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MITSUBISHI HEAVY INDUSTRIES

TECHNICAL MANUAL

HYPER INVERTER PACKAGED AIR-CONDITIONERS

(Split system, air to air heat pump type)

CEILING CASSETTE-4 WAY COMPACT TYPE

FDTC40ZSXVF
50ZSXVF
60ZSXVF

CEILING SUSPENDED TYPE

FDE40ZSXVG
50ZSXVG
60ZSXVG

DUCT CONNECTED-LOW/ MIDDLE STATIC PRESSURE TYPE

FDUM40ZSXVF
50ZSXVF
60ZSXVF

MITSUBISHI HEAVY INDUSTRIES THERMAL SYSTEMS, LTD.

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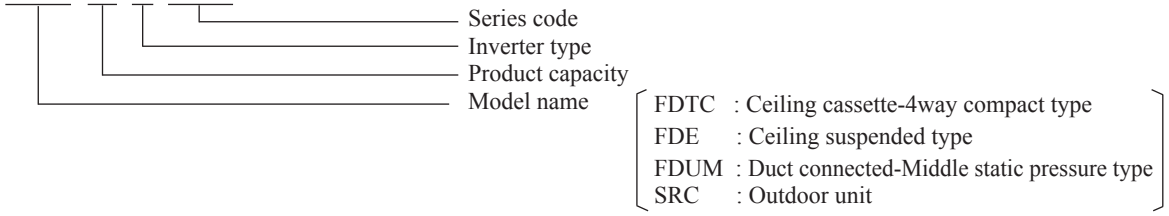
How to read the model name

Example: FDTC 40 Z SXVF



1. SPECIFICATIONS

(1) Ceiling cassette-4way compact (FDTC)

Item			Model	FDTC40ZSXVF	
				Indoor unit **FDTC40VF**	Outdoor unit **SRC40ZSX-S**
Power source				1 Phase 220-240V 50Hz / 220V 60Hz	
Operation data	Nominal cooling capacity (range)		kW	4.0 [1.1(Min.)- 4.7(Max.)]	
	Nominal heating capacity (range)		kW	4.5 [0.6(Min.)- 5.4(Max.)]	
	Power consumption	Cooling	kW	1.04	
		Heating		1.10	
	Max power consumption			2.60	
	Running current	Cooling	A	4.9 / 5.1	
		Heating		5.2 / 5.5	
	Inrush current, max current			5 , 12	
	Power factor	Cooling	%	92 / 93	
		Heating		92 / 91	
	EER	Cooling		3.85	
	COP	Heating		4.09	
	Sound power level	Cooling	dB(A)	60	63
		Heating			
	Sound pressure level	Cooling		P-Hi : 47 Hi : 42 Me : 36 Lo : 30	50
		Heating		P-Hi : 47 Hi : 42 Me : 36 Lo : 32	49
	Silent mode sound pressure level			—	Cooling : 42 / Heating : 43
Exterior dimensions (Height x Width x Depth)			mm	Unit 248 × 570 × 570 Panel 35 × 700 × 700	640×800(+71)×290
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	45
Compressor type & Q'ty				—	RMT5113MCE2 (Twin rotary type)×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.45 (MA68)
Refrigerant (Type, amount, pre-charge length)			kg	R410A 1.5kg in outdoor unit (incl. the amount for the piping of : 15m)	
Heat exchanger				Louver fin & inner grooved tubing	M shape fin & inner grooved tubing
Refrigerant control				Capillary tubes + Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	33 < Direct line start >	34 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 7	36
		Heating		P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 8	33
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	—
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") Pipe ϕ6.35(1/4") × 0.8 O/U ϕ6.35 (1/4")	
				Gas line: ϕ12.7 (1/2") ϕ12.7(1/2") × 0.8 ϕ12.7 (1/2")	
	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.30m	
	Vertical height diff. between O.U. and I.U.		m	Max.20m (Outdoor unit is higher)	Max.20m (Outdoor unit is lower)
	Drain hose			Hose connectable VP20(O.D.26)	Holes size ϕ20 × 5pcs
Drain pump, max lift height			mm	Built-in drain pump , 600	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	4.8	
Interconnecting wires	Size x Core number			ϕ1.5mm^2 × 4 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IPX4
Standard accessories				Mounting kit, Drain hose	Drain elbow, Drain hole grommet
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 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.

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Item			Model	FDTC50ZSXVF	
				Indoor unit **FDTC50VF**	Outdoor unit **SRC50ZSX-S**
Power source				1 Phase 220-240V 50Hz / 220V 60Hz	
Operation data	Nominal cooling capacity (range)		kW	5.0 [1.1(Min.)- 5.6(Max.)]	
	Nominal heating capacity (range)		kW	5.4 [0.6(Min.)- 6.3(Max.)]	
	Power consumption	Cooling	kW	1.56	
		Heating		1.45	
	Max power consumption			2.90	
	Running current	Cooling	A	7.2 / 7.5	
		Heating		6.7 / 7.0	
	Inrush current, max current			5 , 15	
	Power factor	Cooling	%	94 / 95	
		Heating		94 / 94	
	EER	Cooling		3.21	
	COP	Heating		3.72	
	Sound power level	Cooling	dB(A)	60	63
		Heating			
	Sound pressure level	Cooling		P-Hi : 47 Hi : 42 Me : 36 Lo : 30	50
		Heating		P-Hi : 47 Hi : 42 Me : 36 Lo : 32	49
	Silent mode sound pressure level			—	Cooling : 42 / Heating : 43
Exterior dimensions (Height x Width x Depth)			mm	Unit 248 × 570 × 570 Panel 35 × 700 × 700	640×800(+71)×290
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	45
Compressor type & Q'ty				—	RMT5113MCE2 (Twin rotary type)×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.45 (MA68)
Refrigerant (Type, amount, pre-charge length)			kg	R410A 1.5kg in outdoor unit (incl. the amount for the piping of : 15m)	
Heat exchanger				Louver fin & inner grooved tubing	M shape fin & inner grooved tubing
Refrigerant control				Capillary tubes + Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	33 < Direct line start >	34 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 7	40
		Heating		P-Hi : 13.5 Hi : 11.5 Me : 9 Lo : 8	33
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	—
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") Pipe ϕ6.35(1/4") × 0.8 O/U ϕ6.35 (1/4")	
				Gas line: ϕ12.7 (1/2") ϕ12.7(1/2") × 0.8 ϕ12.7 (1/2")	
	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.30m	
	Vertical height diff. between O.U. and I.U.		m	Max.20m (Outdoor unit is higher)	Max.20m (Outdoor unit is lower)
	Drain hose			Hose connectable VP20(O.D.26)	Holes size ϕ20 × 5pcs
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 x Core number			ϕ1.5mm^2 × 4 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IPX4
Standard accessories				Mounting kit, Drain hose	Drain elbow, Drain hole grommet
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 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.

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Item			Model	FDTC60ZSXVF	
				Indoor unit **FDTC60VF**	Outdoor unit **SRC60ZSX-S**
Power source				1 Phase 220-240V 50Hz / 220V 60Hz	
Operation data	Nominal cooling capacity (range)		kW	5.6 [1.1(Min.)- 6.3(Max.)]	
	Nominal heating capacity (range)		kW	6.7 [0.6(Min.)- 6.7(Max.)]	
	Power consumption	Cooling	kW	1.99	
		Heating		2.07	
	Max power consumption			2.90	
	Running current	Cooling	A	9.1 / 9.5	
		Heating		9.6 / 10.1	
	Inrush current, max current			5 , 15	
	Power factor	Cooling	%	95 / 95	
		Heating		94 / 93	
	EER	Cooling		2.81	
	COP	Heating		3.24	
	Sound power level	Cooling	dB(A)	60	65
		Heating			64
	Sound pressure level	Cooling		P-Hi : 47 Hi : 46 Me : 39 Lo : 30	52
		Heating		P-Hi : 47 Hi : 46 Me : 39 Lo : 32	
	Silent mode sound pressure level			—	Cooling : 42 / Heating : 43
Exterior dimensions (Height x Width x Depth)			mm	Unit 248 × 570 × 570 Panel 35 × 700 × 700	640×800(+71)×290
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	45
Compressor type & Q'ty				—	RMT5113MCE2 (Twin rotary type)×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.45 (MA68)
Refrigerant (Type, amount, pre-charge length)			kg	R410A 1.5kg in outdoor unit (incl. the amount for the piping of : 15m)	
Heat exchanger				Louver fin & inner grooved tubing	M shape fin & inner grooved tubing
Refrigerant control				Capillary tubes + Electronic expansion valve	
Fan type & Q'ty				Turbo fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	33 < Direct line start >	34 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 13.5 Hi : 13.5 Me : 10 Lo : 7	41.5
		Heating		P-Hi : 13.5 Hi : 13.5 Me : 10 Lo : 8	39
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	—
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") Pipe ϕ6.35(1/4") × 0.8 O/U ϕ6.35 (1/4")	
				Gas line: ϕ12.7 (1/2") ϕ12.7(1/2") × 0.8 ϕ12.7 (1/2")	
	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.30m	
	Vertical height diff. between O.U. and I.U.		m	Max.20m (Outdoor unit is higher)	Max.20m (Outdoor unit is lower)
	Drain hose			Hose connectable VP20(O.D.26)	Holes size ϕ20 × 5pcs
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 x Core number			ϕ1.5mm^2 × 4 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IPX4
Standard accessories				Mounting kit, Drain hose	Drain elbow, Drain hole grommet
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 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.

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(2) Ceiling suspended type (FDE)

Item			Model	FDE40ZSXVG	
				Indoor unit **FDE40VG**	Outdoor unit **SRC40ZSX-S**
Power source				1 Phase 220-240V 50Hz / 220V 60Hz	
Operation data	Nominal cooling capacity (range)		kW	4.0 [1.1(Min.)-4.7(Max.)]	
	Nominal heating capacity (range)		kW	4.5 [0.6(Min.)-5.4(Max.)]	
	Power consumption	Cooling	kW	1.02	
		Heating		1.10	
	Max power consumption			2.60	
	Running current	Cooling	A	4.8 / 5.0	
		Heating		5.1 / 5.4	
	Inrush current, max current			5 , 12	
	Power factor	Cooling	%	92 / 93	
		Heating		94 / 93	
	EER	Cooling		3.92	
	COP	Heating		4.09	
	Sound power level	Cooling	dB(A)	60	63
		Heating			
	Sound pressure level	Cooling		P-Hi : 46 Hi : 38 Me : 36 Lo : 31	50
		Heating			49
	Silent mode sound pressure level			—	Cooling : 42 / Heating : 43
Exterior dimensions (Height x Width x Depth)			mm	210 × 1,070 × 690	640×800(+71)×290
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	45
Compressor type & Q'ty				—	RMT5113MCE2 (Twin rotary type)×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.45 (MA68)
Refrigerant (Type, amount, pre-charge length)			kg	R410A 1.5kg in outdoor unit (incl. the amount for the piping of : 15m)	
Heat exchanger				Louver fin & inner grooved tubing	M shape fin & inner grooved tubing
Refrigerant control				Capillary tubes + Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×2	Propeller fan ×1
Fan motor (Starting method)			W	30 < Direct line start >	34 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 13 Hi : 10 Me : 9 Lo : 7	36
		Heating			33
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	—
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") Pipe ϕ6.35(1/4")x0.8 O/U ϕ6.35 (1/4")	
				Gas line: ϕ12.7 (1/2") ϕ12.7(1/2")x0.8 ϕ12.7 (1/2")	
	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.30m	
	Vertical height diff. between O.U. and I.U.		m	Max.20m (Outdoor unit is higher)	Max.20m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20(O.D.26)	Holes size ϕ20 x 5pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	4.8	
Interconnecting wires	Size x Core number			1.5mm^2×4 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IPX4
Standard accessories				Mounting kit, Drain hose	Drain elbow, Drain hole grommet
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.

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Item			Model	FDE50ZSXVG	
				Indoor unit **FDE50VG**	Outdoor unit **SRC50ZSX-S**
Power source				1 Phase 220-240V 50Hz / 220V 60Hz	
Operation data	Nominal cooling capacity (range)		kW	5.0 [1.1(Min.)-5.6(Max.)]	
	Nominal heating capacity (range)		kW	5.4 [0.6(Min.)-6.3(Max.)]	
	Power consumption	Cooling	kW	1.52	
		Heating		1.46	
	Max power consumption			2.90	
	Running current	Cooling	A	7.0 / 7.4	
		Heating		7.0 / 7.3	
	Inrush current, max current			5 , 15	
	Power factor	Cooling	%	94 / 93	
		Heating		91	
	EER	Cooling		3.29	
	COP	Heating		3.70	
	Sound power level	Cooling	dB(A)	60	63
		Heating			
	Sound pressure level	Cooling		P-Hi : 46 Hi : 38 Me : 36 Lo : 31	50
		Heating			49
	Silent mode sound pressure level			—	Cooling : 42 / Heating : 43
Exterior dimensions (Height x Width x Depth)			mm	210 × 1,070 × 690	640×800(+71)×290
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	45
Compressor type & Q'ty				—	RMT5113MCE2 (Twin rotary type)×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.45 (MA68)
Refrigerant (Type, amount, pre-charge length)			kg	R410A 1.5kg in outdoor unit (incl. the amount for the piping of : 15m)	
Heat exchanger				Louver fin & inner grooved tubing	M shape fin & inner grooved tubing
Refrigerant control				Capillary tubes + Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×2	Propeller fan ×1
Fan motor (Starting method)			W	30 < Direct line start >	34 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 13 Hi : 10 Me : 9 Lo : 7	40
		Heating			33
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	—
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") Pipe ϕ6.35(1/4")x0.8 O/U ϕ6.35 (1/4")	
				Gas line: ϕ12.7 (1/2") ϕ12.7(1/2")x0.8 ϕ12.7 (1/2")	
	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.30m	
	Vertical height diff. between O.U. and I.U.		m	Max.20m (Outdoor unit is higher)	Max.20m (Outdoor unit is lower)
	Drain hose			Hose connectable with VP20(O.D.26)	Holes size ϕ20 x 5pcs
Drain pump, max lift height			mm	—	—
Recommended breaker size			A	—	
L.R.A. (Locked rotor ampere)			A	5.0	
Interconnecting wires	Size x Core number			1.5mm^2×4 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IPX4
Standard accessories				Mounting kit, Drain hose	Drain elbow, Drain hole grommet
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.

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Item				Model	FDE60ZSXVG	
					Indoor unit **FDE60VG**	Outdoor unit **SRC60ZSX-S**
Power source					1 Phase 220-240V 50Hz / 220V 60Hz	
Operation data	Nominal cooling capacity (range)			kW	5.6 [1.1(Min.)-6.3(Max.)]	
	Nominal heating capacity (range)			kW	6.7 [0.6(Min.)-7.1(Max.)]	
	Power consumption		Cooling	kW	1.75	
			Heating		1.86	
	Max power consumption				2.90	
	Running current		Cooling	A	8.0 / 8.4	
			Heating		8.7 / 9.1	
	Inrush current, max current				5 , 15	
	Power factor		Cooling	%	95	
			Heating		93	
	EER		Cooling		3.20	
	COP		Heating		3.60	
	Sound power level		Cooling	dB(A)	60	65
			Heating			64
	Sound pressure level		Cooling		P-Hi : 47 Hi : 41 Me : 37 Lo : 32	52
			Heating			
	Silent mode sound pressure level				—	Cooling : 42 / Heating : 43
Exterior dimensions (Height x Width x Depth)				mm	210 × 1,320 × 690	640×800(+71)×290
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	45
Compressor type & Q'ty					—	RMT5113MCE2 (Twin rotary type)×1
Compressor motor (Starting method)				kW	—	Direct line start
Refrigerant oil (Amount, type)				ℓ	—	0.45 (MA68)
Refrigerant (Type, amount, pre-charge length)				kg	R410A 1.5kg in outdoor unit (incl. the amount for the piping of : 15m)	
Heat exchanger					Louver fin & inner grooved tubing	M shape fin & inner grooved tubing
Refrigerant control					Capillary tubes + Electronic expansion valve	
Fan type & Q'ty					Centrifugal fan ×4	Propeller fan ×1
Fan motor (Starting method)				W	50 < Direct line start >	34 < Direct line start >
Air flow			Cooling	m^3/min	P-Hi : 20 Hi : 16 Me : 13 Lo : 10	41.5
			Heating			39
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	—
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") Pipe ϕ6.35(1/4")x0.8 O/U ϕ6.35 (1/4")	
					Gas line: ϕ12.7 (1/2") ϕ12.7(1/2")x0.8 ϕ12.7 (1/2")	
	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.30m	
	Vertical height diff. between O.U. and I.U.			m	Max.20m (Outdoor unit is higher)	Max.20m (Outdoor unit is lower)
	Drain hose				Hose connectable with VP20(O.D.26)	Holes size ϕ20 x 5pcs
Drain pump, max lift height				mm	—	—
Recommended breaker size				A	—	
L.R.A. (Locked rotor ampere)				A	5.0	
Interconnecting wires	Size x Core number				1.5mm^2×4 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number					IPX0	IPX4
Standard accessories					Mounting kit, Drain hose	Drain elbow, Drain hole grommet
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.

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(3) Duct connected-Low / Middle static pressure tpye (FDUM)

Item				Model	FDUM40ZSXVF	
					Indoor unit **FDUM40VF**	Outdoor unit **SRC40ZSX-S**
Power source					1 Phase 220-240V 50Hz / 220V 60Hz	
Operation data	Nominal cooling capacity (range)			kW	4.0 [1.1(Min.)- 4.7(Max.)]	
	Nominal heating capacity (range)			kW	4.5 [0.6(Min.)- 5.4(Max.)]	
	Power consumption		Cooling	kW	0.952	
			Heating		1.07	
	Max power consumption				2.60	
	Running current		Cooling	A	4.4 / 4.6	
			Heating		4.9 / 5.1	
	Inrush current, max current				5 , 12	
	Power factor		Cooling	%	94	
			Heating		95	
	EER		Cooling		4.20	
	COP		Heating		4.21	
	Sound power level		Cooling	dB(A)	60	63
			Heating			
	Sound pressure level		Cooling		P-Hi : 37 Hi : 32 Me : 29 Lo : 26	50
			Heating			49
	Silent mode sound pressure level				—	Cooling : 42 / Heating : 43
Exterior dimensions (Height x Width x Depth)				mm	280 × 750 × 635	640×800(+71)×290
Exterior appearance (Munsell color)					—	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight				kg	29	45
Compressor type & Q'ty					—	RMT5113MCE2 (Twin rotary type)×1
Compressor motor (Starting method)				kW	—	Direct line start
Refrigerant oil (Amount, type)				ℓ	—	0.45 (MA68)
Refrigerant (Type, amount, pre-charge length)				kg	R410A 1.5kg in outdoor unit (incl. the amount for the piping of : 15m)	
Heat exchanger					Louver fin & inner grooved tubing	M shape fin & inner grooved tubing
Refrigerant control					Capillary tubes + Electronic expansion valve	
Fan type & Q'ty					Centrifugal fan ×1	Propeller fan ×1
Fan motor (Starting method)				W	100 < Direct line start >	34 < Direct line start >
Air flow			Cooling	m^3/min	P-Hi : 13 Hi : 10 Me : 9 Lo : 8	36
			Heating			33
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	—	—
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") Pipe ϕ6.35(1/4")x0.8 O.U. ϕ6.35 (1/4")	
					Gas line: ϕ12.7 (1/2") ϕ12.7 (1/2")x0.8 ϕ12.7 (1/2")	
	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.30m	
	Vertical height diff. between O.U. and I.U.			m	Max.20m (Outdoor unit is higher)	Max.20m (Outdoor unit is lower)
	Drain hose				Hose Connectable with VP25(O.D.32)	Holes size ϕ20 x 5pcs
Drain pump, max lift height				mm	Built-in drain pump , 600	—
Recommended breaker size				A	—	
L.R.A. (Locked rotor ampere)				A	4.8	
Interconnecting wires	Size x Core number				1.5mm^2 x 4 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number					IPX0	IPX4
Standard accessories					Mounting kit, Drain hose	Drain elbow, Drain hole grommet
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℃	19℃	35℃	24℃	35Pa	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.
(6) Static pressure of optional air filter "UM-FL1EF" is 5Pa initially.
(7) The external static pressure setting can be changed to 10-100Pa. (For RC-EX3 and RC-E5 only)

Item			Model	FDUM50ZSXVF	
				Indoor unit **FDUM50VF**	Outdoor unit **SRC50ZSX-S**
Power source				1 Phase 220-240V 50Hz / 220V 60Hz	
Operation data	Nominal cooling capacity (range)		kW	5.0 [1.1(Min.)- 5.6(Max.)]	
	Nominal heating capacity (range)		kW	5.4 [0.6(Min.)- 6.3(Max.)]	
	Power consumption	Cooling	kW	1.38	
		Heating		1.45	
	Max power consumption			2.90	
	Running current	Cooling	A	6.3 / 6.6	
		Heating		6.6 / 6.9	
	Inrush current, max current			5 , 15	
	Power factor	Cooling	%	95	
		Heating		96	
	EER	Cooling		3.62	
	COP	Heating		3.72	
	Sound power level	Cooling	dB(A)	60	63
		Heating			
	Sound pressure level	Cooling		P-Hi : 37 Hi : 32 Me : 29 Lo : 26	50
		Heating			49
	Silent mode sound pressure level			—	Cooling : 42 / Heating : 43
Exterior dimensions (Height x Width x Depth)			mm	280 × 750 × 635	640×800(+71)×290
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	29	45
Compressor type & Q'ty				—	RMT5113MCE2 (Twin rotary type)×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.45 (MA68)
Refrigerant (Type, amount, pre-charge length)			kg	R410A 1.5kg in outdoor unit (incl. the amount for the piping of : 15m)	
Heat exchanger				Louver fin & inner grooved tubing	M shape fin & inner grooved tubing
Refrigerant control				Capillary tubes + Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×1	Propeller fan ×1
Fan motor (Starting method)			W	100 < Direct line start >	34 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 13 Hi : 10 Me : 9 Lo : 8	40
		Heating			33
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	—	—
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") Pipe ϕ6.35(1/4")x0.8 O.U. ϕ6.35 (1/4")	
				Gas line: ϕ12.7 (1/2") ϕ12.7 (1/2")x0.8 ϕ12.7 (1/2")	
	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.30m	
	Vertical height diff. between O.U. and I.U.		m	Max.20m (Outdoor unit is higher)	Max.20m (Outdoor unit is lower)
	Drain hose			Hose Connectable with VP25(O.D.32)	Holes size ϕ20 x 5pcs
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 x Core number			1.5mm^2 x 4 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IPX4
Standard accessories				Mounting kit, Drain hose	Drain elbow, Drain hole grommet
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 230V 50Hz or 220V 60Hz.
(6) Static pressure of optional air filter "UM-FL1EF" is 5Pa initially.
(7) The external static pressure setting can be changed to 10-100Pa. (For RC-EX3 and RC-E5 only)

Item			Model	FDUM60ZSXVF	
				Indoor unit **FDUM60VF**	Outdoor unit **SRC60ZSX-S**
Power source				1 Phase 220-240V 50Hz / 220V 60Hz	
Operation data	Nominal cooling capacity (range)		kW	5.6 [1.1(Min.)- 6.3(Max.)]	
	Nominal heating capacity (range)		kW	6.7 [0.6(Min.)- 7.1(Max.)]	
	Power consumption	Cooling	kW	1.54	
		Heating		1.75	
	Max power consumption			2.90	
	Running current	Cooling	A	6.8 / 7.1	
		Heating		7.8 / 8.2	
	Inrush current, max current			5 , 15	
	Power factor	Cooling	%	98 / 99	
		Heating		98 / 97	
	EER	Cooling		3.64	
	COP	Heating		3.83	
	Sound power level	Cooling	dB(A)	60	65
		Heating			64
	Sound pressure level	Cooling		P-Hi : 36 Hi : 31 Me : 28 Lo : 25	52
		Heating			
	Silent mode sound pressure level			—	Cooling : 42 / Heating : 43
Exterior dimensions (Height x Width x Depth)			mm	280 × 950 × 635	640×800(+71)×290
Exterior appearance (Munsell color)				—	Stucco white (4.2Y7.5/1.1) near equivalent
Net weight			kg	34	45
Compressor type & Q'ty				—	RMT5113MCE2 (Twin rotary type)×1
Compressor motor (Starting method)			kW	—	Direct line start
Refrigerant oil (Amount, type)			ℓ	—	0.45 (MA68)
Refrigerant (Type, amount, pre-charge length)			kg	R410A 1.5kg in outdoor unit (incl. the amount for the piping of : 15m)	
Heat exchanger				Louver fin & inner grooved tubing	M shape fin & inner grooved tubing
Refrigerant control				Capillary tubes + Electronic expansion valve	
Fan type & Q'ty				Centrifugal fan ×2	Propeller fan ×1
Fan motor (Starting method)			W	130 < Direct line start >	34 < Direct line start >
Air flow		Cooling	m^3/min	P-Hi : 20 Hi : 15 Me : 13 Lo : 10	41.5
		Heating			39
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	—	—
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") Pipe ϕ6.35(1/4")x0.8 O.U. ϕ6.35 (1/4")	
				Gas line: ϕ12.7 (1/2") ϕ12.7 (1/2")x0.8 ϕ12.7 (1/2")	
	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.30m	
	Vertical height diff. between O.U. and I.U.		m	Max.20m (Outdoor unit is higher)	Max.20m (Outdoor unit is lower)
	Drain hose			Hose Connectable with VP25(O.D.32)	Holes size ϕ20 x 5pcs
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 x Core number			1.5mm^2 x 4 cores (Including earth cable) / Termainal block (Screw fixing type)	
IP number				IPX0	IPX4
Standard accessories				Mounting kit, Drain hose	Drain elbow, Drain hole grommet
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 230V 50Hz or 220V 60Hz.
(6) Static pressure of optional air filter "UM-FL1EF" is 5Pa initially.
(7) The external static pressure setting can be changed to 10-100Pa. (For RC-EX3 and RC-E5 only)

PJG000Z159M

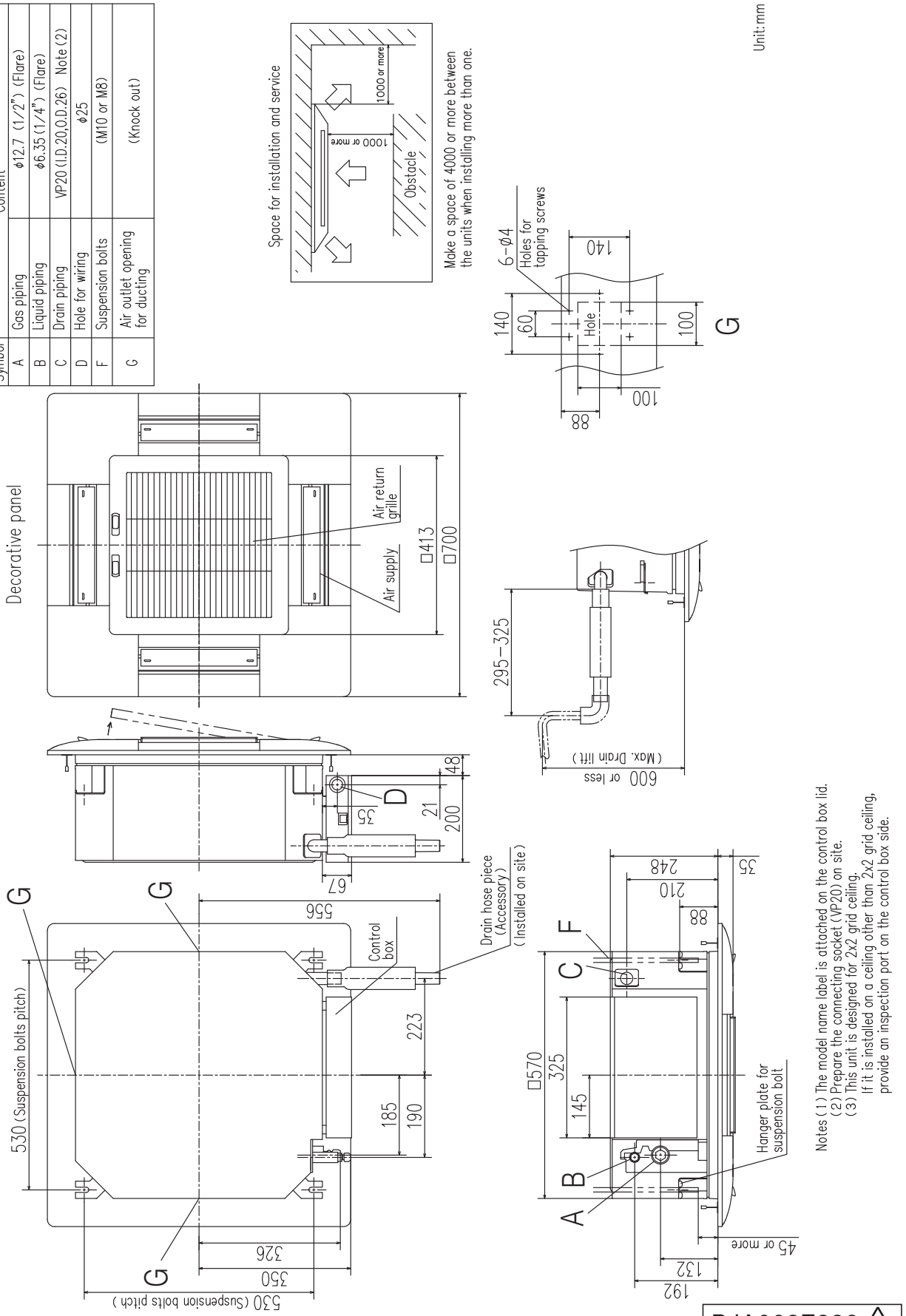
2. EXTERIOR DIMENSIONS

(1) Indoor units

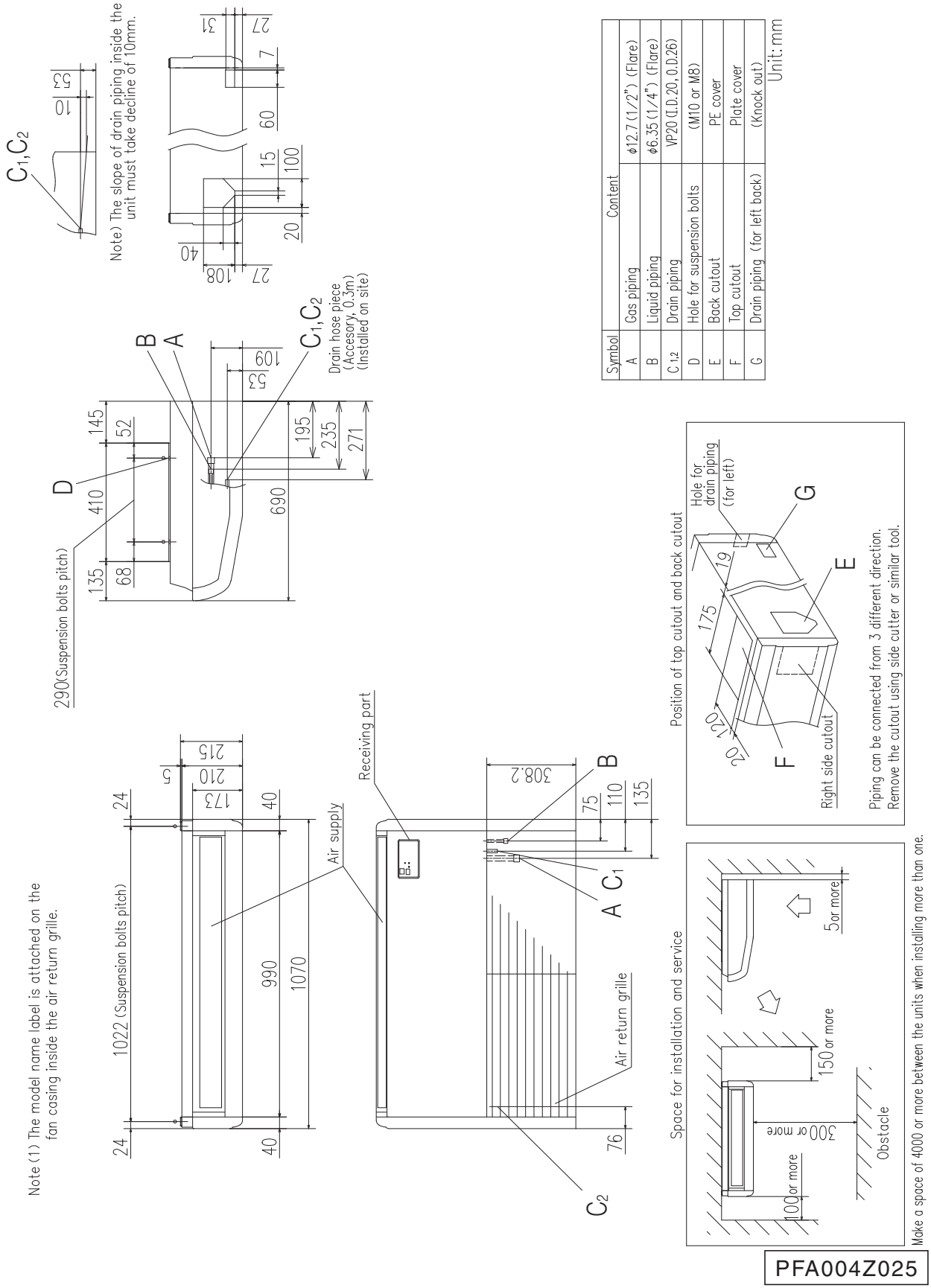
(a) Ceiling cassette-4way compact type (FDTC)

Models FDTC40VF, 50VF, 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)



(b) Ceiling suspended type (FDE)
Models FDE40VG, 50VG

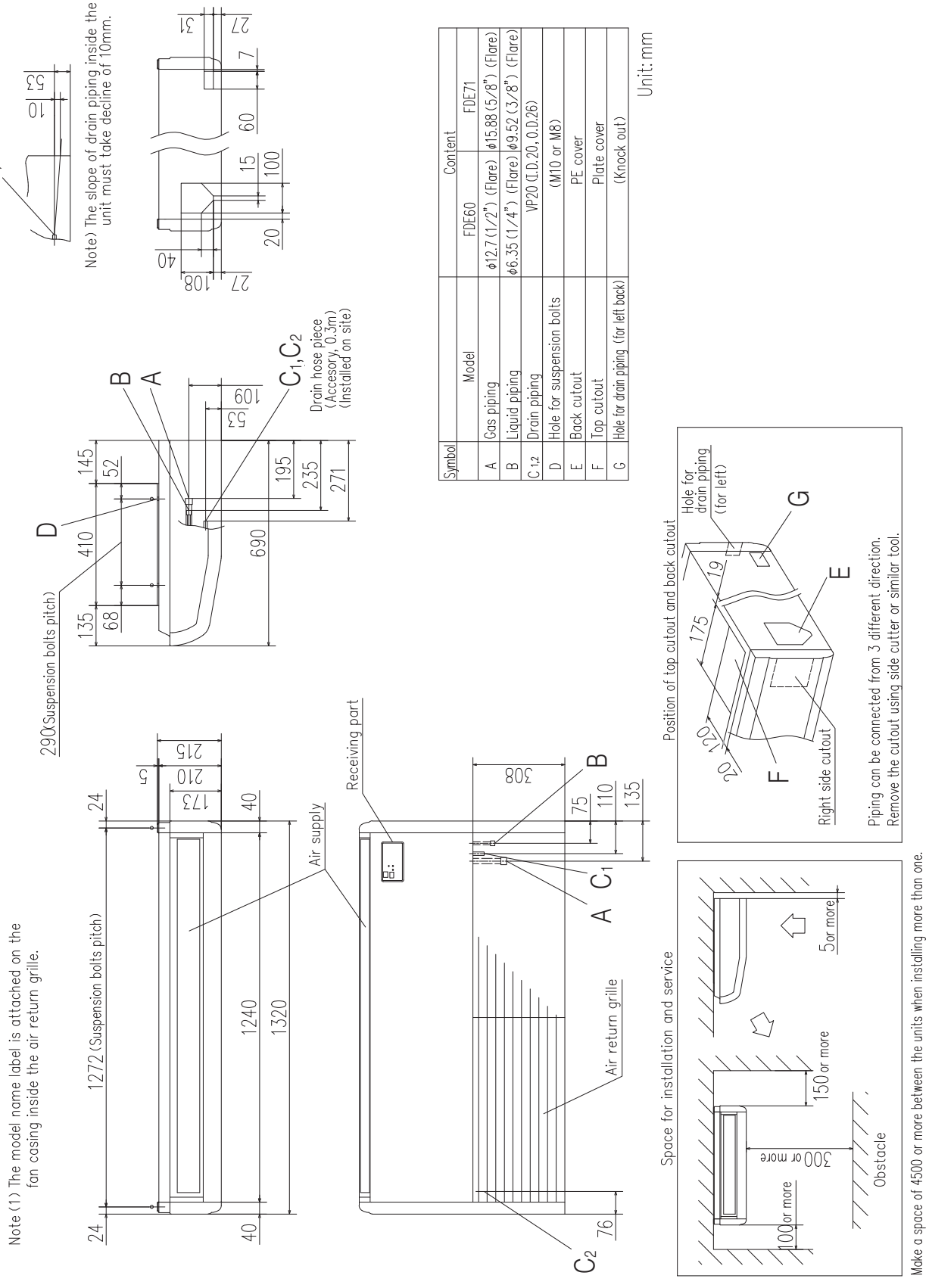


Symbol	Content	
A	Gas piping	φ12.7 (1/2") (Flare)
B	Liquid piping	φ6.35 (1/4") (Flare)
C 1,2	Drain piping	VP20 (I.D.20, O.D.26)
D	Hole for suspension bolts	(M10 or M8)
E	Back cutout	PE cover
F	Top cutout	Plate cover
G	Drain piping (for left back)	(Knock out)

Unit: mm

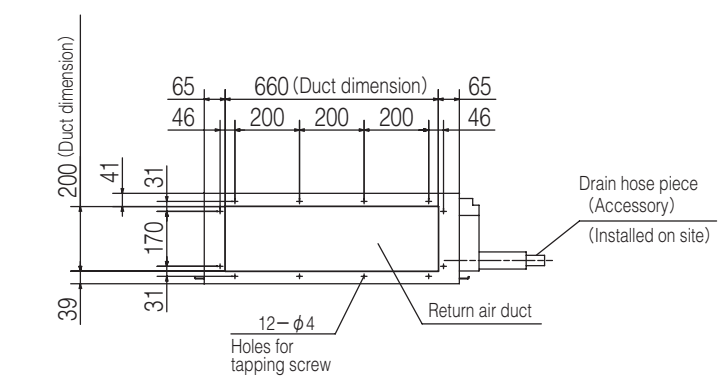
PFA004Z025

Model FDE60VG



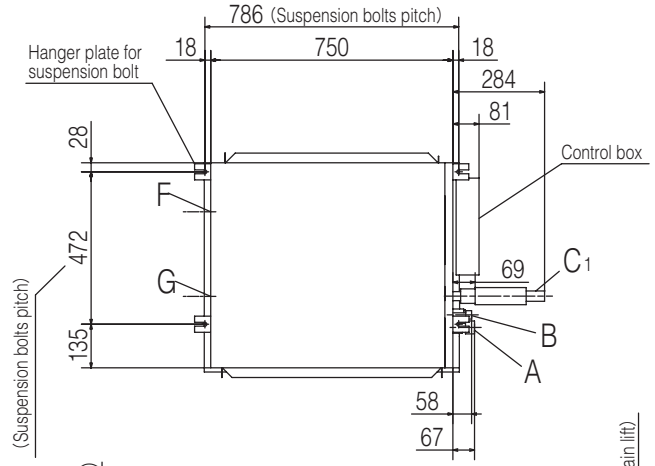
PFA004Z026

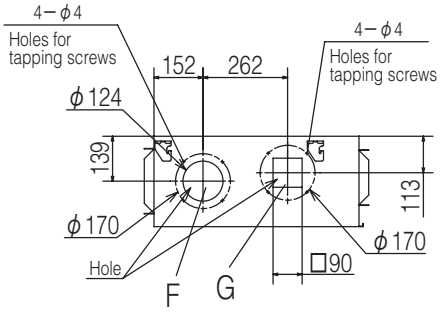
(c) Duct connected-Low / Middle static pressure type (FDUM)
Models FDUM40VF, 50VF



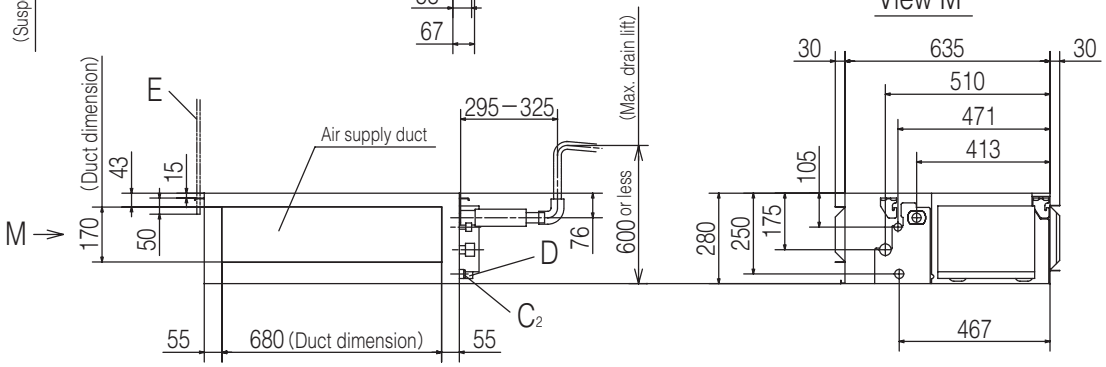
Symbol	Content	
A	Gas piping	φ12.7 (1/2") (Flare)
B	Liquid piping	φ6.35 (1/4") (Flare)
C1	Drain piping	VP25 (I.D.25, O.D.32)
C2	Drain piping (Gravity drainage)	VP20 (I.D.20, O.D.26)
D	Hole for wiring	
E	Suspension bolts	(M10)
F	Outside air opening for ducting	(φ150) (Knock out)
G	Air outlet opening for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

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





View M

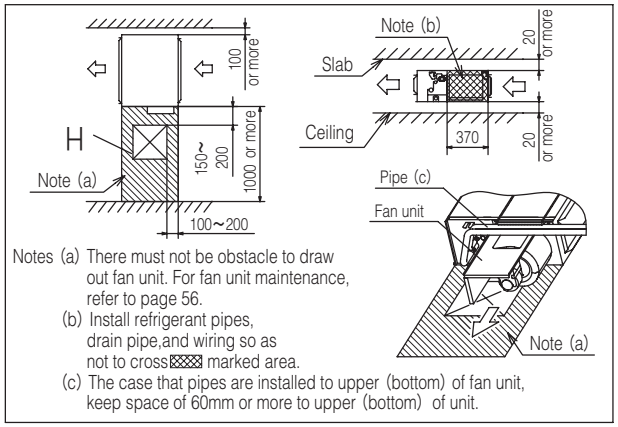


Unit:mm

Space for installation and service

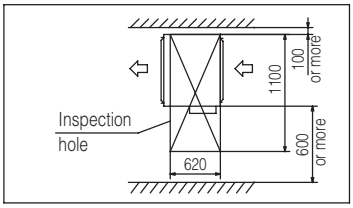
Select either of two cases to keep space for installation and services.

(Case 1) From side of unit



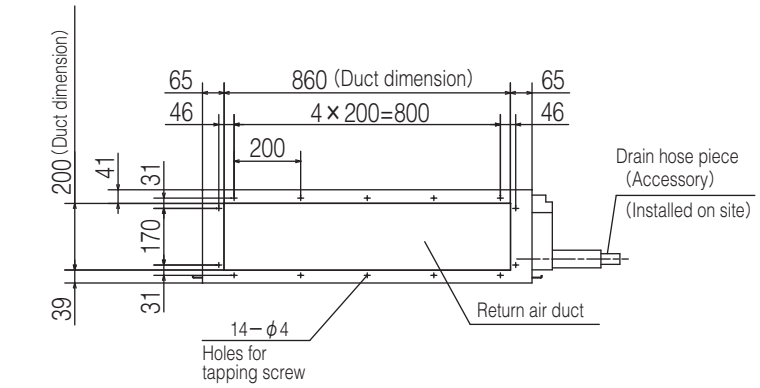
Notes (a) There must not be obstacle to draw out fan unit. For fan unit maintenance, refer to page 56.
(b) Install refrigerant pipes, drain pipe,and wiring so as not to cross ▨ marked area.
(c) The case that pipes are installed to upper (bottom) of fan unit, keep space of 60mm or more to upper (bottom) of unit.

(Case 2) From bottom of unit



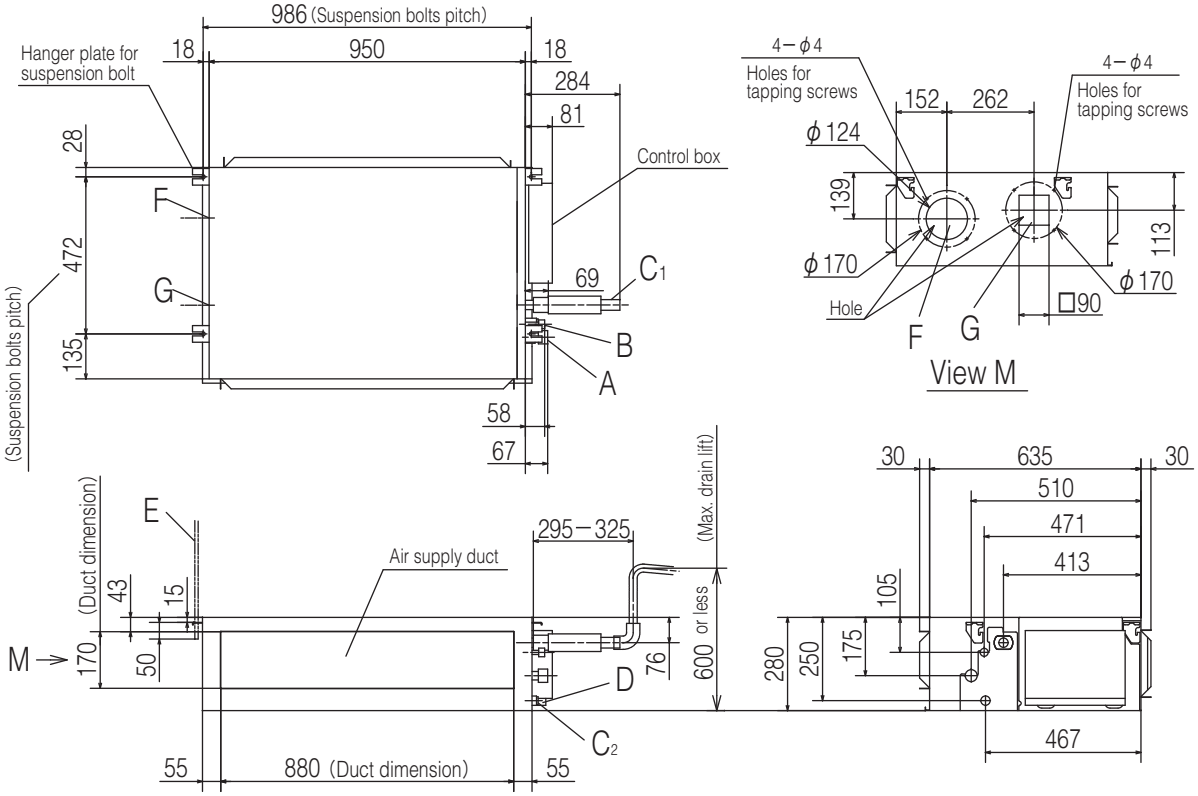
PJG000Z002 B

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)

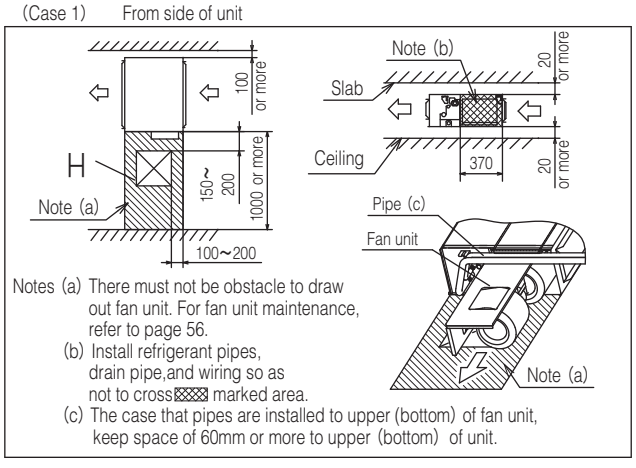
Note (1) The model name label is attached on the lid of the control box.



Space for installation and service

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

(Case 1) From side of unit

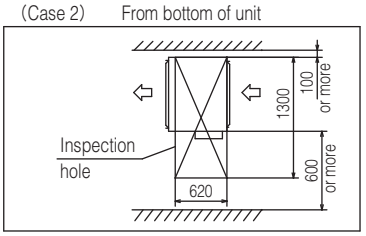


Notes (a) There must not be obstacle to draw out fan unit. For fan unit maintenance, refer to page 56.

(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

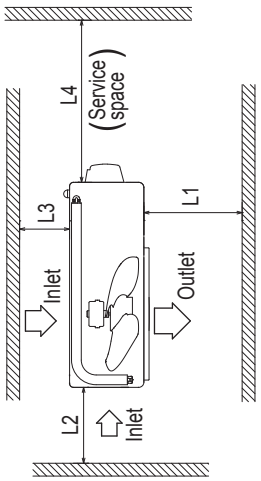


PJG000Z003 A

(2) Outdoor units
Models SRC40ZSX-S, 50ZSX-S, 60ZSX-S

Symbol	Content	
A	Service valve connection (Gas side)	ϕ12.7(1/2")(Flare)
B	Service valve connection (Liquid side)	ϕ6.35(1/4")(Flare)
C	Pipe/cable draw-out hole	
D	Drain discharge hole	ϕ20×5 places
E	Anchor bolt hole	M10-12×4 places

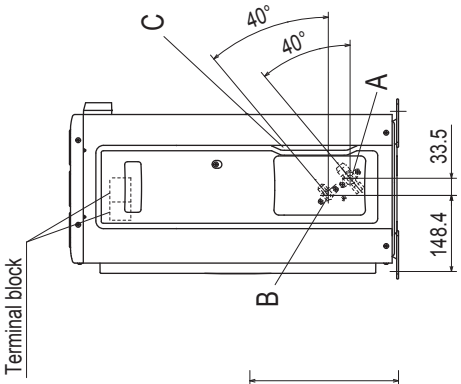
Notes
(1) The unit must not be surrounded by walls on the four sides.
(2) The unit must be fixed with anchor bolts. An anchor bolt must not protrude more than 15mm.
(3) If the unit is installed in the location where there is a possibility of strong winds, place the unit such that the direction of air from the outlet gets perpendicular to the wind direction.
(4) Leave 200mm or more space above the unit.
(5) The wall height on the outlet side should be 1200mm or less.
(6) The model name label is attached on the front side of the unit.

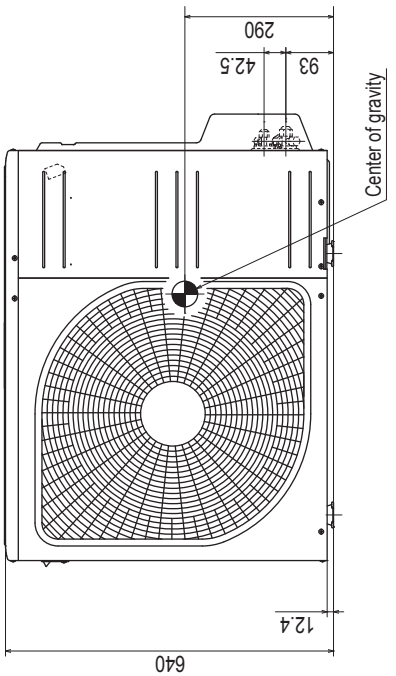


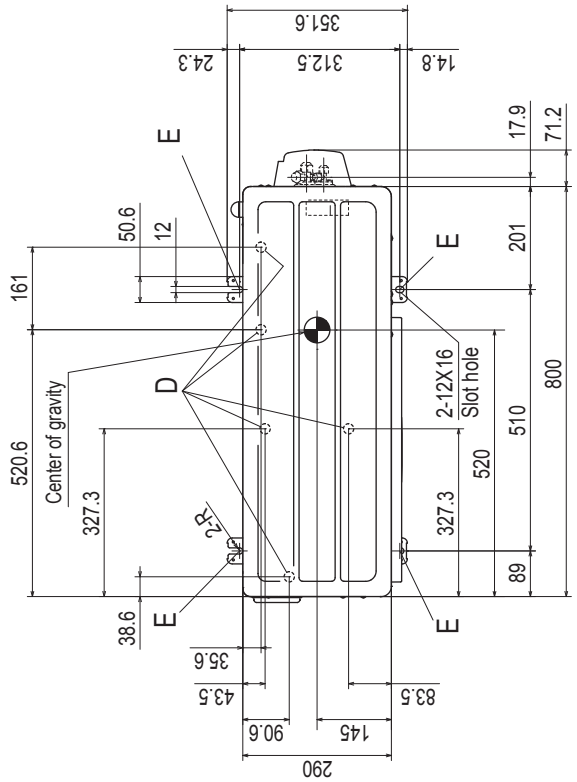
Minimum installation space

Examples installation / Size	I	II	III	IV
L1	Open	280	280	180
L2	100	75	Open	Open
L3	100	80	80	80
L4	250	Open	250	Open

Unit:mm



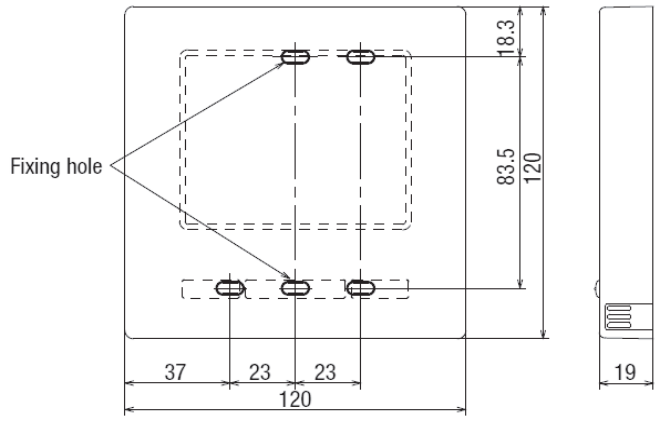




RCT000Z020

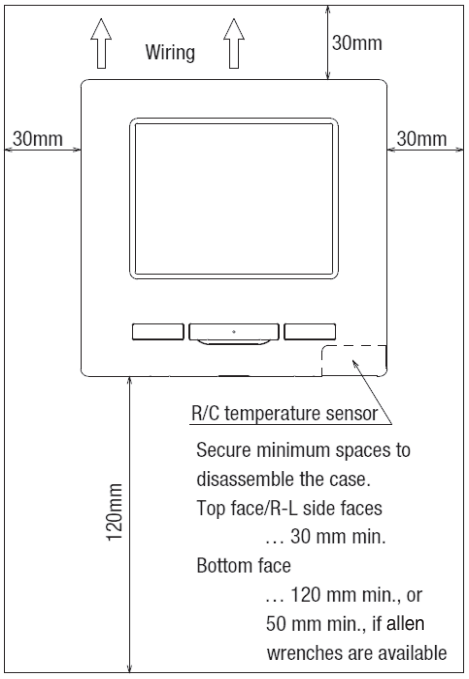
(3) Remote control (Option parts)
Wired remote control
Model RC-EX3

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.

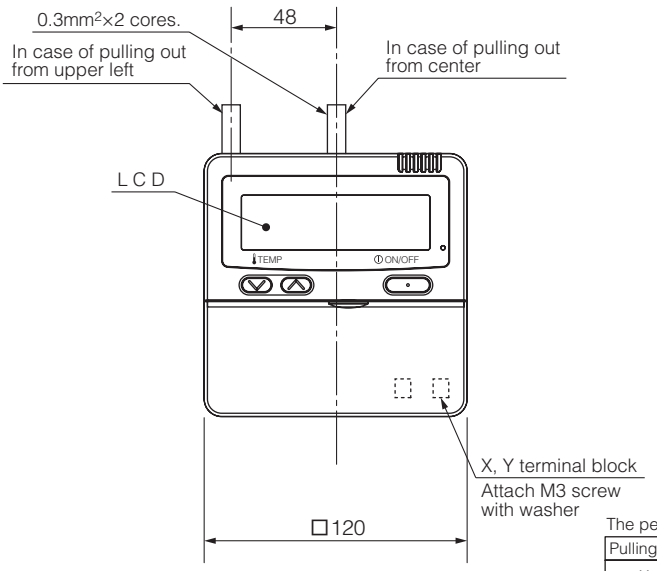
< 200 m	0.5 mm^2 x 2 cores
< 300 m	0.75 mm^2 x 2 cores
< 400 m	1.25 mm^2 x 2 cores
< 600 m	2.0 mm^2 x 2 cores

Adapted to RoHS directive

PJZ000Z321

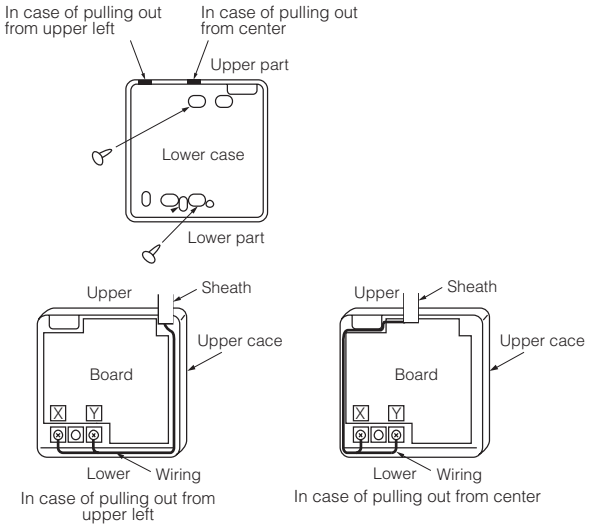
Model RC-E5

Exposed mounting



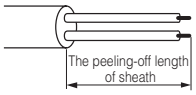
Exterior appearance (Munsell color)	Pearl white (N8.5) near equivalent

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.

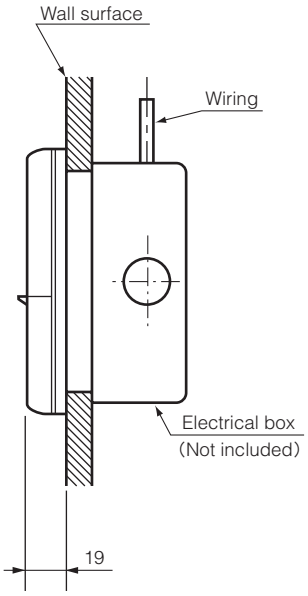


The peeling-off length of sheath

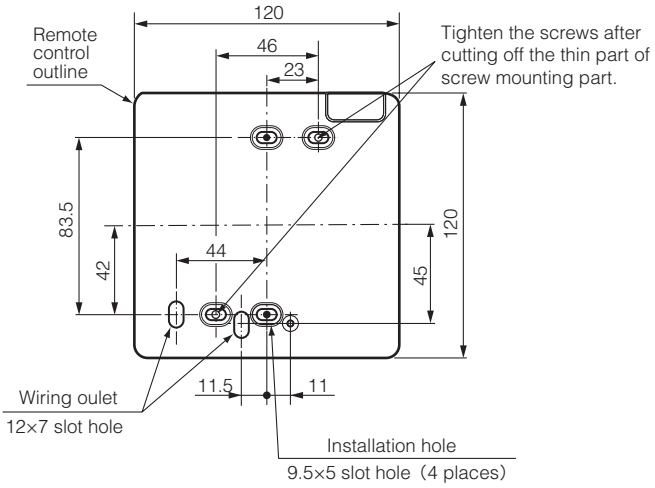
Pulling out from upper left	Pulling out from center
X wiring : 215mm Y wiring : 195mm	X wiring : 170mm Y wiring : 190mm



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

3. ELECTRICAL WIRING

(1) Indoor units

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

Models FDTC40VF, 50VF, 60VF

Color Marks

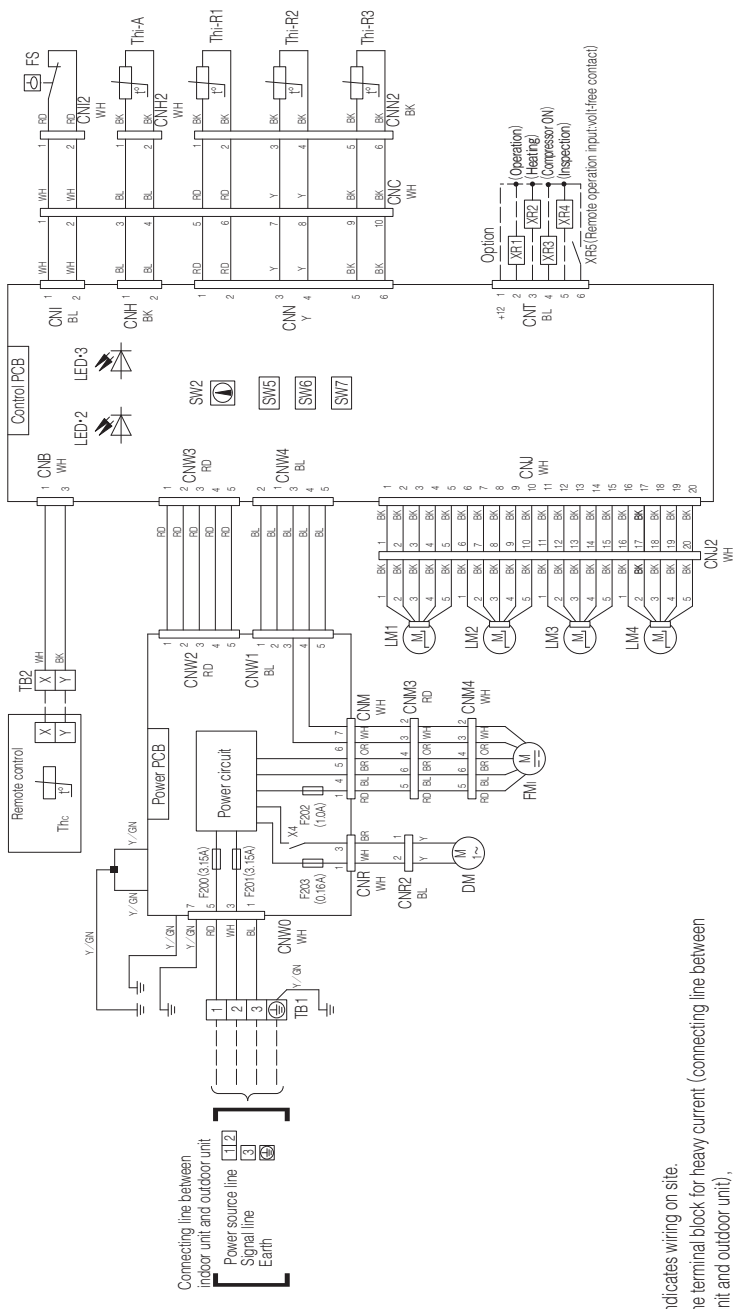
Mark	Color
BK	Black
BL	Blue
BR	Brown
OR	Orange
RD	Red
WH	White
Y	Yellow
Y／GN	Yellow／Green

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)
X4	Relay for DM
■mark	Closed-end connector

LED･3	Indication lamp (Red-Inspection)
LM1~4	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

Meaning of marks

CNB~Z	Connector
DM	Drain motor
F200~203	Fuse
FM I	Fan motor
FS	Float switch
LED･2	Indication lamp (Green-Normal operation)

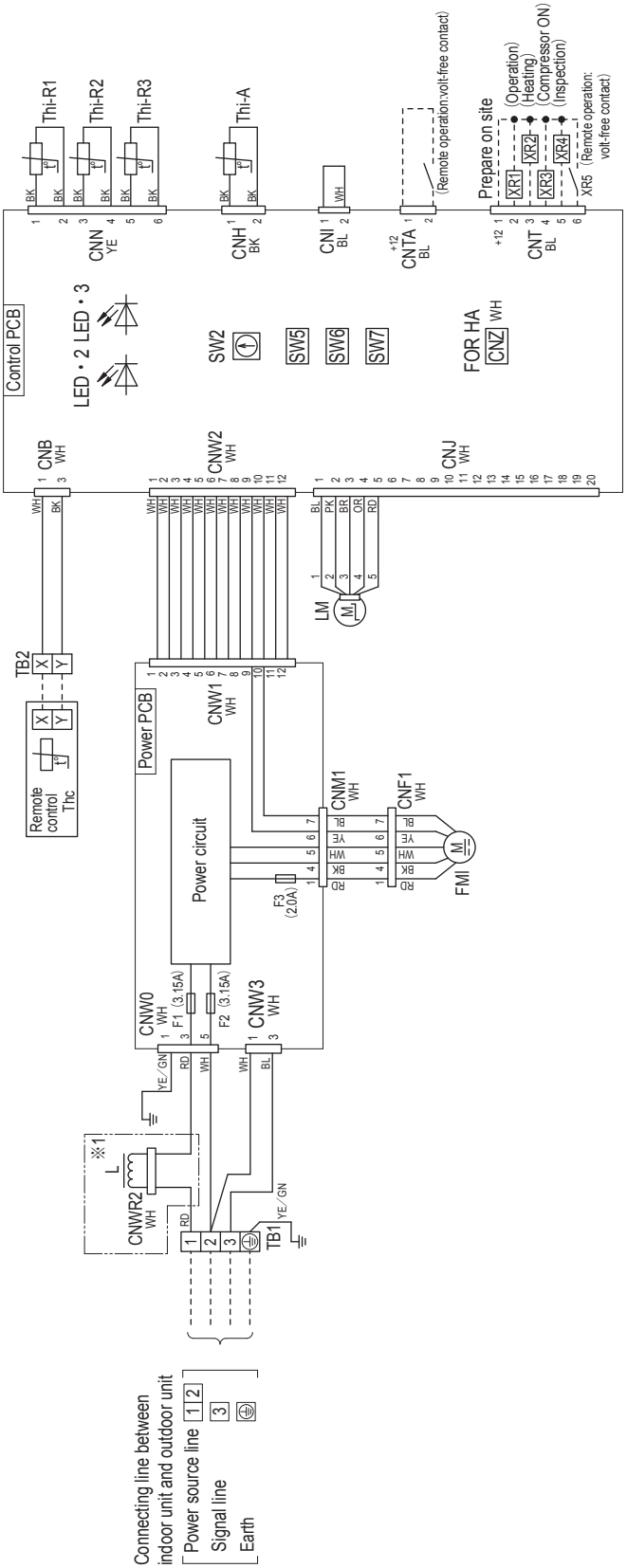


Notes 1. — — indicates wiring on site.
2. TB1 is the terminal block for heavy current (connecting line between indoor unit and outdoor unit), and TB2 is the terminal block for weak current (remote control).
3. See the wiring diagram of outside unit about the line between inside unit and outside unit.
4. Use twin core cable (0.3mm^2 x 2) at remote control line.
5. Do not put remote control line alongside power source line.

PJA003Z340 Ⓓ

(b) Ceiling suspended type (FDE)

Models FDE40VG, 50VG, 60VG



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)

Color marks

Mark	Color
BK	Black
BL	Blue
BR	Brown
OR	Orange
PK	Pink
RD	Red
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 indoor unit and outdoor unit.
3. Use twin core cable (0.3mm² x2) 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 models FDE100-140 only.

PFA004Z028

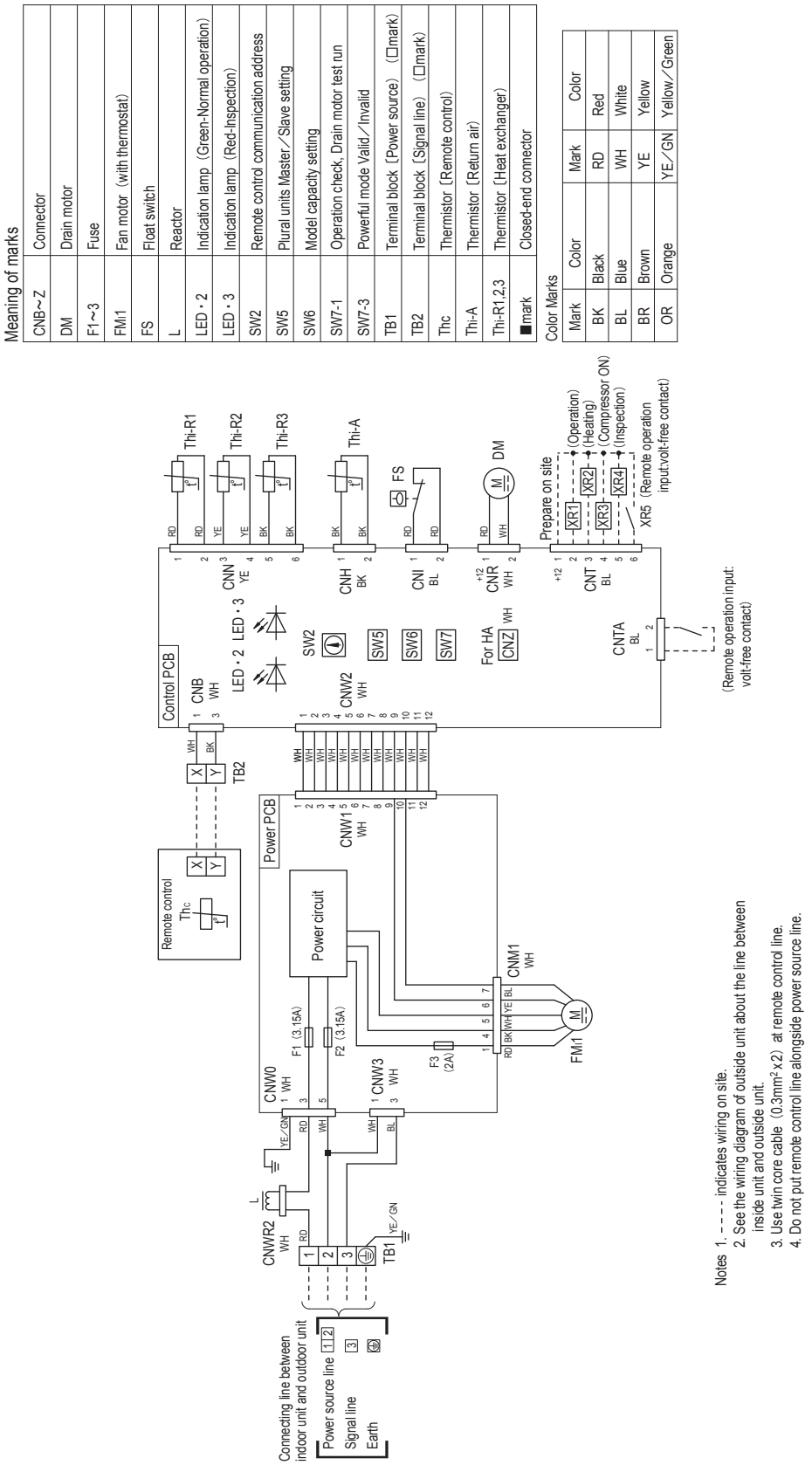
(c) Duct connected-Low / Middle static pressure type (FDUM)
Models FDUM40VF, 50VF

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 Ⓓ

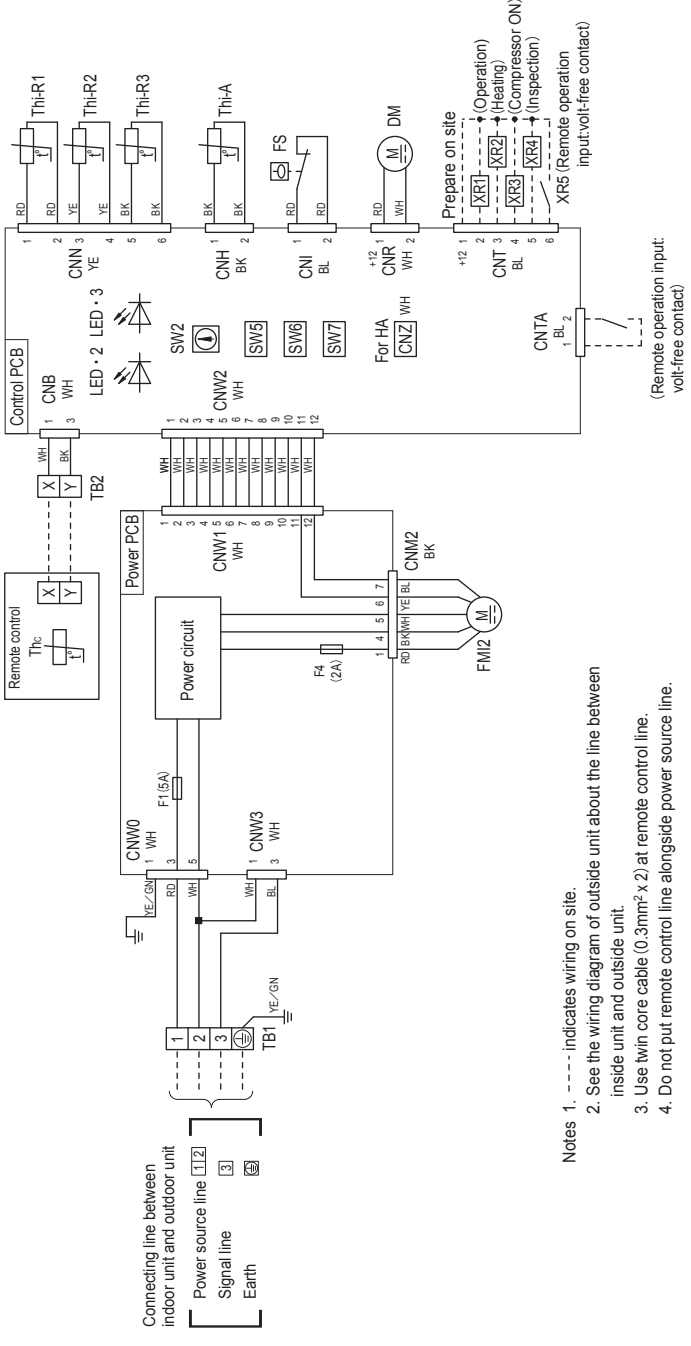
Model FDUM60VF

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

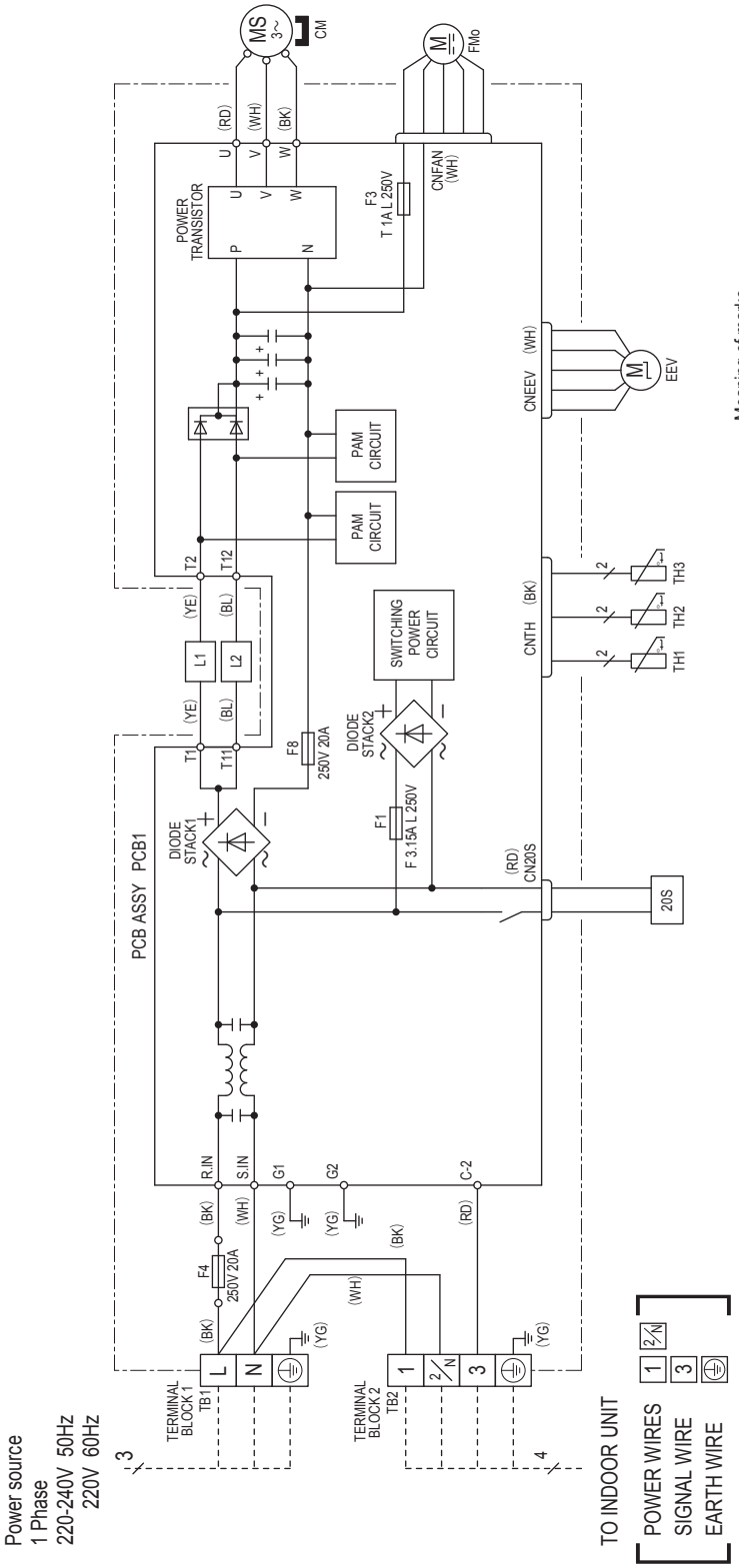


Notes 1. ---- indicates wiring on site.
2. See the wiring diagram of outside unit about the line between inside unit and outside unit.
3. Use twin core cable (0.3mm² x 2) at remote control line.
4. Do not put remote control line alongside power source line.

PJG000Z028 B

(2) Outdoor units

Models SRC40ZSX-S, 50ZSX-S, 60ZSX-S



Meaning of marks

Item	Description
20S	Solenoid coil for 4-way valve
CN20S CNEEV CNFAN CNTH	Connector
CM	Compressor motor
EEV	Electric expansion valve (coil)
FMo	Fan motor
L1,2	Reactor
TH1	Heat exchanger sensor
TH2	Outdoor air temp. sensor
TH3	Discharge pipe temp. sensor

Color marks

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

Power cable, indoor-outdoor connecting wires

Model name	MAX running current (A)	Power cable wire size x number*	Power cable length (m)	Connecting cable wire size x number*
SRC50ZSX-S SRC60ZSX-S	15	2.0mm² x 3	13	1.5mm² x 4

* The wire numbers include earth wire (Yellow／Green)
◦ Switchgear or circuit breaker capacity should be chosen according to national or regional electricity regulations.
◦ The power 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 national or regional electricity regulations.

RWC000Z298

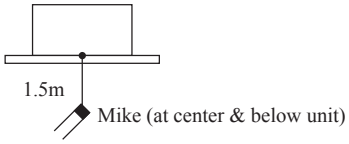
4. NOISE LEVEL

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.

(1) Indoor units

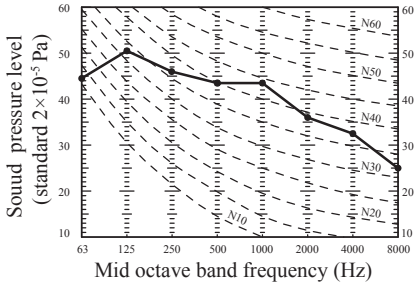
(a) Ceiling cassette-4way type (FDTC)

Measured based on JIS B 8616
Mike position as right

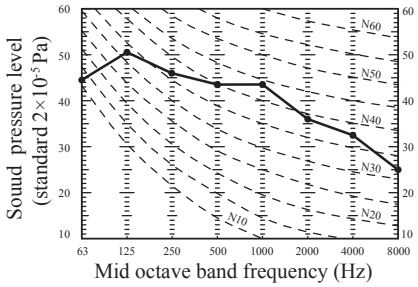


Models FDTC40VF,50VF

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

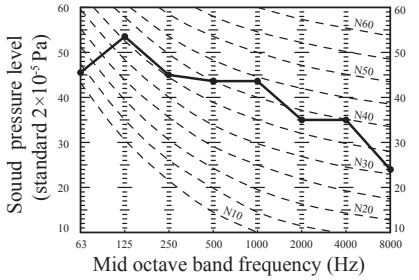


Heating noise level 47 dB (A) at P-HIGH
42 dB (A) at HIGH
36 dB (A) at MEDIUM
32 dB (A) at LOW

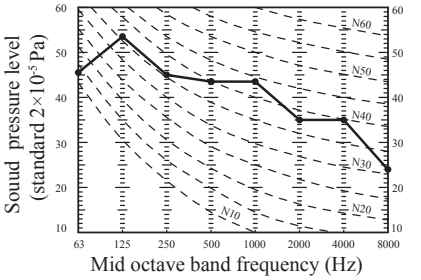


Model FDTC60VF

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

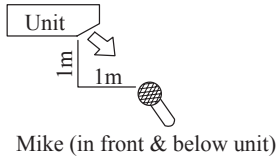


Heating noise level 47 dB (A) at P-HIGH
46 dB (A) at HIGH
39 dB (A) at MEDIUM
32 dB (A) at LOW



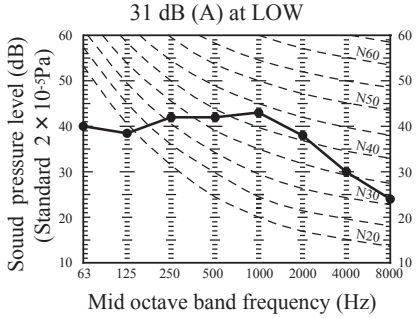
(b) Ceiling suspended type (FDE)

Measured based on JIS B 8616
Mike position as right



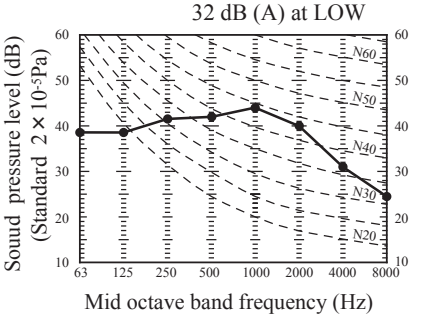
Models FDE40VG, 50VG

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



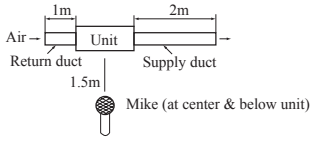
Model FDE60VG

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



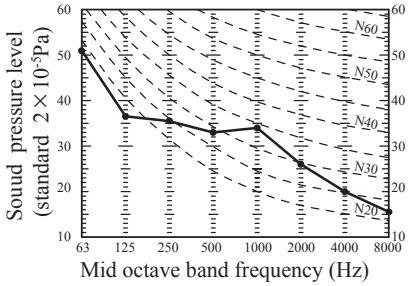
(c) Duct connected-Low / Middle static pressure type (FDUM)

Measured based on JIS B 8616
Mike position as right



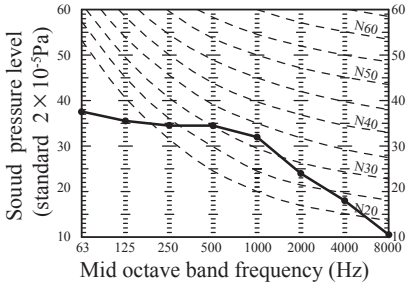
Models FDUM40VF, 50VF

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



(2) Outdoor units

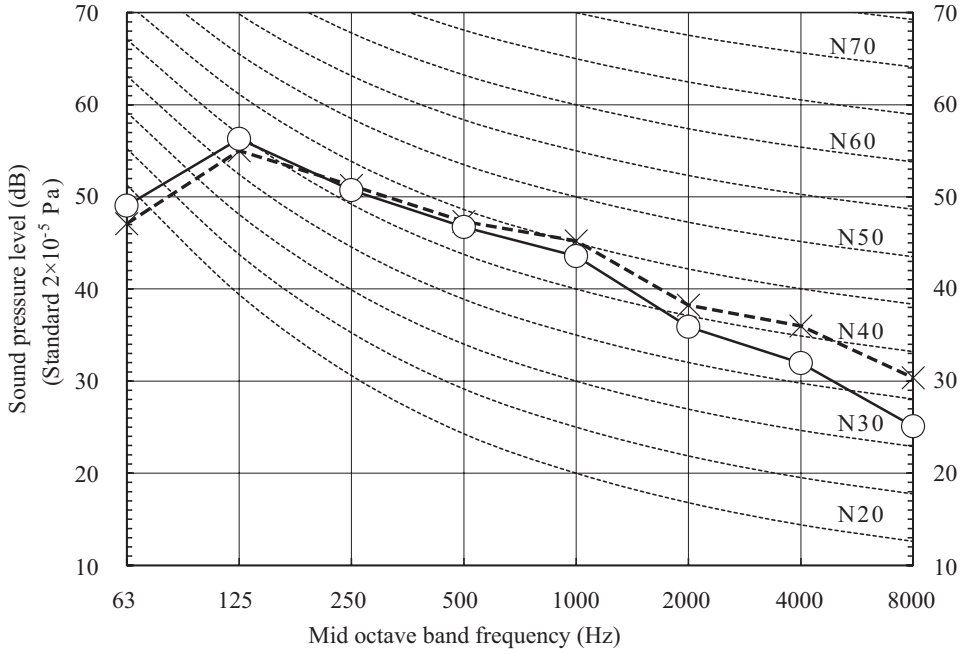
Measured based or JIS B 8616 or JIS C 9612
Mike position: at highest noise level in position as mentined below.
Distance from front side 1m

Models SRC40ZSX-S, 50ZSX-S

Model	SRC40ZSX-S, 50ZSX-S	
Noise Level	Cooling	50 dB(A)
	Heating	49 dB(A)

●Mike position: at highest noise level in position as mentioned below
Distance from front side 1m

× ····· Cooling, ○ —— Heating

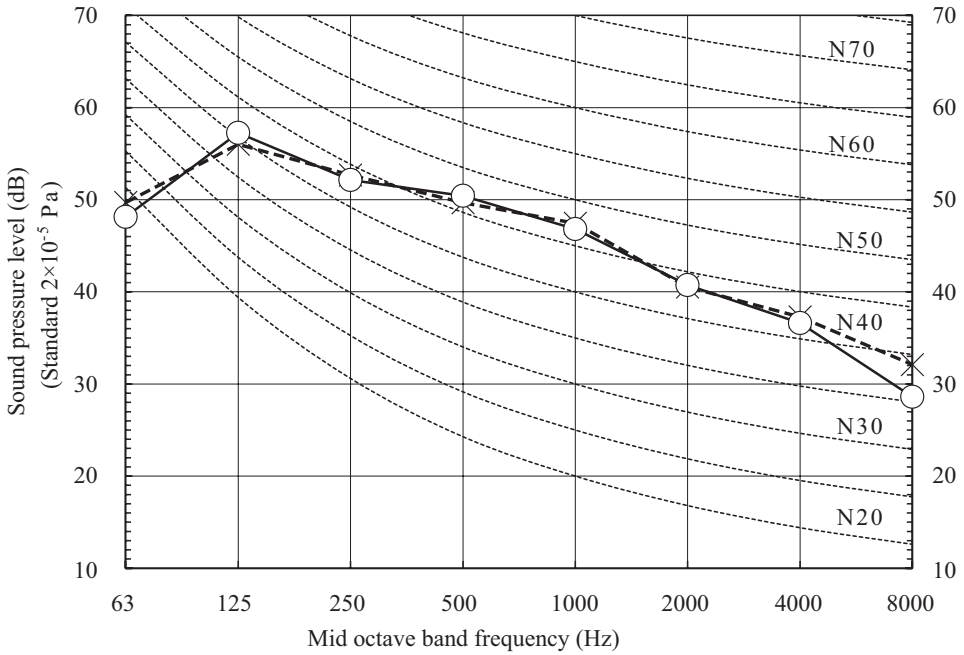


Model SRC60ZSX-S

Model	SRC60ZSX-S	
Noise Level	Cooling	52 dB(A)
	Heating	52 dB(A)

●Mike position: at highest noise level in position as mentioned below
Distance from front side 1m

× ····· Cooling, ○ —— Heating



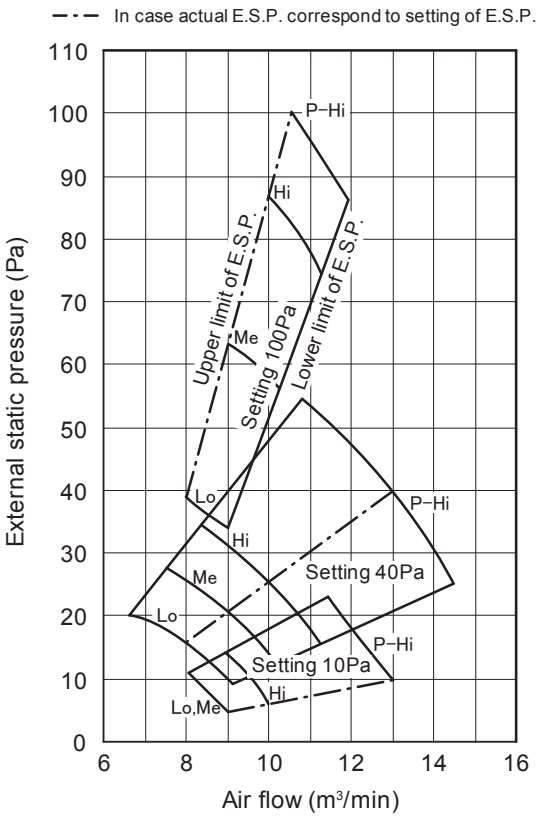
5. CHARACTERISTICS OF FAN

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

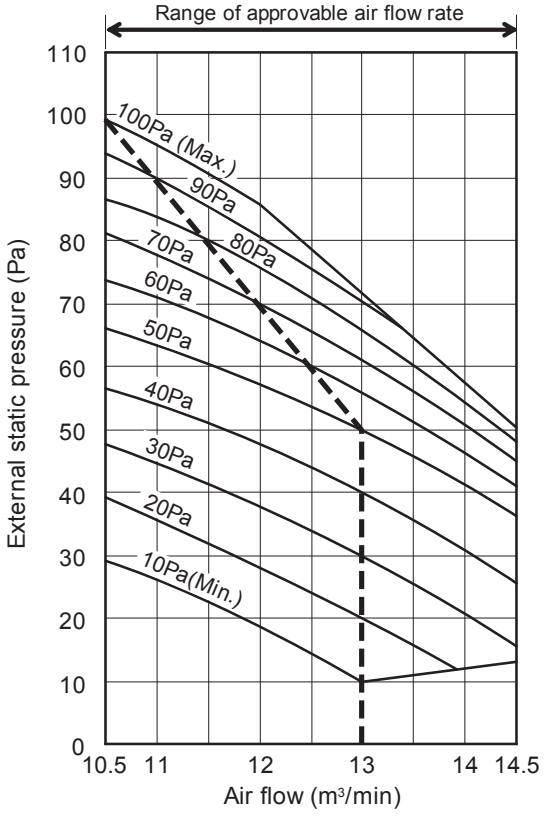
- Characteristic FAN (1) shows air flow vs. External Static Pressure (E.S.P.) range where settings of E.S.P. are maximum E.S.P. (100Pa) , rated E.S.P., and minimum E.S.P. (10Pa)
- Characteristic FAN (2) shows air flow vs E.S.P. curve when set fan tap is set P-Hi with each setting of E.S.P by remote control.
- 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.

Models FDUM40VF, 50VF

Characteristic FAN(1)

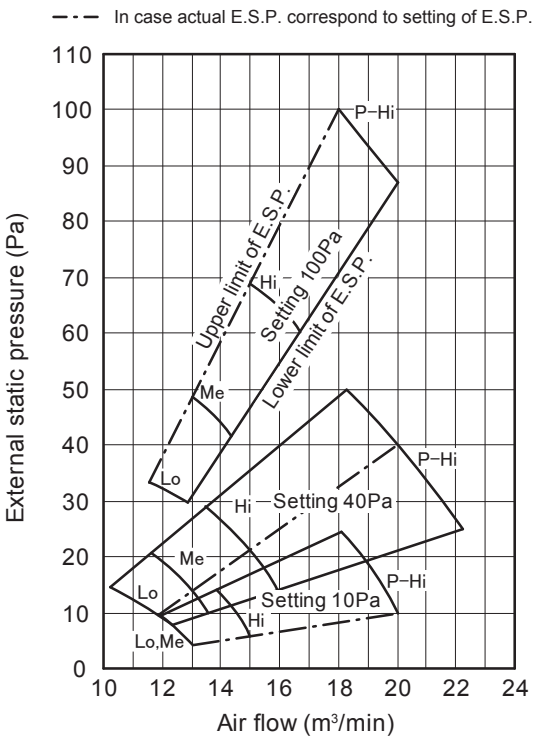


Characteristic FAN(2)

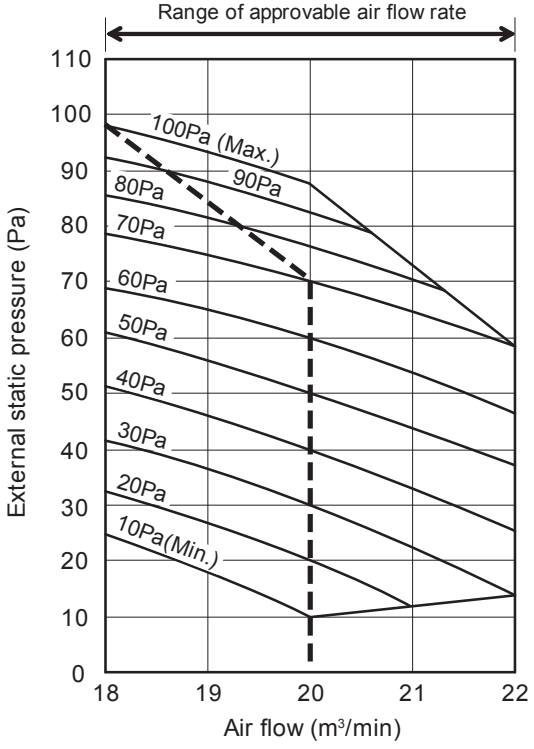


Model FDUM60VF

Characteristic FAN(1)



Characteristic FAN(2)



6. TEMPERATURE AND VELOCITY DISTRIBUTION

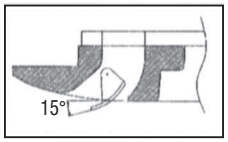
Indoor temperature
Cooling 27°CDB / 19°CWB
Heating 20°CDB
Note: These figures represent the typical main range of temperature and velocity distribution at the center of air outlet within the published conditions.
In the actual installation, they may differ from the typical figures under the influence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

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

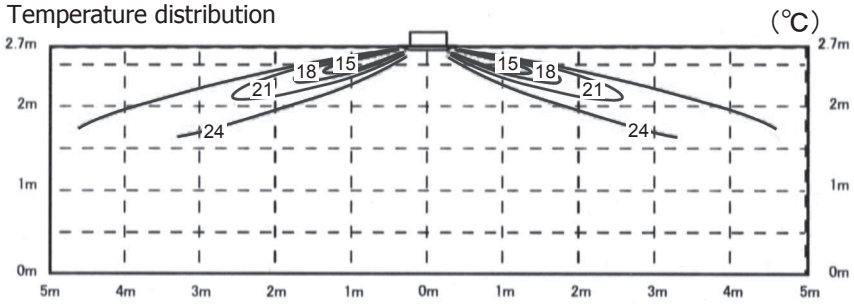
Models FDTC40VF, 50VF, 60VF

Cooling air flow : P-Hi

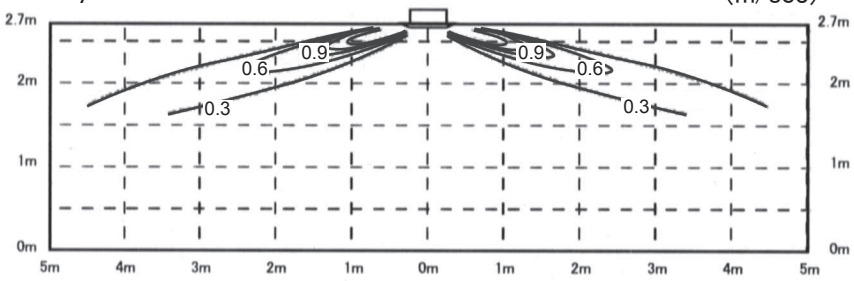
Louver position



Temperature distribution (°C)

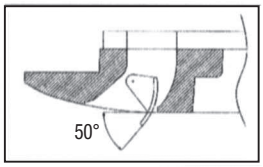


Velocity distribution (m/sec)

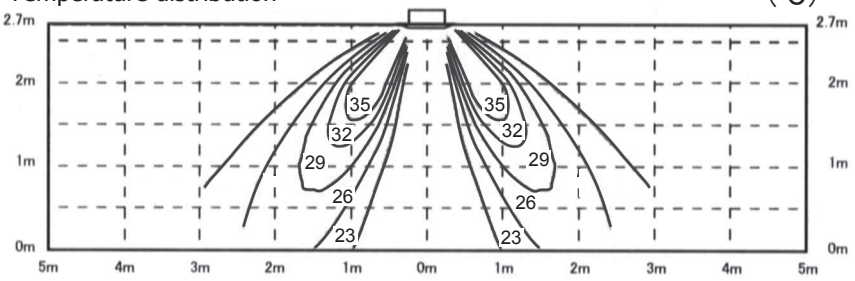


Heating air flow : P-Hi

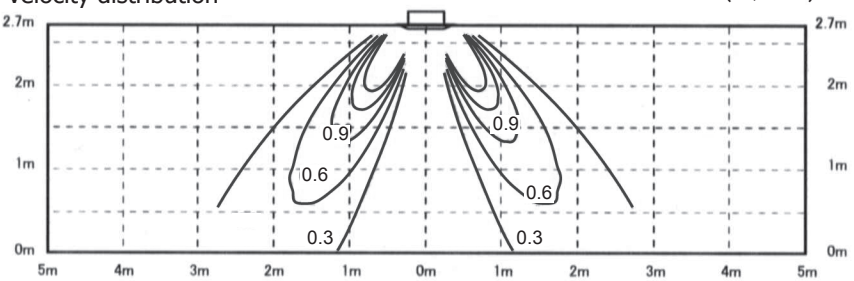
Louver position



Temperature distribution (°C)



Velocity distribution (m/sec)



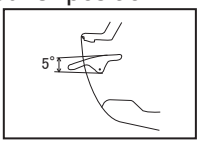
ISD09407

(2) Ceiling suspended type (FDE)

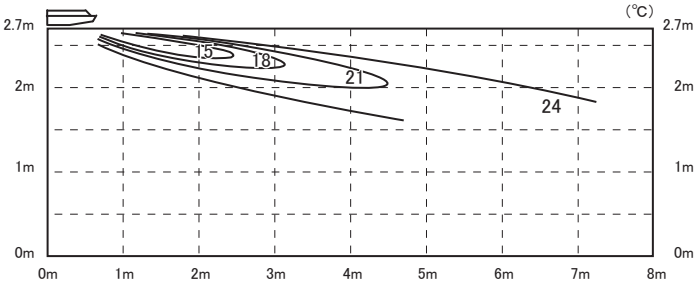
Models FDE40, 50VG

Cooling air flow : P-Hi

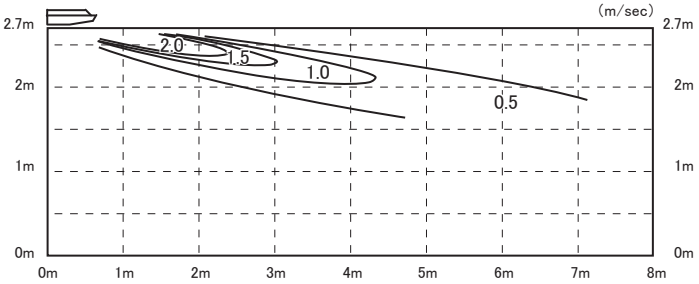
Louver position



Temperature distribution

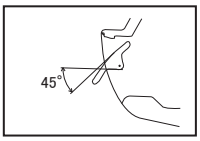


Velocity distribution

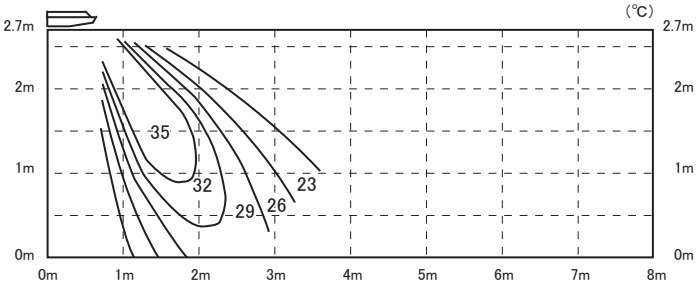


Heating air flow : P-Hi

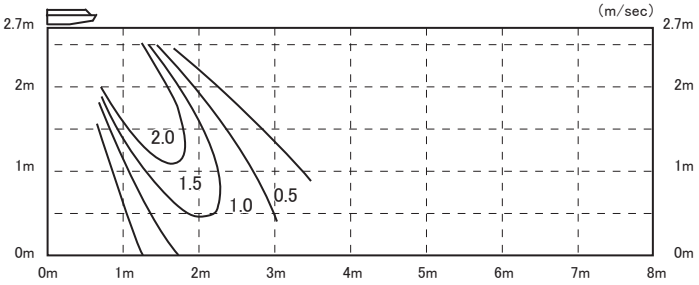
Louver position



Temperature distribution



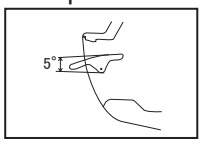
Velocity distribution



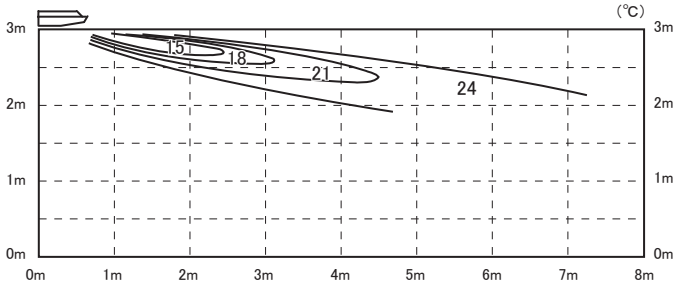
Model FDE60

Cooling air flow : P-Hi

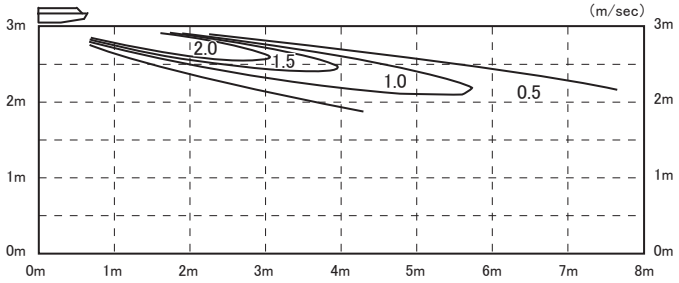
Louver position



Temperature distribution

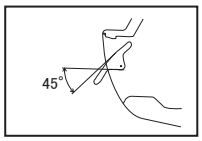


Velocity distribution

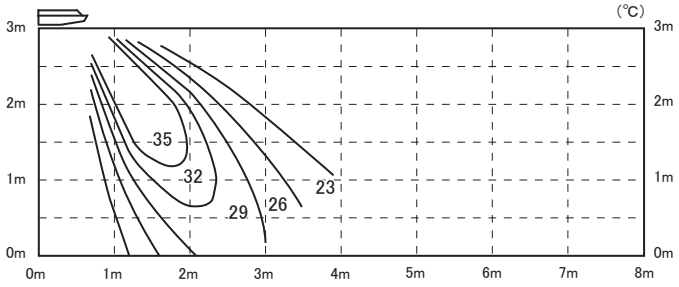


Heating air flow : P-Hi

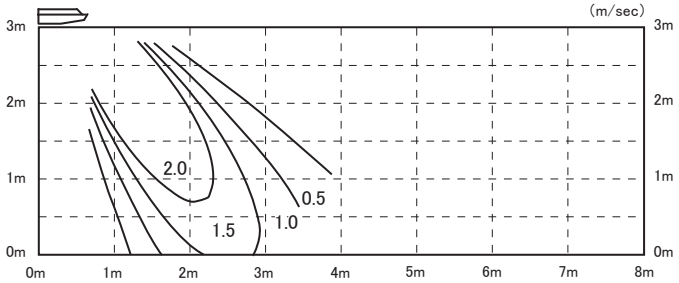
Louver position



Temperature distribution

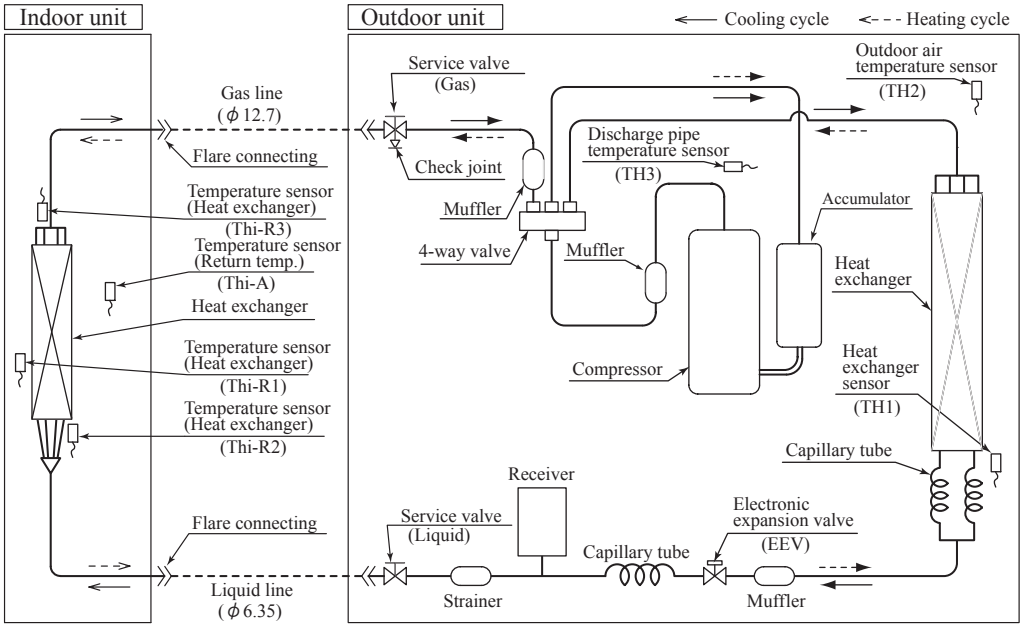


Velocity distribution



7. PIPING SYSTEM

Models 40, 50, 60



Preset point of the protective devices

Parts name	Mark	Equipped unit	40, 50, 60 model
Temperature sensor (for protection overloading in heating)	**Thi-R**	Indoor unit	ON 63℃ OFF 56℃
Temperature sensor (for frost prevention)	**Thi-R**		ON 1.0℃ OFF 10℃
Temperature sensor (for protection high pressure in cooling.)	**TH1**	Outdoor unit	ON 63℃ OFF 53℃
Temperature sensor (for detecting discharge pipe temp.)	**TH3**	Outdoor unit	ON 115℃ OFF 95℃

8. RANGE OF USAGE & LIMITATIONS

Operating temperature range		See the next page.
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℃, and it has no snow accumulation.
Installation site		The limitations of installation space are shown in the page for outline drawing. 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)		Dew point temperature : 23 ℃ or less, relative hummdity : 80% or less
Limitations on unit and piping installation		Connecting pipe length : 30m or less Elevation difference between indoor and outdoor units : 20m or less
Compressor ON-OFF cycling	Cycle Time	Max. 4 times / h (Inching prevention 10 minutes)
	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.

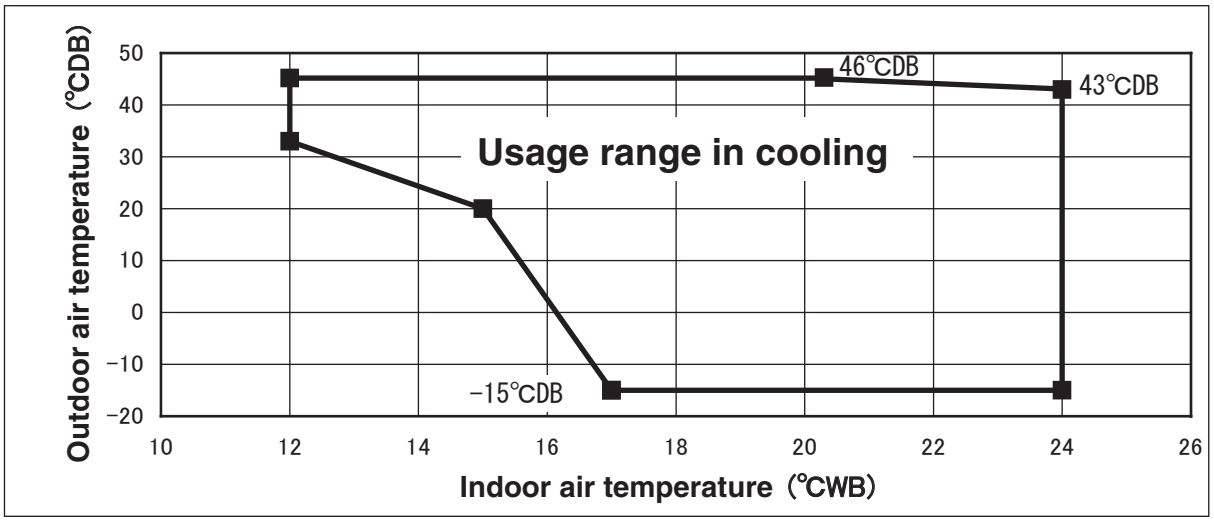
Note 2. If ambient temperature and humidity exceed the above values, add polyurethane foam insulation on the outer plate (10mm or thicker) of indoor unit.
Both gas and liquid pipes need to be cover with 20mm or thicker heat insulation materials at the place where humidity exceeds 70%.

Note 3. When snow accumulate, install a snow hood on site.

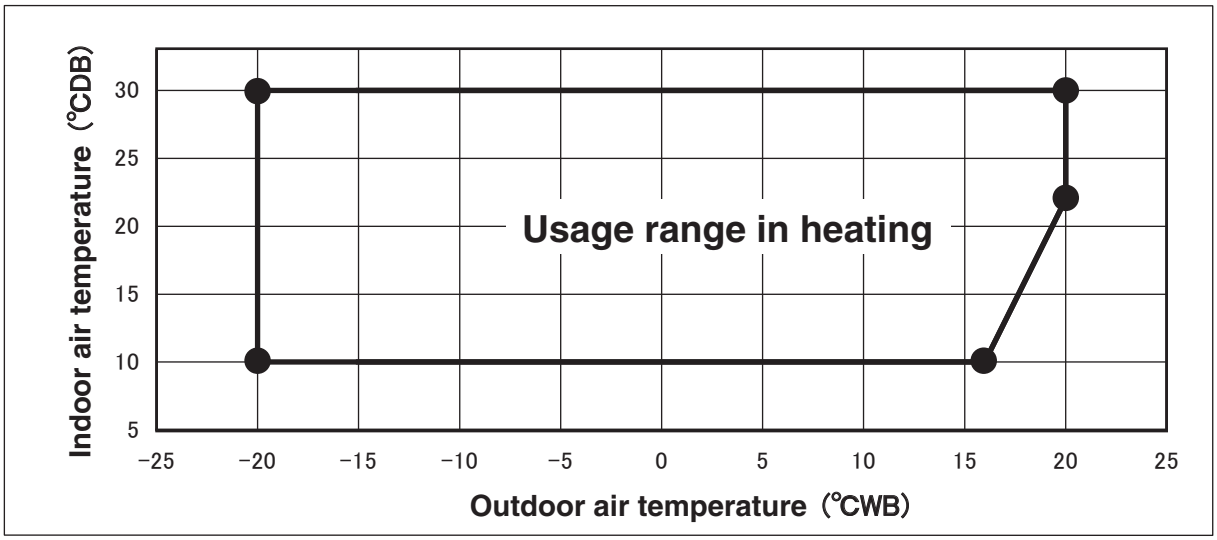
PCA001Z804

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.

PCA001Z804

"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℃ 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.

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 (9.1) × Correction factors shown in the table (9.2) (9.3) (9.4).

Caution: In case that the cooling operation during low outdoor air temperature below -5°C 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.

9.1 Capacity tables

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

Model FDTC40ZSXVF Indoor unit FDTC40VF Outdoor unit SRC40ZSX-S

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					3.38	2.87	3.56	3.10	3.65	3.08	3.75	3.05	3.95	3.22	4.15	3.17
13					3.46	2.91	3.65	3.14	3.75	3.11	3.85	3.09	4.05	3.26	4.26	3.20
15					3.54	2.94	3.74	3.17	3.84	3.15	3.95	3.13	4.15	3.29	4.36	3.23
17					3.62	2.98	3.83	3.21	3.94	3.19	4.04	3.16	4.26	3.33	4.47	3.27
19					3.69	3.01	3.91	3.24	4.02	3.22	4.15	3.20	4.41	3.38	4.67	3.33
21					3.81	3.06	3.99	3.27	4.10	3.25	4.26	3.24	4.56	3.43	4.87	3.39
23					3.85	3.08	4.04	3.29	4.15	3.27	4.30	3.25	4.59	3.44	4.88	3.40
25			3.73	3.20	3.89	3.09	4.08	3.31	4.20	3.29	4.34	3.27	4.61	3.45	4.89	3.40
27			3.76	3.21	3.93	3.11	4.13	3.33	4.25	3.31	4.36	3.28	4.60	3.44		
29			3.70	3.19	3.86	3.08	4.06	3.30	4.18	3.28	4.30	3.25	4.54	3.42		
31			3.64	3.16	3.80	3.05	4.00	3.28	4.12	3.26	4.24	3.23	4.48	3.40		
33	3.23	2.85	3.44	3.06	3.74	3.03	3.94	3.25	4.06	3.23	4.18	3.21	4.42	3.38		
35	3.28	2.88	3.44	3.06	3.68	3.00	3.88	3.23	4.00	3.21	4.12	3.19	4.36	3.36		
37	3.23	2.85	3.38	3.04	3.62	2.98	3.82	3.20	3.94	3.19	4.06	3.17	4.30	3.34		
39	3.17	2.82	3.32	3.01	3.56	2.95	3.76	3.18	3.88	3.16	4.00	3.14	4.23	3.32		
41	3.12	2.80	3.27	2.99	3.50	2.93	3.70	3.16	3.82	3.14	3.93	3.12	4.17	3.30		
43	3.06	2.77	3.21	2.96	3.44	2.90	3.64	3.13	3.76	3.12	3.87	3.10	4.10	3.27		

Heating Mode:HC (kW)

Outdoor air temp.		Indoor air temperature °CDB				
°CDB	°CWB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	2.67	2.63	2.59	2.55	2.50
-11.5	-12	2.83	2.79	2.75	2.71	2.67
-9.5	-10	3.00	2.96	2.92	2.88	2.84
-7.5	-8	3.17	3.13	3.09	3.05	3.01
-5.5	-6	3.23	3.20	3.16	3.12	3.09
-3.0	-4	3.29	3.26	3.23	3.20	3.17
-1.0	-2	3.36	3.33	3.30	3.28	3.25
1.0	0	3.42	3.40	3.38	3.35	3.33
2.0	1	3.45	3.43	3.41	3.39	3.37
3.0	2	3.67	3.65	3.63	3.61	3.59
5.0	4	4.11	4.09	4.07	4.04	4.01
7.0	6	4.55	4.53	4.50	4.47	4.44
9.0	8	4.78	4.75	4.72	4.69	4.66
11.5	10	5.01	4.98	4.95	4.91	4.88
13.5	12	5.30	5.26	5.21	5.14	5.10
15.5	14	5.58	5.53	5.48	5.37	5.32
16.5	16	5.73	5.67	5.61	5.48	5.44

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Model FDTC50ZSXVF Indoor unit FDTC50VF Outdoor unit SRC50ZSX-S

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					4.22	3.31	4.45	3.54	4.56	3.51	4.69	3.48	4.94	3.66	5.19	3.59
13					4.32	3.35	4.56	3.59	4.68	3.56	4.81	3.53	5.07	3.70	5.32	3.63
15					4.42	3.40	4.68	3.64	4.80	3.61	4.93	3.58	5.19	3.75	5.45	3.67
17					4.53	3.45	4.79	3.68	4.92	3.65	5.06	3.63	5.32	3.79	5.58	3.72
19					4.62	3.49	4.89	3.73	5.02	3.70	5.19	3.68	5.51	3.86	5.84	3.80
21					4.76	3.55	4.99	3.77	5.13	3.74	5.32	3.73	5.70	3.93	6.09	3.89
23					4.81	3.58	5.04	3.79	5.19	3.77	5.37	3.75	5.73	3.94	6.10	3.89
25			4.66	3.72	4.86	3.60	5.10	3.81	5.25	3.79	5.42	3.77	5.76	3.95	6.11	3.89
27			4.70	3.74	4.91	3.62	5.16	3.84	5.31	3.81	5.46	3.79	5.75	3.95		
29			4.62	3.70	4.83	3.59	5.08	3.81	5.23	3.78	5.38	3.75	5.68	3.92		
31			4.54	3.66	4.75	3.55	5.00	3.77	5.15	3.75	5.30	3.72	5.60	3.89		
33	4.04	3.32	4.31	3.55	4.67	3.51	4.93	3.74	5.08	3.72	5.23	3.69	5.53	3.87		
35	4.11	3.36	4.30	3.54	4.59	3.48	4.85	3.71	5.00	3.69	5.15	3.66	5.45	3.84		
37	4.04	3.32	4.23	3.51	4.52	3.44	4.77	3.67	4.92	3.65	5.07	3.63	5.37	3.81		
39	3.97	3.29	4.16	3.48	4.45	3.41	4.70	3.64	4.85	3.63	4.99	3.60	5.29	3.78		
41	3.90	3.25	4.09	3.44	4.38	3.38	4.62	3.61	4.77	3.59	4.92	3.57	5.21	3.75		
43	3.83	3.22	4.01	3.40	4.30	3.34	4.55	3.58	4.69	3.56	4.84	3.54	5.13	3.72		

Heating Mode:HC (kW)

Outdoor air temp.		Indoor air temperature °CDB				
°CDB	°CWB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	3.20	3.15	3.11	3.05	3.00
-11.5	-12	3.40	3.35	3.31	3.26	3.20
-9.5	-10	3.60	3.55	3.51	3.46	3.41
-7.5	-8	3.80	3.75	3.71	3.66	3.61
-5.5	-6	3.88	3.83	3.79	3.75	3.71
-3.0	-4	3.95	3.92	3.88	3.84	3.80
-1.0	-2	4.03	4.00	3.97	3.93	3.90
1.0	0	4.10	4.08	4.05	4.03	4.00
2.0	1	4.14	4.12	4.10	4.07	4.05
3.0	2	4.41	4.38	4.36	4.33	4.30
5.0	4	4.94	4.91	4.88	4.85	4.82
7.0	6	5.46	5.43	5.40	5.37	5.33
9.0	8	5.74	5.70	5.67	5.63	5.59
11.5	10	6.02	5.98	5.94	5.89	5.85
13.5	12	6.36	6.31	6.25	6.17	6.12
15.5	14	6.70	6.64	6.57	6.44	6.39
16.5	16	6.87	6.80	6.73	6.58	6.52

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Notes (1) These data show average statuses.
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.
(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 FDTC60ZSXVF Indoor unit FDTC60VF Outdoor unit SRC60ZSX-S

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					4.73	3.50	4.98	3.73	5.11	3.69	5.25	3.64	5.53	3.81	5.81	3.70
13					4.84	3.54	5.11	3.78	5.24	3.73	5.39	3.69	5.67	3.85	5.96	3.74
15					4.95	3.59	5.24	3.83	5.38	3.78	5.52	3.73	5.82	3.90	6.11	3.78
17					5.07	3.64	5.37	3.88	5.51	3.83	5.66	3.78	5.96	3.94	6.25	3.82
19					5.17	3.68	5.48	3.92	5.63	3.88	5.81	3.84	6.17	4.01	6.54	3.91
21					5.33	3.75	5.59	3.96	5.74	3.92	5.96	3.89	6.39	4.08	6.82	3.99
23					5.39	3.77	5.65	3.99	5.81	3.94	6.01	3.91	6.42	4.09	6.83	3.99
25			5.22	3.96	5.44	3.80	5.71	4.01	5.88	3.97	6.07	3.93	6.45	4.10	6.84	3.99
27			5.27	3.98	5.50	3.82	5.78	4.04	5.94	3.99	6.11	3.94	6.44	4.10		
29			5.18	3.94	5.41	3.78	5.69	4.00	5.86	3.96	6.02	3.91	6.36	4.07		
31			5.09	3.90	5.32	3.74	5.60	3.97	5.77	3.93	5.94	3.88	6.27	4.04		
33	4.53	3.55	4.82	3.77	5.23	3.71	5.52	3.94	5.69	3.90	5.85	3.85	6.19	4.01		
35	4.60	3.59	4.81	3.77	5.15	3.67	5.43	3.90	5.60	3.86	5.77	3.82	6.10	3.99		
37	4.52	3.55	4.73	3.73	5.06	3.63	5.35	3.87	5.51	3.83	5.68	3.79	6.01	3.96		
39	4.44	3.51	4.65	3.70	4.98	3.60	5.26	3.84	5.43	3.80	5.59	3.76	5.92	3.93		
41	4.37	3.47	4.58	3.67	4.90	3.57	5.18	3.81	5.34	3.77	5.51	3.73	5.83	3.90		
43	4.29	3.44	4.50	3.63	4.82	3.53	5.10	3.78	5.26	3.74	5.42	3.70	5.74	3.87		

Heating Mode:HC (kW)

Outdoor air temp.		Indoor air temperature °CDB				
°CDB	°CWB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-19.8	-20	3.26	3.20	3.14	3.07	3.00
-17.7	-18	3.49	3.43	3.37	3.30	3.24
-15.7	-16	3.72	3.66	3.61	3.54	3.48
-13.5	-14	3.97	3.91	3.85	3.79	3.73
-11.5	-12	4.22	4.16	4.10	4.04	3.98
-9.5	-10	4.47	4.41	4.35	4.29	4.23
-7.5	-8	4.72	4.66	4.60	4.54	4.48
-5.5	-6	4.81	4.76	4.70	4.65	4.60
-3.0	-4	4.90	4.86	4.81	4.77	4.72
-1.0	-2	5.00	4.96	4.92	4.88	4.84
1.0	0	5.09	5.06	5.03	4.99	4.96
2.0	1	5.14	5.11	5.08	5.05	5.02
3.0	2	5.47	5.44	5.41	5.37	5.34
5.0	4	6.12	6.09	6.05	6.01	5.98
7.0	6	6.78	6.74	6.70	6.66	6.61
9.0	8	7.12	7.08	7.03	6.98	6.94
11.5	10	7.47	7.41	7.36	7.31	7.26
13.5	12	7.89	7.82	7.76	7.65	7.59
15.5	14	8.31	8.23	8.15	7.99	7.93
16.5	16	8.53	8.44	8.35	8.16	8.09

Notes (1) These data show average statuses.
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.
(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)

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(2) Ceiling suspended type(FDE)

Model FDE40ZSXVG Indoor unit FDE40VG Outdoor unit SRC40ZSX-S

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					3.38	3.03	3.56	3.28	3.65	3.25	3.75	3.23	3.95	3.42	4.15	3.36
13					3.46	3.06	3.65	3.32	3.75	3.29	3.85	3.26	4.05	3.45	4.26	3.39
15					3.54	3.09	3.74	3.35	3.84	3.32	3.95	3.30	4.15	3.49	4.36	3.42
17					3.62	3.12	3.83	3.38	3.94	3.36	4.04	3.33	4.26	3.52	4.47	3.45
19					3.69	3.15	3.91	3.41	4.02	3.39	4.15	3.37	4.41	3.57	4.67	3.51
21					3.81	3.20	3.99	3.44	4.10	3.42	4.26	3.40	4.56	3.62	4.87	3.57
23					3.85	3.22	4.04	3.46	4.15	3.43	4.30	3.42	4.59	3.63	4.88	3.57
25			3.73	3.35	3.89	3.23	4.08	3.48	4.20	3.45	4.34	3.43	4.61	3.63	4.89	3.58
27			3.76	3.36	3.93	3.25	4.13	3.50	4.25	3.47	4.36	3.44	4.60	3.63		
29			3.70	3.34	3.86	3.22	4.06	3.47	4.18	3.45	4.30	3.42	4.54	3.61		
31			3.64	3.31	3.80	3.20	4.00	3.45	4.12	3.42	4.24	3.40	4.48	3.59		
33	3.23	2.99	3.44	3.22	3.74	3.17	3.94	3.42	4.06	3.40	4.18	3.38	4.42	3.57		
35	3.28	3.01	3.44	3.22	3.68	3.15	3.88	3.40	4.00	3.38	4.12	3.36	4.36	3.55		
37	3.23	2.99	3.38	3.20	3.62	3.12	3.82	3.38	3.94	3.36	4.06	3.33	4.30	3.53		
39	3.17	2.96	3.32	3.17	3.56	3.10	3.76	3.36	3.88	3.34	4.00	3.31	4.23	3.51		
41	3.12	2.94	3.27	3.15	3.50	3.07	3.70	3.33	3.82	3.31	3.93	3.29	4.17	3.49		
43	3.06	2.91	3.21	3.12	3.44	3.05	3.64	3.31	3.76	3.29	3.87	3.27	4.10	3.47		

Heating Mode : HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	2.67	2.63	2.59	2.55	2.50
-11.5	-12	2.83	2.79	2.75	2.71	2.67
-9.5	-10	3.00	2.96	2.92	2.88	2.84
-7.5	-8	3.17	3.13	3.09	3.05	3.01
-5.5	-6	3.23	3.20	3.16	3.12	3.09
-3.0	-4	3.29	3.26	3.23	3.20	3.17
-1.0	-2	3.36	3.33	3.30	3.28	3.25
1.0	0	3.42	3.40	3.38	3.35	3.33
2.0	1	3.45	3.43	3.41	3.39	3.37
3.0	2	3.67	3.65	3.63	3.61	3.59
5.0	4	4.11	4.09	4.07	4.04	4.01
7.0	6	4.55	4.53	4.50	4.47	4.44
9.0	8	4.78	4.75	4.72	4.69	4.66
11.5	10	5.01	4.98	4.95	4.91	4.88
13.5	12	5.30	5.26	5.21	5.14	5.10
15.5	14	5.58	5.53	5.48	5.37	5.32
16.5	16	5.73	5.67	5.61	5.48	5.44

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Model FDE50ZSXVG Indoor unit FDE50VG Outdoor unit SRC50ZSX-S

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					4.22	3.37	4.45	3.62	4.56	3.59	4.69	3.56	4.94	3.74	5.19	3.66
13					4.32	3.42	4.56	3.66	4.68	3.63	4.81	3.60	5.07	3.78	5.32	3.70
15					4.42	3.46	4.68	3.71	4.80	3.68	4.93	3.65	5.19	3.82	5.45	3.74
17					4.53	3.51	4.79	3.76	4.92	3.72	5.06	3.69	5.32	3.87	5.58	3.78
19					4.62	3.55	4.89	3.80	5.02	3.76	5.19	3.74	5.51	3.93	5.84	3.86
21					4.76	3.61	4.99	3.84	5.13	3.81	5.32	3.79	5.70	4.00	6.09	3.94
23					4.81	3.63	5.04	3.86	5.19	3.83	5.37	3.81	5.73	4.01	6.10	3.95
25			4.66	3.78	4.86	3.65	5.10	3.88	5.25	3.85	5.42	3.83	5.76	4.02	6.11	3.95
27			4.70	3.80	4.91	3.67	5.16	3.91	5.31	3.88	5.46	3.84	5.75	4.02		
29			4.62	3.76	4.83	3.64	5.08	3.87	5.23	3.84	5.38	3.81	5.68	3.99		
31			4.54	3.73	4.75	3.60	5.00	3.84	5.15	3.81	5.30	3.78	5.60	3.96		
33	4.04	3.38	4.31	3.62	4.67	3.57	4.93	3.81	5.08	3.79	5.23	3.76	5.53	3.94		
35	4.11	3.42	4.30	3.61	4.59	3.53	4.85	3.78	5.00	3.75	5.15	3.73	5.45	3.91		
37	4.04	3.38	4.23	3.58	4.52	3.50	4.77	3.75	4.92	3.72	5.07	3.70	5.37	3.88		
39	3.97	3.35	4.16	3.55	4.45	3.47	4.70	3.72	4.85	3.70	4.99	3.67	5.29	3.86		
41	3.90	3.31	4.09	3.52	4.38	3.44	4.62	3.69	4.77	3.67	4.92	3.64	5.21	3.83		
43	3.83	3.28	4.01	3.48	4.30	3.41	4.55	3.66	4.69	3.64	4.84	3.61	5.13	3.80		

Heating Mode : HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	3.20	3.15	3.11	3.05	3.00
-11.5	-12	3.40	3.35	3.31	3.26	3.20
-9.5	-10	3.60	3.55	3.51	3.46	3.41
-7.5	-8	3.80	3.75	3.71	3.66	3.61
-5.5	-6	3.88	3.83	3.79	3.75	3.71
-3.0	-4	3.95	3.92	3.88	3.84	3.80
-1.0	-2	4.03	4.00	3.97	3.93	3.90
1.0	0	4.10	4.08	4.05	4.03	4.00
2.0	1	4.14	4.12	4.10	4.07	4.05
3.0	2	4.41	4.38	4.36	4.33	4.30
5.0	4	4.94	4.91	4.88	4.85	4.82
7.0	6	5.46	5.43	5.40	5.37	5.33
9.0	8	5.74	5.70	5.67	5.63	5.59
11.5	10	6.02	5.98	5.94	5.89	5.85
13.5	12	6.36	6.31	6.25	6.17	6.12
15.5	14	6.70	6.64	6.57	6.44	6.39
16.5	16	6.87	6.80	6.73	6.58	6.52

PFA004Z047

Notes (1) These data show average statuses.
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.
(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 FDE60ZSXVG Indoor unit FDE60VG Outdoor unit SRC60ZSX-S

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					4.73	4.47	4.98	4.87	5.11	4.83	5.25	4.79	5.53	5.10	5.81	5.01
13					4.84	4.51	5.11	4.91	5.24	4.87	5.39	4.84	5.67	5.14	5.96	5.05
15					4.95	4.55	5.24	4.96	5.38	4.92	5.52	4.88	5.82	5.19	6.11	5.09
17					5.07	4.60	5.37	5.01	5.51	4.97	5.66	4.93	5.96	5.23	6.25	5.13
19					5.17	4.64	5.48	5.05	5.63	5.01	5.81	4.98	6.17	5.30	6.54	5.21
21					5.33	4.71	5.59	5.09	5.74	5.05	5.96	5.03	6.39	5.36	6.82	5.30
23					5.39	4.73	5.65	5.11	5.81	5.08	6.01	5.05	6.42	5.37	6.83	5.30
25			5.22	4.93	5.44	4.75	5.71	5.14	5.88	5.10	6.07	5.07	6.45	5.38	6.84	5.30
27			5.27	4.95	5.50	4.78	5.78	5.16	5.94	5.12	6.11	5.08	6.44	5.38		
29			5.18	4.91	5.41	4.74	5.69	5.13	5.86	5.09	6.02	5.05	6.36	5.36		
31			5.09	4.87	5.32	4.70	5.60	5.09	5.77	5.06	5.94	5.02	6.27	5.33		
33	4.53	4.39	4.82	4.72	5.23	4.67	5.52	5.06	5.69	5.03	5.85	4.99	6.19	5.30		
35	4.60	4.42	4.81	4.71	5.15	4.63	5.43	5.03	5.60	5.00	5.77	4.97	6.10	5.27		
37	4.52	4.39	4.73	4.64	5.06	4.60	5.35	5.00	5.51	4.97	5.68	4.94	6.01	5.25		
39	4.44	4.35	4.65	4.56	4.98	4.57	5.26	4.97	5.43	4.94	5.59	4.91	5.92	5.22		
41	4.37	4.28	4.58	4.49	4.90	4.54	5.18	4.94	5.34	4.91	5.51	4.88	5.83	5.19		
43	4.29	4.20	4.50	4.41	4.82	4.50	5.10	4.91	5.26	4.88	5.42	4.85	5.74	5.16		

Heating Mode : HC (kW)

Outdoor air temp.		Indoor air temperature ℃CDB				
℃CDB	℃CWB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	3.97	3.91	3.85	3.79	3.73
-11.5	-12	4.22	4.16	4.10	4.04	3.98
-9.5	-10	4.47	4.41	4.35	4.29	4.23
-7.5	-8	4.72	4.66	4.60	4.54	4.48
-5.5	-6	4.81	4.76	4.70	4.65	4.60
-3.0	-4	4.90	4.86	4.81	4.77	4.72
-1.0	-2	5.00	4.96	4.92	4.88	4.84
1.0	0	5.09	5.06	5.03	4.99	4.96
2.0	1	5.14	5.11	5.08	5.05	5.02
3.0	2	5.47	5.44	5.41	5.37	5.34
5.0	4	6.12	6.09	6.05	6.01	5.98
7.0	6	6.78	6.74	6.70	6.66	6.61
9.0	8	7.12	7.08	7.03	6.98	6.94
11.5	10	7.47	7.41	7.36	7.31	7.26
13.5	12	7.89	7.82	7.76	7.65	7.59
15.5	14	8.31	8.23	8.15	7.99	7.93
16.5	16	8.53	8.44	8.35	8.16	8.09

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Notes (1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuous
These data show the case where the operation frequency of a compressor is fixed.(Cooling only)
(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) Duct connected-Low / Middle static pressure type (FDUM)

Model FDUM40ZSXVF Indoor unit FDUM40VF Outdoor unit SRC40ZSX-S

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					3.38	3.08	3.56	3.34	3.65	3.31	3.75	3.29	3.95	3.49	4.15	3.44
13					3.46	3.11	3.65	3.37	3.75	3.35	3.85	3.33	4.05	3.52	4.26	3.47
15					3.54	3.14	3.74	3.41	3.84	3.38	3.95	3.36	4.15	3.56	4.36	3.50
17					3.62	3.18	3.83	3.44	3.94	3.42	4.04	3.39	4.26	3.59	4.47	3.53
19					3.69	3.21	3.91	3.47	4.02	3.45	4.15	3.43	4.41	3.64	4.67	3.59
21					3.81	3.26	3.99	3.51	4.10	3.48	4.26	3.47	4.56	3.69	4.87	3.66
23					3.85	3.27	4.04	3.53	4.15	3.50	4.30	3.49	4.59	3.71	4.88	3.66
25			3.73	3.40	3.89	3.29	4.08	3.54	4.20	3.52	4.34	3.50	4.61	3.71	4.89	3.66
27			3.76	3.42	3.93	3.31	4.13	3.56	4.25	3.54	4.36	3.51	4.60	3.71		
29			3.70	3.39	3.86	3.28	4.06	3.53	4.18	3.51	4.30	3.49	4.54	3.69		
31			3.64	3.36	3.80	3.25	4.00	3.51	4.12	3.49	4.24	3.47	4.48	3.67		
33	3.23	3.03	3.44	3.27	3.74	3.23	3.94	3.49	4.06	3.47	4.18	3.45	4.42	3.65		
35	3.28	3.05	3.44	3.27	3.68	3.20	3.88	3.46	4.00	3.44	4.12	3.42	4.36	3.63		
37	3.23	3.03	3.38	3.24	3.62	3.18	3.82	3.44	3.94	3.42	4.06	3.40	4.30	3.61		
39	3.17	3.00	3.32	3.22	3.56	3.15	3.76	3.42	3.88	3.40	4.00	3.38	4.23	3.58		
41	3.12	2.98	3.27	3.19	3.50	3.13	3.70	3.39	3.82	3.38	3.93	3.36	4.17	3.56		
43	3.06	2.95	3.21	3.15	3.44	3.10	3.64	3.37	3.76	3.35	3.87	3.33	4.10	3.54		

Heating Mode : HC (kW)

Outdoor air temp.		Indoor air temperature ℃DB				
℃DB	℃WB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	2.67	2.63	2.59	2.55	2.50
-11.5	-12	2.83	2.79	2.75	2.71	2.67
-9.5	-10	3.00	2.96	2.92	2.88	2.84
-7.5	-8	3.17	3.13	3.09	3.05	3.01
-5.5	-6	3.23	3.20	3.16	3.12	3.09
-3.0	-4	3.29	3.26	3.23	3.20	3.17
-1.0	-2	3.36	3.33	3.30	3.28	3.25
1.0	0	3.42	3.40	3.38	3.35	3.33
2.0	1	3.45	3.43	3.41	3.39	3.37
3.0	2	3.67	3.65	3.63	3.61	3.59
5.0	4	4.11	4.09	4.07	4.04	4.01
7.0	6	4.55	4.53	4.50	4.47	4.44
9.0	8	4.78	4.75	4.72	4.69	4.66
11.5	10	5.01	4.98	4.95	4.91	4.88
13.5	12	5.30	5.26	5.21	5.14	5.10
15.5	14	5.58	5.53	5.48	5.37	5.32
16.5	16	5.73	5.67	5.61	5.48	5.44

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Model FDUM50ZSXVF Indoor unit FDUM50VF Outdoor unit SRC50ZSX-S

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					4.22	3.43	4.45	3.69	4.56	3.66	4.69	3.63	4.94	3.82	5.19	3.76
13					4.32	3.48	4.56	3.73	4.68	3.71	4.81	3.68	5.07	3.87	5.32	3.80
15					4.42	3.52	4.68	3.78	4.80	3.75	4.93	3.72	5.19	3.91	5.45	3.84
17					4.53	3.57	4.79	3.83	4.92	3.80	5.06	3.77	5.32	3.96	5.58	3.88
19					4.62	3.61	4.89	3.87	5.02	3.84	5.19	3.82	5.51	4.02	5.84	3.97
21					4.76	3.67	4.99	3.91	5.13	3.88	5.32	3.87	5.70	4.09	6.09	4.05
23					4.81	3.70	5.04	3.93	5.19	3.91	5.37	3.89	5.73	4.10	6.10	4.05
25			4.66	3.84	4.86	3.72	5.10	3.96	5.25	3.93	5.42	3.91	5.76	4.11	6.11	4.05
27			4.70	3.86	4.91	3.74	5.16	3.98	5.31	3.96	5.46	3.93	5.75	4.11		
29			4.62	3.82	4.83	3.71	5.08	3.95	5.23	3.92	5.38	3.90	5.68	4.09		
31			4.54	3.79	4.75	3.67	5.00	3.92	5.15	3.89	5.30	3.87	5.60	4.06		
33	4.04	3.43	4.31	3.68	4.67	3.63	4.93	3.89	5.08	3.86	5.23	3.84	5.53	4.03		
35	4.11	3.47	4.30	3.67	4.59	3.60	4.85	3.85	5.00	3.83	5.15	3.81	5.45	4.00		
37	4.04	3.43	4.23	3.64	4.52	3.57	4.77	3.82	4.92	3.80	5.07	3.78	5.37	3.97		
39	3.97	3.40	4.16	3.60	4.45	3.54	4.70	3.79	4.85	3.77	4.99	3.75	5.29	3.95		
41	3.90	3.36	4.09	3.57	4.38	3.50	4.62	3.76	4.77	3.74	4.92	3.72	5.21	3.92		
43	3.83	3.33	4.01	3.53	4.30	3.47	4.55	3.73	4.69	3.71	4.84	3.69	5.13	3.89		

Heating Mode:HC (kW)

Outdoor air temp.		Indoor air temperature °CDB				
°CDB	°CWB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	3.20	3.15	3.11	3.05	3.00
-11.5	-12	3.40	3.35	3.31	3.26	3.20
-9.5	-10	3.60	3.55	3.51	3.46	3.41
-7.5	-8	3.80	3.75	3.71	3.66	3.61
-5.5	-6	3.88	3.83	3.79	3.75	3.71
-3.0	-4	3.95	3.92	3.88	3.84	3.80
-1.0	-2	4.03	4.00	3.97	3.93	3.90
1.0	0	4.10	4.08	4.05	4.03	4.00
2.0	1	4.14	4.12	4.10	4.07	4.05
3.0	2	4.41	4.38	4.36	4.33	4.30
5.0	4	4.94	4.91	4.88	4.85	4.82
7.0	6	5.46	5.43	5.40	5.37	5.33
9.0	8	5.74	5.70	5.67	5.63	5.59
11.5	10	6.02	5.98	5.94	5.89	5.85
13.5	12	6.36	6.31	6.25	6.17	6.12
15.5	14	6.70	6.64	6.57	6.44	6.39
16.5	16	6.87	6.80	6.73	6.58	6.52

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Notes (1) These data show average statuses.
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.
(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 FDUM60ZSXVF Indoor unit FDUM60VF Outdoor unit SRC60ZSX-S

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					4.73	4.33	4.98	4.71	5.11	4.67	5.25	4.62	5.53	4.91	5.81	4.80
13					4.84	4.37	5.11	4.76	5.24	4.71	5.39	4.66	5.67	4.95	5.96	4.84
15					4.95	4.41	5.24	4.80	5.38	4.75	5.52	4.70	5.82	4.99	6.11	4.88
17					5.07	4.45	5.37	4.84	5.51	4.80	5.66	4.75	5.96	5.03	6.25	4.91
19					5.17	4.49	5.48	4.88	5.63	4.83	5.81	4.79	6.17	5.09	6.54	4.99
21					5.33	4.55	5.59	4.92	5.74	4.87	5.96	4.84	6.39	5.15	6.82	5.06
23					5.39	4.58	5.65	4.94	5.81	4.89	6.01	4.86	6.42	5.16	6.83	5.06
25			5.22	4.78	5.44	4.59	5.71	4.96	5.88	4.92	6.07	4.88	6.45	5.17	6.84	5.06
27			5.27	4.80	5.50	4.62	5.78	4.99	5.94	4.94	6.11	4.89	6.44	5.17		
29			5.18	4.77	5.41	4.58	5.69	4.95	5.86	4.91	6.02	4.86	6.36	5.14		
31			5.09	4.73	5.32	4.55	5.60	4.92	5.77	4.88	5.94	4.83	6.27	5.12		
33	4.53	4.27	4.82	4.62	5.23	4.51	5.52	4.90	5.69	4.85	5.85	4.81	6.19	5.09		
35	4.60	4.30	4.81	4.61	5.15	4.48	5.43	4.86	5.60	4.82	5.77	4.78	6.10	5.07		
37	4.52	4.27	4.73	4.58	5.06	4.45	5.35	4.84	5.51	4.80	5.68	4.75	6.01	5.04		
39	4.44	4.23	4.65	4.55	4.98	4.42	5.26	4.81	5.43	4.77	5.59	4.73	5.92	5.02		
41	4.37	4.20	4.58	4.49	4.90	4.39	5.18	4.78	5.34	4.74	5.51	4.70	5.83	4.99		
43	4.29	4.17	4.50	4.41	4.82	4.36	5.10	4.75	5.26	4.71	5.42	4.67	5.74	4.97		

Heating Mode:HC (kW)

Outdoor air temp.		Indoor air temperature °CDB				
°CDB	°CWB	16	18	20	22	24
-19.8	-20					
-17.7	-18					
-15.7	-16					
-13.5	-14	3.97	3.91	3.85	3.79	3.73
-11.5	-12	4.22	4.16	4.10	4.04	3.98
-9.5	-10	4.47	4.41	4.35	4.29	4.23
-7.5	-8	4.72	4.66	4.60	4.54	4.48
-5.5	-6	4.81	4.76	4.70	4.65	4.60
-3.0	-4	4.90	4.86	4.81	4.77	4.72
-1.0	-2	5.00	4.96	4.92	4.88	4.84
1.0	0	5.09	5.06	5.03	4.99	4.96
2.0	1	5.14	5.11	5.08	5.05	5.02
3.0	2	5.47	5.44	5.41	5.37	5.34
5.0	4	6.12	6.09	6.05	6.01	5.98
7.0	6	6.78	6.74	6.70	6.66	6.61
9.0	8	7.12	7.08	7.03	6.98	6.94
11.5	10	7.47	7.41	7.36	7.31	7.26
13.5	12	7.89	7.82	7.76	7.65	7.59
15.5	14	8.31	8.23	8.15	7.99	7.93
16.5	16	8.53	8.44	8.35	8.16	8.09

Notes (1) These data show average statuses.
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.
(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)

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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

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.

Piping length (m)	7	10	15	20	25	30
Cooling	1	0.99	0.975	0.965	0.95	0.935
Heating	1	1	1	1	1	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 \ Capacity	40, 50, 60
Max. one way piping length	30m
Max. vertical height difference	Outdoor unit is higher 20m Outdoor unit is lower 20m

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 FDTC40ZSXVF with the air flow “P-Hi”, 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 = 4.0 × 1.00 × 0.975 × 0.99 ≒ 3.9kW

- 4.0: Net cooling total capacity of FDTC40ZSXVF (Outdoor temp. : 35℃DB Indoor temp. : 19℃WB) shown in table 9.1
- 1.00: Air flow : P-High shown in table 9.2
- 0.975: Piping length :15m (Gas pipe size is φ15.88) shown in table 9.3
- 0.99: Height diff. :5m (Outdoor unit : below) shown in table 9.4

10. APPLICATION DATA

10.1 Installation of indoor unit

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

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This manual is for the installation of an indoor unit.
For electrical wiring work (Indoor), refer to the electrical wiring work installation manual (page 62).
For remote control installation, refer to page 66. For wireless kit installation, refer to page 178.
For electrical wiring work (Outdoor) and refrigerant pipe work installation for outdoor unit, refer to page 79.
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 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 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.)

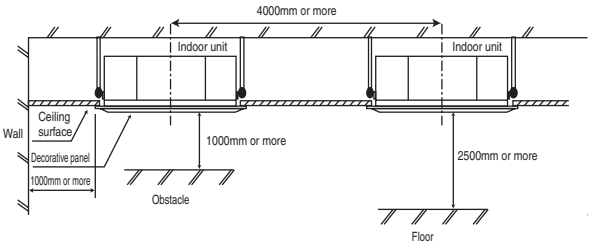
② Check if the place where the air-conditioner is installed can hold the weight of the unit. If it is not able to hold, reinforce the structure with boards and beams strong enough to hold it. If the strength is not enough, it could cause injury due to unit falling.

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

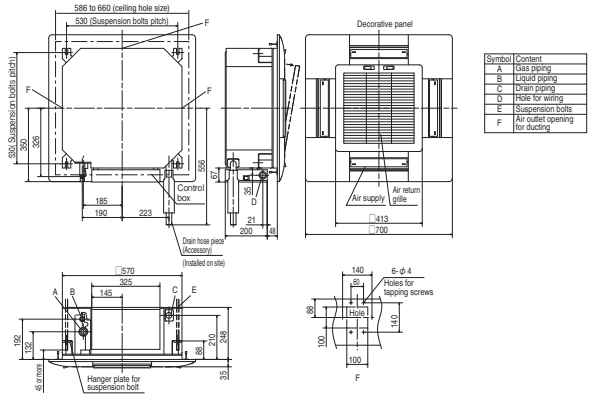
- When it is not possible to keep enough space between indoor unit and wall or between indoor units, close the air supply port where it is not possible to keep space and confirm there is no short circuit of air flow.
- Install the indoor unit at a height of more than 2.5m above the floor.



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.

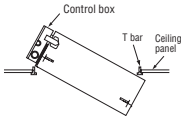
Ceiling opening, Suspension bolts pitch, Pipe position



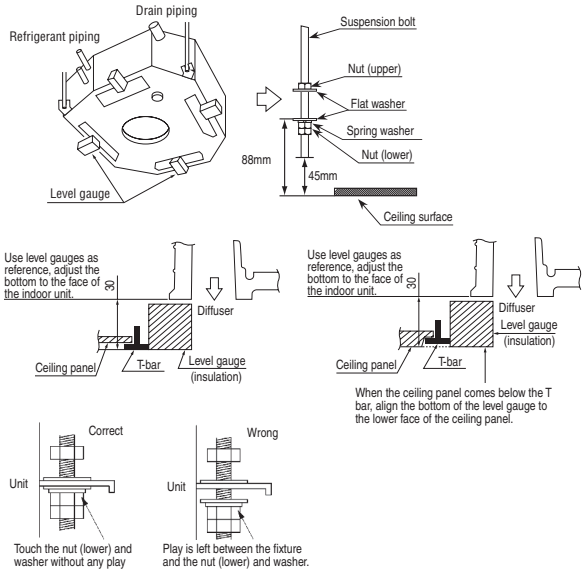
④ Installation of indoor unit

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.

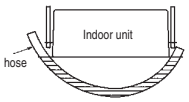


5. Adjust the indoor unit position after hanging it by inserting the level gauge attached on the package into the air supply port and checking if the gap between the ceiling plane and the indoor unit is appropriate. In order to adjust the indoor unit position, adjust the lower nuts while the upper nuts 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.



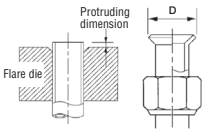
Caution

- 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

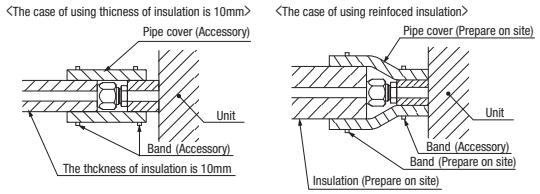
- Use phosphorus deoxidized copper alloy seamless pipe (C1220T specified in JIS H 3300) for refrigeration pipe installation.
  In addition, make sure there is no damage both inside and outside of the pipe, and no harmful substances such as sulfur, oxide, dust or a contaminant stuck on the pipes.
- Do 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)



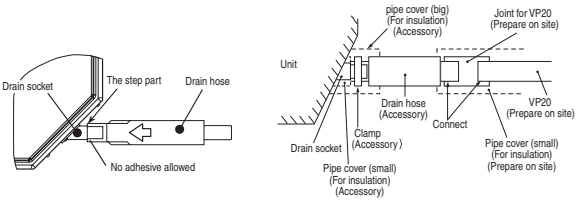
⑥ Drain pipe

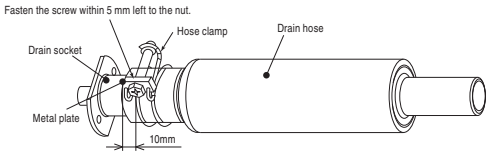
Caution

- 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.

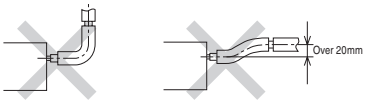
Work procedure

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.

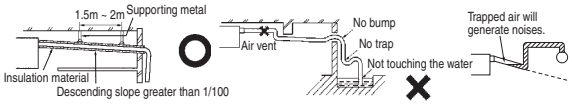




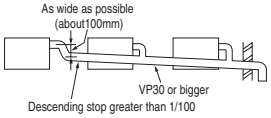
2. Prepare a joint for connecting VP20 pipe, adhere and connect the joint to the drain hose (the end made of rigid PVC), and adhere and connect VP20 pipe (prepare on site).
   ※ As for drain pipe, apply VP20 made of rigid PVC which is on the market.
   ● Make sure that the adhesive will not get into 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.

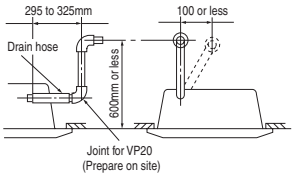


⑥ Drain pipe (continued)

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

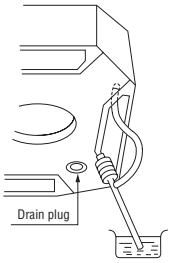
- The position for drain pipe outlet can be raised up to 600mm above the ceiling. Use elbows for installation to avoid obstacles inside ceiling. If the horizontal drain pipe is too long before vertical pipe, the backflow of water will increase when the unit is stopped, and it may cause overflow of water 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.

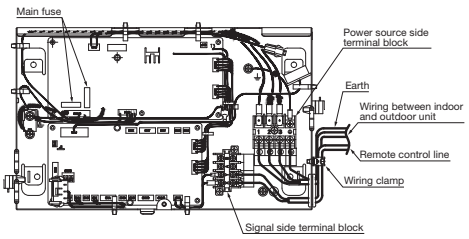
⑦ Wiring-out position and wiring connection

- 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.

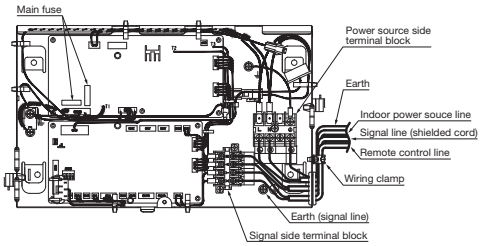
1. Remove a lid of the control box (1 screws).
2. Hold each wiring inside the unit and fasten them to terminal block securely.
3. Fix the wiring with clamp.
4. Install a lid of the control box back to original place.

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

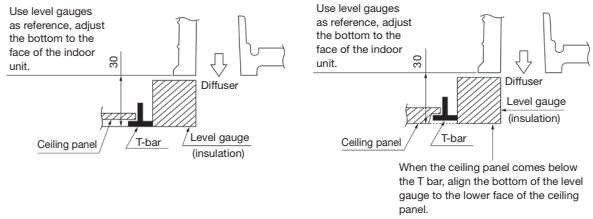
Please read this manual together with the indoor unit's installation manual.

⚠ 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.

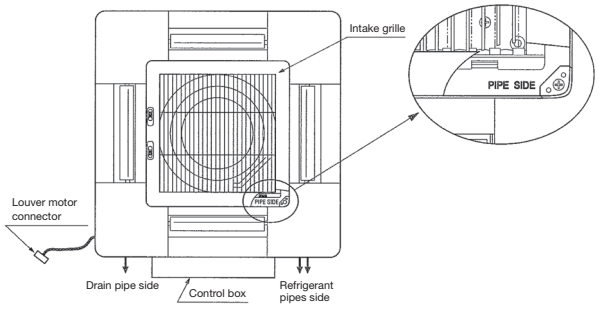


② Orientation of the panel and return air grille installation

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.

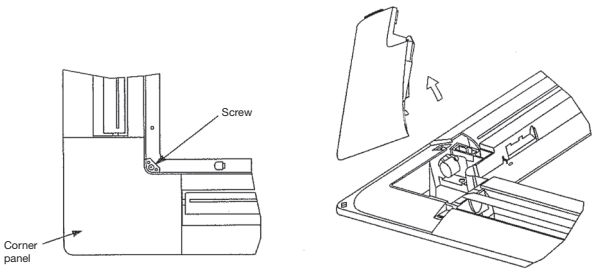
Caution

· 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.



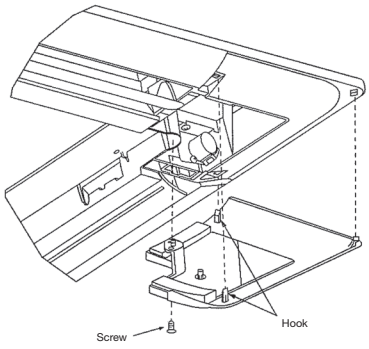
③ Removing a corner panel

- 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.



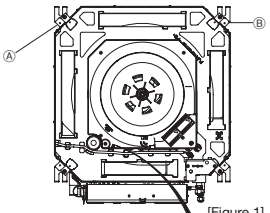
⑤ Panel installation

- Install the panel on the unit after completing the electrical wiring.

Accessories

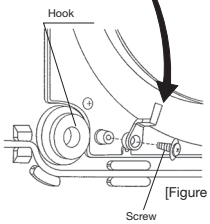
1	Hook		1 piece	For fixing temporarily
2	Chain		2 pieces	
3	Screw		4 pieces	For hoisting the panel
4	Screw		1 piece	For attaching a hook
5	Screw		2 pieces	For attaching a chain

1. Screw in two bolts out of the four supplied with the panel by about slightly less than 5mm. (● mark ⒶⒷ) [Figure 1]



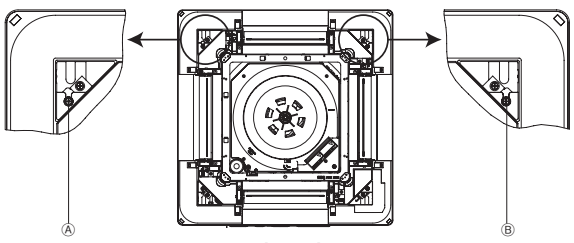
[Figure 1]

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)



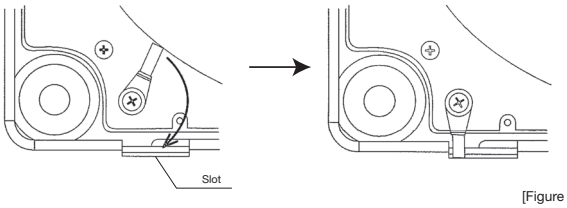
[Figure 2]

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]

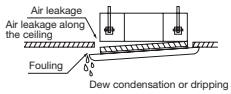


[Figure 4]

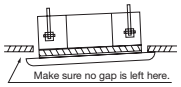
7. Tighten the two bolts used for fixing the panel temporarily and the other two.

Caution

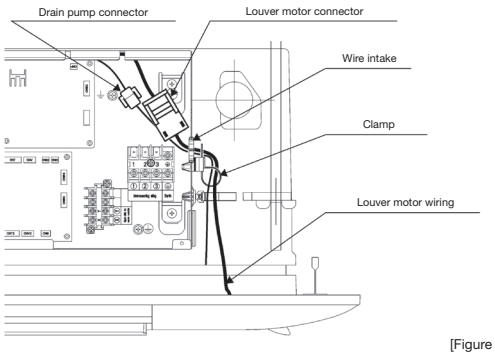
- Improperly tightened hanging bolts can cause the problems listed below, so make sure that you have tightened them securely.



- 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.

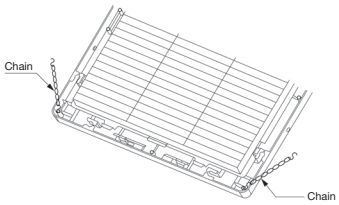


8. Please open the lid of a control box.
9. Like drain pump wiring, please band together by the clamp and put in louver motor wiring into a control box. [Figure 5]
10. Please connect a louver motor connector. [Figure 5]



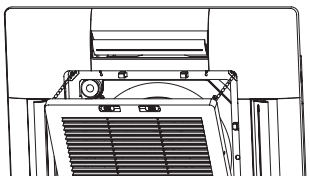
[Figure 5]

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.



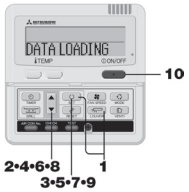
[Figure 7]

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)

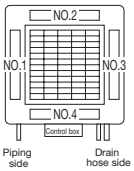
9 Press SET button. (Fixing of the lower limit position)
Upper limit position and lower limit position are fixed, and the set positions are displayed for two seconds, then setting is completed.
- After the setting is completed, the louver which was set moves from the original position to the lower limit 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 ▲

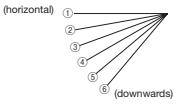
10 Press ON/OFF button.
Louver adjusting mode ends and returns to the original display.

NOTICE

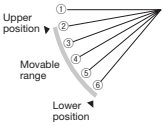
- In case the louver No to be set is uncertain, set any louver temporarily.
The louver will swing once when the setting is completed and it is possible to confirm the louver No and the position.
After that, choose the correct louver No and set the top and bottom position.



Louver No.



the position of the louver



Caution

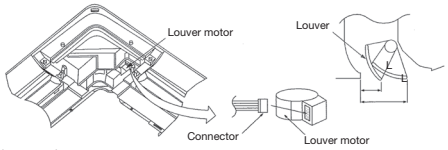
If the upper limit position number and the lower limit position number are set to the same position, the louver is fixed at that position auto swing does not function.

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.

(2) Ceiling suspended type (FDE)

PFA012D628

This manual is for the installation of an indoor unit.
For electrical wiring work (Indoor), refer to page 62. For remote control installation, refer to page 66. For wireless kit installation, refer to page 186. For electrical wiring work (Outdoor) and refrigerant pipe work installation for outdoor unit, refer to page 79.

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.

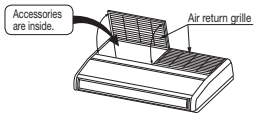
  It can affect performance or function and etc..
- **Do not put any valuables which will break down by getting wet under the air-conditioner.**
  Condensation could drop when the relative humidity is higher than 80% or drain pipe is clogged, and it damages user's belongings.
- **Do not use the base frame 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



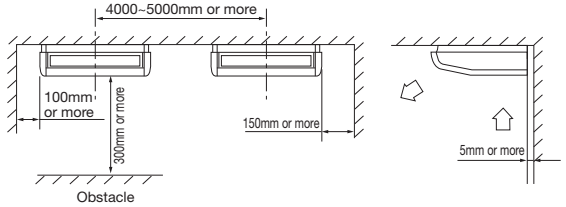
②Selection of installation location for the indoor unit

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 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.
- ・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

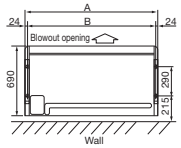


③Preparation before installation

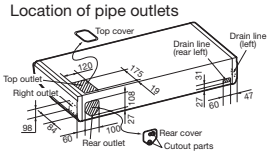
- ●If suspension bolt becomes longer, do reinforcement of earthquake resistant.
  - ○For grid ceiling
    When suspension bolt length is over 500mm, or the gap between the ceiling and roof is over 700mm, apply earthquake resistant brace to the bolt.
  - ○In case the unit is hanged directly from the slab 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)

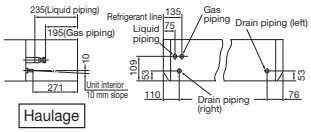
(mm)

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

※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.

Pipe position

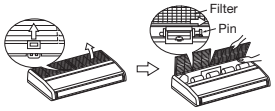


Haulage

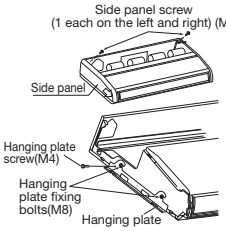
- ●Move the box as close to the installation area as possible packed.
- ●If it must be unpacked, wrap the unit with a nylon sling, and be careful not to damage the unit.
  - ※Do not hold fragile plastic parts, such as the side panel, blow louver, etc.
- ●If you need to lay the unit on a floor after unpacking, always put it with the intake grille facing upward.

Preparation before instalation

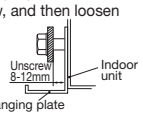
1. Remove the air return grille.
Slide stoppers (4 places) of the catches, then pull out the pins (4 or 6 places).



2. Remove the side panel.
Remove the screw and detach the side panel by sliding it toward the direction indicated by the arrow mark.



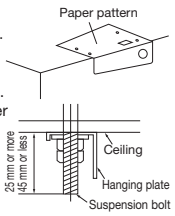
3. Remove the hanging plate.
Remove the screw, and then loosen the fixing bolts.



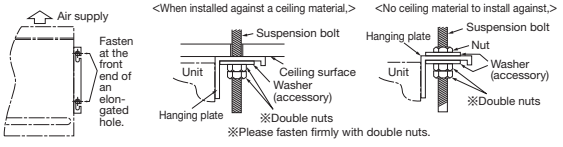
④Installation of indoor unit

Work procedure

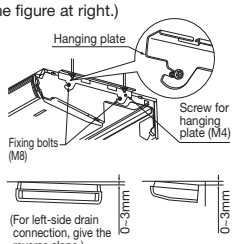
1. Select the suspension bolt locations and the pipe hole location.
   (1) Use enclosed paper pattern as a reference, and drill the holes for the suspension bolts and pipe.
   ※Decide the locations based on direct measurements.
   (2) Once the locations are properly placed, the paper pattern can be removed.
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.



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.

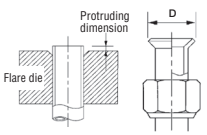
※To ensure smooth drain flow, install the unit with a descending slope toward the drain outlet.

⚠ **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

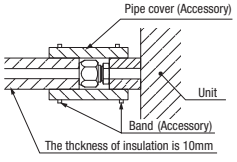
●Use phosphorus deoxidized copper alloy seamless pipe (C1220T specified in JIS H 3300) for refrigeration pipe installation. In addition, make sure there is no damage both inside and outside of the pipe, and no harmful substances such as sulfur, oxide, dust or a contaminant stuck on the pipes.
●Do not 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

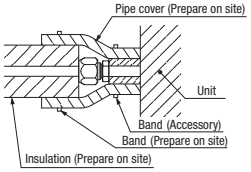
1. Remove the flare nut and blind flanges on the pipe of the indoor unit.
※ Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them. (Gas may come 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 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.

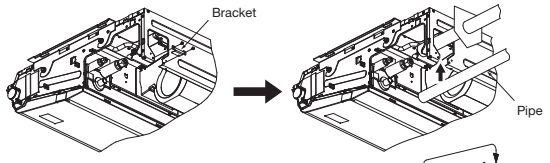
〈The case of using thicness of insulation is 10mm〉



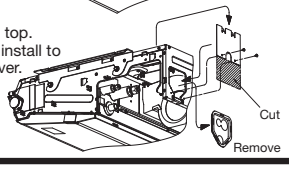
〈The case of using reinfoced insulation〉



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

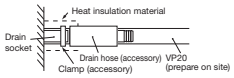
●The drain pipes may pull out either from back, right or left side.

Caution

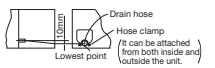
- Install the drain pipe according to the installation manual in order to drain properly. Imperfection in draining may cause flood indoors and wetting the household goods, etc.
- Do not put the drain pipe directly into the ditch where toxic gas such as sulfur, the other harmful andinflammable gas is 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.

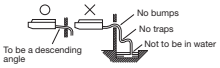
Work procedure

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.

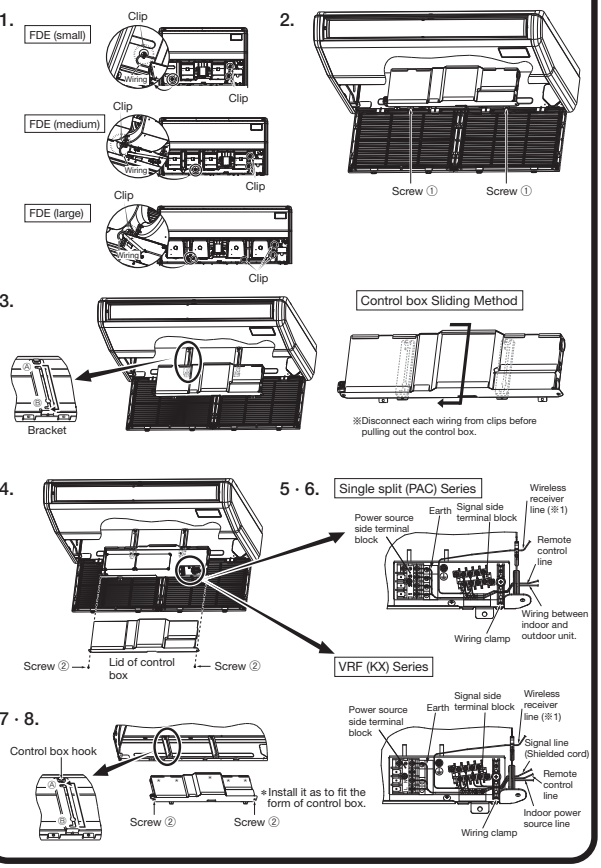
⑦Wiring-out position and wiring connection

- 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

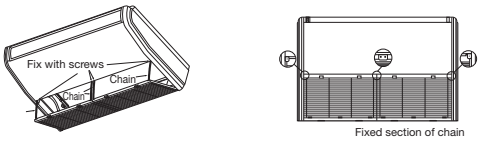
● The control content of indoor units can be switched in following way. (▭ is the default setting)

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

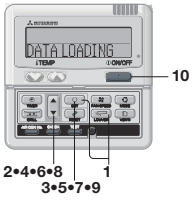
● Check the following items after all installation work completed.

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	
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	

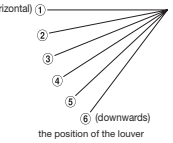
⑪How to set the air flow direction

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.

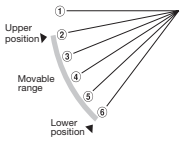
1. Stop the air-conditioner and press SET button and LOUVER button simultaneously for three seconds or more.
   - ●The following is displayed if the number of the indoor units connected to the remote control is one. Go to step 4.
     "DATA LOADING" → "No.1 ▲"
   - ●The following is displayed if the 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.

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

PJG012D008C D

(a) Indoor unit

This manual is for the installation of an indoor unit.
For electrical wiring work (Indoor), refer to page 62. For remote control installation, refer to page 66. For wireless kit installation, refer to page 194. For electrical wiring work (Outdoor) and refrigerant pipe work installation for outdoor unit, refer to page 80.

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 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 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

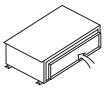
●Install correctly according to the installation manual.

●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.

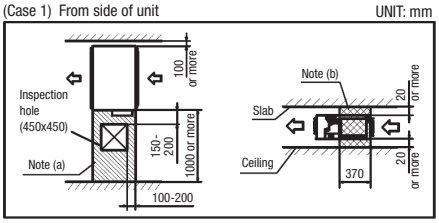
Space for installation and service

●Make installation altitude over 2.5m.

(Indoor Unit)

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

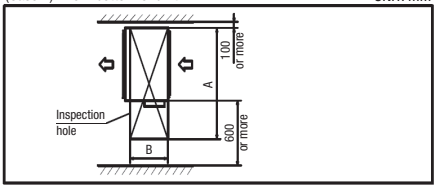
(Case 1) From side of unit UNIT: mm



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

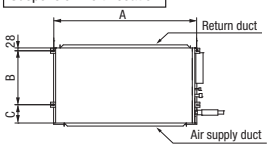
When the suspension bolt length is over 500mm, or the gap between the ceiling and roof is over 700mm, apply earthquake resistant brace to the bolt.

○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

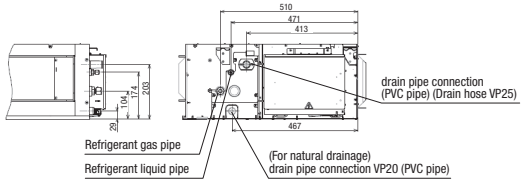


UNIT: mm

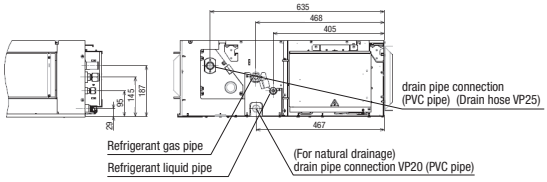
Multi type	22-56	71, 90	112-160
Single type	40-50	60, 71	100-140
A	786	986	1404
B	472	472	530
C	135	135	180

Pipe locations UNIT: mm

Multi type	22-90
Single type	40-71



Multi type	112-160
Single type	100-140

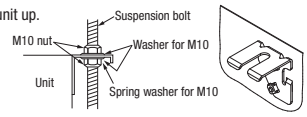


④Installation of indoor unit

Installation

[Hanging]

Hang the unit up.

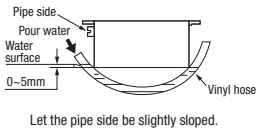


If the measurements between the unit and the ceiling hole do not match upon installation, it may be adjusted with the long holed installation tool.

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.

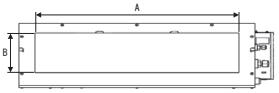
⑤Duct Work

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.

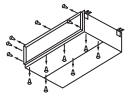
UNIT: mm

Single type	40-50	60-71	100-140
Multi type	22-56	71-90	112-140
A	682	882	1202
B	172	172	172

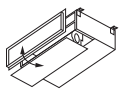


- ●Duct should be at their minimum length.
- ●We recommend to use sound and heat insulated duct to prevent it from condensation.
- ●Connect duct to unit before ceiling attachment.

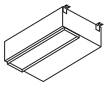
③Inlet port
- ●When shipped the inlet port lies on the back.
- ●When connecting the duct to the inlet port, remove the air filter if it is fitted to the inlet port.
- ●When placing the inlet port to carry out suction from the bottom side, use the following procedure to replace the suction duct joint and the bottom plate.



●Remove the screws which fasten the bottom plate and the duct joint on the inlet port side of the unit.

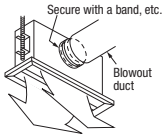


●Replace the removed bottom plate and duct joint.

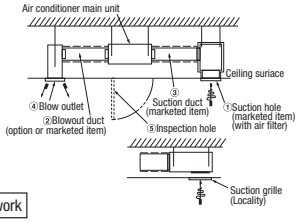


- ●Fit the duct join with a screw; fit the bottom plate.
- ●Make sure to insulate the duct to prevent dewing on it.

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

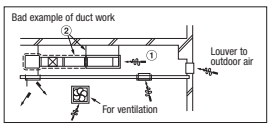
①If a duct is not provided at the suction side but it is substituted with the space over the ceiling, humidity in the space will increase by the influence of capacity of ventilation fan, strength of wind blowing against the out door air louver, weather (rainy day) and others.

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.

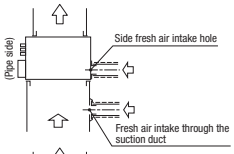
②If vibration damping is not conducted between the unit and the duct, and between the unit and the slab, vibration will be transmitted to the duct and vibration noise may occur. Also, vibration may be transmitted from the unit to the slab. Vibration damping must be performed.



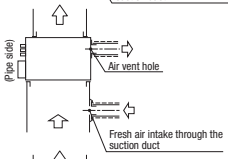
⑤Duct Work (continued)

Connecting the air intake/vent ducts

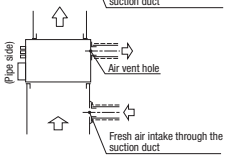
①Fresh Air Intake
[for air intake duct only]
○Use the side fresh air intake hole, or supply through a part of the suction duct.



[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)

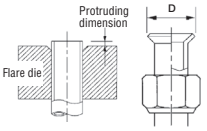


○Insulate the duct to protect it from dew condensation.

⑥Refrigerant pipe

Caution

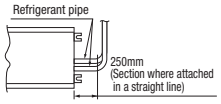
- ●Be sure to use new pipes for the refrigerant pipes. Use the flare nut attached to the product or a nut compatible with JIS B 8607, Class 2.
  Regarding whether existing pipes can be reused or not, and the washing method, refer to the instruction manual of the outdoor unit, catalogue or technical data.
  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

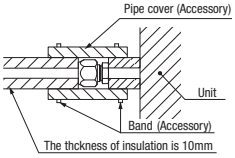
1. Remove the flare nut and blind flanges on the pipe of the indoor unit.
   ※ Make sure to loosen the flare nut with holding the nut on pipe side with a spanner and giving torque to the nut with another spanner in order to avoid unexpected stress to the copper pipe, and then remove them. (Gas may come 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)

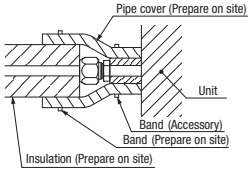
4. Refrigerant is charged in the outdoor unit.
   As for the additional refrigerant charge for the indoor unit and piping, refer to the installation manual attached to the outdoor unit.

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>



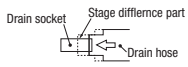
⑦Drain pipe

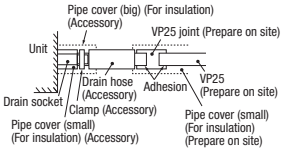
Caution

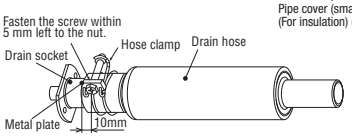
- Install the drain pipe according to the installation manual in order to drain properly. Imperfection in draining may cause flood indoors and wetting the household goods, etc.
- Do not put the drain pipe directly into the ditch where toxic gas such as sulfur, the other harmful and inflammable gas is 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

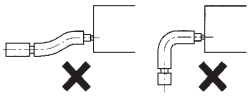
1. Make sure to insert the drain hose (the end mode of soft PVC) to the end of the step part of drain socket.
   Attach the hose clamp to the drain hose around 10mm from the end, and fasten the screw within 5mm left to the nut.
   ●Do not apply adhesives on this end.
   ●Do not use acetone-based adhesives to connect to the drain socket.



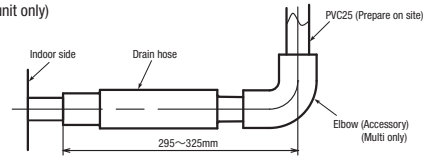




2. Prepare a joint for connecting VP25 pipe, adhere and connect the joint to the drain hose (the end made of rigid PVC), and adhere and connect VP25 pipe (prepare on site).
   ※As for drain pipe, apply VP25 made of rigid PVC which is on the market.
   ●Make sure that the adhesive will not get into the 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.

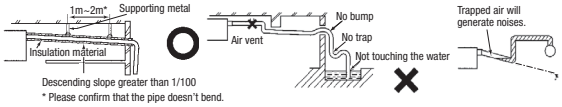


   ●As for drain pipe, apply VP25 (OD32).
   If apply PVC25 (OD25), connect the expanded connector to the drain hose, with adhesive. (Multi unit only)

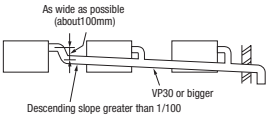


⑦Drain pipe (continued)

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.



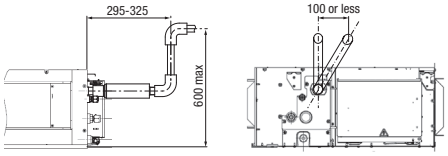
   ●When sharing a drain pipe for more than one unit, lay the main pipe 100mm below the drain outlet of the unit. In addition, select VP30 or bigger size for main drain pipe.



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.



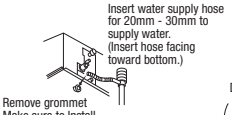
Otherwise, the construction point makes it same as drain pipe construction.

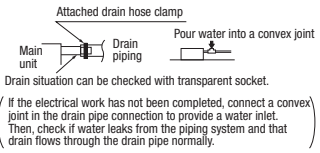
Drain test

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

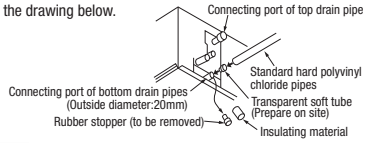
1. Supply about 1000 cc of water to the unit through the air outlet by using a feed water pump.
2. Check the drain while cooling operation.





Outline of bottom drain piping work

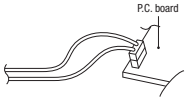
- If the bottom drain piping can be done with a descending gradient (1/50-1/100), it is possible to connect the pipes as shown in the drawing below.



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.)

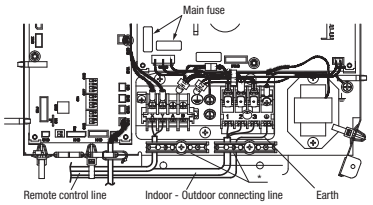


⑧Wiring-out position and wiring connection

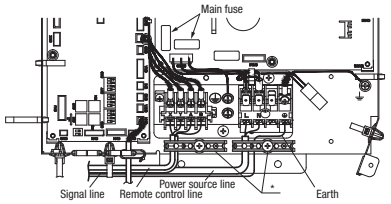
- Electrical installation work must be performed according to the installation manual by an electrical installation service provider qualified by a power provider of the country, and be executed according to the technical standards and other regulations applicable to electrical installation in the country.
  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.

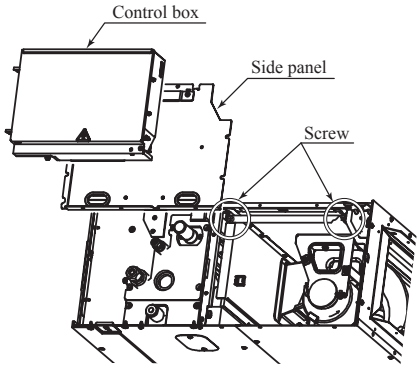
Check if	Expected trouble	Check
The indoor and outdoor units are fixed securely?	Falling, vibration, noise	
Inspection for leakage is done?	Insufficient capacity	
Insulation work is properly done?	Water leakage	
Water is drained properly?	Water leakage	
Power source voltage is same as mentioned in the 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

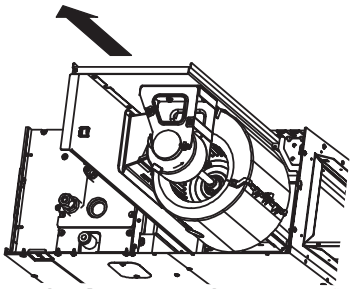
Notes(1) The unit is a heavy item. It must be supported securely and handled with care not to drop when it is necessary to replace.
(2) For the maintenance space, refer to page 56.

(i) Models FDUM40VF, 50VF

1) Remove the control box and the side panel, and remove the screws marked in the circles (2 places) in the figure.

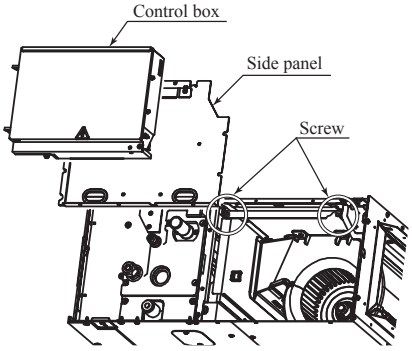


2) Take out the fan unit in the arrow direction.

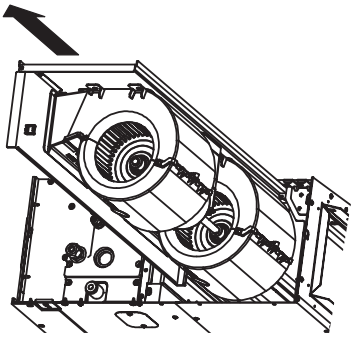


(ii) Model FDUM60VF

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.



(4) Effective range of cool/hot wind (Reference)

FDE series

Model	Effective range
FDE40VG, 50VG	7.5m
FDE60VG	8.0m

[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 the wind to reach the floor.
5. Wind speed at the effective range: 0.5 m/s

10.2 Electric wiring work installation

FDTC, FDE, FDUM, series

PSB012D999

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)

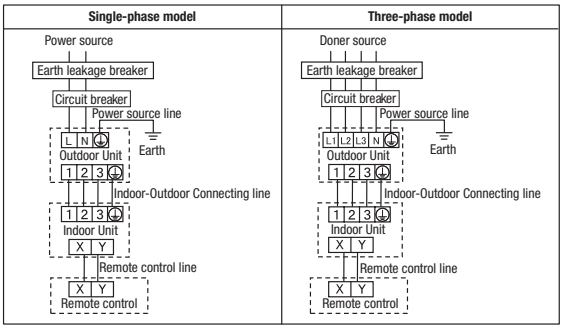
Switch No.	Control Content	
SW2	Indoor unit address (0-Fh)	
SW5-1	Master/Slave Switching (plural /Slave unit Setting)	
SW5-2		
SW6-1～4	Model capacity setting	
SW7－1	ON	Operation check, Drain motor test run
	OFF	Normal operation

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.

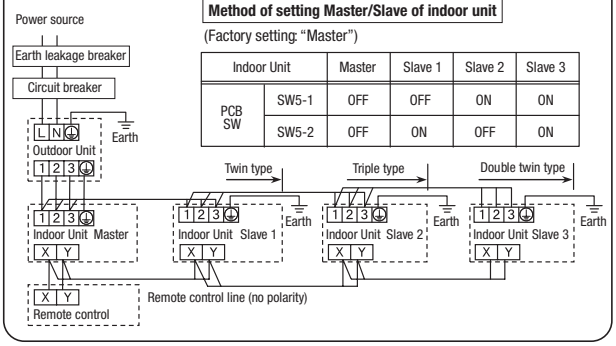
Cable connection for single unit installation

①As for connecting method of power source, select from following connecting patterns. In principle, do not directly connect power 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

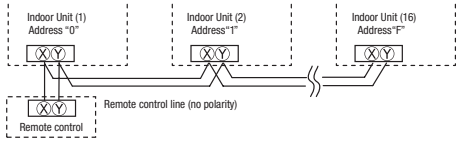
●Do not install it on the following places
①Places exposed to direct sunlight
②Places near heat devices
③High humidity places
④Hot surface or cold surface enough to generate condensation
⑤Places exposed to oil mist or steam directly.
⑥Uneven surface

Installation and wiring of remote control

①Install remote control referring to the attached installation manual.
②Wiring of remote control should use 0.3mm^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)

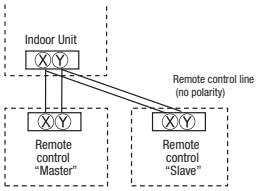
Control plural indoor units by a single remote control.

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.

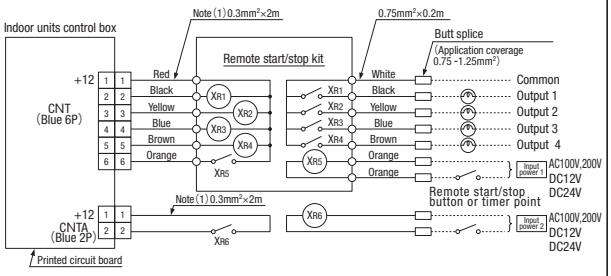
6 Cooling test run from remote control

"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.		

10.3 Installation of wired remote control (Option)
(1) Model RC-EX3

PJZ012A131 A

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

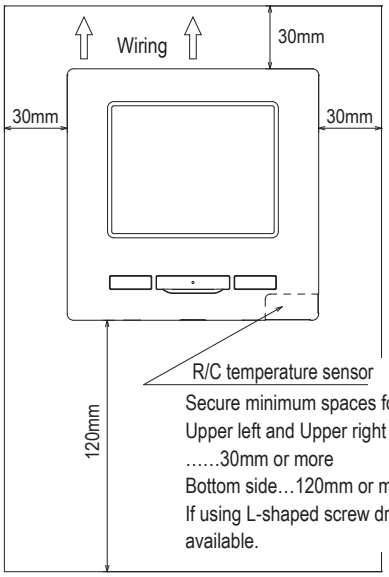
When the cable length is longer than 100 m, the max size for wires used in the R/C case is 0.5 mm^2 . Connect them to wires of larger size near the outside of R/C. When wires are connected, take measures to prevent water, etc. from entering inside.

≦ 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

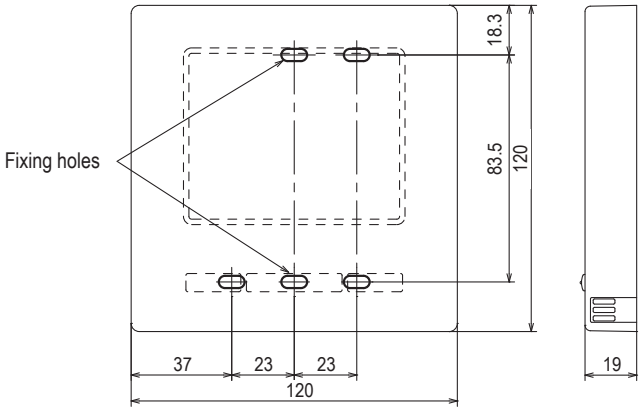


Secure minimum spaces for disassembling the case.
Upper left and Upper right sides
……30mm or more
Bottom side…120mm or more
If using L-shaped screw driver, 50mm or more is available.

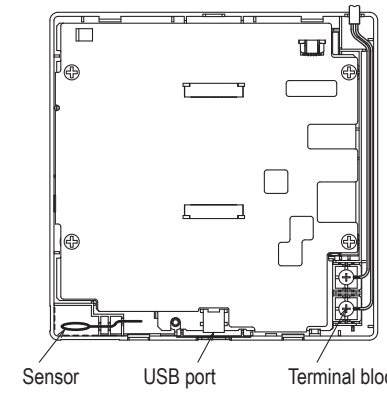
4 . Installation procedure

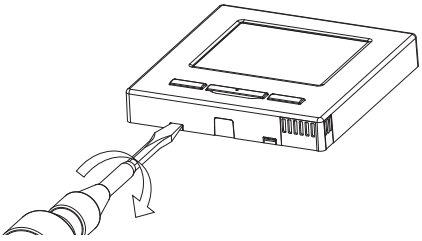
Perform installation and wiring work for the remote control according to the following procedure.

Dimensions (Viewed from front)



PCB side (Viewed from rear)





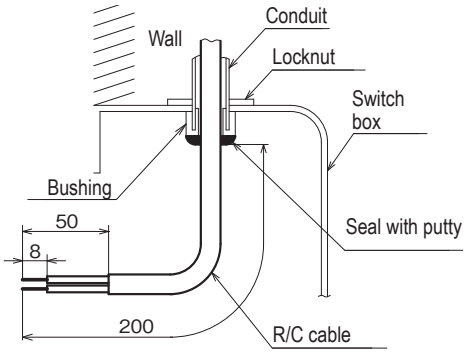
To remove the upper case from the bottom cases of R/C

· 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

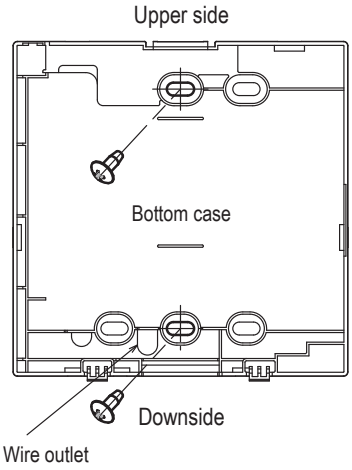
(When the wiring is retrieved “Backward”)

① Embed the switch box and the R/C wires beforehand.
Seal the inlet hole for the R/C wiring with putty.

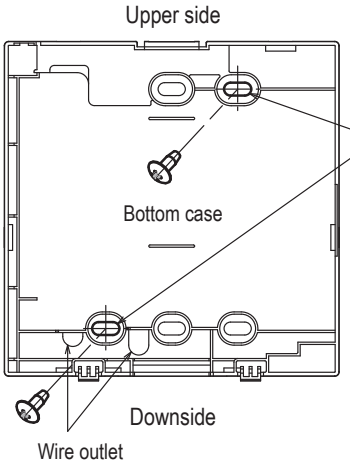


② When wires are passed through the bottom case, fix the bottom case at 2 places on the switch box.

Switch box for 1 pcs



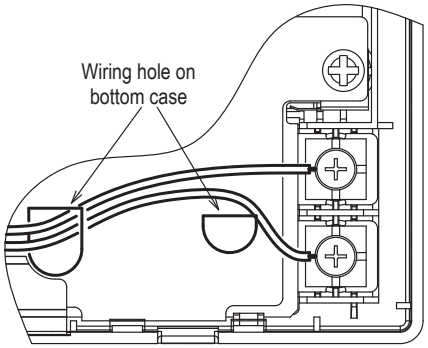
Switch box for 2 pcs



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.

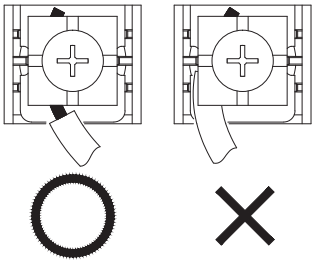


Cautions for wire connection

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.



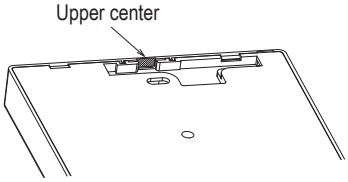
In case of exposing wiring

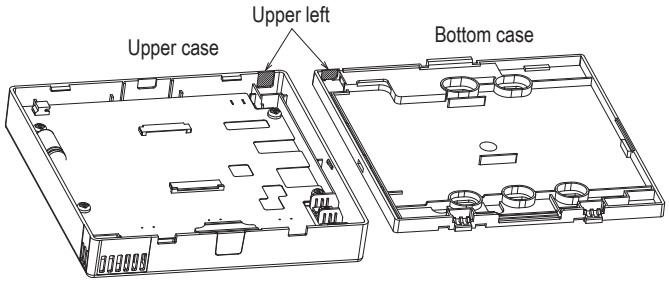
(When the wiring is taken out from the "upper center" or "upper left" of R/C)

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.





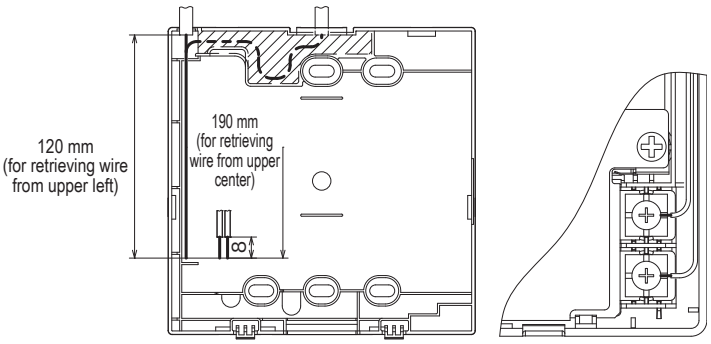
② Fix the bottom R/C case on a flat surface with two wood screws.

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.

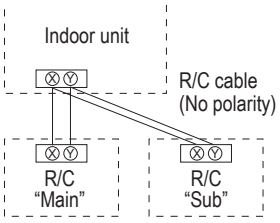
⑤ Install the top case with care not to pinch wires of R/C.

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.

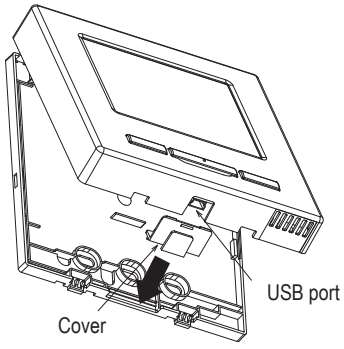
R/C operations			Main	Sub
Run/Stop, Change set temp, Change flap direction, Auto swing, Change fan speed operations			○	○
High power operation, Energy-saving operation			○	○
Silent mode control			○	×
Useful functions	Individual flap control		○	×
	Anti draft setting		○	×
	Timer		○	○
	Favorite setting		○	○
	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	○	○

○: operable ×: not operable

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.

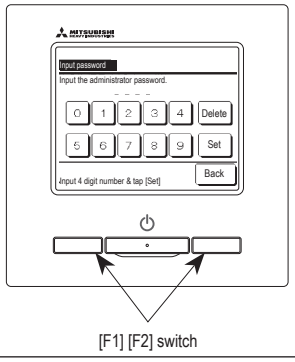


Advice: Initializing of password

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.



(2) Model RC-E5

PJA012D730 B

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

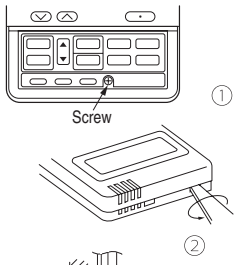
- Do not install the remote control at the following places in order to avoid malfunction.
  (1) Places exposed to direct sunlight
  (2) Places near heat devices
  (3) High humidity places
  (4) Hot surface or cold surface enough to generate condensation
  (5) Places exposed to oil mist or steam directly
  (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 insulation 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

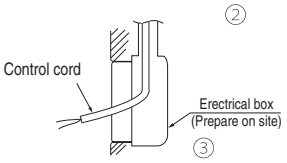
① Open the cover of remote control, and remove the screw under the buttons without fail.

② Remove the upper case of remote control.
Insert a flat-blade screw driver into the dented part of the upper part of the remote control, and wrench slightly.

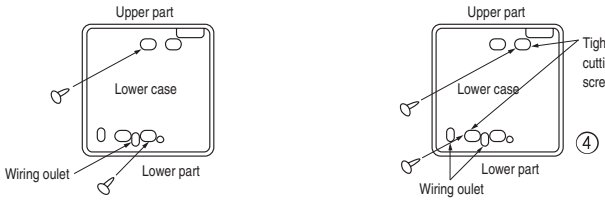


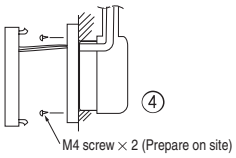
[In case of embedding cord]

③ Embed the erectrical box and remote control cord beforehand.



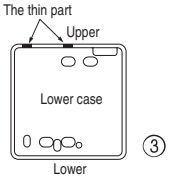
④ Prepare two M4 screws (recommended length is 12-16mm) on site, and install the lower case to erectrical box.
Choose either of the following two positions in fixing it with screws.





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)

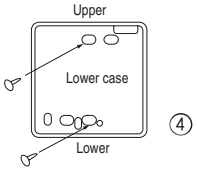
⑥ Install the upper case as before so as not to catch up the remote control cord, and tighten with the screws.



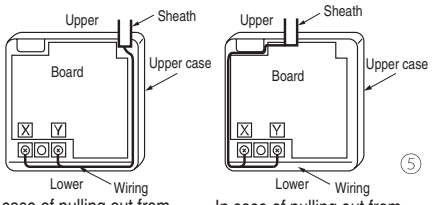
[In case of exposing cord]

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.

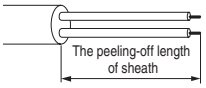


In case of pulling out from upper left

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.

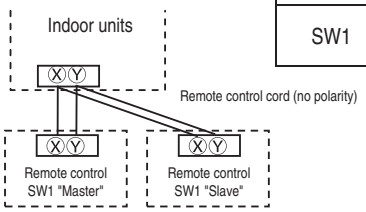
Installation and wiring of remote control

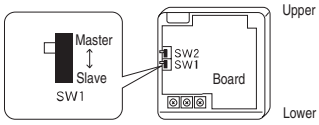
① Wiring of remote control should use 0.3mm^2 × 2 cores wires or cables. (on-site configuration)
② Maximum prolongation of remote control wiring is 600 m.
If the prolongation is over 100m, change to the size below.
But, wiring in the remote control case should be under 0.5mm^2 . Change the wire size 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 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.

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.

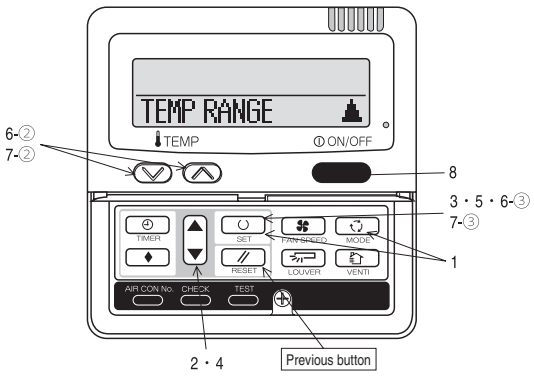
2. When ⑫TEMP RANGE SET, remote control function of function setting mode is "NO INDN CHANGE"
   【If upper limit value is set】
   During heating, even if the value exceeding the upper limit is set, upper limit value will be sent to the indoor unit. But, the indication is the same as the temperature set.

   【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 ▼

To next page

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			
	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 of ※-※-※or the four speed of ※-※-※-※.
	HI-LO	※	Air flow of fan becomes of ※-※.
	HI-MID		Air flow of fan becomes of ※-※.
	1 FAN SPEED	※	Air flow of fan is fixed at one speed.
14 POSITION			If you 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 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 ℃/°F SET			
	℃	○	Temperature indication is by degree C
	°F		Temperature indication is by degree F

To next page

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".

From previous page

(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 — 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
  - ❄♨ ○ — 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, the fan does not perform extra operation.
  - 0.5 HOUR — After cooling is stopped, the fan perform extra operation for half an hour.
  - 1 HOUR — After cooling is stopped, the fan perform extra operation for an hour.
  - 6 HOUR — After cooling is stopped, 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 ○
  - 20minOFF 5minON — 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.
  - 5minOFF 5minON — 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 ※
  - TYPE1 ※ — Connected "OA Processing" type indoor unit, and is automatically defined.

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Note2: Fan setting of "HIGH SPEED"

Fan tap		Indoor unit air flow setting			
		❄all - ❄all - ❄all - ❄all	❄all - ❄all - ❄all	❄all - ❄all	❄all - ❄all
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

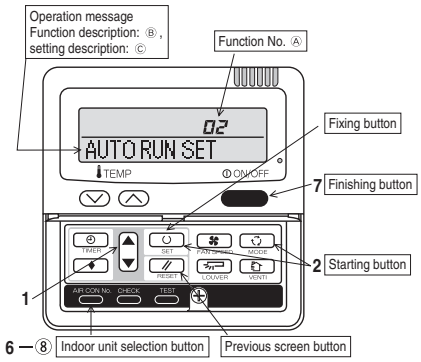
Initial function setting of some indoor unit is "HIGH SPEED".
4 speed is not able to be set with wireless remote control.

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).

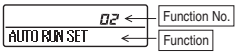
5. **Press (SET) button.**



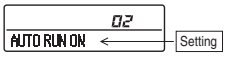
6. **【On the occasion of remote control function selection】**

① "DATA LOADING" (Indication with blinking)
↓
Display is changed to "01 ESP SET".

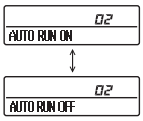
② Press ▲ or ▼ button.
"No. and function"are indicated by turns on the remote control function table, then you can select from them.
(For example)



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.

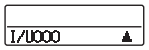
7. **Press ON/OFF button.**
   Setting is finished.

【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]

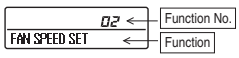
(1) If plural indoor units are connected to a remote control, the indication is "I/U 000" (blinking) ← The lowest number of the indoor unit connected is indicated.



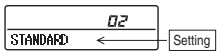
(2) Press ▲ or ▼ button.
Select the number of the indoor unit you are to set
If you select "ALL UNIT ▼", you can set the same setting with all unites.

(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.)

10.4 Installation of outdoor unit

Models SRC40ZSX-S, SRC50ZSX-S, SRC60ZSX-S

RWC012A060 A

R410A REFRIGERANT USED

• This installation manual deals with an outdoor unit installation only. For an indoor unit installation, refer to page 45.

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 outdoor unit)		Q'ty
(1)	Drain grommet	4
(2)	Drain elbow	1

*Not included for SRC20, 25, or 35ZSX-SA.

Locally procured parts	
(a)	Anchor bolt(M10-M12)×4 pcs
(b)	Putty
(c)	Electrical tape
(d)	Connecting pipe
(e)	Connecting cable
(f)	Power cable
(g)	Clamp and screw (for finishing work)

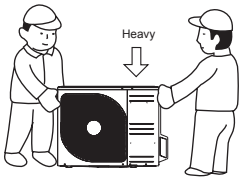
Tools for installation work		
Plus headed driver	Spanner wrench	Vacuum pump*
Knife	Torque wrench [14.0-62.0N/m(1.4-6.2kgf•m)]	Gauge manifold *
Saw	Wrench key (Hexagon) [4m/m]	Charge hose *
Tape measure	Flaring tool set *	Vacuum pump adapter* (Anti-reverse flow type)
Pipe cutter	Flare adjustment gauge	Gas leak detector *

*Designed specifically for R410A

2. OUTDOOR UNIT INSTALLATION

1. Haulage

- Always carry or move the unit with two or more persons.
- The right hand side of the unit as viewed from the front (outlet side) is heavier.
  A person carrying the right hand side must take care of this fact. A person carrying the left hand side must hold the handle provided on the front panel of the unit with his right hand and the corner column section of the unit with his left hand.



⚠ CAUTION

When a unit is hauled, take care of its gravity center position which is shifted towards right hand side.
If the unit is not hauled properly, it can go off balance and fall resulting in serious injury.

2. Selecting the installation location

Select the suitable installation location where:

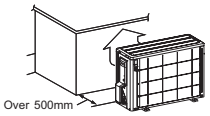
- Unit will be stable, horizontal and free of any vibration transmission.
- There is no obstacle which can prevent smooth air circulation from inlet and outlet side of the unit.
- There is enough space for service and maintenance of unit.
- Neighbours are not bothered by noise or air generating from the unit.
- Outlet air of the unit does not blow directly to animals or plants.
- Drain water can be discharged properly.
- There is no risk of flammable gas leakage.
- There are no other heat sources nearby.
- Unit is not directly exposed to rain or sunlight.
- Unit is not directly exposed to oil mist and steam.
- Chemical substances like ammonia (organic fertilizer), calcium chloride (snow melting agent) and acid (sulfurous acid etc.), which can harm the unit, will not generate or accumulate.
- Unit is not directly exposed to corrosive gases (like sulphide gas, chloride gas), sea breeze or salty atmosphere.
- No TV set or radio receiver is placed within 1m.
- Unit is not affected by electromagnetic waves and/or high-harmonic waves generated by other equipments.
- Strong wind does not blow against the unit outlet.
- Heavy snowfalls do not occur (If installed, provide proper protection to avoid snow accumulation).

NOTE

If the unit is installed in the area where there is a possibility of strong wind or snow accumulation, the following measures are required.

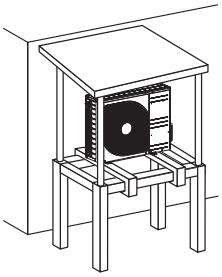
(1) Location of strong wind

- Place the unit with its outlet side facing the wall.
- Place the unit such that the direction of air from the outlet gets perpendicular to the wind direction.



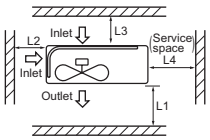
(2) Location of snow accumulation

- Install the unit on the base so that the bottom is higher than snow cover surface.
- Install the unit under eaves or provide the roof on site.



3. Installation space

- There must be 1 meter or larger space between the unit and the wall in at least 1 of the 4 sides. Walls surrounding the unit from 4 sides is not acceptable. The wall height on the outlet side should be 1200 mm or less. Refer to the following figure and table for details.



(mm)

Size \ Example installation	I	II	III	IV
L1	Open	280	280	180
L2	100	75	Open	Open
L3	100	80	80	80
L4	250	Open	250	Open

NOTE

When more than one unit are installed side by side, provide a 250mm or wider interval between them as a service space.

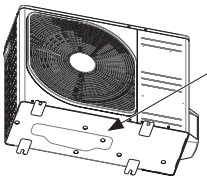
⚠ CAUTION

When more than one unit are installed in parallel directions, provide sufficient inlet space so that short-circuiting may not occur.

4. Drain piping work (If necessary)

Carry out drain piping work by using a drain elbow and a drain grommet supplied separately as accessories if condensed water needs to be drained out.
(1) Install drain elbow and drain grommet.
(2) Seal around the drain elbow and drain grommet with putty or adequate caulking material.

<SRC20/25/35/40/50/60ZSX-S>

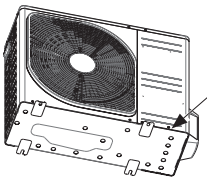


Do not put a grommet on this hole.
This is a supplementary drain hole to discharge drain water, when a large amount of it is gathered.

⚠ CAUTION

Do not use drain elbow and drain grommet if there is a possibility to have several consecutive days of sub zero temperature. (There is a risk of drain water freezing inside and blocking the drain.)

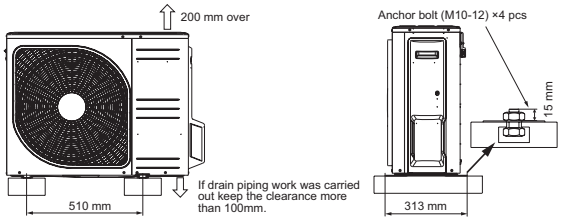
<SRC20/25/35ZSX-SA>



Do not block the drain holes when installing the outdoor unit.

5. Installation

- Install the unit on a flat level base.
- While installing the unit, keep space and fix the unit's legs with 4 anchor bolts as shown in the figure below. The protrusion of an anchor bolt from the foundation surface must be kept within 15mm.



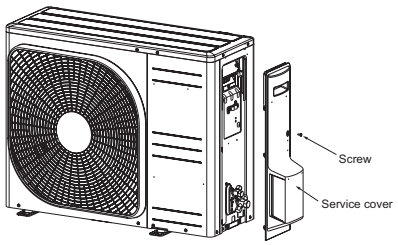
⚠ CAUTION

- Install the unit properly so that it does not fall over during earthquake, strong wind, etc.
- Make sure that unit is installed on a flat level base. Installing unit on uneven base may result in unit malfunction.

3. PREPARATION FOR WORK

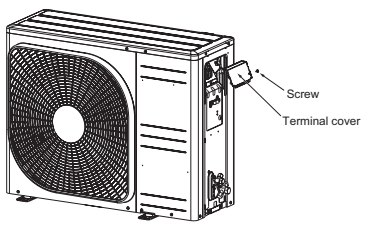
1. Removing service cover

Remove the screw. Slide service cover downwards and remove it.



2. Removing terminal cover

Remove the screw and take out terminal cover.

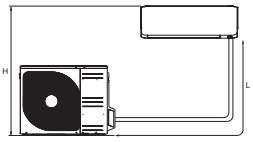


4. CONNECTING PIPING WORK

1. Restrictions on unit installation

Abide by the following restrictions on unit installation.
Improper installation can cause compressor failure or performance degradation.

	Dimensional restrictions	
	Model SRC20/25/35	Model SRC40/50/60
Connecting pipe length(L)	25m or less	30m or less
Elevation difference between indoor and outdoor units(H)*	15m or less	20m or less



* Outdoor unit installation position can be higher as well as lower than the indoor unit installation position.

2. Preparation of connecting pipe

2.1. Selecting connecting pipe

Select connecting pipe according to the following table.

	Model SRC20/25/35	Model SRC40/50/60
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).

NOTE

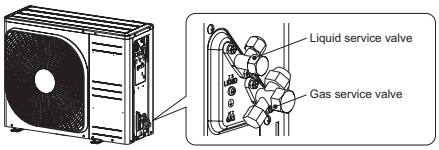
If it is required to reuse the existing connecting pipe system, refer to 5. UTILIZATION OF EXISTING PIPE.

2.2. 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.

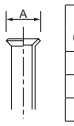
3. Piping work

Check that both liquid and gas service valves are fully closed.
Carry out the piping work with service valves fully closed.

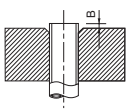


3.1. Flaring pipe

(1) Take out flare nuts from the service valves of outdoor 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

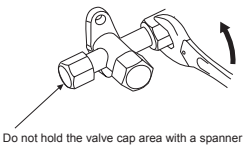


Copper pipe outer diameter	Rigid (clutch) type	
	R410A	Conventional
ø6.35	0–0.5	1.0–1.5
ø9.52		
ø12.7		

3.2. 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



Do not hold the valve cap area with a spanner

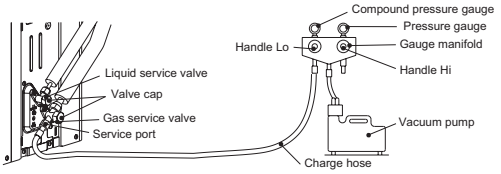
⚠ CAUTION

- 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.

4. Evacuation

(1) Connect vacuum pump to gauge manifold. Connect charge hose of gauge manifold to service port of outdoor unit.
(2) Run the vacuum pump for at least one hour after the vacuum gauge shows -0.1MPa (–76cm Hg).
(3) Confirm that the vacuum gauge indicator does not rise even if the system is left for 15 minutes or more.
Vacuum gauge indicator will rise if the system has moisture left inside or has a leakage point.
Check the system for the leakage point. If leakage point is found, repair it and return to (1) again.
(4) Close the Handle Lo and stop the vacuum pump.
Keep this state for a few minutes to make sure that the compound pressure gauge pointer does not swing back.
(5) Remove valve caps from liquid service valve and gas service valve.
(6) Turn the liquid service valve's rod 90 degree counterclockwise with a hexagonal wrench key to open valve.
Close it after 5 seconds, and check for gas leakage.
Using soapy water, check for gas leakage from indoor unit's flare and outdoor unit's flare and valve rods.
Wipe off all the water after completing the check.
(7) Disconnect charging hose from gas service valve's service port and fully open liquid and gas operation valves. (Do not attempt to turn valve rod beyond its stop.)
(8) Tighten service valve caps and service port cap to the specified torque shown in the table below.

Service valve size (mm)	Service valve cap tightening torque (N·m)	Service port cap tightening torque (N·m)
ø6.35 (1/4")	20–30	10–12
ø9.52 (3/8")		
ø12.7 (1/2")	25–35	



⚠ CAUTION

- To prevent the entering of different oil into the refrigeration system, do not use tools designed for any other refrigerant type (R22, R407C, etc.).
- To prevent vacuum pump oil from entering into the refrigerant system, use a counterflow prevention adapter.

5. Additional refrigerant charge

Additional refrigerant charge is required only when connecting pipe length exceeds 15 m.

5.1 Calculating additional refrigerant charge

Additional refrigerant charge can be calculated using the formula given below.
Additional refrigerant charge (g) = { Connecting pipe length (m) – Factory charged length 15 (m) } x 20 (g/m)

NOTE

- If additional refrigerant charge calculation result is negative, there is no need to remove the refrigerant.
- If refrigerant recharge is required for the unit with connecting pipe length 15m or shorter, charge the factory charged volume as shown in the table below.

	Model SRC 20/25/35	Model SRC40/50/60
Factory charged volume(kg)	1.45	1.50

5.2 Charging refrigerant

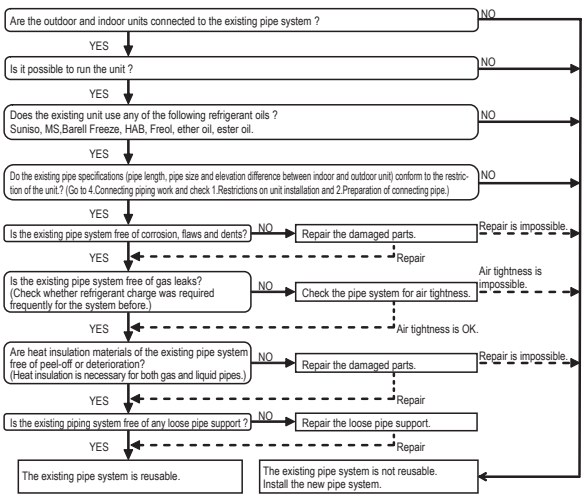
(1) Charge the R410A refrigerant in liquid phase from service port with both liquid and gas service valves shut. Since R410A refrigerant must be charged in the liquid phase, make sure that refrigerant is discharged from the cylinder in the liquid phase all the time.
(2) When it is difficult to charge a required refrigerant volume, fully open both liquid and gas service valves and charge refrigerant, while running the unit in the cooling mode. When refrigerant is charged with the unit being run, complete the charge operation within 30 minutes.
(3) Write the additional refrigerant charge calculated from the connecting pipe length on the label attached on the service cover.

⚠ CAUTION

Running the unit with an insufficient quantity of refrigerant for a long time can cause unit malfunction.

5. UTILIZATION OF EXISTING PIPE

(1) Check whether an existing pipe system is reusable or not by using the following flow chart.



NOTE

- Consult with our distributor in the area, if you need to recover refrigerant and charge it again.

(2) Clean the existing pipe system according to the procedure given below.
(a) Carry out forced cooling operation of existing unit for 30 minutes.
For 'Forced cooling operation' refer to the indoor unit installation manual.
(b) Stop the indoor fan and carry out forced cooling operation for 3 minutes (Liquid return).
(c) Close the liquid service valve of the outdoor unit and carry out pump down operation (Refer to 6. PUMP DOWN).
(d) Blow with nitrogen gas. If discolored refrigeration oil or any foreign matter is discharged by the blow, wash the pipe system or install a new pipe system.
(3) Remove the flare nuts from the existing pipe system. Go back to 4.Connecting Piping work and proceed to step 2.2 Cutting connecting pipe.

⚠ CAUTION

Do not use the old flare nuts (of existing unit). Make sure that the flare nuts supplied with the (new) outdoor unit are used.

* If the existing piping is specified as liquid pipe ø9.52 or gas pipe ø12.7, refer to the following. (SRC40,50 and 60 only)

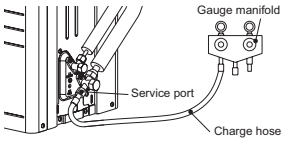
<Table of pipe size restrictions>

Additional charge volume per meter of pipe		0.06kg/m
Pipe size	Liquid pipe	ø9.52
	Gas pipe	ø12.7
Maximum one-way pipe length		10
Length covered without additional charge		5

Additional charge volume (kg) = {Main pipe length (m) - Length covered without additional charge shown in the table (m)} X Additional charge volume per meter of pipe shown in the table (kg/m)

6. PUMP DOWN

(1) Connect charge hose of gauge manifold to service port of outdoor unit.
(2) Close the liquid service valve with hexagonal wrench key.
(3) Fully open the gas service valve with hexagonal wrench key.
(4) Carry out forced cooling operation (For forced cooling operation procedure, refer to indoor unit installation manual).
(5) When the low pressure gauge becomes 0.01MPa, close the gas service valve and stop forced cooling operation.



7. ELECTRICAL WIRING WORK

⚠ WARNING

- Make sure that all the electrical work is carried out in accordance with the national or regional electrical standards.
- Make sure that the earth leakage breaker and circuit breaker of appropriate capacities are installed (Refer to the table given below).
- Do not turn on the power until the electrical work is completed.
- Do not use a condensive capacitor for power factor improvement under any circumstances. (It does not improve power factor. Moreover, it can cause an abnormal overheat accident).

Breaker specifications

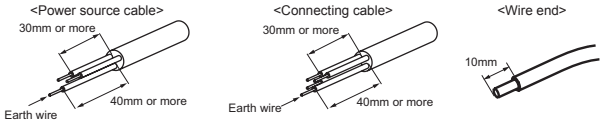
Model	Phase	Earth leakage breaker	Circuit breaker
SRC20/25/35	Single phase	Leakage current: 30mA, 0.1sec or less	Over current: 16A
SRC40/50/60			Over current: 20A

Main fuse specification

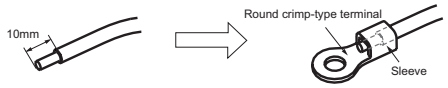
Model	Specification	Parts No.	Code on LABEL,WIRING
SRC20/25/35	250V 15A	SSA564A136	F4
SRC40/50/60	250V 20A	SSA564A136A	F4

1.Preparing cable

(1) Selecting cable
Select the power source cable and connecting cable in accordance with the specifications mentioned below.
(a) Power source cable
3 cores* 2.0mm^2 or more, conformed with 60245 IEC57
When selecting the power source cable length, make sure that voltage drop is less than 2%.
If the wire length gets longer, increase the wire diameter.
(b) Connecting cable
4 cores* 1.5mm^2, conformed with 60245 IEC57
* 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.



(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.



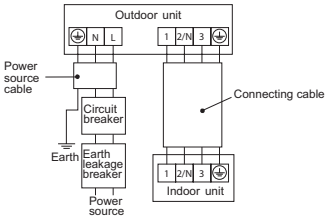
⚠ CAUTION

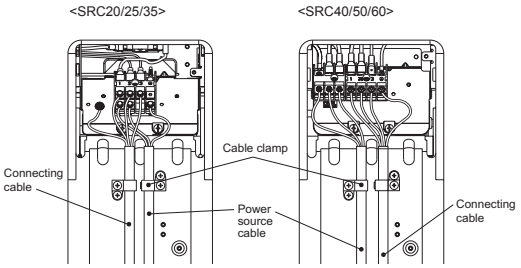
Power source cable and connecting cable must conform to the specifications mentioned in the manual.
Using cables with wrong specifications may result in unit malfunction.

2.Connecting cable

(1) Remove the service cover.
(2) Connect the cables according to the instructions and figures given below.
(a) Connect the earth wire of power source cable.
An earth wire must be connected before connecting the other wires of power source cable.
Keep the earth wire longer than the remaining two wires of power source cable.
(b) Connect the remaining two wires (N and L) of power source cable.
(c) Connect the wires of connecting cable. Make sure that for each wire, outdoor and indoor side terminal numbers match.
(3) Fasten the cables properly with cable clamps so that no external force may work on terminal connections.
Moreover, make sure that cables do 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.

<Circuit diagram>

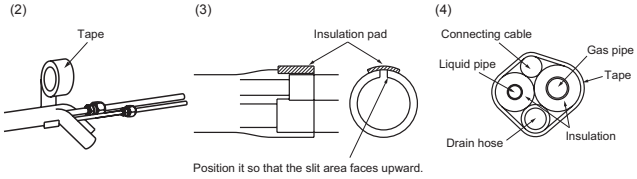




8. FINISHING WORK

1. 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

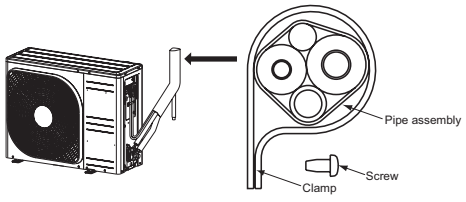
Locations where relative humidity exceeds 70%, both liquid and gas pipes need to be dressed with 20mm or thicker heat insulation materials.

⚠ 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.

2.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.

9. INSTALLATION TEST CHECK POINTS

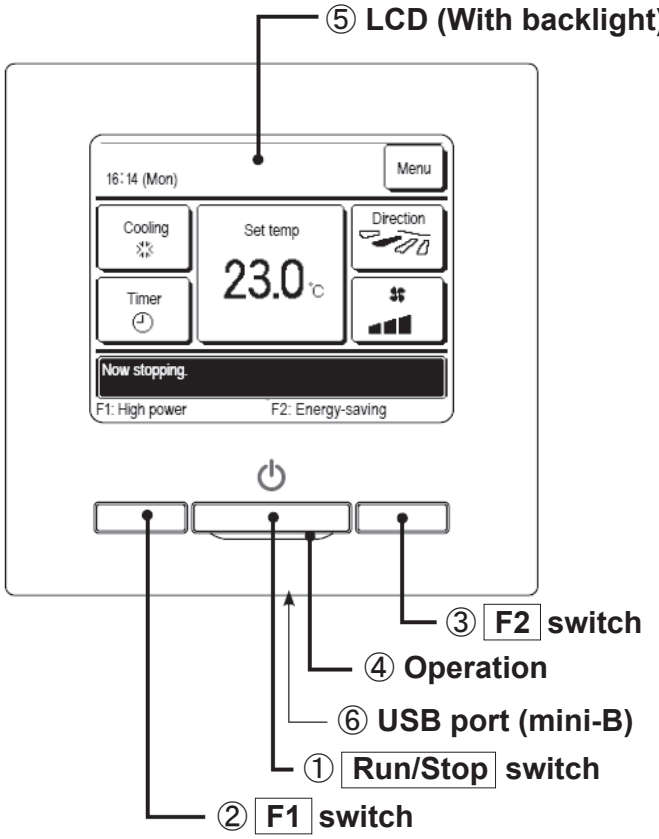
After finishing the installation work, check the following points again before turning on the power.
Conduct test run (Refer to indoor unit installation manual) and ensure that the unit operates properly.

Power source voltage complies with the rated voltage of air-conditioner.		No gas leaks from the joints of the service valves.	
Earth leakage breaker and circuit breaker are installed.		Indoor and outdoor side pipe joints have been insulated.	
Power cable and connecting cable are securely fixed to the terminal block.		Drain hose (if installed) is fixed properly.	
Both liquid and gas service valves are fully open.		Screw of the service cover is tightened properly.	

11. OUTLINE OF OPERATION CONTROL BY MICROCOMPUTER

11.1 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

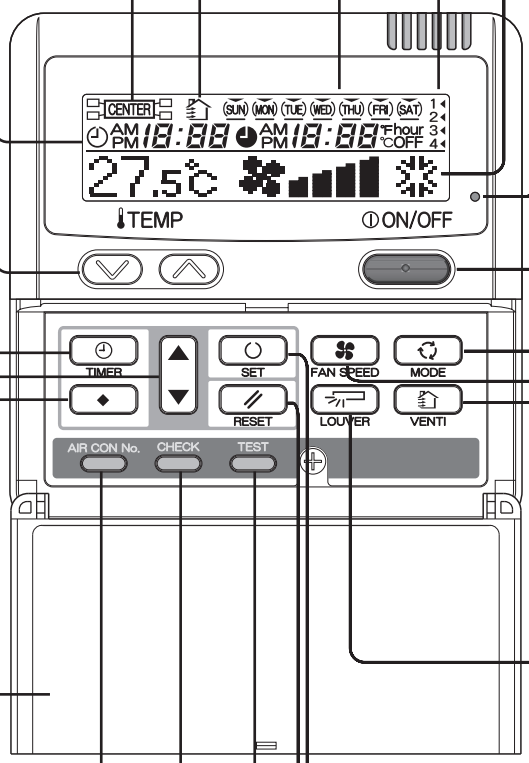
USB connector (mini-B) allows connecting to a personal computer.
For operating methods, refer to the instruction manual attached to the software for personal computer (eco-touch remote control utility software).

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 centralized remote 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, airflow 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)

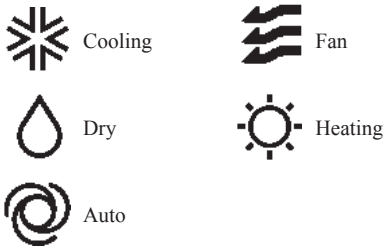
∗ All displays are described in the liguid crystal display for explanation.

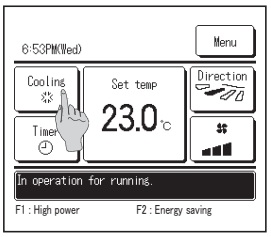
11.2 Operation control function by the wired remote control

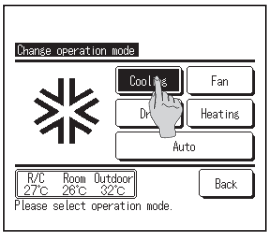
Model RC-EX3

(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.





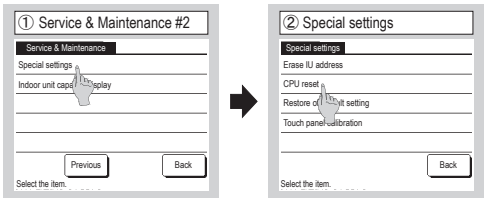


Notes(1) Operation modes which cannot be selected depending on combinations of indoor unit and outdoor unit are not displayed.
(2) When the Auto is selected,the cooling and heating switching operation is performed automatically according to indoor and outdoor temperatures.

(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.

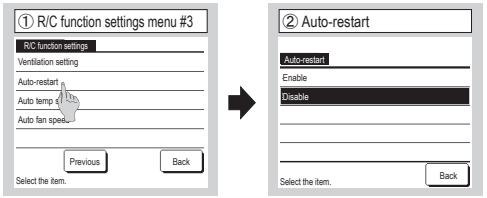
CPU reset

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.

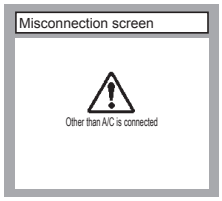
(a) Communication check between indoor unit and remote control

●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

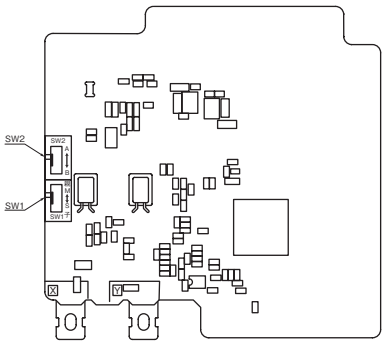
(e) Louver auto swing/stop
However, the stop position (4-position) is cancelled so that it returns to Position (1).

(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

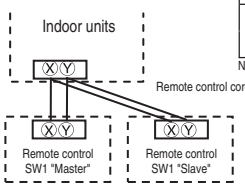
(h) Sleep timer and weekly timer settings (Other timer settings are not memorized.)

[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

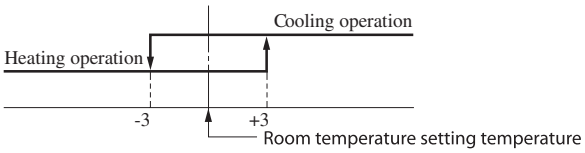
When using multiple remote controls, the following dispiays or settings cannot be done with the slave remote control. It is available only with the master remote control.

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

11.3 Operation control function by the indoor control FDTC, FDE, FDUM 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).

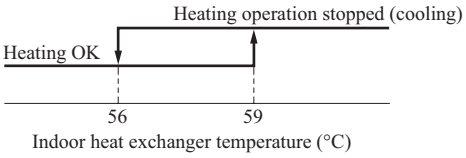


Room temperature (detec ted with Thi-A) [deg]

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.



Indoor heat exchanger temperature (°C)

(b) The following automatic controls are performed other than (a) above.

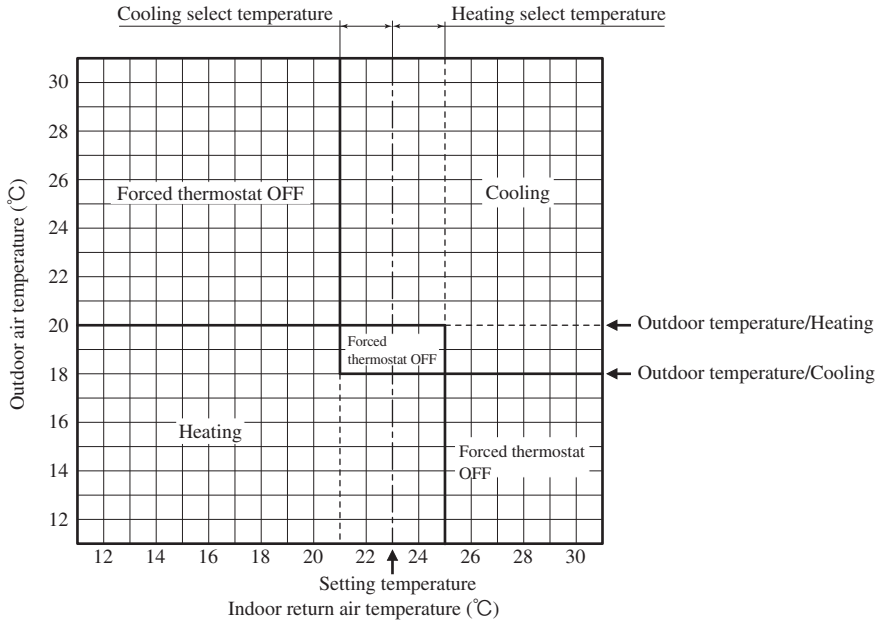
(i) Cooling or heating operation mode is judged according to the conditions of the "Judgment based on Setting temperature + Cooling select temperature and Indoor return air temperature" and the "Judgment based on Outdoor temperature".

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



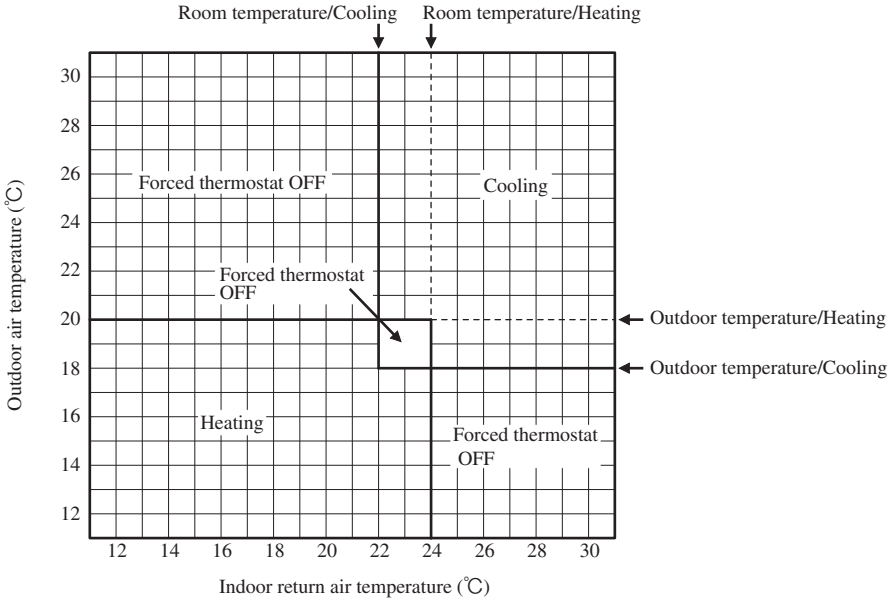
(ii) Regardless of the setting temperature, the cooling or heating operation mode is judged according to the "Judgment based on Room temperature/Cooling or Heating and Outdoor temperature/Cooling or Heating".

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)

Note (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

Return air temperature thermistor [Thi-A (by the remote control when the remote control thermistor is enabled)] controls the indoor temperature environment simultaneously.

(a) 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.

(b) 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.

(c) 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	×	×	×	

Note (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 (FDTC, FDE 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.

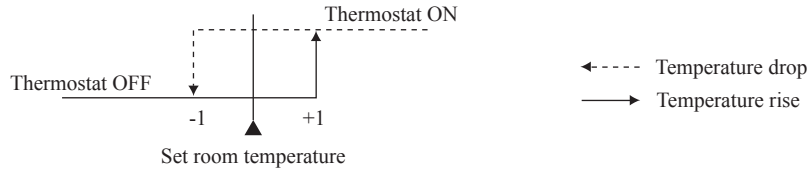
Note (1) When the indoor function of wired remote control "POSITION" has been switched, switch also the remote control function "POSITION" in the same way.

(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.

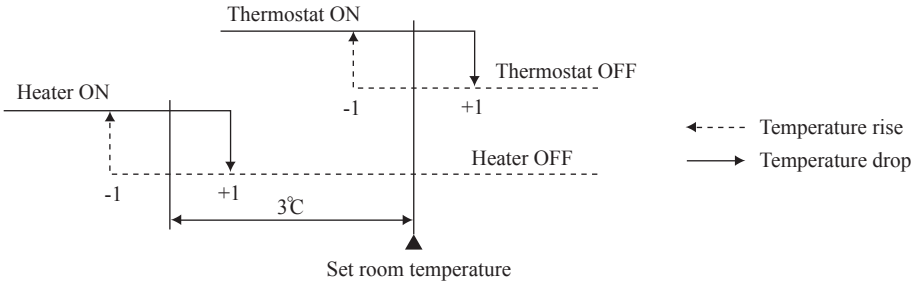


(iii) Thermostat is turned ON when the room temperature is in the range of -1 < Set temperature < +1 at the start of cooling operation (including from heating to cooling).

(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.

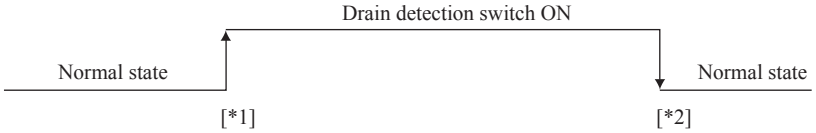
(iii) ❄ AND ☀ AND ≡ 〔Operate in heating & fan〕: Drain pump is run during cooling, dry, heating and fan.

(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				

Note (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

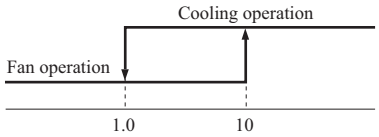
There is no communication with the outdoor unit but it allows performing operation in respective modes by operating the remote control.

(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.

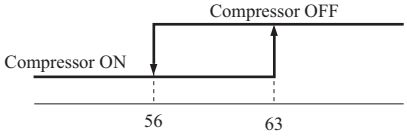
• Compressor frequency drop start temperature

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).

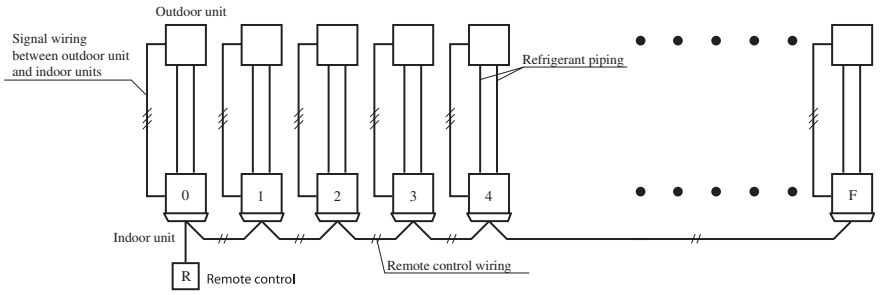
(18) Plural unit control – Control of 16 units group by one remote control

(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.

Note (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 airflow 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)

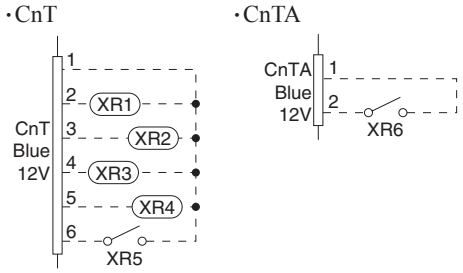
(20) Abnormal temperature thermistor (return air/indoor heat exchanger) broken wire/short-circuit detection

(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).

(20) 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	CnT-6 (XR5)	Remote operation input	External input 1
(Volt-free contact)"	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	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"

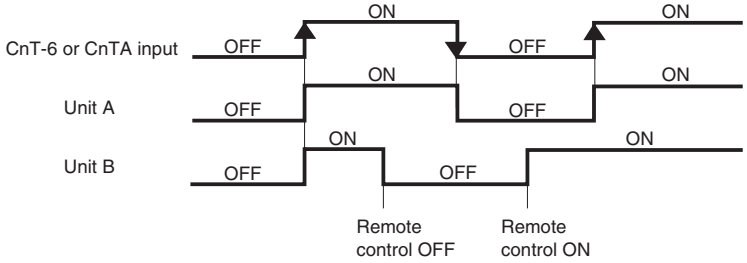
(b) Input for external control

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.

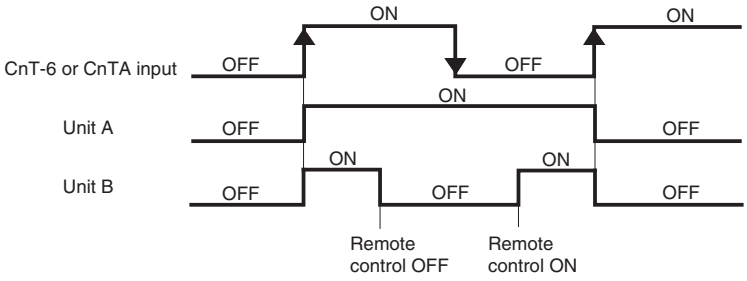


Note: The latest operation has priority

It is available to operate/stop by remote control or center control

(ii) In case of "Pulse input" setting (Local setting)

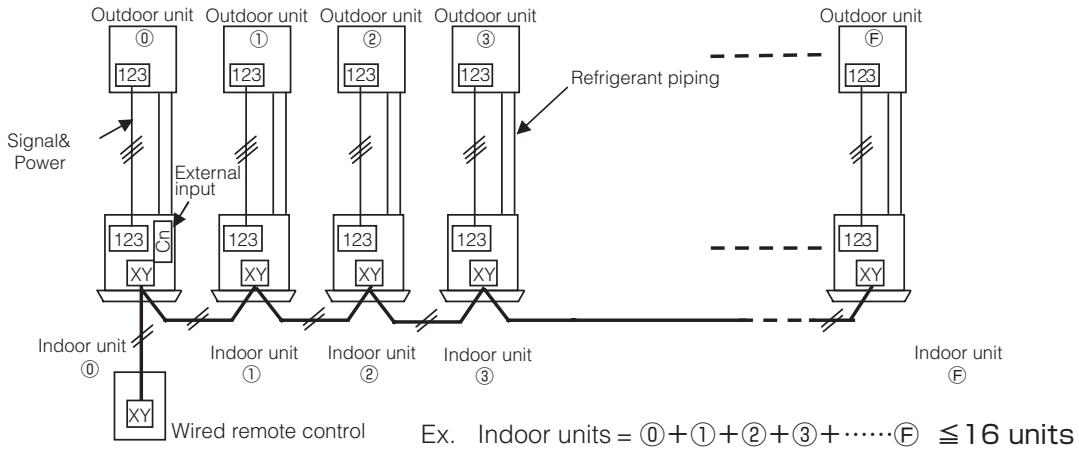
It is effective only when the input signal to CnT-6 or CnTA is changed OFF→ON, and at that time unit operation [ON/OFF] is inverted.



(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.

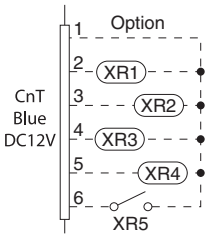
(3) External input to CnT-6 or CnTA on the other indoor unit than the unit ① is not effective.

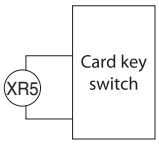
(22) Operation permission/prohibition

(In case of adopting card key switches or commercially available timers)

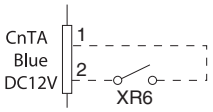
When the indoor function setting of wired remote control for "Operation permission/prohibition" is changed from "Invalid (Factory default)" to " Valid", following control becomes effective.

・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.

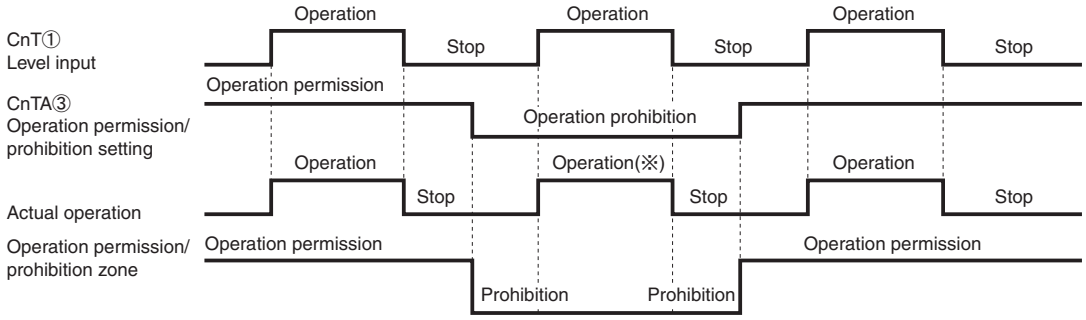
*(2) In case that "Operation permission/prohibition mode" setting is "Valid" and "External input" setting is "Pulse input (Local setting)";

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.

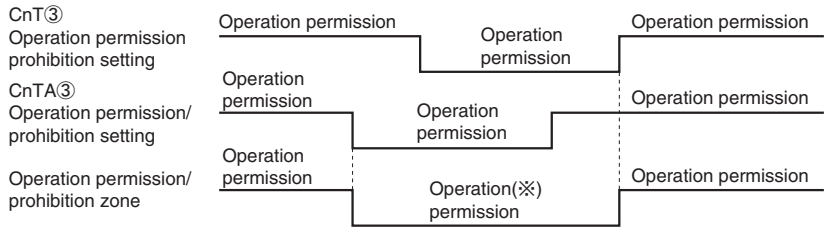
(3) This function is invalid only at "Center mode" setting done by central control.

(a) In case of CnT ① Operation stop level > CnTA ③ Operation permission/prohibition level



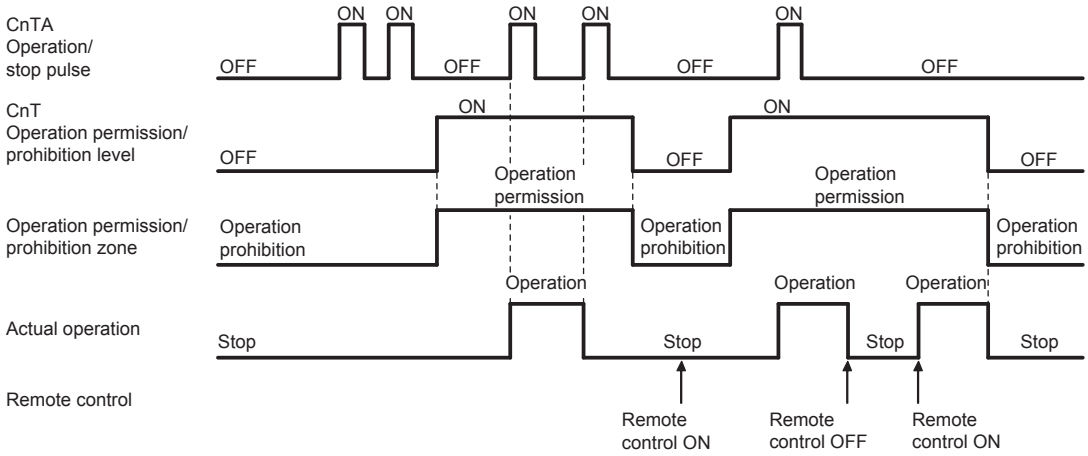
(※) CnT level input supersedes CnTA operation prohibition.

(b) In case of CnT ③ operation permission/prohibition level + CnTA ③ operation permission/prohibition level



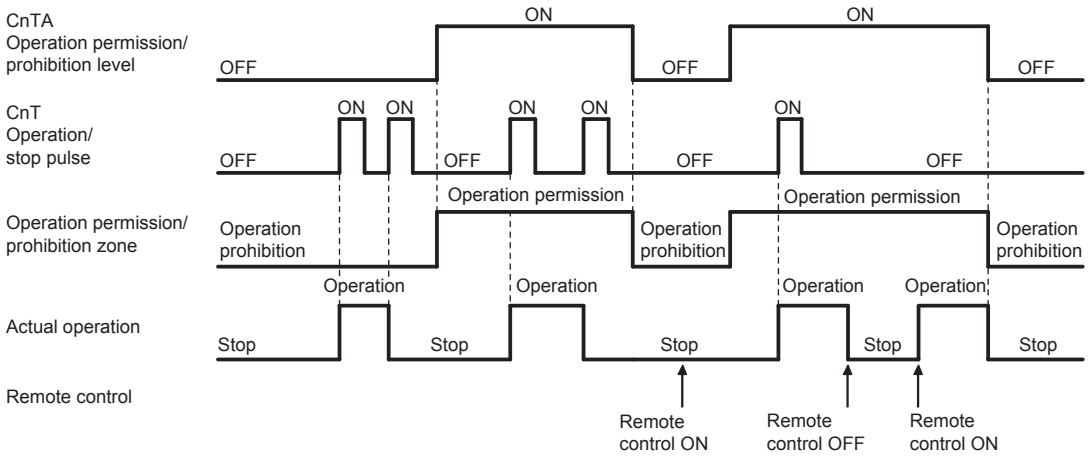
(※) Operation prohibition zone is determined by the OR judgment between CnT operation prohibition zone and CnTA operation prohibition zone.

(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

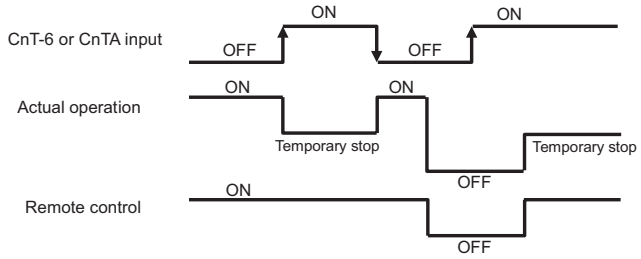


(23) Temporary stop input

In case of temporary stop, operation lamp of remote control lights, but indoor/outdoor unit stop the operation.

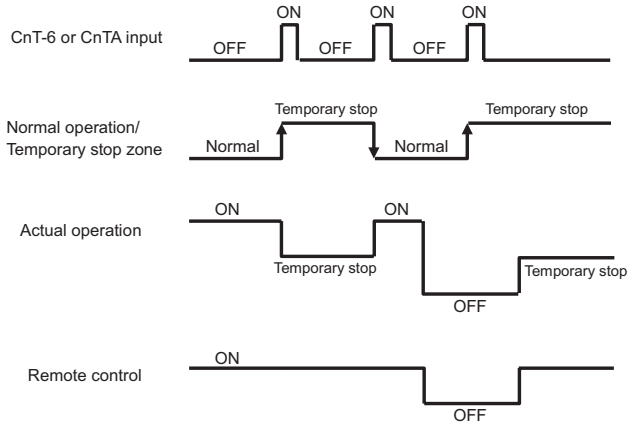
(a) In case of "level input" setting (Factory default)

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

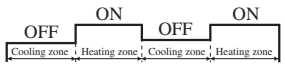
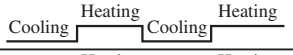
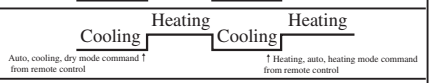
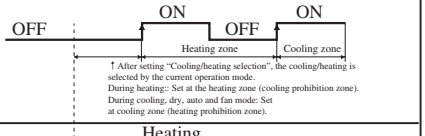
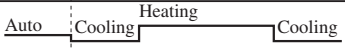
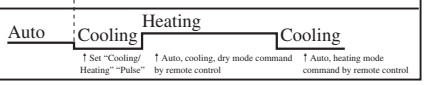
(a) When "External input 1 setting: Cooling/heating" is set by the indoor unit function from remote control, the cooling or heating is selected with CnT-6 or CnTA.

(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)	

Notes (1) Regarding the priority order for combinations of CnT and CnTA, refer to Page 98.

(25) Fan control at heating startup

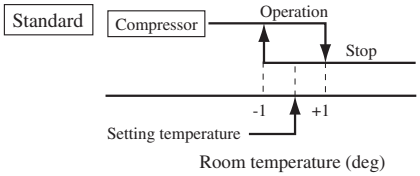
(a) Starting conditions
At the start of heating operation, if the difference of setting temperature and return air temperature is 5°C or higher after the end of hot start control, this control is performed.

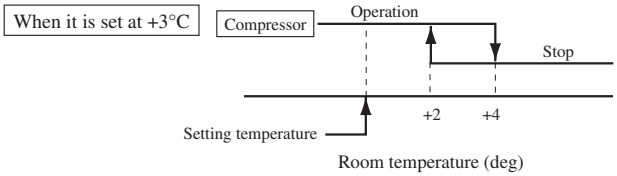
(b) Contents of control
(i) Sampling is made at each minute and, when the indoor unit heat exchanger temperature (detected with Thi-R) is 37°C or higher, present number of revolutions of indoor unit fan speed is increased by 10 min^{-1}.
(ii) If the indoor unit heat exchanger temperature drops below 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 leval, 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.

11.4 Operation control function by the indoor control Models SRC40-60

(1) Defrost operation

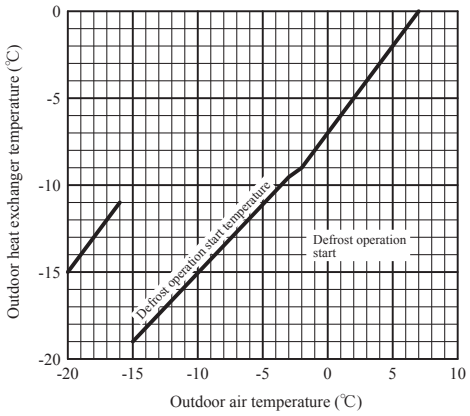
(a) Starting conditions (Defrost operation can be started only when all of the following conditions are satisfied.)

1) After start heating operation
When it elapsed 35 minutes. (Total compressor operation time)

2) After finish of defrost operation
When it elapsed 35 minutes. (Total compressor operation time)

3) Outdoor heat exchanger sensor (TH1) temperature
When the temperature has been −5ºC or less for 3 minutes continuously.

4) The difference between the outdoor air sensor temperature and the outdoor heat exchanger sensor temperature is as following.

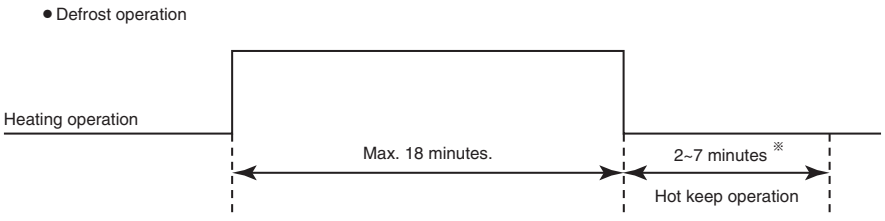


5) During continuous compressor operation
In case satisfied all of following conditions.
- Connect compressor speed 0 rps 10 times or more.
- Satisfy 1), 2) and 3) conditions above.
- Outdoor air temperature is 3°C or less.

(b) Ending conditions (Operation returns to the heating cycle when either one of the following is satisfied.)

1) Outdoor heat exchanger sensor (TH1) temperature: 10ºC or higher

2) Continued operation time of defrost operation → For more than 18 minutes.



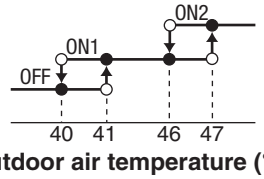
※Depends on an operation condition, the time can be longer than 7 minutes.

(2) Cooling overload protective control

(a) Operating conditions

When the outdoor air temperature (TH2) has become continuously for 30 seconds at 41°C or more, or 47ºC or more with the compressor running, the lower limit speed of compressor is brought up.

Outdoor air temperature	41°C or more	47°C or more
Lower limit speed	30 rps	40 rps



Outdoor air temperature (°C)

(b) Detail of operation

1) The outdoor fan is stepped up by 3 speed step. [Upper limit 8 th speed.]
2) The lower limit of compressor speed is set to 30 or 40 rps.
   However, when the thermo OFF, the speed is reduced to 0 rps.

(c) Reset conditions

When either of the following condition is satisfied.

1) The outdoor air temperature is lower than 40°C.
2) The compressor speed is 0 rps.

(3) Cooling high pressure control

(a) Purpose

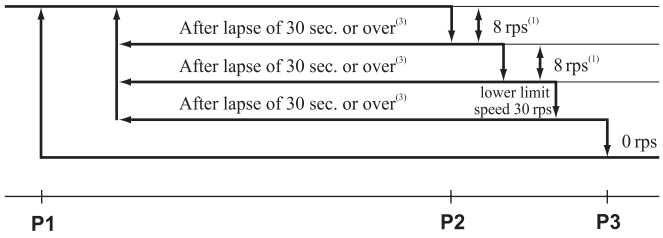
Prevents anomalous high pressure operation during cooling.

(b) Detector

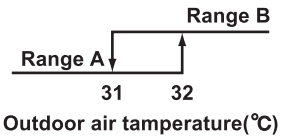
Outdoor heat exchanger sensor (TH1).

(c) Detail of operation

(Example) Compressor speed



	TH1(℃)		
	P1	P2	P3
Range A	51	53	56
Range B	53	58	63



Notes (1) When the outdoor heat exchanger temperature is in the range of P2-P3℃, the speed is reduced by 8 rps at each 20 seconds.
(2) When the temperature is P3℃ or higher, the compressor is stopped.
(3) When the outdoor heat exchanger temperature is in the range of P1-P2℃, if the compressor speed is been maintained and the operation has continued for more than 20 seconds at the same speed, it returns to the normal cooling operation.

(4) Cooling low outdoor air temperature protective control

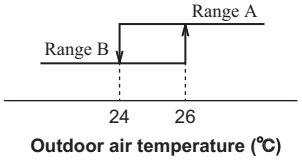
(a) Operating conditions

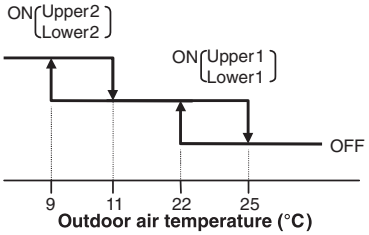
When the outdoor air temperature (TH2) is 22°C or lower continues for 20 seconds while the compressor speed is other than 0 rps.

(b) Detail of operation

1) It controls the upper and lower limit values for the compressor speed according to the following table.
2) It checks the outdoor temperature (TH2) once every hour to judge the operation range.

Compressor speed: Upper/lower limit (rps)				
Lower 1		Upper 1	Lower 2	Upper 2
Range B	Range A			
35	Release	75	45	60





(C) Reset conditions

When either of the following condition is satisfied.

1) The outdoor air temperature (TH2) is D°C or higher.
2) The compressor speed is 0 rps.

(5) Heating high pressure control

(a) Starting condition

When the indoor heart exchanger temperature (Thi-R) has risen to a specified temperature while the compressor is turned on.

(b) Compressor speed is controlled according to the zones of indoor heat exchanger temperature as shown by the following table.

	Thi-R<P1	P1≦Thi-R<P2	P2≦Thi-R<P3	P3≦Thi-R
Protection control speed (NP)	Normal	Retention	NP-4rps	NP-8rps
Sampling time (s)	Normal	10	10	10

Unit:°C

NP \ Thi-R	P1	P2	P3
NP<50	45	52	54.5
50≦NP<115	45	52	57
115≦NP<120	45-43	52-50	57-55
120≦NP	43	50	55

(6) Heating overload protective control

(a) Operating condition

When the outdoor air temperature (TH2) is 13ºC or higher continues for 30 seconds while the compressor speed is other than 0 rps.

(b) Detail of operation

(i) Taking the upper limit of compressor speed range at 90(75) rps, if the output speed obtained with the fuzzy calculation exceeds the upper limit, the upper limit value is maintained.

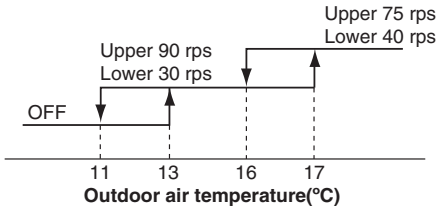
(ii) The lower limit of compressor speed is set to 30(40) rps and even if the calculated result lower than that after fuzzy calulation, the speed is kept to 30(40) rps. However, when the thermostat OFF, the speed is reduced to 0 rps.

(iii) Inching prevention control is activated and inching prevention control is carried out with the minimum speed set at 40 rps.

(iv) The outdoor fan speed is stepped down by 3 speed step.(Low limit 2nd speed)

(c) Reset condition

The outdoor air temperature (TH2) is lower than 11ºC.



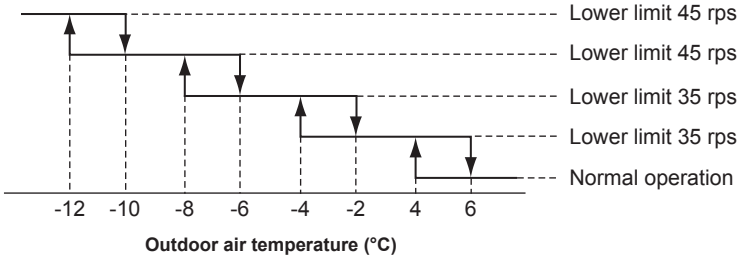
(7) Heating low outdoor temperature protective control

(a) Operating conditions

When the outdoor air temperature (TH2) is lower than 4℃ or higher continues for 30 seconds while the compressor speed is other than 0 rps.

(b) Detail of operation

The lower limit compressor speed is change as shown in the figure below.



(c) Reset conditions

When either of the following condition is satisfied.

1) The outdooe air temperature (TH2) becomes 6℃.
2) The compressor speed is 0 rps.

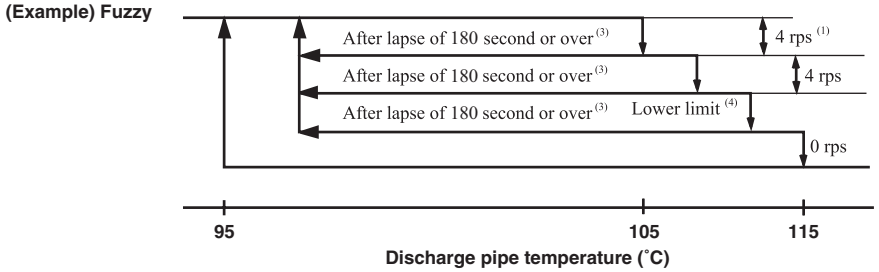
(8) Compressor overheat protection

(a) Purpose

It is designed to prevent deterioration of oil, burnout of motor coil and other trouble resulting from the compressor overheat.

(b) Detail of operation

1) Speeds are controlled with temperature detected by the sensor (TH3) mounted on the discharge pipe.



Notes (1) When the discharge pipe temperature is in the range of 105-115ºC, the speed is reduced by 4 rps.
(2) When the discharge pipe temperature is raised and continues operation for 20 seconds without changing, then the speed is reduced again by 4 rps.
(3) If the discharge pipe temperature is in the range of 95-105ºC even when the compressor speed is maintained for 180 seconds when the temperature is in the range of 95-105ºC, the speed is raised by 1 rps and kept at that speed for 180 seconds. This process is repeated until the com-mand speed is reached.
(4) Lower limit speed

	Cooling	Heating
Lower limit speed	25 rps	32 rps

2) If the temperature of 115ºC is detected by the sensor on the discharge pipe, then the compressor will stop immediately. When the discharge pipe temperature drops and 3 minutes has elapsed the unit starts again within 1 hour but there is no start at the third time.

(9) Current safe

(a) Purpose

Current is controlled not to exceed the upper limit of the setting operation current.

(b) Detail of operation

Input current to the converter is monitored with the current sensor fixed on the printed circuit board of the outdoor unit and, if the operation current value reaches the limiting current value, the compressor speed is reduced.

If the mechanism is actuated when the compressor speed is less than 30 rps, the compressor is stopped immediately.

Operation starts again after 3 minutes.

(10) Current cut

(a) Purpose

Inverter is protected from overcurrent.

(b) Detail of operation

Output current from the inverter is monitored with a shunt resistor and, if the current exceeds the setting value, the compressor is stopped immediately. Operation starts again after 3 minutes.

(11) Outdoor unit failure

This is a function for determining when there is trouble with the outdoor unit during air-conditioning.

The compressor is stopped if any one of the following in item (i), (ii) is satisfied. Once the unit is stopped by this function, it is not restarted.

(i) When the input current is measured at 1 A or less for 3 continuous minutes or more.

(ii) If the outdoor unit sends a 0 rps signal to the indoor unit 3 times or more within 20 minutes of the power being turned on.

(12) Serial signal transmission error protection

(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.

(13) Rotor lock

If the motor for the compressor does not turn after it has been started, it is determined that a compressor lock has occurred and the compressor is stopped.

(14) Outdoor fan motor protection

If the outdoor fan motor has operated at 75 min^{-1} or under for more than 30 seconds, the compressor and fan motor are stopped.

(15) Outdoor fan control at low outdoor temperature

(a) Cooling

1) Operating conditions

When the outdoor air temperature (TH2) is 22ºC or lower continues for 30 seconds while the compressor speed is other than 0 rps.

2) Detail of operation

After the outdoor fan operates at A speed for 60 seconds; the corresponding outdoor heat exchanger temperature shall implement the following controls.

● Value of A

	Outdoor fan
Outdoor air temperature > 10˚C	2nd speed
Outdoor air temperature ≦ 10˚C	1st speed

a) Outdoor heat exchanger temperature (TH1) ≦ 21ºC
After the outdoor fan speed drops (down) to 1 speed for 60 seconds; if the outdoor heat exchanger temperature is lower than 21ºC, gradually reduce the outdoor fan speed by 1 speed. (Lower limit 1st speed)

b) 21ºC < Outdoor heat exchanger temperature (TH1) ≦ 38ºC
After the outdoor fan speed maintains at A speed for 20 seconds; if the outdoor heat exchanger temperature is 21°C -38°C, maintain outdoor fan speed.

c) Outdoor heat exchanger tempeature (TH1) > 38ºC
After the outdoor fan speed rises (up) to 1 speed for 60 seconds; if the outdoor heat exchanger temperature is higher than 38ºC, gradually increase outdoor fan speed by 1 speed. (Upper limit 3rd speed)

3) Reset conditions

When either of the following conditions is satisfied.

a) The outdoor air temperature (TH2) is 25ºC or higher.

b) The compressor speed is 0 rps.

(b) Heating

1) Operating conditions

When the outdoor air temperature (TH2) is 4ºC or lower continues for 30 seconds while the compressor speed is other than 0 rps.

2) Detail of operation

The outdoor fan is stepped up by 2 speed step at each 20 seconds. (Upper limit 8th speed)

3) Reset conditions

When either of the following conditions is satisfied.

a) The outdoor air temperature (TH2) is 6ºC or higher.

b) The compressor speed is 0 rps.

(16) Refrigeration cycle system protection

(a) Starting conditions

1) When A minutes have elapsed after the compressor ON or the completion of the defrost operation

2) Other than the defrost operation

3) When, after satisfying the conditions of 1) and 2) above, the compressor speed, indoor air temperature (Thi-A) and indoor heat exchanger temperature (Thi-R) have satisfied the conditions in the following table for 5 minutes:

Operation mode	A	Compressor speed (N)	Room temperature (Thi-A)	Room temperature (Thi-A)/ Indoor heat exchanger temperature (Thi-R)
Cooling	5	40≦N	10≦Thi-A≦40	Thi-A−4<Thi-R
Heating(1)	9	40≦N	0≦Thi-A≦40	Thi-R<Thi-A+4

Note (1) Except that the fan speed is Hi in heating operation and silent mode control.

(b) Contents of control

1) When the conditions of (i) above are satisfied, the compressor stops.

2) Error stop occurs when the compressor has stopped 3 times within 60 minutes.

(c) Reset condition

When the compressor has been turned OFF.

12. MAINTENANCE DATA

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).

(i) Indoor unit

FDTC, FDE, FDUM 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 supply	• Power OFF, broken wire/blown fuse, broken transformer wire	Repair	134
		* 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	135
						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	136 − 140
						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	142
						Remote control indoor control PCB	*• Defective remote control or indoor control PCB (defective communication circuit)?	Replacement of remote control or PCB	
E5		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	143
		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 supply (defective communication circuit)?	Replacement of PCB	
		2-time flash	Keeps flashing	Stays OFF	Stays OFF	Outdoor control PCB	• **Defective outdoor control PCB on the way of power source**	Replacement	
						Fuse	• **Blown fuse**		
E6		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	144
						Indoor control PCB	*• **Defective indoor control PCB (Defective temperature thermistor input circuit)?**	Replacement of PCB	
E7		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	145
						Indoor control PCB	*• **Defective indoor control PCB (Defective temperature thermistor input circuit)?**	Replacement of PCB	
E8		1-time flash	Keeps flashing	Stays OFF	Keeps flashing	Installation or operating condition	• **Heating over-load** (Anomalously high indoor heat exchanger temperature)	Repair	146
						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	
E9		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	147
						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	148
E 11		Keeps flashing	Keeps flashing	Stays OFF	Keeps flashing	Address setting error	• **Address setting error of indoor units**	Repair	149
E 16		1(2)-time flash	Keeps flashing	Stays OFF	Keeps flashing	Fan motor	• **Defective fan motor**	Replacement, repair	150
						Indoor power PCB	• **Defective indoor power PCB**	Replacement	
E 19		1-time flash	Keeps flashing	Stays OFF	Keeps flashing	Indoor control PCB	• **Improper operation mode setting**	Repair	151

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	Keeps flashing	1(2)-time flash	Keeps flashing	Stays OFF	Keeps flashing	Fan motor	• Indoor fan motor rotation speed anomaly	Replacement, repair	152
						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	153

Note (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.

(ii) Outdoor unit

SRC40-60

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	Red LED				
E35	Keeps flashing	Stays OFF	Keeps flashing	2-time flash	Installation, operation status	• Higher outdoor heat exchanger temperature	Repair	154
					Outdoor heat exchanger temperature sensor	• Defective outdoor heat exchanger temperature sensor	Replacement, repair of temperature sensor	
					Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature sensor input circuit)?	Replacement of PCB	
E36		Stays OFF	Keeps flashing	5-time flash	Installation, operation status	• Higher discharge temperature	Repair	155
					Discharge pipe temperature sensor	• Defective discharge pipe temperature sensor	Replacement, repair of temperature sensor	
					Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature sensor input circuit)?	Replacement of PCB	
E37		Stays OFF	Keeps flashing	8-time flash	Outdoor heat exchanger temperature sensor	• Defective outdoor heat exchanger temperature sensor, broken wire or poor connector connection	Replacement, repair of temperature sensor	156
					Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature sensor input circuit)?	Replacement of PCB	
E38		Stays OFF	Keeps flashing	8-time flash	Outdoor air temperature sensor	• Defective outdoor air temperature sensor, broken wire or poor connector connection	Replacement, repair of temperature sensor	157
					Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature sensor input circuit)?	Replacement of PCB	
E39		Stays OFF	Keeps flashing	8-time flash	Discharge pipe temperature sensor	• Defective discharge pipe temperature sensor, broken wire or poor connector connection	Replacement, repair of temperature sensor	158
					Outdoor control PCB	*• Defective outdoor control PCB (Defective temperature sensor input circuit)?	Replacement of PCB	
E40		Stays OFF	Keeps flashing	4-time flash	Installation, operation status	• Service valve (gas side) closing operation	Replacement	159
E42		Stays OFF	Keeps flashing	1-time flash	Outdoor control PCB, compressor	• Current cut (Anomalous compressor over-current)	Replacement of PCB	160•161
					Installation, operation status	• Service valve closing operation	Repair	
E47		Stays OFF	Keeps flashing	2-time flash	Outdoor control PCB	• Defective active filter	Repair PCB replacement	162
E48		Stays OFF	Keeps flashing	ON	Fan motor	• Defective fan motor	Replacement	163
					Outdoor control PCB	• Defective outdoor control PCB		
E51		Stays OFF	Keeps flashing	1-time flash	Power transistor error (outdoor control PCB)	• Power transistor error	Replacement of PCB	164
E57		Stays OFF	Keeps flashing	2-time flash	Operation status	• Shortage in refrigerant quantity	Repair	165
					Installation status	• Service valve closing operation	Service valve opening check	
E58		Stays OFF	Keeps flashing	3-time flash	• Overload operation • Overcharge • Compressor locking	• Current safe stop	Replacement	166
E59		Stays OFF	Keeps flashing	2-time flash	Compressor, outdoor control PCB	• Anomalous compressor startup	Replacement	167
E60		Stays OFF	Keeps flashing	7-time flash	Compressor	• Anomalous compressor rotor lock	Replacement	168

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

FDTC, FDE, FDUM 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

(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>E32>·····E60
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°C or lower is detected for 5 seconds continuously within 60 minutes after initial detection of this anomalous temperature.
	Indoor heat exchanger temperature thermistor anomaly	E6	-50°C or lower is detected for 5 seconds continuously within 60 minutes after initial detection of this anomalous temperature. Or 70°C or higher is detected for 5 seconds continuously.
Outdoor	Outdoor air temperature thermistor anomaly	E38	-55°C or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. Or -55°C or lower is detected for 5 seconds continuously within 20 seconds after compressor ON.
	Outdoor heat exchanger temperature thermistor anomaly	E37	-55°C or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. Or -55°C or lower is detected for 5 seconds continuously within 20 seconds after compressor ON.
	Discharge pipe temperature thermistor anomaly	E39	-25°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.
	Low pressure sensor anomaly	E54	0V or lower or 4.0V or higher is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous pressure.

■ **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) FDTC, FDE, FDUM 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, 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.

PSB012D990 B
PSB012D990B C

1) Model FDE, FDUM series

a) Control PCB

Replace and set up the PCB according to this instruction.

① Set to an appropriate address and function using switch on PCB.

Select the same setting with the removed PCB.

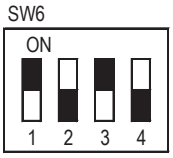
item	switch	Content of control	
Address	SW2	Plural indoor units control by 1 remote control	
Test run	SW7-1	—	Normal
		○	Operation check/drain motor test run

○:ON —:OFF

② 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
40V	○	○	—	—
50V	○	—	○	—
60V	○	○	○	—



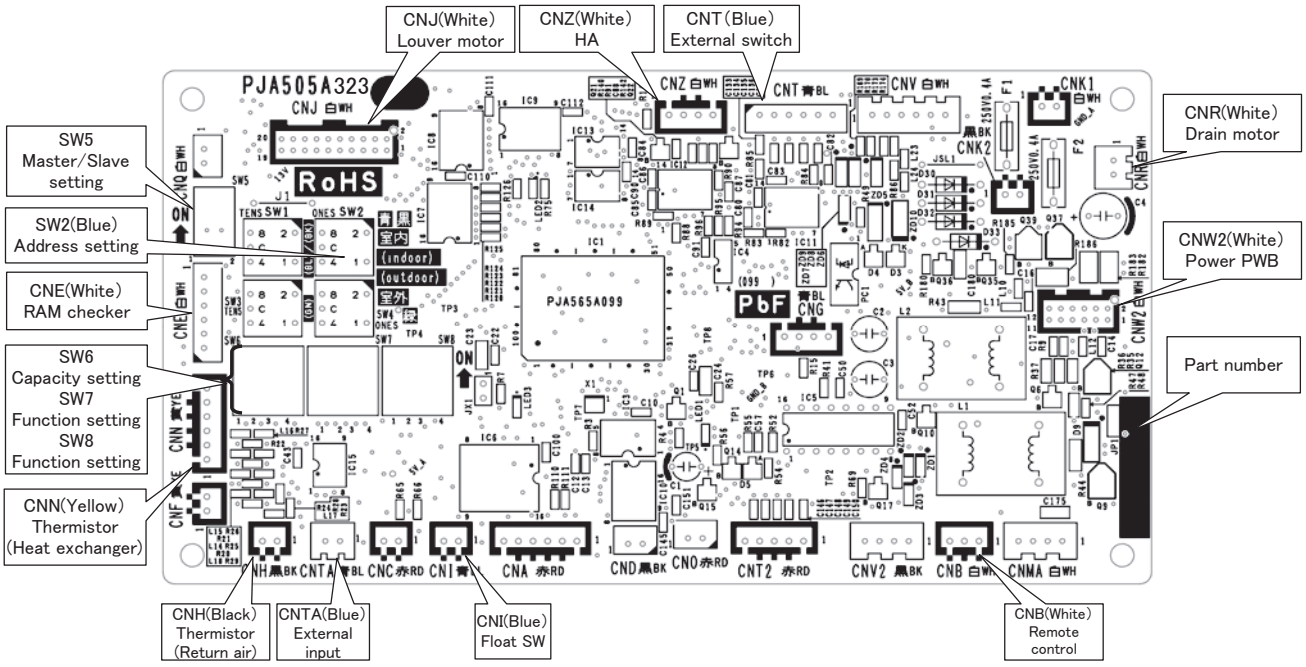
Example setting fro 50V

③ 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.

④ 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.

① Replace the PCB

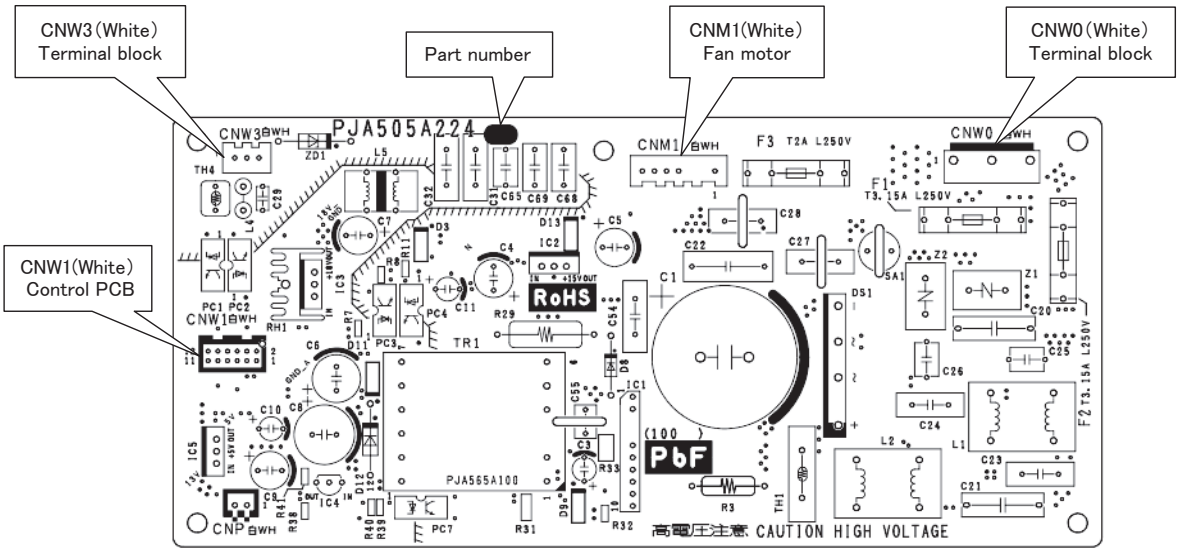
1. Unscrew terminal of the wiring(yellow/green) connected to Terminal block (CNWO) from the box.
2. Replace the PCB only after all the wirings connected to the connector are removed.
3. Fix the board such that it will not pinch any of the wires.
4. Reconnect the wirings to the PCB. Wiring connector color should match with the color of connector of the PCB.
5. Screw back the terminal of wiring, that was removed in 1.

② Power PCB

Parts mounting are different by the kind of PCB.

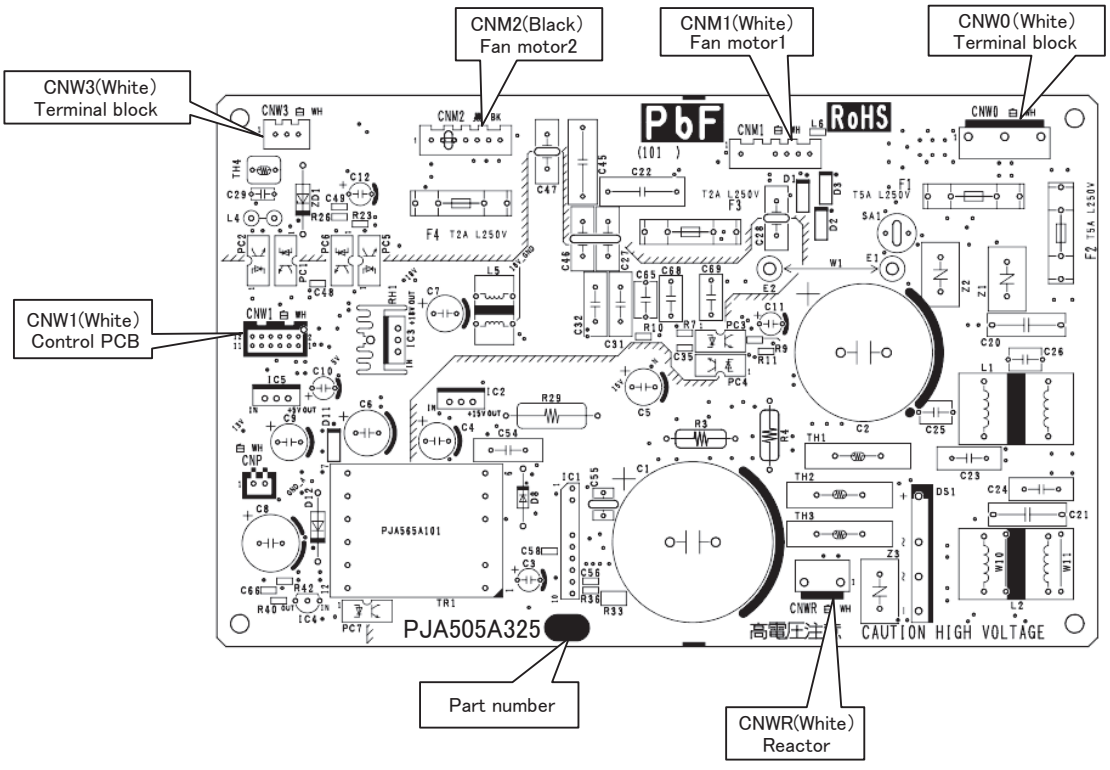
• Model FDE40, 50, 60VG
FDUM40, 50VF

PSB012D992



• Model FDUM60VF

PSB012D993



PSB012D976C

2) Model FDTC series

a) Control PCB

Replace and set up the PCB according to this instruction.

① Set to an appropriate address and function using switch on PCB.

Select the same setting with the removed PCB.

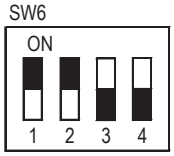
item	switch	Content of control	
Address	SW2	Plural indoor units control by 1 remote control	
Test run	SW7-1	—	Normal
		○	Operation check/drain motor test run

○:ON —:OFF

② 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
40VF	○	○	—	—
50VF	○	—	○	—
60VF	○	○	○	—



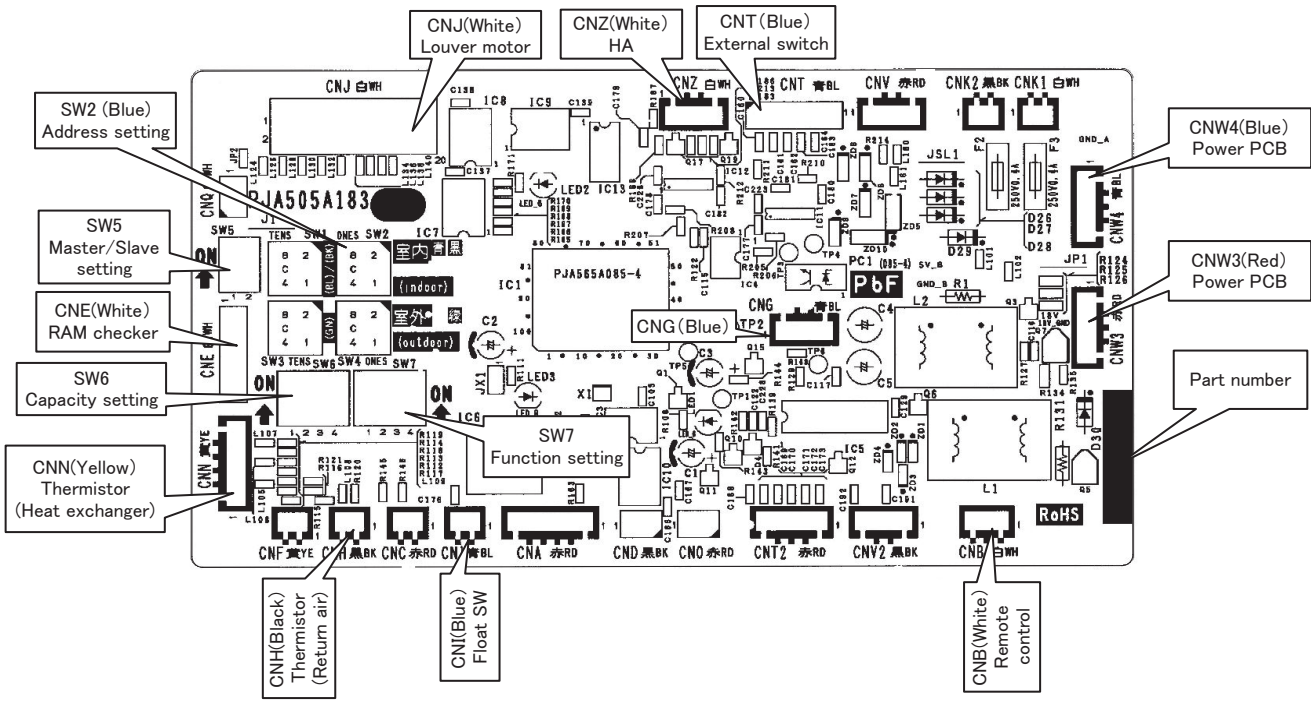
Example setting fro 40VF

③ 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.

④ Control PCB

Parts mounting are different by the kind of PCB.



b) Power PCB

PSB012D953A

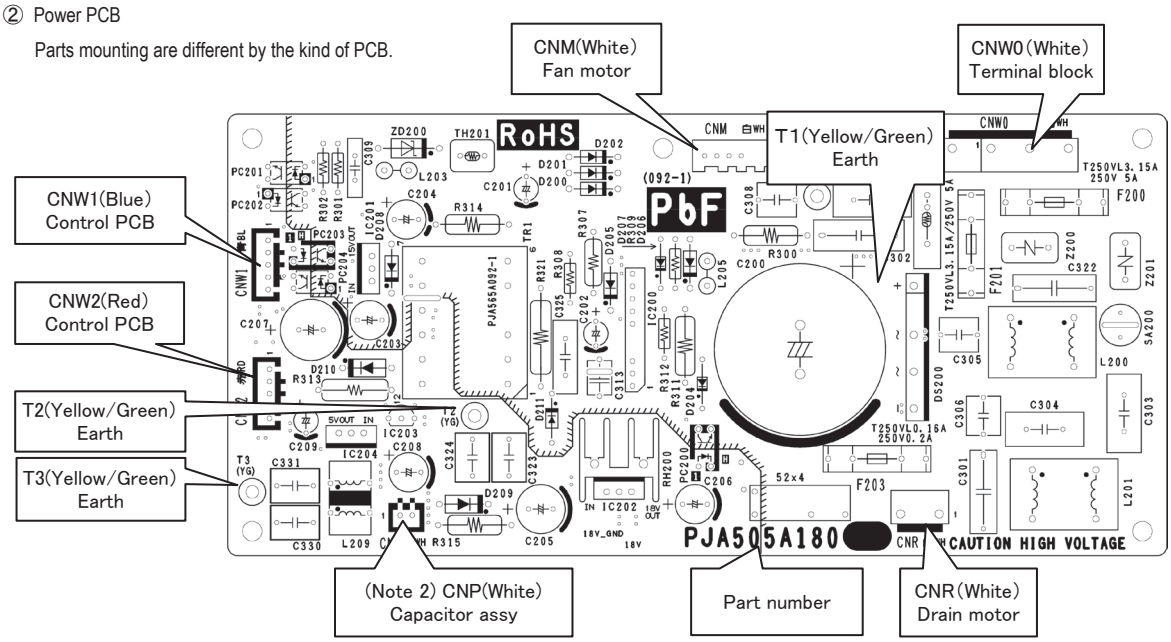
This PCB is a general PCB. Replace the PCB according to this instruction.

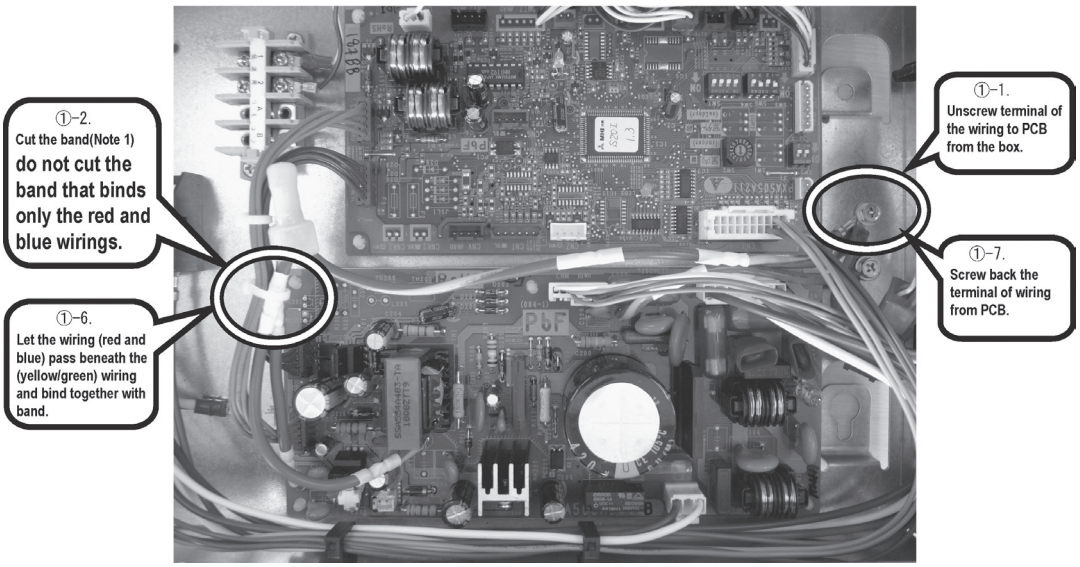
① Replace the PCB (refer to right dwg.)

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.**

② Power PCB

Parts mounting are different by the kind of 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
SW6-1 SW6-2 SW6-3 SW6-4	Model selection		As per model		See table 1
SW7-1	Test run, Drain motor	Normal*/Test run	OFF	Normal	
SW7-2	Reserved		OFF		keep OFF
SW7-3	Powerful mode	Valid*/Invalid	ON	Valid	
SW7-4	Reserved		OFF		keep OFF
SW8-1	Reserved		OFF		keep OFF
SW8-2	Reserved		OFF		keep OFF
SW8-3	Reserved		OFF		keep OFF
SW8-4	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

0: OFF 1:ON

	40V	50V	60V
SW6-1	1	1	1
SW6-2	1	0	1
SW6-3	0	1	1
SW6-4	0	0	0

(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 microcomputor on indoor and outdoor PCB can assist to find the cause of malfunction smoothly by making a diagnosis of not only the anomaly of microcomutor, 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 Red 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 sensor (of outdoor heat exchanger, discharge pipe and outdoor air), fuse (for control PCB) and reactor

(5) Check of anomalous operation data with the remote control

(a) 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 Control 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)
13	SUPPLY AIR___℃	(Supply Air Temperature)
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
"0"	Normal
"1"	Discharge pipe temperature protection control
"2"	Discharge pipe temperature anomaly
"3"	Current safe control of inverter primary current
"4"	High pressure protection control
"5"	High pressure anomaly
"6"	Low pressure protection control
"7"	Low pressure anomaly
"8"	Anti-frost prevention control
"9"	Current cut
"10"	Power transistor protection control
"11"	Power transistor anomaly (Overheat)
"12"	Compression ratio control
"13"	Spare
"14"	Dewing prevention control
"15"	Current safe control of inverter secondary current
"16"	Stop by compressor rotor lock
"17"	Stop by compressor startup failure
"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-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.

Number	Data Item	
01	❄	(Operation Mode)
02	SET TEMP ___℃	(Set Temperature)
03	RETURN AIR ___℃	(Return Air Temperature)
04	SENSOR ___℃	(Remote Control 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)

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 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
"0"	Normal
"1"	Discharge pipe temperature protection control
"2"	Discharge pipe temperature anomaly
"3"	Current safe control of inverter primary current
"4"	High pressure protection control
"5"	High pressure anomaly
"6"	Low pressure protection control
"7"	Low pressure anomaly
"8"	Anti-frost prevention control
"9"	Current cut
"10"	Power transistor protection control
"11"	Power transistor anomaly (Overheat)
"12"	Compression ratio control
"13"	Spare
"14"	Dewing prevention control
"15"	Current safe control of inverter secondary current
"16"	Stop by compressor rotor lock
"17"	Stop by compressor startup failure
"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.

#

(6) Inverter checker for diagnosis of inverter output

●Checking method

Model: SRC40-60

1) Setup procedure of checker.

a) Power OFF (Turn off the breaker).

b) Remove the terminal cover of compressor and disconnect the wires (U, V, W) from compressor.

c) Connect the wires U (Red) , V (White) and W (Black) of the checker to the terminal of disconnected wires (U, V, W) from compressor respectively.

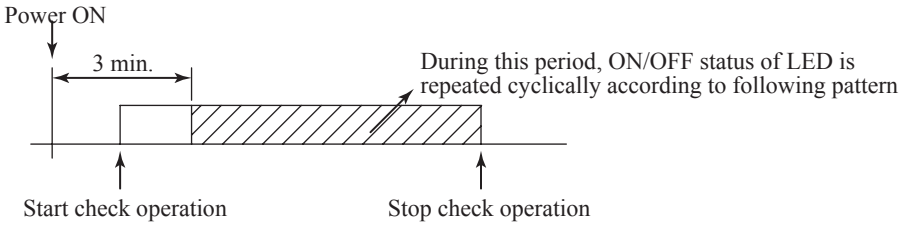
2) Operation for judgment.

a) Power ON and start check operation on cooling or heating mode.

b) Check ON/OFF status of 6 LED's on the checker.

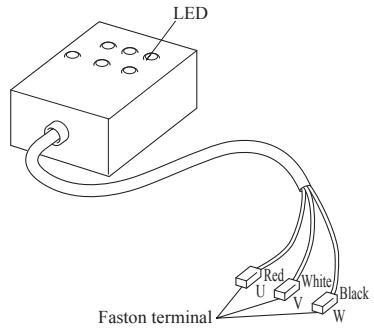
c) Judge the PCB by ON/OFF status of 6 LED's on the checker.

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



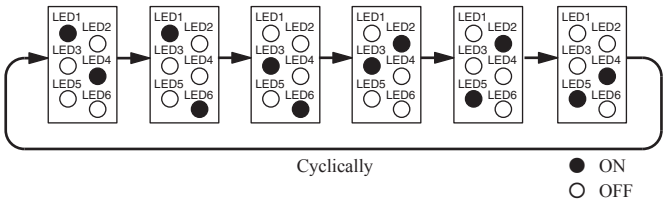
d) Stop check operation within about 2 minutes after starting check operation.

〈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

Models SRC40ZSX-S, SRC50ZSX-S, 60ZSX-S

◆Check point of outdoor unit

⚠ CAUTION – HIGH VOLTAGE

High voltage is produced in the control box. Don't touch electrical parts in the control box for 5 minutes after the unit is stopped.

Color symbol

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

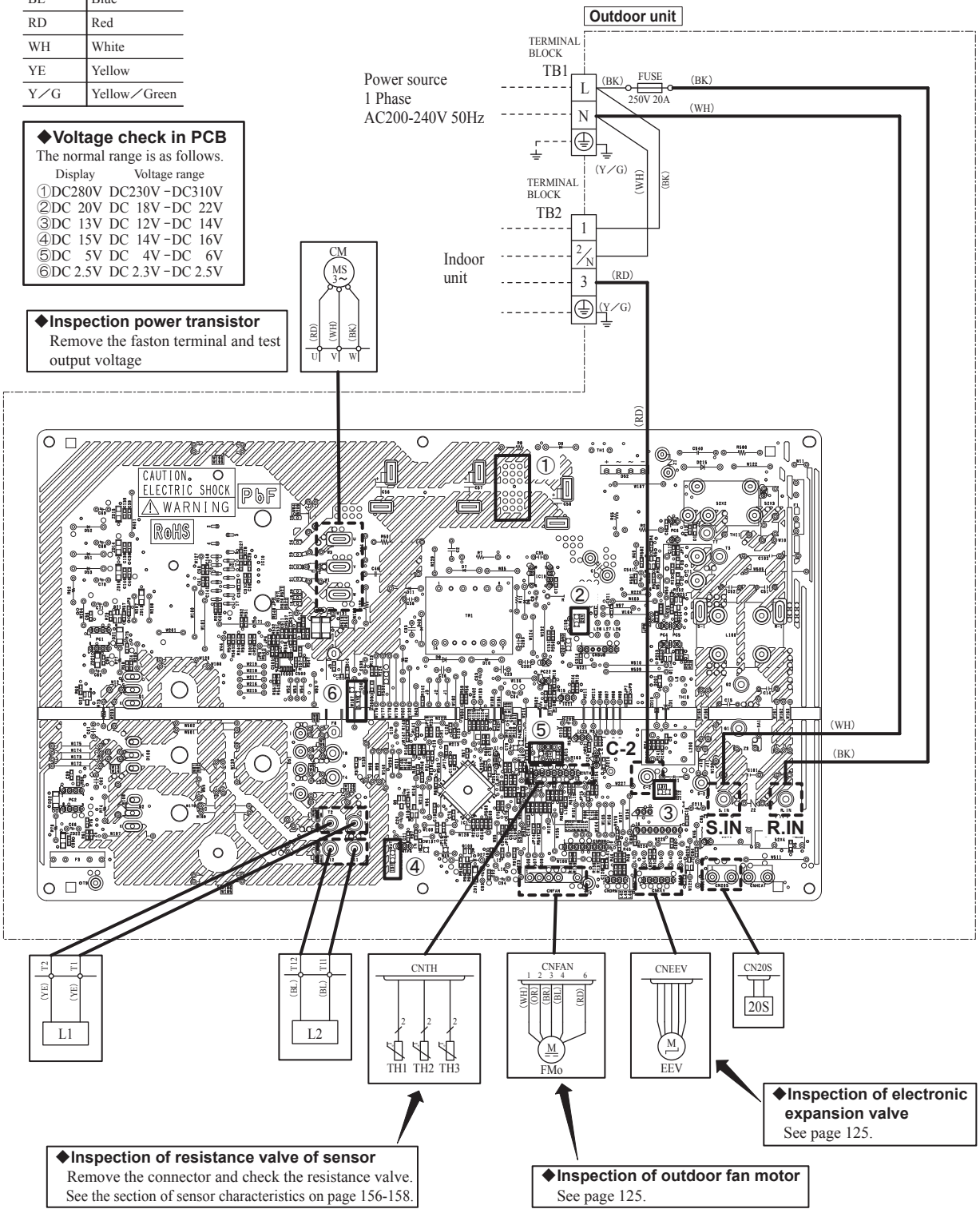
◆Voltage check in PCB

The normal range is as follows.

Display	Voltage range
①DC280V	DC230V－DC310V
②DC 20V	DC 18V－DC 22V
③DC 13V	DC 12V－DC 14V
④DC 15V	DC 14V－DC 16V
⑤DC 5V	DC 4V－DC 6V
⑥DC 2.5V	DC 2.3V－DC 2.5V

◆Power source and serial signal inspection

Ⓛ to Ⓝ : AC220/230/240V
① to ②/Ⓝ : AC220/230/240V
②/Ⓝ to ③ : Normal if the voltage oscillates between DC0 and approx. 20V

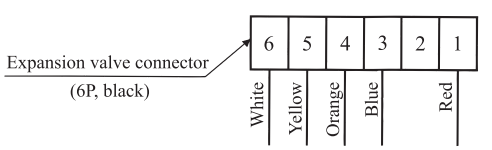


(a) Inspection of electronic expansion valve

Electronic expansion valve operates for approx. 10 seconds after the power on, in order to determine its aperture. Check the operating sound and voltage during the period of time. (Voltage cannot be checked during operation in which only the aperture change occurs.)

(i) If it is heard the sound of operating electronic expansion valve, it is almost normal.

(ii) If the operating sound is not heard, check the output voltage.



1 – 3
1 – 4
1 – 5
1 – 6

} Approx. DC5V is detected for 10 seconds after the power on.

(iii) If voltage is detected, the outdoor PCB is normal.

(iv) If the expansion valve does not operate (no operating sound) while voltage is detected, the expansion valve is defective.

• Inspection of electronic expansion valve as a separate unit

Measure the resistance between terminals with an analog tester.

Measuring point	Resistance when normal
1–6	46 ± 4Ω (at 20°C)
1–5	
1–4	
1–3	

(b) Outdoor unit fan motor check procedure

• When the outdoor unit fan motor error is detected, diagnose which of the outdoor unit fan motor or outdoor PCB is defective.

• Diagnose this only after confirming that the indoor unit is normal.

(i) Outdoor PCB output check

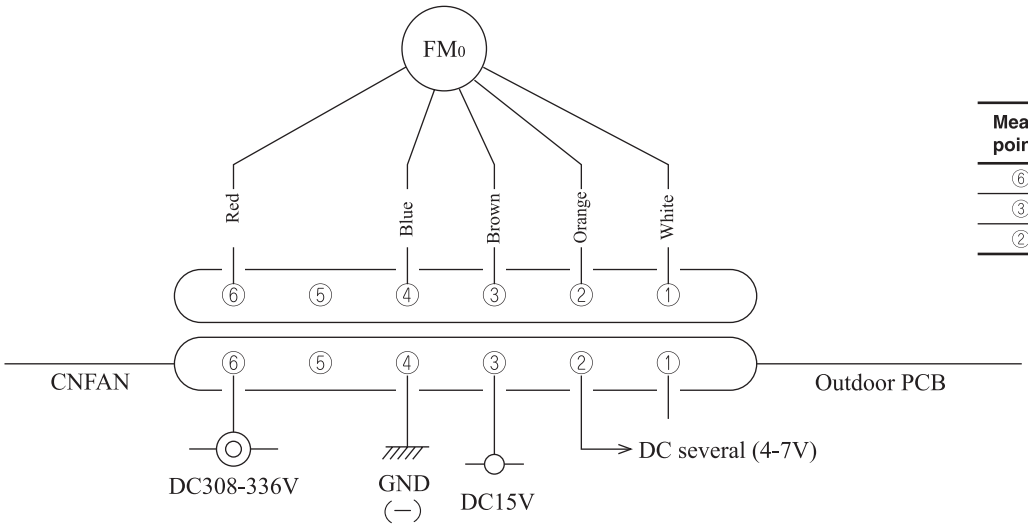
1) Turn off the power.

2) Disconnect the outdoor unit fan motor connector CNFAN.

3) When the indoor unit is operated by inserting the power source plug and pressing (ON) the backup switch for more than 5 seconds, if the voltage of pin No. ② in the following figure is output for 30 seconds at 20 seconds after turning "ON" the backup switch, the outdoor PCB is normal but the fan motor is defective.

If the voltage is not detected, the outdoor PCB is defective but the fan motor is normal.

Note (1) The voltage is output 3 times repeatedly. If it is not detected, the indoor unit displays the error message.



Measuring point	Voltage range when normal
⑥ - ④	DC308-336V
③ - ④	DC15V
② - ④	DC several V (4-7V)

(ii) Fan motor resistance check

Measuring point	Resistance when normal
⑥ - ④ (Red - Blue)	20 MΩ or higher
③ - ④ (Brown - Blue)	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.

12.2 Troubleshooting flow

(1) List of troubles

FDTC, FDE, FDUM series

Remote controller display	Description of trouble	Reference page
None	Operates but does not cool.	127
None	Operates but does not heat.	128
None	Earth leakage breaker activated	129
None	Excessive noise/vibration (1/3)	130
None	Excessive noise/vibration (2/3)	131
None	Excessive noise/vibration (3/3)	132
None	Louver motor failure (FDTC and FDEN series)	133
None	Power source system error (Power source to indoor unit control PCB)	134
None	Power source system error (Power source to remote control)	135
INSPECT I/U	INSPECT I/U (When 1 or 2 remote controls are connected)	136
INSPECT I/U	INSPECT I/U (Connection of 3 units or more remote controls)	137
WAIT	Communication error at initial operation	138-140
None	No display	141
E1	Remote controller communication circuit error	142
E5	Communication error during operation	143
E6	Indoor heat exchanger temperature thermistor anomaly	144
E7	Return air temperature thermistor anomaly	145
E8	Heating overload operation	146
E9	Drain trouble	147
E10	Excessive number of connected indoor units (more than 17 units) by controlling with one remote control	148
E11	Address setting error of indoor units	149
E16	Indoor fan motor anomaly	150
E19	Indoor unit operation check, drain motor check setting error	151
E20	Indoor fan motor rotation speed anomaly	152
E28	Remote control temperature thermistor anomaly	153
E35	Cooling overload operation	154
E36	Discharge pipe temperature error	155
E37	Outdoor heat exchanger temperature sensor anomaly	156
E38	Outdoor air temperature sensor anomaly	157
E39	Discharge pipe temperature sensor anomaly	158
E40	Service valve (gas side) closing operation	159
E42	Current cut	160 · 161
E47	Inverter over-current error	162
E48	Outdoor fan motor anomaly	163
E51	Power transistor anomaly	164
E57	Insufficient refrigerant amount or detection of service valve closure	165
E58	Current safe stop	166
E59	Compressor startup failure	167
E60	Anomalous compressor rotor lock	168

(2) Troubleshooting

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

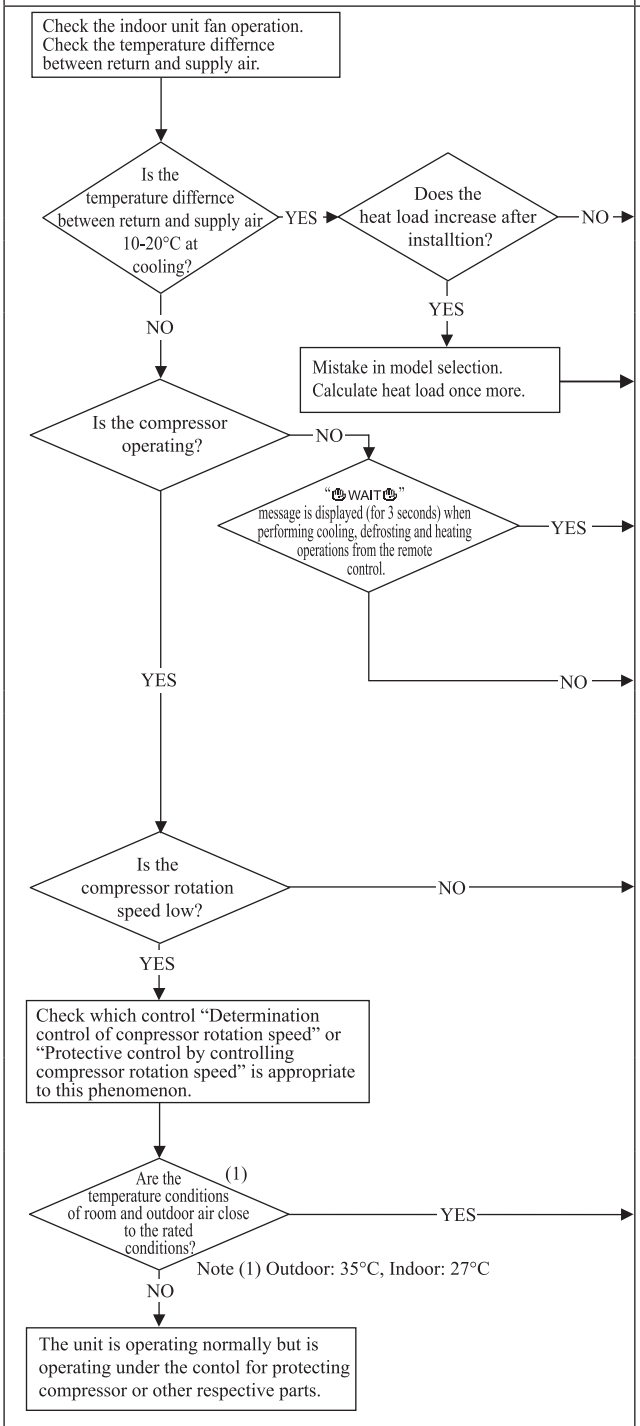
2. Error detection method

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

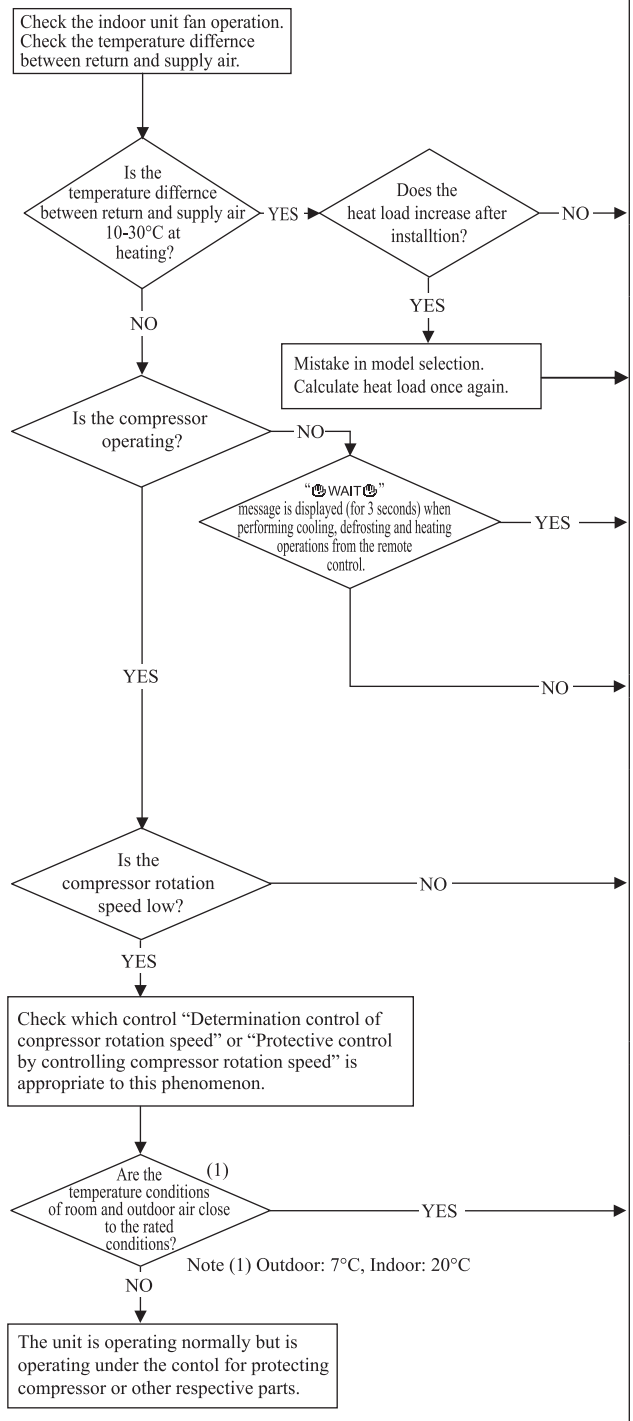
2.Error detection method

3. Condition of error displayed

4.Presumable cause

- Faulty 4-way valve operation
- Poor compression of compressor
- Faulty expansion valve operation

5.Troubleshooting



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

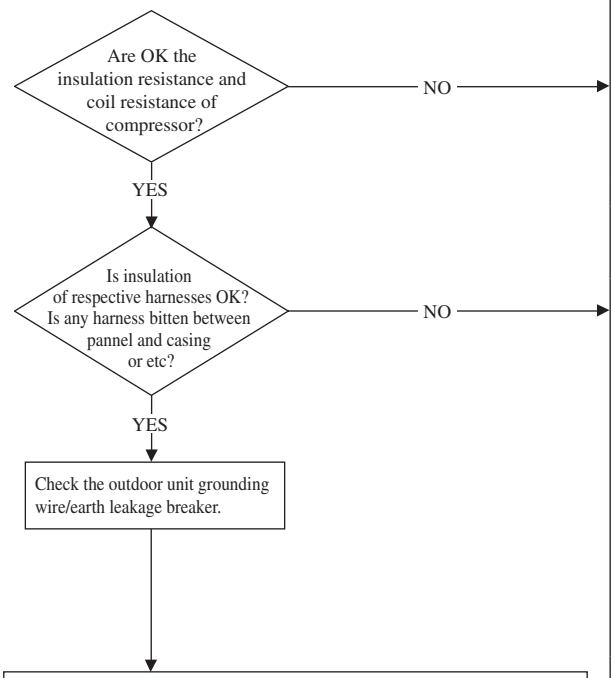
2. Error detection method

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 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

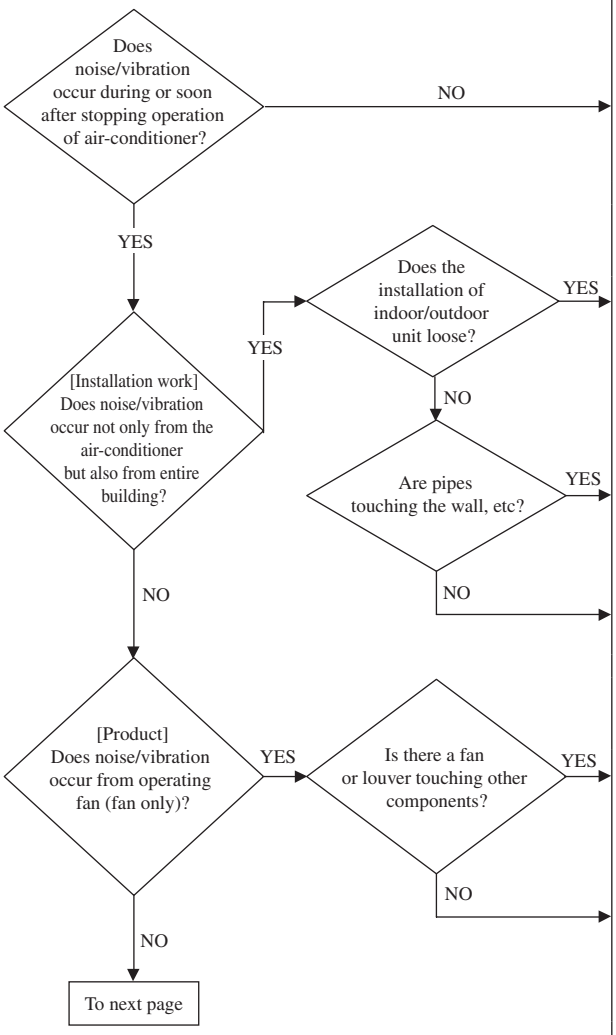
4. Presumable cause

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 nois 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

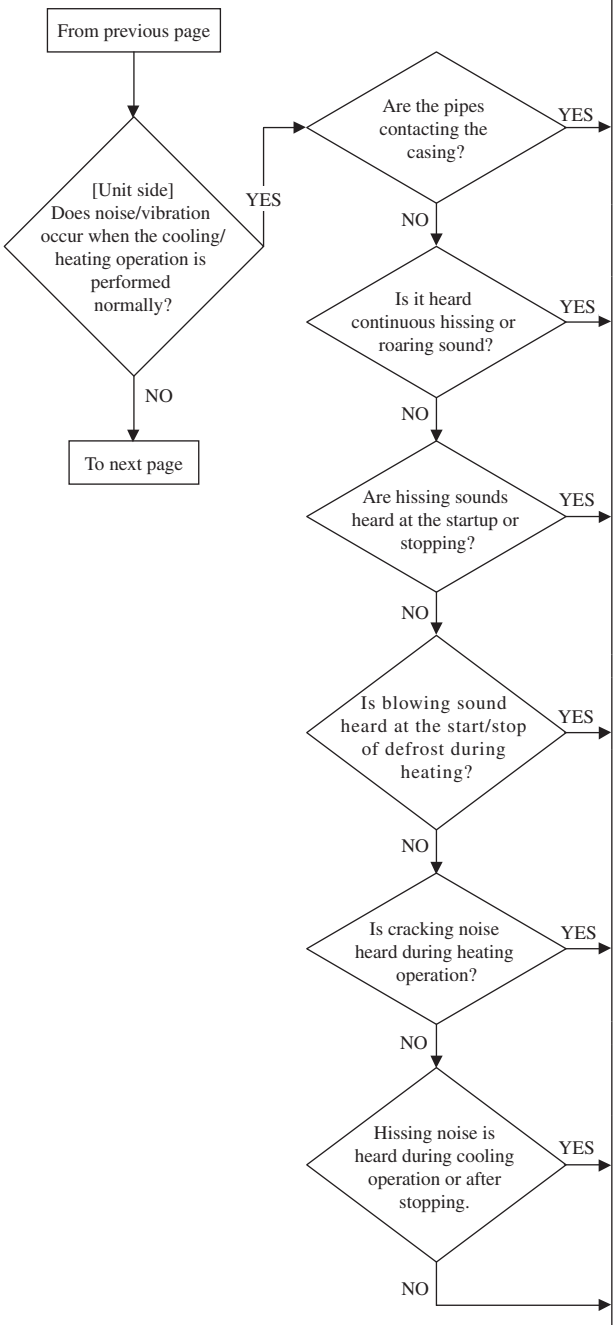
All models

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 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 during heating? YES	When the 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 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

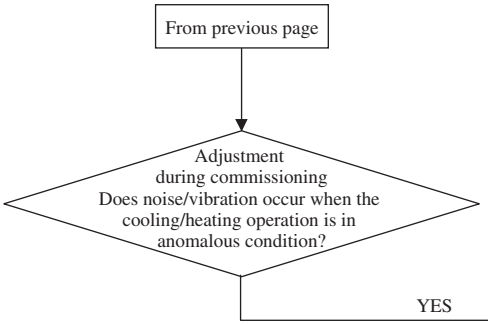
All models

2. Error detection method

3. Condition of error displayed

4. Presumable cause

5.Troubleshooting

Diagnosis	Countermeasure
	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

Remote control: None

LED	Green	Red
Indoor	Keeps flashing	Stays OFF
Outdoor	Keeps flashing	Stays OFF

Content

Louver motor failure (FDTC and FDE series)

1. Applicable model

FDTC and FDE seriess only

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? NO → Is LM locked? NO	Defective indoor unit control PCB → Replace.
Is LM wiring broken? YES	Repair wiring.
Is LM locked? YES	Replace LM.
Does the louver operate at the power on? YES → Is the louver operable with the remote controll? YES	Normal
Is the louver operable with the remote controll? NO	Adjust LM lever and then check again.
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

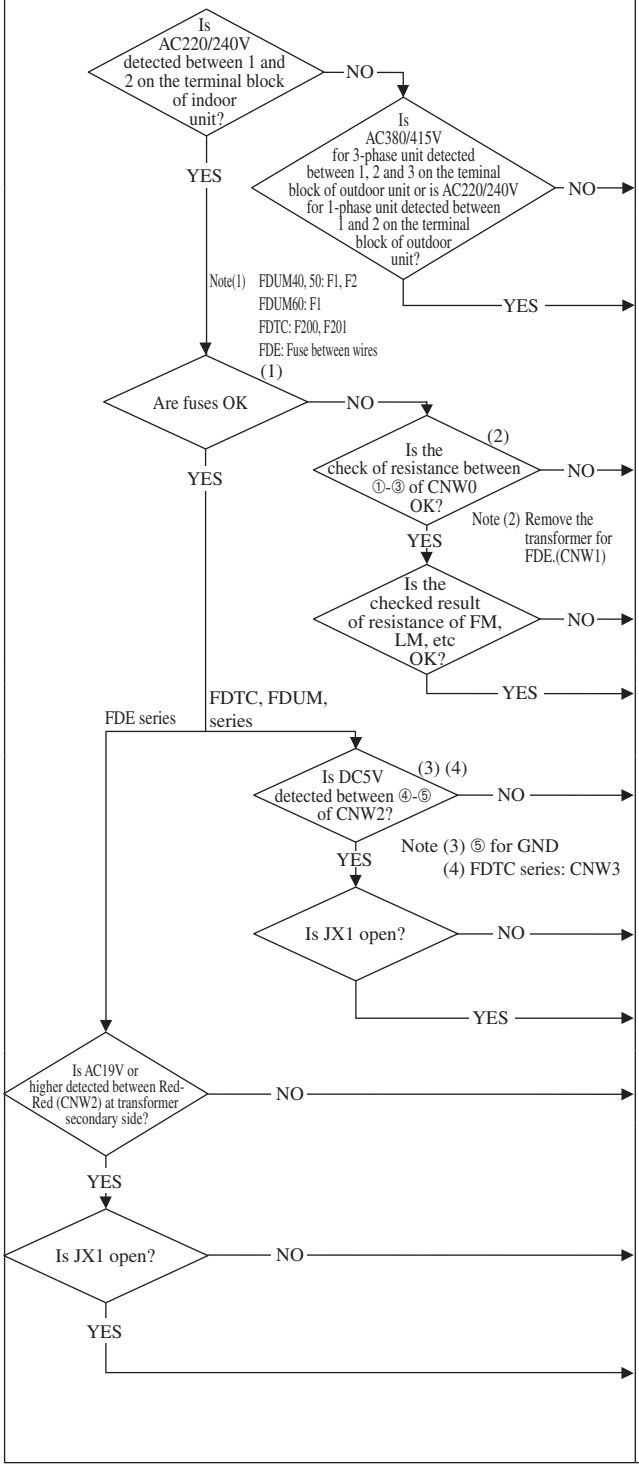
2.Error detection method

3. Condition of error displayed

4.Presumable cause

- Misconnection or breakage of connecting wires
- Blown fuse
- Faulty transformer
- Faulty indoor unit control or power PCB
- Broken harness
- Faulty outdoor unit control PCB (Noise filter)

5.Troubleshooting



Note:

Error code

Remote control: None

LED	Green	Red
Indoor	Keeps flashing	3-time flash
Outdoor	Keeps flashing	Stays OFF

Content

Power source system error (Power source to remote control)

1. Applicable model

All models

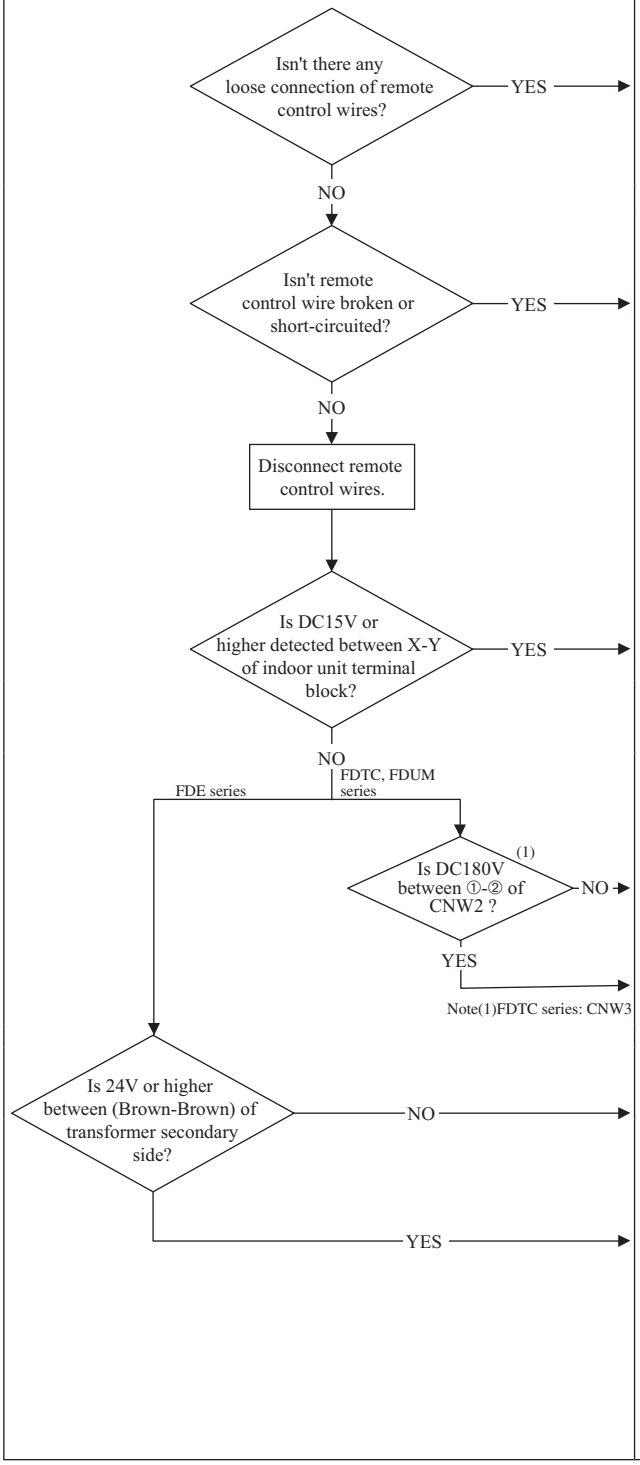
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Remote control wire breakage/short-circuit
- Defective remote control
- Malfunction by noise
- Faulty indoor unit 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.

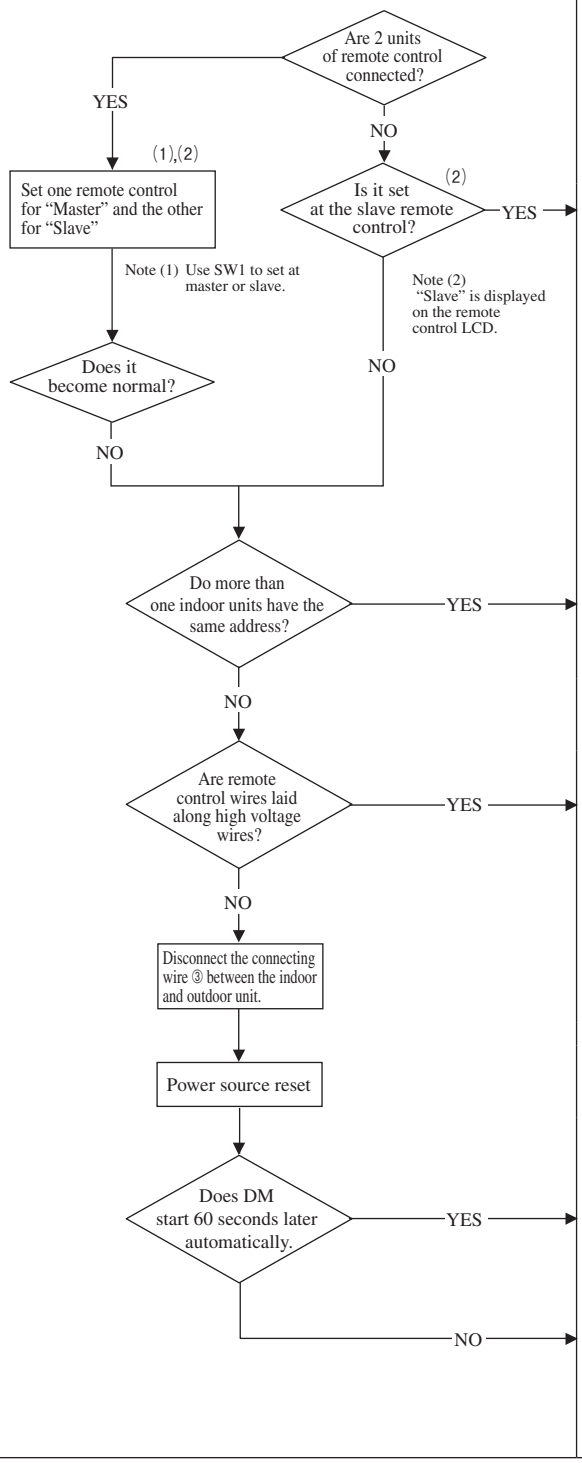
3. Condition of error displayed

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.

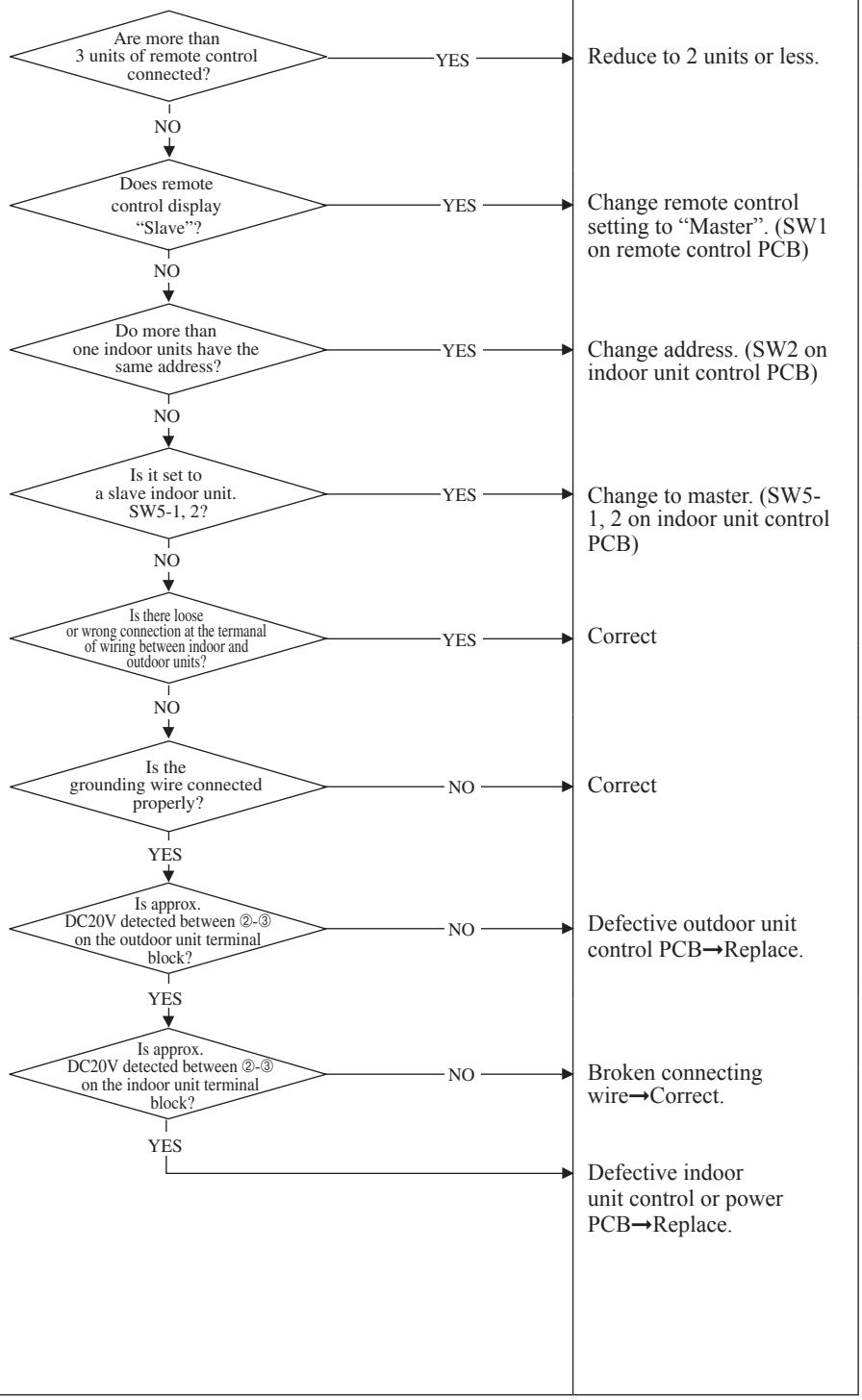
3. Condition of error displayed

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 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: WAIT	Indoor	Keeps flashing	Stays OFF	Communication error at initial operation (1/3) (Models SRC40-60)
	Outdoor	–	2-time flash	

1. Applicable model

Models SRC40-60

When the remote control LCD displays "WAIT" 2 minutes after the power on.

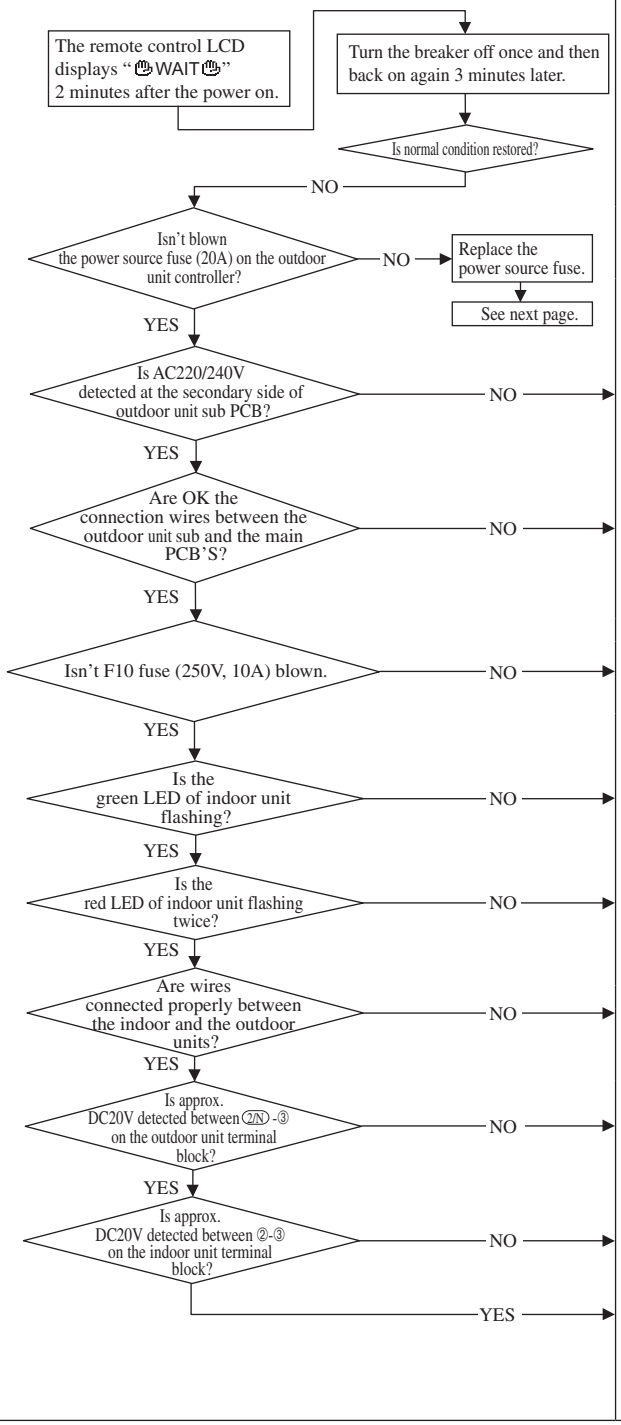
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Blown fuse
- Faulty outdoor sub PCB
- Connection between PCB's
- Blown fuse on single phase model
- Faulty indoor unit control PCB
- Defective remote control
- Broken remote control wire

5. Troubleshooting



Note: If any anomaly is detected during communication, the error code E5 is displayed. (Outdoor unit red LED flashes 2-time.) Inspection procedure is same as above. (Excluding matters related to connection) When the power source is reset after the occurrence of E5, the LED will display " WAIT " if the anomaly continues. If the breaker ON/OFF is repeated in a short period of time (within 1 minute), " WAIT " may be displayed. In such occasion, turn the breaker off and wait for 3 minutes.

Error code

Remote control: WAIT

LED	Green	Red
Indoor	Keeps flashing	Stays OFF
Outdoor	–	2-time flash

Content: Communication error at initial operation (2/3) (Models SRC40-60)

1. Applicable model

All models

When the fuse is blown, the method to inspect inverter before replacing the power source fuse

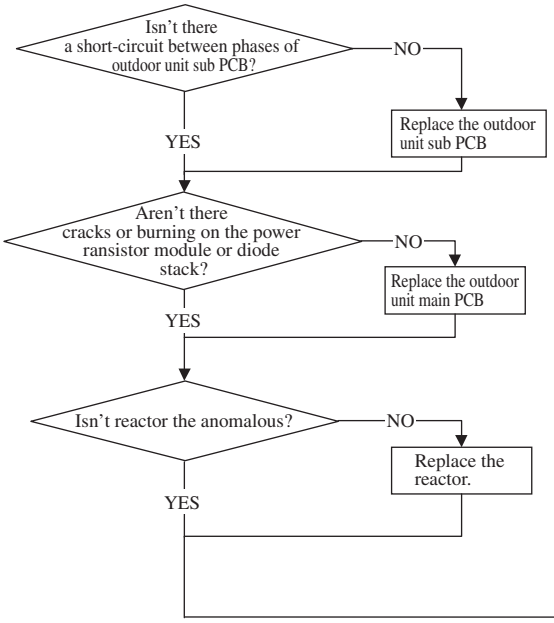
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Blown fuse
- Faulty outdoor unit sub PCB
- Faulty outdoor unit main PCB
- Faulty reactor

5. Troubleshooting

Diagnosis	Countermeasure
	Replace fuse.

Note:

Error code

Remote control: WAIT

LED	Green	Red
Indoor	Keeps flashing	Stays OFF
Outdoor	–	2-time flash

Content

Communication error at initial operation (3/3)

(Models SRC40-60)

1. Applicable model

All models

When the remote control display is extinguished after the power on.

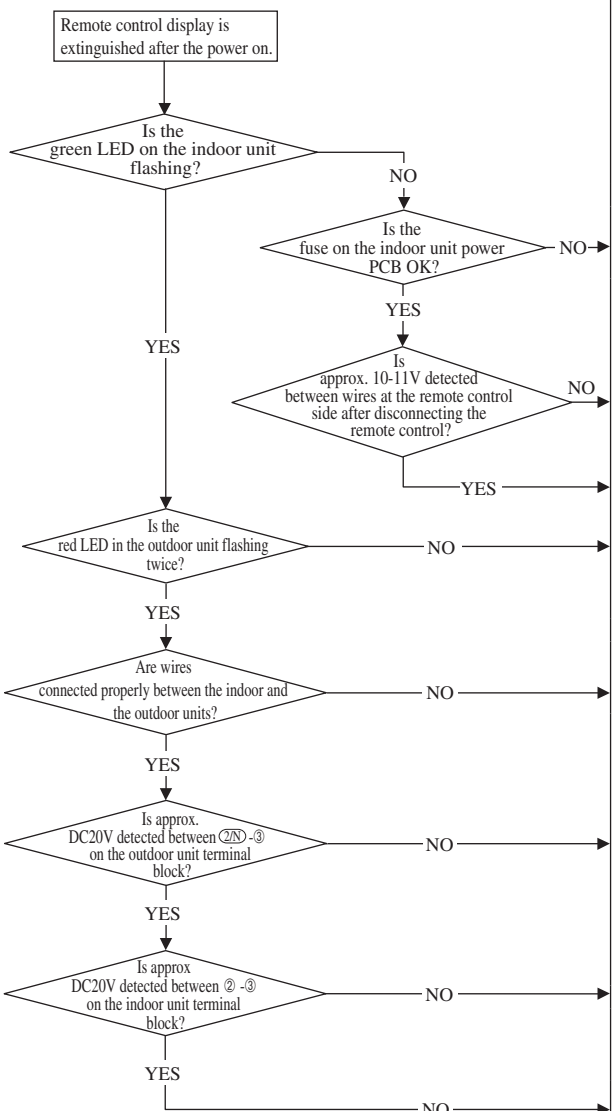
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Blown fuse
- Connection between PCB's
- Blown fuse
- Faulty indoor unit power PCB
- Defective remote control
- Wire breakage on remote control
- Faulty outdoor unit sub PCB

5. Troubleshooting



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

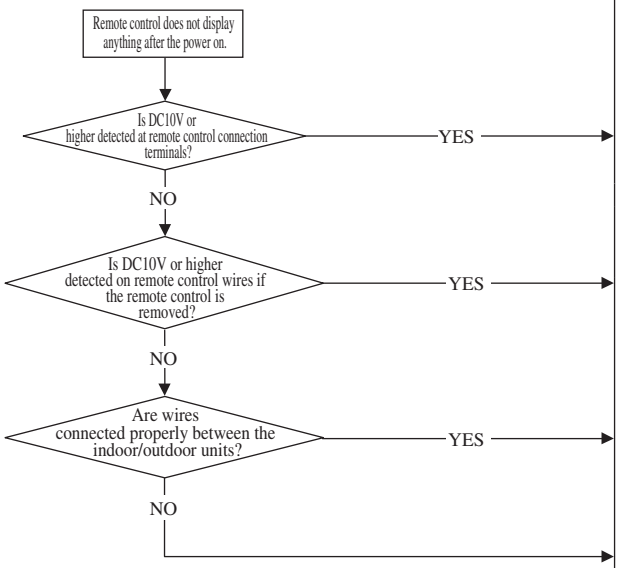
2. Error detection method

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 source 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 → Does the drain pump restart automatically 1 minute later? → YES	Defective indoor unit control PCB → Replace.
NO	Defective remote control → 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	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 control 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.)
In case that the outdoor unit red LED stays OFF	
Power reset NO Has the remote control LCD returned to normal state? NO	Defective outdoor unit control 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	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

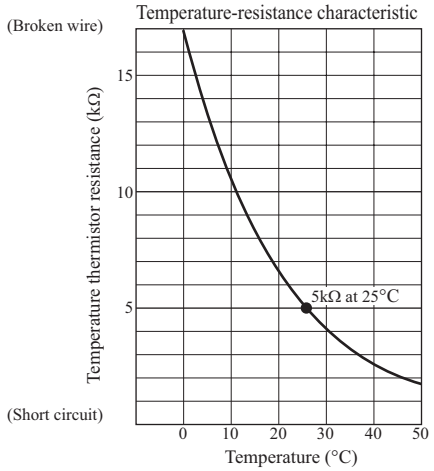
- When the temperature thermistor detects -50°C or lower for 5 seconds continuously, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.
- Or if 70°C or higher is detected for 5 seconds continuously.

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

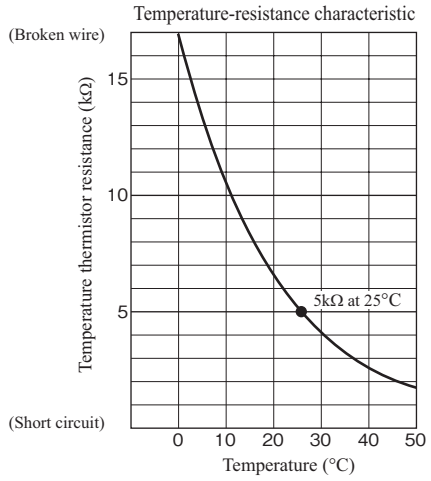
- When the temperature thermistor detects -50°C or lower for 5 seconds continuously, the compressor stops. After 3-minute delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.

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)

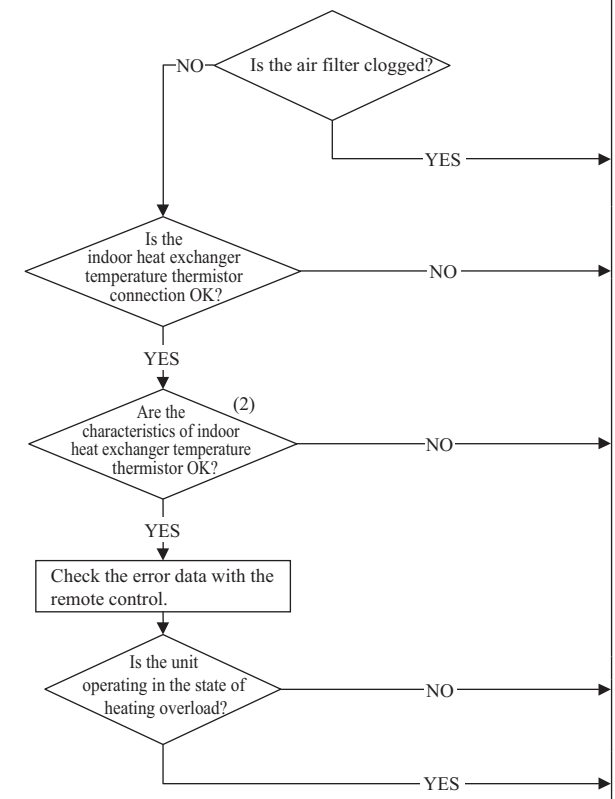
3. Condition of error displayed

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

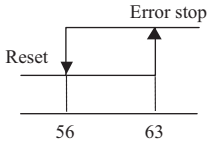
- Clogged air filter
- Defective indoor heat exchanger temperature thermistor connector
- Defective indoor heat exchanger temperature thermistor
- Anomalous refrigerant system

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 (FDTC and FDUM series)
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

FDTC and FDUM series only

2. Error detection method

Float switch is activated

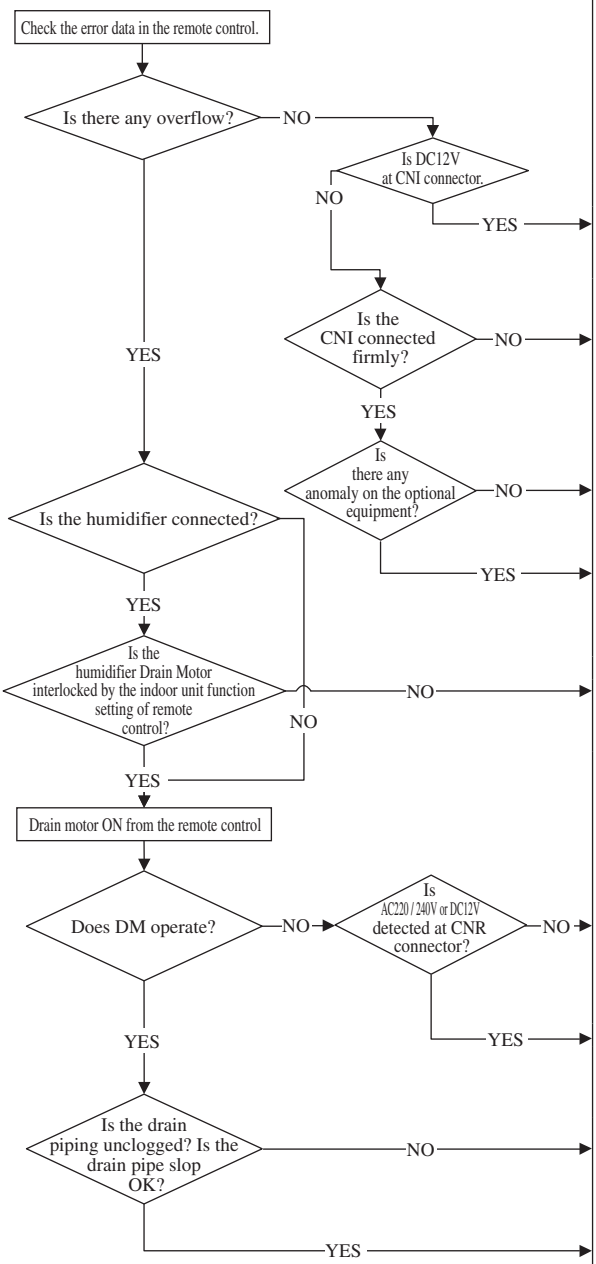
3. Condition of error displayed

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 PCB
- Float switch setting error
- Humidifier DM interlock setting error
- Option 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 remote 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: E11	Indoor	Keeps flashing	Keeps flashing	Address setting error of 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.

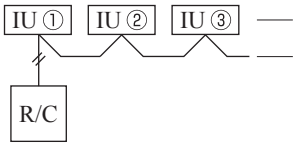
3. Condition of error displayed

Same as above

4. Presumable cause

Same as above

5. Troubleshooting

Diagnosis	Countermeasure
E11 occurs ↓ Is “Master IU address set” function of remote control used? YES →	• In cases of RC-EX3 Menu → Service setting → IU settings → Service password → IU select • In cases of RC-E5 Return address No. to “IU …” using [▲] or [▲] button.
In case the wiring is below and “Mastar IU address set” is used, E11 is appeared. 	

Note:

Error code	LED	Green	Red	Content
Remote control: E16	Indoor	Keeps flashing	1(2)-time flash	Indoor fan motor anomaly
	Outdoor	Keeps flashing	Stays OFF	

Note (1) Value in ( ) is for the FDU, FDUM series FMI2 only.

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

Diagnosis	Countermeasure
Does any foreign material intervene in rotational area of fan propeller? — YES	Remove foreign material.
Does the fan rotate smoothly when turned by hand? — NO	Replace the fan motor.
Is DC280V detected between ①-④ of fan motor connector CNM? (1) Note (1) ④ for GND — NO: FDE series / FDTC and FDUM series	Replace indoor unit control PCB.
Is the fuse F3 (F4) or F202 (F203) blown? — NO	Check power voltage.
Is the fuse F3 (F4) or F202 (F203) blown? — YES	Replace faulty fan motor and power PCB.
Power source reset → Is it normalized? — NO	Replace fan motor. (If the error persists after replacing the fan motor, replace the indoor unit control PCB.)
Is it normalized? — YES	Malfunction by temporary noise

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 unit 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(2)-time flash	Indoor fan motor rotation speed anomaly
	Outdoor	Keeps flashing	Stays OFF	

Note (1) Value in ( ) is for the FDUM series FMI2 only.

1. Applicable model

All models

2. Error detection method

Detected by rotation speed of indoor fan motor

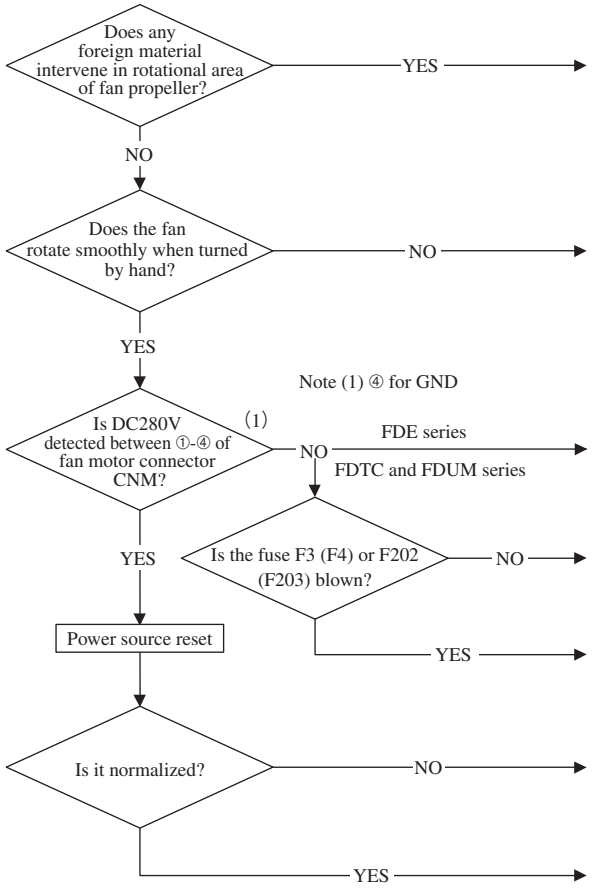
3. Condition of error displayed

When the actual fan rotation speed does not reach to the speed of [required speed -50min^{-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 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: 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

Diagnosis	Countermeasure
Is the remote control temperature thermistor connected properly? → NO	Correct.
YES → Are the characteristics of remote control temperature thermistor OK? Is the thermistor wire OK? → NO	Defective remote control temperature thermistor → Replace.
YES	Defective remote control PCB → Replace. (Defective remote control temperature thermistor input circuit)

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

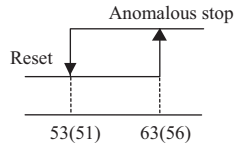
Note: After 10 seconds has passed since remote control thermistor was switched from valid to invalid, E28 will not be displayed even if the thermistor harness is disconnected. At same time the thermistor, which is effective, is switched from remote control thermistor to indoor return air temperature 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	Keeps flashing	Stays OFF	Cooling overload operation
	Outdoor	–	2-time flash	

1. Applicable model

All models

2. Error detection method



Outdoor heat exchanger temperature (°C)

Note(1) Values in ( ) are applicable when outdoor temperature (TH2) is lower than 32°C

3. Condition of error displayed

When anomalous outdoor heat exchanger temperature occurs 5 times within 60 minutes or 63(56)°C or higher continues for 10 minutes, including the compressor stop.

4. Presumable cause

- Defective outdoor heat exchanger temperature sensor
- 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 quantity

5. Troubleshooting

Diagnosis	Countermeasure
* For the characteristics of outdoor heat exchanger temperature sensor, refer to E37. Are normal the characteristics of outdoor heat exchanger temperature sensor normal? NO →	Replace outdoor heat exchanger temperature sensor.
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 heater exchanger?
NO Is the high pressure control normal NO →	Control operation check*
YES Is the temperature (measured actually) at direction of error correct? NO →	Defective outdoor unit main PCB→Replace.
YES →	Excessive refrigerant amount: Recharge refrigerant by weighing 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 micro computer control function for corresponding models.

Note:

Error code	LED	Green	Red	Content
Remote control: E36	Indoor unit control PCB	Keeps flashing	Stays OFF	Discharge pipe temperature error
	Outdoor unit control PCB	Keeps flashing	1(5)-time flash	
	Outdoor unit inverter PCB	Yellow		
		Keeps flashing		

Note (1) Value in ( ) is for the models SRC40-60.

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.

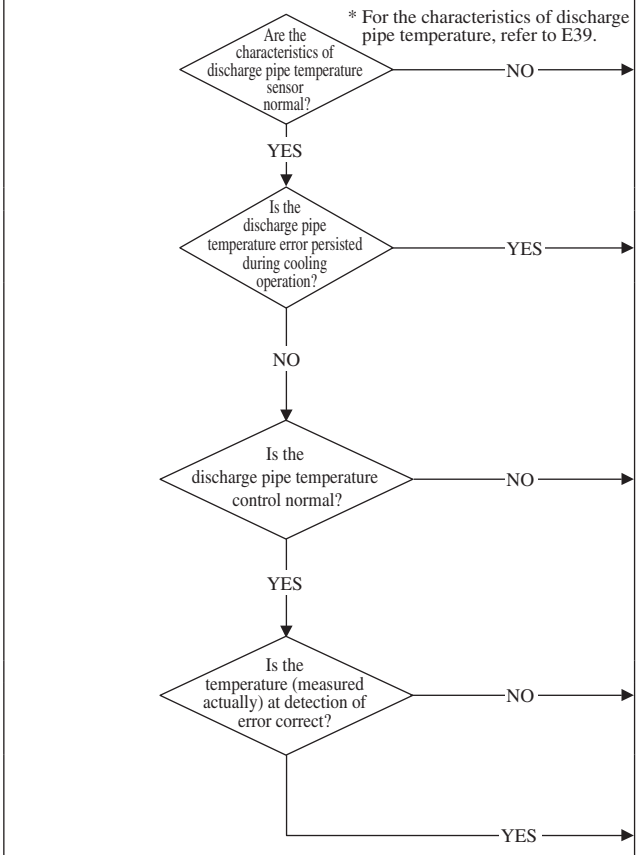
3. Condition of error displayed

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 control PCB
- Defective discharge pipe temperature sensor
- 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 micro computer control function for corresponding models.

Note:

Error code	LED	Green	Red
Remote control: E37	Indoor unit control PCB	Keeps flashing	Stays OFF
	Outdoor unit control PCB	Keeps flashing	1(8)-time flash
	Outdoor unit inverter PCB	Yellow	
		Keeps flashing	

Content: **Outdoor heat exchanger temperature sensor anomaly**

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) on the outdoor heat exchanger temperature sensor

3. Condition of error displayed

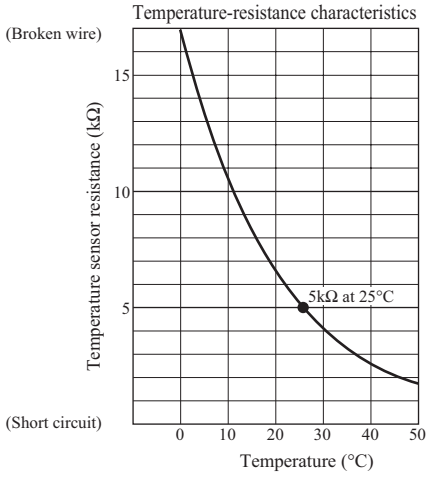
- When the temperature sensor detects-55°C or lower for 20 seconds continuously within 2 minutes to 2 minutes 20 seconds after the compressor ON, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this anomalous temperature is detected 3 times within 40 minutes.
- When -55°C or lower is detected for 5 seconds continuously within 20 second after compressor ON.

4. Presumable cause

- Defective outdoor unit control PCB
- Broken sensor harness or temperature sensing section
- Disconnected wire connection (connector)

5. Troubleshooting

Diagnosis	Countermeasure
Is the outdoor heat exchanger temperature sensor connector connected properly? — NO	Correct connector.
YES	
For the characteristics of outdoor heat exchanger temperature sensor, see the following graph.	
Are the characteristics of outdoor heat exchanger temperature sensor OK? — NO	Defective outdoor heat exchanger temperature sensor→Replace.
YES	Defective outdoor unit control PCB→Replace. (Defective outdoor heat exchanger temperature sensor input circuit)



Note:

Error code	LED	Green	Red
Remote control: E38	Indoor unit control PCB	Keeps flashing	Stays OFF
	Outdoor unit control PCB	Keeps flashing	8-time flash
	Outdoor unit inverter PCB	Yellow	
		Keeps flashing	

Content

Outdoor air temperature sensor anomaly

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) on outdoor air temperature sensor

3. Condition of error displayed

- When the temperature sensor detects -55°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 -55°C or lower is detected for 5 seconds continuously within 20 second after compressor ON.

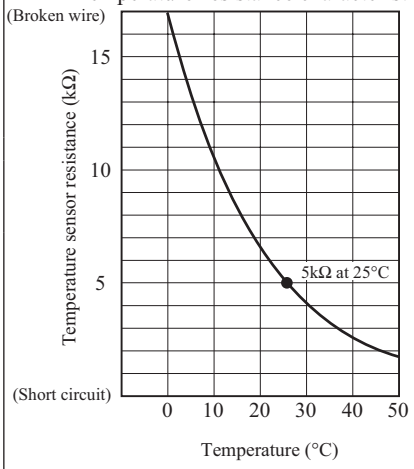
4. Presumable cause

- Defective outdoor unit control PCB
- Broken sensor harness or temperature sensing section (Check molding.)
- Disconnected wire connection (connector)

5. Troubleshooting

Diagnosis	Countermeasure
Is the outdoor air temperature sensor connector connected properly? → NO	Correct connector.
YES → Is the characteristics of the outdoor air temperature sensor OK? (For the characteristics of outdoor air temperature sensor, see the following graph.) → NO	Defective outdoor air temperature sensor→Replace.
YES	Defective outdoor unit control PCB→Replace. (Defective outdoor air temperature sensor input circuit)

Temperature-resistance characteristics



Note:

Error code	LED	Green	Red
Remote control: E39	Indoor unit control PCB	Keeps flashing	Stays OFF
	Outdoor unit control PCB	Keeps flashing	8-time flash
	Outdoor unit inverter PCB	Yellow	
		Keeps flashing	

Content

Discharge pipe temperature sensor anomaly

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) on the discharge pipe temperature sensor

3. Condition of error displayed

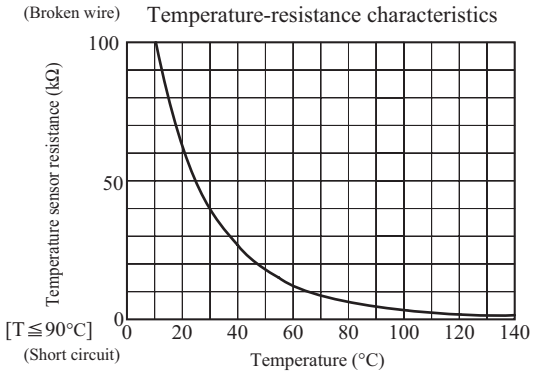
When the temperature sensor detects -25°C or lower for 5 seconds continuously within 10 minutes to 10 minutes 20 seconds after the compressor ON, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this anomalous temperature is detected 3 times within 40 minutes.

4. Presumable cause

- Defective outdoor unit control PCB
- Broken sensor harness or temperature sensing section (Check molding.)
- Disconnected wire connection (connector)

5. Troubleshooting

Diagnosis	Countermeasure
Is the discharge pipe temperature sensor connector connected properly? → NO	Correct connector.
YES → Are the characteristics of discharge pipe temperature sensor OK? (For the characteristics of discharge pipe temperature sensor, see the following graph.) → NO	Defective discharge pipe temperature sensor→Replace.
YES	Defective outdoor unit control PCB→Replace. (Defective temperature sensor input circuit)



Note:

Error code	LED	Green	Red	Content
Remote control: E40	Indoor	Keeps flashing	Stays OFF	Service valve (gas side) closing operation
	Outdoor	—	1-time flash	

1. Applicable model

All models

2. Error detection method

If the inverter output current value exceeds the setting value within 80 seconds after the compressor ON in the heating mode, the compressor stops.

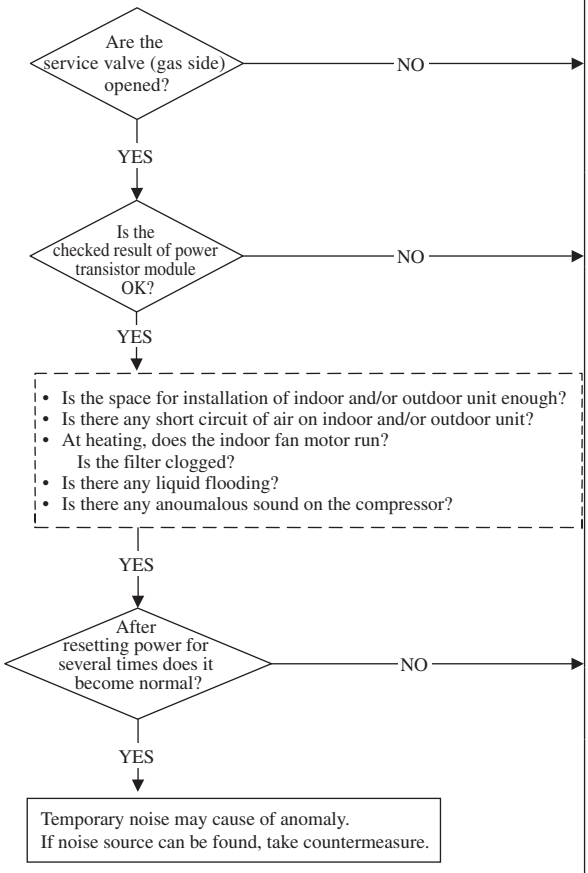
3. Condition of error displayed

- If the output current of inveter exceeds the specifications, it makes the compressor stopping. (In heating mode)
- After 3-minute delay, the compressor restarts, but if this anomaly occurs 2 times within 20 minute after the intial detection.

4. Presumable cause

- Service valve (gas side) closing
- Defective outdoor unit main PCB

5. Troubleshooting



Note:

Error code	LED	Green	Red
Remote control: E42	Indoor unit control PCB	Keeps flashing	Stays OFF
	Outdoor unti control PCB	Keeps flashing	1-time flash
	Outdoor unit inverter PCB	Yellow LED	
		1-time flash	

Content

Current cut (1/2)

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 3 times within 20 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 refregerant 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 (1) 0.864Ω or more at 20°C	Replace compressor.
YES → To next page.	

Note:

Error code	LED	Green	Red
Remote control: E42	Indoor	Keeps flashing	Stays OFF
	Outdoor unti control PCB	Keeps flashing	1-time flash
	Outdoor unit inverter PCB	Yellow LED	
		1-time flash	

Content

Current cut (2/2)

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 inverter exceeds the specifications, it makes the compressor stopping.
- After 3-minute delay, the compressor restarts, but if this amonaly occurs 3 times within 20 minute after the initial detection.

4. Presumable cause

- Defective inverter PCB
- Faulty power source
- Insufficient refrigerant amount
- Faulty compressor
- Faulty power transistor module

5. Troubleshooting

Diagnosis	Countermeasure
From previous page ↓ Is the checked result of power transistor module OK? NO →	Defective inverter PCB→ Replace.
YES ↓ • Is the space for installation of indoor and/or outdoor unit enough? • Is there any short circuit of air on indoor and/or outdoor unit? • At cooling, does the outdoor fan motor run? Are the service valves fully opened? Is the filter clogged? • At heating, does the indoor fan motor run? Are the service valves fully opened? Is the filter clogged? • Is there any liquid flooding? Is the superheat within normal range? Is the low pressure sensor and suction pipe temperature sensor normal? • Is there any anoumalous sound on the compressor?	
YES ↓ After resetting power for several times does it become normal? NO →	Defective inverter PCB→ Replace.
YES ↓ Temporary noise may cause of anomaly. If noise source can be found, take countermeasure.	

Note:

Error code	LED	Green	Red	Content
Remote control: E47	Indoor	Keeps flashing	Stays OFF	Active filter voltage error (Models SRC40-60)
	Outdoor	—	2-time flash	

1. Applicable model

Models SRC40-60

2. Error detection method

Error is displayed if the converter voltage exceeds DC340V (3 times within 20 minutes). Remote control may be set after 3 minutes delay.

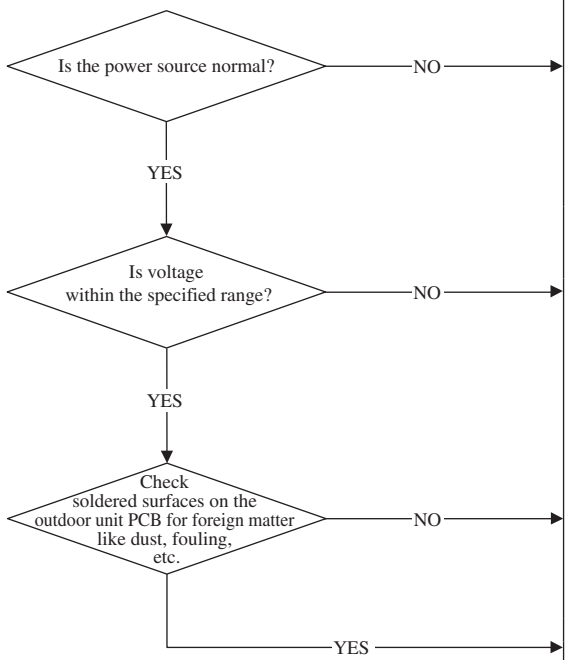
3. Condition of error displayed

Same as above

4. Presumable cause

- Defective outdoor unit PCB
- Dust on outdoor unit PCB
- Anomalous power source

5. Troubleshooting



Note:

Error code	LED	Green	Red	Content
Remote control: E48	Indoor	Keeps flashing	Stays OFF	Outdoor fan motor anomaly
	Outdoor	—	ON	

1. Applicable model

All models

2. Error detection method

Detected by rotation speed of outdoor fan motor

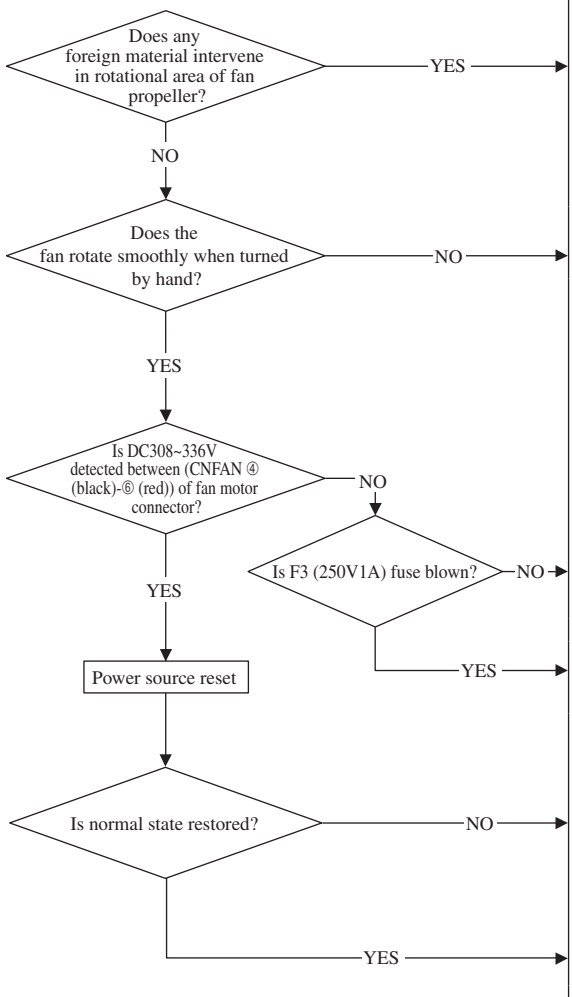
3. Condition of error displayed

When actual rotation speed of outdoor fan motor drops to 75min^{-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 3 times within 60 minutes after the initial detection.

4. Presumable cause

- Defective outdoor unit PCB
- Foreign material at rotational area of fan propeller
- Defective fan motor
- Dust on outdoor unit PCB
- Blown F3 fuse

5. Troubleshooting



Note: When E48 error occurs, in almost cases F3 fuse (1A) on the outdoor unit 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 PCB (or fuse) is replaced, another trouble 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.)

Error code	LED	Green	Red	Content
Remote control: E51	Indoor	Keeps flashing	Stays OFF	Power transistor anomaly
	Outdoor	—	1-time flash	

1. Applicable model

All models

2. Error detection method

Power transistor primary current

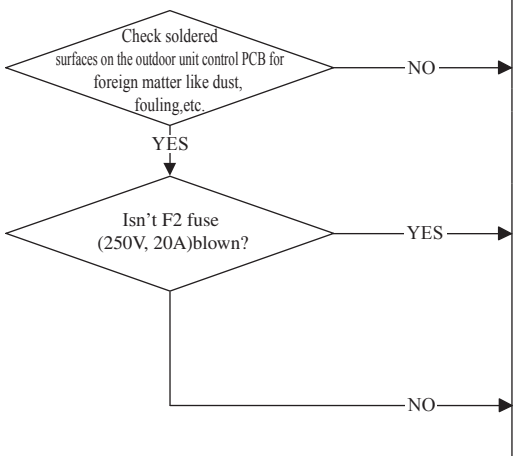
3. Condition of error displayed

If the power transistor primary current exceeds the setting value for 3 seconds, the compressor stops.

4. Presumable cause

- Outdoor unit control PCB anomaly
- Dust on outdoor unit control PCB
- Blown F2 fuse

5. Troubleshooting



Note:

Error code	LED	Green	Red	Content
Remote control: E57	Indoor	Keeps flashing	Stays OFF	Insufficient refrigerant amount or detection of service valve closure
	Outdoor	—	2-time flash	

1. Applicable model

All models

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).

3. Condition of error displayed

When the insufficient refrigerant amount is detected 3 times within 60 minutes.

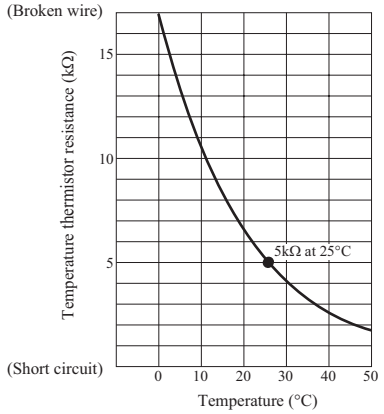
4. Presumable cause

- Defective indoor heat exchanger temperature thermistor
- Defective indoor return air temperature thermistor
- Defective indoor unit control PCB
- Insufficient refregerant 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: When the compressor speed is 50 rps or under at 5 minutes after the start of compressor or the completion of defrosting, the low refrigerant protection control judges, by detecting the difference between the indoor heat exchanger temperature (Thi-R) and the indoor return air temperature (Thi-A), that it is in the state of gas low, and stops the compressor.
Cooling: Indoor return air temperature (Thi-A) – Indoor heat exchanger temperature (Thi-R) ≧ 4 deg
Heating: Indoor heat exchanger temperature (Thi-R) – Indoor return air temperature (Thi-A) ≦ 6 deg

Error code	LED	Green	Red	Content
Remote control: E58	Indoor	Keeps flashing	Stays OFF	Current safe stop
	Outdoor	—	3-time flash	

1. Applicable model

All models

2. Error detection method

When the current safe control has operated at the compressor speed of 30 rps or under:

3. Condition of error displayed

Same as above

4. Presumable cause

- Excessive refrigerant amount
- Indoor,outdoor unit installation spaces
- Faulty compressor
- Defective outdoor air temperature sensor
- Defective outdoor unit PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the refrigerant amount nomal ? NO	Adjust the refrigerant amount properly.
YES → Is outdoor ventilation condition good ? NO	Secure space for inlet and outlet.
YES → Inspect compressor NO	Replace compressor.
YES → Inspect outdoor air temperature sensor NO	Replace sensor.
YES	Defective outdoor unit PCB→Replace. (Defective outdoor air temperature sensor input circuit)

Note:

Error code	LED	Green	Red	Content
Remote control: E59	Indoor	Keeps flashing	Stays OFF	Compressor startup failure
	Outdoor	—	2-time flash	

1. Applicable model

All models

2. Error detection method

If it fails to change over to the rotor detection operation of compressor motor

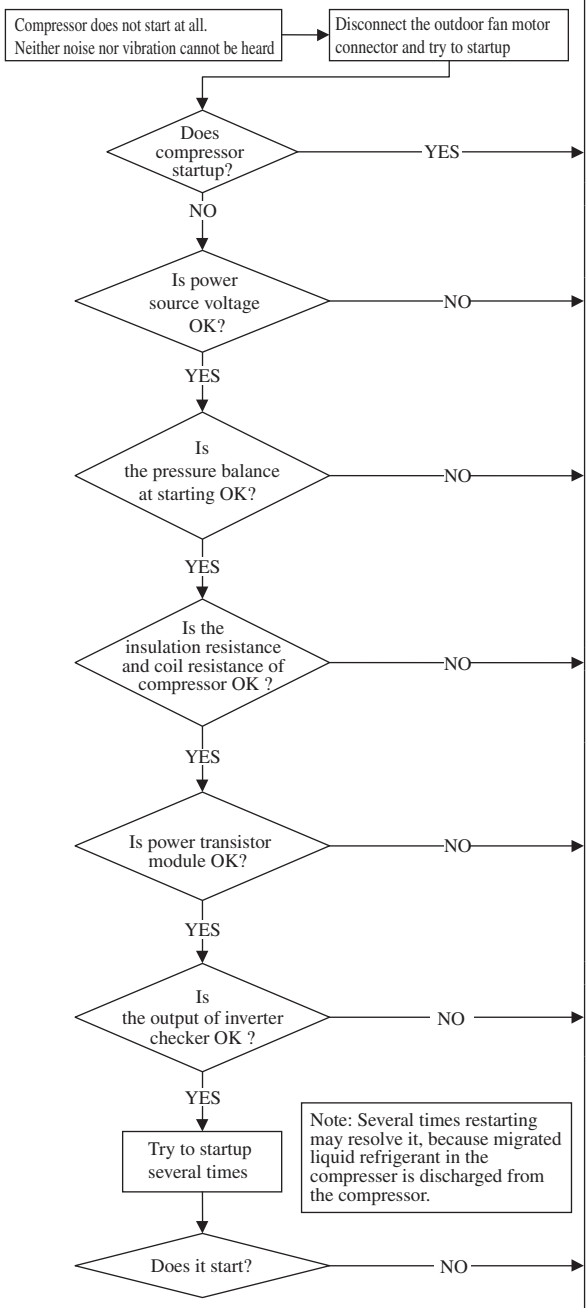
3. Condition of error displayed

If compressor fails to startup for 42 times

4. Presumable cause

- Outdoor fan motor anomaly
- Outdoor unit PCB anomaly
- Anomalous power source voltage
- Improper refrigerant amount and refrigerant circuit
- Faulty compressor (Motor bearing)

5. Troubleshooting



Note: Insulation resistance
- The unit is left for long period without power source or soon after installation, migrated liquid refrigerant may dissolve in the refrigerant oil in the compressor. In such case insulation resistance decreases upto several MΩ or lower. If the electric leakage breaker is activated due to low insulation resistance, check followings.
  ① Check whehter the insulation resistance can recover or not, ater 6 hours has passed since power ON. (By energize the crankcase heater, migrated liquid refrigerant in the refrigerant oil in compressor can be evaporated)
  ② Check whether the electric leakage breake conforms to high-hermonic specifications (As units has inverter, in order to prevent from improper operation, be sure to use high-hermonic one.)

Error code	LED	Green	Red	Content
Remote control: E60	Indoor	Keeps flashing	Stays OFF	Compressor rotor lock error
	Outdoor	—	7-time flash	

1. Applicable model

All models

2. Error detection method

Compressor rotor position

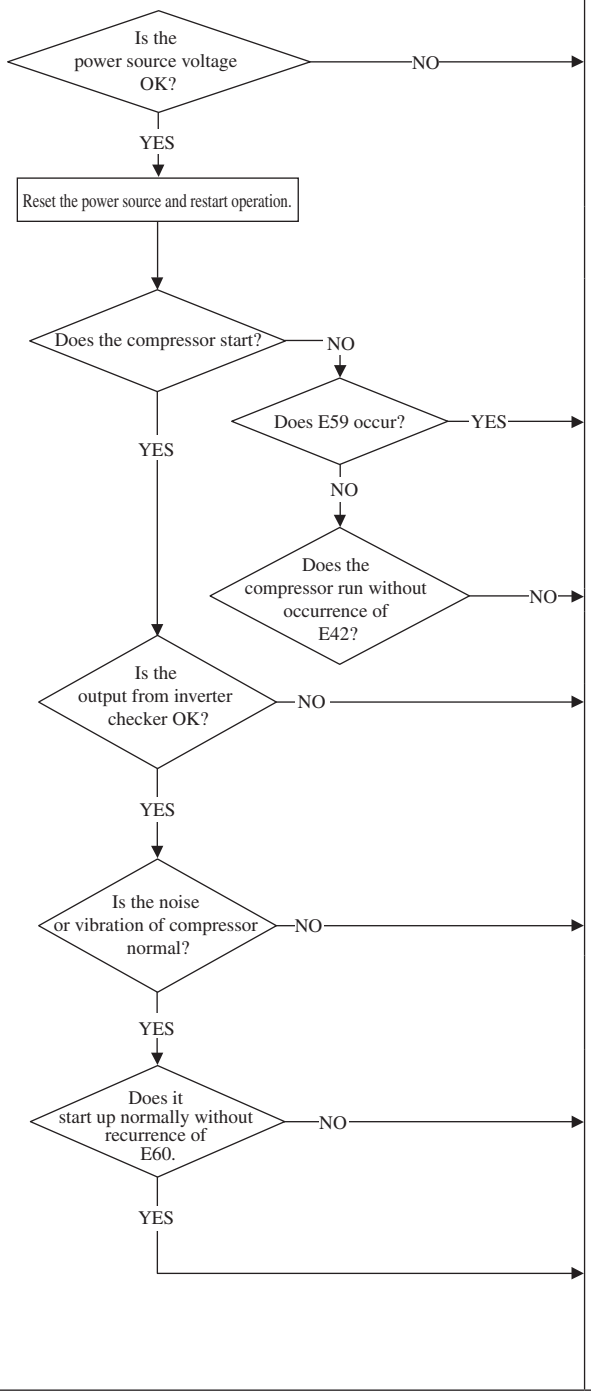
3. Condition of error displayed

If it fails again to detect the rotor position after shifting to the compressor rotor position detection operation, the compressor stops.

4. Presumable cause

- Defective outdoor fan motor
- Defective outdoor unit PCB
- Anomalous power source voltage
- Improper refrigerant amount and refrigerant circuit
- Defective compressor (motor, bearing)

5. Troubleshooting



Note: Insulation resistance
- The unit is left for long period without power source or soon after installation, migrated liquid refrigerant may dissolve in the refrigerant oil in the compressor. In such case insulation resistance decreases upto several MΩ or lower. If the electric leakage breaker is activated due to low insulation resistance, check followings.
  ① Check whehter the insulation resistance can recover or not, ater 6 hours has passed since power ON. (By energize the crankcase heater, migrated liquid refrigerant in the refrigerant oil in compressor can be evaporated)
  ② Check whether the electric leakage breake conforms to high-hermonic specifications (As units has inverter, in order to prevent from improper operation, be sure to use high-hermonic one.)

13. TECHNICAL INFORMATION

(1) Ceiling casette-4 way compact type (FDTC)

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDTC40VF**
Outdoor unit model name	**SRC40ZSX-S**

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	**4.0**	kW
heating / Average	Pdesignh	**4.0**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.53**	A++
heating / Average	SCOP/A	**3.96**	A
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**3.31**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	**0.69**	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	**4.00**	kW
Tj=30℃	Pdc	**2.95**	kW
Tj=25℃	Pdc	**1.90**	kW
Tj=20℃	Pdc	**1.37**	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.85**	-
Tj=30℃	EERd	**5.46**	-
Tj=25℃	EERd	**9.05**	-
Tj=20℃	EERd	**11.91**	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**3.57**	kW
Tj=2℃	Pdh	**2.19**	kW
Tj=7℃	Pdh	**1.40**	kW
Tj=12℃	Pdh	**0.78**	kW
Tj=bivalent temperature	Pdh	**3.57**	kW
Tj=operating limit	Pdh	**2.88**	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**2.7**	-
Tj=2℃	COPd	**3.84**	-
Tj=7℃	COPd	**5.38**	-
Tj=12℃	COPd	**4.84**	-
Tj=bivalent temperature	COPd	**2.7**	-
Tj=operating limit	COPd	**2.36**	-

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	**-7**	℃
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	**12**	W
standby mode	Psb	**12**	W
thermostat-off mode	Pto	**15**	W
crankcase heater mode	Pck	**0**	W

Annual electricity consumption			
cooling	Qce	**215**	kWh/a
heating / Average	Qhe	**1416**	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	**63**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**810**	m3/h
Rated air flow(outdoor)	-	**2160**	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. 7 Roundwood Avenue, Stockley Park, Uxbridge, Middlesex, UB11 1AX, United Kingdom

B	PJA003Z401⚠

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDTC50VF**
Outdoor unit model name	**SRC50ZSX-S**

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	**5.0**	kW
heating / Average	Pdesignh	**4.8**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.01**	A+
heating / Average	SCOP/A	**3.85**	A
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**3.95**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	**0.85**	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	**5.00**	kW
Tj=30℃	Pdc	**3.69**	kW
Tj=25℃	Pdc	**2.37**	kW
Tj=20℃	Pdc	**1.37**	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.21**	-
Tj=30℃	EERd	**4.92**	-
Tj=25℃	EERd	**7.41**	-
Tj=20℃	EERd	**11.91**	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**4.25**	kW
Tj=2℃	Pdh	**2.58**	kW
Tj=7℃	Pdh	**1.66**	kW
Tj=12℃	Pdh	**0.78**	kW
Tj=bivalent temperature	Pdh	**4.25**	kW
Tj=operating limit	Pdh	**3.45**	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**2.5**	-
Tj=2℃	COPd	**3.77**	-
Tj=7℃	COPd	**5.22**	-
Tj=12℃	COPd	**4.84**	-
Tj=bivalent temperature	COPd	**2.5**	-
Tj=operating limit	COPd	**2.2**	-

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	**-7**	℃
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	**12**	W
standby mode	Psb	**12**	W
thermostat-off mode	Pto	**15**	W
crankcase heater mode	Pck	**0**	W

Annual electricity consumption			
cooling	Qce	**291**	kWh/a
heating / Average	Qhe	**1745**	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	**63**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**810**	m3/h
Rated air flow(outdoor)	-	**2400**	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. 7 Roundwood Avenue, Stockley Park, Uxbridge, Middlesex, UB11 1AX, United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDTC60VF**
Outdoor unit model name	**SRC60ZSX-S**

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	**5.6**	kW
heating / Average	Pdesignh	**5.9**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**5.76**	A+
heating / Average	SCOP/A	**3.80**	A
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**5.14**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	**0.76**	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	**5.60**	kW
Tj=30℃	Pdc	**4.13**	kW
Tj=25℃	Pdc	**2.65**	kW
Tj=20℃	Pdc	**1.40**	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**2.81**	-
Tj=30℃	EERd	**4.54**	-
Tj=25℃	EERd	**7.16**	-
Tj=20℃	EERd	**11.38**	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**5.60**	kW
Tj=2℃	Pdh	**3.55**	kW
Tj=7℃	Pdh	**2.10**	kW
Tj=12℃	Pdh	**0.95**	kW
Tj=bivalent temperature	Pdh	**5.60**	kW
Tj=operating limit	Pdh	**4.36**	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**2.49**	-
Tj=2℃	COPd	**3.74**	-
Tj=7℃	COPd	**5.25**	-
Tj=12℃	COPd	**5.14**	-
Tj=bivalent temperature	COPd	**2.49**	-
Tj=operating limit	COPd	**2.11**	-

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	**-7**	℃
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	**12**	W
standby mode	Psb	**12**	W
thermostat-off mode	Pto	**15**	W
crankcase heater mode	Pck	**0**	W

Annual electricity consumption			
cooling	Qce	**341**	kWh/a
heating / Average	Qhe	**2172**	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	**65**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**810**	m3/h
Rated air flow(outdoor)	-	**2490**	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. 7 Roundwood Avenue, Stockley Park, Uxbridge, Middlesex, UB11 1AX, United Kingdom

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(2) Ceiling suspended type (FDE)

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDE40VG**
Outdoor unit model name	**SRC40ZSX-S**

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	**4.0**	kW
heating / Average	Pdesignh	**3.0**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.46**	A++
heating / Average	SCOP/A	**3.93**	A
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**3.0**	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	**4.00**	kW
Tj=30℃	Pdc	**2.95**	kW
Tj=25℃	Pdc	**1.90**	kW
Tj=20℃	Pdc	**1.38**	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.92**	-
Tj=30℃	EERd	**5.67**	-
Tj=25℃	EERd	**8.26**	-
Tj=20℃	EERd	**13.14**	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**2.66**	kW
Tj=2℃	Pdh	**1.61**	kW
Tj=7℃	Pdh	**1.04**	kW
Tj=12℃	Pdh	**0.77**	kW
Tj=bivalent temperature	Pdh	**3.00**	kW
Tj=operating limit	Pdh	**2.47**	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.09**	-
Tj=2℃	COPd	**4.20**	-
Tj=7℃	COPd	**3.92**	-
Tj=12℃	COPd	**5.13**	-
Tj=bivalent temperature	COPd	**2.73**	-
Tj=operating limit	COPd	**2.47**	-

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	**13**	W
standby mode	Psb	**13**	W
thermostat-off mode	Pto	**13**	W
crankcase heater mode	Pck	**0**	W

Annual electricity consumption			
cooling	Qce	**217**	kWh/a
heating / Average	Qhe	**1069**	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	**63**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**780**	m3/h
Rated air flow(outdoor)	-	**2160**	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. 7 Roundwood Avenue, Stockley Park, Uxbridge, Middlesex, UB11 1AX, United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDE50VG**
Outdoor unit model name	**SRC50ZSX-S**

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	**5.0**	kW
heating / Average	Pdesignh	**3.8**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.10**	A++
heating / Average	SCOP/A	**3.92**	A
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**3.8**	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	**5.00**	kW
Tj=30℃	Pdc	**3.69**	kW
Tj=25℃	Pdc	**2.37**	kW
Tj=20℃	Pdc	**1.38**	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.29**	-
Tj=30℃	EERd	**5.12**	-
Tj=25℃	EERd	**7.18**	-
Tj=20℃	EERd	**13.14**	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**3.36**	kW
Tj=2℃	Pdh	**2.04**	kW
Tj=7℃	Pdh	**1.31**	kW
Tj=12℃	Pdh	**0.77**	kW
Tj=bivalent temperature	Pdh	**3.80**	kW
Tj=operating limit	Pdh	**3.15**	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**2.97**	-
Tj=2℃	COPd	**4.32**	-
Tj=7℃	COPd	**3.72**	-
Tj=12℃	COPd	**5.13**	-
Tj=bivalent temperature	COPd	**2.53**	-
Tj=operating limit	COPd	**2.22**	-

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	**13**	W
standby mode	Psb	**13**	W
thermostat-off mode	Pto	**13**	W
crankcase heater mode	Pck	**0**	W

Annual electricity consumption			
cooling	Qce	**288**	kWh/a
heating / Average	Qhe	**1358**	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	**63**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**780**	m3/h
Rated air flow(outdoor)	-	**2400**	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. 7 Roundwood Avenue, Stockley Park, Uxbridge, Middlesex, UB11 1AX, United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDE60VG**
Outdoor unit model name	**SRC60ZSX-S**

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	**5.6**	kW
heating / Average	Pdesignh	**4.3**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.72**	A++
heating / Average	SCOP/A	**4.08**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**4.3**	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	**5.60**	kW
Tj=30℃	Pdc	**4.13**	kW
Tj=25℃	Pdc	**2.65**	kW
Tj=20℃	Pdc	**1.55**	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.20**	-
Tj=30℃	EERd	**5.74**	-
Tj=25℃	EERd	**8.55**	-
Tj=20℃	EERd	**13.48**	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**3.81**	kW
Tj=2℃	Pdh	**2.31**	kW
Tj=7℃	Pdh	**1.49**	kW
Tj=12℃	Pdh	**0.81**	kW
Tj=bivalent temperature	Pdh	**4.30**	kW
Tj=operating limit	Pdh	**3.64**	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**3.00**	-
Tj=2℃	COPd	**4.44**	-
Tj=7℃	COPd	**4.12**	-
Tj=12℃	COPd	**5.06**	-
Tj=bivalent temperature	COPd	**2.56**	-
Tj=operating limit	COPd	**2.30**	-

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	**13**	W
standby mode	Psb	**13**	W
thermostat-off mode	Pto	**20**	W
crankcase heater mode	Pck	**0**	W

Annual electricity consumption			
cooling	Qce	**292**	kWh/a
heating / Average	Qhe	**1475**	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	**65**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**1200**	m3/h
Rated air flow(outdoor)	-	**2490**	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. 7 Roundwood Avenue, Stockley Park, Uxbridge, Middlesex, UB11 1AX, United Kingdom

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

Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDUM40VF**
Outdoor unit model name	**SRC40ZSX-S**

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	**4.0**	kW
heating / Average	Pdesignh	**3.5**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.01**	A+
heating / Average	SCOP/A	**4.15**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**2.788**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	**0.713**	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	**4.00**	kW
Tj=30℃	Pdc	**2.95**	kW
Tj=25℃	Pdc	**1.90**	kW
Tj=20℃	Pdc	**1.51**	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**4.17**	-
Tj=30℃	EERd	**5.57**	-
Tj=25℃	EERd	**7.45**	-
Tj=20℃	EERd	**10.27**	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**3.05**	kW
Tj=2℃	Pdh	**1.79**	kW
Tj=7℃	Pdh	**1.21**	kW
Tj=12℃	Pdh	**0.98**	kW
Tj=bivalent temperature	Pdh	**3.05**	kW
Tj=operating limit	Pdh	**2.35**	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**2.88**	-
Tj=2℃	COPd	**4.34**	-
Tj=7℃	COPd	**4.90**	-
Tj=12℃	COPd	**5.17**	-
Tj=bivalent temperature	COPd	**2.88**	-
Tj=operating limit	COPd	**2.37**	-

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	**-7**	℃
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	**12**	W
standby mode	Psb	**12**	W
thermostat-off mode	Pto	**15**	W
crankcase heater mode	Pck	**0**	W

Annual electricity consumption			
cooling	Qce	**233**	kWh/a
heating / Average	Qhe	**1182**	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	**63**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**780**	m3/h
Rated air flow(outdoor)	-	**2160**	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. 7 Roundwood Avenue, Stockley Park, Uxbridge, Middlesex, UB11 1AX, United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDUM50VF**
Outdoor unit model name	**SRC50ZSX-S**

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	**5.0**	kW
heating / Average	Pdesignh	**4.3**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**5.68**	A+
heating / Average	SCOP/A	**4.36**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**3.42**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	**0.88**	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	**5.00**	kW
Tj=30℃	Pdc	**3.69**	kW
Tj=25℃	Pdc	**2.37**	kW
Tj=20℃	Pdc	**1.51**	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.62**	-
Tj=30℃	EERd	**4.86**	-
Tj=25℃	EERd	**6.93**	-
Tj=20℃	EERd	**9.50**	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**3.78**	kW
Tj=2℃	Pdh	**2.31**	kW
Tj=7℃	Pdh	**1.50**	kW
Tj=12℃	Pdh	**0.98**	kW
Tj=bivalent temperature	Pdh	**3.78**	kW
Tj=operating limit	Pdh	**2.82**	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**2.86**	-
Tj=2℃	COPd	**4.33**	-
Tj=7℃	COPd	**5.51**	-
Tj=12℃	COPd	**6.76**	-
Tj=bivalent temperature	COPd	**2.86**	-
Tj=operating limit	COPd	**2.47**	-

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	**-7**	℃
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	**12**	W
standby mode	Psb	**12**	W
thermostat-off mode	Pto	**15**	W
crankcase heater mode	Pck	**0**	W

Annual electricity consumption			
cooling	Qce	**309**	kWh/a
heating / Average	Qhe	**1382**	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	**63**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**780**	m3/h
Rated air flow(outdoor)	-	**2400**	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. 7 Roundwood Avenue, Stockley Park, Uxbridge, Middlesex, UB11 1AX, United Kingdom

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Information to identify the model(s) to which the information relates to:	
Indoor unit model name	**FDUM60VF**
Outdoor unit model name	**SRC60ZSX-S**

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	**5.6**	kW
heating / Average	Pdesignh	**5.4**	kW
heating / Warmer	Pdesignh	**-**	kW
heating / Colder	Pdesignh	**-**	kW

Item	symbol	value	class
Seasonal efficiency and energy efficiency class			
cooling	SEER	**6.42**	A++
heating / Average	SCOP/A	**4.37**	A+
heating / Warmer	SCOP/W	**-**	-
heating / Colder	SCOP/C	**-**	-

Declared capacity at outdoor temperature Tdesignh			
heating / Average (-10℃)	Pdh	**4.50**	kW
heating / Warmer (2℃)	Pdh	**-**	kW
heating / Colder (-22℃)	Pdh	**-**	kW

Back up heating capacity at outdoor temperature Tdesignh			unit
heating / Average (-10℃)	elbu	**0.90**	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	**5.60**	kW
Tj=30℃	Pdc	**4.13**	kW
Tj=25℃	Pdc	**2.65**	kW
Tj=20℃	Pdc	**1.48**	kW

Declared energy efficiency ratio, at indoor temperature 27(19)℃ and outdoor temperature Tj			
Tj=35℃	EERd	**3.64**	-
Tj=30℃	EERd	**5.23**	-
Tj=25℃	EERd	**7.68**	-
Tj=20℃	EERd	**13.10**	-

Declared capacity for heating / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	Pdh	**4.80**	kW
Tj=2℃	Pdh	**2.85**	kW
Tj=7℃	Pdh	**1.77**	kW
Tj=12℃	Pdh	**0.97**	kW
Tj=bivalent temperature	Pdh	**4.80**	kW
Tj=operating limit	Pdh	**4.00**	kW

Declared coefficient of performance / Average season, at indoor temperature 20℃ and outdoor temperature Tj			
Tj=-7℃	COPd	**2.91**	-
Tj=2℃	COPd	**4.35**	-
Tj=7℃	COPd	**5.62**	-
Tj=12℃	COPd	**5.77**	-
Tj=bivalent temperature	COPd	**2.91**	-
Tj=operating limit	COPd	**2.5**	-

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	**-7**	℃
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	**12**	W
standby mode	Psb	**12**	W
thermostat-off mode	Pto	**25**	W
crankcase heater mode	Pck	**0**	W

Annual electricity consumption			
cooling	Qce	**306**	kWh/a
heating / Average	Qhe	**1731**	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	**65**	dB(A)
Global warming potential	GWP	**1975**	kgCO2eq.
Rated air flow(indoor)	-	**1200**	m3/h
Rated air flow(outdoor)	-	**2490**	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. 7 Roundwood Avenue, Stockley Park, Uxbridge, Middlesex, UB11 1AX, United Kingdom

L	PJG000Z159⚠

14. OPTION PARTS

(1) Wireless kit

(a) 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

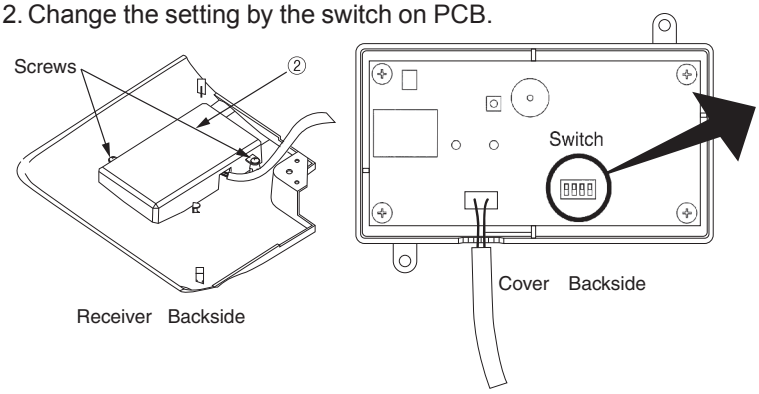
PCB on the receiver has the following switches to set the functions. Default setting is shown with ☐ mark.

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 .

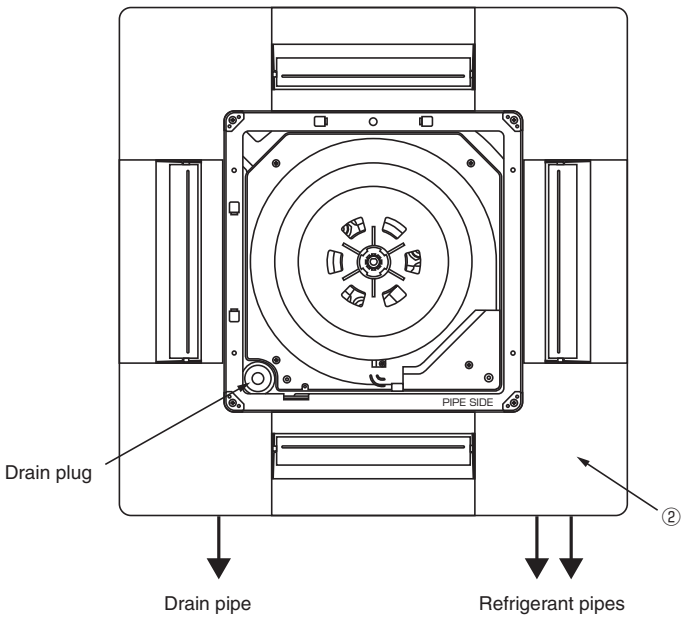
   *The receivable area of the signal refer to ⑤ Receiver .

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.

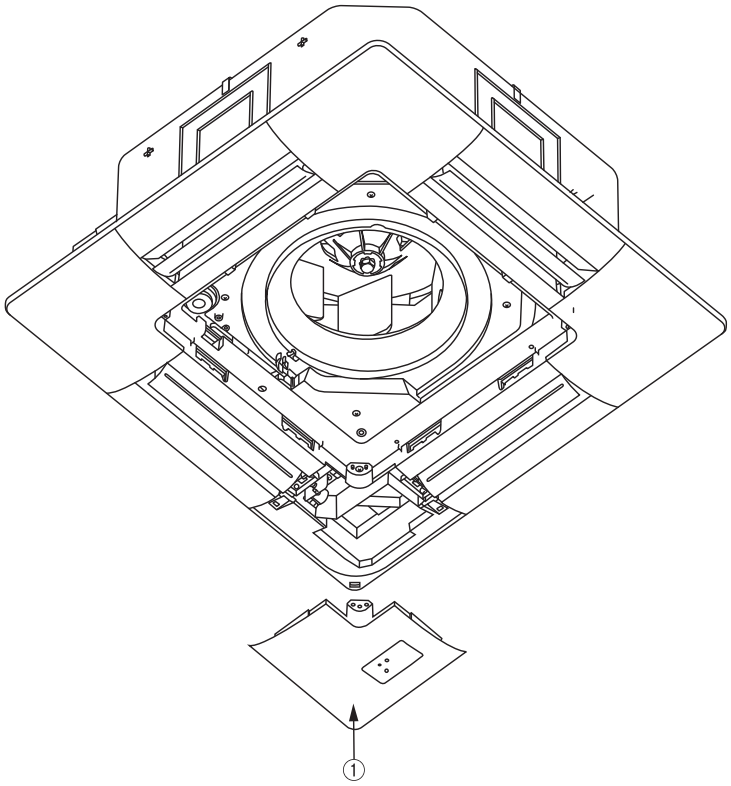


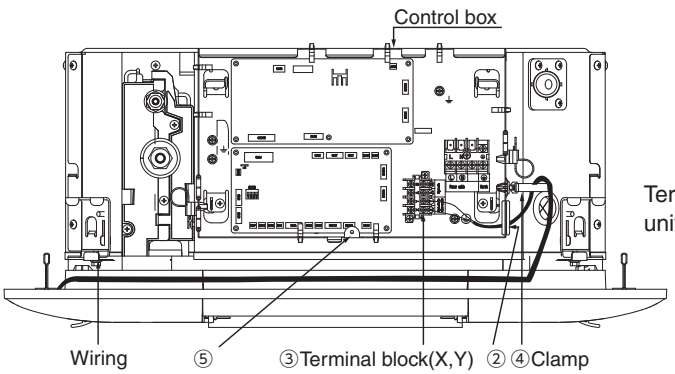
③ How to install the receiver(continued)

Installation of the receiver

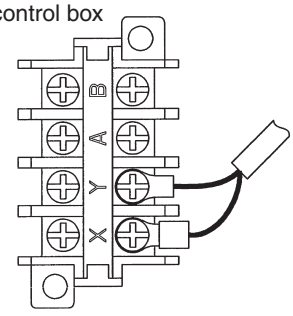
① Attach the receiver to the panel according to the panel installation manual.
② Put the wiring in the control box with other wiring as shown below.
③ Connect the wiring to the terminal block (X,Y) provided in the control box.(No polarity)
④ Fix the wiring with the clamp as shown below.
⑤ Reattach the 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

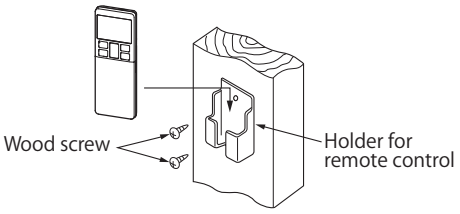


④ Wireless remote control

Installation tips for the remote control holder

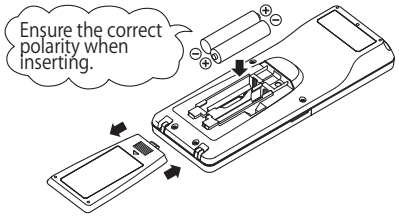
Fix the remote control holder using the screws supplied with this product.

* 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.



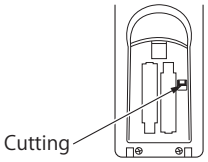
How to insert batteries

1. Detach the back lid.
2. Insert the batteries. (two AAA batteries)
3. Reattach the back lid.



Setting to avoid mixed communication

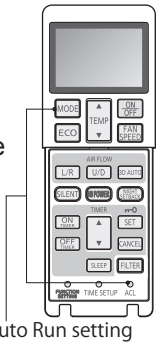
1. Detach the back lid, and remove the batteries.
2. Cut off the switching wire in the battery compartment using nippers.
3. Insert the batteries, and attach the back lid.



Changing the wireless remote control setting

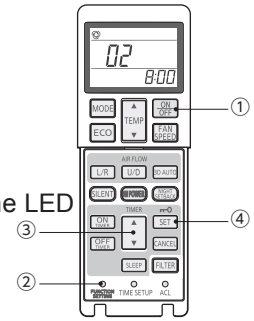
How to change the Auto Run setting
The Auto Run mode is not available on the building air-conditioner and gas heat pump series (excluding the cooling/heating free multi system).
When using the wireless remote control to operate those models, set the wireless remote control to disable the Auto Run mode.
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.

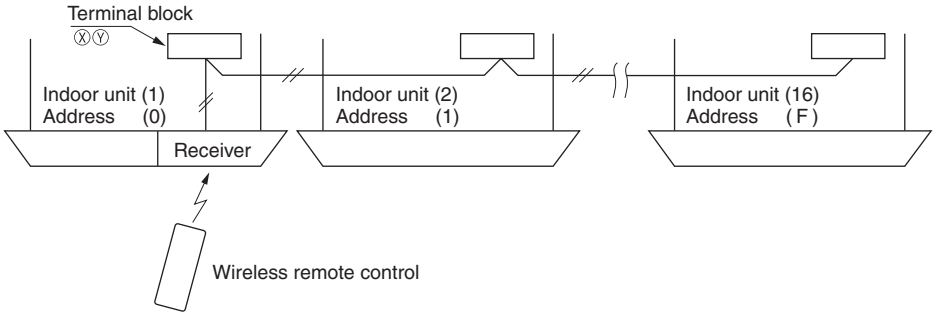
1. Connect the XY terminal with 2 cores wire. As for the size, refer to the following note.
2. For Packaged air-conditioner series, set the indoor unit address with SW2 on the indoor unit PCB from [0] to [F] so as not to duplicate.

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.

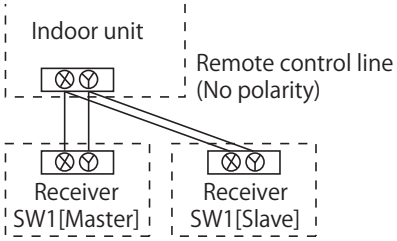


For the building air-conditioner and gas heat pump series

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.

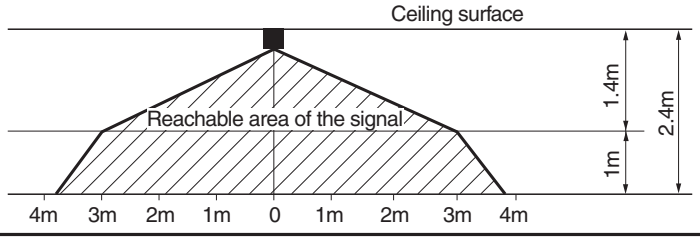


Switch	Setting	Function
SW2	ON	Master
	OFF	Slave

Wireless remote control's operable area

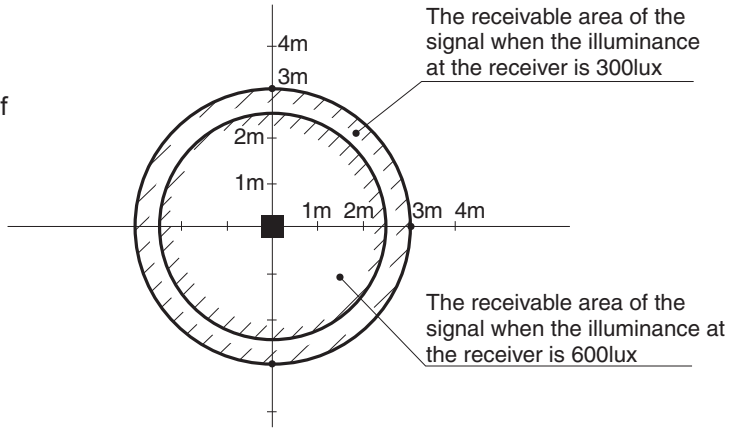
1. Standard reachable area of the signal

[Condition] Illuminance at the receiver: 300lux
(when no lighting is installed within 1m of the receiver in an ordinary office.)



⑤ Receiver (continued)

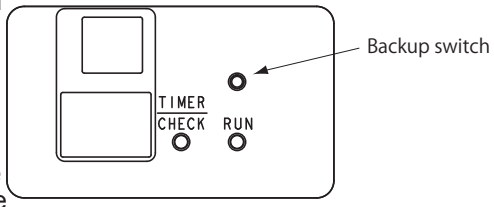
2. Correlation between illuminance at the receiver and reachable area of the signal in a plain view.
   The drawing in the right shows the correlation between the reachable area of the signal and illuminance at the receiver when the wireless remote control is operated at 1m high under the condition of 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.

(b) 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

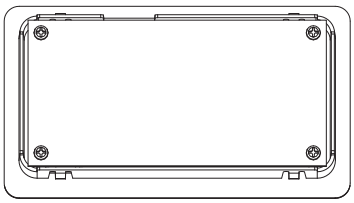
PCB on the receiver has the following switches to set the function.
Default setting is shown with [ ] mark.

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]

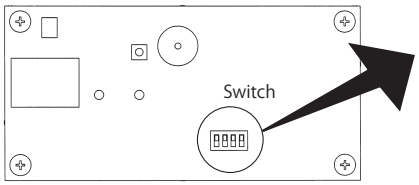
② Preparation before installation (continued)

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

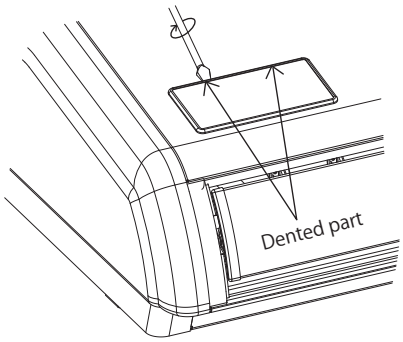
Up to two receiver or wired remote control can be installed in one indoor unit group. When two receiver or wired remote control are used, it is necessary to change SW on the PCB to set it as slave.

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

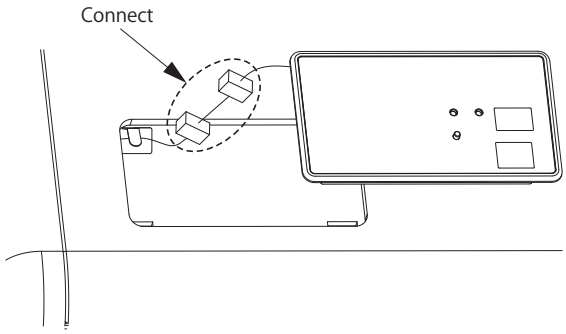
The receiver can be installed by replacing with a cover of the panel.
CAUTION: When installing the receiver after unit has been fixed, injury due to falling may result because of working at high place.

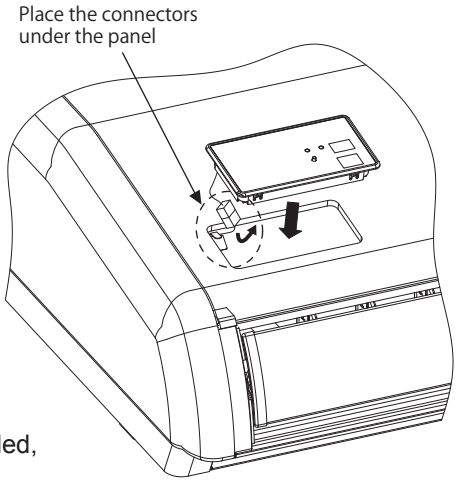


① **Remove the cover**
Insert a flat-blade screw driver into the dented part (2 places), and wrench slightly.

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.

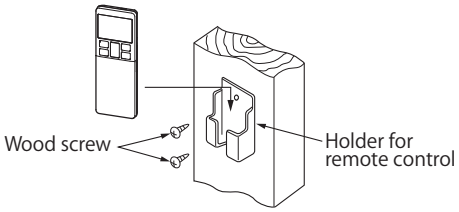
CAUTION: Connect the connectors before installing the receiver.
In case of connecting after the receiver had been installed, it will be necessary to remove the panel.

④ Wireless remote control

Installation tips for the remote control holder

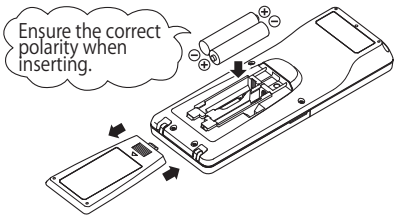
Fix the remote control holder using the screws supplied with this product.

* 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



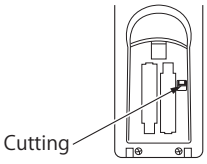
How to insert batteries

1. Detach the back lid.
2. Insert the batteries. (two AAA batteries)
3. Reattach the back lid.



Setting to avoid mixed communication

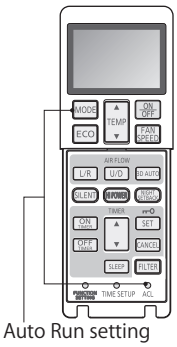
1. Detach the back lid, and remove the batteries.
2. Cut off the switching wire in the battery compartment using nippers.
3. Insert the batteries, and attach the back lid.



Changing the wireless remote control setting

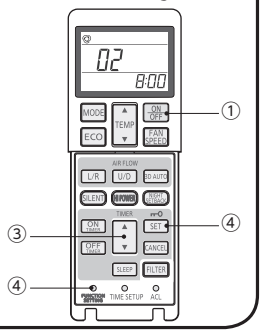
How to change the Auto Run setting
The Auto Run mode is not available on the building air-conditioner and gas heat pump series (excluding the cooling/heating free multi system).
When using the wireless remote control to operate those models, set the wireless remote control to disable the Auto Run mode.
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.

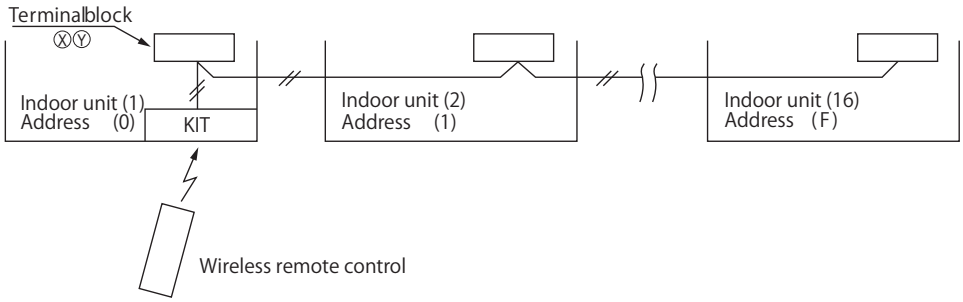
1. Connect the XY terminal with 2 cores wire. As for the size, refer to the following note.
2. For Packaged air-conditioner series, set the indoor unit address with SW2 on the indoor unit PCB from [0] to [F] so as not to duplicate.

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.

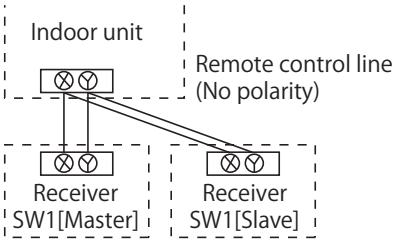


For the building air-conditioner and gas heat pump series

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.

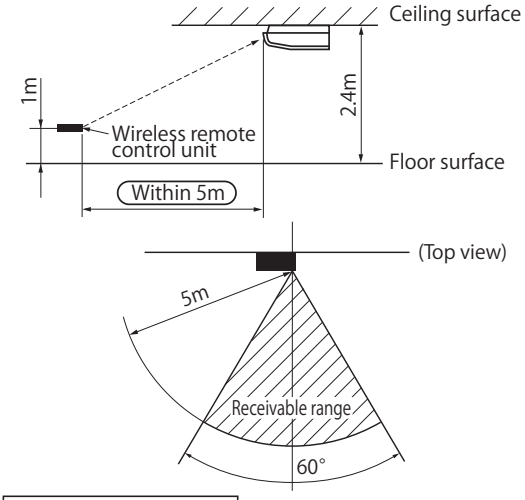


Switch	Setting	Function
SW2	ON	Master
	OFF	Slave

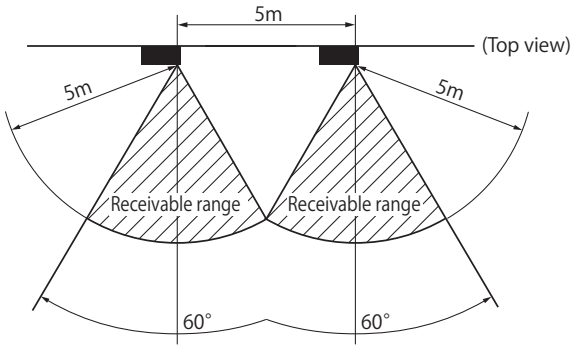
⑤ Receiver (continued)

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)

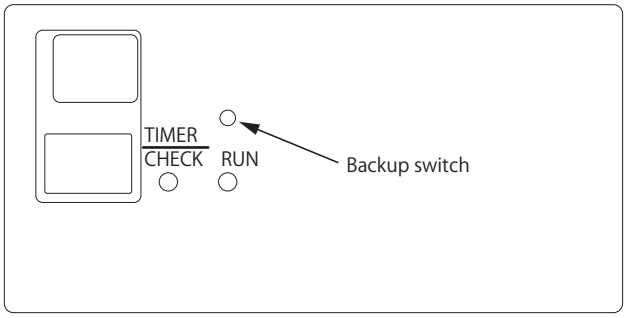


2. Points for attention in connecting a plural number of indoor units
   [Condition]
   Illuminance at the receiver area: 360 lux.



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.

(c) FDUM series
RCN-KIT4-E2

PJZ012D112

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

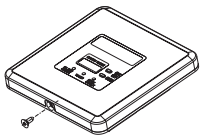
PCB on the receiver has the following switches to set the function. Default setting is shown with ☐ mark.

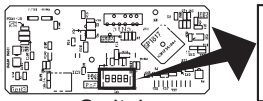
SW1	Prevents interference during plural setting	☐ ON : Normal	OFF : Customized
SW2	Receiver master/ slave setting	☐ ON : Master	OFF : Slave
SW3			
SW4	Auto restart	ON : Valid	☐ OFF : Invalid

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.





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.

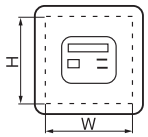
③ How to install the receiver

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

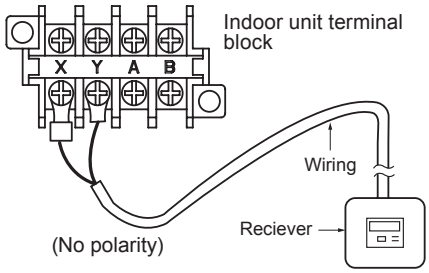
(1) Drilling of the ceiling (ceiling opening)

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

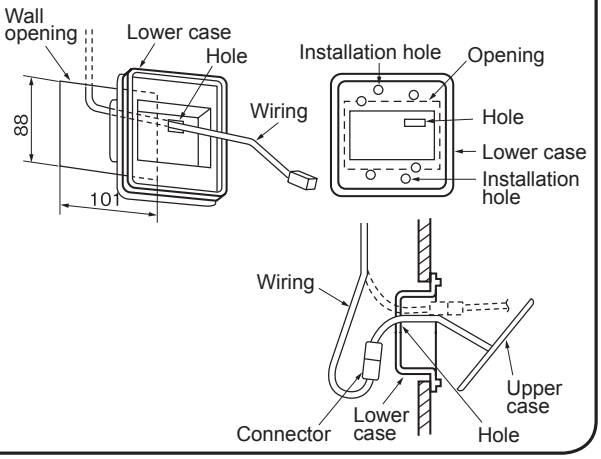
▷ Use this installation method when the ceiling is wooden, and there is no problem for strength in installing directly with wood screws.

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.

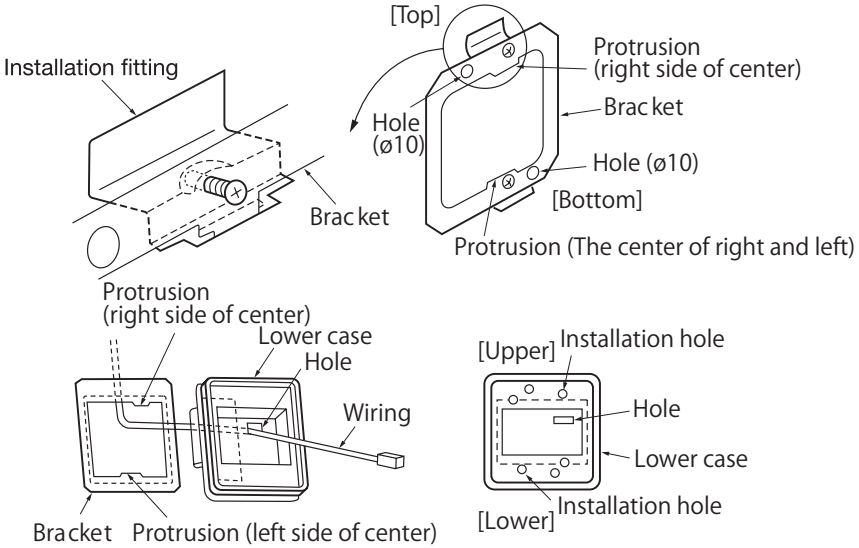


③ How to install the receiver(continued)

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.

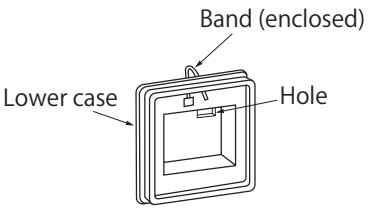


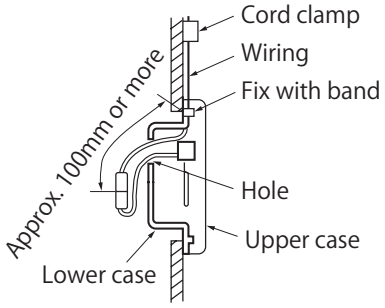
① Catch the two protrusion of the enclosed bracket onto the fitting as shown above, and temporarily fix with the screws. (The bracket has an Upper/Lower and front/back orientation. Confirm the Upper/Lower protrusion positions and the positional relation of the ø10 holes on the bracket and the installation 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.





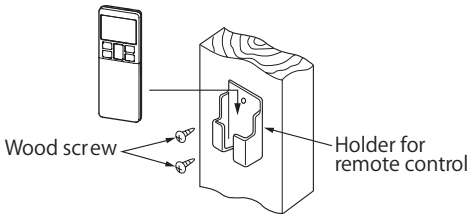
① Cut off the thin section on the side of the upper case with a pair of nippers or a knife, and remove the burrs with a file, etc. (The wiring is passed through this section.)
② Pass the enclosed band through the wiring outlet hole on the lower case.
③ Use on of the light detection adaptor installation 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

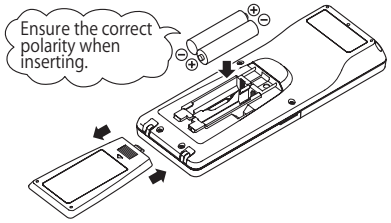
Fix the remote control holder using the screws supplied with this product.

* 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.



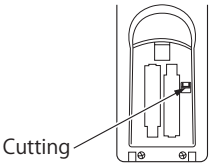
How to insert batteries

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.

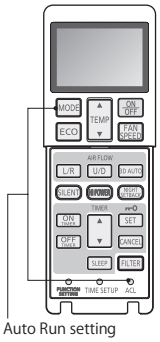


④ Wireless remote control (continued)

Changing the wireless remote control setting

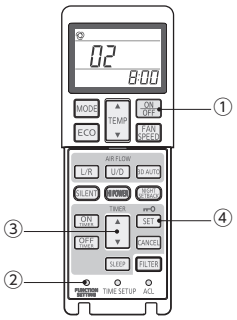
How to change the Auto Run setting
The Auto Run mode is not available on the building air-conditioner and gas heat pump series (excluding the cooling/heating free multi system).
When using the wireless remote control to operate those models, set the wireless remote control to disable the Auto Run mode.
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.

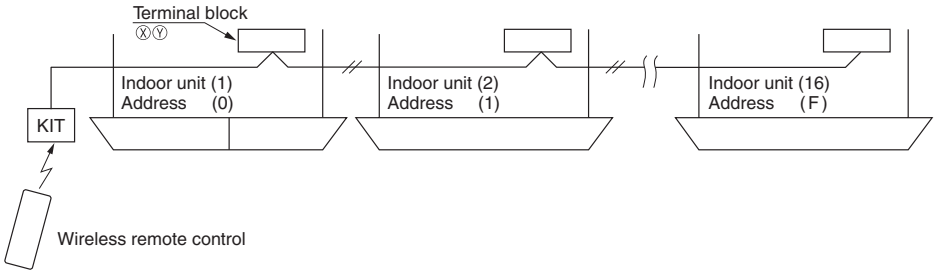
Restrictions on the thickness and length of wire (Maximun total extension 600m.)

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.

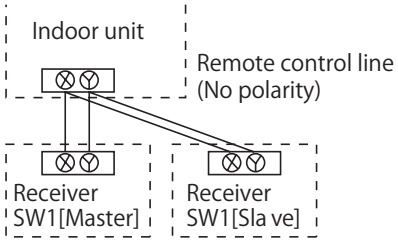


For the building air-conditioner and gas heat pump series

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.

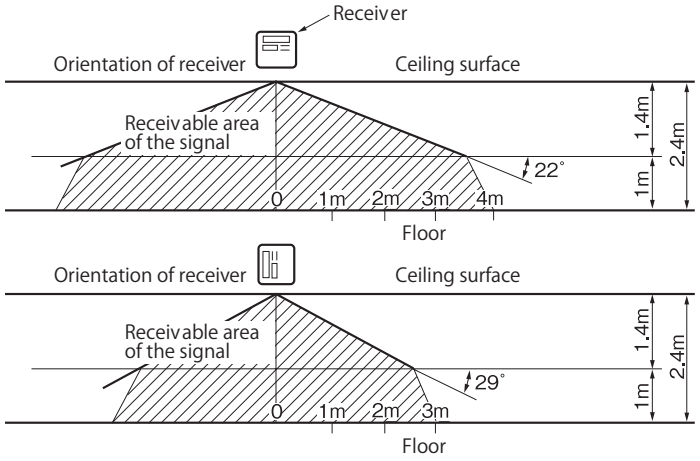


Switch	Setting	Function
SW2	ON	Master
	OFF	Slave

When installed on ceiling

1. Standard reachable area of the signa

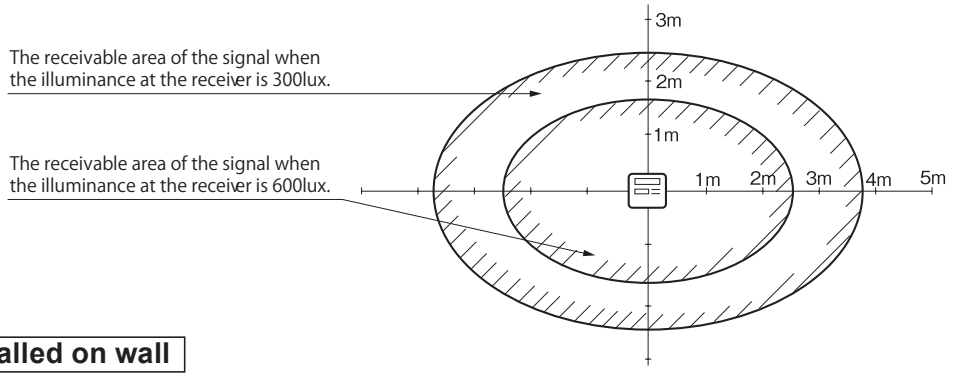
[Condition] Illuminance at the receiver : **300lux** (when no lighting is installed within 1m of the receiver in an ordinary office.)l



2. Correlation between illuminance at the receiver and reachable area of the signal in a plain view.

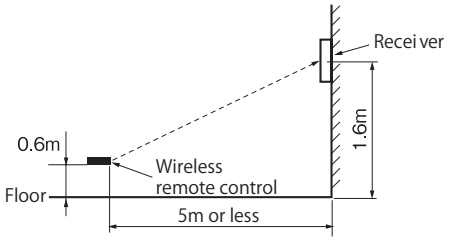
[Condition] Correlation between the reachable area of the signal and illuminance at the receiver when the wireless remote control is operated at 1m high under the condition of ceiling height of 2.4m. When the illuminance becomes double, the area is narrowed down to two third.

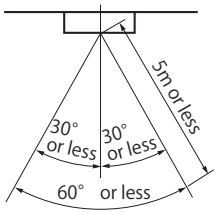
⑤ Receiver (continued)



When installed on wall

[Condition] Illuminance at the receiver : 800lux.

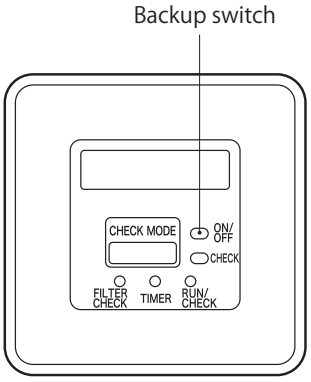




Backup switch

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

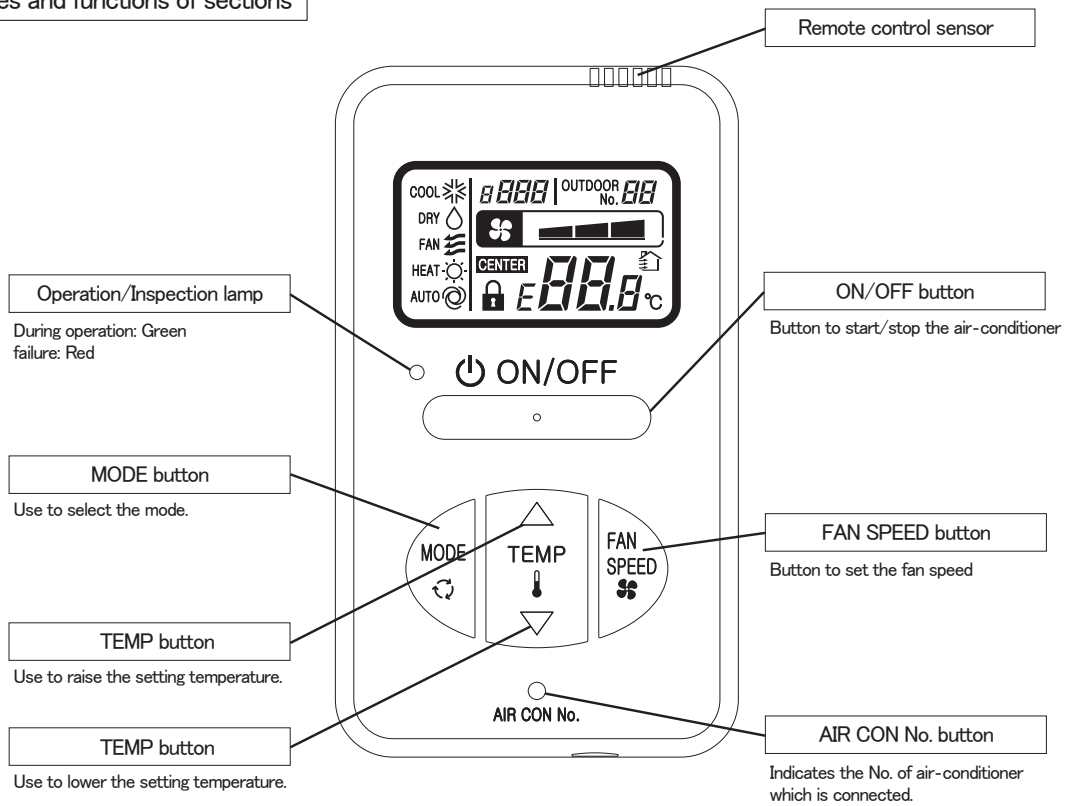
A 6-digit indicator (7-segment indicator) is provided on the receiver section.

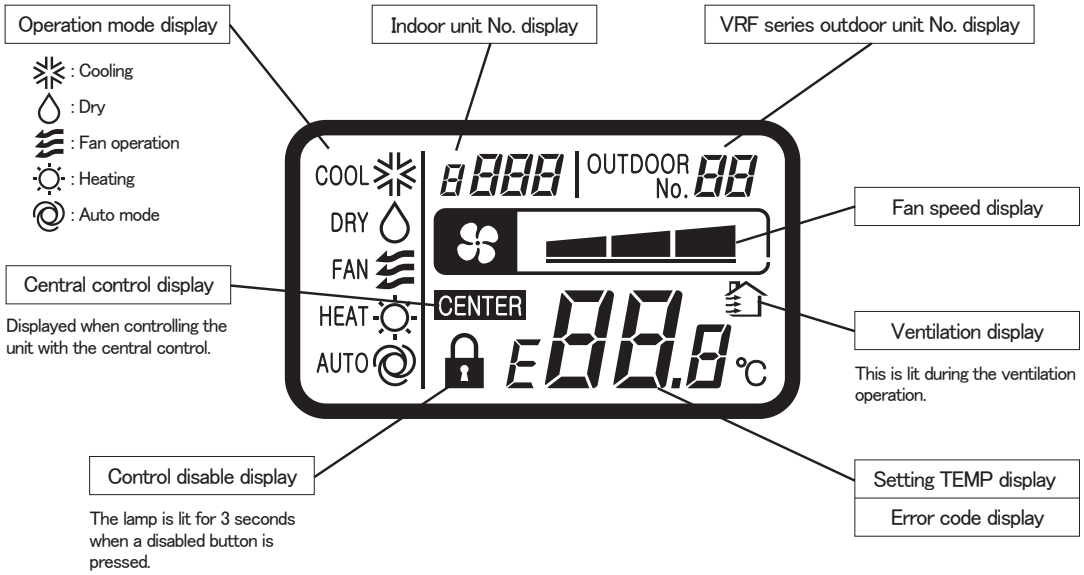
1. An indication will be displayed for one hour after power on.
2. An indication appears for 3.5 seconds when a “Stop” command is sent from the wireless remote control unit while the air-conditioner is not running.
3. An indication appearing in (1) or (2) above will go off as soon as the unit starts 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.

(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





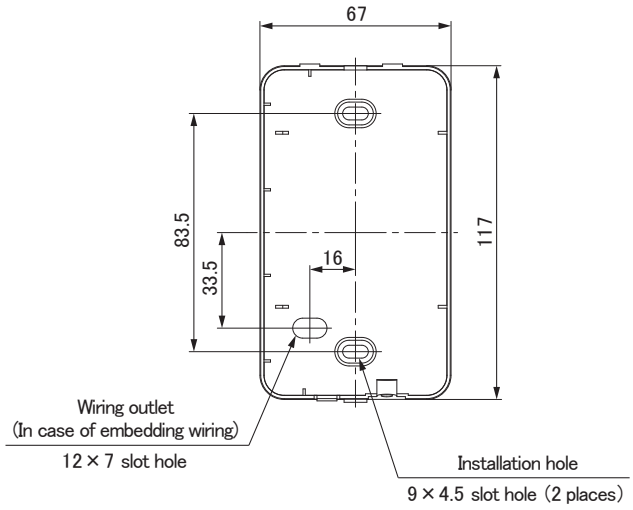
Installation of remote control

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

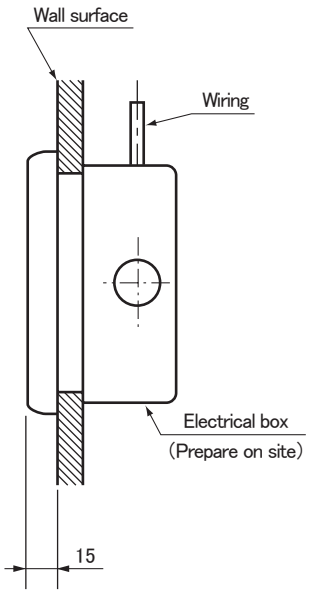
PJZ000Z272 a

Remote control installation dimensions

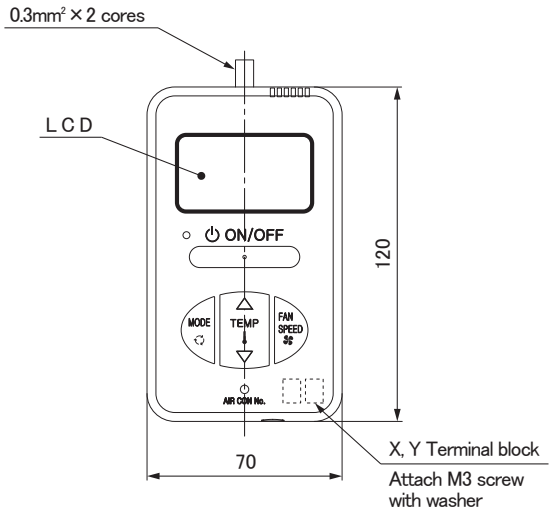


Note: Installation screw for remote control
M4 screw (2 pieces)

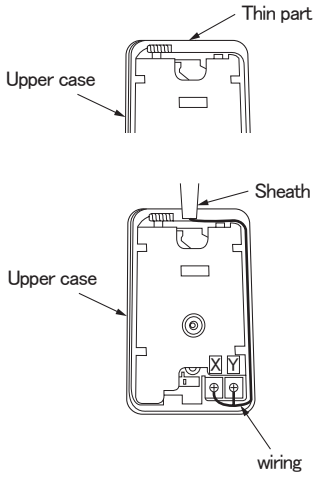
In case of embedding wiring



In case of exposing wiring

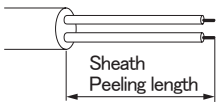


The remote control wiring can be extracted from the upper center.
After the thin part in the upper side of the remote control upper case is scraped with a nipper or knife, remove burr with a file.



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

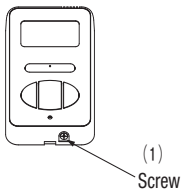
- **Do not install the remote control at the following places in order to avoid malfunction.**
  (1) Places exposed to direct sunlight
  (2) Places near heat devices
  (3) High humidity places
  (4) Hot surface or cold surface enough to generate condensation
  (5) Places exposed to oil mist or steam 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 (ϕ 3.5×16) 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)

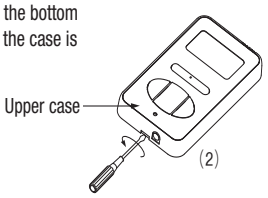
1. Installation procedure

In case of embedding cord

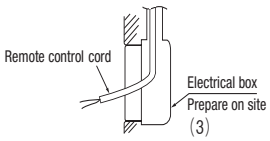
(1) Make certain to remove the screw on the bottom surface of the remote control.



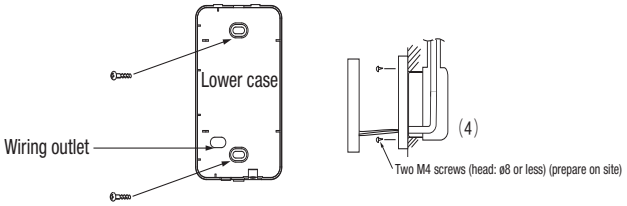
(2) Remove the upper case of the remote control.
Insert a flat-blade screwdriver to a concave portion of the bottom surface of the remote control and slightly twist it, and the case is removed.



(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.

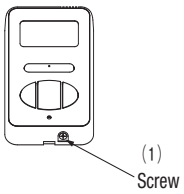


(5) Connect the remote control cord to the terminal block.
Connect the terminals (X and Y) of the remote control and the terminals (X and Y) of the indoor unit. (No polarity of X and Y)

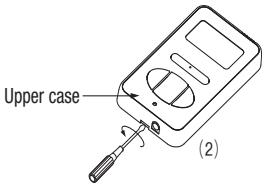
(6) Mount the upper case for restoring to its former state so as not to crimp the remote control cord, and secure with the removed screw.

In case of exposing cord

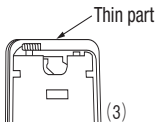
(1) Make certain to remove a screw on the bottom surface of the remote control.



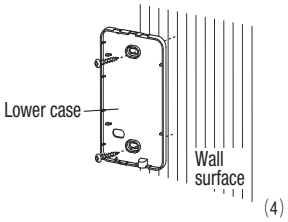
(2) Remove the upper case of the remote control.
Insert a flat-blade screwdriver to a concave portion of the bottom surface of the remote control and slightly twist it, and the case is removed.



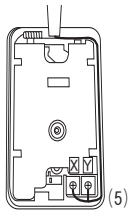
(3) The remote control cord can be extracted from the upper center.
After the thin part in the upper side of the remote control upper case is scraped with a nipper or knife, remove burr with a file.



(4) The lower case of the remote control is mounted to a flat wall with two accessory wood screws.

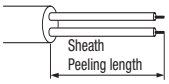


(5) Connect the remote control cord to the terminal block.
Connect the terminals (X and Y) of the remote control and the terminals (X and Y) of the indoor unit. (No polarity of X and Y)
The wiring route is as shown in the right.



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.

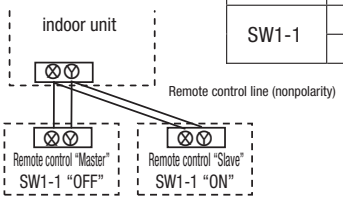
2. Installation and wiring of remote control

(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

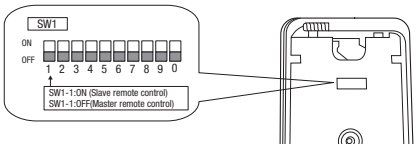
(1) Up to two remote controls can be connected to one unit (or one group) of indoor unit.

Switch	Setting	Function detail
SW1-1	ON	Slave remote control
	OFF	Master remote control



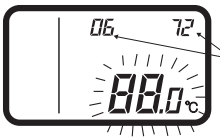
(2) Set the switch SW1-1 of the slave remote control is "Slave" (ON). The factory default is set as "Master" (OFF).

(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.

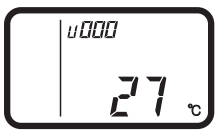
(1) **Press AIR CON No. button for over 5 seconds.**
"88" blinks on the temperature setting indicator.
("88" blinks for approximately 2 seconds while data is read.)
↓
Then, the return air temperature is displayed.
(Example) return air temperature: "27 °C" (blinking)

(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.

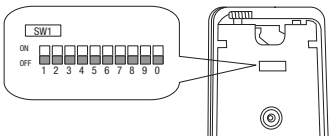
6. Function setting

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

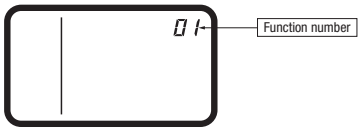
Fan speed setting	Indoor unit fan speed setting		
	❋■■■ - ❋■■ - ❋■	❋■■■ - ❋■	❋■■■ - ❋■■
Standard	Hi — Mid — Lo	Hi — Lo	Hi — Mid
High speed 1 ・ 2	UHi — Hi — Mid	UHi — Mid	UHi — Hi

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".

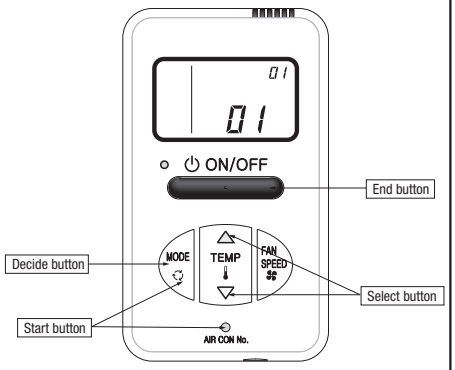
7. How to set functions by button operation

(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.

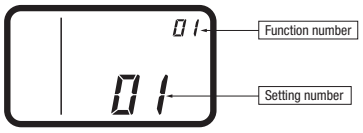


(2) **Press TEMP△ or TEMP▽ button.**
Select the function number.

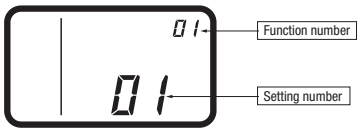
(3) **Press MODE button.**
Decide the function number.



(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)



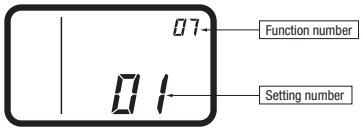
② **Press TEMP△ or TEMP▽ button.**
Select the setting number.
③ **Press MODE button.**
The setting is completed.
Light is on for approximately 3 to 20 seconds while data of the decided function No. and setting No. is transmitted.
(Example)
Function number: "01" (lighting for 3 to 20 seconds)
Setting 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).

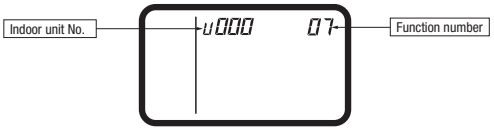
(5) **Press ON/OFF button.**
The setting is completed.

[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 .

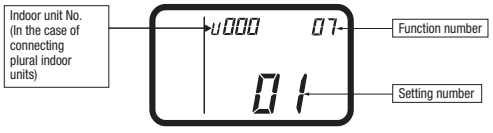
[Note]
a. In the case of connecting one remote control to plural indoor units, the display will be as follows:
Indoor unit No. display: "U 000" (blinking)
(Display the lowest number among the connected indoor units.)



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) 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.

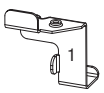
⚠CAUTION

●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)

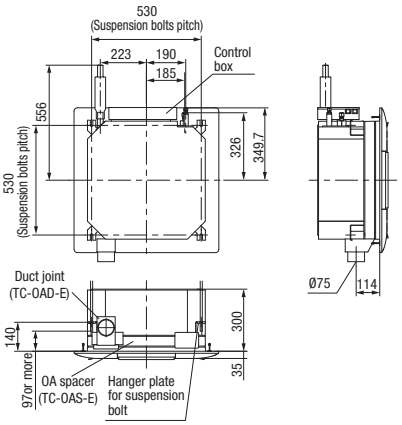
Duct Joint	Screw	Insulation 1 (120 × 54)	Insulation 2 (40 × 60)
			
1	6	1	2

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

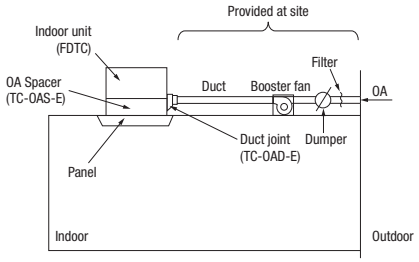
- Intake outdoor air volume is 2.6 m³/min at the maximum (when two sets of duct joints are used).
  Up to two sets of duct joint can be installed on OA spacer.
  In case one set of duct joint is installed: 1.3 m³/min max.
  In case two sets of duct joint is installed: 2.6 m³/min max.

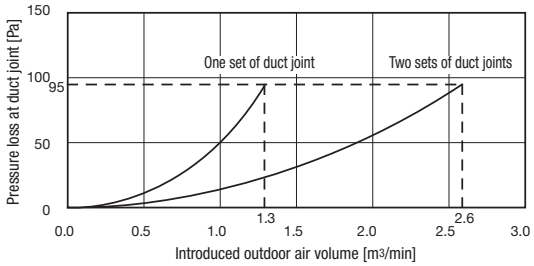
(3) Selection of booster fan

- 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.)



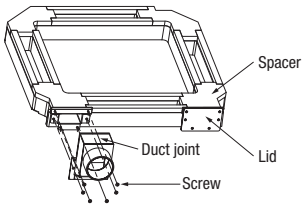


③ Installation of duct joint (TC-OAD-E) onto OA spacer

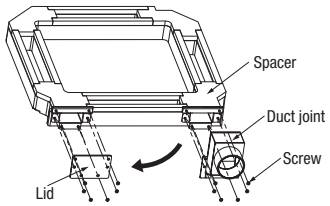
・There are two places where the duct joint can be installed.

When installing one duct joint

Install OA spacer at either one of two installation places on the duct joint.

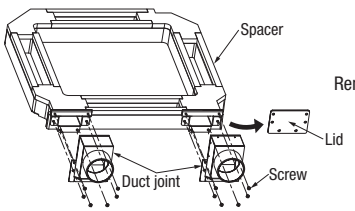


To install the duct joint, screw it in as shown at left.



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



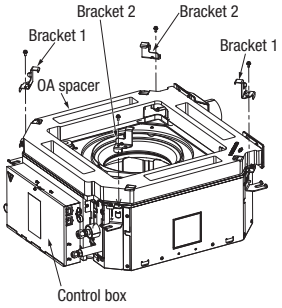
Remove the lid and then install two pieces of duct joint.

④ Installation of OA spacer on the indoor unit

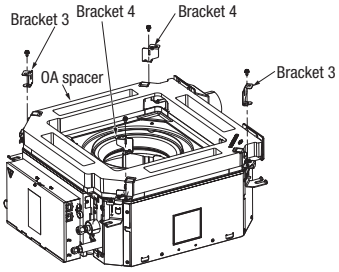
OA spacer can be installed regardless whether the indoor unit has already been hanged or not.
(It is recommended to install before hanging the unit for convenience of installation.)

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.

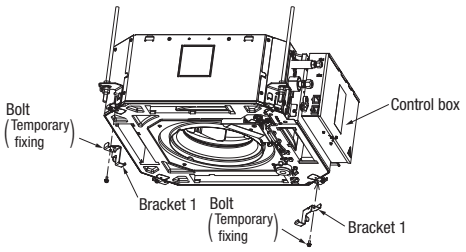


② Fix the brackets 3 and 4 (2 pieces each) with bolts.

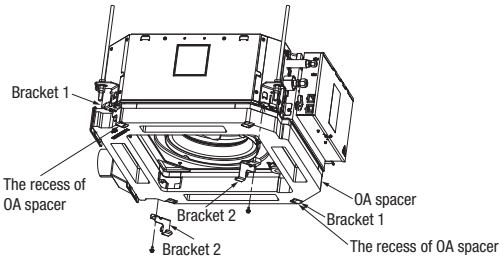


1-2. When installing OA spacer after hanging the indoor unit

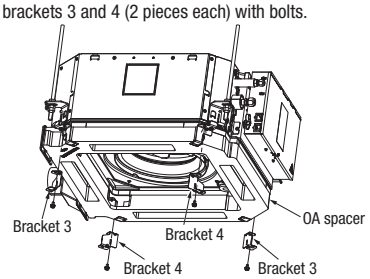
① After hanging the indoor unit (*), fix the bracket 1 (2 pieces) temporarily with bolt by 2 turns as shown in the figure.
* For the height (position) of hanging the indoor unit, refer to Section 5.



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)

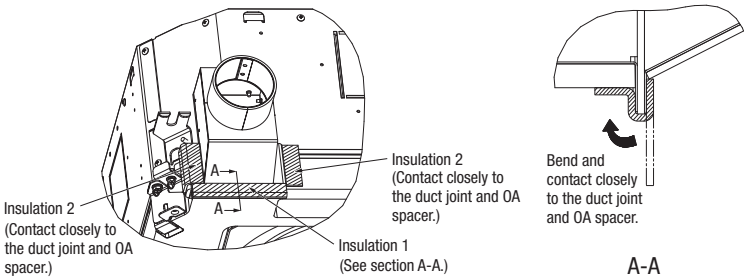


③ Fix the brackets 3 and 4 (2 pieces each) with bolts.



2. Applying insulation

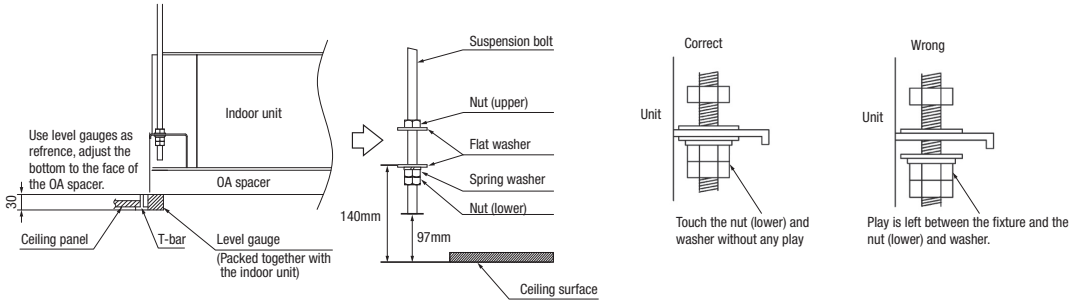
Applying the insulation attached to duct joint set (TC-OAD-E)
① Applying the insulation 1 as shown in the figure.
② Applying the insulation 2 as shown in the figure.
* Be sure to cover the entire surface of sheet metal of the duct joint with the insulation.



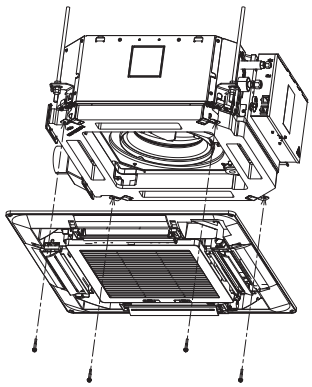
⑤ Installation of indoor unit

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



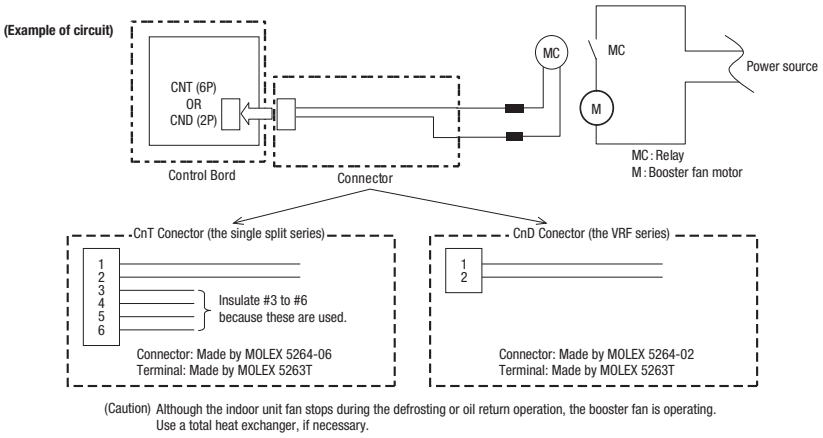
Tighten the panels to the brackets 3 and 4 with bolts.
For further details, refer to the installation manual of panel.

(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.

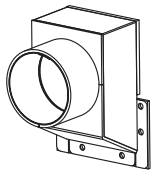
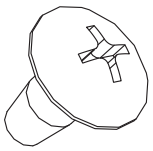
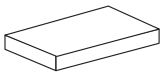
(4) Duct joint (FDTC series)

PJZ012D073

● This product is used by assembling on the spacer (TC-OAS-E)

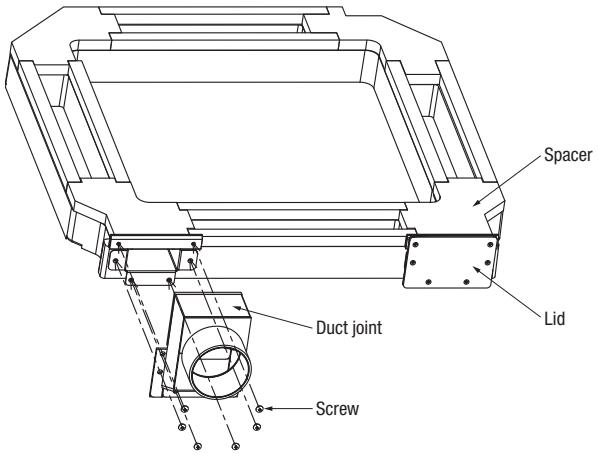
1.Before installation

• 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.



(5) Filter kit (FDUM series)

PJZ012D076A

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.

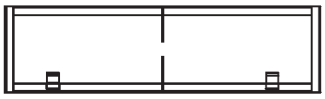
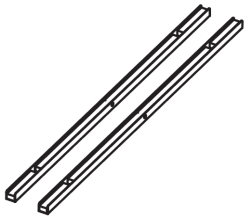
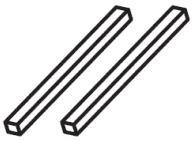
⚠ CAUTION

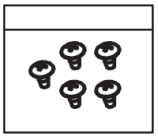
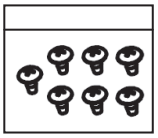
- After unpacking, carry out this work on the ground.
- Do not carry out the work during operation, or there is a danger of being entangled in the rotating parts and getting injured.
- Clean the air filter regularly.
- Be sure to entrust qualified serviceman to performance on the air filter.
- Be sure 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

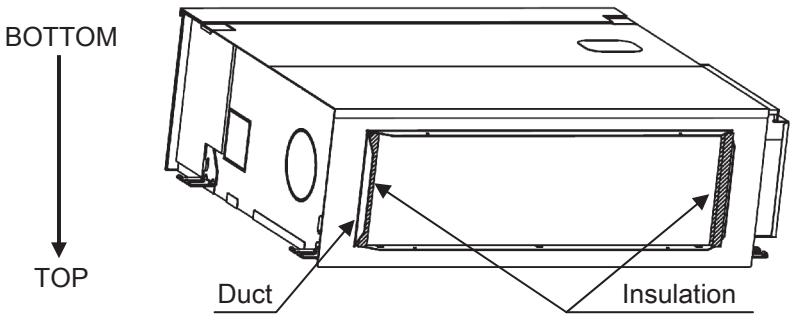
2. Parts list of filter kit

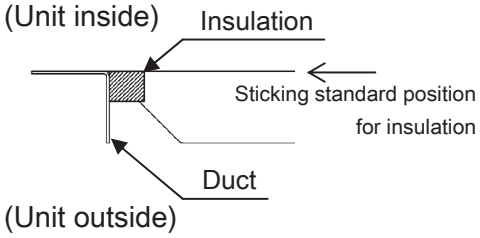
Filter	Rail	Insulation
 1pc	 2pc	 2pc

Bracket	Parts set (screw)	
 1pc	 small and medium model : 5pcs.	 large model : 7pcs. 1pc

3. Installation Points

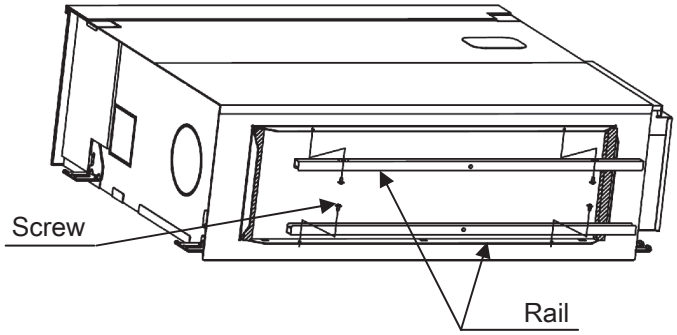
(1) Stick the insulation on both inner sides of the duct, leaving no space up and down.



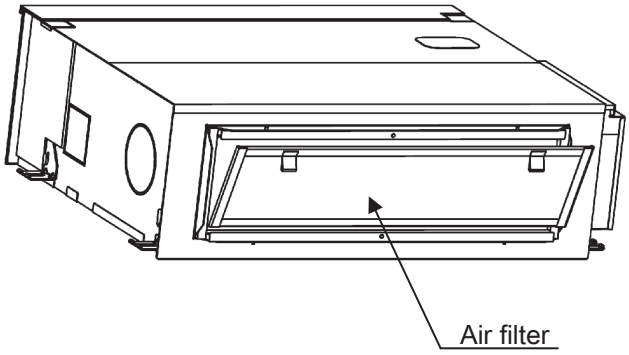


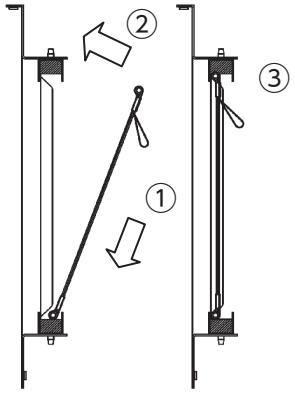
(*) After unpacking, bottom side of the unit is located at the upper side.

(2) Install the rail on both inner sides of the duct with the screw.



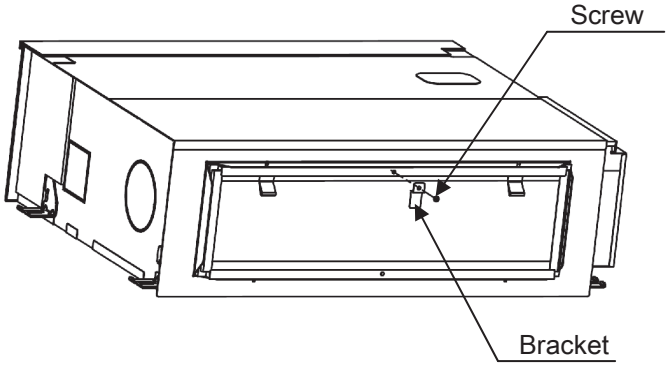
(3) Install the air filter on the rails.





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.

(6) 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.

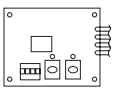
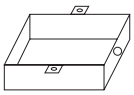
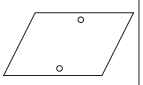
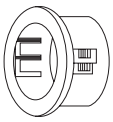
⚠Caution

- 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

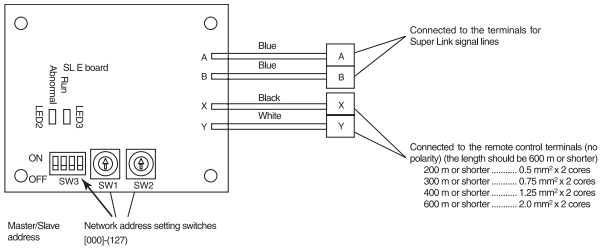
Settings can be changed by the switch SW3 on the SL E board as in the following.

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)



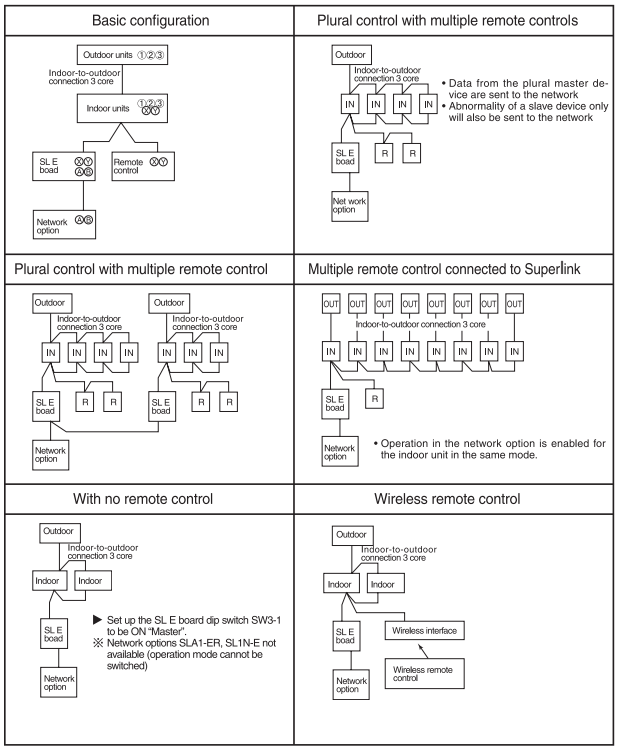
(*1) Whether the actual link is either the new Superlink or the previous Superlink depends on the models of the connected outdoor and indoor units. Consult the agent or the dealer.

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

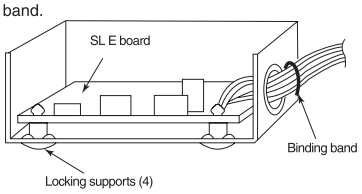
(*2) Up to 1500 m for 0.75 mm², and up to 1000 m for 1.25 mm².
Do not use 2.0 mm². It may cause an error.
(*3) Connect grounding on both ends of the shielding wire.
For the grounding method, refer to the section "6 Installation".

(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.

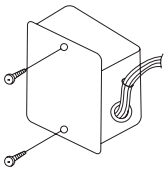


6 Installation

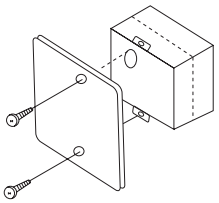
1. When using the metal box (mounted on the indoor unit / mounted on the back of the remote control):
   (1) Mount the SL E board in the metal box using the locking supports.
   (2) Wiring should go through the provided grommet since then through the wiring to the hole on the Metal box.
   Secure the 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.



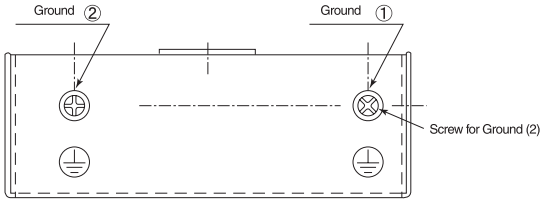
▲ When installed outside the indoor unit, put the metal cover on.



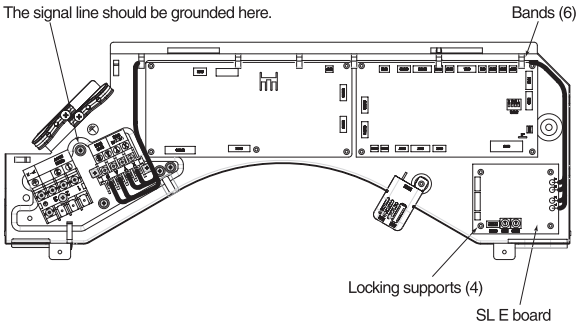
▲ When installed on the back of the remote control, mount it directly on the remote control bottom case.



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

HYPER INVERTER PACKAGED AIR-CONDITIONERS

MITSUBISHI HEAVY INDUSTRIES

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