

MHI

TECHNICAL MANUAL

**INVERTER WALL MOUNTED TYPE
RESIDENTIAL AIR-CONDITIONERS
(Split system, air to air heat pump type)**

SRK20ZM-S

25ZM-S

35ZM-S

50ZM-S



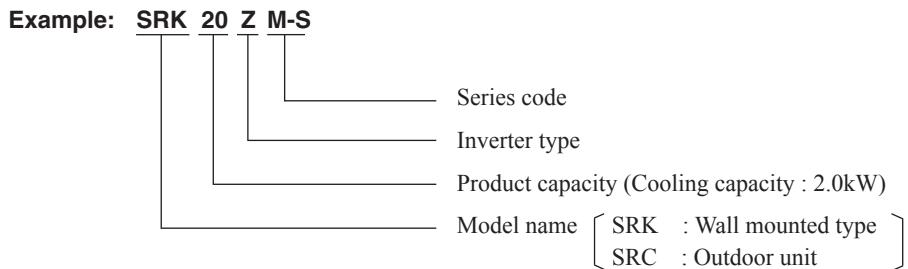
MITSUBISHI HEAVY INDUSTRIES, LTD.

CONTENTS

1. SPECIFICATIONS	3
2. EXTERIOR DIMENSIONS	7
(1) Indoor units	7
(2) Outdoor units	8
(3) Remote control	10
3. ELECTRICAL WIRING	12
(1) Indoor units	12
(2) Outdoor units	13
4. NOISE LEVEL	15
5. PIPING SYSTEM	19
6. RANGE OF USAGE & LIMITATIONS	21
7. CAPACITY TABLES	23
8. APPLICATION DATA	25
(1) Installation of indoor unit	25
(2) Installation of outdoor unit	29
9. OUTLINE OF OPERATION CONTROL BY MICROCOMPUTER	37
(1) Operation control function by wireless remote control	37
(2) Unit ON/OFF button	38
(3) Auto restart function	38
(4) Installing two air conditioners in the same room	38
(5) Selection of the annual cooling function	39
(6) High power operation	39
(7) Economy operation	39
(8) Flap and louver control	40
(9) 3D auto operation	41
(10) Timer operation	42
(11) Silent mode	42
(12) Night setback	42
(13) Installation location setting	42
(14) Outline of heating operation	43
(15) Outline of cooling operation	44
(16) Outline of dry (dehumidifying) operation	45
(17) Outline of automatic operation	45
(18) Protective control function	46
10. MAINTENANCE DATA	54
(1) Cautions	54

(2) Items to check before troubleshooting	54
(3) Troubleshooting procedure (If the air conditioner does not run at all)	54
(4) Troubleshooting procedure (If the air conditioner runs)	55
(5) Self-diagnosis table	56
(6) Service mode (Trouble mode access function)	57
(7) Inspection procedures corresponding to detail of trouble	65
(8) Phenomenon observed after shortcircuit, wire breakage on sensor	70
(9) Checking the indoor electrical equipment	70
(10) How to make sure of wireless remote control	72
(11) Inspection procedure for blown fuse on the indoor and outdoor PCB	72
(12) Outdoor unit inspection points	73
11. OPTION PARTS	76
(1) Wired remote control (RC-E5)	76
(2) Interface kit (SC-BIKN-E)	82
(3) Super link E board (SC-ADNA-E)	86
12. TECHNICAL INFORMATION	88

■How to read the model name



1. SPECIFICATIONS

Item	Model	SRK20ZM-S	
		Indoor unit SRK20ZM-S	Outdoor unit SRC20ZM-S
Power source		Single phase, 220 - 240V, 50Hz	
Operation data	Nominal cooling capacity (range)	kW	2.0 (1.0 (Min.) - 2.7 (Max.))
	Nominal heating capacity (range)	kW	2.7 (1.2 (Min.) - 3.9 (Max.))
	Power consumption	Cooling	0.44 (0.21 - 0.77)
		Heating	0.62 (0.27 - 1.38)
	Max power consumption		1.65
	Running current	Cooling	2.5 / 2.4 / 2.3 (220/ 230/ 240 V)
		Heating	3.2 / 3.1 / 3.0 (220/ 230/ 240 V)
	Inrush current, max current		3.2 / 3.1 / 3.0 (220/ 230/ 240 V) Max. 9
	Power factor	Cooling	79.7
		Heating	87
EER	Cooling		4.55
COP	Heating		4.35
Sound power level	Cooling	dB(A)	49
	Heating		52
	Cooling		Hi: 33 Me: 27 Lo: 24 ULo: 21
	Heating		Hi: 36 Me: 31 Lo: 24 ULo: 21
	Silent mode sound pressure level		— Cooling:42 / Heating:45
Exterior dimensions (Height x Width x Depth)	mm	294 x 798 x 229	540 x 780(+62) x 290
Exterior appearance (Munsell color)		Fine snow (8.0Y 9.3/0.1) near equivalent	Stucco white (4.2Y 7.5/1.1) near equivalent
Net weight	kg	9.5	31.5
Compressor type & Q'ty		—	RM-B5077MDE1(Rotary type) x 1
Compressor motor (Starting method)	kW	—	0.75 (Inverter driven)
Refrigerant oil (Amount, type)	ℓ	—	0.35 (DIAMOND FREEZE MA68)
Refrigerant (Type, amount, pre-charge length)	kg	R410A 0.75 in outdoor unit (incl. the amount for the piping of 15m)	
Heat exchanger		Louver fins & inner grooved tubing	M fins & inner grooved tubing
Refrigerant control		Capillary tubes + Electronic expansion valve	
Fan type & Q'ty		Tangential fan x 1	Propeller fan x 1
Fan motor (Starting method)	W	30 x1 (Direct drive)	24 x1 (Direct drive)
Air flow	Cooling	m³/min	Hi: 7.8 Me: 5.6 Lo: 5.3 ULo: 4.8
	Heating		Hi: 9.8 Me: 6.3 Lo: 5.0 ULo: 4.5
Available external static pressure	Pa	0	0
Outside air intake		Not possible	
Air filter, Quality / Quantity		Polypropylene net (washable) x 2	
Shock & vibration absorber		Rubber sleeve (for fan motor)	
Electric heater		—	—
Operation control	Remote control	Wireless remote control	
	Room temperature control	Microcomputer thermostat	
	Operation display	RUN: Green, TIMER: Yellow, HI POWER: Green, 3D AUTO: Green	
Safety equipments		Compressor overheat protection, Overcurrent protection, Frost protection, Serial signal error protection, Indoor fan motor error protection, Heating overload protection (High pressure control), Cooling overload protection	
Installation data	Refrigerant piping size (O.D)	mm	Liquid line : ϕ 6.35 (1/4") Gas line : ϕ 9.52 (3/8")
	Connecting method		Flare connection
	Attached length of piping	m	Liquid line : 0.53 / Gas line : 0.40
	Insulation for piping		Necessary (Both sides), independent
	Refrigerant line (one way) length	m	Max. 15
	Vertical height diff. between O.U. and I.U.	m	Max. 10 (Outdoor unit is higher) / Max. 10 (Outdoor unit is lower)
	Drain hose		Hose connectable (VP 16) Holes ϕ 20 x 2 pcs
Drain pump, max lift height	mm	—	—
Recommended breaker size	A		16
L.R.A. (Locked rotor ampere)	A	3.2 / 3.1 / 3.0 (220/ 230/ 240 V)	
Interconnecting wires	Size x Core number	1.5mm² x 4 cores (Including earth cable) / Terminal block (Screw fixing type)	
IP number		IPX0	IPX4
Standard accessories		Mounting kit, Clean filter (Allergen clear filter x 1, Photocatalytic washable deodorizing filter x 1)	
Option parts		Interface kit (SC-BIKN-E)	
Note (1) The data are measured at the following conditions.			The pipe length is 7.5m.
Operation	Indoor air temperature	Outdoor air temperature	
	DB	WB	Standards
	27°C	19°C	
	Heating	20°C	35°C 24°C ISO5151-T1
(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 value are somewhat higher due to ambient conditions.			
(4) Select the breaker size according to the own national standard.			

RWA000Z253 

Item	Model	SRK25ZM-S	
		Indoor unit SRK25ZM-S	Outdoor unit SRC25ZM-S
Power source		Single phase, 220 - 240V, 50Hz	
	Nominal cooling capacity (range)	kW	2.5 (1.0 (Min.) - 2.9 (Max.))
	Nominal heating capacity (range)	kW	3.2 (1.2 (Min.) - 4.2 (Max.))
	Power consumption	Cooling	0.62 (0.21 - 0.88)
		Heating	0.80 (0.27 - 1.36)
	Max power consumption		1.65
	Running current	Cooling	3.2 / 3.1 / 3.0 (220/ 230/ 240 V)
		Heating	4.0 / 3.8 / 3.7 (220/ 230/ 240 V)
	Inrush current, max current		4.0 / 3.8 / 3.7 (220/ 230/ 240 V) Max. 9
Operation data	Power factor	Cooling	87
		Heating	91.5
	EER	Cooling	4.03
	COP	Heating	4.00
	Sound power level	Cooling	50
		Heating	55
	Sound pressure level	Cooling	Hi: 34 Me: 28 Lo: 24 ULo: 21
		Heating	Hi: 39 Me: 31 Lo: 24 ULo: 21
	Silent mode sound pressure level		— Cooling:42 / Heating:45
Exterior dimensions (Height x Width x Depth)	mm	294 x 798 x 229	540 x 780(+62) x 290
Exterior appearance (Munsell color)		Fine snow (8.0Y 9.3/0.1) near equivalent	Stucco white (4.2Y 7.5/1.1) near equivalent
Net weight	kg	9.5	31.5
Compressor type & Q'ty		—	RM-B5077MDE1(Rotary type) x 1
Compressor motor (Starting method)	kW	—	0.75 (Inverter driven)
Refrigerant oil (Amount, type)	ℓ	—	0.35 (DIAMOND FREEZE MA68)
Refrigerant (Type, amount, pre-charge length)	kg	R410A 0.75 in outdoor unit (incl. the amount for the piping of 15m)	
Heat exchanger		Louver fins & inner grooved tubing	M fins & inner grooved tubing
Refrigerant control		Capillary tubes + Electronic expansion valve	
Fan type & Q'ty		Tangential fan x 1	Propeller fan x 1
Fan motor (Starting method)	W	30 x1 (Direct drive)	24 x1 (Direct drive)
Air flow	Cooling	m³/min	Hi: 7.9 Me: 6.0 Lo: 5.3 ULo: 5.0
	Heating		Hi: 10.6 Me: 6.5 Lo: 5.1 ULo: 4.6
Available external static pressure	Pa	0	0
Outside air intake		Not possible	
Air filter, Quality / Quantity		Polypropylene net (washable) x 2	
Shock & vibration absorber		Rubber sleeve (for fan motor)	
Electric heater		—	—
Operation control	Remote control	Wireless remote control	
	Room temperature control	Microcomputer thermostat	
	Operation display	RUN: Green, TIMER: Yellow, HI POWER: Green, 3D AUTO: Green	
Safety equipments		Compressor overheat protection, Overcurrent protection, Frost protection, Serial signal error protection, Indoor fan motor error protection, Heating overload protection (High pressure control), Cooling overload protection	
Installation data	Refrigerant piping size (O.D)	mm	Liquid line : ϕ 6.35 (1/4") Gas line : ϕ 9.52 (3/8")
	Connecting method		Flare connection Flare connection
	Attached length of piping	m	Liquid line : 0.53 / Gas line : 0.40
	Insulation for piping		Necessary (Both sides), independent
	Refrigerant line (one way) length	m	Max. 15
	Vertical height diff. between O.U. and I.U.	m	Max. 10 (Outdoor unit is higher) / Max. 10 (Outdoor unit is lower)
	Drain hose		Hose connectable (VP 16) Holes ϕ 20 x 2 pcs
Drain pump, max lift height	mm	—	—
Recommended breaker size	A	16	
L.R.A. (Locked rotor ampere)	A	4.0 / 3.8 / 3.7 (220/ 230/ 240 V)	
Interconnecting wires	Size x Core number	1.5mm² x 4 cores (Including earth cable) / Terminal block (Screw fixing type)	
IP number		IPX0	IPX4
Standard accessories		Mounting kit, Clean filter (Allergen clear filter x 1, Photocatalytic washable deodorizing filter x 1)	
Option parts		Interface kit (SC-BIKN-E)	

Note (1) The data are measured at the following conditions.

The pipe length is 7.5m.

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

(2) This air-conditioner is manufactured and tested in conformity with the ISO.

(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.

(4) Select the breaker size according to the own national standard.

RWA000Z253 

Item	Model	SRK35ZM-S	
		Indoor unit SRK35ZM-S	Outdoor unit SRC35ZM-S
Power source		Single phase, 220 - 240V, 50Hz	
Nominal cooling capacity (range)	kW	3.5 (1.0 (Min.) - 3.8 (Max.))	
Nominal heating capacity (range)	kW	4.0 (1.3 (Min.) - 4.8 (Max.))	
Power consumption	Cooling	1.01 (0.21 - 1.24)	
	Heating	1.00 (0.29 - 1.45)	
Max power consumption		1.65	
Running current	Cooling	4.9 / 4.7 / 4.5 (220/ 230/ 240 V)	
	Heating	4.9 / 4.7 / 4.5 (220/ 230/ 240 V)	
Inrush current, max current		4.9 / 4.7 / 4.5 (220/ 230/ 240 V) Max. 9	
Power factor	Cooling	93.4	
	Heating	92.5	
EER	Cooling	3.47	
COP	Heating	4.00	
Sound power level	Cooling	58	62
	Heating	59	63
Sound pressure level	Cooling	Hi: 42 Me: 32 Lo: 26 ULo: 22	50
	Heating	Hi: 43 Me: 37 Lo: 25 ULo:22	51
Silent mode sound pressure level		—	Cooling:45 / Heating:45
Exterior dimensions (Height x Width x Depth)	mm	294 x 798 x 229	540 x 780(+62) x 290
Exterior appearance (Munsell color)		Fine snow (8.0Y 9.3/0.1) near equivalent	Stucco white (4.2Y 7.5/1.1) near equivalent
Net weight	kg	9.5	34.5
Compressor type & Q'ty		—	RM-B5077MDE1(Rotary type) x 1
Compressor motor (Starting method)	kW	—	0.90 (Inverter driven)
Refrigerant oil (Amount, type)	ℓ	—	0.35 (DIAMOND FREEZE MA68)
Refrigerant (Type, amount, pre-charge length)	kg	R410A 1.05 in outdoor unit (incl. the amount for the piping of 15m)	
Heat exchanger		Louver fins & inner grooved tubing	M fins & inner grooved tubing
Refrigerant control		Capillary tubes + Electronic expansion valve	
Fan type & Q'ty		Tangential fan x 1	Propeller fan x 1
Fan motor (Starting method)	W	30 x1 (Direct drive)	24 x1 (Direct drive)
Air flow	Cooling	Hi: 10.1 Me: 6.4 Lo: 5.4 ULo: 5.0	31.5
	Heating	Hi: 12.8 Me: 9.4 Lo: 6.1 ULo: 4.8	27.8
Available external static pressure	Pa	0	0
Outside air intake		Not possible	—
Air filter, Quality / Quantity		Polypropylene net (washable) x 2	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)
Electric heater		—	—
Operation control	Remote control	Wireless remote control	
	Room temperature control	Microcomputer thermostat	
	Operation display	RUN: Green, TIMER: Yellow, HI POWER: Green, 3D AUTO: Green	
Safety equipments		Compressor overheat protection, Overcurrent protection, Frost protection, Serial signal error protection, Indoor fan motor error protection, Heating overload protection (High pressure control), Cooling overload protection	
Installation data	Refrigerant piping size (O.D)	mm	Liquid line : ϕ 6.35 (1/4") Gas line : ϕ 9.52 (3/8")
	Connecting method		Flare connection
	Attached length of piping	m	Liquid line : 0.53 / Gas line : 0.40
	Insulation for piping		Necessary (Both sides), independent
	Refrigerant line (one way) length	m	Max. 15
	Vertical height diff. between O.U. and I.U.	m	Max. 10 (Outdoor unit is higher) / Max. 10 (Outdoor unit is lower)
	Drain hose		Hose connectable (VP 16)
Drain pump, max lift height	mm	—	—
Recommended breaker size	A		16
L.R.A. (Locked rotor ampere)	A	4.9 / 4.7 / 4.5 (220/ 230/ 240 V)	
Interconnecting wires	Size x Core number	1.5mm ² x 4 cores (Including earth cable) / Terminal block (Screw fixing type)	
IP number		IPX0	IPX4
Standard accessories		Mounting kit, Clean filter (Allergen clear filter x 1, Photocatalytic washable deodorizing filter x 1)	
Option parts		Interface kit (SC-BIKN-E)	
Note (1) The data are measured at the following conditions.			The pipe length is 7.5m.
Operation	Indoor air temperature	Outdoor air temperature	
	DB	WB	Standards
	27°C	19°C	
	35°C	24°C	
Cooling	20°C	—	ISO5151-T1
Heating	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 value are somewhat higher due to ambient conditions.

(4) Select the breaker size according to the own national standard.

Item	Model	SRK50ZM-S	
		Indoor unit SRK50ZM-S	Outdoor unit SRC50ZM-S
Power source		Single phase, 220 - 240V, 50Hz	
Nominal cooling capacity (range)	kW	5.0 (1.6 (Min.) - 5.5 (Max.))	
Nominal heating capacity (range)	kW	5.8 (1.6 (Min.) - 6.6 (Max.))	
Power consumption	Cooling	1.55 (0.40 - 2.20)	
	Heating	1.59 (0.42 - 2.10)	
Max power consumption		2.68	
Running current	Cooling	A	7.1 / 6.8 / 6.5 (220/ 230/ 240 V)
	Heating		7.3 / 7.0 / 6.7 (220/ 230/ 240 V)
Inrush current, max current			7.3 / 7.0 / 6.7 (220/ 230/ 240 V) Max. 14
Power factor	Cooling	%	99
	Heating		99
EER	Cooling		3.23
COP	Heating		3.65
Sound power level	Cooling	dB(A)	60
	Heating		61
Sound pressure level	Cooling	dB(A)	Hi: 46 Me: 37 Lo: 28 ULo: 25
	Heating		Hi: 45 Me: 37 Lo: 31 ULo: 27
Silent mode sound pressure level			— Cooling:43 / Heating:45
Exterior dimensions (Height x Width x Depth)	mm	294 x 798 x 229	640 x 800(+71) x 290
Exterior appearance (Munsell color)		Fine snow (8.0Y 9.3/0.1) near equivalent	Stucco white (4.2Y 7.5/1.1) near equivalent
Net weight	kg	9.5	40.5
Compressor type & Q'ty		—	5RS132XAB21(Rotary type) x 1
Compressor motor (Starting method)	kW	—	1.50 (Inverter driven)
Refrigerant oil (Amount, type)	ℓ	—	0.37 (FV50S)
Refrigerant (Type, amount, pre-charge length)	kg	R410A 1.35 in outdoor unit (incl. the amount for the piping of 15m)	
Heat exchanger		Louver fins & inner grooved tubing	M fins & inner grooved tubing
Refrigerant control		Capillary tubes + Electronic expansion valve	
Fan type & Q'ty		Tangential fan x 1	Propeller fan x 1
Fan motor (Starting method)	W	30 x1 (Direct drive)	34 x1 (Direct drive)
Air flow	Cooling	m³/min	Hi: 11.3 Me: 7.8 Lo: 6.0 ULo: 5.3
	Heating		Hi: 13.5 Me: 10.2 Lo: 7.5 ULo: 6.2
Available external static pressure	Pa	0	0
Outside air intake		Not possible	
Air filter, Quality / Quantity		Polypropylene net (washable) x 2	
Shock & vibration absorber		Rubber sleeve (for fan motor)	
Electric heater		—	—
Operation control	Remote control	Wireless remote control	
	Room temperature control	Microcomputer thermostat	
	Operation display	RUN: Green, TIMER: Yellow, HI POWER: Green, 3D AUTO: Green	
Safety equipments		Compressor overheat protection, Overcurrent protection, Frost protection, Serial signal error protection, Indoor fan motor error protection, Heating overload protection (High pressure control), Cooling overload protection	
Installation data	Refrigerant piping size (O.D)	mm	Liquid line : ϕ 6.35 (1/4") Gas line : ϕ 12.7 (1/2")
	Connecting method		Flare connection
	Attached length of piping	m	Liquid line : 0.53 / Gas line : 0.40
	Insulation for piping		Necessary (Both sides), independent
	Refrigerant line (one way) length	m	Max. 25
	Vertical height diff. between O.U. and I.U.	m	Max. 15 (Outdoor unit is higher) / Max. 15 (Outdoor unit is lower)
	Drain hose		Hose connectable (VP 16) Holes ϕ 20 x 5 pcs
Drain pump, max lift height	mm	—	—
Recommended breaker size	A	16	
L.R.A. (Locked rotor ampere)	A	7.3 / 7.0 / 6.7 (220/ 230/ 240 V)	
Interconnecting wires	Size x Core number	1.5mm² x 4 cores (Including earth cable) / Terminal block (Screw fixing type)	
IP number		IPX0	IPX4
Standard accessories		Mounting kit, Clean filter (Allergen clear filter x 1, Photocatalytic washable deodorizing filter x 1)	
Option parts		Interface kit (SC-BIKN-E)	
Note (1) The data are measured at the following conditions.			The pipe length is 7.5m.
Operation	Indoor air temperature	Outdoor air temperature	
	DB	WB	Standards
	27°C	19°C	
	35°C	24°C	
Cooling	20°C	—	ISO5151-T1
Heating	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 value are somewhat higher due to ambient conditions.

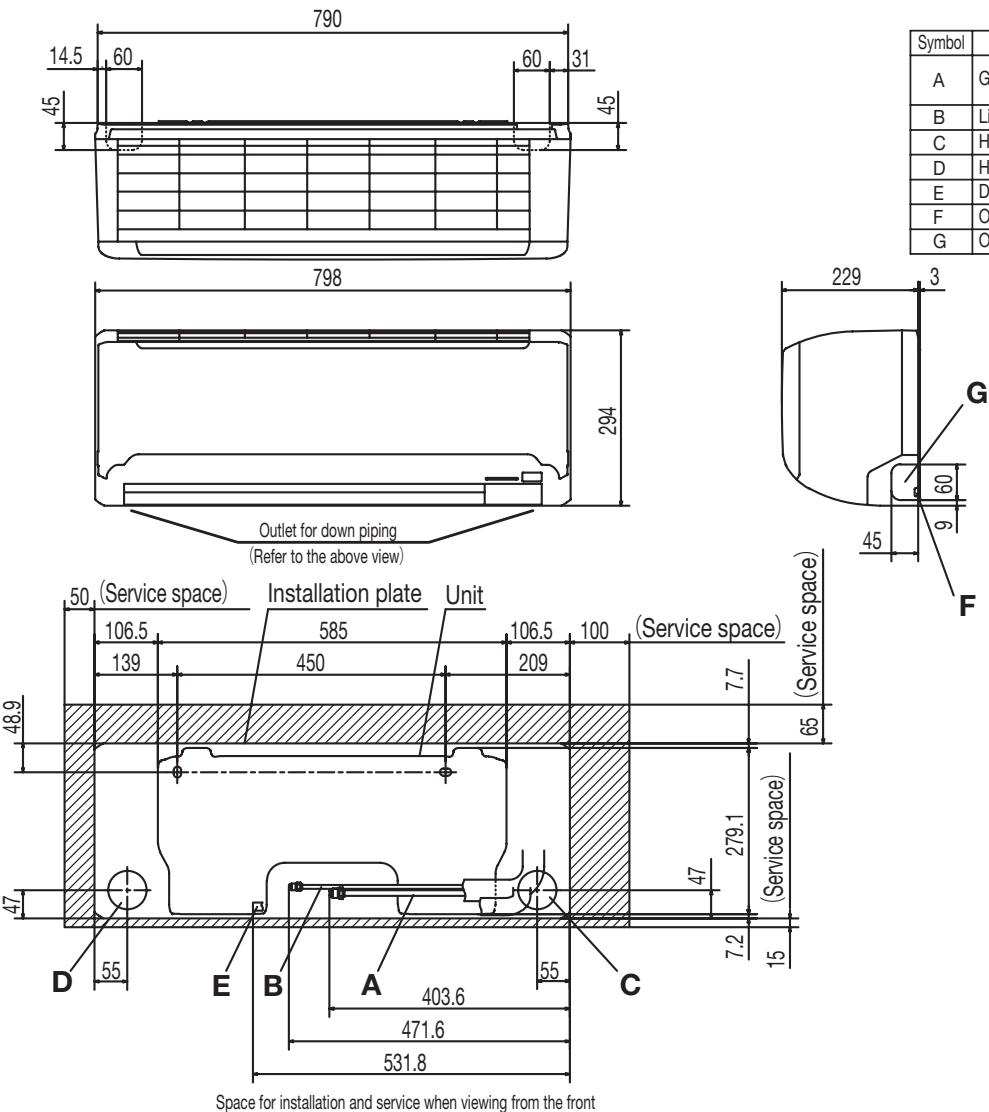
(4) Select the breaker size according to the own national standard.

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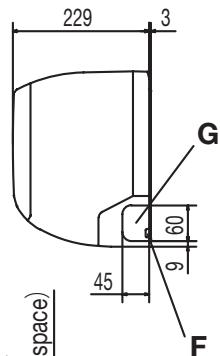
2. EXTERIOR DIMENSIONS

(1) Indoor units

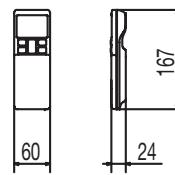
Models SRK20ZM-S, 25ZM-S, 35ZM-S, 50ZM-S



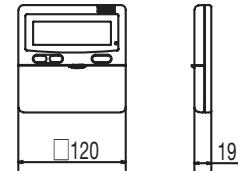
Symbol	Content	
A	Gas piping	Model 20~35 : $\phi 9.52$ (3/8") (Flare) 50 : $\phi 12.7$ (1/2") (Flare)
B	Liquid piping	$\phi 6.35$ (1/4") (Flare)
C	Hole on wall for right rear piping	($\phi 65$)
D	Hole on wall for left rear piping	($\phi 65$)
E	Drain hose	VP16
F	Outlet for wiring	
G	Outlet for piping (on both side)	



Wireless remote control



Wired - remote control
(Option)



Notes
 (1) The model name label is attached on the underside of the panel.
 (2) It takes the interface kit (SC-BIKN-E) to connect the wired remote control.

Unit:mm

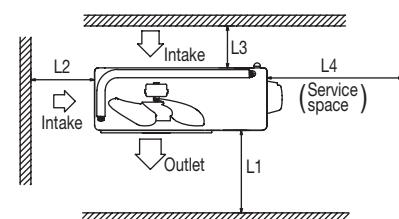
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(2) **Outdoor units**
Models SRC20ZM-S, 25ZM-S, 35ZM-S

- (1) It 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) Where the unit is subject to strong winds, lay it in such a direction that the blower outlet faces perpendicularly to the dominant wind direction.
- (4) Leave 1m or more space above the unit.
- (5) A wall in front of the blower outlet must not exceed the units height.
- (6) The model name label is attached on the right side of the unit.

Notes

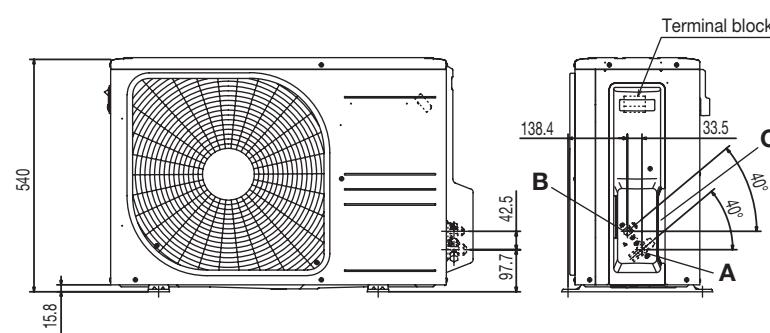
- (1) It must not be surrounded by walls on the four sides.
- (2) The unit must be fixed with anchor bolts. An anchor bolt must not protrude more than 15mm.
- (3) Where the unit is subject to strong winds, lay it in such a direction that the blower outlet faces perpendicularly to the dominant wind direction.
- (4) Leave 1m or more space above the unit.
- (5) A wall in front of the blower outlet must not exceed the units height.
- (6) The model name label is attached on the right side of the unit.



Minimum installation space

Examples of installation Dimensions	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

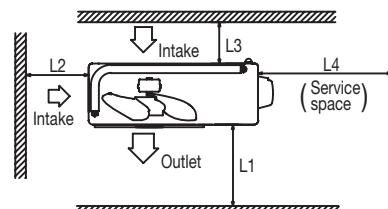


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Unit:mm

Notes

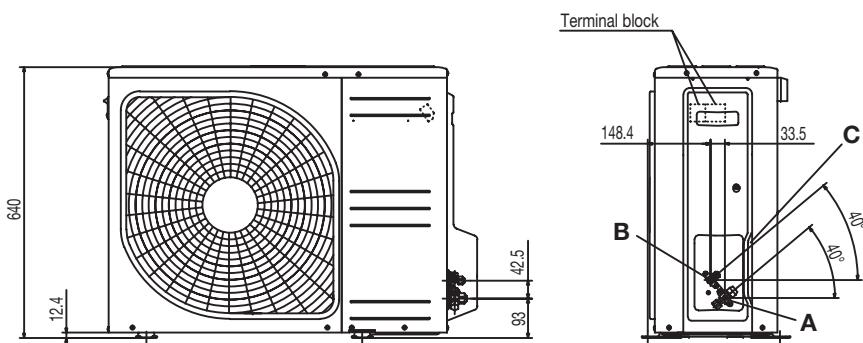
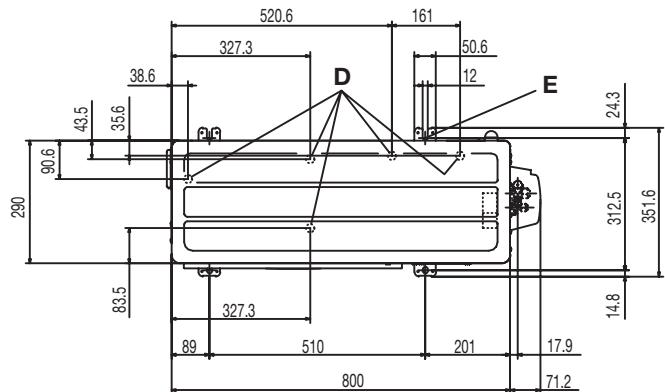
- (1) It must not be surrounded by walls on the four sides.
- (2) The unit must be fixed with anchor bolts. An anchor bolt must not protrude more than 15mm.
- (3) Where the unit is subject to strong winds, lay it in such a direction that the blower outlet faces perpendicularly to the dominant wind direction.
- (4) Leave 1m or more space above the unit.
- (5) A wall in front of the blower outlet must not exceed the units height.
- (6) The model name label is attached on the right side of the unit.



Minimum installation space

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

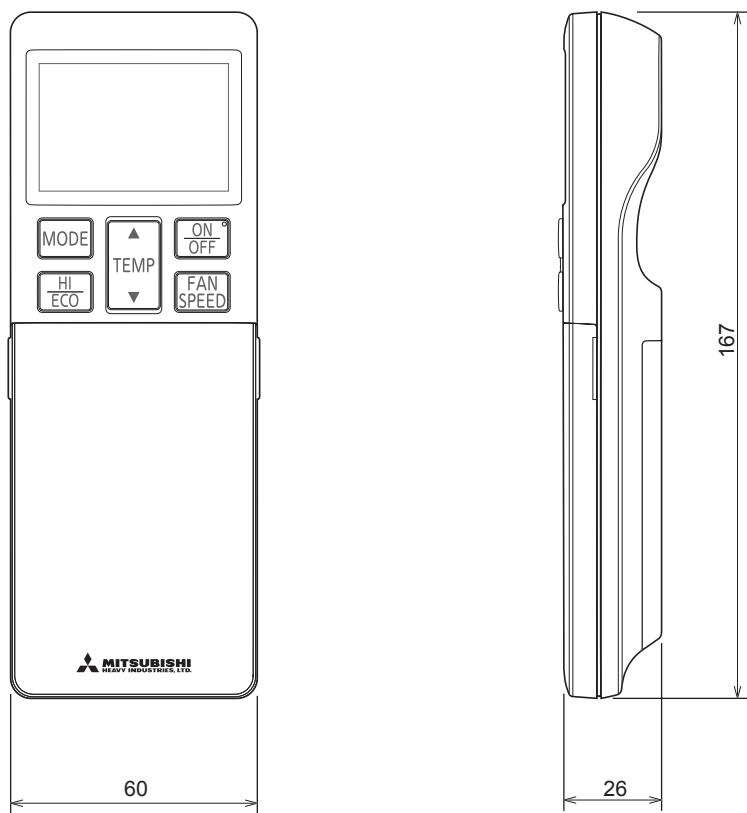
Symbol	Content
A	Service valve connection (gas side) $\phi 12.7$ (1/2") (Flare)
B	Service valve connection (liquid side) $\phi 6.35$ (1/4") (Flare)
C	Pipe/cable draw-out hole
D	Drain discharge hole $\phi 20 \times 5$ places
E	Anchor bolt hole M10 $\times 4$ places

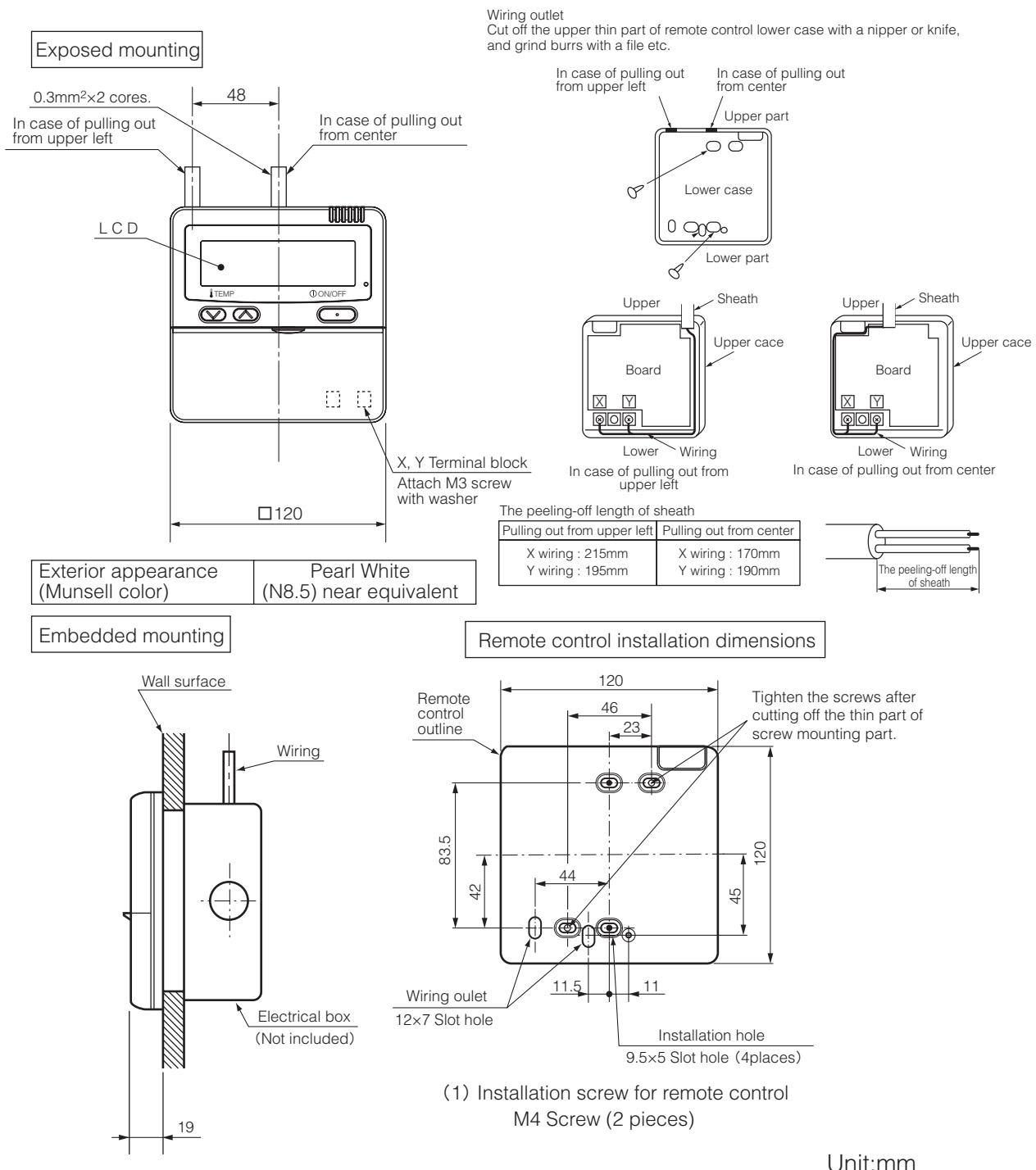


RCT000Z009

(3) Remote control
(a) Wireless remote control

Unit : mm



(b) Wired remote control (option parts)**Interface kit (SC-BIKN-E) is required to use the wired remote control.****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.

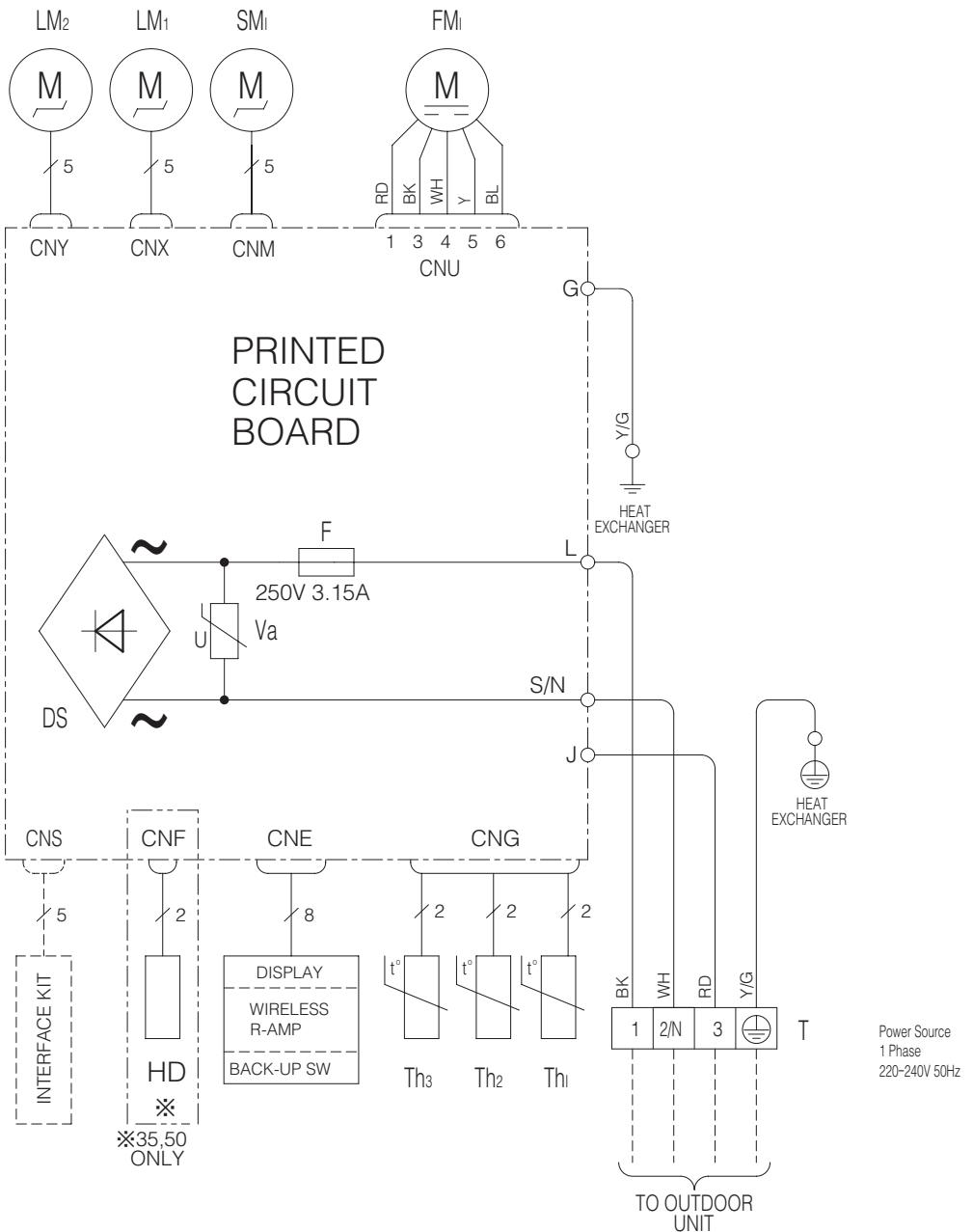
Length	Wiring thickness
100 to 200m	0.5mm ² ×2 cores
Under 300m	0.75mm ² ×2 cores
Under 400m	1.25mm ² ×2 cores
Under 600m	2.0mm ² ×2 cores

PJZ000Z295

3. ELECTRICAL WIRING

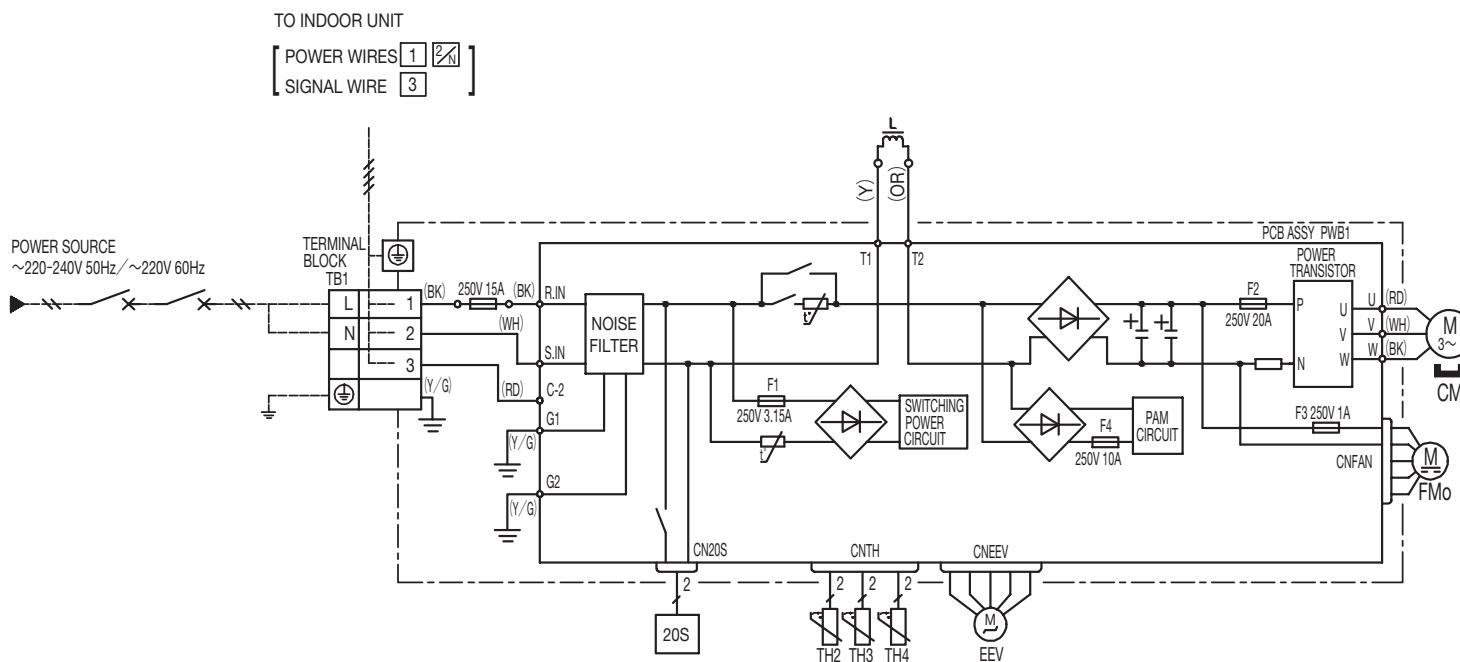
(1) Indoor units

Models SRK20ZM-S, 25ZM-S, 35ZM-S, 50ZM-S



Item	Description
CNE-CNY	Connector
FMi	Fan motor
SMi	Flap motor
LM _{1,2}	Louver motor
HD	Humidity sensor
Th ₁	Room temp. sensor
Th _{2,3}	Heat exch. sensor
DS	Diode stack
F	Fuse
T	Terminal block
Va	Varistor

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



Power cable, indoor-outdoor connecting wires

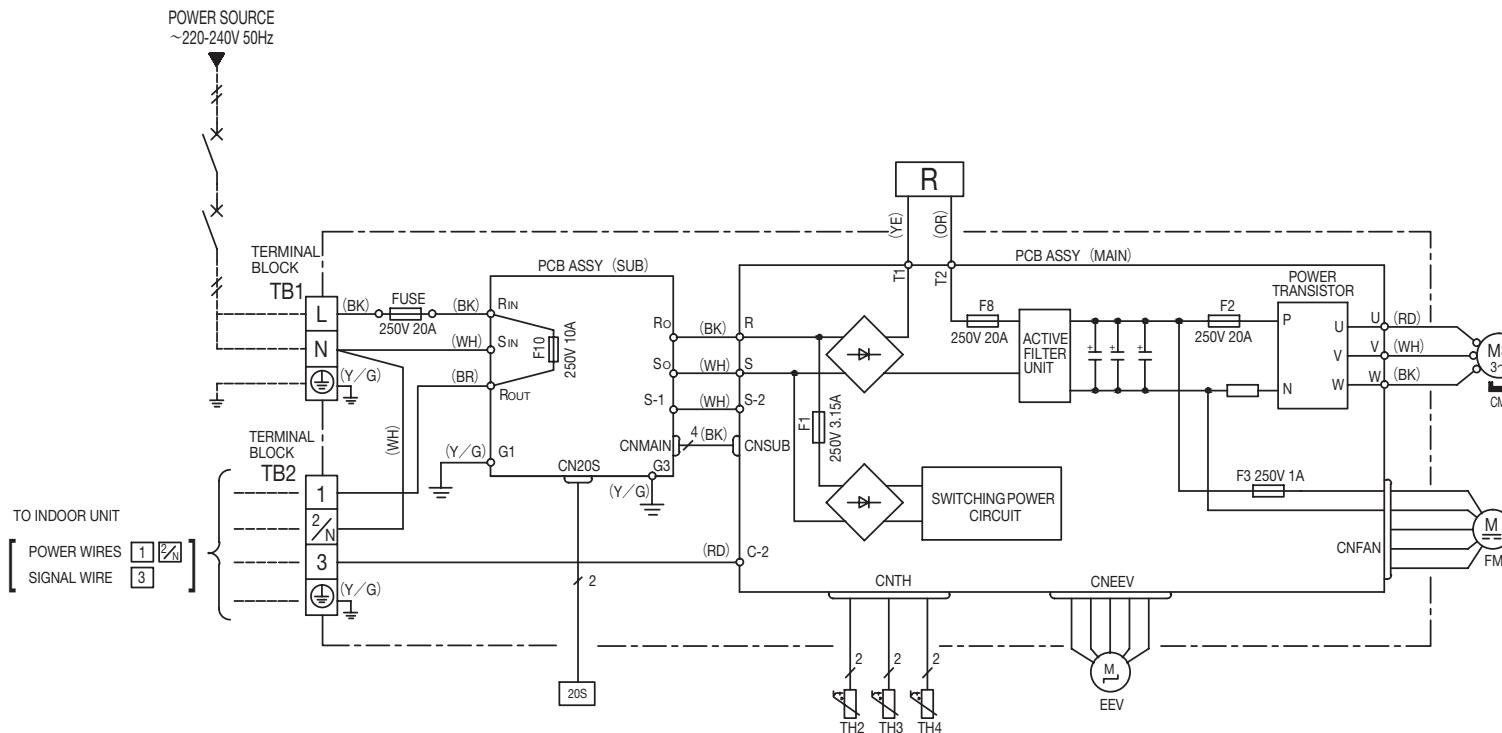
Model	MAX running current (A)	Power cable size (mm ²)	Power cable length (m)	indoor-outdoor wire size x number	Earth wire size (mm ²)
20	9	2.0	32	1.5mm ² x 3	1.5
25					
35					

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

Item	Description
CM	Compressor motor
CN20S CNTH CNEEV CNFAN	Connector
EEV	Electric expansion valve (coil)
FMo	Fan motor
L	Reactor
TB1	Terminal block
TH2	Heat exchanger sensor (outdoor unit)
TH3	Outdoor air temp.sensor
TH4	Discharge pipe temp.sensor
20S	Solenoid valve for 4 way valve

Mark	Color
BK	Black
OR	Orange
RD	Red
WH	White
Y	Yellow
Y/G	Yellow/Green

RWC000Z272



Power cable, indoor-outdoor connecting wires

Model	MAX running current (A)	Power cable size (mm ²)	Power cable length (m)	indoor-outdoor wire size x number	Earth wire size (mm ²)
50	14	2.0	18	1.5mm ² x 3	1.5

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

Item	Description
CM	Compressor motor
CNEEV~CN20S	Connector
EEV	Electric expansion valve (coil)
FMo	Fan motor
R	Reactor
TB1,2	Terminal block
TH2	Heat exchanger sensor (outdoor unit)
TH3	Outdoor air temp.sensor
TH4	Discharge pipe temp.sensor
20S	Solenoid valve for 4 way valve

Mark	Color
BK	Black
BR	Brown
OR	Orange
RD	Red
WH	White
YE	Yellow
Y/G	Yellow/Green

4. NOISE LEVEL

Model SRK20ZM-S

Condition ISO-T1, JIS C 9612

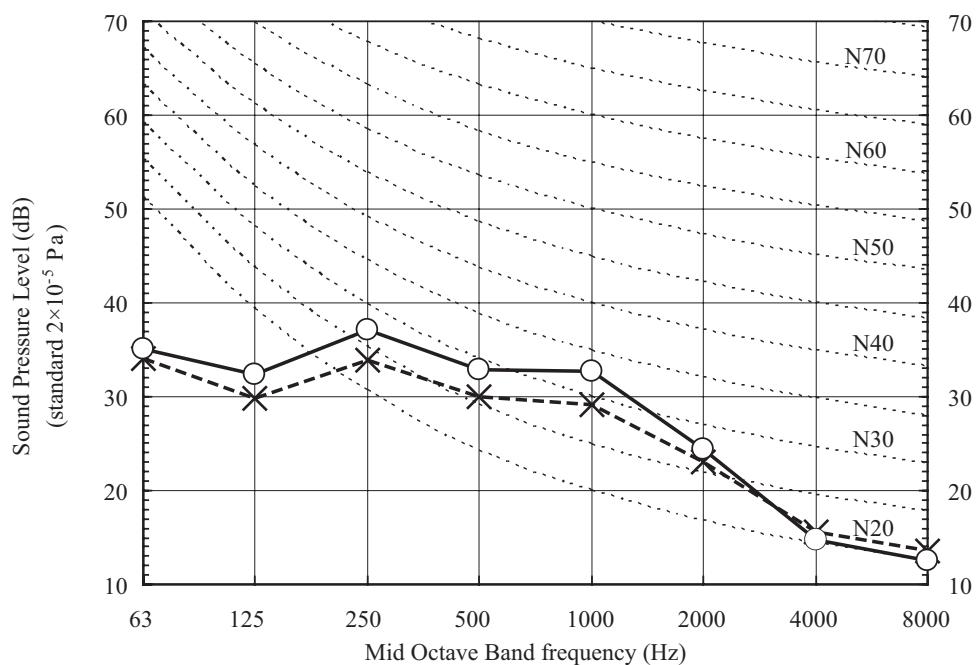
(Indoor Unit)

Model	SRK20ZM-S	
Noise Level	Cooling	33 dB(A)
	Heating	36 dB(A)

●Mike position



× Cooling ○ — Heating

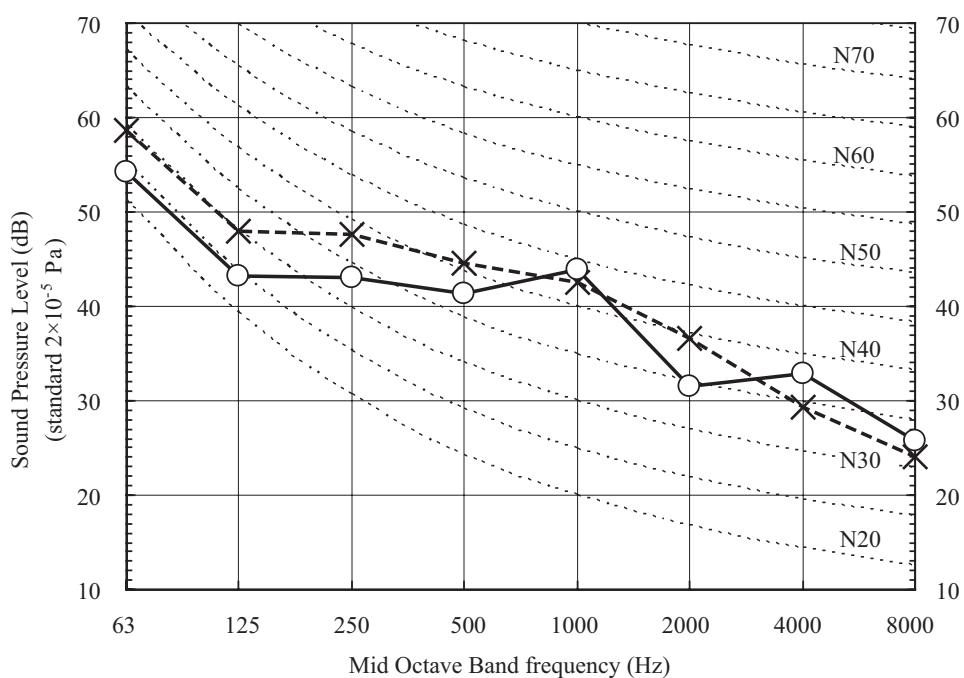


(Outdoor Unit)

Model	SRC20ZM-S	
Noise Level	Cooling	47 dB(A)
	Heating	46 dB(A)

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

× Cooling ○ — Heating



Model SRK25ZM-S

(Indoor Unit)

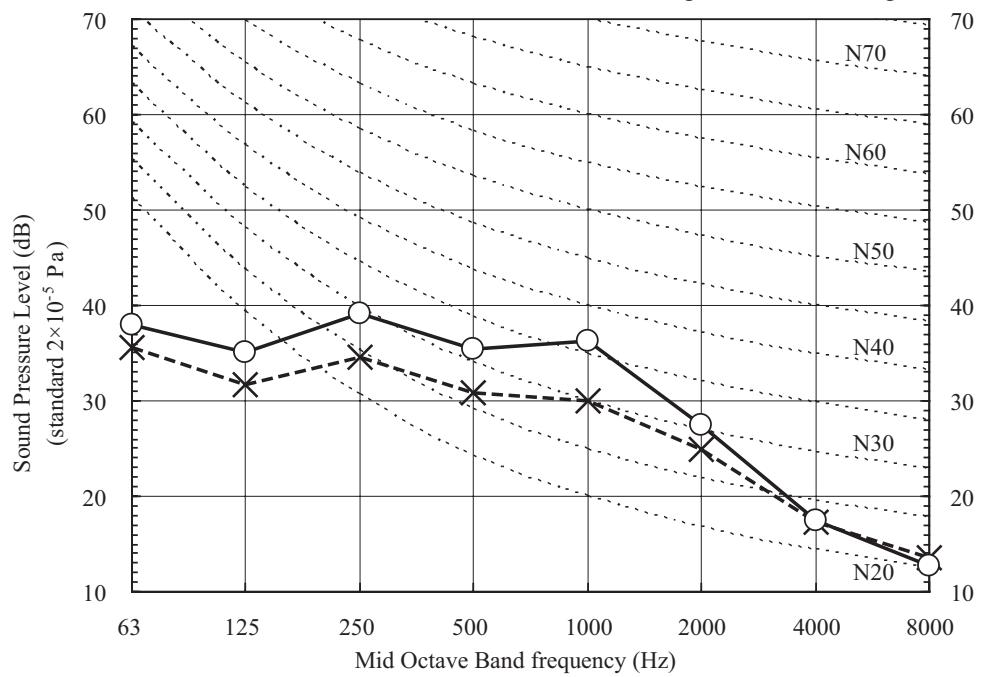
Model	SRK25ZM-S	
Noise Level	Cooling	34 dB(A)
	Heating	39 dB(A)

Condition ISO-T1, JIS C 9612

●Mike position



x Cooling ○ — Heating

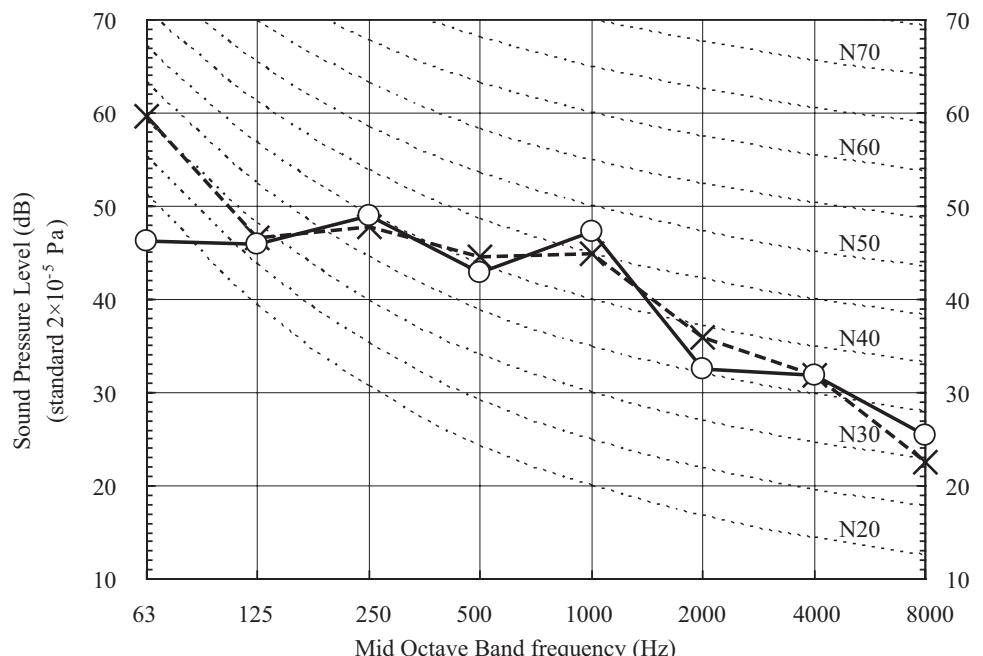


(Outdoor Unit)

Model	SRC25ZM-S	
Noise Level	Cooling	48 dB(A)
	Heating	49 dB(A)

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

x Cooling ○ — Heating



Model SRK35ZM-S

(Indoor Unit)

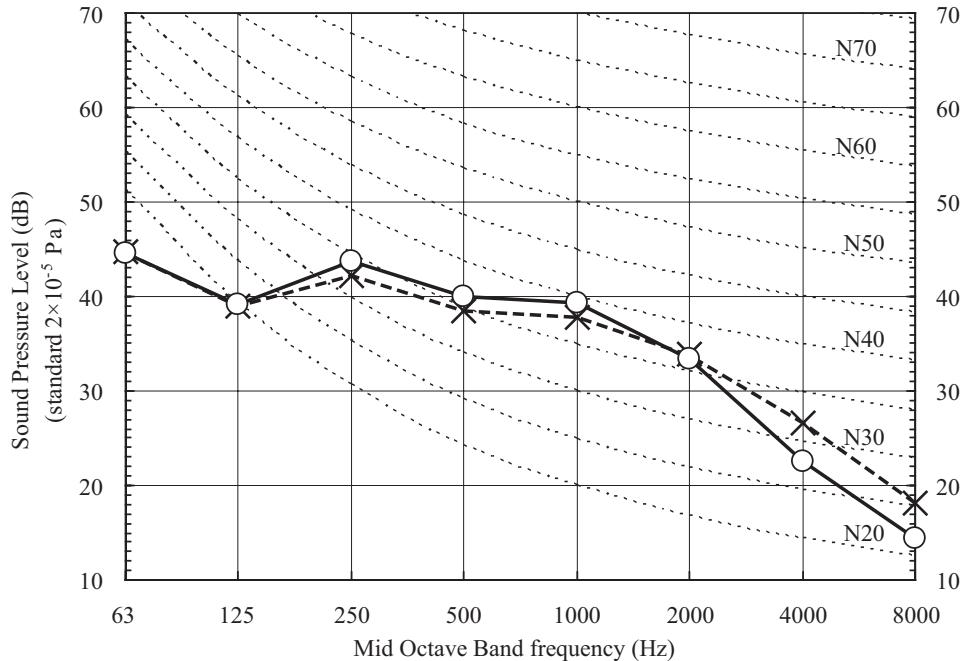
Model SRK35ZM-S	
Noise Level	Cooling 42 dB(A)
Heating	43 dB(A)

Condition ISO-T1, JIS C 9612

●Mike position



x Cooling ○ — Heating

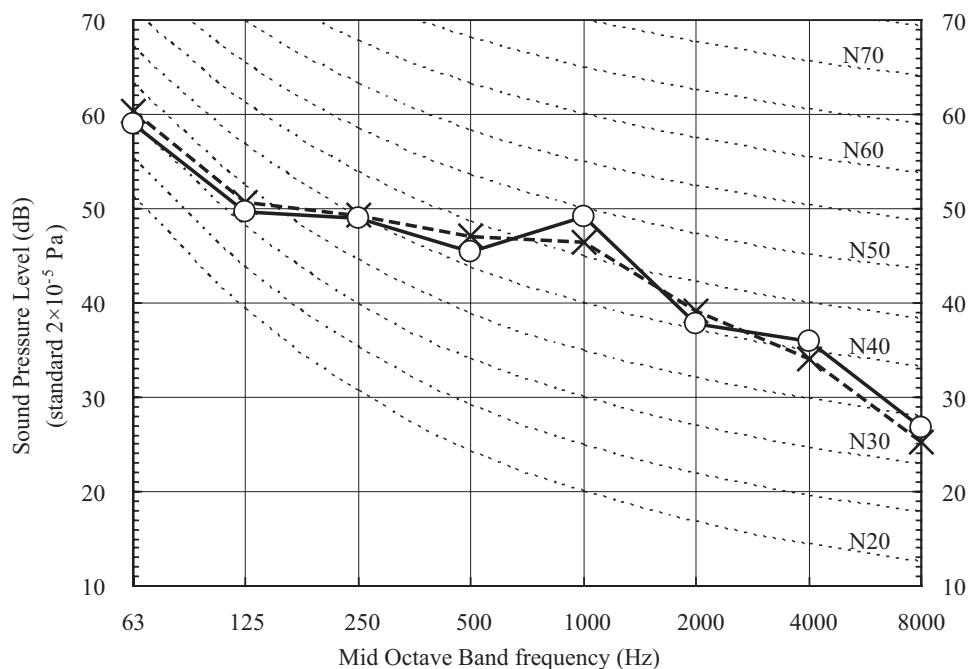


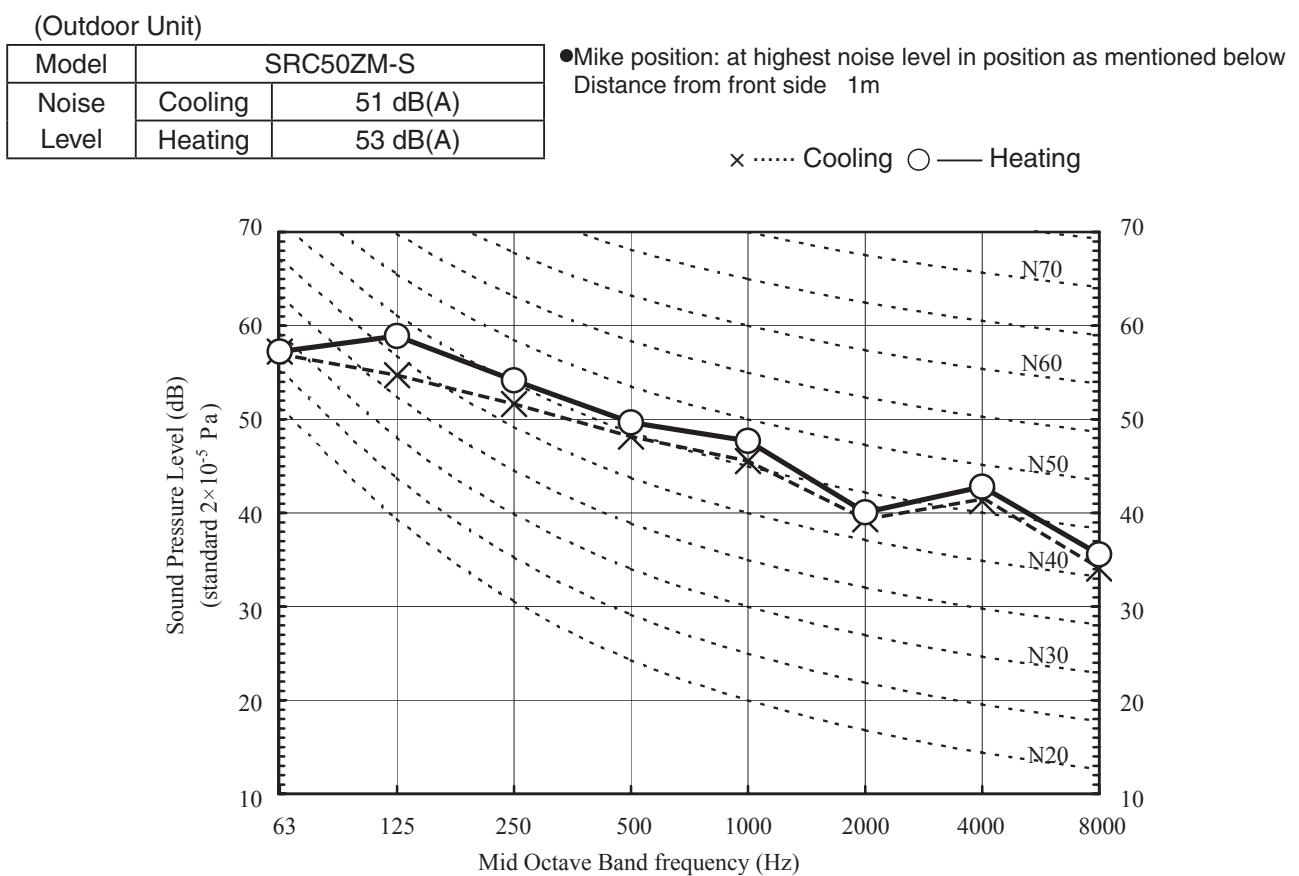
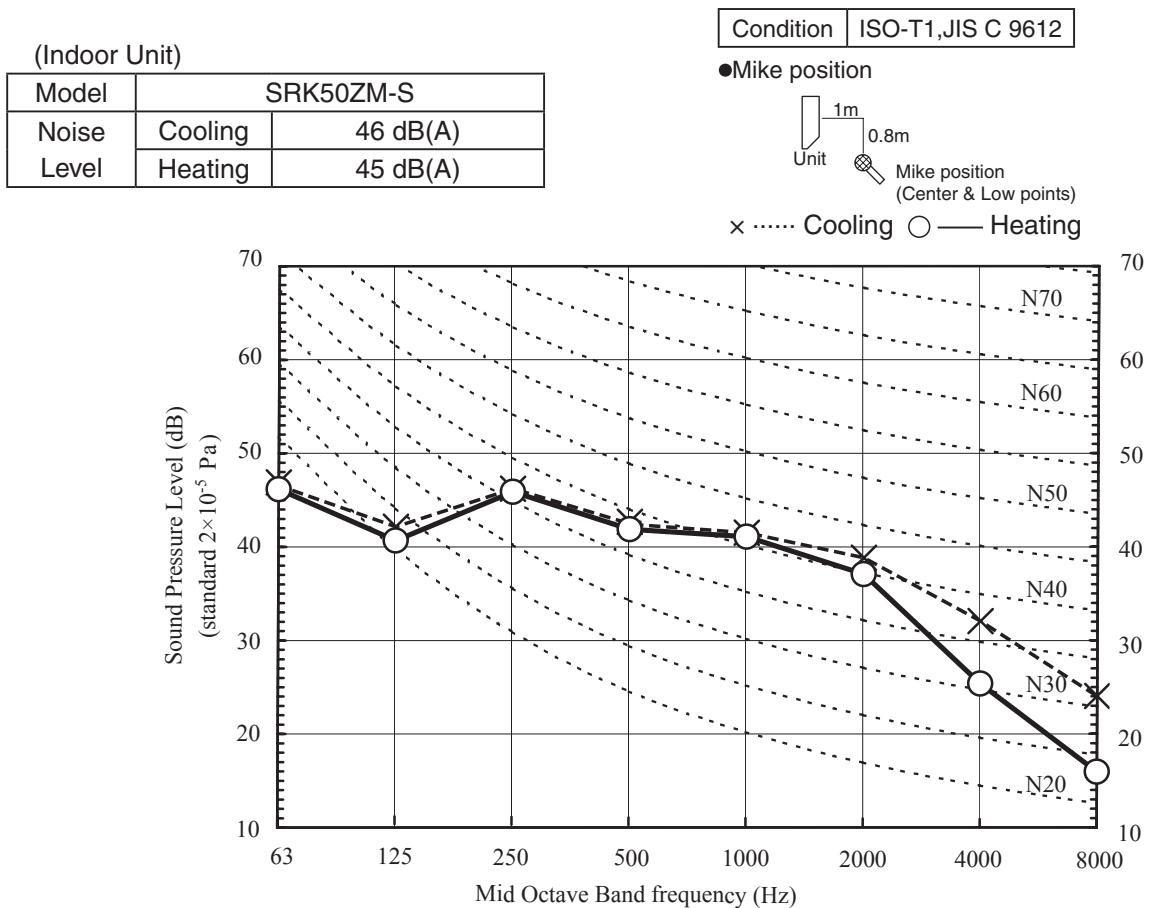
(Outdoor Unit)

Model SRC35ZM-S	
Noise Level	Cooling 50 dB(A)
Heating	51 dB(A)

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

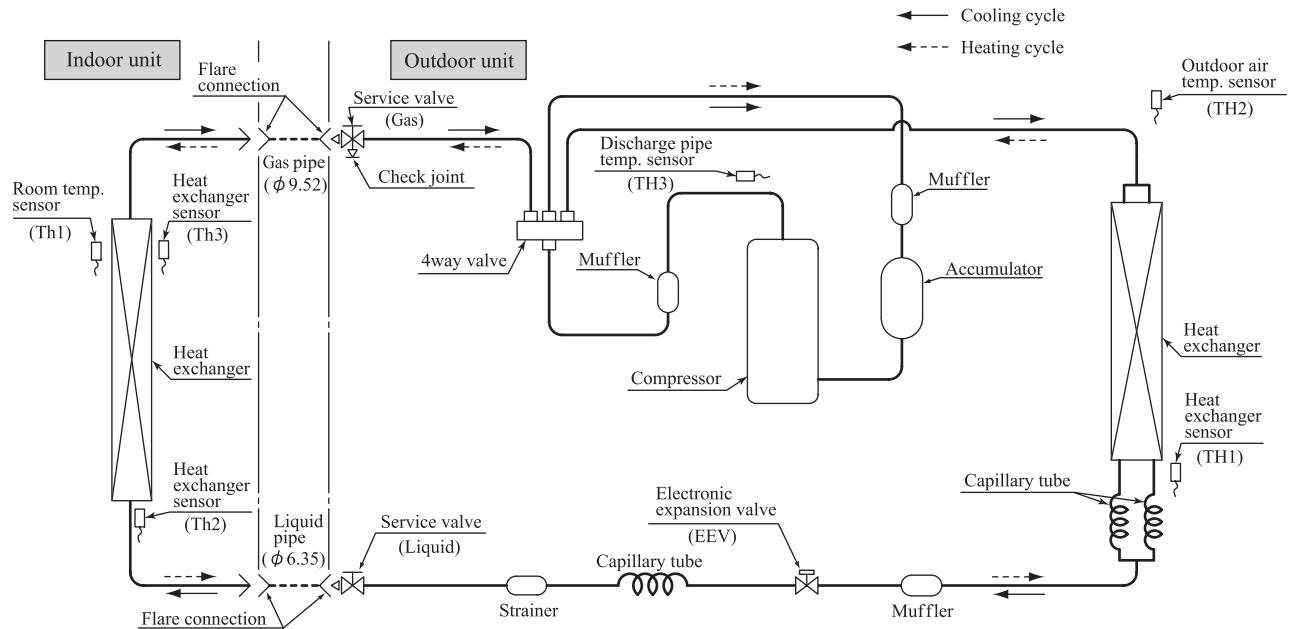
x Cooling ○ — Heating



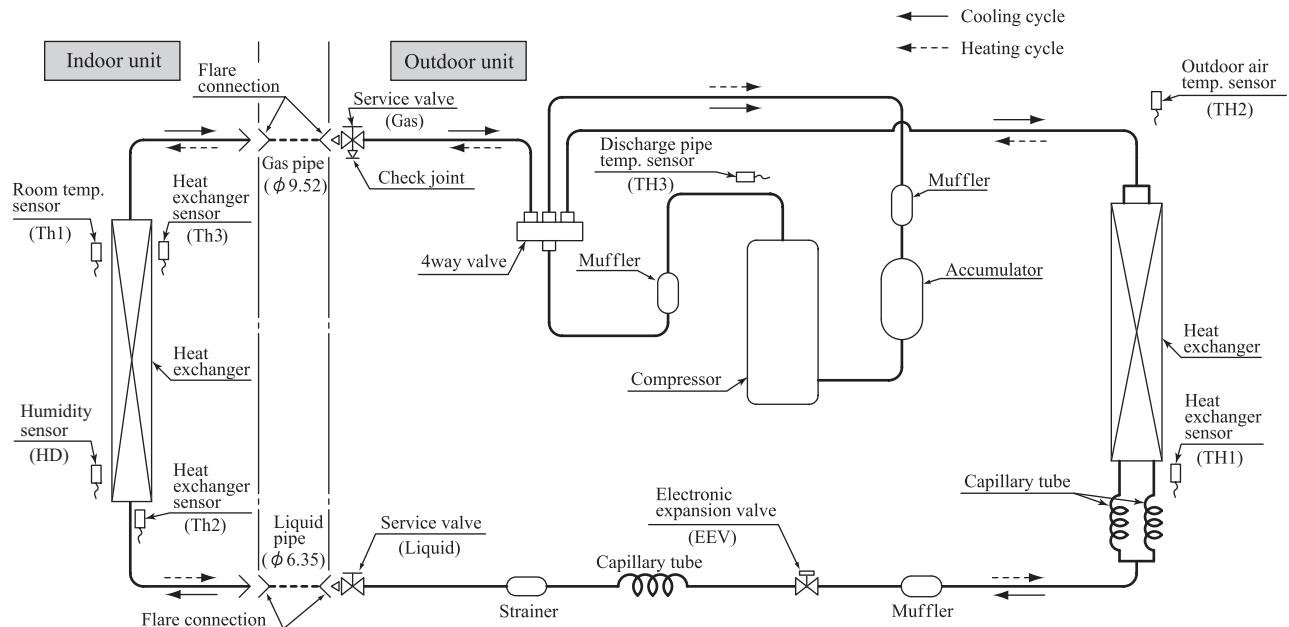
Model SRK50ZM-S

5. PIPING SYSTEM

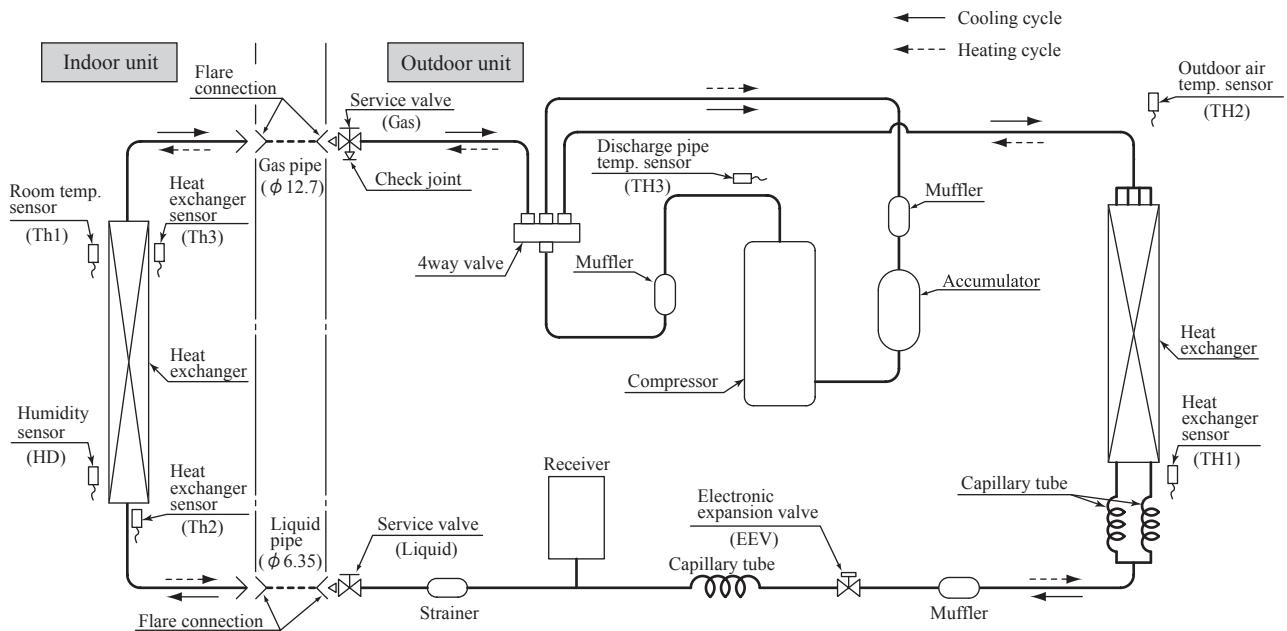
Models SRK20ZM-S, 25ZM-S



Model SRK35ZM-S



Model SRK50ZM-S



6. RANGE OF USAGE & LIMITATIONS

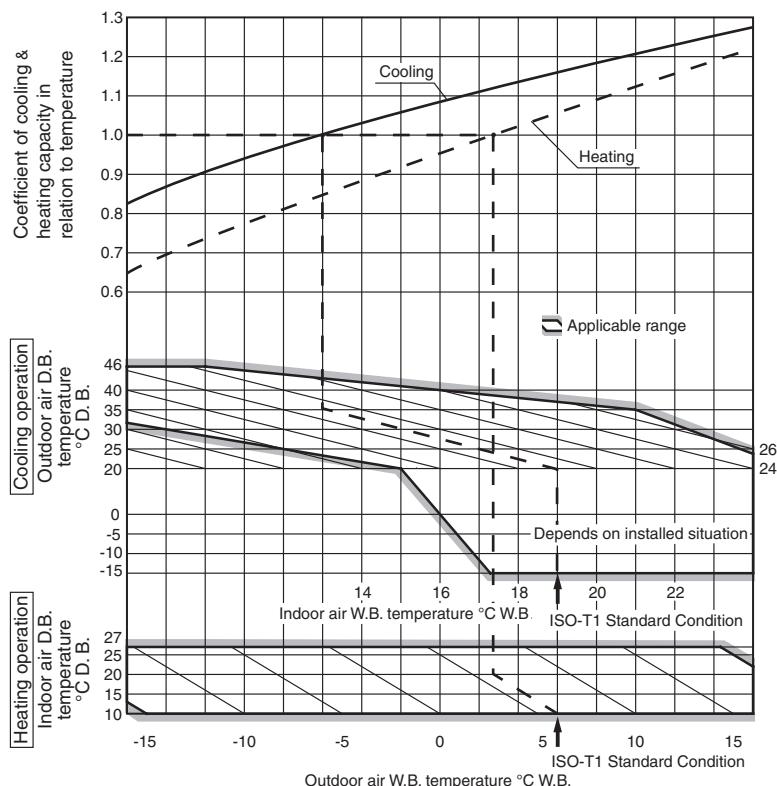
Models	SRK20,25,35ZM-S	SRK50ZM-S
Item		
Indoor return air temperature (Upper, lower limits)	Cooling operation : Approximately 18 to 32°C D.B. Heating operation : Approximately 10 to 30°C D.B. (Refer to the selection chart)	
Outdoor air temperature (Upper, lower limits)	Cooling operation : Approximately -15 to 46°C D.B. Heating operation : Approximately -15 to 24°C D.B. (Refer to the selection chart)	
Refrigerant line (one way) length	Max. 15m	Max. 25m
Vertical height difference between outdoor unit and indoor unit	Max. 10m (Outdoor unit is higher) Max. 10m (Outdoor unit is lower)	Max. 15m (Outdoor unit is higher) Max. 15m (Outdoor unit is lower)
Power source voltage	Rating $\pm 10\%$	
Voltage at starting	Min. 85% of rating	
Frequency of ON-OFF cycle	Max. 4 times/h (Inching prevention 10 minutes)	Max. 7 times/h (Inching prevention 5 minutes)
ON and OFF interval	Min. 3 minutes	

Selection chart

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

Net capacity = Capacity shown on specification \times Correction factors as follows.

(1) Coefficient of cooling and heating capacity in relation to temperatures



(2) 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 piping length between the indoor and outdoor units.

Piping length [m]	7	10	15	20	25	30
Cooling	1.0	0.99	0.975	0.965	0.95	0.935
Heating	1.0	1.0	1.0	1.0	1.0	1.0

(3) Correction relative to frosting on outdoor heat exchanger during heating

In addition to the foregoing corrections (1), (2) the heating capacity needs to be adjusted also with respect to the frosting on the outdoor heat exchanger.

Air inlet temperature of outdoor unit in °CWB	-15	-10	-9	-7	-5	-3	-1	1	3	5 or more
Adjustment coefficient	0.95	0.95	0.94	0.93	0.91	0.88	0.86	0.87	0.92	1.00

How to obtain the cooling and heating capacity

Example : The net cooling capacity of the model SRK35ZM-S with the piping length of 15m, indoor wet-bulb temperature at 19.0°C and outdoor dry-bulb temperature 35°C is Net cooling capacity = $3.5 \times 0.975 \times 1.0 = 3.4 \text{ kW}$

$$\text{SRK35ZM-S} \quad \overbrace{\quad \quad \quad}^{\text{Length 15m}} \quad \overbrace{\quad \quad \quad}^{\text{Factor by air temperatures}} \quad 3.5 \quad \times \quad 0.975 \quad \times \quad 1.0 \quad = \quad 3.4 \text{ kW}$$

7. CAPACITY TABLES

Model SRK20ZM-S

Air flow		Cooling Mode												Heating Mode (HC) (kW)	
		Indoor air temp													
		21°CDB		23°CDB		26°CDB		27°CDB		28°CDB		31°CDB		33°CDB	
		14°CWB	16°CWB	18°CWB	19°CWB	20°CWB	22°CWB	24°CWB	TC	SHC	TC	SHC	TC	SHC	TC
Hi 7.8 (m ³ /min)	10	2.25	1.93	2.36	1.90	2.45	1.99	2.49	1.96	2.53	1.94	2.60	2.02	2.67	1.97
	12	2.21	1.91	2.32	1.88	2.41	1.97	2.45	1.95	2.50	1.93	2.58	2.01	2.65	1.96
	14	2.17	1.89	2.28	1.86	2.38	1.96	2.42	1.94	2.47	1.91	2.55	2.00	2.62	1.95
	16	2.13	1.87	2.24	1.85	2.34	1.94	2.39	1.92	2.43	1.90	2.52	1.99	2.59	1.94
	18	2.08	1.85	2.19	1.82	2.30	1.92	2.35	1.90	2.40	1.88	2.49	1.98	2.56	1.93
	20	2.04	1.83	2.15	1.81	2.26	1.91	2.31	1.89	2.36	1.87	2.45	1.97	2.53	1.92
	22	1.99	1.81	2.10	1.78	2.22	1.89	2.28	1.88	2.32	1.86	2.42	1.95	2.50	1.91
	24	1.94	1.78	2.05	1.76	2.18	1.88	2.24	1.86	2.28	1.85	2.38	1.94	2.47	1.90
	26	1.90	1.76	2.01	1.74	2.14	1.86	2.20	1.85	2.24	1.83	2.35	1.93	2.43	1.89
	28	1.85	1.74	1.96	1.72	2.09	1.84	2.15	1.83	2.20	1.82	2.31	1.92	2.40	1.88
	30	1.79	1.70	1.90	1.70	2.05	1.83	2.11	1.82	2.16	1.80	2.27	1.90	2.36	1.87
	32	1.74	1.65	1.85	1.68	2.00	1.81	2.07	1.80	2.12	1.79	2.23	1.89	2.32	1.86
	34	1.69	1.60	1.80	1.65	1.95	1.79	2.02	1.78	2.07	1.77	2.19	1.88	2.28	1.85
	35	1.66	1.58	1.77	1.64	1.93	1.78	2.00	1.78	2.05	1.76	2.17	1.87	2.26	1.84
	36	1.63	1.55	1.74	1.62	1.90	1.77	1.98	1.77	2.02	1.75	2.15	1.87	2.24	1.83
	38	1.58	1.50	1.68	1.60	1.85	1.75	1.93	1.75	1.98	1.74	2.11	1.85	2.20	1.82
	39	1.55	1.47	1.66	1.57	1.83	1.74	1.91	1.74	1.95	1.73	2.08	1.84	2.18	1.81

Model SRK25ZM-S

Air flow		Cooling Mode												Heating Mode (HC) (kW)	
		Indoor air temp													
		21°CDB		23°CDB		26°CDB		27°CDB		28°CDB		31°CDB		33°CDB	
		14°CWB	16°CWB	18°CWB	19°CWB	20°CWB	22°CWB	24°CWB	TC	SHC	TC	SHC	TC	SHC	TC
Hi 7.9 (m ³ /min)	10	2.82	2.23	2.95	2.19	3.06	2.27	3.11	2.24	3.16	2.21	3.26	2.28	3.34	2.21
	12	2.77	2.20	2.90	2.17	3.01	2.25	3.07	2.22	3.12	2.20	3.22	2.27	3.31	2.20
	14	2.71	2.17	2.85	2.14	2.97	2.23	3.03	2.21	3.08	2.18	3.18	2.25	3.28	2.19
	16	2.66	2.15	2.80	2.12	2.92	2.21	2.98	2.19	3.04	2.16	3.15	2.24	3.24	2.18
	18	2.60	2.12	2.74	2.09	2.88	2.19	2.94	2.17	2.99	2.14	3.11	2.22	3.20	2.17
	20	2.55	2.09	2.68	2.07	2.83	2.17	2.89	2.14	2.95	2.12	3.07	2.21	3.17	2.15
	22	2.49	2.06	2.63	2.04	2.78	2.14	2.84	2.12	2.90	2.10	3.02	2.20	3.13	2.14
	24	2.43	2.03	2.57	2.01	2.72	2.12	2.80	2.11	2.85	2.08	2.98	2.18	3.08	2.13
	26	2.37	2.00	2.51	1.98	2.67	2.10	2.74	2.09	2.80	2.07	2.93	2.16	3.04	2.11
	28	2.31	1.97	2.44	1.96	2.61	2.08	2.68	2.07	2.75	2.05	2.89	2.14	3.00	2.10
	30	2.24	1.94	2.38	1.92	2.56	2.05	2.64	2.05	2.70	2.03	2.84	2.13	2.95	2.08
	32	2.18	1.91	2.31	1.89	2.50	2.03	2.58	2.03	2.64	2.01	2.79	2.11	2.90	2.07
	34	2.11	1.88	2.25	1.87	2.44	2.01	2.53	2.00	2.59	1.99	2.74	2.09	2.85	2.05
	35	2.08	1.87	2.21	1.85	2.41	1.99	2.50	1.98	2.56	1.97	2.71	2.08	2.83	2.04
	36	2.04	1.85	2.18	1.84	2.38	1.98	2.47	1.98	2.53	1.96	2.69	2.08	2.80	2.03
	38	1.97	1.82	2.11	1.81	2.32	1.96	2.41	1.96	2.47	1.94	2.63	2.05	2.75	2.02
	39	1.94	1.80	2.07	1.79	2.28	1.94	2.38	1.94	2.44	1.93	2.61	2.05	2.72	2.01

Model SRK35ZM-S

Air flow		Cooling Mode												Heating Mode (HC) (kW)	
		Indoor air temp													
		21°CDB		23°CDB		26°CDB		27°CDB		28°CDB		31°CDB		33°CDB	
		14°CWB	16°CWB	18°CWB	19°CWB	20°CWB	22°CWB	24°CWB	TC	SHC	TC	SHC	TC	SHC	TC
Hi 10.1 (m ³ /min)	10	3.94	3.00	4.13	2.95	4.28	3.04	4.35	3.00	4.43	2.97	4.56	3.04	4.68	2.94
	12	3.87	2.97	4.06	2.92	4.22	3.02	4.29	2.98	4.37	2.94	4.51	3.02	4.63	2.93
	14	3.80	2.93	3.99	2.88	4.16	2.99	4.24	2.96	4.31	2.91	4.46	3.00	4.59	2.91
	16	3.72	2.89	3.91	2.85	4.09	2.96	4.18	2.93	4.25	2.89	4.40	2.98	4.54	2.89
	18	3.65	2.85	3.84	2.81	4.03	2.93	4.11	2.90	4.19	2.87	4.35	2.96	4.49	2.88
	20	3.57	2.81	3.76	2.77	3.96	2.90	4.05	2.87	4.13	2.84	4.29	2.94	4.43	2.85
	22	3.49	2.77	3.68	2.73	3.89	2.86	3.98	2.83	4.06	2.80	4.23	2.92	4.38	2.84
	24	3.40	2.72	3.59	2.69	3.81	2.83	3.91	2.81	3.99	2.78	4.17	2.89	4.32	2.81
	26	3.32	2.68	3.51	2.65	3.74	2.80	3.84	2.78	3.92	2.75	4.11	2.86	4.26	2.80
	28	3.23	2.63	3.42	2.61	3.66	2.77	3.77	2.76	3.85	2.72	4.04	2.84	4.20	2.77
	30	3.14	2.59	3.33	2.57	3.58	2.74	3.70	2.72	3.78	2.70	3.98	2.82	4.13	2.75
	32	3.05	2.54	3.24	2.52	3.50	2.70	3.62	2.69	3.70	2.66	3.91	2.79	4.06	2.73
	34	2.95	2.50	3.14	2.48	3.41	2.66	3.54	2.66	3.62	2.63	3.84	2.77	4.00	2.69
	35	2.91	2.48	3.10	2.46	3.37	2.65	3.50	2.64	3.58	2.62	3.80	2.75	3.96	2.68
	36	2.86	2.46	3.05	2.44	3.33	2.63	3.46	2.63	3.54	2.60	3.76	2.72	3.92	2.67
	38	2.76	2.41	2.95	2.40	3.24	2.59	3.38	2.59	3.46	2.57	3.69	2.70	3.85	2.65
	39	2.71	2.39	2.90	2.37	3.20	2.57	3.33	2.58	3.42	2.56	3.65	2.69	3.81	2.64

Note(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 :7m

Level difference of Zero.

(3)

Model SRK50ZM-S

Cooling Mode

(kW)

Air flow	Outdoor air temp.	Indoor air temp													
		21°CDB		23°CDB		26°CDB		27°CDB		28°CDB		31°CDB			
		14°CWB		16°CWB		18°CWB		19°CWB		20°CWB		22°CWB			
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC		
Hi 11.3 (m ³ /min)	10	5.63	4.09	5.90	4.02	6.11	4.12	6.22	4.05	6.32	3.99	6.51	4.05	6.69	3.92
	12	5.53	4.03	5.80	3.97	6.03	4.07	6.14	4.01	6.25	3.96	6.44	4.02	6.62	3.89
	14	5.43	3.98	5.70	3.91	5.94	4.03	6.05	3.98	6.16	3.92	6.37	4.00	6.55	3.86
	16	5.32	3.92	5.59	3.86	5.85	3.98	5.96	3.93	6.08	3.88	6.29	3.96	6.48	3.84
	18	5.21	3.85	5.48	3.80	5.75	3.94	5.88	3.90	5.99	3.84	6.21	3.93	6.41	3.81
	20	5.10	3.79	5.37	3.74	5.65	3.89	5.78	3.85	5.90	3.80	6.13	3.90	6.33	3.78
	22	4.98	3.73	5.25	3.68	5.55	3.84	5.69	3.81	5.80	3.76	6.05	3.86	6.25	3.75
	24	4.86	3.67	5.14	3.62	5.45	3.79	5.59	3.76	5.71	3.72	5.96	3.83	6.17	3.72
	26	4.74	3.60	5.01	3.56	5.34	3.74	5.49	3.71	5.61	3.67	5.87	3.79	6.08	3.69
	28	4.61	3.54	4.89	3.50	5.23	3.69	5.39	3.67	5.50	3.63	5.78	3.76	5.99	3.66
	30	4.49	3.46	4.76	3.43	5.11	3.64	5.28	3.62	5.40	3.58	5.68	3.72	5.90	3.62
	32	4.35	3.40	4.63	3.37	5.00	3.58	5.17	3.57	5.29	3.54	5.58	3.68	5.81	3.59
	34	4.22	3.33	4.49	3.31	4.88	3.52	5.06	3.52	5.18	3.49	5.48	3.64	5.71	3.55
	35	4.15	3.29	4.42	3.27	4.82	3.49	5.00	3.49	5.12	3.45	5.43	3.62	5.66	3.53
	36	4.08	3.26	4.35	3.24	4.76	3.47	4.94	3.46	5.06	3.43	5.37	3.60	5.61	3.50
	38	3.94	3.19	4.21	3.18	4.63	3.42	4.82	3.42	4.94	3.39	5.27	3.54	5.50	3.47
	39	3.87	3.15	4.14	3.14	4.57	3.39	4.76	3.39	4.88	3.36	5.21	3.52	5.45	3.45

Heating Mode (HC)

(kW)

Air flow	outdoor air temp.	indoor air temp				
		16°CDB	18°CDB	20°CDB	22°CDB	24°CDB
Hi 13.5 (m ³ /min)	-15°CWB	3.57	3.49	3.41	3.34	3.26
	-10°CWB	4.04	3.97	3.91	3.81	3.73
	-5°CWB	4.37	4.31	4.22	4.18	4.11
	0°CWB	4.59	4.52	4.44	4.39	4.32
	5°CWB	5.84	5.77	5.74	5.63	5.55
	6°CWB	5.94	5.87	5.80	5.73	5.66
	10°CWB	6.31	6.25	6.21	6.12	6.06
	15°CWB	6.86	6.80	6.76	6.68	6.62
	20°CWB	7.38	7.32	7.28	7.20	7.14

Note(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 :7m

Level difference of Zero.

(3) Symbols are as follows.

TC : Total cooling capacity (kW)

SHC : Sensible heat capacity (kW)

HC : Heating capacity (kW)

8. APPLICATION DATA

(1) Installation of indoor unit

Models SRK20ZM-S, 25ZM-S, 35ZM-S, 50ZM-S

RLA012A020

- This installation manual illustrates the method of installing an indoor unit.
- For electrical wiring work, please see instructions set out on the backside.
- For outdoor unit installation and refrigerant piping, please refer to page 29.

SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, **WARNING** and **CAUTION**.
- WARNING** : Wrong installation would cause serious consequences such as injuries or death.
- CAUTION** : Wrong installation might cause serious consequences depending on circumstances.
- Both mentions the important items to protect your health and safety so strictly follow them by any means.
- Be sure to confirm no anomaly on the equipment by commissioning after completed installation and explain the operating methods as well as the maintenance methods of this equipment to the user according to the owner's manual.

- A wired remote control unit is supplied separately as an optional part.
- When install the unit, be sure to check whether the selection of installation place, power supply specifications, usage limitation (piping length, height differences between indoor and outdoor units, power supply voltage and etc.) and installation spaces.

- Keep the installation manual together with owner's manual at a place where any user can read at any time. Moreover if necessary, ask to hand them to a new user.
- For installing qualified personnel, take precautions in respect to themselves by using suitable protective clothing, gloves, etc., and then perform the installation works.
- Please pay attention not to fall down the tools, etc. when installing the unit at the high position.
- If unusual noise can be heard during operation, consult the dealer.
- The meanings of "Marks" used here are shown as follows:

	Never do it under any circumstances.		Always do it according to the instruction.
--	--------------------------------------	--	--

WARNING

- Installation must be carried out by the qualified installer.**
If you install the system by yourself, it may cause serious trouble such as water leaks, electric shocks, fire and personal injury, as a result of a system malfunction. Do not carry out the installation and maintenance work except by the qualified installer.
- Install the system in full accordance with the installation manual.**
Incorrect installation may cause bursts, personal injury, water leaks, electric shocks and fire.
- Be sure to use only for household and residence.**
If this appliance is installed in inferior environment such as machine shop and etc., it can cause malfunction.
- Use the original accessories and the specified components for installation.**
If parts other than those prescribed by us are used, it may cause water leaks, electric shocks, fire and personal injury.
- Install the unit in a location with good support.**
Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury.
- Ventilate the working area well in the event of refrigerant leakage during installation.**
If the refrigerant comes into contact with naked flames, poisonous gas is produced.
- When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage, referred by the formula (accordance with ISO5149).**
If the density of refrigerant exceeds the limit, please consult the dealer and install the ventilation system, otherwise lack of oxygen can occur, which can cause serious accident.
- After completed installation, check that no refrigerant leaks from the system.**
If refrigerant leaks into the room and comes into contact with an oven or other hot surface, poisonous gas is produced.
- Use the prescribed pipes, flare nuts and tools for R410A.**
Using existing parts (for R22 or R407C) can cause the unit failure and serious accidents due to burst of the refrigerant circuit.

- Tighten the flare nut by torque wrench with specified method.**
If the flare nut were tightened with excess torque, this may cause burst and refrigerant leakage after a long period.
- The electrical installation must be carried out by the qualified electrician in accordance with "the norm for electrical work" and "national wiring regulation", and the system must be connected to the dedicated circuit.**
Power supply with insufficient capacity and incorrect function done by improper work can cause electric shocks and fire.
- Be sure to shut off the power before starting electrical work.**
Failure to shut off the power can cause electric shocks, unit failure or incorrect function of equipment.
- Be sure to use the cables conformed to safety standard and cable ampacity for power distribution work.**
Unconformable cables can cause electric leak, anomalous heat production or fire.
- This appliance must be connected to main power supply by means of a circuit breaker or switch (fuse:16A) with a contact separation of at least 3mm.**
When plugging this appliance, a plug conforming to the norm IEC60884-1 must be used.
- Use the prescribed cables for electrical connection, tighten the cables securely in terminal block and relieve the cables correctly to prevent overloading the terminal blocks.**
Loose connections or cable mountings can cause anomalous heat production or fire.
- Arrange the wiring in the control box so that it cannot be pushed up further into the box. Install the service panel correctly.**
Incorrect installation may result in overheating and fire.
- Be sure to switch off the power supply in the event of installation, inspection or servicing.**
If the power supply is not shut off, there is a risk of electric shocks, unit failure or personal injury due to the unexpected start of fan.
- Be sure to wear protective goggles and gloves while at work.**
If the earth leakage breaker is not installed, it can cause electric shocks.

- Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulphide gas can occur.**
Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.
- Ensure that no air enters in the refrigerant circuit when the unit is installed and removed.**
If air enters in the refrigerant circuit, the pressure in the refrigerant circuit becomes too high, which can cause burst and personal injury.

- Do not processing, splice the power cord, or share a socket with other power plugs.**
This may cause fire or electric shock due to defective contact, defective insulation and over-current etc.
- Do not bundling, winding or processing for the power cord. Or, do not deforming the power plug due to tread it.**
This may cause fire or heating.

WARNING

- Do not vent R410A into the atmosphere : R410A is a fluorinated greenhouse gas, covered by the Kyoto Protocol with Groval Warming Potential (GWP)=1975.**
- Do not run the unit with removed panels or protections.**
Touching rotating equipments, hot surfaces or high voltage parts can cause personal injury due to entrapment, burn or electric shocks.
- Do not perform any change of protective device itself or its setup condition.**
The forced operation by short-circuiting protective device of pressure switch and temperature controller or the use of non specified component can cause fire or burst.

CAUTION

- Carry out the electrical work for ground lead with care.**
Do not connect the ground lead to the gas line, water line, lightning conductor or telephone line's ground lead. Incorrect grounding can cause unit faults such as electric shocks due to short-circuiting.
- Use the circuit breaker of correct capacity. Circuit breaker should be the one that disconnect all poles under over current.**
Using the incorrect one could cause the system failure and fire.
- Install isolator or disconnect switch on the power supply wiring in accordance with the local codes and regulations.**
The isolator should be locked in OFF state in accordance with EN60204-1.
- Be sure to install indoor unit properly according to the installation manual in order to run off the drainage smoothly.**
Improper installation of indoor unit can cause dropping water into the room and damaging personal property.
- Install the drainage pipe to run off drainage securely according to the installation manual.**
Incorrect installation of the drainage pipe can cause dropping water into the room and damaging personal property.
- Be sure to install the drainage pipe with descending slope of 1/100 or more, and not to make traps and air-bleedings.**
Check if the drainage runs off securely during commissioning and ensure the space for inspection and maintenance.
- 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.

- For installation work, be careful not to get injured with the heat exchanger, piping flare portion or screws etc.**
- Be sure to insulate the refrigerant pipes so as not to condense the ambient air moisture on them.**
Insufficient insulation can cause condensation, which can lead to moisture damage on the ceiling, floor, furniture and any other valuables.

- When perform the air conditioner operation (cooling or drying operation) in which ventilator is installed in the room. In this case, using the air conditioner in parallel with the ventilator, there is the possibility that drain water may backflow in accordance with the room lapse into the negative pressure status. Therefore, set up the opening port such as incorporate the air into the room that may appropriate to ventilation (For example: Open the door a little). In addition, just as above, so set up the opening port if the room lapse into negative pressure status due to register of the wind for the high rise apartment etc.**
- Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.**
If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.

- Do not install the unit in the locations listed below.**
If leaked gases accumulate around the unit, it can cause fire.

- Do not install the unit where corrosive gas (such as sulfuric acid gas etc.) or combustible gas (such as thinner and petroleum gases) can accumulate or collect, or where volatile combustible substances are handled.**
Corrosive gas can cause corrosion of heat exchanger, breakage of plastic parts and etc. And combustible gas can cause fire.

- Do not use the indoor unit at the place where water splashes may occur such as in laundries.**
Since the indoor unit is not waterproof, it can cause electric shocks and fire.

- Do not install nor use the system close to the equipment that generates electromagnetic fields or high frequency harmonics.**
Equipment such as inverters, standby generators, medical high frequency equipments and telecommunication equipments can affect the system, and cause malfunctions and breakdowns. The system can also affect medical equipment and telecommunication equipment, and obstruct its function or cause jamming.

- Do not place any variables which will be damaged by getting wet under the indoor unit.**
When the relative humidity is higher than 80% or drainage pipe is clogged, condensation or drainage water can drop and it can cause the damage of valuables.

- Do not install the wireless remote control at the direct sunlight.**
It can cause malfunction or deformation of the wireless remote control.
- Do not use the unit for special purposes such as storing foods, cooling precision instruments and preservation of animals, plants or art.**
It can cause the damage of the items.

- Do not use any materials other than a fuse with the correct rating in the location where fuses are to be used.**
Connecting the circuit with copper wire or other metal thread can cause unit failure and fire.

- Do not touch any buttons with wet hands.**
It can cause electric shocks.

- Do not touch any refrigerant pipes with your hands when the system is in operation.**
During operation the refrigerant pipes become extremely hot or extremely cold depending the operating condition, and it can cause burn injury or frost injury.

Fixing of indoor unit

• How to remove the indoor unit from the installation board

- ① Push up at the marked portion of the indoor unit base lower latch, and slightly pull it toward you. (both right and left hand sides) (The indoor unit base lower latch can be removed from the installation board.)
- ② Push up the indoor unit upward. So the indoor unit will be removed from the installation board.

Since this air conditioner has been designed to collect dew drops on the rear surface to the drain pan, do not attach the power cord above the gutter.

Drainage

- Arrange the drain hose in a downward angle.
- Avoid the following drain piping.

CAUTION Go through all installation steps and check if the drainage is all right. Otherwise water leak may occur.

- Pour water to the drain pan located under the heat exchanger, and ensure that the water is discharged outdoor.
- When the extended drain hose is indoor, securely insulate it with a heat insulator available in the market.

CONNECTION OF REFRIGERANT PIPINGS

Preparation Keep the openings of the pipes covered with tapes etc. to prevent dust, sand, etc. from entering them.

CAUTION
Do not apply refrigerating machine oil to the flared surface.

• Flaring work

Copper pipe diameter	Measurement B (mm)		
	Clutch type flare tool for R410A	Conventional (R22) flare tool	
	Clutch type	Wing nut type	
ø6.35	0.0 - 0.5	1.0 - 1.5	1.5 - 2.0
ø9.52	0.0 - 0.5	1.0 - 1.5	1.5 - 2.0
ø12.7	0.0 - 0.5	1.0 - 1.5	2.0 - 2.5

Use a flare tool designed for R410A or a conventional flare tool.
Please note that measurement B (protrusion from the flaring block) will vary depending on the type of a flare tool in use.
If a conventional flare tool is used, please use a copper pipe gauge or a similar instrument to check protrusion so that you can keep measurement B to a correct value.

Connection

- Connect the pipes on both liquid and gas sides.
- Tighten the nuts to the following torque.
Liquid side (ø6.35) : 14.0 - 18.0 N·m (1.4 - 1.8 kgf·m)
Gas side (ø9.52) : 34.0 - 42.0 N·m (3.4 - 4.2 kgf·m)
(ø12.7) : 49.0 - 61.0 N·m (4.9 - 6.1 kgf·m)

CAUTION

Do not apply excess torque to the flared nuts. Otherwise, the flared nuts may check depending.

Insulation of the connection portion

Finishing work and fixing

Cover the exterior portion with outer tape and shape the piping so it will match the contours of the route that the piping to take.
Also fix the wiring and pipings to the wall with clamps.

Open/close and detachment/attachment of the air inlet panel

- To open, pull the panel at both ends of lower part and release latches, then pull up the panel until you feel resistance.
(The panel stops at approx. 60° open position)
- To close, hold the panel at both ends of lower part to lower downward and push it slightly until the latch works.
- To remove, pull up the panel to the position shown in right illustration and pull it toward you.
- To install, insert the panel arm into the slot on the front panel from the position shown in right illustration, hold the panel at both ends of lower part, lower it downward slowly, then push it slightly until the latch works.

How to remove and fit the front panel

- Removing
 - ① Remove the air inlet panel.
 - ② Remove the 2 set screws.
 - ③ Remove the 3 latches in the upper section.
 - ④ Move the lower part of the panel forward and push upwards to remove.
- Fitting
 - ① Do remove the air filter.
 - ② Cover the body with the front panel.
 - ③ Fit the 3 latches in the upper section.
 - ④ Tighten the 2 set screws.
 - ⑤ Fit the air filter.
 - ⑥ Fit the air inlet panel.

13 • SRK-T-143

ELECTRICAL WIRING WORK

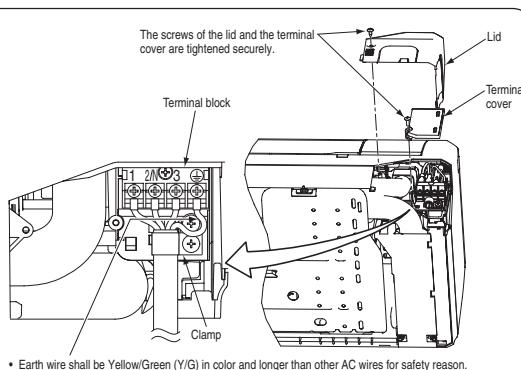
Preparation of indoor unit

Mounting of connecting wires

- ① Remove the lid.
- ② Remove the terminal cover.
- ③ Remove the wiring clamp.
- ④ Connect the connecting wire securely to the terminal block.
 - 1) Connect the connection wire securely to the terminal block. If the wire is not affixed completely, contact will be poor, and it is dangerous as the terminal block may heat up and catch fire.
 - 2) Take care not to confuse the terminal numbers for indoor and outdoor connections.
 - 3) Fix the connecting wire by wiring clamp.
 - 4) Attach the terminal cover.
 - 5) Attach the lid.

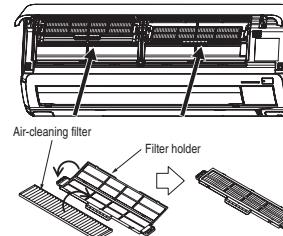
CAUTION
In case of faulty wiring connection, the indoor unit stops, and then the run lamp turns on and the timer lamp blinks.

Use cables for interconnection wiring to avoid loosening of the wires. CENELEC code for cables Required field cables.
H05RN4G1.5 (example) or 245IEC57
H Harmonized cable type
05 300/500 volts
R Natural-and/or synth. rubber wire insulation
N Polychloroprene rubber conductors insulation
R Stranded core
40f5 Number of conductors
G One conductor of the cable is the earth conductor (yellow/green)
1.5 Section of copper wire (mm²)



Installing the air-cleaning filters

1. Open the air inlet panel and remove the air filters.
2. Install the air-cleaning filter in the filter holders, and then install the filter holders in the air conditioner.
 - Each air-cleaning filter can be installed in the left or right filter holder.
3. Install the air filters and close the inlet panel.



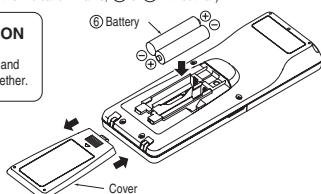
INSTALLATION OF WIRELESS REMOTE CONTROL

Mounting method of battery

- Uncover the wireless remote control, and mount the batteries [R03 (AAA, Micro), X 2 pieces] in the body regularly.
- (Fit the poles with the indication marks, + & - without fail)

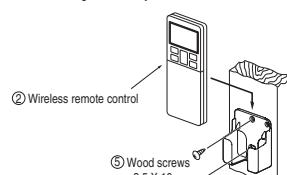
CAUTION

Do not use new and old batteries together.



Fixing to pillar or wall

- Conventionally, operate the wireless remote control by holding in your hand.
- Avoid installing it on a clay wall etc.



INSTALLING TWO AIR CONDITIONERS IN THE SAME ROOM

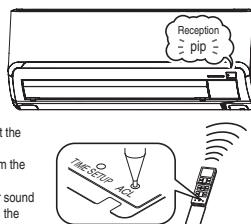
When two air conditioners are installed in the same room, use this setting when the two air conditioners are not operated with one wireless remote control. Set the wireless remote control and indoor unit.

Setting the wireless remote control

- ① Pull out the cover and take out batteries.
- ② Disconnect the switching line next to the battery with wire cutters.
- ③ Insert batteries. Close the cover.

Setting an indoor unit

- ① Turn off the power supply, and turn it on after 1 minute.
- ② Point the wireless remote control that was set according to the procedure described on the left side at the indoor unit and send a signal by pressing the AC L switch on the wireless remote control.
- Since the signal is sent in about 6 seconds after the AC L switch is pressed, point the wireless remote control at the indoor unit for some time.
- ③ Check that the reception buzzer sound "pip" is emitted from the indoor unit.
- At completion of the setting, the indoor unit emits a buzzer sound "pip". (If no reception tone is emitted, start the setting from the beginning again.)



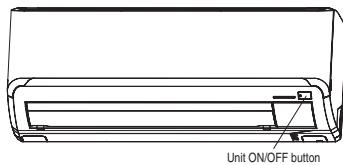
HOW TO RELOCATE OR DISPOSE OF THE UNIT

- In order to protect the environment, be sure to pump down (recovery of refrigerant).
- Pump down is the method of recovering refrigerant from the indoor unit to the outdoor unit when the pipes are removed from the unit.

How to pump down:

- ① Connect charge hose to check joint of outdoor unit.
- ② Liquid side : Close the liquid valve with hexagon wrench key.
Gas side : Fully open the gas valve.
- Carry out cooling operation. (If indoor temperature is low, operate forced cooling operation.)
- After low pressure gauge become 0.01MPa, stop cooling operation and close the gas valve.

- Forced cooling operation
Turn on a power supply again after a while after turn off a power supply. Then press continually the ON/OFF button 5 seconds or more.

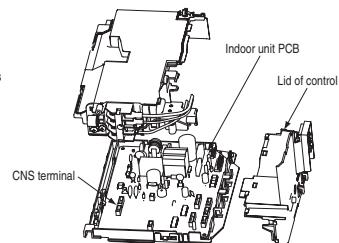


CONCERNING TERMINAL CONNECTION FOR AN INTERFACE

- ① Remove the front panel and lid of control.
- ② Remove the control.
- ③ There is a terminal (respectively marked with CNS) for the indoor control board.

In connecting an interface, connect to the respective terminal securely with the connection harness supplied with an optional "Interface connection kit SC-BIKN-E" and fasten the connection harness onto the indoor control board with the clamp supplied with the kit.

For more details, please refer to the user's manual of your "Interface connection kit SC-BIKN-E".



INSTALLATION TEST CHECK POINTS

After installation

- The power supply voltage is correct as the rating.
- No gas leaks from the joints of the service valve.
- Power cables and crossover wires are securely fixed to the terminal board.
- The screw of the lid and the terminal cover are tightened securely.

Check the following points again after completion of the installation, and before turning on the power. Conduct a test run again and ensure that the unit operates properly. At the same time, explain to the customer how to use the unit and how to take care of the unit following the user's manual.

Test run

- Air conditioning operation is normal.
- No abnormal noise.
- Water drains smoothly.
- Protective functions are not working.
- The wireless remote control is normal.
- Operation of the unit has been explained to the customer. (Three-minutes restart preventive timer)
When the air conditioner is restarted or when changing the operation, the unit will not start operating for approximately 3 minutes. This is to protect the unit and it is not a malfunction.

(2) Installation of outdoor unit

Models SRC20ZM-S, 25ZM-S, 35ZM-S, 50ZM-S

- This installation manual deals with outdoor units and general installation specifications only. For indoor units, refer to page 25.
- When install the unit, be sure to check whether the selection of installation place, power supply specifications, usage limitation (piping length, height differences between indoor and outdoor units, power supply voltage and etc.) and installation spaces.

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- Keep the installation manual together with owner's manual at a place where any user can read at any time. Moreover if necessary, ask to hand them to a new user.
- For installing qualified personnel, take precautions in respect to themselves by using suitable protective clothing, groves, etc., and then perform the installation works.
- Please pay attention not to fall down the tools, etc. when installing the unit at the high position.
- If unusual noise can be heard during operation, consult the dealer.
- The meanings of "Marks" used here are shown as follows:

	Never do it under any circumstances.			Always do it according to the instruction.
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WARNING

	<ul style="list-style-type: none"> • Installation must be carried out by the qualified installer. If you install the system by yourself, it may cause serious trouble such as water leaks, electric shocks, fire and personal injury, as a result of a system malfunction. Do not carry out the installation and maintenance work except the by qualified installer. • Install the system in full accordance with the installation manual. Incorrect installation may cause bursts, personal injury, water leaks, electric shocks and fire. • Be sure to use only for household and residence. If this appliance is installed in inferior environment such as machine shop and etc., it can cause malfunction. • 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 accident. • Use the original accessories and the specified components for installation. If parts other than those prescribed by us are used, It may cause water leaks, electric shocks, fire and personal injury. • Install the unit in a location with good support. Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury. • Ensure the unit is stable when installed, so that it can withstand earthquakes and strong winds. Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury. 	<ul style="list-style-type: none"> • Ventilate the working area well in the event of refrigerant leakage during installation. If the refrigerant comes into contact with naked flames, poisonous gas is produced. • Use the prescribed pipes, flare nuts and tools for R410A. Using existing parts (for R22 or R407C) can cause the unit failure and serious accidents due to burst of the refrigerant circuit. • Tighten the flare nut by torque wrench with specified method. If the flare nut were tightened with excess torque, this may cause burst and refrigerant leakage after a long period. • Do not open the service valves for liquid line and gas line until completed refrigerant piping work, air tightness test and evacuation. If the compressor is operated in state of opening service valves before completed connection of refrigerant piping work, air can be sucked into refrigerant circuit, which can cause bust or personal injury due to anomalously high pressure in the refrigerant. • The electrical installation must be carried out by the qualified electrician in accordance with "the norm for electrical work" and "national wiring regulation", and the system must be connected to the dedicated circuit. Power supply with insufficient capacity and incorrect function done by improper work can cause electric shocks and fire. • Be sure to shut off the power before starting electrical work. Failure to shut off the power can cause electric shocks, unit failure or incorrect function of equipment. • Be sure to use the cables conformed to safety standard and cable ampacity for power distribution work. Unconformable cables can cause electric leak, anomalous heat production or fire. • This appliance must be connected to main power supply by means of a circuit breaker or switch (fuse:16A) with a contact separation of at least 3mm.
	<ul style="list-style-type: none"> • Ensure that no air enters in the refrigerant circuit when the unit is installed and removed. If air enters in the refrigerant circuit, the pressure in the refrigerant circuit becomes too high, which can cause burst and personal injury. • Do not processing, splice the power cord, or share a socket with other power plugs. This may cause fire or electric shock due to defecting contact, defecting insulation and over-current etc. 	<ul style="list-style-type: none"> • Do not bundling, winding or processing for the power cord. Or, do not deforming the power plug due to tread it. This may cause fire or heating. • Do not run the unit with removed panels or protections. Touching rotating equipments, hot surfaces or high voltage parts can cause personal injury due to entrapment, burn or electric shocks. • Do not perform any change of protective device itself or its setup condition. The forced operation by short-circuiting protective device of pressure switch and temperature controller or the use of non specified component can cause fire or burst.

 CAUTION	
	<ul style="list-style-type: none"> Carry out the electrical work for ground lead with care. Do not connect the ground lead to the gas line, water line, lightning conductor or telephone line's ground lead. Incorrect grounding can cause unit faults such as electric shocks due to short-circuiting.
	<ul style="list-style-type: none"> Use the circuit breaker for all pole correct capacity. Circuit breaker should be the one that disconnect all poles under over current. Using the incorrect circuit breaker, it can cause the unit malfunction and fire. Install isolator or disconnect switch on the power supply wiring in accordance with the local codes and regulations. The isolator should be locked in OFF state in accordance with EN60204-1. After maintenance, all wiring, wiring ties and the like, should be returned to their original state and wiring route, and the necessary clearance from all metal parts should be secured. Secure a space for installation, inspection and maintenance specified in the manual. Insufficient space can result in accident such as personal injury due to falling from the installation place.
	<ul style="list-style-type: none"> Do not install the unit in the locations listed below. <ul style="list-style-type: none"> Locations where carbon fiber, metal powder or any powder is floating. Locations where any substances that can affect the unit such as sulphide gas, chloride gas, acid and alkaline can occur. Vehicles and ships. Locations where cosmetic or special sprays are often used. Locations with direct exposure of oil mist and steam such as kitchen and machine plant. Locations where any machines which generate high frequency harmonics are used. Locations with salty atmospheres such as coastlines. Locations with heavy snow (If installed, be sure to provide base flame and snow hood mentioned in the manual). Locations where the unit is exposed to chimney smoke. Locations at high altitude (more than 1000m high). Locations with ammonic atmospheres. Locations where heat radiation from other heat source can affect the unit. Locations without good air circulation. Locations with any obstacles which can prevent inlet and outlet air of the unit. Locations where short circuit of air can occur (in case of multiple units installation). Locations where strong air blows against the air outlet of outdoor unit. Locations where something located above the unit could fall. <p>It can cause remarkable decrease in performance, corrosion and damage of components, malfunction and fire.</p> Do not install the outdoor unit in the locations listed below. <ul style="list-style-type: none"> Locations where discharged hot air or operating sound of the outdoor unit can bother neighborhood. Locations where outlet air of the outdoor unit blows directly to an animal or plants. The outlet air can affect adversely to the plant etc. Locations where vibration can be amplified and transmitted due to insufficient strength of structure. Locations where vibration and operation sound generated by the outdoor unit can affect seriously (on the wall or at the place near bed room). Locations where an equipment affected by high harmonics is placed (TV set or radio receiver is placed within 1m). Locations where drainage cannot run off safely. <p>It can affect surrounding environment and cause a claim.</p> Do not install the unit near the location where leakage of combustible gases can occur. If leaked gases accumulate around the unit, it can cause fire. Do not install the unit where corrosive gas (such as sulfurous acid gas etc.) or combustible gas (such as thinner and petroleum gases) can accumulate or collect, or where volatile combustible substances are handled. Corrosive gas can cause corrosion of heat exchanger, breakage of plastic parts and etc. And combustible gas can cause fire. Do not install nor use the system close to the equipment that generates electromagnetic fields or high frequency harmonics. Equipment such as inverters, standby generators, medical high frequency equipments and telecommunication equipments can affect the system, and cause malfunctions and breakdowns. The system can also affect medical equipment and telecommunication equipment, and obstruct its function or cause jamming. Do not install the outdoor unit in a location where insects and small animals can inhabit. Insects and small animals can enter the electric parts and cause damage or fire. Instruct the user to keep the surroundings clean. Do not use the base flame for outdoor unit which is corroded or damaged due to long periods of operation. Using an old and damage base flame can cause the unit falling down and cause personal injury. Do not use any materials other than a fuse with the correct rating in the location where fuses are to be used. Connecting the circuit with copper wire or other metal thread can cause unit failure and fire. Do not touch any buttons with wet hands. It can cause electric shocks. Do not touch any refrigerant pipes with your hands when the system is in operation. During operation the refrigerant pipes become extremely hot or extremely cold depending the operating condition, and it can cause burn injury or frost injury. Do not touch the suction or aluminum fin on the outdoor unit. This may cause injury. Do not put anything on the outdoor unit and operating unit. This may cause damage the objects or injury due to falling to the object. Do not use the unit for special purposes such as storing foods, cooling precision instruments and preservation of animals, plants or art. Do not clean up the unit with water.

Check before installation work

- Model name and power source
- Refrigerant piping length
- Piping, wiring and miscellaneous small parts
- Indoor unit installation manual

Accessories for outdoor unit		Q'ty
① Grommet (Heat pump type only)	Model SRC20~35 D XC09,12	1
	Model SRC50/DXC18	4

② Drain elbow (Heat pump type only)		1
Option parts	Q'ty	
③ Sealing plate	1	
④ Sleeve	1	
⑤ Inclination plate	1	
⑥ Putty	1	
⑦ Drain hose (extension hose)	1	
⑧ Piping cover (for insulation of connection piping)	1	

Necessary tools for the installation work		
1	Plus headed driver	9 Wrench key (Hexagon) [4m/m]
2	Knife	10 Vacuum pump
3	Sleeve	11 Vacuum pump adapter (Anti-reverse flow type) (Designed specifically for R410A)
4	Inclination plate	12 Gauge manifold (Designed specifically for R410A)
5	Putty	13 Charge hose (Designed specifically for R410A)
6	Drain hose (extension hose)	14 Flaring tool set (Designed specifically for R410A)
7	Piping cover	15 Gas leak detector (Designed specifically for R410A)
8	(for insulation of connection piping)	16 Gauge for projection adjustment (Used when flare is made by using conventional flare tool)
9		17 Hole core drill (65mm in diameter)

Notabilia as a unit designed for R410A

- Do not use any refrigerant other than R410A. R410A will rise to pressure about 1.6 times higher than that of a conventional refrigerant. A cylinder containing R410A has a pink indication mark on the top.
- A unit designed for R410A has adopted a different size indoor unit service valve charge port and a different size check joint provided in the unit to prevent the charging of a wrong refrigerant by mistake. The processed dimension of the flared part of a refrigerant pipe and a flare nut's parallel side measurement have also been altered to raise strength against pressure. Accordingly, you are required to arrange dedicated R410A tools listed in the table on the left before installing or servicing this unit.
- Do not use a charge cylinder. The use of a charge cylinder will cause the refrigerant composition to change, which results in performance degradation.
- In charging refrigerant, always take it out from a cylinder in the liquid phase.
- All indoor units must be models designed exclusively for R410A. Check connectable indoor unit models in a catalog, etc. (A wrong indoor unit, if connected into the system, will impair proper system operation)

1. HAULAGE AND INSTALLATION

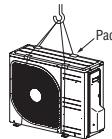
(Take particular care in carrying in or moving the unit, and always perform such an operation with two or more persons.)

CAUTION

When a unit is hoisted with slings for haulage, take into consideration the offset of its gravity center position.
If not properly balanced, the unit can be thrown off-balance and fall.

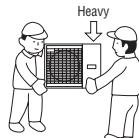
1) Delivery

- Deliver the unit as close as possible to the installation site before removing it from the packaging.
- When you have to unpack the unit for a compelling reason before you haul it to the installation point, hoist the unit with nylon slings or ropes and protection pads so that you may not damage the unit.



2) Portage

- The right hand side of the unit as viewed from the front (diffuser side) is heavier. A person carrying the right hand side must take heed of this fact. A person carrying the left hand side must hold with his right hand the handle provided on the front panel of the unit and with his left hand the corner column section.



3) Selecting the installation location

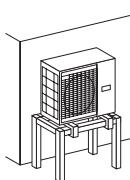
Be careful of the following conditions and choose an installation place.

- Where air is not trapped.
- Where the installation fittings can be firmly installed.
- Where wind does not hinder the intake and outlet pipes.
- Out of the heat range of other heat sources.
- A place where stringent regulation of electric noises is applicable.
- Where it is safe for the drain water to be discharged.
- Where noise and hot air will not bother neighboring residents.
- Where snow will not accumulate.
- Where strong winds will not blow against the outlet pipe.
- A place where no TV set or radio receiver is placed within 1m.
(If electrical interference is caused, seek a place less likely to cause the problem)
- If a operation is conducted when the outdoor air temperature is -5°C lower, the outdoor unit should be installed at a place where it is not influenced by natural wind.
- Where it is likely that the unit is subjected to strong winds, provide wind guards according to the following guidelines. Strong winds can cause performance degradation, an accidental stop due to a rise of high pressure and a broken fan.

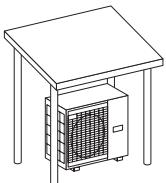
4) Caution about selection of installation location

- ① If the unit is installed in the area where the snow will accumulate, following measures are required.
The bottom plate of unit and intake, outlet may be blocked by snow.

1 Install the unit on the base so that the bottom is higher than snow cover surface.



2 Install the unit under or provide the roof on site.

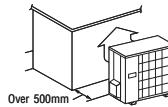


Since drain water generated by defrost control may freeze, following measures are required.
• Do not execute drain piping work by using a drain elbow and drain grommets (accessories).
[Refer to Drain piping work.]

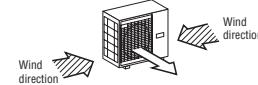
- ② If the unit can be affected by strong wind, following measures are required.

Strong wind can cause damage of fan (fan motor), or can cause performance degradation, or can trigger anomalous stop of the unit due to rising of high pressure.

- 1 Place the unit outlet side is turned to the wall.



- 2 Install so the direction of the air from the blowing outlet will be perpendicular to the direction of the wind.

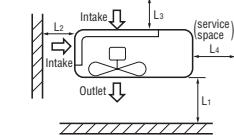


5) Installation space

- Walls surrounding the unit in the four sides are not acceptable.
- There must be a 1-meter or larger space in the above.
- When more than one unit are installed side by side, provide a 250mm or wider interval between them as a service space. In order to facilitate servicing of controllers, please provide a sufficient space between units so that their top plates can be removed easily.
- Where a danger of short-circuiting exists, install guide louvers.
- When more than one unit are installed, provide sufficient intake space consciously so that short-circuiting may not occur.
- Where piling snow can bury the outdoor unit, provide proper snow guards.

Size	Model SRC20~50/DXC09~18 (mm)			
	I	II	III	IV
L1	Open	280	280	180
L2	100	75	Open	Open
L3	100	80	80	80
L4	250	Open	250	Open

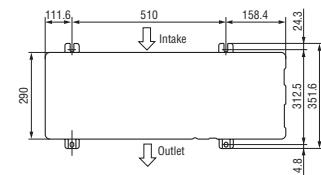
The height of a wall is 1200mm or less.



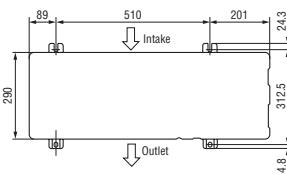
6) Installation

① Anchor bolt fixed position

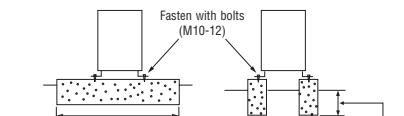
Model SRC20~35/DXC09,12



Model SRC50/DXC18



② Notabilia for installation



- In installing the unit, fix the unit's legs with bolts specified on the above.
- The protrusion of an anchor bolt on the front side must be kept within 15mm.
- Securely install the unit so that it does not fall over during earthquakes or strong winds, etc.
- Refer to the above illustrations for information regarding concrete foundations.
- Install the unit in a level area. (With a gradient of 5mm or less.) Improper installation can result in a compressor failure, broken piping within the unit and abnormal noise generation.

2. REFRIGERANT PIPING WORK

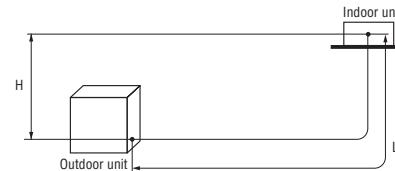
1) Restrictions on unit installation and use

- Check the following points in light of the indoor unit specifications and the installation site.
- Observe the following restrictions on unit installation and use. Improper installation can result in a compressor failure or performance degradation.
- Additional refrigerant charge is not required at all (Model SRC20~35/DXC09,12).

Restrictions		Dimensional restrictions		Marks appearing in the drawing on the right
		Model SRC20~35/DXC09,12	Model SRC50/DXC18	
Main pipe length		15m or less	25m or less	L
Elevation difference between indoor and outdoor units	When the outdoor unit is positioned higher,	10m or less	15m or less	H
	When the outdoor unit is positioned lower,	10m or less	15m or less	H

CAUTION

The use restrictions appearing in the table above are applicable to the standard pipe size combinations shown in the table below.



2) Determination of pipe size

Determine refrigerant pipe size pursuant to the following guidelines based on the indoor unit specifications.

		Model SRC20~35/DXC09,12		Model SRC50/DXC18
	Gas pipe	Liquid pipe	Gas pipe	Liquid pipe
Outdoor unit connected	ø9.52 Flare	ø6.35 Flare	ø12.7 Flare	ø6.35 Flare
Refrigerant piping (branch pipe L)	ø9.52	ø6.35	ø12.7	ø6.35
Indoor unit connected	ø9.52	ø6.35	ø12.7	ø6.35

3) Refrigerant pipe wall thickness and material

- Select refrigerant pipes of the table shown on the right wall thickness and material as specified for each pipe size.

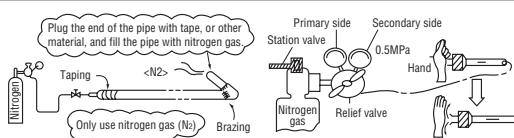
NOTE Select pipes having a wall thickness larger than the specified minimum pipe thickness.

When pipe is brazing.

About brazing

Brazing must be performed under a nitrogen gas flow.

Without nitrogen gas, a large quantity of foreign matters (oxidized film) are created, causing a critical failure from capillary tube or expansion valve clogging.



Pipe diameter [mm]	ø6.35	ø9.52	ø12.7
Minimum pipe wall thickness [mm]	0.8	0.8	0.8
Pipe material*	O-type pipe	O-type pipe	O-type pipe

*Phosphorus deoxidized seamless copper pipe ICS 23.040.15, ICS 77.150.30

4) On-site piping work

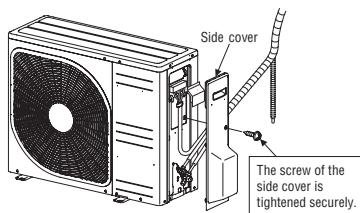
IMPORTANT

Take care so that installed pipes may not touch components within a unit. If touching with an internal component, it will generate abnormal sounds and/or vibrations.

How to remove the side cover

Please remove the screw of a side cover and remove to the front.

- Carry out the on site piping work with the service valve fully closed.
- Give sufficient protection to a pipe end (compressed and flared, or with an adhesive tape) so that water or foreign matters may not enter the piping.
- Bend a pipe to a radius as large as practical (R100~R150). Do not bend a pipe repeatedly to correct its form.
- Flare connection is used between the unit and refrigerant pipe. Flare a pipe after engaging a flare nut onto it. Flare dimensions for R410A are different from those for conventional R407C. Although we recommend the use of flaring tools designed specifically for R410A, conventional flaring tools can also be used by adjusting the measurement of protrusion B with a protrusion control gauge.
- The pipe should be anchored every 1.5m or less to isolate the vibration.
- Tighten a flare joint securely.



Flared pipe end : A (mm)	
Copper pipe outer diameter	A -04
ø6.35	9.1
ø9.52	13.2
ø12.7	16.6

Copper pipe protrusion for flaring : B (mm)	
In the case of a rigid (clutch) type	
With an R410A tool	0~0.5
With a conventional tool	1.0~1.5
ø6.35	
ø9.52	
ø12.7	

CAUTION

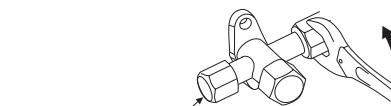
Do not apply force beyond proper fastening torque in tightening the flare nut.

Fix both liquid and gas service valves at the valve main bodies as illustrated on the right, and then fasten them, applying appropriate fastening torque.

Service valve size (mm)	Tightening torque (N·m)	Tightening angle (°)	Recommended length of a tool handle (mm)
ø6.35 (1/4")	14~18	45~60	150
ø9.52 (3/8")	34~42	30~45	200
ø12.7 (1/2")	49~61	30~45	250

Do not hold the valve cap area with a spanner.

Use a torque wrench. If a torque wrench is not available, fasten the flare nut manually first and then tighten it further, using the left table as a guide.

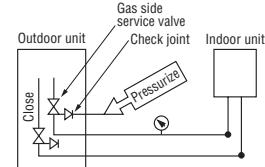


5) Air tightness test

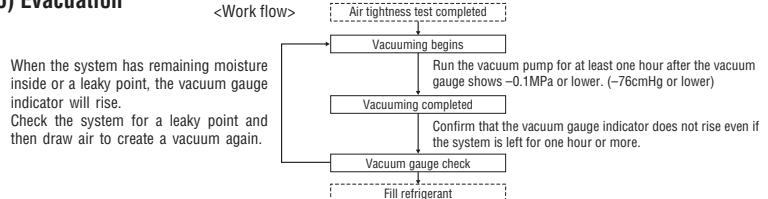
① Although outdoor and indoor units themselves have been tested for air tightness at the factory, check the connecting pipes after the installation work for air tightness from the service valve's check joint equipped on the outdoor unit side. While conducting a test, keep the service valve shut all the time.

- Raise the pressure to 0.5MPa, and then stop. Leave it for five minutes to see if the pressure drops.
- Then raise the pressure to 1.5MPa, and stop. Leave it for five more minutes to see if the pressure drops.
- Then raise the pressure to the specified level (0.15MPa), and record the ambient temperature and the pressure.
- If no pressure drop is observed with an installation pressurized to the specified level and left for about one day, it is acceptable. When the ambient temperature fall 1°C, the pressure also fall approximately 0.01MPa. The pressure, if changed, should be compensated for.
- If a pressure drop is observed in checking e) and a) – d), a leak exists somewhere. Find a leak by applying bubble test liquid to welded parts and flare joints and repair it. After repair, conduct an air tightness test again.

② In conducting an air tightness test, use nitrogen gas and pressurize the system with nitrogen gas from the gas side. Do not use a medium other than nitrogen gas under any circumstances.

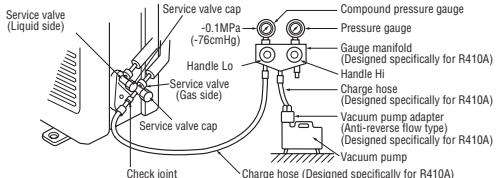


6) Evacuation



Pay attention to the following points in addition to the above for the R410A and compatible machines.

- To prevent a different oil from entering, assign dedicated tools, etc. to each refrigerant type. Under no circumstances must a gauge manifold and a charge hose in particular be shared with other refrigerant types (R22, R407C, etc.).
- Use a counterflow prevention adapter to prevent vacuum pump oil from entering the refrigerant system.



Securely tighten the service valve cap and the check joint blind nut after adjustment.

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

7) Additional refrigerant charge (Model SRC50/DXC18)

(1) Calculate a required refrigerant charge volume from the following table.

	Additional charge volume (kg) per meter of refrigerant piping (liquid pipe ø6.35)	Refrigerant volume charged for shipment at the factory (kg)	Installation's pipe length (m) covered without additional refrigerant charge
Model SRC50/DXC18	0.02	1.35	15

- This unit contains factory charged refrigerant covering 15m of refrigerant piping and additional refrigerant charge on the installation site is not required for an installation with up to 15m refrigerant piping.
- When refrigerant piping exceeds 15m, additionally charge an amount calculated from the pipe length and the above table for the portion in excess of 15m.

Formula to calculate the volume of additional refrigerant required

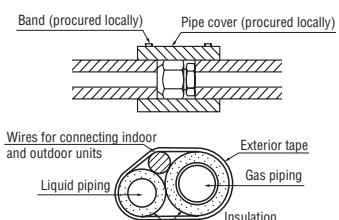
$$\text{Additional charge volume (kg)} = (\text{Main length (m)} - \text{Factory charged volume 15 (m)}) \times 0.02 (\text{kg/m})$$

- * When an additional charge volume calculation result is negative, it is not necessary to charge refrigerant additionally.
- * For an installation measuring 15m or shorter in pipe length, please charge the refrigerant volume charged for shipment at the factory, when you recharge refrigerant after servicing etc.

(2) Charging refrigerant

- Since R410A refrigerant must be charged in the liquid phase, you should charge it, keeping the container cylinder upside down or using a refrigerant cylinder equipped with a siphon tube.
- Charge refrigerant always from the liquid side service port with the service valve shut. When you find it difficult to charge a required amount, fully open the outdoor unit valves on both liquid and gas sides and charge refrigerant from the gas (suction) side service port, while running the unit in the cooling mode. In doing so, care must be taken so that refrigerant may be discharged from the cylinder in the liquid phase all the time. When the cylinder valve is throttled down or a dedicated conversion tool to change liquid phase refrigerant into mist is used to protect the compressor, however, adjust charge conditions so that refrigerant will gasify upon entering the unit.
- In charging refrigerant, always charge a calculated volume by using a scale to measure the charge volume.
- When refrigerant is charged with the unit being run, complete a charge operation within 30minutes. Running the unit with an insufficient quantity of refrigerant for a long time can cause a compressor failure.

NOTE Put down the refrigerant volume calculated from the pipe length onto the caution label attached on the service panel.



8) Heating and condensation prevention

(1) Dress refrigerant pipes (both gas and liquid pipes) for heat insulation and prevention of dew condensation.

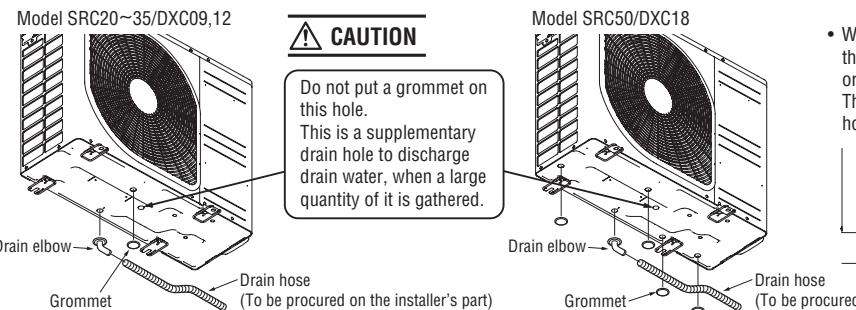
- Improper heat insulation/anti-dew dressing can result in a water leak or dripping causing damage to household effects, etc.

(2) Use a heat insulating material that can withstand 120°C or a higher temperature. Poor heat insulating capacity can cause heat insulation problems or cable deterioration.

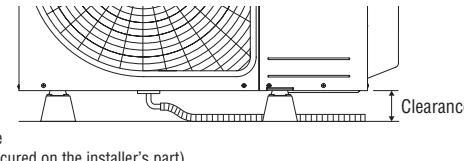
- All gas pipes must be securely heat insulated in order to prevent damage from dripping water that comes from the condensation formed on them during a cooling operation or personal injury from burns because their surface can reach quite a high temperature due to discharged gas flowing inside during a heating operation.
- Wrap indoor units' flare joints with heat insulating parts (pipe cover) for heat insulation (both gas and liquid pipes).
- Give heat insulation to both gas and liquid side pipes. Bundle a heat insulating material and a pipe tightly together so that no gaps may be left between them and wrap them together with a connecting cable by a dressing tape.
- Both gas and liquid pipes need to be dressed with 20mm or thicker heat insulation materials above the ceiling where relative humidity exceeds 70%.**

3. DRAIN PIPING WORK

- Execute drain piping by using a drain elbow and drain grommets supplied separately as accessories, where water drained from the outdoor unit is a problem.
- Water may drip where there is a larger amount of drain water. Seal around the drain elbow and drain grommets with putty or adequate caulking material.
- Condensed water may flow out from vicinity of service valve or connected pipes.
- Where you are likely to have several days of sub-zero temperatures in a row, do not use a drain elbow and drain grommets. (There is a risk of drain water freezing inside and blocking the drain.)



- When condensed water needs to be led to a drain, etc., install the unit on a flat base (supplied separately as an optional part) or concrete blocks. Then, please secure space for the drain elbow and the drain hose.



4. ELECTRICAL WIRING WORK

For details of electrical cabling, refer to the indoor unit installation manual.

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

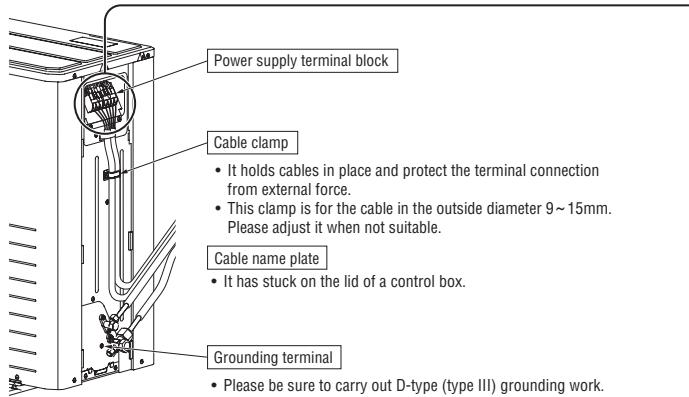
- Do not use any supply cord lighter than one specified in parentheses for each type below.
 - braided cord (code designation 60245 IEC 51)
 - ordinary tough rubber sheathed cord (code designation 60245 IEC 53)
 - flat twin tinsel cord (code designation 60227 IEC 41)
- Use polychloroprene sheathed flexible cord (code designation 60245 IEC57) for supply cords of parts of appliances for outdoor use.
- Ground the unit. Do not connect the grounding wire to a gas pipe, water pipe, lightning rod or telephone grounding wire. If improperly grounded, an electric shock or malfunction may result.
- A grounding wire must be connected before connecting the power cable. Provide a grounding wire longer than the power cable.
- The installation of an impulse withstanding type earth leakage breaker is necessary. A failure to install an earth leakage breaker can result in an accident such as an electric shock or a fire.
- 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 dose not improve power factor, while it can cause an abnormal overheat accident)
- For power supply cables, use conduits.
- Do not lay electronic control cables (wireless remote control and signaling wires) and other cables together outside the unit. Laying them together can result in the malfunctioning or a failure of the unit due to electric noises.
- Fasten cables so that they may not touch the piping, etc.
- When cables are connected, make sure that all electrical components within the electrical component box are free of loose connector coupling or terminal connection and then attach the cover securely. (Improper cover attachment can result in malfunctioning or a failure of the unit, if water penetrates into the box.)
- Never use a shield cable.
- SRC-ZMA-S, SRC-ZMXA-S and DXC-ZMA-S complies with the DRED (Demand Response Enabling Devices) standard AS/NZS4755.3.1 and supports demand response modes 1, 2, and 3 (DRM1, 2, and 3). Since the air conditioner limits the electric power or energy by receiving the DRED input signal, the sense of cooling operation or heating operation may deteriorate over time. The outdoor unit of this air conditioner is equipped with a terminal block for DRED input and supports ELV (Extra-Low Voltage) complying with AS/NZS60335.1.

CAUTION

In case of faulty wiring connection, the indoor unit stops, and then the run lamp turns on and the timer lamp blinks.

Use cables for interconnection wiring to avoid loosening of the wires. CENELEC code for cables Required field cables.

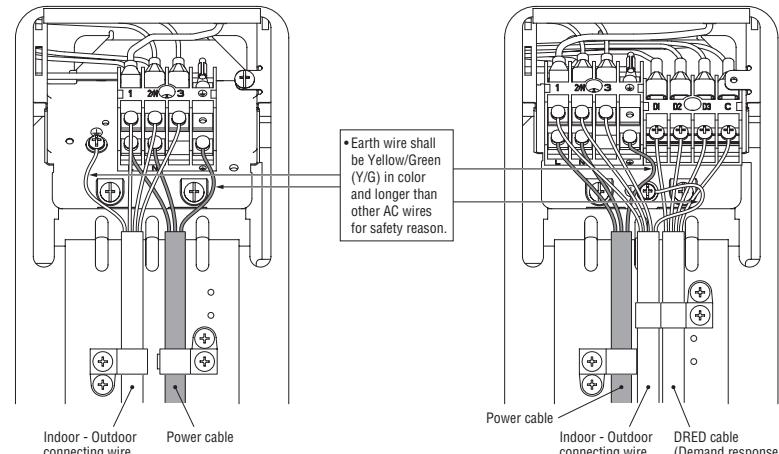
H05RR4G1.5 (Example) or 245IEC57
 H Harmonized cable type
 05 300/500 volts
 R Natural-and/or synth. rubber wire insulation
 N Polychloroprene rubber conductors insulation
 R Stranded core
 4or5 Number of conductors
 G One conductor of the cable is the earth conductor (yellow/green)
 1.5 Section of copper wire (mm²)



Power cable, indoor - outdoor connecting wire circuit diagram

Model SRC20~35ZM-S
Model SRC20~35ZMX-S

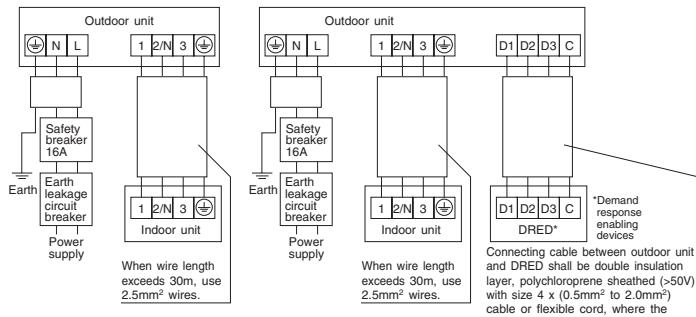
Model SRC20~35ZMA-S
Model SRC20~35ZMXA-S
Model DXC09,12ZMA-S



Power cable, indoor-outdoor connecting wires

Model SRC-ZM-S
Model SRC-ZMX-S

Model SRC-ZMA-S
Model SRC-ZMXA-S



- Always perform grounding system installation work with the power cord unplugged.
- Connect a pair bearing a common terminal number with an indoor-outdoor connecting wire.
- In cabling, fasten cables securely with cable clamps so that no external force may work on terminal connections.
- Grounding terminals are provided in the control box.

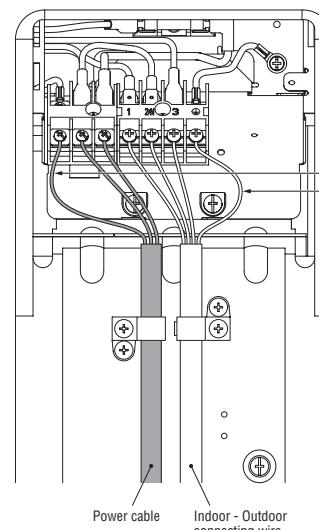
CAUTION

Always use an earth leakage circuit breaker designed for inverter circuits to prevent a faulty operation.

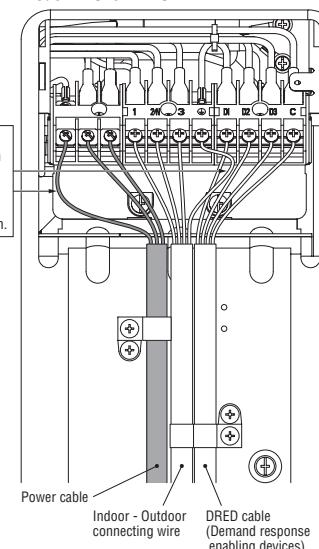
Phase	Earth leakage breaker	Switchgear or Circuit Breaker		Power source (minimum)	Interconnecting and grounding wires (minimum)
		Switch breaker	Over current protector rated capacity		
Single-phase	15A, 30mA, 0.1sec or less	30A	16A	2.0mm ²	1.5mm ² X 4

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

Model SRC50ZM-S

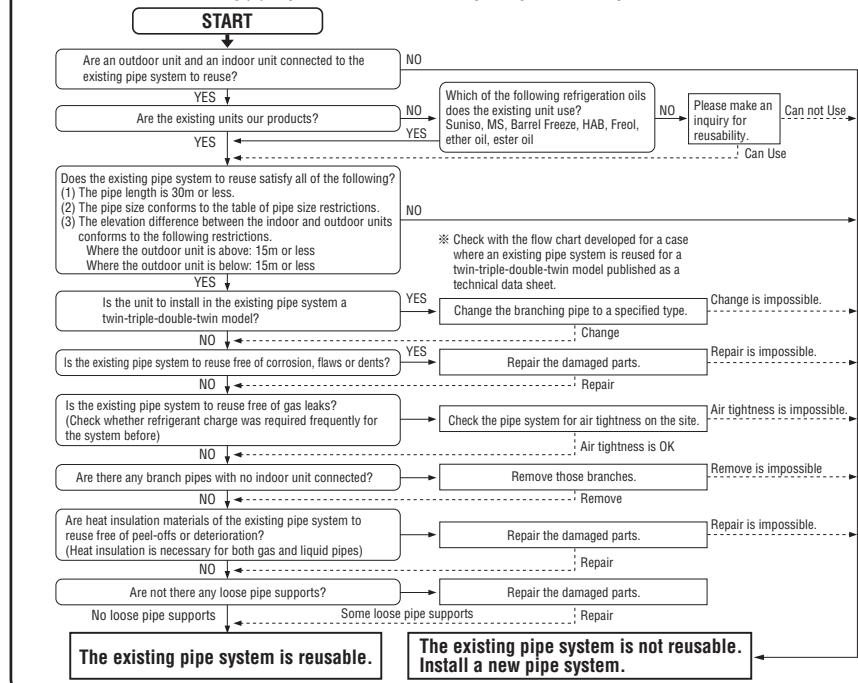


Model SRC50ZMA-S Model DXC18ZMA-S



5. UTILIZATION OF EXISTING PIPING

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



<Table of pipe size restrictions>

○: Standard pipe size

Pipe size	Additional charge volume per meter of pipe	0.02kg/m
	Liquid pipe	ø6.35
	Gas pipe	ø9.52
20-35	Usability	○
	Maximum one-way pipe length	15
	Length covered without additional charge	10

- Please consult with our distributor in the area, if you need to recover refrigerant and charge it again.
- Any combinations of pipe sizes not listed in the table are not usable.

WARNING

<Where the existing unit can be run for a cooling operation.>

Carry out the following steps with the existing unit (in the order of (1), (2), (3) and (4))

- (1) Run the unit for 30 minutes for a cooling operation.
- (2) Stop the indoor fan and run the unit for 3 minutes for a cooling operation (returning liquid)
- (3) Close the liquid side service valve of the outdoor unit and pump down (refrigerant recovery)
- (4) Blow with nitrogen gas. ※ If discolored refrigeration oil or any foreign matters is discharged by the blow, wash the pipe system or install a new pipe system.

• For the flare nut, do not use the old one, but use the one supplied with the outdoor unit.

Process a flare to the dimensions specified for R410A.

<Where the existing unit cannot be run for a cooling operation.>

Wash the pipe system or install a new pipe system.

- If you choose to wash the pipe system, please contact our distributor in the area.

INSTALLATION TEST CHECK POINTS

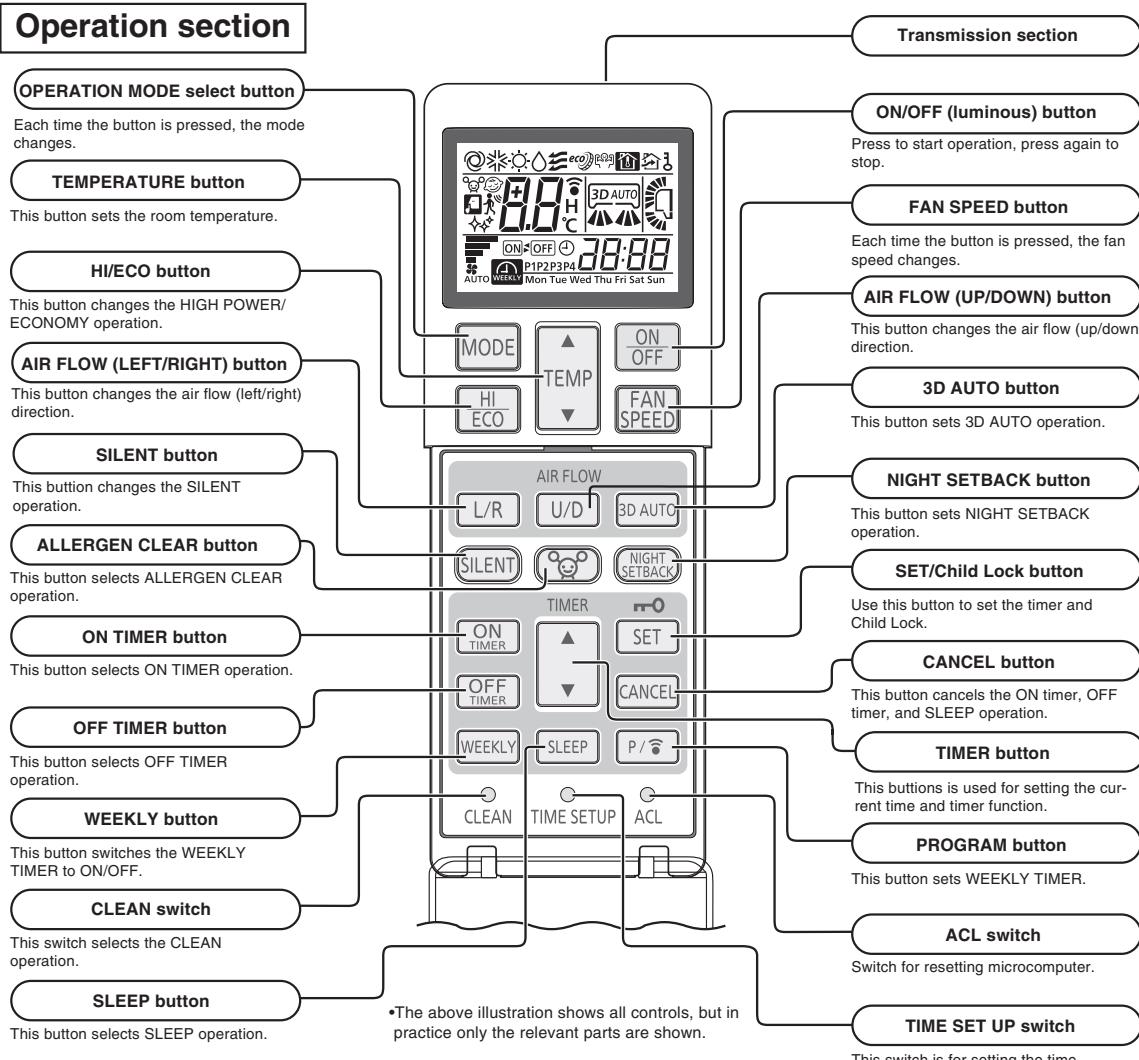
Check the following points again after completion of the installation, and before turning on the power. Conduct a test run again and ensure that the unit operates properly. Explain to the customer how to use the unit and how to take care of the unit following the instruction manual.

After installation

<input type="checkbox"/> Power cables and connecting wires are securely fixed to the terminal block.	<input type="checkbox"/> The pipe joints for indoor and outdoor pipes have been insulated.
<input type="checkbox"/> The power supply voltage is correct as the rating.	<input type="checkbox"/> The reverse flow check cap is attached.
<input type="checkbox"/> The drain hose is fixed securely.	<input type="checkbox"/> The cover of the pipe cover (A) faces downward to prevent rain from entering.
<input type="checkbox"/> Service valve is fully open.	<input type="checkbox"/> Gaps are properly sealed between the pipe covers (A) (B) and the wall surface / pipes.
<input type="checkbox"/> No gas leaks from the joints of the service valve.	<input type="checkbox"/> The screw of the side cover is tightened securely.

9. OUTLINE OF OPERATION CONTROL BY MICROCOMPUTER

(1) Operation control function by wireless remote control



Unit display section

