.



Switch	Setting	Function
SW2	ON	Master
	OFF	Slave

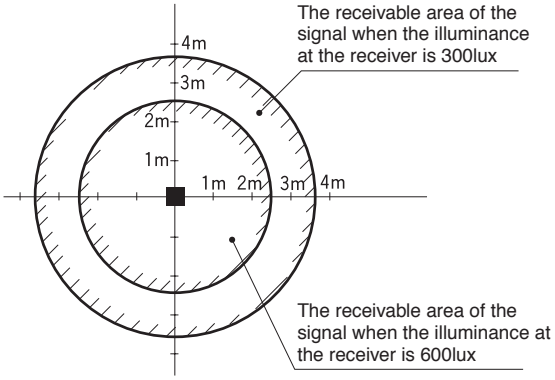
Wireless remote control's operable area

1. Standard reachable area of the signal
   [condition] Illuminance at the receiver: 300lux
   (when no lighting is installed within 1m of the receiver in an ordinary office.)



⑤ Receiver (continued)

2. Correlation between illuminance at the receiver and reachable area of the signal in a plain view. The drawing in the right shows the correlation between the reachable area of the signal and illuminance at the receiver when the remote control is operated at 1.0m high under the condition of ceiling height of 2.4m. When the illuminance becomes double, the area is narrowed down to two thirds.

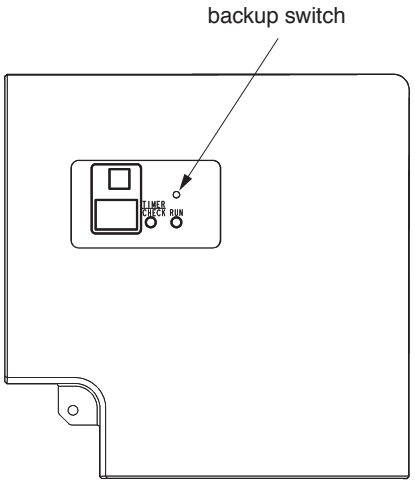


3. Installation tips when several receivers are installed close
   Minimum distance between the indoor units which can avoid cross communication is 5m under the condition of 300lux of illuminance at the receiver.
   (When no lighting is installed within 1m of the receiver in an ordinary office)

Backup switch

A Backup switch is provided on the receiver. Even when the operation from the wireless remote control is not possible (due to flat batteries, control lost, or control failure), still it possible to operate as temporary means. Press the switch directly when operating it.

1. The air-conditioner starts the operation with the condition of Auto mode, 23°C of set point, High fan speed and horizontal louver position.
2. The air-conditioner stops the operation when the switch is pressed when in operation.



Cooling test run operation

- After safety confirmation, turn on the power.
- Transmit a cooling operation command with the wireless remote control unit, while the backup switch on the receiver is depressed.
- If the backup switch on the receiver is pressed during a test run, it will end the test run.
- If you cannot operate the unit properly during a test run, please check wiring by consulting with inspection guides.

How to read the 2-digit display

On the receiver of a wireless kit, a two-digit (7-segment) display is provided.

1. An indication will be displayed for one hour after power on.
2. An indication will be displayed for 3.5 seconds after transmitting a “STOP” command from the wireless remote control or the operation of the backup switch to stop the unit.
3. An indication appearing in (1) or (2) above will go off as soon as the unit starts operation.
4. When there are no error records to indicate, addresses of all the connected units are displayed.
5. When there are some error records remaining, the error records are displayed.
6. Error records can be cleared by transmitting a "STOP" command from the wireless remote control, while the backup button is pressed.

3.1.2 FDTC series (RCN-TC-24W-E2)

PJA012D791

Note :
Following functions of FDTC Type-F indoor unit series are not able to be set with this wireless remote control (RCN-TC-24W-E2).
1. Individual flap control system

Safety precautions

●Please read this manual carefully before starting installation work to install the unit properly. Every one of the followings is important information to be observed strictly.
⚠WARNING Failure to follow these instructions properly may result in serious consequences such as death, severe injury, etc.
⚠CAUTION Failure to follow these instructions properly may cause injury or property damage. It could have serious consequences depending on the circumstances.
●The following pictograms are used in the text.

⃠	Never do.	❗	Always follow the instructions given.

●Keep this manual at a safe place where you can consult with whenever necessary. Show this manual to installers when moving or repairing the unit. When the ownership of the unit is transferred, this manual should be given to a new owner.

⚠WARNING

- **Consult your dealer or a professional contractor to install the unit.**
  Improper installation made on your own may cause electric shocks, fire or dropping of the unit.
- **Installation work should be performed properly according to this installation manual.**
  Improper installation work may result in electric shocks, fire or break-down.
- **Be sure to use accessories and specified parts for installation work.**
  Use of unspecified parts may result in drop, fire or electric shocks.
- **Install the unit properly to a place with sufficient strength to hold the weight.**
  If the place is not strong enough, the unit may drop and cause injury.
- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient and improper work can cause electric shock and fire.
- **Shut OFF the main power source before starting electrical work.**
  Otherwise, it could result in electric shocks, break-down or malfunction.
- **Do not modify the unit.**
  It could cause electric shocks, fire, or break-down.
- **Be sure to turn OFF the power circuit breaker before repairing/inspecting the unit.**
  Repairing/inspecting the unit with the power circuit breaker turned ON could cause electric shocks or injury.
- **Do not install the unit in appropriate environment or where inflammable gas could generate, flow in, accumulate or leak.**
  If the unit is used at places where air contains dense oil mist, steam, organic solvent vapor, corrosive gas (ammonium, sulfuric compound, acid, etc) or where acidic or alkaline solution, special spray, etc. are used, it could cause electric shocks, break-down, smoke or fire as a result of signi ficant deterioration of its performance or corrosion.
- **Do not install the unit where water vapor is generated excessively or condensation occurs.**
  It could cause electric shocks, fire, or break-down.
- **Do not use the unit in a place where it gets wet, such as laundry room.**
  It could cause electric shocks, fire, or break-down.
- **Do not operate the unit with wet hands.**
  It could cause electric shocks.

⚠WARNING

- **Do not wash the unit with water.**
  It could cause electric shocks, fire, or break-down.
- **Use the specified cables for wiring, and connect them securely with care to protect electronic parts from external forces.**
  Improper connections or fixing could cause heat generation, fire, etc.
- **When installing the unit at a hospital, telecommunication facility, etc., take measures to suppress electric noises.**
  It could cause malfunction or break-down due to hazardous effects on the inverter, private power generator, high frequency medical equipment, radio communication equipment, etc.
  The influences transmitted from the remote control to medical or communication equipment could disrupt medical activities, video broadcasting or cause noise interference.
- **Do not leave the remote control with its PCB case removed.**
  If dew, water, insect, etc. enters through the hole, it could cause electric shocks, fire or break-down.

⚠CAUTION

- Do not install the wireless kit at the following places in order to avoid malfunction.
  It could cause break-down or deformation of remote control.
  (1) Places exposed to direct sunlight
  (2) Places near heat devices
  (3) High humidity places
  (4) Hot surface or cold surface enough to generate condensation
  (5) Places exposed to oil mist or steam directly
  (6) Uneven surface
  (7) Places affected by the direct air flow of the AC unit
  (8) Places where the receiver is influenced by the fluorescent lamp (especially inverter type) or sunlight
  (9) Places where the receiver is affected by infrared rays of any other communication devices
  (10) Places where some object may obstruct the communication with the remote control.

① Accessories

Please make sure that you have all of the following accessories.

① Receiver		1
② Parts set		1
③ Installation manual		1

① Wireless remote control		1
② Remote control holder		1
③ Screw for holder		2
④ AAA dry cell battery (LR03)		2
⑤ User's manual		1

② Preparation before installation

Setting on site

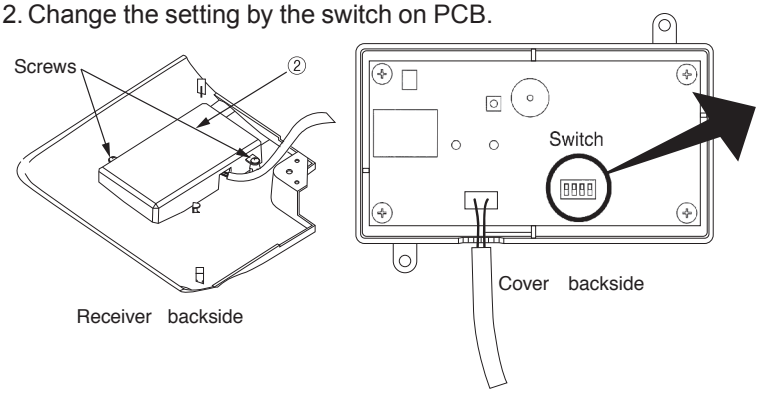
PCB on the receiver has the following switches to set the functions. Default setting is shown with ☐ mark.

SW1	Prevents interference during plural setting	☐ ON : Normal OFF : Remote
SW2	Receiver master/slave setting	☐ ON : Master OFF : Slave
SW3	Buzzer	☐ ON : Valid OFF : Invalid
SW4	Auto restart	ON : Valid ☐ OFF : Invalid

② Preparation before installation (continued)

To change setting

1. Remove the cover by unscrewing two screws from the back of receiver.
2. Change the setting by the switch on PCB.



Master/Slave setting when using plural remote controls

Up to two receiver or wired remote control can be installed in one indoor unit group. When two receiver or wired remote control are used, it is necessary to change SW on the PCB to set it as slave.

3. When SW1 is turned to OFF position, change the wireless remote control setting.
   For the method of changing the setting, refer to Setting to avoid mixed communication of ④ Wireless remote control .

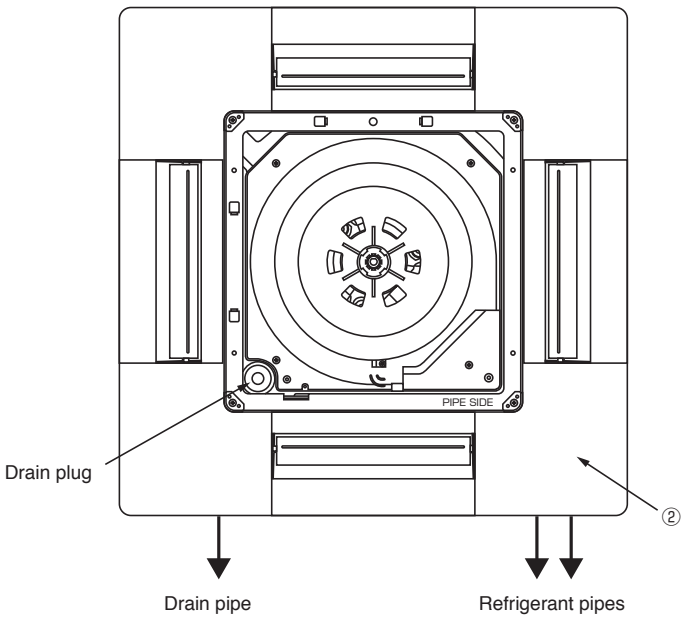
   *The receivable area of the signal refer to ⑤ Receiver .

③ How to install the receiver

The receiver can be installed by replacing with a corner panel on the applicable decorative panel.

Preparation before installation

① Remove the air return grille.
② Remove a corner panel located on the refrigerant pipes side.
③ Remove two screws and detach the lid from the control box of the air-conditioner.

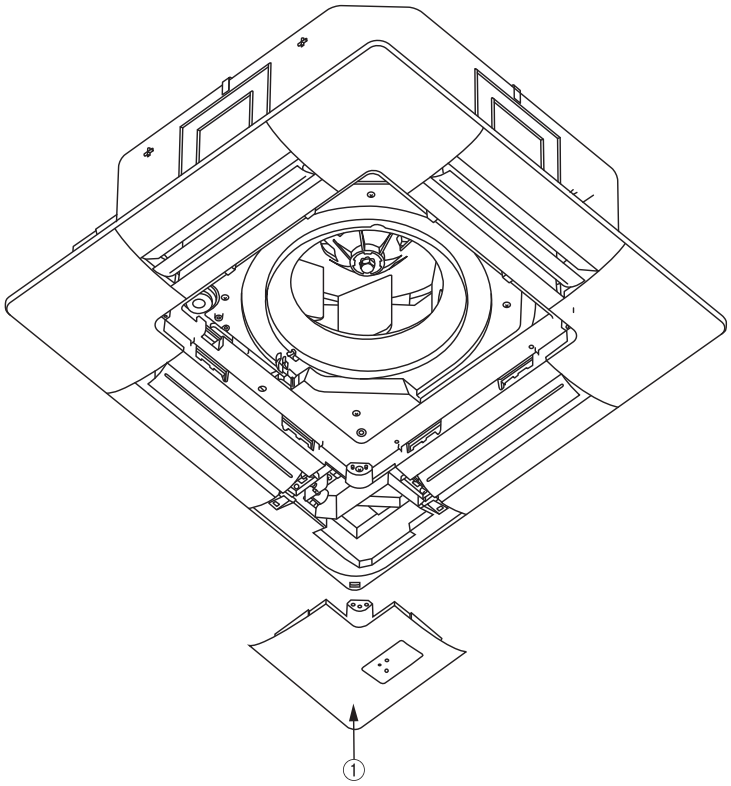


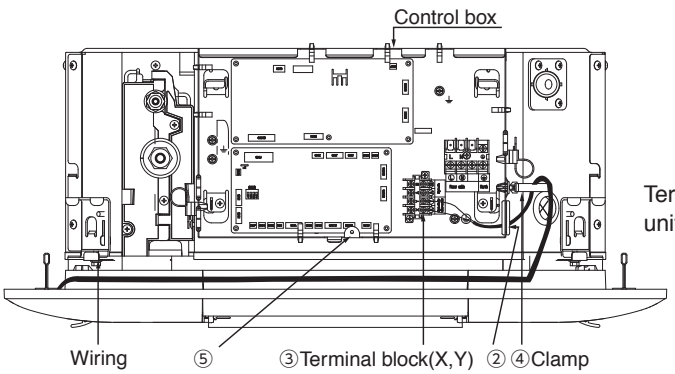
③ How to install the receiver(continued)

Installation of the receiver

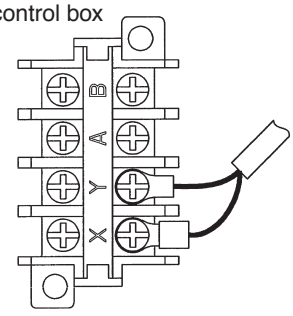
① Attach the receiver to the panel according to the panel installation manual.
② Put the wiring in the control box with other wiring as shown below.
③ Connect the wiring to the terminal block (X,Y) provided in the control box.(No polarity)
④ Fix the wiring with the clamp as shown below.
⑤ Reattach the control box lid with 1 screw removed.

Note: Make sure wires not to be pinched by any other parts like panel and control box.





Terminal block (X,Y) in the indoor unit control box

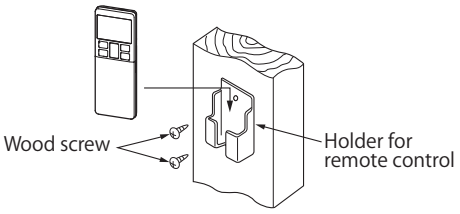


④ Wireless remote control

Installation tips for the remote control holder

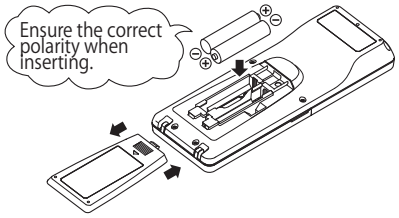
Fix the remote control holder using the screws supplied with this product.

* Precautions for installing the holder
- Adjust the position so that it is upright.
- Ensure that the screw heads are not protruding.
- Do not attach the holder on plaster wall.



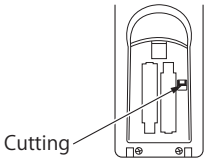
How to insert batteries

1. Detach the back lid.
2. Insert the batteries. (two AAA batteries)
3. Reattach the back lid.



Setting to avoid mixed communication

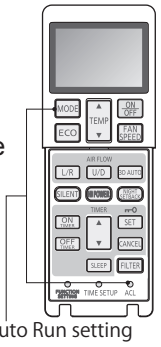
1. Detach the back lid, and remove the batteries.
2. Cut off the switching wire in the battery compartment using nippers.
3. Insert the batteries, and attach the back lid.



Changing the wireless remote control setting

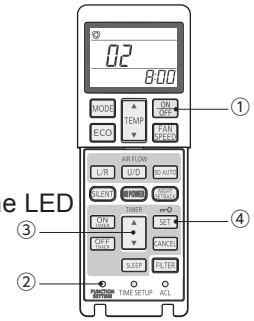
How to change the Auto Run setting
The Auto Run mode is not available on the building air-conditioner and gas heat pump series (excluding the cooling/heating free multi system).
When using the wireless remote control to operate those models, set the wireless remote control to disable the Auto Run mode.
To disable the Auto Run mode, press the ACL switch while holding down the MODE button, or insert batteries while holding down the MODE button.

* Note: Once the batteries are removed, the setting is reset to the factory default.
When the batteries are removed, repeat the steps described above.



Indoor function settings

1. How to set indoor functions
   ① Press the ON/OFF button to stop the unit.
   ② Press the desired one of the buttons shown item **2.** while holding down the FUNCTION SETTING switch.
   ③ Use the selection buttons, ▲ and ▼, to change the setting.
   ④ Press the SET button.
   The buzzer on the wireless remote control signal receiver beeps twice, and the LED lamp flashes four times at two-second intervals.



④ Wireless remote control (continued)

2. Setting details
   The following functions can be set.

Button	Number indicator	Function setting
FAN SPEED	00	Fun speed setting : Standard
	01	Fun speed setting : Setting 1 *
	02	Fun speed setting : Setting 2 *
MODE	00	Room heating temperature adjustment : Disable
	01	Room heating temperature adjustment : +1°C
	02	Room heating temperature adjustment : +2°C
	03	Room heating temperature adjustment : +3°C
FILTER	00	Filter sign display : OFF
	01	Filter sign display : 180 hours
	02	Filter sign display : 600 hours
	03	Filter sign display : 1000 hours
	04	Filter sign display : Operation stop after 1000 hours have elapsed
U/P (Up/Down)	00	Anti draft setting : Disable
	01	Anti draft setting : Enable
SILENT	00	Infrared sensor setting (Motion sensor setting) : Disable
	01	Infrared sensor setting (Motion sensor setting) : Enable
HI POWER	00	Infrared sensor control (Motion sensor control) : Disable
	01	Infrared sensor control (Motion sensor control) : Power control only
	02	Infrared sensor control (Motion sensor control) : Auto OFF only
	03	Infrared sensor control (Motion sensor control) : Power control + Auto OFF
ON TIMER	00	Cooling fan residual-period running : Disable
	01	Cooling fan residual-period running : 0.5 hours
	02	Cooling fan residual-period running : 2 hours
	03	Cooling fan residual-period running : 6 hours
OFF TIMER	00	Heating fan residual-period running : Disable
	01	Heating fan residual-period running : 0.5 hours
	02	Heating fan residual-period running : 2 hours
	03	Heating fan residual-period running : 6 hours
NIGHT SETBACK	00	Remote control signal receiver LED : Brightness High
	01	Remote control signal receiver LED : Brightness Low
	02	Remote control signal receiver LED : OFF

* Refer to technical data.

⑤ Receiver

1 Control plural indoor units with one remote control

Up to 16 indoor units can be connected.

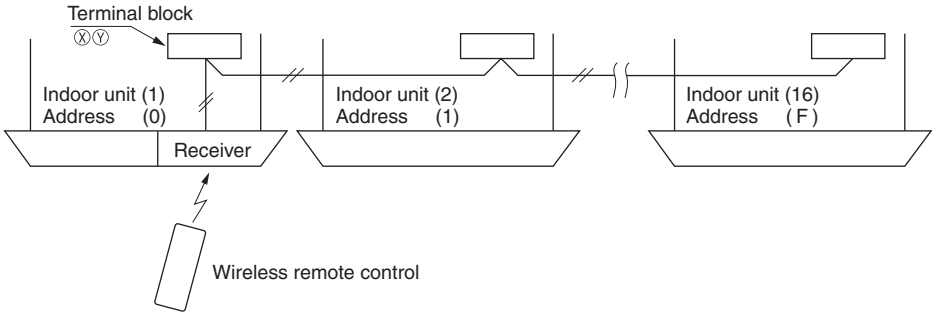
1. Connect the XY terminal with 2 cores wire. As for the size, refer to the following note.
2. For Packaged air-conditioner series, set the indoor unit address with SW2 on the indoor unit PCB from [0] to [F] so as not to duplicate.

Restrictions on the thickness and length of wire (Maximun total extension 600m.)

Standard	Within 0.3 mm² × 100m
	Within 0.5 mm² × 200m
	Within 0.75mm² × 300m
	Within 1.25mm² × 400m
	Within 2.0 mm² × 600m

For the shop series

For VRF series, set the indoor unit address with SW1, SW2 and SW5-2 on the indoor unit PCB from [000] to [127] so as not to duplicate.

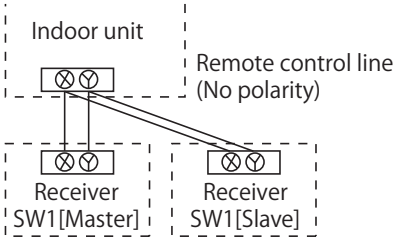


For the building air-conditioner and gas heat pump series

Set the indoor unit and outdoor unit numbers by manually specifying the addresses.
Use the rotary switchs SW1 and SW2 provided on the indoor unit PCB (printed circuit board) to set the indoor unit numbers so that they are not duplicated.

Master/Slave setting when using plural remote control

Up to two receivers can be installed in one indoor unit group.

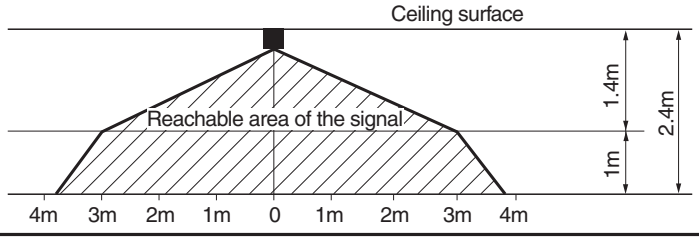


Switch	Setting	Function
SW2	ON	Master
	OFF	Slave

Wireless remote control's operable area

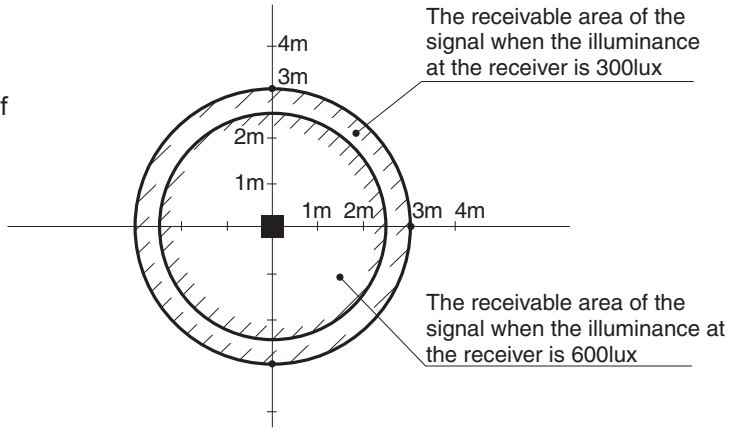
1. Standard reachable area of the signal

[Condition] Illuminance at the receiver: 300lux
(when no lighting is installed within 1m of the receiver in an ordinary office.)



⑤ Receiver (continued)

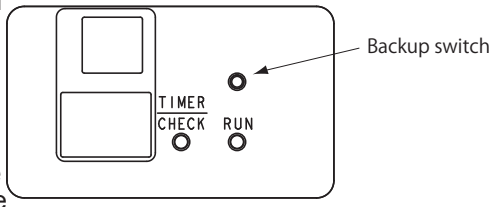
2. Correlation between illuminance at the receiver and reachable area of the signal in a plain view.
   The drawing in the right shows the correlation between the reachable area of the signal and illuminance at the receiver when the wireless remote control is operated at 1m high under the condition of ceiling height of 2.4m.



3. Installation tips when several receivers are installed close
   Minimum distance between the indoor units which can avoid cross communication is 5m under the condition of 300lux of illuminance at the receiver.
   (When no lighting is installed within 1m of the receiver in an ordinary office.)

Backup switch

A backup switch is provided on the receiver section of the panel surface.
When operation from the wireless remote control unit is not possible (due to flat batteries, a mislaid unit, a unit failure), you can use it as an emergency means. You should operate this switch manually.



1. If pressed while the air-conditioner is in a halt, it will cause the air-conditioner to start operation in the automatic mode (in the case of cooling only, in the cooling mode).
   Wind speed: Hi fan, Temperature setting: 23°C, Louver: horizontal
2. If pressed while the air-conditioner is in operation, it will stop the air-conditioner.

Cooling test run operation

- After safety confirmation, turn on the power.
- Transmit a cooling operation command with the wireless remote control unit, while the backup switch on the receiver is depressed.
- If the backup switch on the receiver is pressed during a test run, it will end the test run.
- If you cannot operate the unit properly during a test run, please check wiring by consulting with inspection guides.

How to read the two-digit display

On the receiver of a wireless kit, a two-digit (7-segment) display is provided.

1. An indication will be displayed for one hour after power on.
2. An indication will be displayed for 3.5 seconds after transmitting a “STOP” command from the wireless remote control or the operation of the backup switch to stop the unit.
3. An indication appearing in (1) or (2) above will go off as soon as the unit starts operation.
4. When there are no error records to indicate, addresses of all the connected units are displayed.
5. When there are some error records remaining, the error records are displayed.
6. Error records can be cleared by transmitting a “STOP” command from the wireless remote control, while the backup button is pressed.

3.1.3 FDE series (RCN-E-E2)

PFA012D630

Safety precautions

●Please read this manual carefully before starting installation work to install the unit properly. Every one of the followings is important information to be observed strictly.
⚠WARNING Failure to follow these instructions properly may result in serious consequences such as death, severe injury, etc.
⚠CAUTION Failure to follow these instructions properly may cause injury or property damage. It could have serious consequences depending on the circumstances.
●The following pictograms are used in the text.

⃠	Never do.	❗	Always follow the instructions given.

●Keep this manual at a safe place where you can consult with whenever necessary. Show this manual to installers when moving or repairing the unit. When the ownership of the unit is transferred, this manual should be given to a new owner.

⚠WARNING

- **Consult your dealer or a professional contractor to install the unit.**
  Improper installation made on your own may cause electric shocks, fire or dropping of the unit.
- **Installation work should be performed properly according to this installation manual.**
  Improper installation work may result in electric shocks, fire or break-down.
- **Be sure to use accessories and specified parts for installation work.**
  Use of unspecified parts may result in drop, fire or electric shocks.
- **Install the unit properly to a place with sufficient strength to hold the weight.**
  If the place is not strong enough, the unit may drop and cause injury.
- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient and improper work can cause electric shock and fire.
- **Shut OFF the main power source before starting electrical work.**
  Otherwise, it could result in electric shocks, break-down or malfunction.
- **Do not modify the unit.**
  It could cause electric shocks, fire, or break-down.
- **Be sure to turn OFF the power circuit breaker before repairing/inspecting the unit.**
  Repairing/inspecting the unit with the power circuit breaker turned ON could cause electric shocks or injury.
- **Do not install the unit in appropriate environment or where inflammable gas could generate, flow in, accumulate or leak.**
  If the unit is used at places where air contains dense oil mist, steam, organic solvent vapor, corrosive gas (ammonium, sulfuric compound, acid, etc) or where acidic or alkaline solution, special spray, etc. are used, it could cause electric shocks, break-down, smoke or fire as a result of significant deterioration of its performance or corrosion.
- **Do not install the unit where water vapor is generated excessively or condensation occurs.**
  It could cause electric shocks, fire, or break-down.
- **Do not use the unit in a place where it gets wet, such as laundry room.**
  It could cause electric shocks, fire, or break-down.
- **Do not operate the unit with wet hands.**
  It could cause electric shocks.

⚠WARNING

- **Do not wash the unit with water.**
  It could cause electric shocks, fire, or break-down.
- **Use the specified cables for wiring, and connect them securely with care to protect electronic parts from external forces.**
  Improper connections or fixing could cause heat generation, fire, etc.
- **When installing the unit at a hospital, telecommunication facility, etc., take measures to suppress electric noises.**
  It could cause malfunction or break-down due to hazardous effects on the inverter, private power generator, high frequency medical equipment, radio communication equipment, etc.
  The influences transmitted from the remote control to medical or communication equipment could disrupt medical activities, video broadcasting or cause noise interference.
- **Do not leave the remote control with its PCB case removed.**
  If dew, water, insect, etc. enters through the hole, it could cause electric shocks, fire or break-down.

⚠CAUTION

- Do not install the wireless kit at the following places in order to avoid malfunction.
  It could cause break-down or deformation of remote control.
  (1) Places exposed to direct sunlight
  (2) Places near heat devices
  (3) High humidity places
  (4) Hot surface or cold surface enough to generate condensation
  (5) Places exposed to oil mist or steam directly
  (6) Uneven surface
  (7) Places affected by the direct air flow of the AC unit
  (8) Places where the receiver is influenced by the fluorescent lamp (especially inverter type) or sunlight
  (9) Places where the receiver is affected by infrared rays of any other communication devices
  (10) Places where some object may obstruct the communication with the remote control

① Accessories

Please make sure that you have all of the following accessories.

① Receiver		1
② Parts set		1
③ Installation manual		1

① Wireless remote control		1
② Remote control holder		1
③ Screw for holder		2
④ AAA dry cell battery (LR03)		2
⑤ User's manual		1

② Preparation before installation

Setting on site

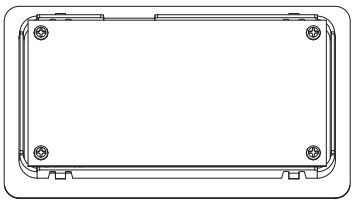
PCB on the receiver has the following switches to set the function.
Default setting is shown with [ ] mark.

SW1	Prevents interference during plural setting	[ON : Normal] OFF : Customized
SW2	Receiver master/slave setting	[ON : Master] OFF : Slave
SW3	Buzzer	[ON : Valid] OFF : Invalid
SW4	Auto restart	ON : Valid [OFF : Invalid]

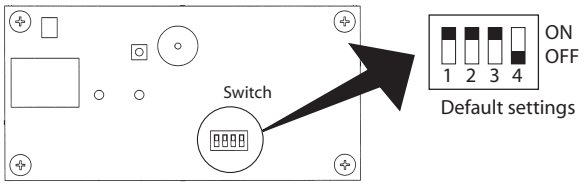
② Preparation before installation (continued)

To change setting

1. Remove four screws located on the back of the receiver and detach the board.
2. Change the setting by the switch on PCB.



Receiver backside



Default settings

Master/Slave setting when using plural remote controls

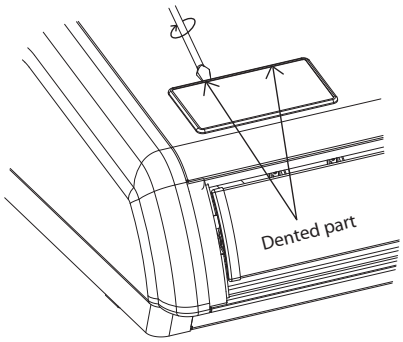
Up to two receiver or wired remote control can be installed in one indoor unit group. When two receiver or wired remote control are used, it is necessary to change SW on the PCB to set it as slave.

3. When SW1 is turned to OFF position, change the wireless remote control setting.
   For the method of changing the setting, refer to Setting to avoid mixed communication of ④ Wireless remote control .

   *The receivable area of the signal refer to ⑤ Receiver .

③ How to install the receiver

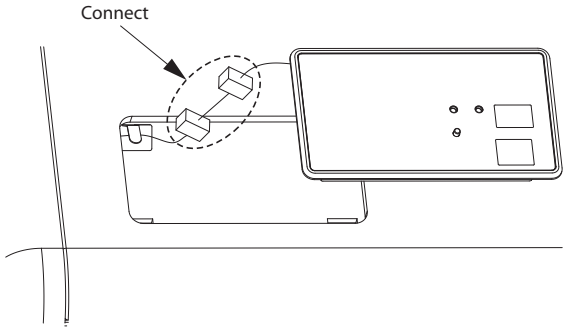
The receiver can be installed by replacing with a cover of the panel.
CAUTION: When installing the receiver after unit has been fixed, injury due to falling may result because of working at high place.

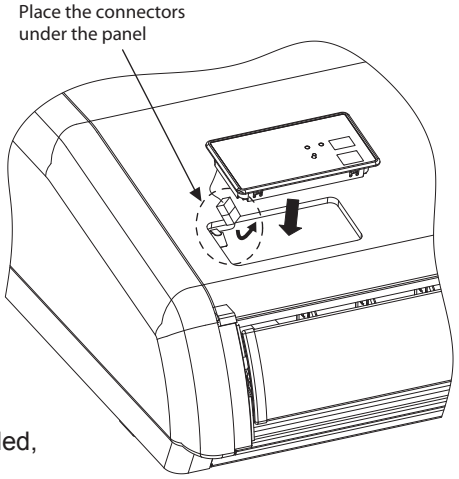


① **Remove the cover**
Insert a flat-blade screw driver into the dented part (2 places), and wrench slightly.

② **Connect the wiring**
Connect wiring of the receiver to the wiring in the back.

ATTENTION: Do not remove the clamp fixed the wiring.





③ **Installation of the receiver**
Check direction of the receiver, and fix to the panel.

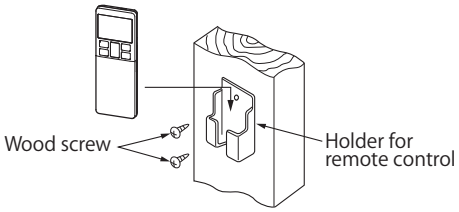
CAUTION: Connect the connectors before installing the receiver.
In case of connecting after the receiver had been installed, it will be necessary to remove the panel.

④ Wireless remote control

Installation tips for the remote control holder

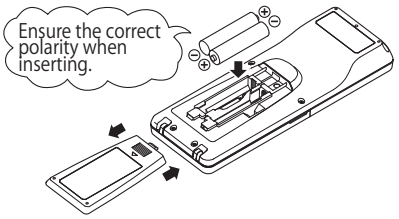
Fix the remote control holder using the screws supplied with this product.

* Precautions for installing the holder
- Adjust the position so that it is upright.
- Ensure that the screw heads are not protruding.
- Do not attach the holder on plaster wall



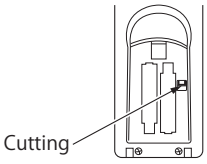
How to insert batteries

1. Detach the back lid.
2. Insert the batteries. (two AAA batteries)
3. Reattach the back lid.



Setting to avoid mixed communication

1. Detach the back lid, and remove the batteries.
2. Cut off the switching wire in the battery compartment using nippers.
3. Insert the batteries, and attach the back lid.



Changing the wireless remote control setting

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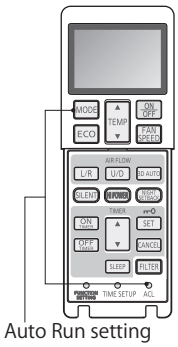
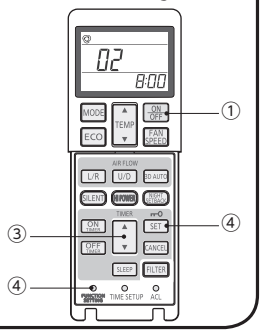
The Auto Run mode is not available on the building air-conditioner and gas heat pump series (excluding the cooling/heating free multi system).
When using the wireless remote control to operate those models, set the wireless remote control to disable the Auto Run mode.
To disable the Auto Run mode, press the ACL switch while holding down the MODE button, or insert batteries while holding down the MODE button.

* Note: Once the batteries are removed, the setting is reset to the factory default.
When the batteries are removed, repeat the steps described above.



Indoor function settings

1. How to set indoor functions
   ① Press the ON/OFF button to stop the unit.
   ② Press the desired one of the buttons shown item **2.** while holding down the FUNCTION SETTING switch.
   ③ Use the selection buttons, ▲ and ▼, to change the setting.
   ④ Press the SET button.
   The buzzer on the wireless remote control signal receiver beeps twice, and the LED lamp flashes four times at two-second intervals.



④ Wireless remote control (continued)

2. Setting details
   The following functions can be set.

Button	Number indicator	Function setting
FAN SPEED	00	Fun speed setting : Standard
	01	Fun speed setting : Setting 1 *
	02	Fun speed setting : Setting 2 *
MODE	00	Room heating temperature adjustment : Disable
	01	Room heating temperature adjustment : +1°C
	02	Room heating temperature adjustment : +2°C
	03	Room heating temperature adjustment : +3°C
FILTER	00	Filter sign display : OFF
	01	Filter sign display : 180 hours
	02	Filter sign display : 600 hours
	03	Filter sign display : 1000 hours
	04	Filter sign display : Operation stop after 1000 hours have elapsed
U/P (Up/Down)	00	Anti draft setting : Disable
	01	Anti draft setting : Enable
SILENT	00	Infrared sensor setting (Motion sensor setting) : Disable
	01	Infrared sensor setting (Motion sensor setting) : Enable
HI POWER	00	Infrared sensor control (Motion sensor control) : Disable
	01	Infrared sensor control (Motion sensor control) : Power control only
	02	Infrared sensor control (Motion sensor control) : Auto OFF only
	03	Infrared sensor control (Motion sensor control) : Power control + Auto OFF
ON TIMER	00	Cooling fan residual-period running : Disable
	01	Cooling fan residual-period running : 0.5 hours
	02	Cooling fan residual-period running : 2 hours
	03	Cooling fan residual-period running : 6 hours
OFF TIMER	00	Heating fan residual-period running : Disable
	01	Heating fan residual-period running : 0.5 hours
	02	Heating fan residual-period running : 2 hours
	03	Heating fan residual-period running : 6 hours
NIGHT SETBACK	00	Remote control signal receiver LED : Brightness High
	01	Remote control signal receiver LED : Brightness Low
	02	Remote control signal receiver LED : OFF

* Refer to technical data.

⑤ Receiver

1 Control plural indoor units with one remote control

Up to 16 indoor units can be connected.

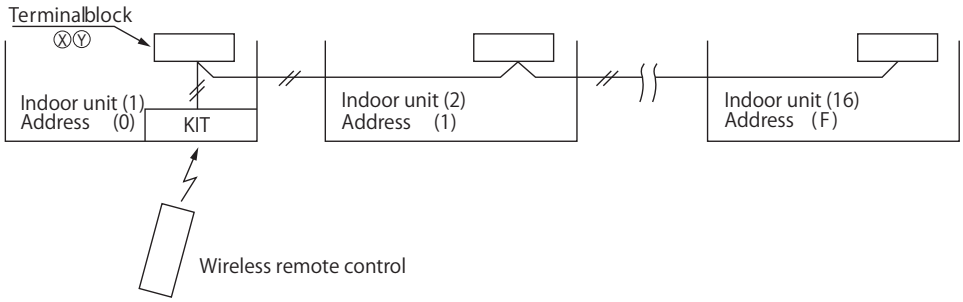
1. Connect the XY terminal with 2 cores wire. As for the size, refer to the following note.
2. For Packaged air-conditioner series, set the indoor unit address with SW2 on the indoor unit PCB from [0] to [F] so as not to duplicate.

Restrictions on the thickness and length of wire (Maximun total extension 600m.)

Standard	Within 0.3 mm² × 100m
	Within 0.5 mm² × 200m
	Within 0.75mm² × 300m
	Within 1.25mm² × 400m
	Within 2.0 mm² × 600m

For the shop series

For VRF series, set the indoor unit address with SW1, SW2 and SW5-2 on the indoor unit PCB from [000] to [127] so as not to duplicate.

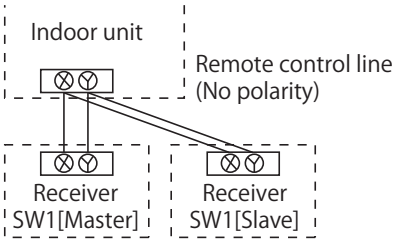


For the building air-conditioner and gas heat pump series

Set the indoor unit and outdoor unit numbers by manually specifying the addresses.
Use the rotary switchs SW1 and SW2 provided on the indoor unit PCB (printed circuit board) to set the indoor unit numbers so that they are not duplicated.

Master/Slave setting when using plural remote control

Up to two receivers can be installed in one indoor unit group.

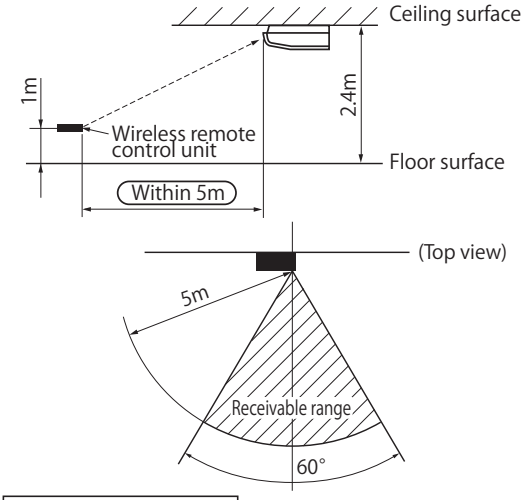


Switch	Setting	Function
SW2	ON	Master
	OFF	Slave

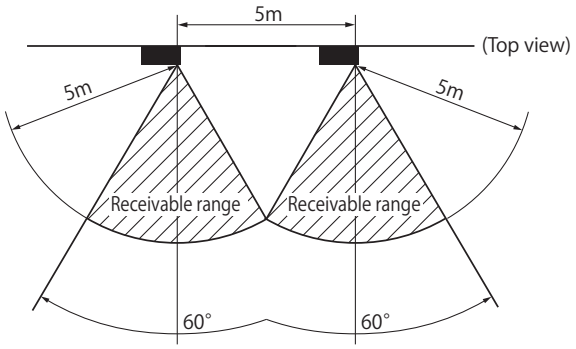
⑤ Receiver (continued)

Wireless remote control's operable area

1. Standard signal receiving range
   [Condition]
   Illuminance at the receiver area: 360 lux.
   (When no lighting fixture is located within 1m of indoor unit in an ordinary office)

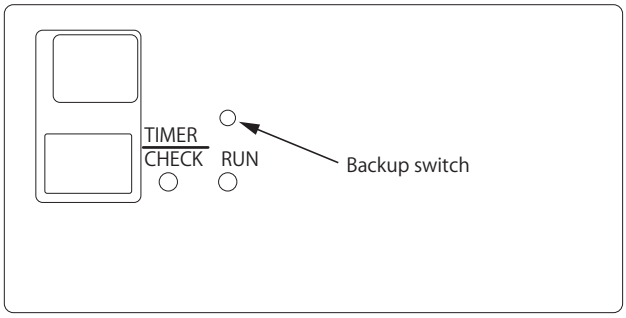


2. Points for attention in connecting a plural number of indoor units
   [Condition]
   Illuminance at the receiver area: 360 lux.



Backup switch

A backup switch is provided on the receiver section of the panel surface.
When operation from the wireless remote control unit is not possible (due to flat batteries, a mislaid unit, a unit failure), you can use it as an emergency means. You should operate this switch manually.



1. If pressed while the air-conditioner is in a halt, it will cause the air-conditioner to start operation in the automatic mode (in the case of cooling only, in the cooling mode).
   Wind speed: Hi fan, Temperature setting: 23°C, Louver: horizontal.
2. If pressed while the air-conditioner is in operation, it will stop the air-conditioner.

Cooling test run operation

- After safety confirmation, turn on the power.
- Transmit a cooling operation command with the wireless remote control unit, while the backup switch on the receiver is depressed.
- If the backup switch on the receiver is pressed during a test run, it will end the test run.
- If you cannot operate the unit properly during a test run, please check wiring by consulting with inspection guides.

How to read the two-digit display

A two-digit indicator (7-segment indicator) is provided on the receiver section.

1. An indication will be displayed for one hour after power on.
2. An indication appears for 3.5 seconds when a “Stop” command is sent from the wireless remote control unit while the air-conditioner is not running.
3. An indication appearing in (1) or (2) above will go off as soon as the unit starts operation.
4. When there are no error records to indicate, addresses are displayed for all of the connected units.
5. When there are some error records remaining, the error records are displayed.
6. Error records can be cleared by transmitting a “Stop” command from the wireless remote control unit, while the backup switch is depressed.

3.1.4 FDU, FDUM, FDF series (RCN-KIT4-E2)

PJZ012D112A

Safety precautions

●Please read this manual carefully before starting installation work to install the unit properly.
Every one of the followings is important information to be observed strictly.
⚠WARNING Failure to follow these instructions properly may result in serious consequences such as death, severe injury, etc.
⚠CAUTION Failure to follow these instructions properly may cause injury or property damage. It could have serious consequences depending on the circumstances.
●The following pictograms are used in the text.

⃠	Never do.	❗	Always follow the instructions given.

●Keep this manual at a safe place where you can consult with whenever necessary. Show this manual to installers when moving or repairing the unit. When the ownership of the unit is transferred, this manual should be given to a new owner.

⚠WARNING

- **Consult your dealer or a professional contractor to install the unit.**
  Improper installation made on your own may cause electric shocks, fire or dropping of the unit.
- **Installation work should be performed properly according to this installation manual.**
  Improper installation work may result in electric shocks, fire or break-down.
- **Be sure to use accessories and specified parts for installation work.**
  Use of unspecified parts may result in drop, fire or electric shocks.
- **Install the unit properly to a place with sufficient strength to hold the weight.**
  If the place is not strong enough, the unit may drop and cause injury.
- **Be sure to have the electrical wiring work done by qualified electrical installer, and use exclusive circuit.**
  Power source with insufficient and improper work can cause electric shock and fire.
- **Shut OFF the main power source before starting electrical work.**
  Otherwise, it could result in electric shocks, break-down or malfunction.
- **Do not modify the unit.**
  It could cause electric shocks, fire, or break-down.
- **Be sure to turn OFF the power circuit breaker before repairing/inspecting the unit.**
  Repairing/inspecting the unit with the power circuit breaker turned ON could cause electric shocks or injury.
- **Do not install the unit in appropriate environment or where inflammable gas could generate, flow in, accumulate or leak.**
  If the unit is used at places where air contains dense oil mist, steam, organic solvent vapor, corrosive gas (ammonium, sulfuric compound, acid, etc) or where acidic or alkaline solution, special spray, etc. are used, it could cause electric shocks, break-down, smoke or fire as a result of significant deterioration of its performance or corrosion.
- **Do not install the unit where water vapor is generated excessively or condensation occurs.**
  It could cause electric shocks, fire, or break-down.
- **Do not use the unit in a place where it gets wet, such as laundry room.**
  It could cause electric shocks, fire, or break-down.
- **Do not operate the unit with wet hands.**
  It could cause electric shocks.

⚠WARNING

- **Do not wash the unit with water.**
  It could cause electric shocks, fire, or break-down.
- **Use the specified cables for wiring, and connect them securely with care to protect electronic parts from external forces.**
  Improper connections or fixing could cause heat generation, fire, etc.
- **When installing the unit at a hospital, telecommunication facility, etc., take measures to suppress electric noises.**
  It could cause malfunction or break-down due to hazardous effects on the inverter, private power generator, high frequency medical equipment, radio communication equipment, etc.
  The influences transmitted from the remote control to medical or communication equipment could disrupt medical activities, video broadcasting or cause noise interference.
- **Do not leave the remote control with its PCB case removed.**
  If dew, water, insect, etc. enters through the hole, it could cause electric shocks, fire or break-down.

⚠CAUTION

- Do not install the wireless kit at the following places in order to avoid malfunction.
  It could cause break-down or deformation of remote control.
  (1) Places exposed to direct sunlight
  (2) Places near heat devices
  (3) High humidity places
  (4) Hot surface or cold surface enough to generate condensation
  (5) Places exposed to oil mist or steam directly
  (6) Uneven surface
  (7) Places affected by the direct air flow of the AC unit
  (8) Places where the receiver is influenced by the fluorescent lamp (especially inverter type) or sunlight
  (9) Places where the receiver is affected by infrared rays of any other communication devices
  (10) Places where some object may obstruct the communication with the remote control

① Accessories

Please make sure that you have all of the following accessories.

① Receiver		1
② Wiring (3m)		1
③ Parts set (A)		1
④ Parts set (B)		1
⑤ Parts set (C)		1
⑥ Installation manual		1

① Wireless remote control		1
② Remote control holder		1
③ Screw for holder		2
④ AAA dry cell battery (LR03)		2
⑤ User's manual		1

① Screw for receiver		2
② Fixing band		1
③ Clamp		5
④ Screw for clamp		5

① Receiver installation bracket		1
② Screw for the bracket		2
③ Installation fitting		2

② Preparation before installation

Setting on site

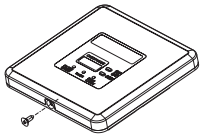
PCB on the receiver has the following switches to set the function. Default setting is shown with ☐ mark.

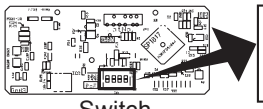
SW1	Prevents interference during plural setting	☐ ON : Normal	OFF : Customized
SW2	Receiver master/ slave setting	☐ ON : Master	OFF : Slave
SW3			
SW4	Auto restart	ON : Valid	☐ OFF : Invalid

② Preparation before installation (continued)

To change setting

1. Remove one screws located on the under of the receiver and detach the board.
2. Change the setting by the switch on PCB.





Switch

Default settings

3. When SW1 is turned to OFF position, change the wireless remote control setting. For the method of changing the setting, refer to Setting to avoid mixed communication of ④ Wireless remote control .

*The receivable area of the signal refer to ⑤ Receiver .

Master/Slave setting when using plural remote controls

Up to two receiver or wired remote control can be installed in one indoor unit group.
When two receiver or wired remote control are used, it is necessary to change SW on the PCB to set it as slave.

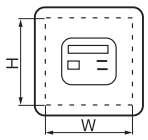
③ How to install the receiver

The following two methods can be used to install the receiver onto a ceiling or a wall.
Select a method according to the installation position.

<Installation position> (A) Direct installation onto the ceiling with wood screws.
(B) Installation with accessory's bracket

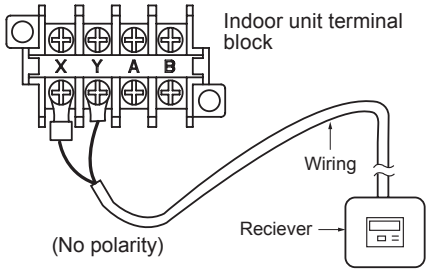
(1) Drilling of the ceiling (ceiling opening)

Drill the receiver installation holes with the dimensions shown right at the ceiling position where wires can be connected.



(A) Direct installation onto the ceiling with wood screws.	88mm(H)×101mm(W)
(B) Installation with enclosed bracket	108mm(H)×108mm(W)

(2) Wiring connection of receiver

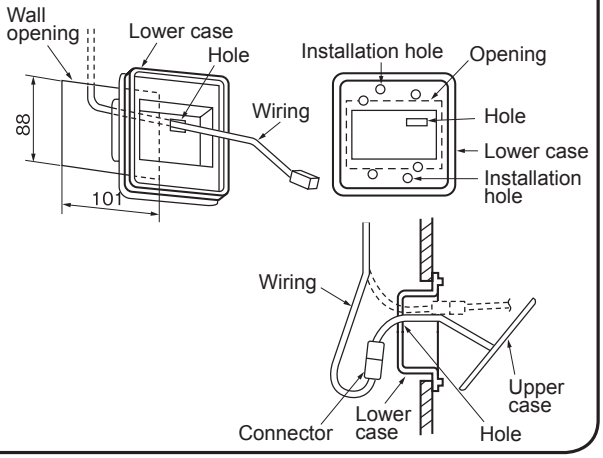


⚠ Caution
Do not connect the wiring to the power source of the terminal block. If it is connected, printed board will be damaged.

(3) Installation of the receiver

Remove the screw on the side of the receiver and sprit it into the upper case and lower case.
Install the receiver with one of the two installation methods (A) to (C) shown below.

(A) Direct installation onto the ceiling with screws



▷ Use this installation method when the ceiling is wooden, and there is no problem for strength in installing directly with wood screws.

① Put through the wiring from the back side to the hole of the lower case.

② Fit the lower case into the ceiling opening. Make sure that the clearance between the convex part of the back of the lower case and the ceiling opening must be as equal as possible on both sides.

③ Using the two installation holes shown right, fix the lower case onto the ceiling with the enclosed wood screws. (The other four holes are not used.)

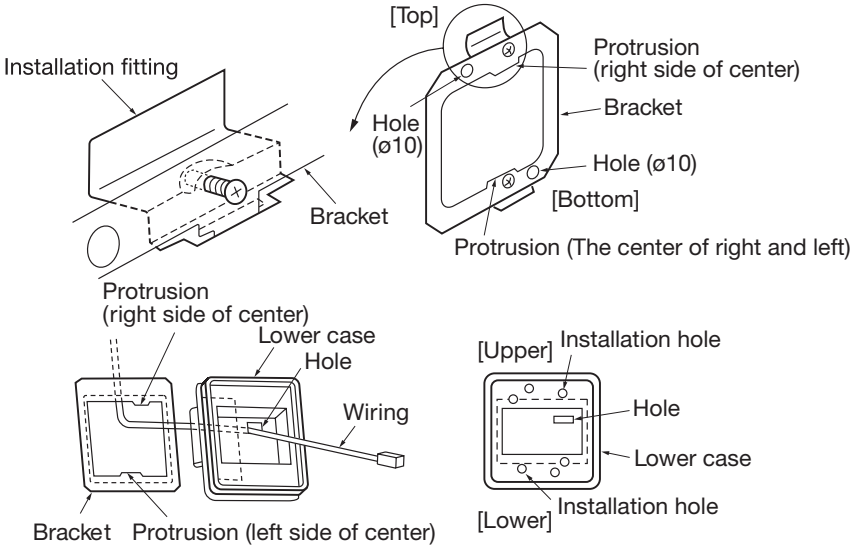
④ Connect the wiring with the wiring from the upper case by the connector.

③ How to install the receiver(continued)

⑤ Take out the connector to the backside from the hole of the lower case putting through the wiring at ①.
⑥ Fit the upper case and the lower case, and tighten the screws.

(B) Installation with enclosed bracket

Use this method when installaing onto a gypsum board (7 to 18mm), etc.

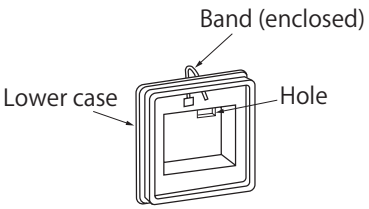


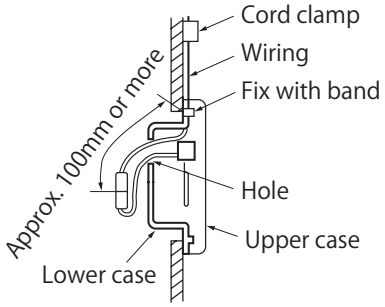
① Catch the two protrusion of the enclosed bracket onto the fitting as shown above, and temporarily fix with the screws. (The bracket has an Upper/Lower and front/back orientation. Confirm the Upper/Lower protrusion positions and the positional relation of the ø10 holes on the bracket and the installation hole on the lower case with the above drawing.)
② Insert the end of the installation fitting into the back of the ceiling from the opening, and tighten the screws to fix the bracket onto the ceiling.
③ Pass the wiring from the rear side through the hole on the lower case.
④ Fit the lower case onto the bracket, and fix the lower case to the bracket using the two installation holes shown above. (The other four holes are not used.)
⑤ Follow step ① to ⑥ for (A) to complete the installation.

③ How to install the receiver (continued)

(C) Exposed installation

Use the following procedure when installing the case with the wiring exposed.





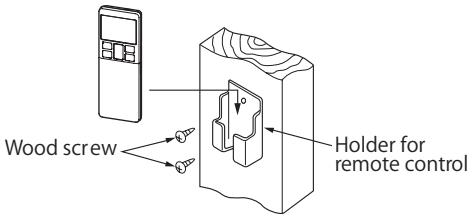
① Cut off the thin section on the side of the upper case with a pair of nippers or a knife, and remove the burrs with a file, etc. (The wiring is passed through this section.)
② Pass the enclosed band through the wiring outlet hole on the lower case.
③ Use on of the light detection adaptor installation methods (A) or (B) explained in section 3, and fix the lower case onto the wall. Do not pass the wiring through the hole on the lower case.
④ Fix the wiring using the band while leaving the wiring length from the band fixing section to the end of the wiring connector at 100mm or more.
⑤ Connect the wiring with the wiring protruding front the upper case using a connector.
⑥ Pass the connected connector and the excess wiring through the hole on the lower case.
⑦ Fit the upper case onto the lower case, and tighten the screws.
⑧ Adequately fix the wiring with the enclesed cord clamp.

④ Wireless remote control

Installation tips for the remote control holder

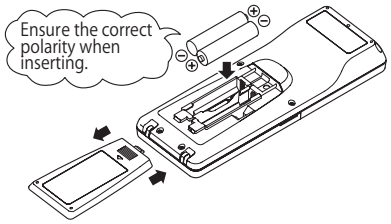
Fix the remote control holder using the screws supplied with this product.

* Precautions for installing the holder
- Adjust the position so that it is upright.
- Ensure that the screw heads are not protruding.
- Do not attach the holder on plaster wall.



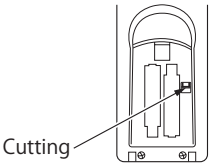
How to insert batteries

1. Detach the back lid.
2. Insert the batteries. (two AAA batteries)
3. Reattach the back lid.



Setting to avoid mixed communication

1. Detach the back lid, and remove the batteries.
2. Cut off the switching wire in the battery compartment using nippers.
3. Insert the batteries, and attach the back lid.

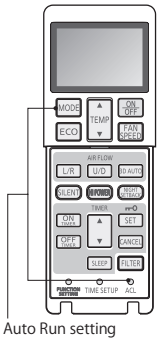


④ Wireless remote control (continued)

Changing the wireless remote control setting

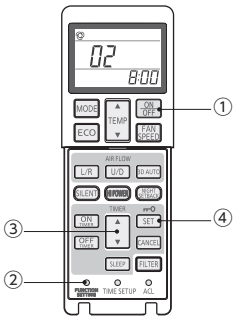
How to change the Auto Run setting
The Auto Run mode is not available on the building air-conditioner and gas heat pump series (excluding the cooling/heating free multi system).
When using the wireless remote control to operate those models, set the wireless remote control to disable the Auto Run mode.
To disable the Auto Run mode, press the ACL switch while holding down the MODE button, or insert batteries while holding down the MODE button.

* Note: Once the batteries are removed, the setting is reset to the factory default.
When the batteries are removed, repeat the steps described above.



Indoor function settings

1. How to set indoor functions
   ① Press the ON/OFF button to stop the unit.
   ② Press the desired one of the buttons shown below while holding down the FUNCTION SETTING switch.
   ③ Use the selection buttons, ▲ and ▼, to change the setting.
   ④ Press the SET button.
   The buzzer on the wireless remote control signal receiver beeps twice, and the LED lamp flashes four times at two-second intervals.
2. Setting details
   The following functions can be set.



Button	Number indicator	Function setting
FAN SPEED	00	Fun speed setting : Standard
	01	Fun speed setting : Setting 1 *
	02	Fun speed setting : Setting 2 *
MODE	00	Room heating temperature adjustment : Disable
	01	Room heating temperature adjustment : +1°C
	02	Room heating temperature adjustment : +2°C
	03	Room heating temperature adjustment : +3°C
FILTER	00	Filter sign display : OFF
	01	Filter sign display : 180 hours
	02	Filter sign display : 600 hours
	03	Filter sign display : 1000 hours
	04	Filter sign display : Operation stop after 1000 hours have elapsed
U/P	00	Anti draft setting : Disable
	01	Anti draft setting : Enable
SILENT	00	Infrared sensor setting (Motion sensor setting) : Disable
	01	Infrared sensor setting (Motion sensor setting) : Enable
HI POWER	00	Infrared sensor control (Motion sensor control) : Disable
	01	Infrared sensor control (Motion sensor control) : Power control only
	02	Infrared sensor control (Motion sensor control) : Auto OFF only
	03	Infrared sensor control (Motion sensor control) : Power control and Auto OFF

Button	Number indicator	Function setting
ON TIMER	00	Cooling fan residual-period running : Disable
	01	Cooling fan residual-period running : 0.5 hours
	02	Cooling fan residual-period running : 2 hours
	03	Cooling fan residual-period running : 6 hours
OFF TIMER	00	Heating fan residual-period running : Disable
	01	Heating fan residual-period running : 0.5 hours
	02	Heating fan residual-period running : 2 hours
	03	Heating fan residual-period running : 6 hours
NIGHT SETBACK	00	Remote control signal receiver LED : Brightness High
	01	Remote control signal receiver LED : Brightness Low
	02	Remote control signal receiver LED : OFF

* Refer to technical data.

⑤ Receiver

1 Control plural indoor units with one remote control

Up to 16 indoor units can be connected.

1. Connect the XY terminal with 2 cores wire. As for the size, refer to the following note.
2. For Packaged air-conditioner series, set the indoor unit address with SW2 on the indoor unit PCB from [0] to [F] so as not to duplicate.

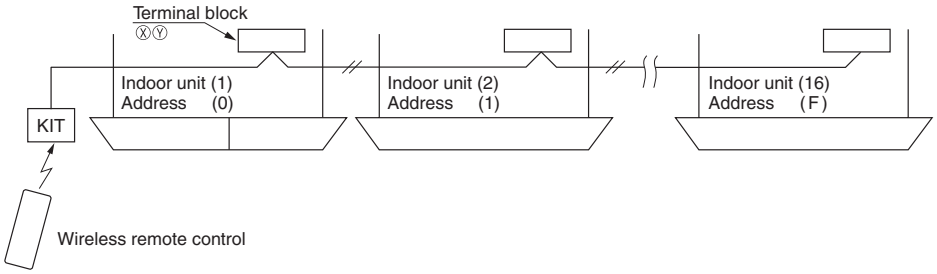
Restrictions on the thickness and length of wire (Maximun total extension 600m.)

Standard	Within 0.3 mm² × 100m
	Within 0.5 mm² × 200m
	Within 0.75mm² × 300m
	Within 1.25mm² × 400m
	Within 2.0 mm² × 600m

⑤ Receiver (continued)

For the shop series

For VRF series, set the indoor unit address with SW1, SW2 and SW5-2 on the indoor unit PCB from [000] to [127] so as not to duplicate.

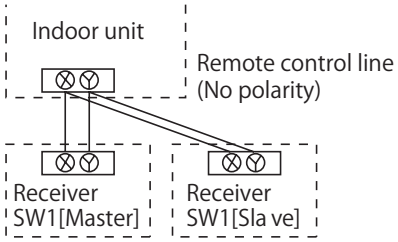


For the building air-conditioner and gas heat pump series

Set the indoor unit and outdoor unit numbers by manually specifying the addresses.
Use the rotary switchs SW1 and SW2 provided on the indoor unit PCB (printed circuit board) to set the indoor unit numbers so that they are not duplicated.

Master/Slave setting when using plural remote control

Up to two receivers can be installed in one indoor unit group.

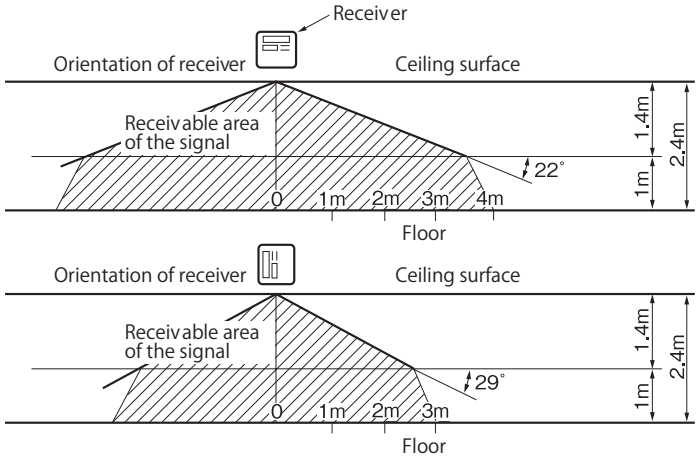


Switch	Setting	Function
SW2	ON	Master
	OFF	Slave

When installed on ceiling

1. Standard reachable area of the signa

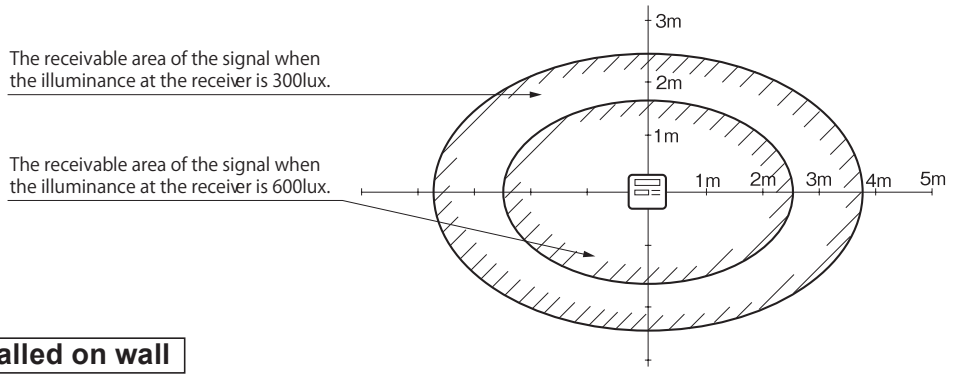
[Condition] Illuminance at the receiver : **300lux** (when no lighting is installed within 1m of the receiver in an ordinary office.)l



2. Correlation between illuminance at the receiver and reachable area of the signal in a plain view.

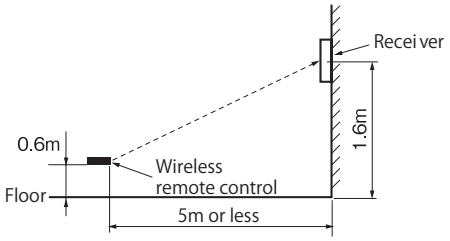
[Condition] Correlation between the reachable area of the signal and illuminance at the receiver when the wireless remote control is operated at 1m high under the condition of ceiling height of 2.4m. When the illuminance becomes double, the area is narrowed down to two third.

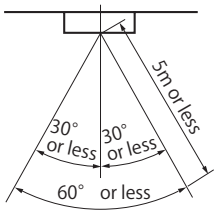
⑤ Receiver (continued)



When installed on wall

[Condition] Illuminance at the receiver : 800lux.

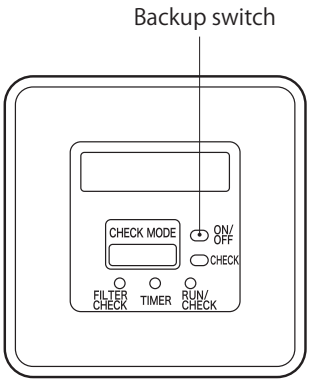




Backup switch

A backup switch is provided on the receiver section of the panel surface. When operation from the wireless remote control unit is not possible (due to flat batteries, a mislaid unit, a unit failure), you can use it as an emergency means. You should operate this switch manually.

1. If pressed while the air-conditioner is in a halt, it will cause the air-conditioner to start operation in the automatic mode (in the case of cooling only, in the cooling mode). Wind speed: Hi fan, Temperature setting: 23°C, Louver: horizontal
2. If pressed while the air-conditioner is in operation, it will stop the air-conditioner.



Cooling test run operation

- After safety confirmation, turn on the power.
- Transmit a cooling operation command with the wireless remote control unit, while the backup switch on the receiver is depressed.
- If the backup switch on the receiver is pressed during a test run, it will end the test run.
- If you cannot operate the unit properly during a test run, please check wiring by consulting with inspection guides.

How to read the 6-digit display

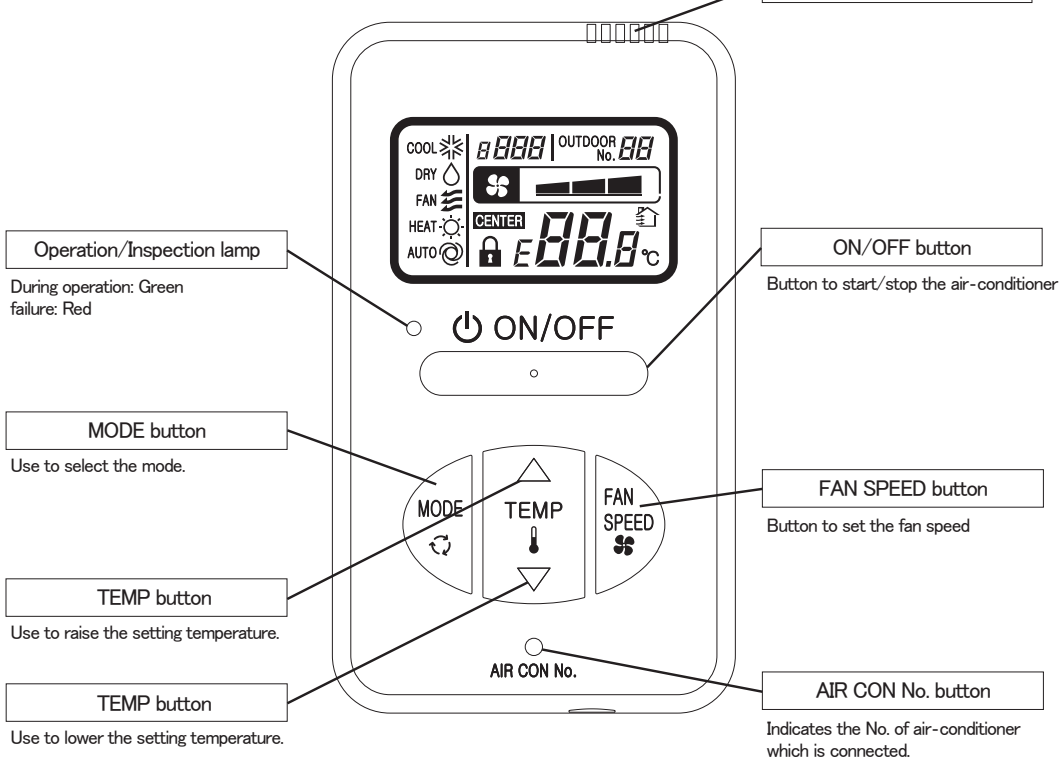
A 6-digit indicator (7-segment indicator) is provided on the receiver section.

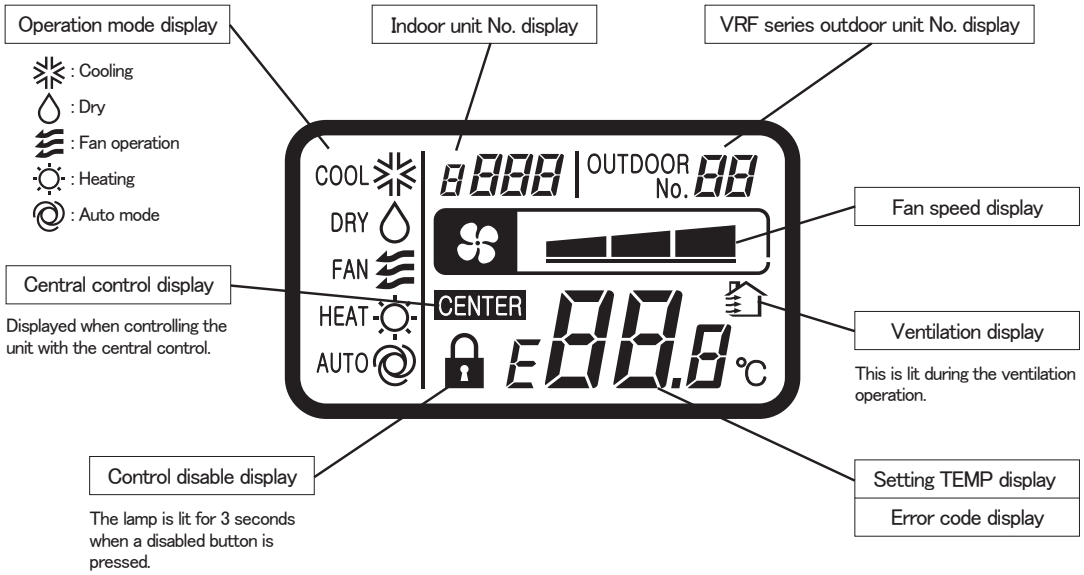
1. An indication will be displayed for one hour after power on.
2. An indication appears for 3.5 seconds when a “Stop” command is sent from the wireless remote control unit while the air-conditioner is not running.
3. An indication appearing in (1) or (2) above will go off as soon as the unit starts operation.
4. When there are no error records to indicate, addresses are displayed for all of the connected units.
5. When there are some error records remaining, the error records are displayed.
6. Error records can be cleared by transmitting a “Stop” command from the wireless remote control unit, while the backup switch is depressed.

3.2 SIMPLE WIRED REMOTE CONTROL (RCH-E3)

Notes:
Following functions of FDU indoor unit series are not able to be set with this simple wired remote control (RCH-E3).
1. 4-fan speed setting (P-Hi/Hi/Me/Lo)→ 3-fan speed setting (Hi/Me/Lo)

Names and functions of sections





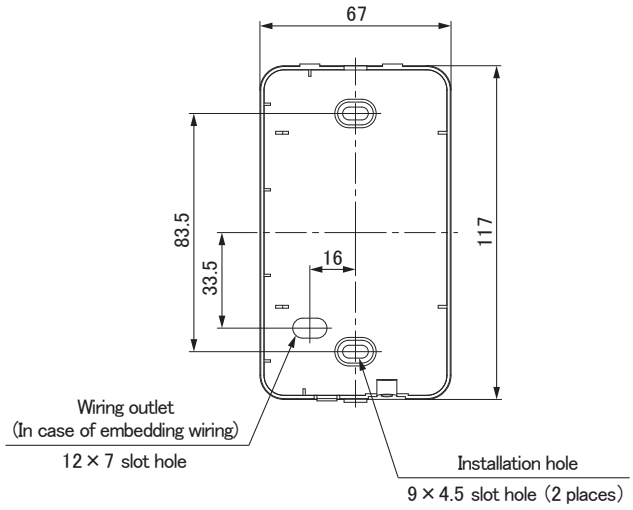
Installation of remote control

Do not install the remote control at the following places in order to avoid malfunction.

(1) Places exposed to direct sunlight
(2) Places near heat devices
(3) High humidity places
(4) Hot surface or cold surface enough to generate condensation
(5) Places exposed to oil mist or steam directly
(6) Uneven surface

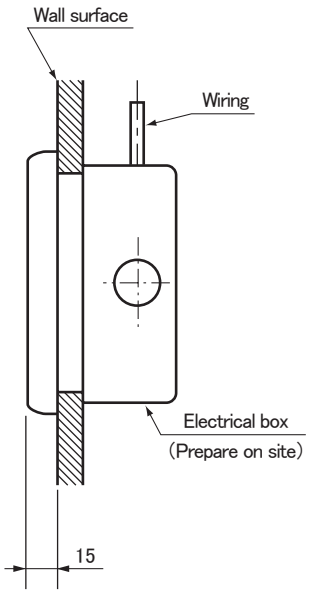
PJZ000Z272

Remote control installation dimensions

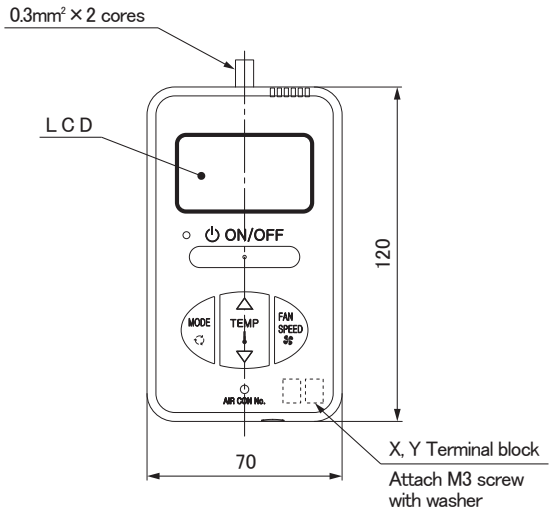


Note: Installation screw for remote control
M4 screw (2 pieces)

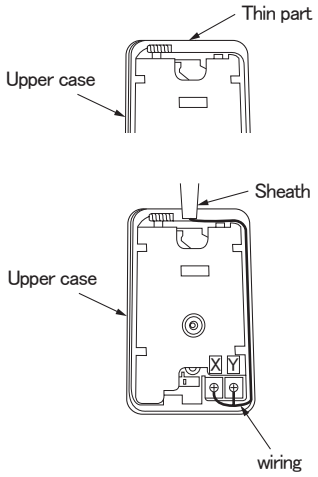
In case of embedding wiring



In case of exposing wiring

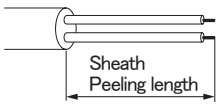


The remote control wiring can be extracted from the upper center.
After the thin part in the upper side of the remote control upper case is scraped with a nipper or knife, remove burr with a file.



The peeling length of each wiring is as follows:

X wiring : 160mm
Y wiring : 150mm



Wiring specifications

(1) Wiring of remote control should use 0.3mm² × 2 cores wires or cables. (on-site configuration)
(2) Maximum prolongation of remote control wiring is 600m.
If the prolongation is over 100m, change to the size below.
But, the wiring in the remote control case should be 0.3mm² (recommended) to 0.5mm².
Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire
connecting section. Be careful about contact failure.

Unit:mm

Length	Wiring thickness
100 to 200m	0.5mm² × 2 cores
Under 300m	0.75mm² × 2 cores
Under 400m	1.25mm² × 2 cores
Under 600m	2.0mm² × 2 cores

Adapted to **RoHS** directive

Simple Remote Control Installation Manual

PJZ012D069Ⓐ

Read together with indoor unit's installation manual.

⚠WARNING

- **Fasten the wiring to the terminal securely and hold the cable securely so as not to apply unexpected stress on the terminal.**
  Loose connection or hold will cause abnormal heat generation or fire.
- **Make sure the power source is turned off when electric wiring work.**
  Otherwise, electric shock, malfunction and improper running may occur.

⚠ CAUTION

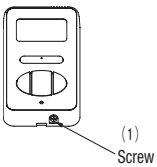
- **Do not install the remote control at the following places in order to avoid malfunction.**
  (1) Places exposed to direct sunlight
  (2) Places near heat devices
  (3) High humidity places
  (4) Hot surface or cold surface enough to generate condensation
  (5) Places exposed to oil mist or steam directly
  (6) Uneven surface
- **Do not leave the remote control without the upper case.**
  In case the upper cace needs to be detached, protect the remote control with a packaging box or bag in order to keep it away from water and dust.

Accessories	Remote control, wood screw (ϕ3.5×16) 2 pieces
Prepare on site	Remote control cord (2 cores) (Refer to [2. Installation and wiring of remote control]) [In case of embedding cord] Electrical box, M4 screw (2 pieces) [In case of exposing cord] Cord clamp (if needed)

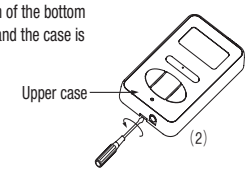
1. Installation procedure

In case of embedding cord

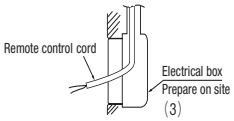
(1) Make certain to remove the screw on the bottom surface of the remote control.



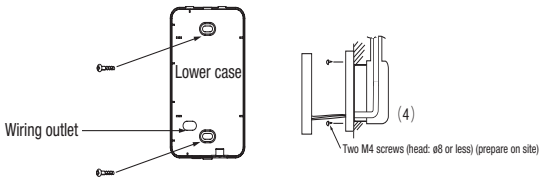
(2) Remove the upper case of the remote control.
Insert a flat-blade screwdriver to a concave portion of the bottom surface of the remote control and slightly twist it, and the case is removed.



(3) Pre-bury the electrical box and remote control cord.



(4) Prepare two M4 screws (recommended length: 12 – 16mm), and install the lower case to the electrical box.
Do not use a screw whose screw head is larger than the height of the wall around the screw hole.

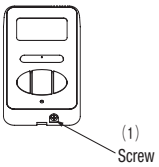


(5) Connect the remote control cord to the terminal block.
Connect the terminals (X and Y) of the remote control and the terminals (X and Y) of the indoor unit. (No polarity of X and Y)

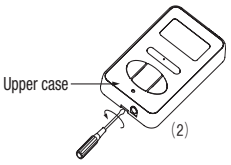
(6) Mount the upper case for restoring to its former state so as not to crimp the remote control cord, and secure with the removed screw.

In case of exposing cord

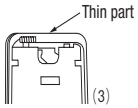
(1) Make certain to remove a screw on the bottom surface of the remote control.



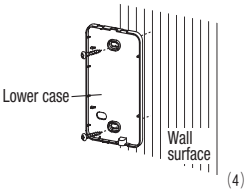
(2) Remove the upper case of the remote control.
Insert a flat-blade screwdriver to a concave portion of the bottom surface of the remote control and slightly twist it, and the case is removed.



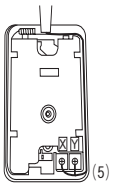
(3) The remote control cord can be extracted from the upper center.
After the thin part in the upper side of the remote control upper case is scraped with a nipper or knife, remove burr with a file.



(4) The lower case of the remote control is mounted to a flat wall with two accessory wood screws.

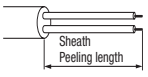


(5) Connect the remote control cord to the terminal block.
Connect the terminals (X and Y) of the remote control and the terminals (X and Y) of the indoor unit. (No polarity of X and Y)
The wiring route is as shown in the right.



The wiring in the remote control case should be 0.3 mm^2 (recommended) to 0.5 mm^2 at maximum.
Further, peel off the sheath.
The peeling length of each wiring is as follows:

X wiring : 160mm
Y wiring : 150mm



(6) Mount the upper case for restoring to its former state so as not to crimp the remote control cord, and secure with the removed screw.

(7) In the case of exposing installation, secure the remote control cord to the wall surface with a cord clamp so as not to loosen the remote control cord.

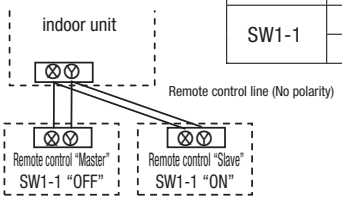
2. Installation and wiring of remote control

(1) Wiring of remote control should use 0.3mm^2 × 2 cores wires or cables. (on-site configuration)
(2) Maximum prolongation of remote control wiring is 600 m.
If the prolongation is over 100m, change to the size below.
But, the wiring in the remote control case should be 0.3mm^2 (recommended) to 0.5mm^2.
Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire
connecting section. Be careful about contact failure.
100 - 200m·····0.5mm^2 × 2 cores
Under 300m·····0.75mm^2 × 2 cores
Under 400m·····1.25mm^2 × 2 cores
Under 600m·····2.0mm^2 × 2 cores

3. Master/ slave setting when more than one remote control are used

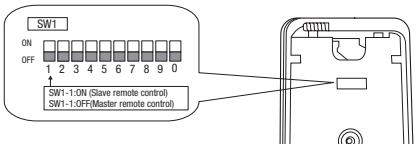
(1) Up to two remote controls can be connected to one unit (or one group) of indoor unit.

Switch	Setting	Function detail
SW1-1	ON	Slave remote control
	OFF	Master remote control



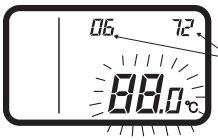
(2) Set the switch SW1-1 of the slave remote control is "Slave" (ON). The factory default is set as "Master" (OFF).

(Note) • The remote control thermistor enabled setting can be set only to the master remote control.
• Install the master remote control at the position to detect room temperature.
• The air-conditioner operation follows the last operation of the remote control in case of the master / slave setting.



4. The indication when power source is supplied

(1) At the time of turning the power source on, after the light is on for the first 2 seconds, the display becomes as shown below.
The number displayed on the upper side of LCD in the remote control is the software number, and this is not an error code.



Software number
(The number in the left is one example. Another number may be shown.)

(2) Then, "88.0 °C" blinks on the remote control until the communication between the remote control and the indoor unit is established.

(3) In the case of connecting one remote control with one unit (or one group) of indoor unit, make certain to set the master remote control (factory default).
If the slave remote control is set, a communication cannot be established.

(4) If a state where the communication between the remote control and the indoor unit cannot be established continues about for 30 minutes, "E" is displayed. Confirm the wiring of the indoor unit and the outdoor unit and master/slave setting of the remote control.

5. Confirmation method for return air temperature

Return air temperature can be confirmed by the remote control operation.

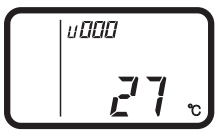
(1) **Press AIR CON No. button for over 5 seconds.**
"88" blinks on the temperature setting indicator.
("88" blinks for approximately 2 seconds while data is read.)
↓
Then, the return air temperature is displayed.
(Example) return air temperature: "27 °C" (blinking)

(Note) For the return air temperature, in the normal case, the return air temperature of the indoor unit is displayed; however, in the case that the remote control thermistor is effective, detected temperature by the remote control thermistor is displayed.

(2) **Press ⏻ ON/OFF button.**
End.

[In the case that the remote thermistor is ineffective and plural indoor units are connected to one remote control]

(1) **Press AIR CON No. button for over 5 seconds.**
indoor unit No. indicator: "U 000" (blinking)
(Among the connected indoor units, the lowest number is displayed.)



(2) **Press TEMP△ or TEMP▽ button.**
Select the indoor unit No.

(3) **Press MODE button.**
Dectder the indoor unit No.
(Example) indoor unit No. indicator: "U 000"
"88" blinks on the temperature setting indicator. (blinking for approximately 2 to 10 seconds while data is read) Then, the return air temperature is displayed. When AIR CON No. is pressed, return to the indoor unit selection display (example, "U 000").

(4) **Press ⏻ ON/OFF button.**
End.

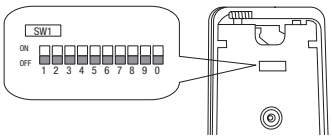
6. Function setting

Each function of the remote control and the indoor unit is automatically set to the initial setting, which is the standard use, on the occasion of connecting the remote control with the indoor unit. In the case of the standard use, the setting change is unnecessary. However, if you whould like to change the initial setting " ○ ", change the setting for only the item of the function number. **Record the setting contents and stored them.**

(1) Function setting item by switch on PCB

Switch No.	Setting	Setting detail	Initial setting
SW1-1	ON	Slave remote control	
	OFF	Master remote control	○
SW1-2	ON	Remote control thermistor enabled	
	OFF	Remote control thermistor disabled	○
SW1-3	ON	"MODE" button prohibited	
	OFF	"MODE" button enabled	○
SW1-4	ON	"ON/OFF" button prohibited	
	OFF	"ON/OFF" button enabled	○

Switch No.	Setting	Setting detail	Initial setting
SW1-5	ON	"TEMP" button prohibited	
	OFF	"TEMP" button enabled	○
SW1-6	ON	"FAN SPEED" button prohibited	※ Note 1
	OFF	"FAN SPEED" button enabled	※ Note 1
SW1-7	ON	Auto restart function enabled	
	OFF	Auto restart function disabled	○
SW1-8, 9, 0	ON	Not used	
	OFF		



- As for the slave remote control, function setting is impossible other than SW1-1.
- In the indoor unit with only one fan speed, "FAN SPEED" button cannot be enabled.

(2) Function setting item by button operation

Classification	Function No.	Function	Setting No.	Setting	Initial setting	Remarks
Remote control function	01	Indoor unit fan speed	01	Fan speed: three steps	※ Note 1	The fan speed is three steps, ❋■■■ - ❋■■ - ❋■.
			02	Fan speed: two steps (Hi-Lo)	※ Note 1	The fan speed is two steps, ❋■■■ - ❋■.
			03	Fan speed: two steps (Hi-Me)		The fan speed is two steps, ❋■■■ - ❋■■.
			04	Fan: one step	※ Note 1	The fan speed is fixed to one step.
	03	Remote control thermistor at the time of cooling	01	Remote control thermistor: no offset	○	
			02	Remote control thermistor: +3.0 °C		At the time of cooling, in the case of remote control thermistor enabled, offset temperature at +3.0°C.
			03	Remote control thermistor: +2.0 °C		At the time of cooling, in the case of remote control thermistor enabled, offset temperature at +2.0°C.
			04	Remote control thermistor: +1.0 °C		At the time of cooling, in the case of remote control thermistor enabled, offset temperature at +1.0°C.
			05	Remote control thermistor: -1.0 °C		At the time of cooling, in the case of remote control thermistor enabled, offset temperature at -1.0°C.
			06	Remote control thermistor: -2.0 °C		At the time of cooling, in the case of remote control thermistor enabled, offset temperature at -2.0°C.
			07	Remote control thermistor: -3.0 °C		At the time of cooling, in the case of remote control thermistor enabled, offsett temperature at -3.0°C.
	04	Remote control thermistor at the time of heating	01	Remote control thermistor: no offset	○	
			02	Remote control thermistor: +3.0 °C		At the time of heating, in the case of remote control thermistor enabled, offset temperature at +3.0°C.
			03	Remote control thermistor: +2.0 °C		At the time of heating, in the case of remote control thermistor enabled, offset temperature at +2.0°C.
			04	Remote control thermistor: +1.0 °C		At the time of heating, in the case of remote control thermistor enabled, offset temperature at +1.0°C.
			05	Remote control thermistor: -1.0 °C		At the time of heating, in the case of remote control thermistor enabled, offset temperature at -1.0°C.
			06	Remote control thermistor: -2.0 °C		At the time of heating, in the case of remote control thermistor enabled, offset temperature at -2.0°C.
			07	Remote control thermistor: -3.0 °C		At the time of heating, in the case of remote control thermistor enabled, offset temperature at -3.0°C.
	05	Ventilation setting	01	No ventilator connection	○	
			02	Ventilator links air-conditioner		In case of Single split series, by connecting ventilation device to CNT of the indoor printed circuit board (in case of VRF series, by connecting it to CND of the indoor printed circuit board), the operation of ventilation device is linked with the operation of indoor unit.
	06	"Auto" operation setting	01	"Auto" operation enabled	※ Note 1	
			02	"Auto" operation disabled	※ Note 1	"Auto" operation disabled
Indoor unit function	07	Operation permission/ prohibition	01	Disabled	○	
			02	Enabled		Operation permission/prohibition control is enabled.
	08	External input	01	Level input	○	
			02	Pulse input		
	09	Fan speed setting	01	Standard	Note2	
			02	High speed 1	Note2	
			03	High speed 2	Note2	
	10	Fan remaining operation at the time of cooling	01	No remaining operation	○	After cooling stopped, no fan remaining operation
			02	0.5 hours		After cooling stopped, fan remaining operation for 0.5 hours
			03	1 hour		After cooling stopped, fan remaining operation for 1 hour
			04	6 hours		After cooling stopped, fan remaining operation for 6 hours
	11	Fan remaining operation at the time of heating	01	No remaining operation	○	After heating stopped or after heating thermostat OFF, no fan remaining operation
			02	0.5 hours		After heating stopped or after heating thermostat OFF, fan remaining operation for 0.5 hours
			03	2 hours		After heating stopped or after heating thermostat OFF, fan remaining operation for 2 hours
			04	6 hours		After heating stopped or after heating thermostat OFF, fan remaining operation for 6 hours
	12	Setting temperature offset at the time of heating	01	No offset	○	
			02	Setting temperature offset + 3.0 °C		The setting temperature at the time of heating is offset by +3.0 °C.
			03	Setting temperature offset + 2.0 °C		The setting temperature at the time of heating is offset by +2.0 °C.
			04	Setting temperature offset + 1.0 °C		The setting temperature at the time of heating is offset by +1.0 °C.
	13	Heating fan controller	01	Low fan speed	※ Note 1	At the time of heating thermostat OFF, operate with low fan speed.
			02	Setting fan speed		At the time of heating thermostat OFF, operate with the setting fan speed.
			03	Intermittent operation	※ Note 1	At the time of heatingr thermostat OFF, intermittently operate.
			04	Fan off		At the time of heating thermostat OFF, a fan will be stopped. When the remote control thermistor is enabled, automatically set to "Fan off". Do not set at the time of the indoor unit thermistor.
	14	Return air temperature offset	01	No offset	○	
			02	Return air temperature offset +2.0 °C		Offset the return air temperature of the indoor unit by +2.0 °C.
			03	Return air temperature offset +1.5 °C		Offset the return air temperature of the indoor unit by +1.5 °C.
			04	Return air temperature offset +1.0 °C		Offset the return air temperature of the indoor unit by +1.0 °C.
			05	Return air temperature offset -1.0 °C		Offset the return air temperature of the indoor unit by -1.0 °C.
			06	Return air temperature offset -1.5 °C		Offset the return air temperature of the indoor unit by -1.5 °C.
			07	Return air temperature offset -2.0 °C		Offset the return air temperature of the indoor unit by -2.0 °C.

Note 1: The symbol " ※ " in the initial setting varies depending upon the indoor unit and the outdoor unit to be connected, and this is automatically determined as follows:

Swith No. Function No.	Function	Setting	Product model
SW1-6	"FAN SPEED" button	"FAN SPEED" button prohibited	Product model whose indoor fan speed is only one step
		"FAN SPEED" button enabled	Product model whose indoor fan speed is two steps or three steps
Remote control function 01	Indoor unit fan speed	Fan speed: three steps	Product model whose indoor unit fan speed is three steps
		Fan speed: two steps (Hi-Lo)	Product model whose indoor unit fan speed is two steps
		Fan speed: two steps (Hi-Me)	
		Fan: one step	Product model whose indoor unit fan speed is only one step
Remote control function 06	"Auto" operation setting	"Auto" operation enabled	Product model where "Auto" mode is selectable
		"Auto" operation disabled	Product model without "Auto" mode
Indoor unit function 13	Heating fan control	Low fan speed	Product model except FDUS
		Intermittent operation	FDUS

Note 2: Fan speed of "High speed" setting

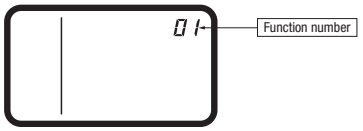
Fan speed setting	Indoor unit fan speed setting		
	❋■■■ - ❋■■ - ❋■	❋■■■ - ❋■	❋■■■ - ❋■■
Standard	Hi — Mid — Lo	Hi — Lo	Hi — Mid
High speed 1 ・ 2	UHi — Hi — Mid	UHi — Mid	UHi — Hi

Initial setting of some indoor unit is "High speed".

Note 3: As for plural indoor unit, set indoor functions to each master and slave indoor unit.
But only master indoor unit is received the setting change of indoor unit function "07 Operation permission/ prohibition" and "08 External input".

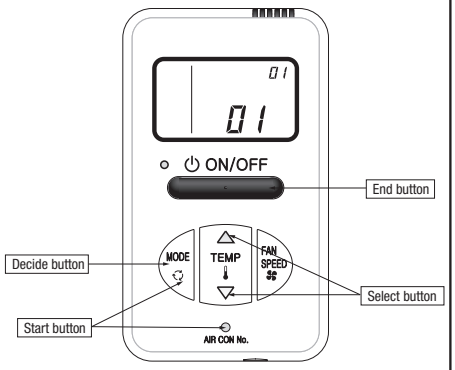
7. How to set functions by button operation

(1) **Stop air-conditioner, and simultaneously press AIR CON No. and MODE buttons at the same time for over three seconds.**
The function number "01" blinks in the upper right.

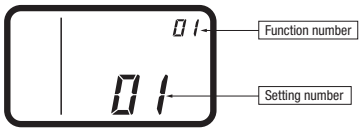


(2) **Press TEMP△ or TEMP▽ button.**
Select the function number.

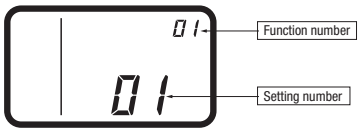
(3) **Press MODE button.**
Decide the function number.



(4) **[In the case of selecting the remote control function (01-06)]**
① The current setting number of the selected function number blinks
(Example)
Function number: "01" (lighting)
Setting number: "01" (blinking)



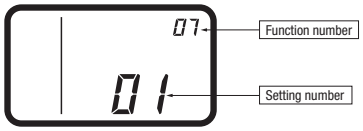
② **Press TEMP△ or TEMP▽ button.**
Select the setting number.
③ **Press MODE button.**
The setting is completed.
Light is on for approximately 3 to 20 seconds while data of the decided function No. and setting No. is transmitted.
(Example)
Function number: "01" (lighting for 3 to 20 seconds)
Setting number: "01" (lighting for 3 to 20 seconds)



Then, the screen goes back to the function number blinking indication (1), if the setting is sequentially conducted, continue with the same procedures. If the setting is finished, proceed to (5).

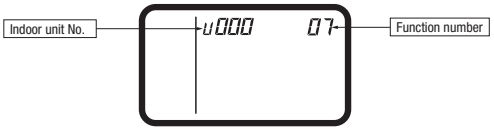
(5) **Press ON/OFF button.**
The setting is completed.

[In the case of selecting the indoor unit function (07-14)]
① **"88" blinks on the temperature setting indicators.**
(blinking for approximately 2 to 10 seconds while data are read)
↓
After that, the current setting number of the selected function number blinks.
(Example)
Function number: "07" (lighting)
Setting number: "01" (blinking)



Proceed to ② .

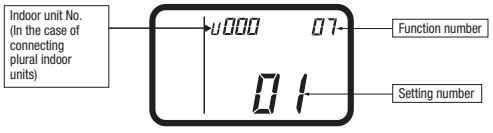
[Note]
a. In the case of connecting one remote control to plural indoor units, the display will be as follows:
Indoor unit No. display: "U 000" (blinking)
(Display the lowest number among the connected indoor units.)



b. Press TEMP△ or TEMP▽ button.
Select the indoor unit No. to be set.
If "U ALL" is selected, the same setting can be set to all units.
c. Press MODE button.
Decide the indoor unit No.
"88" blinks on the temperature setting indicators. (blinking for 2 to 10 seconds while data is read)
When AIR CON No. button is pressed, go back to the indoor unit selection display (for example, "U 000" blinking).

② **Press TEMP△ or TEMP▽ button.**
Select the setting number

③ **Press MODE button.**
The setting is completed.
Light is on for approximately 3 to 20 seconds while data of the decided function No. and setting No. is transmitted.
(Example)
Indoor unit No.: "U 000" (lighting for 3 to 20 seconds)
Function number: "07" (lighting for 3 to 20 seconds)
Setting number: "01" (lighting for 3 to 20 seconds)



Then, the screen goes back to the function number blinking indication (1), if the setting is sequentially conducted, continue with the same procedures. If the setting is finished, proceed to (5).

- Even if ON/OFF button is pressed during setting, the setting is ended. However, any details where the setting has not been completed will be ineffective.
- The setting contents are stored in the control, and even if the power failure occur, this will not be lost.

[Confirmation method for current setting]
According to the operation, the "setting number" displayed first after selecting "function number" and pressing MODE button is the currently set content.
(However, in the case of selecting "U ALL" (all units), the setting number of the lowest number among the indoor units is displayed.)

3.3 OA SPACER (FDTC series)

PJZ012D074 B

This manual describes the installation methods for OA spacer (TC-OAS-E) and the duct joint (TC-OAD-E).
◎This OA spacer is designed for assembling on the indoor unit (FDTC Series), not for be using independently.

Application model	FDTCA151R, 201R, FDTCA22-56KXE4R, FDTC22-56KXE6 FDTC22-56KXE6A, FDTC22-56KXE6B, FDTC22-56KXE6D FDTC40V, 50V, FDTC40-60VB, FDTC25-60VD, FDTC40-60VF

◎Prepare the duct (size: ø75) and the booster fan at site.
◎For the installation of indoor unit, refer to the installation manual attached to the indoor unit.

SAFETY PRECAUTIONS

● Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.

⚠WARNING

●Installation should be performed by the specialist.
If you install the unit by yourself, it may lead to serious trouble such as water leakage, electric shock, fire, and injury due to overturn of the unit.

●Install the system correctly according to these installation manuals.
Improper installation may cause explosion, injury, water leakage, electric shock, and fire.

●Use the genuine accessories and the specified parts for installation.
If parts unspecified by our company are used it could cause water leakage, electric shock, fire, and injury due to overturn of the unit.

●Turn off the power source during servicing or inspection work.
If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.

●Shut off the power before electrical wiring work.
It could cause electric shock, unit failure and improper running.

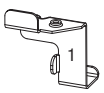
⚠CAUTION

●Do not install and use the unit where corrosive gas (such as sulfurous acid gas etc.) or flammable gas (such as thinner, petroleum etc.) may be generated or accumulated, or volatile flammable substances are handled.
It could cause the corrosion of heat exchanger, breakage of plastic parts etc. And inflammable gas could cause fire.

① Before installation

●Confirm the following parts are included:

OA spacer (TC-OAS-E)

Spacer	Bracket 1	Bracket 2	Bracket 3	Bracket 4	Bolt
					
1	2	2	2	2	8

Duct joint (TC-OAD-E)

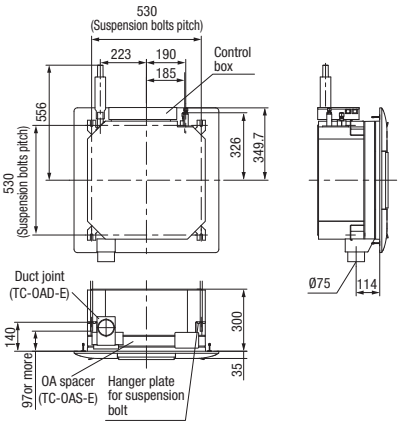
Duct Joint	Screw	Insulation 1 (120 × 54)	Insulation 2 (40 × 60)
			
1	6	1	2

② Prior study before installation (Usage limitation)

(1) Temperature conditions for OA spacer

- Adjust the temperature conditions of mixed air with outdoor air and indoor air within the usage range of suction air temperature for the air-conditioner.
- The usage temperature conditions of intake outdoor air and indoor air around the ducts are shown in the following table.
- If the temperature conditions of intake outdoor air do not meet, process the outdoor air before intaking.

Operation mode	Usage temperature conditions	
	Intake outdoor air	Indoor air around the ducts
In heating	5ºC DB or higher	18.5ºC WB or lower and 60% RH or lower
In cooling	29ºC DB or lower and 80% RH or lower	20ºC DB or higher



(2) Intake outdoor air volume

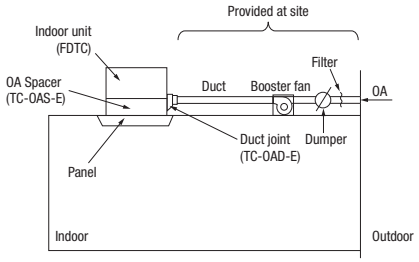
- Intake outdoor air volume is 2.6 m³/min at the maximum (when two sets of duct joints are used).
  Up to two sets of duct joint can be installed on OA spacer.
  In case one set of duct joint is installed: 1.3 m³/min max.
  In case two sets of duct joint is installed: 2.6 m³/min max.

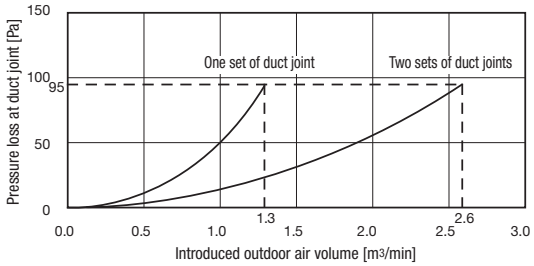
(3) Selection of booster fan

- Select the booster fan based on the duct resistance plus the pressure loss at the duct joint. (See the figure)

(4) Other conditions

- Determine the capacity of air-conditioner based on the calculation of air-conditioner load including the heat load of intake outdoor air.
- Install the filter for the intake outdoor air and the reverse flow prevention dumper during the duct work at site.
- Insulate the duct and duct joint in order to prevent dewing.
- Interlock the operation of booster fan with ON/OFF operation of the indoor unit. (See Section 7.)



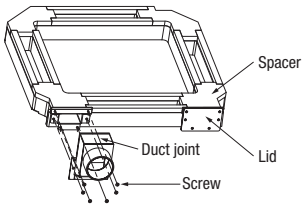


③ Installation of duct joint (TC-OAD-E) onto OA spacer

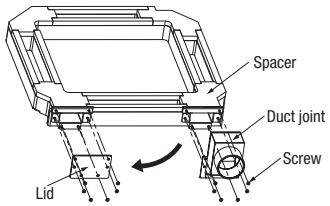
・There are two places where the duct joint can be installed.

When installing one duct joint

Install OA spacer at either one of two installation places on the duct joint.

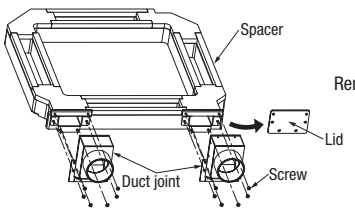


To install the duct joint, screw it in as shown at left.



When installing the duct joint at the lid side, remove the lid and reinstall it at the other end before installing the duct joint.

When installing two duct joints



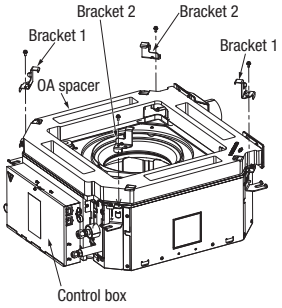
Remove the lid and then install two pieces of duct joint.

④ Installation of OA spacer on the indoor unit

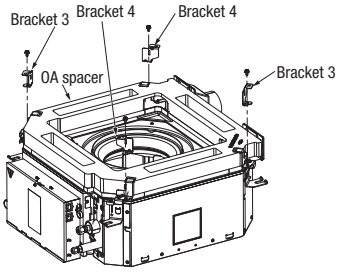
OA spacer can be installed regardless whether the indoor unit has already been hanged or not.
(It is recommended to install before hanging the unit for convenience of installation.)

1-1. When installing OA spacer before hanging the indoor unit

① Placing OA spacer on the indoor unit, fix the brackets 1 and 2 (2 pieces each) with bolts.
Install OA spacer in the appropriate position that the duct joint side of OA spacer becomes opposite to the control box of indoor unit.

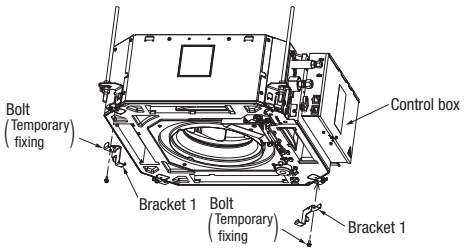


② Fix the brackets 3 and 4 (2 pieces each) with bolts.

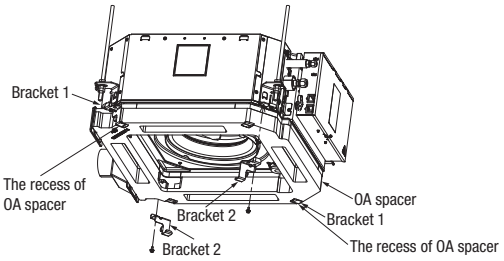


1-2. When installing OA spacer after hanging the indoor unit

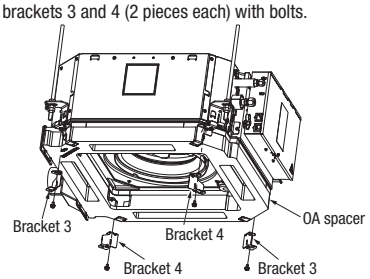
① After hanging the indoor unit (*), fix the bracket 1 (2 pieces) temporarily with bolt by 2 turns as shown in the figure.
* For the height (position) of hanging the indoor unit, refer to Section 5.



② Install OA spacer.
i. Install it in the way that the recess of OA spacer will fit on the bracket 1 fixed temporarily at the step ①.
ii. Tighten the bolt of bracket 1.
iii. Fix the bracket 2 with bolt. (Tighten up)

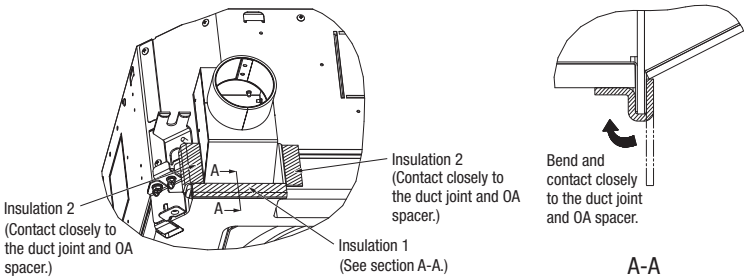


③ Fix the brackets 3 and 4 (2 pieces each) with bolts.



2. Applying insulation

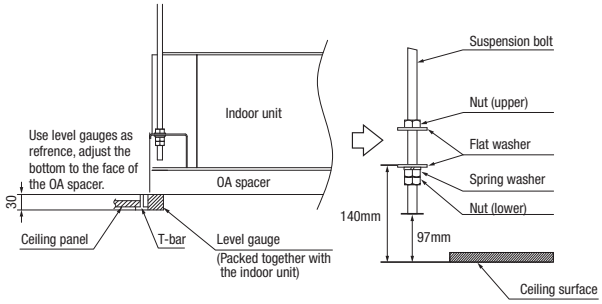
Applying the insulation attached to duct joint set (TC-OAD-E)
① Applying the insulation 1 as shown in the figure.
② Applying the insulation 2 as shown in the figure.
* Be sure to cover the entire surface of sheet metal of the duct joint with the insulation.

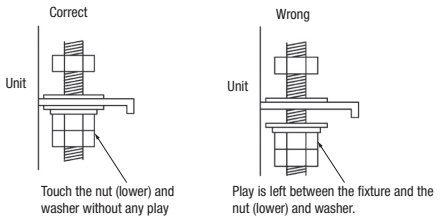


⑤ Installation of indoor unit

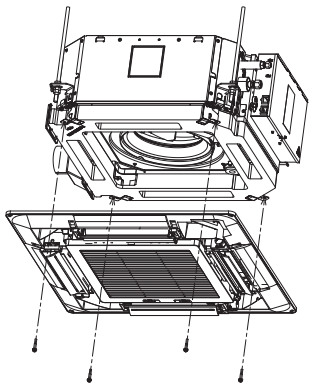
Work procedure

1. This units is designed for 2 x 2 grid ceiling.
   If necessary, please detach the T bar temporarily before you install it.
   If it is installed on a ceiling other than 2 x 2 grid ceiling, provide an inspection port on the control box side.
2. Arrange the suspension bolt at the right position (530mm530mm).
3. Make sure to use four suspension bolts and fix them so as to be able to hold 500N load.
4. Ensure that the lower end of the suspension bolt should be 97mm above the ceiling plane. Temporarily put the four lower nuts 140mm above the ceiling plane and the upper nuts on distant place from the lower nuts in order not to obstruct hanging the indoor unit or adjust the indoor unit position, and then hang the indoor unit.
5. Adjust the indoor unit position after hanging it by inserting the level gauge (Packed together with the indoor unit.) attached on the package into the air supply port and checking if the gap between the ceiling plane and the indoor unit is appropriate. (*) In order to adjust the indoor unit position, adjust the lower nuts while the upper nuts are put on distant place. Confirm there is no backlash between the hanger plate for suspension bolt and the lower nut and washer.
   * Use the level gauge only when OA spacer has been installed before hanging (④ 1-1 only).





⑥ Installation of panel



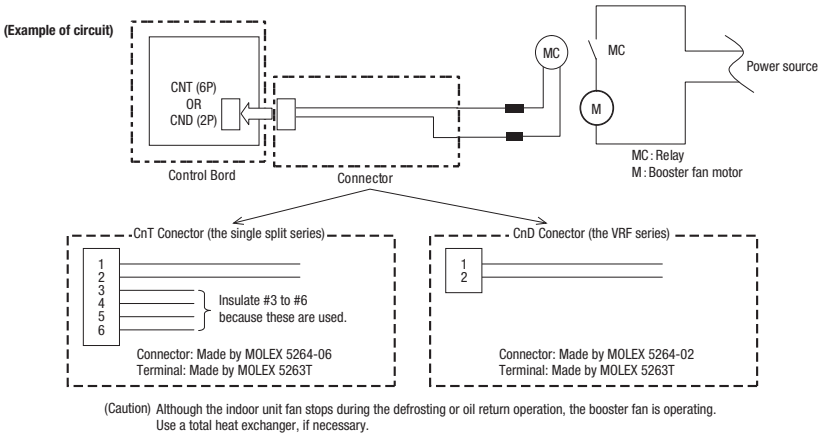
Tighten the panels to the brackets 3 and 4 with bolts.
For further details, refer to the installation manual of panel.

(Caution) Connect the connector of lover motor within the control box.

⑦ Interlocking with the indoor unit fan

◎Connect the Single split series and the VRF series to CnT on the indoor PCB and to CnD on the indoor PCB respectively. If a ventilation device is connected been geared with the motion of indoor device (ON: DC12V output, OFF: 0V output), the ventilation device is operated/stopped.

◎Set it at "VENT LINK" by selecting "No. 11 VENT LINK SET" from the Functional setting by remote control. For details, refer to the "ELECTRIC WIRNG WORK INSTRUCTION" of indoor unit.



(Caution) Although the indoor unit fan stops during the defrosting or oil return operation, the booster fan is operating.
Use a total heat exchanger, if necessary.

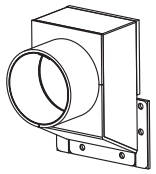
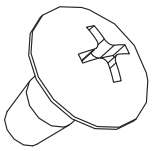
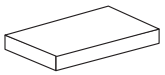
3.4 DUCT JOINT (FDTC series)

PJZ012D073

● This product is used by assembling on the spacer (TC-OAS-E)

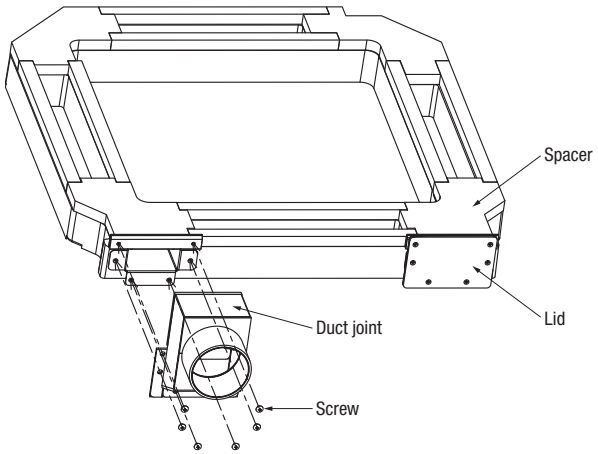
1.Before installation

• Confirm the following parts are included:

Duct joint	Screw	Insulation 1 (120 × 54)	Insulation 2 (40 × 60)
			
1	6	1	2

2.Regarding the use of this product

• Fix the product on the spacer (TC-OAS-E) as shown below.
• For the installation method, refer to the installation manual of the spacer.



3.5 FILTER KIT (FDUM series)

PJZ012D076A△A

This manual contains installation points and operating instructions for the filter kit manufactured by MHI.
Carry out the work following the instructions below.
This manual also contains information on the usage after installation,
so keep this manual properly with USER'S MANUAL provided with the indoor unit.

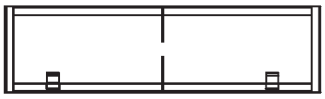
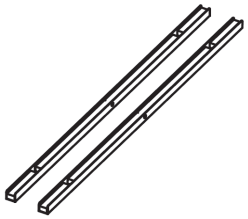
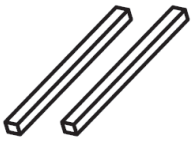
⚠ CAUTION

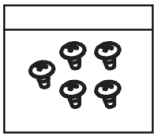
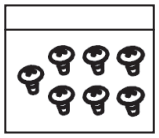
- After unpacking, carry out this work on the ground.
- Do not carry out the work during operation, or there is a danger of being entangled in the rotating parts and getting injured.
- Clean the air filter regularly.
- Be sure to entrust qualified serviceman to performance on the air filter.
- Be sure to cut off the power and stop the unit before performing maintenance.

1. Table of filter kit parts No. and corresponding object models

	Small model	Medium model	Large model
Single type	40, 50	60, 71	100 - 140
Multi type	22 - 56	71, 90	112 - 160
Filter Kit	UM-FL1EF	UM-FL2EF	UM-FL3EF

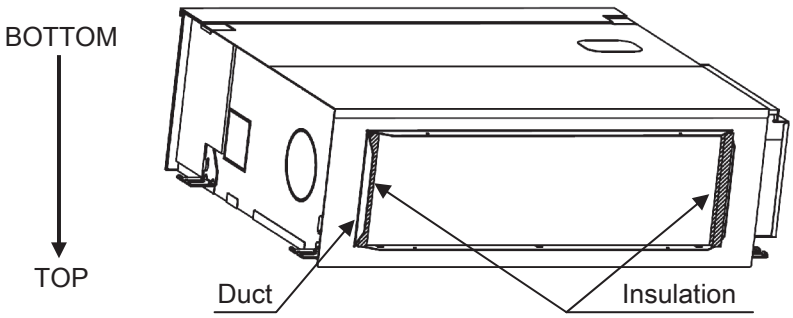
2. Parts list of filter kit

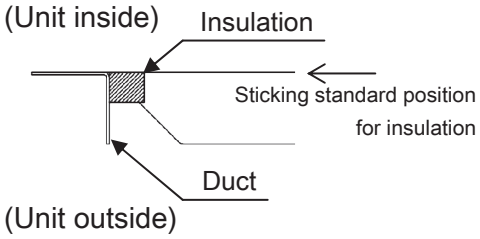
Filter	Rail	Insulation
 1pc	 2pc	 2pc

Bracket	Parts set (screw)	
 1pc	 small and medium model : 5pcs.	 large model : 7pcs. 1pc

3. Installation Points

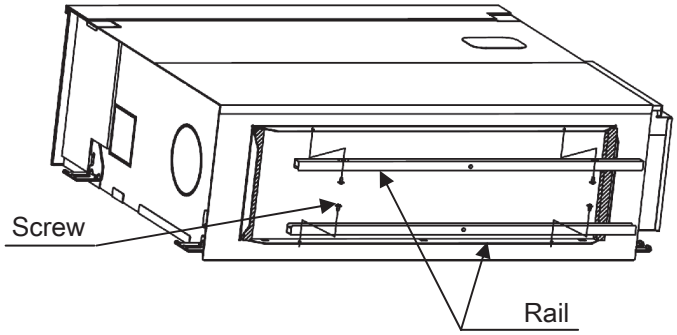
(1) Stick the insulation on both inner sides of the duct, leaving no space up and down.



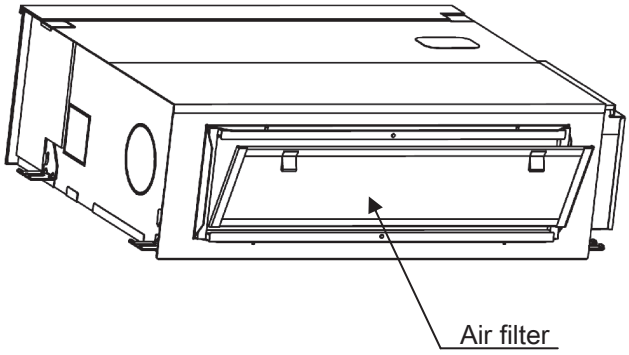


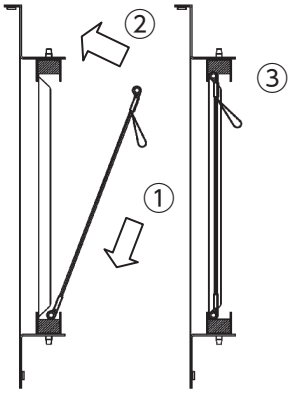
(*) After unpacking, bottom side of the unit is located at the upper side.

(2) Install the rail on both inner sides of the duct with the screw.



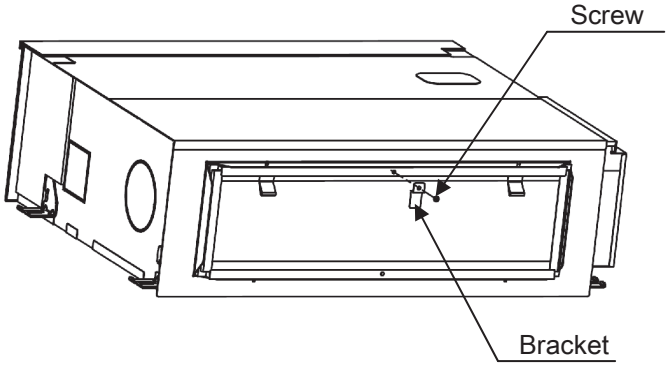
(3) Install the air filter on the rails.





Installation procesure

(4) Install the bracket on the rail with the screw.



(**) When the unit is installed, bottom side of the unit is located at the lower side.

3.6 BASE HEATER KIT (CW-H-E1)

PCZ012D007A△

Model Name: CW-H-E1

⚠ WARNING

- Follow the instruction and installation manual for outdoor unit when installing the heater.
- This heater must be installed by authorized personnel.
- Turn off the power source when the kit is installed.
- Failure to follow the above will result in serious accident like electrical shock or fire.

⚠ CAUTION

- Follow the law or regulation of the country where it is installed.
- Do not alter the heater.
- Lay down the heater so that the edge of the sheet metal does not damage the heater.
- Bending radius must be bigger than 25mm.
- Do not use the heater near flammable substances.
- Be sure to check the electrical insulation before use.
- Be sure to check the drain is not trapped by the heater.
- Do not leave refrigerant oil on the base.

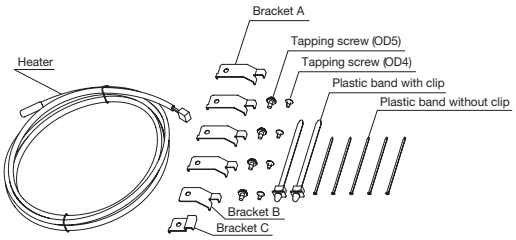
AREAS TO BE APPLIED

This kit is to be used in an area where the lowest temperature drops below zero.

⚠Caution: In case the heater is not applied on the unit which is installed in an area mentioned above, it may be regarded as installation failure and warranty may not be given.

Components

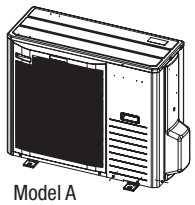
- Heater : 1pc
- Bracket A : 4pcs
- Bracket B : 1pcs
- Bracket C : 1pcs
- Tapping screw (OD5) : 4pcs
- Tapping screw (OD4) : 4pcs
- Plastic band with clip : 2pcs
- Plastic band : 5pcs



Applicable model

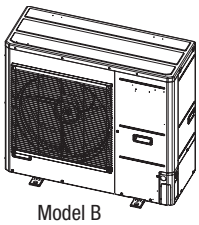
This heater kit is applicable for 3 different models.

<Model A>
Single fan with plastic fan guard model



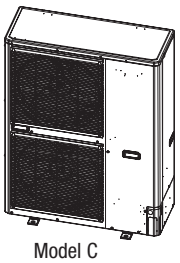
Model A

<Model B>
Single fan model



Model B

<Model C>
Double fan model



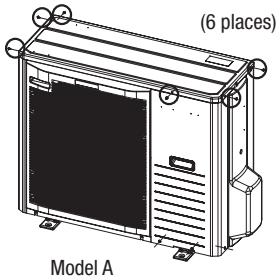
Model C

Installation procedure

Step 1

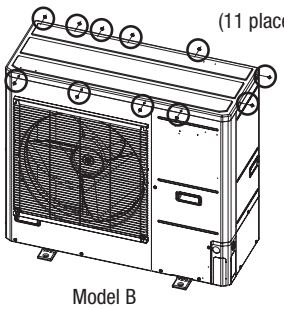
1. Remove the top panel of the outdoor unit.

(6 places)



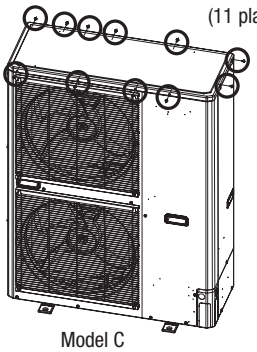
Model A

(11 places)



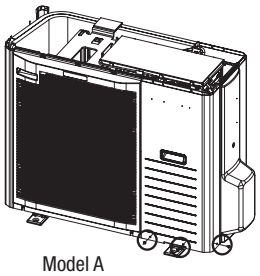
Model B

(11 places)

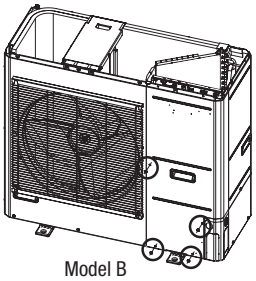


Model C

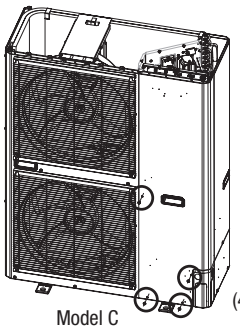
Step 2 2. Remove the service panel.



Model A (3 places)



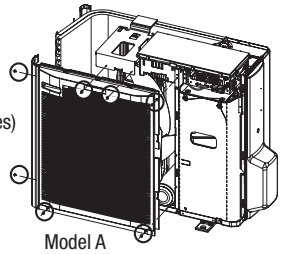
Model B (4 places)



Model C (4 places)

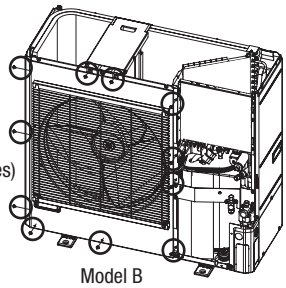
Step 3 3. Remove the front panel.
Pull the panel straightforward so that the panel doesn't touch the fan blade.

(7 places)



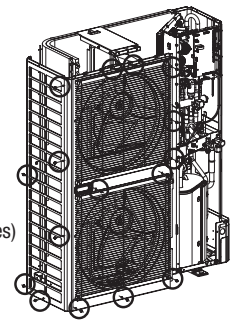
Model A

(11 places)



Model B

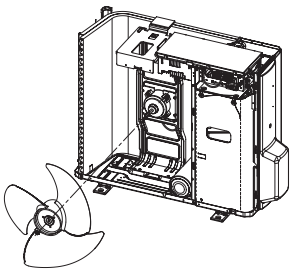
(16 places)



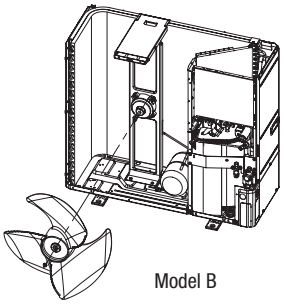
Model C

Step 4 4. Remove the fan blade if necessary.

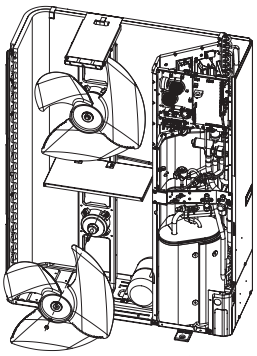
<Note>
Do not rotate the axis of fan motor when removing the fan blade.
It may cause malfunction of the fan motor.



Model A

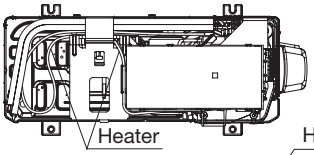


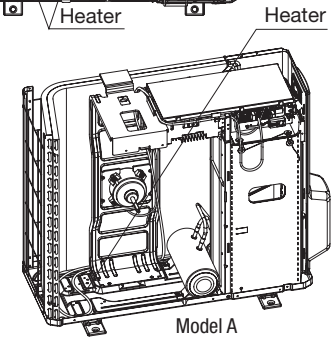
Model B



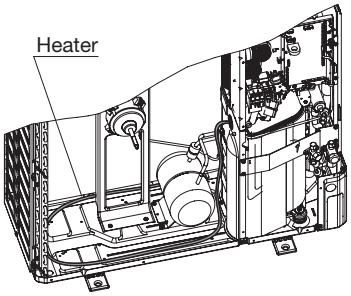
Model C

Step 5 5. Lay down the drain pan heater on the base.
For model A, put the cables rear the fan motor bracket.

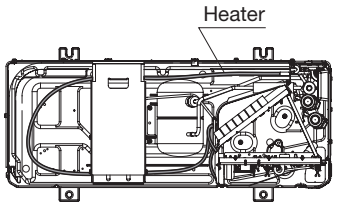




Model A

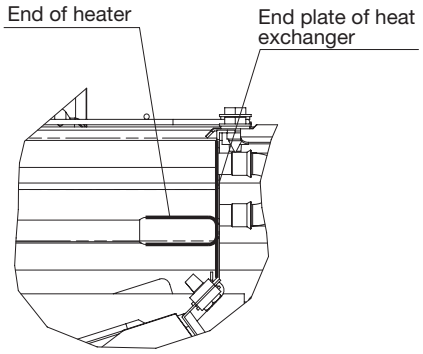


Model B, C



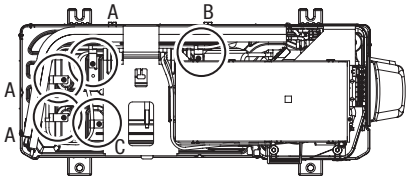
Step 6

6. Put the heater underneath the heat exchanger and align the end of heater with the end plate of heat exchanger.

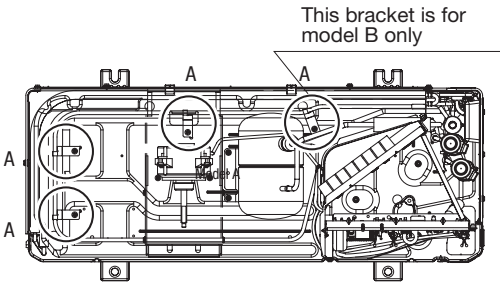


Step 7

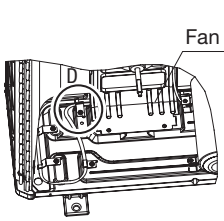
7. Fix the heater with brackets.



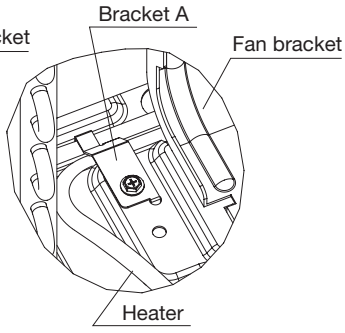
For model A, use 3 pcs of bracket A, 1pc of bracket B and C. Fix bracket A and C with the attached screw (OD4), and fix bracket B with the removed screw which is fastened at the same place.



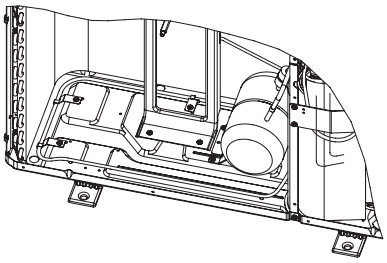
For model B and C, fix bracket A with the attached screw (OD5).



Model A



Detail view D



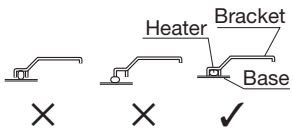
Model B, C

<Note for model A>

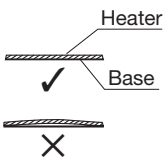
1) Put the end of heating part just after the bracket C.
2) Fix the incoming and out going cable with one bracket A on the left of fan bracket as figure shows.

<Note>

1) Fix the heater so that the bracket doesn't pinch the heater as figure shows.



2) Place the heater so as to touch the base completely.

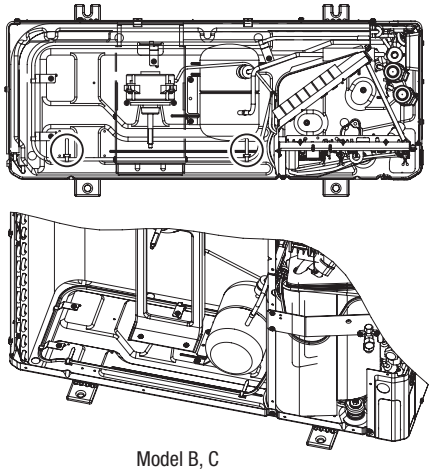


3) In bending position, twist the heater to make it easier to bend, and get back to be able to fix it with bracket.

4) Be careful not to be injured by aluminum fin when fixing the heater with screw.

Step 8

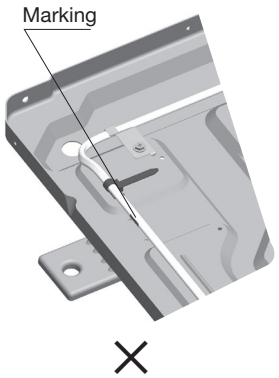
8. Insert the plastic band with clip on the designated place (2 places), and fix the heater.(Model B,C only)



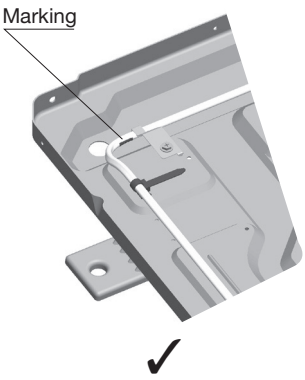
Model B, C

<Note>

1) Do not fasten the heating part with the plastic band.
   There is a marking on the end of heating part.



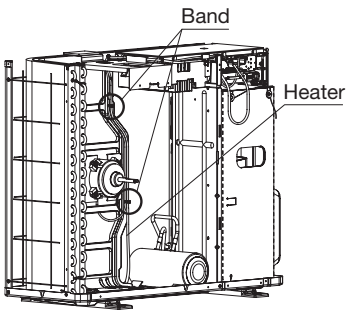
2) When the heater is laid down correctly, the end of heating part comes to the corner of the base.



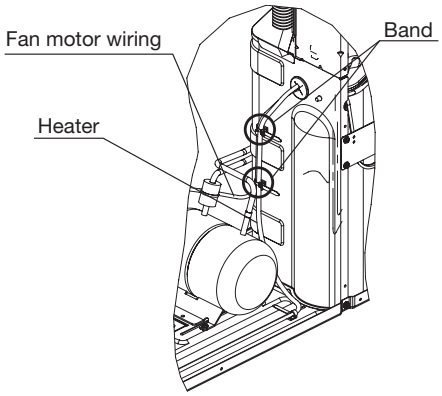
Step 9

9. Lay down the wiring on the same route of fan motor wiring, and fix the wire with attached plastic band at the same place where the fan motor wiring is banded.

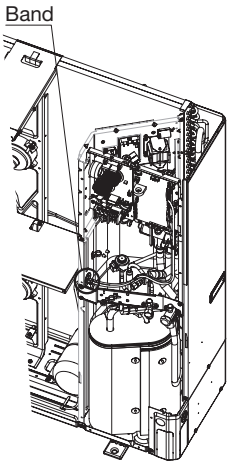
Model A

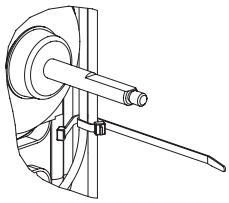


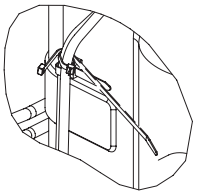
Model B

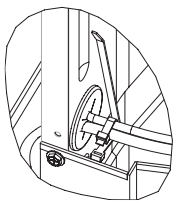


Model C









<Note>

Fan motor wiring is banded on the bracket so that it doesn't loosen.
Do not loose the band for the motor wiring to band the heater wire together but use the attached plastic band.

Step 10

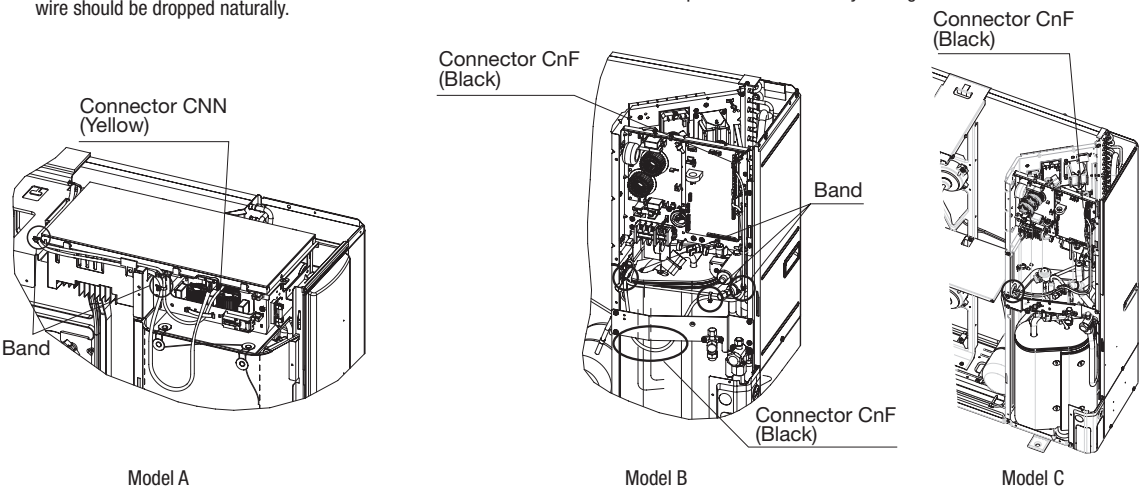
10.Insert the connector to the port (Model A: CNN, Model B,C:CNF) on the PCB, and fix the wire with bands. Excess part of the wire should be dropped naturally.

<Note>

Be sure to cut the excess part of plastic band.

It may cause abnormal noise when hit by fan blade or misassembling of panels.

Do not bundle excess part of the wire. It may damage the heater.



Model A Model B Model C

Step 11

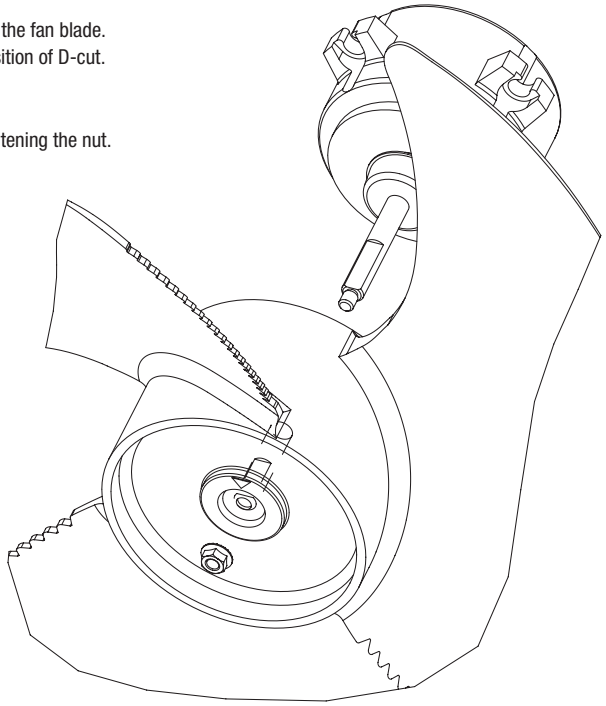
11. Reassemble the fan blade.

Take care to align the D-cut of motor shaft and the fan blade.

▽ mark on the center of the fan shows the position of D-cut.

<Note>

1. Tightening torque of the nut is 4.0-4.9 N·m.
2. Do not rotate the axis of fan motor when tightening the nut. It may cause malfunction of the fan motor.



<Note>

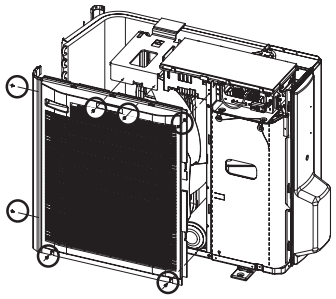
- This heater should have bending radius of at least 25mm including non-heating part. Do not bundle the excess part of the wire. It may cause disconnection of the heater or insufficient capacity.
- Be sure to prevent the heater from touching any refrigerant piping.

  Especially, pay close attention not to make it touch with pipes which are close to the wiring route such as suction pipe, check valve and check joint.

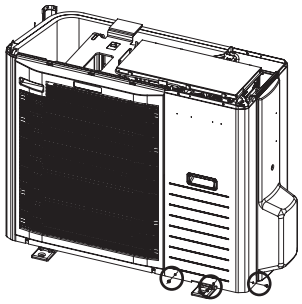
Step 12

12. Reassemble the panels.

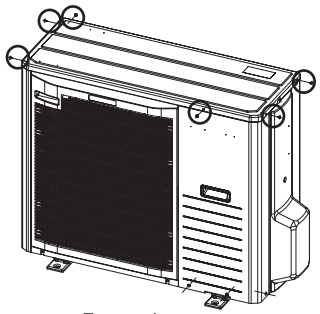
[Model A]



Front panel

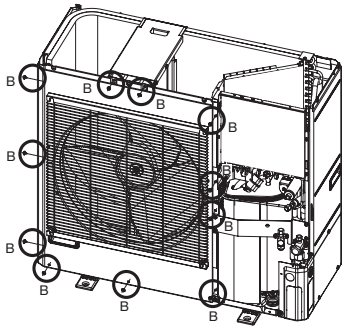


Service panel

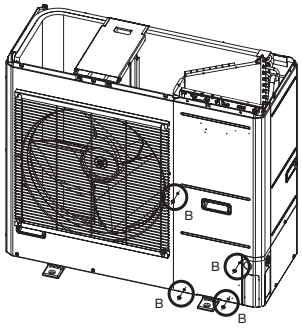


Top panel

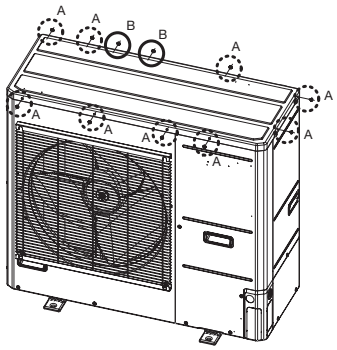
[Model B]



Front panel

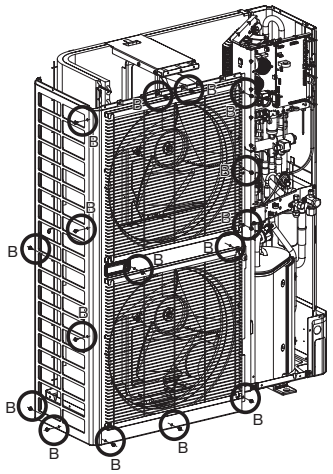


Service panel

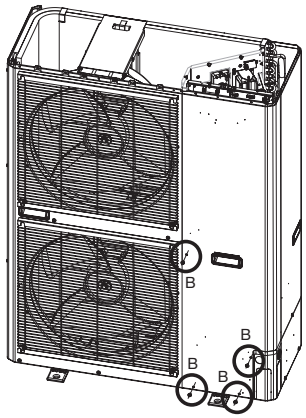


Top panel

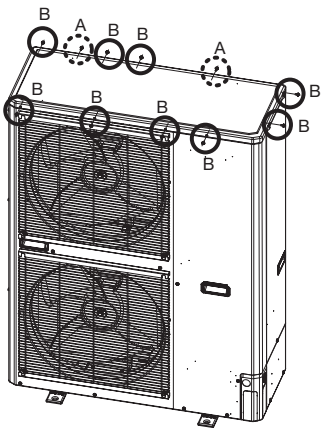
[Model C]



Front panel



Service panel

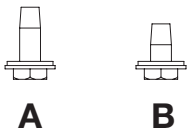


Top panel

<Note>

1) When reassembling the service panel, take care not to damage the front panel with the edge.

2) Top panel of model B and model C is fixed with two different screws.
Be sure to use correct screw as figure shows.



A **B**

3.7 INTERFACE KIT (SC-BIKN2-E)

※When RC-EX3 is connected, please use SC-BIKN2-E by all means.

RKZ012A099

Accessories included in package

Be sure to check all the accessories included in package.

No.	Part name	Quantity
①	Indoor unit's connection cable (cable length: 1.8m)	1
②	Wood screws (for mounting the interface: ø4x 25)	2
③	Tapping screws (for the cable clump and the interface mounting bracket)	3
④	Interface mounting bracket	1
⑤	Cable clamp (for the indoor unit's connection cable)	1
⑥	CnT terminal connection cable (total cable length: 0.5m)	1

Safety precautions

Before use, please read these Safety precautions thoroughly before installation.

- All the cautionary items mentioned below are important safety related items to be taken into consideration, so be sure to observe them at all times.

⚠Warning	Incorrect installation could lead to serious consequences such as death, major injury or enviromental destruction.

- Symbols used in these precautions

	Always go along these instruction.

- After completed installation, carry out trial operation to confirm no anomaly, and ask the user to keep this installation manual in a good place for future reference.

⚠ Warnings

- **Installation must be carried out by a qualified installer.**
  If you install it by yourself, it may cause an electric shock, fire and personal injury , as a result of a system malfunction.
- **Install it in full accordance with the installation manual.**
  Incorrect installation may cause an electric shock, fire and personal injury.
- **Electrical work must be carried out by a qualified electrician in accordance with the technical standard for electrical equipment, the indoor wiring standard and this installation manual.**
  Incorrect installation may cause an electric shock, fire and personal injury.
- **Use the specific cables for wiring. And connect all the cables to terminals or connectors securely and clamp them with cable clamps in order for external forces not to be transmitted to the terminals directly.**
  Incomplete connection may cause malfunction, and lead to heat generation and fire.
- **Use the original accessories and specified components for installation.**
  If the parts other than those prescribed by us are used, it may cause an electric shock, fire and sersonal injury.

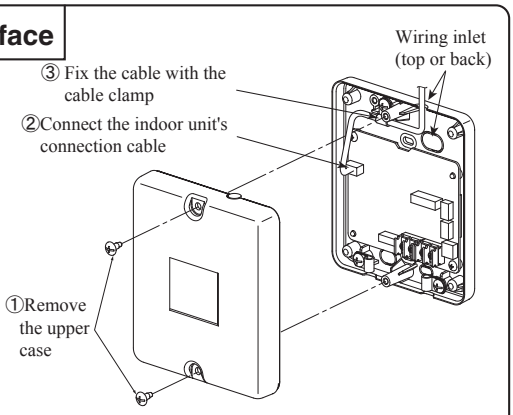
Connecting the indoor unit's connection cable to the interface

①Remove the upper case of the interface.
- Remove 2 screws from the interface casing before removal of upper casing.

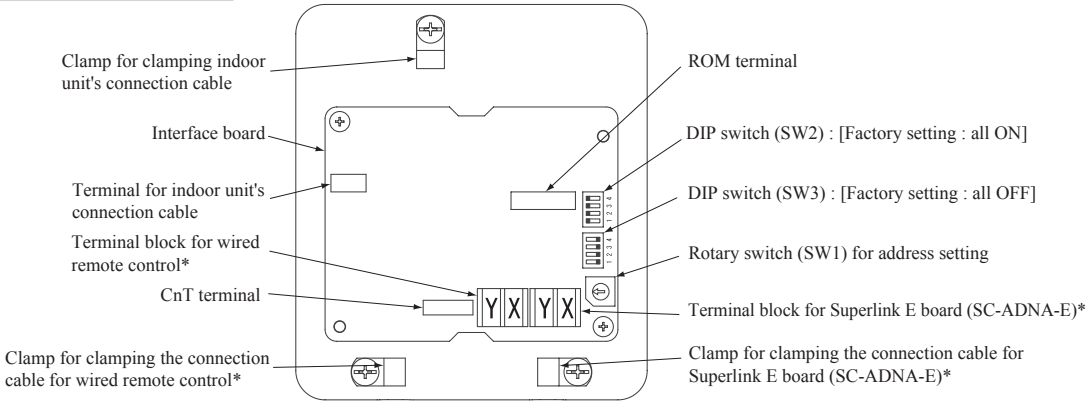
②Connect the indoor unit's connection cable to the interface.
- Connect the connector of the indoor unit connection cable to the connector on the interface's circuit board.

③Fix the indoor unit's connection cable with the cable clamp.
- Cable can be brought in from the top or from the back.
- Cut out the punch-outs for the connection cables running into the casing with cutter.

④Connect the indoor unit's connection cable to the indoor control PCB.
- Connect the indoor unit's connection cable to the indoor control PCB securely.
- Clamp the connection cable to the indoor control box securely with the cable clamp provided as an accessory.
- Regarding the cable connection to the indoor unit, refer to the installation manual for indoor unit.



Name of each part of the interface



*Either the connection cables of Superlink E board (SC-ADNA-E) or of wired remote control is connectable.

Switch	Setting	Function	Switch	Setting	Function
SW2-1	ON**	CnT level input	SW2-3	ON**	External input (CnT input)
	OFF	CnT pulse input		OFF	Operation permission/prohibition (CnT input)
SW2-2	ON**	Wired remote control : Enable	SW2-4	ON**	Annual cooling : Enable***
	OFF	Wired remote control : Disable		OFF	Annual cooling : Disable***

** Factory setting

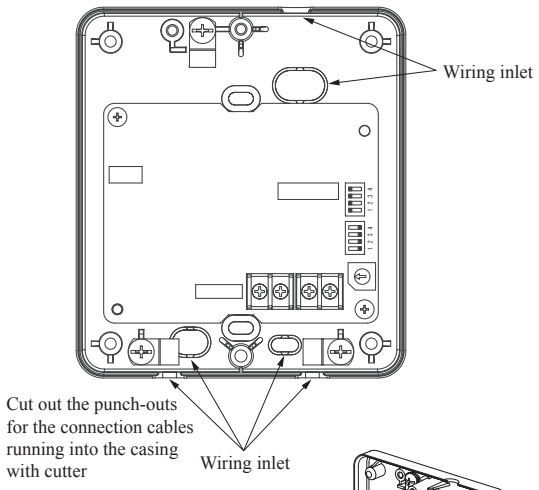
*** Indoor fan control at low outdoor air temperature in cooling

Installation of the interface

- Install the interface within the range of the connection cable length (approximately 1.3m) from the indoor unit.
- Be sure not to extend the connection cable on site. If the connection cable is extended, malfunction may occur.
- Fix the interface on the wall, pillar or the like.

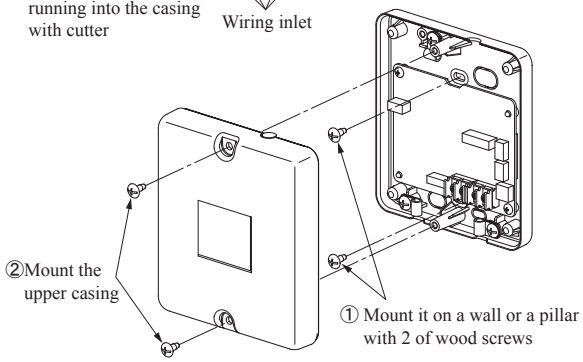
●Don't install the interface and wired remote control at the following places.

○Places exposed to direct sunlight
○Places near heating devices
○High humidity places
○Surfaces where are enough hot or cold to generate condensation
○Places exposed to oil mist or steam directly
○Uneven surface



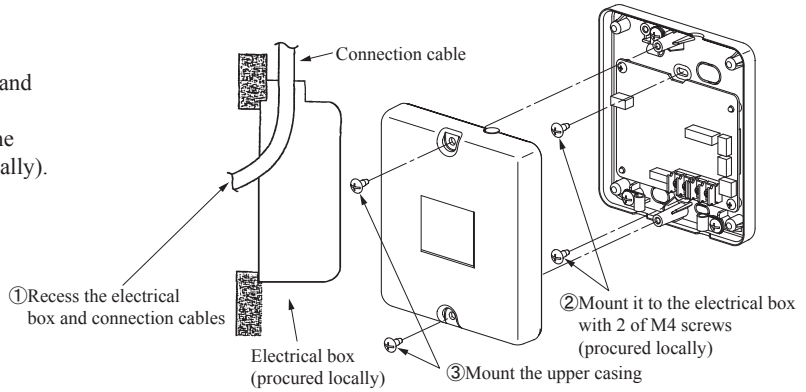
Mounting the interface directly on a wall

①Mount the lower casing of the interface on a flat surface with wood screws provided as standard accessory.
②Mount the upper casing.



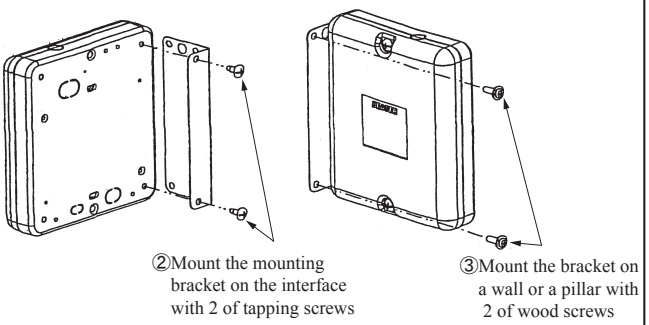
Recessing the interface in the wall

①Recess the electrical box (procured locally) and connection cables in the wall.
②Mount the lower casing of the interface to the electrical box with M4 screws (procured locally).
③Mount the upper casing.



Mounting the interface with the mounting bracket

①Mount the upper casing.
②Mount the mounting bracket to the interface with tapping screws provided as standard accessory.
③Mount the mounting bracket on wall or the like with wood screws provided as standard accessory.



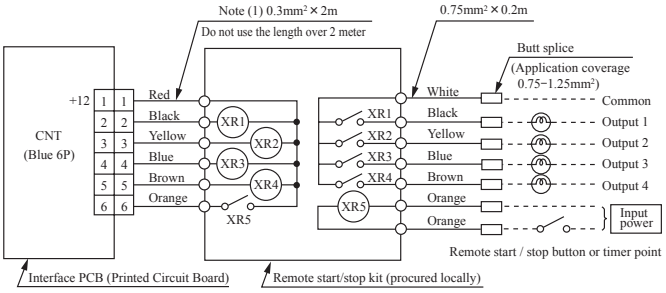
Installation check items

☐ Are the connection cables connected securely to the terminal blocks and connectors?
☐ Are the thickness and length of the connection cables conformed with the standard?

Functions of CnT connector

It is available to operate the air-conditioner and to monitor the operation status with the external control unit (remote display) by sending the input/output signal through CnT connector on the indoor control PCB.

①Connect a external remote control unit (procured locally) to CnT terminal.
②In case of the pulse input, switch OFF the DIP switch SW2-1 on the interface PCB.
③When setting operation permission/prohibition mode, switch OFF the DIP switch SW2-3 on the interface PCB.



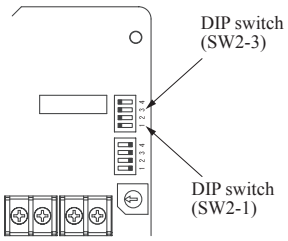
Input/ Output	Function	Output signal		Content
		Relay	ON/OFF	
Output 1	Operation output	XR_1	ON	During air-conditioner operation
Output 2	Heating output	XR_2	ON	During heating operation
Output 3	Compressor operation output	XR_3	ON	During compressor running
Output 4	Malfunction output	XR_4	ON	During anomalous stop

- XR_{1-4} are for the DC 12V relay
- XR_5 is a DC 12/24V or AC 220-240V relay
- CnT connector (local) maker, model

Connector	Molex	5264-06
Terminals	Molex	5263T

Input/ Output	Function	SW2-1		SW2-3				Air-conditioner	Operation by remote control
		Setting		Setting	Input signal		Content		
					Level/Pulse	XR_5			
Input	External control input	ON*	Level input	ON*	Level	OFF→ON	External input	ON	Allowed
						ON→OFF		OFF	
				OFF		OFF→ON	Operation permission	OFF	
						ON→OFF	Operation prohibition	OFF	Not allowed
		OFF	Pulse input	ON*	Pulse	OFF→ON	External input	OFF→ON	Allowed
								ON→OFF	
				OFF	Level	OFF→ON	Operation permission	ON	
						ON→OFF	Operation prohibition	OFF	Not allowed

* Factory setting

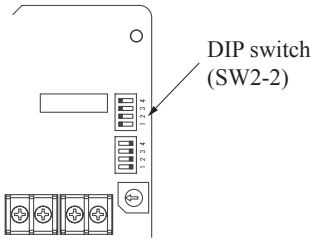


In case of the remote control (RC-EX3 or later model), the external outputs (1 – 4) and the external input can be changed using the function setting of remote control. For the setting method, refer to the installation manual.
Also refer to the technical manual to know how it is adapted to the function setting for the external outputs and input, at the indoor unit side.

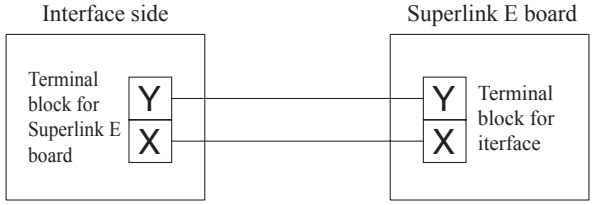
Connection of Superlink E board

Regarding the connection of Superlink E board, refer to the installation manual of Superlink E board.
For electrical work, power source for all of units in the Superlink system must be turned OFF.

①Switch ON the DIP switch SW2-2 (Factory setting: ON) on the interface PCB.
Caution: Wireless remote control attached to the indoor unit can be used in parallel, after connecting the wired remote control. However, some of functions other than the basic functions such as RUN/STOP, temperature setting, etc. may not work properly and may have a mismatch between the display and the actual behavior.



②Wiring connection between the interface and the Superlink E board.

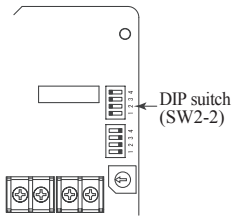


No.	Names of recommended signal wires
1	Shielded wire
2	Vinyl cabtyre round cord
3	Vinyl cabtyre round cable
4	Vinyl insulated wire vinyl sheathed cable for control

Within 200 m 0.5 mm² × 2 cores
Within 300 m 0.75 mm² × 2 cores
Within 400 m 1.25 mm² × 2 cores
Within 600 m 2.0 mm² × 2 cores

③Clamp the connection cables with cable clamps.

Connection of wired remote control



Regarding the connection of wired remote control, refer to the installation manual of wired remote control.

①Switch ON the DIP switch SW2-2 (Factory setting : ON) on the interface PCB.

Caution:Wireless remote control attached to the indoor unit can be used in parallel, after connecting the wired remote control. However, some of functions other than the basic functions such as RUN/STOP, temperature setting, etc. may not work properly and may have a mismatch between the display and the actual behavior.

②Wiring connection between the interface and the wired remote control.

Installation and wiring of wired remote control

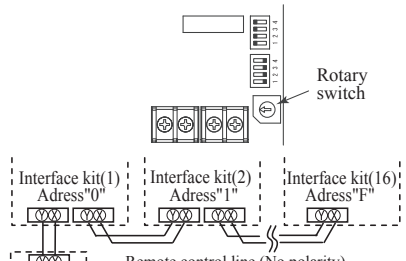
Ⓐ Install the wired remote control with reference to the attached installation manual of wired remote control.
Ⓑ 0.3mm² x 2 cores cable should be used for the wiring of wired remote control.
Ⓒ Maximum length of wiring is 600m.
If the length of wiring exceeds 100m, change the size of cable as mentioned below.
100m-200m: 0.5mm² X 2 cores, 300m or less: 0.75mm² X 2 cores, 400m or less: 1.25mm² X 2 cores, 600m or less: 2.0mm² X 2 cores
However, cable size connecting to the terminal of wired remote control should not exceed 0.5mm². Accordingly if the size of connection cable exceeds 0.5mm², be sure to downsize it to 0.5mm² at the nearest section of the wired remote control and waterproof treatment should be done at the connecting section in order to avoid contact failure.
Ⓓ Don't use the multi-core cable to avoid malfunction.
Ⓔ Keep the wiring of wired remote control away from grounding (Don't touch it to any metal frame of building, etc.).
Ⓕ Connect the connection cables to the terminal blocks of the wired remote control and the interface securely (No polarity).

③Clamp the connection cables with cable clamps.

Control of multiple units by a single wired remote control

Multiple units (up to 16) can be controlled by a single wired remote control.
In this case, all units connected with a single wired remote control will operate under the same mode and same setting temperature.

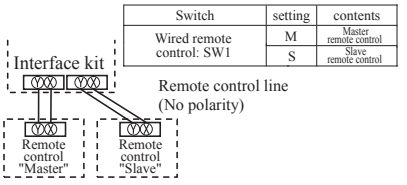
①Connect all the interface with 2 cores cables of wired remote control line.
②Set the address of indoor unit for remote control communication from "0" to "F" with the rotary switch SW1 on the interface PCB.
③After turning the power ON, the address of indoor unit can be displayed by pressing AIR CON No. button on the wired remote control.
Make sure all indoor units connected are displayed in order by pressing ▲ or ▼ button.



Master/Slave setting wired when 2 of wired remote control are used

Maximum two wired remote control can be connected to one indoor unit (or one group of indoor units)

①Set the DIP switch SW1 on the wired remote control to "Slave" for the slave remote control. (Factory setting : Master)
○ Caution : Remote control sensor of the slave remote control is invalid.



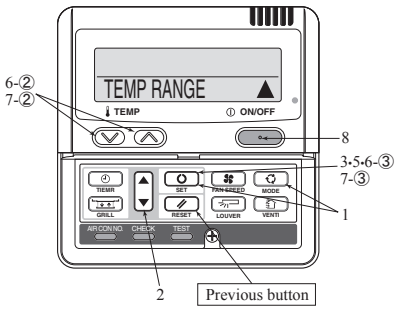
●When using the wireless remote control in parallel with the wired remote control;
Since temperature setting range of wired remote control is different from that of wireless remote control, please adjust the setting range of wired remote control to be the same setting range of wireless remote control by following procedure. (The set temperature may not be displayed correctly on the wireless remote control, unless change of temperature setting range is done.)
Changing procedure of temperature setting range is as follows.

How to set upper and lower limit of temperature setting range

1. Stop the air-conditioner, and press ○ (SET) and ◇ (MODE) button at the same time for 3 seconds or more.
The indication changes to"FUNCTION SET▼"
2. Press ▼ button once, and change to the "TEMP RANGE▲" indication.
3. Press ○ (SET) button, and enter the temperature range setting mode.
4. Confirm that the "Upper limit ▼ " is shown on the display.
5. Press ○ (SET)button to fix.
6. ①Indication: "☝∨ ∧ SET UP"→"UPPER 28℃ ∨ ∧"
②Select the upper limit value 30℃ with temperature setting button △."UPPER30℃∨ " (blinking)
③Press ○ (SET) button to fix. "UPPER 30℃" (Displayed for two seconds)
After the fixed upper limit value displayed for two seconds, the indication will return to"UPPER LIMIT▼".
7. Press ▼ button once, "LOWER LIMIT ▲ " is selected, press ○ (SET) button to fix.
①Indication: "☝∨ ∧ SET UP" → "LOWER 20℃∨ ∧"
②Select the lower limit value 18℃ with temperature setting button ▽."LOWER18℃∧ " (blinking)
③Press ○ (SET) button to fix. "LOWER 18℃" (Displayed for two seconds)
After the fixed lower limit value displayed for two seconds, the indication will return to"LOWER LIMIT▼"
8. Press ON/OFF button to finish.

Temperature setting range

Mode	Temperature setting range
Cooling, Heating, Dry, Auto	18-30℃



- It is possible to quit in the middle by pressing ON/OFF button, but the change of setting is incompleted.
- During setting, if pressing ✎ (RESET) button, it returns to the previous screen.

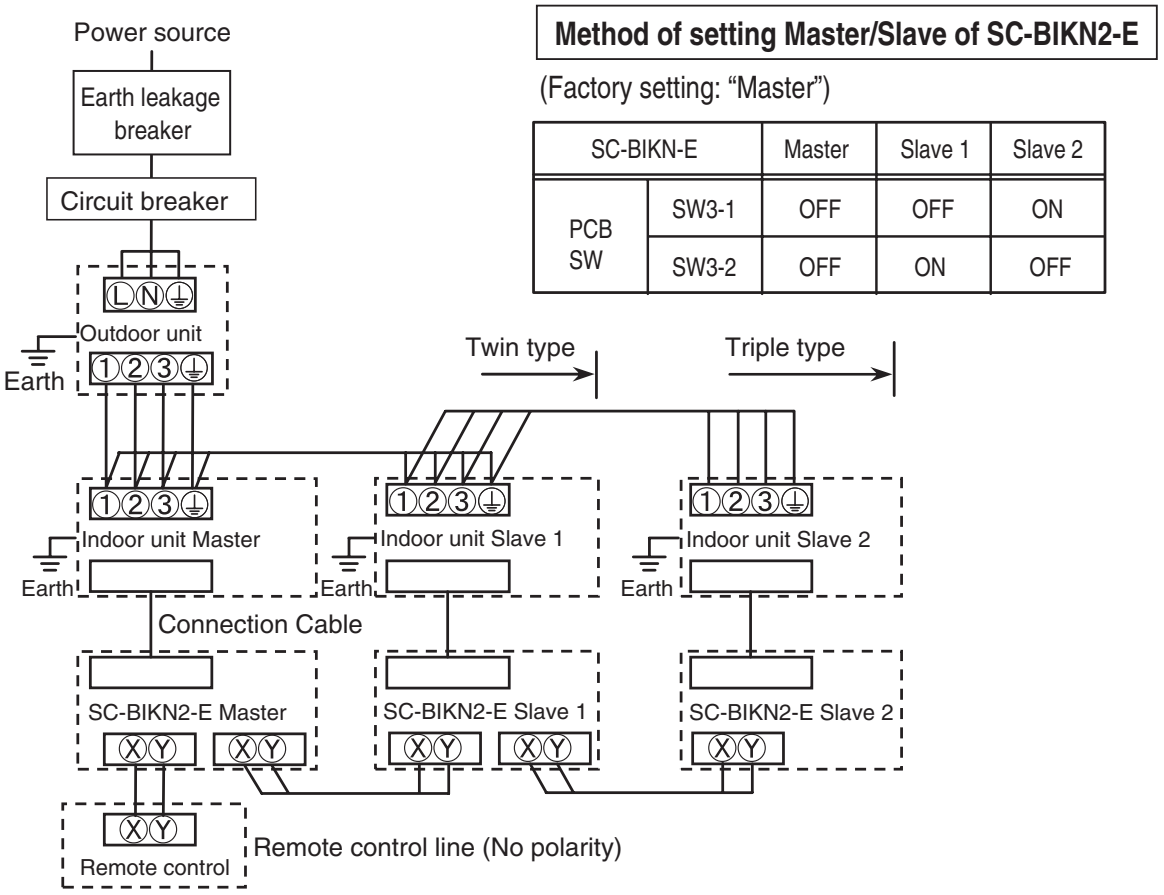
3.7.1 Cable connection for SRK twin/triple installation

①Connect the same pairs number of terminal block "①,②,and ③"and " Ⓧ and Ⓨ " between master and slave indoor units.

②Do the same address setting of all inside units belong to same refrigerant system by rotary switch SW1 on SC-BIKN2-E's PCB (Printed circuit board).

③Set slave indoor unit as "slave 1" through" slave 2" by address switch SW3-1, 3-2 on SC-BIKN2-E's PCB.

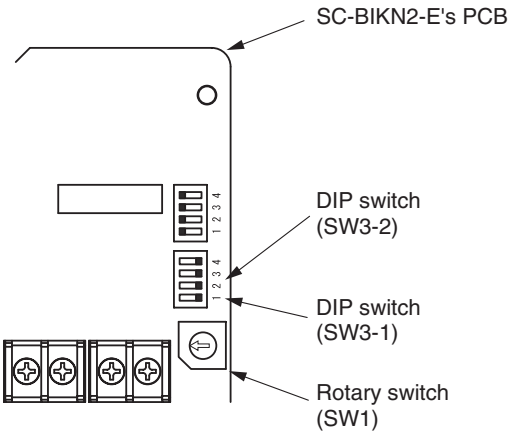
④When the AIR CON NO. button on the remote control unit is pressed after turning on the power, an indoor unit's address number will be displayed. Do not fail to confirm that the connected indoor unit's numbers are displayed on the remote control unit by pressing the ▲ or ▼ button.



Method of setting Master/Slave of SC-BIKN2-E

(Factory setting: "Master")

SC-BIKN-E		Master	Slave 1	Slave 2
PCB SW	SW3-1	OFF	OFF	ON
	SW3-2	OFF	ON	OFF



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3.8 SUPERLINK E BOARD (SC-ADNA-E)

PJZ012D029K

- Read and understand the instructions completely before starting installation.
- Refer to the instructions for both indoor and outdoor units.

Safety precautions

- Carefully read "Safety precautions" first. Follow the instructions for installation.
- Precautions are grouped into "Warning⚠" and "Caution⚠". The "Warning⚠" group includes items that may lead to serious injury or death if not observed. The items included in the "Caution⚠" group also may lead to serious results under certain conditions. Both groups are crucial for safety installation. Read and understand them carefully.
- After installation, conduct the test operation of the device to check for any abnormalities. Describe how to operate the device to the customer following the installation instruction manual. Instruct the customer to keep this installation instruction for future reference.

⚠Warning

- This device should be installed by the dealer where you purchase the device or a licensed professional shop. If the device is incorrectly installed by the customer, it may result in electric shock or fire.
- Install the device carefully following the installation instruction. If the device is incorrectly installed, it may result in electric shock or fire.
- Use the accessory parts and specified parts for installation. If any parts that do not match the specifications are used, it may result in electric shock or fire.
- A person with the electrical service certification should conduct the service based on the "Technical standards for electrical facilities", "Electrical Wiring Code", and the installation instruction. If the work is done incorrectly, it may result in electric shock or fire.
- Wiring should be securely connected using the specified types of wire. No external force on the wire should be applied to any terminals. If a secure connection is not achieved, it may result in electric shock or fire.

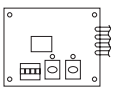
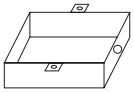
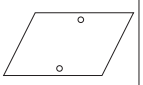
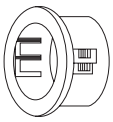
⚠Caution

- Provide ground connection.
  The ground line should never be connected to the gas supply piping, the water supply piping, the lightning conductor rod, nor the telephone ground.If the grounding is improper, it may result in electric shock.
- Do not install the device in the following locations.
  1.Where there is mist/spray of oil or steam such as kitchens.
  2.Where there is corrosive gases such as sulfurous acid gas.
  3.Where there is a device generating electromagnetic waves.
  These may interfere with the control system resulting in the device becoming uncontrollable.
  4.Where flammable volatile materials such as paint thinner and gasoline may exist or where they are handled. This may cause a fire.

1 Application

Indoor-to-outdoor three core communication specification type 3 (since October 2007)

2 Accessories

SL E board	Metal box	Metal cover	Screw for ground
			M4×8L 2 pieces 
Pan head screws	Locking supports	Binding band	Grommet
ø4×8L 2 pieces 	To secure the print board and the metal box Made of nylon 4 pieces 		

3 Function

Allowing the center console SL1N-E, SL2N-E, and SL3N-AE/BE to control and monitor the commercial air-conditioner unit.

4 Control switching

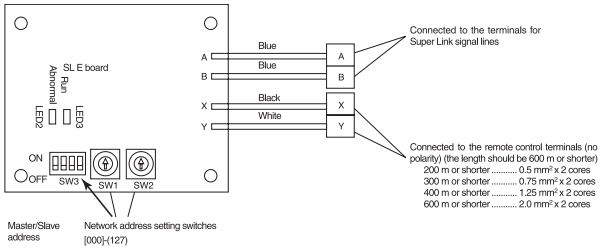
Settings can be changed by the switch SW3 on the SL E board as in the following.

Switch	Symbol	Switch	Remarks
SW3	1	ON	Master
		OFF (default)	Slave
	2	ON	Fixed previous protocol
		OFF (default)	Automatic adjustment of Superlink protocol
	3	ON	Indicates the forced operation stop when abnormality has occurred.
		OFF (default)	Indicates the status of running/stop as it is, when abnormality has occurred.
	4	ON	The hundredth address activated "1"
		OFF (default)	The hundredth address activated "0"

5 Connection Outline

Note for setting the address

- Set the address between 00 and 47 for the previous Superlink connection and between 000 and 127 for the new Superlink connection. (*1)
- Do not set the address overlapping with those of the other devices in the network. (The default is 000)



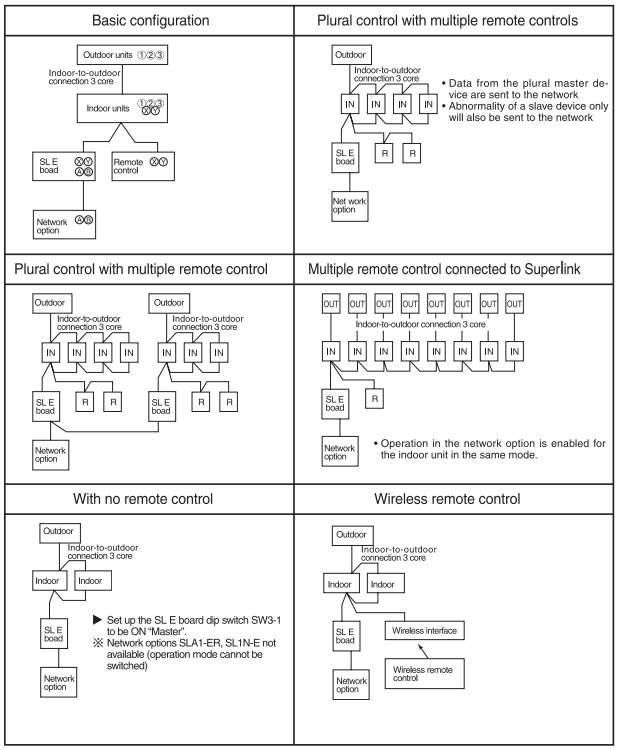
(*1) Whether the actual link is either the new Superlink or the previous Superlink depends on the models of the connected outdoor and indoor units. Consult the agent or the dealer.

Signal line specification

Communication method	Previous Superlink	New Superlink
Line type	MVVS	MVVS
Line diameter	0.75 - 1.25mm²	0.75/1.25mm²
Signal line (total length)	up to 1000m	up to 1500/1000m (*2)
Signal line (maximum length)	up to 1000m	up to 1000m

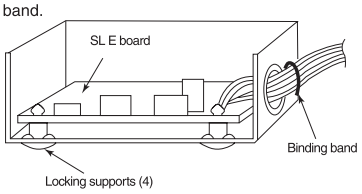
(*2) Up to 1500 m for 0.75 mm², and up to 1000 m for 1.25 mm².
Do not use 2.0 mm². It may cause an error.
(*3) Connect grounding on both ends of the shielding wire.
For the grounding method, refer to the section "6 Installation".

(1) Set the Superlink network address with SW1 (tens place), SW2 (ones place), and SW3 (hundreds place).
(2) Set the SL E board SW3-1 to be ON (Master) when using this without any remote control (no wired remote controller nor wireless remote control).
(3) Set up the plural master/slave device using the dip switches on the indoor unit board.
(4) Set up the remote control master/slave device using the slide switch on the remote control board.
(5) Set up "0" to "F" using the address rotary switch on the indoor unit board when controlling the indoor unit with the multiple remote control.

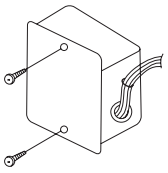


6 Installation

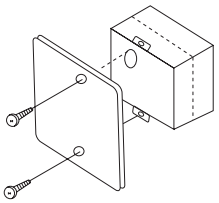
1. When using the metal box (mounted on the indoor unit / mounted on the back of the remote control):
   (1) Mount the SL E board in the metal box using the locking supports.
   (2) Wiring should go through the provided grommet since then through the wiring to the hole on the Metal box.
   Secure the grommet after inserting the grommet into the Metal box as shown in below figure, then tie the wiring at the outlet of the unit using a binding band.



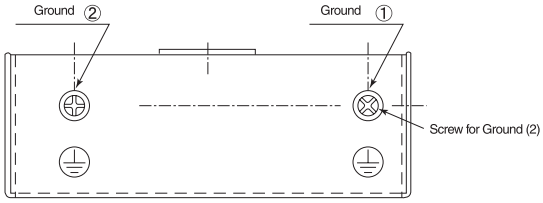
▲ When installed outside the indoor unit, put the metal cover on.



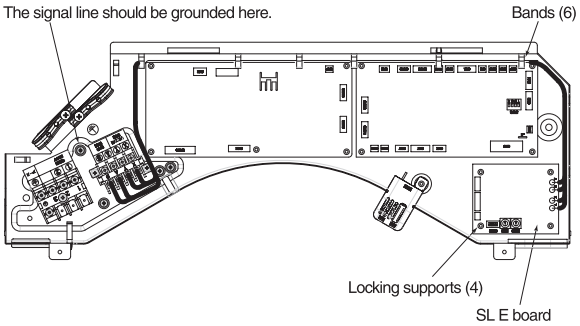
▲ When installed on the back of the remote control, mount it directly on the remote control bottom case.



Connect grounding. Connect grounding for the power line to Ground ①, and grounding for the signal line to Ground ② or to the Ground on the indoor unit control box.



2. When connecting to the indoor unit control box (ceiling-concealed type and FDT type only):
   (1) Mount the SL E board in the control box using the locking supports.
   (2) Remove 6 bands from the box and put the wiring through the bands to be secured.



Electrical shock hazard! Make sure to turn the power off for servicing. Be cautious so that no abnormal force should be applied to the wiring. Do not let the SL E board hung by the wiring. Do not damage the board with a screw driver.
The board is sensitive to static electricity. Release the static electricity of your body before servicing.
(you can do this by touching the control board which is grounded).

Location of installation

Install the device at the location where there are no electromagnetic waves nor where there is water and dust. The specified temperature range of the device is 0 to 40°C. Install the device at the location where the ambient temperature stays within the range. If it exceeds the specification, make sure to provide solution such as installing a cooling fan. When used outside of the range, it may cause abnormal operation.

7 Indicator display

Check the LED 3 (green) and LED 2 (red) on the SL E board for flashing.

SL E board LEDs		Inspection mode	Display on the integrated network control device
Red	Green		
Off	Flashing	Normal communication	
Off	Off	• Disconnection in the remote control communication line (X or Y) • Short-circuit in the remote control communication line (between X and Y) • Faulty indoor unit remote control power • Faulty remote control communication circuit • Faulty CPU on SL E board	No corresponding unit number
One flash	Flashing	• Disconnection in the Superlink signal line (A or B) • Short-circuit in the Superlink signal line (between A and B) • Faulty Superlink signal circuit	
Two flashes	Flashing	• Faulty address setting for the SL E board (Set up the address for previous SL E board : more than 48 new SL E board : more than 128)	
Three flashes	Flashing	• SL E board parent not set up when used without a remote control • Faulty remote control communication circuit	E1
Four flashes	Flashing	• Address overlapping for the SL E board and the Superlink network connected indoor unit	E2
Off	Flashing	• Number of connected devices exceeds the specification for the multiple indoor unit control	E10

MICRO INVERTER PACKAGED AIR-CONDITIONERS

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