DAIKIN

SiBE04-624_B

Service Manual

Inverter Pair
Wall Mounted Type E-Series

[Applied Models]

- **Inverter Pair : Heat Pump**

Inverter Pair Wall Mounted Type E-Series

●Heat Pump

Indoor Unit

FTXR28EV1B9
FTXR42EV1B9
FTXR50EV1B9

Outdoor Unit

RXR28EV1B9	**RXR28EV1B8**
RXR42EV1B9	**RXR42EV1B8**
RXR50EV1B9	**RXR50EV1B8**

The removal procedure for each model is separately bound. Refer to page 155 for the booklet number of applicable model.

1. Introduction

1.1 Safety Cautions

Cautions and Warnings

- Be sure to read the following safety cautions before conducting repair work.
- The caution items are classified into "⚠ **Warning**" and "⚠ **Caution**". The "⚠ **Warning**" items are especially important since they can lead to death or serious injury if they are not followed closely. The "⚠ **Caution**" items can also lead to serious accidents under some conditions if they are not followed. Therefore, be sure to observe all the safety caution items described below.
- About the pictograms

△ This symbol indicates the item for which caution must be exercised.
The pictogram shows the item to which attention must be paid.

◯ This symbol indicates the prohibited action.
The prohibited item or action is shown in the illustration or near the symbol.

● This symbol indicates the action that must be taken, or the instruction.
The instruction is shown in the illustration or near the symbol.

- After the repair work is complete, be sure to conduct a test operation to ensure that the equipment operates normally, and explain the cautions for operating the product to the customer.

1.1.1 Cautions Regarding Safety of Workers

⚠ Warning	
Be sure to disconnect the power cable plug from the plug socket before disassembling the equipment for repair. Working on the equipment that is connected to the power supply may cause an electrical shock. If it is necessary to supply power to the equipment to conduct the repair or inspecting the circuits, do not touch any electrically charged sections of the equipment.	
If the refrigerant gas is discharged during the repair work, do not touch the discharged refrigerant gas. The refrigerant gas may cause frostbite.	
When disconnecting the suction or discharge pipe of the compressor at the welded section, evacuate the refrigerant gas completely at a well-ventilated place first. If there is gas remaining inside the compressor, the refrigerant gas or refrigerating machine oil discharges when the pipe is disconnected, and it may cause injury.	
If the refrigerant gas leaks during the repair work, ventilate the area. The refrigerant gas may generate toxic gases when it contacts flames.	
The step-up capacitor supplies high-voltage electricity to the electrical components of the outdoor unit. Be sure to discharge the capacitor completely before conducting repair work. A charged capacitor may cause an electrical shock.	
Do not start or stop the air conditioner operation by plugging or unplugging the power cable plug. Plugging or unplugging the power cable plug to operate the equipment may cause an electrical shock or fire.	

Warning	
Be sure to wear a safety helmet, gloves, and a safety belt when working at a high place (more than 2 m). Insufficient safety measures may cause a fall accident.	
In case of R-410A refrigerant models, be sure to use pipes, flare nuts and tools for the exclusive use of the R-410A refrigerant. The use of materials for R-22 refrigerant models may cause a serious accident such as a damage of refrigerant cycle as well as an equipment failure.	

Caution	
Do not repair the electrical components with wet hands. Working on the equipment with wet hands may cause an electrical shock.	
Do not clean the air conditioner by splashing water. Washing the unit with water may cause an electrical shock.	
Be sure to provide the grounding when repairing the equipment in a humid or wet place, to avoid electrical shocks.	
Be sure to turn off the power switch and unplug the power cable when cleaning the equipment. The internal fan rotates at a high speed, and may cause injury.	
Be sure to conduct repair work with appropriate tools. The use of inappropriate tools may cause injury.	
Be sure to check that the refrigerating cycle section has cooled down enough before conducting repair work. Working on the unit when the refrigerating cycle section is hot may cause burns.	
Use the welder in a well-ventilated place. Using the welder in an enclosed room may cause oxygen deficiency.	

1.1.2 Cautions Regarding Safety of Users

Warning	
Be sure to use parts listed in the service parts list of the applicable model and appropriate tools to conduct repair work. Never attempt to modify the equipment. The use of inappropriate parts or tools may cause an electrical shock, excessive heat generation or fire.	
If the power cable and lead wires have scratches or deteriorated, be sure to replace them. Damaged cable and wires may cause an electrical shock, excessive heat generation or fire.	
Do not use a joined power cable or extension cable, or share the same power outlet with other electrical appliances, since it may cause an electrical shock, excessive heat generation or fire.	
Be sure to use an exclusive power circuit for the equipment, and follow the local technical standards related to the electrical equipment, the internal wiring regulations, and the instruction manual for installation when conducting electrical work. Insufficient power circuit capacity and improper electrical work may cause an electrical shock or fire.	
Be sure to use the specified cable for wiring between the indoor and outdoor units. Make the connections securely and route the cable properly so that there is no force pulling the cable at the connection terminals. Improper connections may cause excessive heat generation or fire.	
When wiring between the indoor and outdoor units, make sure that the terminal cover does not lift off or dismount because of the cable. If the cover is not mounted properly, the terminal connection section may cause an electrical shock, excessive heat generation or fire.	
Do not damage or modify the power cable. Damaged or modified power cable may cause an electrical shock or fire. Placing heavy items on the power cable, and heating or pulling the power cable may damage the cable.	
Do not mix air or gas other than the specified refrigerant (R-410A / R-22) in the refrigerant system. If air enters the refrigerating system, an excessively high pressure results, causing equipment damage and injury.	
If the refrigerant gas leaks, be sure to locate the leaking point and repair it before charging the refrigerant. After charging refrigerant, make sure that there is no refrigerant leak. If the leaking point cannot be located and the repair work must be stopped, be sure to perform pump-down and close the service valve, to prevent the refrigerant gas from leaking into the room. The refrigerant gas itself is harmless, but it may generate toxic gases when it contacts flames, such as fan and other heaters, stoves and ranges.	
When relocating the equipment, make sure that the new installation site has sufficient strength to withstand the weight of the equipment. If the installation site does not have sufficient strength and if the installation work is not conducted securely, the equipment may fall and cause injury.	

Warning	
Check to make sure that the power cable plug is not dirty or loose, then insert the plug into a power outlet securely. If the plug has dust or loose connection, it may cause an electrical shock or fire.	
Be sure to install the product correctly by using the provided standard installation frame. Incorrect use of the installation frame and improper installation may cause the equipment to fall, resulting in injury.	For unitary type only 
Be sure to install the product securely in the installation frame mounted on the window frame. If the unit is not securely mounted, it may fall and cause injury.	For unitary type only 
When replacing the coin battery in the remote controller, be sure to dispose of the old battery to prevent children from swallowing it. If a child swallows the coin battery, see a doctor immediately.	

Caution	
Installation of a leakage breaker is necessary in some cases depending on the conditions of the installation site, to prevent electrical shocks.	
Do not install the equipment in a place where there is a possibility of combustible gas leaks. If the combustible gas leaks and remains around the unit, it may cause a fire.	
Check to see if the parts and wires are mounted and connected properly, and if the connections at the soldered or crimped terminals are secure. Improper installation and connections may cause excessive heat generation, fire or an electrical shock.	
If the installation platform or frame has corroded, replace it. Corroded installation platform or frame may cause the unit to fall, resulting in injury.	
Check the grounding, and repair it if the equipment is not properly grounded. Improper grounding may cause an electrical shock.	

Caution	
Be sure to measure the insulation resistance after the repair, and make sure that the resistance is 1 MΩ or higher. Faulty insulation may cause an electrical shock.	
Be sure to check the drainage of the indoor unit after the repair. Faulty drainage may cause the water to enter the room and wet the furniture and floor.	
Do not tilt the unit when removing it. The water inside the unit may spill and wet the furniture and floor.	
Be sure to install the packing and seal on the installation frame properly. If the packing and seal are not installed properly, water may enter the room and wet the furniture and floor.	For unitary type only 

1.2 Used Icons

Icons are used to attract the attention of the reader to specific information. The meaning of each icon is described in the table below:

Icon	Type of Information	Description
Note:	Note	A “note” provides information that is not indispensable, but may nevertheless be valuable to the reader, such as tips and tricks.
Caution	Caution	A “caution” is used when there is danger that the reader, through incorrect manipulation, may damage equipment, loose data, get an unexpected result or has to restart (part of) a procedure.
Warning	Warning	A “warning” is used when there is danger of personal injury.
	Reference	A “reference” guides the reader to other places in this binder or in this manual, where he/she will find additional information on a specific topic.

Part 1
List of Functions

1. Functions

Category	Functions	FTXR28/42/50EV1B9 RXR28/42/50EV1B9	Category	Functions	FTXR28/42/50EV1B9 RXR28/42/50EV1B9
Basic Function	Inverter (with inverter power control)	●	Health & Clean	Air purifying filter	—
	Operation limit for cooling (°CDB)	–10 ~43		Photocatalytic deodorizing filter	—
	Operation limit for heating (°CWB)	–20 ~18		Air purifying filter with photocatalytic deodorizing function	—
	PAM control	●		Titanium apatite photocatalytic air purifying filter	●
Compressor	Oval scroll compressor	—		Air supply filter	●
	Swing compressor	●		Deodorizing filter for streamer	●
	Rotary compressor	—		FLASH STREAMER AIR PURIFYING operation	●
	Reluctance DC motor	●			
Comfortable Airflow	Power-airflow flap	—		Air filter (prefilter)	●
	Power-airflow dual flaps	●		Wipe-clean flat panel	●
	Power-airflow diffuser	—		Washable upper grille	●
	Wide-angle louvers	●		Filter cleaning indicator (remote controller)	●
	Vertical auto-swing (up and down)	●		MOLD PROOF operation	●
	Horizontal auto-swing (right and left)	●		MOLD SHOCK OUT operation	●
	3-D airflow	●		Mold proof stick	●
	COMFORT AIRFLOW operation	●		COMFORT SLEEP operation	●
	COOLING BREEZE operation	●		FRESH AIR SUPPLY VENTILATION operation	●
Comfort Control	Auto fan speed	●			
	Indoor unit quiet operation	●		HOME LEAVE VENTILATION	●
	NIGHT QUIET mode (automatic)	—	Timer	24-hour ON/OFF TIMER	●
	OUTDOOR UNIT QUIET operation (manual)	—		COUNTDOWN OFF TIMER	●
	INTELLIGENT EYE operation	—		NIGHT SET mode	●
	Quick warming function (Preheating Operation)	●	Worry Free “Reliability & Durability”	Quiet control	●
				Auto-restart (after power failure)	●
	Hot-start function	●		Self-diagnosis (digital, LED) display	●
	Automatic defrosting	●		Wiring error check function	—
Operation	AUTO operation	●		Anti-corrosion treatment of outdoor heat exchanger	●
	URURU HUMIDIFYING operation	●			
	MOISTURIZING operation	●	Flexibility	Multi-split / split type compatible indoor unit	—
	SARARA DRYING operation	●		Flexible power supply correspondence	—
	DRY COOLING operation	●		High ceiling application	—
	Program dry function	—		Chargeless	●
	Fan only	—		Either side drain (right or left)	●
	Air purifying operation	●		Power selection	—
Lifestyle Convenience	New POWERFUL operation (non-inverter)	—	Remote Control	5-room centralized controller (option)	●
	Inverter POWERFUL operation	●		Remote control adaptor (normal open pulse contact) (option)	●
	Priority-room setting	—			
	COOL / HEAT mode lock	—		Remote control adaptor (normal open contact) (option)	●
	HOME LEAVE operation	—			
	ECONO operation	—		DIII-NET compatible (adaptor) (option)	●
	Indoor unit [ON/OFF] button	●	Remote Controller	Wireless	●
	Multi-colored indicator lamp	●		Wired	—
	Monitor brightness setting	●			
	Signal receiving sign	●			
	Temperature & humidity level INFORMATION DISPLAY (remote controller)	●			
	CHILDPROOF LOCK	●			

Note: ● : Holding Functions
— : No Functions

Category	Functions	FTXR28/42/50EV1B9 RXR28/42/50EV1B8	Category	Functions	FTXR28/42/50EV1B9 RXR28/42/50EV1B8
Basic Function	Inverter (with inverter power control)	●	Health & Clean	Air purifying filter	—
	Operation limit for cooling (°CDB)	–10 ~43		Photocatalytic deodorizing filter	—
	Operation limit for heating (°CWB)	–20 ~18		Air purifying filter with photocatalytic deodorizing function	—
	PAM control	●		Titanium apatite photocatalytic air purifying filter	●
Compressor	Oval scroll compressor	—		Air supply filter	●
	Swing compressor	●		Deodorizing filter for streamer	●
	Rotary compressor	—		FLASH STREAMER AIR PURIFYING operation	●
	Reluctance DC motor	●			
Comfortable Airflow	Power-airflow flap	—		Air filter (prefilter)	●
	Power-airflow dual flaps	●		Wipe-clean flat panel	●
	Power-airflow diffuser	—		Washable upper grille	●
	Wide-angle louvers	●		Filter cleaning indicator (remote controller)	●
	Vertical auto-swing (up and down)	●		MOLD PROOF operation	●
	Horizontal auto-swing (right and left)	●		MOLD SHOCK OUT operation	●
	3-D airflow	●		Mold proof stick	●
	COMFORT AIRFLOW operation	●		COMFORT SLEEP operation	●
	COOLING BREEZE operation	●		FRESH AIR SUPPLY VENTILATION operation	●
Comfort Control	Auto fan speed	●			
	Indoor unit quiet operation	●		HOME LEAVE VENTILATION	●
	NIGHT QUIET mode (automatic)	—	Timer	24-hour ON/OFF TIMER	●
	OUTDOOR UNIT QUIET operation (manual)	—		COUNTDOWN OFF TIMER	●
	INTELLIGENT EYE operation	—		NIGHT SET mode	●
	Quick warming function (Preheating Operation)	●	Worry Free “Reliability & Durability”	Quiet control	●
				Auto-restart (after power failure)	●
	Hot-start function	●		Self-diagnosis (digital, LED) display	●
	Automatic defrosting	●		Wiring error check function	—
Operation	AUTO operation	●		Anti-corrosion treatment of outdoor heat exchanger	●
	URURU HUMIDIFYING operation	●			
	MOISTURIZING operation	●	Flexibility	Multi-split / split type compatible indoor unit	—
	SARARA DRYING operation	●		Flexible power supply correspondence	—
	DRY COOLING operation	●		High ceiling application	—
	Program dry function	—		Chargeless	●
	Fan only	—		Either side drain (right or left)	●
	Air purifying operation	●		Power selection	—
Lifestyle Convenience	New POWERFUL operation (non-inverter)	—	Remote Control	5-room centralized controller (option)	●
	Inverter POWERFUL operation	●		Remote control adaptor (normal open pulse contact) (option)	●
	Priority-room setting	—			
	COOL / HEAT mode lock	—		Remote control adaptor (normal open contact) (option)	●
	HOME LEAVE operation	—			
	ECONO operation	—		DIII-NET compatible (adaptor) (option)	●
	Indoor unit [ON/OFF] button	●	Remote Controller	Wireless	●
	Multi-colored indicator lamp	●		Wired	—
	Monitor brightness setting	●			
	Signal receiving sign	●			
	Temperature & humidity level INFORMATION DISPLAY (remote controller)	●			
	CHILDPROOF LOCK	●			

Note: ● : Holding Functions
— : No Functions

Part 2
Specifications

1. Specifications

50 Hz, 220 - 230 - 240 V

Model	Indoor Unit		FTXR28EV1B9		FTXR42EV1B9	
	Outdoor Unit		RXR28EV1B9		RXR42EV1B9	
			Cooling	Heating	Cooling	Heating
Capacity Rated (Min. ~ Max.)		kW	2.8 (1.55 ~ 3.60)	3.6 (1.30 ~ 5.00)	4.2 (1.55 ~ 4.60)	5.1 (1.30 ~ 5.60)
		Btu/h	9,600 (5,300 ~ 12,300)	12,300 (4,400 ~ 16,400)	14,300 (5,300 ~ 15,700)	17,400 (4,400 ~ 19,100)
		kcal/h	2,410 (1,330 ~ 3,100)	3,100 (1,120 ~ 4,130)	3,610 (1,330 ~ 3,960)	4,390 (1,120 ~ 4,820)
Moisture Removal		L/h	1.6	—	2.3	—
Running Current (Rated)		A	3.2 - 3.1 - 3.0	3.9 - 3.8 - 3.7	5.3 - 5.2 - 5.1	5.9 - 5.8 - 5.7
Power Consumption Rated (Min. ~ Max.)		W	560 (250 ~ 800)	700 (220 ~ 1,410)	1,050 (260 ~ 1,320)	1,180 (220 ~ 1,600)
Power Factor		%	79.5 - 78.5 - 77.8	81.6 - 80.1 - 78.8	90.1 - 87.8 - 85.8	90.9 - 88.5 - 86.3
COP Rated (Min. ~ Max.)		W/W	5.00 (6.20 ~ 4.50)	5.14 (5.91 ~ 3.55)	4.00 (5.96 ~ 3.48)	4.32 (5.91 ~ 3.50)
Piping Connections	Liquid	mm	ϕ 6.4		ϕ 6.4	
	Gas	mm	ϕ 9.5		ϕ 9.5	
	Drain	mm	ϕ 18.0		ϕ 18.0	
Heat Insulation			Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Max. Interunit Piping Length		m	10		10	
Max. Interunit Height Difference		m	8		8	
Amount of Additional Charge of Refrigerant		g/m	Chargeless		Chargeless	
Indoor Unit			**FTXR28EV1B9**		**FTXR42EV1B9**	
Front Panel Color			White		White	
Airflow Rate	H	m³/min (cfm)	11.1 (392)	12.4 (438)	12.4 (438)	12.9 (456)
	M		8.8 (311)	9.8 (346)	9.6 (339)	10.2 (360)
	L		6.5 (230)	7.3 (258)	6.8 (240)	7.7 (272)
	SL		5.7 (201)	6.5 (230)	6.0 (212)	6.8 (240)
Fan	Type		Cross Flow Fan (With Saw Edge)		Cross Flow Fan (With Saw Edge)	
	Motor Output	W	57		57	
	Speed	Steps	5 Steps, Quiet, Auto		5 Steps, Quiet, Auto	
Air Direction Control			Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter			Removable / Washable / Mildew Proof		Removable / Washable / Mildew Proof	
Running Current (Rated)		A	0.15 - 0.14 - 0.13	0.15 - 0.14 - 0.13	0.17 - 0.16 - 0.15	0.17 - 0.16 - 0.15
Power Consumption (Rated)		W	30 - 30 - 30	30 - 30 - 30	35 - 35 - 35	35 - 35 - 35
Power Factor		%	90.9 - 93.2 - 96.2	90.9 - 93.2 - 96.2	93.6 - 95.1 - 97.2	93.6 - 95.1 - 97.2
Temperature Control			Microcomputer Control		Microcomputer Control	
Dimensions (H × W × D)		mm	305 × 890 × 209		305 × 890 × 209	
Packaged Dimensions (H × W × D)		mm	280 × 956 × 378		280 × 956 × 378	
Weight (Mass)		kg	14		14	
Gross Weight (Gross Mass)		kg	18		18	
Sound Pressure Level	H / M / L / SL	dB(A)	39 / 33 / 26 / 23	41 / 35 / 28 / 25	42 / 35 / 27 / 24	42 / 36 / 29 / 26
Sound Power Level	H	dB	55	57	58	58
Outdoor Unit			**RXR28EV1B9**		**RXR42EV1B9**	
Casing Color			Ivory White		Ivory White	
Compressor	Type		Hermetically Sealed Swing Type		Hermetically Sealed Swing Type	
	Model		2YC36CXD		2YC36CXD	
	Motor Output	W	1,100		1,100	
Refrigerant Oil	Model		FVC50K		FVC50K	
	Charge	L	0.4		0.4	
Refrigerant	Model		R-410A		R-410A	
	Charge	kg	1.4		1.4	
Airflow Rate	HH	m³/min (cfm)	33.8 (800)	31.4 (750)	36.2 (850)	31.9 (760)
Fan	Type		Propeller		Propeller	
	Motor Output	W	60		60	
Running Current (Rated)		A	3.05 - 2.96 - 2.87	3.75 - 3.66 - 3.57	5.13 - 5.04 - 4.95	5.73 - 5.64 - 5.55
Power Consumption (Rated)		W	530 - 530 - 530	670 - 670 - 670	1,015 - 1,015 - 1,015	1,145 - 1,145 - 1,145
Power Factor		%	79.0 - 77.8 - 76.9	81.2 - 79.6 - 78.2	89.9 - 87.6 - 85.4	90.8 - 88.3 - 86.0
Starting Current		A	3.9		5.9	
Dimensions (H × W × D)		mm	693 × 795 × 285		693 × 795 × 285	
Packaged Dimensions (H × W × D)		mm	736 × 935 × 410		736 × 935 × 410	
Weight (Mass)		kg	48		48	
Gross Weight (Gross Mass)		kg	55		55	
Sound Pressure Level	H	dB(A)	46	46	48	48
Sound Power Level	H	dB	60	60	62	62
Drawing No.			3D055811		3D055812	

Note: ■ The data are based on the conditions shown in the table below.

Cooling	Heating	Piping Length
Indoor ; 27°CDB / 19°CWB Outdoor ; 35°CDB / 24°CWB	Indoor ; 20°CDB Outdoor ; 7°CDB / 6°CWB	7.5 m

Conversion Formulae
kcal/h = kW × 860 Btu/h = kW × 3412 cfm = m³/min × 35.3

50 Hz, 220 - 230 - 240 V

Model	Indoor Unit		FTXR50EV1B9	
	Outdoor Unit		RXR50EV1B9	
			Cooling	Heating
Capacity Rated (Min. ~ Max.)		kW	5.0 (1.55 ~ 5.50)	6.0 (1.30 ~ 6.20)
		Btu/h	17,100 (5,300 ~ 18,800)	20,500 (4,400 ~ 21,200)
		kcal/h	4,300 (1,330 ~ 4,730)	5,160 (1,120 ~ 5,330)
Moisture Removal		L/h	2.8	—
Running Current (Rated)		A	7.2 - 7.1 - 7.0	7.4 - 7.3 - 7.2
Power Consumption Rated (Min. ~ Max.)		W	1,460 (260 ~ 1,800)	1,510 (230 ~ 1,770)
Power Factor		%	92.2 - 89.4 - 86.9	92.8 - 89.9 - 87.4
COP Rated (Min. ~ Max.)		W/W	3.42 (5.96 ~ 3.06)	3.97 (5.65 ~ 3.50)
Piping Connections	Liquid	mm	ϕ 6.4	
	Gas	mm	ϕ 9.5	
	Drain	mm	ϕ 18.0	
Heat Insulation			Both Liquid and Gas Pipes	
Max. Interunit Piping Length		m	10	
Max. Interunit Height Difference		m	8	
Amount of Additional Charge of Refrigerant		g/m	Chargeless	
Indoor Unit			**FTXR50EV1B9**	
Front Panel Color			White	
Airflow Rate	H	m³/min (cfm)	13.3 (470)	14.0 (494)
	M		10.3 (364)	11.1 (392)
	L		7.3 (258)	8.3 (293)
	SL		6.5 (230)	7.3 (258)
Fan	Type		Cross Flow Fan (With Saw Edge)	
	Motor Output	W	57	
	Speed	Steps	5 Steps, Quiet, Auto	
Air Direction Control			Right, Left, Horizontal, Downward	
Air Filter			Removable / Washable / Mildew Proof	
Running Current (Rated)		A	0.20 - 0.19 - 0.18	0.20 - 0.19 - 0.18
Power Consumption (Rated)		W	40 - 40 - 40	40 - 40 - 40
Power Factor		%	90.9 - 91.5 - 92.6	90.9 - 91.5 - 92.6
Temperature Control			Microcomputer Control	
Dimensions (H × W × D)		mm	305 × 890 × 209	
Packaged Dimensions (H × W × D)		mm	280 × 956 × 378	
Weight (Mass)		kg	14	
Gross Weight (Gross Mass)		kg	18	
Sound Pressure Level	H / M / L / SL	dB(A)	44 / 37 / 29 / 26	44 / 38 / 31 / 28
Sound Power Level	H	dB	60	60
Outdoor Unit			**RXR50EV1B9**	
Casing Color			Ivory White	
Compressor	Type		Hermetically Sealed Swing Type	
	Model		2YC36CXD	
	Motor Output	W	1,100	
Refrigerant Oil	Model		FVC50K	
	Charge	L	0.4	
Refrigerant	Model		R-410A	
	Charge	kg	1.4	
Airflow Rate	HH	m³/min (cfm)	36.2 (850)	34.3 (810)
Fan	Type		Propeller	
	Motor Output	W	60	
Running Current (Rated)		A	7.0 - 6.91 - 6.82	7.2 - 7.11 - 7.02
Power Consumption (Rated)		W	1,420 - 1,420 - 1,420	1,470 - 1,470 - 1,470
Power Factor		%	92.2 - 89.3 - 86.8	92.8 - 89.9 - 87.3
Starting Current		A	7.4	
Dimensions (H × W × D)		mm	693 × 795 × 285	
Packaged Dimensions (H × W × D)		mm	736 × 935 × 410	
Weight (Mass)		kg	48	
Gross Weight (Gross Mass)		kg	55	
Sound Pressure Level	H	dB(A)	48	50
Sound Power Level	H	dB	62	64
Drawing No.			3D055813	

Note: ■ The data are based on the conditions shown in the table below.

Cooling	Heating	Piping Length
Indoor ; 27°CDB / 19°CWB Outdoor ; 35°CDB / 24°CWB	Indoor ; 20°CDB Outdoor ; 7°CDB / 6°CWB	7.5 m

Conversion Formulae
kcal/h = kW × 860 Btu/h = kW × 3412 cfm = m³/min × 35.3

50 Hz, 220 - 230 - 240 V

Model	Indoor Unit		FTXR28EV1B9		FTXR42EV1B9	
	Outdoor Unit		RXR28EV1B8		RXR42EV1B8	
			Cooling	Heating	Cooling	Heating
Capacity Rated (Min. ~ Max.)		kW	2.8 (1.55 ~ 3.60)	3.6 (1.30 ~ 5.00)	4.2 (1.55 ~ 4.60)	5.1 (1.30 ~ 5.60)
		Btu/h	9,600 (5,300 ~ 12,300)	12,300 (4,400 ~ 17,100)	14,300 (5,300 ~ 15,700)	17,400 (4,400 ~ 19,100)
		kcal/h	2,410 (1,330 ~ 3,100)	3,100 (1,120 ~ 4,300)	3,610 (1,330 ~ 3,960)	4,390 (1,120 ~ 4,820)
Moisture Removal		L/h	1.6	—	2.3	—
Running Current (Rated)		A	3.2 - 3.1 - 3.0	3.9 - 3.8 - 3.7	5.3 - 5.2 - 5.1	5.9 - 5.8 - 5.7
Power Consumption Rated (Min. ~ Max.)		W	560 (250 ~ 800)	700 (220 ~ 1,410)	1,050 (260 ~ 1,320)	1,180 (220 ~ 1,600)
Power Factor		%	79.5 - 78.5 - 77.8	81.6 - 80.1 - 78.8	90.1 - 87.8 - 85.8	90.9 - 88.5 - 86.3
COP Rated (Min. ~ Max.)		W/W	5.00 (6.20 ~ 4.50)	5.14 (5.91 ~ 3.55)	4.00 (5.96 ~ 3.48)	4.32 (5.91 ~ 3.50)
Piping Connections	Liquid	mm	ϕ 6.4		ϕ 6.4	
	Gas	mm	ϕ 9.5		ϕ 9.5	
	Drain	mm	ϕ 18.0		ϕ 18.0	
Heat Insulation			Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Max. Interunit Piping Length		m	10		10	
Max. Interunit Height Difference		m	8		8	
Amount of Additional Charge of Refrigerant		g/m	Chargeless		Chargeless	
Indoor Unit			**FTXR28EV1B9**		**FTXR42EV1B9**	
Front Panel Color			White		White	
Airflow Rate	H	m³/min (cfm)	11.1 (392)	12.4 (438)	12.4 (438)	12.9 (456)
	M		8.8 (311)	9.8 (346)	9.6 (339)	10.2 (360)
	L		6.5 (230)	7.3 (258)	6.8 (240)	7.7 (272)
	SL		5.7 (201)	6.5 (230)	6.0 (212)	6.8 (240)
Fan	Type		Cross Flow Fan		Cross Flow Fan	
	Motor Output	W	57		57	
	Speed	Steps	5 Steps, Quiet, Auto		5 Steps, Quiet, Auto	
Air Direction Control			Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter			Removable / Washable / Mildew Proof		Removable / Washable / Mildew Proof	
Running Current (Rated)		A	0.15 - 0.14 - 0.13	0.15 - 0.14 - 0.13	0.17 - 0.16 - 0.15	0.17 - 0.16 - 0.15
Power Consumption (Rated)		W	30 - 30 - 30	30 - 30 - 30	35 - 35 - 35	35 - 35 - 35
Power Factor		%	90.9 - 93.2 - 96.2	90.9 - 93.2 - 96.2	93.6 - 95.1 - 97.2	93.6 - 95.1 - 97.2
Temperature Control			Microcomputer Control		Microcomputer Control	
Dimensions (H × W × D)		mm	305 × 890 × 209		305 × 890 × 209	
Packaged Dimensions (H × W × D)		mm	280 × 956 × 378		280 × 956 × 378	
Weight (Mass)		kg	14		14	
Gross Weight (Gross Mass)		kg	18		18	
Sound Pressure Level	H / M / L / SL	dB(A)	39 / 33 / 26 / 23	41 / 35 / 28 / 25	42 / 35 / 27 / 24	42 / 36 / 29 / 26
Sound Power Level	H	dB	55	57	57	57
Outdoor Unit			**RXR28EV1B8**		**RXR42EV1B8**	
Casing Color			Ivory White		Ivory White	
Compressor	Type		Hermetically Sealed Swing Type		Hermetically Sealed Swing Type	
	Model		2YC36CXD		2YC36CXD	
	Motor Output	W	1,100		1,100	
Refrigerant Oil	Model		FVC50K		FVC50K	
	Charge	L	0.4		0.4	
Refrigerant	Model		R-410A		R-410A	
	Charge	kg	1.4		1.4	
Airflow Rate	HH	m³/min (cfm)	33.8 (800)	31.4 (750)	36.2 (850)	31.9 (760)
Fan	Type		Propeller		Propeller	
	Motor Output	W	60		60	
Running Current (Rated)		A	3.05 - 2.96 - 2.87	3.75 - 3.66 - 3.57	5.13 - 5.04 - 4.95	5.73 - 5.64 - 5.55
Power Consumption (Rated)		W	530 - 530 - 530	670 - 670 - 670	1,015 - 1,015 - 1,015	1,145 - 1,145 - 1,145
Power Factor		%	79.0 - 77.8 - 76.9	81.2 - 79.6 - 78.2	89.9 - 87.6 - 85.4	90.8 - 88.3 - 86.0
Starting Current		A	3.9		5.9	
Dimensions (H × W × D)		mm	693 × 795 × 285		693 × 795 × 285	
Packaged Dimensions (H × W × D)		mm	736 × 935 × 410		736 × 935 × 410	
Weight (Mass)		kg	48		48	
Gross Weight (Gross Mass)		kg	55		55	
Sound Pressure Level	H	dB(A)	46	46	48	48
Sound Power Level	H	dB	59	59	61	61
Drawing No.			3D080171A		3D080174A	

Note:

■ The data are based on the conditions shown in the table below.

Cooling	Heating	Piping Length
Indoor ; 27°CDB / 19°CWB Outdoor ; 35°CDB / 24°CWB	Indoor ; 20°CDB Outdoor ; 7°CDB / 6°CWB	5 m

Conversion Formulae
kcal/h = kW × 860 Btu/h = kW × 3412 cfm = m³/min × 35.3

50 Hz, 220 - 230 - 240 V

Model	Indoor Unit		FTXR50EV1B9	
	Outdoor Unit		RXR50EV1B8	
			Cooling	Heating
Capacity Rated (Min. ~ Max.)		kW	5.0 (1.55 ~ 5.50)	6.0 (1.30 ~ 6.20)
		Btu/h	17,100 (5,300 ~ 18,800)	20,500 (4,400 ~ 21,200)
		kcal/h	4,300 (1,330 ~ 4,730)	5,160 (1,120 ~ 5,330)
Moisture Removal		L/h	2.8	—
Running Current (Rated)		A	7.2 - 7.1 - 7.0	7.4 - 7.3 - 7.2
Power Consumption Rated (Min. ~ Max.)		W	1,460 (260 ~ 1,800)	1,510 (230 ~ 1,770)
Power Factor		%	92.2 - 89.4 - 86.9	92.8 - 89.9 - 87.4
COP Rated (Min. ~ Max.)		W/W	3.42 (5.96 ~ 3.06)	3.97 (5.65 ~ 3.50)
Piping Connections	Liquid	mm	ϕ 6.4	
	Gas	mm	ϕ 9.5	
	Drain	mm	ϕ 18.0	
Heat Insulation			Both Liquid and Gas Pipes	
Max. Interunit Piping Length		m	10	
Max. Interunit Height Difference		m	8	
Amount of Additional Charge of Refrigerant		g/m	Chargeless	
Indoor Unit			**FTXR50EV1B9**	
Front Panel Color			White	
Airflow Rate	H	m³/min (cfm)	13.3 (470)	14.0 (494)
	M		10.3 (364)	11.1 (392)
	L		7.3 (258)	8.3 (293)
	SL		6.5 (230)	7.3 (258)
Fan	Type		Cross Flow Fan	
	Motor Output	W	57	
	Speed	Steps	5 Steps, Quiet, Auto	
Air Direction Control			Right, Left, Horizontal, Downward	
Air Filter			Removable / Washable / Mildew Proof	
Running Current (Rated)		A	0.20 - 0.19 - 0.18	0.20 - 0.19 - 0.18
Power Consumption (Rated)		W	40 - 40 - 40	40 - 40 - 40
Power Factor		%	90.9 - 91.5 - 92.6	90.9 - 91.5 - 92.6
Temperature Control			Microcomputer Control	
Dimensions (H × W × D)		mm	305 × 890 × 209	
Packaged Dimensions (H × W × D)		mm	280 × 956 × 378	
Weight (Mass)		kg	14	
Gross Weight (Gross Mass)		kg	18	
Sound Pressure Level	H / M / L / SL	dB(A)	44 / 37 / 29 / 26	44 / 38 / 31 / 28
Sound Power Level	H	dB	59	59
Outdoor Unit			**RXR50EV1B8**	
Casing Color			Ivory White	
Compressor	Type		Hermetically Sealed Swing Type	
	Model		2YC36CXD	
	Motor Output	W	1,100	
Refrigerant Oil	Model		FVC50K	
	Charge	L	0.4	
Refrigerant	Model		R-410A	
	Charge	kg	1.4	
Airflow Rate	HH	m³/min (cfm)	36.2 (850)	34.3 (810)
Fan	Type		Propeller	
	Motor Output	W	60	
Running Current (Rated)		A	7.0 - 6.91 - 6.82	7.2 - 7.11 - 7.02
Power Consumption (Rated)		W	1,420 - 1,420 - 1,420	1,470 - 1,470 - 1,470
Power Factor		%	92.2 - 89.3 - 86.8	92.8 - 89.9 - 87.3
Starting Current		A	7.4	
Dimensions (H × W × D)		mm	693 × 795 × 285	
Packaged Dimensions (H × W × D)		mm	736 × 935 × 410	
Weight (Mass)		kg	48	
Gross Weight (Gross Mass)		kg	55	
Sound Pressure Level	H	dB(A)	48	50
Sound Power Level	H	dB	62	64
Drawing No.			3D080175A	

Note: ■ The data are based on the conditions shown in the table below.

Cooling	Heating	Piping Length
Indoor ; 27°CDB / 19°CWB Outdoor ; 35°CDB / 24°CWB	Indoor ; 20°CDB Outdoor ; 7°CDB / 6°CWB	5 m

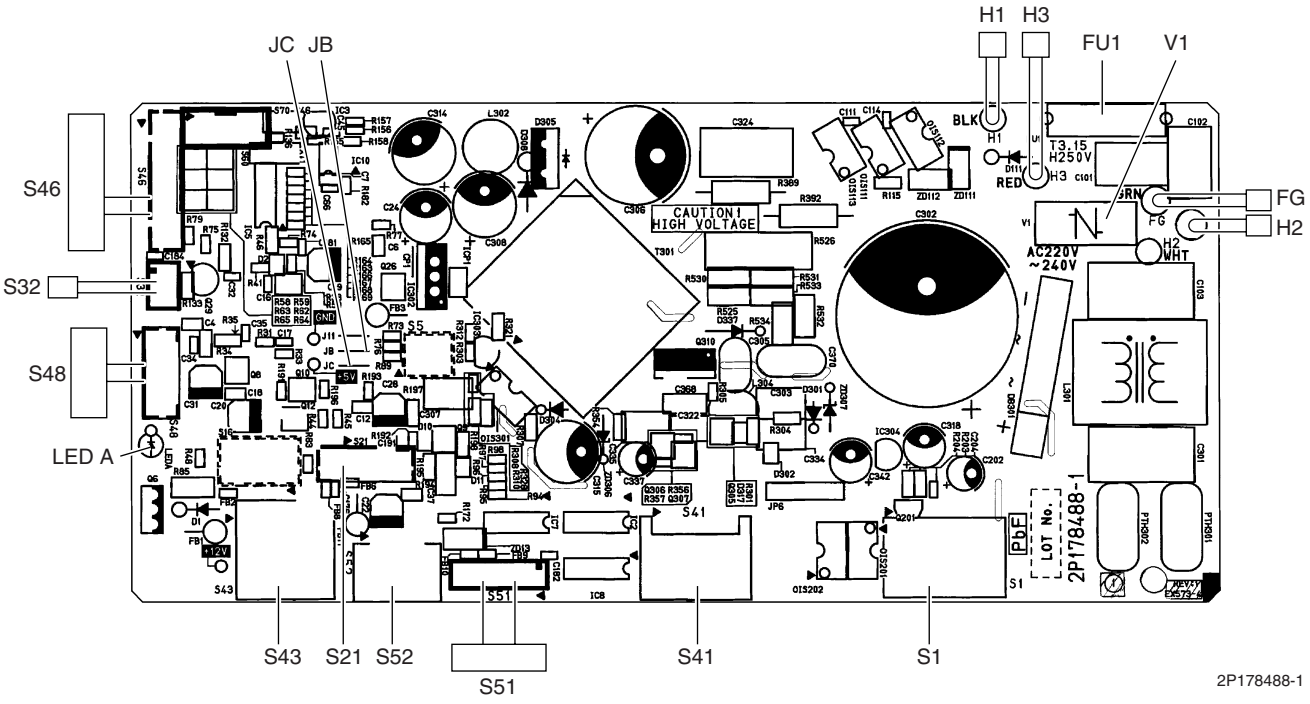
Conversion Formulae
kcal/h = kW × 860 Btu/h = kW × 3412 cfm = m³/min × 35.3

Part 3
Printed Circuit Board Connector Wiring Diagram

1. Indoor Unit

A1P: Control PCB

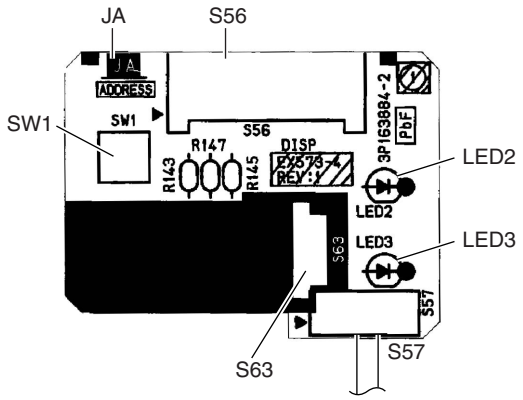
1) S1	Connector for fan motor
2) S21	Connector for centralized control (HA)
3) S32	Indoor heat exchanger thermistor (R1T)
4) S41	Connector for swing motors (horizontal, vertical)
5) S43	Connector for dehumidifying solenoid valve coils
6) S46	Connector for display PCB
7) S48	Connector for humidity sensor PCB
8) S51	Connector for reduction motor, limit switch (front panel)
9) S52	Connector for streamer unit PCB
10) H1, H2, H3	Connector for terminal board (indoor - outdoor transmission)
11) FG	Connector for terminal board (frame ground)
12) FU1 (F1U)	Fuse (3.15 A, 250 V)
13) LED A	LED for service monitor (green)
14) JB	Fan speed setting when compressor stops for thermostat OFF
JC	Power failure recovery function (auto-restart) *Refer to page 150 for detail.
15) V1 (R1V)	Varistor



Caution **Replace the PCB if you accidentally cut the jumpers other than JB and JC.**
Jumpers are necessary for electronic circuit. Improper operation may occur if you cut any of them.

A2P: Display PCB

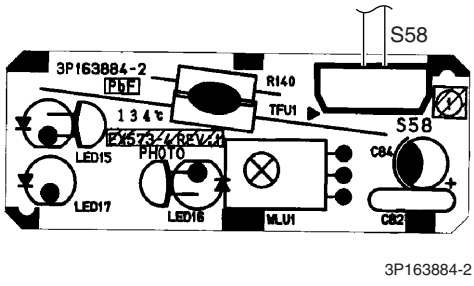
1) S56 Connector for control PCB
2) S57 Connector for signal receiver / transmitter PCB
3) S63 (H1P) Connector for LED PCB (multi monitor)
4) JA Address setting jumper
*Refer to page 150 for detail.
5) SW1 (S1W) Forced cooling operation [ON/OFF] button
*Refer to page 147 for detail.
6) LED2 (H2P) LED for timer (yellow)
7) LED3 (H3P) LED for moisture operation (green)



Caution **Replace the PCB if you accidentally cut the jumpers other than JA.**
Jumpers are necessary for electronic circuit. Improper operation may occur if you cut any of them.

A3P: Signal Receiver / Transmitter PCB

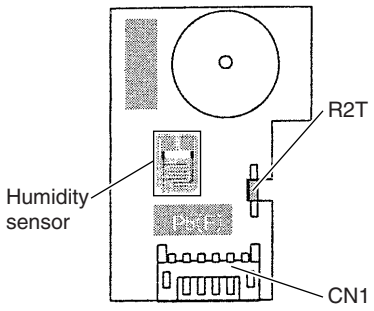
1) S58 Connector for display PCB



3P163884-2

A4P: Humidity Sensor PCB

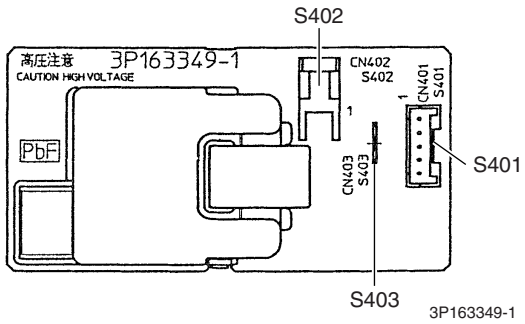
1) CN1 Connector for control PCB
2) R2T Room temperature thermistor



3P163282-1

A5P: Streamer Unit PCB

1) S401 Connector for control PCB
2) S402 Connector for limit switch for streamer
3) S403 Connector for streamer

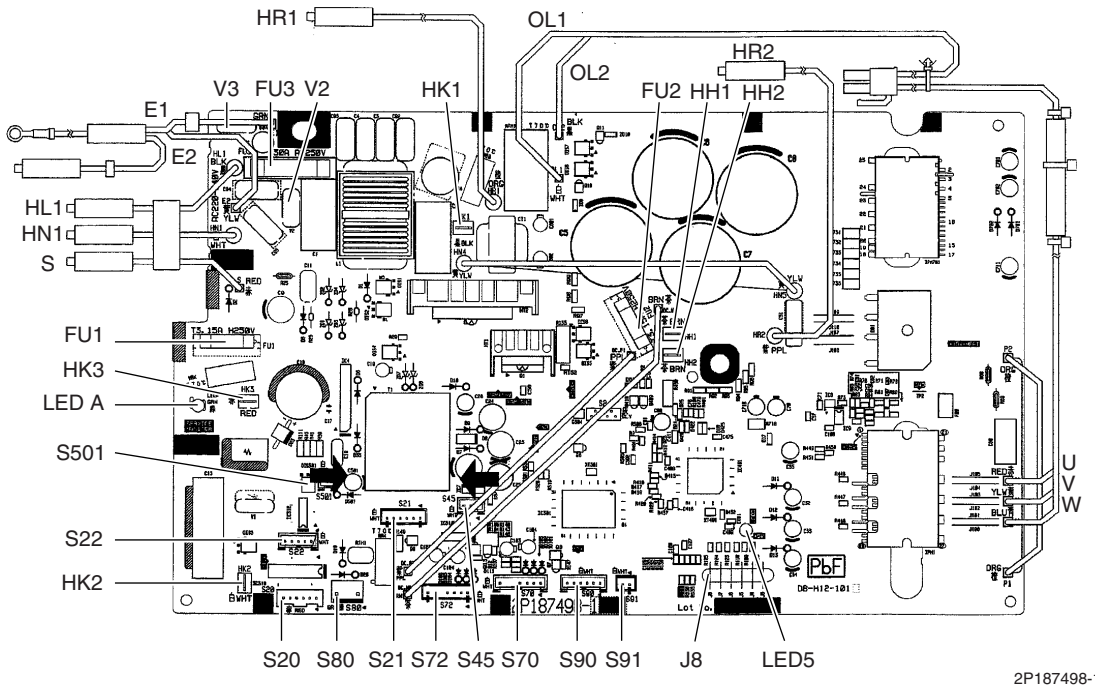


3P163349-1

2. Outdoor Unit

PCB Detail

1) S20	Connector for electronic expansion valve coil
2) S21	Connector for humidifying rotor motor
3) S22	Connector for damper motor
4) S45	Connector for thermal fuse (102°C)
5) S70	Connector for fan motor
6) S72	Connector for humidifier fan motor
7) S80	Connector for four way valve coil
8) S90	Connector for thermistors (outdoor temperature, outdoor heat exchanger, discharge pipe)
9) S91	Connector for humidifying thermistor
10) S501	Connector for limit switch
11) HR1, HR2	Connector for reactor
12) HK1, HK2, HK3	Connector for hygroscopic fan motor
13) HH1, HH2	Connector for humidifying heater
14) HL1, HN1, S	Connector for terminal board
15) E1, E2	Connector for earth wire
16) U, V, W	Connector for compressor
17) OL1, OL2	Connector for overload protector
18) FU1, FU2	Fuse (3.15 A, 250 V)
19) FU3	Fuse (30 A, 250 V)
20) V2, V3	Varistor
21) LED A, LED5	LED for service monitor (green)
22) J8	Jumper for improvement of defrost performance
	*Refer to page 150 for detail.



Caution **Replace the PCB if you accidentally cut the jumpers other than J8.**
Jumpers are necessary for electronic circuit. Improper operation may occur if you cut any of them.

Part 4
Function and Control

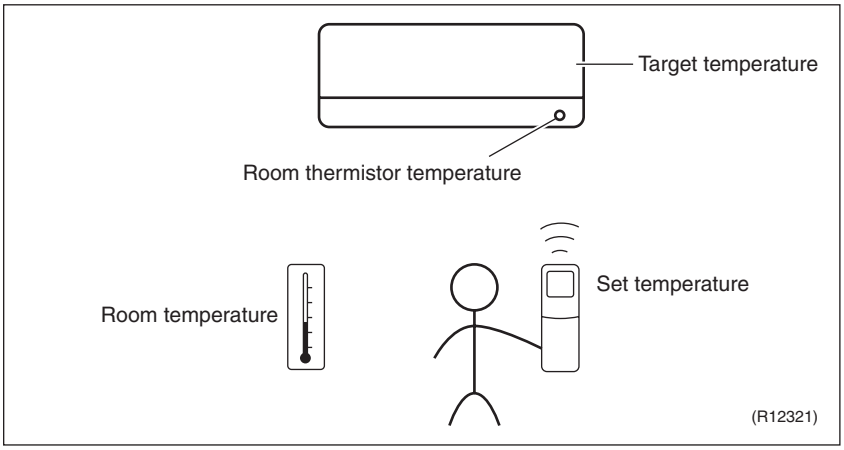
1. Main Functions

1.1 Temperature Control

Definitions of Temperatures

The definitions of temperatures are classified as following.

- Room temperature: temperature of lower part of the room
- Set temperature: temperature set by remote controller
- Room thermistor temperature: temperature detected by room temperature thermistor
- Target temperature: temperature determined by microcomputer



Temperature Control

The temperature of the room is detected by the room temperature thermistor. However, there is difference between the “temperature detected by room temperature thermistor” and the “temperature of lower part of the room”, depending on the type of the indoor unit or installation condition. Practically, the temperature control is done by the “target temperature appropriately adjusted for the indoor unit” and the “temperature detected by room temperature thermistor”.

1.2 Frequency Principle

Main Control Parameters

The frequency of the compressor is controlled by the following 2 parameters:

- The load condition of the operating indoor unit
- The difference between the room thermistor temperature and the target temperature

Additional Control Parameters

The target frequency is adapted by additional parameters in the following cases:

- Frequency restrictions
- Initial settings
- Forced cooling operation

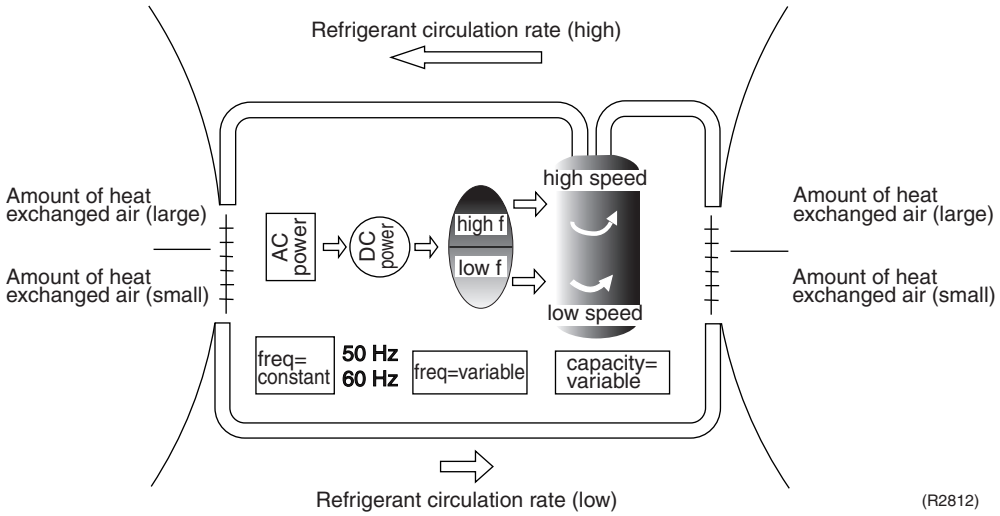
Inverter Principle

To regulate the capacity, a frequency control is needed. The inverter makes it possible to vary the rotation speed of the compressor. The following table explains the conversion principle:

Phase	Description
1	The supplied AC power source is converted into the DC power source for the present.
2	The DC power source is reconverted into the three phase AC power source with variable frequency. ■ When the frequency increases, the rotation speed of the compressor increases resulting in an increased refrigerant circulation. This leads to a higher amount of the heat exchange per unit. ■ When the frequency decreases, the rotation speed of the compressor decreases resulting in a decreased refrigerant circulation. This leads to a lower amount of the heat exchange per unit.

Drawing of Inverter

The following drawing shows a schematic view of the inverter principle:



Inverter Features

The inverter provides the following features:

- The regulating capacity can be changed according to the changes in the outdoor temperature and cooling / heating load.
- Quick heating and quick cooling
  The compressor rotational speed is increased when starting the heating (or cooling). This enables to reach the set temperature quickly.
- Even during extreme cold weather, high capacity is achieved. It is maintained even when the outdoor temperature is 2°C.
- Comfortable air conditioning
  A fine adjustment is integrated to keep the room temperature constant.
- Energy saving heating and cooling
  Once the set temperature is reached, the energy saving operation enables to maintain the room temperature at low power.

Frequency Limits

The following functions regulate the minimum and maximum frequency:

Frequency	Functions
Low	■ Four way valve operation compensation. Refer to page 56.
High	■ Compressor protection function. Refer to page 57. ■ Discharge pipe temperature control. Refer to page 58. ■ Input current control. Refer to page 59. ■ Freeze-up protection control. Refer to page 60. ■ Heating peak-cut control. Refer to page 60. ■ Defrost control. Refer to page 63.

Forced Cooling Operation

Refer to page 147 for detail.

1.3 Airflow Direction Control

1.3.1 Power-Airflow Dual Flaps

The large flaps send a large volume of air downward to the floor and provide an optimum control in cooling, dry, and heating operation.

<Cooling / Dry>
During cooling or dry operation, the flap retracts into the indoor unit. Then, cool air can be blown far and pervaded all over the room.

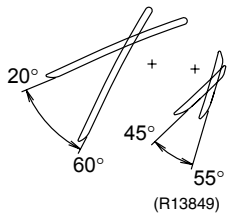
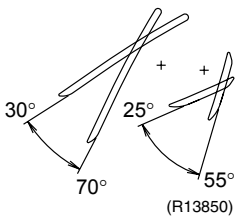
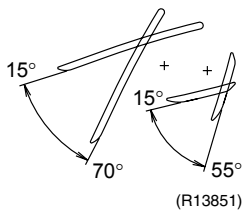
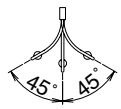
<Heating>
During heating operation, the large flap directs airflow downward to spread the warm air to the entire room.

1.3.2 Wide-Angle Louvers

The louvers, made of elastic synthetic resin, provide a wide range of airflow that guarantees a comfortable air distribution.

1.3.3 Auto-Swing

The following table explains the auto swing process for cooling, dry, heating, and fan:

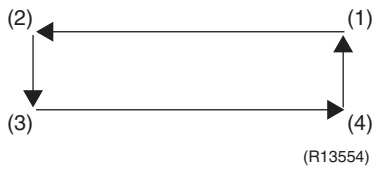
Vertical Swing (up and down)			Horizontal Swing (right and left)
COOLING / "SARARA" DRYING / DRY COOLING	HEATING / "URURU" HUMIDIFYING / HUMID HEATING	FLASH STREAMER AIR PURIFYING only / FRESH AIR SUPPLY VENTILATION only	
 (R13849)	 (R13850)	 (R13851)	 (R11404)

1.3.4 3-D Airflow

Alternative repetition of vertical and horizontal swing motions enables uniform air-conditioning of the entire room. This function is effective for starting the air conditioner.

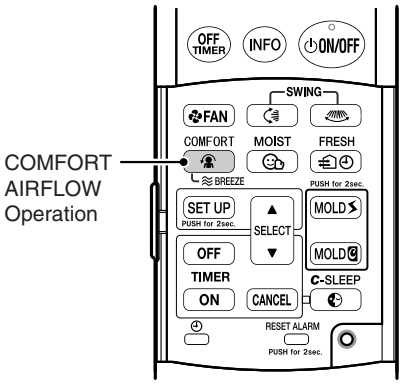
When the horizontal swing and vertical swing are both set to automatic operation, the airflow becomes 3-D airflow. The horizontal and vertical swing motions are alternated and the airflow direction changes in the order shown in the following diagram.

(1) The vertical blades (louvers) move from the right to the left.
(2) The horizontal blades (flaps) move downward.
(3) The vertical blades (louvers) move from the left to the right.
(4) The horizontal blades (flaps) move upward.



(R13554)

1.3.5 COMFORT AIRFLOW Operation

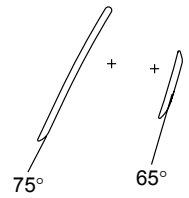
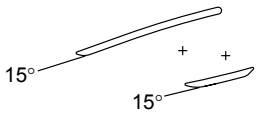


The indication changes every time " " is pressed.

(R13852)

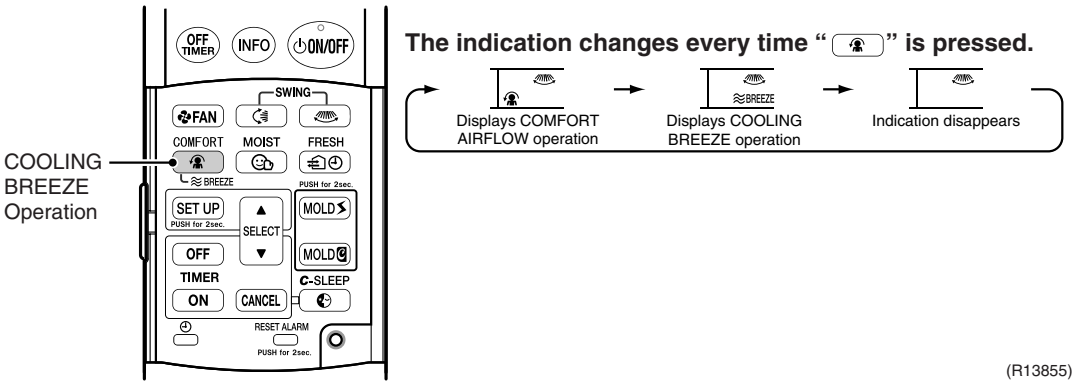
- Effective mode for COMFORT AIRFLOW operation
  - AUTO
  - HEATING
  - HUMID HEATING
  - COOLING
  - "SARARA" DRYING
  - DRY COOLING
  - MOISTURIZING

- Flap motion
  - Left and right flaps move according to the settings of the remote controller.
  - The vertical swing flap is controlled not to blow the air directly on the person in the room.

COOLING / "SARARA" DRYING / DRY COOLING / MOISTURE COOLING	HEATING / HUMID HEATING / MOISTURE HEATING
	
75° 65° (R13853)	15° 15° (R13854)

1.3.6 COOLING BREEZE Operation

Operation



(R13855)

- Effective mode for COOLING BREEZE operation
  - COOLING
  - "SARARA" DRYING
  - DRY COOLING
  - FLASH STREAMER AIR PURIFYING

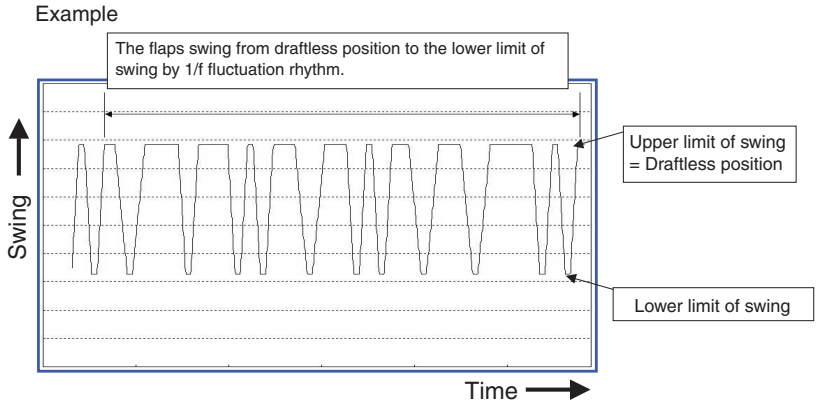
Note On AUTO operation, when the actual operation mode is HEATING, COOLING BREEZE operation does not work. (Indication on the remote controller remains.)

- Flap motion
  As shown in the graph below, the standard position is the upper limit of the swing so that you do not feel draft.
  Depending on the room temperature and the thermostat ON/OFF state, swing interval varies.
  (The lower the temperature, the longer the swing interval, thereby comfort is maintained.)
  Left and right flaps move according to the setting of the remote controller.

- Airflow rate
  Airflow rate is controlled automatically.

Features

- **1/f fluctuation rhythm switches airflow direction.**
  By fluctuating airflow direction you can feel cool even the room temperature is set rather high.
  By 1/f fluctuation rhythm, upper and lower flaps move up and down unlike the conventional up and down swing, and this movement brings you a comfortable air like a breeze in nature.



(R18140)

1.4 Fan Speed Control for Indoor Unit

Outline

Phase control and fan speed control contains 9 steps: LLL, LL, SL, L, ML, M, MH, H, and HH. The airflow rate can be automatically controlled depending on the difference between the room thermistor temperature and the target temperature. This is done through phase control and Hall IC control.

For more information about Hall IC, refer to the troubleshooting for fan motor on page 89.

Automatic Fan Speed Control

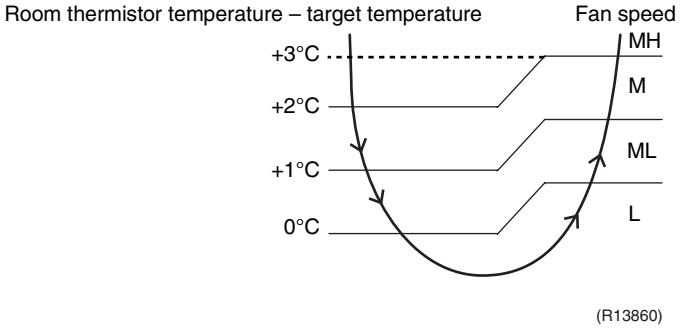
In automatic fan speed operation, the step “SL” is not available.

Step	Cooling	Heating
LLL	 (R11681)	 (R6834)
LL		
L		
ML		
M		
MH		
H		
HH (POWERFUL)		

⟺ = The airflow rate is automatically controlled within this range when the FAN setting button is set to automatic.

<Cooling>

The following drawing explains the principle of fan speed control for cooling.



<Heating>

In heating operation, the fan speed is regulated according to the indoor heat exchanger temperature and the difference between the room thermistor temperature and the target temperature.

Note:

1. During POWERFUL operation, fan rotates at H tap + 80 rpm.
2. The fan stops during defrost operation.

Indoor Unit Quiet Operation

Forced dropping of the fan tap decreases the airflow rate and reduces airflow noise. (Noise is reduced by about 3 dB as compared to that in L tap.)

Note:

- Airflow rate can not be set.
- Since the performance is lowered as compared to that in normal operation (70% under rated conditions), the room may not be cooled or heated when this operation is used for a long time.
- Indoor unit quiet operation is kept in memory even when the power supply is turned OFF. The indication remains on the display of the wireless remote controller and the indoor unit quiet operation works when the power is turned ON again.

1.5 Thermostat Control

Outline

Thermostat control is based on the difference between the room thermistor temperature and the target temperature.

Detail

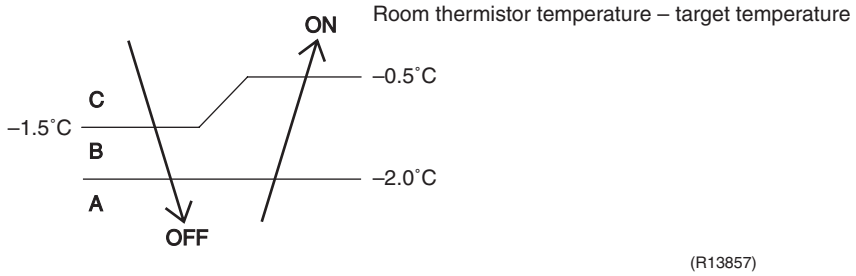
Thermostat OFF Condition

- The temperature difference is in the zone A.

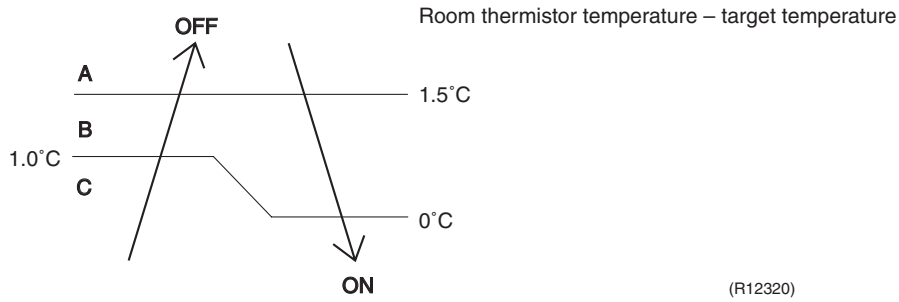
Thermostat ON Condition

- The temperature difference returns to the zone C after being in the zone A.
- The system resumes from defrost control in any zones except A.
- The operation turns on in any zones except A.
- The monitoring time has passed while the temperature difference is in the zone B. (Cooling / Dry : 10 minutes, Heating : 10 seconds)

<Cooling>



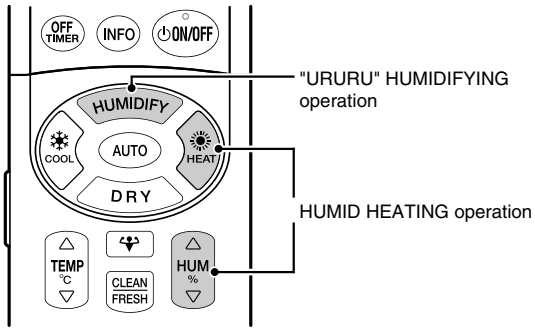
<Heating>



Refer to “Temperature Control” on page 15 for detail.

1.6 “URURU” HUMIDIFYING / HUMID HEATING Operation

Operation



(R13858)

Features

■ **Humidifying method**

This method intakes moisture from the outdoor air using the hygroscopic element mounted in the outdoor unit, and sends it indoor. This enables powerful and speedy humidification.

(R18141)

■ **The room is uniformly humidified.**

• Humidifier + heating operation by air conditioner

Moisture gathers around the ceiling, as it is lighter than the air even if the humidifier is operated. The air on the floor is kept dry.

When using humidifier, moisture gathers around the ceiling.

(R3325)

• HUMID HEATING by URURU / SARARA

This air conditioner enables uniformly humidifying the room by circulating moisture with warm air.

The room is uniformly humidified.

(R3326)

- **Powerful humidifying ability**
  The humidifying capacity is 450 ml/h (50 class) and equivalent to that of a normal humidifier.

Model	28 class	42 class	50 class
Humidifying Capacity	400 ml/h	425 ml/h	450 ml/h

  The values above are measured at 7°CDB / 6°CWB of outdoor air temperature and 7.5 m humidifying hose length.
- **No need for water supply or cleaning**
  Water supply and cleaning are unnecessary as there is no water tank, and there is no proliferation of bacteria.
- **Humidity control**
  The target humidity level is 40 to 50%RH.
  You can select from Low, STD (standard), Hi (high), and CONT (continuous). The target humidity cannot be set by percent.

Note:
- When the outdoor temperature and humidity are low, the humidifying capacity decreases. In addition, the moisture in the room may not attain sufficient humidity when the ventilation volume is high, the preset temperature is high, or the preset humidity is high.
- After the HUMID HEATING operation starts, the relative humidity in the room lowers temporarily. This phenomenon is caused by the increase of saturated water vapor. Therefore, the humidity rises gradually after the temperature reaches the preset temperature.
- In humidifying operation, the operation sound increases by about 2 dB both in the indoor unit and outdoor unit. (When the airflow rate is in L or SL, the operation sound increases by about 3 dB in the indoor unit.)
- This system does not suppose the storage of musical instruments.

Conditions for Humidifying Operation

During heating operation, humidifying operation is available when the following conditions 1~5 are met at the same time.
1. Indoor heat exchanger temperature is 12°C or more.
2. Outdoor temperature is from –10°C to 24°C (in trial operation, up to 34°C is possible). Humidifying operation does not work under –10°C.
3. Approx. 1 minute has already passed after heating operation startup. (See the Note.)
4. Heating operation does not work to its full capacity. (when “continuous” humidification is selected, humidifying operation has the priority.)
5. Room humidity is under 70%RH.

Note:
- Excluding the case when it is recovered from thermostat-off or when the defrost operation finished.

How to Check the Motion of Humidifying Operation

You can check whether the humidifier unit is in good working order. If you conduct humidifying trial operation, you can check even beyond the range of the normal conditions for humidifying operation.
1. Hygroscopic fan ..... Check if air is discharged from the front outlet of the humidifier unit.
2. Humidifying fan / heater / damper ..... Check if warm air is discharged from the duct of outdoor unit.
3. Humidifying rotor ..... Check if the rotor is rotating with the top panel off.

To check performance estimate from a psychrometric chart with the measured temperature and humidity of the outdoor air and humidified air (in front of the indoor outlet) using a thermal hygrometer.

	Airflow rate (m^3/min)
28 class	0.40
42/50 class	0.44

Humidity Fluctuation by Temperature Settings

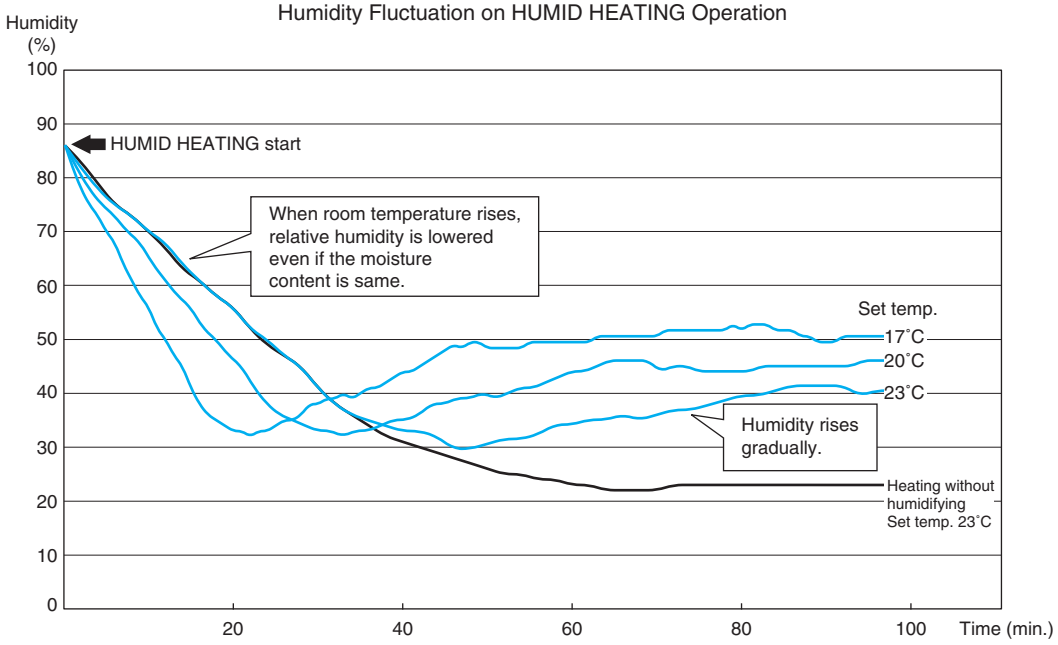
During HUMID HEATING operation, as room temperature rises, relative humidity is temporarily lowered. This is because as room temperature rises, relative humidity is lowered even if the moisture content is the same.

EX: The rise in the room temperature from 15°C to 25°C results in the fall in humidity from 40%RH to about 22%RH.

As humidifying operation starts concurrently with heating, humidity rises gradually as shown in the figure below.

Some room conditions (room size, ventilation frequency, number of residents, etc.) and set temperature (higher temperature) may result in unsatisfactory humidity.

Humidity Fluctuation on HUMID HEATING Operation

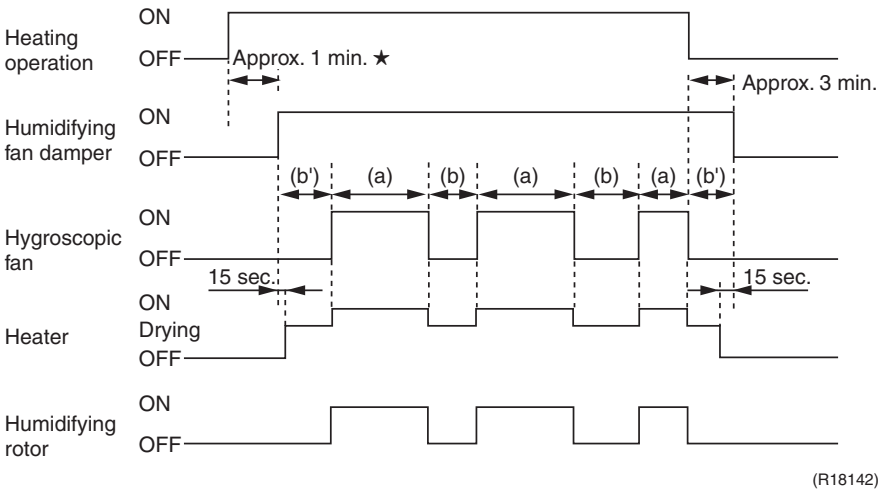


Measurement conditions
- Outdoor temp.: 7˚C
- Humidity setting: CONT (continuous)
- Airflow rate setting: H tap
- Area of the room: 26.4 m²
- Humidifying hose length: 7.5 m
- Ventilation rate: 0.75 times/hour
  - 0.5 times of natural ventilation
  - 0.25 times of humidity absorption by a carpet, a curtain, etc.

(R13861)

Time chart for humidifying operation control

Approximately 1 minute after heating operation starts, humidifying operation and drying operation repeats alternately to prevent condensation inside the hose.



(a): Humidifying time	Approx. 70 min.	According to the outdoor temperature and the hose length set by remote controller
(b): Drying time	Approx. 2~10 min.	According to the hose length set by remote controller
(b'): Drying time	Approx. 2~10 min.	

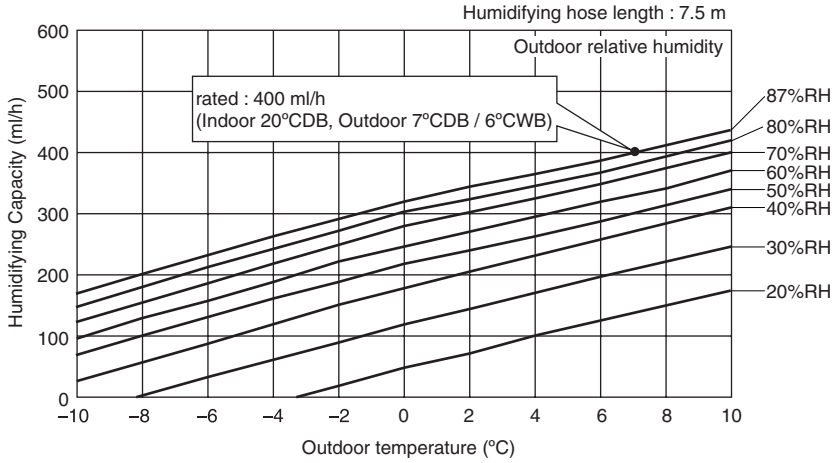
★ Humidifying trial operation has no 1-minute-delay, it immediately starts up from (b'), and works in the same sequence as normal humidifying operation.
Humidifying trial operation automatically stops after about 30 minutes.

Note: In a room that is spacious such as loft style or partitioned by an accordion style curtain, the ventilation volume is large and sometimes may not reach the set humidity.

Humidification performance by outdoor temperature

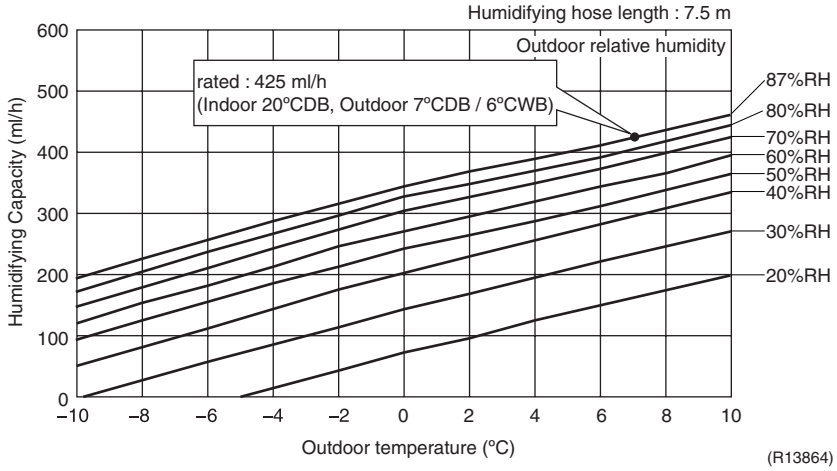
The humidifying of this system is different from that of a normal humidifier. The humidifying performance varies depending on the outdoor temperature or installation condition.
Sufficient humidifying capacity may not be attained depending on the weather condition.
When the outdoor temperature drops by 5°C, the humidifying capacity decreases by about 15%.
When the outdoor humidity drops by 20%, the humidifying capacity decreases by about 20%.

28 class



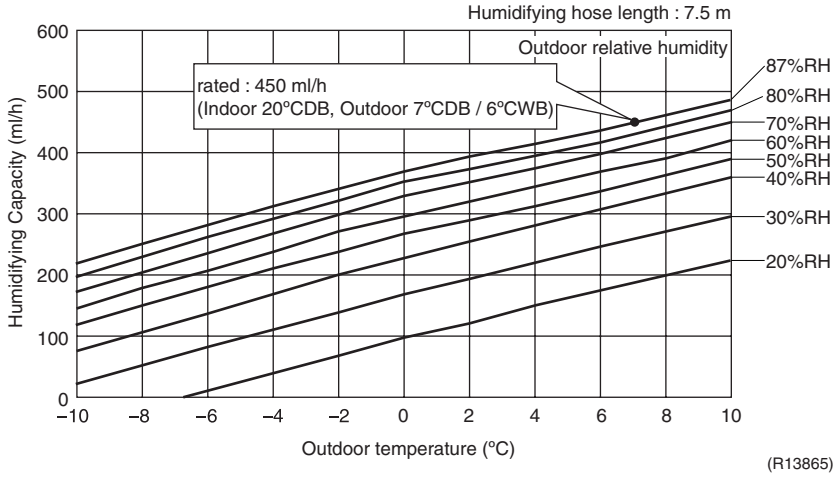
(R13863)

42 class



(R13864)

50 class

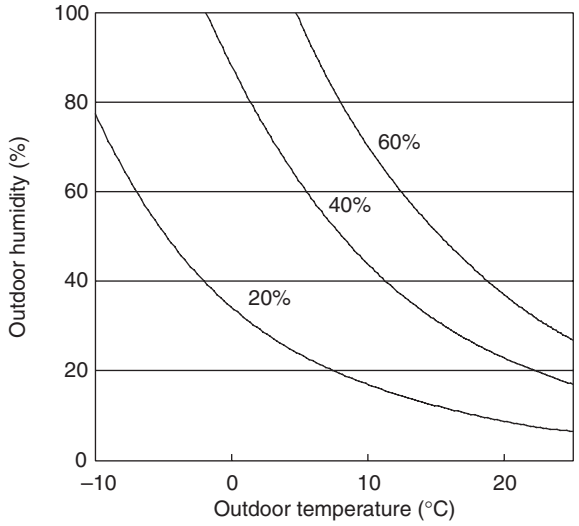


(R13865)

Reachable humidity by outdoor condition

Humidifying capacity drops when the outdoor temperature and the outdoor humidity are low.

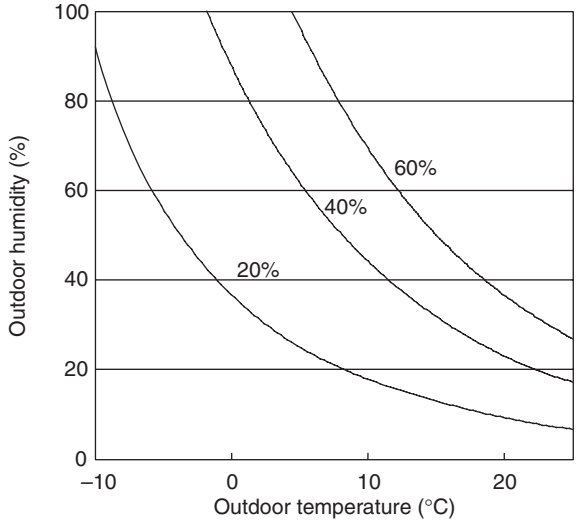
28 class



Condition;
Set temperature: 20°C
Airflow rate: H tap
Room volume: 70 m^3
Ventilation rate: 0.5 times/hour
Humidifying hose length: 7.5 m

(R13866)

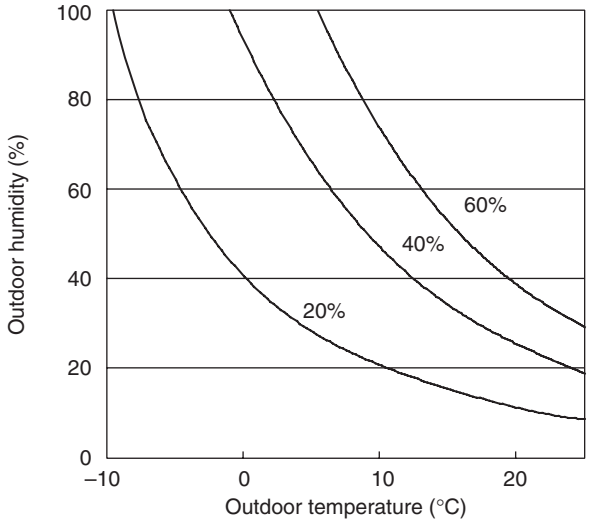
42 class



Condition;
Set temperature: 20°C
Airflow rate: H tap
Room volume: 100 m^3
Ventilation rate: 0.5 times/hour
Humidifying hose length: 7.5 m

(R13867)

50 class

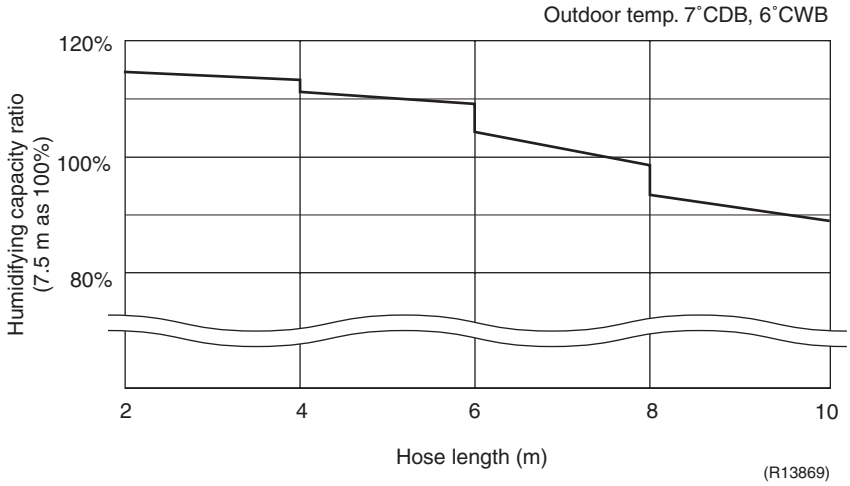


Condition;
Set temperature: 20°C
Airflow rate: H tap
Room volume: 120 m^3
Ventilation rate: 0.5 times/hour
Humidifying hose length: 7.5 m

(R13868)

Performance correction by hose length

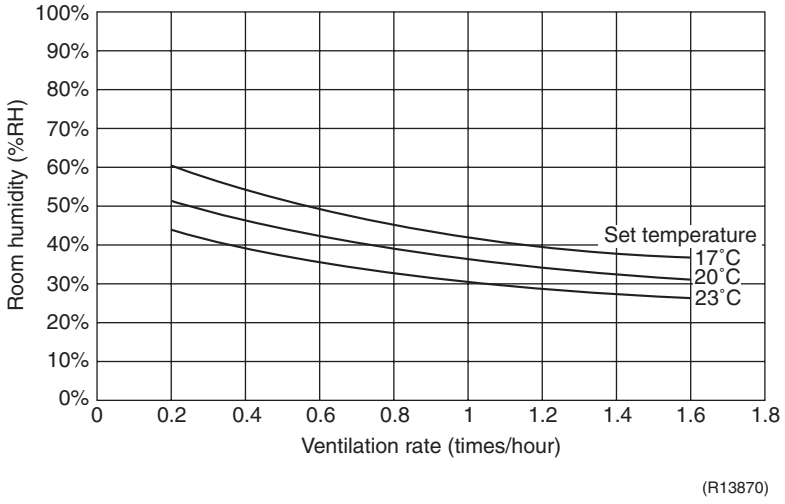
The maximum piping length is set to 10 m, but the humidifying capacity varies depending on the length of the humidifying hose.
When the hose length increases by 2 m, the humidifying capacity decreases by about 10%.



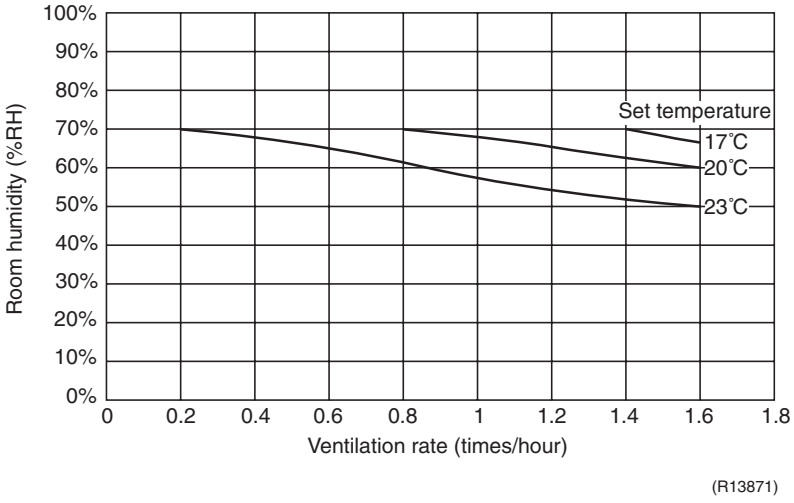
Reference

■ **Room humidity (humidity of the discharged air) by ventilation rate (16 m², hose length: 4 m, 28 class)**

1. Outdoor temp. 0°CDB, 50%RH

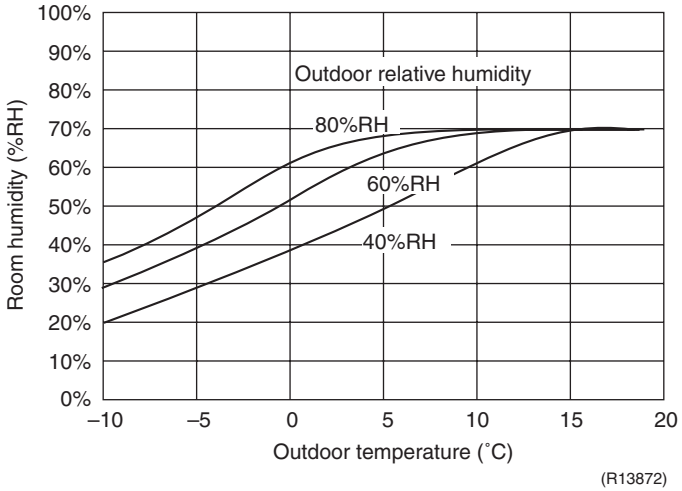


2. Outdoor temp. 7°CDB, 87%RH

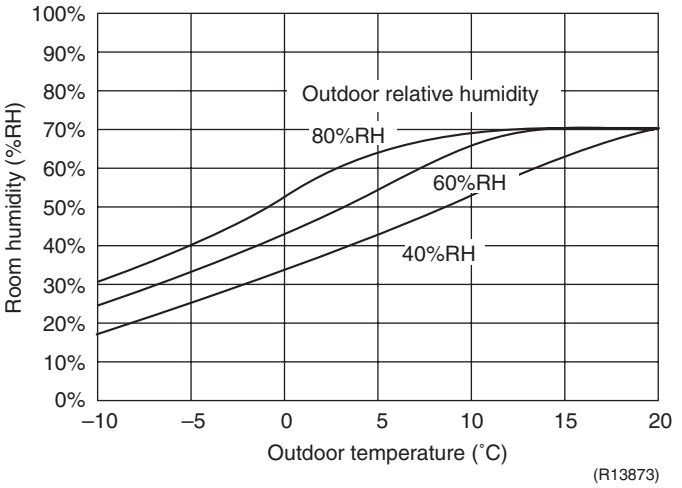


■ **Room humidity (humidity of the discharged air) by outdoor temperature (16 m², hose length: 4 m, ventilation rate: 0.75 times/hour, 28 class)**

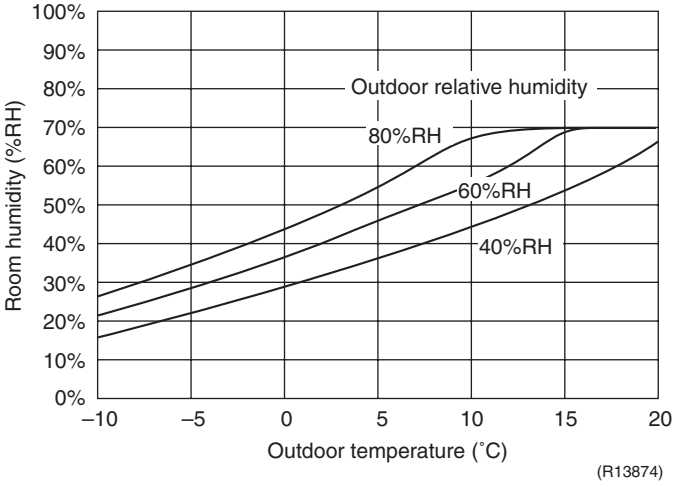
1. Room temp. 17°CDB



2. Room temp. 20°CDB

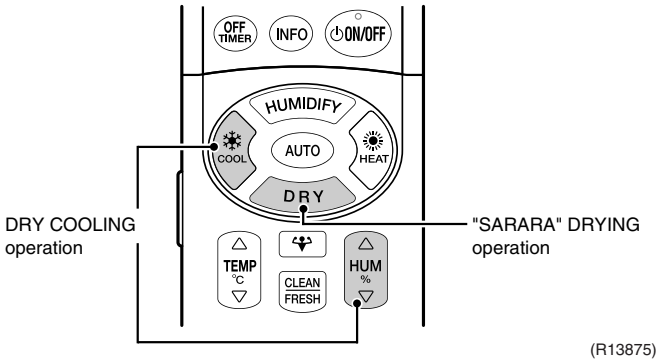


3. Room temp. 23°CDB



1.7 “SARARA” DRYING / DRY COOLING Operation

Operation

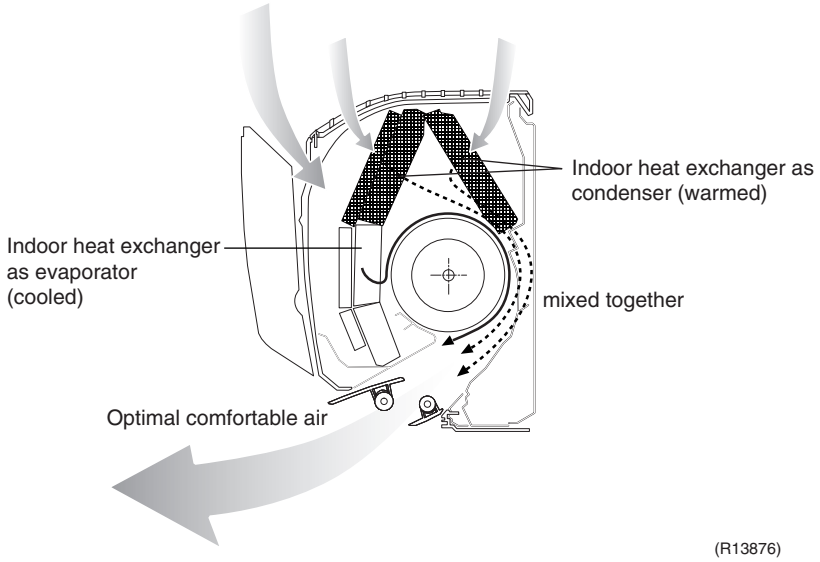


(R13875)

Features of “SARARA” DRYING

■ **Reheating dehumidifying method**

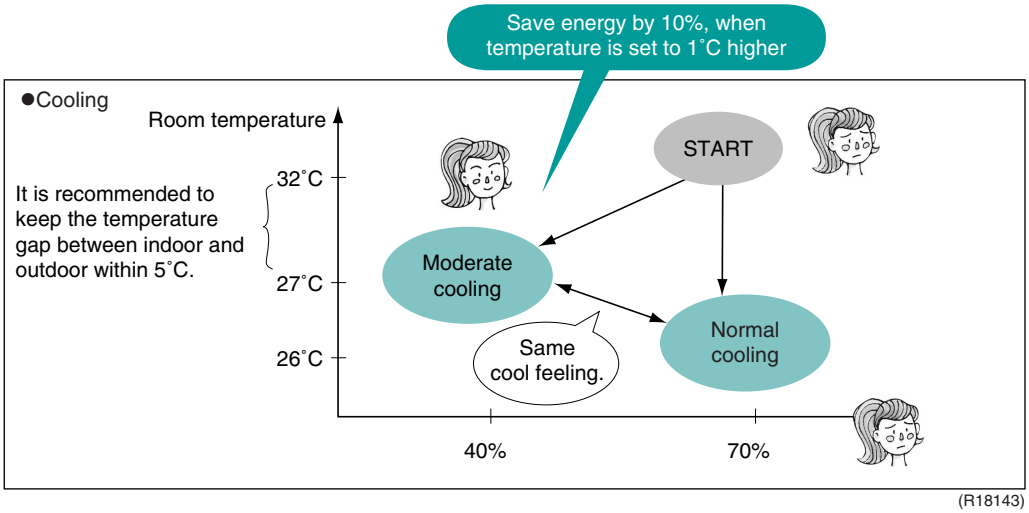
A powerful evaporator eliminates the humidity in the room exclusively. Dry, cool air is mixed with warm air from the reheater, thereby blowing in optimal and comfortable dry air.



(R13876)

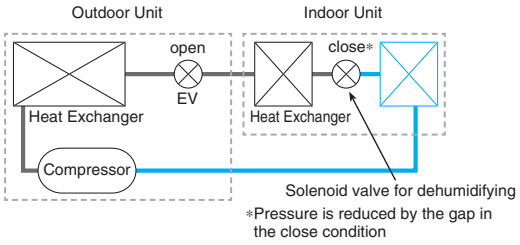
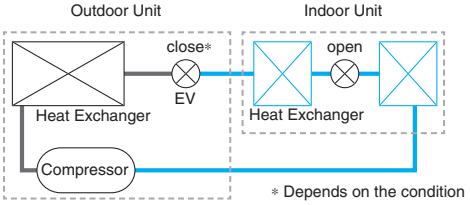
■ **Adjustable at your preferred humidity even during cooling**

You can get comfortable coolness even during moderate cooling because you can adjust the indoor humidity as you like. By decreasing the temperature gap between indoor and outdoor, you can avoid a heat shock. This feature is recommended for ladies or elders who are sensitive to cooling, for families with a baby, as well as for energy saving.



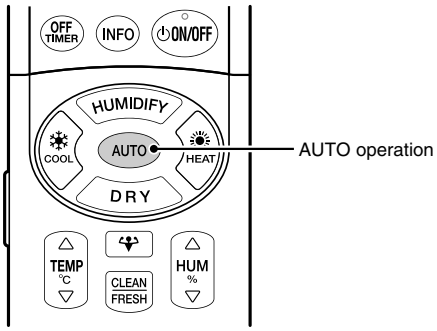
(R18143)

■ Differences between “SARARA” DRYING and DRY COOLING operation

	“SARARA” DRYING	DRY COOLING
Method	Pressure reducing devices (solenoid valves) are located at the center of the indoor heat exchanger. The upper side acts as a condenser to heat the air. The lower part of the indoor heat exchanger performs the usual DRY COOLING operation to make low-temperature and low-humidity air. The two types of air are mixed to make moderate-temperature and low-humidity air.	Like COOLING operation, DRY COOLING operation raises latent heat capacity with controlling sensible heat capacity by adjusting the compressor frequency and indoor airflow rate.
Case by case use for dehumidification and cooling dehumidification	As this is a reheating method, humidity is eliminated without lowering room temperature. It is recommended when the cooling load is small.	DRY COOLING operation does not use a reheating method. In order to eliminate humidity, it is recommended to set the temperature several degrees lower than the room temperature at operation startup. It is recommended when the cooling load is large.
Mechanism	 (R5963)	 (R5964)
Humidity adjusting method	**Operation frequency of the compressor** When the operation frequency increases, humidity drops, and when the operation frequency decreases, the drop of humidity is suppressed.	**Operation frequency of the compressor and indoor airflow rate** When the operation frequency increases and indoor airflow rate decreases, the humidity drops. When the operation frequency decreases and the airflow rate increases, the drop of humidity is suppressed.
Room temperature adjusting method	**Outdoor airflow rate** When the outdoor airflow rate increases, the room temperature drops, and when the outdoor airflow rate decreases, the drop in room temperature is suppressed.	**Operation frequency of the compressor** When the operation frequency increases, the room temperature drops, and when the operation frequency decreases, the drop in room temperature is suppressed.
Thermostat OFF condition	• Room temperature ≤ set temperature – 2.5°C or • Room temperature ≈ set temperature and the humidity is lower than the target humidity (lower by more than 5%).	• Room temperature ≤ set temperature – 2.0°C or • Set temperature – 1.5°C < room temperature ≤ set temperature – 1.0°C continues for 10 minutes
Thermostat OFF → ON condition	When none of the thermostat OFF conditions is not satisfied.	• Room temperature ≥ set temperature – 0.5°C or • Set temperature – 1.5°C < room temperature ≤ set temperature – 1.0°C continues for 10 minutes
Time to reach the target humidity	Approximately 1 hour of consecutive operation as a standard (depending on the conditions)	Approximately 1 hour of consecutive operation as a standard (depending on the conditions)
Remarks (FAQ)	**The humidity does not decrease.** According to the load conditions of the room, the temperature sometimes falls and thermostat ON/OFF repeats. As a result, the room may not be dehumidified enough. Set the temperature lower.	**The humidity does not decrease. (Thermostat ON/OFF repeats.)** As the reheating method is not used, if you set the temperature close to the room temperature, thermostat ON/OFF repeats according to the load conditions of the room. As a result, the room may not be dehumidified enough. In DRY COOLING operation, set the temperature lower than the room temperature by several degrees. If you do not want to lower the room temperature too much, “SARARA” DRYING operation method is recommended.

1.8 AUTO Operation

Operation



Outline

Automatic Cooling / Heating Function

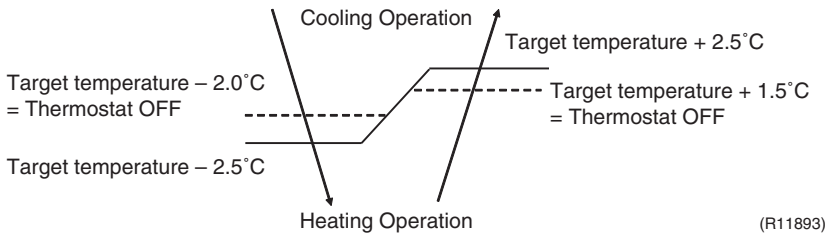
When the AUTO operation is selected with the remote controller, the microcomputer automatically determines the operation mode as cooling or heating according to the room temperature and the set temperature at start-up.

The unit automatically switches the operation mode to maintain the room temperature at the set temperature.

Detail

Ts: set temperature (set by remote controller)
Tt: target temperature (determined by microcomputer)
Tr: room thermistor temperature (detected by room temperature thermistor)
C: correction value

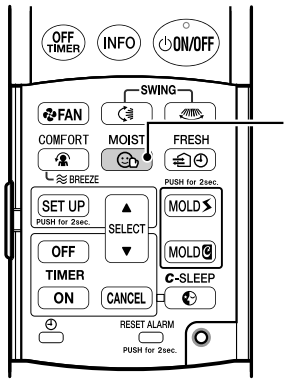
1. The set temperature (Ts) determines the target temperature (Tt).
   (Ts = 18 ~ 30°C).
2. The target temperature (Tt) is calculated as;
   Tt = Ts + C
   where C is the correction value.
   C = 0°C
3. Thermostat ON/OFF point and operation mode switching point are as follows.
   Tr means the room thermistor temperature.
   (1)Heating → Cooling switching point:
   Tr ≥ Tt + 2.5°C
   (2)Cooling → Heating switching point:
   Tr < Tt – 2.5°C
   (3)Thermostat ON/OFF point is the same as the ON/OFF point of cooling or heating operation.
4. During initial operation
   Tr ≥ Ts: Cooling operation
   Tr < Ts: Heating operation



Ex: When the target temperature is 25°C
Cooling → 23°C: Thermostat OFF → 22°C: Switch to heating
Heating → 26.5°C: Thermostat OFF → 27.5°C: Switch to cooling

1.9 MOISTURIZING Operation

Operation



(R13878)

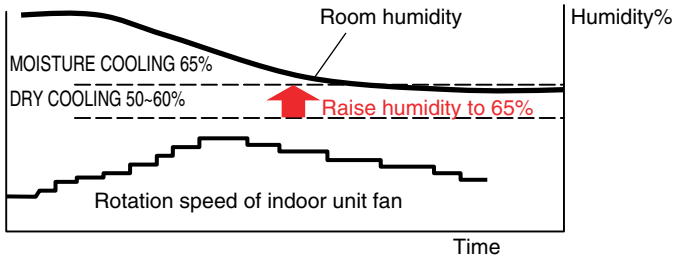
- Effective mode for MOISTURE COOLING operation
  - COOLING
  - DRY COOLING
- Effective mode for MOISTURE HEATING operation
  - HEATING
  - HUMID HEATING

Features

- MOISTURIZING operation has following 3 features.
  - Relatively high humidity setting
  - COMFORT AIRFLOW operation
  - Emission of vitamins and hyaluronic acid
- MOISTURIZING operation is not for beauty and beautiful skin treatment, nor prevention of skin roughness.

- Details of operation

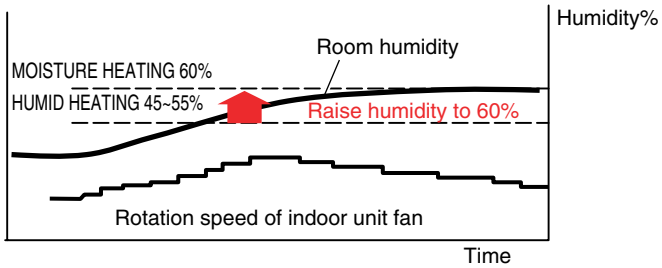
<Humidity in MOISTURE COOLING operation>



- MOISTURE COOLING operation keeps the humidity at 65%.
- Unlike ordinary DRY COOLING, it prevents the room from drying.

(R18351)

<Humidity in MOISTURE HEATING operation>

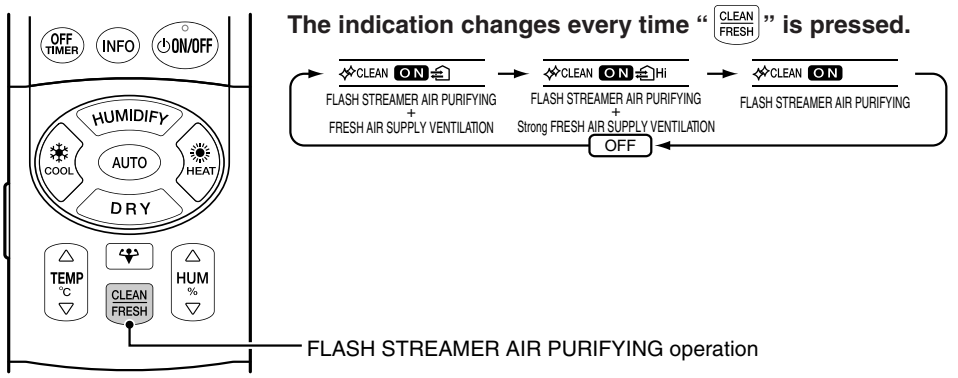


- MOISTURE HEATING operation keeps the humidity at 60%.
- Air is moisturized more than in ordinary HUMID HEATING.

(R18352)

1.10 FLASH STREAMER AIR PURIFYING Operation

Operation



(R18353)

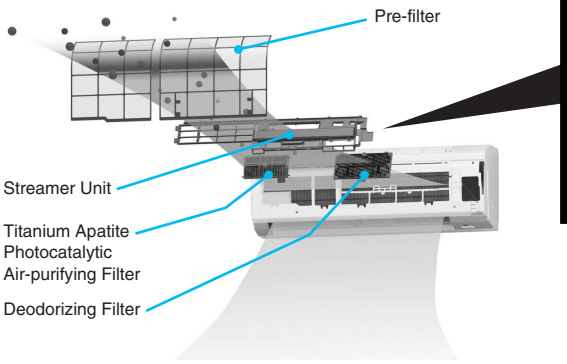
<Note> Temperature, humidity and airflow rate cannot be changed.

Features

The same technology as for real air purifiers is adopted. The original technology FLASH STREAMER system used for Daikin's air purifiers is incorporated.
This technology realizes air purifying exceeding the performance of a normal air conditioner and powerfully decomposes diesel dust, NOx, mold, viruses, etc.

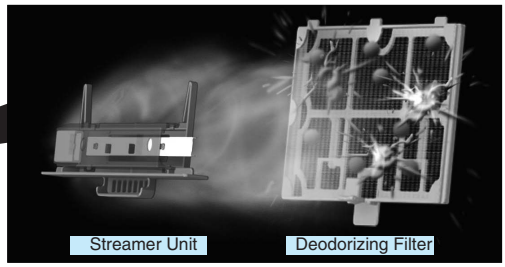
■ **Mechanism of FLASH STREAMER Air-Purifying**
The streamer unit discharges high energy electrons and powerfully decomposes odor, bacteria, and hazardous chemical materials at an oxidative distraction speed 1000 times higher than the general glow discharge.

Air purification flow



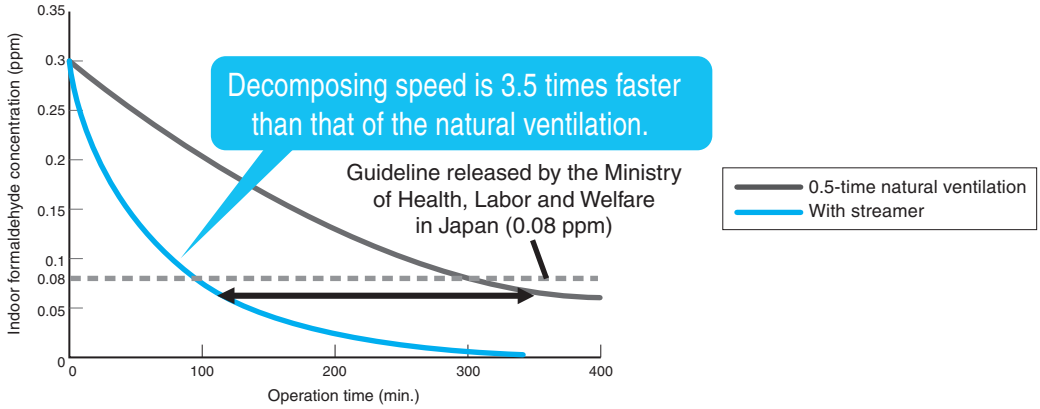
New air purification system incorporating the streamer

(Image)



(R18144)

■ Removing Formaldehyde



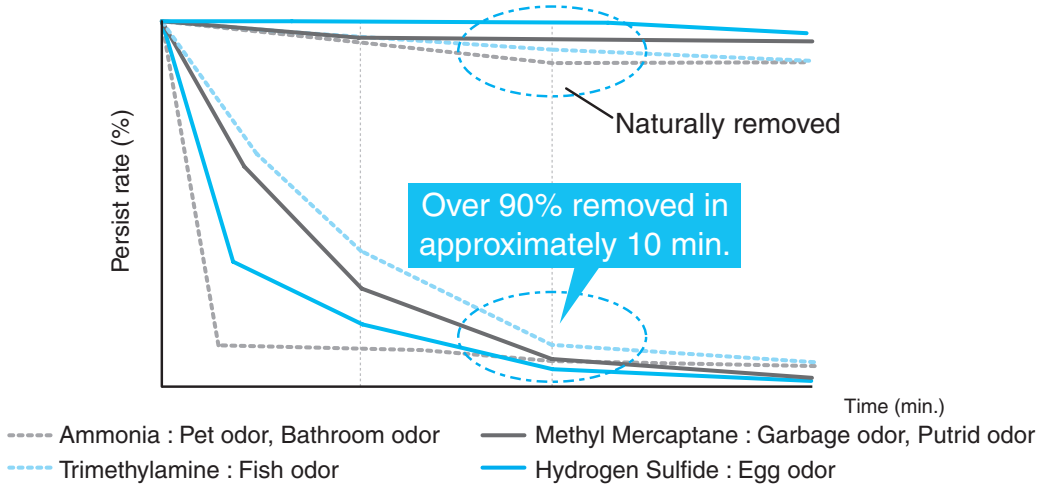
The formaldehyde concentration in the laboratory (10 m^2) at 0.5-time natural ventilation and the initial concentration setting of 0.3 ppm
(Observed by Daikin using 28 class model)
(Nozaki laboratory, Graduate Course of Health and Society System, Tohoku Bunka Gakuen University)

(R13882)

■ Deodorizing Performance of FLASH STREAMER and Titanium Apatite Photocatalyst

Unpleasant odor generated in the room daily such as pet odor or garbage odor is powerfully removed. Speedy deodorization: 90% or more odor is removed in 10 minutes.
80% or more of cigarette odor is removed.

Odor removal performance of FLASH STREAMER



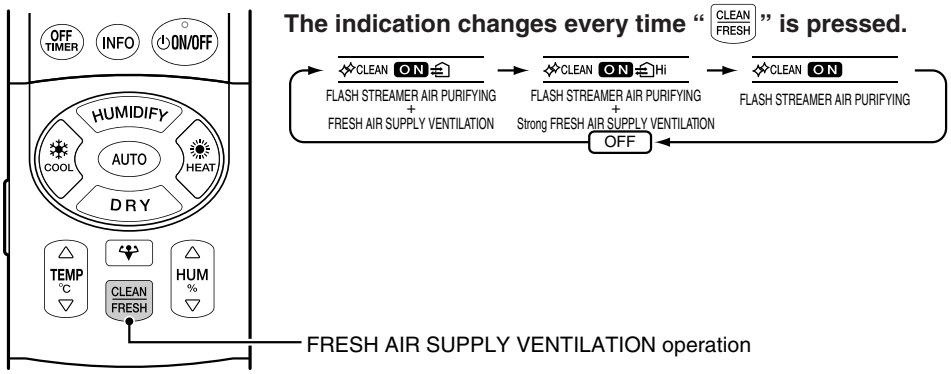
Persist rate of odor ingredients in a box of $1m^3$ with 42 class model (Daikin result)

(R13883)

	Ammonia	Acetaldehyde	Acetic Acid	Cigarette Odor
Removal	90.6%	76.5%	87.2%	82.7%

1.11 FRESH AIR SUPPLY VENTILATION Operation

Operation

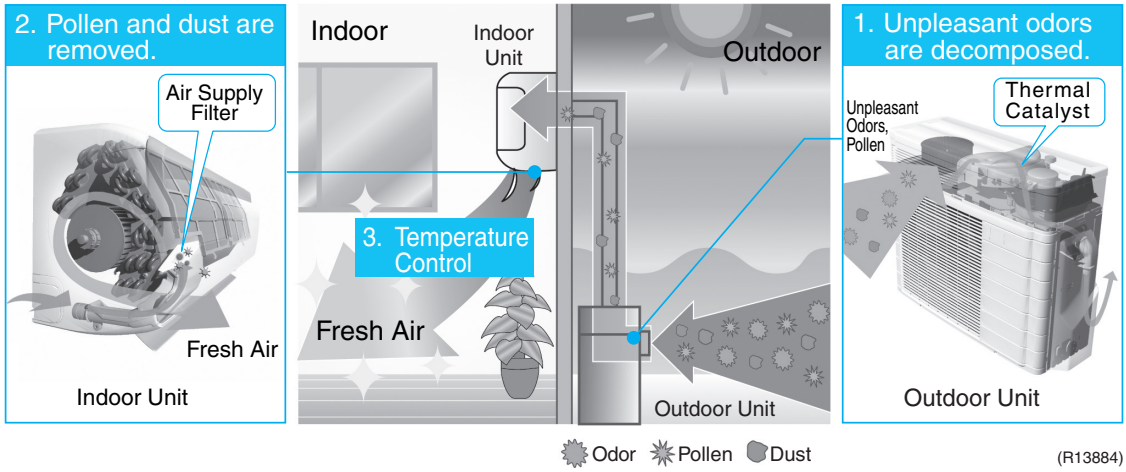


(R5977)

<Note> Temperature, humidity and airflow rate cannot be changed.

Features

The air supply ventilation system uses only fresh air.
Any contaminated outdoor air is purified in two stages of indoor unit and outdoor unit. Fresh air from which pollen and dust were removed is supplied into the room.



(R13884)

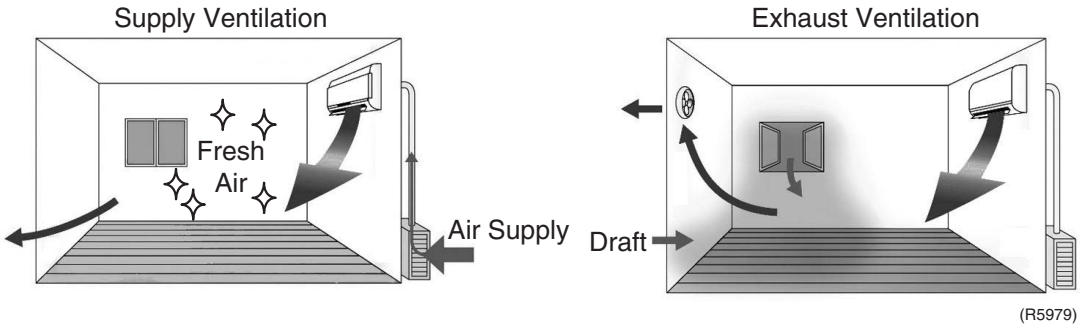
1. **Purifying air in the outdoor unit**
   Thermal catalyst contained in the humidifying rotor decomposes unpleasant odor and also removes exhaust gases (NOx, SOx).
   Manganese catalyst used to treat the exhaust gas of vehicles is adopted for the thermal catalyst.

2. **Purifying air in the indoor unit**
   The air supply filter is placed at the humidifying hose outlet of the indoor unit side.
   The air supply filter removes about 97% of pollen and dust.

3. **Controlling temperature**
   The fresh air passing through the air supply filter is cooled (or heated) in the indoor unit and supplied into the room.
   You can keep comfortable temperature and also replace air because the ventilation is performed while temperature is controlled.

Pollen, exhaust gas and odor that could not be removed by the thermal catalyst or the air supply filter are decomposed by the FLASH STREAMER and photocatalyst.

■ **Ventilation System**
Ventilation is mainly divided into two types. The convenient system is supply ventilation.

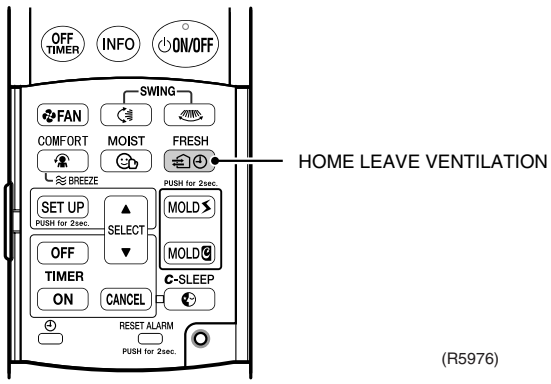


(R5979)

- Quiet because the ventilation fan is located in the outdoor unit	- Operation noise is heard because the ventilation fan is located in the room.
- Energy saving system due to low heat loss	- Electricity charges are high because heat loss is high.
- The room temperature changes little because no wind enters.	- Draft enters easily to prevent comfortable temperature from being kept.

1.12 HOME LEAVE VENTILATION

Operation



(R5976)

Features

■ **Ventilate your room while you are out**
This function refreshes your room by ventilating while you are out.

■ To take fresh air from outdoors via the outdoor unit, air is heated with a heater on the humidifier unit in the outdoor unit to decompose exhaust gas components (NOx) etc., and passed through the air supply filter to eliminate pollen and mold.

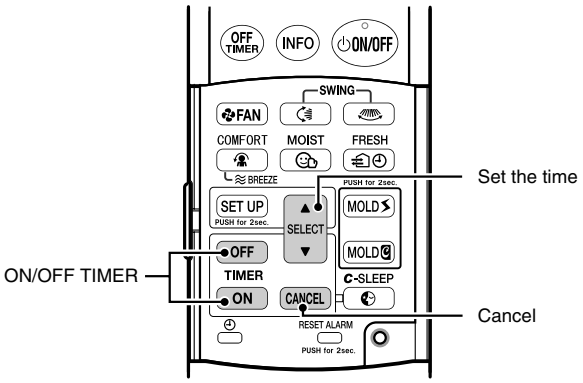
■ OFF timer can be set from 1 to 9 hours (Factory set: 4 hours).

Note:
1. Outdoor sound may be heard or the air may have a smell, as the air is taken from outdoors. Compared with the other operations, operating sound is rather high.
2. Depending on the outdoor temperature and humidity, operating sound sometimes changes.

1.13 TIMER Operation

1.13.1 24-hour ON/OFF TIMER

Operation



(R13885)

Features

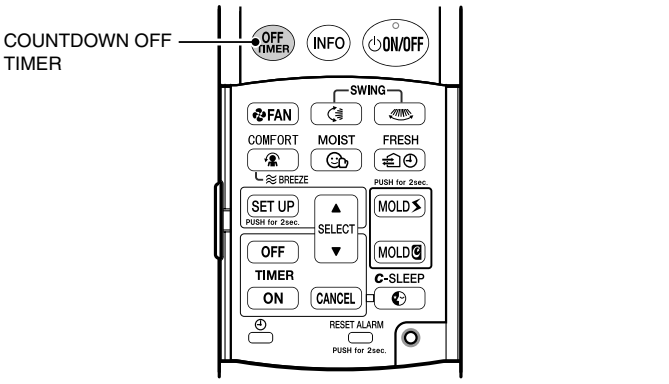
- Time can be set in the unit of 10 minutes.
- When the 24-hour ON/OFF TIMER is set, the indication of present time disappears.
- Time is kept in memory in the next operation unless it is canceled.
- The clock error is ± 30 seconds per month.

ON Timer

The microcomputer monitors the room temperature and the outdoor temperature before preset time and operation starts automatically about 1 hour before so that the room temperature becomes optimum at the preset time.

1.13.2 COUNTDOWN OFF TIMER

Operation



(R13886)

Features

- The COUNTDOWN OFF timer can be set by simple button pressing. The operation is stopped when the set time comes. The timer can be set in the unit of 0.5 hour for maximum 9.5 hours. It can be used in combination with the ON timer.

1.13.3 Combination of ON Timer and OFF Timer

- ON timer and OFF timer, or ON timer and COUNTDOWN OFF timer can be used in combination.

1.14 NIGHT SET Mode

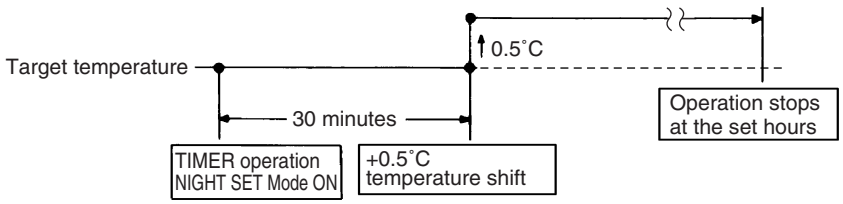
Outline

When the OFF timer is set, the NIGHT SET Mode is automatically activated. The NIGHT SET Mode keeps the airflow rate setting.

Detail

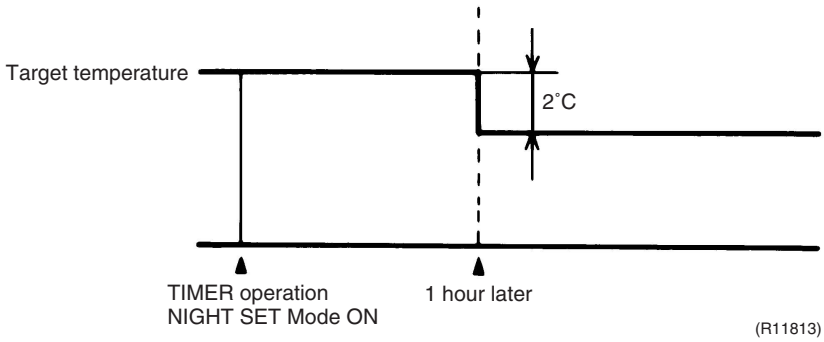
The NIGHT SET Mode continues operation at the target temperature for the first one hour, then automatically raises the target temperature slightly in the case of cooling, or lowers it slightly in the case of heating. This prevents excessive cooling in summer and excessive heating in winter to ensure comfortable sleeping conditions, and also conserves electricity.

<Cooling>



(R18034)

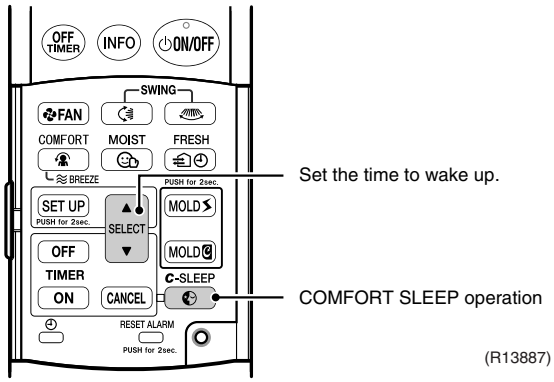
<Heating>



(R11813)

1.15 COMFORT SLEEP Operation

Operation

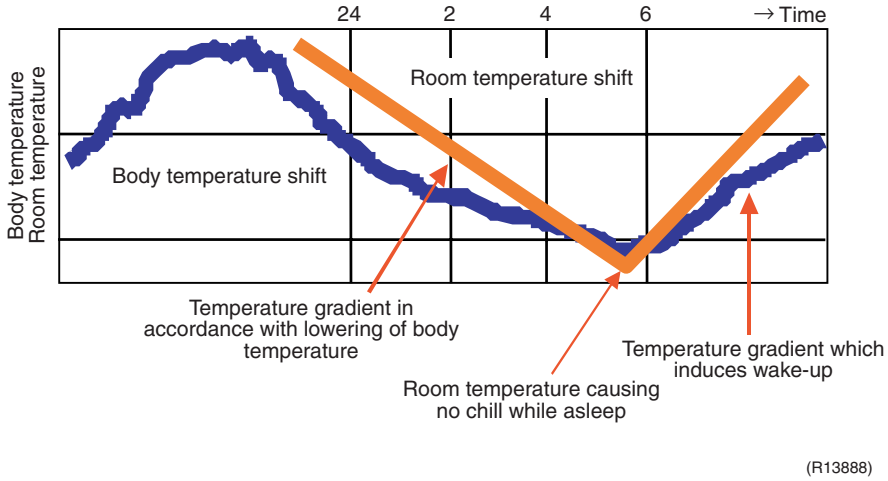


■ Effective mode for COMFORT SLEEP operation
- COOLING
- DRY COOLING
- MOISTURE COOLING
- HEATING
- HUMID HEATING
- MOISTURE HEATING

Features

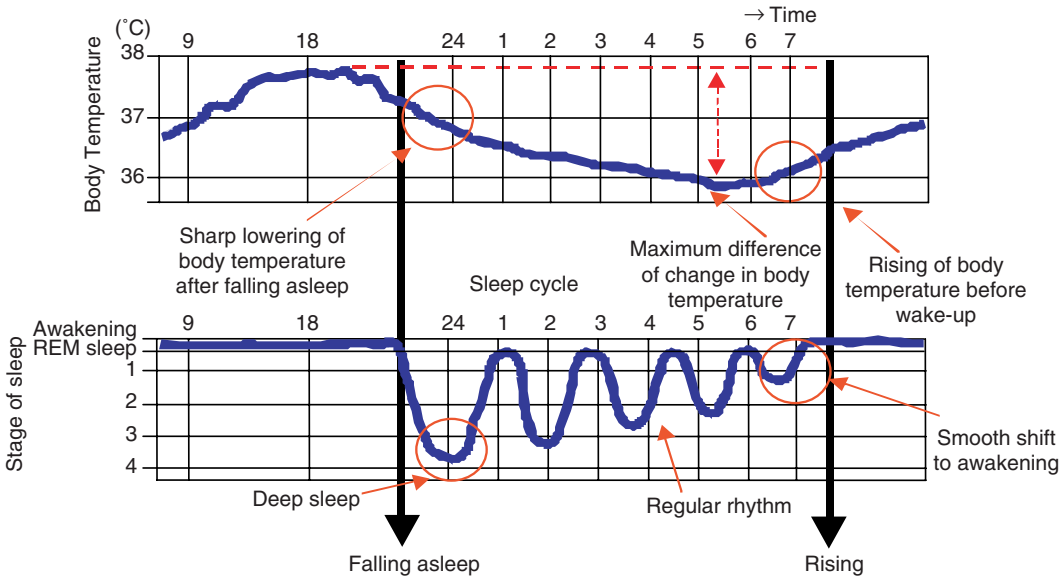
■ Outline of function
The temperature is controlled in unique V-shape pattern within the range of about 2°C upper and lower. First the room temperature is gradually lowered at the beginning of sleep to induce the lowering of body temperature in sleeping.
Then, the room temperature is kept constant, and when the preset wake-up time approaches, the room temperature is gradually raised to induce the raising of body temperature before waking.

■ V-shape pattern temperature control system
The air conditioner controls the room temperature showing V-shape pattern.



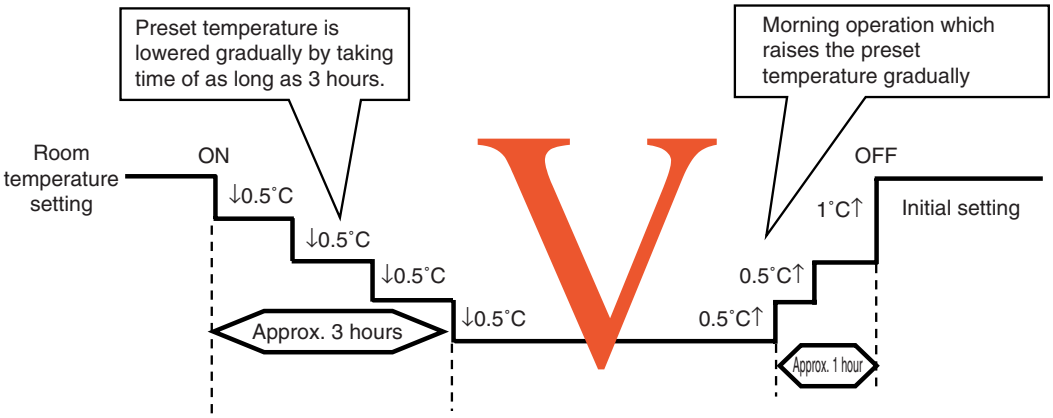
Change in body temperature in human sleep is controlled in ideal V-shape pattern by air-conditioner's temperature control.
(Reference: Control system adopted for JAL first class flight)

■ Human sleep
Sleep cycle and change in body temperature



(R13889)

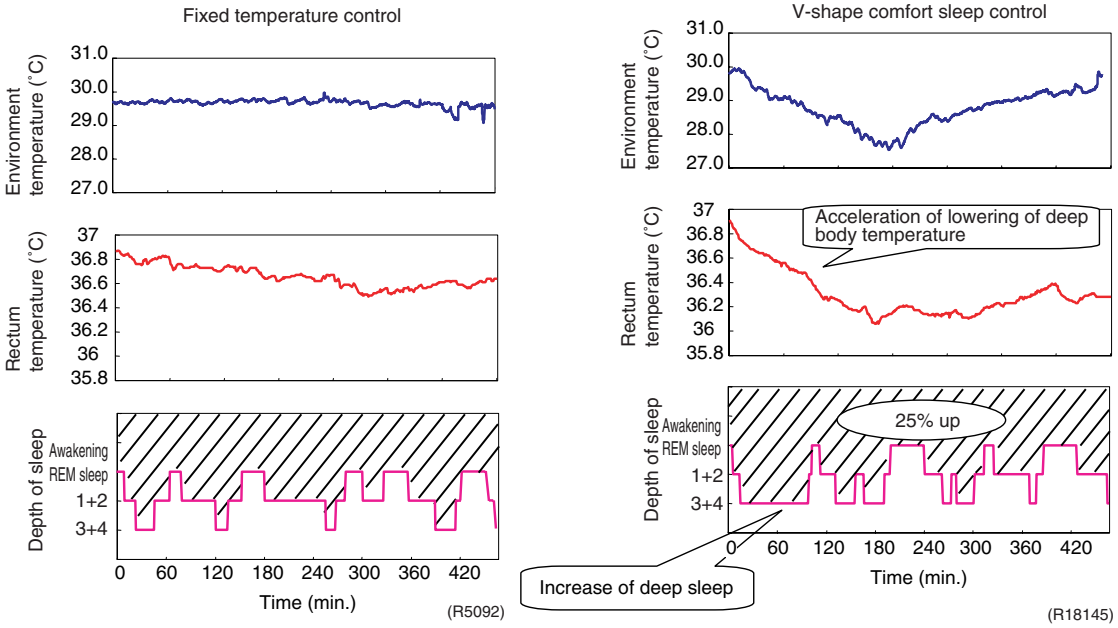
■ Time chart of V-shape comfort sleep control



(R13890)

Reference

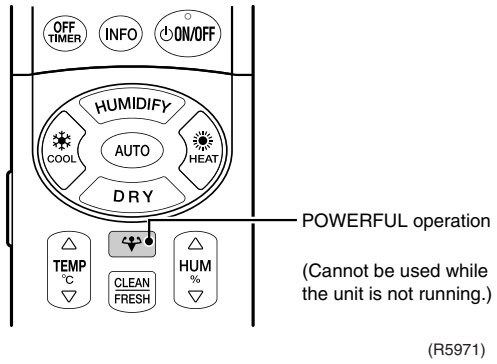
■ Effect



(R5092) (R18145)

1.16 POWERFUL Operation

Operation



(R5971)

- Effective mode for POWERFUL COOLING operation
  - COOLING
  - DRY COOLING
  - MOISTURE COOLING
- Effective mode for POWERFUL HEATING operation
  - HEATING
  - HUMID HEATING
  - MOISTURE HEATING

Features

- Operating sound becomes slightly loud.
- It is impossible to change the airflow rate, temperature, and humidity.
- The airflow rate and the compressor rotating speed are increased from the normal operation for 20 minutes. Normal operation resumes automatically in 20 minutes.

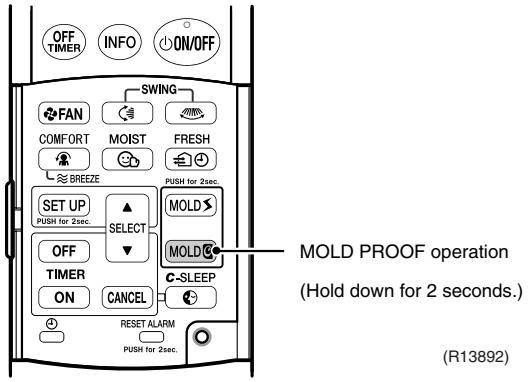
1.17 MOLD PROOF Operation

This is an integrated naming of functions of inside drying and moisture exhaustion. Drying inside the air conditioner prevents mold and odors from growing.

Operation

Operation can be selected from automatic and manual.

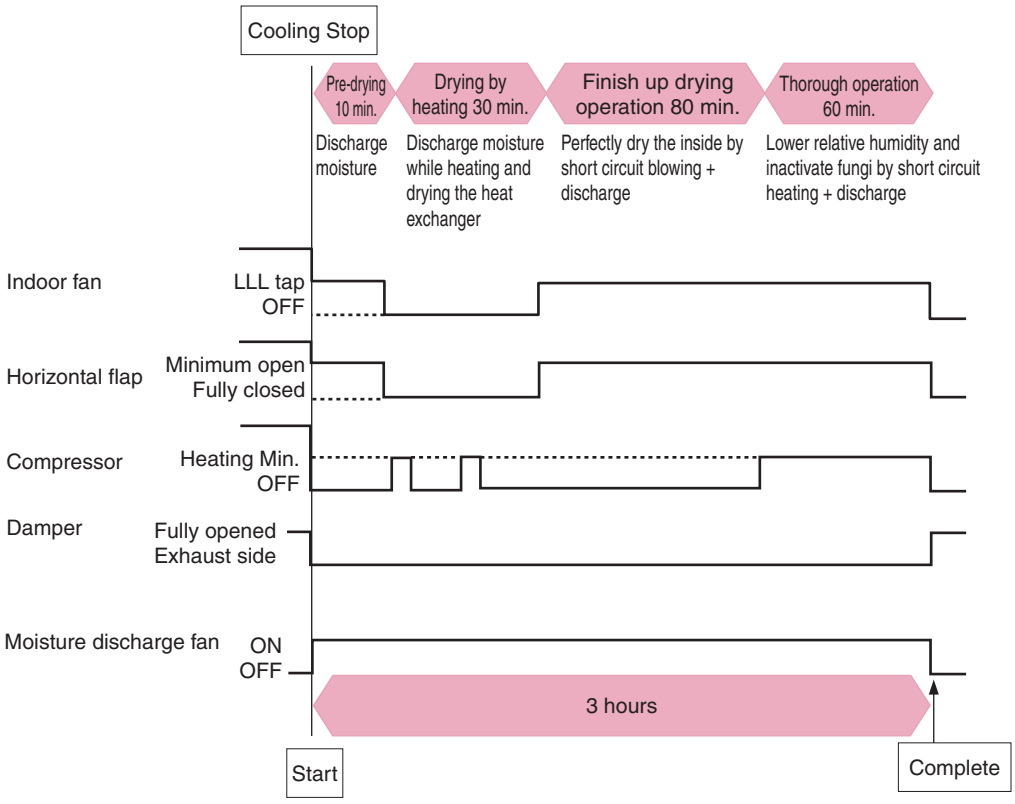
- Automatic operation
  If MOLD PROOF operation is set ON, the MOLD PROOF operation starts automatically after “SARARA” DRYING or COOLING operation. Operation starts depending on the amount of time the unit has been run. (approximately once every 2 weeks)
- Manual operation



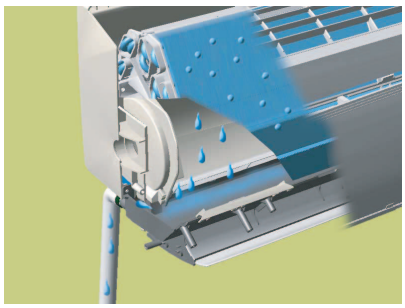
(R13892)

Features

- **Time chart**
  Operation runs about for 3 hours while changing colors of the multi-colored indicator lamp.

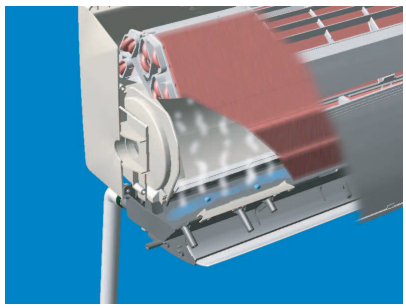


(R13893)



1. Drained water discharge

Drained water in the drain pan is discharged.



2. Inside drying operation

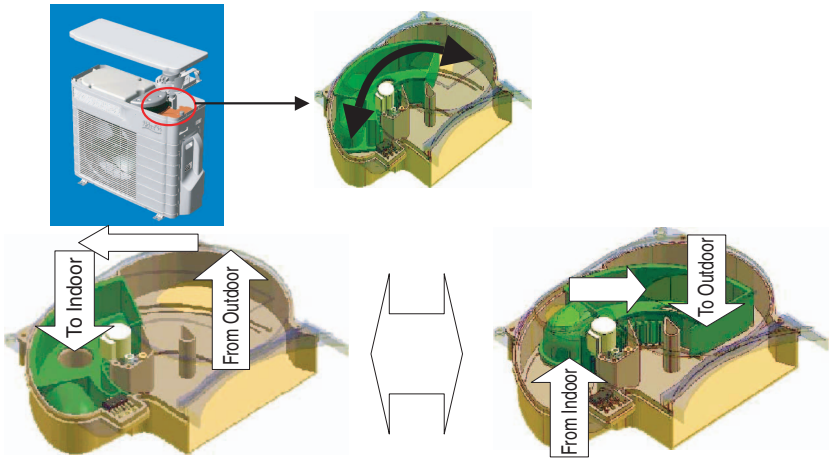
After the drained water discharged, the moisture which are left on the drain pan or the indoor heat exchanger are dried by evaporation.

3. Moisture exhaustion

Moisture is exhausted to outdoors through the humidification hose.

■ **Switching air supply / exhausting**

This function was realized by developing damper inside the humidifier unit.



Air supply position Exhausting position

(R18354)

■ **Conditions for operation**

1. Accumulated operation time: 21,600 minutes (approx.15 days)
2. Accumulated “SARARA” DRYING and COOLING operation time: 5,400 minutes (approx.15 days × 6 hours)

This function starts when both conditions are met.

Note:

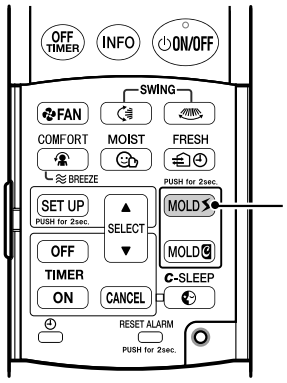
- This is not the function for eliminating dust or mold attached inside the air conditioner.
- During operation, smells may occur.
- This function sometimes does not begin when outdoor temperature or indoor humidity is extremely high.
- Depending on the temperature conditions, moisture exhaustion function is not carried out.

1.18 MOLD SHOCK OUT Operation

The room is kept clean by removing excessive moisture by rapidly lowering the humidity in the room for 1 hour, and keeping operation for 2 hours (total 3 hours).

Operation

It is not self-starting operation.



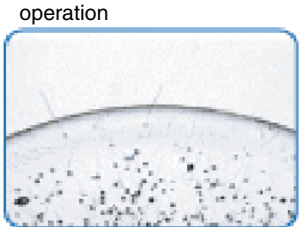
(R13895)

Features

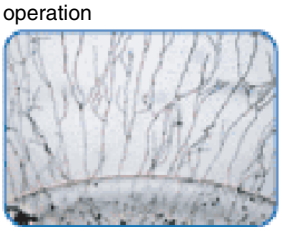
■ Dry shock method

Generation of mold is prevented by sudden drying of humid environment. It is generally said that the growth of mold can be prevented by lowering the humidity to half and continuing the operation for 3 hours.

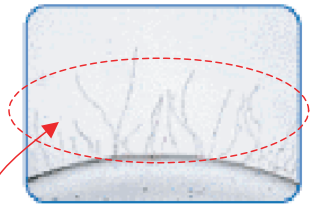
Before MOLD SHOCK OUT operation



Without MOLD SHOCK OUT operation



With MOLD SHOCK OUT operation



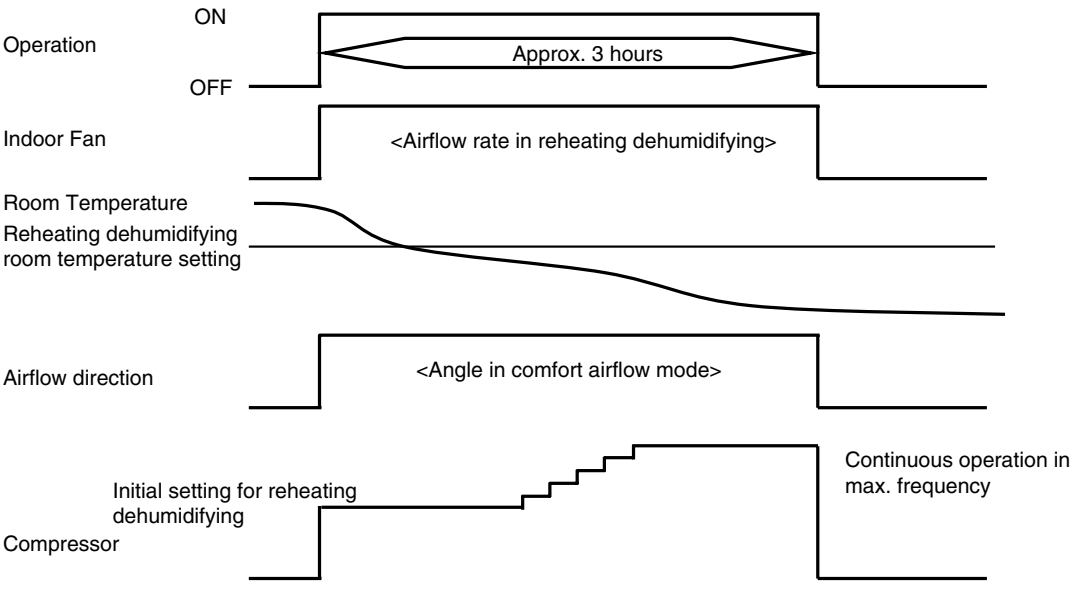
The test was conducted at DAIKIN's laboratory with use of the mold sensor of Environmental Biological Research Institute.

Fewer molds grow as compared with the case of without MOLD SHOCK OUT Operation.

(R13897)

■ Time chart

- Operation runs about for 3 hours in total while changing colors of the multi-colored indicator lamp.
- Reheating dehumidifying which dehumidifies continuously.



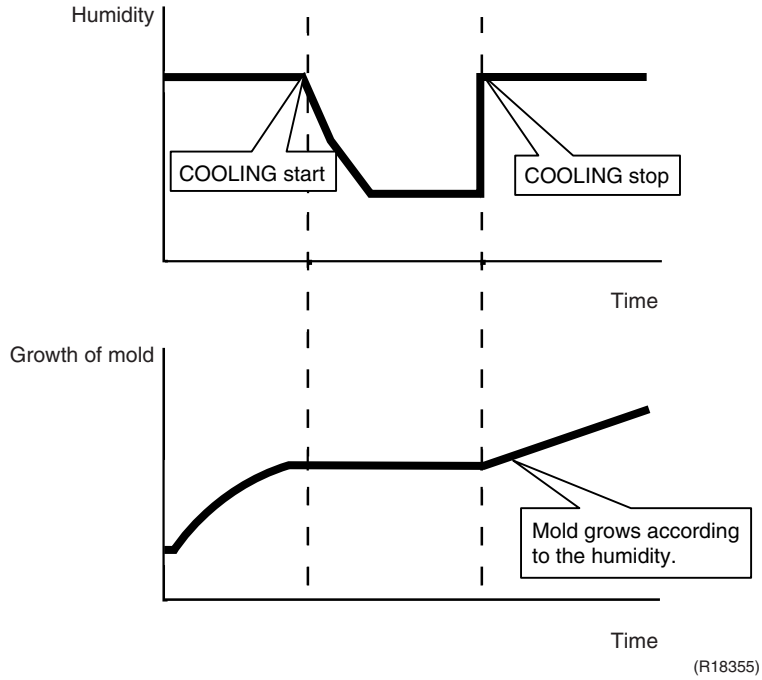
<Note> The room temperature becomes lower by about 5˚C than the temperature at the start of operation.

(R18332)

■ Comparison of COOLING operation and MOLD SHOCK OUT operation

Normal COOLING operation

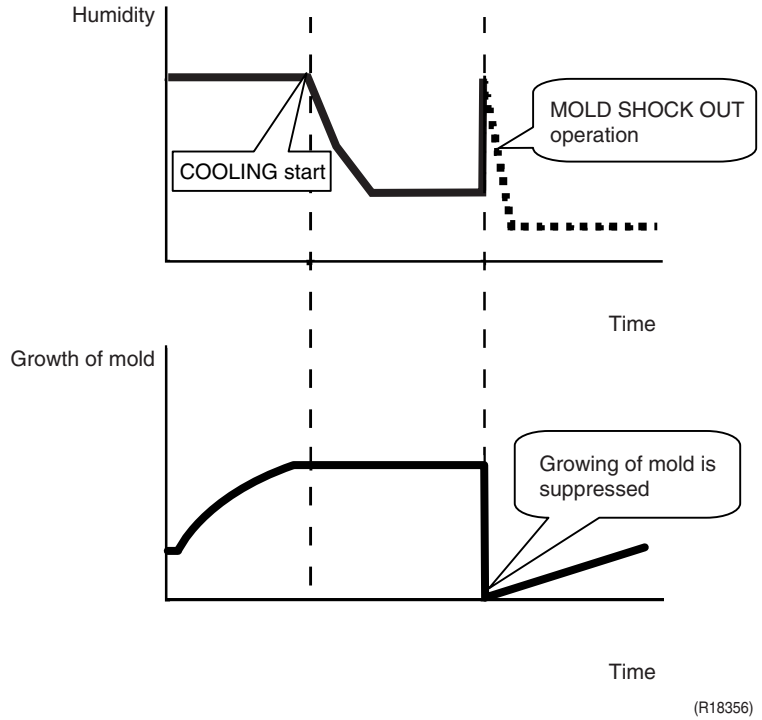
The humidity in the room returns to original level when COOLING operation stops.



(R18355)

MOLD SHOCK OUT operation after COOLING

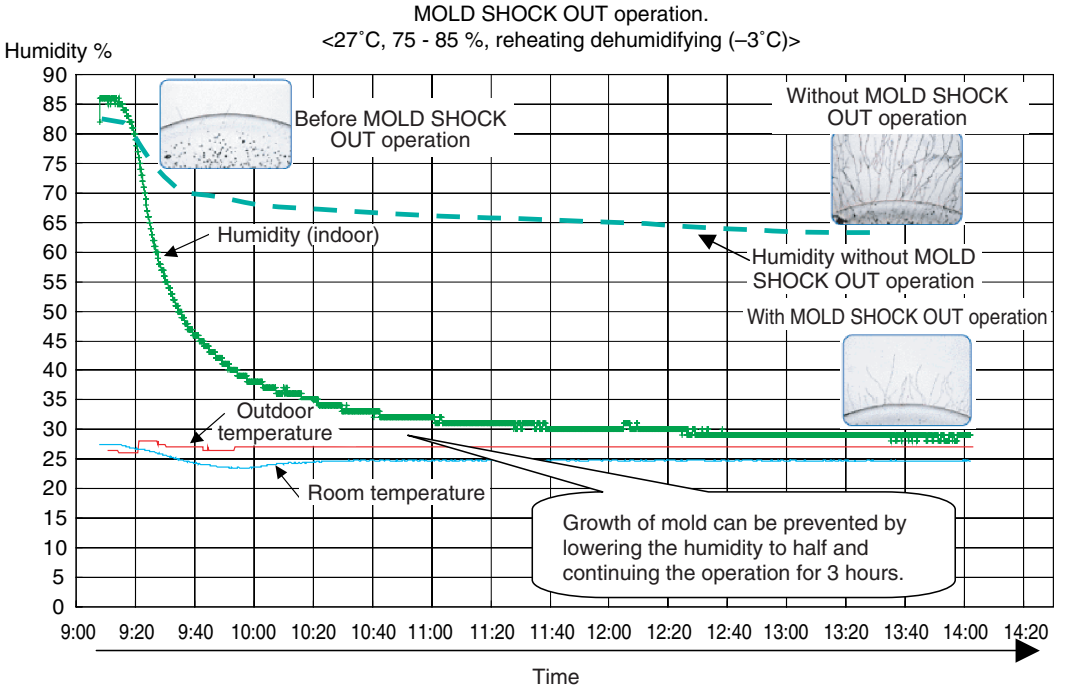
The humidity in the room is lowered suddenly.



(R18356)

Reference

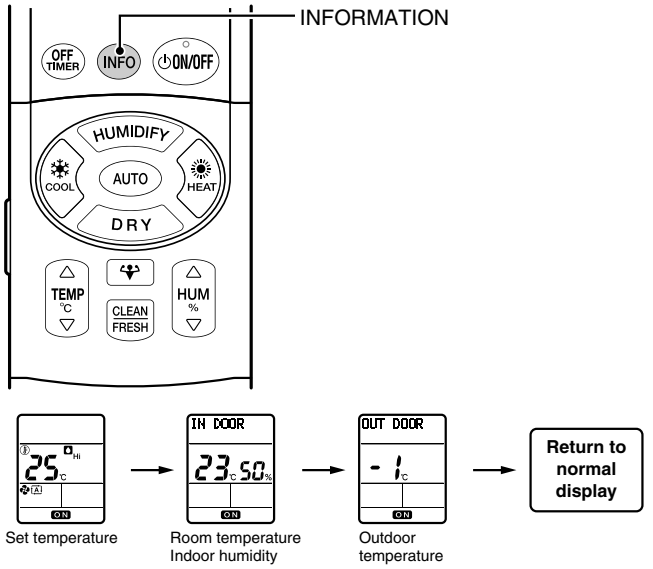
■ Effect



(R18146)

1.19 INFORMATION DISPLAY

Operation



(R13901)

Features

- After pressing the [INFO] button, point the remote controller at the indoor unit for 2 seconds.
- Every time you press the [INFO] button, room temperature, indoor humidity, and outdoor temperature are displayed.

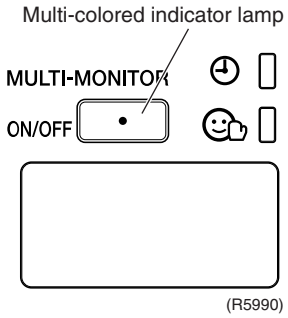
Note

- Outdoor temperature during operation may be displayed relatively high in “SARARA” DRYING or COOLING, and relatively low in HEATING (particularly when the outdoor unit is frosted) by influence of air blown out from the outdoor unit and the temperature of the outdoor heat exchanger.
- Lowest displayable outdoor temperature is –9°C. Even if the outdoor temperature is lower than this, -9 is displayed. Highest displayable outdoor temperature is 39°C. Even if the outdoor temperature is higher than this, 39 is displayed.
- Displayed temperature and humidity are those near the sensor.
- Displayed temperature or humidity may be different from the actual temperature or humidity depending on the conditions of indoor unit and outdoor unit installation (due to obstacle near the sensor or influence of direct sunlight).

1.20 Multi-colored Indicator Lamp

Features

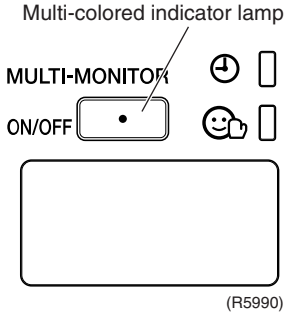
The current operation mode is displayed in color of the lamp of the indoor unit which changes in 8 colors. Operating status can be monitored even in AUTO operation in accordance with the actual operation.



- The lamp color changes according to the operation.
  - HEATING ..... red
  - "URURU" HUMIDIFYING / HUMID HEATING .... orange
  - COOLING ..... green
  - "SARARA" DRYING / DRY COOLING..... yellow
- The lamp color also changes according to the optional function.
  - FLASH STREAMER AIR PURIFYING / FRESH AIR SUPPLY VENTILATION ..... white (Only for the first 2 seconds during operation of the air conditioner.)
  - MOLD PROOF ..... purple & blue → blue & light blue → light blue & white → white
  - MOLD SHOCK OUT ..... blue & light blue & white

1.21 Monitor Brightness Setting

The brightness of the multi-colored indicator lamp can be adjusted HIGH, LOW, or OFF.
It is convenient when it is excessively bright while asleep.
Refer to "SET UP" on page 70 for adjustment.



1.22 Child Proof Lock Setting

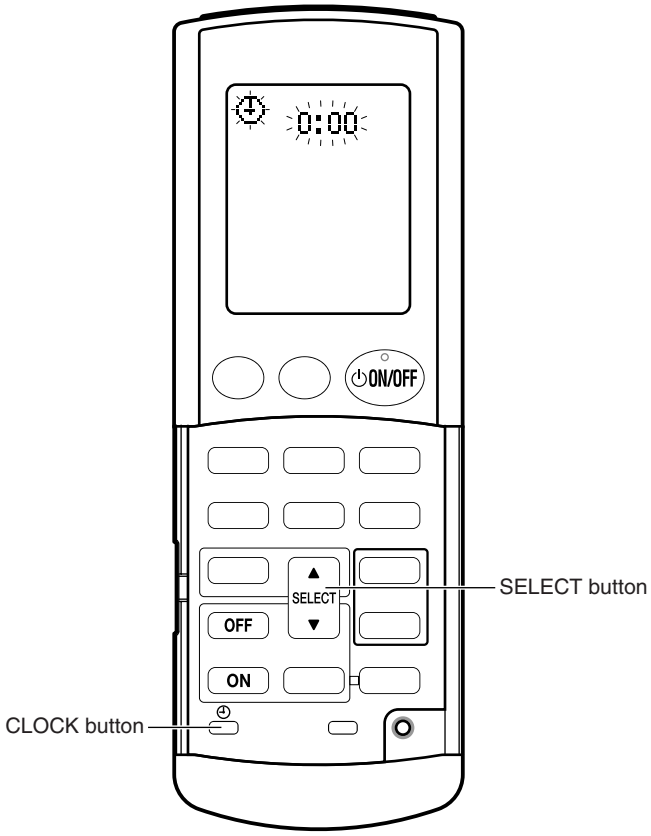
- The child proof lock setting restricts the remote controller operations to avoid misuse by children.
- Activate the child proof lock with the [SET UP] button. Refer to "SET UP" on page 70 for detail.
- While the child proof lock is ON, the display shows " CHILD LOCK ".
- The buttons other than [SET UP] button do not work when the child proof lock is ON.

1.23 Clock Setting

ARC447 Series

The clock can be set by taking the following steps:

1. Press the [CLOCK] button.
   → 0:00 is displayed and ⏲ blinks.
2. Press the [SELECT] ▲ or ▼ button to set the clock to the present time.
   Holding down the [SELECT] ▲ or ▼ button increases or decreases the time display rapidly.
3. Press the [CLOCK] button again.
   → : and ⏲ blink and clock setting is completed.

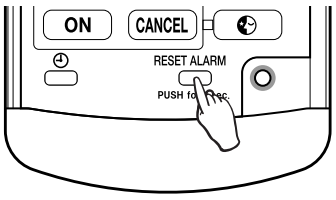


(R18147)

1.24 Filter Cleaning Indicator

When the unit is operated for about 2 weeks (about 340 hours), the filter cleaning indicator appears to inform you that the time of maintenance comes.
If the filter is left dirty, the power consumption increases by about 10%. It is recommended to clean the filter it periodically for energy-saving.

■ How to reset the filter cleaning indicator



When you press the [RESET ALARM] button on the remote controller for about 2 sec. toward the air-conditioner main unit after maintenance of the filter, the filter cleaning indicator disappears.

(R13903)

1.25 Other Functions

1.25.1 Hot-Start Function

In order to prevent the cold air blast that normally comes when heating operation is started, the temperature of the indoor heat exchanger is detected, and the airflow is either stopped or made very weak thereby carrying out comfortable heating of the room.
*The cold air blast is also prevented using similar control when the defrost operation is started or when the thermostat is turned ON.

1.25.2 Signal Receiving Sign

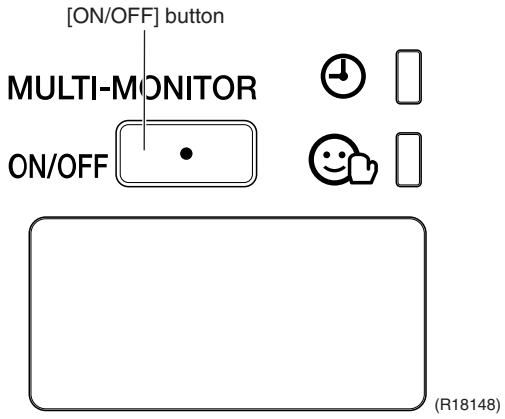
When the indoor unit receives a signal from the remote controller, the unit emits a signal receiving sound.

1.25.3 Indoor Unit [ON/OFF] Button

An [ON/OFF] button is provided on the display of the unit.

- Press the [ON/OFF] button once to start operation. Press once again to stop it.
- The [ON/OFF] button is useful when the remote controller is missing or the battery has run out.
- The operation mode refers to the following table.

Operation mode	Temperature setting	Airflow rate
AUTO	25°C	Automatic



<Forced cooling operation>
Forced cooling operation can be started by pressing the [ON/OFF] button for 5 to 9 seconds while the unit is not operating.
Refer to page 147 for detail.

Note: When the [ON/OFF] button is pressed for 10 seconds or more, the forced cooling operation is stopped.

1.25.4 Titanium Apatite Photocatalytic Air-Purifying Filter

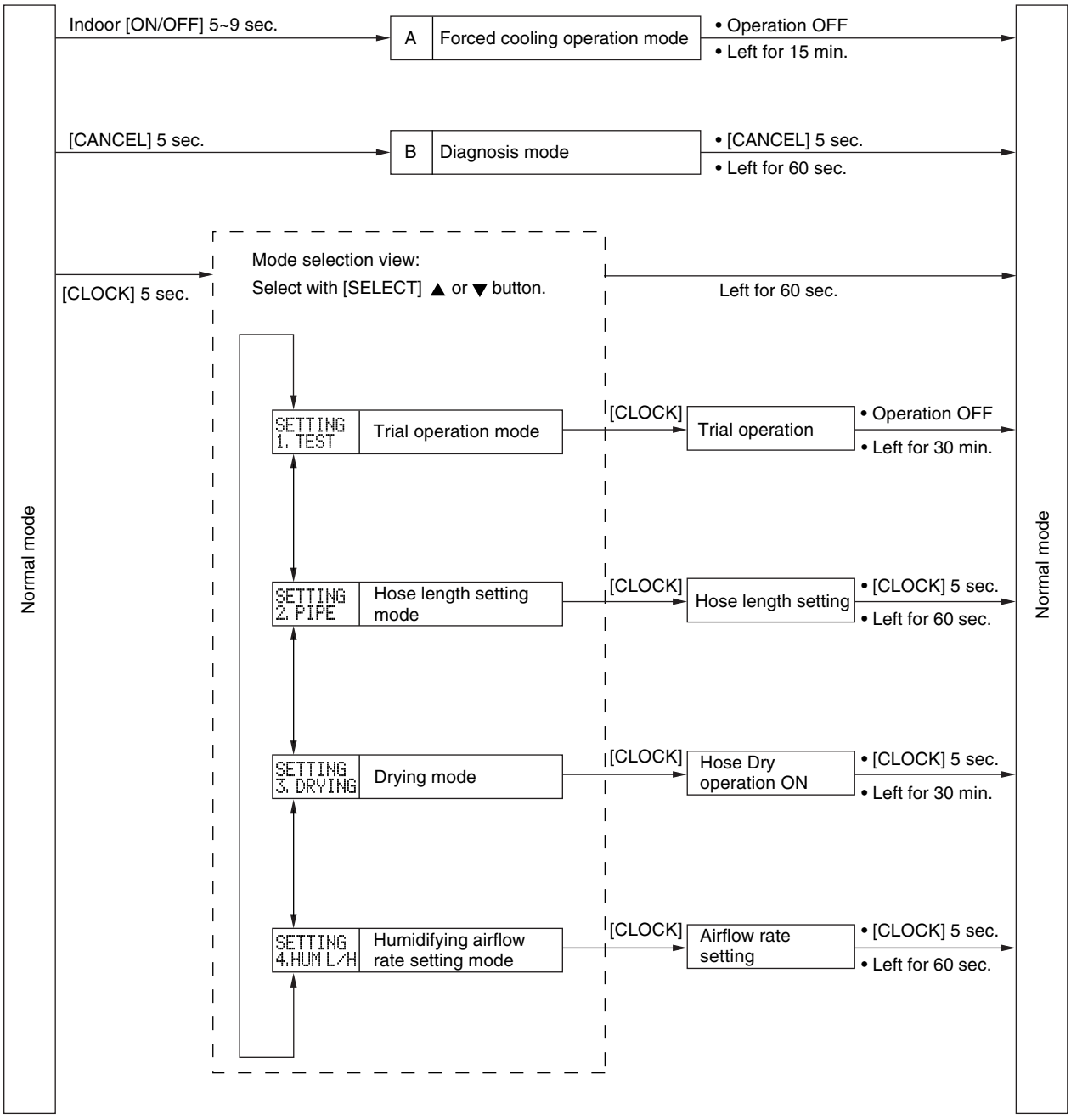
This filter combines the Air-Purifying Filter and Titanium Apatite Photocatalytic Deodorizing Filter as a single highly effective filter. The filter traps microscopic particles, decomposes odors and even deactivates bacteria and viruses. It lasts for 3 years without replacement if washed every 6 months.

1.25.5 Auto-restart Function

If a power failure (including one for just a moment) occurs during the operation, the operation restarts automatically when the power is restored in the same condition as before the power failure.

Note: It takes 3 minutes to restart the operation because the 3-minute standby function is activated.

1.26 Table for Special Modes



(R13905)

A. Forced cooling operation mode:
The buzzer beeps, and the timer and multi-colored indicator lamp illuminate.
Refer to page 147 for detail.

B. Diagnosis mode:
You can identify the error code in a quite simple way.
Refer to page 73 for detail.

1. Trial operation mode:
- You can select a mode for trial operation with the remote controller.
- The operation continues for approx. 30 minutes.

Refer to the installation manual.

2. Hose length setting mode:
You can set the humidifying hose length or check the preset value.
Refer to the installation manual.

3. Drying mode:
- Hose Dry operation is a forced drying operation for humidifying hose.
- The operation continues for approx. 30 minutes.
- Cooling, heating, or dry operation is not available during Hose Dry operation.

4. Humidifying airflow rate setting mode:
Humidifying airflow rate setting mode allows to fine-tune the speed of the humidifying fan around ±10 % relative to Automatic. Set high to increase the airflow rate, or set to low to decrease.

2. Control Specification

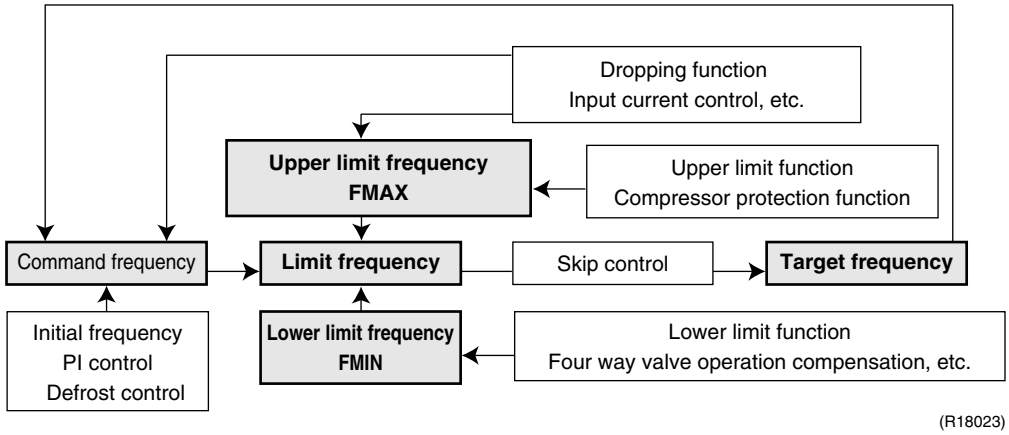
2.1 Frequency Control

Outline

Frequency is determined according to the difference between the room thermistor temperature and the target temperature.
The function is explained as follows.

1. How to determine frequency
2. Frequency command from the indoor unit (Difference between the room thermistor temperature and the target temperature)
3. Frequency initial setting
4. PI control

When the shift of the frequency is less than zero (ΔF<0) by PI control, the target frequency is used as the command frequency.



Detail

How to Determine Frequency
The compressor's frequency is determined by taking the following steps.

1. Determine command frequency

- Command frequency is determined in the following order of priority.
  1.Limiting defrost control time
  2.Forced cooling
  3.Indoor frequency command

2. Determine upper limit frequency

- The minimum value is set as an upper limit frequency among the frequency upper limits of the following functions:
  Compressor protection, input current, discharge pipe temperature, heating peak-cut, freeze-up protection, defrost.

3. Determine lower limit frequency

- The maximum value is set as an lower limit frequency among the frequency lower limits of the following functions:
  Four way valve operation compensation, draft prevention, pressure difference upkeep.

4. Determine prohibited frequency

- There is a certain prohibited frequency such as a power supply frequency.

Indoor Frequency Command (ΔD signal)

The difference between the room thermistor temperature and the target temperature is taken as the "ΔD signal" and is used for frequency command.

Temperature difference	ΔD signal	Temperature difference	ΔD signal	Temperature difference	ΔD signal	Temperature difference	ΔD signal
–2.0	∗Th OFF	0	4	2.0	8	4.0	C
–1.5	1	0.5	5	2.5	9	4.5	D
–1.0	2	1.0	6	3.0	A	5.0	E
–0.5	3	1.5	7	3.5	B	5.5	F

∗Th OFF = Thermostat OFF

Frequency Initial Setting

<Outline>

When starting the compressor, the frequency is initialized according to the ΔD value and the Q value of the indoor unit.

Q value: Indoor unit output determined from indoor unit volume, airflow rate and other factors.

PI Control (Determine Frequency Up / Down by ΔD Signal)

1. **P control**

   The ΔD value is calculated in each sampling time (15 ~ 20 seconds), and the frequency is adjusted according to its difference from the frequency previously calculated.

2. **I control**

   If the operating frequency does not change for more than a certain fixed time, the frequency is adjusted according to the ΔD value.
   When the ΔD value is small, the frequency is lowered.
   When the ΔD value is large, the frequency is increased.

3. **Frequency management when other controls are functioning**

- When frequency is dropping;
  Frequency management is carried out only when the frequency drops.
- For limiting lower limit
  Frequency management is carried out only when the frequency rises.

4. **Upper and lower limit of frequency by PI control**

   The frequency upper and lower limits are set according to the command on indoor unit.
   When the indoor or outdoor unit quiet operation command comes from the indoor unit, the upper limit frequency is lowered than the usual setting.

2.2 Controls at Mode Changing / Start-up

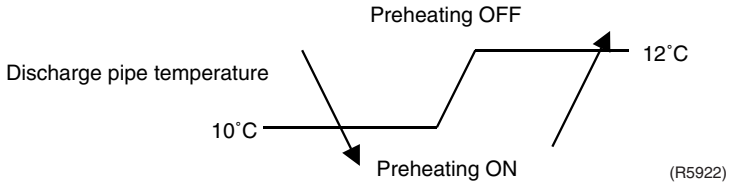
2.2.1 Preheating Operation

Outline

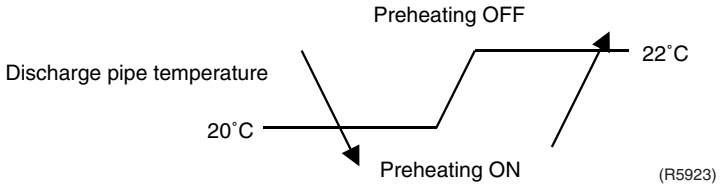
The inverter operation in open phase starts with the conditions of the preheating command from the indoor unit, the outdoor temperature, and the discharge pipe temperature.

Detail

Outdoor temperature ≥ 7°C



Outdoor temperature < 7°C



2.2.2 Four Way Valve Switching

Outline

In heating operation, current is conducted, and in cooling and defrost operation, current is not conducted. In order to eliminate the switching sound, as the four way valve coil switches from ON to OFF when the heating is stopped, the OFF delay switch of the four way valve is carried out.

Detail

OFF delay switch of four way valve:
The four way valve coil is energized for 160 seconds after the operation is stopped.

2.2.3 Four Way Valve Operation Compensation

Outline

At the beginning of the operation as the four way valve is switched, the differential pressure to activate the four way valve is acquired by having output frequency which is more than a certain fixed frequency, for a certain fixed time.

Detail

Starting Conditions

1. When the compressor starts and the four way valve switches from OFF to ON
2. When the four way valve switches from ON to OFF during operation
3. When the compressor starts after resetting
4. When the compressor starts after the fault of four way valve switching

The lower limit of frequency keeps **A** Hz for **B** seconds with any conditions 1 through 4 above.

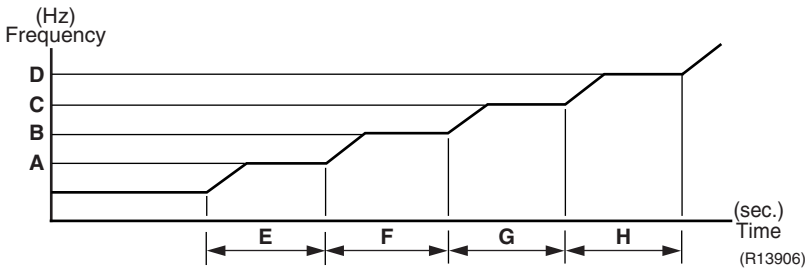
Condition		**A** (Hz)	**B** (seconds)
Cooling		52	60
Heating	outdoor temperature < 16°C	52	
	outdoor temperature ≥ 16°C	– 0.9 × outdoor temperature + 68	

2.2.4 3-minute Standby

Turning on the compressor is prohibited for 3 minutes after turning it off.
(Except when defrosting.)

2.2.5 Compressor Protection Function

When turning the compressor from OFF to ON, the upper limit of frequency is set as follows.
(The function is not activated when defrosting.)



	Cooling	Heating
A (Hz)	52	48
B (Hz)	54	58
C (Hz)	78	80
D (Hz)	98	98
E (seconds)	220	220
F (seconds)	140	140
G (seconds)	60 ★	60 ★
H (seconds)	60 ★	60 ★

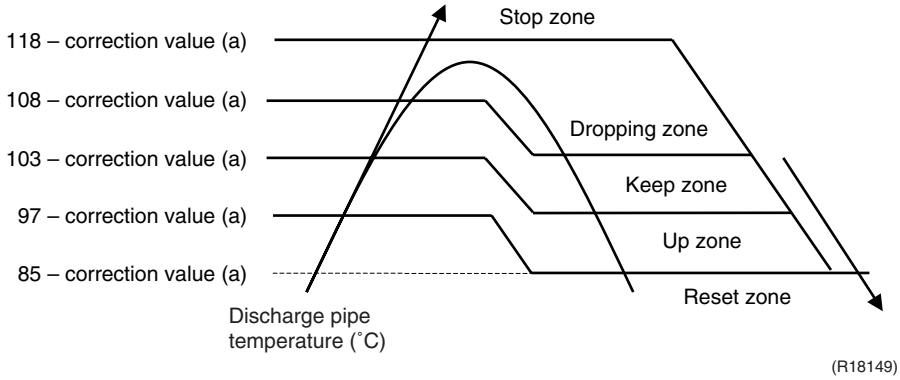
★: The upper limit of frequencies **G** and **H** are the same.

2.3 Discharge Pipe Temperature Control

Outline

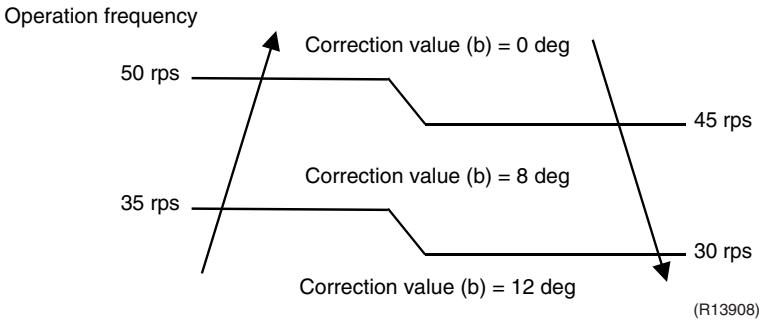
The discharge pipe temperature is used as the internal temperature of the compressor. If the discharge pipe temperature rises above a certain level, the upper limit of frequency is set to keep the discharge pipe temperature from rising further.

Detail

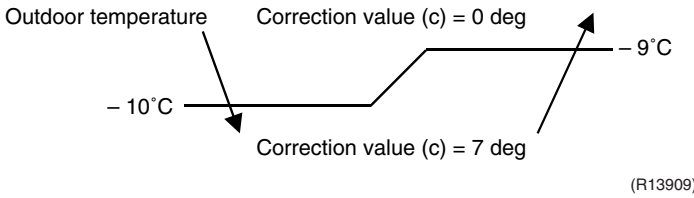


Correction value (a) = correction value by operation frequency (b)
+ correction value by outdoor temperature (c)

Correction value by operation frequency (b)



Correction value by outdoor temperature (c)



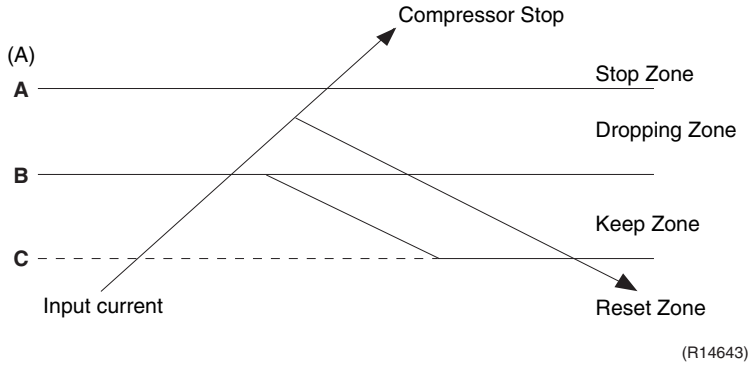
Zone	Control
Stop zone	When the temperature reaches the stop zone, the compressor stops.
Dropping zone	The upper limit of frequency decreases.
Keep zone	The upper limit of frequency is kept.
Up zone	The upper limit of frequency increases.
Reset zone	The upper limit of frequency is canceled.

2.4 Input Current Control

Outline

The microcomputer calculates the input current while the compressor is running, and sets the frequency upper limit from the input current.
In case of heat pump model, this control which is the upper limit control of the frequency takes priority to the lower limit of control of four way valve operation compensation.

Detail



Frequency control in each zone

Stop zone

- After 5 seconds in this zone, the compressor is stopped.

Dropping zone

- The upper limit of the compressor frequency is defined as operation frequency – 2 Hz.
- After this, the output frequency is pulled down by 2 Hz every second until it reaches the keep zone.

Keep zone

- The present maximum frequency goes on.

Reset zone

- Limit of the frequency is canceled.

	28 class		42 class		50 class	
	Cooling	Heating	Cooling	Heating	Cooling	Heating
A (A)	14.0		14.0		14.0	
B (A)	5.5	10.5	7.5	10.5	10.0	10.5
C (A)	4.5	9.5	6.5	9.5	9.0	9.5

Limitation of current dropping and stop value according to the outdoor temperature

- The current drops when outdoor temperature becomes higher than a certain level (depending on the model).

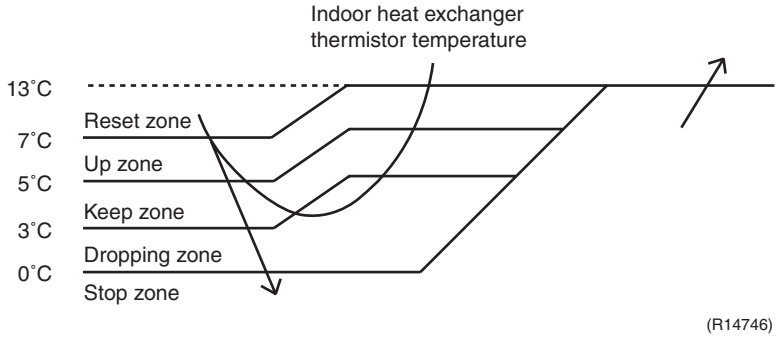
2.5 Freeze-up Protection Control

Outline

During cooling operation, the signal sent from the indoor unit controls the operating frequency limitation and prevents freezing of the indoor heat exchanger. (The signal from the indoor unit is divided into zones.)

Detail

The operating frequency limitation is judged with the indoor heat exchanger temperature.



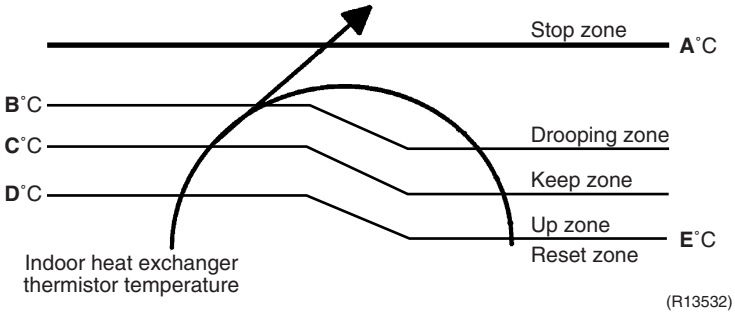
Zone	Control
Stop zone	When the temperature reaches the stop zone, the compressor stops.
Dropping zone	The upper limit of frequency decreases.
Keep zone	The upper limit of frequency is kept.
Up zone	The upper limit of frequency increases.
Reset zone	The upper limit of frequency is canceled.

2.6 Heating Peak-cut Control

Outline

During heating operation, the indoor heat exchanger temperature determines the frequency upper limit to prevent abnormal high pressure.

Detail



Zone	Control
Stop zone	When the temperature reaches the stop zone, the compressor stops.
Dropping zone	The upper limit of frequency decreases.
Keep zone	The upper limit of frequency is kept.
Up zone	The upper limit of frequency increases.
Reset zone	The upper limit of frequency is canceled.

A (°C)	**B** (°C)	**C** (°C)	**D** (°C)	**E** (°C)
65	56	53	51	46

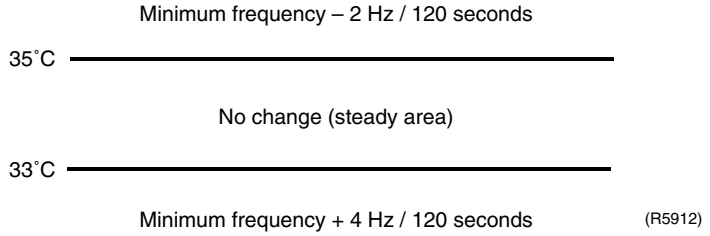
2.7 Draft Prevention Control (Hot-Start Function)

Outline

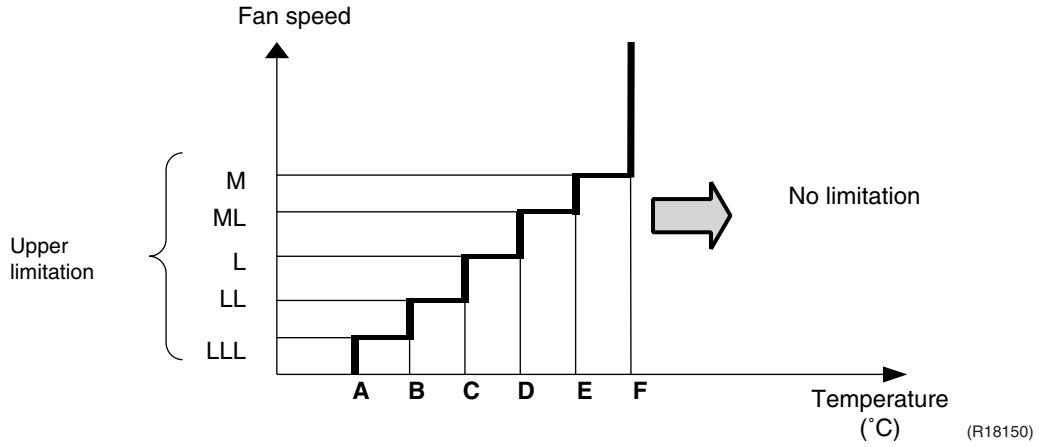
Draft prevention control prevents cold draft when the unit is started up in heating operation. This function is activated when the indoor heat exchanger temperature drops.

Detail

Draft prevention control is conducted by monitoring indoor heat exchanger temperature. When the indoor heat exchanger temperature drops below 33°C, the minimum frequency of the compressor increases.



When the indoor heat exchanger is not hot enough, the indoor fan does not start at the set speed. The fan speed increases step by step. The limitation of the fan speed is lifted when the indoor heat exchanger temperature rises above **F**°C.



	A (°C)	**B** (°C)	**C** (°C)	**D** (°C)	**E** (°C)	**F** (°C)
28 class	10	25	33	34	35	36
42/50 class	10	25	35	37	38	39

2.8 Dew Prevention Control

Outline

Cooling the air around us means that the air is dehumidified (condensation of water on the indoor heat exchanger). But because the air is cooled down, less moisture can present in the air and as a consequence the relative humidity of the air rises. When the relative humidity of the outlet air nears 100%, water may be blown out. To prevent this from happening, the unit changes, its target evaporating temperature and the frequency of the compressor under certain circumstances. Normally speaking, even under these conditions (dew prevention safety active), the room should still be cooled down, only slower. Of course, if the capacity of the indoor unit is small in comparison to the heat load, this is not the case and capacity shortage complaints may follow.

Detail

- When the indoor heat exchanger temperature is lower than the target temperature of the indoor heat exchanger, the compressor frequency decreases by 2 Hz in every minute.
- The target temperature of the indoor heat exchanger is calculated with the room temperature and the indoor humidity.

2.9 Outdoor Fan Control

1. Fan ON control to cool down the electrical box
The outdoor fan is turned ON when the electrical box temperature is high while the compressor is OFF.

2. Fan OFF control while defrosting
The outdoor fan is turned OFF while defrosting.

3. Fan OFF delay when stopped
The outdoor fan is turned OFF 60 seconds after the compressor stops.

4. Fan ON/OFF control when operation starts / stops
The outdoor fan is turned ON when the operation starts. The outdoor fan is turned OFF when the operation stops.

5. Fan ON/OFF control during cooling operation
The rotation speed of the outdoor fan is fixed.
The outdoor fan is turned OFF when the outdoor temperature drops below 0°C.

	Cooling
28 class	800 rpm
42 class	850 rpm
50 class	850 rpm

6. Fan control during heating operation
The rotation speed of the outdoor fan is fixed.

	Heating
28 class	750 rpm
42 class	760 rpm
50 class	810 rpm

2.10 Liquid Compression Protection Function

Outline

In order to obtain the dependability of the compressor, the compressor is stopped according to the outdoor temperature and the outdoor heat exchanger temperature.

Detail

Outdoor temperature and outdoor heat exchanger temperature
- Cooling or dry operation
- Compressor on
- Outdoor temperature < 10°C
- Outdoor heat exchanger temperature < 17°C

If all of these are fulfilled for 11 minutes, the compressor stops, the system is reset and restarted after 3 minutes.

Outdoor temperature only
- Cooling or dry operation
- Not in forced cooling operation
- Outdoor temperature < 0°C

If all of these are fulfilled, the compressor stops, the system resumes operation when the outdoor temperature rises above 0°C.

2.11 Defrost Control

Outline

Defrosting is carried out by the cooling cycle (reverse cycle). The defrosting time or outdoor heat exchanger temperature must be more than a certain value to finish.

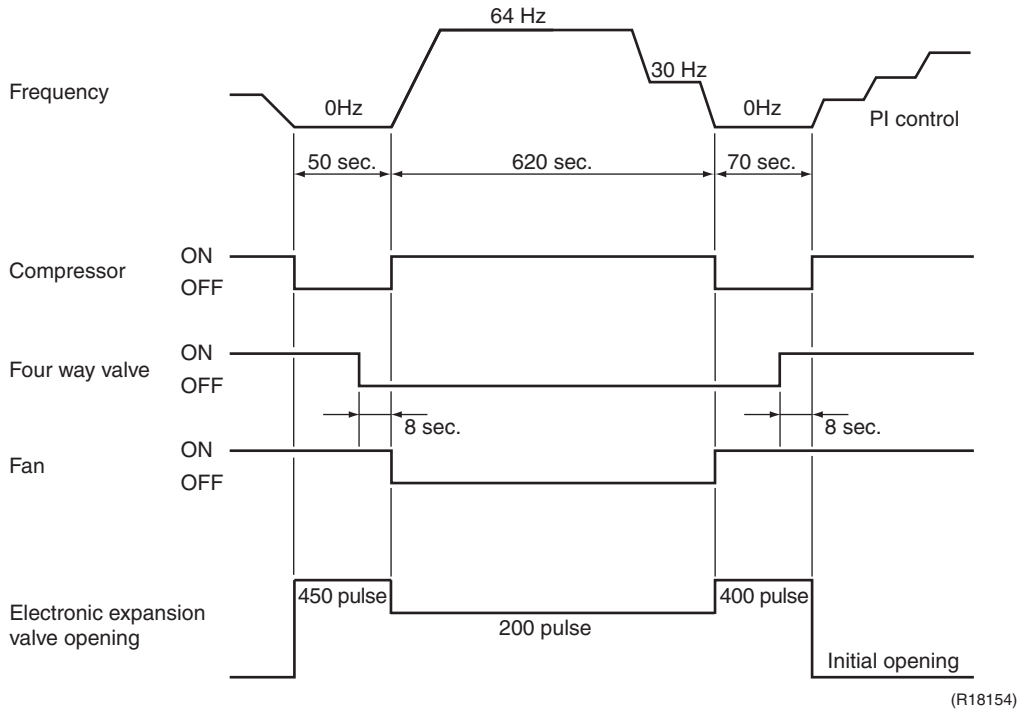
Detail

Conditions for Starting Defrost

- The starting conditions is determined with the outdoor temperature and the outdoor heat exchanger temperature.
- The system is in heating operation.
- The compressor operates for 6 minutes.
- More than 25 minutes of accumulated time pass after the start of the operation, or ending the previous defrosting.

Conditions for Canceling Defrost

The judgment is made with outdoor heat exchanger temperature. (6 ~ 22°C)



2.12 Electronic Expansion Valve Control

Outline

The following items are included in the electronic expansion valve control.

Electronic expansion valve is fully closed

1. Electronic expansion valve is fully closed when turning on the power.
2. Pressure equalizing control

Open Control

1. Electronic expansion valve control when starting operation
2. Electronic expansion valve control when the frequency changes
3. Electronic expansion valve control for defrosting
4. Electronic expansion valve control when the discharge pipe temperature is abnormally high
5. Electronic expansion valve control when the discharge pipe thermistor is disconnected

Feedback Control

Target discharge pipe temperature control

Detail

The followings are the examples of electronic expansion valve control which function in each operation mode.

Operation pattern	Main control	Secondary control	
		Control when the frequency changes	High discharge pipe temperature control
Power ON	Power initialization control	—	—
Cooling operation	Starting control	—	●
	Target discharge pipe temperature control	●	●
Stop	Pressure equalizing control	—	—
Heating operation	Starting control	—	●
	Target discharge pipe temperature control	●	●
Stop	Pressure equalizing control	—	—
Operation with discharge pipe thermistor disconnected	Starting control	—	●
	Target discharge pipe temperature control	—	—
Stop	Pressure equalizing control	—	—

● : Holding Functions
— : No Functions

2.12.1 Fully Closing with Power ON

The electronic expansion valve is initialized when turning on the power. The opening position is set and the pressure equalization is developed.

2.12.2 Pressure Equalizing Control

When the compressor is stopped, the pressure equalizing control is activated. The electronic expansion valve opens, and develops the pressure equalization.

2.12.3 Opening Limit Control

Outline

A maximum and minimum opening of the electronic expansion valve are limited.

Detail

Maximum opening (pulse)	470
Minimum opening (pulse)	52

The electronic expansion valve is fully closed when cooling operation stops, and is opened at fixed degree during defrosting.

2.12.4 Starting Operation Control

The electronic expansion valve opening is controlled when the operation starts, and prevents superheating or liquid compression.

2.12.5 Control when the Frequency Changes

When the target discharge pipe temperature control is active, if the target frequency is changed to a specified value in a certain time period, the target discharge pipe temperature control is canceled and the target opening of the electronic expansion valve is changed according to the shift.

2.12.6 High Discharge Pipe Temperature Control

When the compressor is operating, if the discharge pipe temperature exceeds a certain value, the electronic expansion valve opens and the refrigerant runs to the low pressure side. This procedure lowers the discharge pipe temperature.

2.12.7 Control for Disconnection of the Discharge Pipe Thermistor

Outline

The disconnection of the discharge pipe thermistor is detected by comparing the discharge pipe temperature with the condensation temperature. If the discharge pipe thermistor is disconnected, the electronic expansion valve opens according to the outdoor temperature and the operation frequency, and operates for a specified time, and then stops.
After 3 minutes, the operation restarts and checks if the discharge pipe thermistor is disconnected. If the discharge pipe thermistor is disconnected, the system stops after operating for a specified time.
If the disconnection is detected repeatedly, the system is shut down. When the compressor runs for 60 minutes without any error, the error counter is reset.

Detail

When the starting control (360 seconds) finishes, the detection timer for disconnection of the discharge pipe thermistor (720 seconds) starts. When the timer is over, the following adjustment is made.

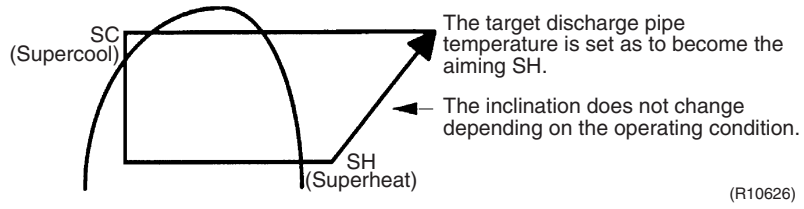
1. When the operation mode is cooling
   When the following condition is fulfilled, the discharge pipe thermistor disconnection is ascertained.
   Discharge pipe temperature + 6°C < outdoor heat exchanger temperature
2. When the operation mode is heating
   When the following condition is fulfilled, the discharge pipe thermistor disconnection is ascertained.
   Discharge pipe temperature + 6°C < indoor heat exchanger temperature

Adjustment when the thermistor is disconnected

When the disconnection is ascertained, the compressor continues operation for 9 minutes and then stops.
When the compressor stops repeatedly, the system is shut down.

2.12.8 Target Discharge Pipe Temperature Control

The target discharge pipe temperature is obtained from the indoor and outdoor heat exchanger temperature, and the electronic expansion valve opening is adjusted so that the actual discharge pipe temperature becomes close to the target discharge pipe temperature. (Indirect SH (superheating) control using the discharge pipe temperature)



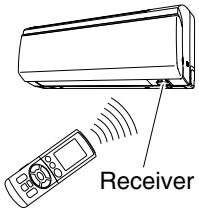
The electronic expansion valve opening and the target discharge pipe temperature are adjusted every 20 seconds. The target discharge pipe temperature is controlled by indoor heat exchanger temperature and outdoor heat exchanger temperature. The opening degree of the electronic expansion valve is controlled by followings.

- Target discharge pipe temperature
- Actual discharge pipe temperature
- Previous discharge pipe temperature

Part 5
Remote Controller

1. FTXR28/42/50EV1B9

Signal transmitter / receiver



- To use the remote controller, aim the transmitter at the indoor unit. If there is anything to block signals between the unit and the remote controller, such as a curtain, the unit will not operate.
- The maximum distance for communication is approx. 7m.

INFORMATION*1 button

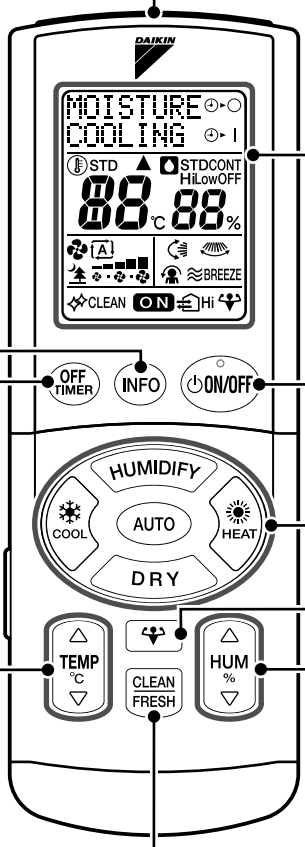
- Displays the indoor temperature and humidity and the outdoor temperature.

COUNTDOWN OFF TIMER*2 button

- Sets the time to stop.

TEMPERATURE adjustment*3 buttons

- Changes the temperature setting.



Display

- Displays the current settings. (In this illustration, each section is shown with all its displays on for the purpose of explanation.)

ON/OFF button

- Press this button once to start operation. Press once again to stop it.

Direct operation buttons

- AUTO*4 button
- "URURU" HUMIDIFYING*5 button
- HEATING button
- "SARARA" DRYING*6 button
- COOLING button

POWERFUL*7 button

- POWERFUL operation

HUMIDITY*3 buttons

- Changes the humidity setting.

FLASH STREAMER AIR PURIFYING*8 / FRESH AIR SUPPLY VENTILATION*9 button

- Cleans the room air.

(R18216)

HEAT PUMP model	ARC447A1

Reference Refer to the following pages for detail.

★1	INFORMATION DISPLAY	48
★2	COUNTDOWN OFF TIMER	38
★3	Temperature and humidity settings	70
★4	AUTO Operation	32
★5	"URURU" HUMIDIFYING / HUMID HEATING Operation	22
★6	"SARARA" DRYING / DRY COOLING Operation	30
★7	POWERFUL Operation	42
★8	FLASH STREAMER AIR PURIFYING Operation	34
★9	FRESH AIR SUPPLY VENTILATION Operation	36

Note: Refer to the operation manual of applicable model for detail. You can download operation manual from 'DISTRIBUTOR'S PAGE':
DISTRIBUTOR'S PAGE → Product Information → Operation/Installation Manual
(URL: http://global.daikin.com/Daikin/global/Distributors_admin/user_mng/login.php)

Open the lid

SWING★16 button
- Adjusts the airflow direction.
- When you press the SWING button, the flap moves up and down, or (and) the louver moves right and left. The flap (louver) stops when you press the SWING button again.

MOISTURIZING★17 button
- Keeps humidity high to moisturize your skin.

FAN setting★10 button
- Selects the airflow rate setting every time you press this button.

HOME LEAVE VENTILATION★18 button
- Ventilates the room during home leaving.

TIMER SELECT button

MOLD SHOCK OUT★19 button
- Continuously runs the dehumidifying operation to keep the room air dry and clean.

COMFORT AIRFLOW★11 / COOLING BREEZE★12 button
- Adjusts air direction and volume.

MOLD PROOF★20 button
- Dries the inside of the unit to prevent mold and odor growth.

SET UP★13 button
- Sets the unit operation and remote controller display according to your preference.

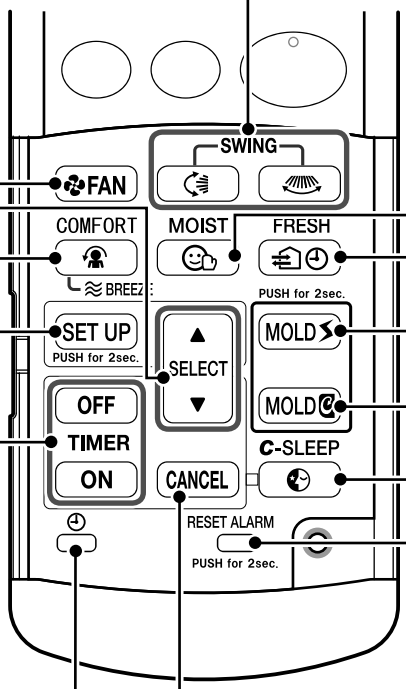
COMFORT SLEEP★21 button
- Controls the room temperature to support comfort sleep and pleasant wake-up.

TIMER Setting★14 button
- Sets the time for timer-on or timer-off.

RESET★22 button
- Cleaning indicator reset.

CLOCK★15 button

CANCEL button



(R18217)

Reference

Refer to the following pages for detail.

★10	Airflow Rate	70
★11	COMFORT AIRFLOW Operation	18
★12	COOLING BREEZE Operation	19
★13	SET UP	70
★14	24-hour ON/OFF TIMER	38
★15	Clock Setting	50

★16	Airflow direction control	17
★17	MOISTURIZING Operation	33
★18	HOME LEAVE VENTILATION	37
★19	MOLD SHOCK OUT Operation	45
★20	MOLD PROOF Operation	43
★21	COMFORT SLEEP Operation	40
★22	RESET	50

Note: Refer to the operation manual of applicable model for detail. You can download operation manual from 'DISTRIBUTOR'S PAGE':
DISTRIBUTOR'S PAGE → Product Information → Operation/Installation Manual
(URL: http://global.daikin.com/Daikin/global/Distributors_admin/user_mng/login.php)

Temperature and Humidity Settings

■ Heating "URURU" HUMIDIFYING Operation

	HEATING	HUMID HEATING	"URURU" HUMIDIFYING
TEMP	10˚C – 30˚C		———
HUM	OFF ⇄ LOW ⇄ STD ⇄ HIGH ⇄ CONT		LOW ⇄ STD ⇄ HIGH ⇄ CONT

■ Cooling "SARARA" DRYING Operation

	COOLING	DRY COOLING	"SARARA" DRYING
TEMP	18˚C – 32˚C		–3˚C – STD
HUM	OFF ⇄ HIGH ⇄ STD ⇄ LOW ⇄ CONT		HIGH ⇄ STD ⇄ LOW ⇄ CONT

■ AUTO Operation

TEMP	18˚C – 30˚C

Airflow Rate

To change the airflow rate, press the " FAN " button during operation.
Five levels of airflow rate setting from " " to " " plus " A " " " are available.

Operating mode	Airflow rate setting	COMFORT AIRFLOW	COOLING BREEZE
"SARARA" DRYING	A	●	●
DRY COOLING		●	●
MOISTURIZING		●	—
AUTO / COOLING	A	●	●
HEATING		●	—
HUMID HEATING		●	—
"URURU" HUMIDIFYING		—	—
FLASH STREAMER AIR PURIFYING / FRESH AIR SUPPLY VENTILATION		—	●

● : Available
— : Not available

SET UP

Set the unit operation and remote controller display according to your preference by taking the following steps.

1. Hold the " SET UP PUSH for 2sec. " button down for about 2 seconds to activate setup mode.
2. The item will change every time the " SET UP PUSH for 2sec. " button is pressed.
3. The setting will change every time the " SELECT " button is pressed.

The display on the remote control returns to normal if no setting is made for 10 seconds.

Item	Setting ([ ] is default.)	Description
CHILD PROOF LOCK ON/OFF	[OFF] ◀ ▶ ON	• Restricts the remote controller operations to avoid misuse by children.
MOLD PROOF ON/OFF	[OFF] ◀ ▶ ON	• If the unit is set to "MOLD PROOF ON", it may automatically enter MOLD PROOF operation mode after operating in DRYING, DRY COOLING or COOLING operation mode, depending on the amount of time it had been operating. This is to dry out the interior of the air conditioner.
MONITOR BRIGHTNESS	[HIGH] ◀ ▶ LOW ◀ ▶ OFF	• Changes the brightness of the indoor unit display.
BEEP volume	[LOW] ◀ ▶ HIGH ◀ ▶ OFF	• Sets the receiving tone volume.
CONTRAST Setting	1 ◀ ▶ [6] ◀ ▶ 16	• Sets the grayscale for the remote controller LCD. • Selectable from contrast 1 to 16.

Setting complete

Part 6
Service Diagnosis

1. Convenient Service Check Function

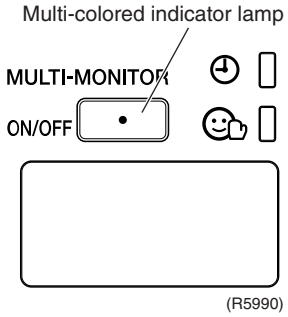
1.1 Indoor Unit

Multi-colored Indicator Lamp

The multi-colored indicator lamp blinks when any of the following errors is detected.

1. When a protection device of the indoor or outdoor unit is activated, or when the thermistor malfunctions.
2. When a signal transmission error occurs between the indoor and outdoor units.

In either case, conduct the diagnostic procedure described in the following pages.



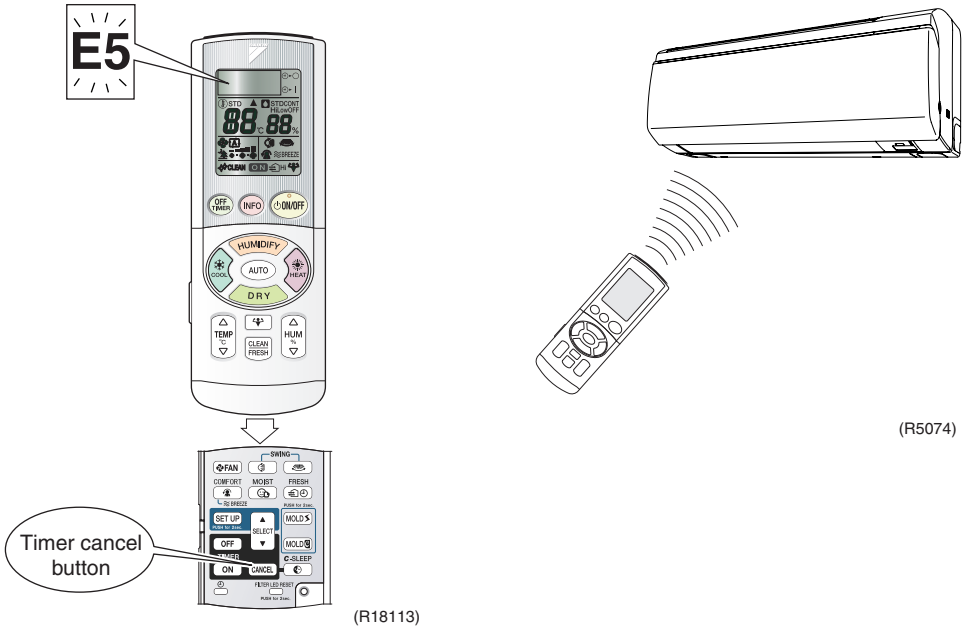
(R5990)

Service Monitor

The indoor unit has one green LED (LED A) on the control PCB. When the microcomputer works in order, the LED A blinks.

Remote Controller

With the wireless remote controller, error codes can be confirmed.



(R18113)

(R5074)

1. Hold the timer cancel button down for 5 seconds, with the remote controller set toward the indoor unit.
2. The display on the remote controller shows an error code with a long beep.

<Note>

To cancel the indication of error code, hold the timer cancel button down for 5 seconds.
When the remote controller is left untouched for 60 seconds, it also returns to the normal mode.

1.2 Outdoor Unit

The outdoor unit has 2 green LEDs (LED A, LED 5) on the PCB. When the microcomputer works in order, the LEDs blink.

2. Troubleshooting

2.1 Error Codes and Description

Code	Unit	Description	Reference page
Basic Failure Diagnosis		Air conditioner does not run.	75
		Air conditioner runs but does not cool (heat) the room.	78
		When operation starts, safety breaker works.	80
		Air conditioner makes big noise and vibration.	82
		Air is not humidified enough.	83
No display	System	Lights-out of microcomputer status lamp	85
A1	Indoor	Indoor unit PCB abnormality	86
A5		Freeze-up protection control or heating peak-cut control	87
A6		Fan motor (DC motor) or related abnormality	89
AH		Streamer unit abnormality	91
C4		Indoor heat exchanger thermistor or related abnormality	93
C7		Front panel open / close abnormality	94
C9		Room temperature thermistor or related abnormality	93
CC		Humidity sensor abnormality	95
E1	Outdoor	Outdoor unit PCB abnormality	107
E5		OL activation (compressor overload)	108
E6		Compressor lock	110
E7		DC fan lock	111
E8		Input overcurrent detection	112
EA		Four way valve abnormality	113
F3		Discharge pipe temperature control	115
F6		High pressure control in cooling	116
H0		Compressor system sensor abnormality	117
H1	Humidifying unit	Damper abnormality	118
H6	Outdoor	Position sensor abnormality	119
H8		DC voltage / current sensor abnormality	121
H9		Outdoor temperature thermistor or related abnormality	122
J3		Discharge pipe thermistor or related abnormality	122
J6		Outdoor heat exchanger thermistor or related abnormality	122
L3		Electrical box temperature rise	124
L4		Radiation fin temperature rise	126
L5		Output overcurrent detection	128
P4		Radiation fin thermistor or related abnormality	122
P9	Humidifying unit	Fan motor system abnormality / fan lock	130
PA		Heater wire abnormality	131
PH		Humidifying thermistor abnormality / humidifying heater temperature abnormality	132
U0	System	Refrigerant shortage	96
U2		Low-voltage detection or over-voltage detection	98
U4		Signal transmission error (between indoor unit and outdoor unit)	100
	Outdoor	Outdoor unit PCB abnormality or communication circuit abnormality	101
U7	System	Signal transmission error on outdoor unit PCB	104
UA		Unspecified voltage (between indoor unit and outdoor unit)	105
	Indoor	Incomplete setting for hose length	106

2.2 Air conditioner does not run.

Error Code

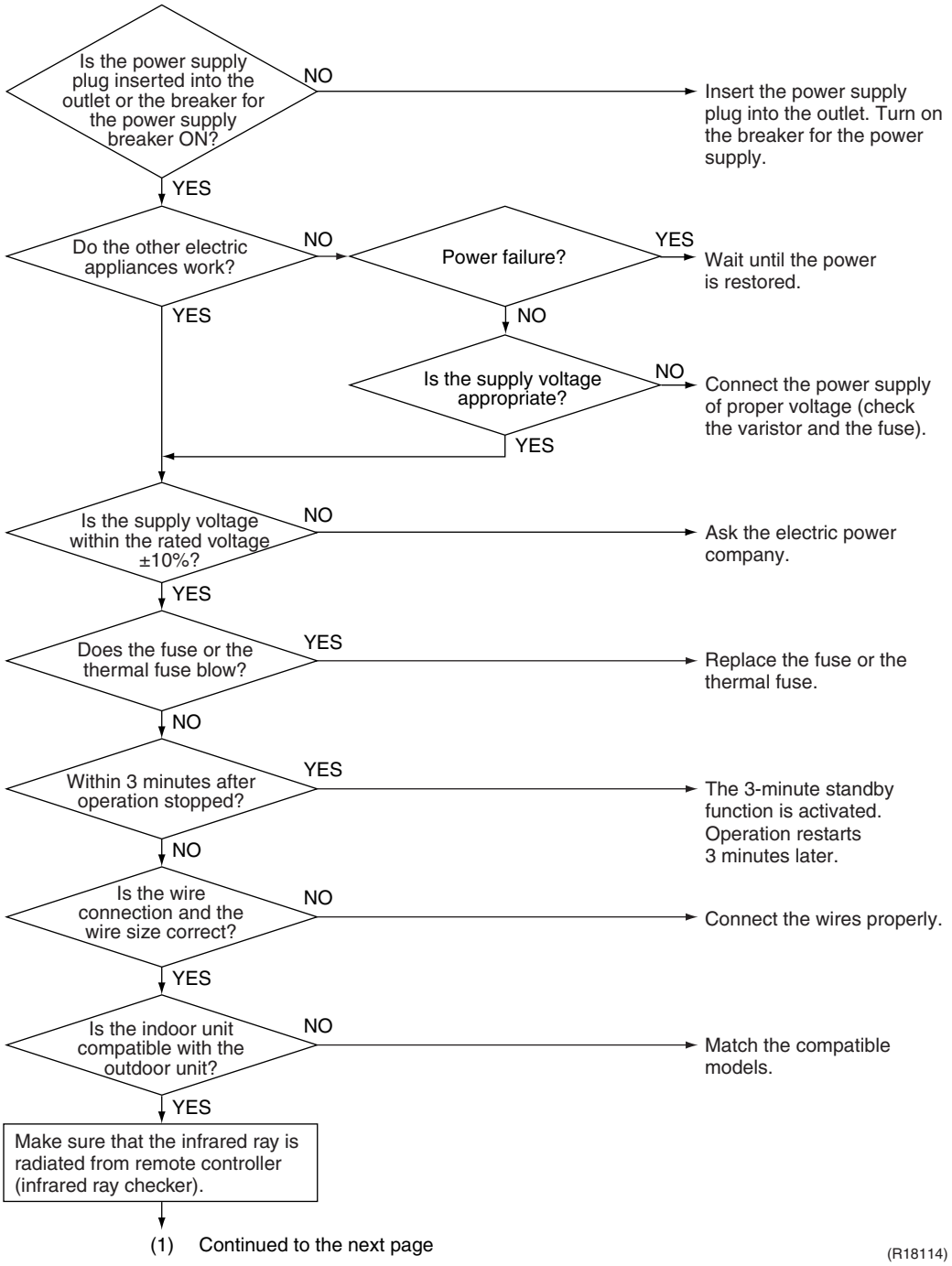
Error Decision Conditions

Supposed Causes

- Power supply is OFF.
- Improper power supply voltage
- Improper connection of wire
- Incorrect combination of indoor unit and outdoor unit
- Battery shortage of remote controller
- Invalid address setting
- Protection device works
  (dirty air filter, refrigerant shortage, overfilling, mixed air, etc.)
- Transmission error between indoor unit and outdoor unit
  (Defective outdoor unit PCB)

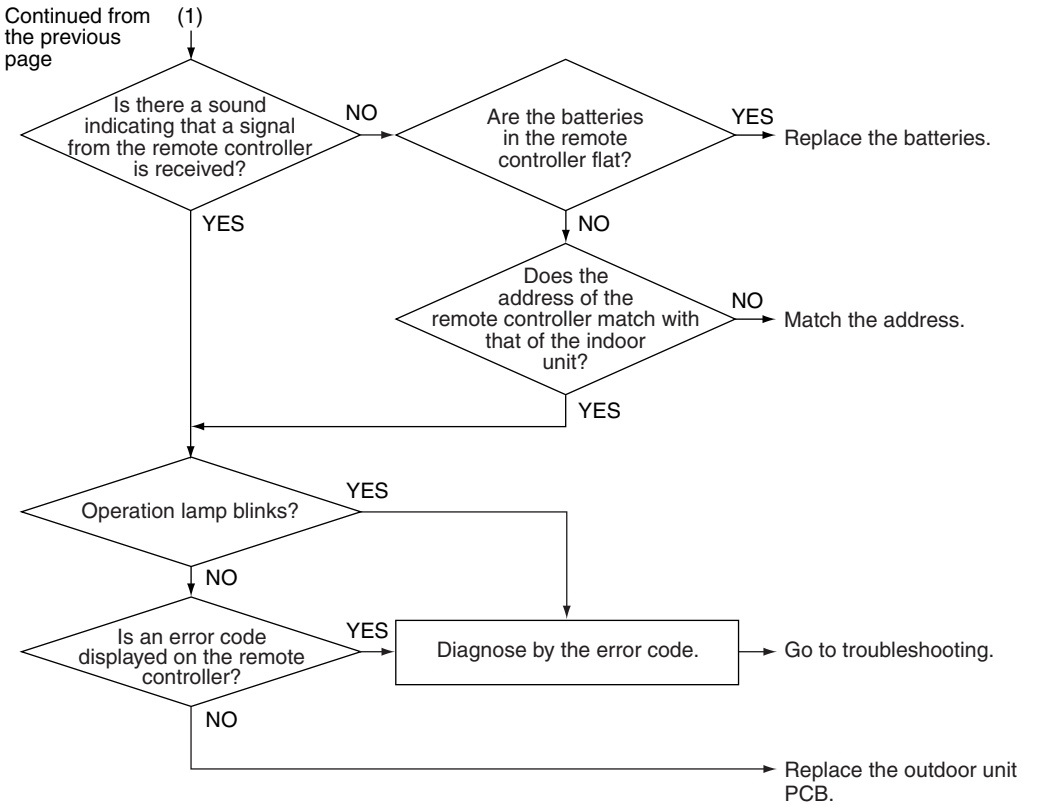
Troubleshooting

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



(1) Continued to the next page

(R18114)


Continued from the previous page
(1)
Is there a sound indicating that a signal from the remote controller is received?
NO
Are the batteries in the remote controller flat?
YES
Replace the batteries.
YES
NO
Does the address of the remote controller match with that of the indoor unit?
NO
Match the address.
YES
Operation lamp blinks?
YES
NO
Is an error code displayed on the remote controller?
YES
Diagnose by the error code.
Go to troubleshooting.
NO
Replace the outdoor unit PCB.

(R18115)

2.3 Air conditioner runs but does not cool (heat) the room.

Error Code

Error Decision Conditions

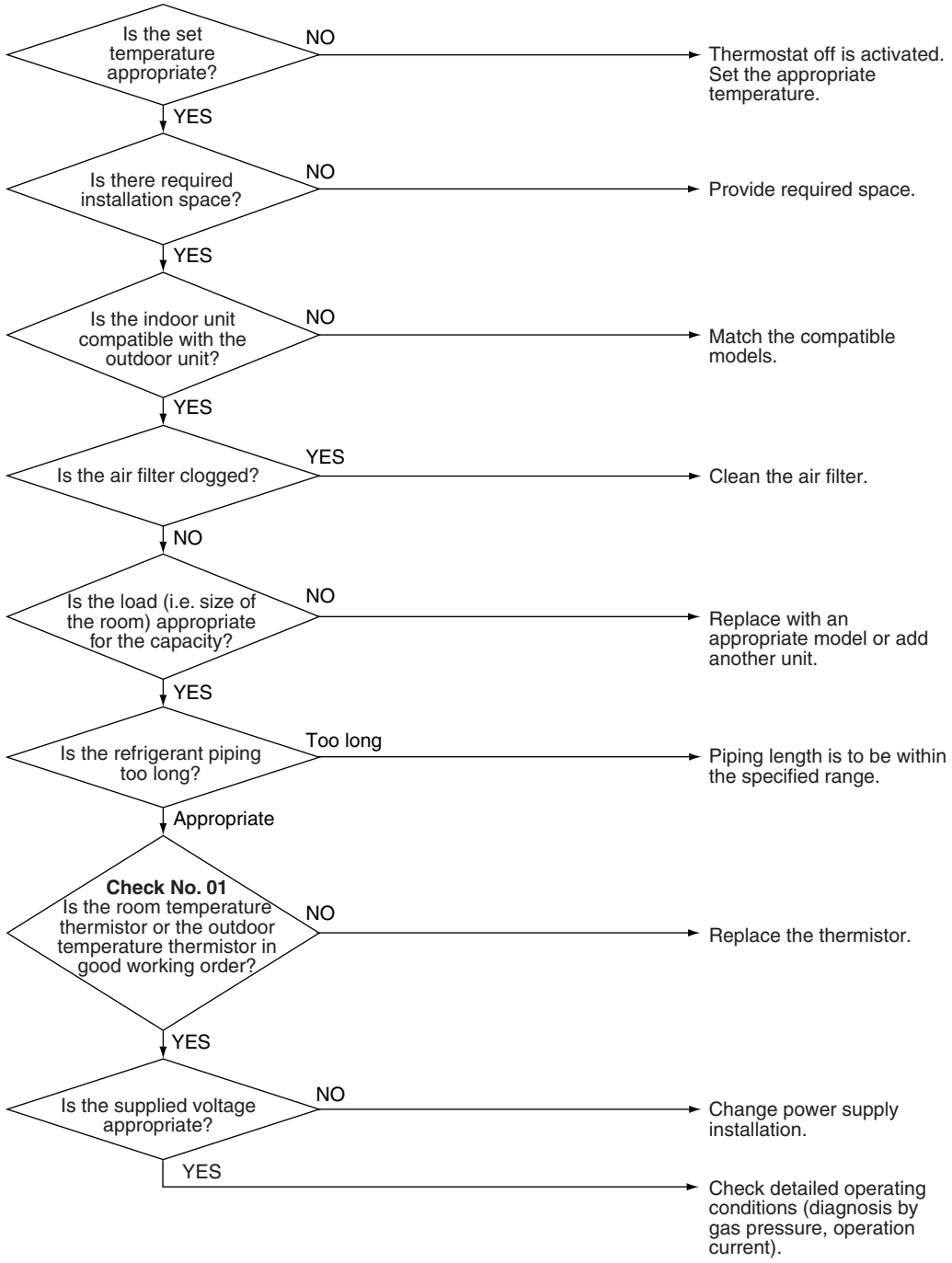
Supposed Causes

- Improper setting for temperature
- Incorrect combination of indoor unit and outdoor unit
- Clogged air filter
- Insufficient power
- Refrigerant piping is too long
- Defective field piping (squeezed, etc.)

Troubleshooting

Check No.01
Refer to P.134

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



(R18116)

Warning: When the air conditioner does not cool or heat the room, refrigerant leakage is considered to be one of the reasons.
Make sure that there is no refrigerant leakage or breaks due to over tightened flare part.
(Though the refrigerant is harmless, but it can generate toxic gases when it leaks into room and contacts flames, such as fan and other heaters, stoves, and ranges. In case of leakage, ventilate the room immediately.)

2.4 When operation starts, safety breaker works.

Error Code

Error Decision Conditions

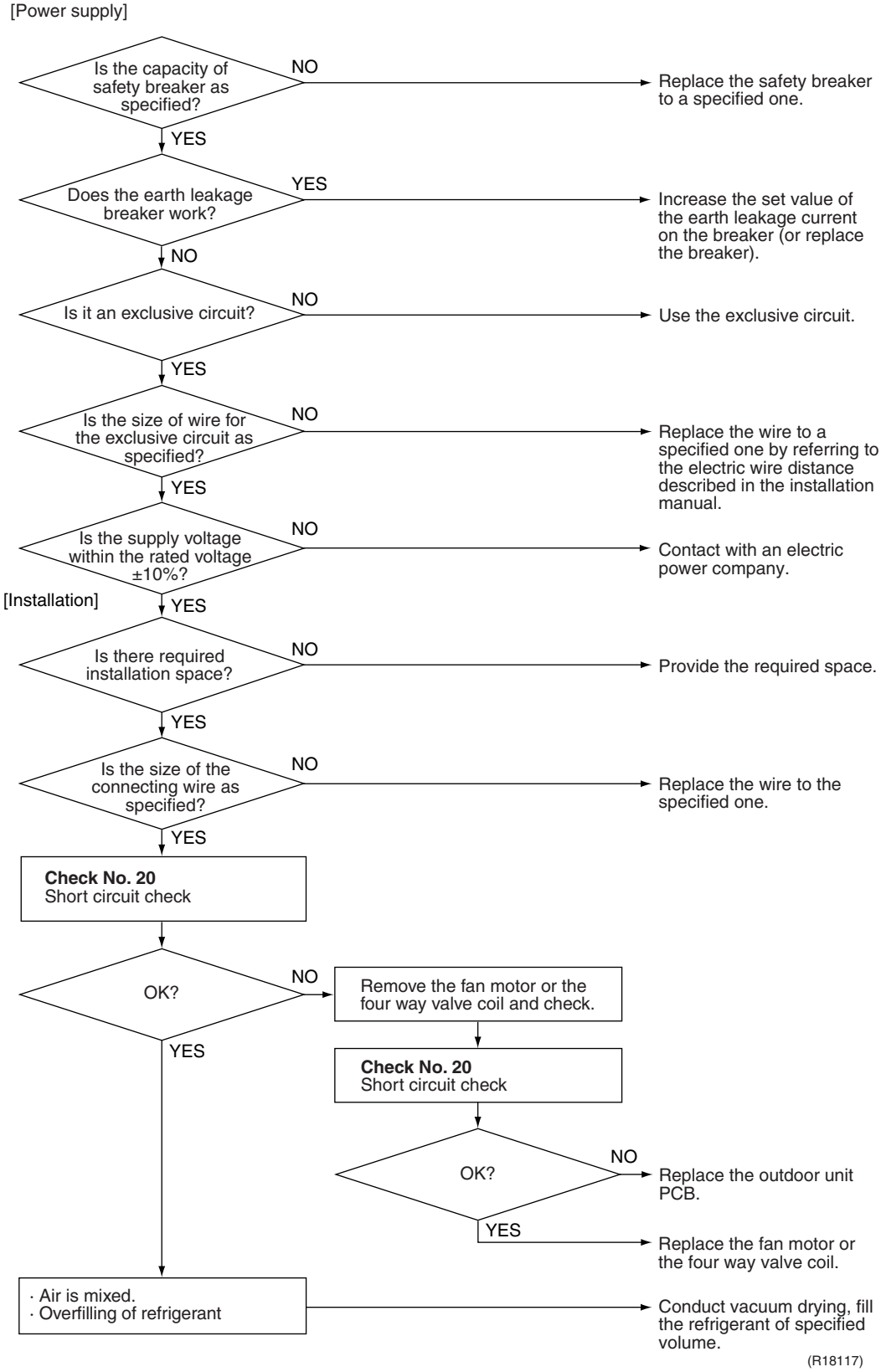
Supposed Causes

- Insufficient capacity of safety breaker
- Earth leakage breaker is too sensitive.
- Not exclusive circuit
- The supply voltage is not within rated voltage ±10%.
- The size of connecting wire is thin.
- Air is mixed.
- Overfilling of refrigerant
- Defective outdoor unit PCB (short circuit)

Troubleshooting

Check No.20
Refer to P.142

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



2.5 Air conditioner makes big noise and vibration.

Error Code

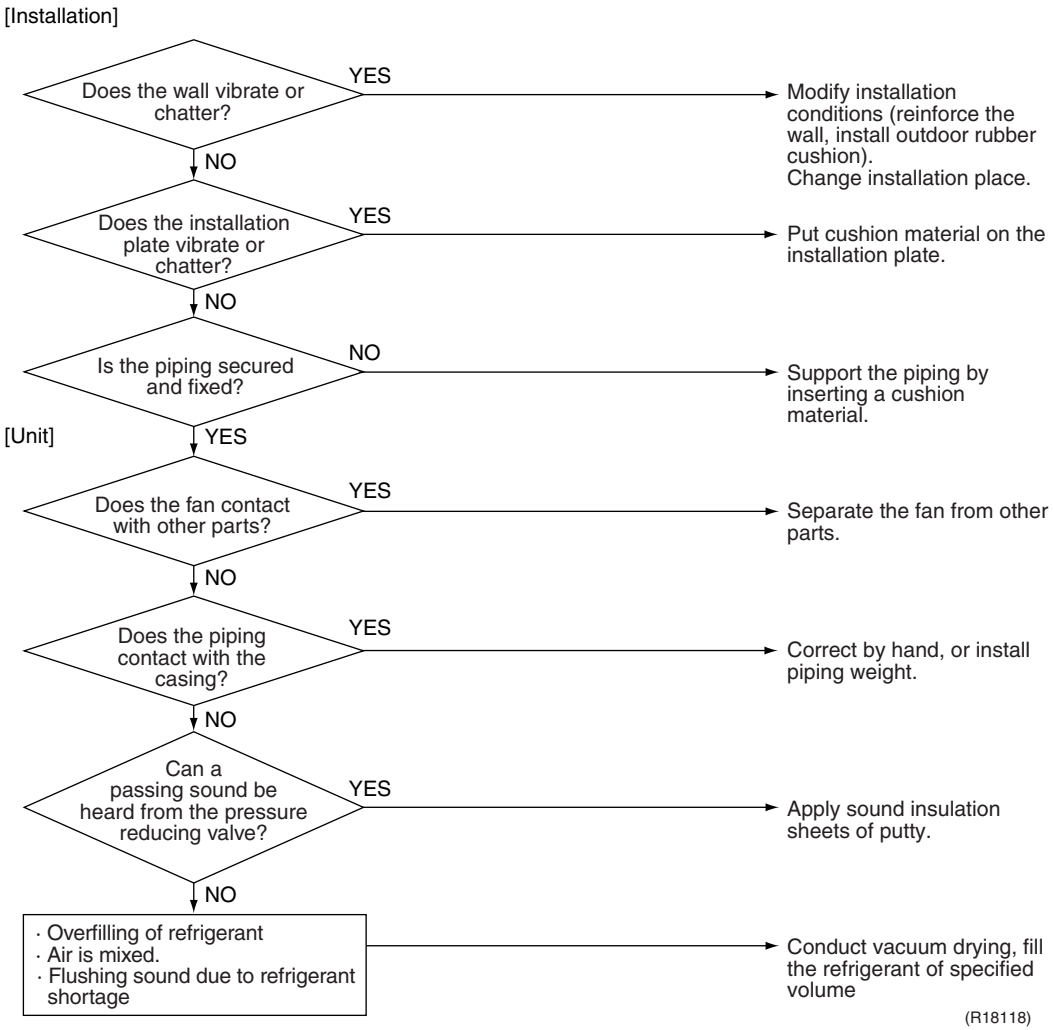
Error Decision Conditions

Supposed Causes

- Refrigerant piping is too short.
- Mounting wall is too thin.
- Insufficient vibration prevention measures
- Deformation of the unit
- Improper quantity of refrigerant

Troubleshooting

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



2.6 Air is not humidified enough.

Error Code

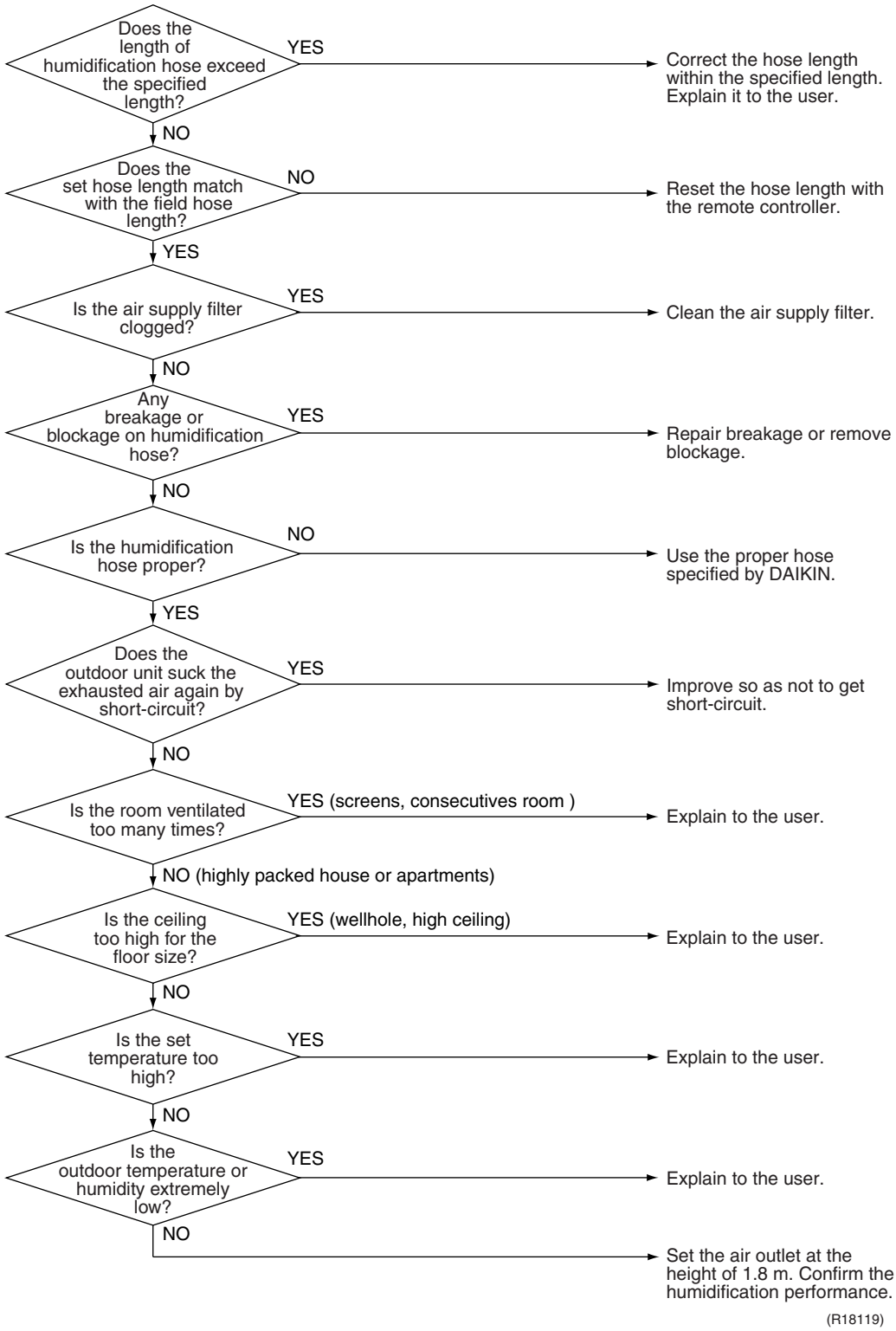
Error Decision Conditions

Supposed Causes

- Hose length is not set.
- Improper setting for hose length
- Air is short-circuited at outdoor unit.
- Clogged air supply filter
- Insufficient heat insulation of duct
- Indoor ventilation is made too often.
- Ceiling is very high.

Troubleshooting

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



(R18119)

2.7 Lights-out of Microcomputer Status Lamp

Error Code

No display

Method of Error Detection

When a microcomputer fault is detected, LED A or LED 5 turns off.

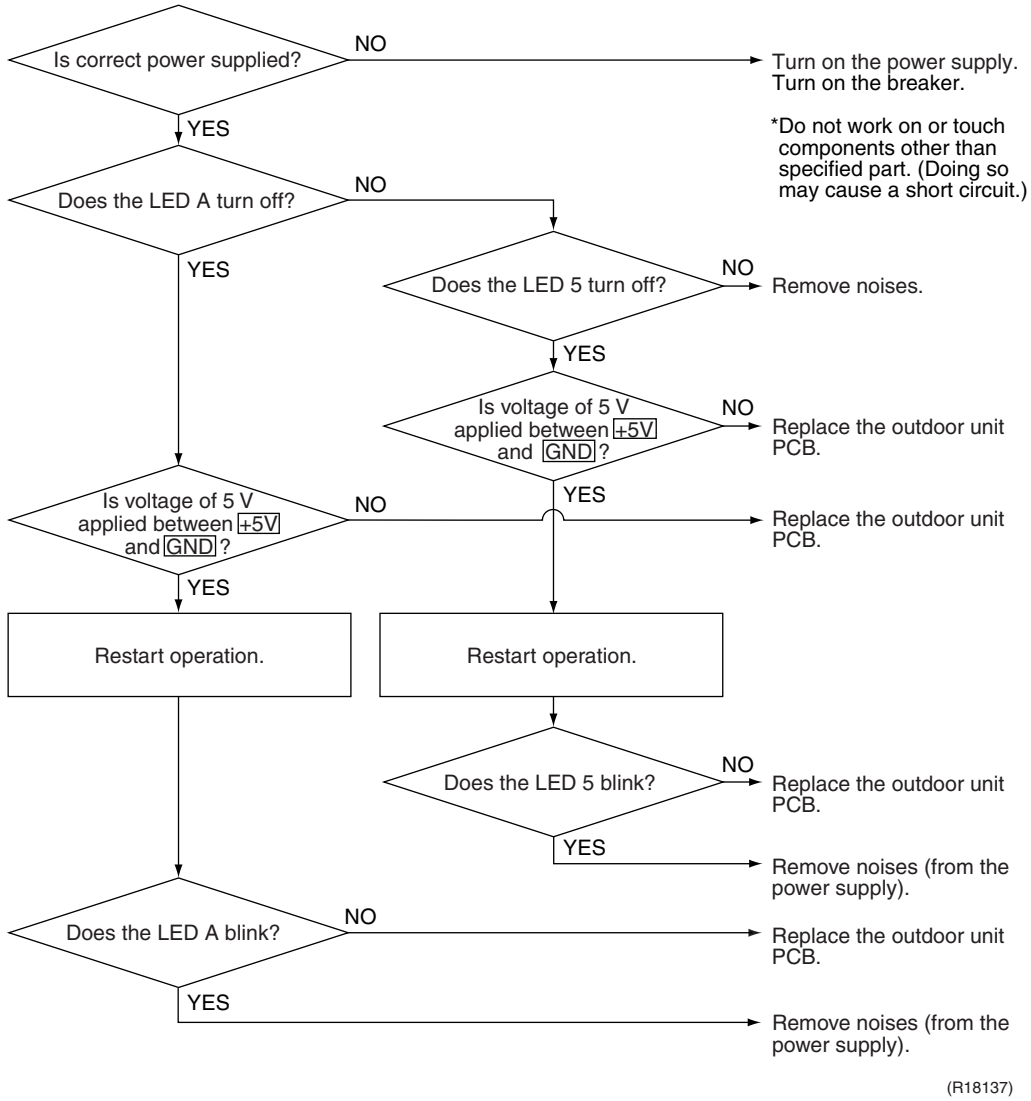
Error Decision Conditions

Supposed Causes

- Outdoor unit PCB is not power supplied
- Power supply failure due to noise

Troubleshooting

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



2.8 Indoor Unit PCB Abnormality

Error Code **A1**

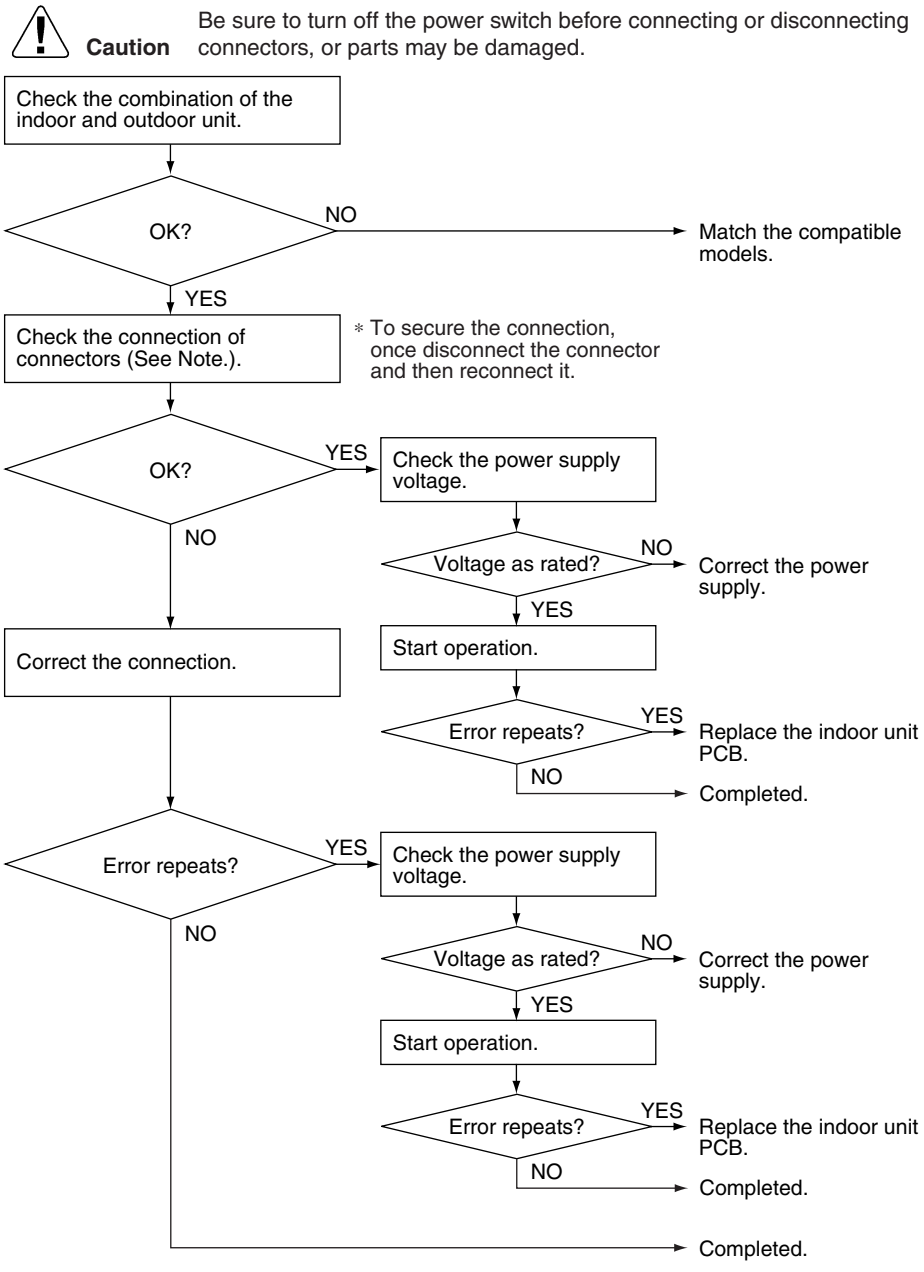
Method of Error Detection The system checks if the circuit works properly within the microcomputer of the indoor unit.

Error Decision Conditions The system cannot set the internal settings.

Supposed Causes

- Wrong models interconnected
- Defective indoor unit PCB
- Disconnection of connector
- Reduction of power supply voltage

Troubleshooting



Note: Check the following connector.

Model Type	Connector
Wall mounted type	Terminal board ~ Control PCB (H1, H2, H3)

2.9 Freeze-up Protection Control or Heating Peak-cut Control

Error Code

A5

Method of Error Detection

- Freeze-up protection control
  During cooling operation, the freeze-up protection control (operation halt) is activated according to the temperature detected by the indoor heat exchanger thermistor.
- Heating peak-cut control
  During heating operation, the temperature detected by the indoor heat exchanger thermistor is used for the heating peak-cut control (operation halt, outdoor fan stop, etc.)

Error Decision Conditions

- Freeze-up protection control
  During cooling operation, the indoor heat exchanger temperature is below 0°C.
- Heating peak-cut control
  During heating operation, the indoor heat exchanger temperature is above 65°C

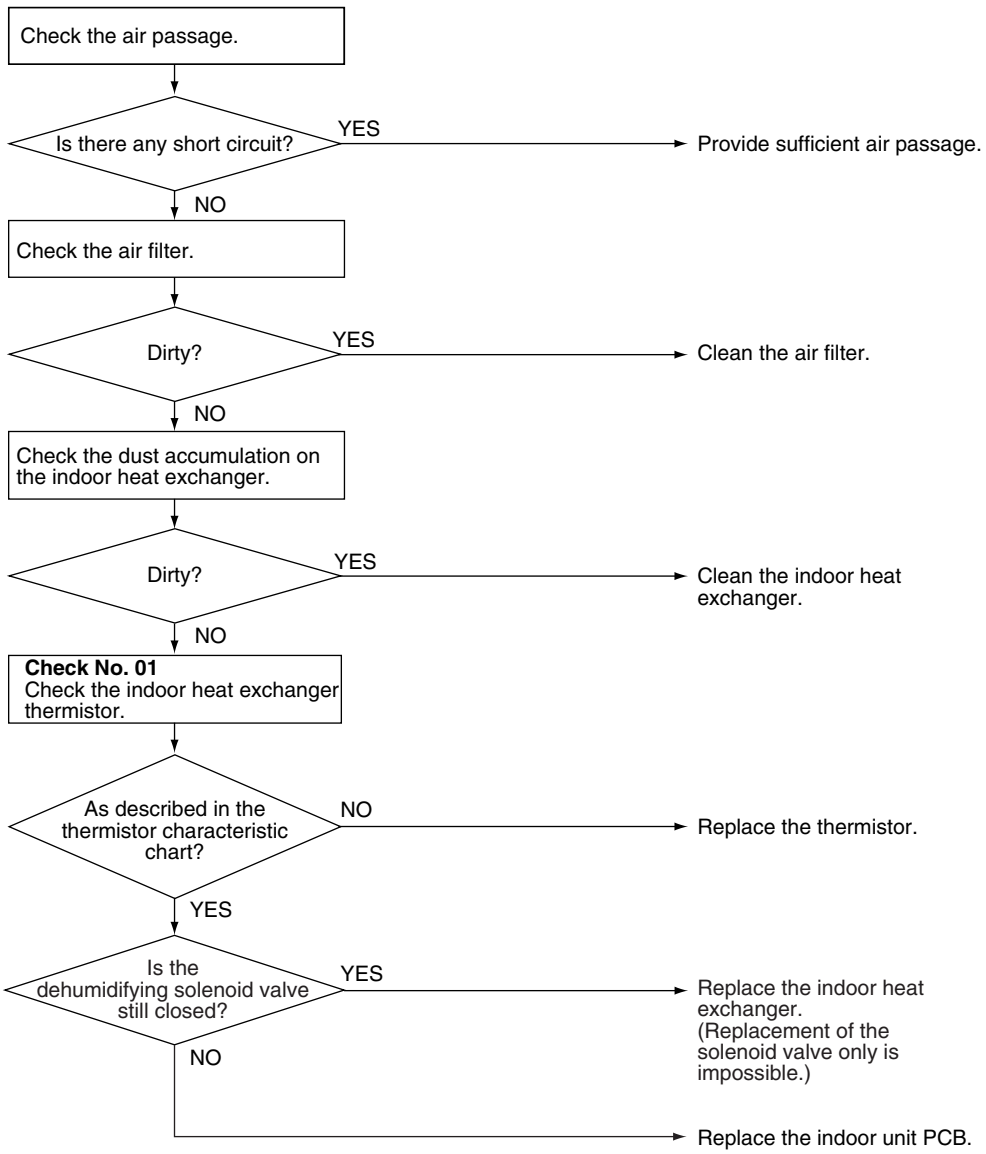
Supposed Causes

- Short-circuited air
- Clogged air filter of the indoor unit
- Dust accumulation on the indoor heat exchanger
- Defective indoor heat exchanger thermistor
- Defective indoor unit PCB
- Dehumidifying solenoid valve remains closed (on cooling operation)

Troubleshooting

Check No.01
Refer to P.134

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



(R18120)

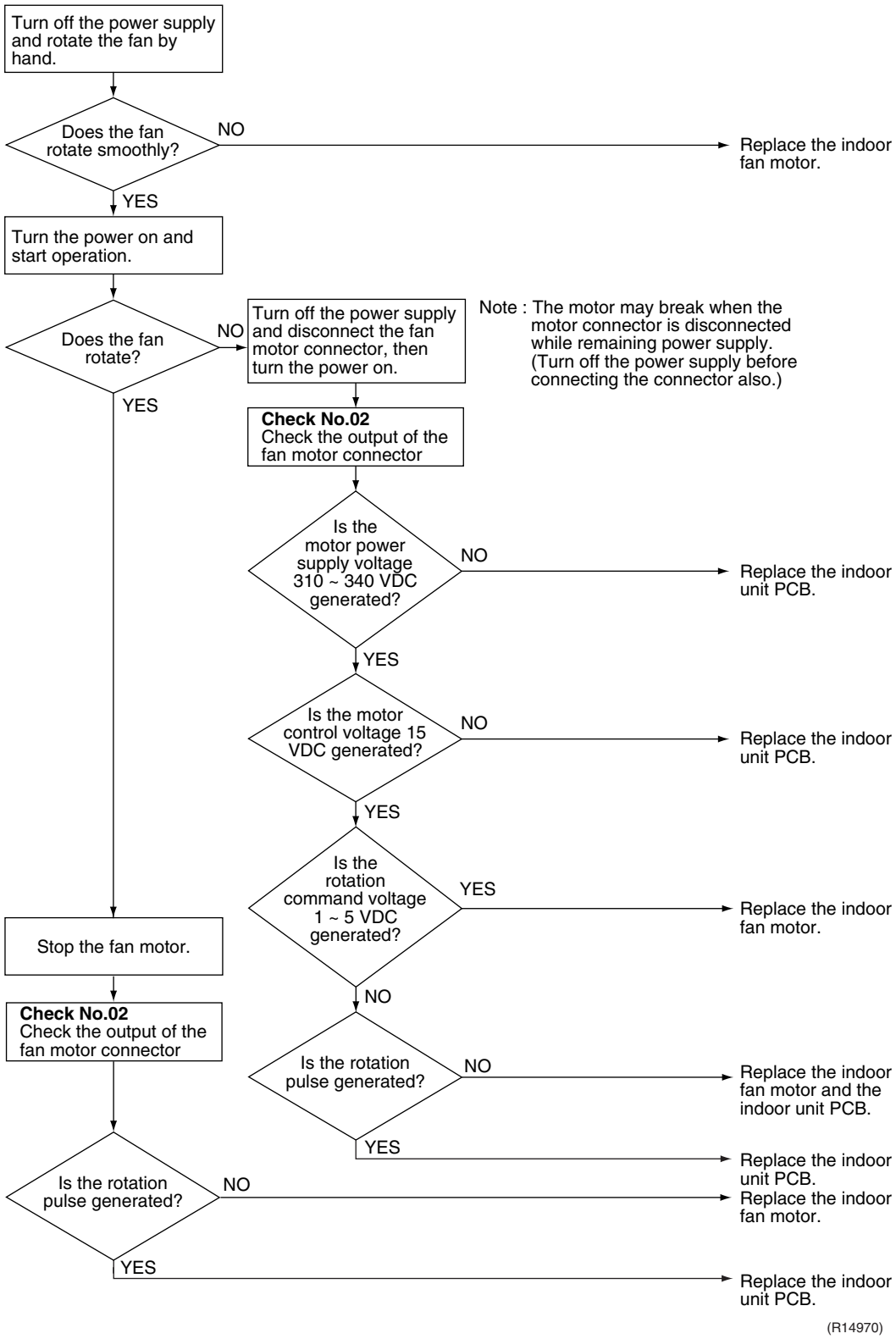
2.10 Fan Motor (DC Motor) or Related Abnormality

Error Code	**A6**
Method of Error Detection	The rotation speed detected by the Hall IC during fan motor operation is used to determine abnormal fan motor operation.
Error Decision Conditions	The detected rotation speed does not reach the demanded rotation speed of the target tap, and is less than 50% of the maximum fan motor rotation speed.
Supposed Causes	■ Layer short inside the fan motor winding ■ Breaking of wire inside the fan motor ■ Breaking of the fan motor lead wires ■ Defective capacitor of the fan motor ■ Defective indoor unit PCB

Troubleshooting

Check No.02
Refer to P.135

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



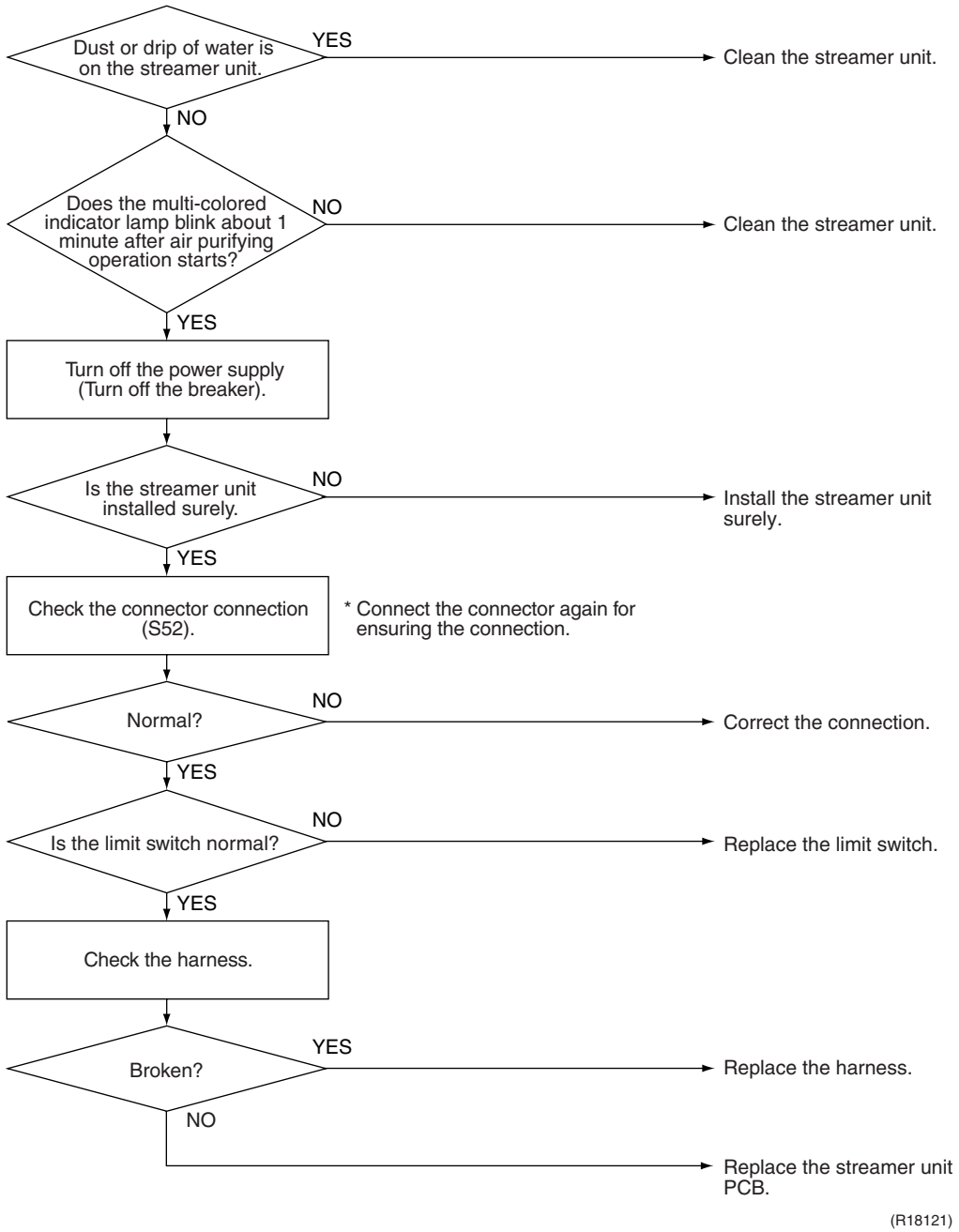
(R14970)

2.11 Streamer Unit Abnormality

Error Code	**AH**
Method of Error Detection	
Error Decision Conditions	■ If the error repeats in air purifying operation, the system is shut down. ■ Reset condition: Continuous run for about 2 minutes without any other error
Supposed Causes	■ Short circuit caused by dust or drip of water on the electrode unit of the streamer unit ■ Scratch or crack in the harness for the streamer unit ■ Defective streamer unit PCB

Troubleshooting

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



(R18121)

Note:
1. Be careful not to break the electrode in cleaning.
2. Since the electrode part is electrified in high voltage, be sure to pull out the power supply plug or turn the breaker off while cleaning the electrode part. (Touching in electrifying results in electrical shock.)

2.12 Thermistor or Related Abnormality (Indoor Unit)

Error Code

C4, C9

Method of Error Detection

The temperatures detected by the thermistors determine thermistor errors.

Error Decision Conditions

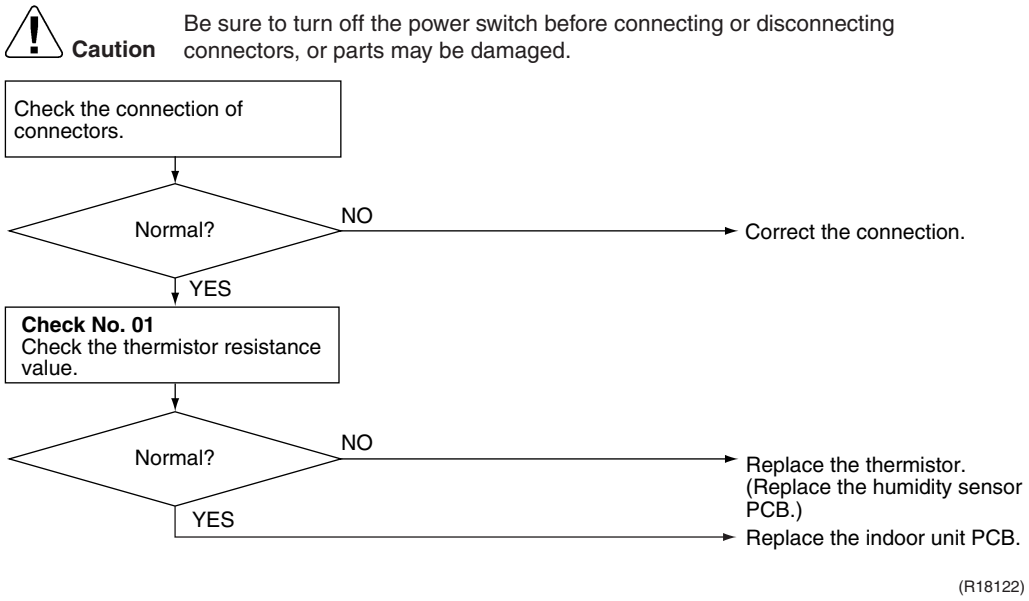
The thermistor input is more than 4.96 V or less than 0.04 V during compressor operation.

Supposed Causes

- Disconnection of connector
- Defective thermistor
- Defective indoor unit PCB (humidity sensor PCB, control PCB)

Troubleshooting

Check No.01
Refer to P.134



C4 : Indoor heat exchanger thermistor
C9 : Room temperature thermistor

2.13 Front Panel Open / Close Abnormality

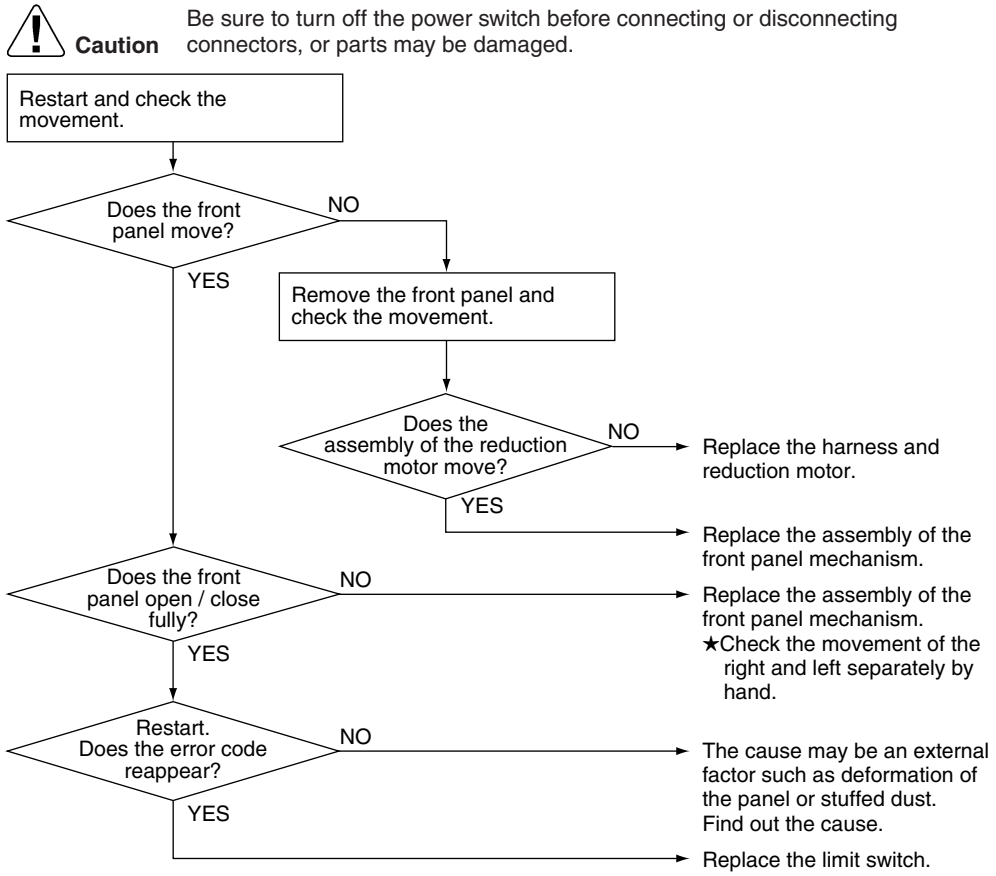
Error Code C7

Method of Error Detection

Error Decision Conditions If the error repeats, the system is shut down.

Supposed Causes
- Defective reduction motor
- Malfunction or deterioration of the front panel mechanism
- Defective limit switch

Troubleshooting



(R18123)

Note: You cannot operate the unit by the remote controller when the front panel mechanism breaks down.

<To the dealers: temporary measure before repair>

1. Turn off the power.
2. Remove the front panel.
3. Turn on the power.
   (Wait until the initialization finishes.)
4. Operate the unit with the indoor unit [ON/OFF] button.

2.14 Humidity Sensor Abnormality

Error Code

CC

Method of Error Detection

Sensor abnormality is detected by input value.

Error Decision Conditions

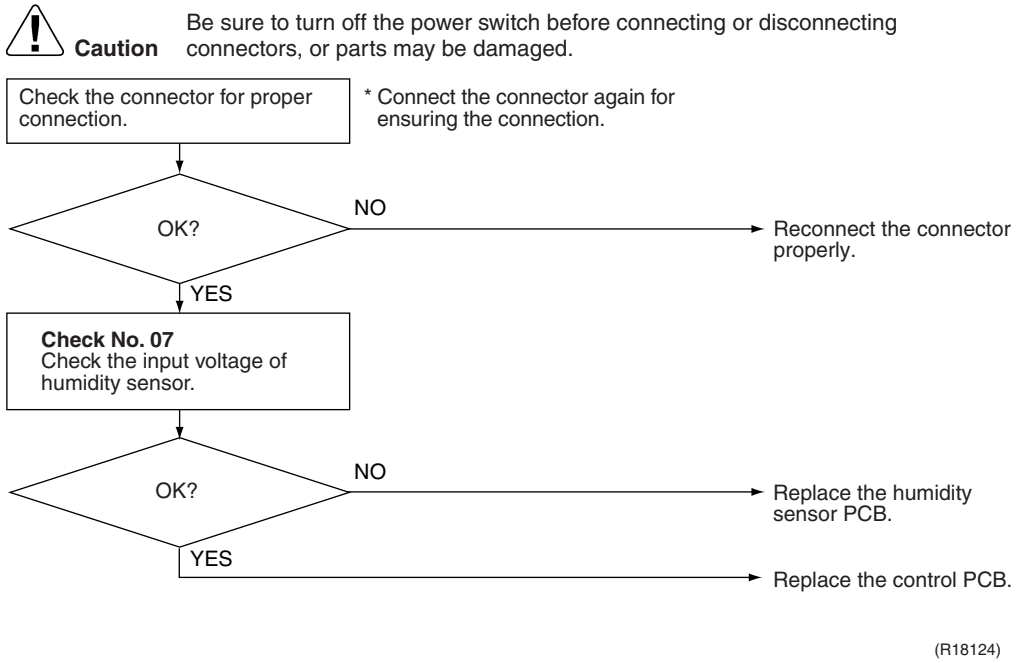
The input from the humidity sensor is 4.96 V or more or 0.04 V or less.

Supposed Causes

- Disconnection of connector
- Defective indoor unit PCB (humidity sensor PCB, control PCB)
- Defective humidity sensor

Troubleshooting

Check No.07
Refer to P.135



2.15 Refrigerant Shortage

Error Code

U0

Method of Error Detection

Refrigerant shortage detection I:
Refrigerant shortage is detected by checking the input current value and the compressor running frequency. If the refrigerant is short, the input current is lower than the normal value.

Refrigerant shortage detection III:
Refrigerant shortage is detected by checking the difference between suction and discharge temperature.

Error Decision Conditions

Refrigerant shortage detection I:
The following conditions continue for 7 minutes.

- Input current × input voltage ≤ 2800 / 256 × output frequency – 350 (W)
- Output frequency > 54 (Hz)

Refrigerant shortage detection III:
When the difference of the temperature is smaller than **A**°C, it is regarded as refrigerant shortage.

Operation mode	Description	**A** (°C)
Cooling	room temperature – indoor heat exchanger temperature	4.0
	outdoor heat exchanger temperature – outdoor temperature	4.0
Heating	indoor heat exchanger temperature – room temperature	4.0
	outdoor temperature – outdoor heat exchanger temperature	4.0

- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 60 minutes without any other error

Supposed Causes

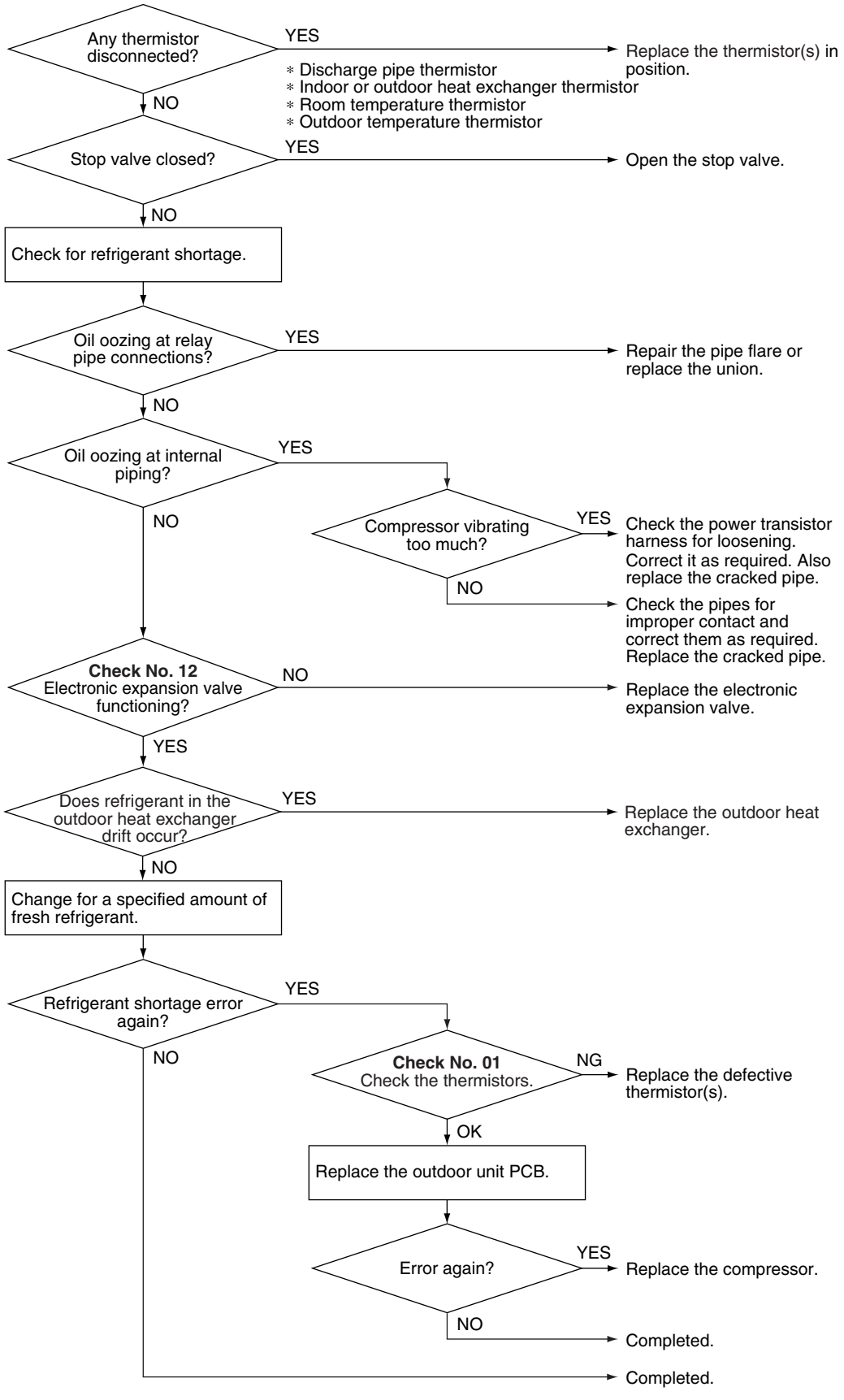
- Disconnection of the discharge pipe thermistor, indoor or outdoor heat exchanger thermistor, room or outdoor temperature thermistor
- Closed stop valve
- Refrigerant drift in the heat exchanger
- Refrigerant shortage (refrigerant leakage)
- Poor compression performance of compressor
- Defective electronic expansion valve

Troubleshooting

Check No.01
Refer to P.134

Check No.12
Refer to P.136

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



(R18129)

2.16 Low-voltage Detection or Over-voltage Detection

Error Code

U2

Method of Error Detection

Low-voltage detection:
An abnormal voltage drop is detected by the DC voltage detection circuit.

Over-voltage detection:
An abnormal voltage rise is detected by the over-voltage detection circuit.

Error Decision Conditions

Low-voltage detection:
- The voltage detected by the DC voltage detection circuit is below 150 V.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 60 minutes without any other error

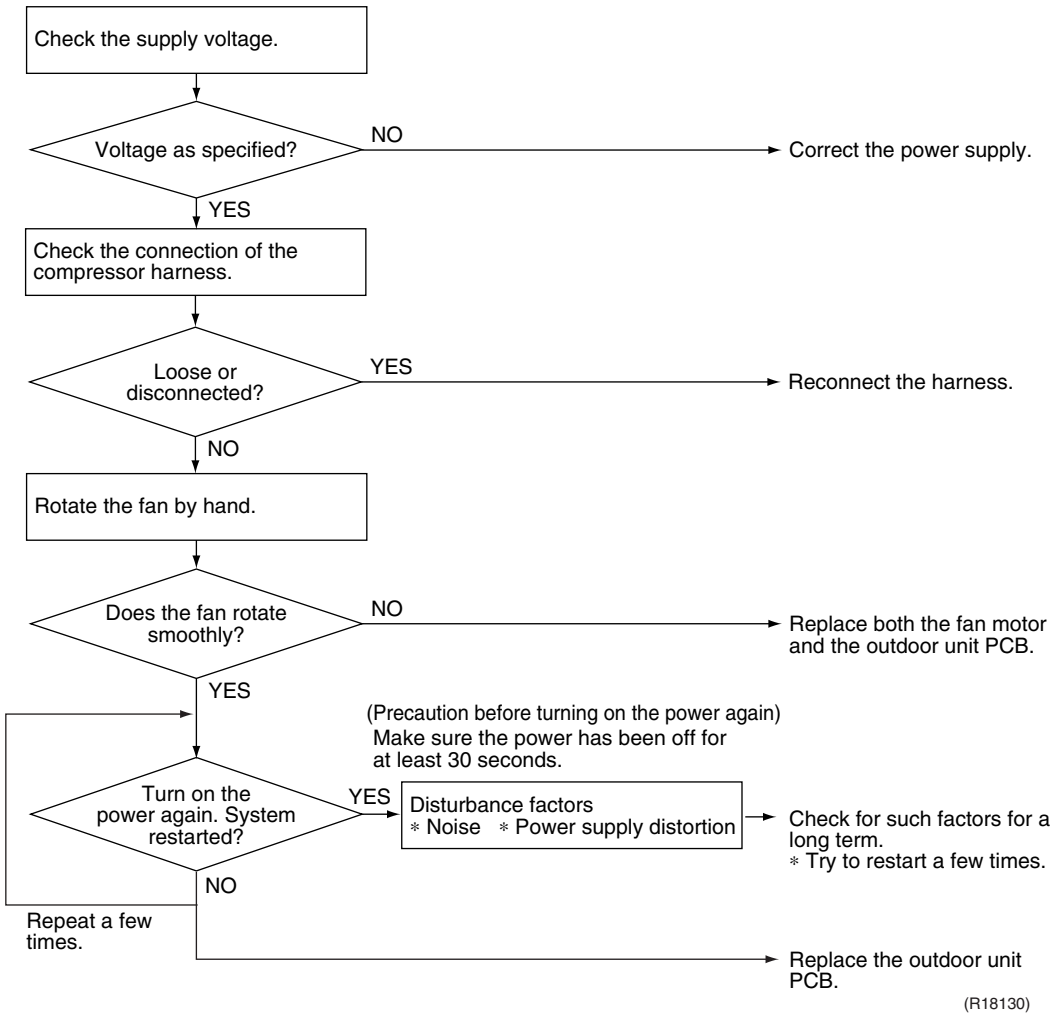
Over-voltage detection:
- An over-voltage signal is fed from the over-voltage detection circuit to the microcomputer.
- The compressor stops if the error occurs, and restarts automatically after 3-minute standby.

Supposed Causes

- Supply voltage is not as specified.
- Defective DC voltage detection circuit
- Defective over-voltage detection circuit
- Defective PAM control part
- Disconnection of compressor harness
- Layer short inside the fan motor winding
- Defective outdoor unit PCB
- Noise
- Momentary fall of voltage
- Momentary power failure

Troubleshooting

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



2.17 Signal Transmission Error (between Indoor Unit and Outdoor Unit)

Error Code

U4

Method of Error Detection

The data sent from the outdoor unit is checked for problem.

Error Decision Conditions

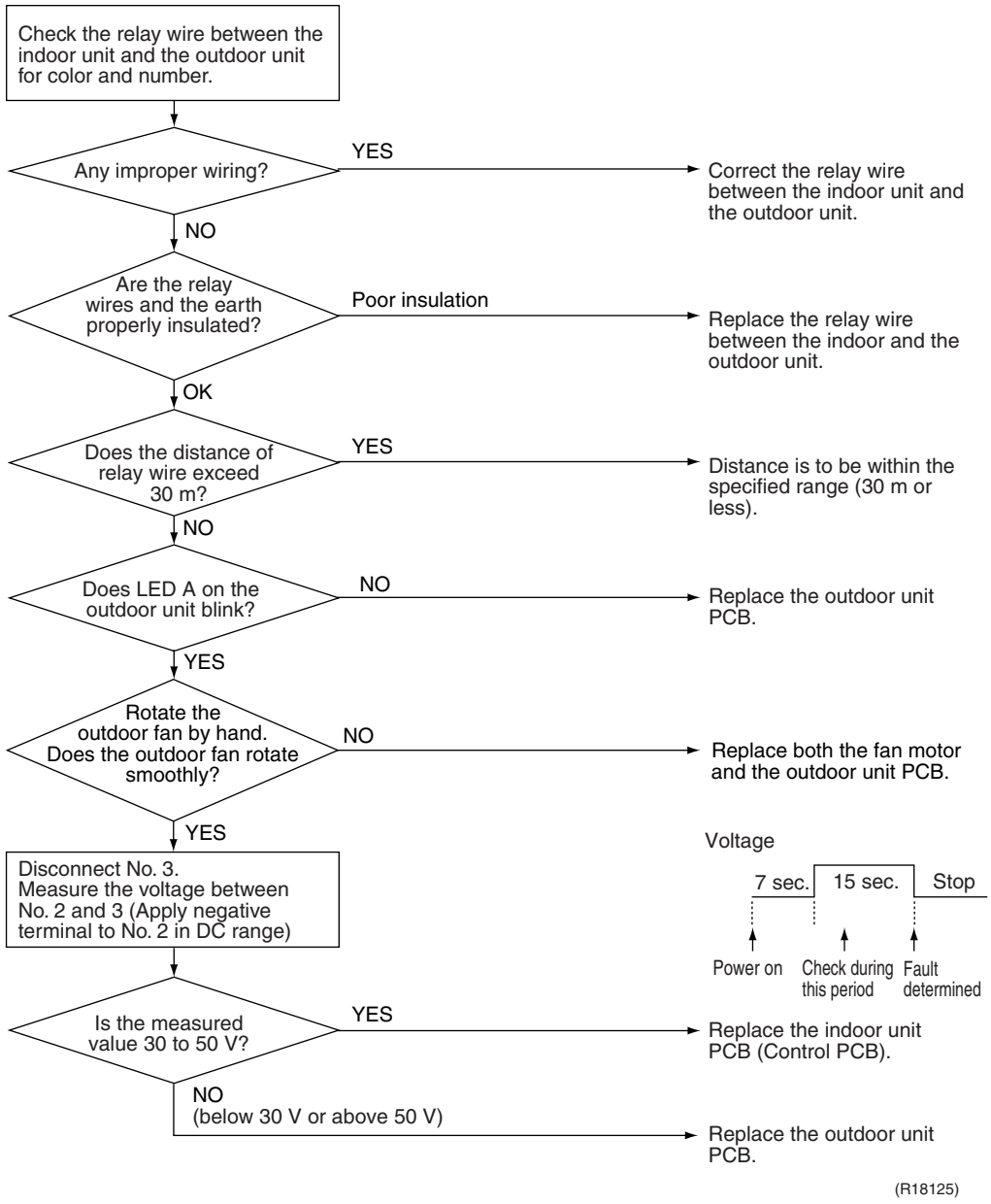
The data sent from the outdoor unit cannot be received without error, or the disable status of signal transmission continues for 15 seconds.

Supposed Causes

- Wiring error
- Breakage of relay wire (transmission wire)
- Defective outdoor unit PCB
- Defective fan motor
- Defective indoor unit PCB

Troubleshooting

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



2.18 Outdoor Unit PCB Abnormality or Communication Circuit Abnormality

Error Code

U4

Method of Error Detection

Detection within the program of the microcomputer that the program is in good running order.

Error Decision Conditions

- The program of the microcomputer does not work in order.
- Signal transmission between the units cannot be performed for more than 15 seconds.
- Zero-cross signal cannot be detected for more than 10 seconds.

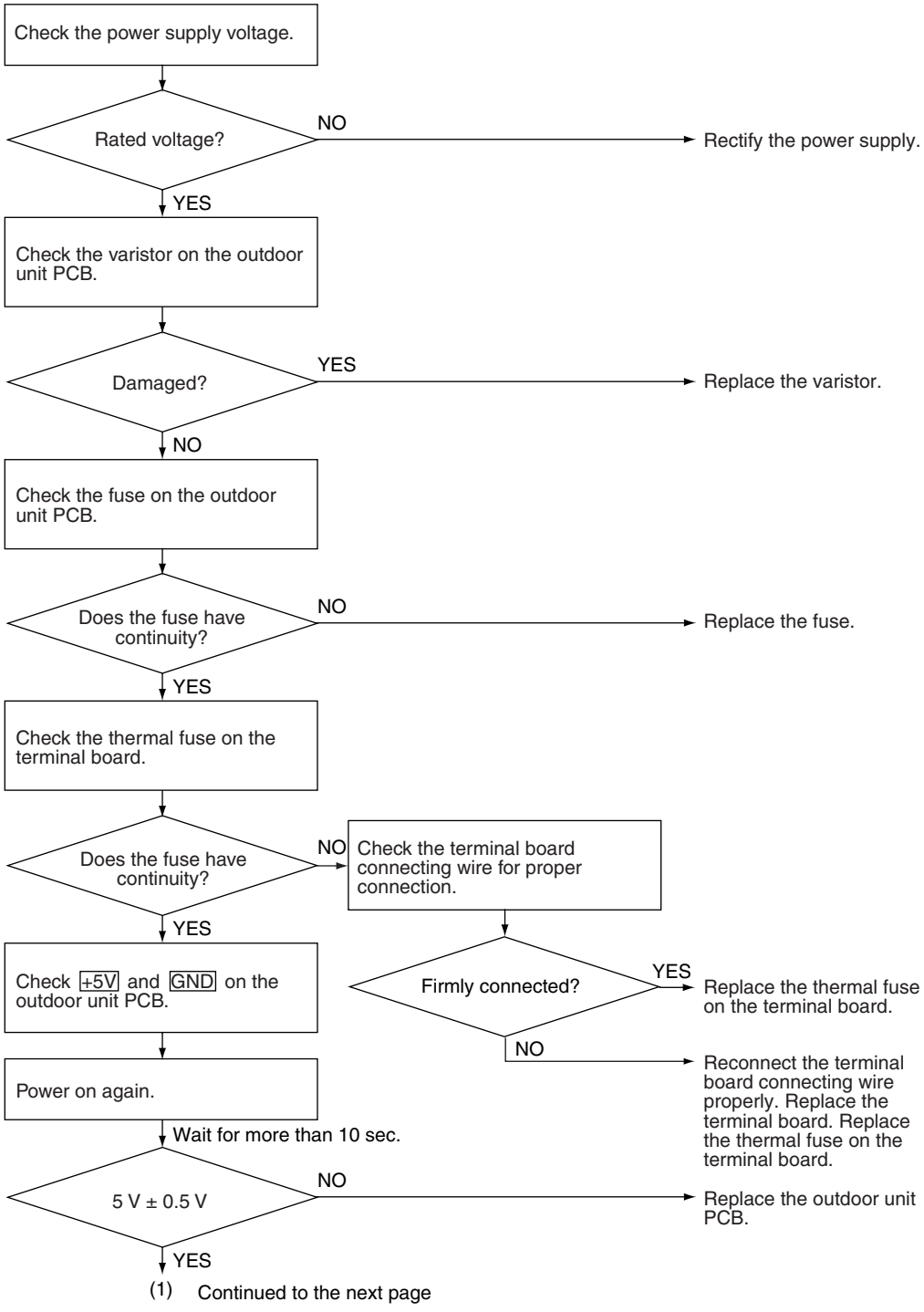
Supposed Causes

- Display disabled due to power supply fault
- Momentary fall of voltage
- Momentary power failure
- Defective varistor
- Defective fuse
- Defective thermal fuse on outdoor terminal board
- Defective terminal board
- Defective outdoor unit PCB
- Improper grounding work
- Noise
- Defective fan motor
- Improper wiring between indoor and outdoor units
- Defective indoor unit PCB

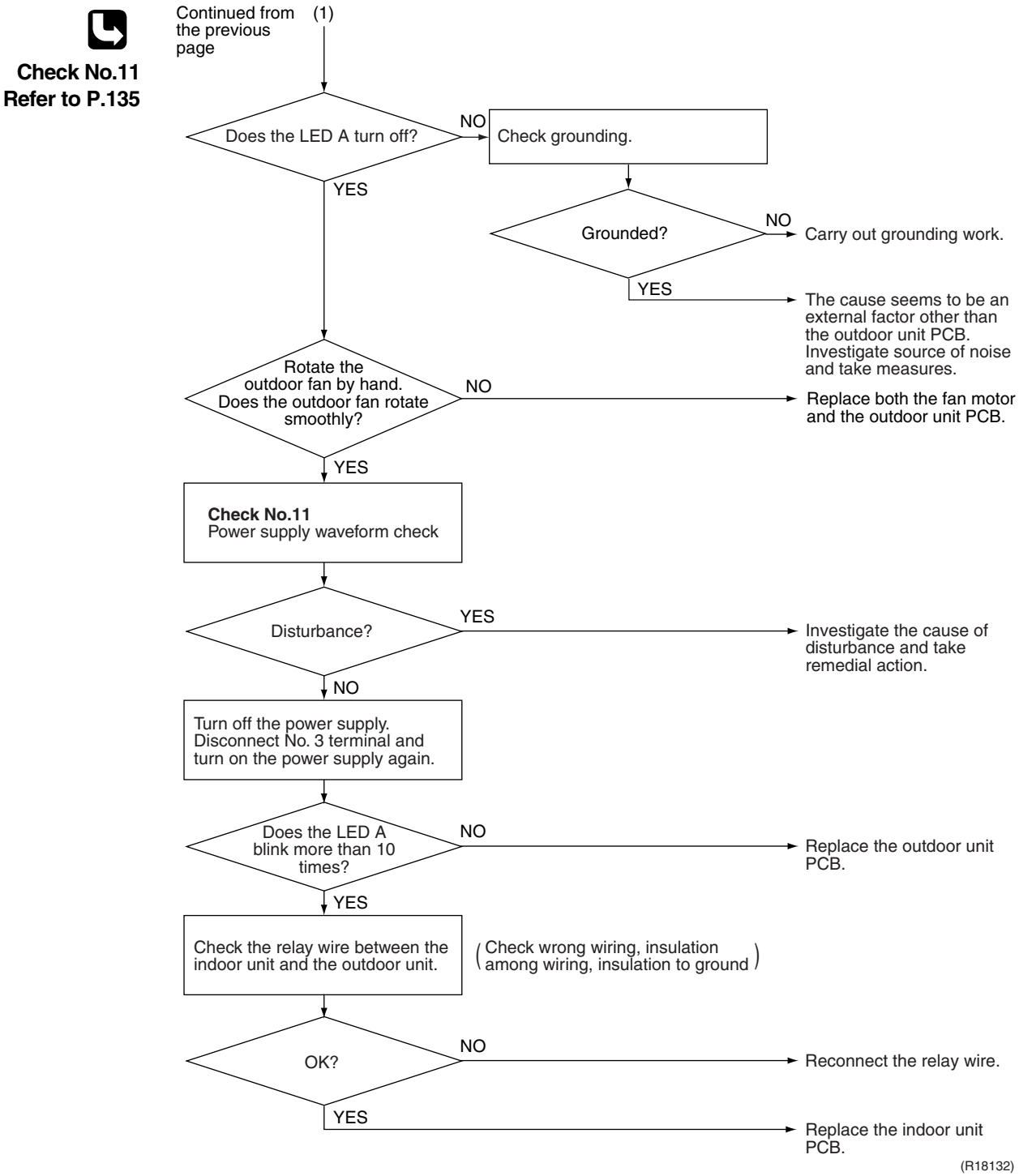
Troubleshooting

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.

Check indoor unit also, because a communication circuit fault may be caused by the problem related to the indoor unit.



(R18131)


Check No.11
Refer to P.135
Continued from the previous page
(1)
Does the LED A turn off?
NO
Check grounding.
YES
Grounded?
NO
Carry out grounding work.
YES
The cause seems to be an external factor other than the outdoor unit PCB. Investigate source of noise and take measures.
Rotate the outdoor fan by hand. Does the outdoor fan rotate smoothly?
NO
Replace both the fan motor and the outdoor unit PCB.
YES
Check No.11
Power supply waveform check
Disturbance?
YES
Investigate the cause of disturbance and take remedial action.
NO
Turn off the power supply. Disconnect No. 3 terminal and turn on the power supply again.
Does the LED A blink more than 10 times?
NO
Replace the outdoor unit PCB.
YES
Check the relay wire between the indoor unit and the outdoor unit.
(Check wrong wiring, insulation among wiring, insulation to ground)
OK?
NO
Reconnect the relay wire.
YES
Replace the indoor unit PCB.
(R18132)

2.19 Signal Transmission Error on Outdoor Unit PCB

Error Code

U7

Method of Error Detection

Communication error between microcomputers mounted on the outdoor unit PCB.

Error Decision Conditions

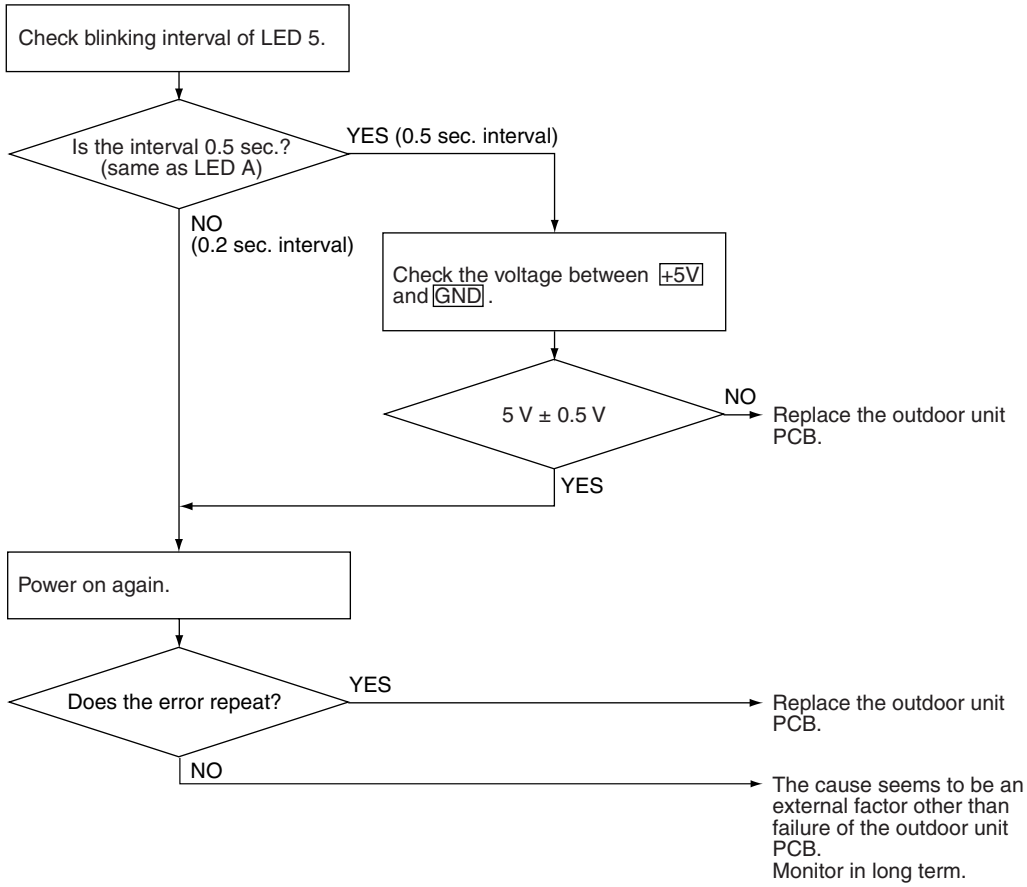
- When the data sent from the microcomputer of the inverter can not be received successively for 15 seconds, the unit shuts down.
- Error counter is reset when the data from the microcomputer of the inverter can be successfully received.

Supposed Causes

- Defective outdoor unit PCB

Troubleshooting

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



(R18133)

2.20 Unspecified Voltage (between Indoor Unit and Outdoor Unit)

Error Code

UA

Method of Error Detection

The supply power is detected for its requirements (different from pair type and multi type) by the indoor / outdoor transmission signal.

Method of Error Detection

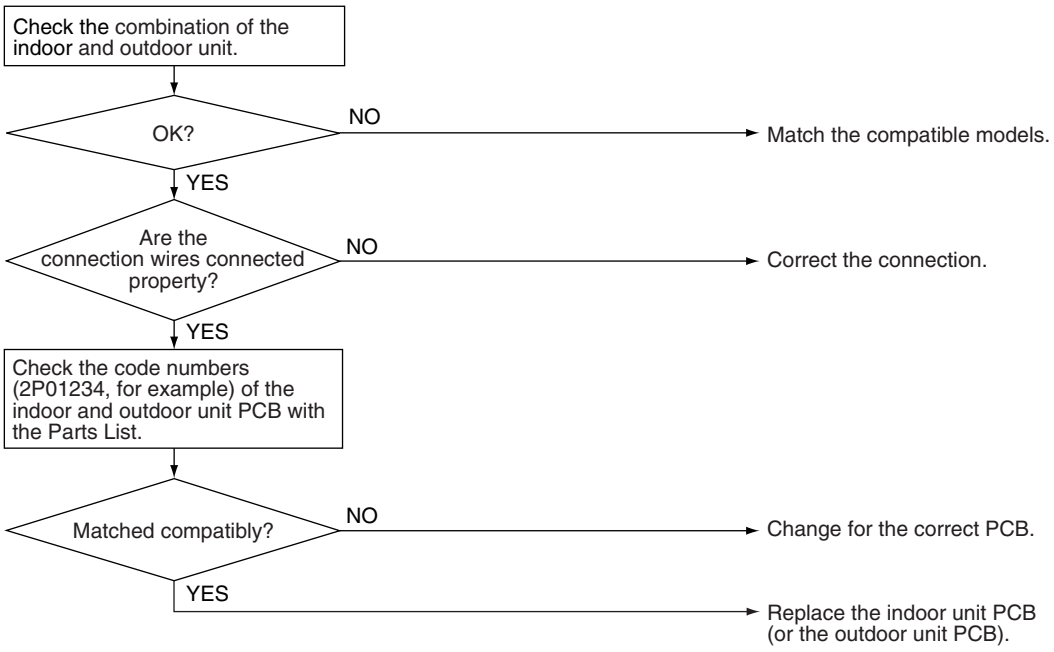
The pair type and multi type are interconnected.

Supposed Causes

- Wrong models interconnected
- Wrong wiring of connecting wires
- Wrong indoor unit PCB or outdoor unit PCB mounted
- Defective indoor unit PCB
- Defective outdoor unit PCB

Troubleshooting

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



(R11707)

2.21 Incomplete Setting for Hose Length

Error Code

UA

Method of Error Detection

This fault occurs when the humidification hose length is not stored in the EEPROMs of the indoor unit and the outdoor unit.
(Hose length is not stored at initial power on.)

Error Decision Conditions

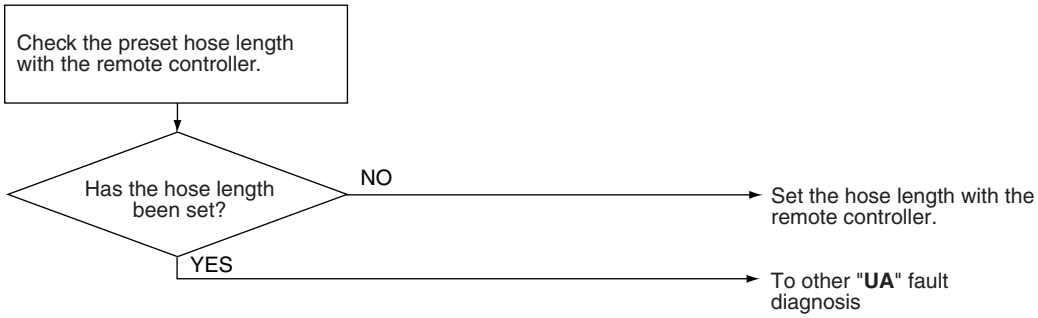
- When the humidification hose length is not stored in EEPROMs of the indoor unit and the outdoor unit.

Supposed Causes

- Hose length is not set.
- Hose length is erased by replacement of the indoor unit PCB and the outdoor unit PCB. (When both the indoor unit PCB and the outdoor unit PCB are replaced simultaneously, the set value is erased.)

Troubleshooting

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



(R13921)

How to check the preset hose length

1) Press the [CLOCK] button for 5 seconds.
   → SETTING 1. TEST is displayed.
2) Press the [SELECT] ▲ or ▼ button and select SETTING 2. PIPE.
3) Press the [CLOCK] button to activate the hose length setting mode.
   → The display shows the preset hose length.
   When the hose length is not set, PIPE LEN UNDEF is displayed.
4) Press the [SELECT] ▲ or ▼ button and select hose length.
   You can select hose length from [~ 3 m] [3.1 ~ 4 m] [4.1 ~ 6 m] [6.1 ~ 8 m] [8.1 ~ 10 m].
5) Press the [CLOCK] button to set the hose length.
6) To return to the normal mode, press the [CLOCK] button for 5 seconds or leave the remote controller for 60 seconds.

2.22 Outdoor Unit PCB Abnormality

Error Code

E1

Method of Error Detection

- The system checks if the microprocessor is working in order.
- The system checks if the zero-cross signal comes in properly.

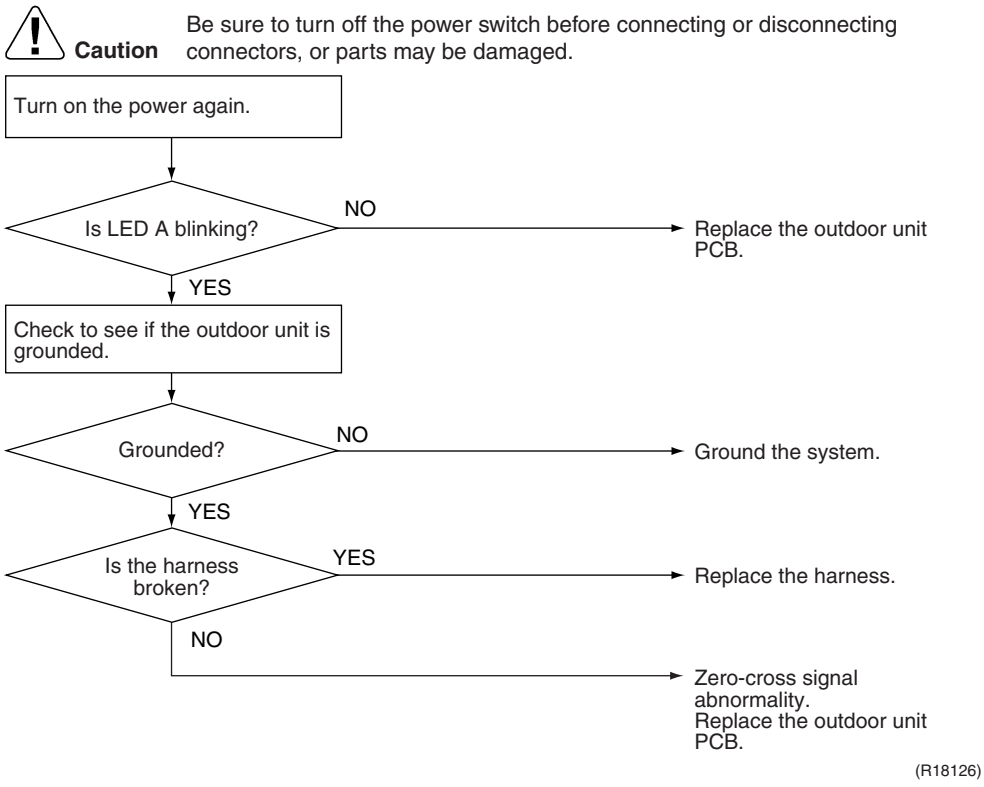
Error Decision Conditions

- The microprocessor program runs out of control.
- The zero-cross signal is not detected.

Supposed Causes

- Defective outdoor unit PCB
- Broken harness between PCBs
- Noise
- Momentary fall of voltage
- Momentary power failure

Troubleshooting



2.23 OL Activation (Compressor Overload)

Error Code

E5

Method of Error Detection

A compressor overload is detected through compressor OL.

Error Decision Conditions

- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 60 minutes without any other error

Supposed Causes

- Disconnection of discharge pipe thermistor
- Defective discharge pipe thermistor
- Disconnection of connector [S40]
- Disconnection of 2 terminals of OL (Q1L)
- Defective OL (Q1L)
- Broken OL harness
- Defective electronic expansion valve or coil
- Defective four way valve or coil
- Defective outdoor unit PCB
- Refrigerant shortage
- Water mixed in refrigerant
- Defective stop valve

Troubleshooting

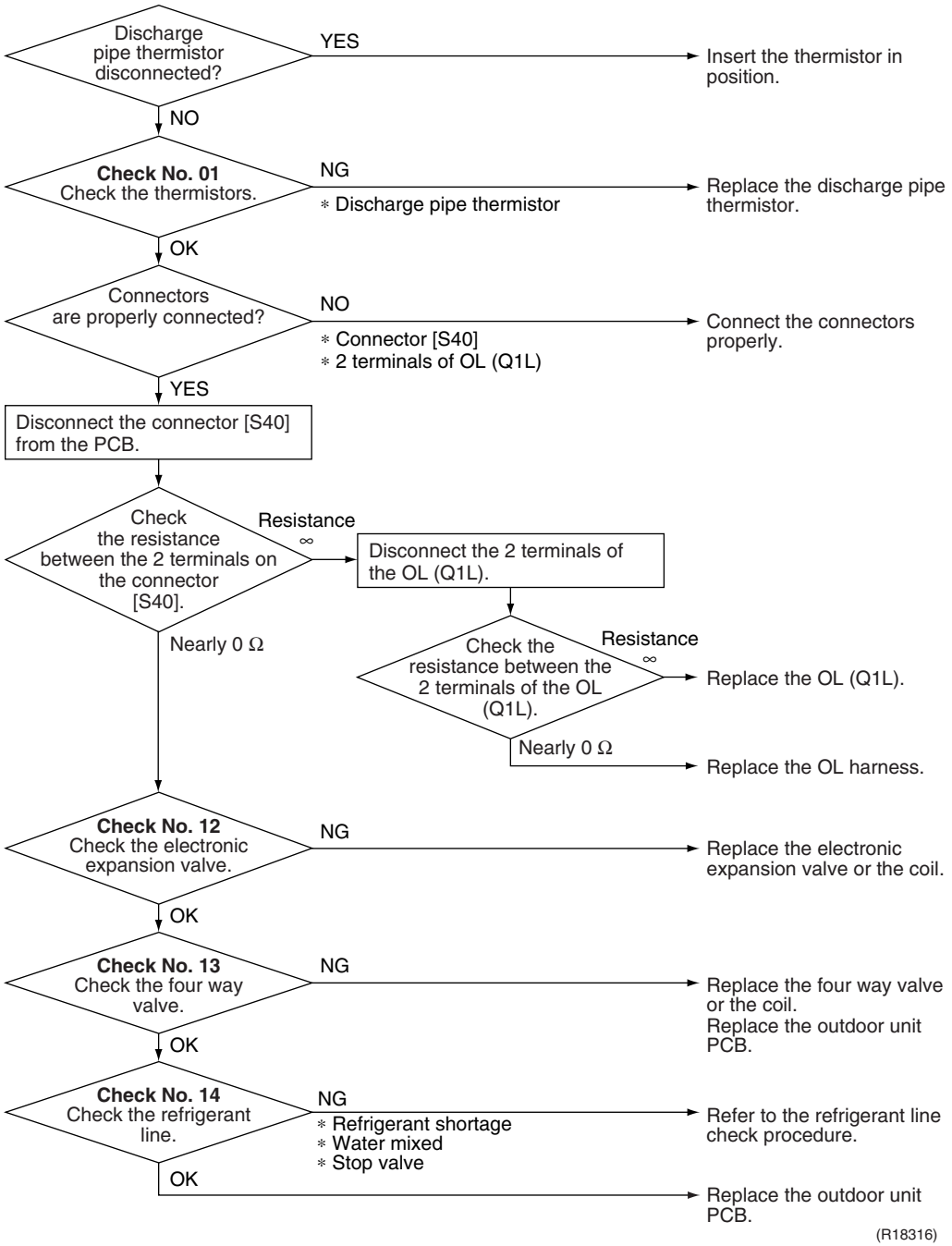
Check No.01
Refer to P.134

Check No.12
Refer to P.136

Check No.13
Refer to P.137

Check No.14
Refer to P.138

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



(R18316)

Note: OL (Q1L) activating temperature: 120°C
OL (Q1L) recovery temperature: 95°C

2.24 Compressor Lock

Error Code

E6

Method of Error Detection

A compressor lock is detected by checking the compressor running condition through the position detection circuit.

Error Decision Conditions

- Operation stops due to overcurrent.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 11 minutes without any other error

Supposed Causes

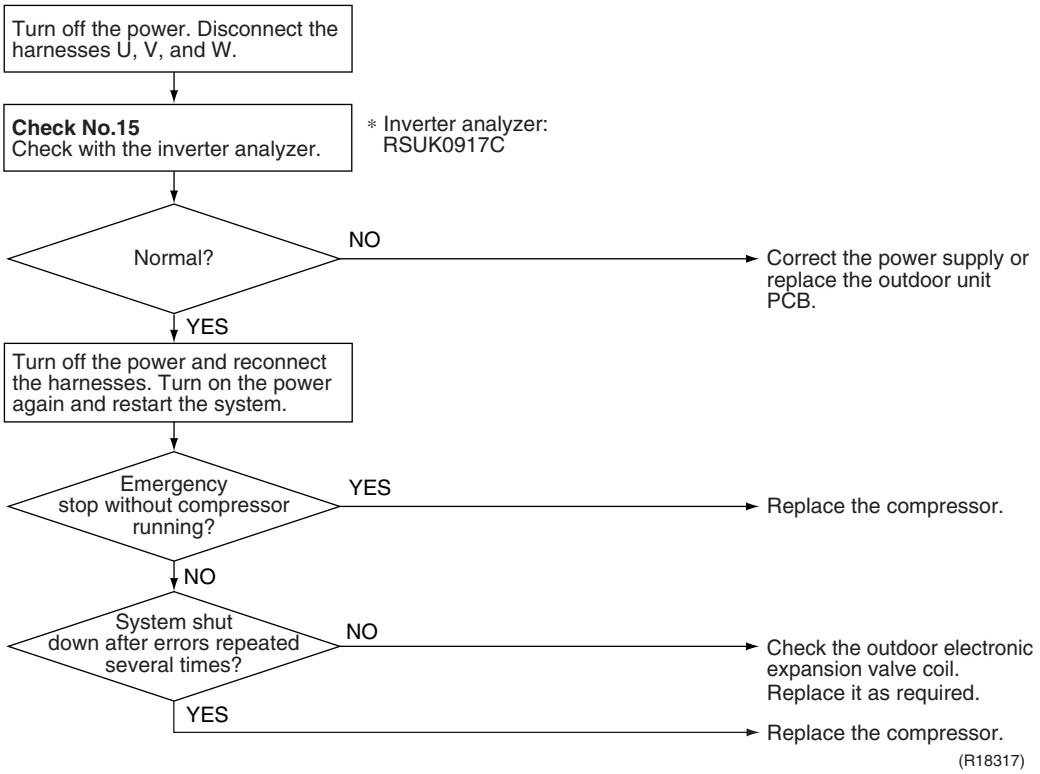
- Compressor locked
- Compressor harness disconnected

Troubleshooting

Check No.15
Refer to P.138

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.

(Precaution before turning on the power again)
Make sure the power has been off for at least 30 seconds.



(R18317)

2.25 DC Fan Lock

Error Code

E7

Method of Error Detection

An error is determined with the high-voltage fan motor rotation speed detected by the Hall IC.

Error Decision Conditions

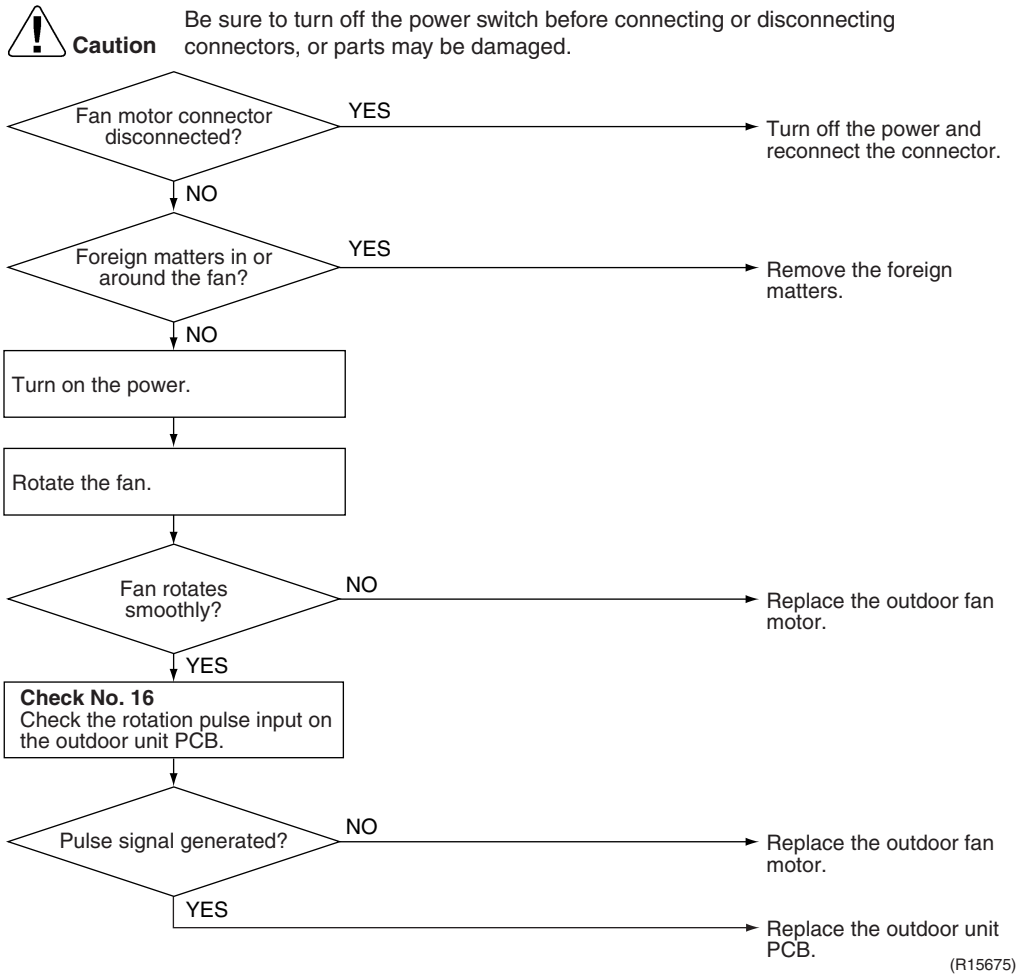
- The fan does not start in 60 seconds even when the fan motor is running.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 11 minutes without any other error

Supposed Causes

- Disconnection of the fan motor
- Foreign matters stuck in the fan
- Defective fan motor
- Defective outdoor unit PCB

Troubleshooting

Check No.16
Refer to P.140



2.26 Input Overcurrent Detection

Error Code

E8

Method of Error Detection

An input overcurrent is detected by checking the input current value with the compressor running.

Error Decision Conditions

The current exceeds about 14 A for 5 seconds with the compressor running.
(The upper limit of the current decreases when the outdoor temperature exceeds a certain level.)

Supposed Causes

- Defective compressor
- Defective power module
- Defective outdoor unit PCB
- Short circuit

Troubleshooting

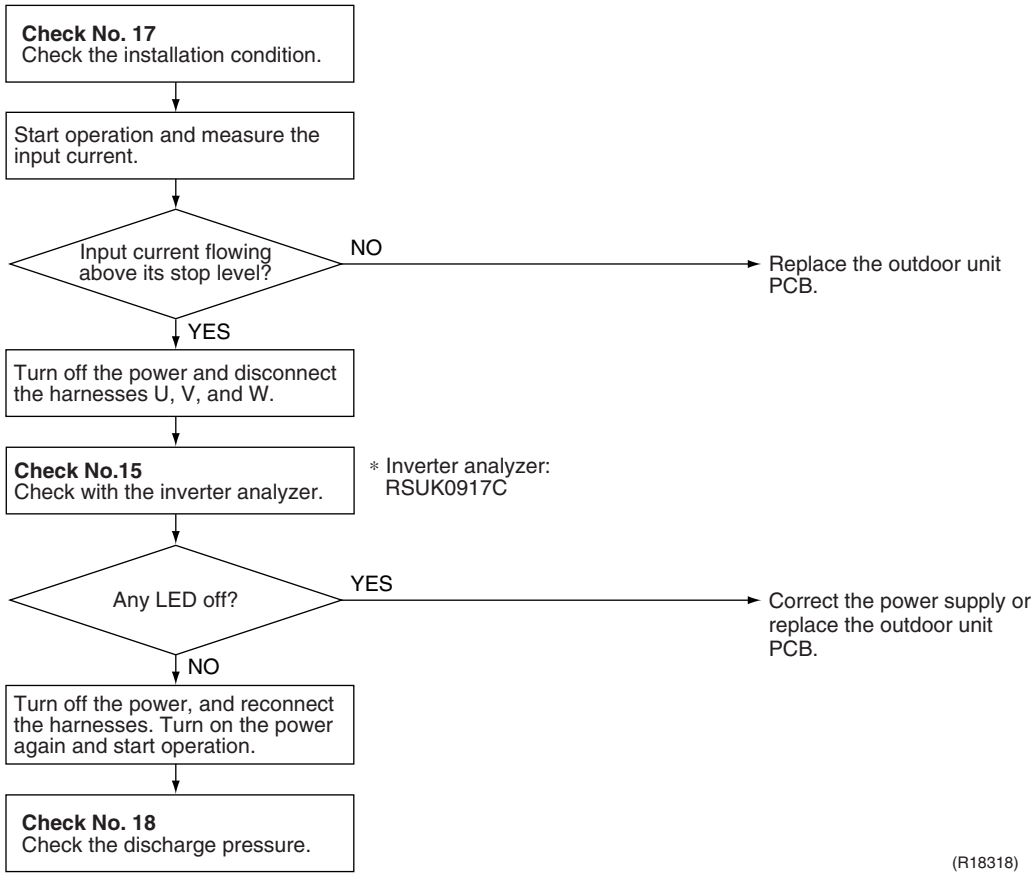
Check No.15
Refer to P.138

Check No.17
Refer to P.141

Check No.18
Refer to P.141

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.

* An input overcurrent may result from wrong internal wiring. If the system is interrupted by an input overcurrent after the wires have been disconnected and reconnected for part replacement, check the wiring again.



2.27 Four Way Valve Abnormality

Error Code

EA

Method of Error Detection

The room temperature thermistor and the indoor heat exchanger thermistor are checked if they function within their normal ranges in each operation mode.

Error Decision Conditions

A following condition continues over 10 minutes after operating for 5 minutes.

- Cooling / Dry
  (room thermistor temp. – indoor heat exchanger temp.) < –5°C
- Heating
  (indoor heat exchanger temp. – room thermistor temp.) < –5°C

- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 60 minutes without any other error

Supposed Causes

- Disconnection of four way valve coil
- Defective four way valve, coil, or harness
- Defective outdoor unit PCB
- Defective thermistor
- Refrigerant shortage
- Water mixed in refrigerant
- Defective stop valve

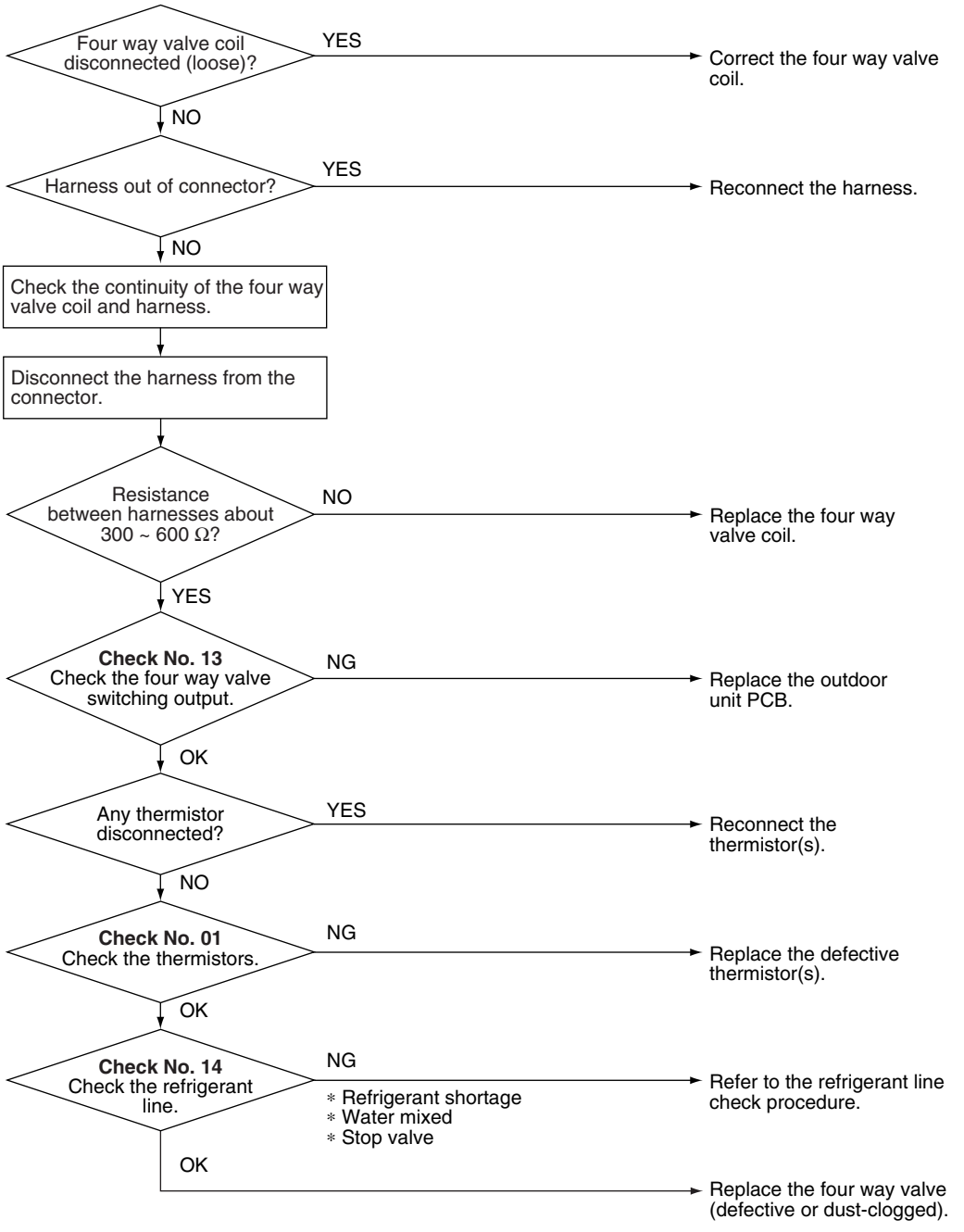
Troubleshooting

Check No.01
Refer to P.134

Check No.13
Refer to P.137

Check No.14
Refer to P.138

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



(R18127)

2.28 Discharge Pipe Temperature Control

Error Code

F3

Method of Error Detection

An error is determined with the temperature detected by the discharge pipe thermistor.

Error Decision Conditions

- If the temperature detected by the discharge pipe thermistor rises above 118°C, the compressor stops.
- The error is cleared when the discharge pipe temperature has dropped below 85°C.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 60 minutes without any other error

Supposed Causes

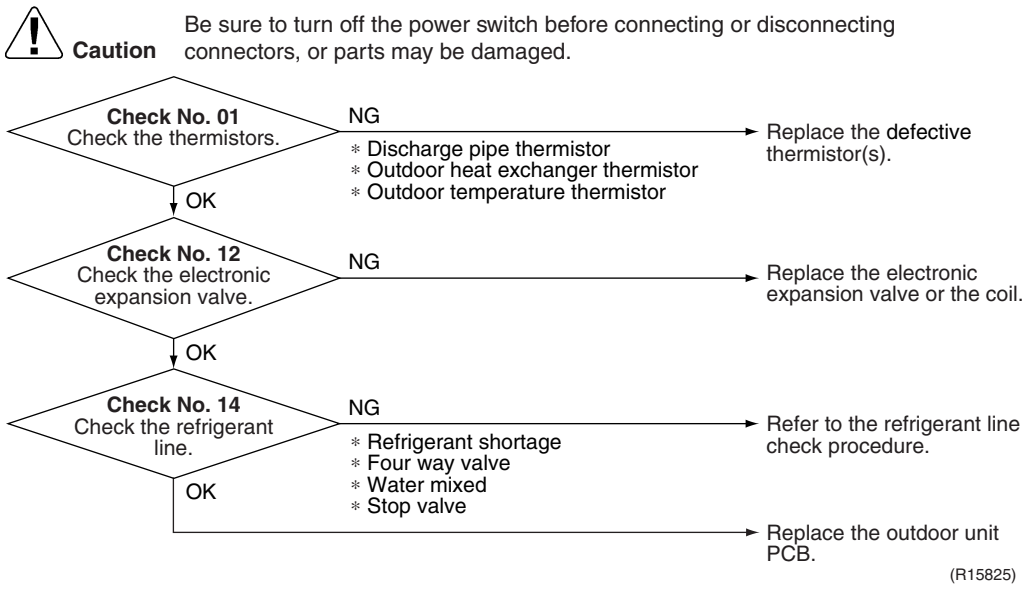
- Defective discharge pipe thermistor (Defective outdoor heat exchanger thermistor or outdoor temperature thermistor)
- Defective electronic expansion valve or coil
- Refrigerant shortage
- Defective four way valve
- Water mixed in refrigerant
- Defective stop valve
- Defective outdoor unit PCB

Troubleshooting

Check No.01
Refer to P.134

Check No.12
Refer to P.136

Check No.14
Refer to P.138



2.29 High Pressure Control in Cooling

Error Code

F6

Method of Error Detection

High-pressure control (operation halt, frequency drop, etc.) is activated in cooling operation if the temperature sensed by the outdoor heat exchanger thermistor exceeds the limit.

Error Decision Conditions

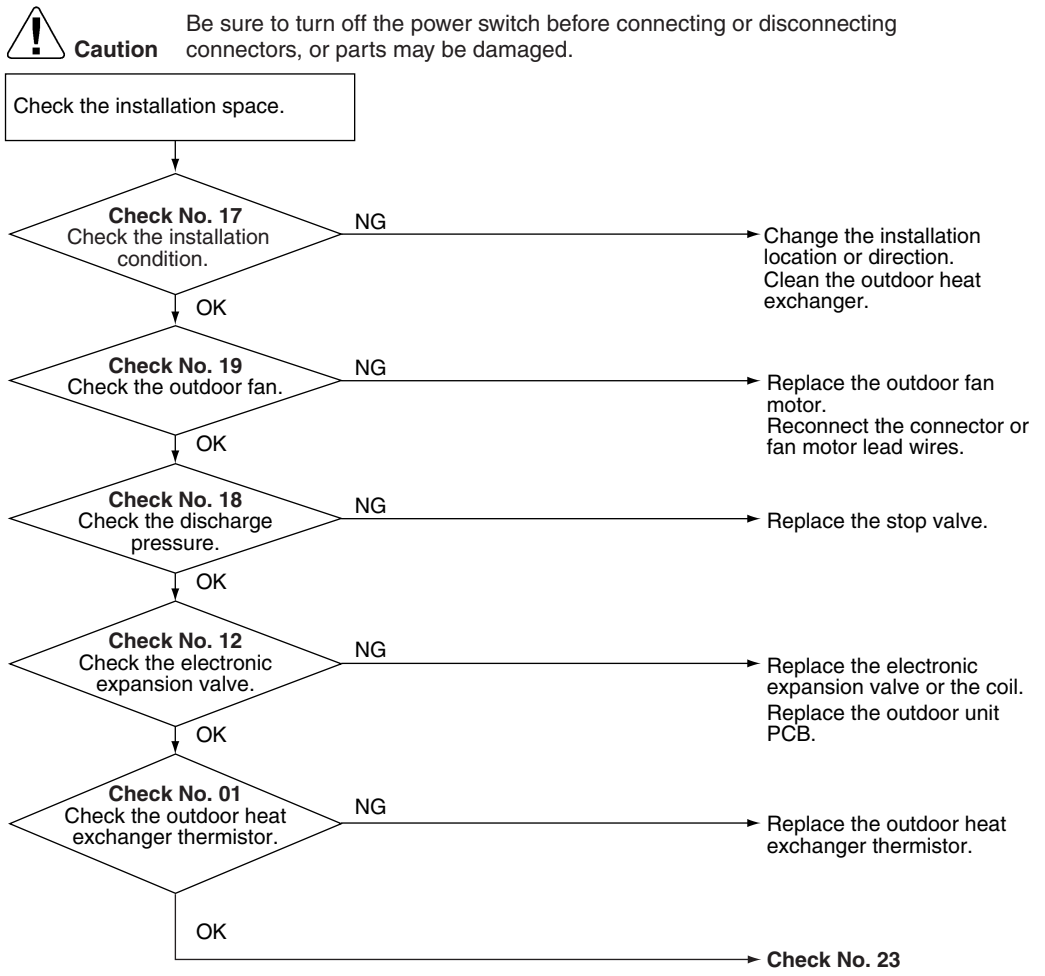
- The temperature sensed by the outdoor heat exchanger thermistor rises above about 65°C.
- The error is cleared when the temperature drops below about 50°C.

Supposed Causes

- The installation space is not large enough.
- Dirty outdoor heat exchanger
- Defective outdoor fan motor
- Defective stop valve
- Defective electronic expansion valve or coil
- Defective outdoor heat exchanger thermistor
- Defective outdoor unit PCB
- Defective dehumidifying solenoid valve

Troubleshooting

Check No.01 Refer to P.134
Check No.12 Refer to P.136
Check No.17 Refer to P.141
Check No.18 Refer to P.141
Check No.19 Refer to P.142
Check No.23 Refer to P.144



(R18128)

2.30 Compressor System Sensor Abnormality

Error Code

H0

Method of Error Detection

Fault condition is identified by DC current which is detected before compressor startup.

Error Decision Conditions

- When the DC voltage is 50 V or less.

Supposed Causes

- Defective outdoor unit PCB
- Harness disconnection / improper connection

Troubleshooting

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.

Replace the outdoor unit PCB.

2.31 Damper Abnormality

Error Code **H1**

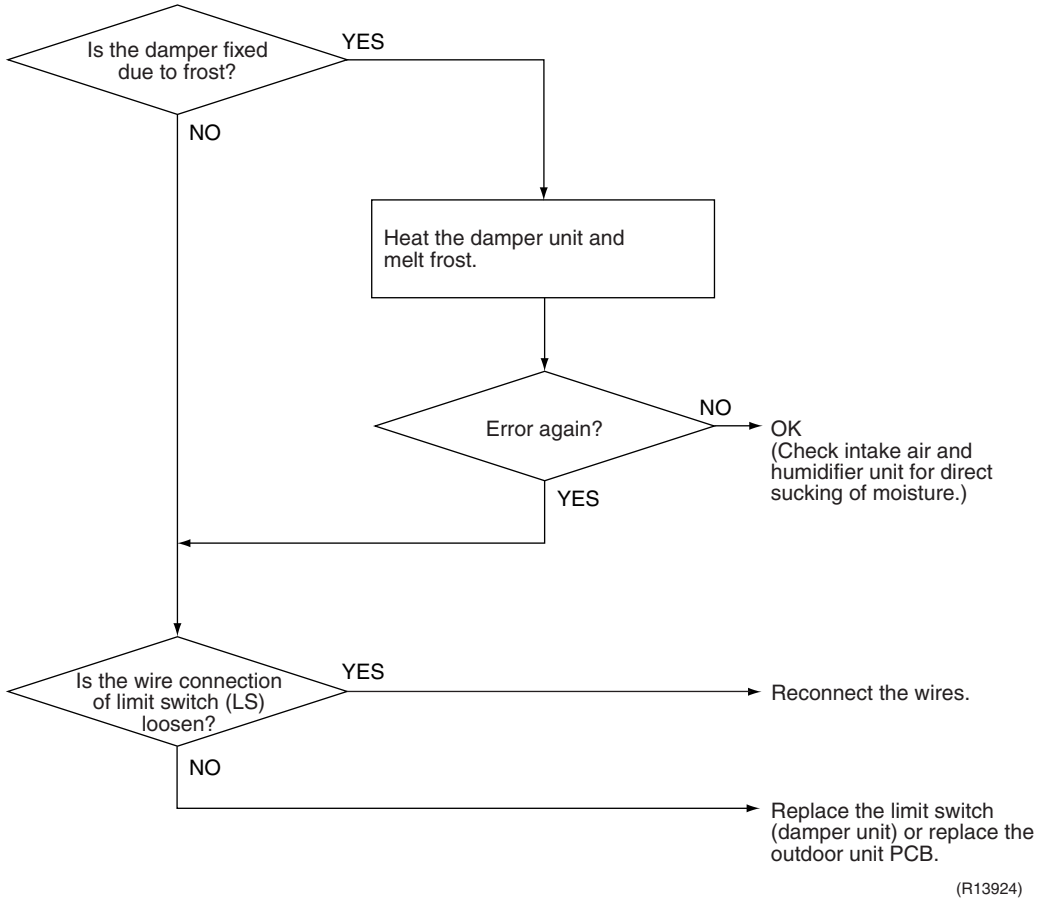
Method of Error Detection
Detected by the limit switch (LS) in the humidifier unit.

Error Decision Conditions
- Limit switch does not turn on or off at the following timing
  * The humidifier unit starts. (When the power supply turns on, humidifying operation starts)
  * The humidifier unit stops.

Supposed Causes
- Frost
- Foreign matter
- Defective limit switch (including improper connection)
- Defective damper motor

Troubleshooting

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



2.32 Position Sensor Abnormality

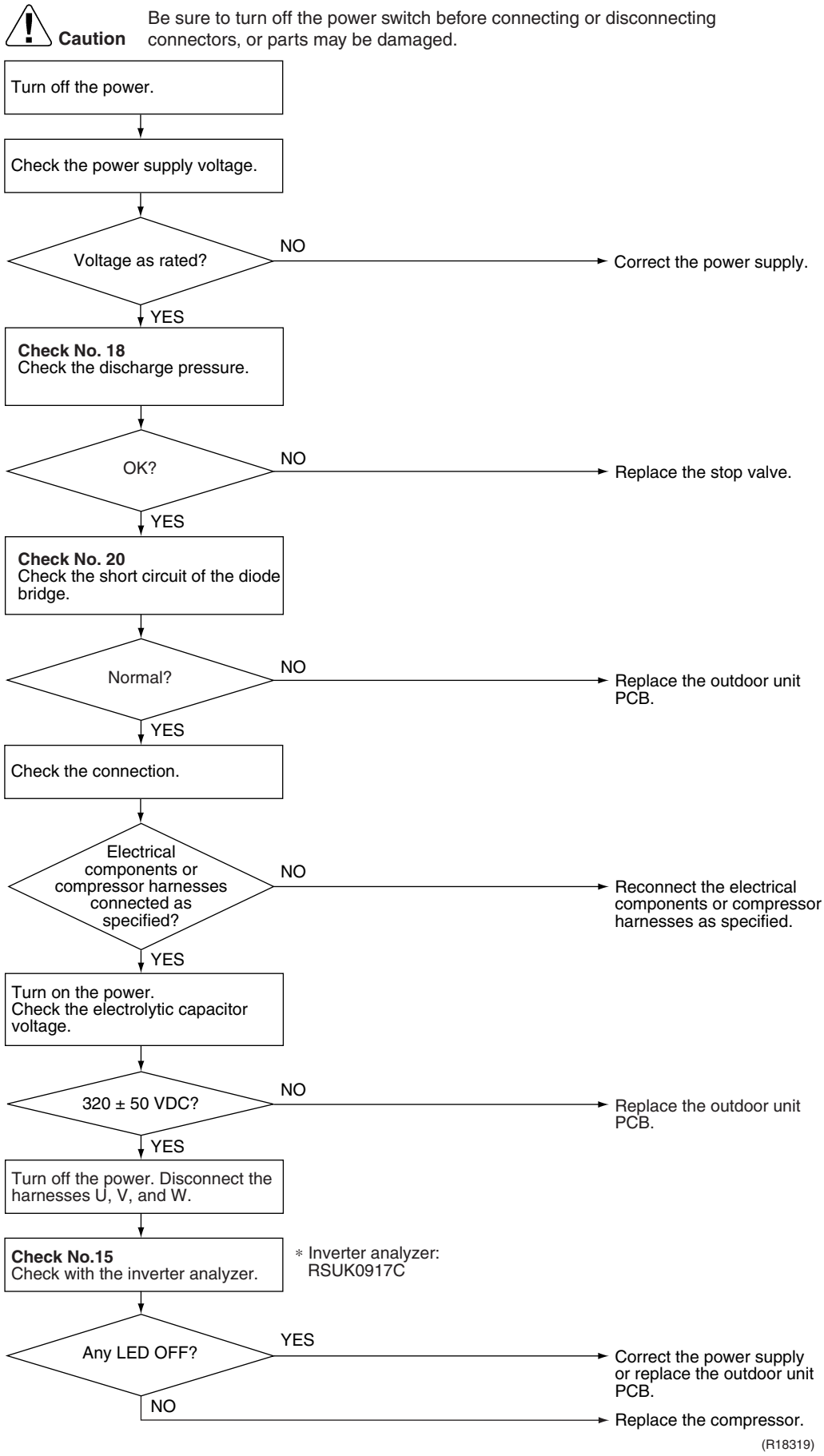
Error Code	**H6**
Method of Error Detection	A compressor start-up failure is detected by checking the compressor running condition through the position detection circuit.
Error Decision Conditions	■ When the compressor does not run for 15 seconds after receiving operation start command. ■ If the error repeats, the system is shut down. ■ Reset condition: Continuous run for about 11 minutes without any other error
Supposed Causes	■ Disconnection of the compressor relay cable ■ Defective compressor ■ Defective outdoor unit PCB ■ Start-up failure caused by the closed stop valve ■ Input voltage is outside the specified range.

Troubleshooting

Check No.15
Refer to P.138

Check No.18
Refer to P.141

Check No.20
Refer to P.142



2.33 DC Voltage / Current Sensor Abnormality

Error Code

H8

Method of Error Detection

DC voltage or DC current sensor abnormality is identified based on the compressor running frequency and the input current.

Error Decision Conditions

- The compressor operation frequency is more than 62 Hz and the input current is less than 0.75 A.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 60 minutes without any other error

Supposed Causes

- Defective outdoor unit PCB

Troubleshooting

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.

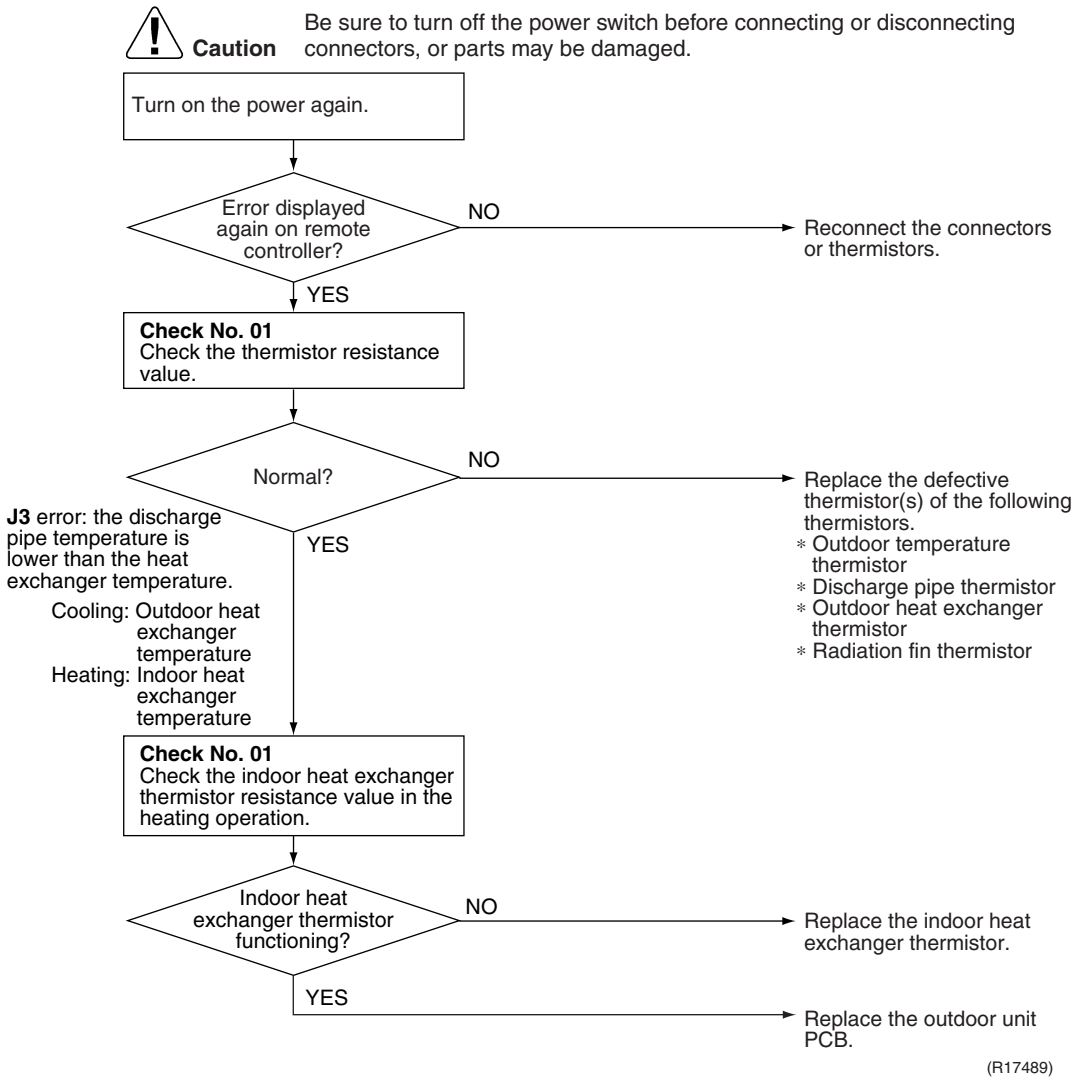
Replace the outdoor unit PCB.

2.34 Thermistor or Related Abnormality (Outdoor Unit)

Error Code	**H9, J3, J6, P4**
Method of Error Detection	This fault is identified based on the thermistor input voltage to the microcomputer. A thermistor fault is identified based on the temperature sensed by each thermistor.
Error Decision Conditions	■ The thermistor input is above 4.98 V or below 0.02 V with the power on. ■ **J3** error is judged if the discharge pipe temperature is lower than the heat exchanger temperature.
Supposed Causes	■ Disconnection of the connector for the thermistor ■ Defective thermistor corresponding to the error code ■ Defective heat exchanger thermistor in the case of **J3** error (outdoor heat exchanger thermistor in cooling operation, or indoor heat exchanger thermistor in heating operation) ■ Defective outdoor unit PCB

Troubleshooting

Check No.01
Refer to P.134



H9: Outdoor temperature thermistor
J3: Discharge pipe thermistor
J6: Outdoor heat exchanger thermistor
P4: Radiation fin thermistor

2.35 Electrical Box Temperature Rise

Error Code

L3

Method of Error Detection

An electrical box temperature rise is detected by checking the radiation fin thermistor with the compressor off.

Error Decision Conditions

- With the compressor off, the radiation fin temperature is above **A**°C.
- The error is cleared when the radiation fin temperature drops below **B**°C.
- To cool the electrical components, the outdoor fan starts when the radiation fin temperature rises above **C**°C and stops when it drops below **B**°C.

A (°C)	**B** (°C)	**C** (°C)
122	113	120

Supposed Causes

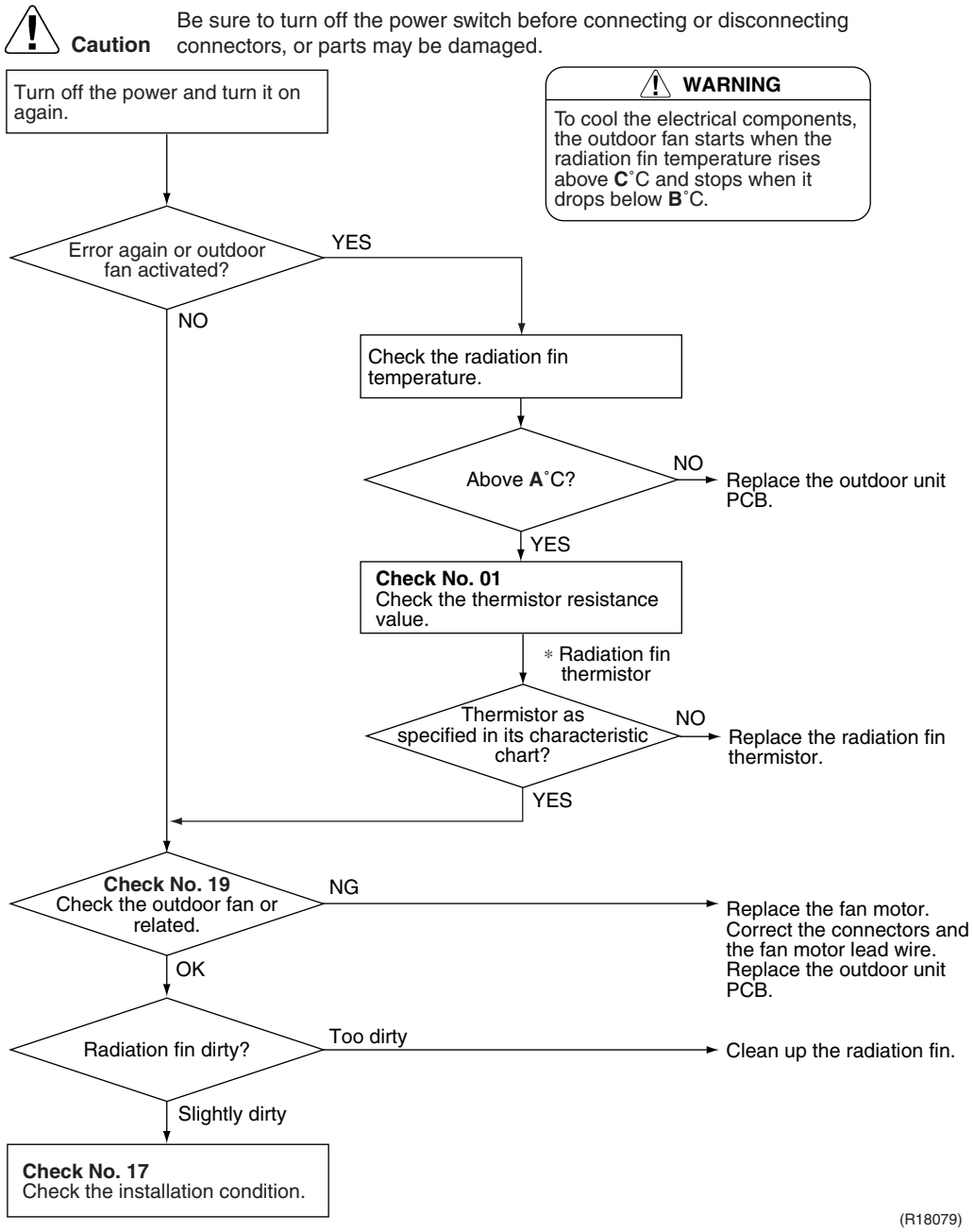
- Defective outdoor fan motor
- Short circuit
- Defective radiation fin thermistor
- Disconnection of connector
- Defective outdoor unit PCB

Troubleshooting

Check No.01
Refer to P.134

Check No.17
Refer to P.141

Check No.19
Refer to P.142



A (°C)	**B** (°C)	**C** (°C)
122	113	120

2.36 Radiation Fin Temperature Rise

Error Code

L4

Method of Error Detection

A radiation fin temperature rise is detected by checking the radiation fin thermistor with the compressor on.

Error Decision Conditions

- If the radiation fin temperature with the compressor on is above **A**°C.
- The error is cleared when the radiation fin temperature drops below **B**°C.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 60 minutes without any other error

A (°C)	**B** (°C)
86	67

Supposed Causes

- Defective outdoor fan motor
- Short circuit
- Defective radiation fin thermistor
- Disconnection of connector
- Defective outdoor unit PCB
- Silicon grease is not applied properly on the radiation fin after replacing the outdoor unit PCB.

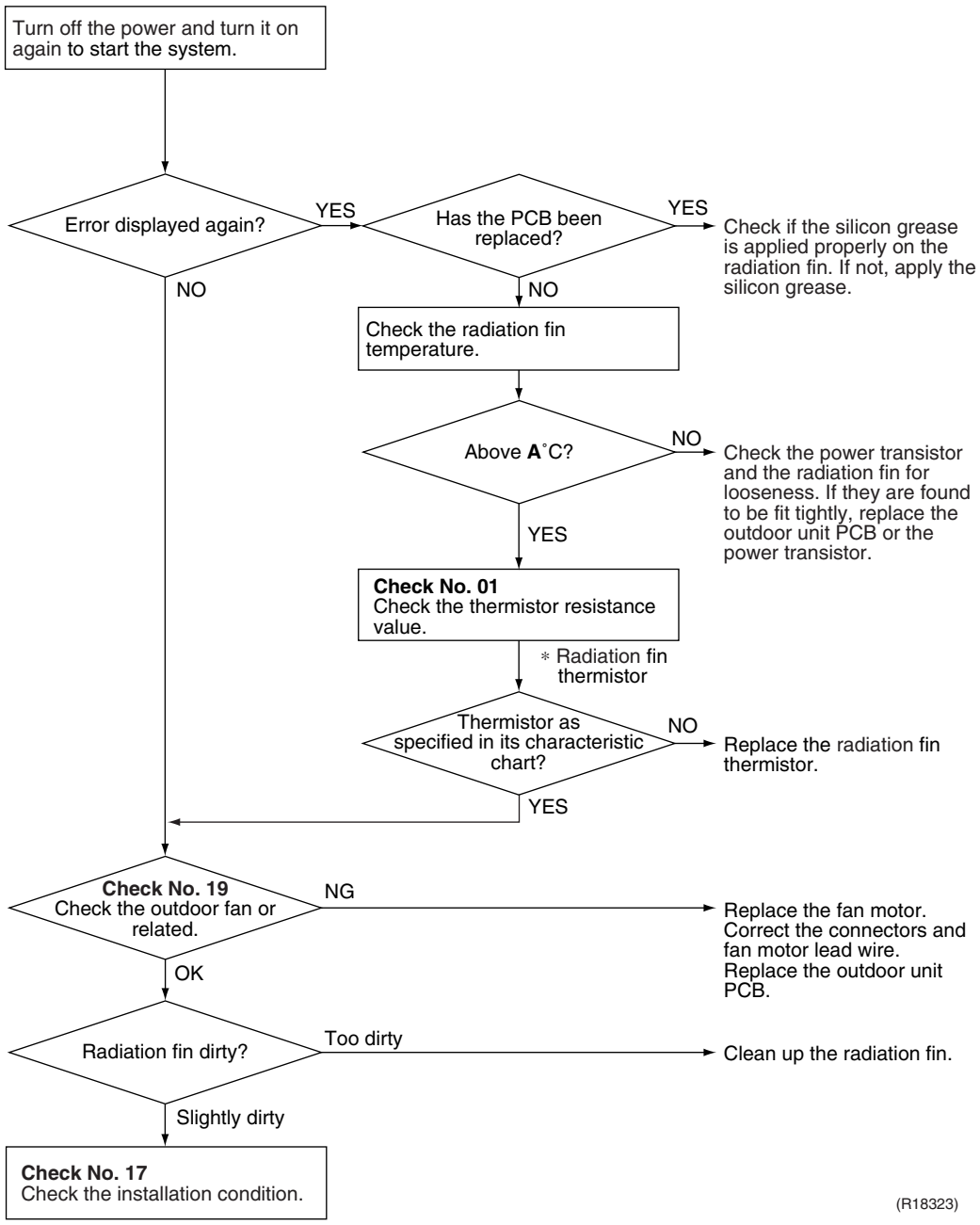
Troubleshooting

Check No.01
Refer to P.134

Check No.17
Refer to P.141

Check No.19
Refer to P.142

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



A (°C)
86

Note: Refer to “Silicon Grease on Power Transistor / Diode Bridge” on P.151.

2.37 Output Overcurrent Detection

Error Code	**L5**
Method of Error Detection	An output overcurrent is detected by checking the current that flows in the inverter DC section.
Error Decision Conditions	■ A position signal error occurs while the compressor is running. ■ A speed error occurs while the compressor is running. ■ An output overcurrent signal is fed from the output overcurrent detection circuit to the microcomputer. ■ If the error repeats, the system is shut down. ■ Reset condition: Continuous run for about 11 minutes without any other error
Supposed Causes	■ Poor installation condition ■ Closed stop valve ■ Defective power module ■ Wrong internal wiring ■ Abnormal power supply voltage ■ Defective outdoor unit PCB ■ Defective compressor

Troubleshooting

Check No.15
Refer to P.138

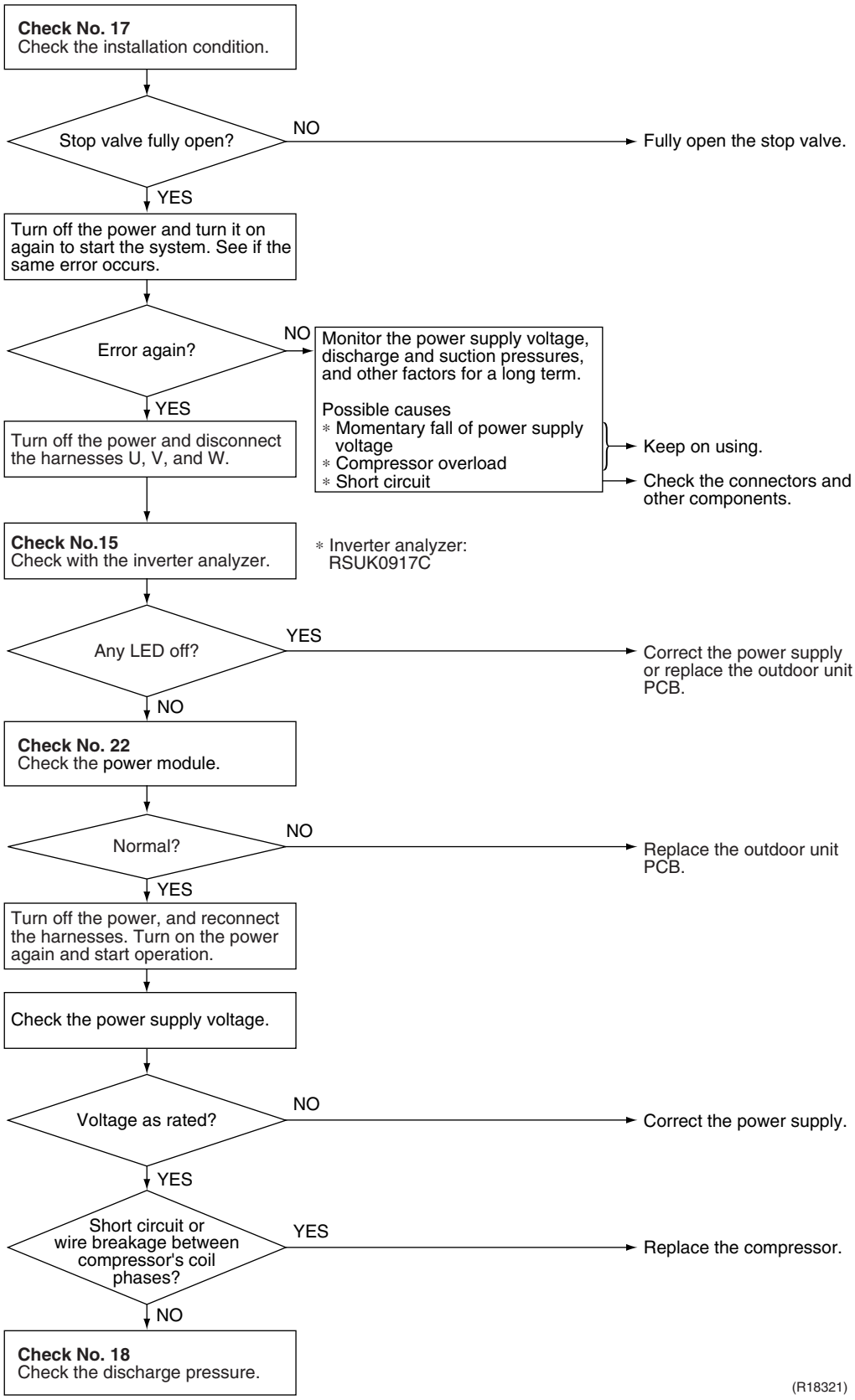
Check No.17
Refer to P.141

Check No.18
Refer to P.141

Check No.22
Refer to P.143

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.

* An output overcurrent may result from wrong internal wiring. If the system is interrupted by an output overcurrent after the wires have been disconnected and reconnected for part replacement, check the wiring again.



2.38 Fan Motor System Abnormality / Fan Lock

Error Code **P9**

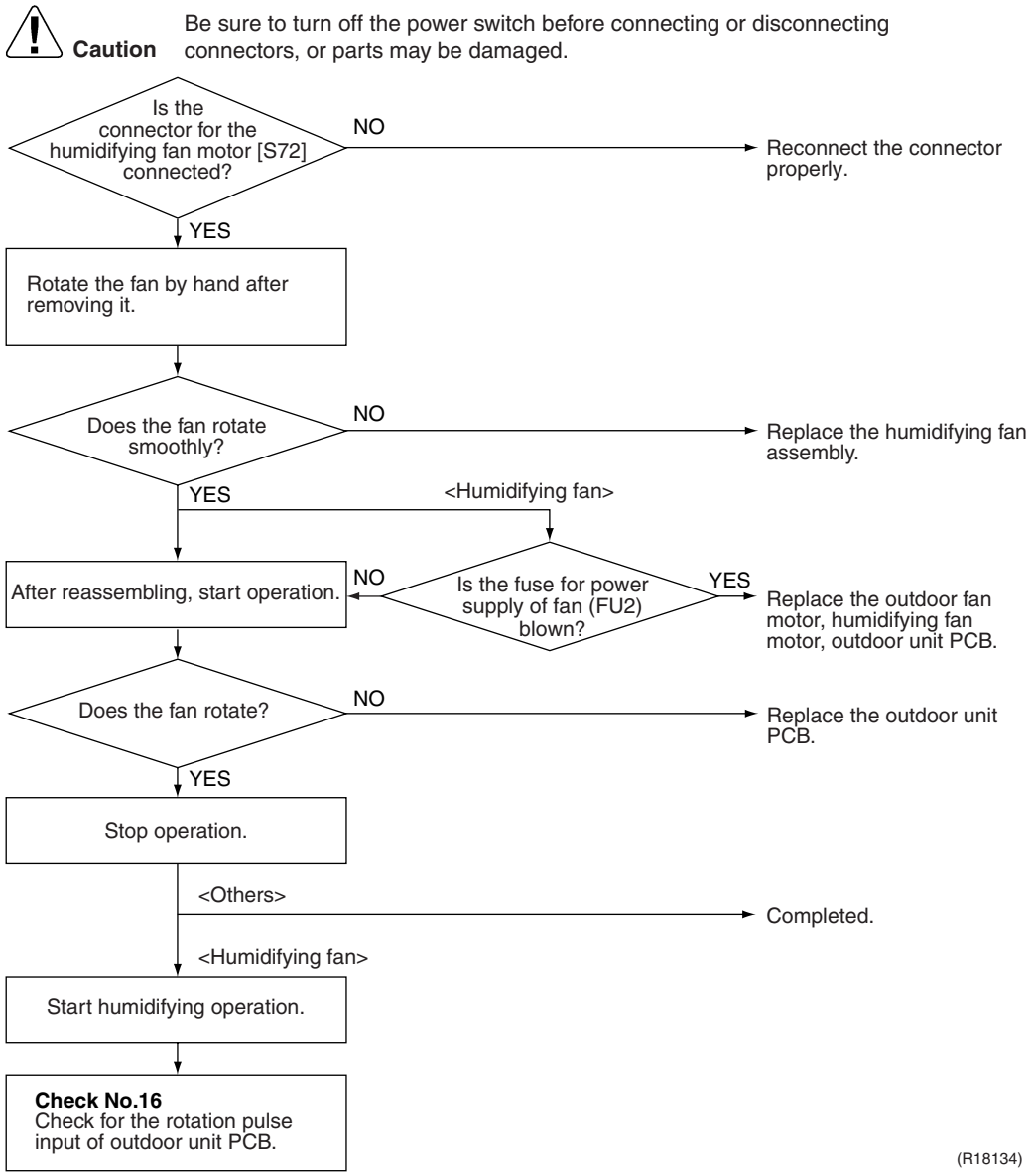
Method of Error Detection
During humidifying fan motor running, fan motor system abnormality is identified based on the fan rotation speed (rpm) detected by Hall IC.

Error Decision Conditions
<Humidifying fan>
When the fan rotation speed does not reach 100 rpm within 7 seconds after the fan motor starts.

Supposed Causes
<Humidifying fan>
- Defective humidifying fan motor
- Breakage of relay harness or loose connector
- Detection fault of fan rotation speed due to defective outdoor unit PCB

Troubleshooting

Check No.16
Refer to P.140



2.39 Heater Wire Abnormality

Error Code

PA

Method of Error Detection

An error is identified when the outlet temperature of humidifying fan does not reach a certain temperature within a given time after the heater is turned on.

Error Decision Conditions

When the temperature detected by the humidifying thermistor is lower than the outdoor temperature (with the heater turned off) + 6°C, and this condition continues for 30 minutes.

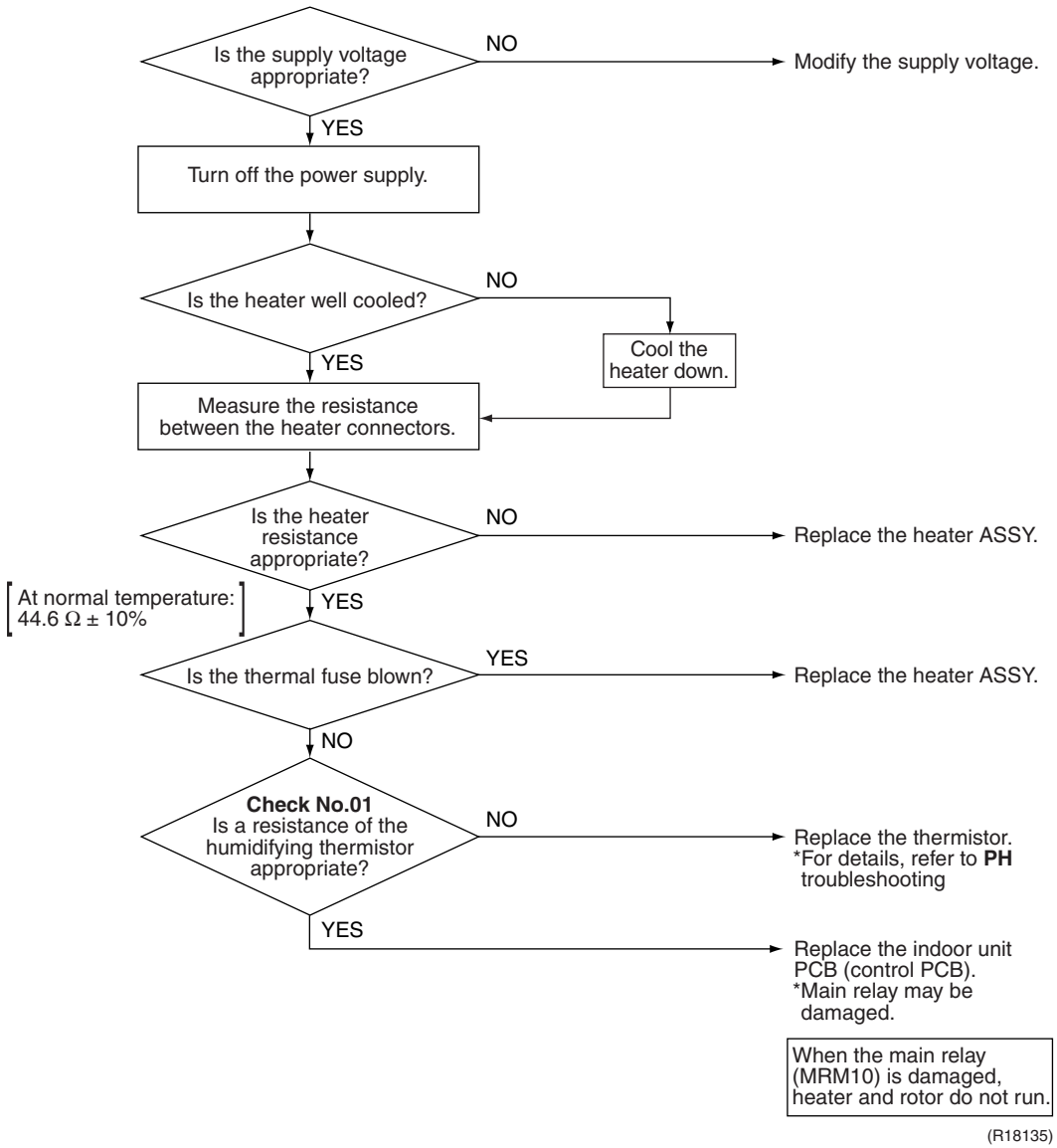
Supposed Causes

- Breakage of heater filament
- Breakage of heater harness
- Abnormal temperature detected by outdoor temperature thermistor
- Abnormal temperature detected by humidifying thermistor
- Defective main relay
- Blown thermal fuse
- Defective heater control part
- Extremely low voltage

Troubleshooting

Check No.01
Refer to P.134

Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



(R18135)

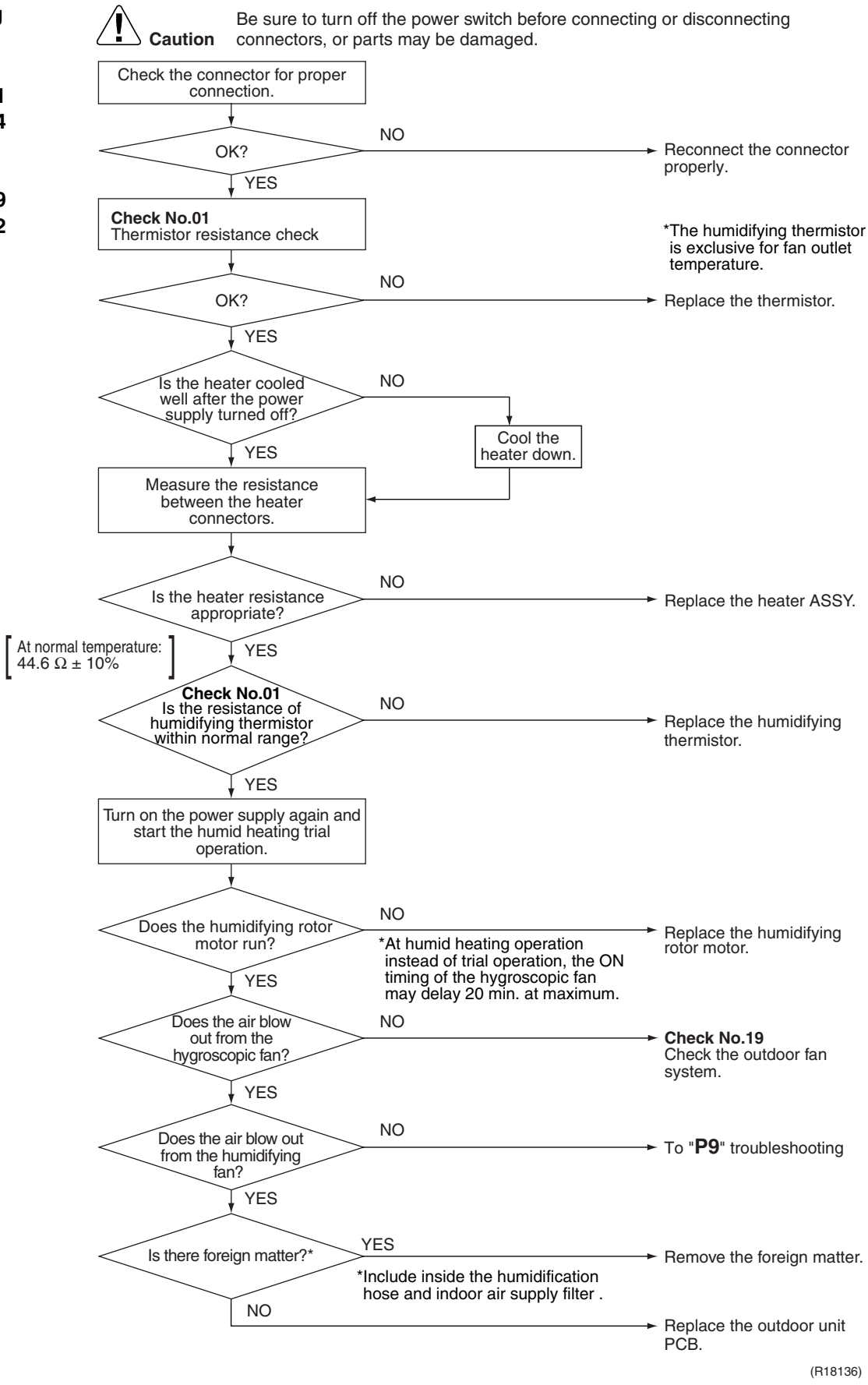
2.40 Humidifying Thermistor Abnormality / Humidifying Heater Temperature Abnormality

Error Code	**PH**
Method of Error Detection	An error is identified when the temperature detected by the humidification thermistor is abnormal.
Error Decision Conditions	■ When the power is supplied and the thermistor input is 4.92 V or more, or 0.06 V or less. ■ The humidifying fan outlet temperature is more than 90°C.
Supposed Causes	■ Short circuit and wire breakage of humidifying thermistor ■ Disconnection of connector ■ Heater has a high power ■ Thermistor temperature detection error ■ Defective rotor motor ■ Defective hygroscopic fan motor ■ Defective heater control part ■ Defective humidifying fan

Troubleshooting

Check No.01
Refer to P.134

Check No.19
Refer to P.142



3. Check

3.1 Thermistor Resistance Check

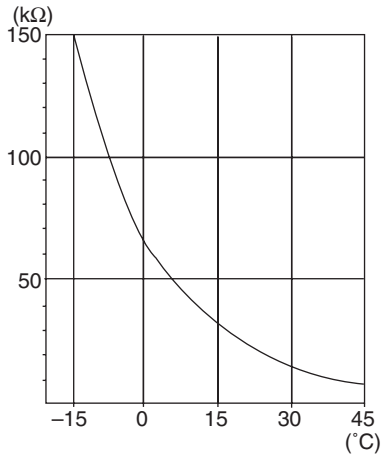
Check No.01

Disconnect the connectors of the thermistors from the PCB, and measure the resistance of each thermistor using tester.
The relationship between normal temperature and resistance is shown in the table and the graph below.

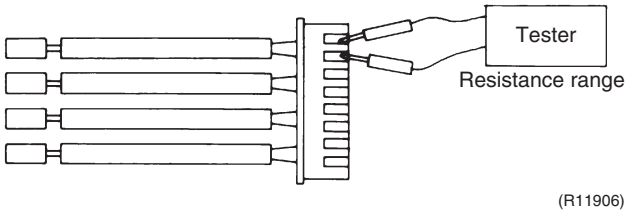
The data is for reference purpose only.

Thermistor temperature (°C)	Resistance (kΩ)
–20	197.8
–15	148.2
–10	112.1
–5	85.60
0	65.93
5	51.14
10	39.99
15	31.52
20	25.02
25	20.00
30	16.10
35	13.04
40	10.62
45	8.707
50	7.176

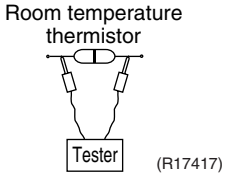
(R25°C = 20 kΩ, B = 3950 K)



(R11905)



(R11906)



(R17417)

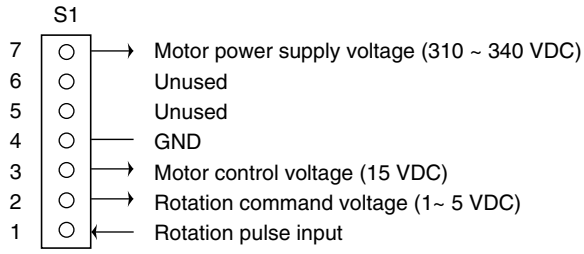
- When the room temperature thermistor is directly mounted on the humidity sensor PCB, disconnect the connector of humidity sensor PCB from the control PCB to measure the resistance.

- When the connector of indoor heat exchanger thermistor is soldered on the PCB, remove the thermistor and measure the resistance.

3.2 Fan Motor Connector Output Check

Check No.02

1. Check the connection of connector.
2. Check the motor power supply voltage output (pins 4 - 7).
3. Check the motor control voltage (pins 4 - 3).
4. Check the rotation command voltage (pins 4 - 2).
5. Check the rotation pulse (pins 4 - 1).

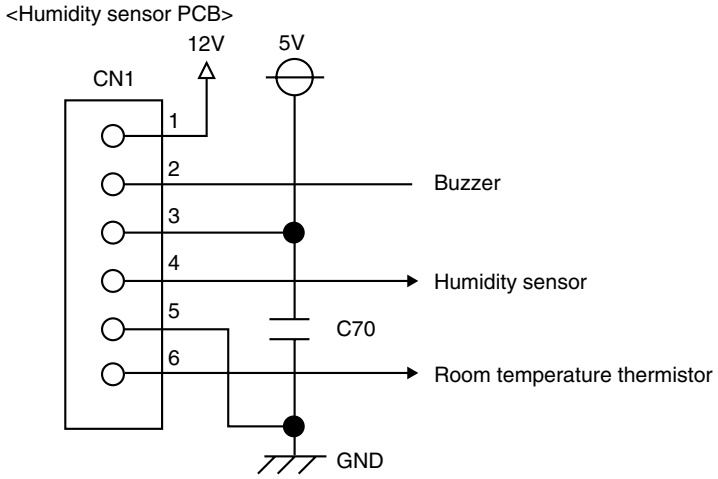


(R12404)

3.3 Humidity Sensor Check

Check No.07

1. Check that the connection is proper.
2. Change the ambient conditions (*) and check that the input level changes accordingly.
   * Change the humidity, temperature, airflow rate. To do this, merely breathe upon.



(R6023)

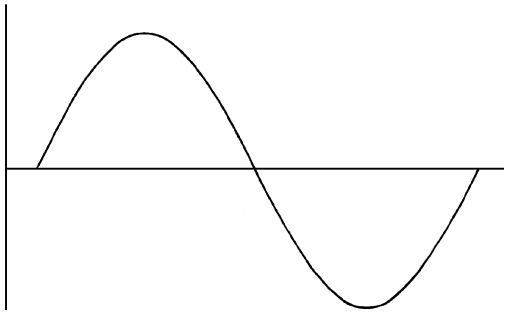
3.4 Power Supply Waveforms Check

Check No.11

Measure the power supply waveform between No. 1 and No. 2 on the terminal board, and check the waveform disturbance.

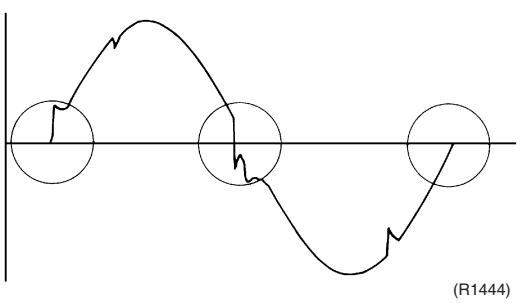
- Check to see if the power supply waveform is a sine wave. (Fig.1)
- Check to see if there is waveform disturbance near the zero cross. (sections circled in Fig.2)

Fig.1



(R1736)

Fig.2



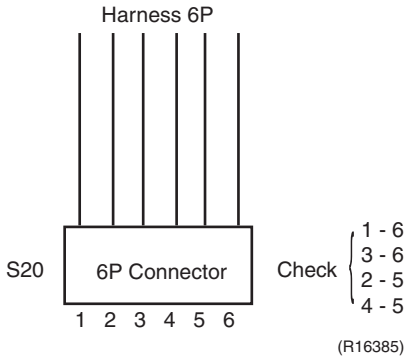
(R1444)

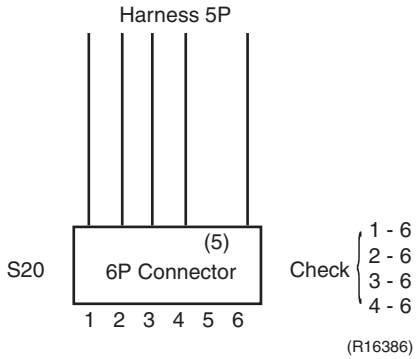
3.5 Electronic Expansion Valve Check

Check No.12

Conduct the followings to check the electronic expansion valve (EV).

1. Check to see if the EV connector is correctly connected to the PCB.
2. Turn the power off and on again, and check to see if the EV generates a latching sound.
3. If the EV does not generate a latching sound in the above step 2, disconnect the connector and check the continuity using a tester.
4. Check the continuity between the pins 1 - 6, 3 - 6, 2 - 5, 4 - 5 (between the pins 1 - 6, 2 - 6, 3 - 6, 4 - 6 for the harness 5P models). If there is no continuity between the pins, the EV coil is faulty.





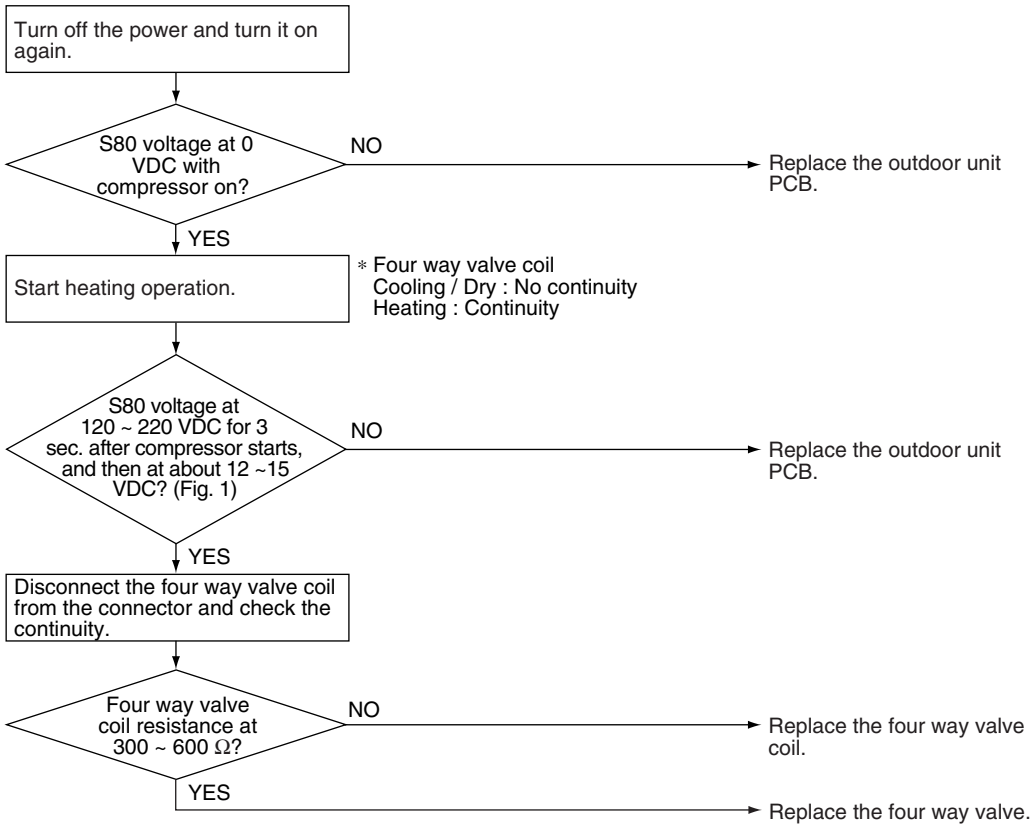
5. If the continuity is confirmed in step 3, the outdoor unit PCB is faulty.

Note: Please note that the latching sound varies depending on the valve type.

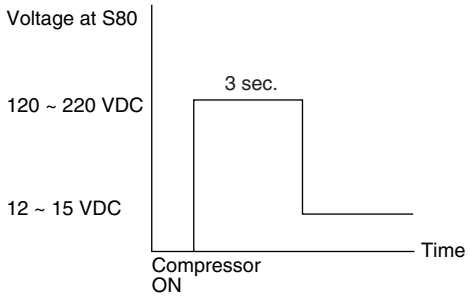
3.6 Four Way Valve Performance Check

Check No.13

< Caution on resetting the power supply >
* Be sure to wait for 30 sec. or more after turning off the power supply.



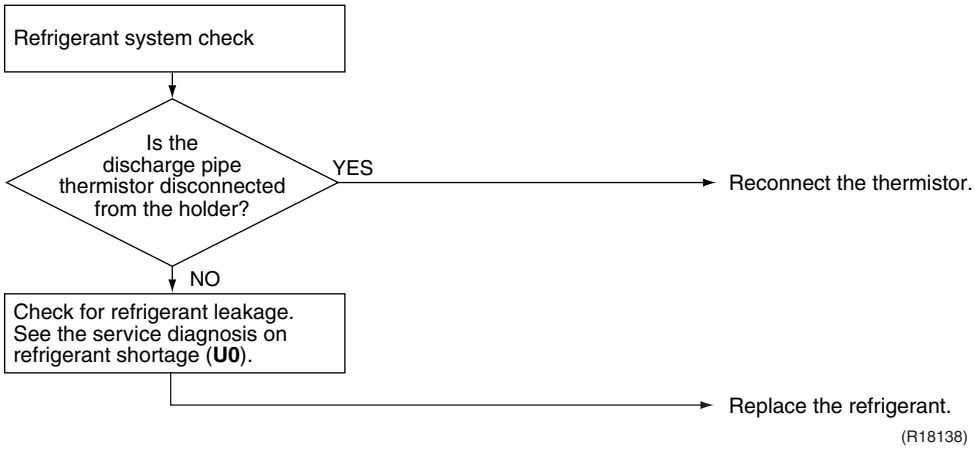
(Fig. 1)



(R13938)

3.7 Inverter Units Refrigerant System Check

Check No.14



3.8 Inverter Analyzer Check

Check No.15

■ **Characteristics**

Inverter analyzer: RSUK0917C

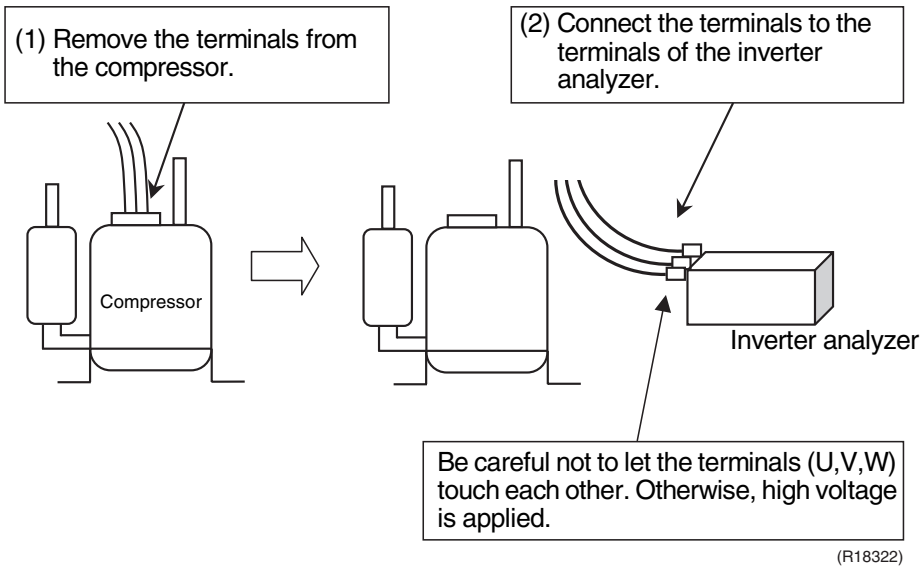
If an abnormal stop occurs due to compressor startup failure or overcurrent output when using an inverter unit, it is difficult to judge whether the stop is caused by the compressor failure or some other failure (main PCB, power module, etc.). The inverter analyzer makes it possible to judge the cause of trouble easily and securely. (Connect an inverter analyzer as a quasi-compressor instead of compressor and check the output of the inverter)

■ **Operation Method**

Step 1
Be sure to turn the power off.

Step 2
Install an inverter analyzer instead of a compressor.

Note:
Make sure the charged voltage of the built-in smoothing electrolytic capacitor drops to 10 VDC or below before carrying out the service work.

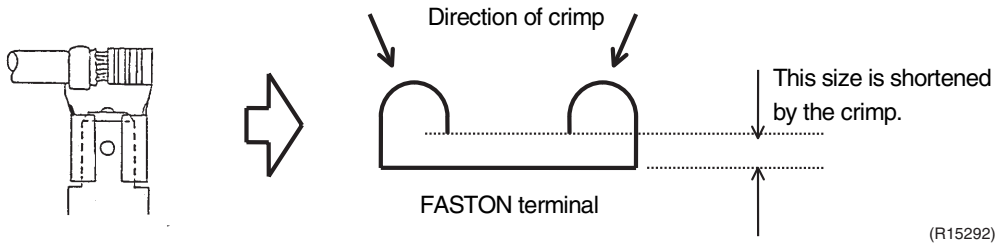


Reference:
If the terminals of the compressor are not FASTON terminals (difficult to remove the wires on the terminals), it is possible to connect wires available on site to the outdoor unit from output side of PCB. (Do not connect them to the compressor at the same time, otherwise it may result in incorrect detection.)

Step 3
Activate the power transistor test operation with the remote controller.
(1) Turn the power on.
(2) Press the [CLOCK] button on the remote controller for 5 seconds.
→ SETTING 1. TEST is displayed.
(3) Press the [CLOCK] button.
→ 1 is displayed.
(4) Press the [CLEAN / FRESH] button.
→ Power transistor test operation starts.

■ **Diagnose method (Diagnose according to 6 LEDs lighting status.)**
(1) If all the LEDs are lit uniformly, the compressor is defective.
→ Replace the compressor.
(2) If the LEDs are not lit uniformly, check the power module.
→ Refer to **Check No.22**.
(3) If NG in **Check No.22**, replace the power module.
(Replace the PCB. The power module is united with the PCB.)
If OK in **Check No.22**, check if there is any solder cracking on the PCB.
(4) If any solder cracking is found, replace the PCB or repair the soldered section.
If there is no solder cracking, replace the PCB.

Caution
(1) When the output frequency is low, the LEDs blink slowly. As the output frequency increases, the LEDs blink quicker. (The LEDs look like they are lit.)
(2) On completion of the inverter analyzer diagnosis, be sure to re-crimp the FASTON terminals. Otherwise, the terminals may be burned due to loosening.



3.9 Rotating Pulse Check on Outdoor Unit PCB

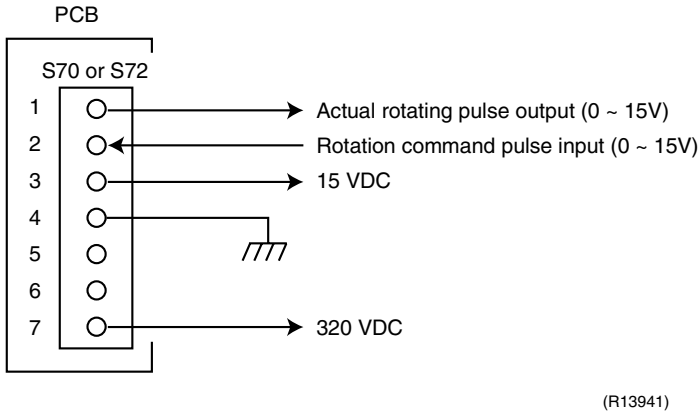
Check No.16

■ **For outdoor fan motor or humidifier fan motor**

Outdoor fan motor: S70
Humidifier fan motor: S72

Make sure that the voltage of 320 ± 30 V is applied.

1. Set operation OFF and power OFF. Remove the connector [S70] or [S72].
2. Check that the voltage between the pins 4 - 7 is 320 VDC.
3. Check that the control voltage between the pins 3 - 4 is 15 VDC.
4. Check that the rotation command voltage between the pins 2 - 4 is 5 VDC.
5. Keep operation OFF and power OFF. Connect the connector [S70] or [S72].
6. Check whether 2 pulses (0 ~ 15 VDC) are output at the pins 1 - 4 when the fan motor is rotated 1 turn by hand.



If NG in step 2 → Defective outdoor unit PCB → Replace the outdoor unit PCB.
If NG in step 4 → Defective Hall IC → Replace the outdoor fan motor.
If OK in both steps 2 and 4 → Replace the outdoor unit PCB.

■ **For hygroscopic fan motor**

Check that the connectors [HK1] [HK2] [HK3] for proper connection.

1. Check that the power supply voltage 5 VDC is applied between [HK1] and [HK3].

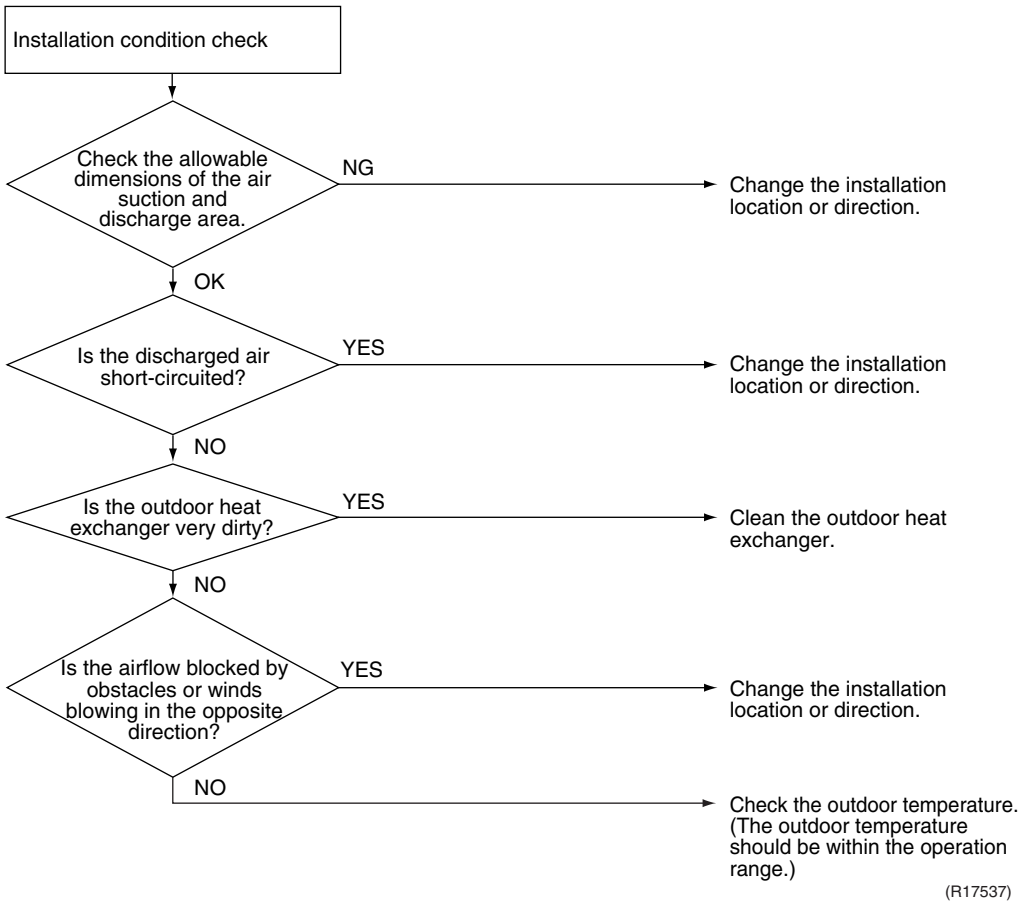
If NG in step 1 → Defective outdoor unit PCB → Replace the outdoor unit PCB.

■ **Fuses are commonly used as follows. Refer to the corresponding wiring diagram.**

FU1	Hygroscopic fan motor
FU2	Outdoor fan motor Humidifier fan motor Four way valve coil

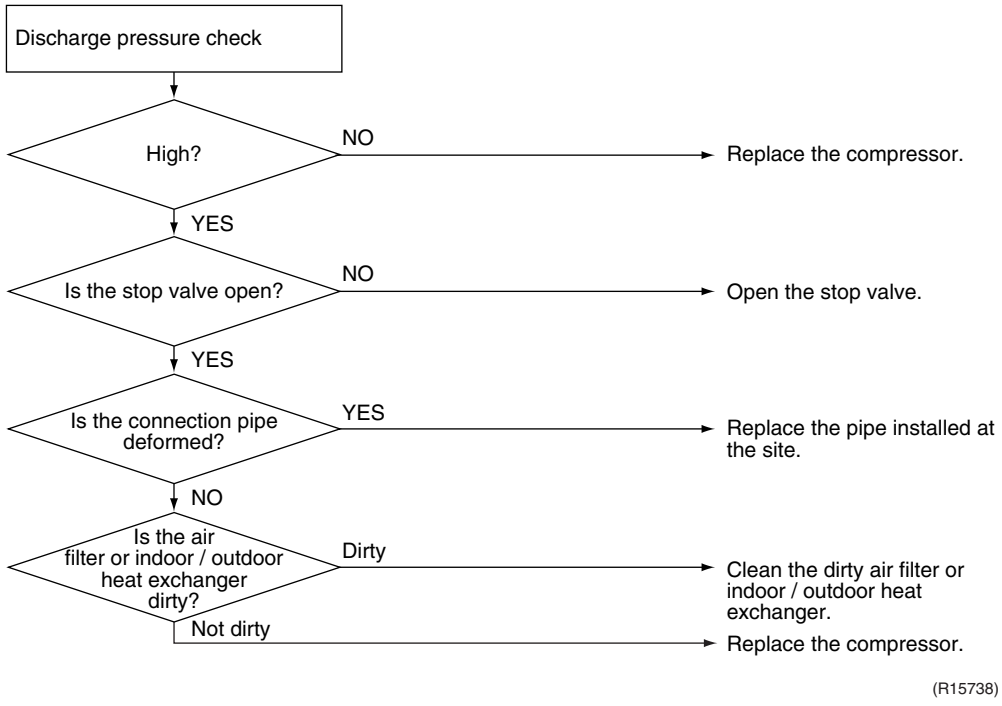
3.10 Installation Condition Check

Check No.17



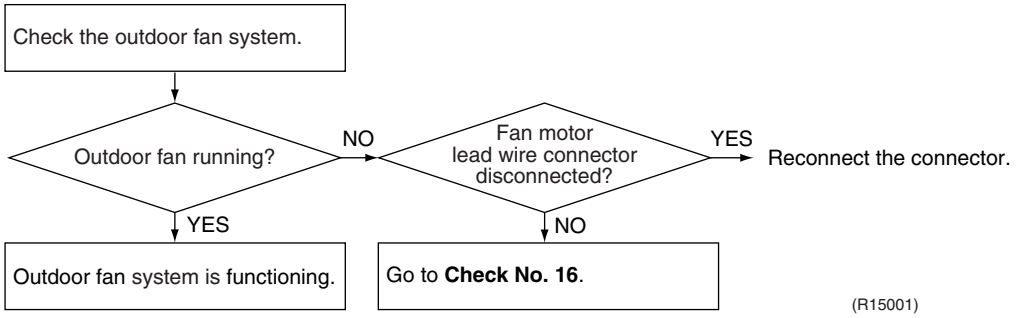
3.11 Discharge Pressure Check

Check No.18



3.12 Outdoor Fan System Check

Check No.19 **DC motor**



3.13 Main Circuit Short Check

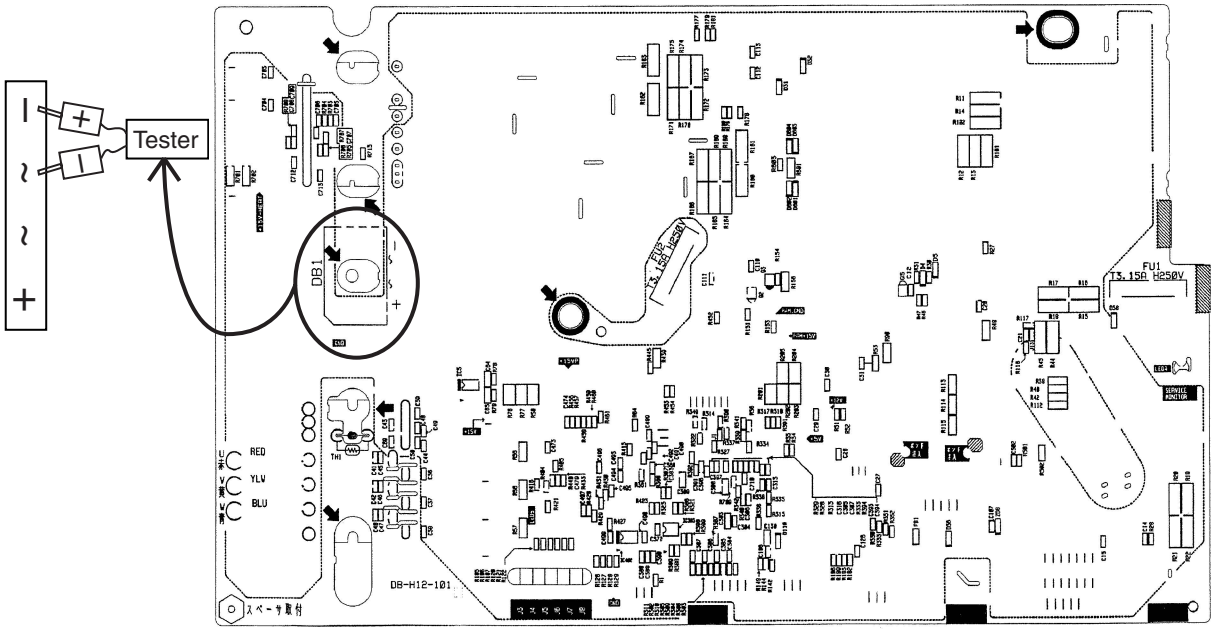
Check No.20

Note: Check to make sure that the voltage between (+) and (–) of the diode bridge (DB1) is approx. 0 V before checking.

- Measure the resistance between the pins of the DB1 referring to the table below.
- If the resistance is ∞ or less than 1 kΩ, short circuit occurs on the main circuit.

Negative (–) terminal of tester (positive terminal (+) for digital tester)	~ (2, 3)	+ (4)	~ (2, 3)	− (1)
Positive (+) terminal of tester (negative terminal (–) for digital tester)	+ (4)	~ (2, 3)	− (1)	~ (2, 3)
Resistance is OK.	several kΩ ~ several MΩ	∞	∞	several kΩ ~ several MΩ
Resistance is NG.	0 Ω or ∞	0	0	0 Ω or ∞

Solder side



(R12035)

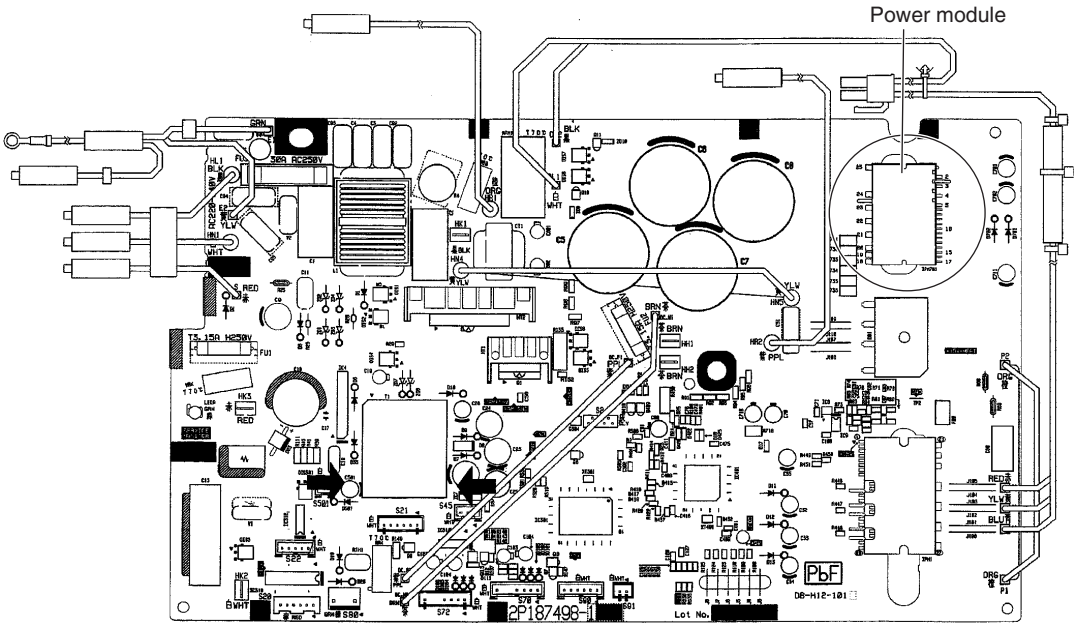
3.14 Power Module Check

Check No.22

Note: Check to make sure that the voltage between (+) and (–) of the power module (IPM1) is approx. 0 V before checking.

- Disconnect the compressor harness connector from the outdoor unit PCB. To disengage the connector, press the protrusion on the connector.
- Follow the procedure below to measure resistance between the terminals of the power module and the terminals of the compressor with a multi-tester. Evaluate the measurement results referring to the following table.

Negative (–) terminal of tester (positive terminal (+) for digital tester)	Power module (+)	UVW	Power module (–)	UVW
Positive (+) terminal of tester (negative terminal (–) for digital tester)	UVW	Power module (+)	UVW	Power module (–)
Resistance is OK.	several kΩ ~ several MΩ			
Resistance is NG.	0 Ω or ∞			

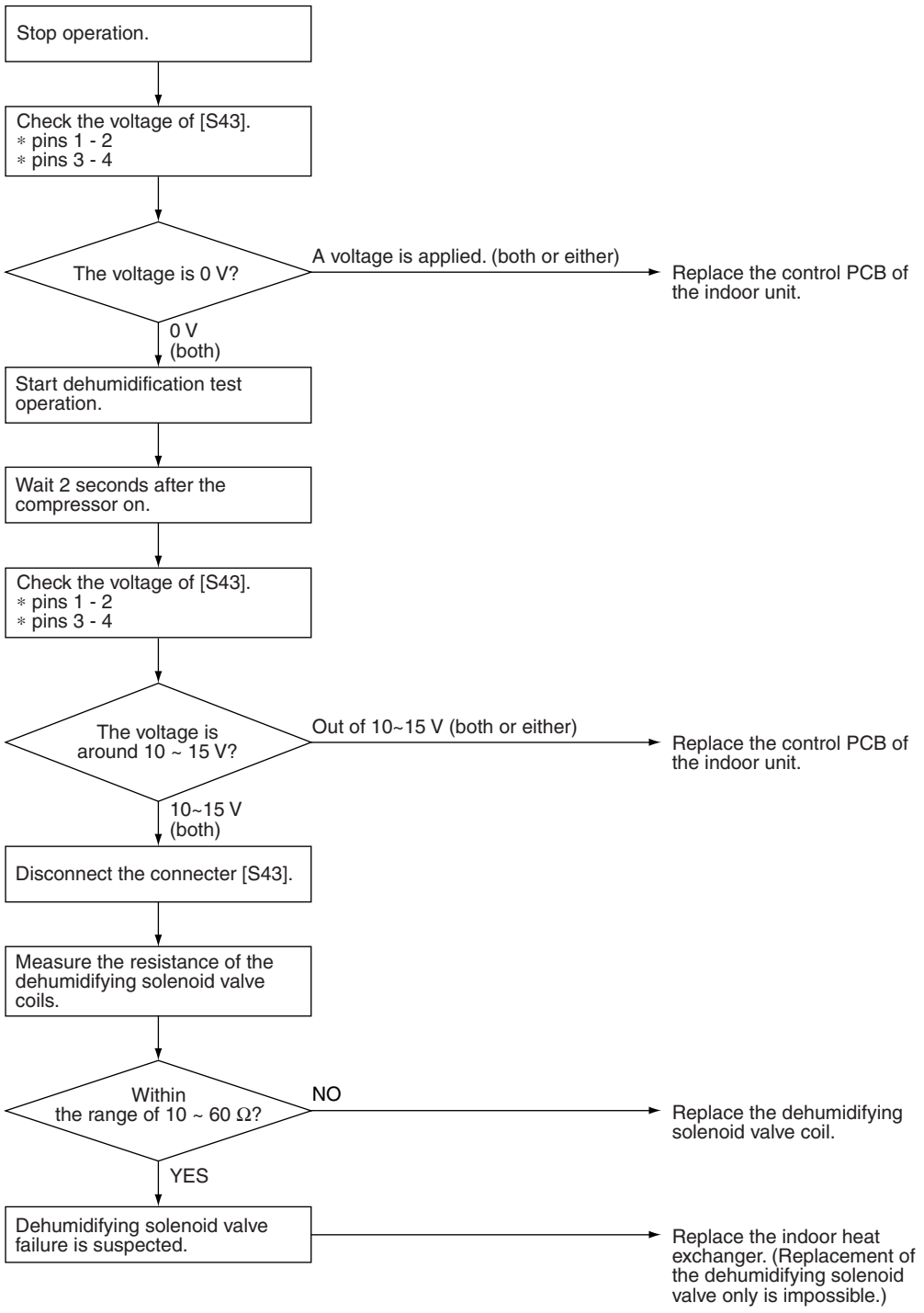


(R18324)

3.15 Dehumidifying Solenoid Valve Check

Check No.23

Faulty criterion:
In dehumidification test operation mode, PCB is identified defective when the dehumidifying solenoid valves do not turn on within 2 seconds after compressor start-up. (When dehumidifying solenoid valves are not used, the operation mode is similar to cooling operation.)



(R18378)

Part 7
Trial Operation and Field Settings

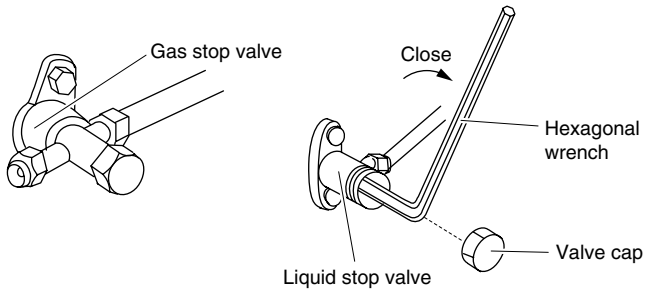
1. Pump Down Operation

Outline

In order to protect the environment, be sure to conduct pump down operation when relocating or disposing the unit.

Detail

1) Remove the valve caps from the liquid stop valve and the gas stop valve.
2) Carry out forced cooling operation.
3) After 5 to 10 minutes, close the liquid stop valve with a hexagonal wrench.
4) After 2 to 3 minutes, close the gas stop valve and stop the forced cooling operation.



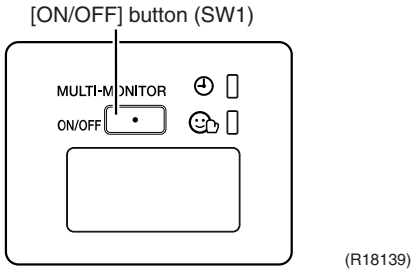
(R14035)

Refer to page 147 for forced cooling operation.

2. Forced Cooling Operation

Item	Forced Cooling
Conditions	The forced cooling operation is allowed when both the following conditions are met. 1) The outdoor unit is not abnormal and not in the 3-minute standby mode. 2) The outdoor unit is not operating.
Start	Press the forced cooling operation [ON/OFF] button (SW1) on the indoor unit for 5 seconds.
Command frequency	58 Hz
End	The forced cooling operation ends when any of the following conditions is fulfilled. 1) The operation ends automatically after 15 minutes. 2) Press the forced cooling operation [ON/OFF] button (SW1) on the indoor unit again. 3) Press the [ON/OFF] button on the remote controller.
Others	The protection functions are prior to all others in the forced cooling operation.

Indoor Unit



(R18139)

3. Trial Operation

Outline

1. Measure the supply voltage and make sure that it falls in the specified range.
2. Trial operation should be carried out in either cooling or heating operation.
3. Carry out the trial operation in accordance with the operation manual to ensure that all functions and parts, such as flap movement, are working properly.

- The air conditioner requires a small amount of power in standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
- If the circuit breaker trips to shut off the power to the air conditioner, the system backs up the operation mode. The system then restarts operation with the previous operation mode when the circuit breaker is restored.

In cooling operation, select the lowest programmable temperature (18°C); in heating operation, select the highest programmable temperature (30°C).

- Trial operation may be disabled in either operation mode depending on the room temperature.
- After trial operation is complete, set the temperature to a normal level. (26°C ~ 28°C in cooling, 20°C ~ 24°C in heating)
- For protection, the system does not start for 3 minutes after it is turned off.

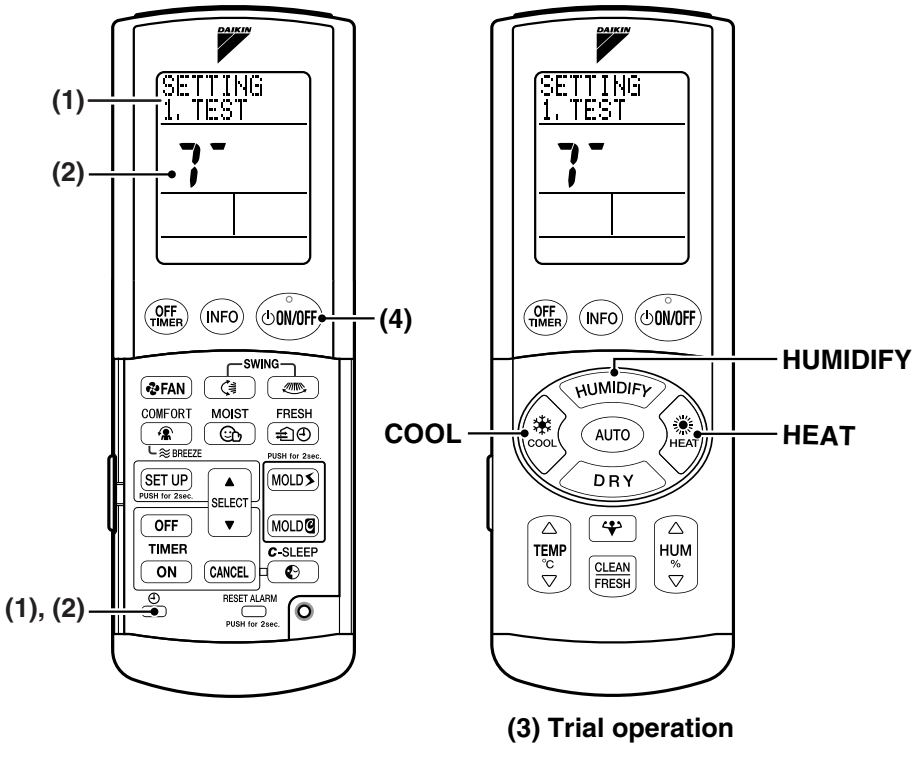
Detail

(1) Press the [CLOCK] button for 5 seconds.
→ SETTING 1. TEST is displayed.

(2) Press the [CLOCK] button.
→ 7˚ is displayed.

(3) Press the [COOL], [HEAT] or [HUMIDIFY] button to start trial operation.

(4) Trial operation terminates in approx. 30 minutes and switches into normal mode. To quit a trial operation, press the [ON/OFF] button.



(R14118)

(3) Trial operation

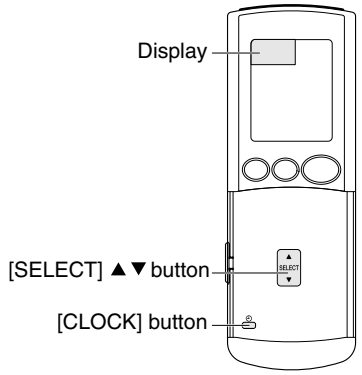
(R14035)

4. Field Settings

4.1 Humidifying Hose Length Setting

Outline

Set the humidifying hose length to ensure humidifying capacity. Use the remote controller to set the humidifying hose length. Power on the unit to establish the communication between the unit and the remote controller.
(The humidifying hose length includes the rear part of the indoor unit.)



(R14036)

Detail

1) Press the [CLOCK] button for 5 seconds.
   → SETTING 1. TEST is displayed.
2) Press the [SELECT] ▲ or ▼ button and select SETTING 2. PIPE .
3) Press the [CLOCK] button to activate the hose length setting mode.
   → The display shows the preset hose length.
   When the hose length is not set, PIPE LEN UNDEF is displayed.
4) Press the [SELECT] ▲ or ▼ button and select hose length.
   You can select hose length from [~ 3 m] [3.1 ~ 4 m] [4.1 ~ 6 m] [6.1 ~ 8 m] [8.1 ~ 10 m].
5) Press the [CLOCK] button to set the hose length.
6) To return to the normal mode, press the [CLOCK] button for 5 seconds or leave the remote controller for 60 seconds.

Note:

- If you set the wrong humidifying hose length, select PIPE SET RESET on the step 4) to cancel the setting.
- When setting the humidifying hose length without powering on the indoor unit, the display shows PIPE LEN UNDEF on the step 5) but the remote controller remembers the set hose length.
  When the customer turns the indoor unit on, the hose length information is sent to the indoor unit.

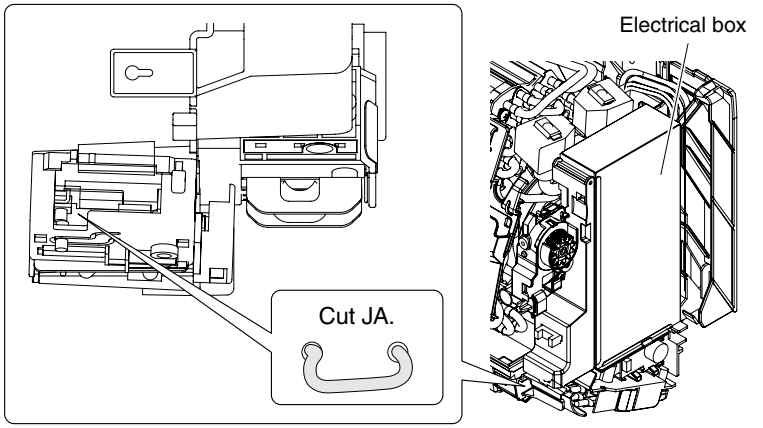
4.2 When 2 Units are Installed in 1 Room

Outline

When 2 indoor units are installed in 1 room, 1 of the 2 indoor unit and the corresponding wireless remote controller can be set for different addresses.
Both the indoor unit PCB and the wireless remote controller need alteration.

Indoor Unit PCB

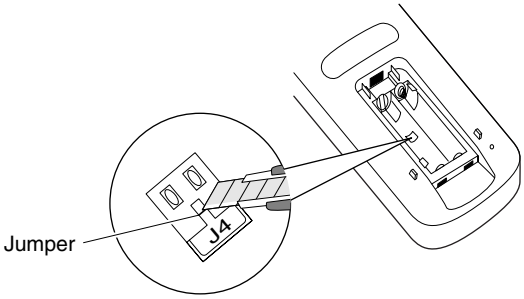
- Cut the address setting jumper JA on the control PCB.



(R14037)

Wireless Remote Controller

- Cut the address setting jumper J4.



(R18328)

4.3 Jumper Settings

Jumper	Function	When connected (factory set)	When cut
JB (on indoor unit PCB)	Fan speed setting when compressor stops for thermostat OFF. (effective only at cooling operation)	Fan speed setting; Remote controller setting	Fan speed setting; “0” (The fan stops.)
JC (on indoor unit PCB)	Power failure recovery function	Auto-restart	The unit does not resume operation after recovering from a power failure. Timer settings are cleared.
J8 (on outdoor unit PCB)	Improvement of defrost performance	Standard control	Reinforced control (ex. The frequency increases, the duration time of defrost lengthens.)

Caution **Replace the PCB if you accidentally cut a wrong jumper.**
Jumpers are necessary for electronic circuit. Improper operation may occur if you cut any of them.

For the location of the jumper, refer to the following pages.
Indoor unit: page 10
Outdoor unit: page 13

5. Silicon Grease on Power Transistor / Diode Bridge

Outline

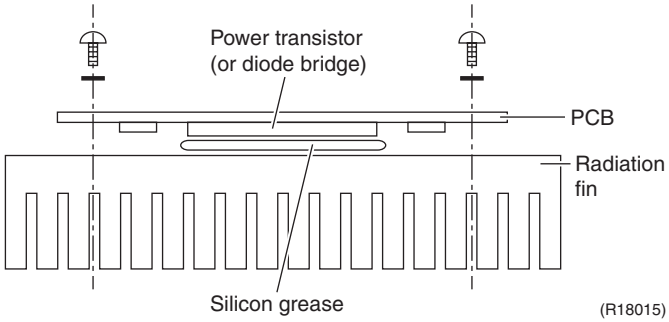
Apply the specified silicon grease to the heat radiation part of a power transistor / diode bridge when you replace an outdoor unit PCB. The silicon grease encourages the heat radiation of a power transistor / diode bridge.

Detail

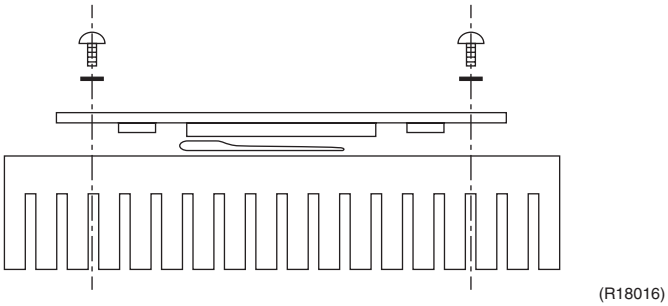
1. Wipe off the old silicon grease completely.
2. Apply the silicon grease evenly. See the illustrations below for examples of application.
3. Tighten the screws of the power transistor / diode bridge.
4. Make sure that the heat radiation parts are firmly contacted to the radiation fin.

Note: Smoke emission may be caused by bad heat radiation when the silicon grease is not appropriately applied.

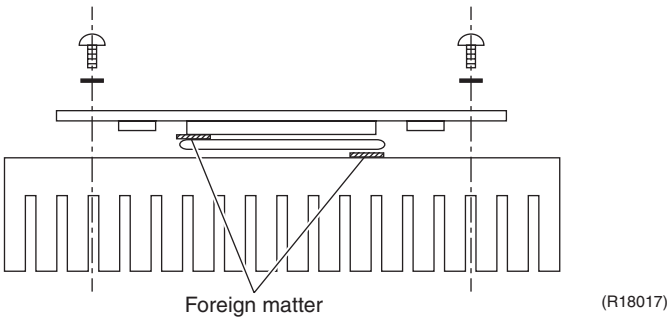
■ OK: Evenly applied



■ NG: Not evenly applied



■ NG: Foreign matter is stuck.

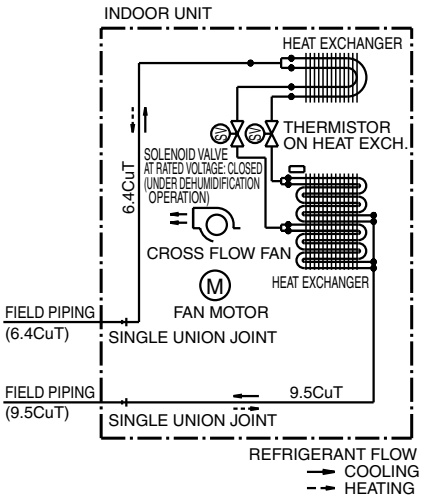


Part 8
Appendix

1. Piping Diagrams

1.1 Indoor Unit

FTXR28/42/50EV1B9



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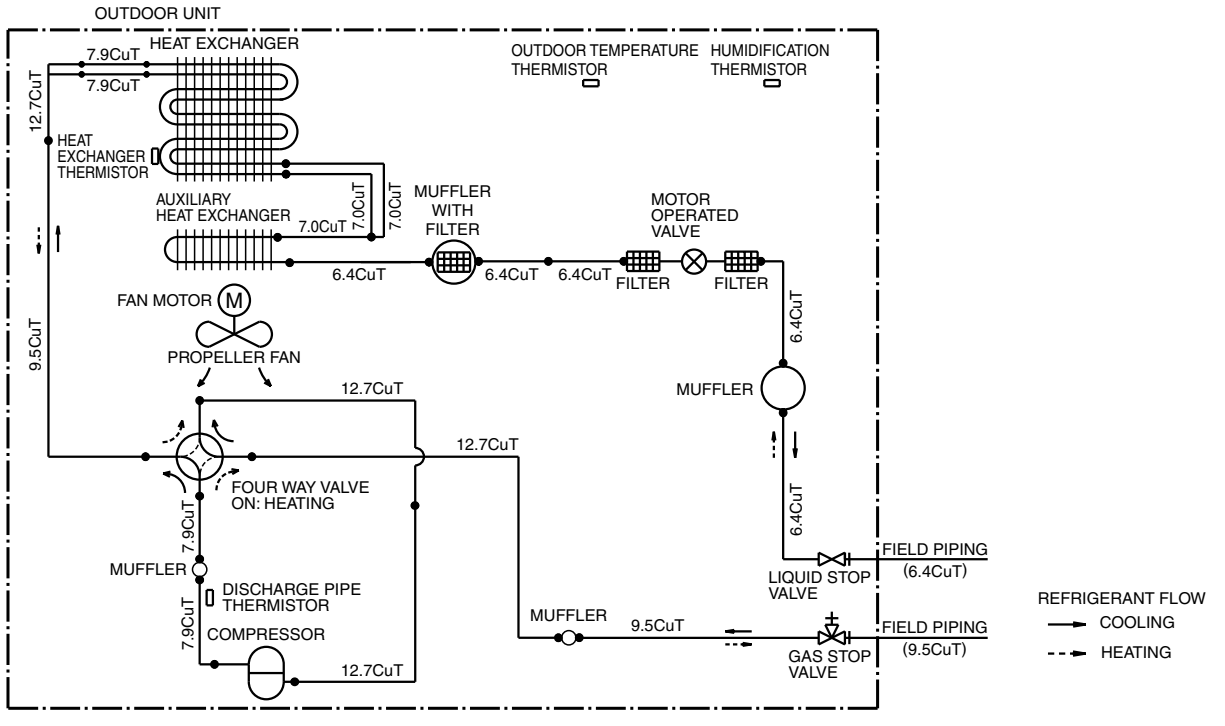
1.2 Outdoor Unit

RXR28/42/50EV1B9, RXR28/42/50EV1B8

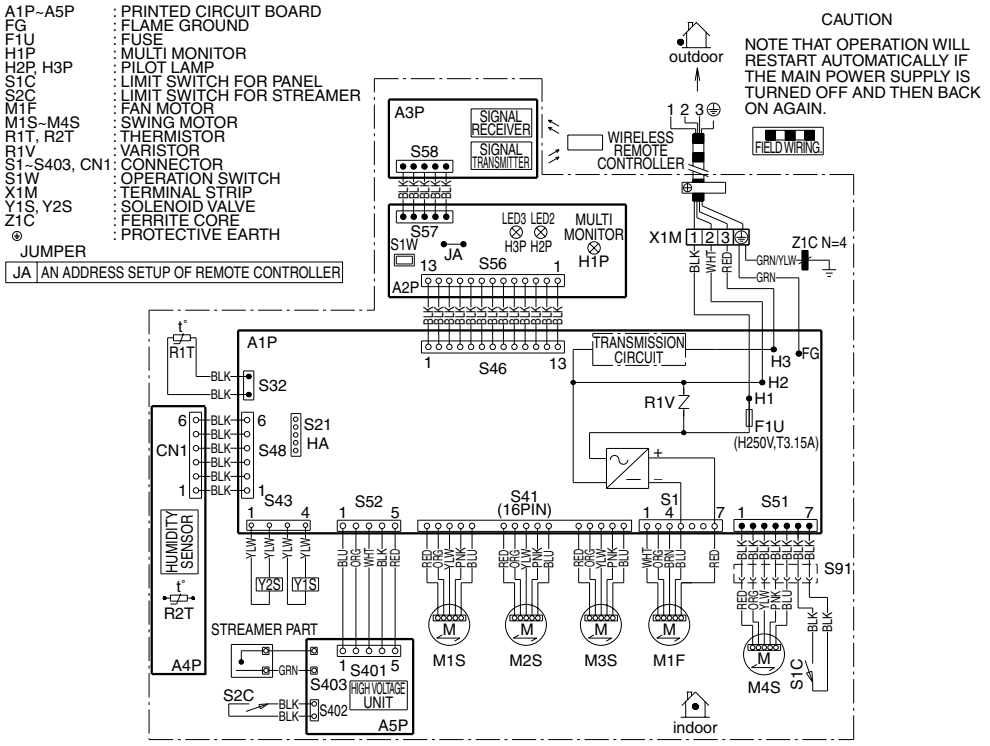


3D053874D

2. Wiring Diagrams

2.1 Indoor Unit

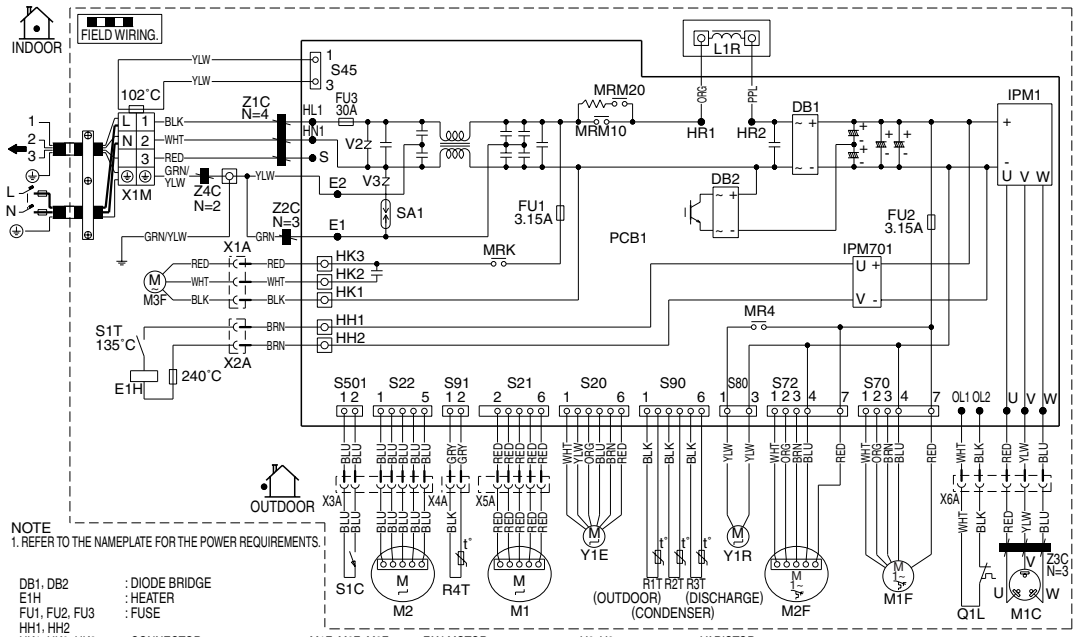
FTXR28/42/50EV1B9



3D052768D

2.2 Outdoor Unit

RXR28/42/50EV1B9, RXR28/42/50EV1B8



3D055425C

3. Removal Procedure (Booklet No.)

Refer to the following booklets for removal procedure.

∗FTXR28/42/50EV1B9	Refer to **Si041260**.
∗RXR28/42/50EV1B9	Refer to **SiBE04-624_A**.
∗RXR28/42/50EV1B8	Refer to **Si001275**.

Revision History

Month / Year	Version	Revised contents
08 / 2006	SiBE04-624	First edition
01 / 2007	SiBE04-624_A	Model change: FTXR28/42/50EV1B9, RXR28/42/50EV1B9
12 / 2012	SiBE04-624_B	Model addition: RXR28/42/50EV1B8

Warning

- Daikin products are manufactured for export to numerous countries throughout the world. Prior to purchase, please confirm with your local authorised importer, distributor and/or retailer whether this product conforms to the applicable standards, and is suitable for use, in the region where the product will be used. This statement does not purport to exclude, restrict or modify the application of any local legislation.
- Ask a qualified installer or contractor to install this product. Do not try to install the product yourself. Improper installation can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Use only those parts and accessories supplied or specified by Daikin. Ask a qualified installer or contractor to install those parts and accessories. Use of unauthorised parts and accessories or improper installation of parts and accessories can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Read the User's Manual carefully before using this product. The User's Manual provides important safety instructions and warnings. Be sure to follow these instructions and warnings.

If you have any enquiries, please contact your local importer, distributor and/or retailer.

Cautions on product corrosion

1. Air conditioners should not be installed in areas where corrosive gases, such as acid gas or alkaline gas, are produced.
2. If the outdoor unit is to be installed close to the sea shore, direct exposure to the sea breeze should be avoided. If you need to install the outdoor unit close to the sea shore, contact your local distributor.

Dealer

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SiBE04-624_B
12/2012 AK.B