DAIKIN

SiUS331604E

R-410A

Service Manual

VRV IV-S

RXTQ36/48/60TAVJU

Heat Pump 60 Hz

VRV IV-S

RXTQ-TAVJU Heat Pump R-410A 60 Hz

ED Reference

For items below, please refer to Engineering Data.

No.	Item	ED No.	Page	Remarks
1	Specifications - Indoor Unit	EDUS391400-F14	2-4	FXFQ-T
		EDUS391000-F1	2-3	FXFQ-P
		EDUS391300-F9	2-3	FXZQ-M
		EDUS391437-F15	3-4	FXUQ-P
		EDUS391533-F16	3-5	FXEQ-P
		EDUS39-600-F2	3-4	FXDQ-M
		EDUS391503-F4	3-5	FXMQ-PB
		EDUS39-900A-F11	3	FXMQ-M
		EDUS39-600-F5	3	FXHQ-M
		EDUS391100-F6	2-3	FXAQ-P
		EDUS391502-F7	4-7	FXLQ-M, FXNQ-M
		EDUS391000-F12	2-3	FXTQ-PA
2	Specifications - Outdoor Unit	EDUS331608-R	2-4	RXTQ-T
3	Specifications - Energy Recovery Ventilator	EDUS711116	2	VAM-G
4	Piping Diagrams - Indoor Unit	EDUS391400-F14	11	FXFQ-T
		EDUS391000-F1	7	FXFQ-P
		EDUS391300-F9	6	FXZQ-M
		EDUS391437-F15	6	FXUQ-P
		EDUS391533-F16	8	FXEQ-P
		EDUS39-600-F2	8	FXDQ-M
		EDUS391503-F4	11	FXMQ-PB
		EDUS39-900A-F11	5	FXMQ-M
		EDUS39-600-F5	7	FXHQ-M
		EDUS391100-F6	7	FXAQ-P
		EDUS391502-F7	14	FXLQ-M, FXNQ-M
		EDUS391000-F12	6	FXTQ-PA
5	Piping Diagrams - Outdoor Unit	EDUS331608-R	12-14	RXTQ-T

6	Option List - Indoor Unit	EDUS391400-F14 EDUS391000-F1 EDUS391300-F9 EDUS391437-F15 EDUS391533-F16 EDUS39-600-F2 EDUS391503-F4 EDUS39-900A-F11 EDUS39-600-F5 EDUS391100-F6 EDUS391502-F7 EDUS391000-F12	43 40 48 36 27 30 43 25 32 43 28 31	FXFQ-T FXFQ-P FXZQ-M FXUQ-P FXEQ-P FXDQ-M FXMQ-PB FXMQ-M FXHQ-M FXAQ-P FXLQ-M, FXNQ-M FXTQ-PA
7	Option List - Outdoor Unit	EDUS331608-R	68	RXTQ-T
8	Option List - Energy Recovery Ventilator	EDUS711116	49	VAM-G

1. Safety Cautions

Be sure to read the following safety cautions before conducting repair work.
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.

Caution Items

The caution items are classified into ⚠ **Warning** and ⚠ **Caution**. The ⚠ **Warning** items are especially important since death or serious injury can result 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.

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.

1.1 Warnings and Cautions Regarding Safety of Workers

⚠ Warning	
Do not store the equipment in a room with fire sources (e.g. naked flames, gas appliances, electric heaters).	
Be sure to disconnect the power cable from the socket before disassembling equipment for repair. Working on 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 refrigerant gas is discharged during repair work, do not touch the discharged refrigerant gas. 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 refrigerant gas leaks during repair work, ventilate the area. Refrigerant gas may generate toxic gases when it contacts flames.	
Be sure to discharge the capacitor completely before conducting repair work. The step-up capacitor supplies high-voltage electricity to the electrical components of the outdoor unit. A charged capacitor may cause an electrical shock.	

Warning	
Do not turn the air conditioner on or off by plugging in or unplugging the power cable. Plugging or unplugging the power cable to operate the equipment may cause an electrical shock or fire.	
Be sure to wear a safety helmet, gloves, and a safety belt when working in a high place (more than 2 m (6.5 ft)). Insufficient safety measures may cause a fall.	
In case of R-32 and R-410A refrigerant models, be sure to use pipes, flare nuts and tools intended for exclusive use with R-32 and R-410A refrigerant. The use of materials for R-22 refrigerant models may cause a serious accident, such as damage to the refrigerant cycle or equipment failure.	
Do not mix air or gas other than the specified refrigerant (R-32, R-410A, R-22) in the refrigerant system. If air enters the refrigerating system, excessively high pressure results, causing equipment damage and injury.	

Caution	
Do not repair electrical components with wet hands. Working on the equipment with wet hands may cause an electrical shock.	
Do not clean the air conditioner with water. Washing the unit with water may cause an electrical shock.	
Be sure to provide an earth/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.	

Caution	
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.	
Conduct welding work in a well-ventilated place. Using a welder in an enclosed room may cause oxygen deficiency.	

1.2 Warnings and Cautions Regarding Safety of Users

Warning	
Do not store the equipment in a room with fire sources (e.g. naked flames, gas appliances, electric heaters).	
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 are scratched or have 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.	

Warning	
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 cables may cause an electrical shock or fire. Placing heavy items on the power cable, or heating or pulling the power cable may damage it.	
Do not mix air or gas other than the specified refrigerant (R-32, R-410A, R-22) in the refrigerant system. If air enters the refrigerating system, excessively high pressure results, causing equipment damage and injury.	
If the refrigerant gas leaks, be sure to locate the leakage and repair it before charging the refrigerant. After charging the refrigerant, make sure that there is no leakage. If the leakage cannot be located and the repair work must be stopped, be sure to pump-down, and close the service valve, to prevent refrigerant gas from leaking into the room. Refrigerant gas itself is harmless, but it may generate toxic gases when it contacts flames, such as those from fan type 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 or if the installation work is not conducted securely, the equipment may fall and cause injury.	
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 is dusty or has a loose connection, it may cause an electrical shock or fire.	
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.	

Caution	
Do not install the equipment in a place where there is a possibility of combustible gas leaks. If combustible gas leaks and remains around the unit, it may cause a fire.	
Check to see if 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. A corroded installation platform or frame may cause the unit to fall, resulting in injury.	
Check the earth/grounding, and repair it if the equipment is not properly earthed/grounded. Improper earth/grounding may cause an electrical shock.	
Be sure to measure 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 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.	

2. Icons Used

The following icons are used to attract the attention of the reader to specific information.

Icon	Type of Information	Description
 Warning	Warning	A **warning** is used when there is danger of personal injury.
 Caution	Caution	A **caution** is used when there is danger that the reader, through incorrect manipulation, may damage equipment, lose data, get an unexpected result or have to restart (part of) a procedure.
 Note:	Note	A **note** provides information that is not indispensable, but may nevertheless be valuable to the reader, such as tips and tricks.
	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
General Information

1. Model Names of Indoor/Outdoor Units

1.1 Indoor Unit

Capacity Range		0.6 ton	0.8 ton	1 ton	1.25 ton	1.5 ton		2 ton	2.5 ton	3 ton	3.5 ton	4 ton	4.5 ton	6 ton	Power Supply, Standard
Capacity Index		7.5	9.5	12	15	18	20	24	30	36	42	48	54	72	
Ceiling Mounted Cassette (Round Flow with Sensing) Type	FXFQ	07T	09T	12T	15T	18T	—	24T	30T	36T	—	48T	—	—	VJU
Ceiling Mounted Cassette (Round Flow) Type	FXFQ	—	09P	12P	—	18P	—	24P	30P	36P	—	48P	—	—	
4 Way Ceiling Mounted Cassette (2'×2') Type	FXZQ	07M	09M	12M	15M	18M	—	—	—	—	—	—	—	—	VJU9
4-Way Blow Ceiling-Suspended Type	FXUQ	—	—	—	—	—	18P	24P	30P	36P	—	—	—	—	VJU
One Way Blow Cassette Type	FXEQ	07P	09P	12P	15P	18P	—	24P	—	—	—	—	—	—	
Slim Ceiling Mounted Duct Type	FXDQ	07M	09M	12M	—	18M	—	24M	—	—	—	—	—	—	
Ceiling Mounted Duct Type (Middle and High Static Pressure)	FXMQ	07PB	09PB	12PB	15PB	18PB	—	24PB	30PB	36PB	—	48PB	54PB	—	
Ceiling Mounted Duct Type	FXMQ	—	—	—	—	—	—	—	—	—	—	—	—	72M	
Ceiling Suspended Type	FXHQ	—	—	12M	—	—	—	24M	—	36M	—	—	—	—	
Wall Mounted Type	FXAQ	07P	09P	12P	—	18P	—	24P	—	—	—	—	—	—	
Floor Standing Type	FXLQ	07M	09M	12M	—	18M	—	24M	—	—	—	—	—	—	
Concealed Floor Standing Type	FXNQ	07M	09M	12M	—	18M	—	24M	—	—	—	—	—	—	
Vertical Air Handling Unit	FXTQ	—	—	12PA	—	18PA	—	24PA	30PA	36PA	42PA	48PA	54PA	—	

VJ : 1 phase, 208/230 V, 60 Hz

U(VJU) : Standard symbol

1.2 Air Treatment Equipment

Outdoor Air Processing Unit

Series	Model Name		Power Supply, Standard
FXMQ	48MF	72MF	VJU

Energy Recovery Ventilator (VAM series)

Series		Model Name				Power Supply, Standard
Energy Recovery Ventilator	VAM	300G	470G	600G	1200G	VJU

VJ : 1 phase, 208/230 V, 60 Hz

U(VJU) : Standard symbol

1.3 Outdoor Unit

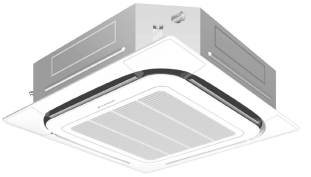
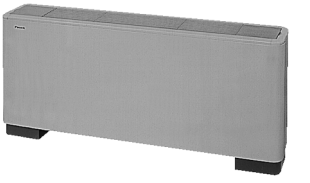
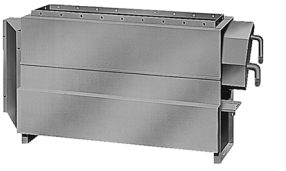
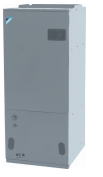
Capacity Range		3 ton	4 ton	5 ton	Power Supply, Standard
Capacity Index		36	48	57	
Heat Pump	RXTQ	36TA	48TA	60TA	VJU

VJ : 1 phase, 208/230 V, 60 Hz

U(VJU) : Standard symbol

2. External Appearance

2.1 Indoor Unit

Ceiling mounted cassette (Round flow with sensing) type FXFQ-T  Shown with BYCQ125B-W1	Ceiling mounted duct type FXMQ-M 
Ceiling mounted cassette (Round flow) type FXFQ-P  Shown with BYCP125K-W1	Ceiling suspended type FXHQ-M 
4 way ceiling mounted cassette (2'×2') type FXZQ-M  Shown with BYFQ60B3W1	Wall mounted type FXAQ-P
4-way blow ceiling-suspended type FXUQ-P 	Floor standing type FXLQ-M 
One way blow cassette type FXEQ-P 	Concealed floor standing type FXNQ-M 
Slim ceiling mounted duct type FXDQ-M 	Vertical air handling unit FXTQ-PA 
Ceiling mounted duct type (Middle and high static pressure) FXMQ-PB 	

2.2 Air Treatment Equipment

Outdoor air processing unit FXMQ-MF 	Energy recovery ventilator (VAM series) VAM-G 

2.3 Outdoor Unit

RXTQ36TAVJU, RXTQ48TAVJU	RXTQ60TAVJU
 3/4 ton	 5 ton

3. Capacity Range

3.1 Combination Ratio

$$\text{Combination ratio} = \frac{\text{Total capacity index of the indoor units}}{\text{Capacity index of the outdoor units}}$$

Type	Min. combination ratio	Max. combination ratio
		Types of connected indoor units
		VRV indoor units
Single outdoor units	50%	130%

Outdoor Unit

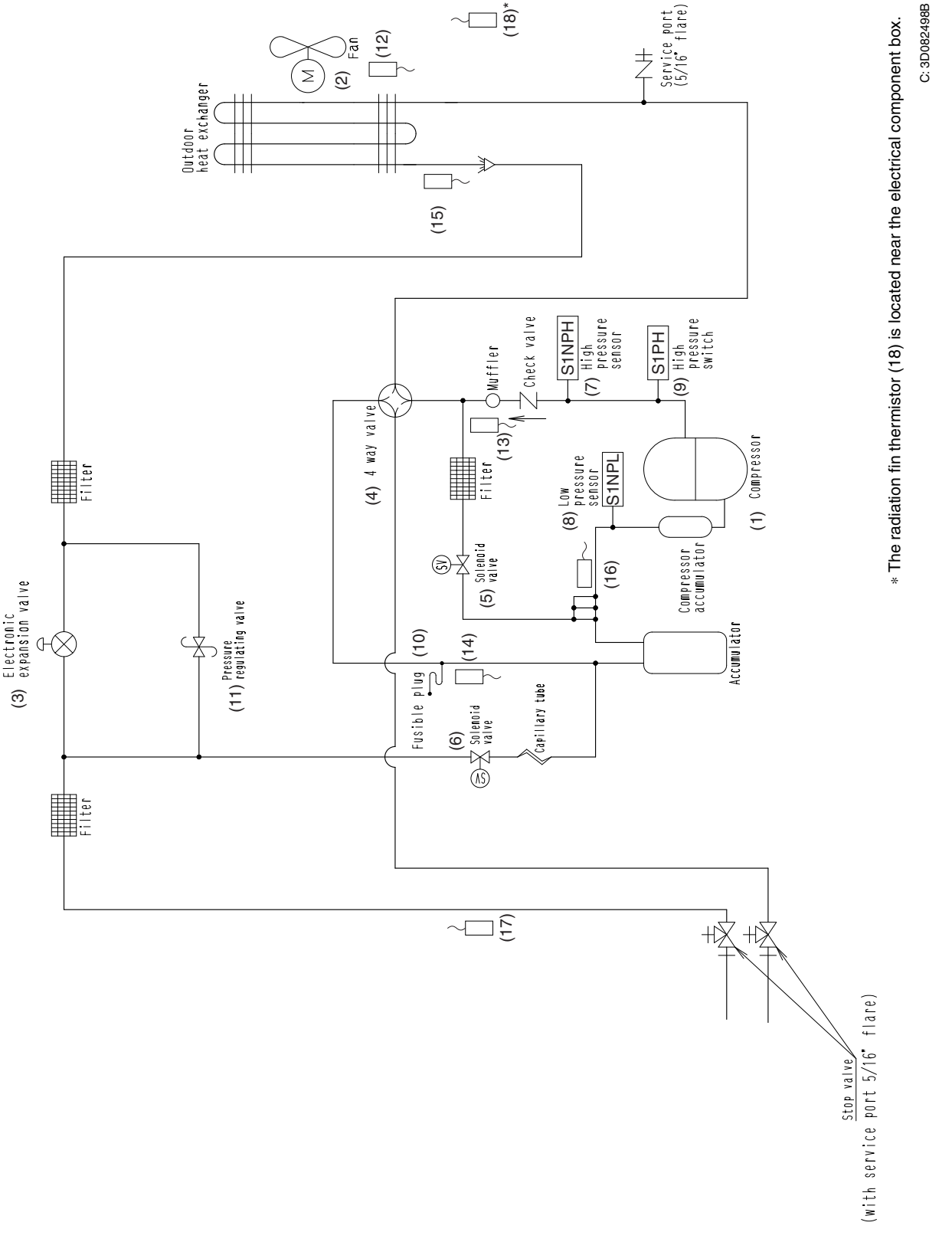
Model Name	RXTQ36TAVJU	RXTQ48TAVJU	RXTQ60TAVJU
Capacity Range	3 ton	4 ton	5 ton
Capacity Index	36	48	57
Max. Number of Connectable Indoor Units	6	8	9
Total Capacity Index of Indoor Units to be Connected	18 ~ 46	24 ~ 62	28.5 ~ 74

Part 2
Refrigerant Circuit

1. Refrigerant Circuit

1.1 RXTQ36TAVJU

No. in piping diagram	Symbol	Name	Function
(1)	M1C	Inverter compressor	Inverter compressor is operated on frequencies between 36 Hz and 195 Hz by using the inverter.
(2)	M1F	Inverter fan	Because the system is of an air heat exchange type, the fan is operated at 8-step rotation speed by using the inverter.
(3)	Y1E	Electronic expansion valve (Main)	While in heating operation, PI control is applied to keep the outlet superheated degree of air heat exchanger constant.
(4)	Y1S	Four way valve	Used to switch the operation mode between cooling and heating.
(5)	Y2S	Solenoid valve (Hot gas)	Used to prevent the low pressure from transient falling.
(6)	Y3S	Solenoid valve (Unload circuit)	Used for unloading operation of compressor.
(7)	S1NPH	High pressure sensor	Used to detect high pressure.
(8)	S1NPL	Low pressure sensor	Used to detect low pressure.
(9)	S1PH	High pressure switch	In order to prevent the increase of high pressure when an error occurs, this switch is activated at high pressure of 4.0 MPa (580 psi) or more to stop the compressor operation.
(10)	—	Fusible plug	In order to prevent the increase of pressure when abnormal heating is caused by fire or others, the fusible part of the plug is molten at a temperature of 70 ~ 75°C (158 ~ 167°F) to release the pressure into the atmosphere.
(11)	—	Pressure regulating valve (Receiver to discharge pipe)	This valve opens at a pressure of 4.0 MPa (580 psi) or more for prevention of pressure increase, thus resulting in no damage of functional parts due to the increase of pressure in transportation or storage.
(12)	R1T	Thermistor (Outdoor air)	Used to detect outdoor air temperature, correct discharge pipe temperature, and others.
(13)	R2T	Thermistor (Discharge pipe)	Used to detect discharge pipe temperature, make the temperature protection control of compressor, and others.
(14)	R3T	Thermistor (Suction pipe 1)	Used to detect suction pipe temperature, keep the suction superheated degree constant in heating operation, and others.
(15)	R4T	Thermistor (Heat exchanger deicer)	Used to detect liquid pipe temperature of air heat exchanger, determine defrost operation, and others.
(16)	R5T	Thermistor (Suction pipe 2)	Used for calculation of internal temperature of compressor etc.
(17)	R7T	Thermistor (Liquid pipe)	Used to detect refrigerant overcharge in check operation, and others.
(18)	R10T	Thermistor (Radiation fin)	• Used for outdoor unit fan speed control. • Used for inverter radiation fin temperature control. • Used for pressure difference control.



* The radiation fin thermistor (18) is located near the electrical component box.

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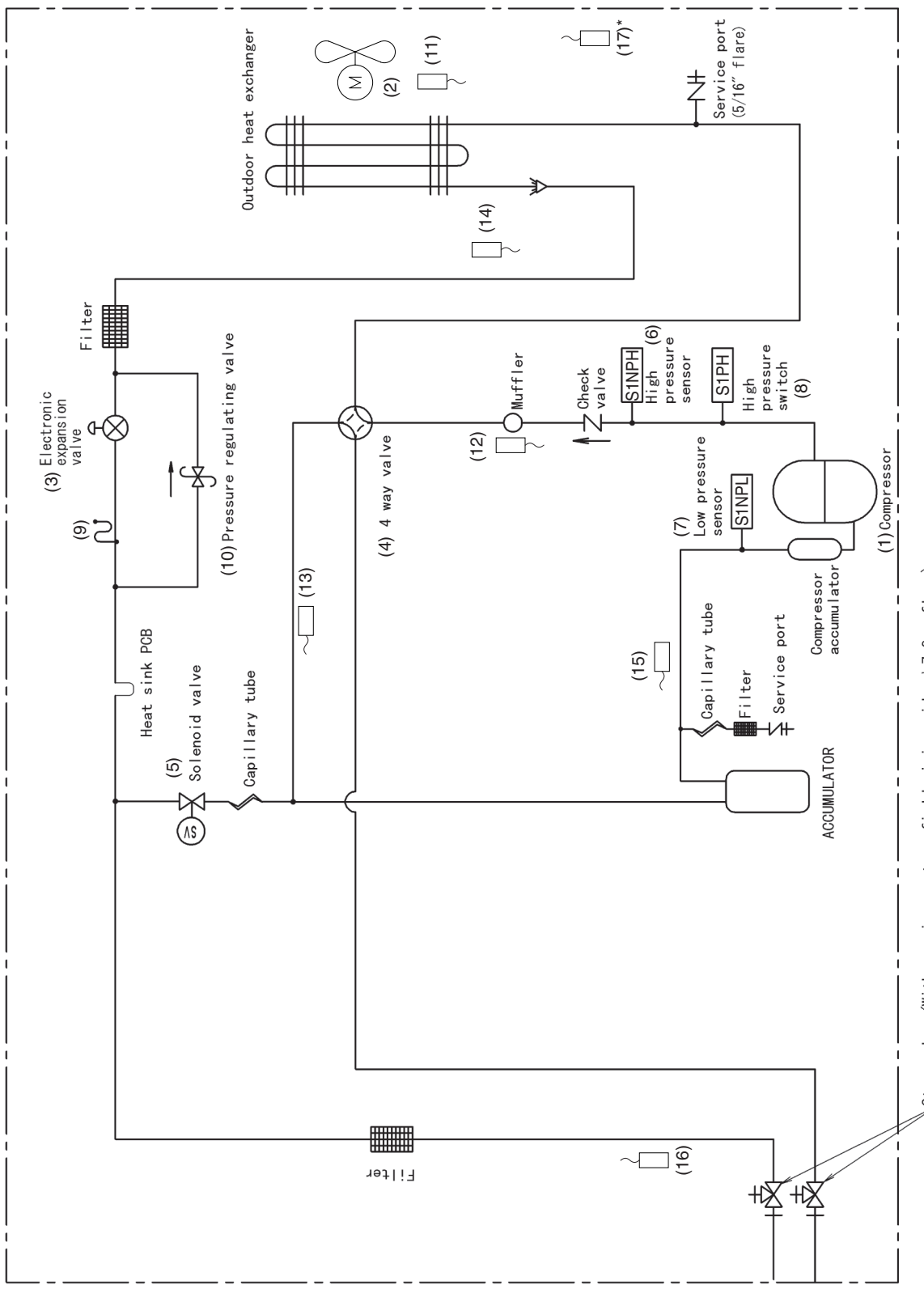
1.2 RXTQ48TAVJU

No. in piping diagram	Symbol	Name	Function
(1)	M1C	Inverter compressor	Inverter compressor is operated on frequencies between 36Hz and 195Hz by using the inverter.
(2)	M1F	Inverter fan	Because the system is of an air heat exchange type, the fan is operated at 8-step rotation speed by using the inverter.
(3)	Y1E	Electronic expansion valve (Main)	While in heating operation, PI control is applied to keep the outlet superheated degree of air heat exchanger constant.
(4)	Y1S	Four way valve	Used to switch the operation mode between cooling and heating.
(5)	Y3S	Solenoid valve (Unload circuit)	Used for unloading operation of compressor.
(6)	S1NPH	High pressure sensor	Used to detect high pressure.
(7)	S1NPL	Low pressure sensor	Used to detect low pressure.
(8)	S1PH	High pressure switch	In order to prevent the increase of high pressure when an error occurs, this switch is activated at high pressure of 4.0 MPa (580 psi) or more to stop the compressor operation.
(9)	—	Fusible plug	In order to prevent the increase of pressure when abnormal heating is caused by fire or others, the fusible part of the plug is molten at a temperature of 70 ~ 75°C (158 ~ 167°F) to release the pressure into the atmosphere.
(10)	—	Pressure regulating valve 1 (Receiver to discharge pipe)	This valve opens at a pressure of 4.0 MPa (580 psi) or more for prevention of pressure increase, thus resulting in no damage of functional parts due to the increase of pressure in transportation or storage.
(11)	R1T	Thermistor (Outdoor air)	Used to detect outdoor air temperature, correct discharge pipe temperature, and others.
(12)	R2T	Thermistor (Discharge pipe)	Used to detect discharge pipe temperature, make the temperature protection control of compressor, and others.
(13)	R3T	Thermistor (Suction pipe 1)	Used to detect suction pipe temperature, keep the suction superheated degree constant in heating operation, and others.
(14)	R4T	Thermistor (Heat exchanger deicer)	Used to detect liquid pipe temperature of air heat exchanger, determine defrost operation, and others.
(15)	R5T	Thermistor (Suction pipe 2)	Used to the calculation of an internal temperature of compressor etc.
(16)	R7T	Thermistor (Liquid pipe)	Used to detect refrigerant overcharge in check operation, and others.
(17)	FIN TH	Thermistor (Radiation fin)	• Used for outdoor unit fan speed control. • Used for inverter radiation fin temperature control. • Used for pressure difference control.


Outdoor heat exchanger
(2)
(11)
(17)*
Service port (5/16" flare)
(14)
Filter
(3) Electronic expansion valve
(9)
(10) Pressure regulating valve
(4) 4 way valve
(12)
Muffler
Check valve
S1NPH
(6) High pressure sensor
S1PH
High pressure switch (8)
(1) Compressor
(7) Low pressure sensor
S1NPL
Compressor accumulator
(13)
Heat sink PCB
(5) Solenoid valve
Capillary tube
(15)
Capillary tube
Filter
Service port
ACCUMULATOR
Filter
(16)
Stop valve (With service port on field piping side φ7.9mm flare)
* The radiation fin thermistor (17) is located near the electrical component box.
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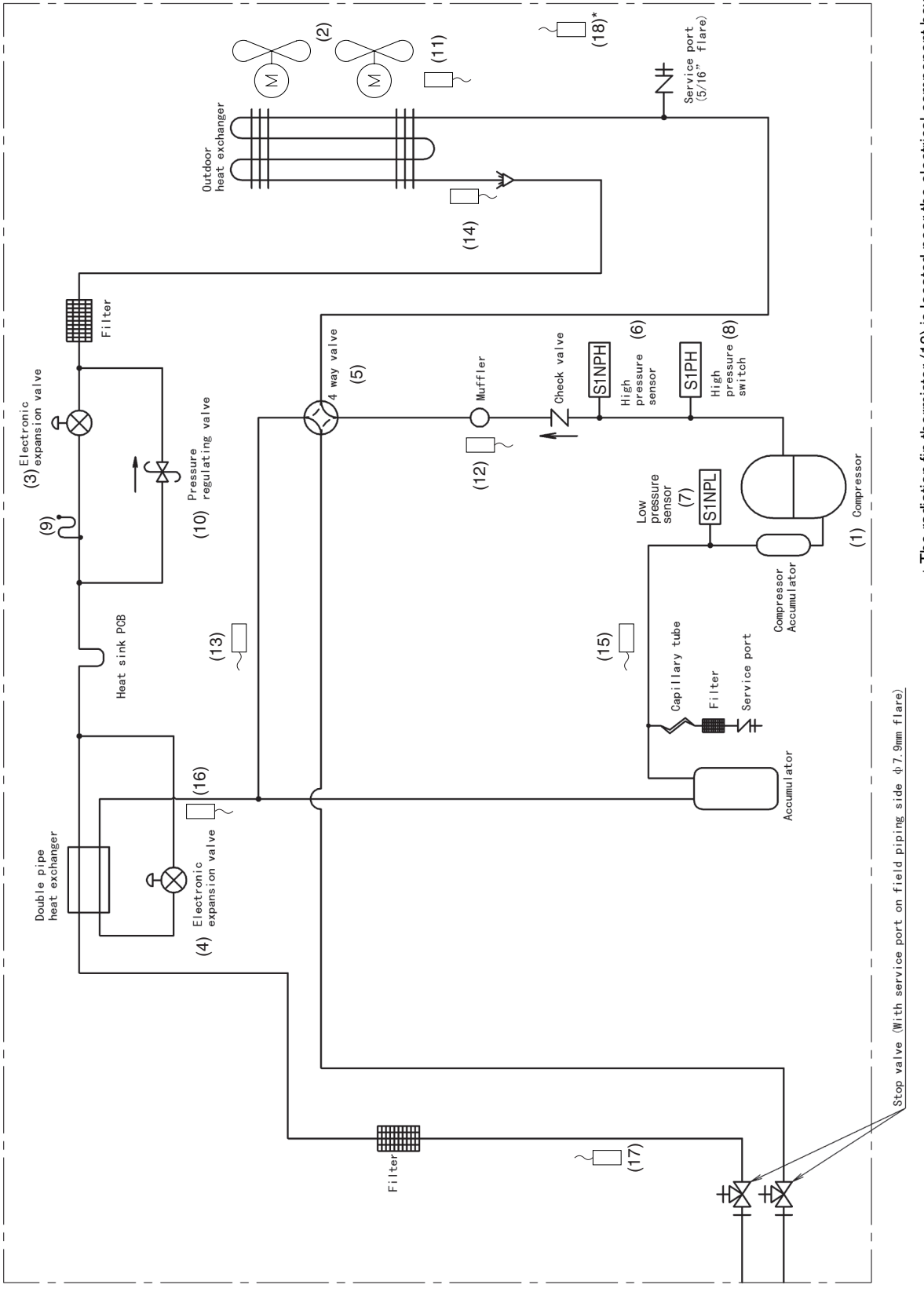
1.3 RXTQ60TAVJU

No. in piping diagram	Symbol	Name	Function
(1)	M1C	Inverter compressor	Inverter compressor is operated on frequencies between 36Hz and 195Hz by using the inverter.
(2)	M1F M2F	Inverter fan	Because the system is of an air heat exchange type, the fan is operated at 8-step rotation speed by using the inverter.
(3)	Y1E	Electronic expansion valve (Main)	While in heating operation, PI control is applied to keep the outlet superheated degree of air heat exchanger constant.
(4)	Y3E	Electronic expansion valve (Subcooling)	PI control is applied to keep the outlet superheated degree of subcooling heat exchanger constant.
(5)	Y1S	Four way valve	Used to switch the operation mode between cooling and heating.
(6)	S1NPH	High pressure sensor	Used to detect high pressure.
(7)	S1NPL	Low pressure sensor	Used to detect low pressure.
(8)	S1PH	High pressure switch	In order to prevent the increase of high pressure when an error occurs, this switch is activated at high pressure of 4.0 MPa (580 psi) or more to stop the compressor operation.
(9)	—	Fusible plug	In order to prevent the increase of pressure when abnormal heating is caused by fire or others, the fusible part of the plug is molten at a temperature of 70 ~ 75°C (158 ~ 167°F) to release the pressure into the atmosphere.
(10)	—	Pressure regulating valve 1 (Receiver to discharge pipe)	This valve opens at a pressure of 4.0 MPa (580 psi) or more for prevention of pressure increase, thus resulting in no damage of functional parts due to the increase of pressure in transportation or storage.
(11)	R1T	Thermistor (Outdoor air)	Used to detect outdoor air temperature, correct discharge pipe temperature, and others.
(12)	R2T	Thermistor (Discharge pipe)	Used to detect discharge pipe temperature, make the temperature protection control of compressor, and others.
(13)	R3T	Thermistor (Suction pipe 1)	Used to detect suction pipe temperature, keep the suction superheated degree constant in heating operation, and others.
(14)	R4T	Thermistor (Heat exchanger deicer)	Used to detect liquid pipe temperature of air heat exchanger, determine defrost operation, and others.
(15)	R5T	Thermistor (Suction pipe 2)	Used to the calculation of an internal temperature of compressor etc.
(16)	R6T	Thermistor (Subcooling heat exchanger gas pipe)	Used to detect gas pipe temperature on the evaporation side of subcooling heat exchanger, keep the superheated degree at the subcooling heat exchanger constant, and others.
(17)	R7T	Thermistor (Liquid pipe)	Used to detect refrigerant overcharge in check operation, and others.
(18)	FIN TH	Thermistor (Radiation fin)	• Used for outdoor unit fan speed control. • Used for inverter radiation fin temperature control. • Used for pressure difference control.



* The radiation fin thermistor (18) is located near the electrical component box.

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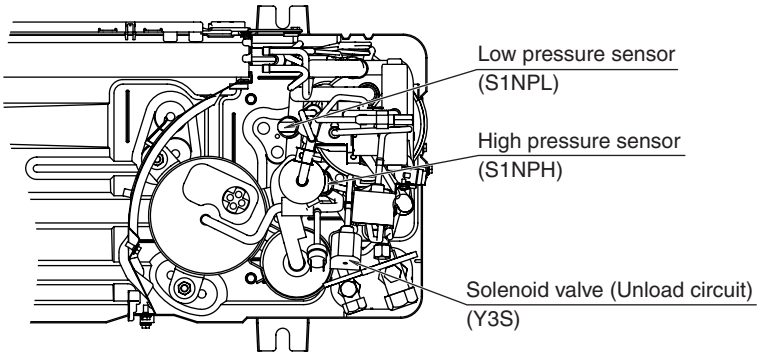
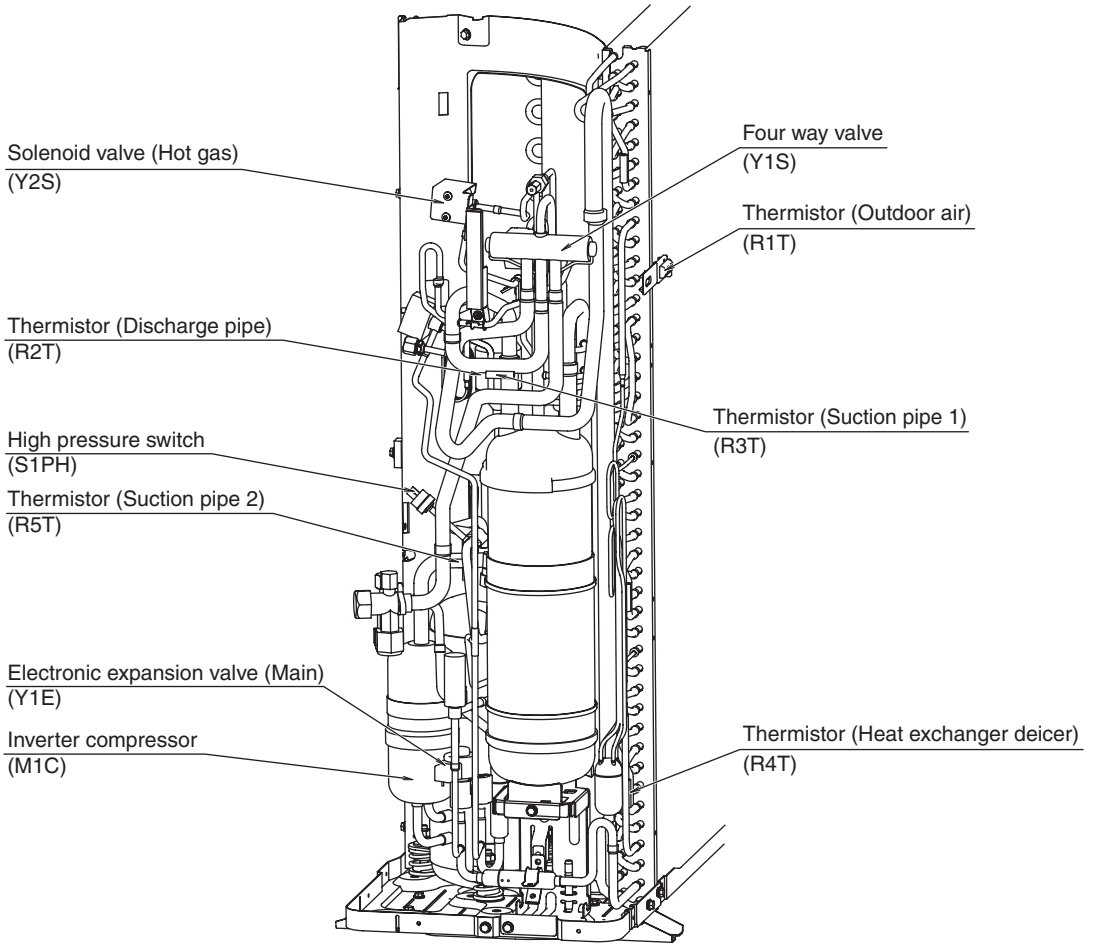
2. Functional Parts Layout

2.1 RXTQ36TAVJU

Top view

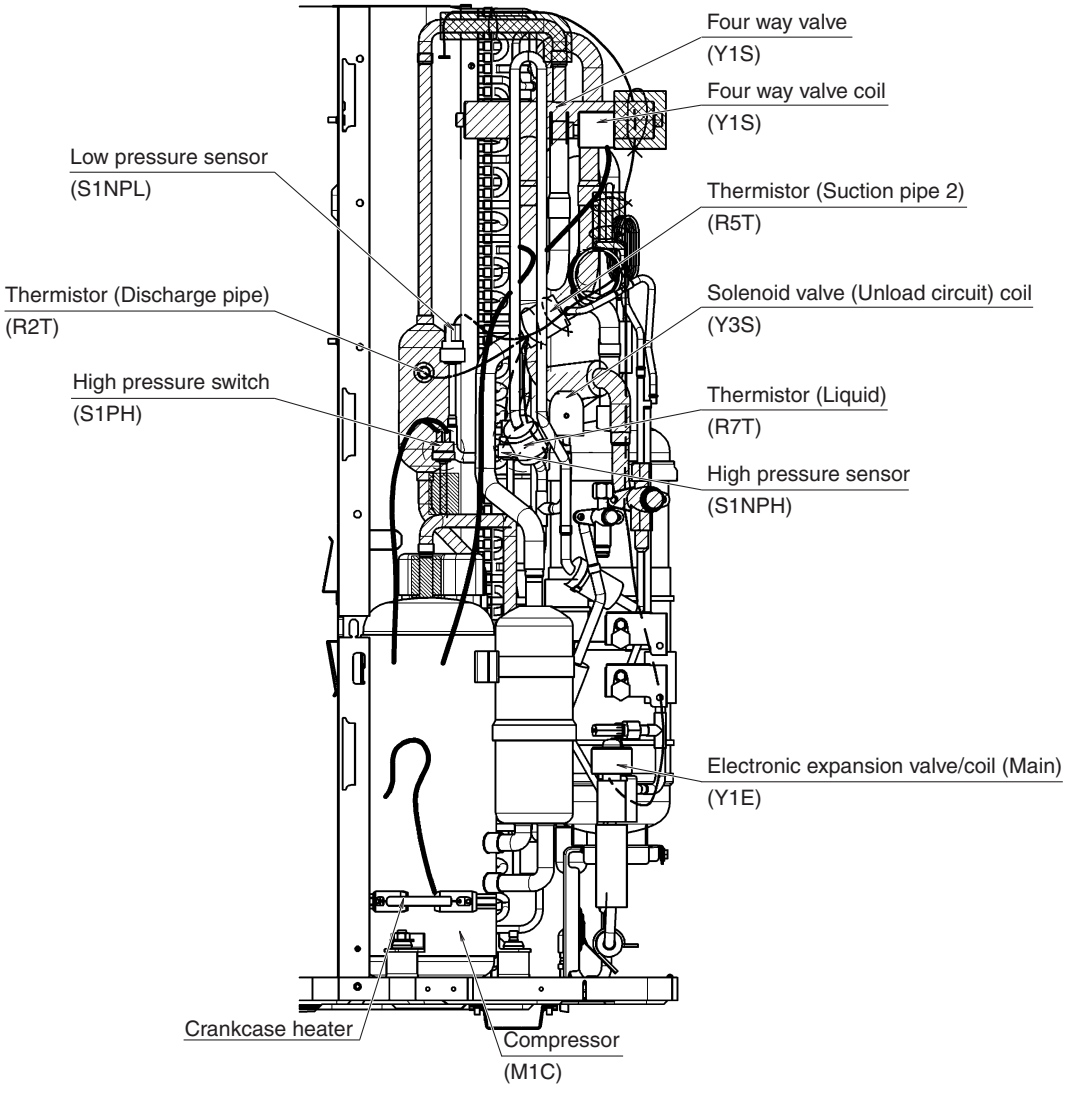


Front view

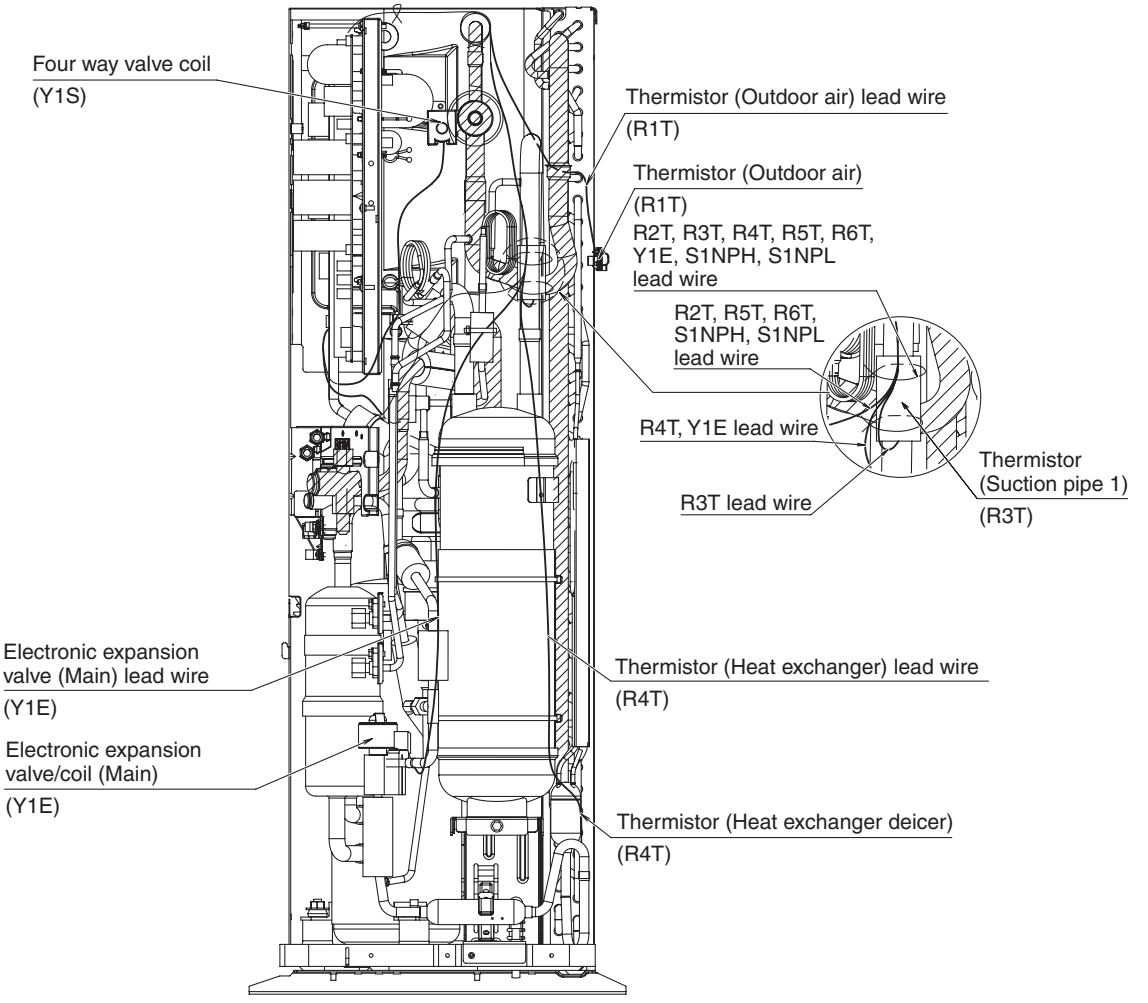


2.2 RXTQ48TAVJU

Front view

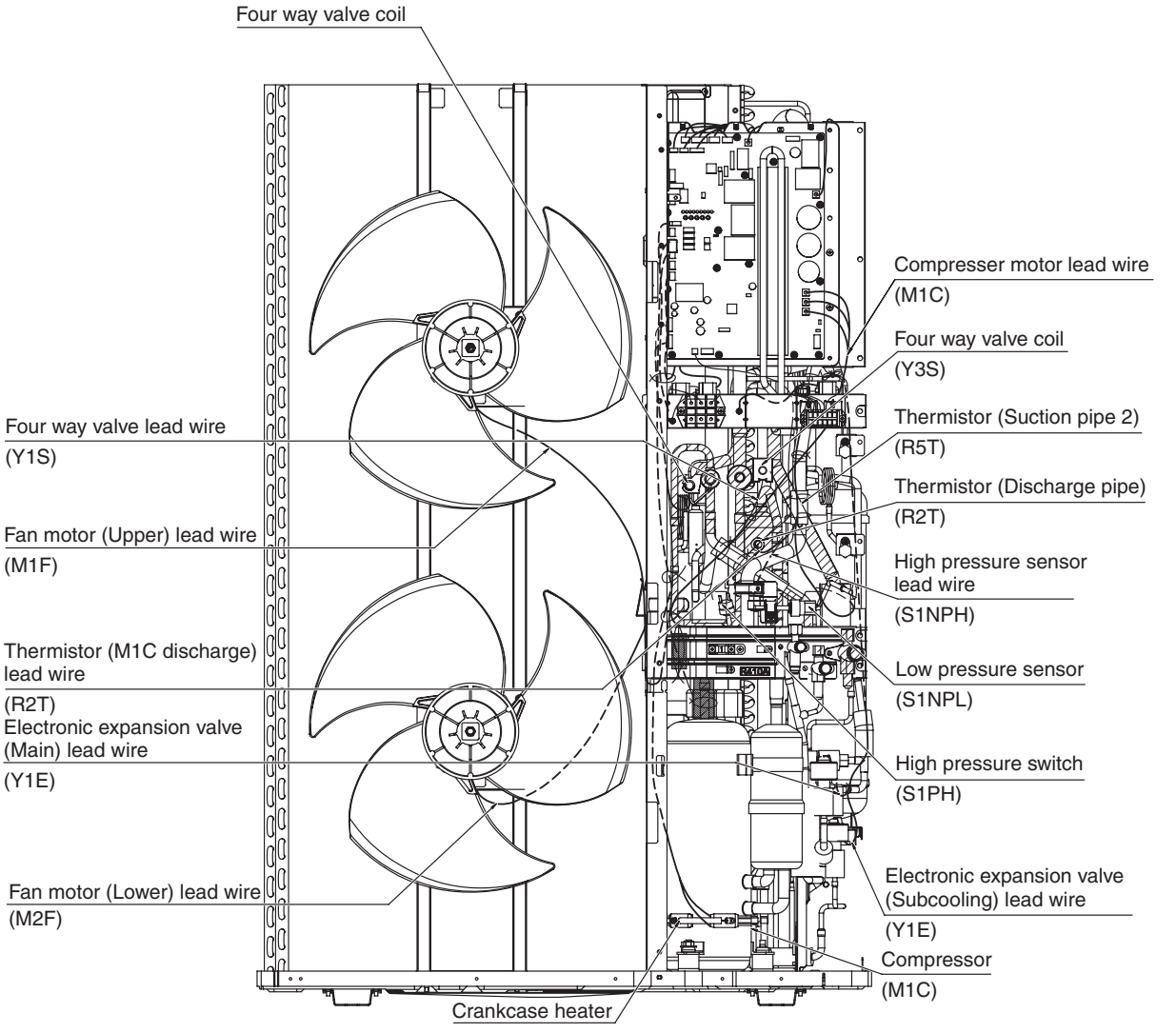


Side view

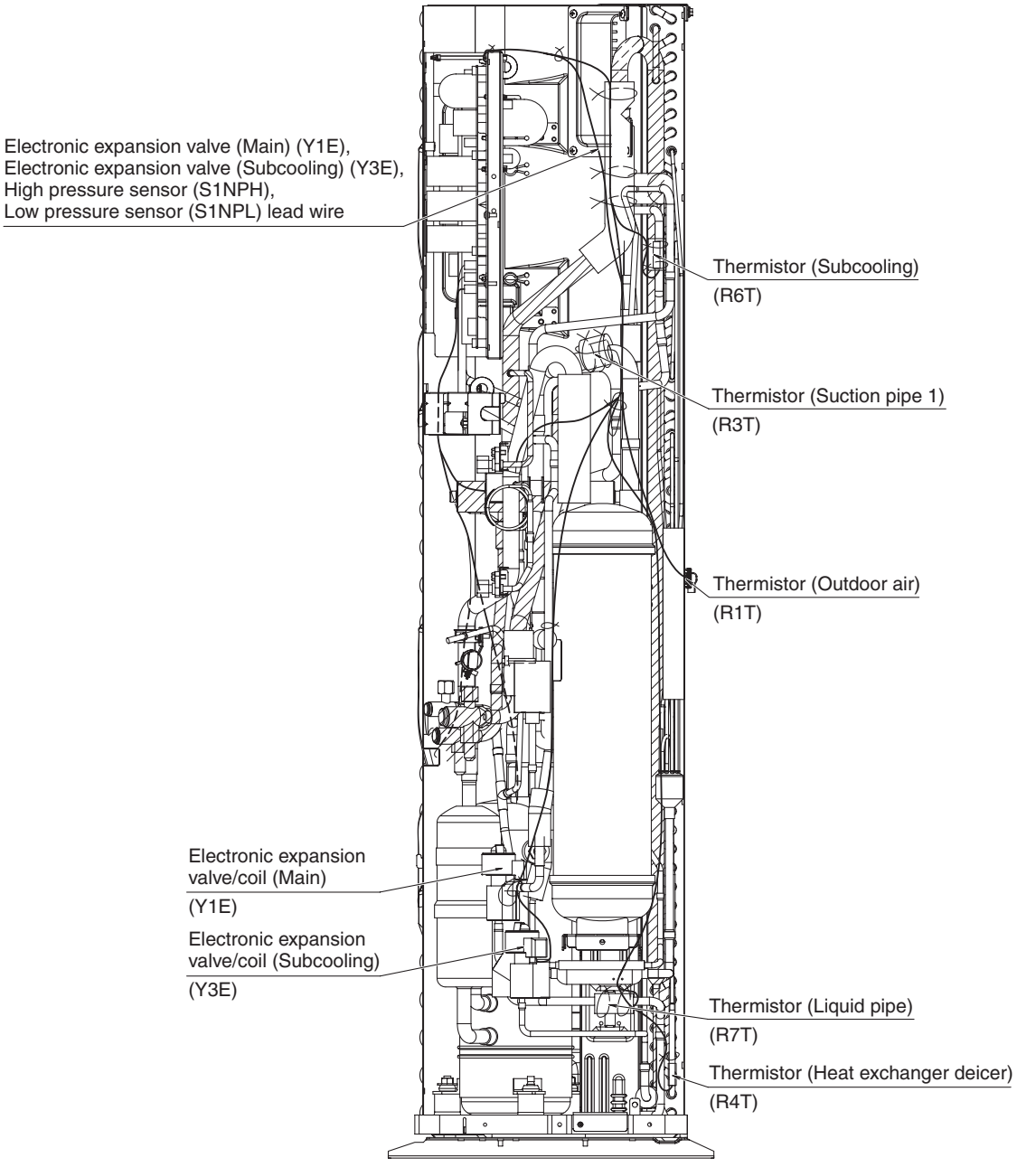

Four way valve coil
(Y1S)
Thermistor (Outdoor air) lead wire
(R1T)
Thermistor (Outdoor air)
(R1T)
R2T, R3T, R4T, R5T, R6T,
Y1E, S1NPH, S1NPL
lead wire
R2T, R5T, R6T,
S1NPH, S1NPL
lead wire
R4T, Y1E lead wire
R3T lead wire
Thermistor
(Suction pipe 1)
(R3T)
Electronic expansion
valve (Main) lead wire
(Y1E)
Electronic expansion
valve/coil (Main)
(Y1E)
Thermistor (Heat exchanger) lead wire
(R4T)
Thermistor (Heat exchanger deicer)
(R4T)

2.3 RXTQ60TAVJU

Front view



Side view


Electronic expansion valve (Main) (Y1E),
Electronic expansion valve (Subcooling) (Y3E),
High pressure sensor (S1NPH),
Low pressure sensor (S1NPL) lead wire
Thermistor (Subcooling)
(R6T)
Thermistor (Suction pipe 1)
(R3T)
Thermistor (Outdoor air)
(R1T)
Electronic expansion valve/coil (Main)
(Y1E)
Electronic expansion valve/coil (Subcooling)
(Y3E)
Thermistor (Liquid pipe)
(R7T)
Thermistor (Heat exchanger deicer)
(R4T)

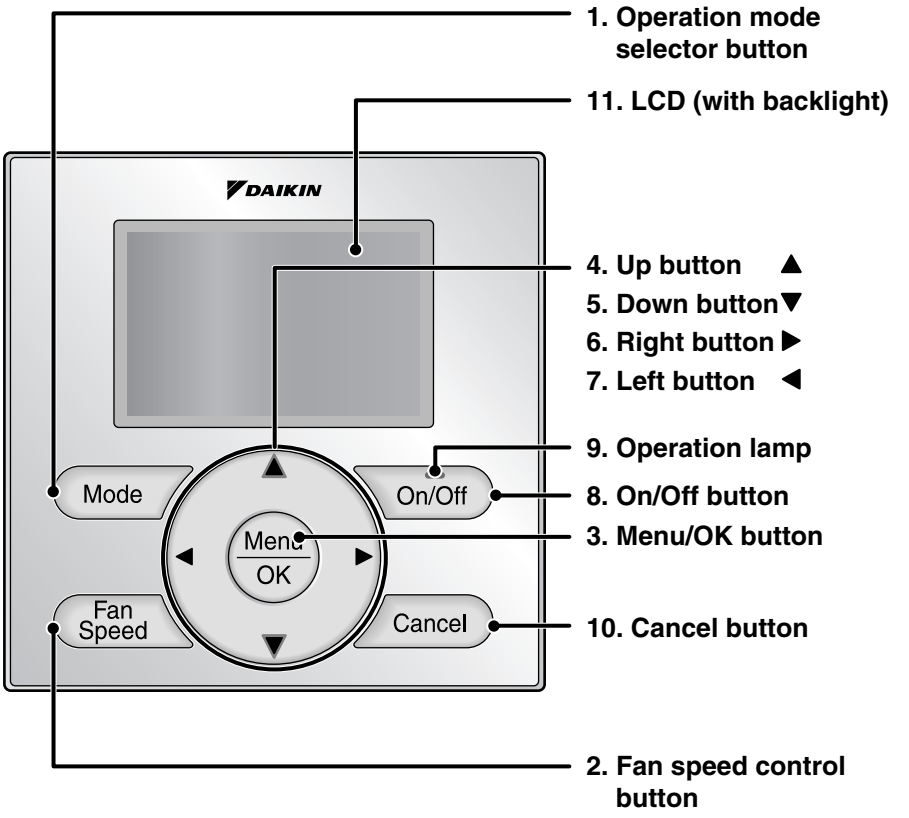
Part 3
Remote Controller

1. Applicable Models

Series	Wired remote controller	Wireless remote controller
	Navigation	
FXFQ	BRC1E73	–
FXZQ		BRC7E830
FXUQ		–
FXEQ		
FXDQ		BRC4C82
FXMQ		
FXHQ		BRC7E83
FXAQ		BRC7E818
FXLQ		–
FXNQ		
FXTQ		

2. Names and Functions

2.1 BRC1E73



Functions other than basic operation items (i.e., On/Off, Operation Mode, Fan Speed, and Setpoint) are set from the menu screen.

Note:

- Do not install the remote controller in places exposed to direct sunlight, the LCD will be damaged.
- Do not pull or twist the remote controller cord, the remote controller may be damaged.
- Do not use objects with sharp ends to press the buttons on the remote controller damage may result.

1. Operation mode selector button

- Press this button to select the operation mode of your preference.
  ∗ Available modes vary with the indoor unit model.

2. Fan speed control button

- Press this button to select the fan speed of your preference.
  ∗ Available fan speeds vary with the indoor unit model.

3. Menu/OK button

- Used to enter the main menu.
- Used to enter the selected item.

4. Up button ▲
- Used to raise the setpoint.
- The item above the current selection will be highlighted.
  (The highlighted items will be scrolled continuously when the button is continuously pressed.)
- Used to change the selected item.

5. Down button ▼
- Used to lower the setpoint.
- The item below the current selection will be highlighted.
  (The highlighted items will be scrolled continuously when the button is continuously pressed.)
- Used to change the selected item.

6. Right button ▶
- Used to highlight the next items on the right-hand side.
- Each screen is scrolled in the right-hand direction.

7. Left button ◀
- Used to highlight the next items on the left-hand side.
- Each screen is scrolled in the left-hand direction.

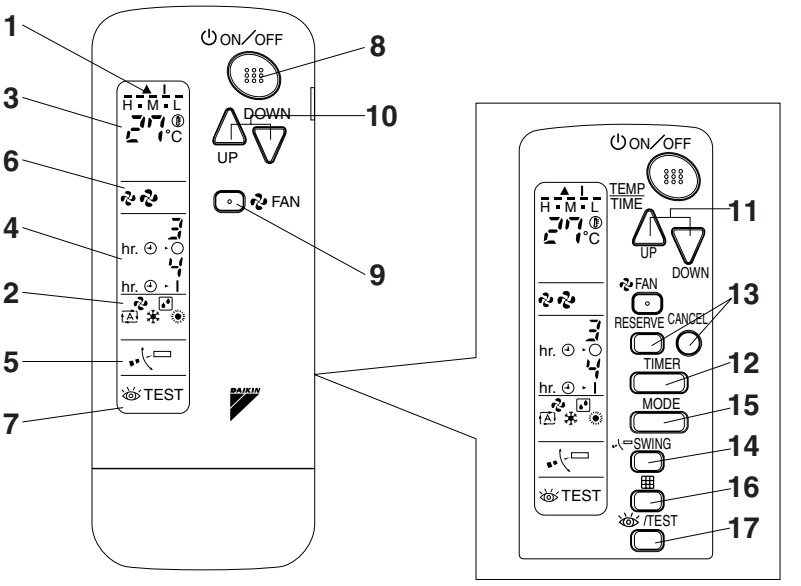
8. On/Off button
- Press this button and system will start.
- Press this button again to stop the system.

9. Operation lamp
- This lamp illuminates solid green during normal operation.
- This lamp blinks if an error occurs.

10. Cancel button
- Used to return to the previous screen.

11. LCD (with backlight)
- The backlight will be illuminated for approximately 30 seconds by pressing any button.
- If two remote controllers are used to control a single indoor unit, only the controller accessed first will have backlight functionality.

2.2 Wireless Remote Controller



1	**DISPLAY ▲ (SIGNAL TRANSMISSION)**
	This lights up when a signal is being transmitted.
2	**DISPLAY (OPERATION MODE)**
	This display shows the current OPERATION MODE. For straight cooling type, (Auto) and (Heating) are not installed.
3	**DISPLAY (SET TEMPERATURE)**
	This display shows the set temperature.
4	**DISPLAY (PROGRAMMED TIME)**
	This display shows programmed time of the system start or stop.
5	**DISPLAY (AIR FLOW FLAP)**
6	**DISPLAY (FAN SPEED)**
	The display shows the set fan speed.
7	**DISPLAY** TEST **(INSPECTION/ TEST)**
	When the **INSPECTION/TEST** button is pressed, the display shows the system mode is in.
8	**ON/OFF BUTTON**
	Press the button and the system will start. Press the button again and the system will stop.

9	**FAN SPEED CONTROL BUTTON**
	Press this button to select the fan speed, HIGH or LOW, of your choice.
10	**TEMPERATURE SETTING BUTTON**
	Use this button for setting temperature (Operates with the front cover of the remote controller closed.)
11	**PROGRAMMING TIMER BUTTON**
	Use this button for programming start and/or stop time. (Operates with the front cover of the remote controller opened.)
12	**TIMER MODE START/STOP BUTTON**
13	**TIMER RESERVE/CANCEL BUTTON**
14	**AIR FLOW DIRECTION ADJUST BUTTON**
15	**OPERATION MODE SELECTOR BUTTON**
	Press this button to select operation mode.
16	**FILTER SIGN RESET BUTTON**
17	**INSPECTION/TEST BUTTON**
	This button is used only by qualified service persons for maintenance purposes.

3. MAIN/SUB Setting

3.1 BRC1E73

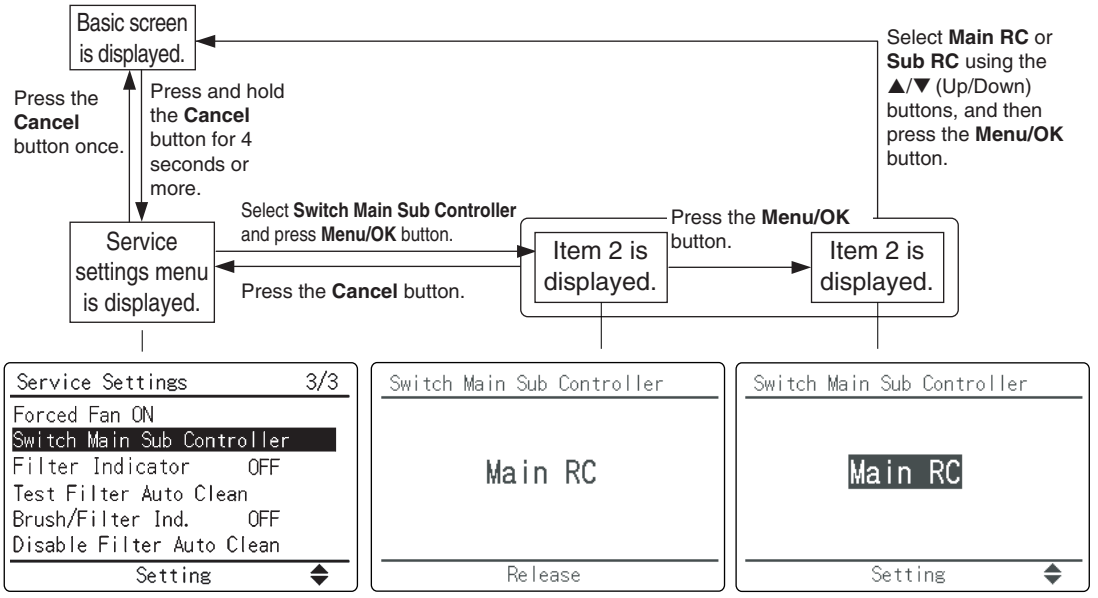
Situation

The MAIN/SUB setting is necessary when 1 indoor unit is controlled by 2 remote controllers. When you use 2 remote controllers (control panel and separate remote controller), set one to MAIN and the other to SUB.

Setting

The remote controllers are factory setting to MAIN, so you only have to change one remote controller from MAIN to SUB. To change a remote controller from MAIN to SUB, proceed as follows:

The designation of the main and sub remote controllers can be swapped. Note that this change requires turning the power OFF and then ON again.



Service settings menu	Item 2
Switch Main Sub Controller	Main RC Sub RC

3.2 Wireless Remote Controller

Introduction

To set the wireless remote controller, you have to set the address for:

- The receiver of the wireless remote controller
- The wireless remote controller.

Setting the Address for the Receiver

The address for the receiver of the wireless remote controller is factory setting to 1. To change this setting, proceed as follows:

Set the wireless address switch (SS2) on the PCB according to the table below.

Unit No.	No. 1	No. 2	No. 3
Wireless address switch (SS2)			

When using both a wired and a wireless remote controller for 1 indoor unit, the wired controller should be set to MAIN. Therefore, set the MAIN/SUB switch (SS1) of the receiver to SUB.

MAIN/SUB	MAIN	SUB
MAIN/SUB switch (SS1)		

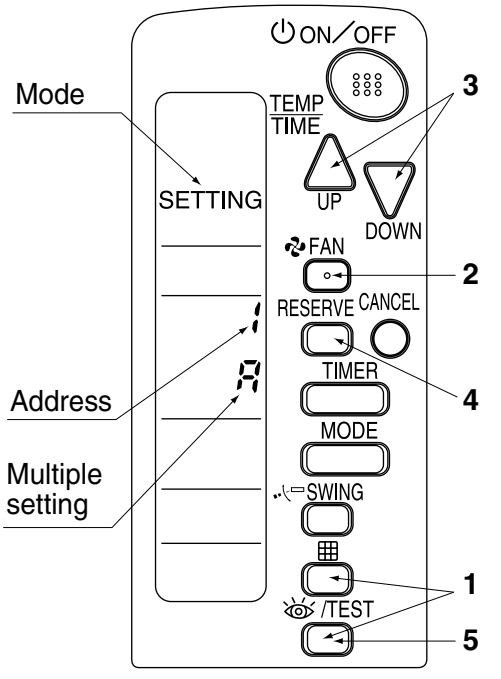
Setting the Address for the Wireless Remote Controller

The address for the wireless remote controller is factory setting to 1. To change this setting, proceed as follows:

1. Hold down the ▦ button and the /TEST button for at least 4 seconds to get the Field setting mode. (Indicated in the display area in the figure at right.)
2. Press the FAN button and select a multiple setting (A/b). Each time the button is pressed the display switches between **A** and **b**.
3. Press the ▲ (UP) button or ▼ (DOWN) button to set the address.

   1 → 2 → 3 → 4 → 5 → 6

   Address can be set from 1 to 6, but set it to 1 ~ 3 and to same address as the receiver. (The receiver does not work with address 4 ~ 6.)
4. Press the RESERVE button to enter the setting.
5. Hold down the /TEST button for at least 1 second to quit the Field setting mode and return to the normal display.

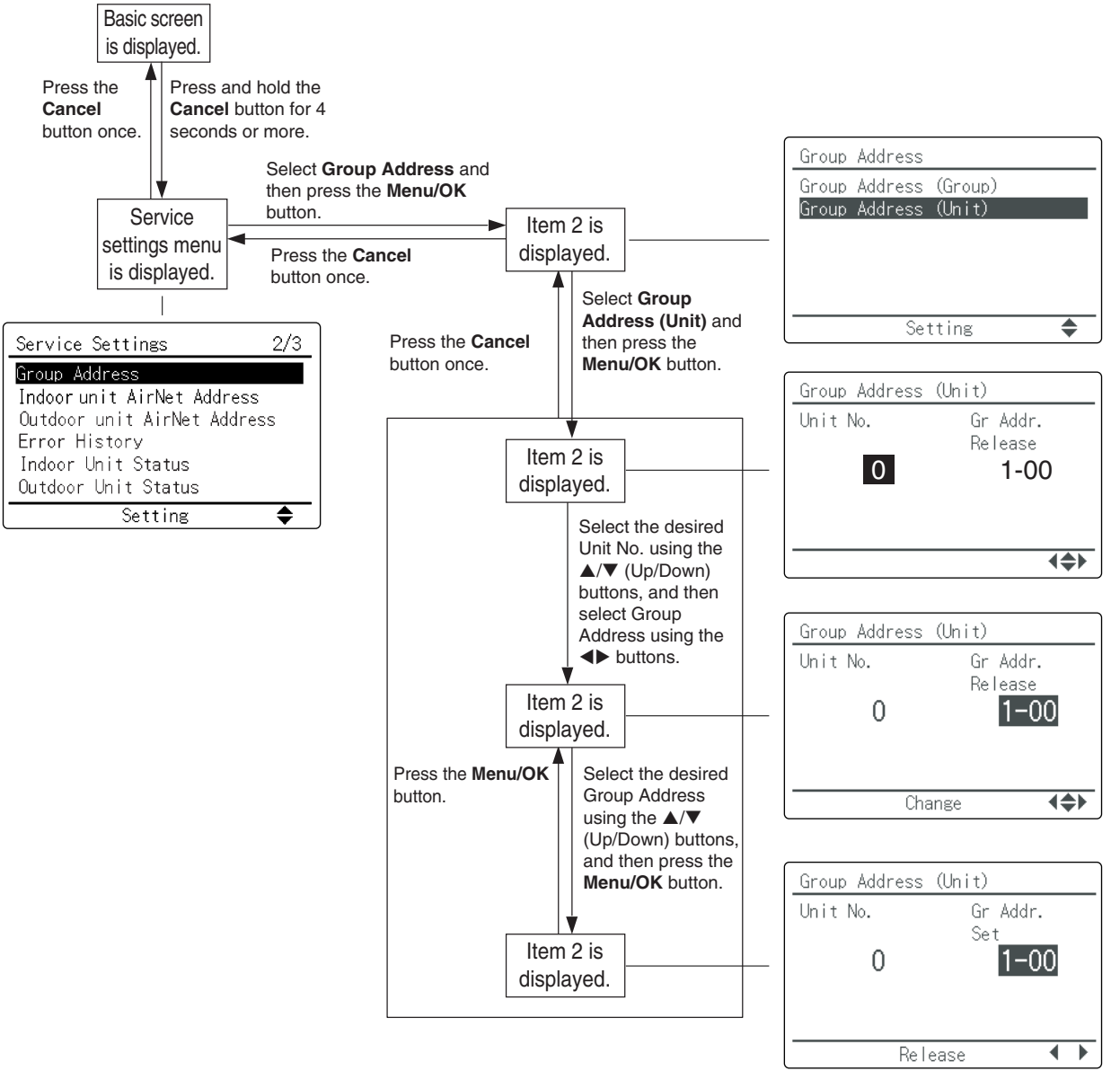


4. Centralized Control Group No. Setting

4.1 BRC1E73

In order to conduct the centralized remote control using the central remote controller and the unified ON/OFF controller, Group No. settings should be made by group using the operating remote controller.
Make Group No. settings for centralized remote control using the operating remote controller.

When initializing Group Address



Service settings menu	Item 2
Group Address	Group Address (Group)
	Group Address (Unit)

■ Description
This menu is used to make group address setting for centralized control.
It is also used to make group address setting by indoor unit.

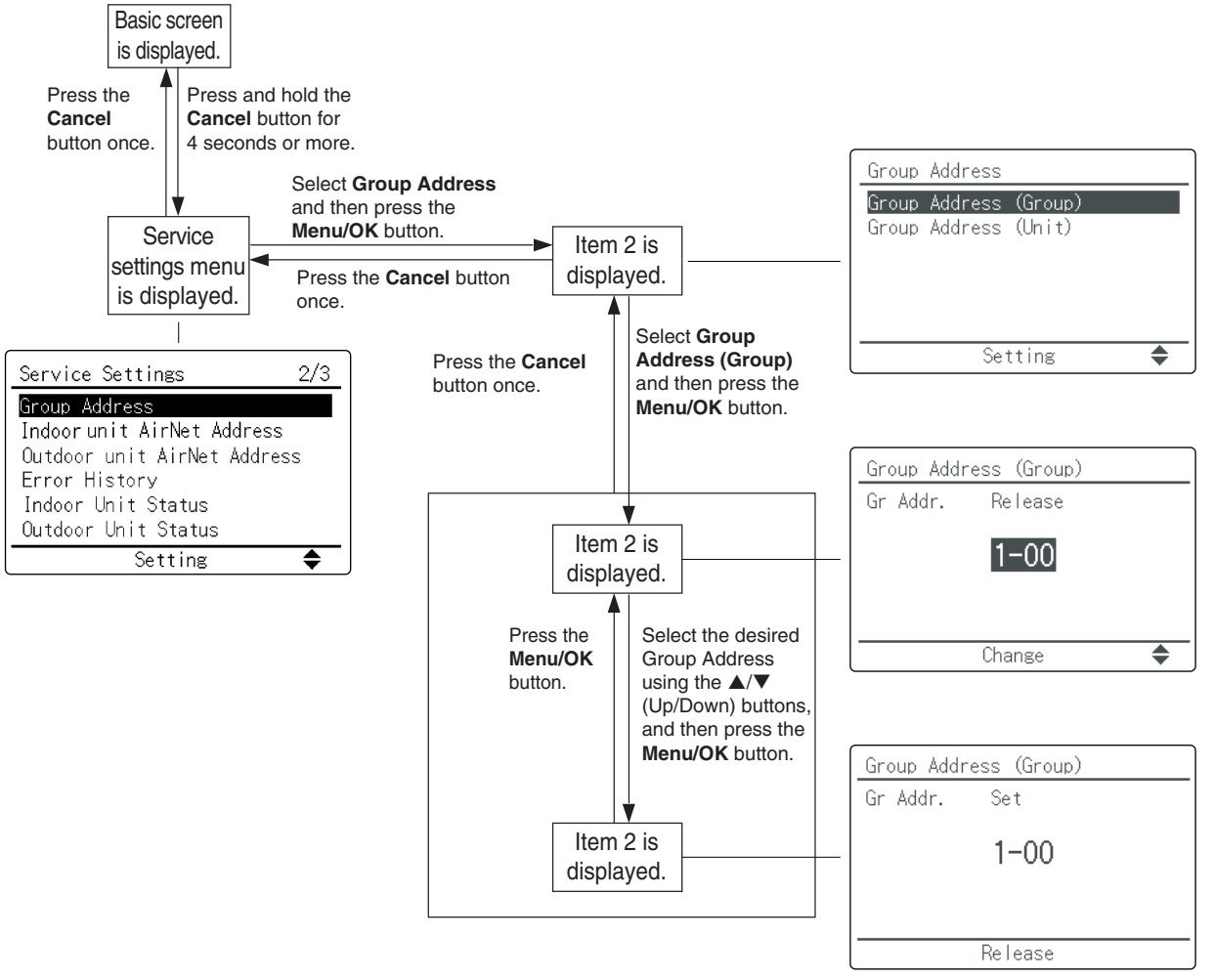
Note:

- For setting group No. of Energy recovery ventilator and wiring adaptor for other air conditioners, etc., refer to the instruction manual attached.

NOTICE

Enter the group No. and installation place of the indoor unit into the attached installation table. Be sure to keep the installation table with the operation manual for maintenance.

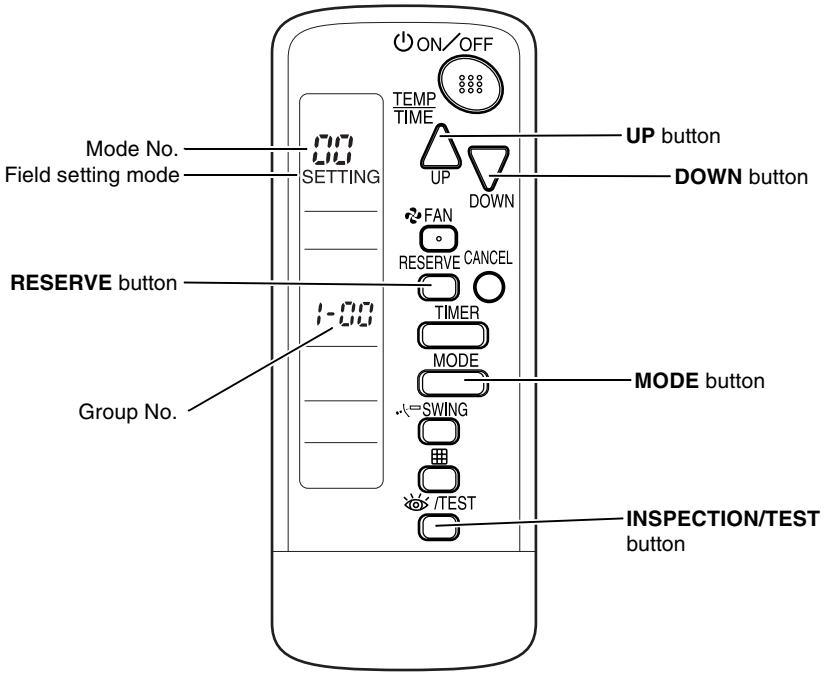
Group Address (Group)



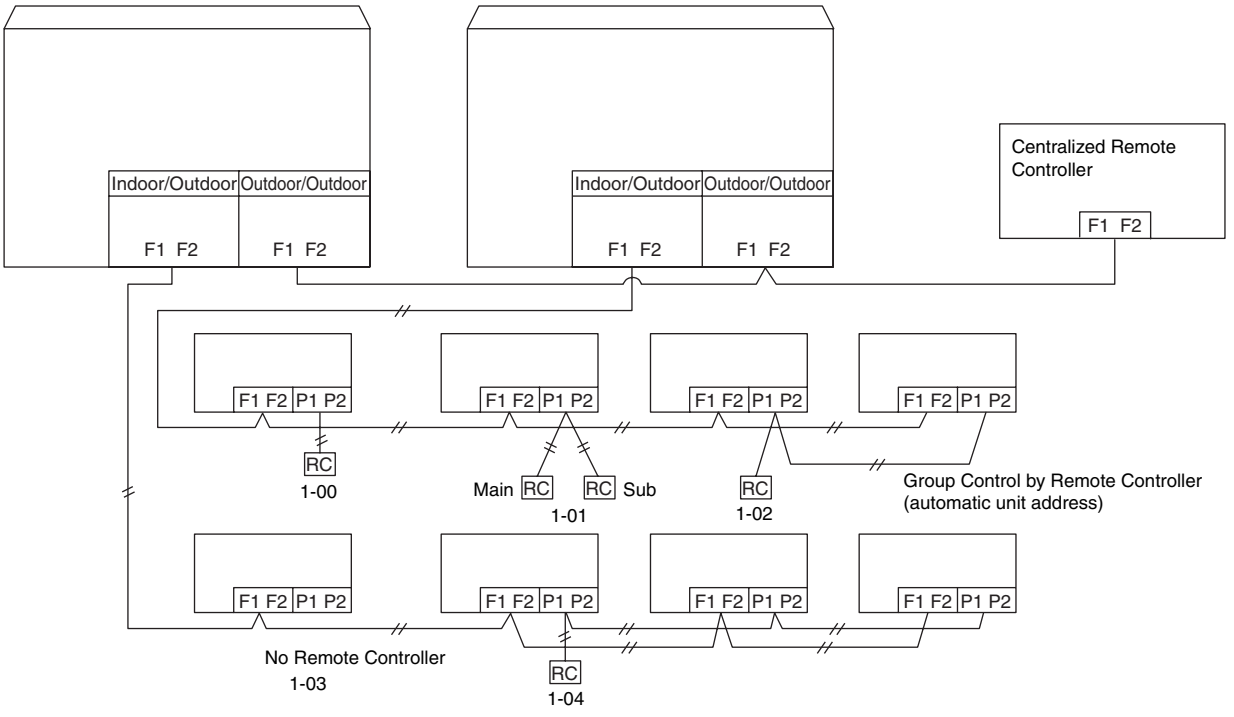
4.2 Wireless Remote Controller

Group No. setting by wireless remote controller for centralized control

1. When in the normal mode, press **INSPECTION/TEST** button for 4 seconds or more to enter field setting mode.
2. Set mode No. 08 with **MODE** button.
3. Set the group No. for each group with **UP** button or **DOWN** button.
4. Enter the selected group numbers by pressing **RESERVE** button.
5. Press **INSPECTION/TEST** button and return to the normal mode.



4.3 Group No. Setting Example



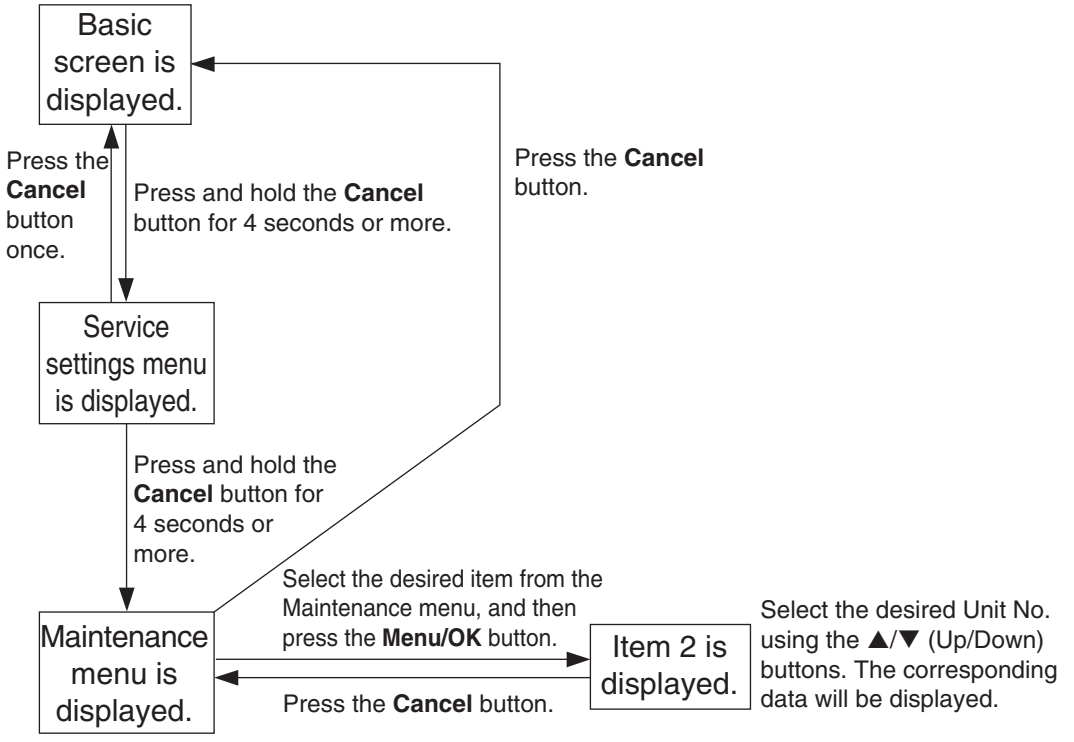
Caution

When turning the power supply on, the unit may often not accept any operation while 88 is displaying after all indications were displayed once for about 1 minute on the liquid crystal display. This is not an operative fault.

5. Service Mode

5.1 BRC1E73

Operating the remote controller allows service data to be acquired and various services to be set.

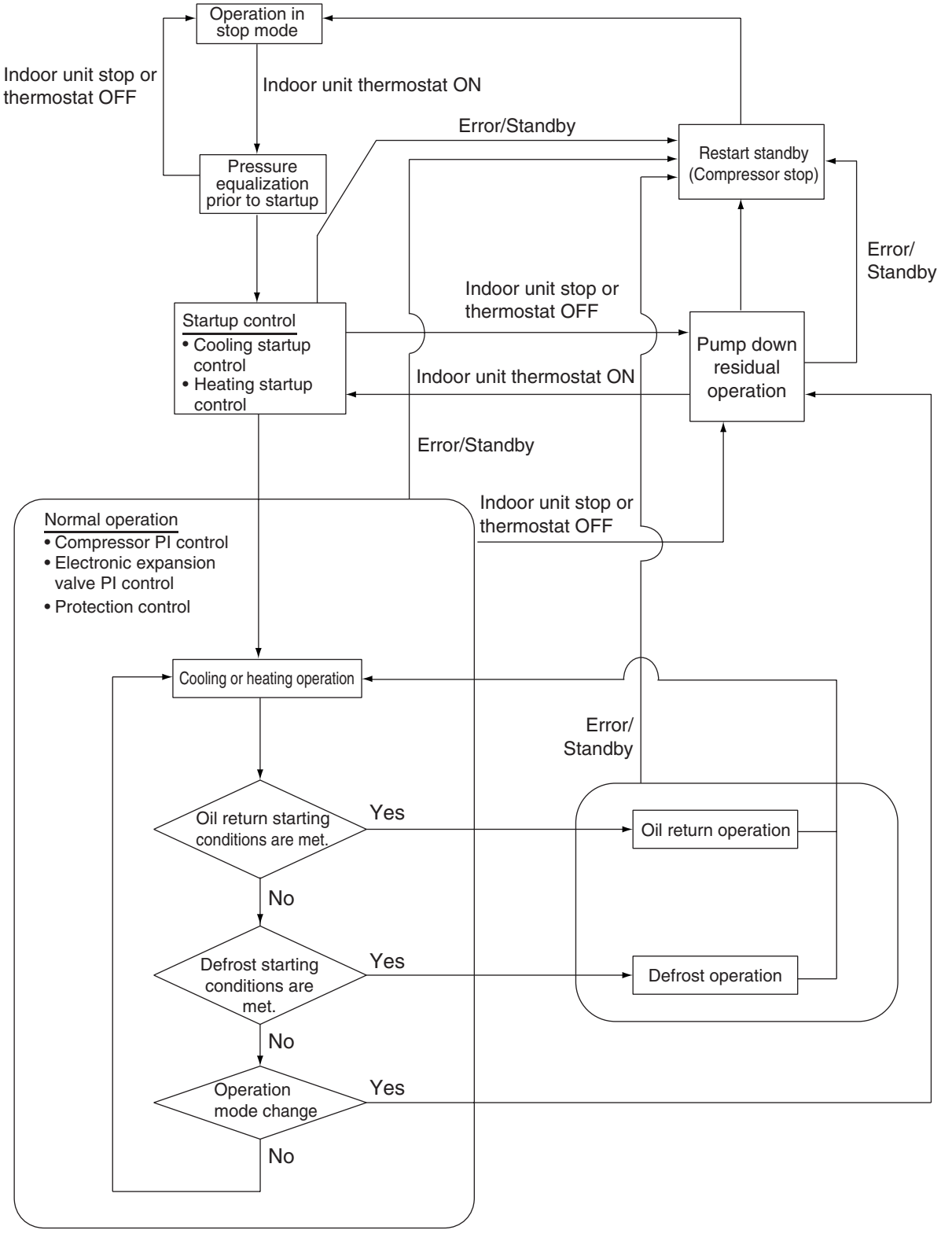


Maintenance Menu	Item 2	Remarks
Model Name	1. Unit No.	Select the Unit No. you want to check.
	2. Indoor unit	
	3. Outdoor unit	
Operation Hours	1. Unit No.	Select the Unit No. you want to check.
	2. Indoor unit operating time	All of these are displayed in hours.
	3. Indoor fan operation	
	4. Indoor unit energized time	
	5. Outdoor unit operating time	
	6. Outdoor fan 1 operation	
	7. Outdoor fan 2 operation	
	8. Outdoor compressor 1 operation	
	9. Outdoor compressor 2 operation	
Indoor Unit Status	1. Unit No.	Select the Unit No. you want to check.
	2. FAN	Fan tap
	3. FLAP	Swing, fixed
	4. Speed	Fan speed (rpm)
	5. EV	Degree that electronic expansion valve is open (pulse)
	6. MP	Drain pump ON/OFF
	7. EH	Electric heater ON/OFF
	8. Hu	Humidifier ON/OFF
	9. TBF	Anti-freezing control ON/OFF

Maintenance Menu	Item 2	Remarks	
Indoor Unit Status	10.FLOAT		
	11.T1/T2		
	12.Unit No.	Select the Unit No. you want to check.	
		SkyAir	*VRV*
	13.Th1	Suction air thermistor	Suction air thermistor
	14.Th2	Heat exchanger thermistor	Heat exchanger liquid pipe thermistor
	15.Th3	—	Heat exchanger gas pipe thermistor
	16.Th4	Discharge air thermistor	Discharge air thermistor
	17.Th5	—	—
	18.Th6	—	—
Outdoor Unit Status	1. Unit No.	Select the Unit No. you want to check.	
	2. FAN step	Fan tap	
	3. COMP	Compressor power supply frequency (Hz)	
	4. EV1	Degree that electronic expansion valve is open (pulse)	
	5. SV1	Solenoid valve ON/OFF	
		SkyAir	*VRV*
	6. Th1	Outdoor air thermistor	—
	7. Th2	Heat exchanger thermistor	—
	8. Th3	Discharge pipe thermistor	—
	9. Th4	Heat exchanger deicer thermistor	—
	10.Th5	Heat exchanger gas pipe thermistor	—
	11.Th6	Liquid pipe thermistor	—
Forced Defrost (SkyAir only)	1. Forced defrost ON	Enables the forced defrost operation.	
	2. Forced defrost OFF	Disables the forced defrost operation.	
Error Display	1. Display Error ON	Displays the error on the screen.	
	2. Display Error OFF	Displays neither errors nor warnings.	
	3. Display Warning ON	Displays a warning on the screen if an error occurs.	
	4. Display Warning OFF	No warning is displayed.	
Swap Unit No.	1. Current Unit No.	A unit No. can be transferred to another.	
	2. Transfer Unit No.		
Addressed Sensor Value	Unit No.: 0 - 15	Select the Unit No. you want to check.	
	Code 00: 01: 02: 03: 04: 05: 06: 07: 08: 09:	 Remote controller thermistor (°F) Suction air thermistor (°F) Heat exchanger liquid pipe thermistor (°F) Heat exchanger gas pipe thermistor (°F) Indoor unit address No. Outdoor unit address No. Branch selector unit address No. Zone control address No. Cooling/Heating batch address No. Demand/low-noise address No.	
	Data	The corresponding data will be displayed, based on the Unit No. and Code selected.	

Part 4
Functions and Control

1. Operation Mode



Note:
In the event that the indoor unit stops or the thermostat turns OFF while in oil return operation or defrost operation, pump down residual operation is performed on completion of oil return operation or defrost operation.

2. Basic Control

2.1 Normal Operation

Cooling Operation

Outdoor unit actuator	Electric symbol			Operation	Remarks
	RXTQ36 TAVJU	RXTQ48 TAVJU	RXTQ60 TAVJU		
Compressor	M1C	M1C	M1C	Compressor PI control	Used for high pressure protection control, low pressure protection control, discharge pipe temperature protection control, and compressor operating frequency upper limit control with inverter protection control.
Outdoor fan	M1F	M1F	M1F, M2F	Cooling fan control	—
Four way valve	Y1S	Y1S	Y1S	OFF	—
Main electronic expansion valve	Y1E	Y1E	Y1E	480 pulse (Fully open)	—
Subcooling electronic expansion valve	—	—	Y3E	PI control	—
Hot gas bypass valve	Y2S	—	—	OFF	This valve turns on with low pressure protection control.

Heating Operation

Outdoor unit actuator	Electric symbol			Operation	Remarks
	RXTQ36 TAVJU	RXTQ48 TAVJU	RXTQ60 TAVJU		
Compressor	M1C	M1C	M1C	Compressor PI control	Used for high pressure protection control, low pressure protection control, discharge pipe temperature protection control, and compressor operating frequency upper limit control with inverter protection control.
Outdoor fan	M1F	M1F	M1F, M2F	STEP 7 or 8	—
Four way valve	Y1S	Y1S	Y1S	ON	—
Main electronic expansion valve	Y1E	Y1E	Y1E	PI control	—
Subcooling electronic expansion valve	—	—	Y3E	PI control	—
Hot gas bypass valve	Y2S	—	—	OFF	This valve turns on with low pressure protection control.

★Heating operation is not functional at an outdoor air temperature of 24°CDB (75°FDB) or more.

2.2 Compressor PI Control

Carries out compressor capacity control to maintain Te at constant during cooling operation and Tc at constant during heating operation thus ensuring stable unit performance.

Cooling operation

Controls compressor capacity to achieve target Te value (TeS).

Te: Low pressure equivalent saturation temperature

TeS: Target temperature of Te (Varies depending on Te setting, operating frequency, etc.)

(1) VRT control (Default)

When the required capacity of all indoor units (suction air temperature – set temperature) is small, the target evaporation temperature is further increased in order to adjust capacity. From the outdoor unit side, the temperature difference for all indoor units (ΔT) is confirmed, and the target temperature is changed.

(2) Constant pressure control

The target evaporation temperature is not changed.

Te setting (Make this setting while in setting mode 2.)

Lower	Normal	VRT (Default)	Higher			
3°C (37.4°F)	6°C (42.8°F)	Variable	8°C (46.4°F)	9°C (48.2°F)	10°C (50°F)	11°C (51.8°F)

Heating operation

Controls compressor capacity to achieve target Tc value (TcS).

Tc: High pressure equivalent saturation temperature

TcS: Target temperature of Tc (Varies depending on Tc setting, operating frequency, etc.)

(1) VRT control (Default)

When the required capacity of all indoor units (set temperature – suction air temperature) is small, the target condensation temperature is further decreased in order to adjust capacity. From the outdoor unit side, the temperature difference for all indoor units (ΔT) is confirmed, and the target temperature is changed.

(2) Constant pressure control

The target condensation temperature is not changed.

Tc setting (Make this setting while in setting mode 2.)

VRT (Default)	Normal	Higher
Variable	46°C (114.8°F)	52°C (125.6°F)

RXTQ36TAVJU

Step	Frequency (Hz)
1	48
2	52.5
3	57
4	61.5
5	67.5
6	75
7	81
8	90
9	100.5
10	105
11	111
12	114
13	118.5
14	129
15	141
16	153
17	163.5
18	174
19	181.5
20	192
21	201
22	211.5
23	222
24	228
25	243
26	253.5
27	265.5
28	277.5
29	289.5
30	301.5

RXTQ48/60TAVJU

Step	Frequency (Hz)
1	45
2	52.5
3	57
4	61.5
5	66
6	72
7	78
8	85.5
9	96
10	105
11	108
12	112.5
13	115.5
14	121.5
15	128.1
16	145.5
17	154.5
18	163.5
19	178.5
20	196.5
21	216
22	223.5
23	232.5
24	244.5
25	253.5
26	255
27	273
28	288
29	309
30	327

* Depending on the operating conditions of the compressor, the compressor can be run in an operating mode different from the modes listed in the table above.

2.3 Electronic Expansion Valve PI Control

Main Electronic Expansion Valve Control

Carries out main electronic expansion valve PI control to maintain evaporator outlet superheated degree (SH) at constant during heating operation thus making maximum use of the outdoor unit heat exchanger (evaporator).

SH = Ts1 – Te

SH: Evaporator outlet superheated degree

Ts1: Suction pipe temperature detected by thermistor R3T

Te: Low pressure equivalent saturation temperature

The optimum initial value of the evaporator outlet superheated degree is 3°C (5.4°F), but varies depending on the inverter compressor discharge pipe superheated degree.

Subcooling Electronic Expansion Valve Control

Carries out PI control of subcooling electronic expansion valve to keep the superheated degree (SH) of the outlet gas pipe on the evaporator side for the full use of the subcooling heat exchanger.

SH = Tsh – Te

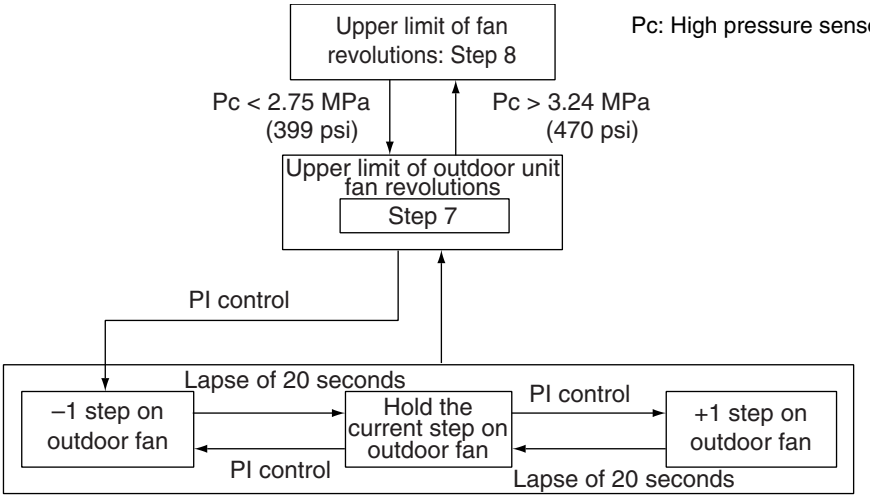
SH: Evaporator outlet superheated degree

Tsh: Subcooling heat exchanger gas pipe temperature detected with the thermistor R6T

Te: Low pressure equivalent saturation temperature

2.4 Cooling Operation Fan Control

In cooling operation with low outdoor air temperature, this control is used to provide an adequate amount of circulation air with liquid pressure secured by high pressure control from the outdoor fan.
Furthermore, when outdoor temperature ≥ 20°C (68°F), the compressor will run in Step 7 or higher.
When outdoor temperature ≥ 18°C (64.4°F), it will run in Step 5 or higher.
When outdoor temperature ≥ 12°C (53.6°F), it will run in Step 1 or higher.



Fan Steps

Step	Fan speed (rpm)			
	RXTQ36TAVJU	RXTQ48TAVJU	RXTQ60TAVJU	
			M1F	M2F
1	200	200	250	0
2	250	250	400	0
3	300	300	285	250
4	480	360	360	325
5	515	430	445	410
6	620	515	580	545
7	830	620	715	680
8	920	920	850	815

3. Special Control

3.1 Startup Control

This control is used to equalize the pressure in the front and back of the compressor prior to compressor startup, thus reducing startup loads. Furthermore, the inverter is turned ON to charge the capacitor.
In addition, to avoid stresses to the compressor due to oil return, etc., after startup, the following control is made and the position of the four way valve is also determined. To position the four way valve, the master and slave units start up simultaneously.
Pc : High pressure sensor detection value
Pe : Low pressure sensor detection value
Ta : Outdoor air temperature

3.1.1 Startup Control in Cooling Operation

Thermostat ON ↓

Outdoor unit actuator	Electric symbol			Pressure equalization control prior to startup	Startup control	
	RXTQ36 TAVJU	RXTQ48 TAVJU	RXTQ60 TAVJU		STEP 1	STEP 2
Compressor	M1C	M1C	M1C	0 Hz	Minimum frequency	Increases 2 steps every 20 seconds from minimum frequency until Pc – Pe > 0.39 MPa (56.6 psi) is achieved
Outdoor fan	M1F	M1F	M1F, M2F	STEP 7	Ta < 20°C (68°F): OFF Ta ≥ 20°C (68°F): STEP 4	+1 step/15 sec. (when Pc > 2.16 MPa (313 psi)) –1 step/15 sec. (when Pc < 1.77 MPa (257 psi))
Four way valve	Y1S	Y1S	Y1S	Holds	OFF	OFF
Main electronic expansion valve	Y1E	Y1E	Y1E	0 pulse	480 pulse (Fully open)	480 pulse (Fully open)
Subcooling electronic expansion valve	—	—	Y3E	0 pulse	0 pulse	0 pulse
Hot gas bypass valve	Y2S	—	—	OFF	OFF	OFF
Ending conditions				OR • Pc – Pe < 0.3 MPa (43.5 psi) • A lapse of 1 to 5 min.	A lapse of 10 sec.	OR • A lapse of 130 sec. • Pc – Pe > 0.39 MPa (56.6 psi)

3.1.2 Startup Control in Heating Operation

Thermostat ON ↓

Outdoor unit actuator	Electric symbol			Pressure equalization control prior to startup	Startup control	
	RXTQ36 TAVJU	RXTQ48 TAVJU	RXTQ60 TAVJU		STEP 1	STEP 2
Compressor	M1C	M1C	M1C	0 Hz	Minimum frequency	Increases 2 steps every 20 seconds from minimum frequency until Pc – Pe > 0.39 MPa (56.6 psi) is achieved
Outdoor fan	M1F	M1F	M1F, M2F	From starting Ta > 20°C (68°F): STEP 1 Ta ≤ 20°C (68°F): OFF	STEP 8	STEP 8
Four way valve	Y1S	Y1S	Y1S	Holds	ON	ON
Main electronic expansion valve	Y1E	Y1E	Y1E	0 pulse	0 pulse	0 pulse
Subcooling electronic expansion valve	—	—	Y3E	0 pulse	0 pulse	0 pulse
Hot gas bypass valve	Y2S	—	—	OFF	OFF	OFF
Ending conditions				OR • Pc – Pe < 0.3 MPa (43.5 psi) • A lapse of 1 to 5 min.	A lapse of 10 sec.	OR • A lapse of 130 sec. • Pc > 2.70 MPa (392 psi) • Pc – Pe > 0.39 MPa (56.6 psi)

3.2 Oil Return Operation

In order to prevent the compressor from running out of oil, oil return operation is conducted to recover oil that has flown out from the compressor to the system side.

3.2.1 Oil Return Operation in Cooling

HTdi : Compressor discharge pipe temperature (Tdi) compensated with outdoor air temperature
Pe : Low pressure sensor detection value
Tc : High pressure equivalent saturation temperature
Te : Low pressure equivalent saturation temperature
Ts : Suction pipe temperature detected by thermistor

Starting conditions

Referring to the set conditions for the following items, start the oil return operation in cooling.

- Cumulative oil feed rate
- Timer setting (Make this setting so as to start the oil return operation when the initial cumulative operating time reaches two hours after power supply is turned ON and then every eight hours.)

Furthermore, the cumulative oil feed rate is computed from Tc, Te, and compressor loads.

Outdoor unit actuator	Electric symbol			Oil return preparation operation	Oil return operation	After oil return operation
	RXTQ36 TAVJU	RXTQ48 TAVJU	RXTQ60 TAVJU			
Compressor	M1C	M1C	M1C	Take the current step as the upper limit.	Minimum frequency (→ Low pressure protection control)	Same as oil return operation.
Outdoor fan	M1F	M1F	M1F, M2F	Fan control (Normal cooling)	Fan control (Normal cooling)	Fan control (Normal cooling)
Four way valve	Y1S	Y1S	Y1S	OFF	OFF	OFF
Main electronic expansion valve	Y1E	Y1E	Y1E	480 pulse (Fully open)	480 pulse (Fully open)	480 pulse (Fully open)
Subcooling electronic expansion valve	—	—	Y3E	SH control	0 pulse	0 pulse
Hot gas bypass valve	Y2S	—	—	OFF	OFF	OFF
Ending conditions				20 seconds	OR • 3 minutes • Ts – Te < 5°C (9°F)	OR • 3 minutes • Pe < 0.6 MPa (87 psi) • HTdi > 110°C (230°F)

Indoor unit actuator		Cooling oil return operation
Indoor fan	Thermostat ON unit	Remote controller setting
	Stopping unit	OFF
	Thermostat OFF unit	Remote controller setting
Electronic expansion valve	Thermostat ON unit	Normal opening
	Stopping unit	224 pulse
	Thermostat OFF unit	Normal opening with forced thermostat ON

3.2.2 Oil Return Operation in Heating

Pc : High pressure sensor detection value
Pe : Low pressure sensor detection value
Tc : High pressure equivalent saturation temperature
Te : Low pressure equivalent saturation temperature
Ts1 : Suction pipe temperature detected by suction 1 thermistor
Tb : Heat exchanger temperature

Starting conditions

Referring to the set conditions for the following items, start oil return operation in heating.

- Integrated amount of displaced oil
- Timer setting (After the power is turned ON, integrated operating time is two hours and subsequently every eight hours.)
  In addition, integrated amount of displaced oil is derived from Tc, Te, and compressor load.

Outdoor unit actuator	Electric symbol			Oil return preparation operation	Oil return operation	After oil return operation
	RXTQ36 TAVJU	RXTQ48 TAVJU	RXTQ60 TAVJU			
Compressor	M1C	M1C	M1C	Upper limit control	140 Hz Full load	Increases 2 steps every 20 seconds from minimum frequency until Pc – Pe > 0.4 MPa (58 psi) is achieved.
Outdoor fan	M1F	M1F	M1F, M2F	STEP 8	OFF	STEP 8
Four way valve	Y1S	Y1S	Y1S	ON	OFF	ON
Main electronic expansion valve	Y1E	Y1E	Y1E	SH control	480 pulse (Fully open)	55 pulse
Subcooling electronic expansion valve	—	—	Y3E	0 pulse	0 pulse	0 pulse
Hot gas bypass valve	Y2S	—	—	OFF	OFF	OFF
Ending conditions				2 minutes	OR (• 12 minutes & (• Ts1 – Te < 5°C (9°F) • Tb > 11°C (51.8°F)))	OR (• 160 seconds • Pc – Pe > 0.4 MPa (58 psi))

* From the preparing oil-returning operation to the oil-returning operation, and from the oil-returning operation to the operation after oil-returning, the compressor stops for 1 minute to reduce noise on changing of the four way valve.

Indoor unit actuator		Heating oil return operation
Indoor fan	Thermostat ON unit	OFF
	Stopping unit	OFF
	Thermostat OFF unit	OFF
Electronic expansion valve	Thermostat ON unit	416 pulse
	Stopping unit	256 pulse
	Thermostat OFF unit	416 pulse

3.3 Defrost Operation

Pc : High pressure sensor detection value
Pe : Low pressure sensor detection value
Tc : High pressure equivalent saturation temperature
Te : Low pressure equivalent saturation temperature
Ts1 : Suction pipe temperature detected by suction 1 thermistor
Tb : Heat exchanger temperature
Defrost operation is performed to melt frost on the outdoor unit heat exchanger when heating, and thus recover heating capacity.

Starting conditions

Defrost operation is started referring to the following conditions.

- Outdoor heat exchanger heat transfer co-efficiency
- Timer setting (Two hours at the minimum)
  In addition, outdoor heat-exchange co-efficiency is derived from Tc, Te, and compressor load.

Outdoor unit actuator	Electric symbol			Defrost preparation operation	Defrost operation	After defrost operation
	RXTQ36 TAVJU	RXTQ48 TAVJU	RXTQ60 TAVJU			
Compressor	M1C	M1C	M1C	Upper limit control	140 Hz Full load	Increases 2 steps every 20 seconds from minimum frequency until Pc – Pe > 0.4 MPa (58 psi) is achieved.
Outdoor fan	M1F	M1F	M1F, M2F	STEP 8	OFF	STEP 8
Four way valve	Y1S	Y1S	Y1S	ON	OFF	ON
Main electronic expansion valve	Y1E	Y1E	Y1E	SH control	480 pulse (Fully open)	55 pulse
Subcooling electronic expansion valve	—	—	Y3E	0 pulse	0 pulse	0 pulse
Hot gas bypass valve	Y2S	—	—	OFF	ON	ON
Ending conditions				2 minutes	OR (• 12 minutes & (• Tb > 11°C (51.8°F) • Ts1 – Te < 5°C (9°F))	OR (• 160 seconds • Pc – Pe > 0.4 MPa (58 psi))

* From the preparation operation to the defrost operation, and from the defrost operation to the operation after defrost, the compressor stops for 1 minute to reduce noise on changing of the four way valve.

Indoor unit actuator		Defrost operation
Indoor fan	Thermostat ON unit	OFF
	Stopping unit	OFF
	Thermostat OFF unit	OFF
Electronic expansion valve	Thermostat ON unit	416 pulse
	Stopping unit	256 pulse
	Thermostat OFF unit	416 pulse

3.4 Pump down Residual Operation

When activating the compressor, if liquid refrigerant remains in the heat exchanger, the liquid enters the compressor and dilutes oil therein resulting in a decrease in lubricity.
Therefore, pump down residual operation is performed to collect refrigerant in the heat exchanger when the compressor is down.

3.4.1 Pump down Residual Operation in Cooling

Outdoor unit actuator	Electric symbol			Pump down residual operation: Step 1	Pump down residual operation: Step 2
	RXTQ36 TAVJU	RXTQ48 TAVJU	RXTQ60 TAVJU		
Compressor	M1C	M1C	M1C	124 Hz	Minimum frequency
Outdoor fan	M1F	M1F	M1F, M2F	Fan control	Fan control
Four way valve	Y1S	Y1S	Y1S	OFF	OFF
Main electronic expansion valve	Y1E	Y1E	Y1E	480 pulse (Fully open)	240 pulse (Half open)
Subcooling electronic expansion valve	—	—	Y3E	0 pulse	0 pulse
Hot gas bypass valve	Y2S	—	—	OFF	OFF
Ending conditions				2 seconds	2 seconds

3.4.2 Pump down Residual Operation in Heating

Outdoor unit actuator	Electric symbol			Pump down residual operation
	RXTQ36 TAVJU	RXTQ48 TAVJU	RXTQ60 TAVJU	
Compressor	M1C	M1C	M1C	124 Hz
Outdoor fan	M1F	M1F	M1F, M2F	STEP 7
Four way valve	Y1S	Y1S	Y1S	ON
Main electronic expansion valve	Y1E	Y1E	Y1E	0 pulse
Subcooling electronic expansion valve	—	—	Y3E	0 pulse
Hot gas bypass valve	Y2S	—	—	OFF
Ending conditions				4 seconds

3.5 Restart Standby

Restart is forced into standby to prevent the power from frequently turning on and off and to equalize pressure in the refrigerant system.

Ta: Outdoor air temperature

Outdoor unit actuator	Electric symbol			Operation
	RXTQ36 TAVJU	RXTQ48 TAVJU	RXTQ60 TAVJU	
Compressor	M1C	M1C	M1C	OFF
Outdoor fan	M1F	M1F	M1F, M2F	Ta > 30°C (86°F): STEP 4 Ta ≤ 30°C (86°F): OFF
Four way valve	Y1S	Y1S	Y1S	Keep former condition.
Main electronic expansion valve	Y1E	Y1E	Y1E	0 pulse
Subcooling electronic expansion valve	—	—	Y3E	0 pulse
Hot gas bypass valve	Y2S	—	—	OFF
Ending conditions				2 minutes

3.6 Stopping Operation

Actuator operation is cleared when the system is down.

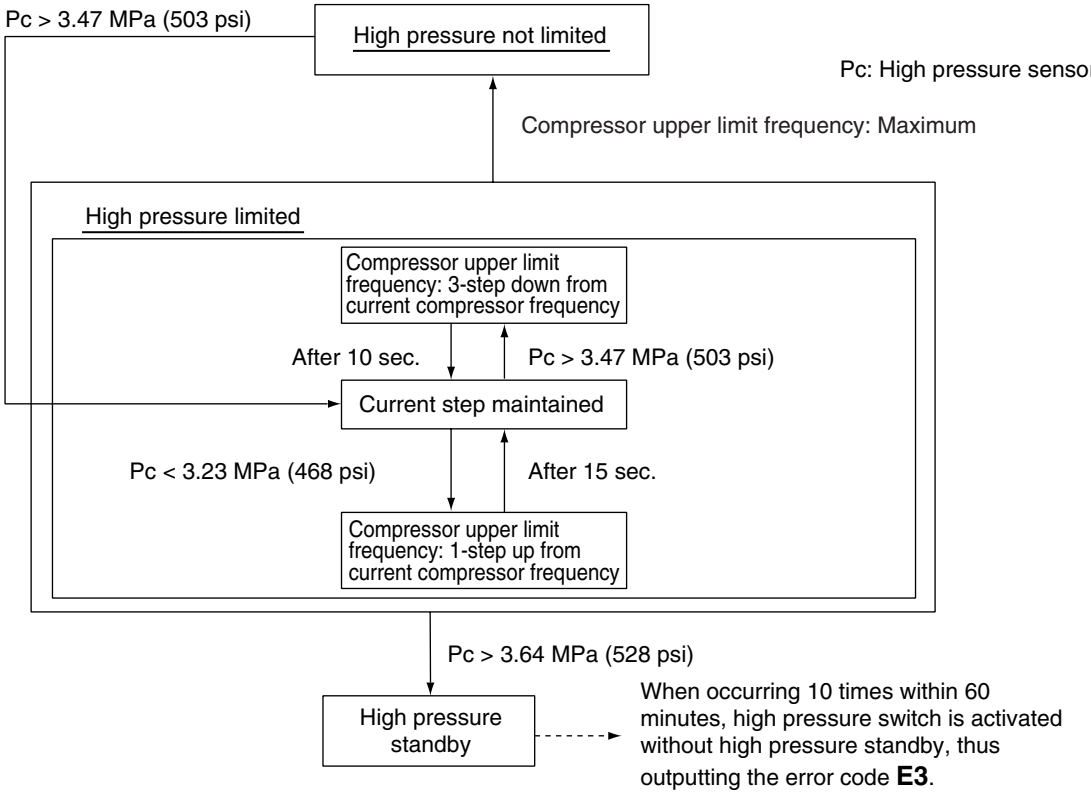
Outdoor unit actuator	Electric symbol			Operation
	RXTQ36 TAVJU	RXTQ48 TAVJU	RXTQ60 TAVJU	
Compressor	M1C	M1C	M1C	OFF
Outdoor fan	M1F	M1F	M1F, M2F	OFF
Four way valve	Y1S	Y1S	Y1S	Keep former condition.
Main electronic expansion valve	Y1E	Y1E	Y1E	0 pulse
Subcooling electronic expansion valve	—	—	Y3E	0 pulse
Hot gas bypass valve	Y2S	—	—	OFF
Ending conditions				Indoor unit thermostat is turned ON.

4. Protection Control

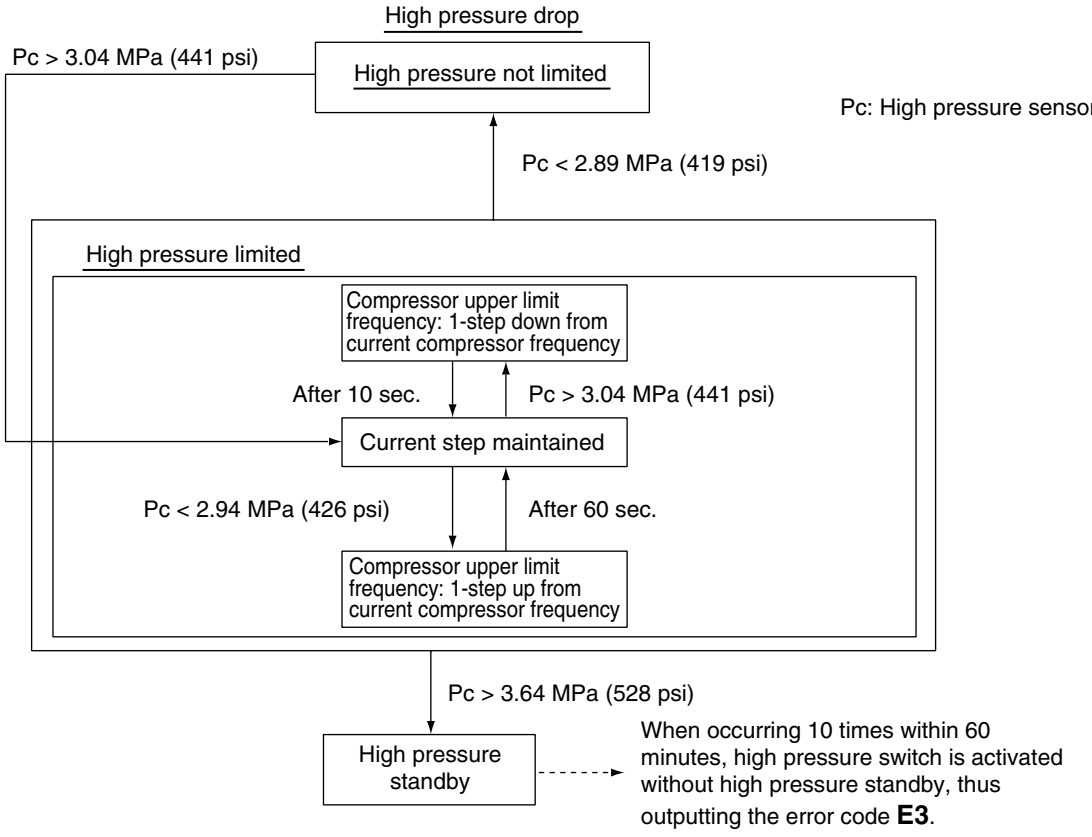
4.1 High Pressure Protection Control

This high pressure protection control is used to prevent the activation of protection devices due to an abnormal increase in high pressure and to protect compressors against transient increases in high pressure.

Cooling operation



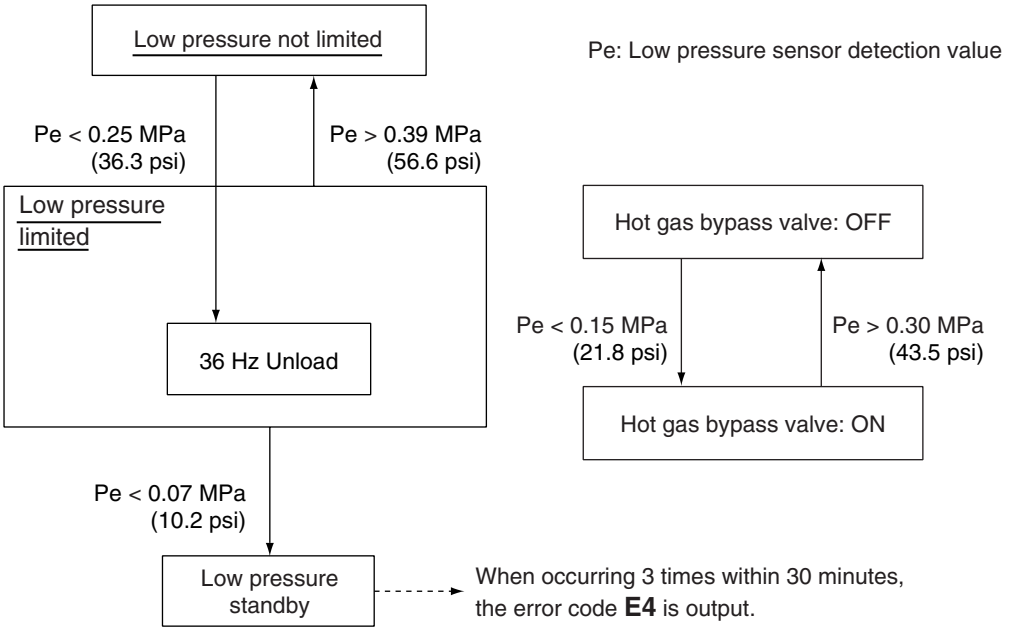
Heating operation



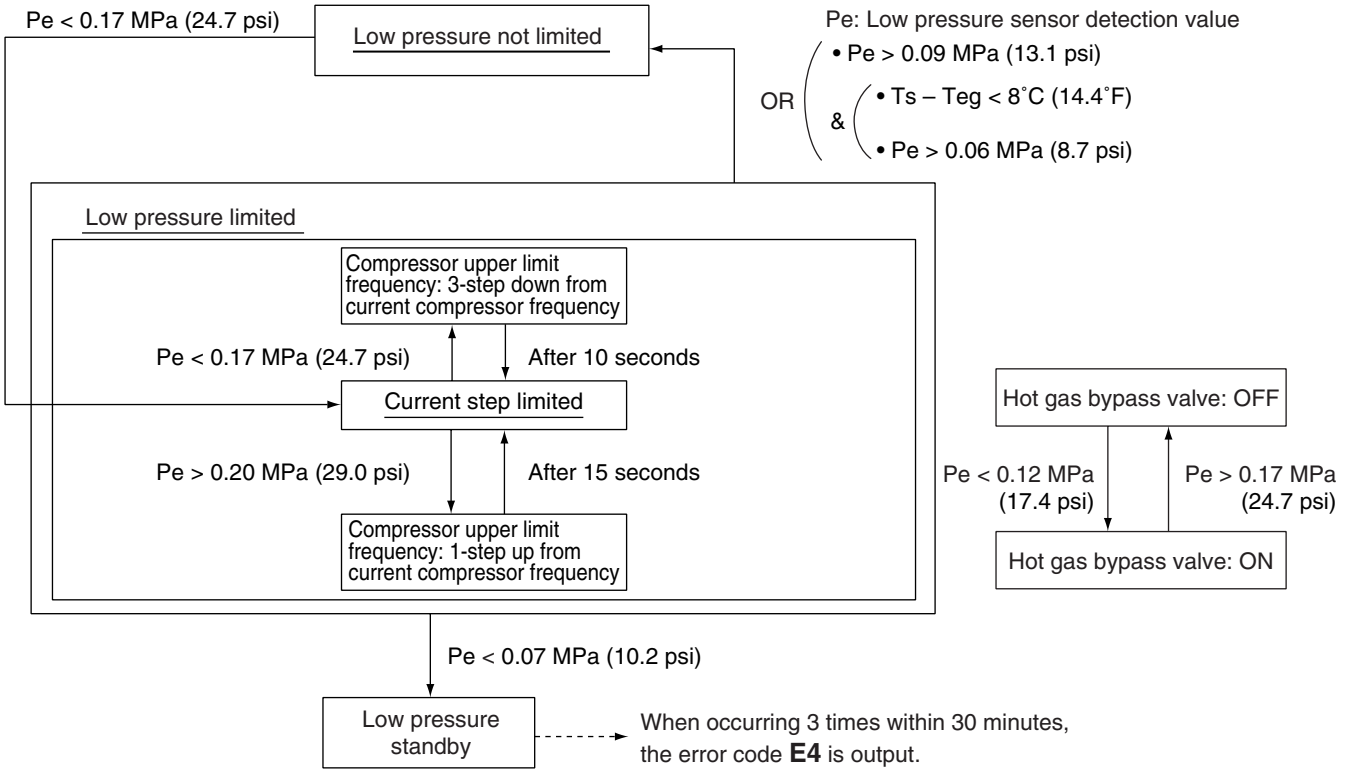
4.2 Low Pressure Protection Control

This low pressure protection control is used to protect compressors against transient decreases in low pressure.

Cooling operation

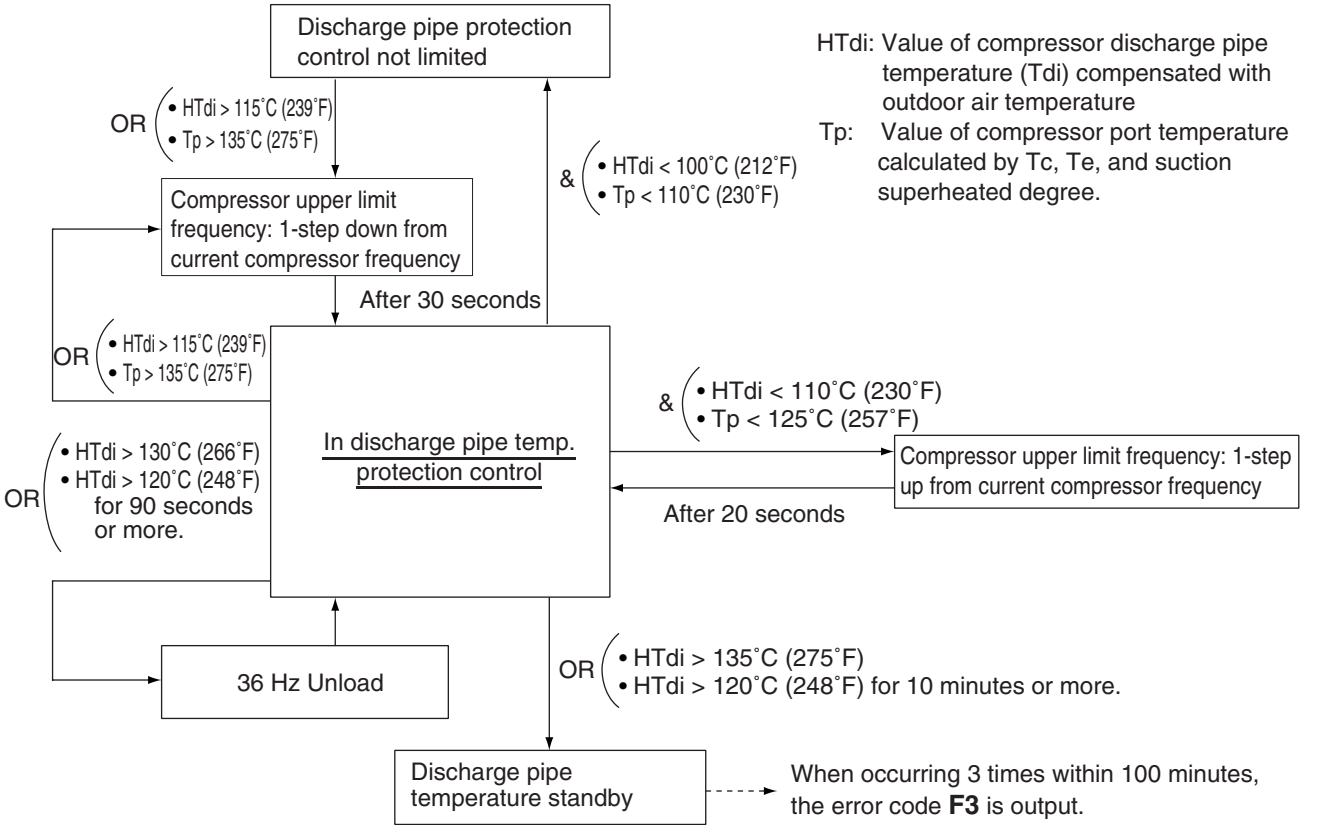


Heating operation



4.3 Discharge Pipe Protection Control

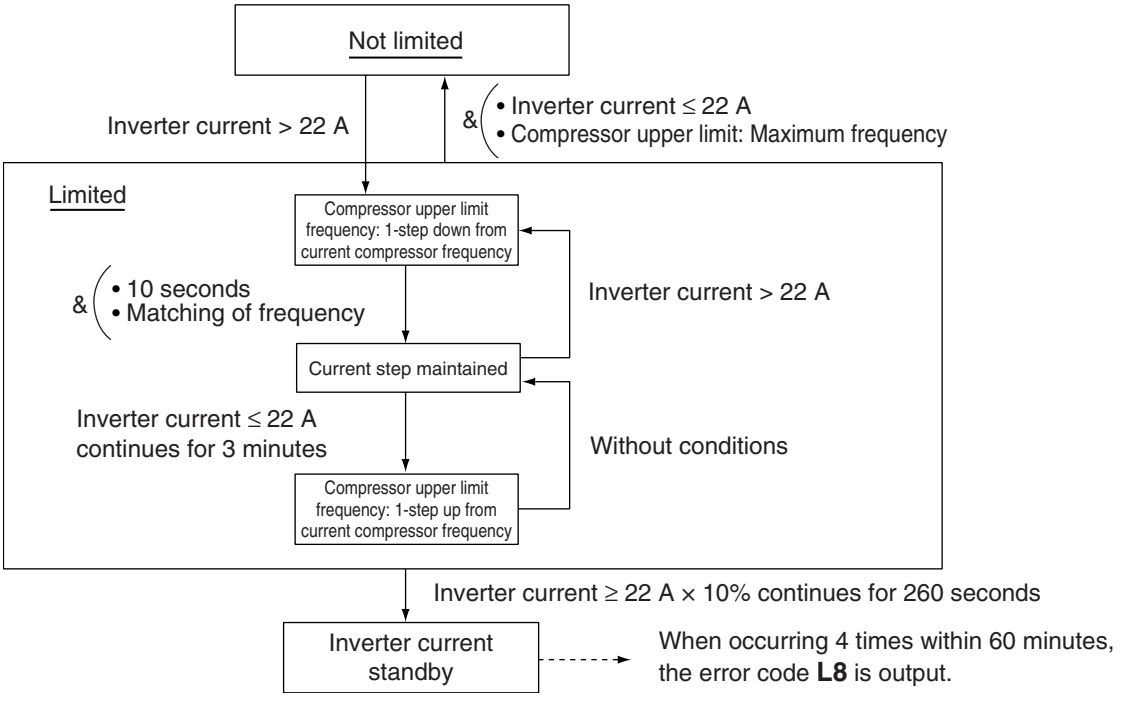
This discharge pipe protection control is used to protect the compressor internal temperature against error or transient increase in discharge pipe temperature.



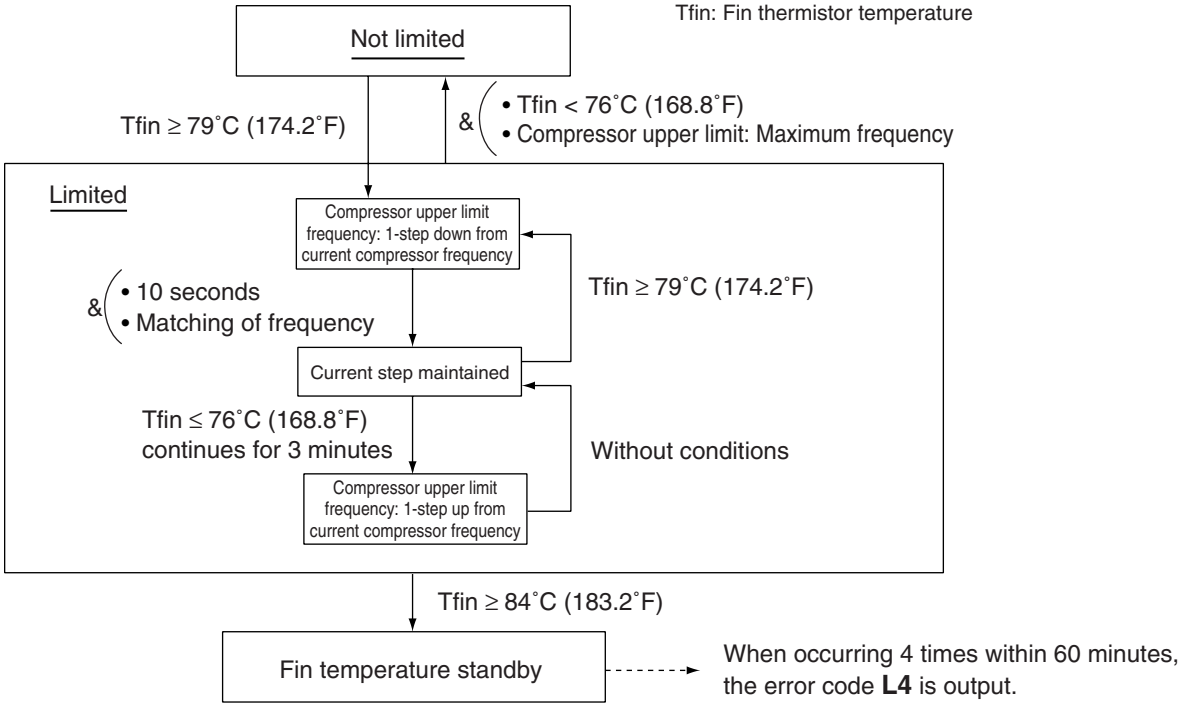
4.4 Inverter Protection Control

Inverter current protection control and inverter fin temperature control are performed to prevent tripping due to error, transient inverter overcurrent, and fin temperature increase.

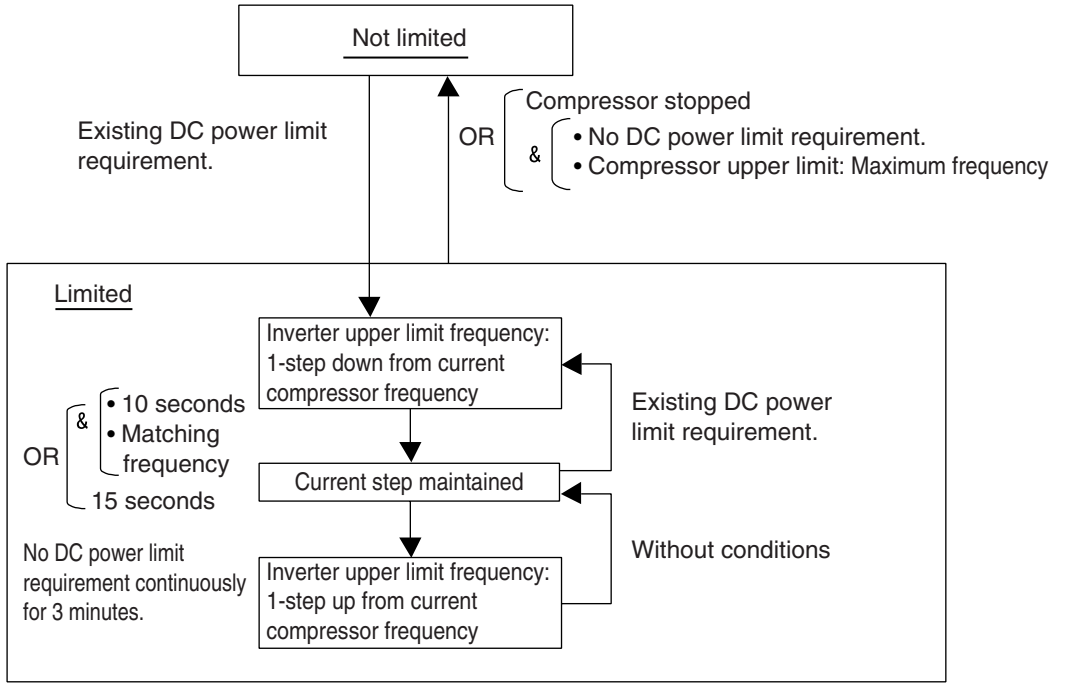
Inverter overcurrent protection control



Radiation fin temperature control



According to the current limit of direct current

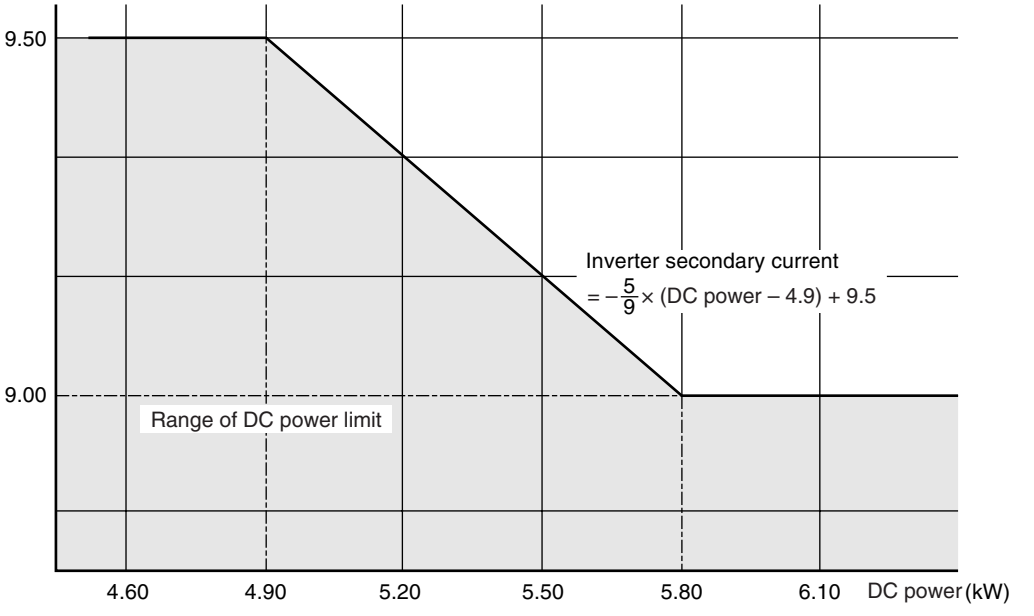


According to the set value of direct current confirmed inverter second current limit

Set value of inverter secondary current drop

■ When the outdoor air temperature is 38°C (100.4°F) or more, inverter secondary current is limited to values falling below the curve shown in the graph below.

Inverter secondary current (A)



■ When the outdoor air temperature is lower than 38°C (100.4°F), the inverter secondary current value is limited to a maximum of 9.5 A.

5. Other Control

5.1 Demand Operation

In order to reduce power consumption, the outdoor unit capacity is reduced forcibly with control by using Demand Setting 1.
To enable this operation, the additional setting of Constant Demand Setting is required.

Demand setting 1

Level	Standard for upper limit of power consumption
Level 1	Approx. 60%
Level 2 (Factory setting)	Approx. 70%
Level 3	Approx. 80%

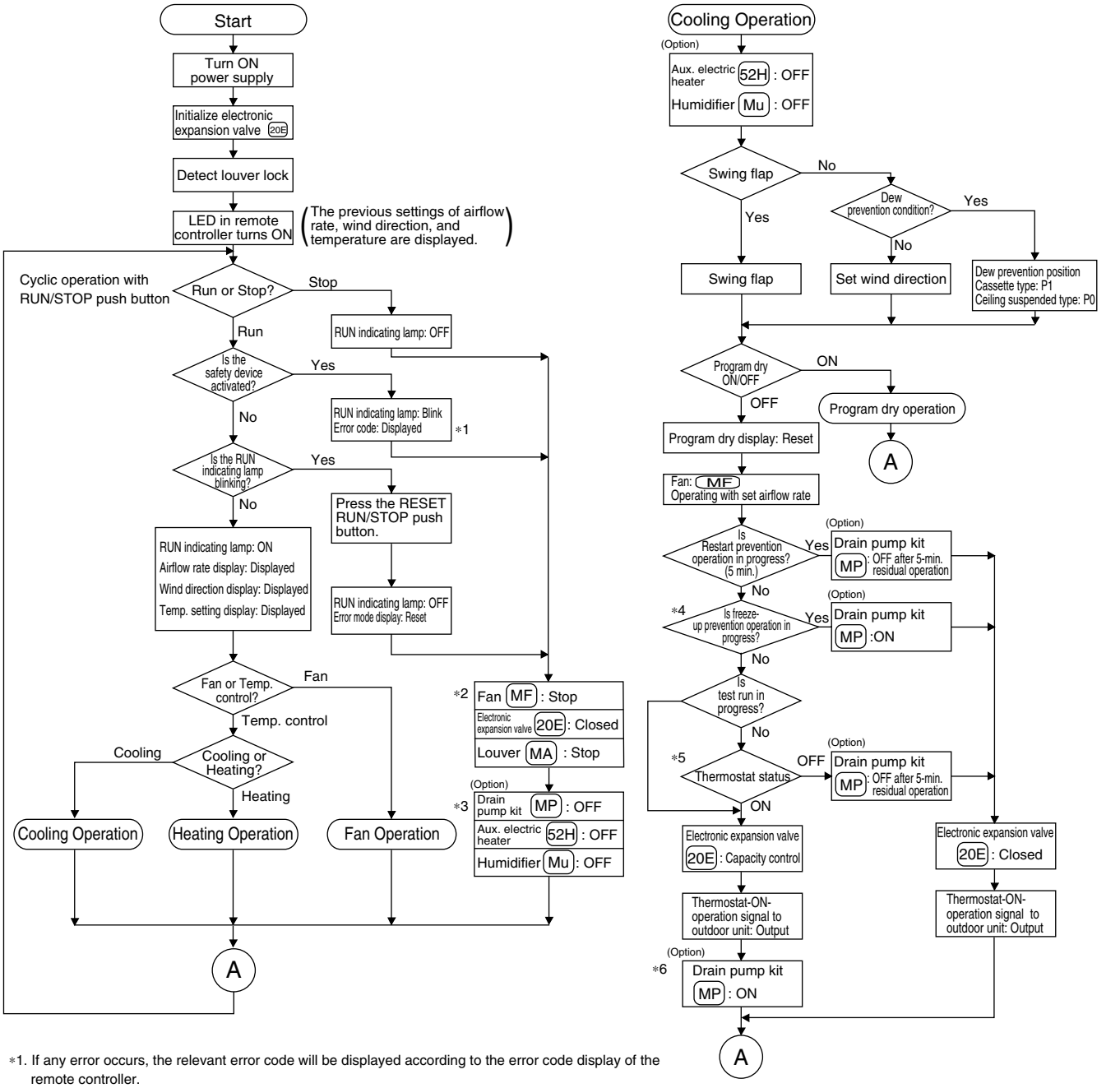
∗ Other protection control functions have precedence over the above operation.

5.2 Heating Operation Prohibition

Heating operation is prohibited above 24°CDB (75.2°FDB) outdoor air temperature.

6. Outline of Control (Indoor Unit)

6.1 Operation Flow Chart



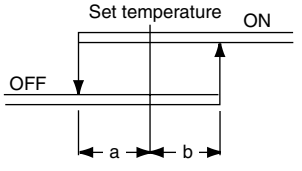
*1. If any error occurs, the relevant error code will be displayed according to the error code display of the remote controller.

*2. When the aux. electric heater turns ON, the fan will stop after it conducts residual operation for 1 minute.

*3. When the drain pump kit turns ON, the drain pump kit will stop after it conducts residual operation for a period of 5 minutes.

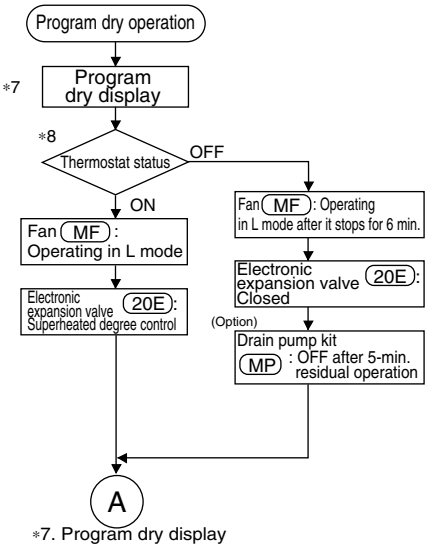
*4. If the evaporator inlet temperature is kept at not more than –5°C (23°F) for a period of cumulative 10 minutes or not more than –1°C (30.2°F) for a cumulative period of 40 minutes, freeze-up prevention operation will be conducted. If the evaporator inlet temperature is kept at not less than 7°C (44.6°F) for a consecutive period of 10 minutes, the freeze-up prevention operation will be reset.

*5. Thermostat status



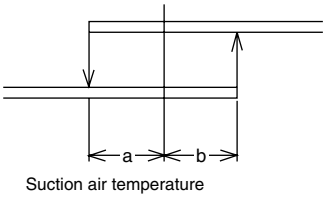
Suction air temperature
a = b = 1˚C (1.8˚F)
(a = b = 0.5˚C (0.9˚F) is only available for the FXFQ and FXHQ series.)

*6. The FXFQ series have a drain pump as standard equipment.

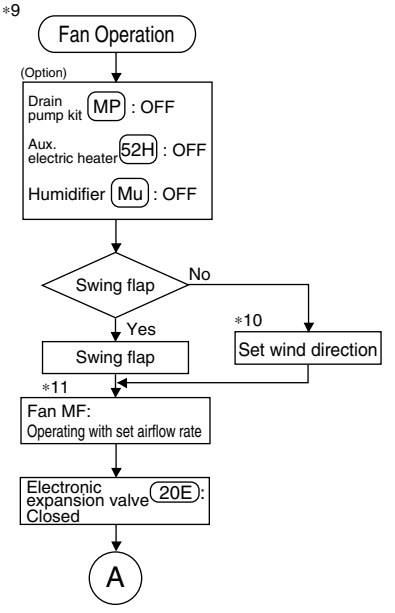


∗7. Program dry display
No set temperature and airflow rate of the remote controller are displayed.

∗8. Thermostat status
Set temperature when operating the program dry mechanism.



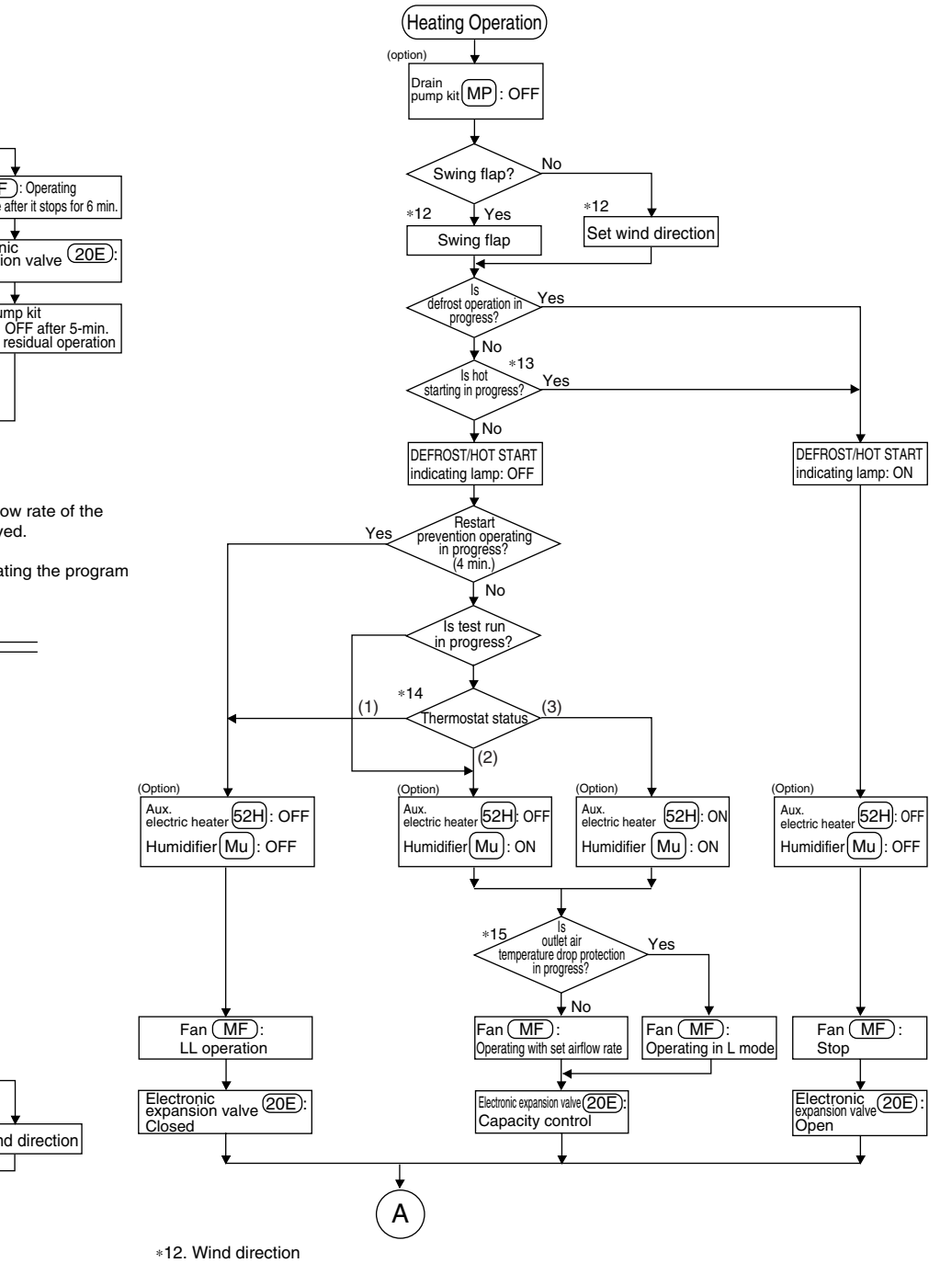
Suction air temperature



∗9. Fan operation
By setting the remote controller to Fan, the fan will operate with thermostat OFF in set temperature control operation mode.

∗10. Set wind direction
According to wind direction instruction from the remote controller, the wind direction is set to 100% horizontal while in heating operation.

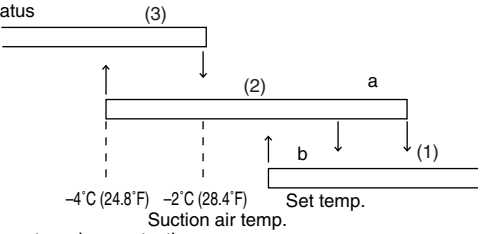
∗11. Fan
According to fan speed instruction from the remote controller, the fan is put into operation in LL mode while in heating operation.



∗12. Wind direction
When the heating thermostat turns OFF, the wind direction will be set to 100% horizontal.

∗13. Hot start
If the condenser inlet temperature exceeds 34°C (93.2°F) at the time of starting operation or after the completion of defrost operation, or until 3 minutes pass or Tc is above 52°C (125.6°F), hot starting will be conducted.

∗14. Thermostat status



Suction air temp.

∗15. Outlet air temperature drop protection
When the set temperature is below 24°C (75.2°F) or the electronic expansion valve opening is small, the protection will be activated.

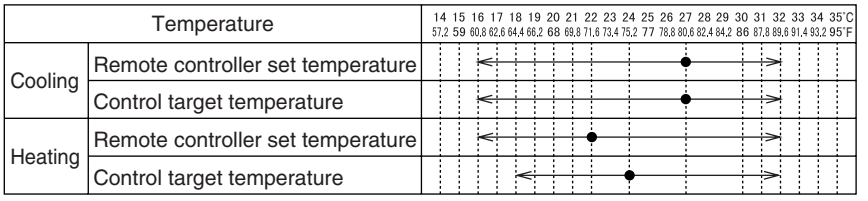
6.2 Set Temperature and Control Temperature

6.2.1 Without the Optional Infrared Floor Sensor

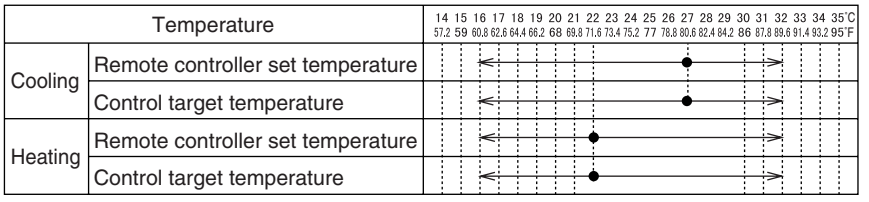
The relationship between remote controller set temperature and control target temperature is described below.

- When the suction air thermistor is used for controlling (Default), the control target temperature is determined as follows to prevent insufficient heating in heating operation.
  Control target temperature: remote controller displayed temperature + 2°C (3.6°F).
- The temperature difference for cooling ⇔ heating mode switching is 5°C (9°F).
- The above also applies to automatic operation.

■ **When setting the suction air thermistor (Default setting)**



■ **When using the remote controller thermistor (Field setting is required)**



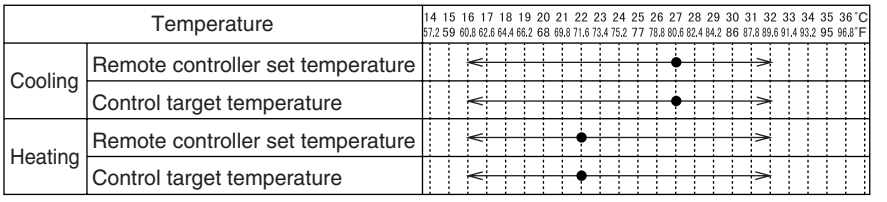
Examples are given to illustrate a control target temperature that satisfies the remote controller set temperature.

6.2.2 With the Optional Infrared Floor Sensor

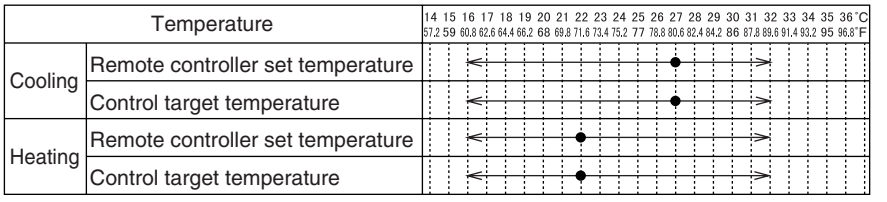
The relationship between remote controller set temperature and control target temperature is described below.

- The temperature difference for cooling ⇔ heating mode switching is 5°C (9°F).
- When using the floor temperature as the control target, the remote controller set temperature is equal to the actual control target temperature in heating operation.
- The above also applies to automatic operation.

■ **When setting the suction air thermistor (Default setting)**



■ **When using the remote controller thermistor (Field setting is required)**



Examples are given to illustrate a control target temperature that satisfies the remote controller set temperature.

Regarding control target temperature

When using the infrared floor sensor, the temperature around people will be treated as the control target temperature for operation.

What is the temperature around people?

The temperature around people refers to the temperature of the living space, obtained from the temperature around the ceiling and the temperature underfoot. The temperature is calculated using the detected values of the suction air thermistor and the infrared floor sensor.
It is difficult to use only suction air temperature control for underfoot air conditioning.

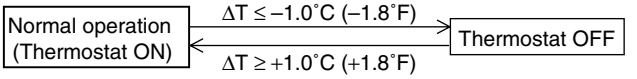
6.3 Thermostat Control

6.3.1 Without the Optional Infrared Floor Sensor

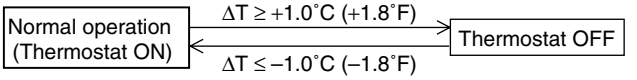
Whether the thermostat is turned on or off is determined by the difference between the remote controller set temperature and the actual detected room temperature (∗1).

- Normal operation

· Cooling operation

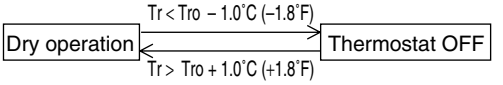


· Heating operation

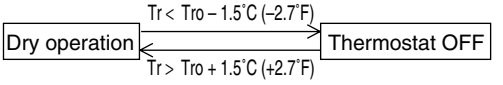


- Dry operation

· When Tro ≤ 24.5°C (76.1°F)



· When Tro > 24.5°C (76.1°F)



∗1: Field setting of the thermistor for room temperature detection is described below.

1. Factory setting	→	Suction air thermistor in the indoor unit
2. When set to the remote controller thermistor	→	Suction air thermistor in the indoor unit and remote controller thermistor

∗2: Description of symbols

ΔT = Detected room temperature – Remote controller set temperature

Tro = Detected room temperature at the start of dry operation

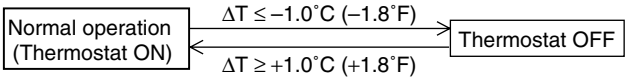
Tr = Determined by the room temperature detected by the thermistor

6.3.2 With the Optional Infrared Floor Sensor

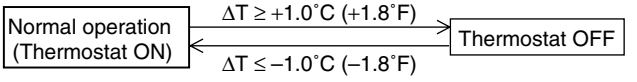
Whether the thermostat is turned on or off is determined by the difference between the remote controller set temperature and the detected temperature around people.

- Normal operation

· Cooling operation

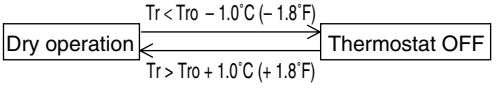


· Heating operation

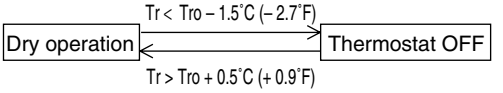


- Dry operation

· When Tro ≤ 24.5°C (76.1°F)



· When Tro > 24.5°C (76.1°F)



∗: Description of symbols

ΔT = Detected room temperature – Remote controller set temperature

Tro = Detected room temperature at the start of dry operation

Tr = Determined by the room temperature detected by the thermistor

Control range of temperature around people

When the floor temperature is very low, operation using the temperature around people may cause the suction air temperature to operate outside of use range.

To avoid the above condition, a limit based on the suction air temperature is set for the use range of the temperature around people.

- Heating operation
  - · When the floor temperature is higher than suction air temperature (R1T), R1T will be treated as the control target temperature in operation.
  - · When the temperature around people is 33°C (91.4°F) or higher, R1T will be treated as the control temperature for operation.
- Cooling operation
  - · When the floor temperature is lower than suction air temperature (R1T), R1T will be treated as the control target temperature for operation.
  - · When the temperature around people is 15°C (59°F) or lower, R1T will be treated as the control temperature for operation.

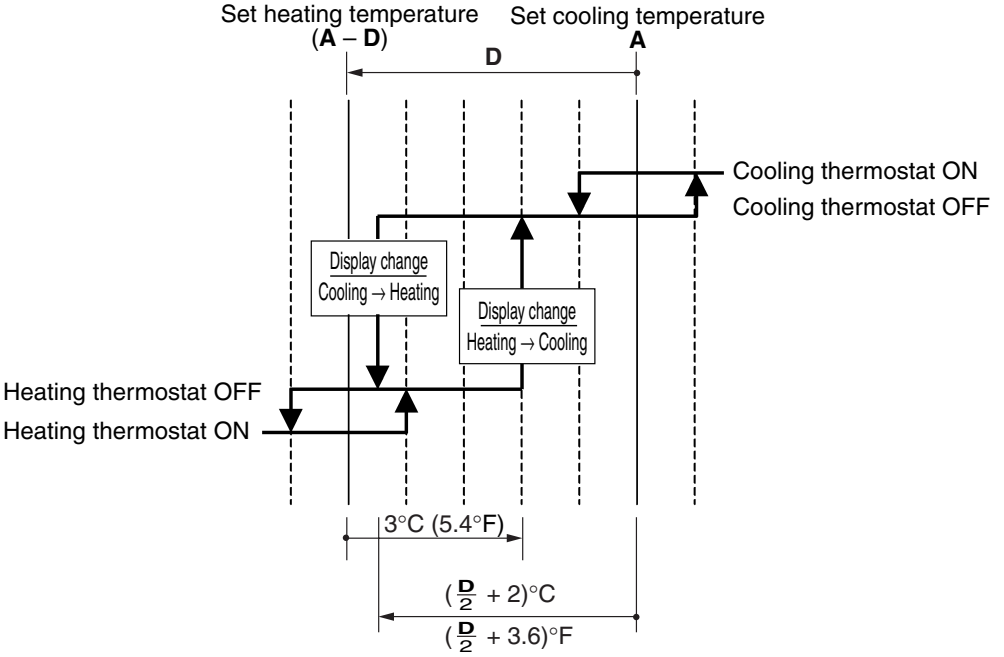
6.3.3 Thermostat Control with Operation Mode Set to "AUTO"

When the operation mode is set to "AUTO" on the remote controller, the system will conduct the temperature control shown below.

Furthermore, setting changes of the differential value (**D**) can be made refering to page 80 and later (Field Setting from Remote Controller).

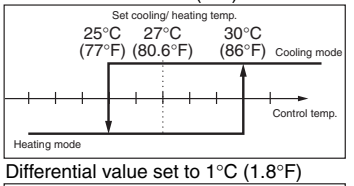
Mode No.	First code No.	Contents of setting	Second code No.							
			01	02	03	04	05	06	07	08
12	4	Differential value while in "AUTO" operation mode	0°C 0°F	1°C 1.8°F	2°C 3.6°F	3°C 5.4°F	4°C 7.2°F	5°C 9.0°F	6°C 10.8°F	7°C 12.6°F

: Factory setting

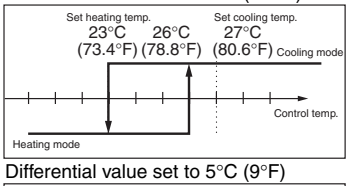


(Ex.) When automatic cooling temperature is set to 27°C (80.6°F):

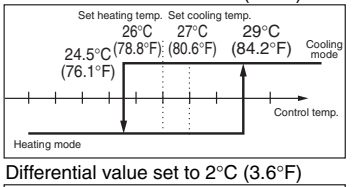
Differential value: 0°C (0°F)



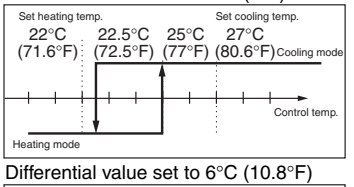
Differential value set to 4°C (7.2°F)



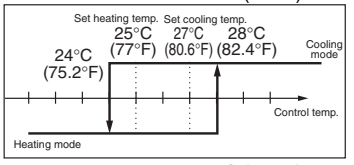
Differential value set to 1°C (1.8°F)



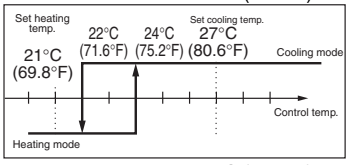
Differential value set to 5°C (9°F)



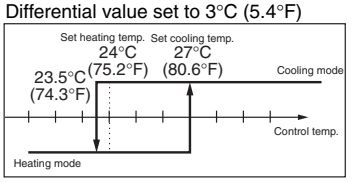
Differential value set to 2°C (3.6°F)



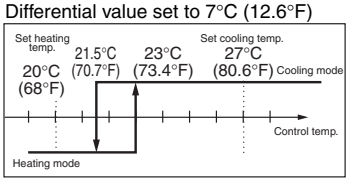
Differential value set to 6°C (10.8°F)



Differential value set to 3°C (5.4°F)



Differential value set to 7°C (12.6°F)



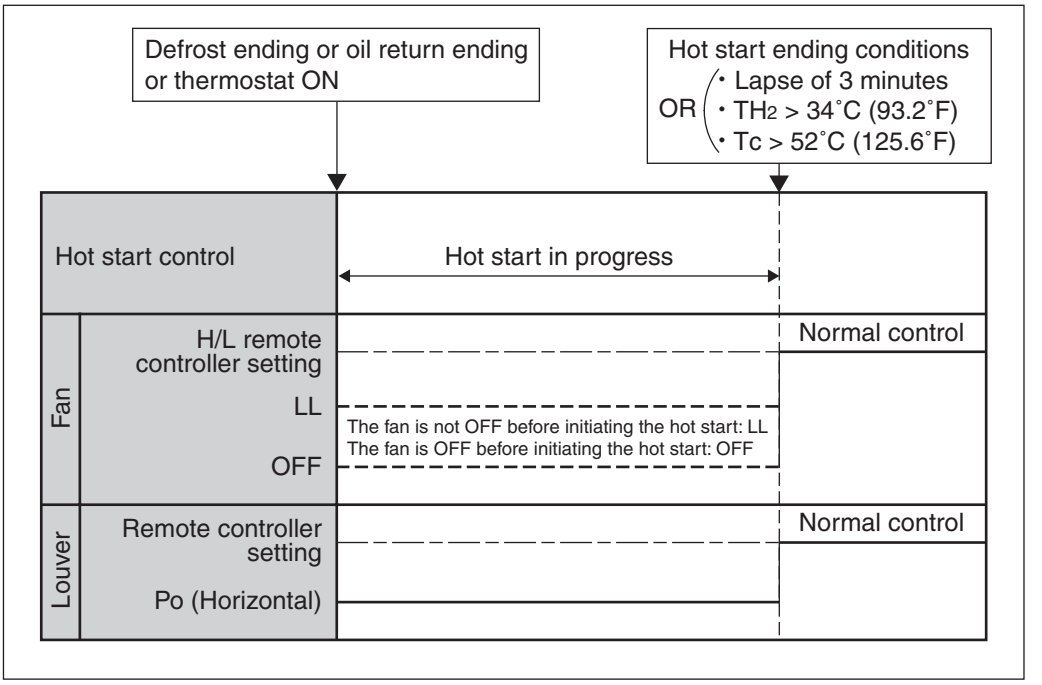
6.4 Operations of Swing Flaps

			Fan	Flap		
				FXFQ	FXHQ	FXAQ
Heating	Hot start from defrosting operation	Swing	OFF	Horizontal	Horizontal	Horizontal
		Airflow direction set	OFF	Horizontal	Horizontal	Horizontal
	Defrosting operation	Swing	OFF	Horizontal	Horizontal	Horizontal
		Airflow direction set	OFF	Horizontal	Horizontal	Horizontal
	Thermostat OFF	Swing	LL	Horizontal	Horizontal	Horizontal
		Airflow direction set	LL	Horizontal	Horizontal	Horizontal
	Hot start from thermostat OFF mode (for prevention of cold air)	Swing	LL	Horizontal	Horizontal	Horizontal
		Airflow direction set	LL	Horizontal	Horizontal	Horizontal
	Stop	Swing	OFF	Horizontal	Horizontal	Totally closed
		Airflow direction set	OFF	Horizontal	Horizontal	Totally closed
Cooling	Thermostat ON in program dry	Swing	L (∗1)	Swing	Swing	Swing
		Airflow direction set	L (∗1)	Set	Set	Set
	Thermostat OFF in program dry	Swing	OFF or L	Swing	Swing	Swing
		Airflow direction set		Horizontal or Set	Set	Set
	Thermostat OFF in cooling	Swing	Set	Swing	Swing	Swing
		Airflow direction set	Set	Set	Set	Set
	Stop	Swing	OFF	Horizontal	Horizontal	Totally closed
		Airflow direction set	OFF	Horizontal	Horizontal	Totally closed
	Micro-computer control (including cooling operation)	Swing	L	Swing	Swing	Swing
		Airflow direction set	L	Set	Set	Set

Note: ∗1.L or LL on FXFQ models only

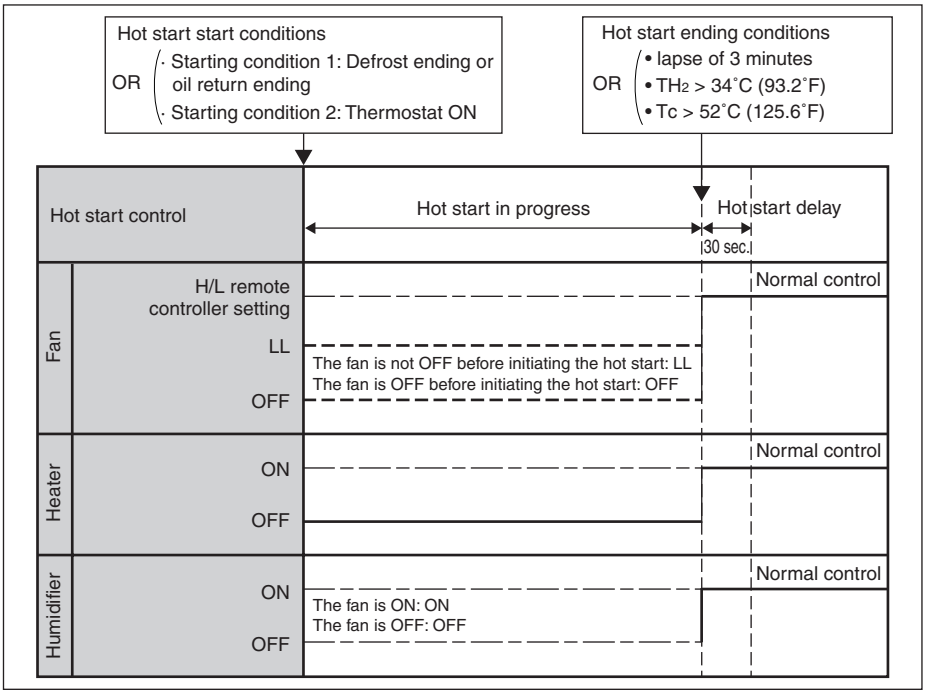
6.5 Hot Start Control (In Heating Operation Only)

At startup with thermostat ON or after the completion of defrosting in heating operation, the indoor fan is controlled to prevent cold air from blasting out and ensure startup capacity.



TH_2: Temperature detected with the gas thermistor
TC : High pressure equivalent saturated temperature

■ **FXTQ**

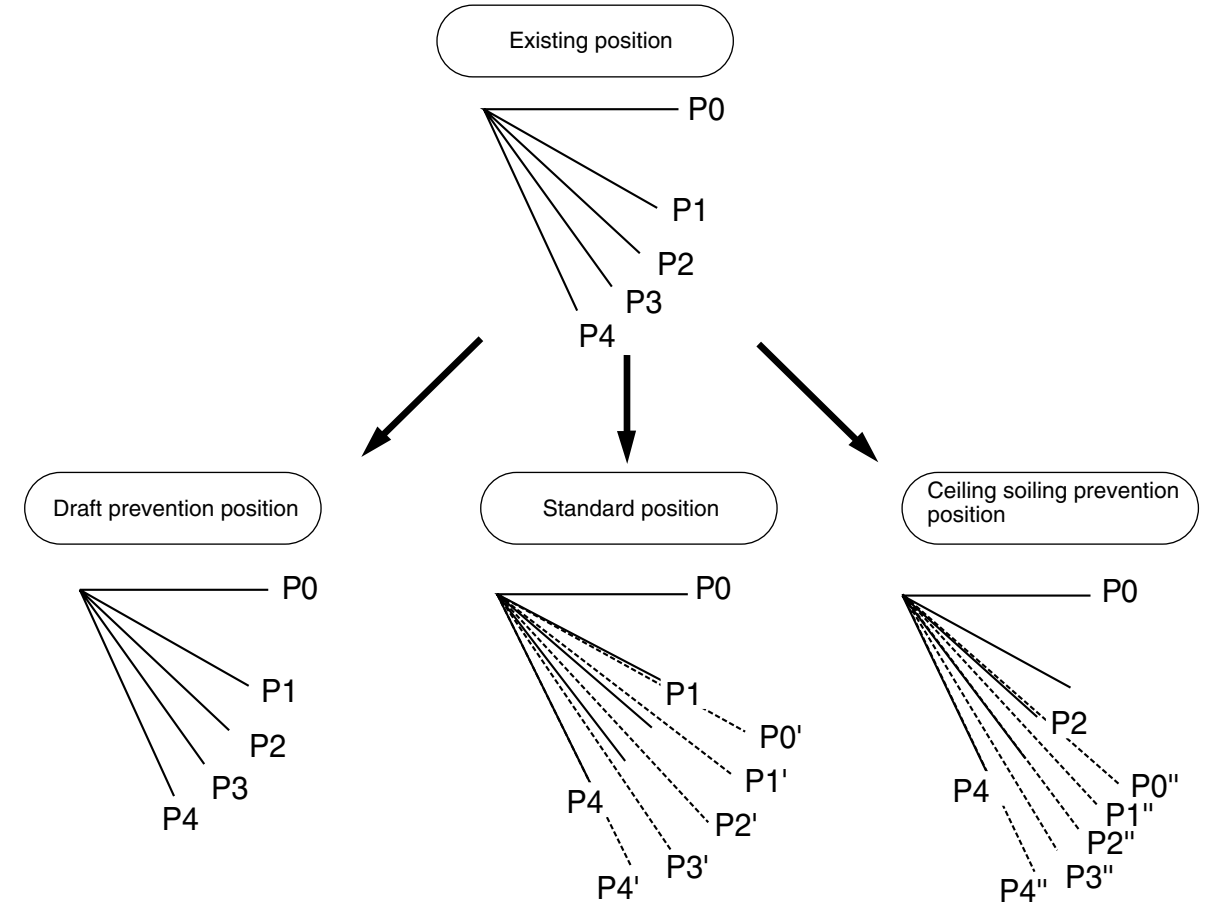


TH_2: Temperature detected with the gas thermistor
TC : High pressure equivalent saturated temperature

6.6 Louver Control for Preventing Ceiling Dirt

FXFQ, FXZQ, FXEQ models

We have added a control feature that allows you to select the range in which air direction can be adjusted in order to prevent the ceiling surrounding the air discharge outlet of ceiling mounted cassette type units from being soiled. (This feature is available on round flow, compact multi flow, and single flow types.)

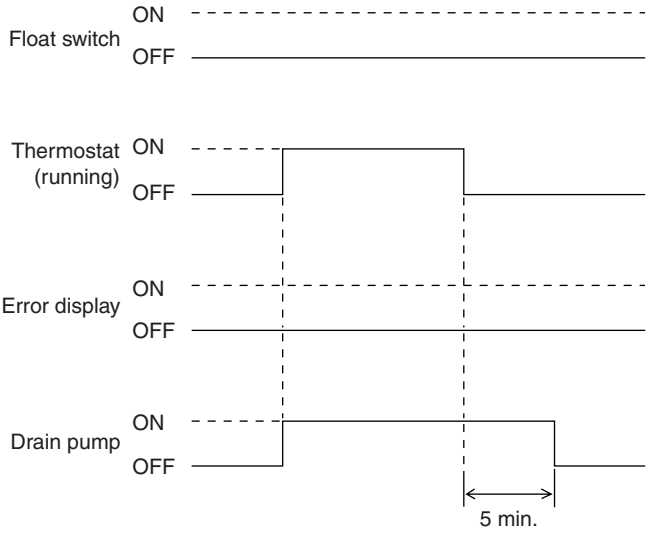


Draft prevention position	P0	P1	P2	P3	P4	Same as existing position
		Range of direction adjustment				
Standard position	Prohibited	P0'	P1'	P2'	P3'	P4'	Separated into 5 positions (P1 - 4)
		Range of direction adjustment				
Ceiling soiling prevention position	Prohibited	P0"	P1"	P2"	P3"	P4"	Separated into 5 positions (P2 - 4)

Factory setting
FXFQ models: draft prevention position
FXZQ, FXEQ models: standard position

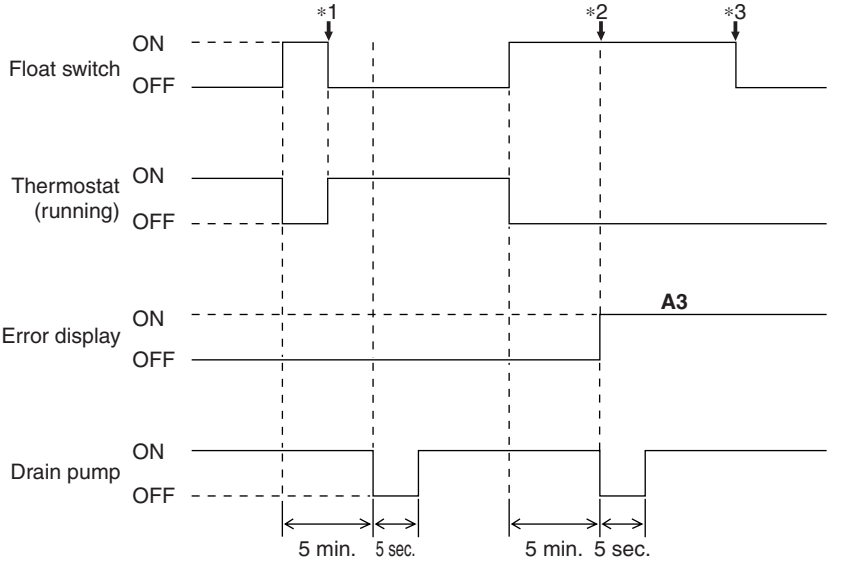
6.7 Drain Pump Control

6.7.1 Normal Operation



- The float switch is OFF in normal operation.
- When cooling operation starts (thermostat ON), the drain pump turns ON simultaneously.
- After the thermostat turns OFF, the drain pump continues to operate for another 5 minutes.
- The aim of residual operation after thermostat OFF is to eliminate the dew that condenses on the indoor heat exchanger during cooling operation.

6.7.2 If the Float Switch is ON with the Thermostat ON in Cooling Operation



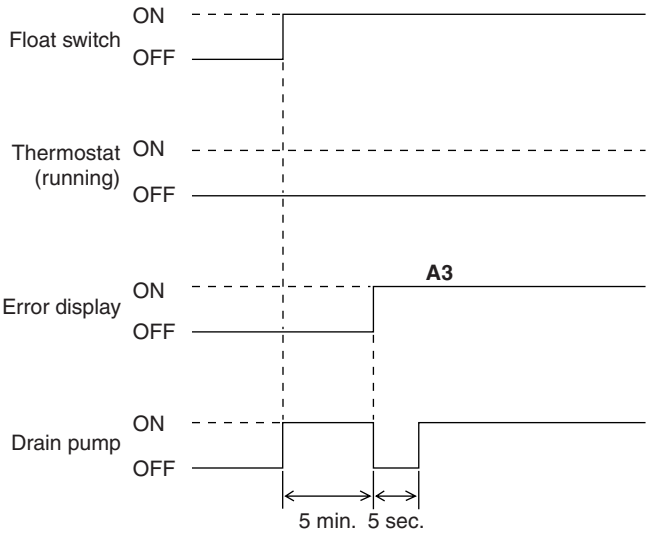
- When the float switch turns ON, the thermostat turns OFF simultaneously.
- After the thermostat turns OFF, the drain pump continues to operate for another 5 minutes.

∗1: If the float switch turns OFF again during the residual operation of the drain pump, cooling operation also turns on again (thermostat ON).

∗2: If the float switch remains ON even after the residual operation of the drain pump has ended, the error code **A3** is displayed on the remote controller.
The drain pump turns OFF once residual operation has ended, then turns ON again after 5 seconds.

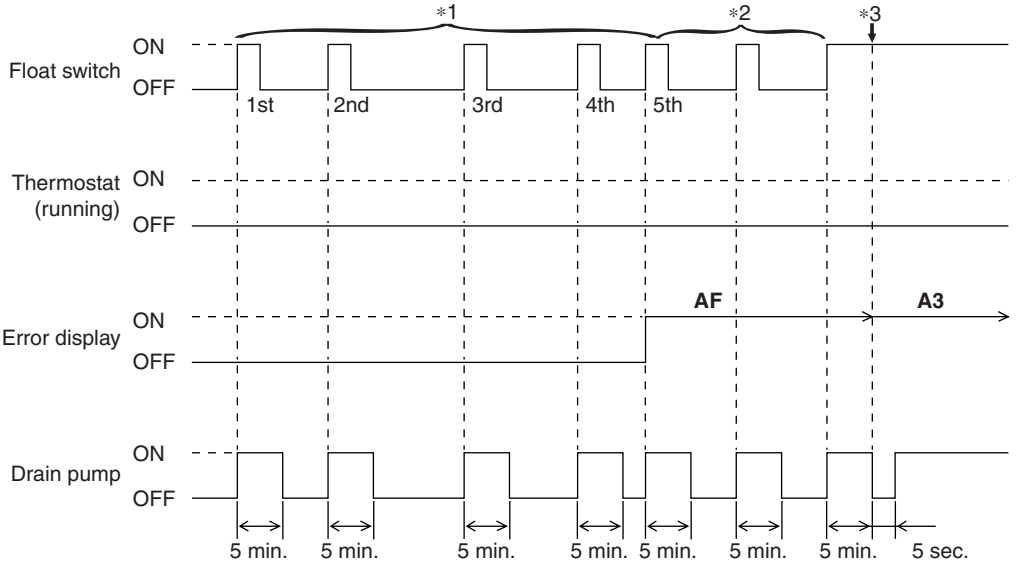
∗3: After **A3** is displayed and the unit comes to an abnormal stop, the thermostat will remain OFF even if the float switch turns OFF again.

6.7.3 If the Float Switch is ON with the Thermostat OFF in Cooling Operation



- When the float switch turns ON, the drain pump turns ON simultaneously.
- If the float switch remains ON even after the residual operation of the drain pump has ended, the error code **A3** is displayed on the remote controller.
- The drain pump turns OFF once residual operation has ended, then turns ON again after 5 seconds.

6.7.4 If the Float Switch Turns ON and OFF Continuously, or the Float Switch Turns ON While AF Displayed



- When the float switch turns ON, the drain pump turns ON simultaneously.

∗1: If the float switch continues to turn ON and OFF 5 times consecutively, it is judged as a drain system error and the error code **AF** is displayed on the remote controller.

∗2: The drain pump continues to turn ON/OFF in accordance with the float switch ON/OFF even after **AF** is displayed on the remote controller.

∗3: While the error code **AF** is displayed, if the float switch remains ON even after the residual operation of the drain pump has ended, the error code **A3** will be displayed on the remote controller.

6.8 Electronic Expansion Valve Control

Electronic expansion valves in indoor units have the functions of conducting superheated degree control in cooling operation and subcooled degree control in heating operation. However, if the indoor units receive a control command such as a protection control command or a special control command from the outdoor unit, the units will give priority to the control command.

• Superheated degree control in cooling operation

This function is used to adjust the opening of the electronic expansion valve so that superheated degree (SH), which is calculated from the detection temperature (Tg) of the gas pipe thermistor (R3T) and the detection temperature (Tl) of the liquid temperature thermistor (R2T) of the indoor unit, will come close to a target superheated degree (SHS).
At that time, correction to the superheated degree is made according to the differences (ΔT) between set temperature and suction air temperature.

SH = Tg – Tl	SH: Evaporator outlet superheated degree
	Tg: Indoor unit gas pipe temperature (R3T)
	Tl: Indoor unit liquid pipe temperature (R2T)
SHS (Target SH value)	SHS: Target superheated degree

- Normally 5°C (9°F).
- As ΔT (Remote controller set temp. – Suction air temp.) becomes larger, SHS becomes lower.
- As ΔT (Remote controller set temp. – Suction air temp.) becomes lower, SHS becomes larger.

• Subcooled degree control in heating operation

This function is used to adjust the opening of the electronic expansion valve so that the high pressure equivalent saturated temperature (Tc), which is converted from the detected pressure of the high pressure sensor in the outdoor unit, and the subcooled degree (SC), which is calculated from the detected temperature (Tl) of the liquid temperature thermistor (R2T) in the indoor unit, will come close to the target subcooled degree (SCS).
At that time, corrections to the subcooled degree are made according to differences (ΔT) between set temperature and suction air temperatures.

SC = Tc – Tl	SC: Condenser outlet subcooled degree
	Tc: High pressure equivalent saturated temperature detected by the high pressure sensor (S1NPH)
	Tl: Indoor unit liquid pipe temperature (R2T)
SCS (Target SC value)	SCS: Target subcooled degree

- Normally 5°C (9°F).
- As ΔT (Remote controller set temp. – Suction air temp.) becomes larger, SCS becomes lower.
- As ΔT (Remote controller set temp. – Suction air temp.) becomes lower, SCS becomes larger.

6.9 Freeze-up Prevention

Freeze-up Prevention by Off Cycle (Indoor Unit Individual Control)

When the temperature detected by the liquid pipe temperature thermistor of the indoor heat exchanger drops too low, the unit enters freeze-up prevention control in accordance with the following conditions, and is also set in accordance with the conditions given below. (Thermostat OFF)

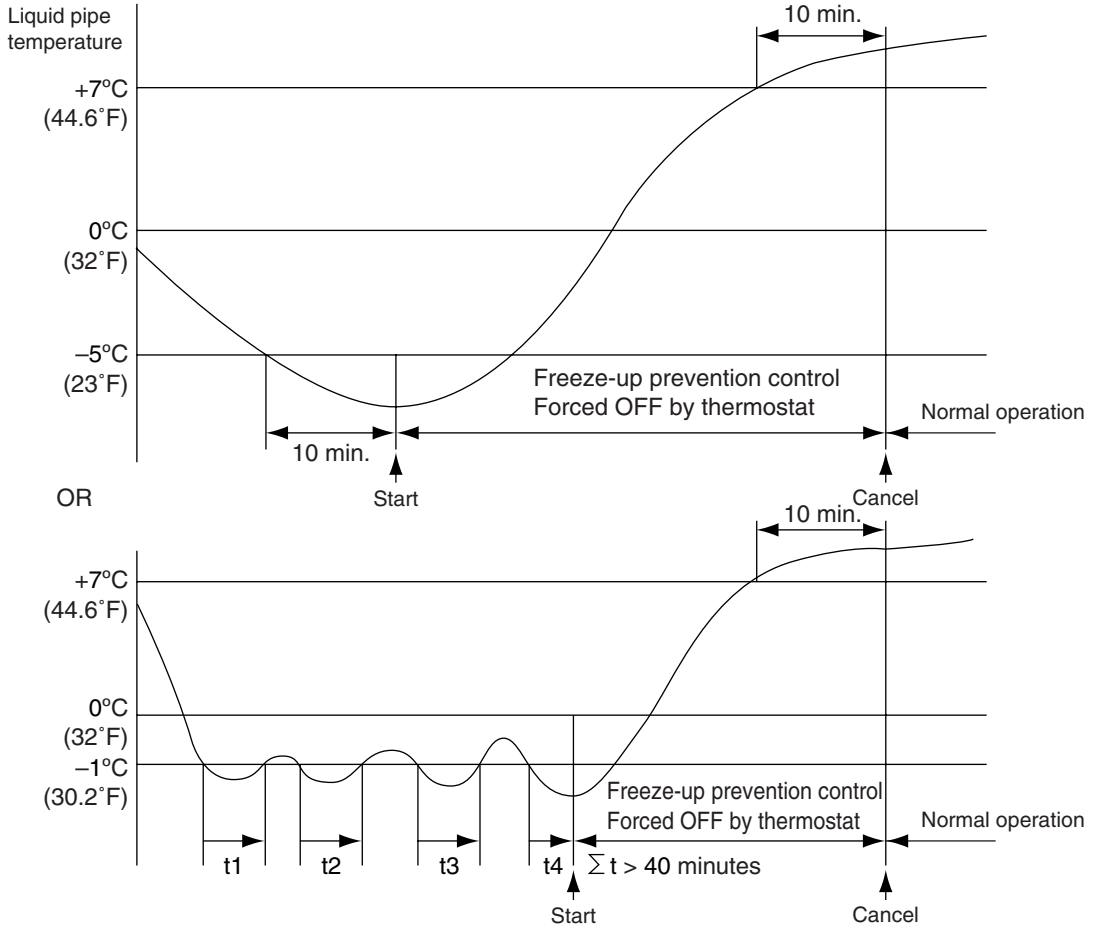
When freeze-up prevention is activated, the electronic expansion valve is closed, the drain pump turns on and the airflow rate is fixed to L tap. When the following conditions for cancelling are satisfied, it will reset.

Conditions for starting:

Liquid pipe temperature ≤ – 1°C (30.2°F) (for total of 40 minutes)
or
Liquid pipe temperature ≤ – 5°C (23°F) (for total of 10 minutes)

Condition for cancelling:

Liquid pipe temperature ≥ +7°C (44.6°F) (for 10 minutes continuously)



The idea of freeze-up prevention control

Difficult to carry out freeze-up prevention operation

· For comfort, suppression of frequent thermostat ON/OFF is necessary.

· Suppressing the switching frequency of the compressor is required to ensure reliability.

After freeze-up prevention operation is carried out, the compressor can be defrosted properly.

· Water leakage prevention must be effective.

Note: When the indoor unit is a round flow or multi flow type, if the air outlet is set as dual-directional or tri-directional, the starting conditions will be changed as follows.

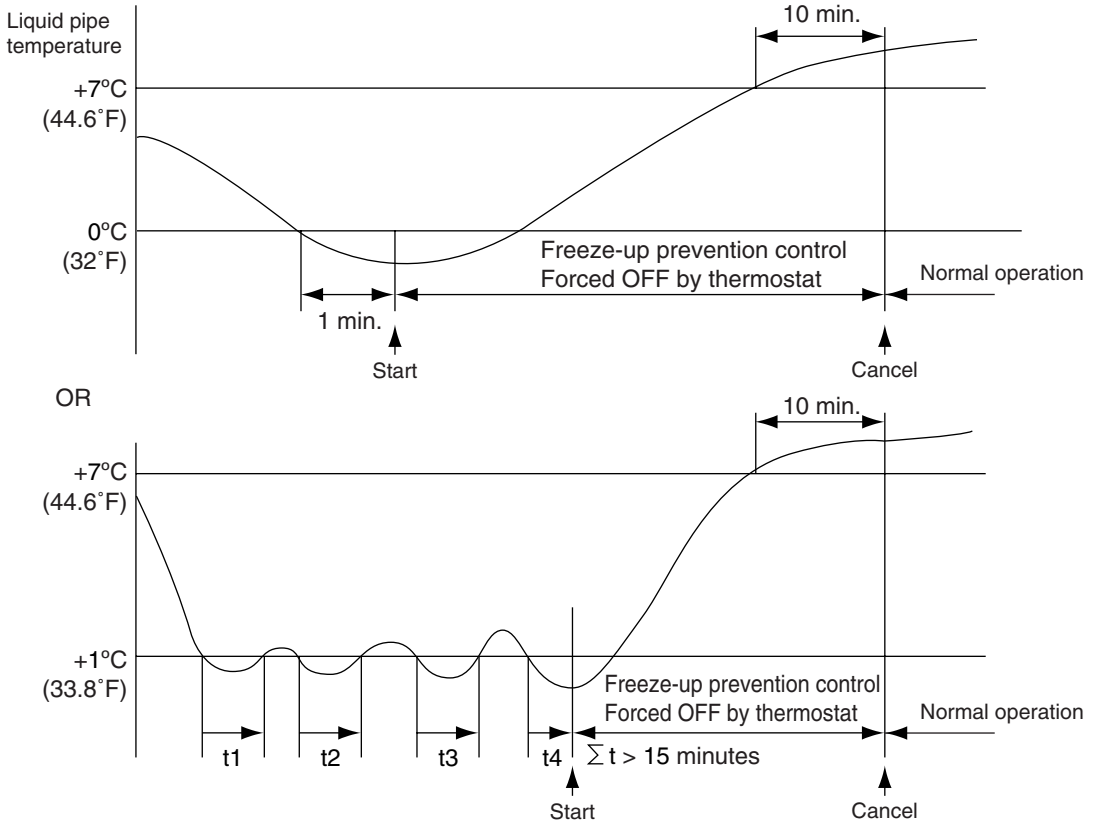
Liquid pipe temperature ≤ 1°C (33.8°F) (for total of 15 minutes)

or

Liquid pipe temperature ≤ 0°C (32°F) (for 1 minute continuously)

During freeze-up prevention operation, the airflow rate is fixed to LL.

(The cancelling conditions are same as the standard.)

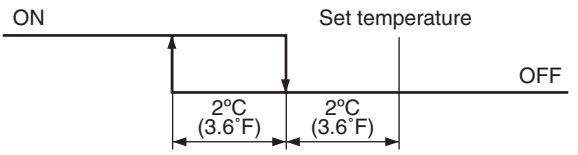


6.10 Heater Control (Optional PCB KRP1B series is required.)

Heater control is conducted in the following manner.

Normal control

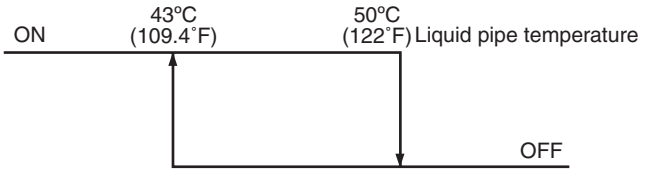
While in heating operation, heater control (ON/OFF) is conducted as shown on the right.



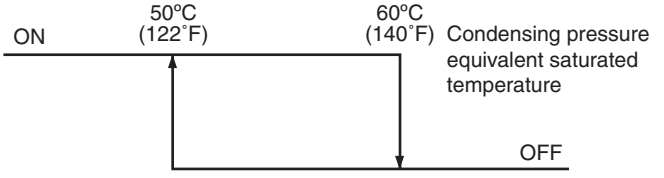
Overload control

When the system is overloaded in heating operation, the heater will be turned OFF in the following two manners.

(1) Heater control (ON/OFF) is conducted through the liquid pipe temperature (R2T) of the indoor unit.



(2) Heater control (ON/OFF) is conducted by converting the heater temperature into the condensing pressure equivalent saturated temperature (Tc) according to the temperature detection through the high pressure sensor (S1NPH) of the outdoor unit.



Fan residual operation

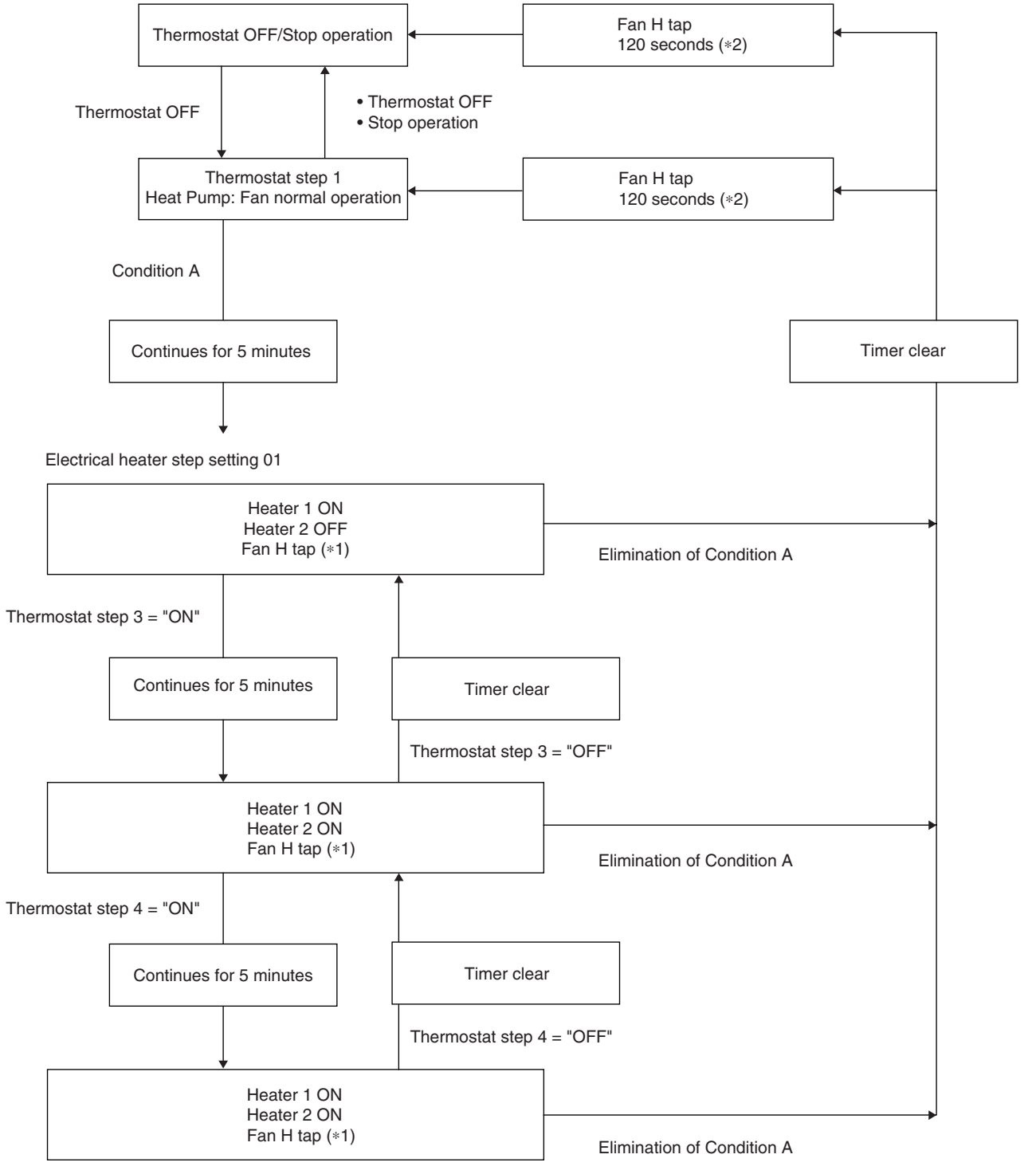
While the heater turns OFF, in order to prevent the activation of the thermal protector, the fan conducts residual operation for a given period of time after the heater turns OFF. (This operation is conducted regardless of whether or not a heater is equipped.)

Residual operation time: 100 seconds on ceiling suspended type or 60 seconds on other types

6.11 Heater Control (FXTQ)

6.11.1 Auxiliary Heater Control

If heating is insufficient in heat pump system alone, an electrical heater is to be used as the auxiliary heater. The following shows the ON/OFF conditions for the electric heater.

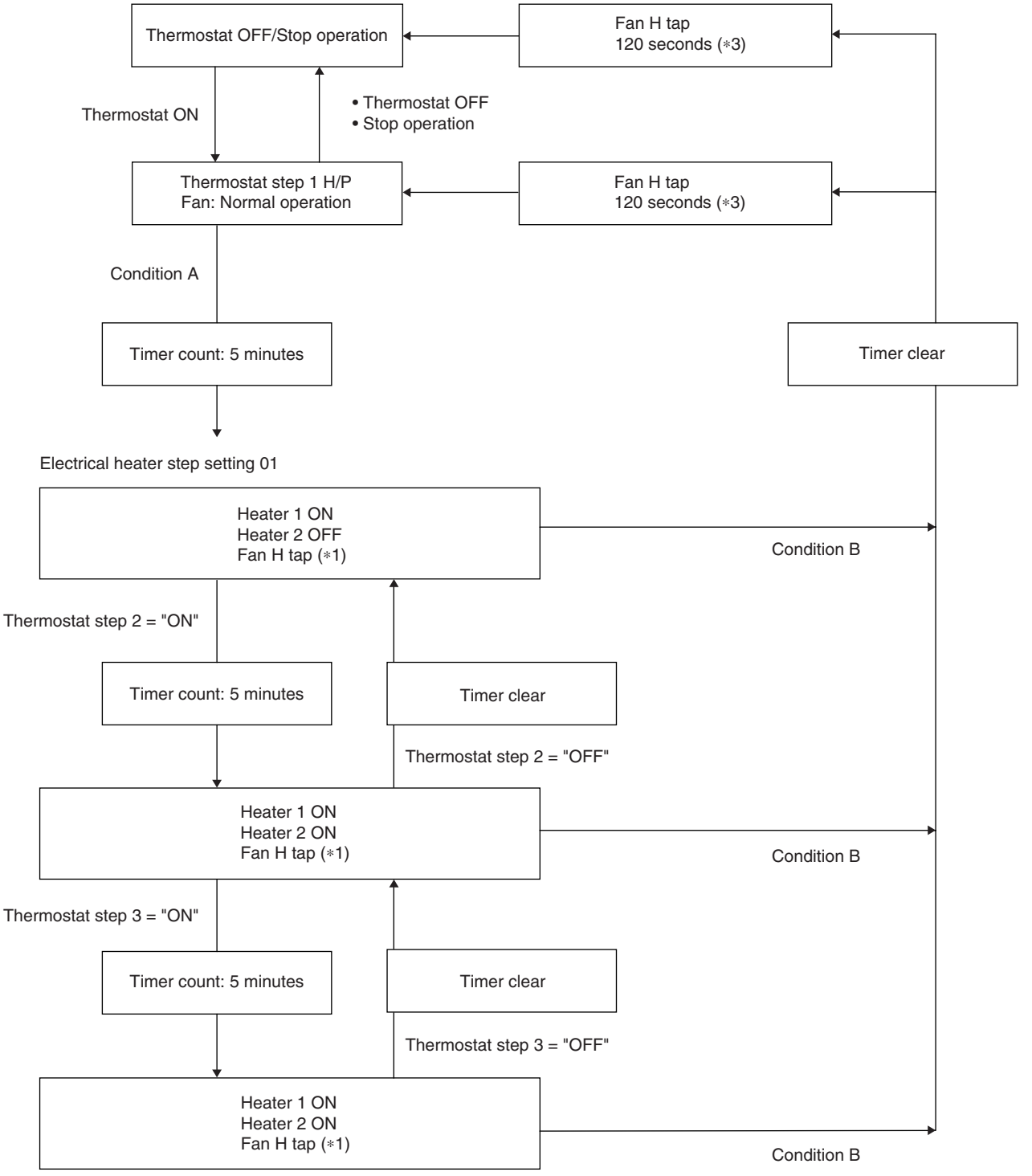


Note: ∗1. Fixing of the fan H tap.

∗2. The heater backup prohibiting conditions are prioritized. Even when the heater ON conditions are met, the heater is turned OFF when the prohibiting conditions are met.

6.11.2 Heat Pump Lockout Mode

During heating operation, users can select an electrical heater for heating. For this, signals are sent using ABC terminal of outdoor unit PCB.
When the hot-water heating signal is received from the outdoor unit PCB, heating operation is performed only with the heater as manual backup operation. The ON/OFF conditions for this electrical heater are shown below.



Condition A

& (• Heating mode
• Thermostat step 1 = "ON"
• Not during fan residual operation
& (OR (• [Electrical heater setting] = "01"
• [Electrical heater setting] = "03")
• Hot-water heater = "1" (ON)))

Condition B

OR (• Elimination of Condition A
• Indoor unit error [Stop due to error]
• Indoor unit error [Abnormal stop]
• Indoor unit error [Remote control thermistor error]
• Indoor unit error [Suction air thermistor error]
• During defrosting or oil return operation) } Heater backup prohibiting conditions (∗2)

Note: ∗1. Fixing of the fan H tap.
∗2. The heater backup prohibiting conditions are prioritized. Even when the heater ON conditions are met, the heater is turned OFF when the prohibiting conditions are met.
∗3. The operation must continue for a certain period of time after the heater turns OFF.
4. The thermostat steps for this control comply with the “6.12 4 Step Thermostat Processing (FXTQ)”.

6.12 4 Step Thermostat Processing (FXTQ)

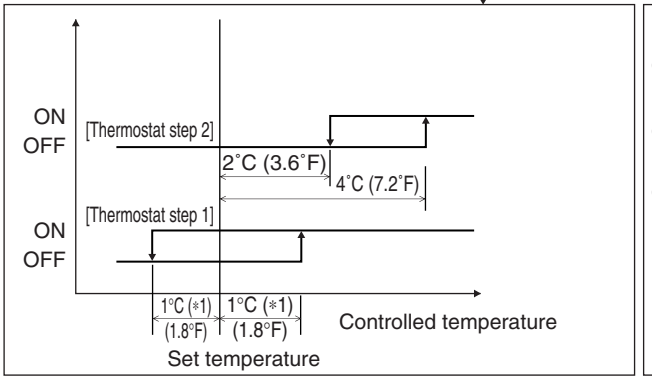
[Outline]
The thermostat ON/OFF for the indoor unit is controlled in accordance with [Thermostat Step 1]. The heater ON/OFF operation during heating is controlled in accordance with [Thermostat Step 2, 3, or 4] or [Thermostat Step 1, 2, or 3].
For more details of the heater, see “6.11 Heater Control (FXTQ)”.
[Detail]

& (• Drain pump abnormal output = OFF
• Thermostat OFF error has not occurred.
• Forced thermostat OFF = "0" (OFF)
• Normal operation = ON
OR (• Remote control operation mode = "Heating"
• Not during anti-freeze operation)

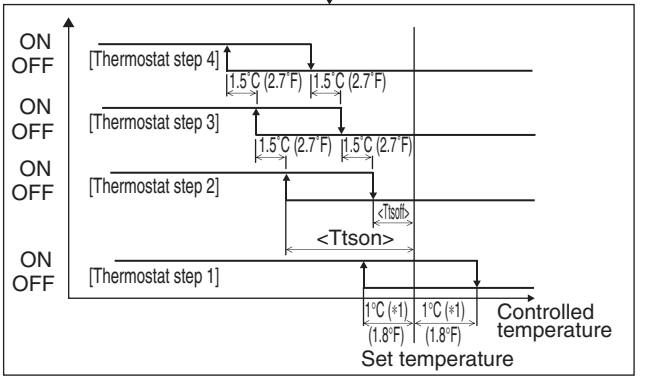
• [Thermostat step 1] = "OFF"
• [Thermostat step 2] = "OFF"
• [Thermostat step 3] = "OFF"
• [Thermostat step 4] = "OFF"

→ Perform the processing in the following chart.
← Elimination conditions of the above

(1) Cooling



(2) Heating



Note: ∗1. This value varies according to the field setting

6.13 Interlocked with External Equipment (FXTQ)

6.13.1 Humidifier

When a humidifier is connected onsite, the fan operates with the airflow rate set of the remote controller or with the H tap.

& (• Remote control operation = ON (including thermostat OFF) • External input = ON) → Fan X (∗3) tap operation (Same operation as with the airflow rate selected with the remote controller)

& (• Remote control operation = ON (including thermostat OFF) • When the external input changes from ON to OFF.) → Fan residual operation for Y (∗3) seconds (The fan airflow rate is set with the X (∗3) tap.)

Note:
1. This control is different from connection of humidifier and it is used for humidifiers locally connected in North America.
2. External input ON is an input signal to the “X12A” terminal on the PCB (A3P).

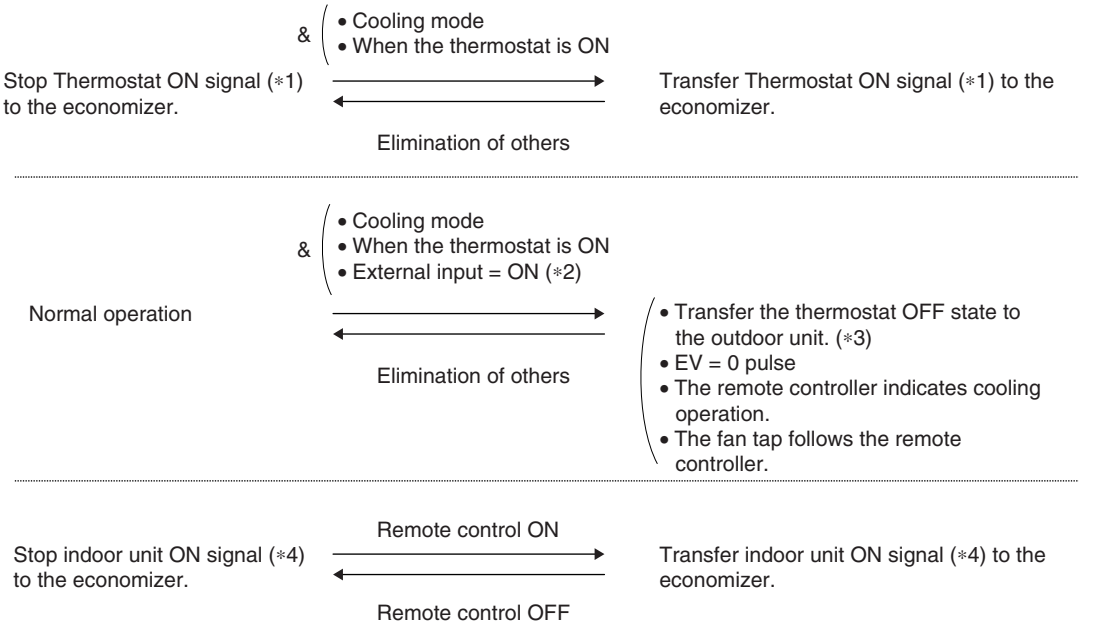
∗3. Refer to “2.3 Setting Contents and Code No. for Indoor Units” (P.83)

: Factory setting

Mode No.	First Code No.	Description of Setting	Second Code No.			
			01	02	03	04
14 (24)	4	Setting of humidifier / air purifier fan tap	Remote controller setting	H tap	—	—
	5	Humidifier residual operation time	30 seconds	60 seconds	120 seconds	—

6.13.2 Economizer

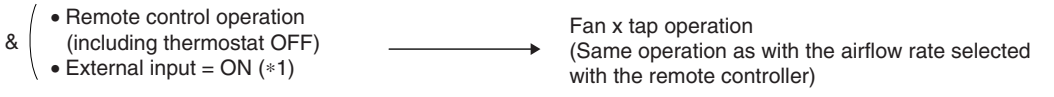
When indoor and outdoor air temperatures are reversed, the compressor is stopped to let in the outdoor air to save energy.
This operation is called economizer operation, and the equipment to detect indoor and outdoor air temperatures and open and close the damper to perform this operation is called an economizer.
The economizer detects indoor and outdoor air temperatures, informs the air conditioner that the economizer operation is ready, and opens and closes the damper.
The indoor unit stops the outdoor unit when it receives a signal from the economizer and performs air supply operation.
When the indoor air temperature is cooled down sufficiently by the economizer operation, and it is no longer necessary (thermostat OFF), the indoor unit outputs a signal to the economizer to close the damper.



Note:
∗1. Thermostat ON signal: A signal to turn ON the indoor unit thermostat and allow the economizer to open the damper.
It turns ON the relay on the “X8A side of X23A” on the PCB (A3P).
∗2. External input ON is an input signal to the “X11A” terminal on the PCB (A3P).
∗3. To stop the compressor while the economizer is in operation to save energy.
∗4. Remote control ON signal: Contact output which shows the operating status of the indoor unit.
This signal turns on the relay “on the opposite side of X8A of X23A” on the PCB (A3P).

6.13.3 Air Purifier (UV lamp)

When an air purifier is connected onsite, the fan is operated with the airflow rate set of the remote controller or with the H tap.



Note:
∗1. External input ON is an input signal to the “X25A” terminal on the PCB (A3P).

Part 5
Field Setting

1. Test Operation

Follow the following procedure to conduct the initial test operation after installation.

1.1 Check Work Prior to Turning Power Supply ON

Check the below items.
- Power wiring
- Control transmission wiring between units
- Earth wire

- Is the power supply appropriate?
- Have you finished a ductwork to drain?
- Have you detach transport fitting?
- Is the wiring performed as specified?
- Are the designated wires used?
- Is the grounding work completed?
  Use a 500 V Megger tester to measure the insulation.
  Do not use a Megger tester for low voltage circuits.
- Are the setscrews of wiring not loose?
- Is the electrical component box covered with an insulation cover completely?

Check on refrigerant piping / insulation material

- Is pipe size proper? (The design pressure of this product is 4.0 MPa (580 psi).)
- Are pipe insulation materials installed securely?
  Liquid and gas pipes need to be insulated. (Otherwise causes water leak.)
- Are respective stop valves on liquid and gas line securely open?

Check on amount of refrigerant charge

- Is refrigerant charged up to the specified amount?
  If insufficient, charge the refrigerant from the service port of stop valve on the liquid side with outdoor unit in stop mode after turning power ON.
- Has the amount of refrigerant charge been recorded on “Record Chart of Additional Refrigerant Charge Amount”?

1.2 Turn Power ON

Turn outdoor unit power ON.

- Be sure to turn the power ON 6 hours before starting operation to protect compressors.
- Close outside panels of the outdoor unit.

Turn indoor unit power ON.

Carry out field setting on outdoor PCB

1.3 Test Operation

To start smoothly, a crankcase heater is equipped to the unit. To power up the crankcase heater in advance, be sure to turn on the power supply 6 hours before operation.

Warning

Be sure to inform other installers or attach the front panel well before leaving with the power supply turned on for the outdoor unit.

Before powering on

- Protect the electronic components with insulating tape in accordance with the "Service Precautions" label attached to the front panel.
- All indoor units connected with the outdoor unit will operate automatically after powering on. To ensure safety, ensure that the indoor unit installation has been completed.

1. Powering on ~ test operation

- Make sure to perform a test run first after installation (If the unit is operated with the indoor unit remote controller but without performing a test operation, the error code **U3** will be indicated on the display of the remote controller and the unit will not operate normally).
- After turning on the power supply, do not touch any switches excluding button switches and changeover switches when setting the outdoor unit PCB (A2P).
  (For positions of the button switches (BS1~5) and changeover switches (DS1-1, 2) on the PCB, refer to the "Service Precautions" label)
- Check the state of the outdoor units and fault wiring with this operation.

(1) • Attach the front panel of the outdoor unit.
• Turn on the power supply of the outdoor and indoor units.

Caution

To power up the crankcase heater in advance, be sure to turn on the power supply 6 hours before operation.

(2) • Remove the front panel of the outdoor unit.
• Check LED display of the outdoor unit PCB (A1P, A2P), to observe whether data transmission is normal.

Outdoor unit PCB	A1P	A2P						
LED display (Factory setting)	SERVICE MONITORING LAMP	MODE	READY / ABNORMAL	C/H CHANGEOVER			LOW NOISE	DEMAND
				IND	MASTER	SUB		
	HAP	H1P	H2P	H3P	H4P	H5P	H6P	H7P
	◑	●	●	○	●	●	●	●

LED display ● Light OFF ○ Light ON ◑ Blinking

Caution

Don't touch the switches other than button switches and changeover switches of the PCB (A2P) during setting. Failure to do so may result in electric shock.

(3) • If customer wishes to perform LOW NOISE operation or DEMAND operation, perform setting with the push buttons (BS1 ~ 5) on outdoor unit PCB (A2P).
• Operate the push buttons from the opening of the insulating cover. (See Protective range of the "Service Precautions" label for details)

Caution

Power supply has been turned on for outdoor unit, be careful to avoid electric shock.

- Set the push buttons (BS1 ~ 5) after making sure the service monitoring lamp has been ON.
- For setting method, see the "Service Precautions" label attached to the front panel of the outdoor unit. (Be sure to keep a record of the setting items to the "Service Precautions" label.)
- Don't touch the changeover switches (DS1-1) while setting them. Failure to do so may result in malfunction.

(4) • Check whether the gas side and liquid side stop valves have been opened. Open them if they are closed.

Caution

Operation with the stop valve closed may result in compressor malfunction.

(5) Press TEST button (BS4) for 5 seconds or more to perform test operation.
See About test operation on the "Service Precautions" label for details.

- Ask other installers to perform test operation or attach the front panel before having to leave the outdoor unit working alone.
- Test operation is automatically stopped after about 30 minutes (maximum 1 hour) operation. (Perform checks of fault wiring, closed stop valves & refrigerant charging and auto determination of piping length)
- After test operation is completed, if there is no error code on the display of the remote controller, the unit can perform normal operation 3 minutes later.
- The display of the remote controller indicates symbol of test operation during this operation.

(6) Be sure to attach the front panel of the outdoor unit after test operation is completed.

About test operation

- If the system is started about 12 minutes after the indoor and outdoor units are opened or later, the compressor will not operate and H2P will light up.
  Before operating, always check whether the symbols indicated on the LED display are those in the table under “1. Powering on ~ test operation (2)”.
- In order to ensure uniform refrigerant distribution, it may take up to around 10 minutes for the compressor to start up after the unit starting operation. This is not a malfunction.
- The operation check is not for checking individual indoor units. After completing the operation check, operate the system normally with the remote controller.
- Test operation can't be performed when the unit is in other modes such as refrigerant recycling mode.
- Never perform test operation with discharge pipe thermistor (R2T), suction pipe thermistor (R3T) and pressure sensor (S1NPH, S1NPL) removed. Failure to do so will result in compressor damage.

2. For normal operation

Set the master unit (the indoor unit with cooling and heating option rights)

For wired remote controller

- After test operation is completed, the symbol **MASTER CONTROLLED** blinks on all remote controllers connected here.
- Set the master unit as per customer's request.
  (It is recommended to set the indoor unit with highest frequency of use as the master unit.)
- Press the operation mode changeover button on the remote controller of the master unit.
- Conduct cool/heat changeover with this remote controller and the symbol **MASTER CONTROLLED** vanishes.
- For other remoter controllers excluding the above, the symbol **MASTER CONTROLLED** lights up.

For wireless remote controller

- After test operation is completed, timer lamps blink on all indoor units connected here.
- Set the master unit as per customer's request.
  (It is recommended to set the indoor unit with highest frequency of use as the master unit.)
- Press the operation mode changeover button on the remote controller of the master unit. Then a sound of beeps can be heard and the timer lamps on all indoor units go out.
- The indoor unit has the option rights to change between cooling/heating operation.

For details, refer to the installation manual included with the indoor unit.

- After test operation is completed, operate the unit normally.
  (Heating is not possible if the outdoor temperature is 24°C (75.2°F) or higher. Refer to the operation manual.)
  (1) Check the indoor and outdoor units are in normal operation.
  (If a knocking sound produced by liquid compression of the compressor can be heard, stop the unit immediately.)
  (2) Operate each indoor unit one by one and check the corresponding outdoor unit is also in operation.
  (3) Check to see if cold (or hot) air is coming out from the indoor unit.
  (4) Press the fan direction and strength buttons of the indoor unit to see if they operate properly.

About normal operation check

- The compressor will not restart in about 5 minutes even if the ON/OFF button of the remote controller is pressed.
- When system operation is stopped by the remote controller, the outdoor unit may continue operating for further 1 minute at maximum.
- If any check operation was not performed through test operation on first installation, the error code **U3** will be displayed. In this case, perform check operation in accordance with “1. Powering on ~ test operation”.

1.4 Error Codes and Corresponding Measures

Please check the remote controller connected to the indoor unit for verification.

Error code		Description	Solution
Primary code	Sub code		
E3	01	High pressure switch activated (S1PH)	Check the stop valve or (field) piping abnormality or the airflow on the air cooling heat exchanger.
	02	· Too much refrigerant charged · Stop valve closed	· Check the amount of refrigerant and recharge the unit. · Open the stop valve.
	13	Stop valve closed (liquid).	Open the liquid stop valve.
	18	· Too much refrigerant charged · Stop valve closed	· Check the amount of refrigerant and recharge the unit. · Open the stop valve.
E4	01	Defective low pressure: · Stop valve closed · Refrigerant undercharged · Defective indoor unit	· Open the stop valve. · Check the amount of refrigerant and recharge the unit. · Check the user interface display. · Check the transmission wiring between the indoor and outdoor units.
E9	01	Defective electronic expansion valve (Subcooling) (RXTQ60TAVJU: Y3E)	Check the connection of the PCB or the actuator.
	04	Defective electronic expansion valve (Main) (Y1E)	Check the connection of the PCB or the actuator.
F3	01	Discharge pipe temperature too high: · Stop valve closed · Refrigerant undercharged	· Open the stop valve. · Check the amount of refrigerant and recharge the unit.
F6	02	· Too much refrigerant charged · Stop valve closed	· Open the stop valve. · Check the amount of refrigerant and recharge the unit.
H9	01	Defective outdoor air thermistor (R1T)	Check the connection of the PCB or the actuator.
J3	16	Defective discharge pipe thermistor (R2T): Tripping	Check the connection of the PCB or the actuator.
	17	Defective discharge pipe thermistor (R2T): Short circuit	Check the connection of the PCB or the actuator.
J5	01	Defective suction pipe thermistor (R3T and R5T): Tripping	Check the connection of the PCB or the actuator.
J6	01	Defective outdoor heat exchanger deicer thermistor (R4T)	Check the connection of the PCB or the actuator.
J7	01	Defective heat exchanger liquid pipe thermistor (R7T)	Check the connection of the PCB or the actuator.
J9	01	Defective subcooling heat exchanger gas pipe thermistor (R6T: RXTQ60TAVJU only)	Check the connection of the PCB or the actuator.
JA	06	Defective high pressure sensor (S1NPH): Tripping	Check the connection of the PCB or the actuator.
	07	Defective high pressure sensor (S1NPH): Short circuit	Check the connection of the PCB or the actuator.
JC	06	Defective low pressure sensor (S1NPL): Tripping	Check the connection of the PCB or the actuator.
	07	Defective low pressure sensor (S1NPL): Short circuit	Check the connection of the PCB or the actuator.
P1	01	Inverter unbalanced power supply voltage	Check if the power supply meets the specifications.
U2	01	Inverter insufficient voltage	Check if the power supply meets the specifications.
	02	Inverter power supply phase missing	Check if the power supply meets the specifications.
U3	03	System test operation not yet executed (Test operation cannot be executed.)	Execute system test operation.

Error code		Description	Solution
Primary code	Sub code		
U4	01	Q1/Q2 or indoor-outdoor units wiring error	Check (Q1/Q2) wiring.
	03	Q1/Q2 or indoor-outdoor units wiring error	Check (Q1/Q2) wiring.
	04	System test operation ends abnormally.	Re-execute the test operation.
U9	01	System mismatch Mismatched indoor unit models used (R-410A, R-407C, RA, Hydrobox, etc.). Defective indoor unit	Check if there are any other defective indoor units and verify if the indoor unit combination meets requirements.
UA	03	Defective indoor unit connection or mismatched models (R-410A, R-407C, RA, Hydrobox, etc.).	Check if there are any other defective indoor units and verify if the indoor unit combination meets requirements.
	18	Defective indoor unit connection or mismatched models (R-410A, R-407C, RA, Hydrobox, etc.).	Check if there are any other defective indoor units and verify if the indoor unit combination meets requirements.
	31	Wrong combination of units (multi-unit system)	Check the compatibility of unit types.
	49	Wrong combination of units (multi-unit system)	Check the compatibility of unit types.
UF	01	Defective automatic addressing (inconsistency)	Check if the quantity of connected units is below the maximum number of units that can be connected (through monitoring mode) or if initiation is complete.
	05	Stop valve closed or defective (During system test operation)	Open the stop valve.
UH	01	Defective automatic addressing (inconsistency)	Check if the quantity of connected units is below the maximum number of units that can be connected (through monitoring mode) or if initiation is complete.

No display on the remote controller

- Error in connection/communication among indoor unit remote controllers.
  Check if there is any disconnection or loosening of connectors.

Caution

For the plumber

For the electrician

Before giving the air conditioner back to the customer after a test operation, please make sure that the casing is securely in place and the screws are well fastened.

1.5 When Turning ON Power First Time

The unit cannot be run for up to 12 minutes to automatically set the master power and address (indoor-outdoor address, etc.).

Status

Outdoor unit	Test lamp H2P .... Blinks Can also be set during operation described above.
Indoor unit	If ON button is pushed during operation described above, the **UH** error indicator blinks. (Returns to normal when automatic setting is complete.)

1.6 When Turning ON Power the Second Time and Subsequent

Tap the **RESET**(BS5) button on the outdoor unit PCB. Operation becomes possible for about 2 minutes. If you do not push the **RESET** button, the unit cannot be run for up to 10 minutes to automatically set master power.

Status

Outdoor unit	Test lamp H2P .... Blinks Can also be set during operation described above.
Indoor unit	If ON button is pushed during operation described above, the operation lamp lights but the compressor does not operate. (Returns to normal when automatic setting is complete.)

1.7 When an Indoor Unit or Outdoor Unit has been Added, or Indoor or Outdoor Unit PCB has been Changed

Be sure to push and hold the **RESET** button for 5 seconds. If not, the addition cannot be recognized. In this case, the unit cannot be run for up to 12 minutes to automatically set the address (indoor-outdoor address, etc.)

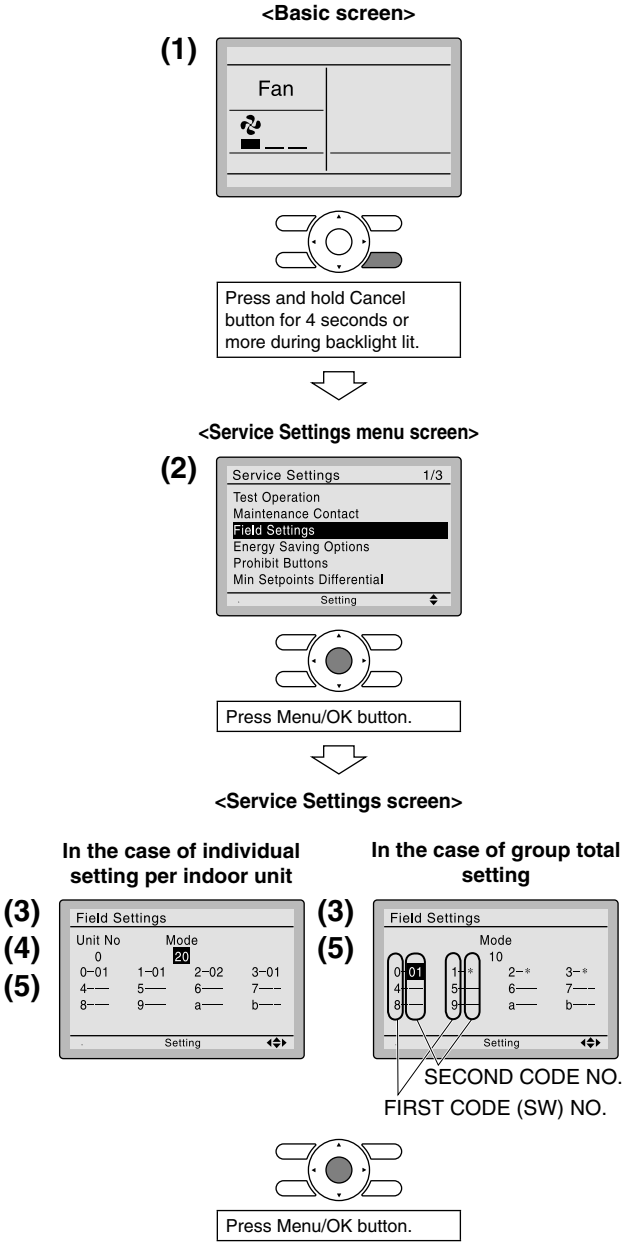
Status

Outdoor unit	Test lamp H2P .... ON Can also be set during operation described above.
Indoor unit	If ON button is pushed during operation described above, the **UH** or **U4** error indicator blinks. (Returns to normal when automatic setting is complete.)

2. Field Setting from Remote Controller

Individual function of indoor unit can be changed from the remote controller. At the time of installation or after service inspection / repair, make the local setting in accordance with the following description.
Wrong setting may cause error.
(When an optional accessory is installed on the indoor unit, settings for the indoor unit may need to be changed.)

2.1 Wired Remote Controller — BRC1E73



1. Press and hold Cancel button for 4 seconds or more.
Service settings menu is displayed.

2. Select Field Settings in the Service Settings menu, and press Menu/OK button.
Field settings screen is displayed.

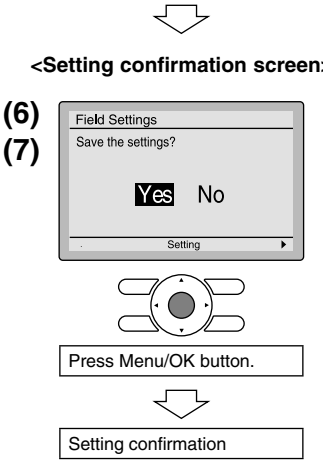
3. Highlight the mode, and select desired “Mode No.” by using ▲▼ (Up/Down) button.

4. In the case of setting per indoor unit during group control (When Mode No. such as 20 , 21 , 22 , 23 , 25 are selected), highlight the unit No. and select “Indoor unit No.” to be set by using ▲▼ (Up/Down) button.
(In the case of group total setting, this operation is not needed.)

> In the case of individual setting per indoor unit, current settings are displayed. And, SECOND CODE NO. “ - ” means no function.

5. Highlight SECOND CODE NO. of the FIRST CODE NO. to be changed, and select desired “SECOND CODE NO.” by using ▲▼ (Up/Down) button. Multiple identical mode number settings are available.

> In case of setting for all indoor units in the remote control group, available SECOND CODE NO. is displayed as “ ∗ ” which means it can be changed.
> When SECOND CODE NO. is displayed as “ - ”, there is no function.



6. Press Menu/OK button. Setting confirmation screen is displayed.

7. Select Yes and press Menu/OK button. Setting details are determined and field settings screen returns.

8. In the case of multiple setting changes, repeat "**(3)**" to "**(7)**".

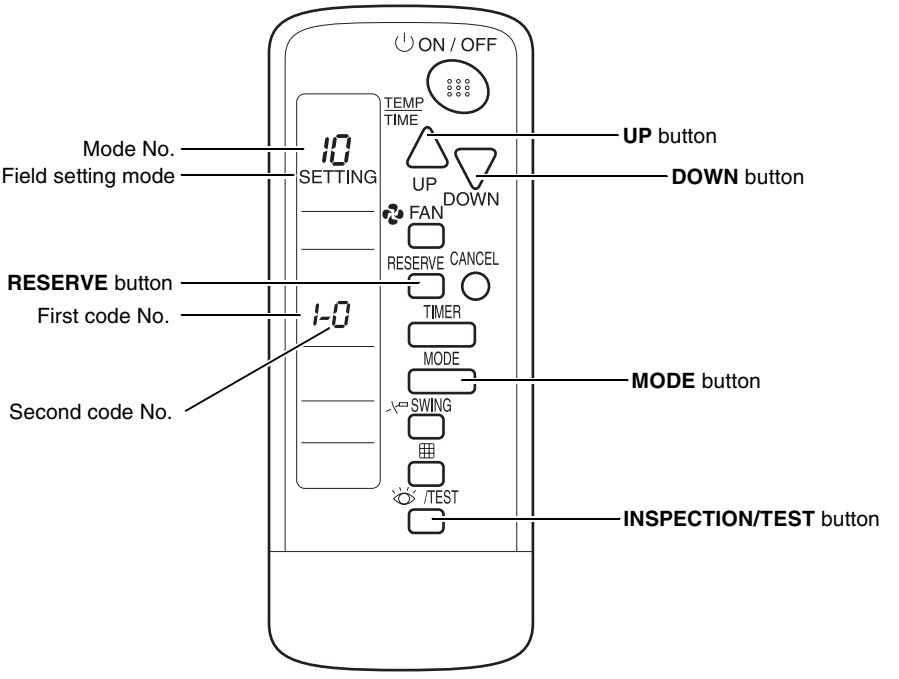
9. After all setting changes are completed, press Cancel button twice.

10. Backlight goes out, and "Checking the connection. Please standby." is displayed for initialization. After the initialization, the basic screen returns.

NOTE

- Installation of optional accessories on the indoor unit may require changes to field settings. See the manual of the optional accessory.
- For field setting details related to the indoor unit, see installation manual shipped with the indoor unit.

2.2 Wireless Remote Controller



To set the field settings, you have to change:

- Mode No.
- First code No.
- Second code No.

Step	Action
1	Press the **INSPECTION/TEST** button for 4 seconds during normal mode to enter the field setting mode.
2	Press the **MODE** button to select the desired mode No.
3	Press the **UP** button to select the first code No.
4	Press the **DOWN** button to select the second code No.
5	Press the **RESERVE** button to confirm the setting.
6	Press the **INSPECTION/TEST** button to return to the normal mode.

2.3 Setting Contents and Code No. for Indoor Units

: Factory setting

Mode No. (∗2)	First Code No.	Description		Second Code No. 01		02		03	04	Details No.
10(20)	0	Filter contamination heavy/light (Setting for display time to clean air filter) (Sets display time to clean air filter to half when there is heavy filter contamination.)	Ultra long life filter	Light	Approx. 10,000 hrs.	Heavy	Approx. 5,000 hrs.	—	—	(1)
			Long life filter		Approx. 2,500 hrs.		Approx. 1,250 hrs.			
			Standard filter		Approx. 200 hrs.		Approx. 100 hrs.			
	0 (∗6)	Filter Sign Setting		Light		Heavy		—	—	
	1	Long life filter type		Long life filter		Ultra long life filter		—	—	(2)
	1 (∗6)	Filter cleaning sign time (Light/Heavy)		2,500/1,250		10,000/5,000		—	—	
	2	Room temperature thermistor in remote controller		Remote controller + Suction air thermistor		Only suction air thermistor		Only remote controller thermistor	—	(3)
	2 (∗6)	Remote sensor and remote controller thermistor		Both		Only remote sensor thermistor		Only remote controller thermistor	—	
	3	Display time to clean air filter calculation (Set when filter sign is not to be displayed.)		Display		No display		—	—	(4)
	6	Remote controller thermostat control during group control		Remote controller thermostat control is not permitted		Remote controller thermostat control is permitted		—	—	(5)
	7	Auxiliary electric heater ON/OFF temperature		Refer to page 88.						(6)
11(21)	1	Auxiliary electric heater ON temperature: Ttson (∗8)		Refer to page 88.						
	2	Auxiliary electric heater OFF temperature: Ttsoff (∗8)								
	3	Setting the airflow rate when heating		Standard		Slightly increased		Increased	—	(7)
	6	Setting the rate of human detection		High sensitivity		Low sensitivity		Standard sensitivity	Infrared presence sensor disabled	(8)
	7	Airflow adjustment		OFF		Completion of airflow adjustment		Start of airflow adjustment	—	(9)
	8	Compensating the temperature around people		Suction air temperature only		Priority given on the suction air temperature		Standard	Priority given on the floor temperature	(10)
	9	Compensating the floor temperature		–4°C (–7.2°F)		–2°C (–3.6°F)		0°C (0°F)	+2°C (+3.6°F)	(11)
12(22)	0	Optional accessories output selection (field selection of output for adaptor for wiring)		Refer to page 90.						(12)
	1	External ON/OFF input (Set when ON/OFF is to be controlled from outside.)		Refer to page 90.						(13)
	2	Thermostat differential changeover (Set when remote sensor is to be used.)		1°C (1.8°F)		0.5°C (0.9°F)(∗7)		—	—	(14)
	3	Airflow setting when heating thermostat is OFF		LL		Set fan speed		—	—	(15)
	4	Automatic mode differential		Refer to page 91.						(16)
	5	Power failure automatic reset		Not equipped		Equipped		—	—	(17)
	6	Airflow setting when cooling thermostat is OFF		LL		Set fan speed		—	—	(18)

Mode No. (∗2)	First Code No.	Description	Second Code No.				Details No.
			01	02	03	04	
13(23)	0	Setting of normal airflow	N	H	S	—	(19)
	1	Selection of airflow direction (Set when a sealing material kit has been installed.)	F (4 directions)	T (3 directions)	W (2 directions)	—	(20)
	2	Swing pattern settings (In case of an infrared floor sensor is installed)	All direction synchronized swing	—	Facing swing	—	(21)
	3	Operation of downward flow flap	Equipped	Not equipped	—	—	(22)
	4	Setting airflow position	Draft prevention	Standard	Ceiling Soiling prevention	—	(23)
	5	Setting of static pressure selection	Standard	High static pressure	—	—	(24)
	6	External Static Pressure Settings	Refer to page 94.				(25)
14 (24)	4 (∗6)	Setting of Humidifier / Air Purifier Fan Tap	Remote controller setting	H tap	—	—	(26)
	5 (∗6)	Residual Operation Time	30 seconds	60 seconds	120 seconds	—	(27)
15(25)	1	Thermostat OFF excess humidity	Not equipped	Equipped	—	—	(28)
	2	Direct duct connection (when the indoor unit and Heat Reclaim Ventilator are connected by duct directly.) (∗5)	Not equipped	Equipped	—	—	(29)
	3	Drain pump and humidifier interlock selection	Not equipped	Equipped	—	—	(30)
	5	Selection for individual ventilation setting by remote controller	Not equipped	Equipped	—	—	(31)
1b (2b)	3	Display of Contact Center	Displayed	Not displayed	—	—	(32)
	4	Display of error codes on the remote controller	—	Two-digit display	—	Four-digit display	(33)
	12	Key-lock pattern settings	No operation allowed (Cancel procedure is displayed.)	No operation allowed (Cancel procedure is not displayed.)	No menu operation is allowed (Cancel procedure is displayed.)	No menu operation is allowed any time.	(34)
	14	Setting restricted/permitted for airflow block	Refer to page 96.				(35)
1c (2c)	0	Room temperature display	Room temperature is not displayed	Room temperature is displayed	—	—	(36)

Note:

1. Settings are made simultaneously for the entire group, however, if you select the mode No. inside parentheses, you can also set units individually. Setting changes however cannot be checked except in the individual mode in parentheses.

∗2. The mode numbers inside parentheses cannot be used by wireless remote controllers, so they cannot be set individually. Setting changes also cannot be checked.

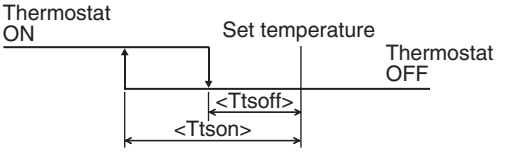
3. Do not make settings other than those described above. Nothing is displayed for functions the indoor unit is not equipped with.
4. **88** or **Checking the connection. Please stand by**. may be displayed to indicate that the remote controller is resetting when returning to normal mode.

∗5. If the setting mode is set to Equipped, heat reclaim ventilation fan conducts the fan residual operation by linking to the indoor unit.

∗6. Only for FXTQ

∗7. For FXTQ: Factory setting is **02**.

∗8.



2.3.1 Detailed Explanation of Setting Modes

(1) Filter Contamination Heavy/Light

If switching the filter sign ON time, set as given in the table below.

Mode No.	First Code No.	Second Code No.	Standard Filter	Long Life Filter	Ultra Long Life Filter	Contents
10 (20)	0	01	200 hrs.	2,500 hrs.	10,000 hrs.	Contamination Light
		02	100 hrs.	1,250 hrs.	5,000 hrs.	Contamination Heavy

■ **FXTQ**

Mode No.	First Code No.	Second Code No.	Contents
10 (20)	0	01	Light
		02	Heavy

(2) Long Life Filter Type

When a Ultra long life filter is installed, the filter sign timer setting must be changed.

Mode No.	First Code No.	Second Code No.	Contents
10 (20)	1	01	Long Life Filter
		02	Ultra Long Life Filter

■ **FXTQ**

Mode No.	First Code No.	Second Code No.	Contents
10 (20)	1	01	2,500/1,250
		02	10,000/5,000

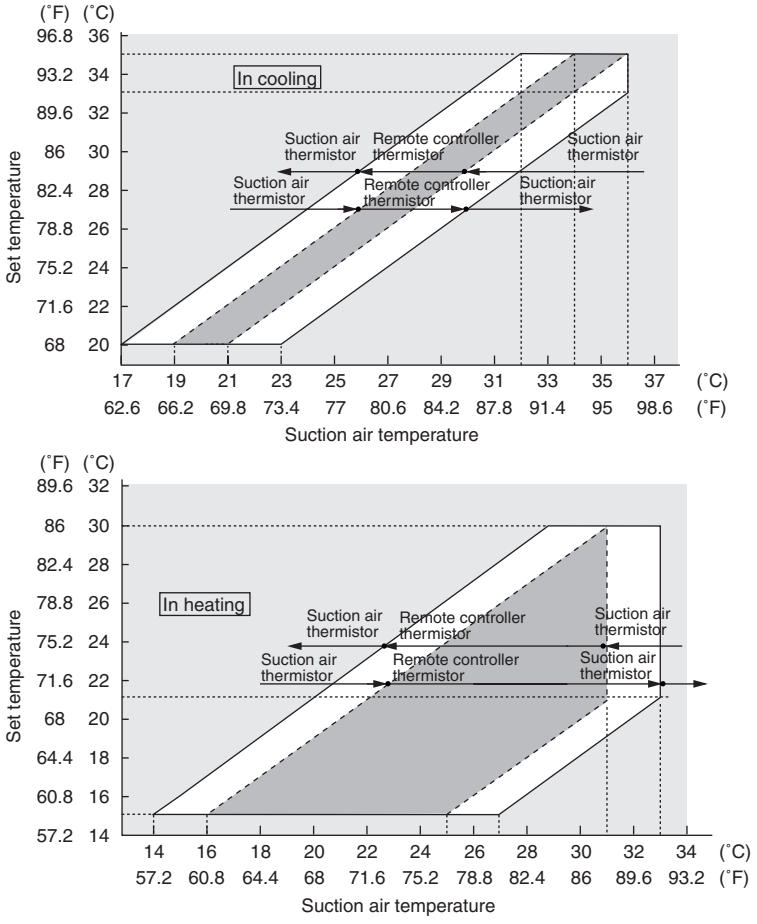
(3) (5) (10) Selecting of Thermistor

Select a thermistor to control the room temperature.

■ When the unit is not equipped with an infrared floor sensor:

Mode No.	First Code No.	Second Code No.	Contents
10 (20)	2	01	Remote controller thermistor and suction air thermistor for indoor unit
		02	Suction air thermistor for indoor unit
		03	Remote controller thermistor

The factory setting for the Second code No. is **01** and room temperature is controlled by the suction air thermistor for indoor unit and remote controller thermistor. When the Second code No. is set to **02**, room temperature is controlled by the suction air thermistor. When the Second code No. is set to **03**, room temperature is controlled by the remote controller thermistor.


(˚F) (˚C)
96.8 36
93.2 34
89.6 32
86 30
82.4 28
78.8 26
75.2 24
71.6 22
68 20
Set temperature
In cooling
Suction air thermistor
Remote controller thermistor
Suction air thermistor
Suction air thermistor
Remote controller thermistor
Suction air thermistor
17 19 21 23 25 27 29 31 33 35 37 (˚C)
62.6 66.2 69.8 73.4 77 80.6 84.2 87.8 91.4 95 98.6 (˚F)
Suction air temperature
(˚F) (˚C)
89.6 32
86 30
82.4 28
78.8 26
75.2 24
71.6 22
68 20
64.4 18
60.8 16
57.2 14
Set temperature
In heating
Suction air thermistor
Remote controller thermistor
Suction air thermistor
Suction air thermistor
Remote controller thermistor
Suction air thermistor
14 16 18 20 22 24 26 28 30 32 34 (˚C)
57.2 60.8 64.4 68 71.6 75.2 78.8 82.4 86 89.6 93.2 (˚F)
Suction air temperature

■ When the unit is equipped with an infrared floor sensor:

Mode No.	First Code No.	Second Code No.					
10 (20)	2	01	02	02	02	02	03
11 (21)	8	01	01	02	03	04	01
The thermistor to be used		↓	↓	↓	↓	↓	↓
Remote controller thermistor		✓	—	—	—	—	✓
Suction air thermistor		✓	✓	✓	✓	✓	—
Infrared floor sensor		—	—	✓	✓	✓	—

The infrared floor sensor is not used

Only the suction air thermistor is used

Priority given to the suction air temperature (∗)

Standard setting (Factory setting)

Priority given to the floor temperature (∗)

Only the remote controller thermistor is used

∗ Refer to (10) Compensating the temperature around people.

Note that the control is automatically switched to the one performed only by the suction air thermistor for indoor unit when the Second code No. is **01** during group control.

To use the remote controller thermistor during group control, select the Second code No. **02** in First code No. **6**.

Mode No.	First Code No.	Second Code No.	Contents
10 (20)	6	01	Remote controller thermostat control is not permitted during group control
		02	Remote controller thermostat control is permitted during group control

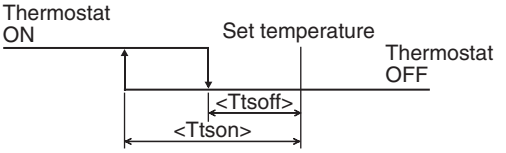
(4) Display Time to Clean Air Filter Calculation

Whether or not to display **Filter Cleaning** after operation of certain duration can be selected.

Mode No.	First Code No.	Second Code No.	Contents
10 (20)	3	01	Display
		02	No Display

∗ **Filter Cleaning** is not displayed when an Auto-clean Panel is connected.

(6) Auxiliary Electric Heater ON/OFF Temperature Setting



Mode No.	First Code No.	Symbol	Second Code No.					
			01	02	03	04	05	06
11 (21)	1	<Ttson>	–4°C (–7.2°F)	–3.5°C (–6.3°F)	–3°C (–5.4°F)	–2.5°C (–4.5°F)	–2°C (–3.6°F)	–1.5°C (–2.7°F)
	2	<Ttsoff>	–2°C (–3.6°F)	–1.5°C (–2.7°F)	–1°C (–1.8°F)	–0.5°C (–0.9°F)	0°C (0°F)	0.5°C (0.9°F)

■ **FXTQ, FXMQ-PB**

Mode No.	First Code No.	Symbol	Second Code No.					
			01	02	03	04	05	06
10 (20)	7	<Ttson>	–4°C (–7.2°F)	–3.5°C (–6.3°F)	–3°C (–5.4°F)	–2.5°C (–4.5°F)	–2°C (–3.6°F)	–1.5°C (–2.7°F)
		<Ttsoff>	–2°C (–3.6°F)	–1.5°C (–2.7°F)	–1°C (–1.8°F)	–0.5°C (–0.9°F)	0°C (0°F)	0.5°C (0.9°F)

There is a limitation of combination between Ttson and Ttsoff as below due to 2°C (3.6°F) hysteresis required for reliability. The combinations shown with N/A cannot be selected.

Second Code No.			<Ttson>					
			01	02	03	04	05	06
			–4°C (–7.2°F)	–3.5°C (–6.3°F)	–3°C (–5.4°F)	–2.5°C (–4.5°F)	–2°C (–3.6°F)	–1.5°C (–2.7°F)
<Ttsoff>	06	0.5°C (0.9°F)	√	√	√	√	√	√
	05	0°C (0°F)	√	√	√	√	√	N/A
	04	–0.5°C (–0.9°F)	√	√	√	√	N/A	N/A
	03	–1°C (–1.8°F)	√	√	√	N/A	N/A	N/A
	02	–1.5°C (–2.7°F)	√	√	N/A	N/A	N/A	N/A
	01	–2°C (–3.6°F)	√	N/A	N/A	N/A	N/A	N/A

(7) Setting the Airflow Rate when Heating

The fan revolution is changed to maintain the sufficient distance for warm air to reach during the heating operation. The setting should be changed depending on the installation condition of the unit.

Mode No.	First Code No.	Second Code No.	Contents
11 (21)	3	01	Standard
		02	Slightly increased
		03	Increased

Note that this setting is effective only during the heating operation.

(8) Setting the Rate of Human Detection
(For units with the infrared presence sensor only)

Set the sensitivity of the infrared presence sensor.

- The infrared presence sensor can be disabled by selecting the Second code No. **04**.

(Note) When the infrared presence sensor is disabled, the remote controller menu does not display some functions such as the automatic draft reduction, energy-saving operation in absence and halt in absence.

Mode No.	First Code No.	Second Code No.	Contents
11(21)	6	01	High sensitivity
		02	Low sensitivity
		03	Standard sensitivity
		04	Infrared presence sensor disabled

(9) Airflow Adjustment (AUTO)

External Static Pressure Settings

Make settings in either method (a) or method (b) as explained below.

(a) Use the airflow auto adjustment function to make settings.
Airflow auto adjustment: The volume of blow-off air is automatically adjusted to the rated quantity.

(b) Select External Static Pressure with Remote Controller Check that 01 (OFF) is set for the “SECOND CODE No.” in “MODE No. 21” for airflow adjustment on an indoor unit basis in Table 4. The “SECOND CODE No.” is set to 01 (OFF) at factory setting. Change the “SECOND CODE No.” as shown in table according to the external static pressure of the duct to be connected.

Mode No.	First Code No.	Second Code No.	Contents
11 (21)	7	01	OFF
		02	Completion of airflow adjustment
		03	Start of airflow adjustment

(10) Compensating the Temperature around People
(When the unit is equipped with an infrared floor sensor)

Change the ratio between the suction air temperature and floor temperature used to calculate the temperature around people.

The temperature around people is calculated using the values of the suction air thermistor and the infrared floor sensor. The factory setting is Normal (the average value of the suction air temperature and the floor temperature is applied). However, the rate at which the suction air thermistor and the infrared floor sensor affect the temperature around people can be changed with this setting.

- To reflect the effect of the temperature around the ceiling, select the "Priority given on the suction air temperature" (the Second code No. **02**).
- To reflect the effect of the temperature around the floor, select the "Priority given on the floor temperature" (the Second code No. **04**).
- The infrared floor sensor can be disabled by selecting "Suction air temperature only" (the Second code No. **01**).

Mode No.	First Code No.	Second Code No.	Contents
11 (21)	8	01	Suction air temperature only
		02	Priority given on the suction air temperature
		03	Standard
		04	Priority given on the floor temperature

(11) Compensating the Floor Temperature
(When the unit is equipped with an infrared floor sensor)

Offset the detected value of the infrared floor sensor with a certain temperature. This setting should be used to have the actual floor temperature detected when, for example, the unit is installed close to a wall.

Mode No.	First Code No.	Second Code No.	Contents
11 (21)	9	01	–4°C (–7.2°F)
		02	–2°C (–3.6°F)
		03	0°C (0°F)
		04	2°C (3.6°F)

Actual procedure to use the setting

Although the standard setting is normally used with no problem, the setting should be changed in the following cases:

Environment	Operation Mode	Problem	Setting Value
· The unit is installed close to a wall or a window. · High thermal capacity of the floor whose material is concrete, etc. · There are many heat sources like a PC. · There is a non-negligible heat source such as floor heating.	Heating	Heated too much	2°C (3.6°F)
		Heated little	–2°C or –4°C (–3.6°F or –7.2°F)

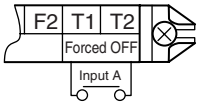
(12) Optional Accessories Output Selection

Using this setting, "operation output signal" and "abnormal output signal" can be provided. Output signal is output between terminals X1 and X2 of "adaptor for wiring", an optional accessory.

Mode No.	First Code No.	Second Code No.	Contents
12 (22)	0	01	Indoor unit thermostat ON/OFF signal is provided.
		02	—
		03	Output linked with "Start/Stop" of remote controller is provided.
		04	In case of "Error Display" appears on the remote controller, output is provided.
		05	—
		06	—
		07	Only for FXMQ-PB Economizer (field supply) ON/OFF signal is provided.

(13) External ON/OFF Input

This input is used for "ON/OFF operation" and "Protection device input" from the outside. The input is performed from the T1-T2 terminal of the operation terminal block in the el. compo. box.



Mode No.	First Code No.	Second Code No.	Contents
12 (22)	1	01	ON: Forced stop (prohibition of using the remote controller) OFF: Permission of using the remote controller
		02	OFF → ON: Permission of operation ON → OFF: Stop
		03	ON: Operation OFF: The system stops, then the applicable unit indicates **A0**. The other indoor units indicate **U9**.
		04	—
		05	Only for FXMQ-PB ON: Economizer (field supply) is connected. OFF: Not connected

(14) Thermostat Differential Changeover

Differential value during thermostat ON/OFF control can be changed.

Mode No.	First Code No.	Second Code No.	Contents
12(22)	2	01	1°C (1.8°F)
		02	0.5°C (0.9°F)

(15) Airflow Setting when Heating Thermostat is OFF

This setting is used to set airflow when heating thermostat is OFF.

* When thermostat OFF airflow volume up mode is used, careful consideration is required before deciding installation location.

Mode No.	First Code No.	Second Code No.	Contents
12 (22)	3	01	LL airflow
		02	Set fan speed

(16) Automatic Mode Differential

This setting makes it possible to change differential values for mode selection while in automatic operation mode.

Mode No.	First Code No.	Second Code No.							
		01	02	03	04	05	06	07	08
12 (22)	4	0°C (0°F)	1°C (1.8°F)	2°C (3.6°F)	3°C (5.4°F)	4°C (7.2°F)	5°C (9°F)	6°C (10.8°F)	7°C (12.6°F)

The automatic operation mode setting is made by the use of the "Operation Mode Selector" button.

(17) Power Failure Automatic Reset

Mode No.	First Code No.	Second Code No.	Setting
12 (22)	5	01	Not equipped
		02	Equipped

For the air conditioners with no setting for the function, the units will be left in the stop condition when the power supply is reset automatically after power failure reset or the main power supply is turned ON again after once turned OFF. However, for the air conditioners with the setting (same as factory setting), the units may start automatically after power failure reset or the main power supply turned ON again (return to the same operation condition as that of before power failure).

For the above reasons, when the unit is set enabling to utilize “Auto restart function after power failure reset”, utmost care should be paid for the occurrence of the following situation.

Caution

1. The air conditioner starts operation suddenly after power failure reset or when the main power supply is turned on again. Consequently, the user might be surprised and wonder why this has happened.

2. In service work, for example, turning off the main power switch while the unit is in operation, and turning on the switch again after the work is completed start unit operation (the fan rotates).

(18) Airflow Setting when Cooling Thermostat is OFF

This is used to set airflow to LL airflow when cooling thermostat is OFF.

Mode No.	First Code No.	Second Code No.	Contents
12 (22)	6	01	LL airflow
		02	Set fan speed

(19) Setting of Normal Airflow

Make the following setting according to the ceiling height. The second code No. is set to **01** at the factory.

■ **FXHQ, FXAQ**

Mode No.	First Code No.	Second Code No.	Contents
13(23)	0	01	Standard (N)
		02	Slight increase (H)
		03	Normal increase (S)

■ **FXFQ12-30**

Mode No.	First Code No.	Second Code No.	Contents	Ceiling Height		
				4-way Outlets	3-way Outlets	2-way Outlets
13 (23)	0	01	Standard (N)	Lower than 2.7 m (8-29/32 ft)	Lower than 3.0 m (9-29/32 ft)	Lower than 3.5 m (11-1/2 ft)
		02	High Ceiling (1) (H)	Lower than 3.0 m (9-29/32 ft)	Lower than 3.3 m (10-27/32 ft)	Lower than 3.8 m (12-15/32 ft)
		03	Higher Ceiling (2) (S)	Lower than 3.5 m (11-1/2 ft)	Lower than 3.5 m (11-1/2 ft)	—

■ **FXFQ36**

Mode No.	First Code No.	Second Code No.	Contents	Ceiling Height		
				4-way Outlets	3-way Outlets	2-way Outlets
13 (23)	0	01	Standard (N)	Lower than 3.2 m (10-1/2 ft)	Lower than 3.6 m (11-12/18 ft)	Lower than 4.2 m (13-25/32 ft)
		02	High Ceiling (1) (H)	Lower than 3.6 m (11-12/18 ft)	Lower than 4.0 m (13-1/8 ft)	Lower than 4.2 m (13-25/32 ft)
		03	Higher Ceiling (2) (S)	Lower than 4.2 m (13-25/32 ft)	Lower than 4.2 m (13-25/32 ft)	—

(20) Selection of Airflow Direction

Set the airflow direction of indoor units as given in the table below. (Set when sealing material kit of air discharge outlet has been installed.) The second code No. is factory set to “01”.

Mode No.	First Code No.	Second Code No.	Contents
13 (23)	1	01	F: 4-direction airflow
		02	T: 3-direction airflow
		03	W: 2-direction airflow

(21) Swing Pattern Settings

(In case of an infrared floor sensor is installed)

Set the flap operation in swing mode.

With the factory swing, flaps facing each other are synchronized to operate, and flaps placed side by side are set to swing in an opposite direction to agitate airflow to reduce temperature irregularity.

Conventional swing operation (all direction synchronized swing) can be set onsite.

Mode No.	First Code No.	Second Code No.	Contents
13 (23)	2	01	All direction synchronized swing
		02	—
		03	Facing swing

(22) Operation of Downward Flow Flap

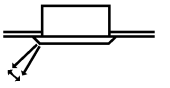
Only the model FXEQ has the function.

When only the front-flow is used, sets yes/no of the swing flap operation of down-flow.

Mode No.	First Code No.	Second Code No.	Contents
13 (23)	3	01	Equipped
		02	Not equipped

(23) Setting Airflow Position

Make the following airflow direction setting according to the respective purpose.



Mode No.	First Code No.	Second Code No.	Contents
13 (23)	4	01	Upward (Draft prevention)
		02	Standard
		03	Downward (Ceiling soiling prevention)

* Some indoor unit models are not equipped with draft prevention (upward) function.

(24) Setting of the Static Pressure Selection (for FXDQ model)

Model No.	First Code No.	Second Code No.	Contents
13 (23)	5	01	Standard (FXDQ07-12: 10 Pa (0.04 inWG), FXDQ18/24: 30 Pa (0.12 inWG))
		02	High static pressure (FXDQ07-12: 15 Pa (0.06 inWG), FXDQ18/24: 45 Pa (0.18 inWG))

(25) External Static Pressure Settings (for FXMQ model)

Mode No.	First Code No.	Second Code No.	Contents
13 (23)	6	01	30 Pa (0.12 inWG) (∗1) (∗3)
		02	50 Pa (0.20 inWG)
		03	60 Pa (0.24 inWG)
		04	70 Pa (0.28 inWG)
		05	80 Pa (0.32 inWG)
		06	90 Pa (0.36 inWG)
		07	100 Pa (0.40 inWG)
		08	110 Pa (0.44 inWG) (∗2)
		09	120 Pa (0.48 inWG) (∗2)
		10	130 Pa (0.52 inWG) (∗2)
		11	140 Pa (0.56 inWG) (∗2)
		12	150 Pa (0.60 inWG) (∗2) (∗3)
		13	160 Pa (0.64 inWG) (∗2) (∗3)
		14	180 Pa (0.72 inWG) (∗2) (∗3)
		15	200 Pa (0.80 inWG) (∗2) (∗3)

The Second Code No. is set to **07** (an external static pressure of 100 Pa (0.40 inWG)) at factory setting.

∗1. FXMQ15/18/24/30/36/48PB cannot be set to 30 Pa (0.12 inWG).

∗2. FXMQ07/09/12PB cannot be set to 110-200 Pa (0.44-0.80 inWG).

∗3. FXMQ54PB cannot be set to 30 Pa (0.12 inWG) or 150-200 Pa (0.60-0.80 inWG).

(26) Setting of Humidifier / Air Purifier Fan Tap (for FXTQ model)

Mode No.	First Code No.	Second Code No.	Contents
14 (24)	4	01	Remote controller setting
		02	H tap

(27) Residual Operation Time (for FXTQ model)

Mode No.	First Code No.	Second Code No.	Contents
14 (24)	5	01	30 seconds
		02	60 seconds
		03	120 seconds

(28) Thermostat OFF Excess Humidity

Setting to "Humidification Setting" turns ON the humidifier if suction air temperature is 20ºC or more and turns OFF the humidifier if suction air temperature is 18ºC or below when the heating thermostat is OFF.

Mode No.	First Code No.	Second Code No.	Contents
15 (25)	1	01	Not equipped
		02	Equipped

(29) Direct Duct Connection

This is used when "fresh air intake kit equipped with fan" is connected. The indoor unit fan carries out residual operation for 1 minute after the thermostat is stopped. (For the purpose of preventing dust on the air filter from falling off.)

Mode No.	First Code No.	Second Code No.	Contents
15 (25)	2	01	Not equipped
		02	Equipped

(30) Drain Pump and Humidifier Interlock Selection

This is used to interlock the humidifier with the drain pump. When water is drained out of the unit, this setting is unnecessary.

Mode No.	First Code No.	Second Code No.	Contents
15 (25)	3	01	Not equipped
		02	Equipped

(31) Selection for Individual Ventilation Setting by Remote Controller

This is set to perform individual operation of heat reclaim ventilation using the remote controller/central unit when heat reclaim ventilation is built in.
(Switch only when heat reclaim ventilation is built in.)

Mode No.	First Code No.	Second Code No.	Contents
15 (25)	5	01	Not equipped
		02	Equipped

(32) Display of Contact Center
(For BRC1E73 only)

You can turn OFF the display of "DAIKIN Contact Center" as "Contact for Service Display."

Mode No.	First Code No.	Second Code No.	Contents
1b (2b)	3	01	Displayed
		02	Not displayed

(33) Display of Error Codes on the Remote Controller
(For BRC1E73 only)

Error code (four digits) is displayed for limited products.
Select two-digit display if four-digit display is not preferred.

Mode No.	First Code No.	Second Code No.	Contents
1b (2b)	4	01	—
		02	Two-digit display
		03	—
		04	Four-digit display

(34) Key-lock Pattern Settings
(For BRC1E73 only)

Setting of key-lock pattern for the remote controller

Mode No.	First Code No.	Second Code No.	Contents
1b (2b)	12	01	No operation allowed (Cancel procedure is displayed.)
		02	No operation allowed (Cancel procedure is not displayed.)
		03	No menu operation is allowed.
		04	No menu operation is allowed any time.

∗ When the Second code No. is set to **04**, no menu operation is allowed without key-lock by pressing and holding the menu button. Set the Second code No. to other than **4** to cancel it.

(35) Setting "Restricted / Permitted" for Airflow Block

(For Sensing flow type only)

Due to possibility of dew condensation, the airflow block function cannot be enabled when closure material kit, fresh air intake kit, natural / separately installed evaporation humidifier, or branch air duct is equipped.
This setting will prevent the airflow bock is advertently set to ON.
Ensure that this setting is "Disable airflow block" when using together with options listed above.

Mode No.	First Code No.	Second Code No.	Contents
1b (2b)	14	01	Airflow block permitted
		02	—
		03	—
		04	—
		05	Airflow block restricted

(36) Room Temperature Display

(For BRC1E73 only)

A "Detailed display screen" can be selected as the display screen. This setting is used if you do not want "Room temperature display" to be shown on the "Detailed display screen."

Mode No.	First Code No.	Second Code No.	Contents
1c (2c)	0	01	Room temperature is not displayed.
		02	Room temperature is displayed.

2.4 Outdoor-Air Processing Unit - Field Setting (Remote Controller)

: Factory setting

Mode No.	First Code No.	Setting Contents		Second Code No.														
				01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
10 (20)	0	Filter contamination		2500 hr	1250 hr	—	—	—	—	—	—	—	—	—	—	—	—	—
	3	Display time to clean air filter calculation		Display	No display	—	—	—	—	—	—	—	—	—	—	—	—	—
12 (22)	1	External ON/OFF input		Forced OFF	ON/OFF control	—	—	—	—	—	—	—	—	—	—	—	—	—
	5	Power failure automatic reset		Not equipped	Equipped	—	—	—	—	—	—	—	—	—	—	—	—	—
14 (24)	3	Discharge pipe temperature (cooling)	°C	13	14	15	16	17	18	19	20	21	22	23	24	25	25	25
			°F	55.4	57.2	59	60.8	62.6	64.4	66.2	68	69.8	71.6	73.4	75.2	77	77	77

2.5 Field Setting of Operation Control Mode

The operation control mode is compatible with a variety of controls and operations by limiting the functions of the operation remote controller. Furthermore, operations such as remote controller ON/OFF can be limited in accordance with the combination conditions. (Refer to information in the next page.)
Centralized remote controller is normally available for operations. (Except when centralized monitor is connected)

2.5.1 Contents of Control Modes

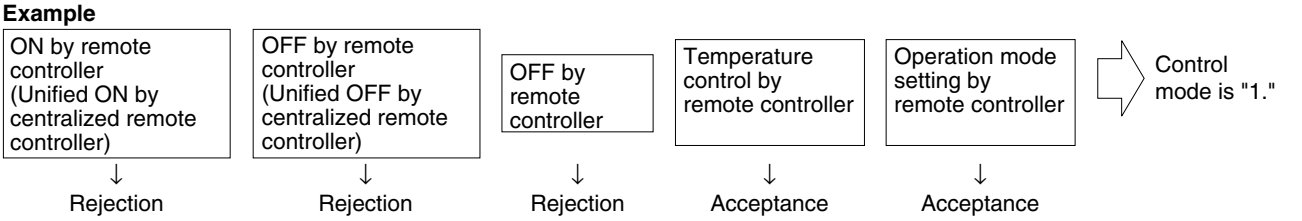
Twenty modes consisting of combinations of the following five operation modes with temperature and operation mode setting by remote controller can be set and displayed by operation modes 0 through 19.

- ON/OFF control impossible by remote controller
  Used when you want to turn ON/OFF by centralized remote controller only.
  (Cannot be turned ON/OFF by remote controller.)
- OFF control only possible by remote controller
  Used when you want to turn on by centralized remote controller only, and off by remote controller only.
- Centralized
  Used when you want to turn on by centralized remote controller only, and turn on/off freely by remote controller during set time.
- Individual
  Used when you want to turn ON/OFF by both centralized remote controller and remote controller.
- Timer operation possible by remote controller
  Used when you want to turn ON/OFF by remote controller during set time and you do not want to start operation by centralized remote controller when time of system start is programmed.

2.5.2 How to Select Operation Mode

Whether operation by remote controller will be possible or not for turning ON/OFF, controlling temperature or setting operation mode is selected and decided by the operation mode given on the right edge of the table below.

Example



: Factory setting

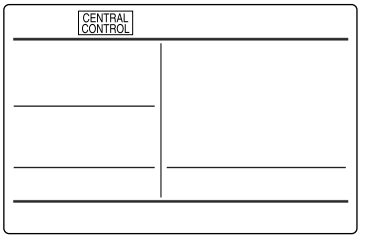
Control mode	Control by remote controller					Control mode
	Operation		OFF	Temperature control	Operation mode setting	
	Unified operation, individual operation by centralized remote controller, or operation controlled by timer	Unified OFF, individual stop by centralized remote controller, or timer stop				
ON/OFF control impossible by remote controller	Rejection (Example)	Rejection (Example)	Rejection (Example)	Rejection	Acceptance	0
					Rejection	10
				Acceptance (Example)	Acceptance (Example)	1(Example)
					Rejection	11
OFF control only possible by remote controller			Acceptance	Rejection	Acceptance	2
					Rejection	12
				Acceptance	Acceptance	3
					Rejection	13
Centralized	Acceptance			Rejection	Acceptance	4
					Rejection	14
				Acceptance	Acceptance	5
					Rejection	15
Individual		Acceptance		Rejection	Acceptance	6
					Rejection	16
				Acceptance	Acceptance	7 ∗1
					Rejection	17
Timer operation possible by remote controller	Acceptance (During timer at ON position only)	Acceptance (During timer at ON position only)		Rejection	Acceptance	8
					Rejection	18
				Acceptance	Acceptance	9
					Rejection	19

Do not select “timer operation possible by remote controller” if not using a remote controller. Operation by timer is impossible in this case.

∗1. Factory setting

Local remote controllers cannot set temperature or operation mode when the system is under centralized control and **CENTRAL CONTROL** is displayed on the screen.

BRC1E73



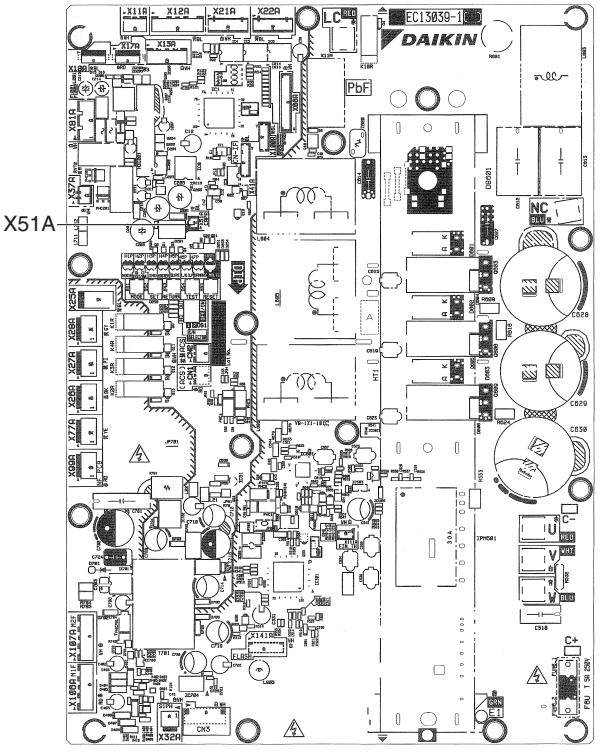
3. Field Setting from Outdoor Unit

3.1 Capacity Setting

Caution

Be sure to carry out capacity setting after changing the main PCB (A1P) to spare PCB.
(for RXTQ48/60TAVJU only)

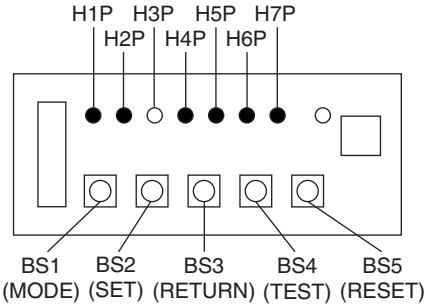
Attach the capacity setting adaptor corresponding to capacity class to connector X51A.
Capacity setting is not required for RXTQ36TAVJU.



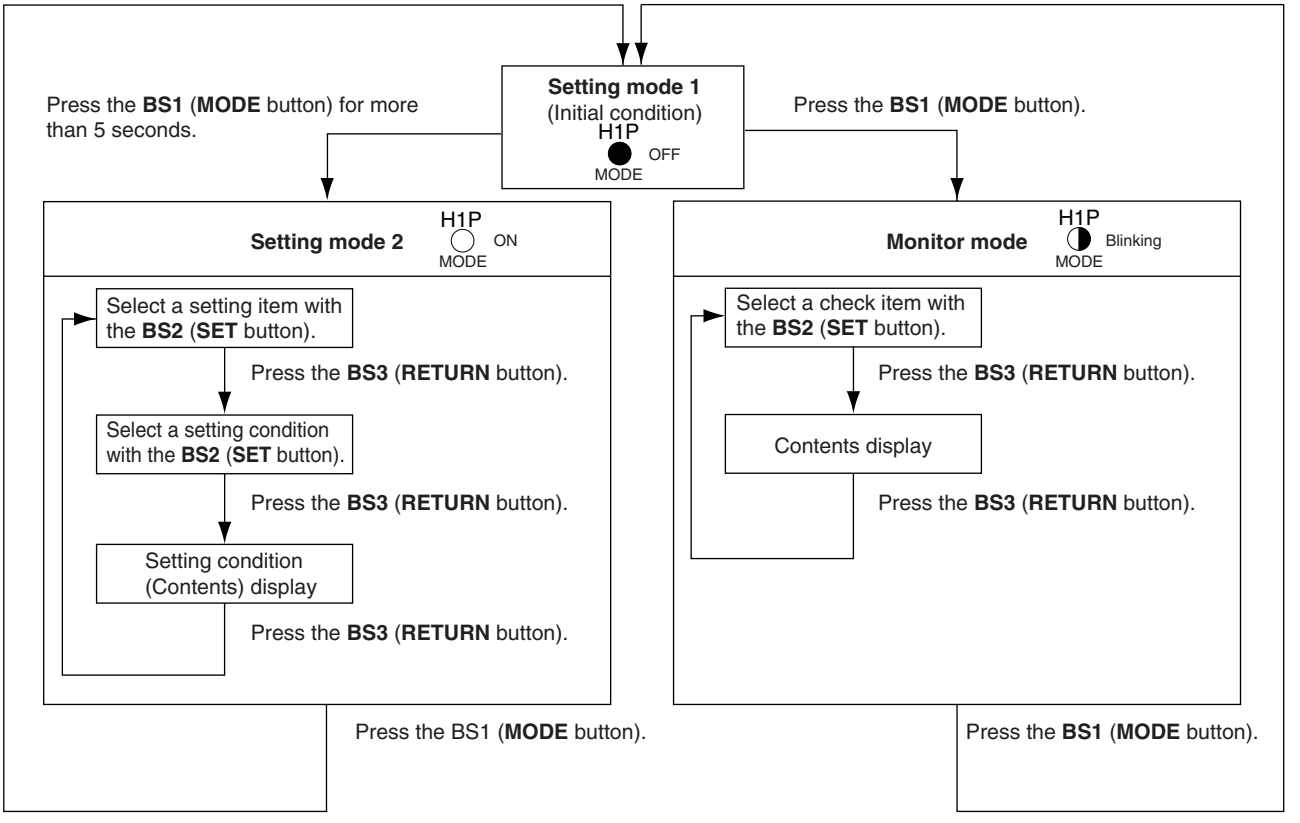
Model	Adaptor type
RXTQ48TAVJU	J71
RXTQ60TAVJU	J56

3.2 Setting Mode and Monitor Mode

The following 3 modes can be changed over with the button switches on the PCB and you can find the present mode by the status of the H1P indicator.



(1) Setting mode 1 (H1P off)
Initial status (normal) : Also indicates during abnormal.
(2) Setting mode 2 (H1P on)
Used to modify the operating status and to set program addresses, etc. Usually used in servicing the system.
(3) Monitor mode (H1P blinks)
Used to check the program made in setting mode 2.



3.3 Setting Mode 1

This mode is used to set and check the following items.

1. Set items.....In order to make COOL/HEAT selection in a batch of outdoor unit group, change the setting.
   - COOL/HEAT selection (IND)..... Used to select COOL or HEAT by individual outdoor unit (factory setting).
   - COOL/HEAT selection (MASTER)..... Used to select COOL or HEAT by outdoor unit group with the master unit.
   - COOL/HEAT selection (SLAVE) ..... Used to select COOL or HEAT by outdoor unit group with the slave unit.
2. Check items.....The following items can be checked.
   (1) Current operating conditions (Normal / Abnormal / In check operation)
   (2) Setting conditions of COOL/HEAT selection (Individual / Batch master / Batch slave)
   (3) Low noise operating conditions (In normal operation / In low noise operation)
   (4) Demand operating conditions (In normal operation / In demand operation)

Procedure for changing COOL/HEAT selection setting

Setting mode 1 is the initial status (normal). In case of other status, press the **MODE** (**BS1**) button one time and return to the setting mode 1.

Press the **SET** (**BS2**) button to set the blinking LED according to the pattern shown on the right.

Press the **RETURN** (**BS3**) button to determine the setting.

The system returns to the initial status of setting mode 1.

○ ON
● OFF
◑ Blink

Setting (displaying) item	MODE H1P	TEST H2P	COOL/HEAT select			LOW NOISE H6P	DEMAND H7P
			IND H3P	MASTER H4P	SLAVE H5P		
For selection by individual outdoor unit (factory setting)	●	●	◑	●	●	●	●
For selection in a batch of outdoor unit group with master unit	●	●	●	◑	●	●	●
For selection in a batch of outdoor unit group with slave unit	●	●	●	●	◑	●	●

Procedure for checking

Setting mode 1 is the initial status (normal). In case of other status, press the **MODE** (**BS1**) button one time and return to the setting mode 1.

Check the system for each condition through LED displays. (Refer to information in table on the right.)

Press the **RETURN** (**BS3**) button and return to the initial status of setting mode 1.

MODE H1P	TEST H2P	COOL/HEAT select			Low noise H6P	Demand H7P
		IND H3P	MASTER H4P	SLAVE H5P		
●	●	○	●	●	●	●

Current operating conditions
- ● Normal
- ○ Abnormal
- ◑ In preparation or in check operation

Setting of COOL/HEAT selection
- ○ ● ● By individual outdoor unit
- ● ○ ● In a batch of outdoor unit group with master unit
- ● ● ○ In a batch of outdoor unit group with slave unit

Low noise operating conditions
- ● In normal operation
- ○ In low noise operation

Demand operating conditions
- ● In normal operation
- ○ In demand operation

3.4 Setting Mode 2

Press the **MODE** (**BS1**) button for 5 seconds and enter the setting mode 2.

Selection of setting items

Press the **SET** (**BS2**) button and select a setting item according to the LED pattern shown in the table on the right.

↓

Press the **RETURN** (**BS3**) button and decide the item. (The present setting condition is shown.)

Selection of setting conditions

Press the **SET** (**BS2**) button and select to the setting condition you want.

↓

Press the **RETURN** (**BS3**) button and decide the condition.

Press the **RETURN** (**BS3**) button and return to the initial status of setting mode 2.

∗ If you become unsure of how to proceed, press the **MODE** (**BS1**) button and return to the setting mode 1.

No.	Setting item	Description
1	Cool / heat unified address	Sets address for cool / heat unified operation.
2	Low noise / demand address	Address for low noise / demand operation
3	Test operation settings	Used to conduct test operation without making changes to the PCB and replacing the refrigerant, after the completion of maintenance.
5	Indoor unit forced fan H	Allows forced operation of indoor unit fan while unit is stopped. (H tap)
6	Indoor unit forced operation	Allows forced operation of indoor unit.
8	Te setting	Target evaporation temperature for cooling
9	Tc setting	Target condensation temperature for heating
10	Defrost changeover setting	Changes the temperature condition for defrost and sets to quick defrost or slow defrost.
12	External low noise / demand setting	Reception of external low noise or demand signal
13	AIRNET address	Set address for AIRNET.
16	Setting of heat pump lockout 1	Make this setting for heat pump lockout.
19	Emergency automatic heat pump lockout	Heat pump is automatically locked out in the event of a system failure.
20	Additional refrigerant charge operation setting	Carries out additional refrigerant charge operation.
21	Refrigerant recovery / vacuuming mode setting	Sets to refrigerant recovery or vacuuming mode.
22	Night-time low noise setting	Sets automatic nighttime low noise operation in a simple way. The operating time is based on Starting Set and Ending Set.
25	Setting of low noise level	Sets low noise level when the low noise signal is received.
26	Night-time low noise operation start setting	Sets starting time of nighttime low noise operation. (Night-time low noise setting is also required.)
27	Night-time low noise operation end setting	Sets ending time of nighttime low noise operation. (Night-time low noise setting is also required.)
28	Power transistor check mode ∗Check after disconnection of compressor wires	Used for trouble diagnosis of DC compressor. Since the waveform of inverter is output without wiring to the compressor, it is convenient to probe whether the trouble comes from the compressor or PCB.
29	Capacity precedence setting	If the capacity control is required, the low noise control is automatically released by this setting during carrying out low noise operation and night-time low noise operation.
30	Demand setting 1	Changes target value of power consumption when demand control 1 is received.
32	Constant demand setting	Enables demand control 1 without external input. (Effective to prevent a problem that circuit breaker of small capacity is shut down due to large load.)
37	Setting of heat pump lockout 2	Make this setting for heat pump lockout.
41	Cooling comfort setting	Selects comfort level of VRT cooling.
42	Heating comfort setting	Selects comfort level of VRT heating.
47	Heat pump lockout release differential	Heat pump would be resumed when the outdoor ambient temperature is recovered by differential above the heat pump lockout temperature.
50	Auxiliary heater maximum allowable temperature	Auxiliary heater is allowed to energize when the ambient temperature is smaller than the auxiliary heater maximum allowable temperature.
56	Auxiliary heater maximum allowable temperature release differential	Auxiliary heater is not allowed to energize when the outdoor ambient temperature is recovered by differential above the auxiliary heater maximum allowable temperature.
57	Heat pump lockout temperature	Heat pump would be locked out when the outdoor ambient temperature is smaller than the heat pump lockout temperature. This setting is only effective when heat pump lockout mode has been set.

The numbers in the No. column represent the number of times to press the **SET** (**BS2**) button.

No.	Setting item	Setting item display: MODE H1P	TEST H2P	C/H selection: IND H3P	C/H selection: Master H4P	C/H selection: Slave H5P	Low noise H6P	Demand H7P	Setting condition display (∗ Factory setting)
1	Cool / heat unified address	○	●	●	●	●	●	○	Address 0 ○●●●●●● ∗ Binary number 1 ○●●●●●○ (6 digits) ~ 31 ○●○○○○○
2	Low noise / demand address	○	●	●	●	●	○	●	Address 0 ○●●●●●● ∗ Binary number 1 ○●●●●●○ (6 digits) ~ 31 ○●○○○○○
3	Test operation settings	○	●	●	●	●	○	○	Test operation : OFF ○●●●●●○ Test operation : ON ○●●●○●● ∗
5	Indoor unit forced fan H	○	●	●	●	○	●	○	Normal operation ○●●●●○ ∗ Indoor forced fan H ○●●●○●
6	Indoor unit forced operation	○	●	●	●	○	○	●	Normal operation ○●●●●○ ∗ Indoor forced operation ○●●●○●
8	Te setting	○	●	●	○	●	●	●	Target Te: 11°C (51.8°F) ○●●●○○○ 10°C (50°F) ○●●●○○● 9°C (48.2°F) ○●●●○●○ 8°C (46.4°F) ○●●●○●● Variable (VRT) ○●●●●○○ ∗ 6°C (42.8°F) ○●●●●○● 3°C (37.4°F) ○●●●●●○
9	Tc setting	○	●	●	○	●	●	○	Target Tc: 52°C (125.6°F) ○●●●○●● 46°C (114.8°F) ○●●●●○● ∗ Variable (VRT) ○●●●●●○
10	Defrost changeover setting	○	●	●	○	●	○	●	Quick defrost ○●●●○●● Normal (factory setting) ○●●●●○● ∗ Slow defrost ○●●●●●○
12	External low noise / demand setting	○	●	●	○	○	●	●	External low noise/demand: NO ○●●●●●○ ∗ External low noise/demand: YES ○●●●●○●
13	AIRNET address	○	●	●	○	○	●	○	Address 0 ○●●●●●● ∗ Binary number 1 ○●●●●●○ (6 digits) ~ 63 ○○○○○○○
16	Setting of heat pump lockout 1	○	●	○	●	●	●	●	OFF ○●●●●●○ ∗ ON ○●●●●○●
19	Emergency automatic heat pump lockout	○	●	○	●	●	○	○	OFF ○●●●●●○ ON ○●●●●●● ∗
20	Additional refrigerant charge operation setting	○	●	○	●	○	●	●	Refrigerant charging: OFF ○●●●●●○ ∗ Refrigerant charging: ON ○●●●●○●
21	Refrigerant recovery / vacuuming mode setting	○	●	○	●	○	●	○	Refrigerant recovery / vacuuming: OFF ○●●●●●○ ∗ Refrigerant recovery / vacuuming: ON ○●●●●○●
22	Night-time low noise setting	○	●	○	●	○	○	●	OFF ○●●●●●● ∗ Level 1 (outdoor fan with 6 step or lower) ○●●●●●○ Level 2 (outdoor fan with 5 step or lower) ○●●●●○● Level 3 (outdoor fan with 4 step or lower) ○●●●●○○

The numbers in the No. column represent the number of times to press the **SET** (**BS2**) button.

No.	Setting item display: Setting item	MODE H1P	TEST H2P	C/H selection: IND H3P	C/H selection: Master H4P	C/H selection: Slave H5P	Low noise H6P	Demand H7P	Setting condition display (∗ Factory setting)	
25	Setting of low noise level	○	●	○	○	●	●	○	Level 1 (outdoor fan with 6 step or lower)	
									Level 2 (outdoor fan with 5 step or lower)	∗
									Level 3 (outdoor fan with 4 step or lower)	
26	Night-time low noise operation start setting	○	●	○	○	●	○	●	About 20:00	
									About 22:00 (factory setting)	∗
									About 24:00	
27	Night-time low noise operation end setting	○	●	○	○	●	○	○	About 6:00	
									About 7:00	
									About 8:00 (factory setting)	∗
28	Power transistor check mode	○	●	○	○	○	●	●	OFF	∗
									ON	
29	Capacity precedence setting	○	●	○	○	○	●	○	OFF	∗
									ON	
30	Demand setting 1	○	●	○	○	○	○	●	60 % demand	
									70 % demand	∗
									80 % demand	
32	Constant demand setting	○	○	●	●	●	●	●	OFF	∗
									ON	
37	Setting of heat pump lockout 2	○	○	●	●	○	●	○	OFF	∗
									Mode 1	
									Mode 2	
									Mode 3	
									Mode 4	
									Mode 5	
									Mode 6	
41	Cooling comfort setting	○	○	●	○	●	●	○	Eco	
									Mild	∗
									Quick	
									Powerful	
42	Heating comfort setting	○	○	●	○	●	○	●	Eco	
									Mild	∗
									Quick	
									Powerful	
47	Heat pump lockout release differential	○	○	●	○	○	○	○	2.8°C (5°F)	
									5.6°C (10°F)	∗
									8.3°C (15°F)	

The numbers in the No. column represent the number of times to press the **SET** (**BS2**) button.

No.	Setting item display: Setting item	MODE H1P	TEST H2P	C/H selection: IND H3P	C/H selection: Master H4P	C/H selection: Slave H5P	Low noise H6P	Demand H7P	Setting condition display	∗ Factory setting
50	Auxiliary heater maximum allowable temperature	○	○	○	●	●	○	●	–17.7°C (0°F) ○●●●●●●	
									–15°C (5°F) ○●●●●●○	
									–12.2°C (10°F) ○●●●●○●	
									–9.4°C (15°F) ○●●●●○○	
									–6.6°C (20°F) ○●●●○●●	
									–3.8°C (25°F) ○●●●○●○	
									–1.1°C (30°F) ○●●●○○●	
									1.6°C (35°F) ○●●●○○○	∗
									4.4°C (40°F) ○●●○●●●	
									7.2°C (45°F) ○●●○●●○	
									10°C (50°F) ○●●○●○●	
									12.7°C (55°F) ○●●○●○○	
									15.5°C (60°F) ○●●○○●●	
									18.3°C (65°F) ○●●○○●○	
									Auxiliary heater always not allowed ○●●○○○●	
									Auxiliary heater always allowed ○●●○○○○	
56	Auxiliary heater maximum allowable temperature release differential	○	○	○	○	●	●	●	2.8°C (5°F) ○●●●●●●	
									5.6°C (10°F) ○●●●●●○	∗
									8.3°C (15°F) ○●●●●○●	
57	Heat pump lockout temperature	○	○	○	○	●	●	○	–26.1°C (–15°F) ○●●●●●●	∗
									–23.3°C (–10°F) ○●●●●●○	
									–20.5°C (–5°F) ○●●●●○●	
									–17.7°C (0°F) ○●●●●○○	
									–15°C (5°F) ○●●●○●●	
									–12.2°C (10°F) ○●●●○●○	
									–9.4°C (15°F) ○●●●○○●	
									–6.6°C (20°F) ○●●●○○○	
									–3.8°C (25°F) ○●●○●●●	
									–1.1°C (30°F) ○●●○●●○	
									1.6°C (35°F) ○●●○●○●	
									4.4°C (40°F) ○●●○●○○	
									7.2°C (45°F) ○●●○○●●	
									10°C (50°F) ○●●○○●○	
									Forced heat pump lockout ○●●○○○●	

The numbers in the No. column represent the number of times to press the **SET (BS2)** button.

3.5 Monitor Mode

Press the **MODE** (**BS1**) button and enter the monitor mode.

Selection of check item

Press the **SET** (**BS2**) button and select a check item according to the LED pattern.

Confirmation on check item

Press the **RETURN** (**BS3**) button to display different data of check item.

Press the **RETURN** (**BS3**) button and return to the initial status of monitor mode.

∗ If you become unsure of how to proceed, press the **MODE** (**BS1**) button and return to the setting mode 1.

No.	Setting item	LED display							Data display
		H1P	H2P	H3P	H4P	H5P	H6P	H7P	
0	Various setting	◑	●	●	●	●	●	●	See the note below.
1	Cool / heat unified address	◑	●	●	●	●	●	○	Lower 6 digits
2	Low noise / demand address	◑	●	●	●	●	○	●	
3	Not used	◑	●	●	●	●	○	○	
4	AIRNET address	◑	●	●	●	○	●	●	
5	Number of connected indoor units	◑	●	●	●	○	●	○	
7	Number of connected zone units (excluding outdoor and BS unit)	◑	●	●	●	○	○	○	
8	Number of outdoor units	◑	●	●	○	●	●	●	
11	Number of zone units (excluding outdoor and BS unit)	◑	●	●	○	●	○	○	Lower 6 digits
12	Number of terminal blocks	◑	●	●	○	○	●	●	Lower 4 digits: upper
13	Number of terminal blocks	◑	●	●	○	○	●	○	Lower 4 digits: lower
14	Contents of error (the latest)	◑	●	●	○	○	○	●	Error code table Refer to page 129.
15	Contents of error (1 cycle before)	◑	●	●	○	○	○	○	
16	Contents of error (2 cycle before)	◑	●	○	●	●	●	●	
20	Contents of retry (the latest)	◑	●	○	●	○	●	●	
21	Contents of retry (1 cycle before)	◑	●	○	●	○	●	○	
22	Contents of retry (2 cycle before)	◑	●	○	●	○	○	●	
25	Normal judgement of outdoor units PCB	◑	●	○	○	●	●	○	Lower 2 digits: ○● Abnormal ●○ Normal ●● Unjudgement

The numbers in the No. column represent the number of times to press the **SET (BS2)** button.

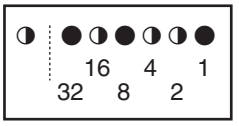
Note: Various Settings

		H1P	H2P	H3P	H4P	H5P	H6P	H7P
Emergency operation / backup operation setting	ON	◑	●	●	○	●	●	●
	OFF	◑	●	●	●	●	●	●
Defrost select setting	Short	◑	●	●	●	○	●	●
	Medium	◑	●	●	●	◑	●	●
	Long	◑	●	●	●	●	●	●
Te setting	H	◑	●	●	●	●	○	●
	M	◑	●	●	●	●	◑	●
	L	◑	●	●	●	●	●	●
Tc setting	H	◑	●	●	●	●	●	○
	M	◑	●	●	●	●	●	◑
	L	◑	●	●	●	●	●	●

Press the **BS2** (**SET** button) and match with the LEDs No. 1 - 15, push the **BS3** (**RETURN** button), and confirm the data for each setting.

★ Data such as addresses and number of units is expressed as binary numbers; the two ways of expressing are as follows:

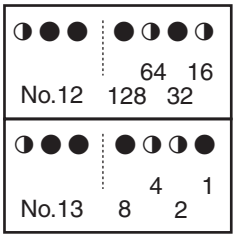
Figure 1



The No. 1 cool / heat unified address is expressed as a binary number consisting of the lower 6 digits. (0 - 63)

In the figure 1, the address is 010110 (binary number), which translates to 16 + 4 + 2 = 22 (base 10 number). In other words, the address is 22.

Figure 2



The number of terminal blocks for No. 12 and 13 is expressed as an 8-digit binary number, which is the combination of four upper, and four lower digits for No. 12 and 13 respectively. (0 - 128)
In the figure 2, the address for No. 12 is 0101, the address for No. 13 is 0110, and the combination of the two is 01010110 (binary number), which translates to 64 + 16 + 4 + 2 = 86 (base 10 number). In other words, the number of terminal block is 86.

∗ Refer to the preceding page for a list of data, etc. for No. 0 - 25.

3.6 Setting of Low Noise Operation and Demand Operation

Setting of Low Noise Operation

By connecting the external contact input to the low noise input of the external control adaptor for outdoor unit (optional), you can lower operating noise by 2-3 dB.

When the low noise operation is automatically carried out at night (The external control adaptor for outdoor unit is not required)

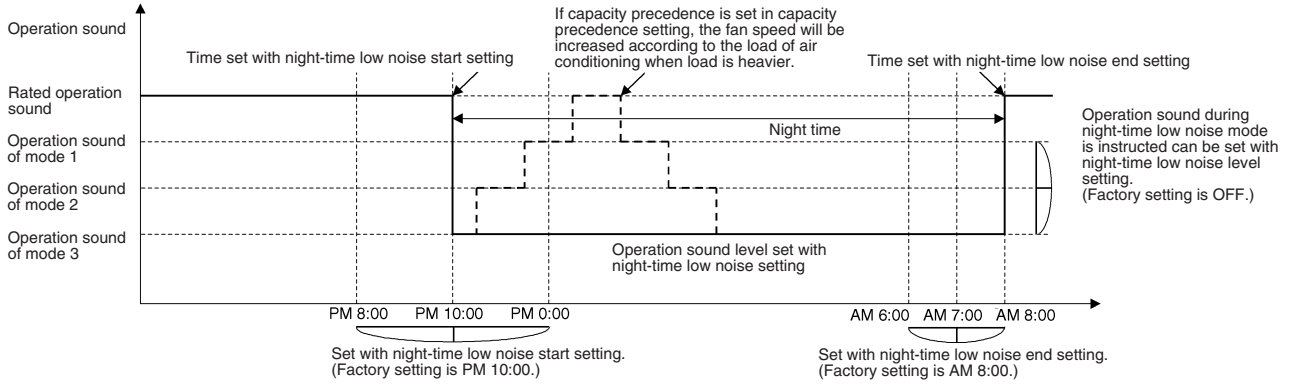
1. While in setting mode 2, select the setting condition (i.e., Mode 1, Mode 2, or Mode 3) for set item No. 22 (Setting of night-time low noise level).

2. If necessary, while in setting mode 2, select the setting condition (i.e., 20:00, 22:00, or 24:00) for set item No. 26 (Setting of start time of night-time low noise operation).
   (Use the start time as a guide since it is estimated according to outdoor temperatures.)

3. If necessary, while in setting mode 2, select the setting condition (i.e., 06:00, 07:00, or 08:00) for set item No. 27 (Setting of end time of night-time low noise operation).
   (Use the end time as a guide since it is estimated according to outdoor temperatures.)

4. If necessary, while in setting mode 2, set the setting condition for set item No. 29 (Setting of capacity precedence) to ON.
   (If the condition is set to ON, when the air-conditioning load reaches a high level, the system enters to normal operation mode even during nighttime.)

Image of operation



Setting of Demand Operation

By connecting the external contact input to the demand input of the external control adaptor for outdoor unit (optional), the power consumption of unit operation can be saved suppressing the compressor operating condition.

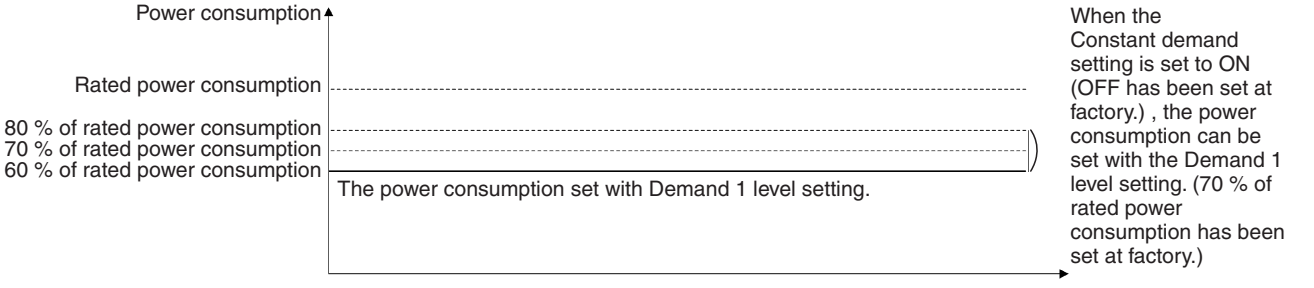
Set item	Condition	Content
Demand	Mode 1	The compressor operates at 60% or less of rating.
	Mode 2	The compressor operates at 70% or less of rating.
	Mode 3	The compressor operates at 80% or less of rating.

When the constant demand operation is carried out. (Use of the external control adaptor for outdoor unit is not required.)

1. While in setting mode 2, make setting of the set item No. 32 (Setting of constant demand) to ON.

2. While in setting mode 2, select the set item No. 30 (Setting of Demand 1 level) and then set the setting condition to targeted mode.

Image of operation



Detailed Setting Procedure of Low Noise Operation and Demand Control

1. Setting mode 1 (H1P off)

In setting mode 2, push the **BS1** (**MODE** button) one time. → The system enters setting mode 1 and the H1P goes off.

In setting mode 1, the H6P (In low noise operation) and the H7P (In demand control) keep lighting.

2. Setting mode 2 (H1P on)

(1) In setting mode 1, push and hold the **BS1** (**MODE** button) for more than 5 seconds. → The system enters setting mode 2 and the H1P lights up.

(2) Push the **BS2** (**SET** button) several times and match the LED display with the Setting No. you want.

(3) Push the **BS3** (**RETURN** button) one time, and the present setting content is displayed.
→ Push the **BS2** (**SET** button) several times and match the LED display with the setting content (as shown on next page) you want.

(4) Push the **BS3** (**RETURN** button) two times. → The system returns to (1).

(5) Push the **BS1** (**MODE** button) one time. → The system returns to setting mode 1 and the H1P goes off.

○: ON ●: OFF ◑: Blink

		(1)							(2)								(3)						
Setting No.	Setting contents	Setting No. indication							Setting No. indication							Setting contents	Setting contents indication (Initial setting)						
		H1P	H2P	H3P	H4P	H5P	H6P	H7P	H1P	H2P	H3P	H4P	H5P	H6P	H7P		H1P	H2P	H3P	H4P	H5P	H6P	H7P
12	External low noise / demand setting	○	●	●	●	●	●	●	○	●	●	○	○	●	●	NO (Factory setting)	○	●	●	●	●	●	◑
																YES	○	●	●	●	●	◑	●
22	Night-time low noise setting								○	●	○	●	○	○	●	OFF (Factory setting)	○	●	●	●	●	●	●
																Level 1	○	●	●	●	●	●	◑
																Level 2	○	●	●	●	●	◑	●
																Level 3	○	●	●	●	●	◑	◑
26	Night-time low noise operation start setting								○	●	○	○	●	○	●	PM 8:00	○	●	●	●	●	●	◑
																PM 10:00 (Factory setting)	○	●	●	●	●	◑	●
																PM 0:00	○	●	●	●	◑	●	●
27	Night-time low noise operation end setting								○	●	○	○	●	○	○	AM 6:00	○	●	●	●	●	●	◑
																AM 7:00	○	●	●	●	●	◑	●
																AM 8:00 (Factory setting)	○	●	●	●	◑	●	●
29	Capacity precedence setting								○	●	○	○	○	●	○	Low noise precedence (Factory setting)	○	●	●	●	●	●	◑
																Capacity precedence	○	●	●	●	●	◑	●
30	Demand setting 1								○	●	○	○	○	○	●	60 % of rated power consumption	○	●	●	●	●	●	◑
																70 % of rated power consumption (Factory setting)	○	●	●	●	●	◑	●
																80 % of rated power consumption	○	●	●	●	◑	●	●
32	Constant demand setting								○	○	●	●	●	●	●	OFF (Factory setting)	○	●	●	●	●	●	◑
																ON	○	●	●	●	●	◑	●

Setting mode indication section Setting No. indication section Set contents indication section

3.7 Setting of Refrigerant Recovery Mode

When carrying out the refrigerant collection on site, fully open the respective electronic expansion valve of indoor and outdoor units
All indoor and outdoor unit's operation are prohibited.

Operation procedure

(1) In setting mode 2 with units in stop mode, set the item No.21 (refrigerant recovery / vacuuming mode) to ON.
The respective expansion valve of indoor and outdoor units are fully opened. **Test Operation** and **Under Centralized Control** are displayed on the remote controller, and the indoor / outdoor unit operation is prohibited.
After setting, do not cancel setting mode 2 until completion of refrigerant recovery operation.

(2) Collect the refrigerant using a refrigerant recovery unit. (See the instruction attached to the refrigerant recovery unit for more detail.)

(3) Press the **MODE** (**BS1**) button once and return to setting mode 2.

3.8 Setting of Vacuuming Mode

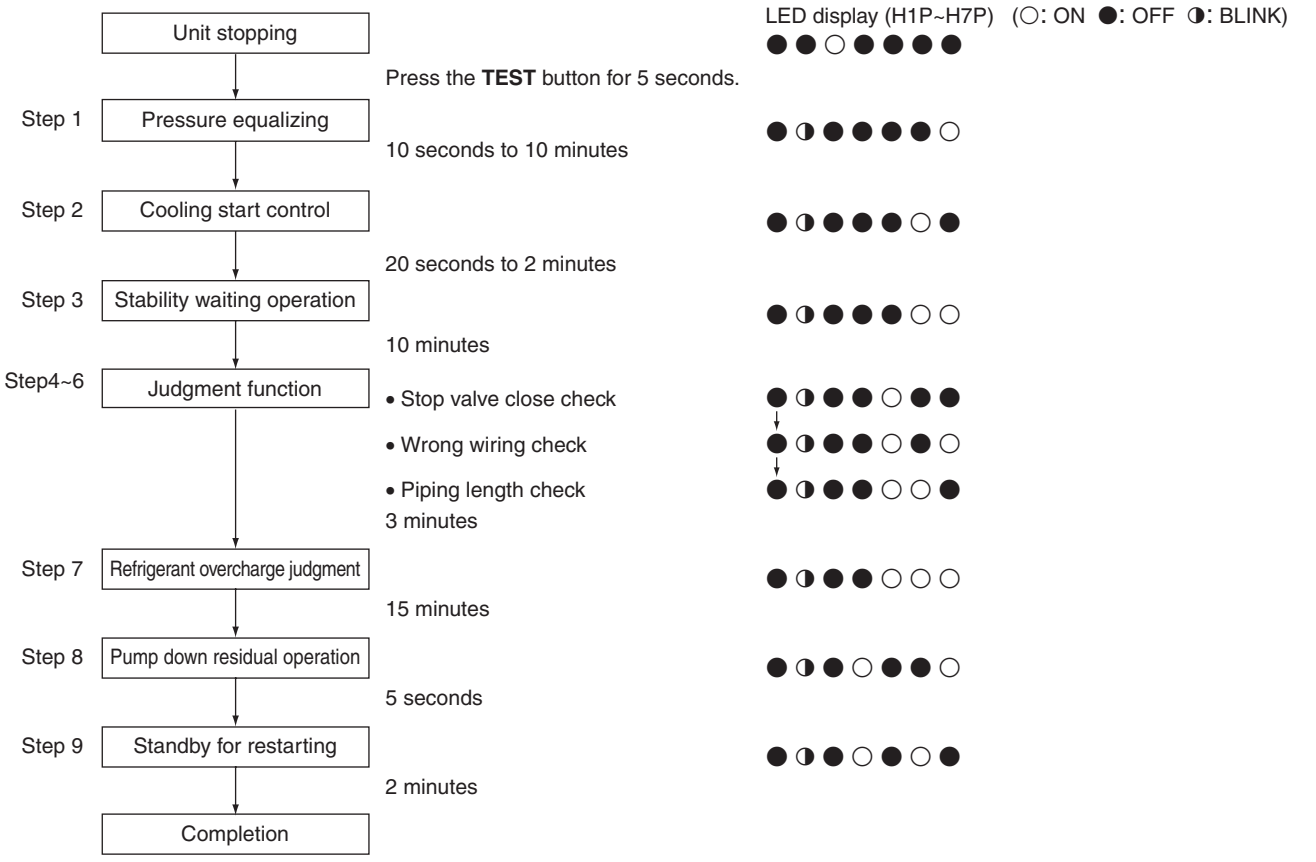
In order to perform vacuuming operation on site, fully open the electronic expansion valves of indoor and outdoor units and turn on some solenoid valves.

Operating procedure

(1) In setting mode 2 with units in stop mode, set the item No.21 (refrigerant recovery / vacuuming mode) to ON.
The respective expansion valve of indoor and outdoor units are fully opened. **Test Operation** and **Under Centralized Control** are displayed on the remote controller, and the indoor / outdoor unit operation is prohibited.
After setting, do not cancel setting mode 2 until completion of Vacuuming operation.
(2) Use the vacuum pump to perform vacuuming operation.
(3) Press the **MODE** (**BS1**) button once and reset setting mode 2.

3.9 Check Operation

To prevent any trouble in the period of installation on site, the system is provided with a test operation mode enabling check for incorrect wiring, stop valve left in closed, coming out (or misplacing with suction pipe thermistor) or discharge pipe thermistor and judgement of piping length, refrigerant overcharging, and learning for the minimum opening degree of electronic expansion valve.



3.10 Setting of Auxiliary Heater Control

To improve efficiency and lower install cost the auxiliary heater can be lockout based on outdoor temperature.

Auxiliary heater maximum allowable temperature

Auxiliary heater is allowed to energize when the ambient temperature is smaller than the auxiliary heater maximum allowable temperature.

No.	Setting item display								Setting condition display								
	Setting item	MODE H1P	TEST H2P	C/H selection IND H3P	C/H selection Master H4P	C/H selection Slave H5P	Low noise H6P	Demand H7P									∗ Factory setting
50	Auxiliary heater maximum allowable temperature	○	○	○	●	●	○	●	–17.7°C (0°F)	○	●	●	●	●	●	●	
									–15°C (5°F)	○	●	●	●	●	●	○	
									–12.2°C (10°F)	○	●	●	●	●	○	●	
									–9.4°C (15°F)	○	●	●	●	●	○	○	
									–6.6°C (20°F)	○	●	●	●	○	●	●	
									–3.8°C (25°F)	○	●	●	●	○	●	○	
									–1.1°C (30°F)	○	●	●	●	○	○	●	
									1.6°C (35°F)	○	●	●	●	○	○	○	∗
									4.4°C (40°F)	○	●	●	○	●	●	●	
									7.2°C (45°F)	○	●	●	○	●	●	○	
									10°C (50°F)	○	●	●	○	●	○	●	
									12.7°C (55°F)	○	●	●	○	●	○	○	
									15.5°C (60°F)	○	●	●	○	○	●	●	
									18.3°C (65°F)	○	●	●	○	○	●	○	
									Auxiliary heater always not allowed	○	●	●	○	○	○	●	
									Auxiliary heater always allowed	○	●	●	○	○	○	○	

Auxiliary heater maximum allowable temperature release differential

Auxiliary heater is not allowed to energize when the outdoor ambient temperature is recovered by differential above the auxiliary heater maximum allowable temperature.

No.	Setting item display								Setting condition display								
	Setting item	MODE H1P	TEST H2P	C/H selection IND H3P	C/H selection Master H4P	C/H selection Slave H5P	Low noise H6P	Demand H7P									∗ Factory setting
56	Auxiliary heater maximum allowable temperature release differential	○	○	○	○	●	●	●	2.8°C (5°F)	○	●	●	●	●	●	●	
									5.6°C (10°F)	○	●	●	●	●	●	○	∗
									8.3°C (15°F)	○	●	●	●	●	○	●	

3.11 Setting of Heat Pump Lockout and Emergency Heat Mode

Heat pump is locked out when the setting below and/or external input to ABC terminal has been made.

No.	Setting item display								Setting condition display
	Setting item	MODE H1P	TEST H2P	C/H selection			Low noise H6P	Demand H7P	∗ Factory setting
				IND H3P	Master H4P	Slave H5P			
16	Setting of heat pump lockout 1	○	●	○	●	●	●	●	OFF ○ ● ● ● ● ● ○ ∗ ON ○ ● ● ● ● ○ ●
37	Setting of heat pump lockout 2	○	○	●	●	○	●	○	OFF ○ ● ● ● ● ● ● ∗ Mode 1 ○ ● ● ● ● ● ○ Mode 2 ○ ● ● ● ● ○ ● Mode 3 ○ ● ● ● ● ○ ○ Mode 4 ○ ● ● ● ○ ● ● Mode 5 ○ ● ● ● ○ ● ○ Mode 6 ○ ● ● ● ○ ○ ●

Type		Description	Actions					
			Field setting	Shorted between	Heating Thermo-on		Heating Thermo-off	
					Heater	Fan	Heater	Fan
I	–	Heat-pump heating is always locked out	2-16: ON	–	ON	ON (H/L)	OFF	LL
II	Mode 1	Lockout is controlled by ABC terminals	2-37: Mode 1	A-C	ON	ON (H/L)	OFF	LL
				B-C				OFF
	Mode 2 (for a heater which does not need airflow)		2-37: Mode 2	A-C		LL		LL
				B-C		OFF		OFF
	Mode 3	Lockout is controlled by the outdoor ambient temperature and setpoint which is configured by the field setting 2-57 and 2-47	2-37: Mode 3	Same as 2-37: Mode 1, A-C shorted				
	Mode 4		2-37: Mode 4	Same as 2-37: Mode 1, B-C shorted				
	Mode 5		2-37: Mode 5	Same as 2-37: Mode 2, A-C shorted				
	Mode 6		2-37: Mode 6	Same as 2-37: Mode 2, B-C shorted				

Heat pump lockout temperature

Heat pump would be locked out when the outdoor ambient temperature is smaller than the heat pump lockout temperature. This setting is only effective when heat pump lockout mode has been set.

No.	Setting item display								Setting condition display								
	Setting item	MODE H1P	TEST H2P	C/H selection IND H3P	C/H selection Master H4P	C/H selection Slave H5P	Low noise H6P	Demand H7P									∗ Factory setting
57	Heat pump lockout temperature	○	○	○	○	●	●	○	–26.1°C (–15°F)	○	●	●	●	●	●	●	∗
									–23.3°C (–10°F)	○	●	●	●	●	●	○	
									–20.5°C (–5°F)	○	●	●	●	●	○	●	
									–17.7°C (0°F)	○	●	●	●	●	○	○	
									–15°C (5°F)	○	●	●	●	○	●	●	
									–12.2°C (10°F)	○	●	●	●	○	●	○	
									–9.4°C (15°F)	○	●	●	●	○	○	●	
									–6.6°C (20°F)	○	●	●	●	○	○	○	
									–3.8°C (25°F)	○	●	●	○	●	●	●	
									–1.1°C (30°F)	○	●	●	○	●	●	○	
									1.6°C (35°F)	○	●	●	○	●	○	●	
									4.4°C (40°F)	○	●	●	○	●	○	○	
									7.2°C (45°F)	○	●	●	○	○	●	●	
									10°C (50°F)	○	●	●	○	○	●	○	
									Forced heat pump lockout	○	●	●	○	○	○	●	

Heat pump lockout release differential

Heat pump would be resumed when the outdoor ambient temperature is recovered by differential above the heat pump lockout temperature.

No.	Setting item display								Setting condition display								
	Setting item	MODE H1P	TEST H2P	C/H selection IND H3P	C/H selection Master H4P	C/H selection Slave H5P	Low noise H6P	Demand H7P									∗ Factory setting
47	Heat pump lockout release differential	○	○	●	○	○	○	○	2.8°C (5°F)	○	●	●	●	●	●	●	
									5.6°C (10°F)	○	●	●	●	●	●	○	∗
									8.3°C (15°F)	○	●	●	●	●	○	●	

Automatic lockout

When heat pump lockout mode has been set, the auto backup function will automatically be set. This will allow the auxiliary or secondary heat source to be automatically energized in the event of a system failure related to outdoor units.

Part 6
Service Diagnosis

1. Servicing Items to be Confirmed

1.1 Troubleshooting

(1) Initial verification and troubleshooting
1. Properly understand the end user's needs and issues.
2. Check the cause of errors according to the description provided by the end user.
3. Check if the remote controller displays any error codes.
   (Or use the outdoor unit monitoring mode to check for errors).
   ↓
4. If there is no display of error codes, refer to "Troubleshooting Based on Present Conditions" for diagnosis.
   If an error code is displayed, refer to troubleshooting flow chart for diagnosis.

(2) Take appropriate measures.
1. Repair the defect or replace the parts according to the troubleshooting results.
2. Turn off the power supply for 10 minutes before disassembling.
3. The refrigerant has to be collected before refrigerant system components are replaced.

(3) Verification after taking appropriate measures
1. Run the unit after repairing the defect to confirm normal unit operation.
2. Record the check results and inform the client.

1.2 Precautions for Maintenance

Pay attention to the following matters in servicing.

(1) Precaution for maintenance
Touch the paint-free metal part of the product (electrical box lid of the standard model; tap bolts of electrical box of anti-corrosion and heavy anti-corrosion models) to release static electricity before starting work.

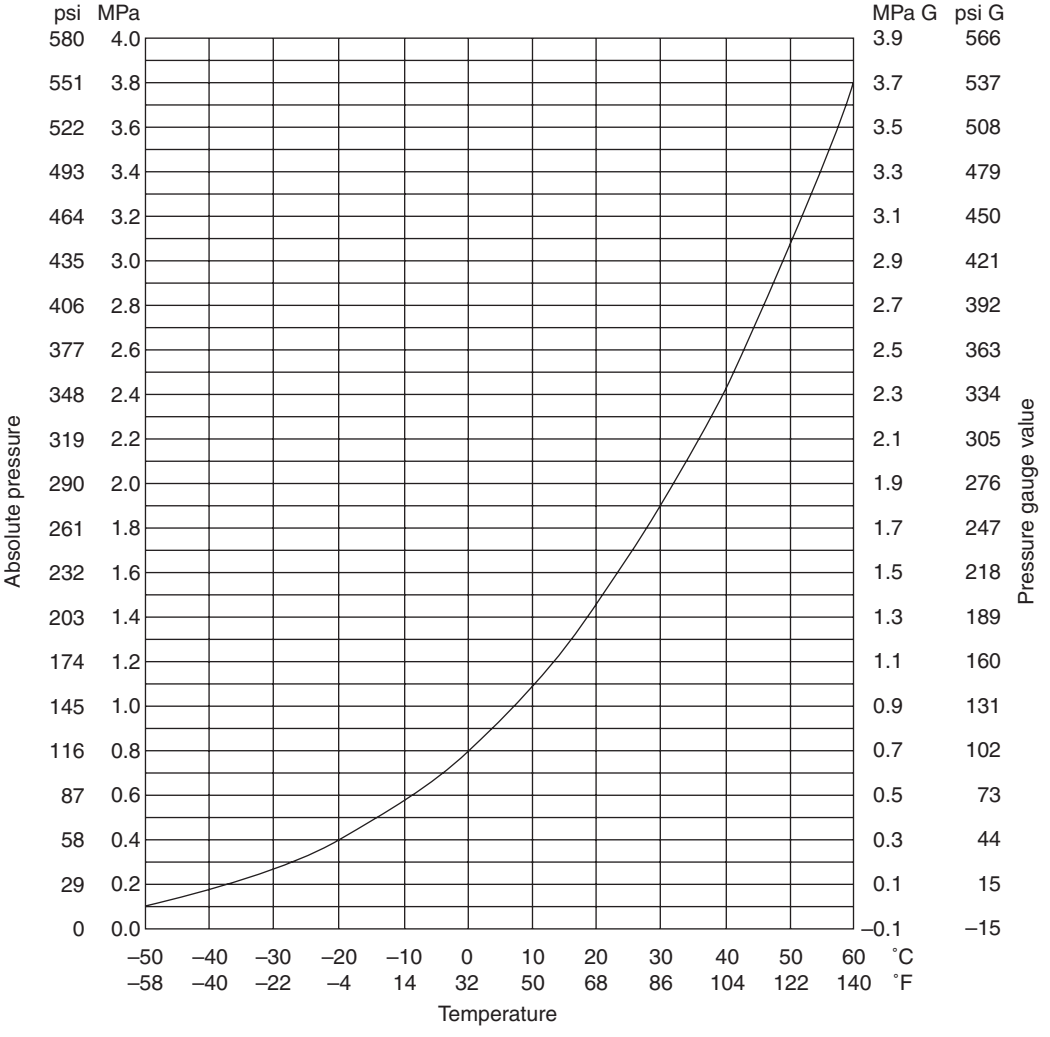
(2) Precautions for maintaining the service cover
After maintenance, make sure to close the service cover.
(Otherwise, leakage of water or contamination by foreign matter may cause defects)

(3) Precautions for maintaining the electrical box
1. Turn off the power for 10 minutes before opening the cover of the electrical box.
2. After opening the cover, use the tester to measure the terminal voltage of the power supply terminal to make sure that the power has been cut.
   Then check if the circuit capacitor voltage is under 50 VDC.
3. To avoid PCB defects, touch the earth terminal of the electrical box with your hand when unplugging the connector to release static electricity.
4. Unplug the relay connectors X106A and X107A (RXTQ60TAVJU only) of the outdoor fan motor.
   When unplugging the relay connectors, do not touch the live parts.
   (When the outdoor fan is rotating because of strong wind, there is a risk of electric shock due to main circuit board capacitor power storage.)
5. After maintenance, reconnect the relay connectors of the outdoor fan in their original positions.
   ・Otherwise, the remote controller will display error code **E7**, preventing normal operation.

(4) Precautions for piping work and refrigerant charging:
This unit uses R-410A refrigerant. Pay attention to the following conditions.
1. The charging pipe and the manifold tube use R-410A products for pressure maintenance and avoiding contamination by impurities (SUNISO oil, etc.).
2. Be sure to purge with nitrogen when brazing.
   ・Properly perform airtightness test and vacuum drying. (Airtight test pressure: 4.0 MPa (580 psi))
   ・Charge refrigerant in liquid state.

(5) Precautions for operating in servicing mode (field setting):
When a test operation is interrupted or after exiting service mode, please wait for at least one minute before entering service mode again. In case of continuous execution, the outdoor unit PCB may sometimes display an error code. If any error codes are displayed, press the **RETURN** button (BS3). If performing the above operation still does not eliminate the error, reconnect the unit to the power supply.

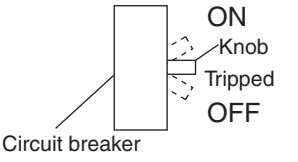
1.3 Refrigerant Properties (R-410A)



Temperature		Absolute Pressure		Temperature		Absolute Pressure		Temperature		Absolute Pressure		Temperature		Absolute Pressure	
°C	°F	MPa	psi	°C	°F	MPa	psi	°C	°F	MPa	psi	°C	°F	MPa	psi
–50	–58	0.11	16.0	–20	–4	0.40	58.0	10	50.0	1.09	158	40	104.0	2.42	351
–48	–54.4	0.12	17.4	–18	–0.4	0.43	62.4	12	53.6	1.15	167	42	107.6	2.54	368
–46	–50.8	0.13	18.9	–16	3.2	0.46	66.7	14	57.2	1.22	177	44	111.2	2.67	387
–44	–47.2	0.15	21.8	–14	6.8	0.50	72.5	16	60.8	1.29	187	46	114.8	2.80	406
–42	–43.6	0.16	23.2	–12	10.4	0.54	78.3	18	64.4	1.37	199	48	118.4	2.93	425
–40	–40	0.18	26.1	–10	14	0.57	82.7	20	68.0	1.45	210	50	122.0	3.07	445
–38	–36.4	0.19	27.6	–8	17.6	0.61	88.5	22	71.6	1.53	222	52	125.6	3.21	466
–36	–32.8	0.21	30.5	–6	21.2	0.66	95.7	24	75.2	1.61	234	54	129.2	3.36	487
–34	–29.2	0.23	33.4	–4	24.8	0.70	102	26	78.8	1.70	247	56	132.8	3.51	509
–32	–25.6	0.25	36.3	–2	28.4	0.75	109	28	82.4	1.79	260	58	136.4	3.64	528
–30	–22	0.27	39.2	0	32	0.80	116	30	86.0	1.89	274	60	140.0	3.83	555
–28	–18.4	0.29	42.1	2	35.6	0.85	123	32	89.6	1.99	289	62	143.6	4.00	580
–26	–14.8	0.32	46.4	4	39.2	0.91	132	34	93.2	2.09	303	64	147.2	4.17	605
–24	–11.2	0.34	49.3	6	42.8	0.96	139	36	96.8	2.20	319				
–22	–7.6	0.37	53.7	8	46.4	1.02	148	38	100.4	2.31	335				

2. Symptom-based Troubleshooting

2.1 Indoor Unit Overall

	Symptom		Supposed Cause	Countermeasure
1	The system does not start operation at all.		Blowout of fuse(s)	Turn Off the power supply and then replace the fuse(s).
			Cutout of breaker(s)	• If the knob of any breaker is in its OFF position, turn ON the power supply. • If the knob of any circuit breaker is in its tripped position, do not turn ON the power supply. 
			Power failure	After the power failure is reset, restart the system.
			The connector loose or not fully plugged in	Turn off the power supply to verify the connection of the connector.
2	The system starts operation but makes an immediate stop.		Blocked air inlet or outlet of indoor or outdoor unit	Remove obstacle(s).
			Clogged air filter(s)	Clean the air filter(s).
3	The system does not cool or heat air well.		Blocked air inlet or outlet of indoor or outdoor unit	Remove obstacle(s).
			Clogged air filter(s)	Clean the air filter(s).
			Enclosed outdoor unit(s)	Remove the enclosure.
			Improper set temperature	Set the temperature to a proper degree.
			Airflow rate set to LOW	Set it to a proper airflow rate.
			Improper direction of air diffusion	Set it to a proper direction.
			Open window(s) or door(s)	Shut it tightly.
		[In cooling]	Direct sunlight received	Hang curtains or shades on windows.
		[In cooling]	Too many persons staying in a room	The model must be selected to match the air conditioning load.
		[In cooling]	Too many heat sources (e.g. OA equipment) located in a room	
4	The system does not operate.	The system stops and immediately restarts operation.	If the operation lamp on the remote controller turns ON, the system will be normal. These symptoms indicate that the system is controlled so as not to put unreasonable loads on the system.	Normal operation. The system will automatically start operation after a lapse of five minutes.
		Pressing the temperature setting button immediately resets the system.		
		The remote controller displays **UNDER CENTRALIZED CONTROL**, which blinks for a period of several seconds when the **OPERATION** button is depressed.	The system is controlled with centralized controller. Blinking display indicates that the system cannot be operated using the remote controller.	Operate the system using the COOL/HEAT centralized remote controller.
		The system stops immediately after turning ON the power supply.	The system is in preparation mode of micro computer operation.	Wait for a period of approximately one minute.
5	The system makes intermittent stops.	The remote controller displays error codes **U4** or **U5**, and the system stops but restarts after a lapse of several minutes.	The system stops due to an interruption in communication between units caused by electrical noises coming from equipment other than air conditioners.	Remove causes of electrical noises. If these causes are removed, the system will automatically restart operation.

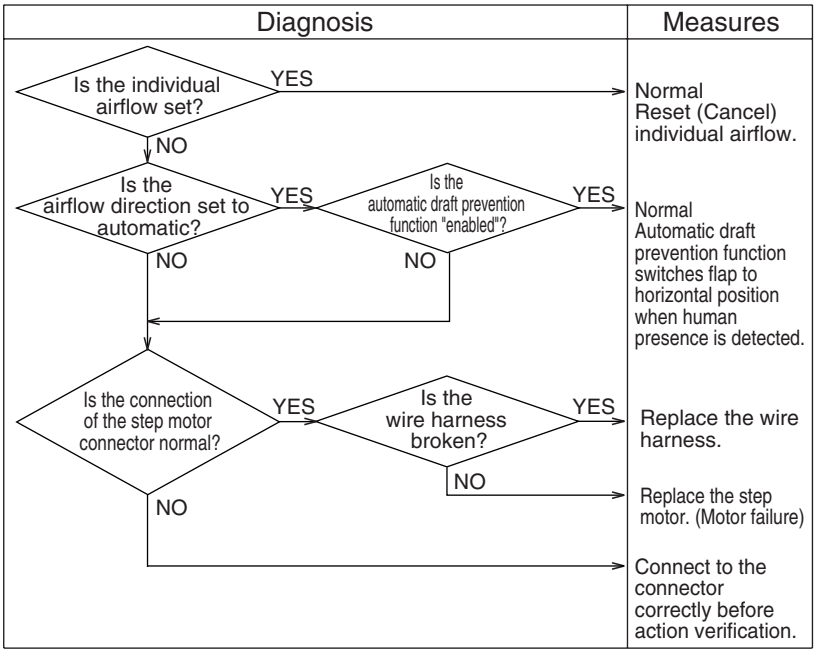
	Symptom		Supposed Cause	Countermeasure
6	COOL/HEAT selection is disabled.	The remote controller displays **UNDER CENTRALIZED CONTROL.**	This remote controller has no option to select cooling operation.	Use a remote controller with option to select cooling operation.
		The remote controller displays **UNDER CENTRALIZED CONTROL**, and the COOL/HEAT selection remote controller is provided.	COOL/HEAT selection is made using the COOL/HEAT selection remote controller.	Use the COOL/HEAT selection remote controller to select cool or heat.
7	The system conducts fan operation but not cooling or heating operation.	This symptom occurs immediately after turning ON the power supply.	The system is in preparation mode of operation.	Wait for a period of approximately 10 minutes.
		The remote controller displays **UNDER CENTRALIZED CONTROL**; no cooling or heating operation is performed. Switch to fan operation.	In thermal storage operation, the unit is set to fan operation in cooling or heating operation, and the remote controller shows **CENTRALIZED CONTROL**.	Normal operation.
8	The airflow rate is not reproduced according to the setting.	Even pressing the airflow rate setting button makes no changes in the airflow rate.	In heating operation, when the room temperature reaches the set degree, the outdoor unit will stop while the indoor unit is brought to fan LL operation so that no one gets cold air. Furthermore, if fan operation mode is selected when other indoor unit is in heating operation, the system will be brought to fan LL operation.	Normal operation.
9	The airflow direction is not reproduced according to the setting.	The airflow direction is not corresponding to that displayed on the remote controller. The flap does not swing.	Automatic control	Normal operation.
10	A white mist comes out from the system.	<Indoor unit> In cooling operation, the ambient humidity is high. (This indoor unit is installed in a place with much oil or dust.)	Uneven temperature distribution due to heavy stain of the inside of the indoor unit	Clean the inside of the indoor unit.
		<Indoor unit> Immediately after cooling operation stopping, the ambient temperature and humidity are low.	Hot gas (refrigerant) flown in the indoor unit results to be vapor from the unit.	Normal operation.
		<Indoor and outdoor units> After the completion of defrost operation, the system is switched to heating operation.	Defrosted moisture turns to be vapor and comes out from the units.	Normal operation.

	Symptom		Supposed Cause	Countermeasure
11	The system produces sounds.	<Indoor unit> Immediately after turning ON the power supply, indoor unit produces ringing sounds.	These are operating sounds of the electronic expansion valve of the indoor unit.	Normal operation. This sound becomes low after a lapse of approximately one minute.
		<Indoor and outdoor units> Hissing sounds are continuously produced while in cooling or defrosting operation.	These sounds are produced from gas (refrigerant) flowing respectively through the indoor and outdoor units.	Normal operation.
		<Indoor and outdoor units> Hissing sounds are produced immediately after the startup or stop of the system, or the startup or stop of defrosting operation.	These sounds are produced when the gas (refrigerant) stops or changes flowing.	Normal operation.
		<Indoor unit> Faint sounds are continuously produced while in cooling operation or after stopping the operation.	These sounds are produced from the drain discharge device in operation.	Normal operation.
		<Indoor unit> Creaking sounds are produced while in heating operation or after stopping the operation.	These sounds are produced from resin parts expanding and contracting with temperature changes.	Normal operation.
		<Indoor unit> Sounds like trickling or the like are produced from indoor units in the stopped state.	On *VRV* systems, these sounds are produced when other indoor units in operation. The reason is that the system runs in order to prevent oil or refrigerant from dwelling.	Normal operation.
		<Outdoor unit> Pitch of operating sounds changes.	The reason is that the compressor changes the operating frequency.	Normal operation.
12	Dust comes out from the system.	Dust comes out from the system when it restarts after the stop for an extended period of time.	Dust, which has deposited on the inside of indoor unit, is blown out from the system.	Normal operation.
13	Odors come out from the system.	In operation	Odors of room, cigarettes or else adsorbed to the inside of indoor unit are blown out.	The inside of the indoor unit should be cleaned.
14	Outdoor unit fan does not rotate.	In operation	The reason is that fan revolutions are controlled to put the operation to the optimum state.	Normal operation.
15	LCD display **88** appears on the remote controller.	Immediately after turning ON the power supply	The reason is that the system is checking to be sure the remote controller is normal.	Normal operation. This code is displayed for a period of approximately one minute at maximum.
16	The outdoor unit compressor or the outdoor unit fan does not stop.	After stopping operation	It stops in order to prevent oil or refrigerant from dwelling.	Normal operation. It stops after a lapse of approximately 5 to 10 minutes.
17	The outdoor gets hot.	While stopping operation	The reason is that the compressor is warmed up to provide smooth startup of the system.	Normal operation.
18	Hot air comes out from the system even though it stops.	Hot air is felt while the system stops.	On *VRV* systems, small quantity of refrigerant is fed to indoor units in the stopped state when other indoor units are in operation.	Normal operation.
19	The system does not cool air well.	The system is in dry operation.	The reason is that the dry operation serves not to reduce the room temperature where possible.	Change the system to cooling operation.

2.2 With the Optional Infrared Floor Sensor

	Condition	Measure
1	"Louver operation different from setting" or "No downward airflow in heating operation"	Refer to the following table.
2	Individual airflow direction setting different from the actual airflow direction	· Check the "Louver operation different from setting" error diagnosis.
3	When in stop mode, the louver does not close completely.	Turn off the circuit breaker and then turn it on again.
4	The remote controller menu does not display energy saving operating mode for when people are not present. The remote controller menu does not display the stop function for when people are not present. The remote controller menu does not display the automatic draft prevention function.	Please check "Infrared presence/infrared floor sensor error (CE)" in troubleshooting.
5	The menu does not display the eco-friendly display function.	No defect. Set the clock.
6	During cooling and dry operation, the louver automatically switches from horizontal (P0) to one-level downward (P1).	No defect. When relative ambient humidity is higher, automatic louver control will be activated.
7	During heating operation, the use of an airflow block will not cause other louvers to turn downward (P4).	No defect. In heating operation, if an airflow block is set, then the air outlet control outside the airflow block will be within the range P0-P3.
8	When using airflow block, the airflow block will be routinely lifted (become horizontal) during heating operation.	No defect. Set louver to horizontal (P0) during thermostat OFF.
9	Although people are not present, the infrared presence sensor detects human presence.	Check if there are any objects that generate temperature change when moving. For example: · An electric heater with swing function · Doors, curtains, blind switches · Output of paper from a fax machine or a printer · Turning on/off of incandescent lights · Moving objects
10	Although people are present, the infrared presence sensor fails to determine their presence.	Check for the following conditions. · Lack of movement · Facing away from the sensor · Little skin exposed · Slight movement in a place far from the sensor
11	Large difference between floor temperature and actual temperature	Check for the following conditions. · Sensor detection zone affected by solar radiation · High or low temperature objects in the sensor detection zone · Large difference between floor temperature and temperature of the living space · Sensors installed near walls may be affected by wall temperature.

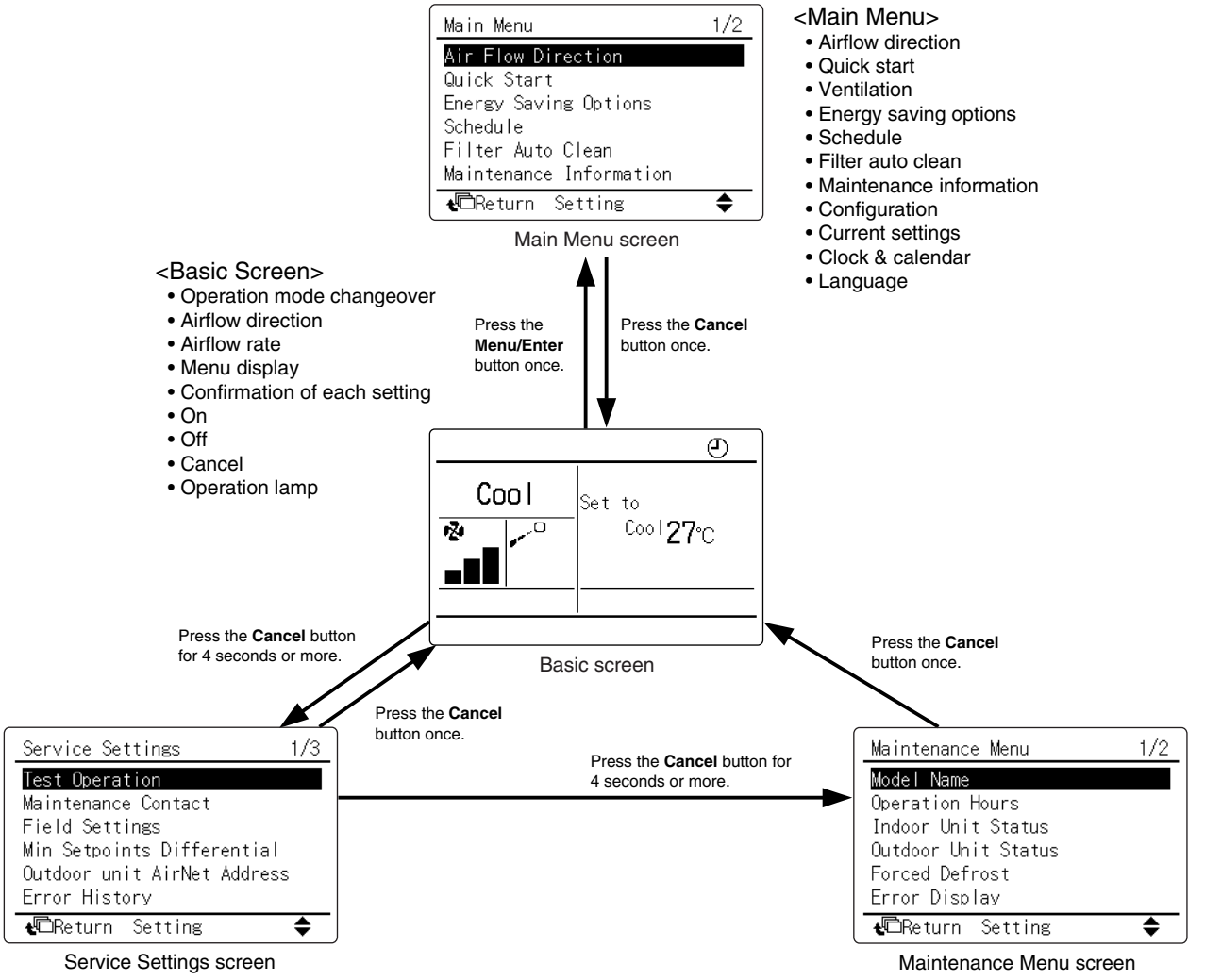
Error diagnosis of "Louver operation different from setting"



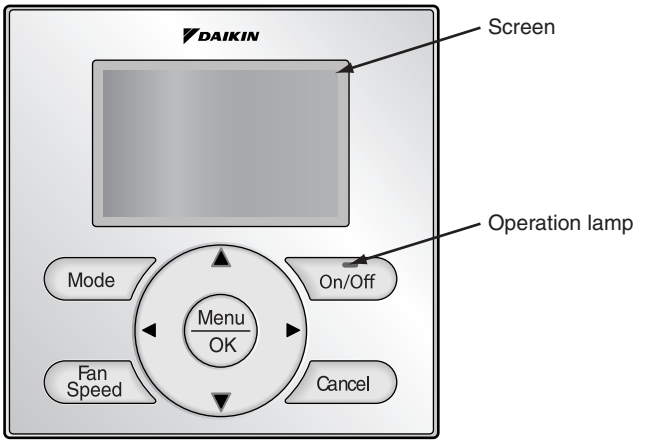
3. Service Check Function

3.1 Wired Remote Controller

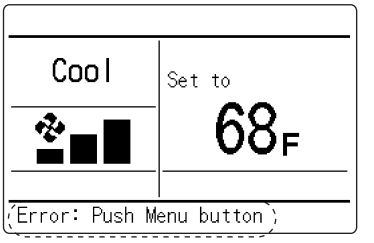
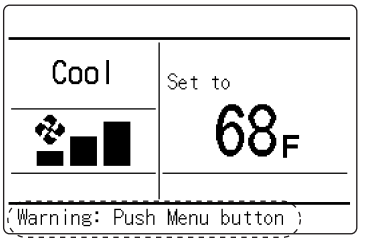
3.1.1 BRC1E73



The following message is displayed on the screen when an error (or a warning) occurs during operation. Check the error code and take the corrective action specified for the particular model.



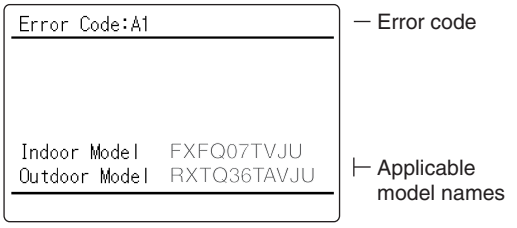
(1) Check if it is an error or warning.

	Operation Status	Display	
Abnormal shutdown	The system stops operating.	The operation lamp (green) starts to blink. The message **Error: Push Menu button** blinks at the bottom of the screen.	
Warning	The system continues its operation.	The operation lamp (green) remains on. The message **Warning: Push Menu button** blinks at the bottom of the screen.	

(2) Take corrective action.

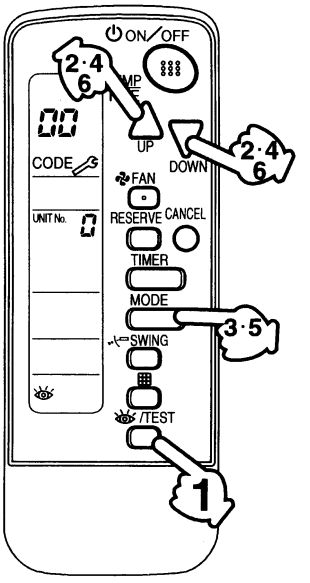
· Press the **Menu/OK** button to check the error code.

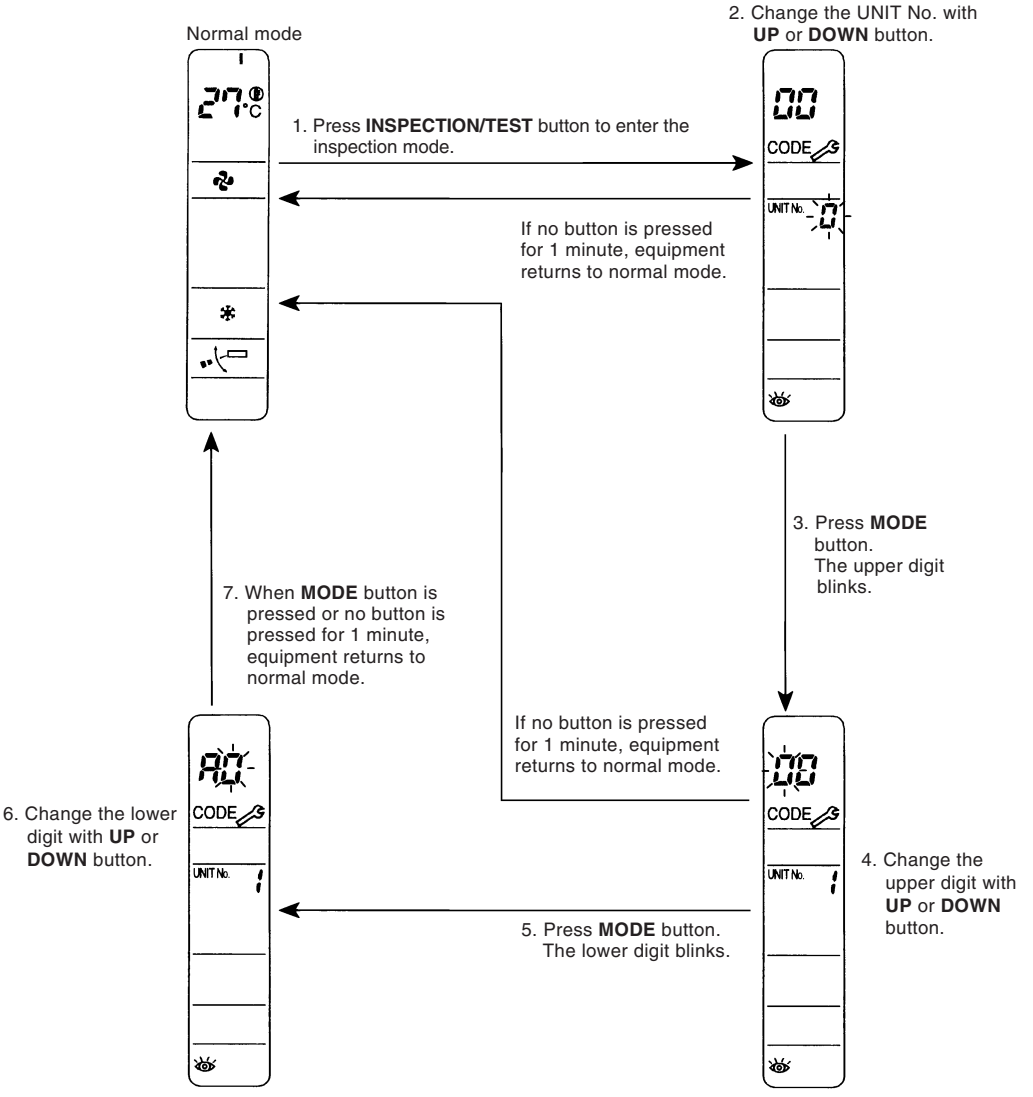
· Take the corrective action specific to the model.



3.2 Wireless Remote Controller

If unit stops due to an error, the operation indicating LED on the signal receiving part of indoor unit flashes. The error code can be determined by following the procedure described below. (The error code is displayed when an operation error has occurred. In normal condition, the error code of the last problem is displayed.)

1	Press the **INSPECTION/TEST** button to enter the inspection mode. Then the figure 0 blinks on the UNIT No. display.	
2	Press the **UP** or **DOWN** button and change the UNIT No. until the receiver of the remote controller starts to beep. **3 short beeps :** Follow all steps below. **1 short beep :** Follow steps 3 and 4. Continue the operation in step 4 until you hear a continuous beep. This continuous beep indicates that the error code is confirmed. **Continuous beep :** There is no abnormality.	
3	Press the **MODE** button. The left 0 (upper digit) indication of the error code blinks.	
4	Press the **UP** or **DOWN** button to change the error code upper digit until the receiver of the remote controller starts to beep. ■ The upper digit of the code changes as shown below. 0⇨1⇨2⇨3⇨4⇨5⇨6⇨7⇨8⇨9⇨A⇨C⇨E⇨F F⇦E⇦C⇦A⇦9⇦8⇦7⇦6⇦5⇦4⇦3⇦2⇦1⇦0 ⇨ "UP" button ⇦ "DOWN" button **Continuous beep :** Both upper and lower digits match. (Error code is confirmed.) **2 short beeps :** The upper digit matches but the lower digit does not. **1 short beep :** The upper digit does not match.	
5	Press the **MODE** button. The right 0 (lower digit) indication of the error code blinks.	
6	Press the **UP** or **DOWN** button and change the error code lower digit until the receiver of the remote controller generates a continuous beep. ■ The lower digit of the code changes as shown below. 0⇨1⇨2⇨3⇨4⇨5⇨6⇨7⇨8⇨9⇨A⇨C⇨E⇨F F⇦E⇦C⇦A⇦9⇦8⇦7⇦6⇦5⇦4⇦3⇦2⇦1⇦0 ⇨ "UP" button ⇦ "DOWN" button **Continuous beep :** Both upper and lower digits match. (Error code is confirmed.) **2 short beeps :** The upper digit matches but the lower digit does not. **1 short beep :** The upper digit does not match.	
7	Press the **MODE** button to return to the normal mode. If you do not press any button for 1 minutes, the remote controller automatically returns to the normal mode.	


Normal mode
2. Change the UNIT No. with UP or DOWN button.
1. Press INSPECTION/TEST button to enter the inspection mode.
If no button is pressed for 1 minute, equipment returns to normal mode.
3. Press MODE button. The upper digit blinks.
7. When MODE button is pressed or no button is pressed for 1 minute, equipment returns to normal mode.
If no button is pressed for 1 minute, equipment returns to normal mode.
6. Change the lower digit with UP or DOWN button.
4. Change the upper digit with UP or DOWN button.
5. Press MODE button. The lower digit blinks.
CODE
UNIT No.

3.3 Error Codes and Descriptions

○: ON ●: OFF ◑: Blink

	Error code	Operation lamp	Description	Reference Page
Indoor Unit	A0	◑	External protection device abnormality	135
	A1	◑	Indoor unit PCB abnormality	136
	A3	◑	Drain level control system (S1L) abnormality	137
	A6	◑	Indoor fan motor (M1F) lock, overload Indoor fan motor abnormality Overload/overcurrent/indoor fan motor lock	139 142 146
	A7	○	Swing flap motor abnormality	147
	A8	◑	Power supply voltage abnormality	149
	A9	◑	Electronic expansion valve coil abnormality, Dust clogging	150
	AF	○	Drain level above limit	152
	AJ	◑	Capacity determination device abnormality	153
	C1	◑	Transmission abnormality (between indoor unit PCB and fan PCB)	154
	C4	◑	Heat exchanger liquid pipe thermistor abnormality	156
	C5	◑	Heat exchanger gas pipe thermistor abnormality	156
	C6	◑	Combination abnormality (between indoor unit PCB and fan PCB)	157
	C9	◑	Suction air thermistor (R1T) abnormality Remote sensor abnormality	156 158
	CA	○	Discharge air thermistor abnormality	156
	CC	○	Humidity sensor system abnormality	159
	CE	○	Infrared presence/floor sensor error	160
	CJ	○	Remote controller thermistor abnormality	165
Outdoor Unit	E1	◑	Outdoor main PCB abnormality	166
	E3	◑	Activation of high pressure switch	167
	E4	◑	Activation of low pressure sensor	169
	E5	◑	Inverter compressor motor lock	171
	E7	◑	Outdoor fan motor abnormality	173
	E9	◑	Electronic expansion valve coil abnormality	175
	F3	◑	Discharge pipe temperature abnormality	177
	F6	◑	Refrigerant overcharged	178
	H9	◑	Outdoor air thermistor abnormality	179
	J3	◑	Discharge pipe thermistor abnormality	179
	J5	◑	Suction pipe thermistor abnormality	179
	J6	◑	Outdoor heat exchanger deicer thermistor abnormality	179
	J7	◑	Outdoor heat exchanger liquid pipe thermistor abnormality	179
	J9	◑	Subcooling heat exchanger gas pipe thermistor abnormality	179
	JA	◑	High pressure sensor abnormality	180
	JC	◑	Low pressure sensor abnormality	181
	L1	◑	PCB (for inverter compressor) abnormality	182
	L4	◑	Radiation fin temperature rise abnormality	183
	L5	◑	Inverter compressor instantaneous overcurrent	184
	L8	◑	Inverter compressor overcurrent	185
	L9	◑	Inverter compressor startup abnormality	186
	LC	◑	Transmission error (between microcomputers on the outdoor main PCB)	187
	P1	◑	Inverter circuit capacitor high voltage	188
	P4	○	Radiation fin thermistor abnormality	189

○: ON ●: OFF ◑: Blink

	Error code	Operation lamp	Description	Reference Page
System	U0	○	Refrigerant shortage	190
	U2	◑	Power supply insufficient or instantaneous abnormality	192
	U3	◑	Check operation not executed	194
	U4	◑	Transmission error between indoor units and outdoor units	195
	U5	◑	Transmission error between remote controller and indoor unit	197
	U8	◑	Transmission error between main and sub remote controllers	198
	U9	◑	Transmission error between indoor and outdoor units in the same system	199
	UA	◑	Improper combination of indoor and outdoor units, indoor units and remote controller	200
	UC	○	Address duplication of centralized controller	202
	UE	◑	Transmission error between centralized controller and indoor unit	203
	UF	◑	System not set	206
	UH	◑	System abnormality, refrigerant system address undefined	207
	M1	◑	Defective PCB	209
	M8	◑	Transmission error (Between centralized controllers)	210
	MA	◑	Poor centralized controller combination	212
	MC	◑	Address duplication, poor setting	214
	—	◑	The operation lamp blinks	216
	—	◑	Central control indicator lamp blinks (One blink)	218
	—	◑	Central control indicator lamp blinks (Two blinks)	221

In the case of error codes identified by black squares, system operation continues, however, be sure to check and repair.

3.4 Error Code Indication by Outdoor Unit PCB

Monitor mode

To enter the monitor mode, press the MODE (BS1) button when in "Setting mode 1".

Selection of setting item

Press the SET (BS2) button and set the LED display to a setting item.

Confirmation of error 1

Press the RETURN (BS3) button once to display "First digit" of error code.

Confirmation of error 2

Press the SET (BS2) button once to display "Second digit" of error code.

Confirmation of error 3

Press the SET (BS2) button once to display "error location".

Confirmation of error 4

Press the SET (BS2) button once to display "master or slave 1 or slave 2" and "error location".

Press the RETURN (BS3) button and switches to the initial status of "Monitor mode".

∗ Press the MODE (BS1) button and returns to "Setting mode 1".

Detailed description on next page.

Contents of Error		Error Code
PCB abnormality		E1
Abnormal high pressure switch	High pressure switch activated	E3
Abnormal low pressure switch	Low pressure switch activated	E4
Compressor lock	Detection of INV. compressor lock	E5
Overload, overcurrent, abnormal lock of outdoor unit fan motor	Detection of DC fan 1 motor lock	E7
	Detection of DC fan 2 motor lock	
Electronic expansion valve abnormality	Main	E9
	Subcooling	
Abnormal discharge pipe temperature	Abnormal Tdi	F3
Abnormal heat exchanger temperature	Refrigerant overcharge	F6
Defective thermistor of outdoor air temperature	Defective Ta sensor (short)	H9
Defective discharge pipe thermistor	Defective Tdi sensor (short)	J3
Defective suction pipe thermistor	Defective Ts1 sensor (short)	J5
	Defective Ts2 sensor (short)	
Defective outdoor heat exchanger deicer thermistor	Defective Tb sensor (short)	J6
Defective outdoor heat exchanger liquid pipe thermistor	Defective Tl sensor (short)	J7
Defective subcooling heat exchanger gas pipe thermistor	Defective Tsh sensor (short)	J9
Defective sensor of high pressure	Defective Pc sensor (short)	JA
Defective sensor of low pressure	Defective Pe sensor (short)	JC
Defective PCB (for inverter compressor)	Defective IPM	L1
	Abnormal current sensor offset	
	Abnormal IGBT	
	Defective current sensor	
	Abnormal SP-PAM overvoltage	
	Abnormal Interleave	
	Abnormal inverter jumper setting	
	Abnormal EEPROM	
Inverter radiation fin temperature rising	Overheating of inverter radiation fin temperature	L4
DC output overcurrent	Inverter instantaneous overcurrent	L5
Electronic thermal	Electronic thermal switch 1	L8
	Electronic thermal switch 2	
	Out-of-step	
	Speed down after startup	
	Lightening detection	
Stall prevention (Limit time)	Stall prevention (Current increasing)	L9
	Stall prevention (Defective start up)	
	Abnormal wave form in startup	
	Out-of-step	
Transmission error (Between microcomputers on the outdoor main PCB)		LC

○: ON ●: OFF ◑: Blink

Error Code	Confirmation of Error 1							Confirmation of Error 2							Confirmation of Error 3							Confirmation of Error 4						
	H1P	H2P	H3P	H4P	H5P	H6P	H7P	H1P	H2P	H3P	H4P	H5P	H6P	H7P	H1P	H2P	H3P	H4P	H5P	H6P	H7P	H1P	H2P	H3P	H4P	H5P	H6P	H7P
E1	◑	◑	●	●	●	◑	◑	◑	●	○	●	●	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●	◑	◑
E3								◑	●	○	●	●	◑	◑	◑	○	●	●	●	●	●	◑	○	○	●	●		
E4								◑	●	○	●	◑	●	●	◑	○	●	●	●	●	●	◑	○	○	●	●		
E5								◑	●	○	●	◑	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●		
E7								◑	●	○	●	◑	◑	◑	◑	○	●	●	●	●	●	◑	○	○	●	◑	*1	
															◑	○	●	●	●	●	◑	◑	○	○	●	◑		
E9								◑	●	○	◑	●	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●		
																						◑	○	○	◑	●		
F3	◑	◑	●	●	◑	●	◑	◑	●	○	●	●	◑	◑	◑	○	●	●	●	●	●	◑	○	○	●	●	*1	
F6								◑	●	○	●	◑	◑	●	◑	○	●	●	●	●	●	◑	○	○	●	●	◑	◑
H9	◑	◑	●	●	◑	●	●	◑	●	○	◑	●	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●	*1	
J3	◑	◑	●	●	◑	◑	●	◑	●	○	●	●	◑	◑	◑	○	●	●	●	●	●	◑	○	○	●	●		
J5								◑	●	○	●	◑	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●		
																						◑	○	○	●	◑		
J6								◑	●	○	●	◑	◑	●	◑	○	●	●	●	●	●	◑	○	○	●	●		
J7								◑	●	○	●	◑	◑	◑	◑	○	●	●	●	●	●	◑	○	○	●	●	*1	
J9								◑	●	○	◑	●	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●		
JA								◑	●	○	◑	●	◑	●	◑	○	●	●	●	●	●	◑	○	○	●	●		
JC								◑	●	○	◑	◑	●	●	◑	○	●	●	●	●	●	◑	○	○	●	●		
L1	◑	◑	●	●	◑	◑	◑	◑	●	○	●	●	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●	●	●
																						◑	○	○	●	●	●	◑
																						◑	○	○	●	●	◑	●
																						◑	○	○	●	●	◑	◑
																						◑	○	○	●	◑	●	●
																						◑	○	○	●	◑	◑	◑
																						◑	○	○	●	◑	●	◑
																						◑	○	○	◑	●	●	●
L4								◑	●	○	●	◑	●	●	◑	○	●	●	●	●	●	◑	○	○	●	●		
L5								◑	●	○	●	◑	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●		
L8								◑	●	○	◑	●	●	●	◑	○	●	●	●	●	●	◑	○	○	●	●	*1	
L9								◑	●	○	◑	●	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●		
LC								◑	●	○	◑	◑	●	●	◑	○	●	●	●	●	●	◑	○	○	●	◑		

Display of contents of error (first digit)

Display of contents of error (second digit)

Display 1 of error in detail

Display 2 of error in detail

*1

●	●	Master
●	◑	Slave1
◑	●	Slave2
◑	◑	System

Monitor mode

To enter the monitor mode, press the MODE (BS1) button when in "Setting mode 1".

Selection of setting item

Press the SET (BS2) button and set the LED display to a setting item.

Confirmation of error 1

Press the RETURN (BS3) button once to display "First digit" of error code.

Confirmation of error 2

Press the SET (BS2) button once to display "Second digit" of error code.

Detailed description on next page.

Confirmation of error 3

Press the SET (BS2) button once to display "error location".

Confirmation of error 4

Press the SET (BS2) button once to display "master or slave 1 or slave 2" and "error location".

Press the RETURN (BS3) button and switches to the initial status of "Monitor mode".

∗ Press the MODE (BS1) button and returns to "Setting mode 1".

Contents of Error		Error Code
Inverter over-ripple protection	Imbalance of inverter power supply voltage	P1
Defective temperature sensor of inverter radiation fin	Defective thermistor of inverter fin	P4
Refrigerant shortage	Refrigerant shortage alarm	U0
	Liquid pipe temperature abnormality	
Abnormal power supply voltage	Insufficient Inverter voltage	U2
	Open phase in inverter (Phase T)	
	Error due to SP-PAM overvoltage	
	Error due to P-N short circuit	
No implementation of test-run		U3
Transmission error between indoor and outdoor unit	I/O transmission error	U4
	Indoor unit system error	
Transmission error of other system	Indoor unit system abnormal in other system or other indoor unit system abnormal in own system	U9
Erroneous field setting	System transmission error	UA
	Overconnection error of indoor units	
	Error of field setting	
	Refrigerant abnormal	
	Connection error (BP unit)	
Conflict in wiring and piping, no setting for system	Conflict in wiring and piping	UF
Defective system	Wiring error (Auto-address error)	UH

○: ON ●: OFF ◑: Blink

Error Code	Confirmation of Error 1							Confirmation of Error 2							Confirmation of Error 3							Confirmation of Error 4						
	H1P	H2P	H3P	H4P	H5P	H6P	H7P	H1P	H2P	H3P	H4P	H5P	H6P	H7P	H1P	H2P	H3P	H4P	H5P	H6P	H7P	H1P	H2P	H3P	H4P	H5P	H6P	H7P
P1	◑	◑	●	◑	●	●	●	◑	●	○	●	●	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●	*1	
P4								◑	●	○	●	◑	●	●	◑	○	●	●	●	●	●	◑	○	○	●	●		
U0	◑	◑	●	◑	●	●	◑	◑	●	○	●	●	●	●	◑	○	●	●	●	●	●	◑	○	○	●	●	◑	◑
																						◑	○	○	●	◑	●	●
U2								◑	●	○	●	●	◑	●	◑	○	●	●	●	●	●	◑	○	○	●	●	●	●
																							○	○	●	◑	●	●
																						◑	○	○	●	●	◑	●
																						◑	○	○	●	●	●	◑
U3								◑	●	○	●	●	◑	◑	◑	○	●	●	●	●	●	◑	○	○	●	●	◑	◑
U4								◑	●	○	●	◑	●	●	◑	○	●	●	●	●	●	◑	○	○	●	●	◑	◑
																						◑	○	○	●	◑	◑	◑
U9								◑	●	○	◑	●	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●	◑	◑
UA								◑	●	○	◑	●	◑	●	◑	○	●	●	●	●	●	◑	○	○	●	●	◑	◑
															◑	○	●	●	●	●	●	◑	○	○	●	◑	◑	◑
															◑	○	●	●	●	●	●	◑	○	○	◑	●	◑	◑
															◑	○	●	●	●	●	◑	◑	○	○	●	●	◑	◑
															◑	○	●	●	●	◑	●	◑	○	○	●	◑	◑	◑
UF								◑	●	○	◑	◑	◑	◑	◑	○	●	●	●	●	●	◑	○	○	●	●	◑	◑
UH								◑	●	○	◑	●	◑	◑	◑	○	●	●	●	●	●	◑	○	○	●	●	◑	◑

Display of contents of error (first digit)

Display of contents of error (second digit)

Display 1 of error in detail

Display 2 of error in detail

*1

●	● Master
●	◑ Slave1
◑	● Slave2
◑	◑ System

4. Troubleshooting by Error Code

4.1 External Protection Device Abnormality

Error Code **A0**

Applicable Models All indoor units

Method of Error Detection Detect open or short circuit between external input terminals in indoor unit.

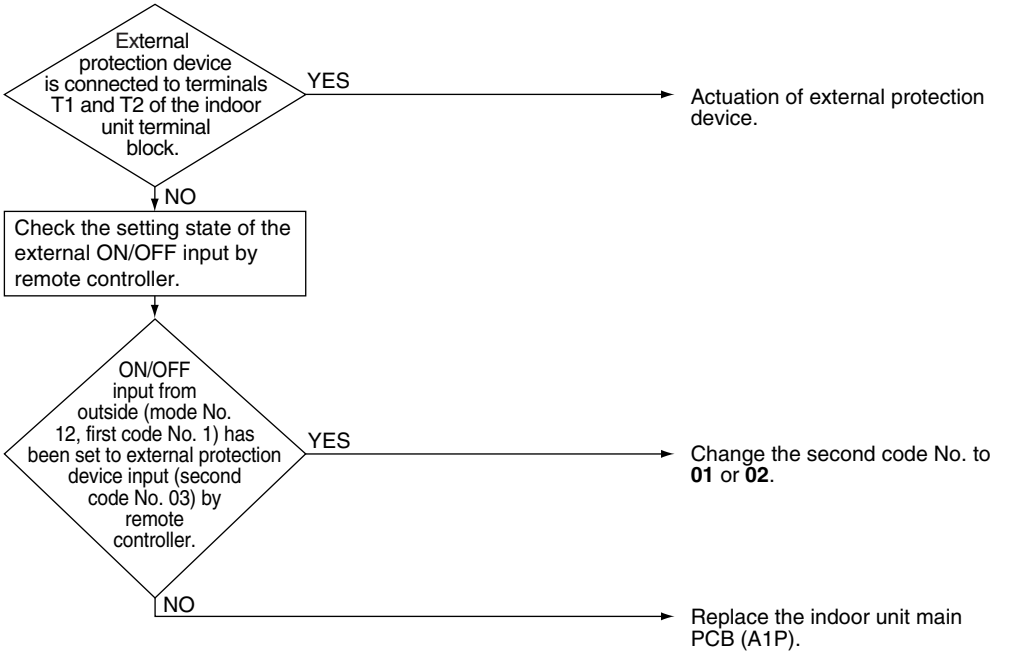
Error Decision Conditions When an open circuit occurs between external input terminals with the remote controller set for external ON/OFF input.

Supposed Causes

- Activation of external protection device
- Improper field setting
- Defective indoor unit PCB

Troubleshooting

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



4.2 Indoor Unit PCB Abnormality

Error Code **A1**

Applicable Models All indoor units

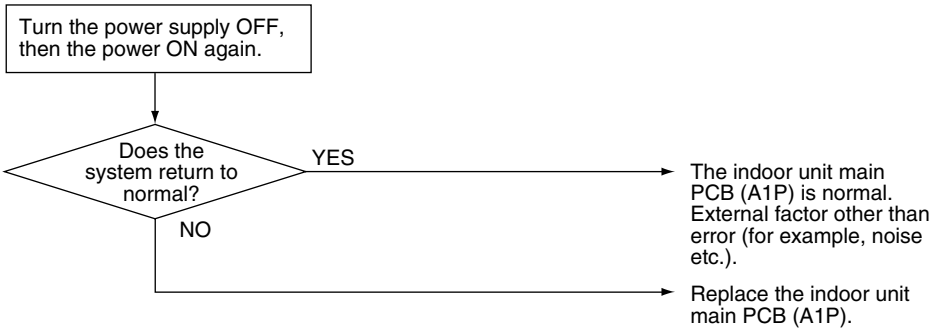
Method of Error Detection Data from EEPROM is checked.

Error Decision Conditions When data cannot be correctly received from the EEPROM
EEPROM: Type of nonvolatile memory. Maintains memory contents even when the power supply is turned OFF.

Supposed Causes
- Defective indoor unit PCB
- External factor (Noise etc.)

Troubleshooting

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



4.3 Drain Level Control System (S1L) Abnormality

Error Code **A3**

Applicable Models FXFQ, FXZQ, FXUQ, FXEQ, FXDQ, FXMQ-PB, FXMQ-M (Option), FXAQ (Option)

Method of Error Detection By float switch OFF detection

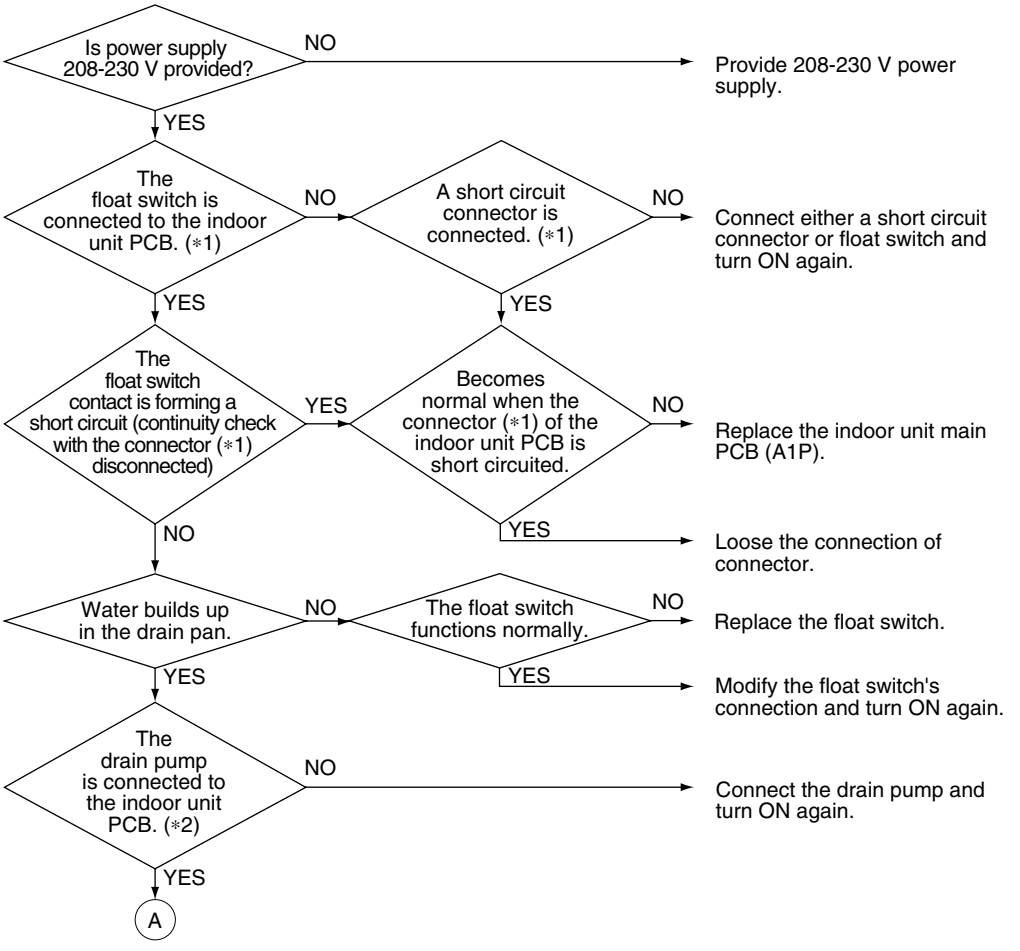
Error Decision Conditions When rise of water level is not a condition and the float switch goes OFF

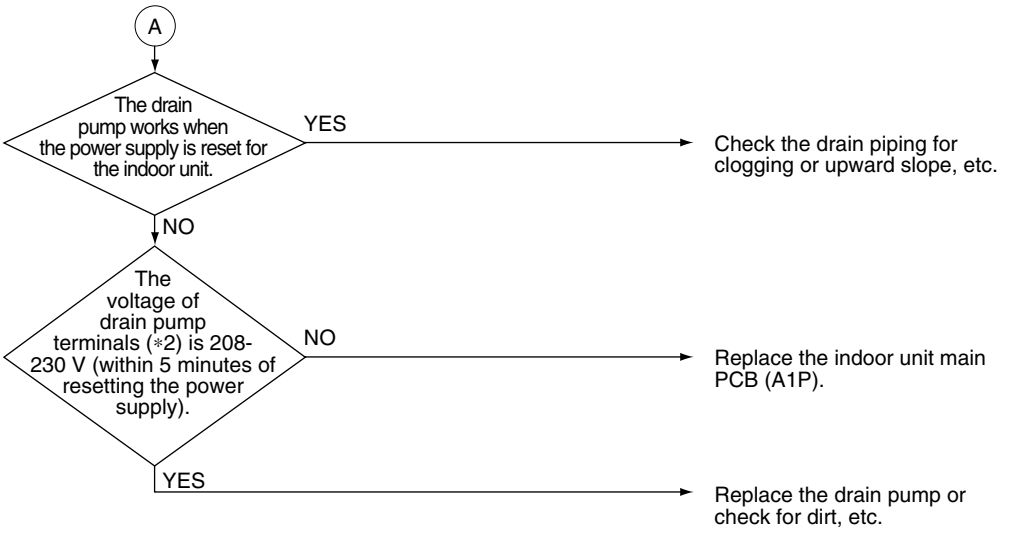
Supposed Causes

- 208~230 V power supply is not provided
- Defective float switch or short circuit connector
- Defective drain pump
- Drain clogging, upward slope, etc.
- Defective indoor unit main PCB
- Loose connection of connector

Troubleshooting

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





Note:

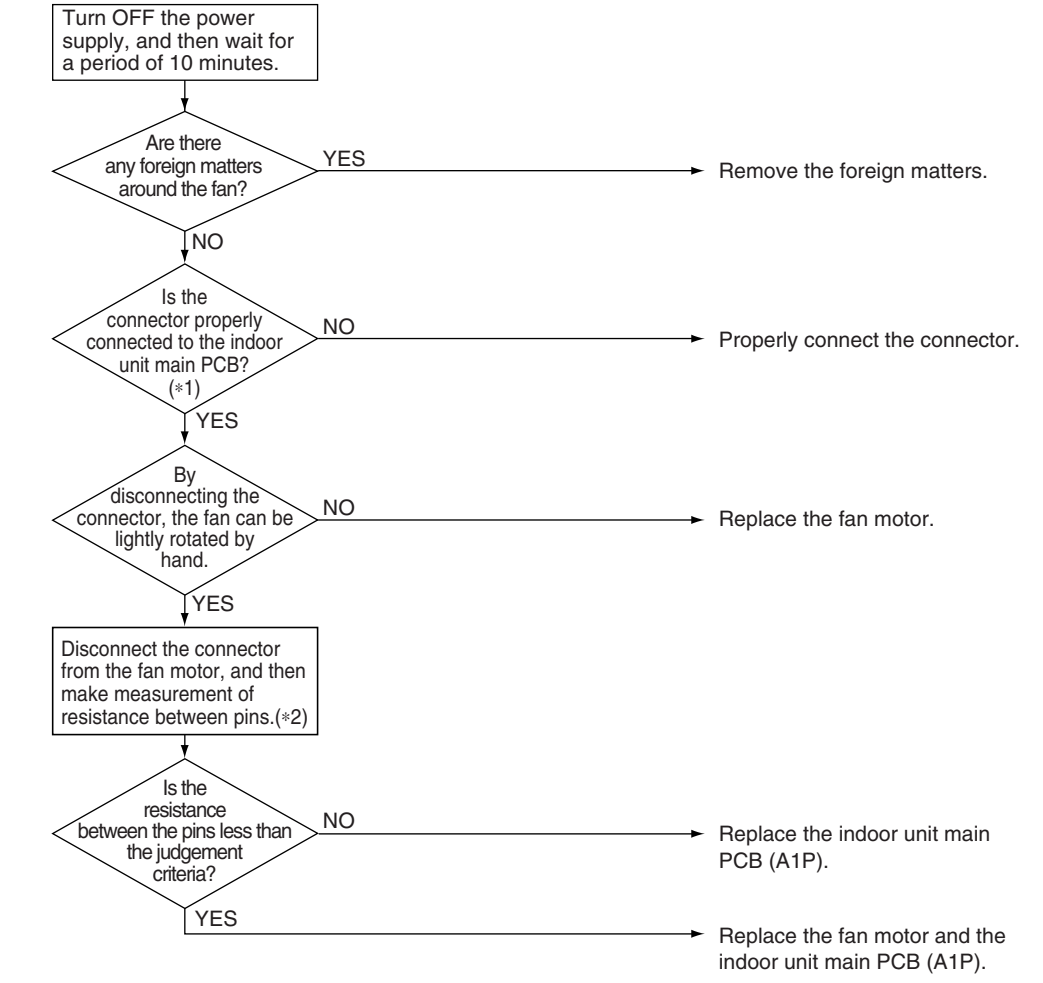
Model	∗1: Float switch (S1L) / short circuit connector	∗2: Drain pump (M1P) connector	Note
FXFQ-T	X15A	X10A	–
FXFQ-P	X15A	X25A	–
FXZQ	X8A	X25A	–
FXUQ	X15A	X25A	–
FXEQ	X15A	X25A	–
FXDQ	X8A	X25A	–
FXMQ-PB	X15A	X25A	–
FXMQ-M	X8A	–	Option
FXAQ	X15A	–	Option

4.4 Indoor Fan Motor (M1F) Lock, Overload

Error Code	**A6**
Applicable Models	FXFQ, FXUQ, FXEQ, FXMQ07-12PB, FXAQ
Method of Error Detection	Abnormal fan revolutions are detected by a signal output from the fan motor.
Error Decision Conditions	When the fan revolutions do not increase
Supposed Causes	■ Broken wires in, short circuit of, or disconnection of connectors from the fan motor harness ■ Defective fan motor (Broken wires or defective insulation) ■ Abnormal signal output from the fan motor (defective circuit) ■ Defective indoor unit main PCB ■ Instantaneous disturbance in the power supply voltage ■ Fan motor lock (Due to motor or external causes) ■ The fan does not rotate due to foreign matter blocking the fan. ■ Disconnection of the connector between the high-power PCB (A1P) and the low-power PCB (A2P) (FXMQ07-12PB only)

Troubleshooting

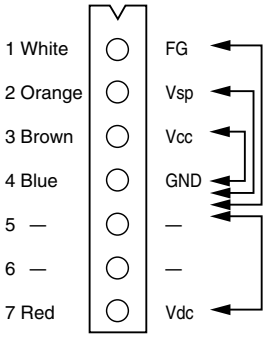
Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.

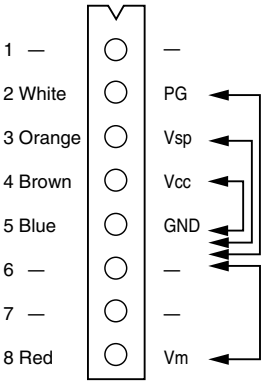


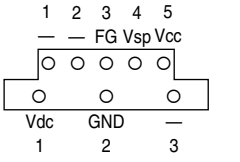
Note: ∗1: Check the following connectors.

Model	Connector
FXFQ-T	X20A, Relay connector
FXFQ09-30P	X20A, Relay connector
FXFQ36/48P	X20A
FXUQ	X20A, Relay connector
FXEQ	X20A
FXMQ07-12PB	X8A
FXAQ	X20A

∗2. Resistance measuring points and judgment criteria.







Judgment criteria

Measuring point	Criteria
FG-GND	1 MΩ or more
Vsp-GND	100 kΩ or more
Vcc-GND	100 Ω or more
Vdc-GND	100 kΩ or more

4.5 Indoor Fan Motor Abnormality

4.5.1 Indoor Fan Motor Abnormality (FXDQ, FXHQ Models)

Error Code **A6**

Applicable Models FXDQ, FXHQ

Method of Error Detection This error is detected if there is no revolution detection signal output from the fan motor.

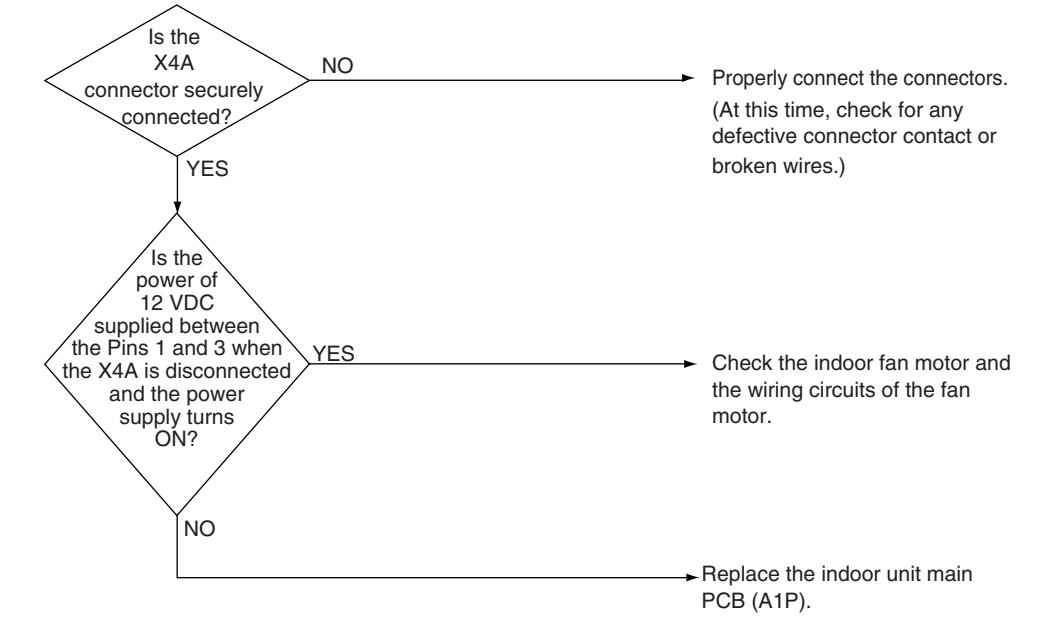
Error Decision Conditions When no revolutions can be detected even at the maximum output voltage to the fan

Supposed Causes

- Defective indoor fan motor
- Broken wires
- Defective contact

Troubleshooting

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

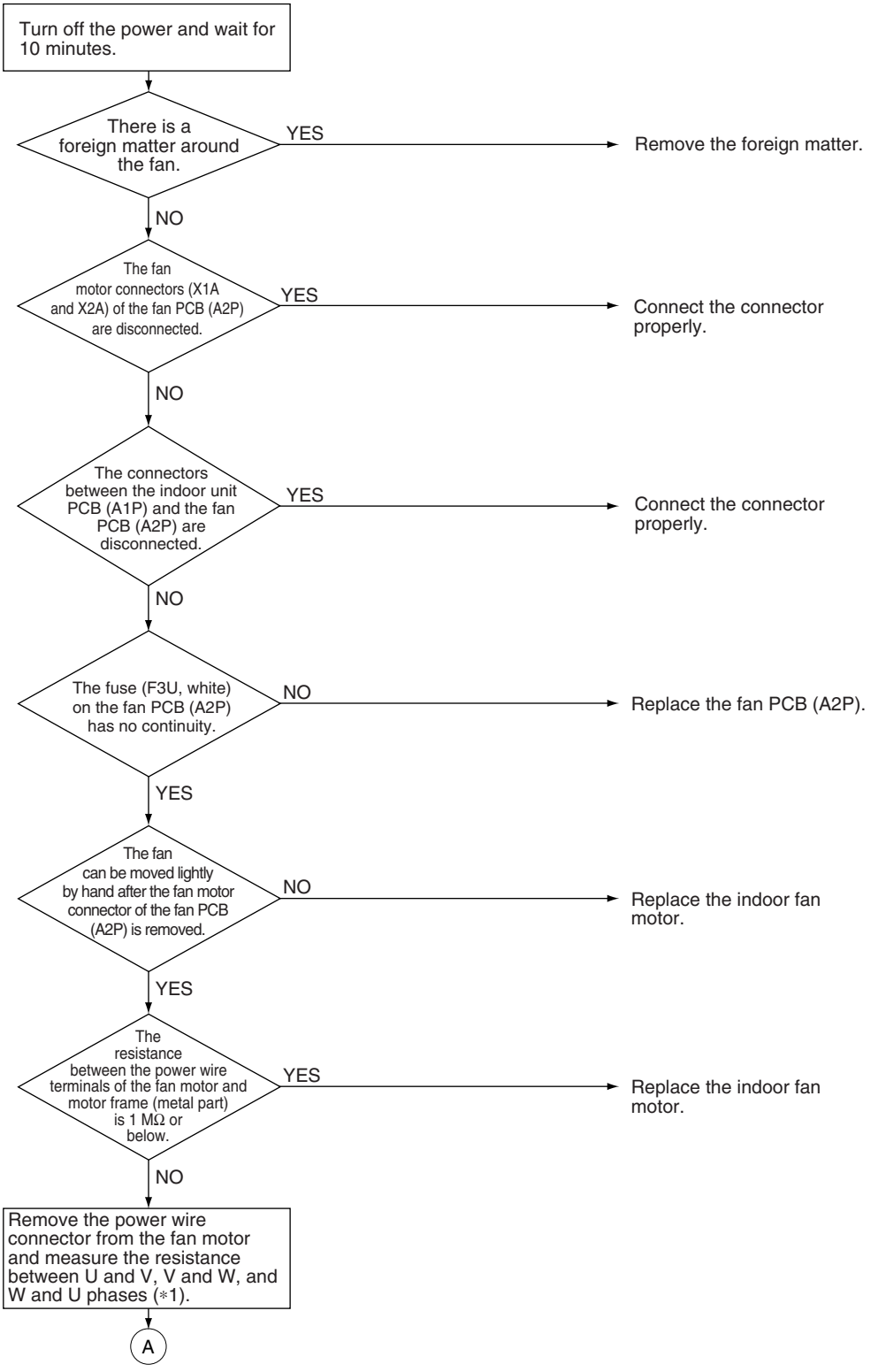


4.5.2 Indoor Fan Motor Abnormality (FXMQ15-54PB)

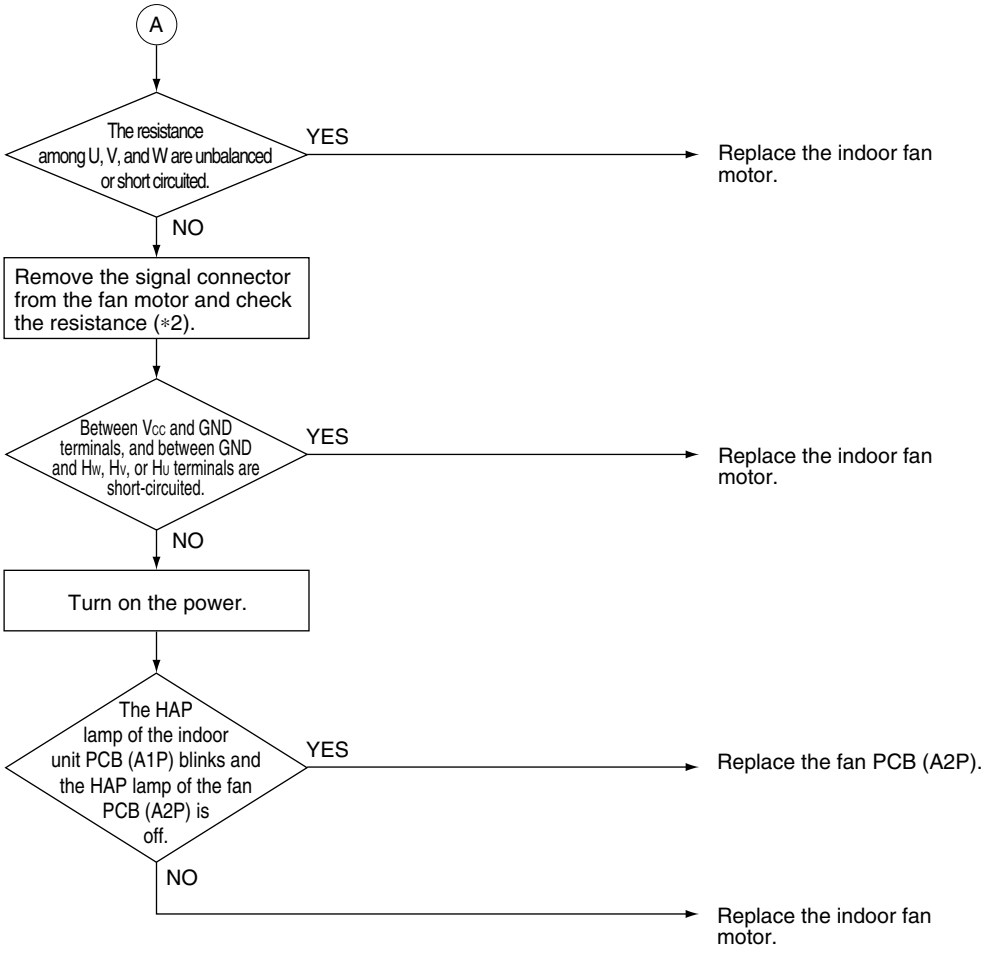
Error Code	**A6**
Applicable Models	FXMQ15-54PB
Method of Error Detection	Error from the current flow on the fan PCB Error from the RPM of the fan motor in operation Error from the position signal of the fan motor Error from the current flow on the fan PCB when the fan motor starting operation
Error Decision Conditions	■ An overcurrent flows. ■ The RPM is less than a certain level for 6 seconds. ■ A position error in the fan rotor continues for 5 seconds or more.
Supposed Causes	■ Clogging of a foreign matter ■ Disconnection of the fan motor connectors (X1A and X2A) ■ Disconnection of the connectors between the indoor unit main PCB (A1P) and fan PCB (A2P) ■ Defective fan PCB (A2P) ■ Defective fan motor

Troubleshooting

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



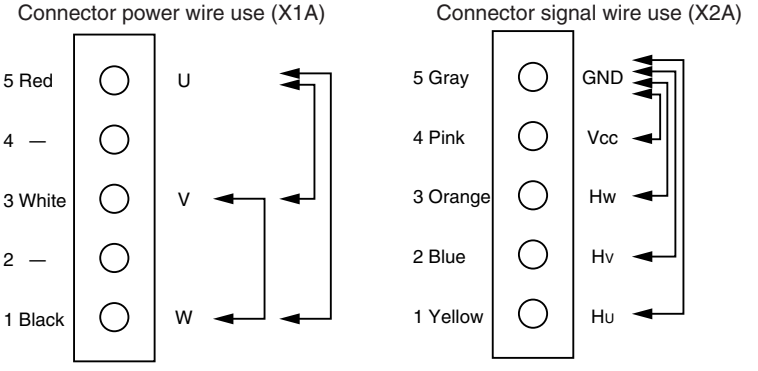
Troubleshooting



Note:

*1. Measurement of power wire connector.
Remove the X1A connector from the fan PCB (A2P) and measure the resistance between the U and V, V and W, and W and U phases of the motor connector (with five conductors) and check that each phase are balanced (within a permissible dispersion range of ±20%).

*2. Measurement of signal wire connector.
Remove the X2A connector and measure the resistance between GND and Vcc, Hw, Hv, or Hu terminals of the motor connector (with five conductors).



4.6 Overload/Overcurrent/Indoor Fan Motor Lock

Error Code **A6**

Applicable Models FXMQ-M

Method of Error Detection This error is detected by detecting that the individual power supply for the fan turns OFF.

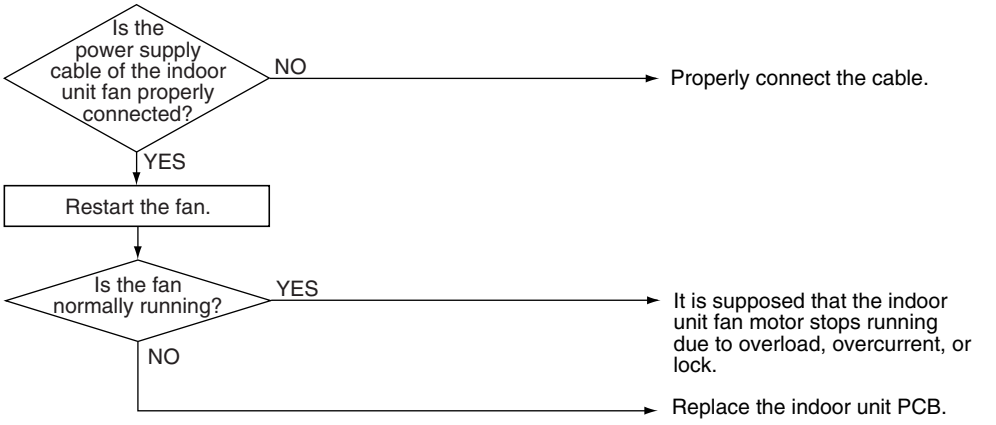
Error Decision Conditions When it is not detected that the individual power supply for the indoor fan turns ON while in operation.

Supposed Causes

- Defective power supply for the indoor unit fan motor
- Clogged drain piping
- Actuation of the indoor unit safety device
- Defective contact in the fan wiring circuit

Troubleshooting

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



4.7 Swing Flap Motor Abnormality

Error Code **A7**

Applicable Models FXFQ, FXZQ, FXUQ, FXEQ, FXHQ, FXAQ

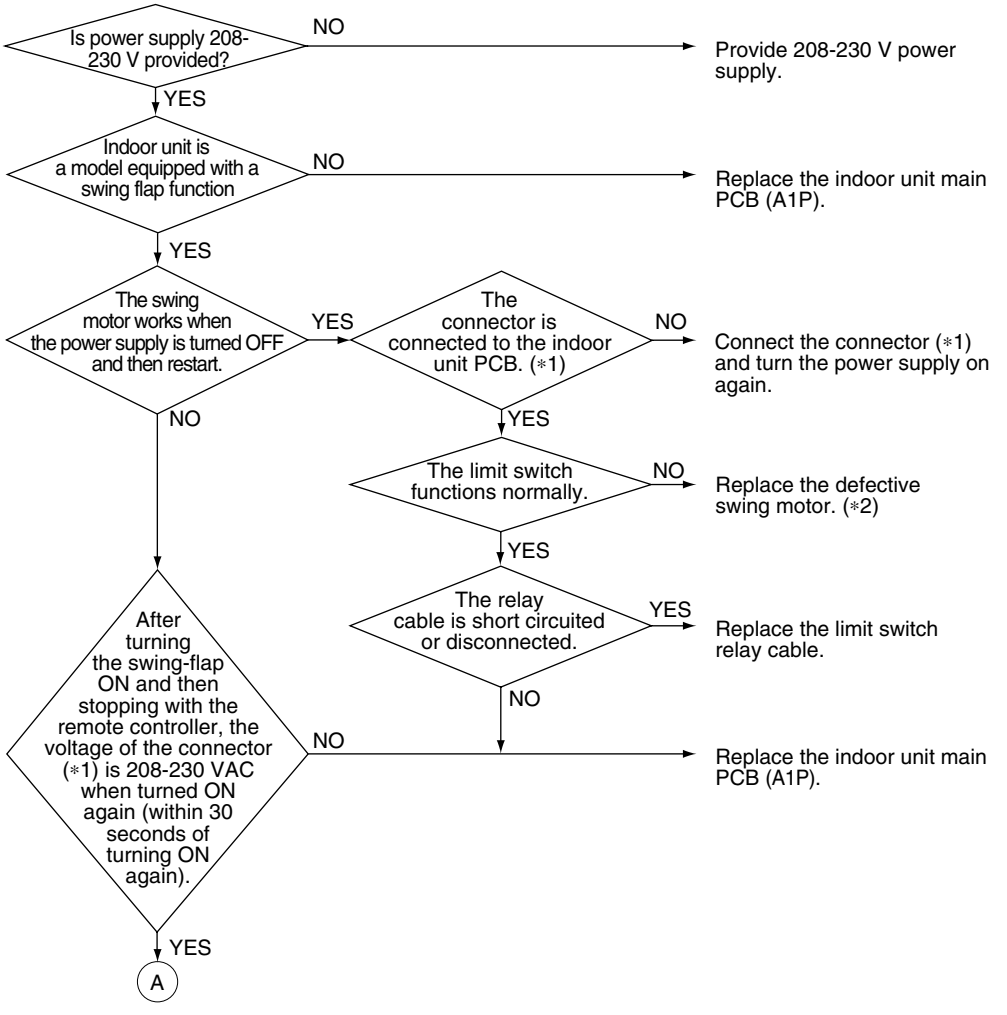
Method of Error Detection Utilizes ON/OFF of the limit switch when the motor turns.

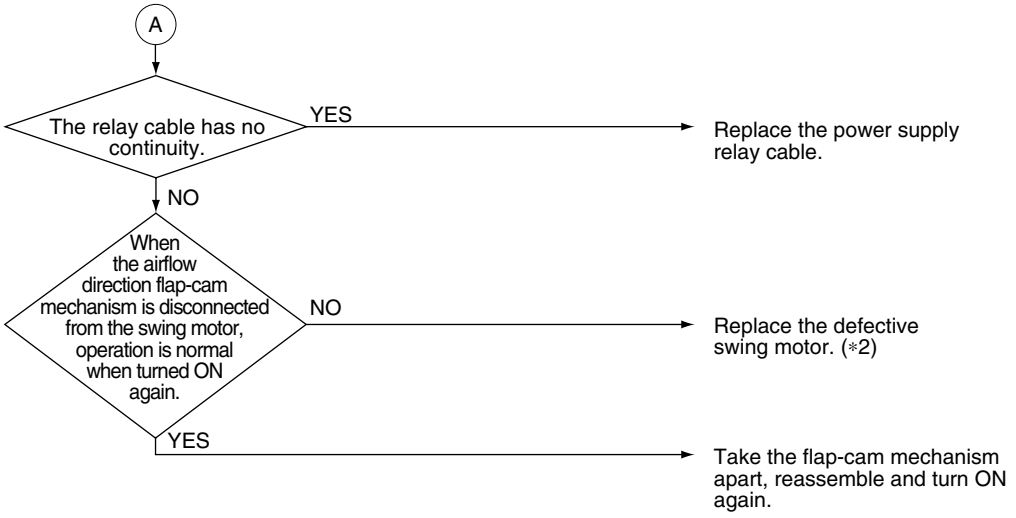
Error Decision Conditions When ON/OFF of the micro-switch for positioning cannot be reversed even though the swing flap motor is energized for a specified amount of time (about 30 seconds).
∗ Error code is displayed but the system operates continuously.

Supposed Causes
- Defective swing motor
- Defective connection cable (power supply and limit switch)
- Defective airflow direction adjusting flap-cam
- Defective indoor unit main PCB

Troubleshooting

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





Model	∗1: Swing motor connector	∗2: Swing motor
FXFQ-T	X9A	M1S, M2S, M3S, M4S
FXFQ-P	X36A	M1S
FXZQ	X28A	M1S
FXUQ	X36A	M1S, M2S, M3S, M4S
FXEQ	X36A	M1S, M2S, M3S, M4S
FXHQ	X6A	M1S
FXAQ	X36A	M1S

4.8 Power Supply Voltage Abnormality

Error Code **A8**

Applicable Models FXMQ-PB

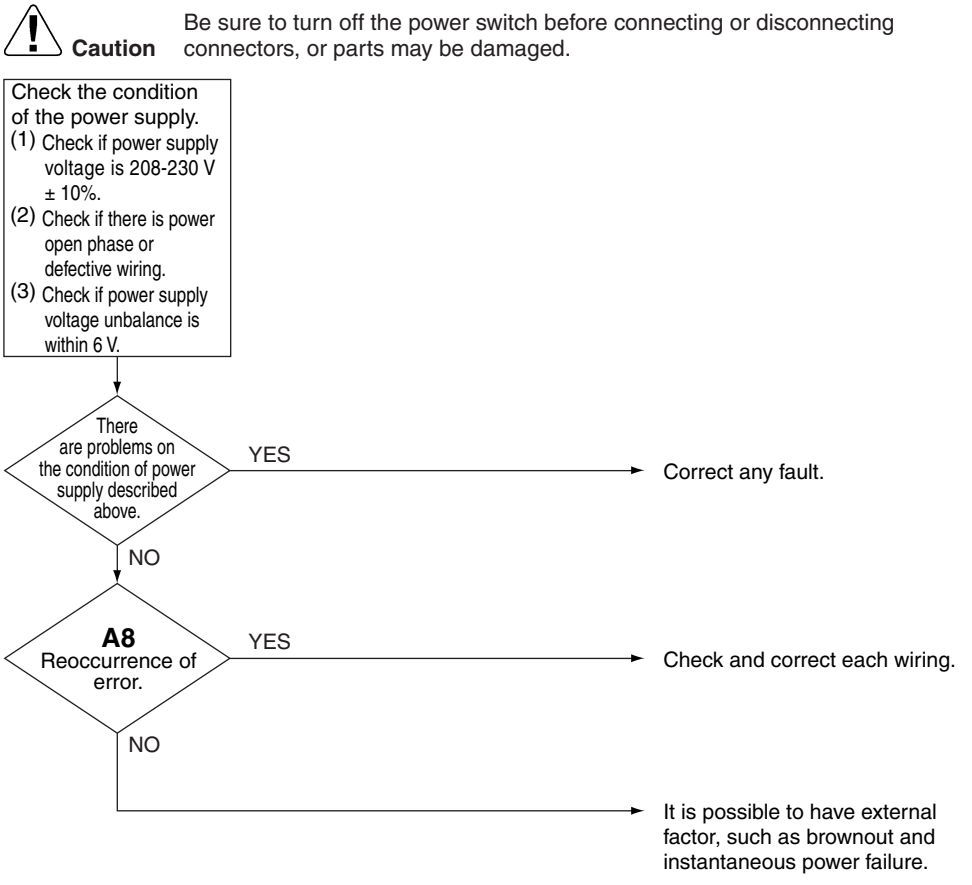
Method of Error Detection Error is detected by checking the input voltage of the fan motor.

Error Decision Conditions When the input voltage of fan motor is 150 V or less, or 386 V or more.

Supposed Causes

- Defective power supply voltage.
- Defective connection on signal line.
- Defective wiring.
- Instantaneous power failure, others.

Troubleshooting

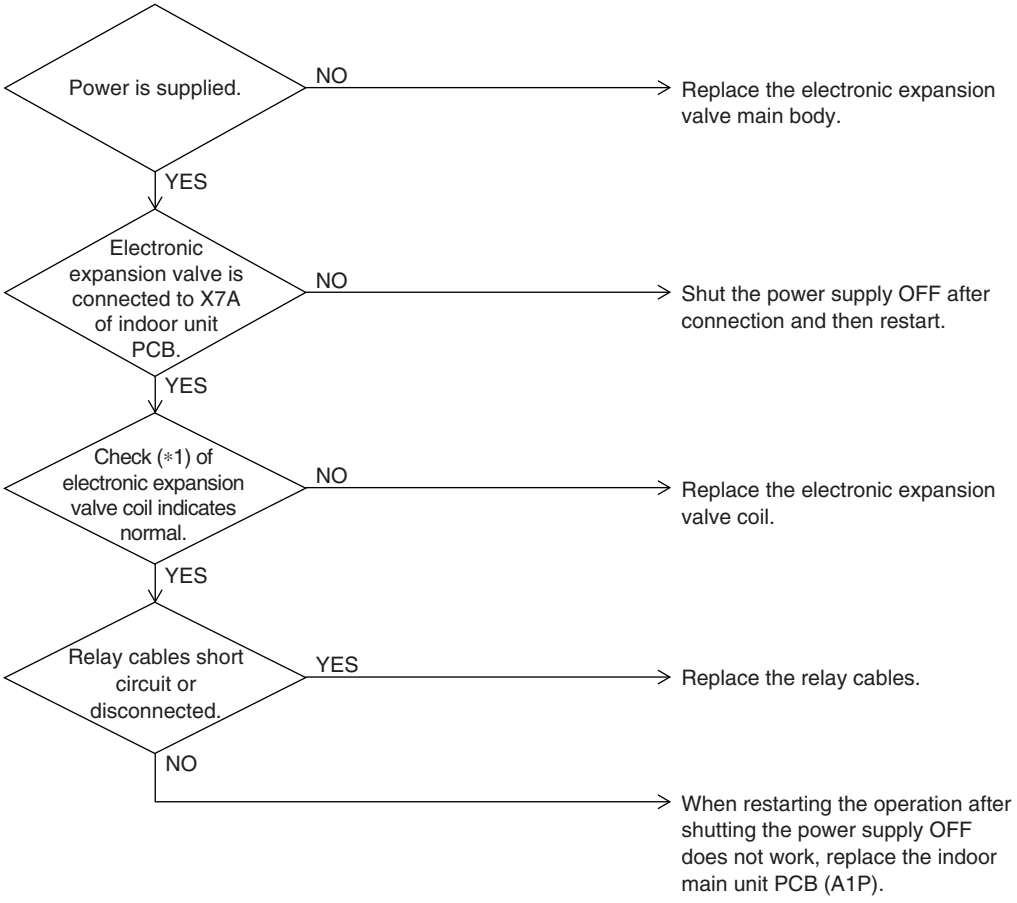


4.9 Electronic Expansion Valve Coil Abnormality, Dust Clogging

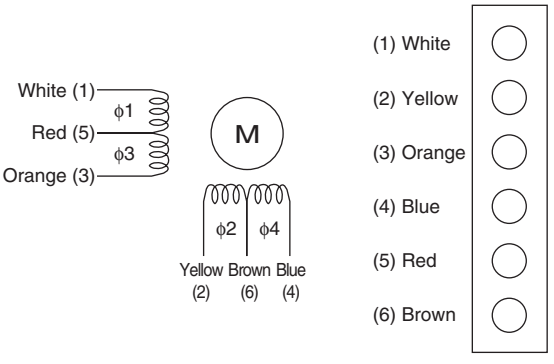
Error Code	**A9**
Applicable Models	All indoor units
Method of Error Detection	Electronic expansion valve coil conditions are checked via micro-computer. The electronic expansion valve main body is checked for dust clogging via micro-computer.
Error Decision Conditions	Pin input for electronic expansion valve coil is abnormal when initializing micro-computer. Either of the following conditions is seen/caused/occurs while the unit stops operation. ● Temperature of suction air (R1T) – temperature of liquid pipe of heat exchanger (R2T) > 8°C (14.4°F). ● Temperature of liquid pipe of heat exchanger (R2T) shows fixed degrees or below.
Supposed Causes	■ Defective electronic expansion valve coil ■ Defective indoor unit main PCB ■ Defective relay cables

Troubleshooting

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



Note: ∗1. How to check the electronic expansion valve coil
Remove the connector for electronic expansion valve (X7A) from PCB. Measure the resistance value between pins and check the continuity to judge the condition.
The normal products will show the following conditions:



(1)-(2): No continuity
(1)-(3): 300 Ω
(1)-(5): 150 Ω
(2)-(4): 300 Ω
(2)-(6): 150 Ω

4.10 Drain Level Above Limit

Error Code

AF

Applicable Models

FXFQ, FXZQ, FXDQ, FXMQ

Method of Error Detection

Water leakage is detected based on float switch ON/OFF operation while the compressor is not in operation.

Error Decision Conditions

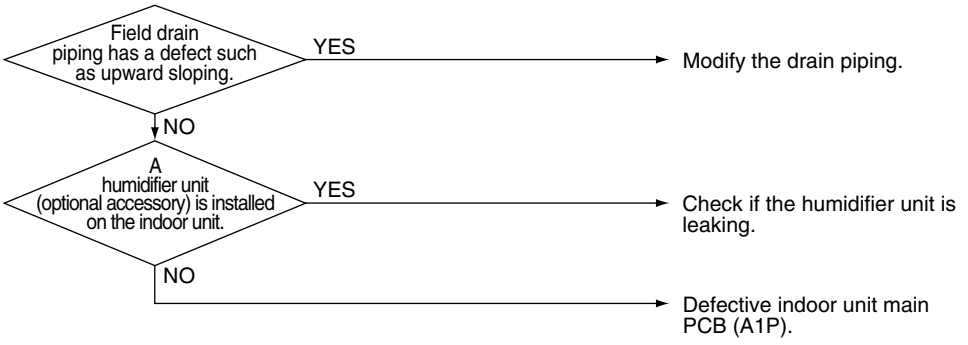
When the float switch changes from ON to OFF while the compressor is not in operation.
∗ Error code is displayed but the system operates continuously.

Supposed Causes

- Humidifier unit (optional accessory) leaking
- Defective drain piping (upward slope, etc.)
- Defective indoor unit main PCB

Troubleshooting

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



4.11 Capacity Determination Device Abnormality

Error Code

AJ

Applicable Models

All indoor units

Method of Error Detection

Capacity is determined according to resistance of the capacity setting adaptor and the memory inside the IC memory on the indoor unit PCB, and whether the value is normal or abnormal is determined.

Error Decision Conditions

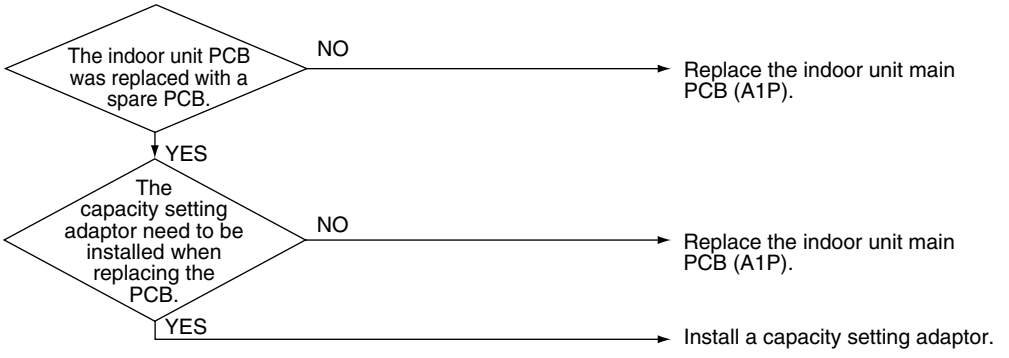
When the capacity code is not saved to the PCB, and the capacity setting adaptor is not connected.
When a capacity that does not exist for that unit is set.

Supposed Causes

- The capacity setting adaptor was not installed.
- Defective indoor unit PCB

Troubleshooting

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

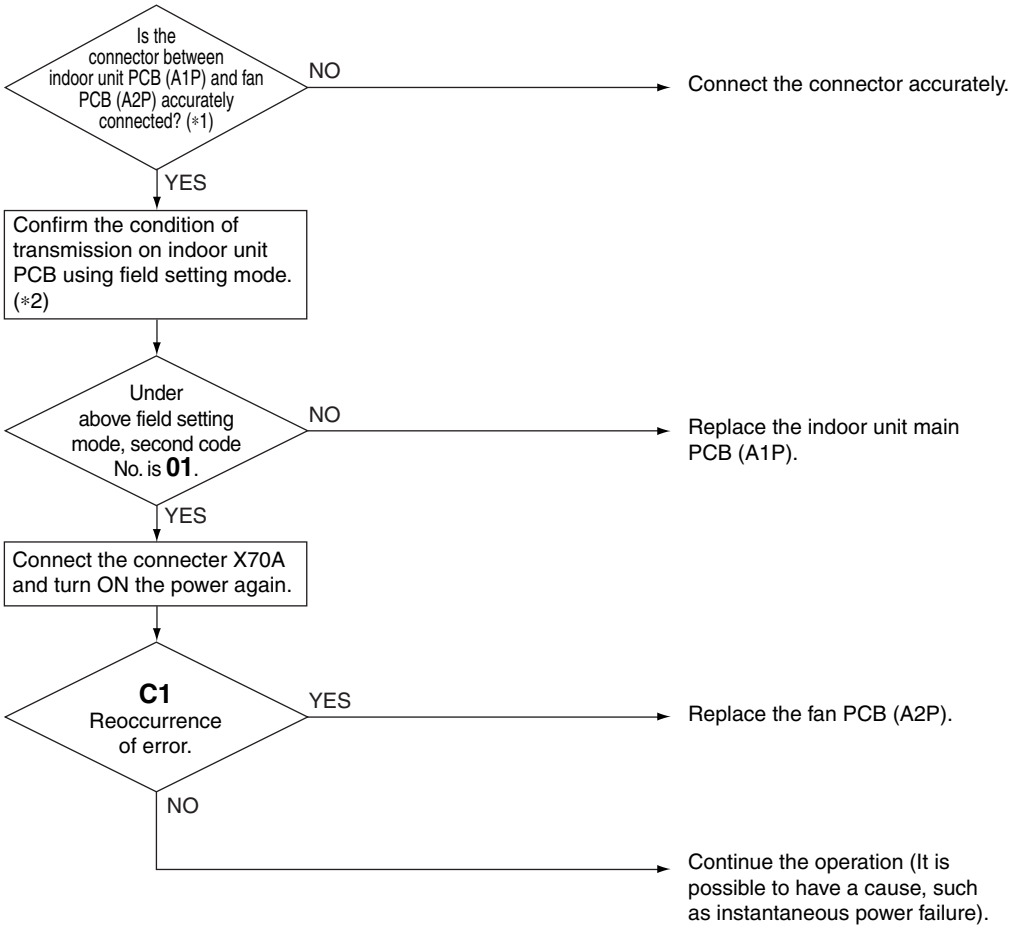


4.12 Transmission Abnormality (between Indoor Unit PCB and Fan PCB)

Error Code	**C1**
Applicable Models	FXMQ-PB
Method of Error Detection	Transmission conditions between the indoor unit main PCB (A1P) and fan PCB (A2P) are checked via micro-computer.
Error Decision Conditions	When normal transmission is not carried out for a certain duration.
Supposed Causes	■ Defective connection of the connector between indoor unit main PCB (A1P) and fan PCB (A2P) ■ Defective indoor unit main PCB (A1P) ■ Defective fan PCB (A2P) ■ External factor, such as instantaneous power failure

Troubleshooting

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



Note:

*1. Pull out and insert the connecter once and check it is absolutely connected.

*2. Method to check transmission part of indoor unit main PCB.

(1) Turn OFF the power and remove the connecter X70A of indoor unit main PCB (A1P).

(2) Short circuit X70A.

(3) After turning ON the power, check below numbers under field setting from remote controller.
(Confirmation: Second code No. at the condition of first code No. 21 on mode No. 41)

↓

Determination
- 01: Normal
- Other than 01: Transmission error on indoor unit main PCB

* After confirmation, turn OFF the power, take off the short circuit and connect X70A back to original condition.

4.13 Thermistor Abnormality

Error Code

C4, C5, C9, CA

Applicable Models

C4, C5, C9: All indoor units
CA: FXMQ-PB models only

Method of Error Detection

The error is determined by the temperature detected by the thermistor.

Error Decision Conditions

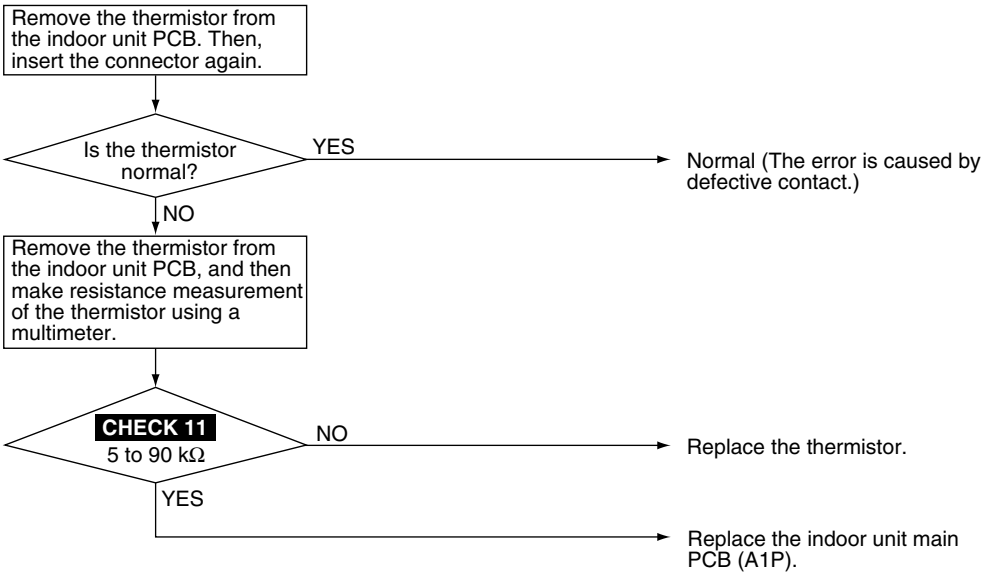
The thermistor becomes disconnected or shorted while the unit is running.

Supposed Causes

- Defective thermistor
- Defective indoor unit PCB
- Disconnection of connector

Troubleshooting

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



Note: Error code and thermistor

Error Code	Thermistor	Except FXTQ	FXTQ
C4	Heat exchanger liquid pipe thermistor	R2T	R1T
C5	Heat exchanger gas pipe thermistor	R3T	R2T
C9	Suction air thermistor	R1T	—
CA	Discharge air thermistor	R4T	—

CHECK 11 Refer to page 231.

4.14 Combination Abnormality (between Indoor Unit PCB and Fan PCB)

Error Code C6

Applicable Models FXMQ-PB

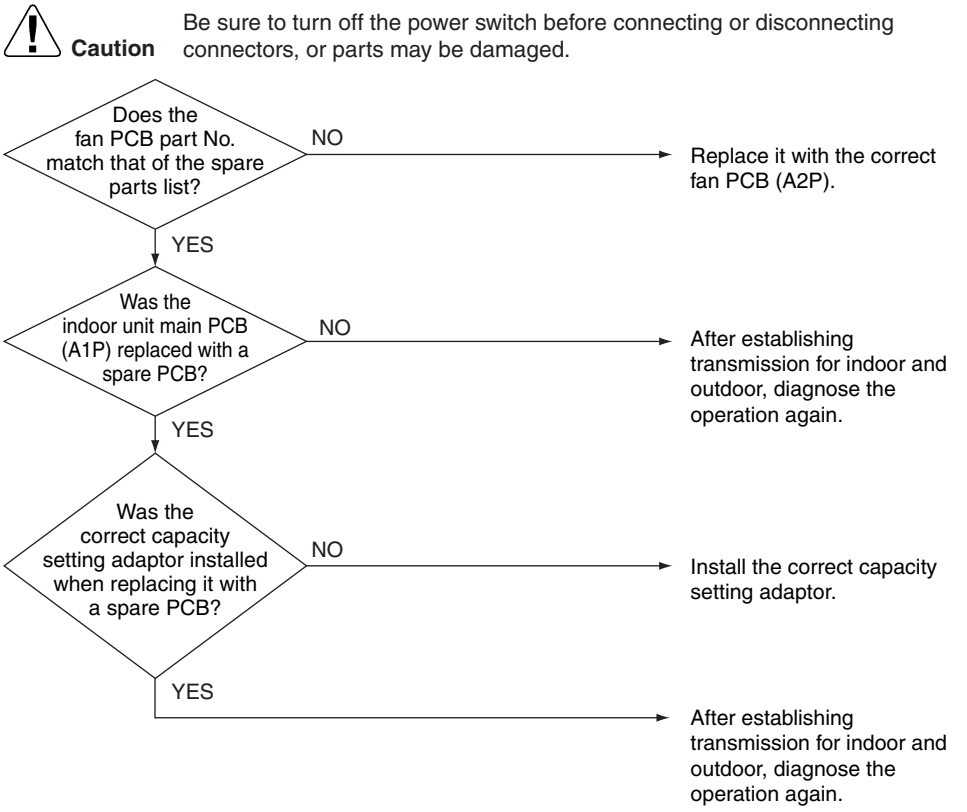
Method of Error Detection Transmission conditions with the fan PCB (A2P) are checked using the indoor unit PCB (A1P).

Error Decision Conditions When the communication data of fan PCB (A2P) is determined as incorrect

Supposed Causes

- Defective fan PCB (A2P).
- Defective connection of capacity setting adaptor
- Field setting error

Troubleshooting



4.15 Remote Sensor Abnormality

Error Code C9

Applicable Models FXTQ

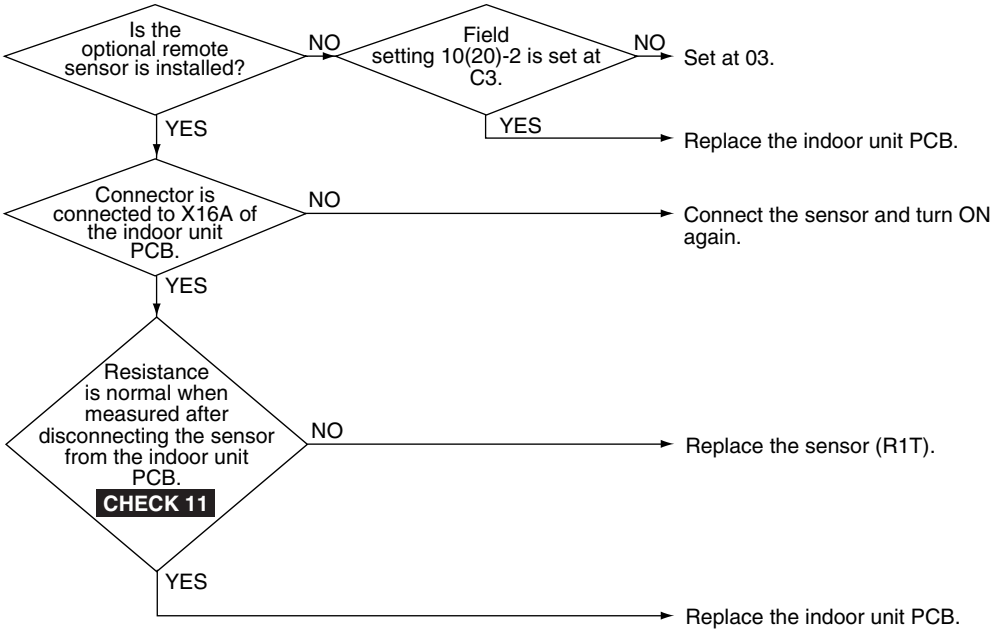
Method of Error Detection The error is detected out by temperature detected by remote sensor.

Error Decision Conditions When the remote sensor becomes disconnected or shorted while the unit is running.

Supposed Causes
- Defective indoor unit thermistor (R1T) for air inlet
- 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 11 Refer to page 231.

4.16 Humidity Sensor System Abnormality

Error Code **CC**

Applicable Models FXFQ

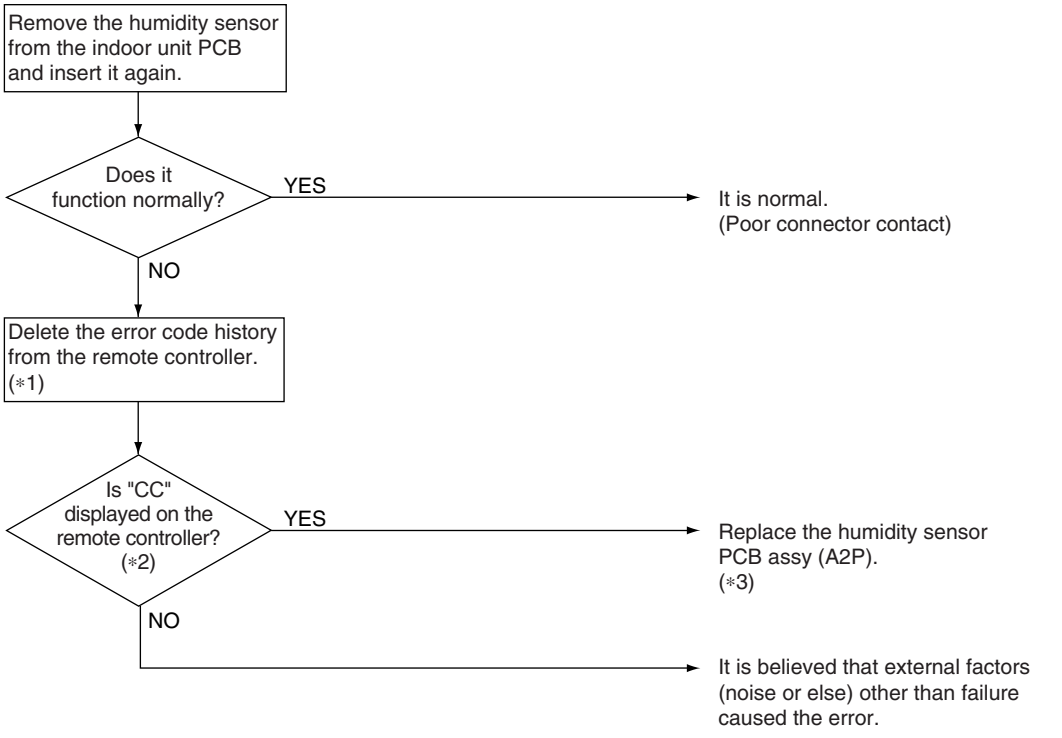
Method of Error Detection Even if an error occurs, operation still continues.
Error is detected according to the moisture (output voltage) detected by the moisture sensor.

Error Decision Conditions When the moisture sensor is disconnected or short circuited

Supposed Causes
- Defective sensor
- Disconnection

Troubleshooting

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



Note:
∗1. To delete the history, the ON/OFF button of the remote controller must be pressed and held for 5 seconds in the check mode.
∗2. To display the code, the INSPECTION/TEST Operation button of the remote controller must be pressed and held in the normal mode.
∗3. If **CC** is displayed even after replacing the humidity sensor PCB assy (A2P) and taking the steps ∗1 and 2, replace the indoor unit PCB assy (A1P).

4.17 Infrared Presence/Floor Sensor Error

Error Code

CE

Applicable Models

FXFQ-T

Method of Error Detection

The contents of a failure vary with the detailed error code. Check the code and proceed with the flowchart.

Error Decision Conditions

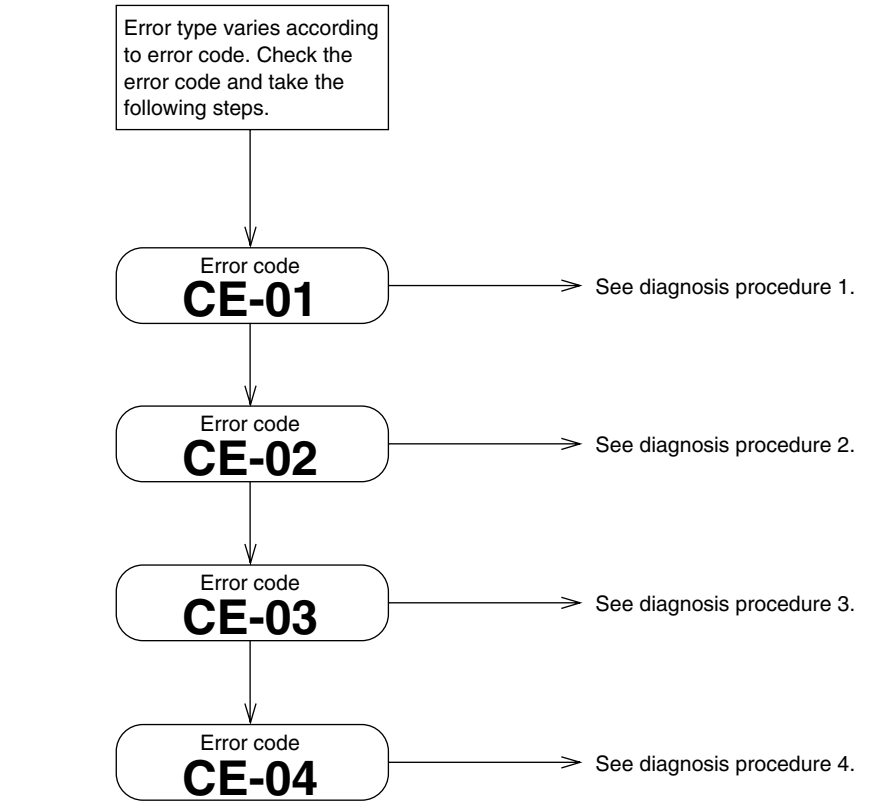
Error is detected based on sensor output signals

Supposed Causes

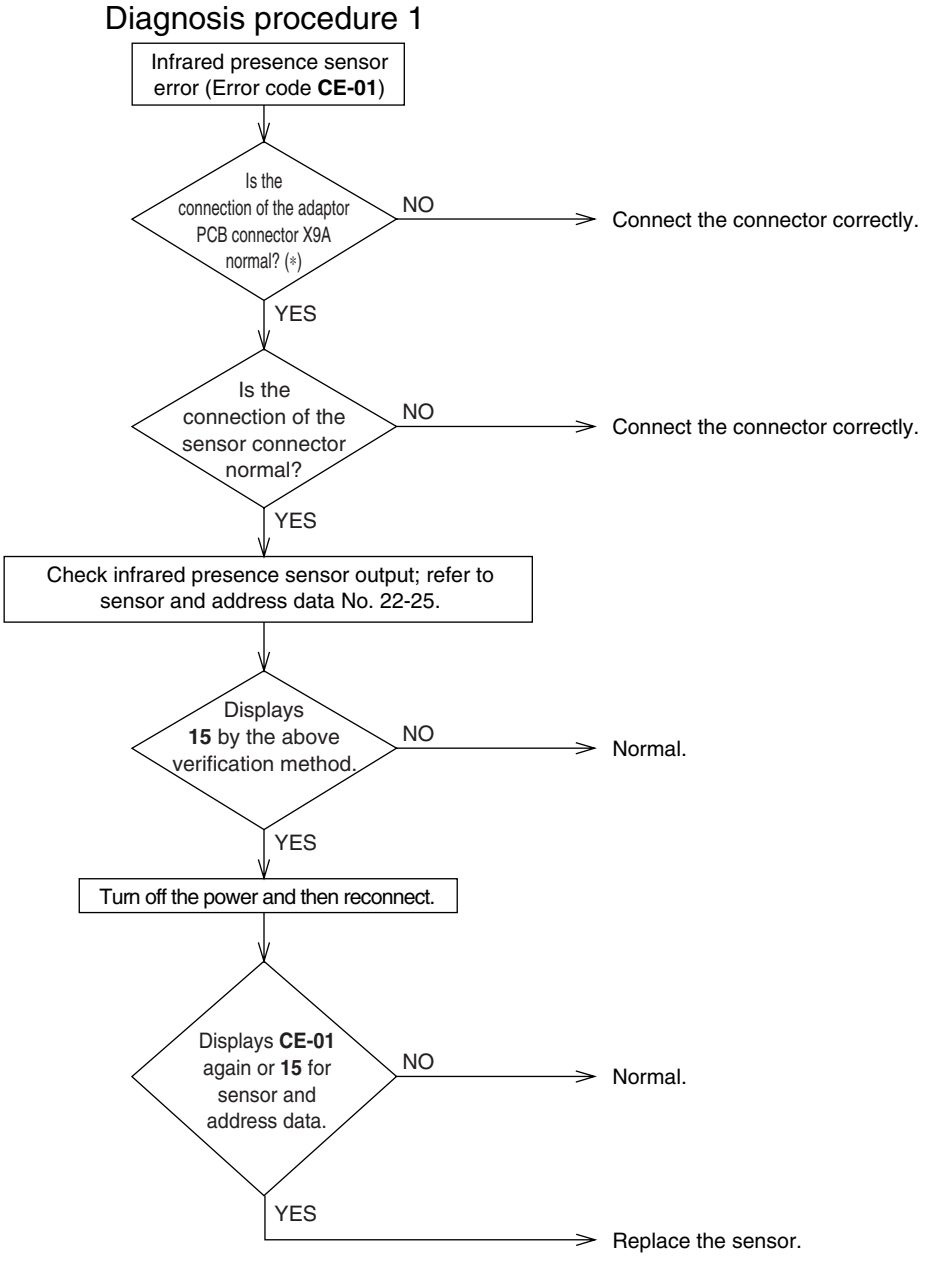
- Defective or disconnected infrared presence sensor connector: **CE-01**
- Defective infrared floor sensor (Temperature compensation circuit disconnection): **CE-02**
- Defective infrared floor sensor (Temperature compensation short circuit): **CE-03**
- Defective infrared floor sensor element: **CE-04**

Troubleshooting

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

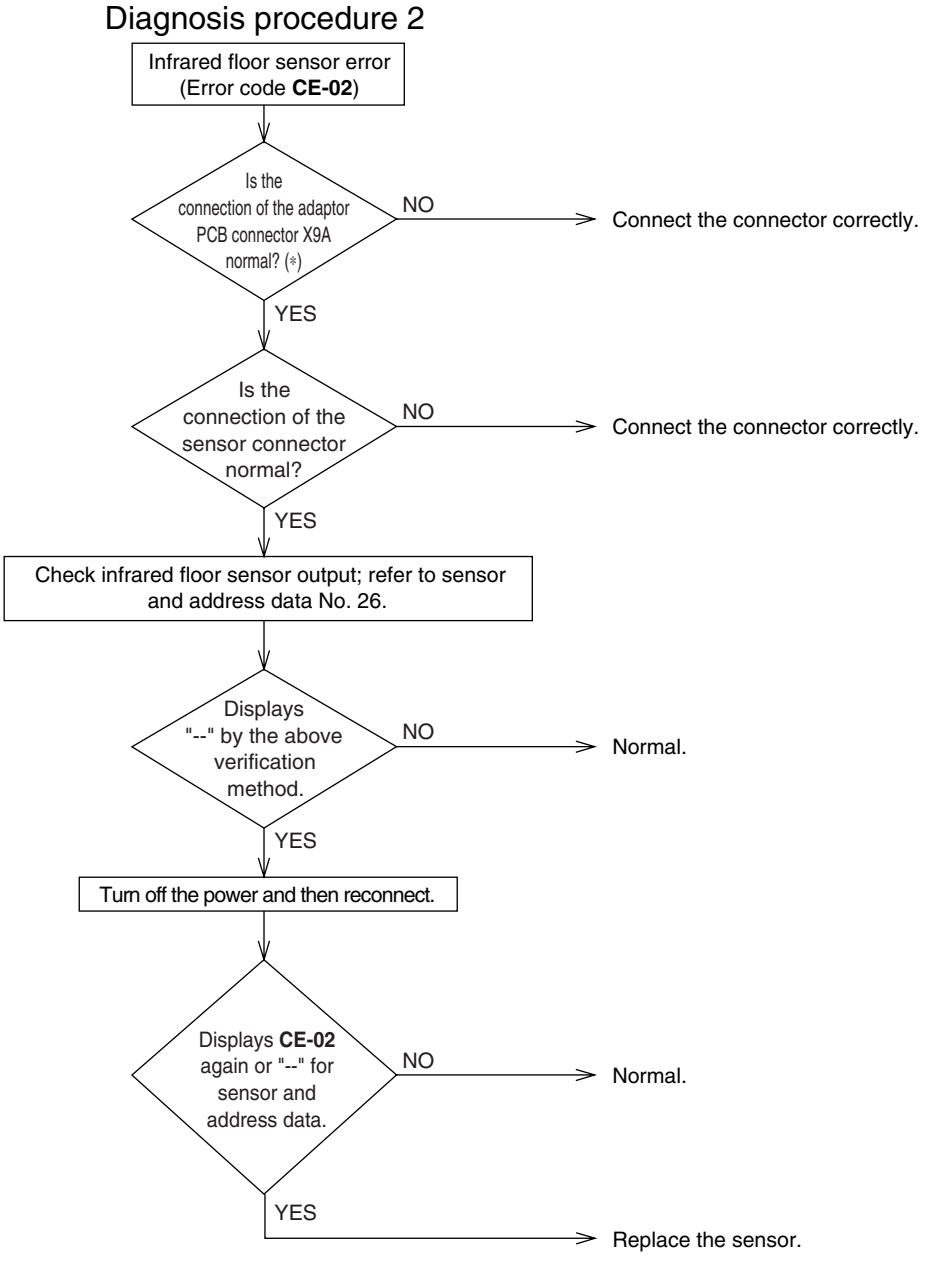


Troubleshooting



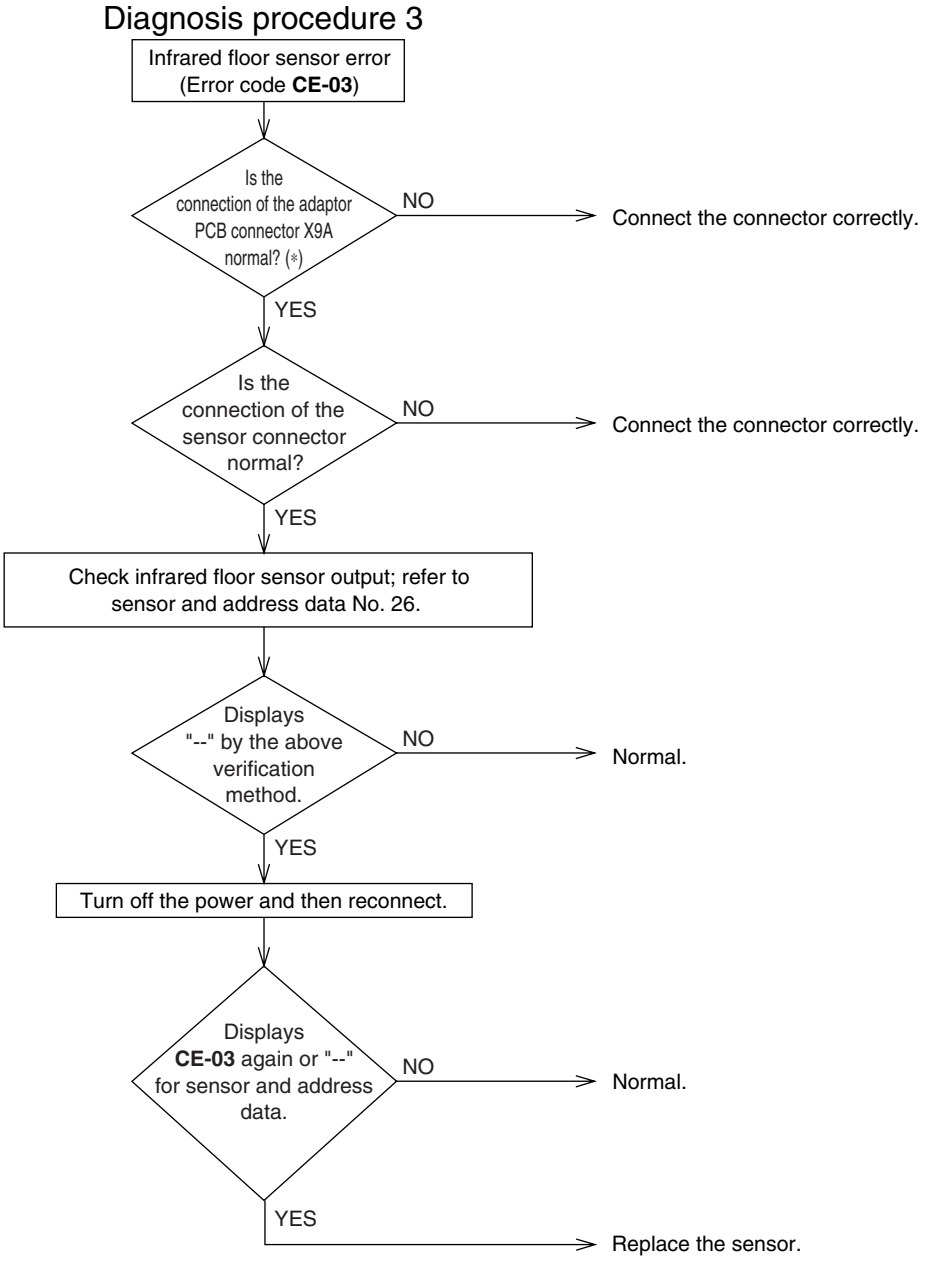
* Check whether A3P connector is well connected or not.

Troubleshooting



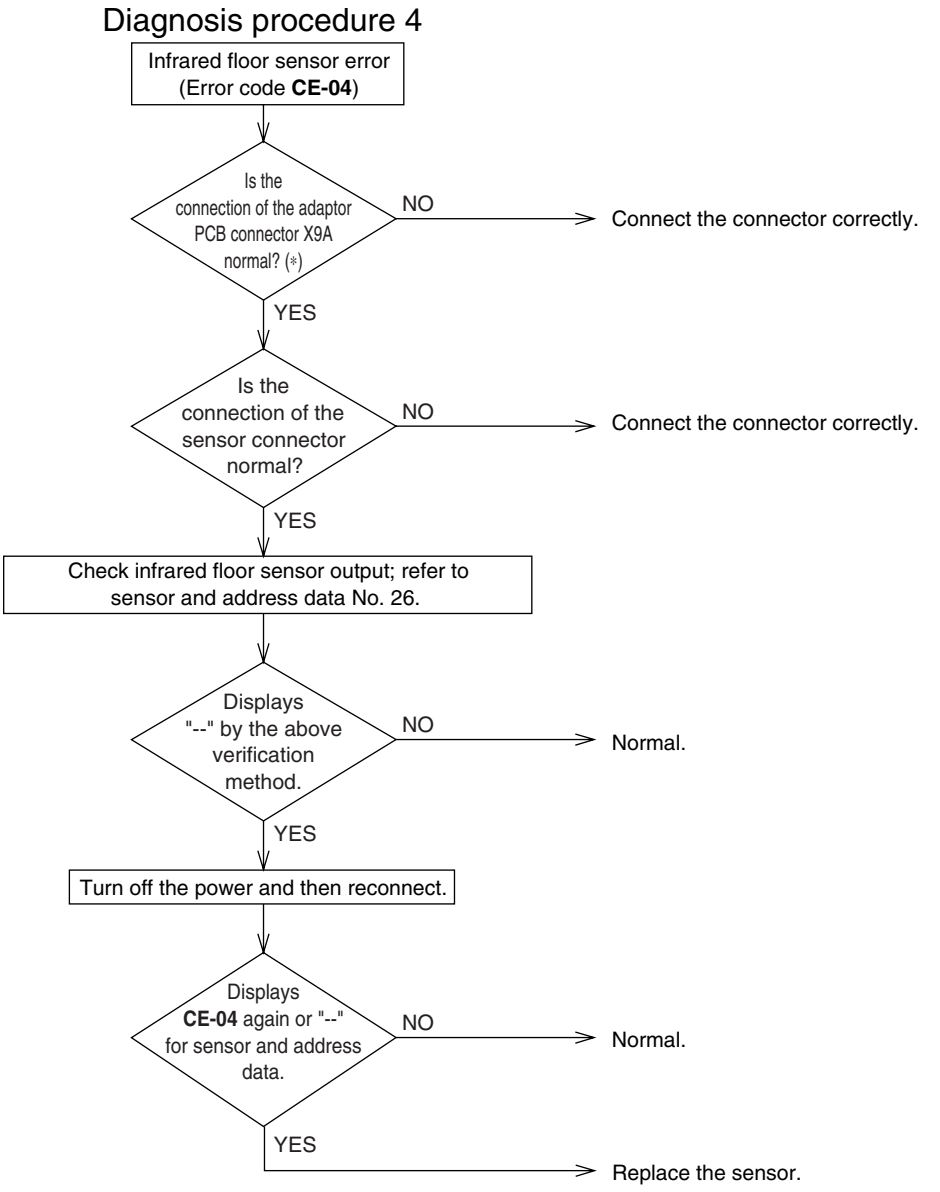
* Check whether A2P connector is well connected or not.

Troubleshooting



* Check whether A2P connector is well connected or not.

Troubleshooting



* Check whether A2P connector is well connected or not.

4.18 Remote Controller Thermistor Abnormality

Error Code **CJ**

Applicable Models All indoor units

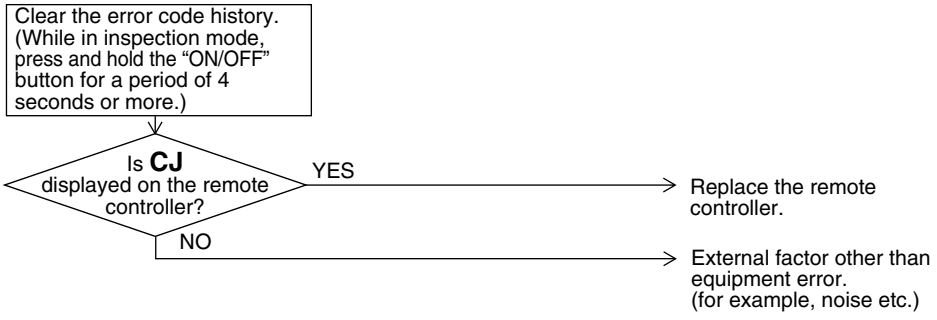
Method of Error Detection Error detection is carried out by the temperature detected by the remote controller thermistor. (See note.)

Error Decision Conditions When the remote controller thermistor becomes disconnected or shorted while the unit is running.
* Error code is displayed but the system operates continuously.

Supposed Causes
- Defective room temperature thermistor in remote controller
- Defective remote controller PCB

Troubleshooting

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



Note: *1: How to delete "history of error codes".
Press the "ON/ OFF" button for 4 seconds and more while the error code is displayed in the inspection mode.

4.19 Outdoor Main PCB Abnormality

Error Code **E1**

Applicable Models All outdoor units

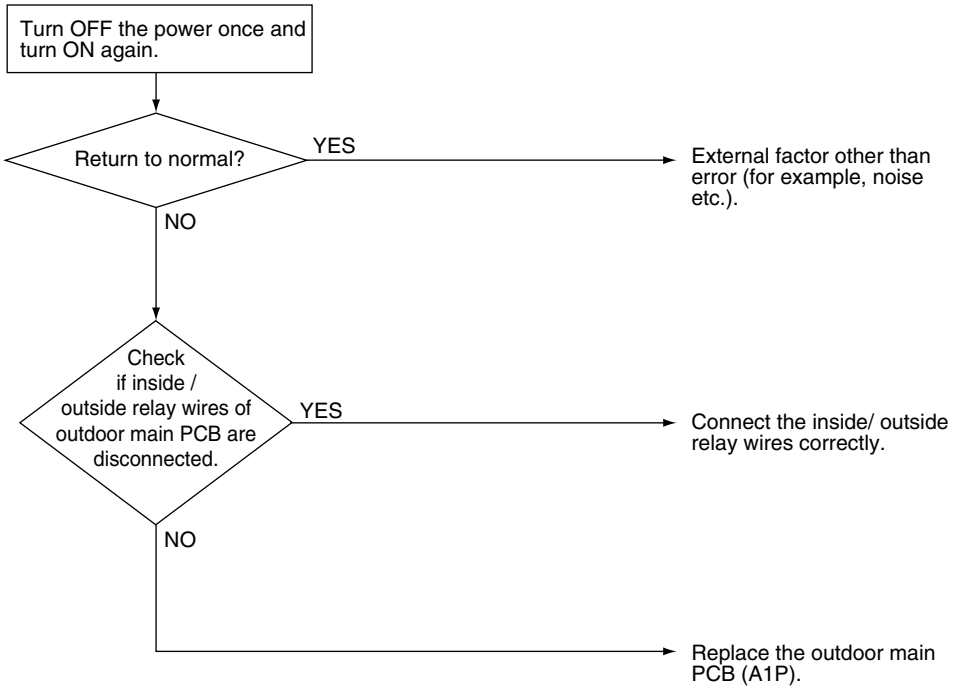
Method of Error Detection Abnormality is detected under the communication conditions in the hardware section between the indoor unit and outdoor unit.

Error Decision Conditions When the communication conditions in the hardware section between the indoor unit and the outdoor unit are not normal.

Supposed Causes
- Defective outdoor main PCB
- Disconnection of the inside/outside relay wires

Troubleshooting

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

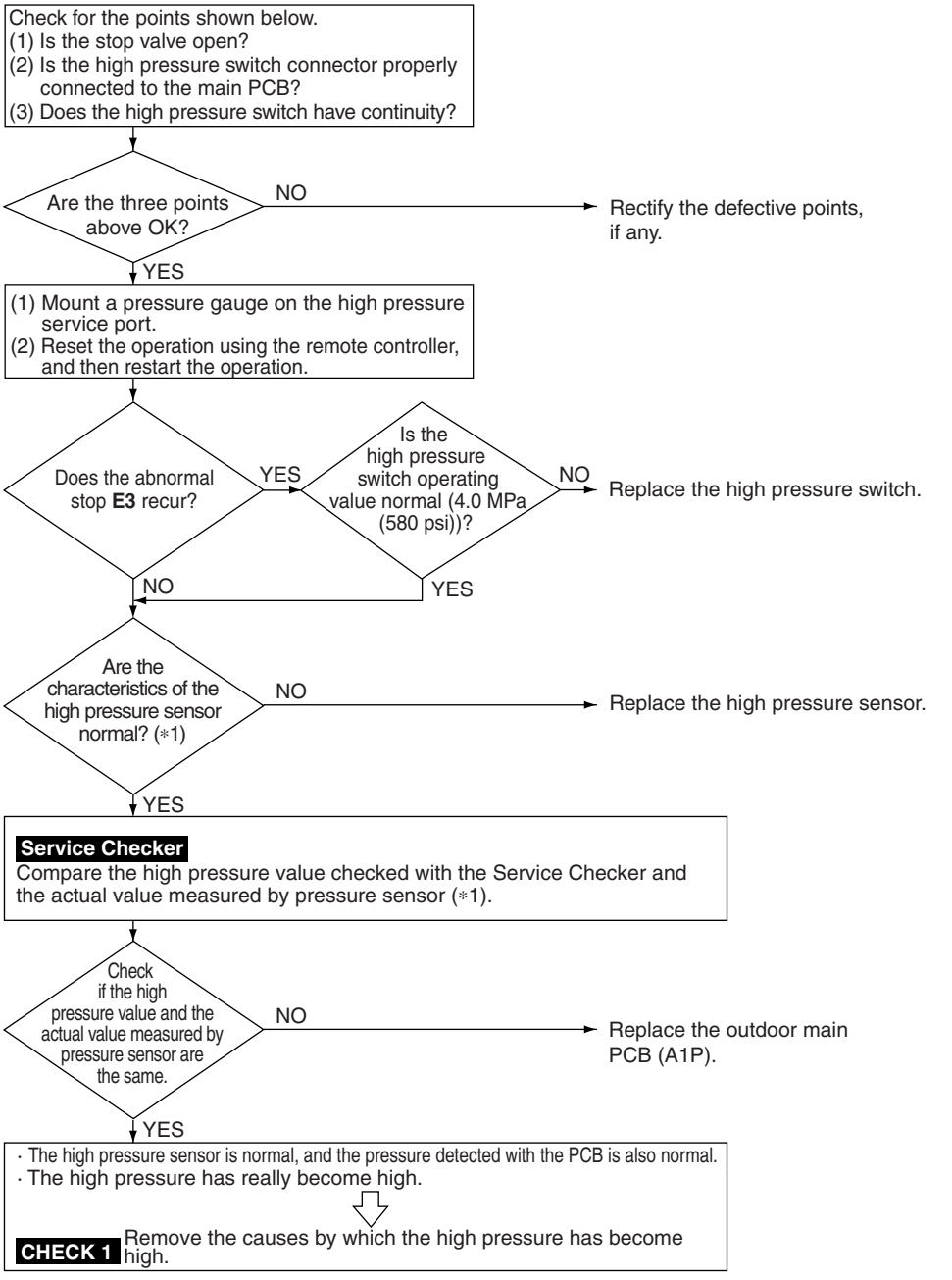


4.20 Activation of High Pressure Switch

Error Code	**E3**
Applicable Models	All outdoor units
Method of Error Detection	Abnormality is detected when the contact of the high pressure protection switch opens. Use the protection device circuit to test high pressure switch conduction.
Error Decision Conditions	Error is generated when the high pressure switch activation count reaches the number specific to the operation mode. When part of the protection device has an open circuit Reference: Operating pressure of high pressure switch Operating pressure: 4.0 MPa (580 psi) Reset pressure: 3.0 MPa (435 psi)
Supposed Causes	■ Activation of outdoor unit high pressure switch ■ Defective high pressure switch ■ Defective outdoor main PCB ■ Instantaneous power failure ■ Defective high pressure sensor

Troubleshooting

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



Note: ∗1: Make a comparison between the voltage of the pressure sensor and that read by the pressure gauge.
(As to the voltage of the pressure sensor, make measurement of voltage at the connector, and then convert it to pressure. **CHECK12**)

CHECK1 Refer to page 222.

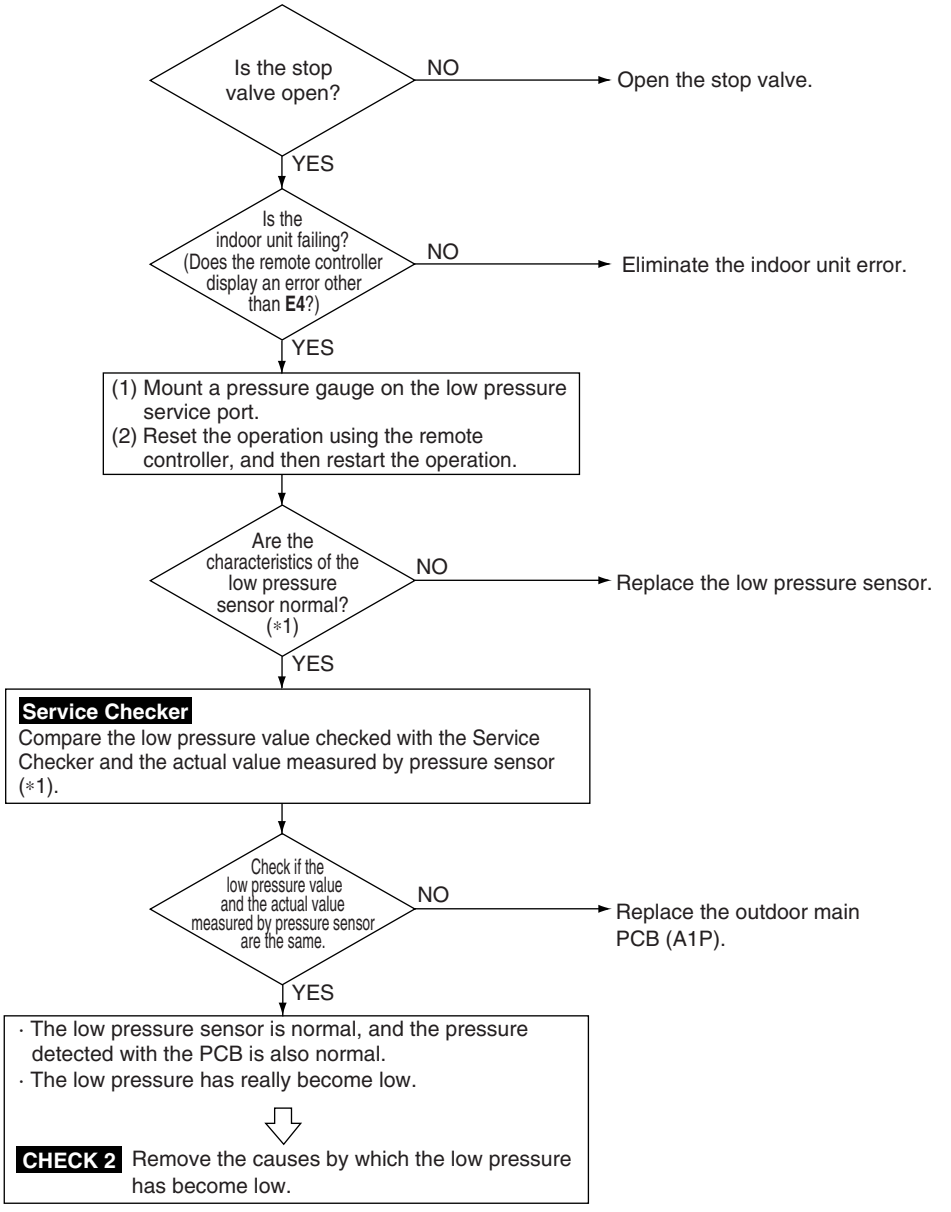
CHECK12 Refer to page 234.

4.21 Activation of Low Pressure Sensor

Error Code	**E4**
Applicable Models	All outdoor units
Method of Error Detection	Abnormality is detected by the pressure value with the low pressure sensor. Use the outdoor main PCB to determine the low pressure sensor pressure test value.
Error Decision Conditions	Error is generated when the low pressure drops below a specific pressure level. Low pressure drops after compressor activation. Operating pressure: 0.07 MPa (10.2 psi)
Supposed Causes	■ Abnormal drop of low pressure ■ Defective low pressure sensor ■ Defective outdoor main PCB ■ Stop valve is not opened

Troubleshooting

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



Note: *1: Make a comparison between the voltage of the pressure sensor and that read by the pressure gauge.
(As to the voltage of the pressure sensor, make measurement of voltage at the connector, and then convert it to pressure. **CHECK12**)

CHECK2 Refer to page 223.

CHECK12 Refer to page 234.

4.22 Inverter Compressor Motor Lock

Error Code

E5

Applicable Models

All outdoor units

Method of Error Detection

PCB takes the position signal from UVW line connected between the inverter and compressor, and the error is detected when any abnormality is observed in the phase-current waveform.

Error Decision Conditions

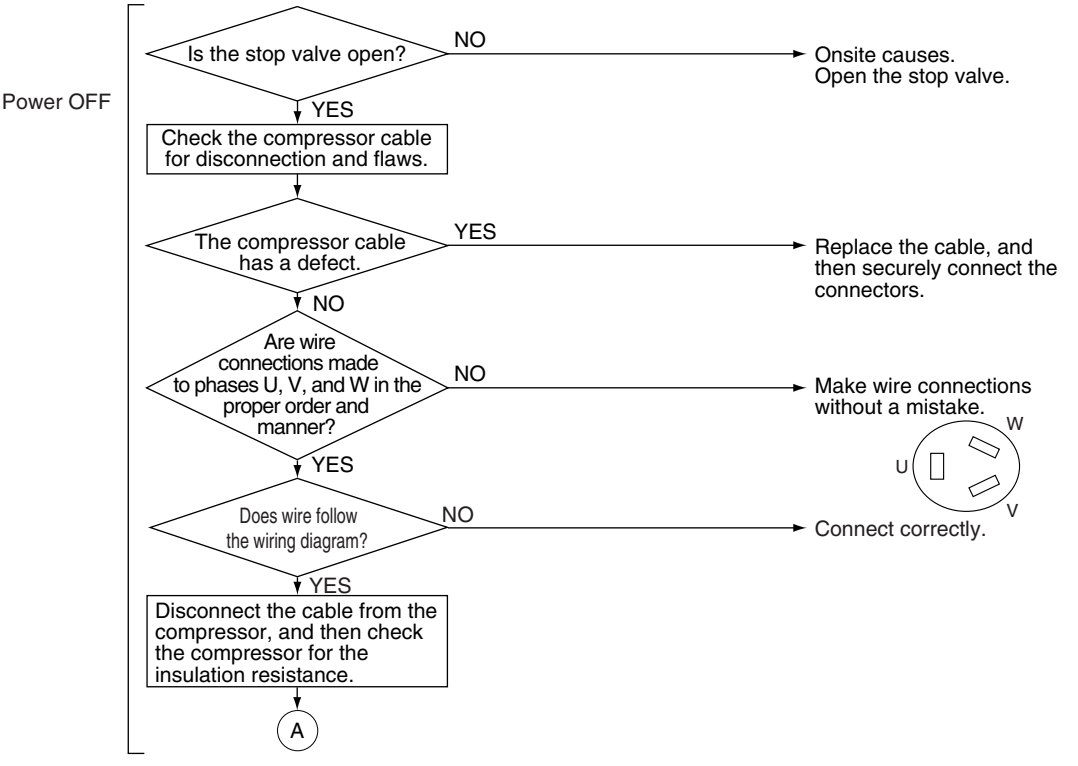
This error will be output when the inverter compressor motor does not start up even in forced startup mode.

Supposed Causes

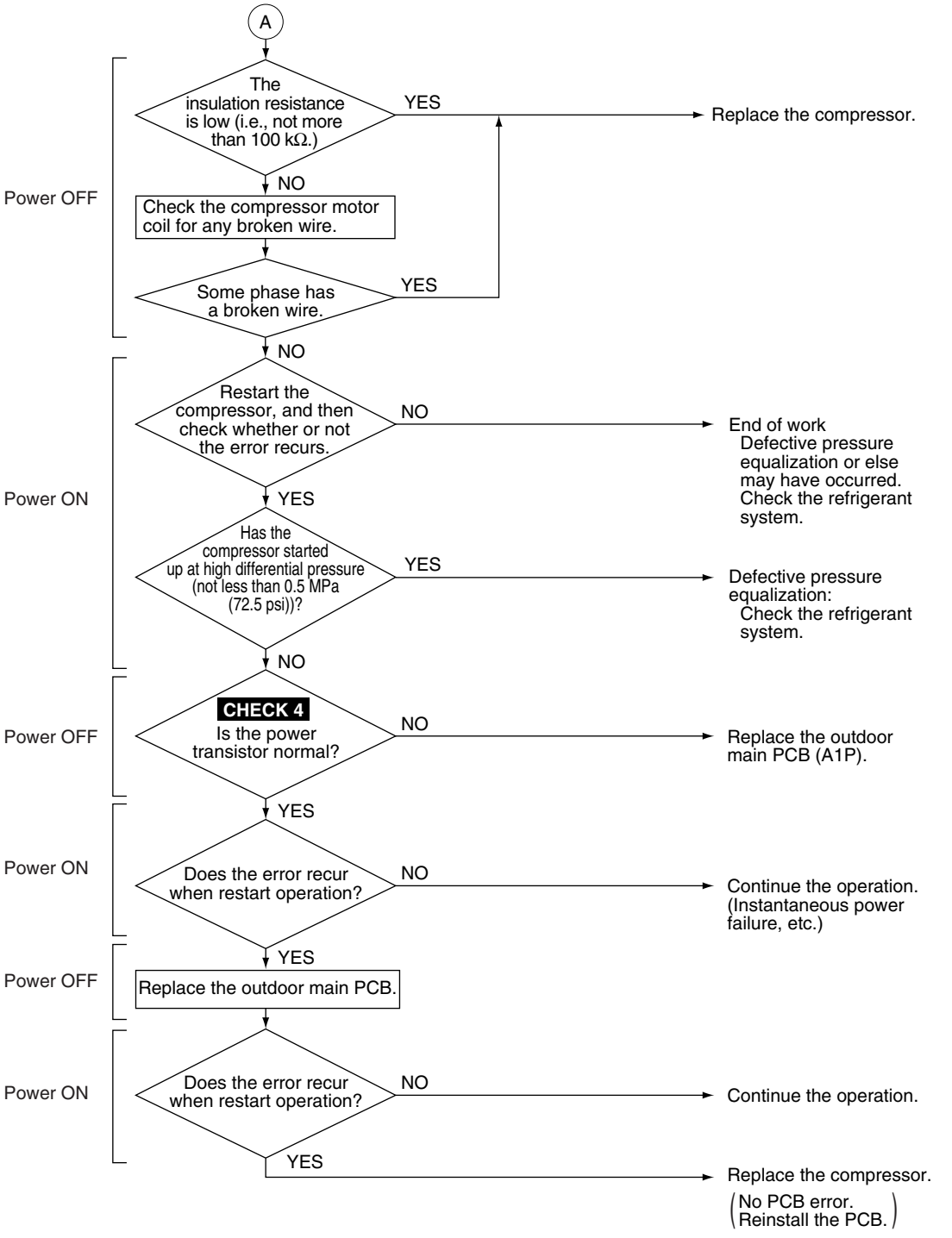
- Inverter compressor lock
- High differential pressure (0.5 MPa (72.5 psi) and above)
- Incorrect UVW wiring
- Defective PCB
- Stop valve is not opened

Troubleshooting

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



Troubleshooting



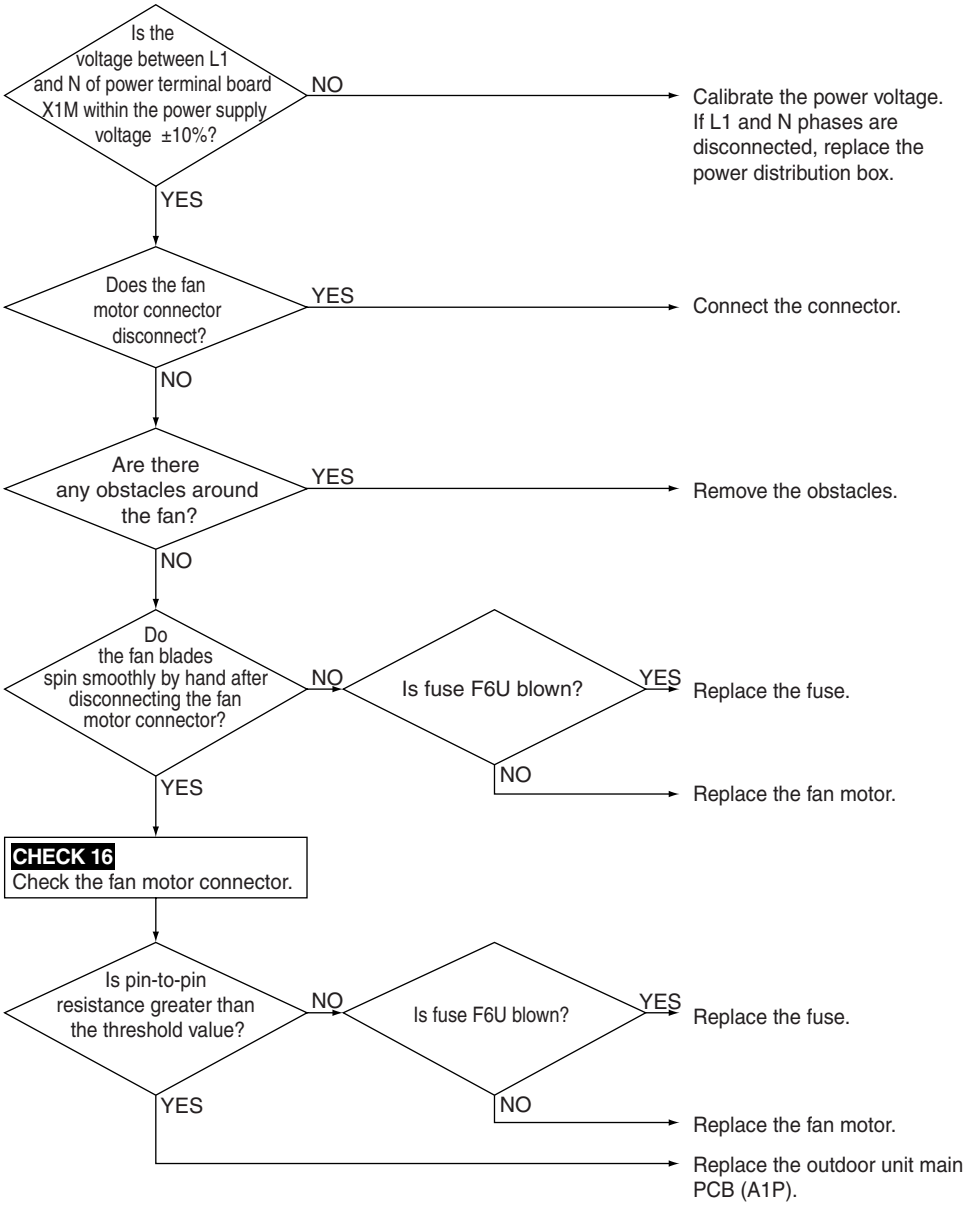
CHECK4 Refer to page 225.

4.23 Outdoor Fan Motor Abnormality

Error Code	**E7**
Applicable Models	All outdoor units
Method of Error Detection	The fan motor circuit error is detected based on the rotation frequency detected by hole IC during the fan motor operation.
Error Decision Conditions	In the condition of fan motor rotation, the number of rotation is below the fixed number for more than 6 seconds. (System down is caused by 4 times of detection.)
Supposed Causes	■ Defective fan motor ■ Defect or connection error of the connectors/ harness between the fan motor and PCB ■ The fan can not rotate due to obstruction of foreign matter. ■ Clear condition: Continue normal operation for 5 minutes ■ Missing phase L1 and missing phase N

Troubleshooting

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



CHECK 16 Refer to page 238.

4.24 Electronic Expansion Valve Coil Abnormality

Error Code **E9**

Applicable Models All outdoor units

Method of Error Detection Check continuity of electronic expansion valve coil.

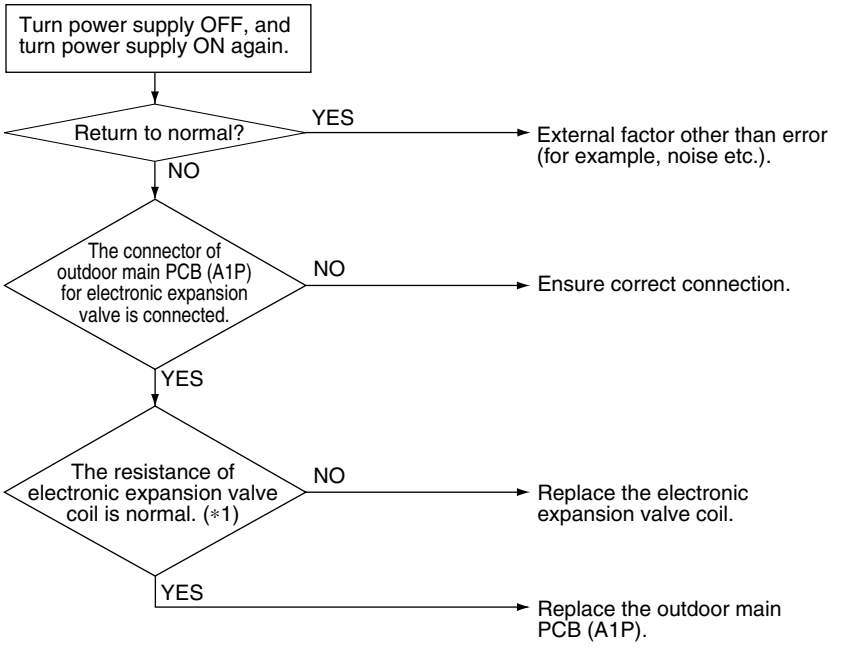
Error Decision Conditions No current is detected in the common (COM [+]) when power supply is ON.

Supposed Causes

- Defective electronic expansion valve coil
- Defective outdoor main PCB
- Disconnection of connectors for electronic expansion valve

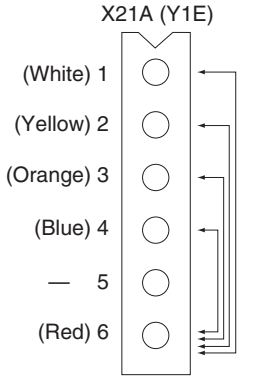
Troubleshooting

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



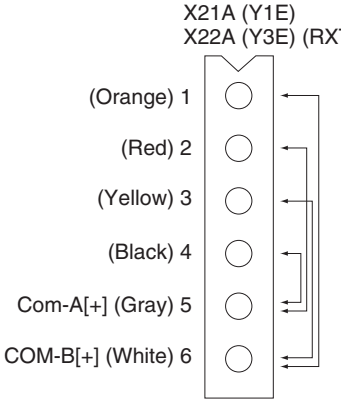
Note: ∗1: Measure the connector pin-to-pin resistance and make sure that the resistance value is within the range listed in the table below.
Determine the type according to the connector wire color and measure the resistance.

RXTQ36TAVJU



Measuring points	Judgment criteria
1-6	46±3 Ω
2-6	
3-6	
4-6	

RXTQ48/60TAVJU



Measuring points	Judgment criteria
1-6	46±3 Ω
2-5	
3-6	
4-5	

4.25 Discharge Pipe Temperature Abnormality

Error Code **F3**

Applicable Models All outdoor units

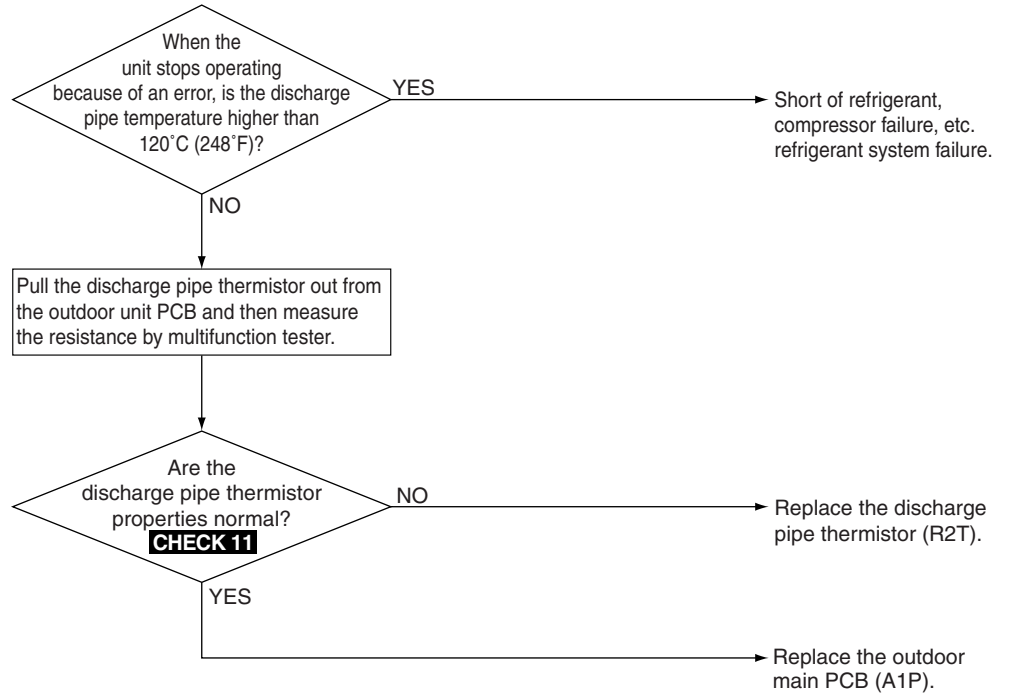
Method of Error Detection Abnormality is detected according to the temperature detected by the discharge pipe thermistor.

Error Decision Conditions
The discharge pipe temperature rises to an abnormally high level.
The discharge pipe temperature rises suddenly.

Supposed Causes
- Defective discharge pipe thermistor (R2T)
- Disconnection of discharge pipe thermistor (R2T)
- Defective outdoor unit PCB

Troubleshooting

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



CHECK 11 Refer to page 231.

4.26 Refrigerant Overcharged

Error Code **F6**

Applicable Models All outdoor units

Method of Error Detection Excessive charging of refrigerant is detected by using the outdoor air temperature, heat exchanger deicer temperature and liquid pipe temperature during a check operation.

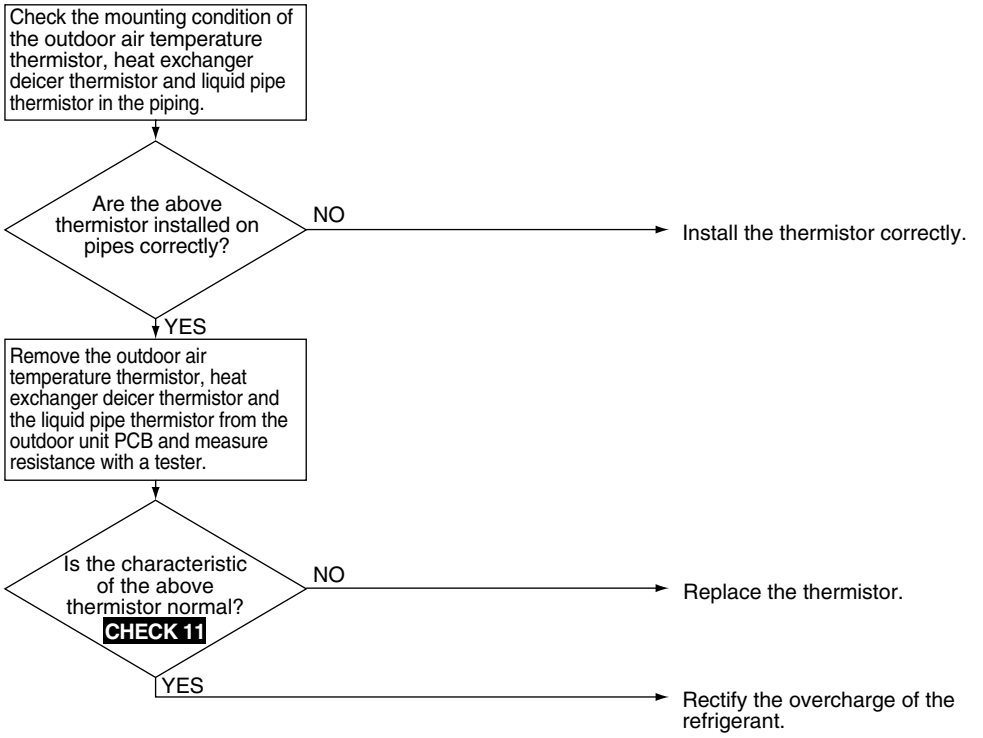
Error Decision Conditions During a check operation, the amount of refrigerant will be calculated based on the outdoor temperature, the heat exchanger deicer temperature, and the liquid pipe temperature. If the calculated amount exceeds the normal amount by 30%, too much refrigerant has been added. (Adding only slightly more than the normal amount of refrigerant may also cause **F6** to be displayed)

Supposed Causes

- Refrigerant overcharge
- Disconnection of outdoor air thermistor, heat exchanger deicer thermistor, liquid pipe thermistor
- Defective outdoor air thermistor, heat exchanger deicer thermistor, liquid pipe thermistor

Troubleshooting

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



CHECK 11 Refer to page 231.

4.27 Thermistor Abnormality

Error Code **H9, J3, J5, J6, J7, J9**

Applicable Models All outdoor units

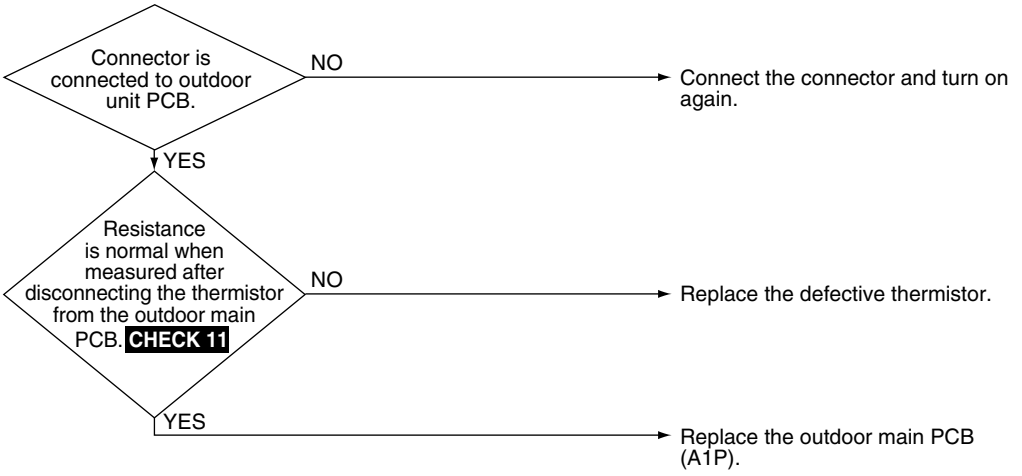
Method of Error Detection Error is detected from the temperature detected by the thermistor∗1.

Error Decision Conditions When the thermistor has short circuit or open circuit

Supposed Causes
- Defective thermistor
- Defective outdoor main PCB
- Defective thermistor connection

Troubleshooting

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



CHECK 11 Refer to page 231.

Note: ∗1

Error code	Thermistor	RXTQ36/48TAVJU		RXTQ60TAVJU	
		Symbol	Connector	Symbol	Connector
H9	Outdoor air thermistor	R1T	X11A	R1T	X11A
J3	Discharge pipe thermistor	R2T	X12A	R2T	X12A
J5	Suction pipe thermistor	R3T		R3T	
		R5T		R5T	
J6	Outdoor heat exchanger deicer thermistor	R4T		R4T	
J7	Outdoor heat exchanger liquid pipe thermistor	R7T	X13A	R7T	X13A
J9	Subcooling heat exchanger gas pipe thermistor	—	—	R6T	

4.28 High Pressure Sensor Abnormality

Error Code **JA**

Applicable Models All outdoor units

Method of Error Detection Error is detected from the pressure detected by the high pressure sensor.

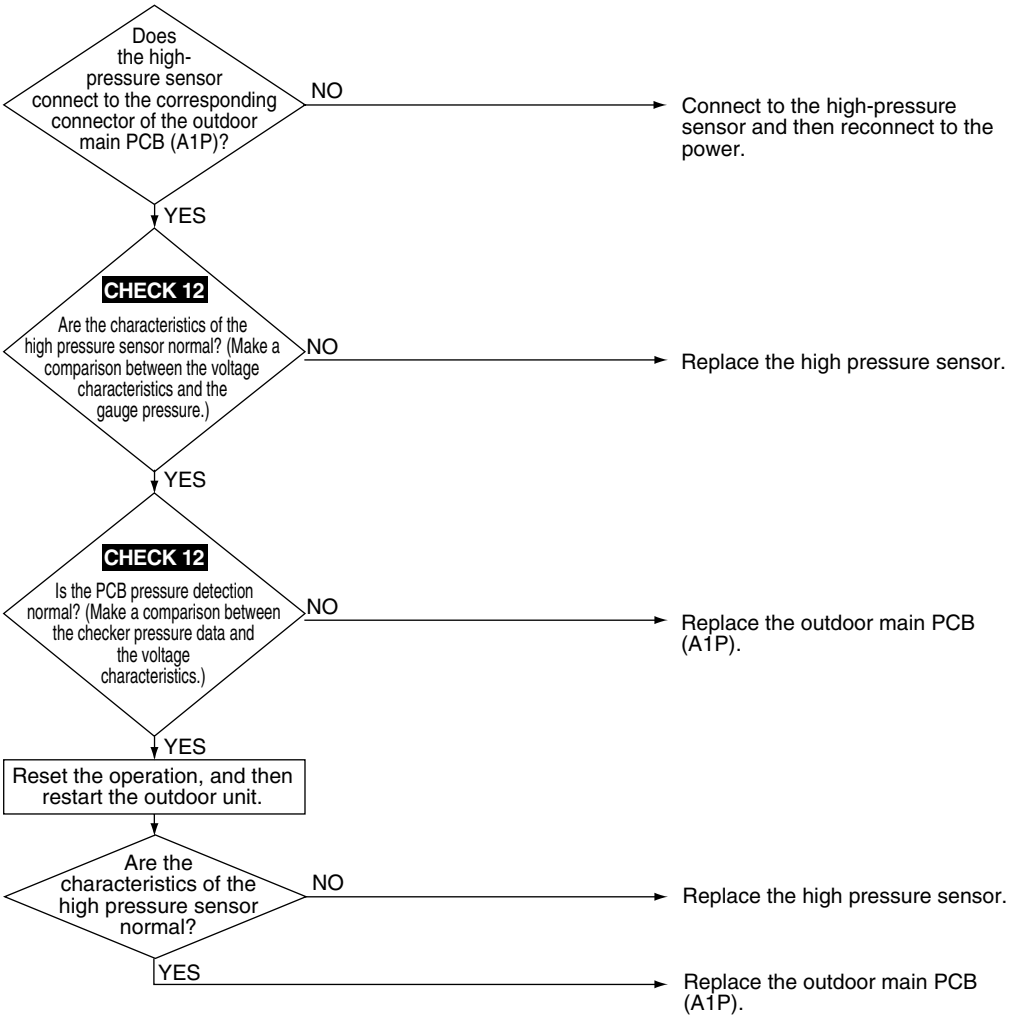
Error Decision Conditions The high pressure sensor is short circuit or open circuit.
Pressure range: 0-4.3 MPa (0-624 psi)

Supposed Causes

- Defective high pressure sensor
- Connection of low pressure sensor with wrong connection
- Defective outdoor main PCB
- Disconnection of high pressure sensor

Troubleshooting

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



CHECK 12 Refer to page 234.

4.29 Low Pressure Sensor Abnormality

Error Code **JC**

Applicable Models All outdoor units

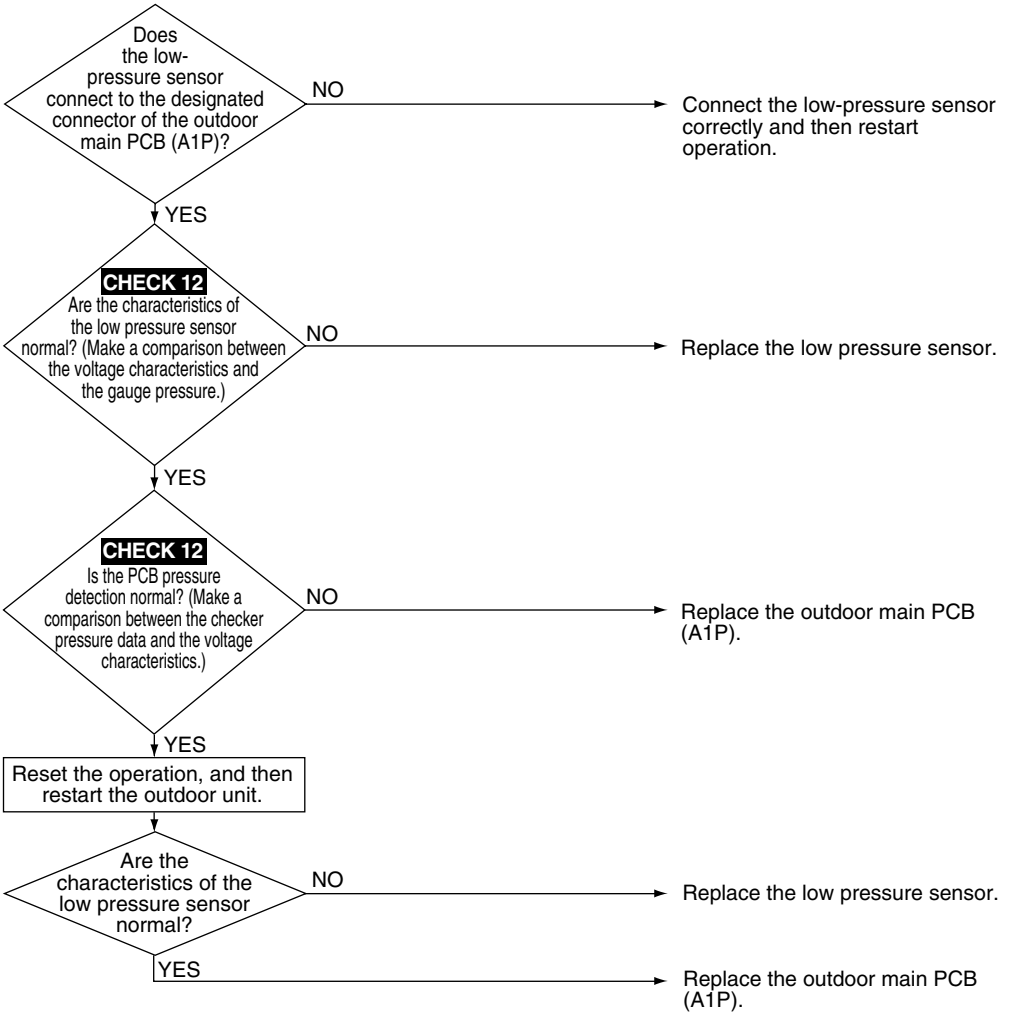
Method of Error Detection Error is detected from pressure detected by low pressure sensor.

Error Decision Conditions The low pressure sensor is short circuit or open circuit.
Pressure range: 0-1.7 MPa (0-247 psi)

Supposed Causes
- Defective low pressure sensor
- Connection of high pressure sensor with wrong connection
- Defective outdoor main PCB
- Disconnection of low pressure sensor

Troubleshooting

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



CHECK 12 Refer to page 234.

4.30 PCB (for Inverter Compressor) Abnormality

Error Code

L1

Applicable Models

All outdoor units

Method of Error Detection

Error is detected based on the current value during waveform output before starting compressor.
Error is detected based on the value from current sensor during synchronous operation when starting the unit.

Error Decision Conditions

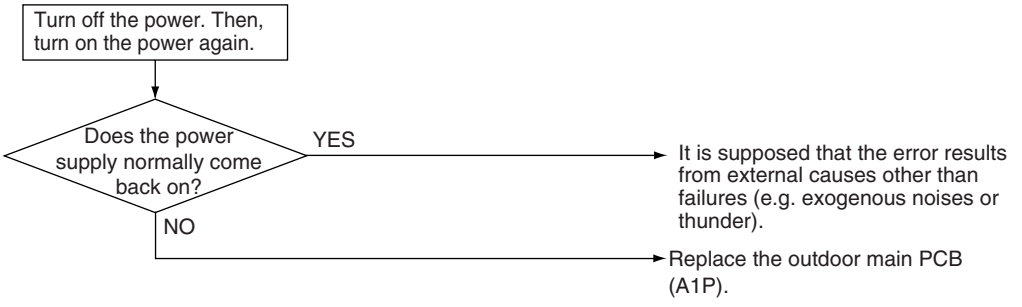
Overcurrent (OCP) flows during waveform output.
Error of current sensor during synchronous operation.
IPM failure.

Supposed Causes

- IPM failure
- Current sensor failure
- Drive circuit failure

Troubleshooting

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



4.31 Radiation Fin Temperature Rise Abnormality

Error Code

L4

Applicable Models

All outdoor units

Method of Error Detection

The radiation fin temperature is detected by the radiation fin thermistor.

Error Decision Conditions

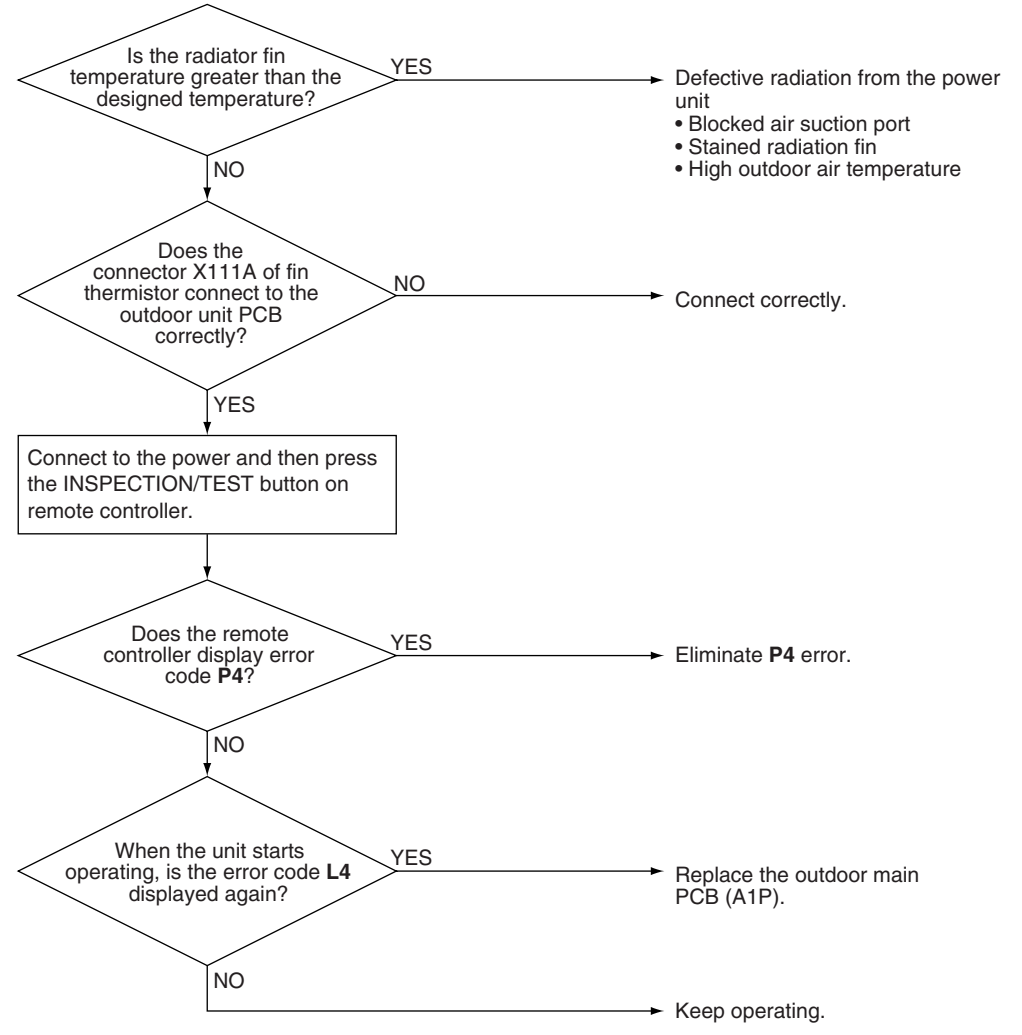
The radiation fin temperature exceeds a certain temperature.

Supposed Causes

- Activation of radiation fin thermistor
- Defective outdoor main PCB
- Defective radiation fin thermistor

Troubleshooting

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



4.32 Inverter Compressor Instantaneous Overcurrent

Error Code

L5

Applicable Models

All outdoor units

Method of Error Detection

Error is detected from current flowing in the power transistor.

Error Decision Conditions

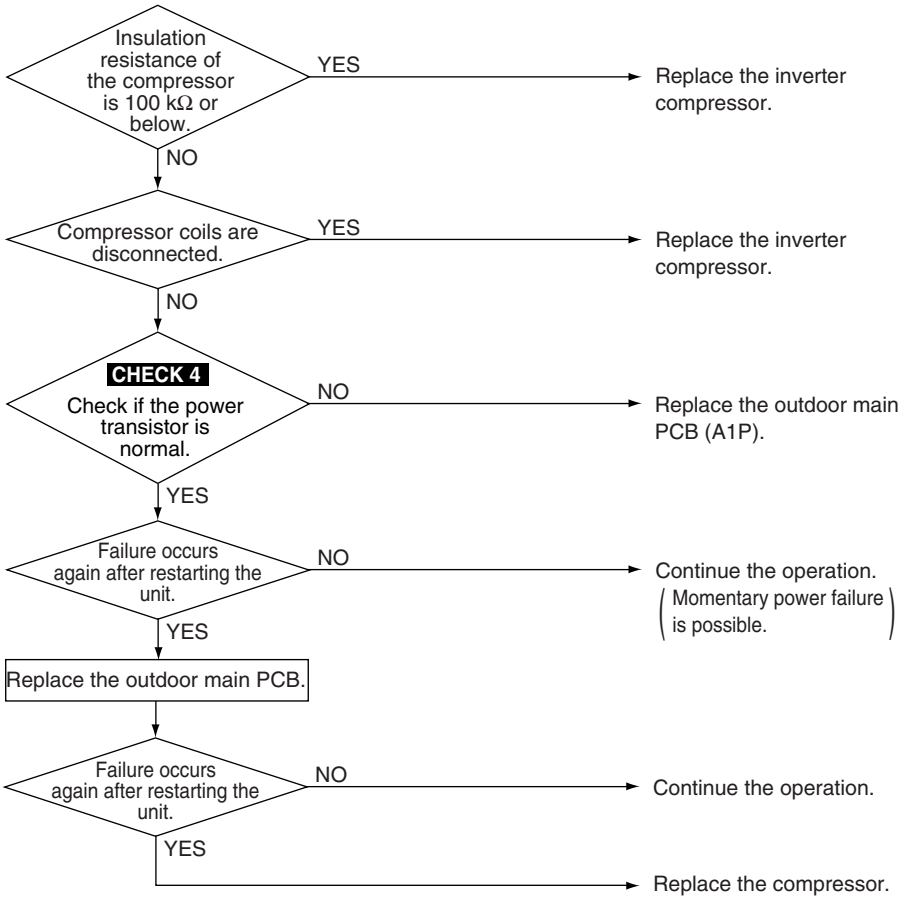
An excessive current flows in the power transistor.

Supposed Causes

- Defective compressor coil (disconnected, defective insulation)
- Defective compressor startup (mechanical lock)
- Defective PCB

Troubleshooting

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



CHECK 4 Refer to page 225.

4.33 Inverter Compressor Overcurrent

Error Code **L8**

Applicable Models All outdoor units

Method of Error Detection Error is detected by current flowing in the power transistor.

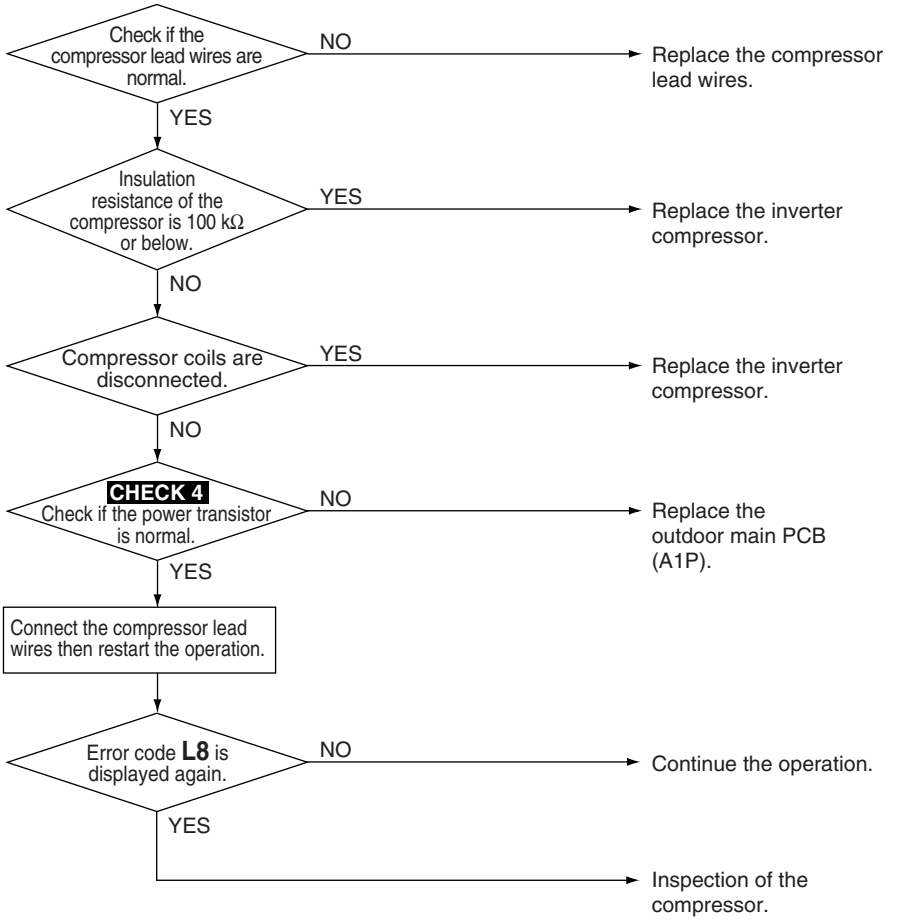
Error Decision Conditions Overload in the compressor is detected.

Supposed Causes

- Compressor overload
- Broken wire inside compressor
- Defective PCB
- Disconnection of compressor

Troubleshooting

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



CHECK 4 Refer to page 225.

4.34 Inverter Compressor Startup Abnormality

Error Code **L9**

Applicable Models All outdoor units

Method of Error Detection Error is detected by the power transistor current

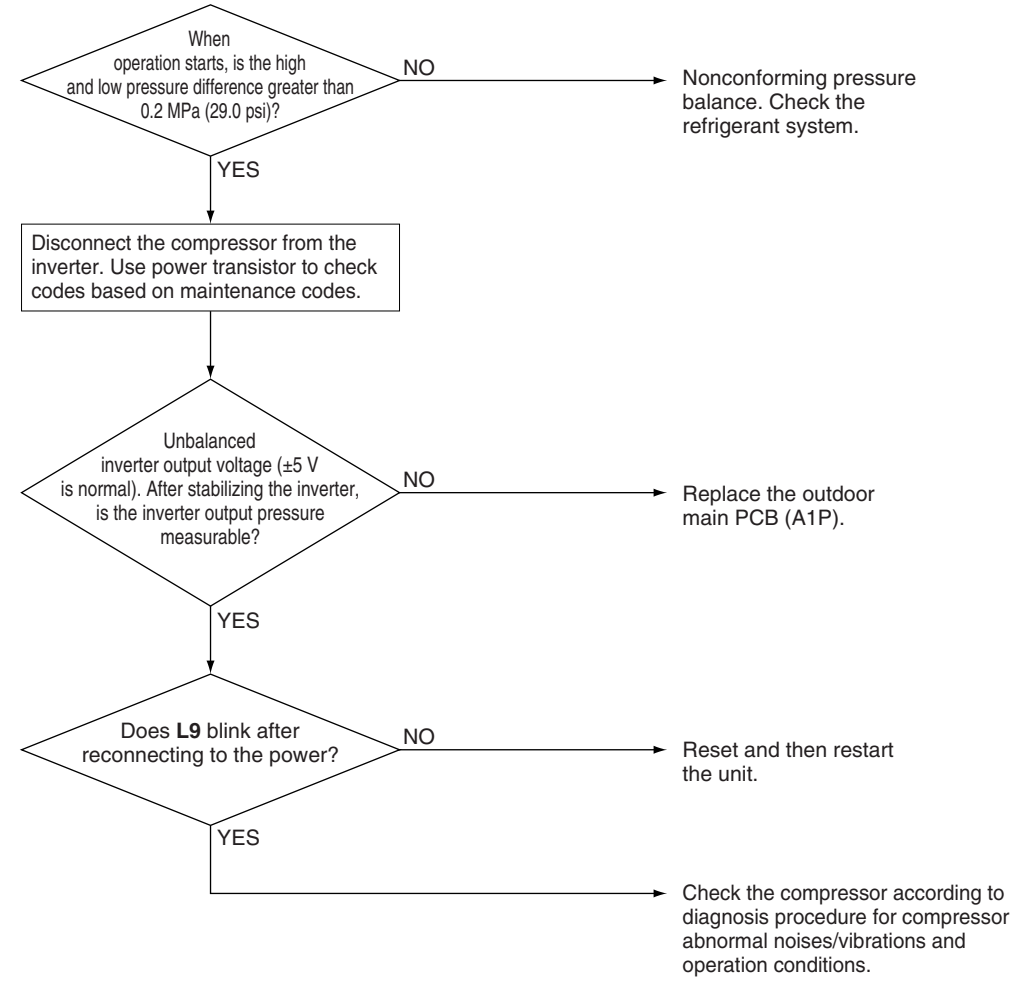
Error Decision Conditions Compressor overload during activation.

Supposed Causes

- Defective compressor
- Large pressure difference before starting the compressor
- Defective PCB

Troubleshooting

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



4.35 Transmission Error (Between Microcomputers on the Outdoor Main PCB)

Error Code

LC

Applicable Models

All outdoor units

Method of Error Detection

Transmission conditions between microcomputers on the outdoor main PCB are tested via microcomputer.

Error Decision Conditions

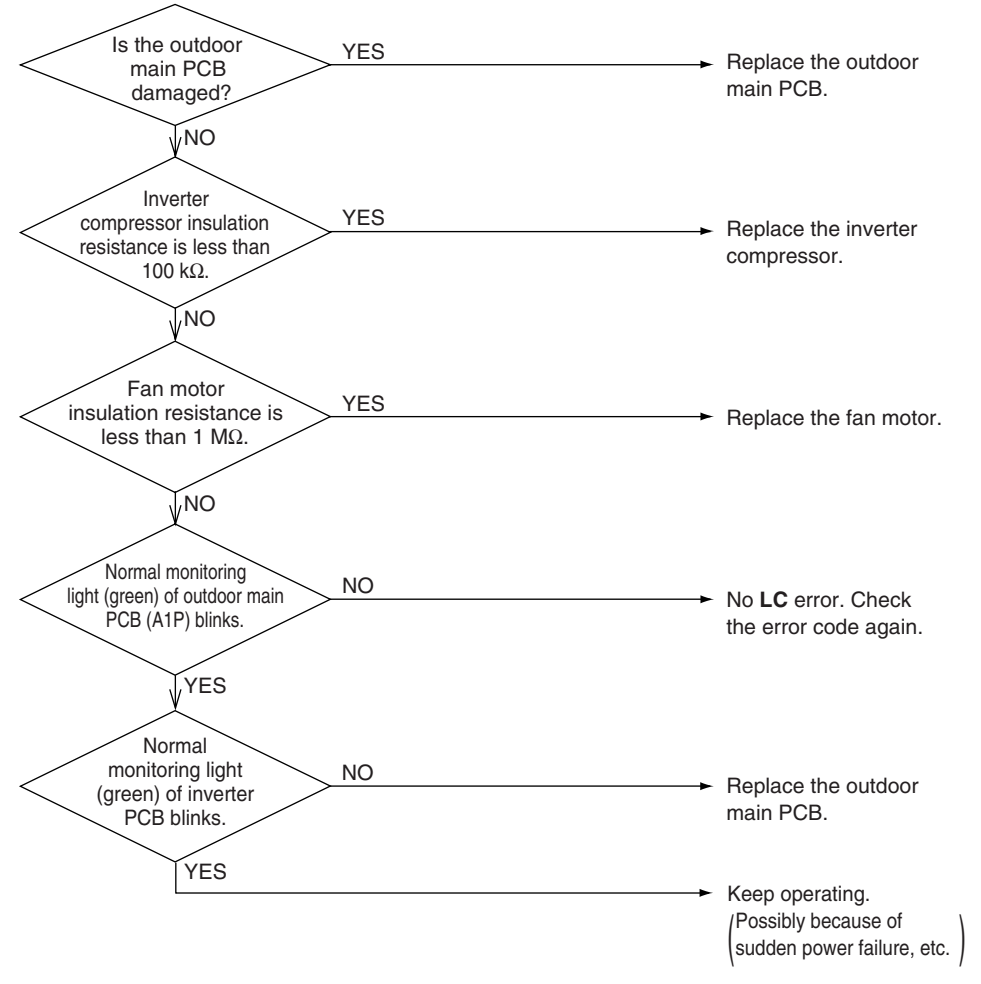
No normal transmission after a certain period of time

Supposed Causes

- Connection error between microcomputers on the outdoor main PCB
- Defective outdoor main PCB (Transmission part)
- Defective noise filter
- External factors (Noise, etc.)
- Defective inverter compressor
- Defective fan motor

Troubleshooting

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



4.36 Inverter Circuit Capacitor High Voltage

Error Code

P1

Applicable Models

All outdoor units

Method of Error Detection

The voltage waveform of the main circuit capacitor of the inverter is used to check for errors.

Error Decision Conditions

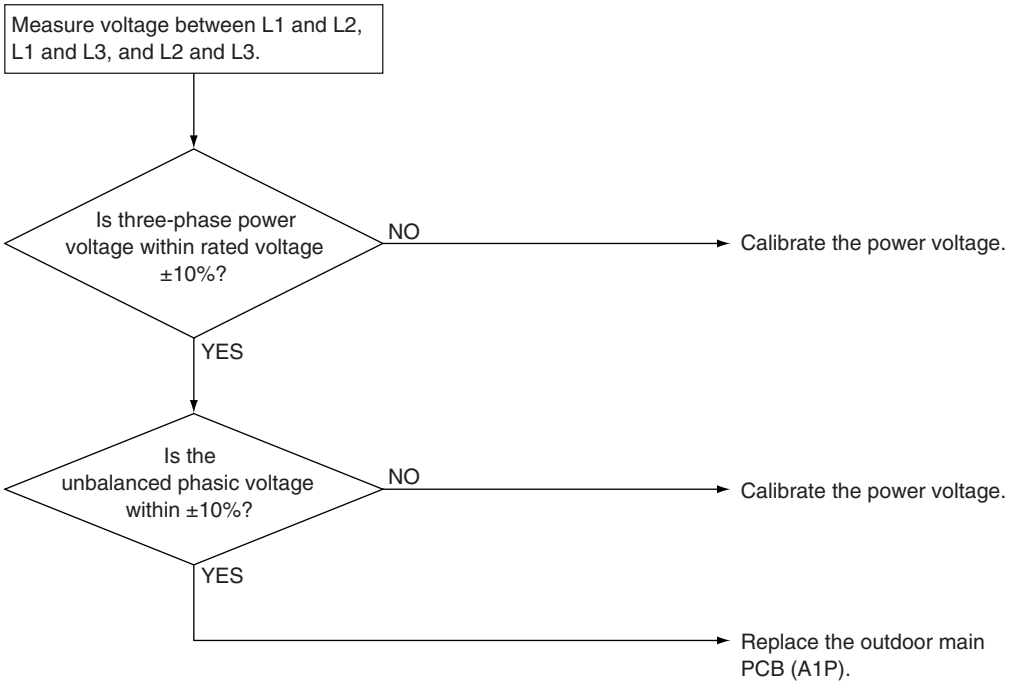
The above-mentioned voltage waveform looks like the waveform of the power supply with a missing phase

Supposed Causes

- Defective main circuit capacitor
- Incorrect main circuit wiring
- Defective outdoor unit PCB
- Unbalanced voltage between phases
- Missing phase

Troubleshooting

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



4.37 Radiation Fin Thermistor Abnormality

Error Code

P4

Applicable Models

All outdoor units

Method of Error Detection

Resistance of the following thermistor is detected when the compressor is not operating.
(1) Radiation fin thermistor
(2) PCB circuit thermistor

Error Decision Conditions

When the resistance value of thermistor becomes a value equivalent to open circuited or short circuited status

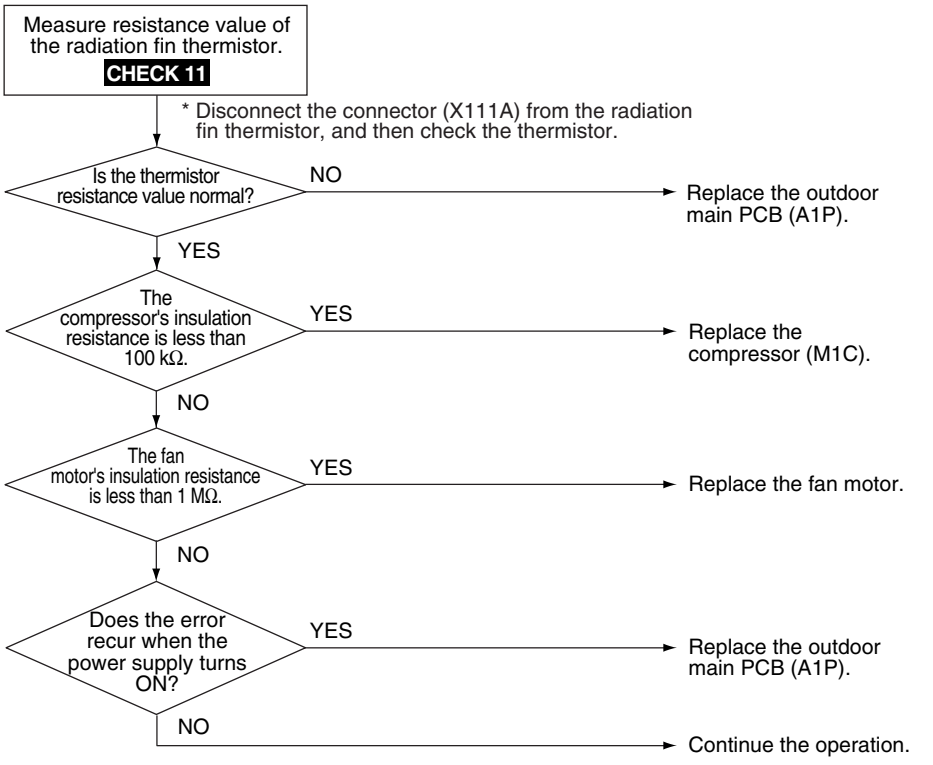
* Error is not decided while the unit operation is continued.
  P4 will be displayed by pressing the inspection button.

Supposed Causes

- Defective radiation fin temperature thermistor
- Defective PCB
- Defective inverter compressor
- Defective fan motor

Troubleshooting

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



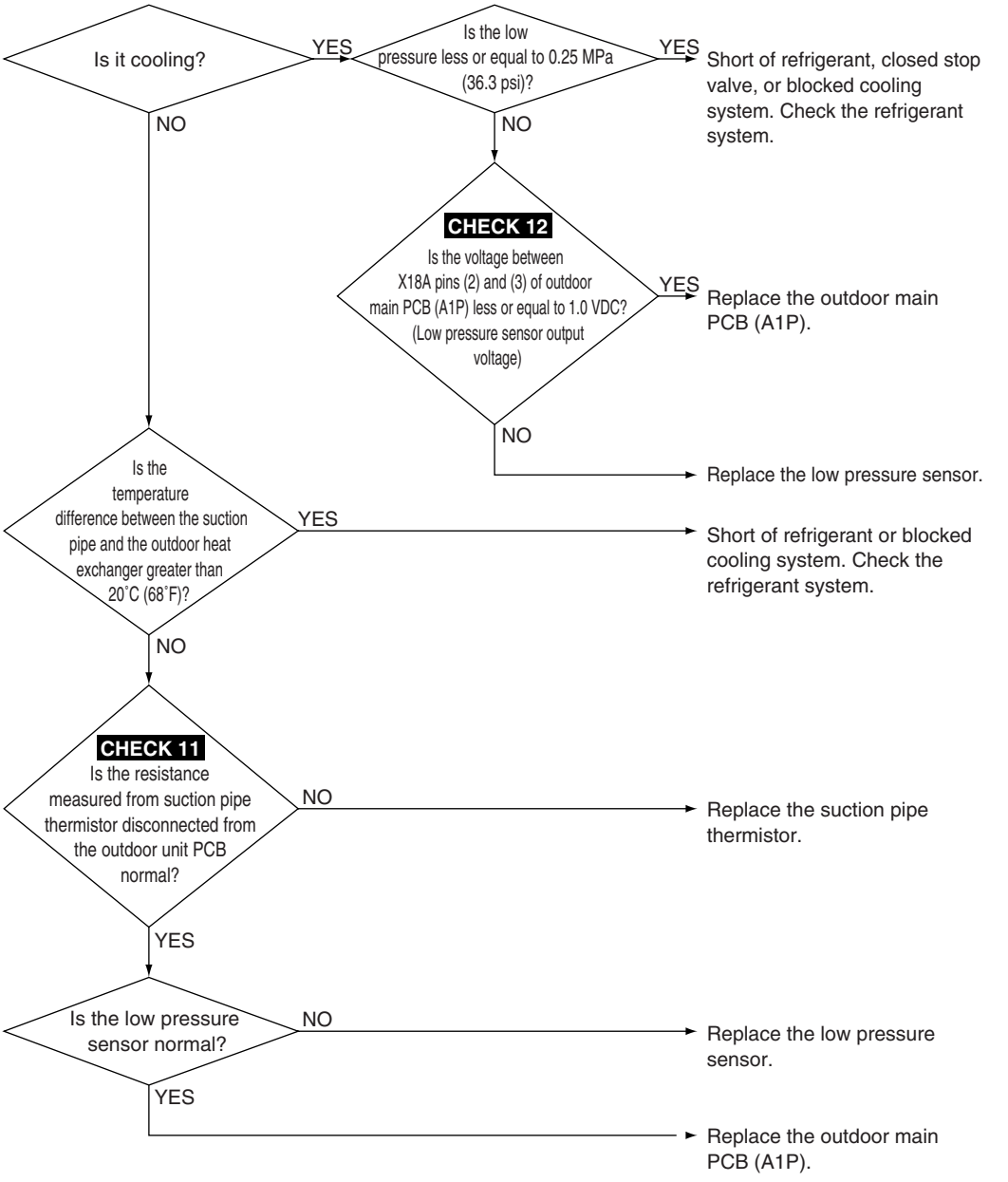
CHECK 11 Refer to page 231.

4.38 Refrigerant Shortage

Error Code	**U0**
Applicable Models	All outdoor units
Method of Error Detection	Refrigerant shortage check is conducted based on the discharge pipe thermistor temperature and the low-pressure saturated temperature.
Error Decision Conditions	Microcomputer is used to determine and check for system refrigerant shortage. ∗The unit can keep operating but there is an unconfirmed error.
Supposed Causes	■ Refrigerant shortage or refrigerant clogging (piping error) ■ Defective suction pipe thermistor ■ Defective pressure sensor ■ Defective outdoor main PCB (A1P)

Troubleshooting

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



CHECK 11 Refer to page 231.

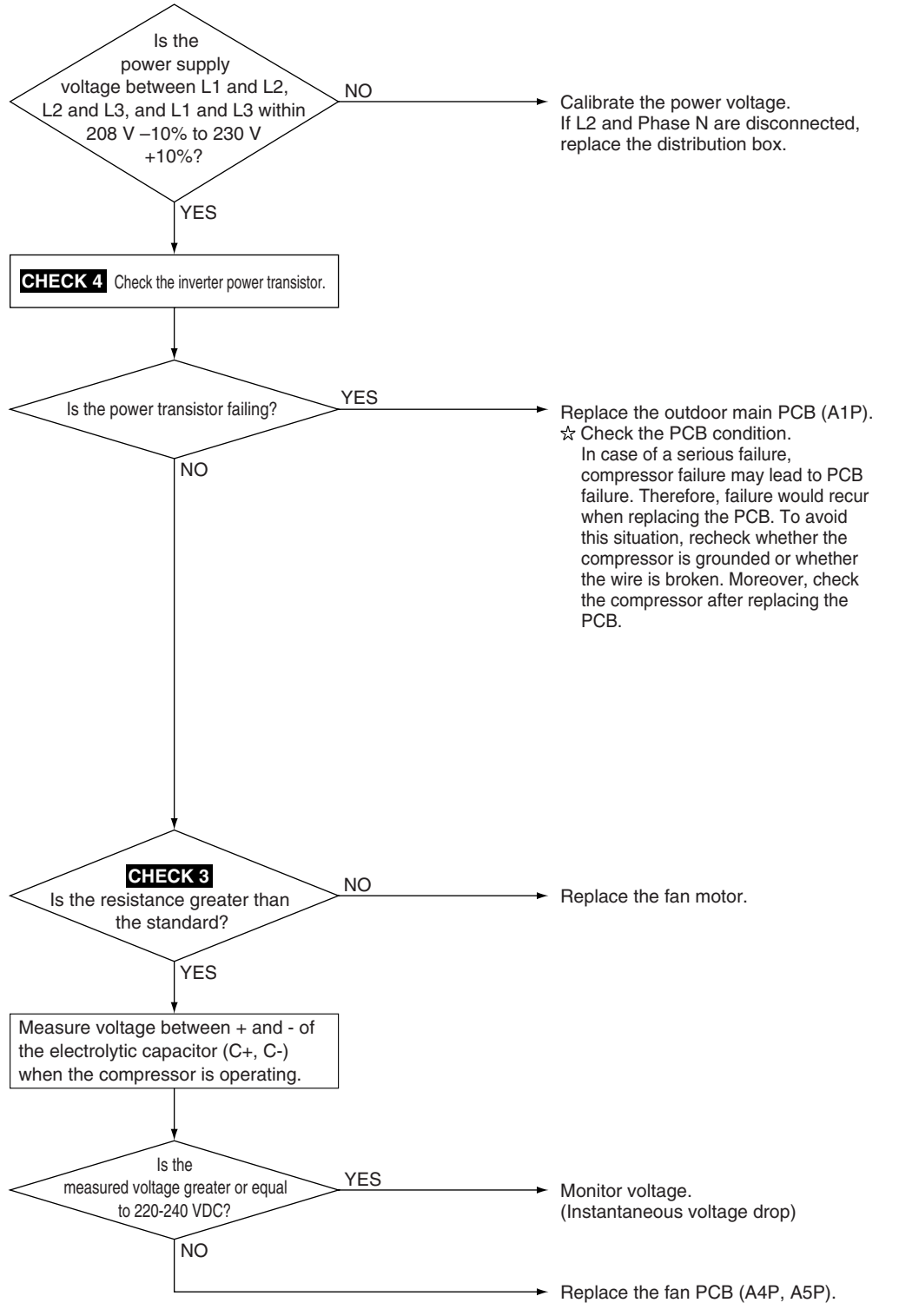
CHECK 12 Refer to page 234.

4.39 Power Supply Insufficient or Instantaneous Abnormality

Error Code	**U2**
Applicable Models	All outdoor units
Method of Error Detection	The main circuit capacitor voltage of the inverter and the power supply voltage is checked.
Error Decision Conditions	The main circuit capacitor of the tested invertor has abnormal voltage or the power supply voltage is abnormal.
Supposed Causes	■ Insufficient power supply ■ Instantaneous power failure ■ Defective outdoor fan motor ■ Defective outdoor unit PCB

Troubleshooting

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



CHECK 3 Refer to page 224.

CHECK 4 Refer to page 225.

4.40 Check Operation Not Executed

Error Code **U3**

Applicable Models All outdoor units

Method of Error Detection Determined based on whether check operation is executed or not

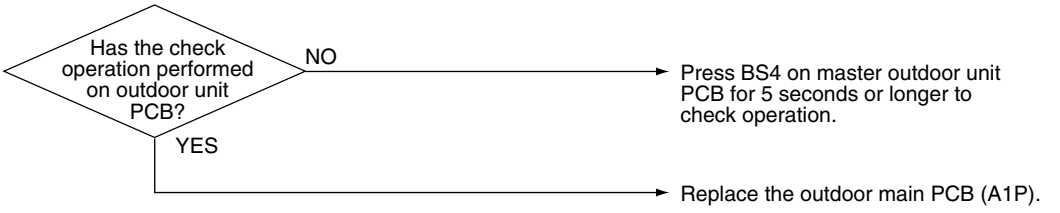
Error Decision Conditions Error is decided when the unit starts operation without check operation.

Supposed Causes

- Check operation is not executed.

Troubleshooting

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



4.41 Transmission Error between Indoor Units and Outdoor Units

Error Code

U4

Applicable Models

All indoor and outdoor units

Method of Error Detection

Micro-computer checks if transmission between indoor and outdoor units is normal.

Error Decision Conditions

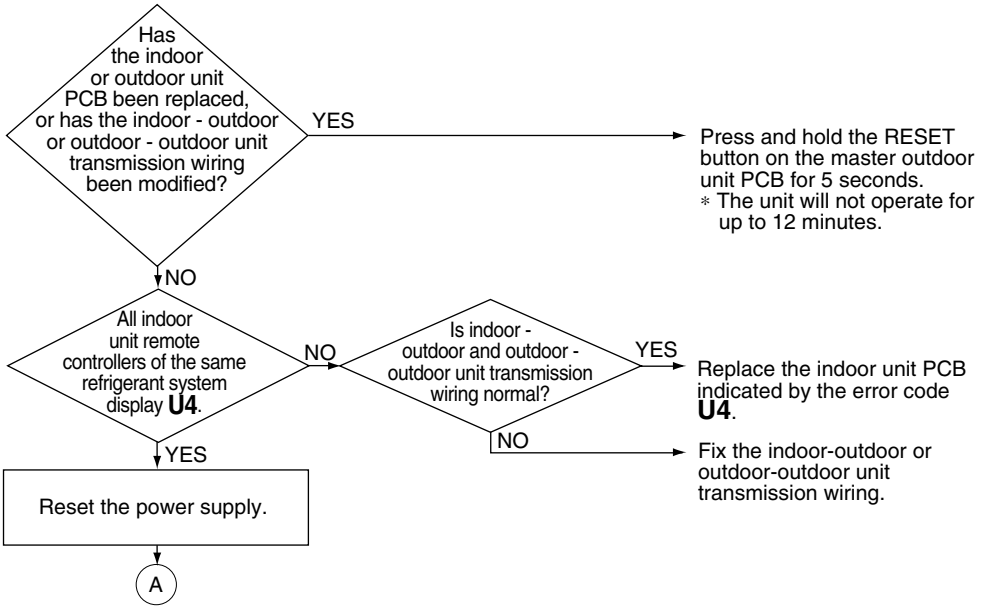
When transmission is not carried out normally for a certain amount of time

Supposed Causes

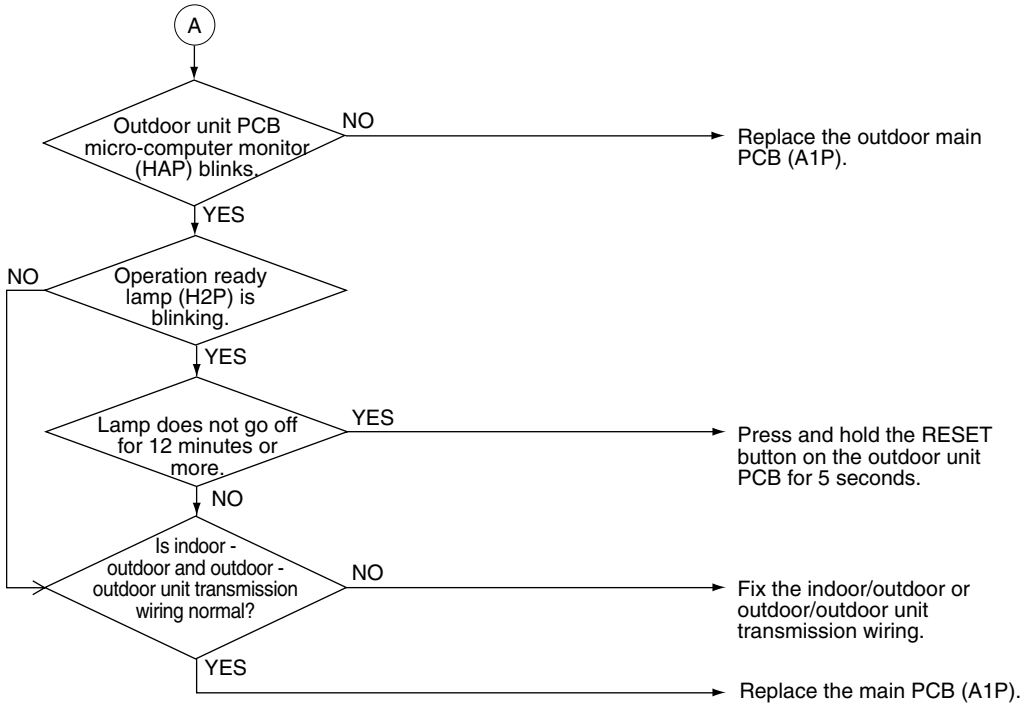
- Indoor to outdoor, outdoor to outdoor transmission wiring F1, F2 disconnection, short circuit or wrong wiring
- Outdoor unit power supply is OFF
- System address does not match
- Defective indoor unit PCB
- Defective outdoor main PCB

Troubleshooting

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



Troubleshooting



4.42 Transmission Error between Remote Controller and Indoor Unit

Error Code U5

Applicable Models All indoor units

Method of Error Detection In case of controlling with 2-remote controller, check the system using micro-computer is signal transmission between indoor unit and remote controller (main and sub) is normal.

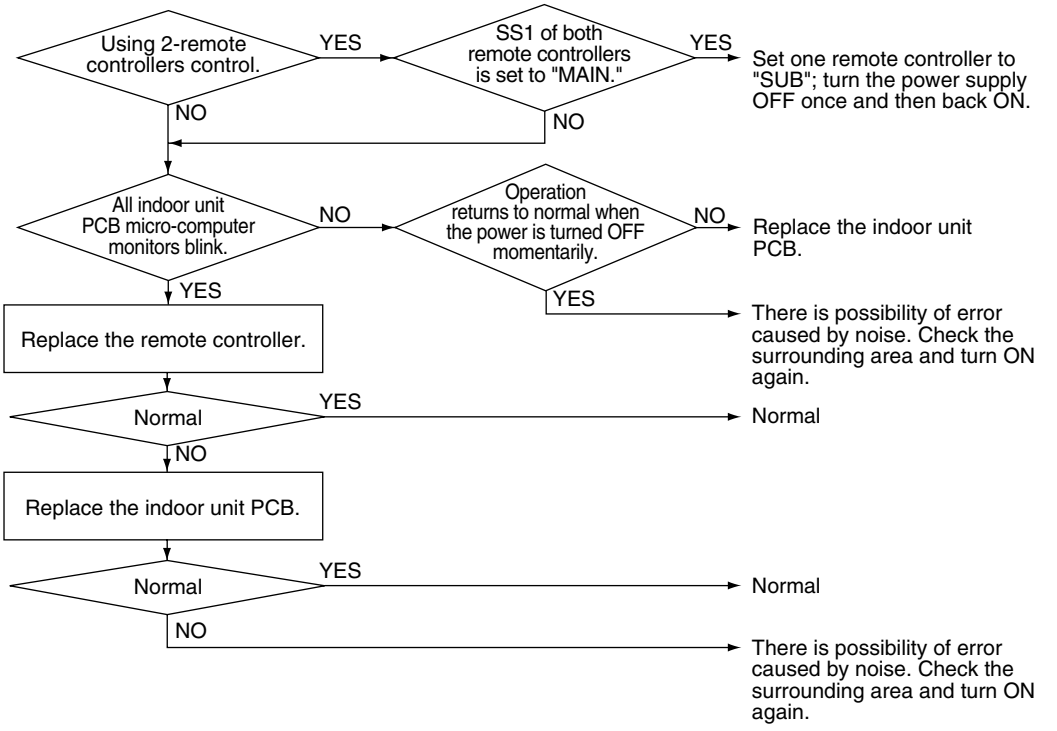
Error Decision Conditions Normal transmission does not continue for specified period.

Supposed Causes

- Transmission error between indoor unit and remote controller
- Connection of two main remote controllers (when using 2 remote controllers)
- Defective indoor unit PCB
- Defective remote controller PCB
- Defective transmission caused by noise

Troubleshooting

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



4.43 Transmission Error between Main and Sub Remote Controllers

Error Code **U8**

Applicable Models All indoor units

Method of Error Detection In case of controlling with 2-remote controller, check the system using micro-computer if signal transmission between indoor unit and remote controller (main and sub) is normal.

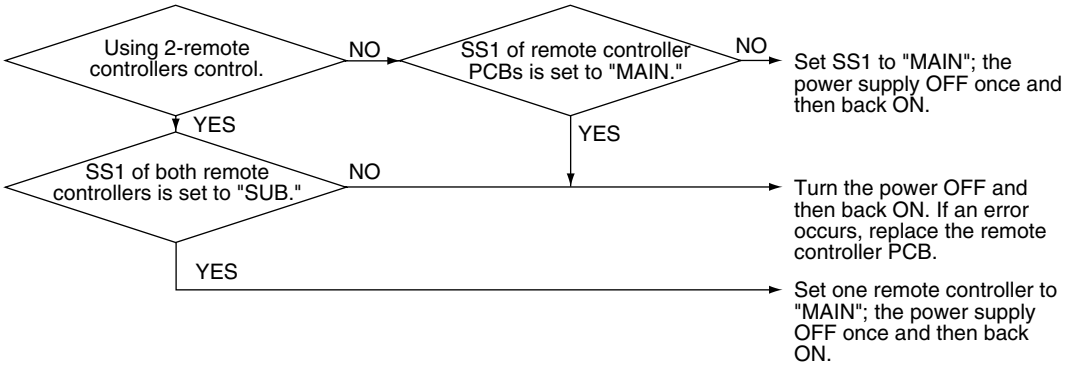
Error Decision Conditions Normal transmission does not continue for specified period.

Supposed Causes

- Transmission error between main and sub remote controller
- Connection between sub remote controllers
- Defective remote controller PCB

Troubleshooting

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



4.44 Transmission Error between Indoor and Outdoor Units in the Same System

Error Code **U9**

Applicable Models All indoor units

Method of Error Detection Error signal for the other indoor units is detected within the system by outdoor unit PCB.

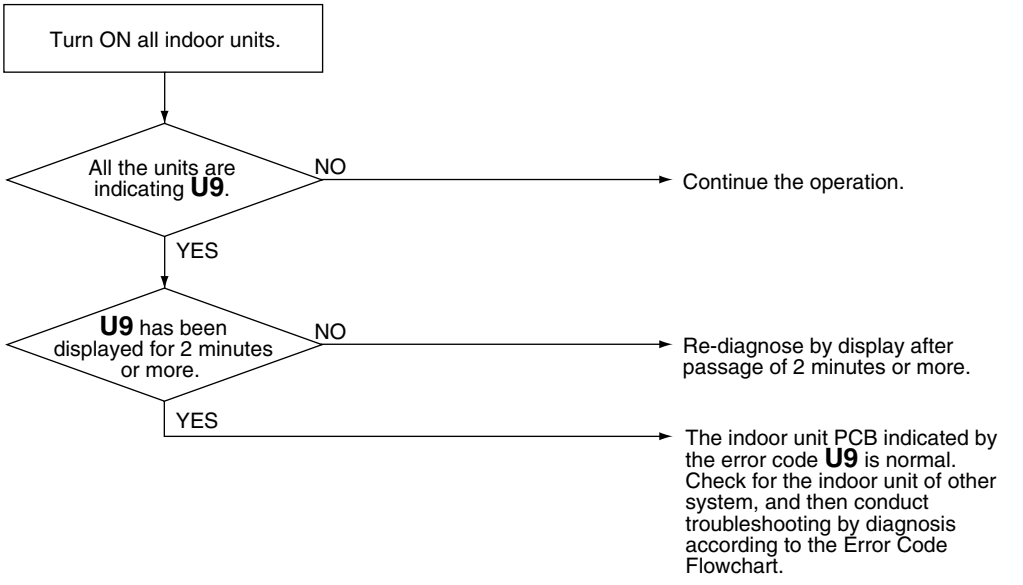
Error Decision Conditions The error decision is made on any other indoor unit within the system concerned.

Supposed Causes

- Transmission error within or outside of other system
- Defective electronic expansion valve in indoor unit of other system
- Defective PCB of indoor unit in other system
- Improper connection of transmission wiring between indoor and outdoor unit

Troubleshooting

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

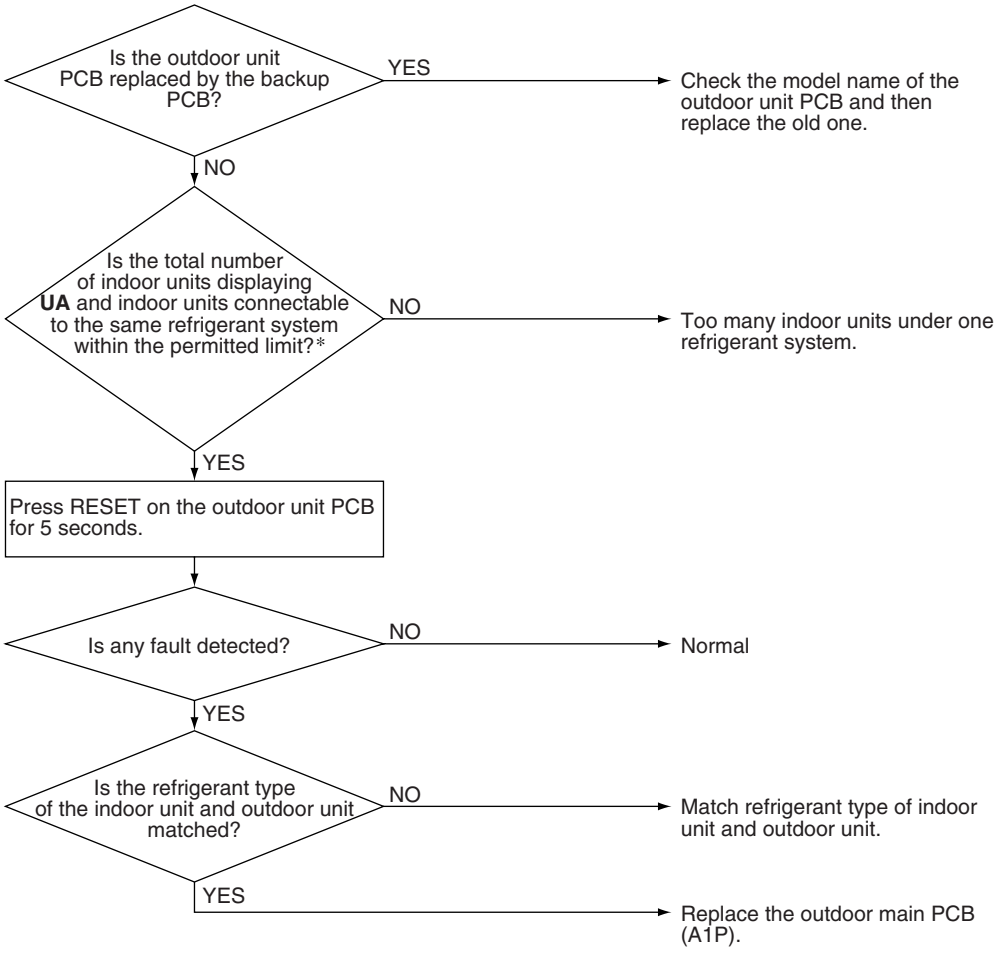


4.45 Improper Combination of Indoor and Outdoor Units, Indoor Units and Remote Controller

Error Code	**UA**
Applicable Models	All indoor units
Method of Error Detection	A difference occurs in data by the type of refrigerant between indoor and outdoor units. The number of indoor units is out of the allowable range.
Error Decision Conditions	The error decision is made as soon as either of the abnormalities aforementioned is detected.
Supposed Causes	■ Excess of connected indoor units ■ Defective outdoor main PCB ■ Mismatching of the refrigerant type of indoor and outdoor unit. ■ Setting of outdoor main PCB was not conducted after replacing to spare PCB.

Troubleshooting

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



* The number of indoor units that may be connected to an individual outdoor unit system is determined by the model of the outdoor unit.

4.46 Address Duplication of Centralized Controller

Error Code

UC

Applicable Models

All indoor units

Method of Error Detection

The principal indoor unit detects the same address as that of its own on any other indoor unit.

Error Decision Conditions

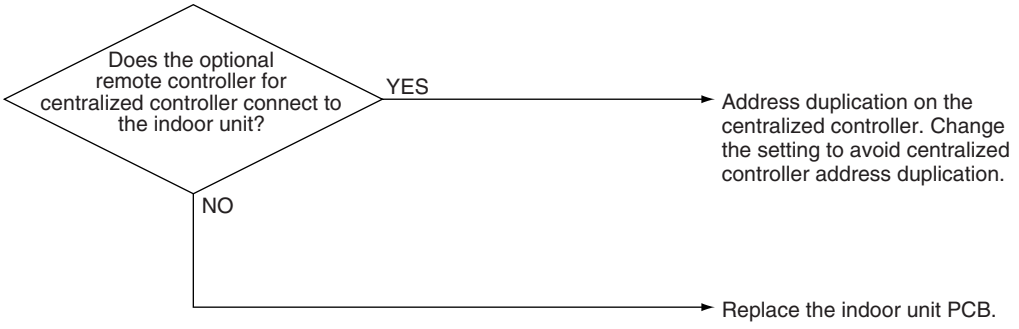
The error decision is made as soon as the abnormality aforementioned is detected.

Supposed Causes

- Address duplication of centralized controller
- Defective indoor unit PCB

Troubleshooting

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

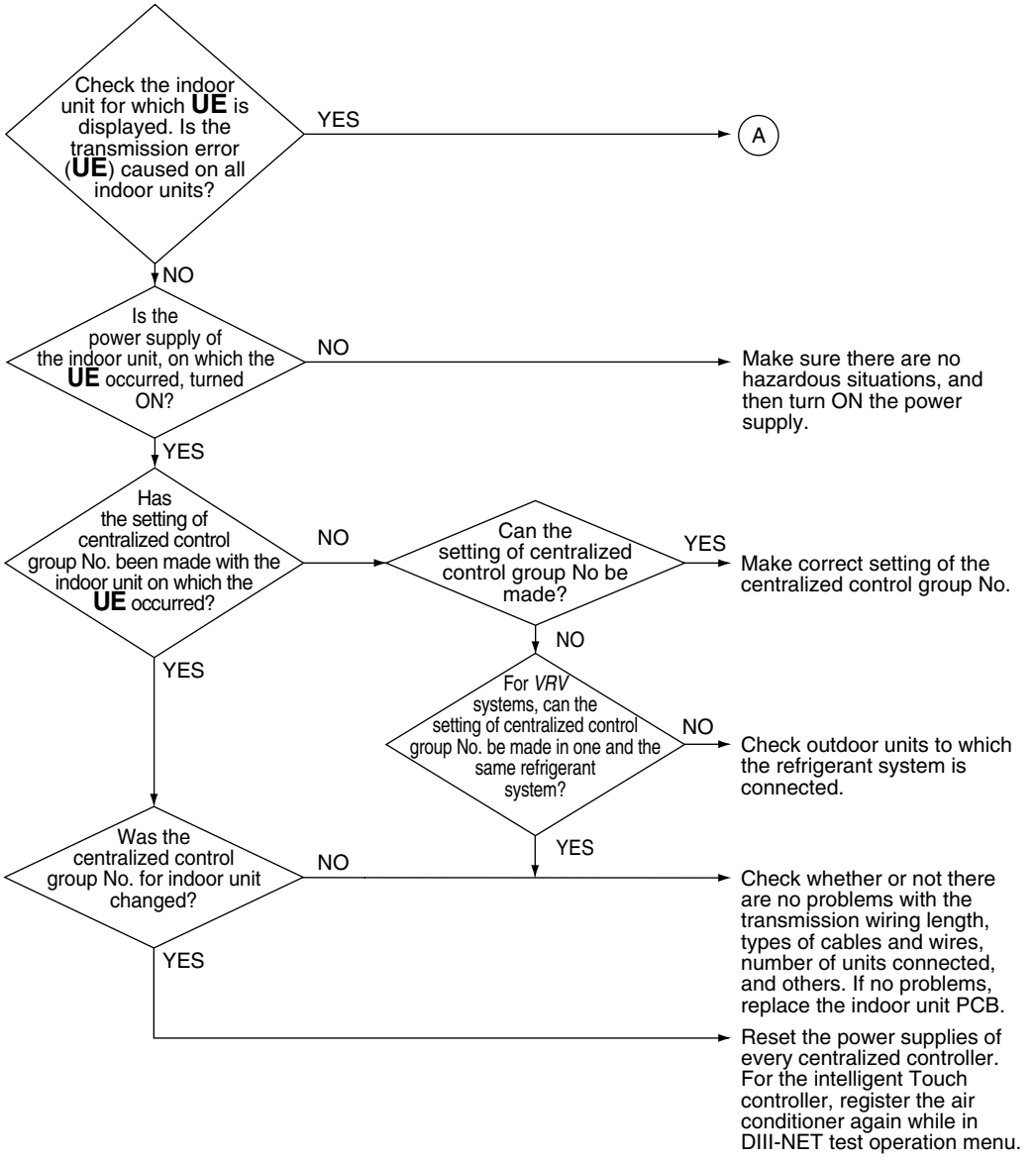


4.47 Transmission Error between Centralized Controller and Indoor Unit

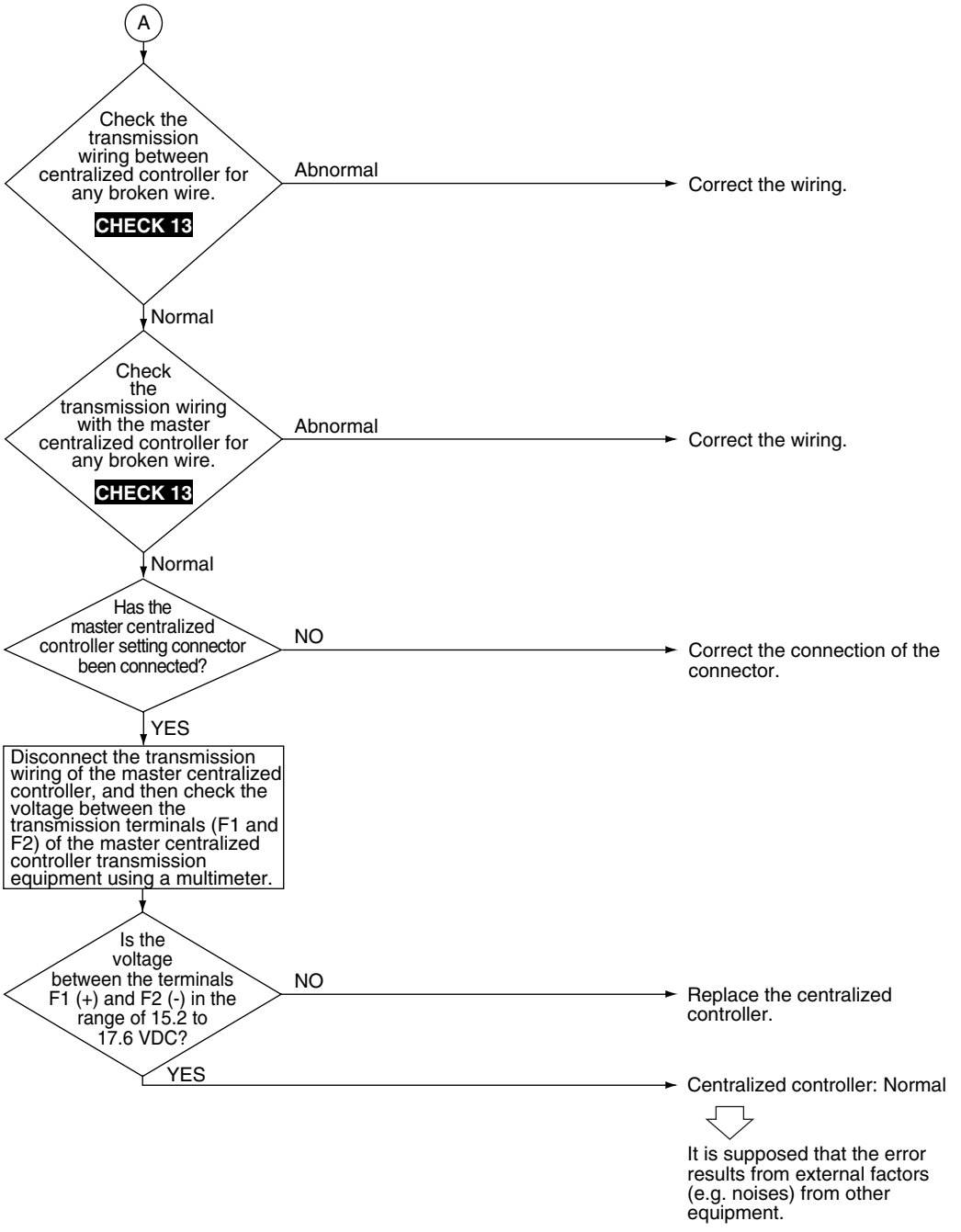
Error Code	**UE**
Applicable Models	All indoor units intelligent Touch Controller Centralized controller
Method of Error Detection	Micro-computer checks if transmission between indoor unit and centralized controller is normal.
Error Decision Conditions	When transmission is not carried out normally for a certain amount of time
Supposed Causes	■ Transmission error between optional controllers for centralized control and indoor unit ■ Connector for setting master controller is disconnected. (or disconnection of connector for independent / combined use changeover switch.) ■ Defective PCB for centralized controller ■ Defective indoor unit PCB

Troubleshooting

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



Troubleshooting



CHECK 13 Refer to page 236.

4.48 System not Set

Error Code

UF

Applicable Models

All indoor units

Method of Error Detection

On check operation, the number of indoor units in terms of transmission is not corresponding to that of indoor units that have made changes in temperature.

Error Decision Conditions

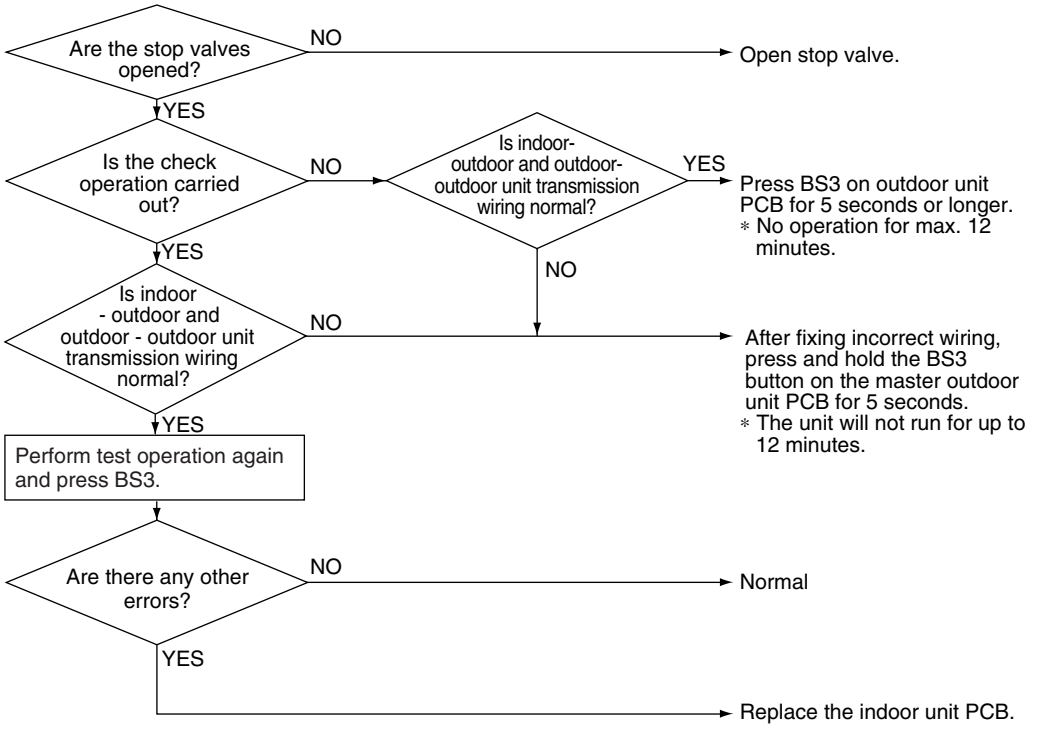
The error is determined as soon as the abnormality aforementioned is detected through checking the system for any erroneous connection of units on the check operation.

Supposed Causes

- Improper connection of transmission wiring between indoor-outdoor units and outdoor-outdoor units
- Failure to execute check operation
- Defective indoor unit PCB
- Stop valve is not opened

Troubleshooting

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

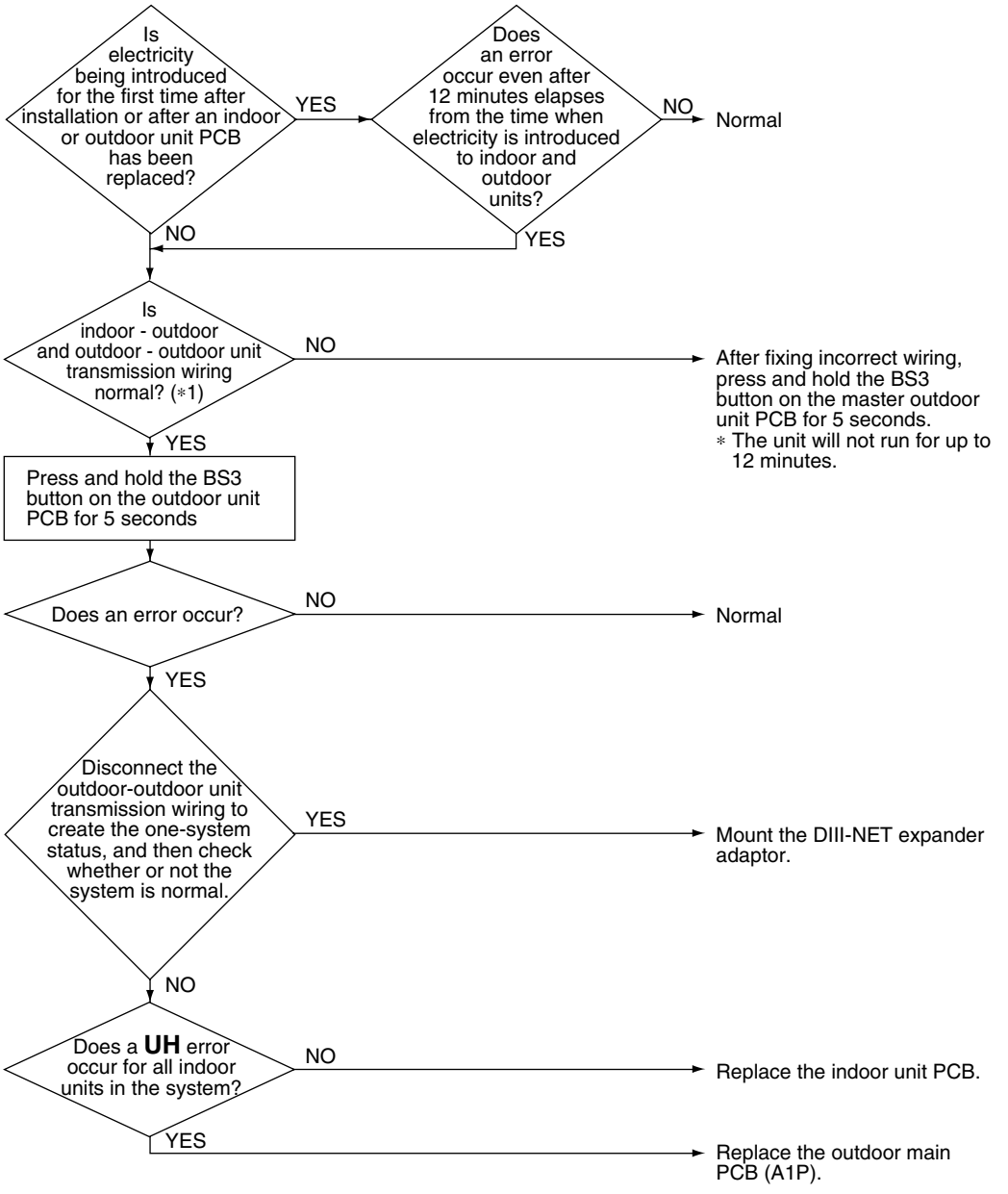


4.49 System Abnormality, Refrigerant System Address Undefined

Error Code	**UH**
Applicable Models	All indoor units
Method of Error Detection	An indoor unit without automatically set address is detected.
Error Decision Conditions	The error decision is made as soon as the abnormality aforementioned is detected.
Supposed Causes	■ Improper connection of transmission wiring between indoor-outdoor units and outdoor-outdoor units ■ Defective indoor unit PCB ■ Defective outdoor main PCB (A1P)

Troubleshooting

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



∗1: Refer to installation manual for correct "indoor unit and outdoor unit connection wiring" and "outdoor unit and outdoor unit connection wiring".

∗2: Automatic address refers to the automatic designated address of indoor unit and outdoor unit when connected to the power after installation or wiring replacement (with BS3 pressed for more than 4 seconds).

4.50 Defective PCB

Error Code **M1**

Applicable Models
Centralized controller
intelligent touch controller
Schedule timer

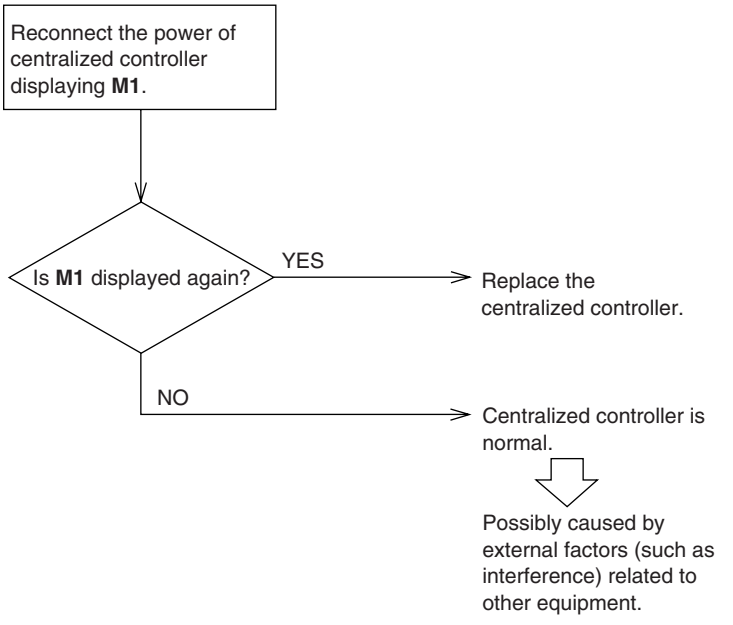
Method of Error Detection
DIII-NET polarity circuit defective conditions are used to detect the error.

Error Decision Conditions
The test detects both positive polarity and negative polarity.

Supposed Causes
- Defective centralized controller PCB
- Defective intelligent touch controller PCB
- Defect of Schedule timer PCB

Troubleshooting

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

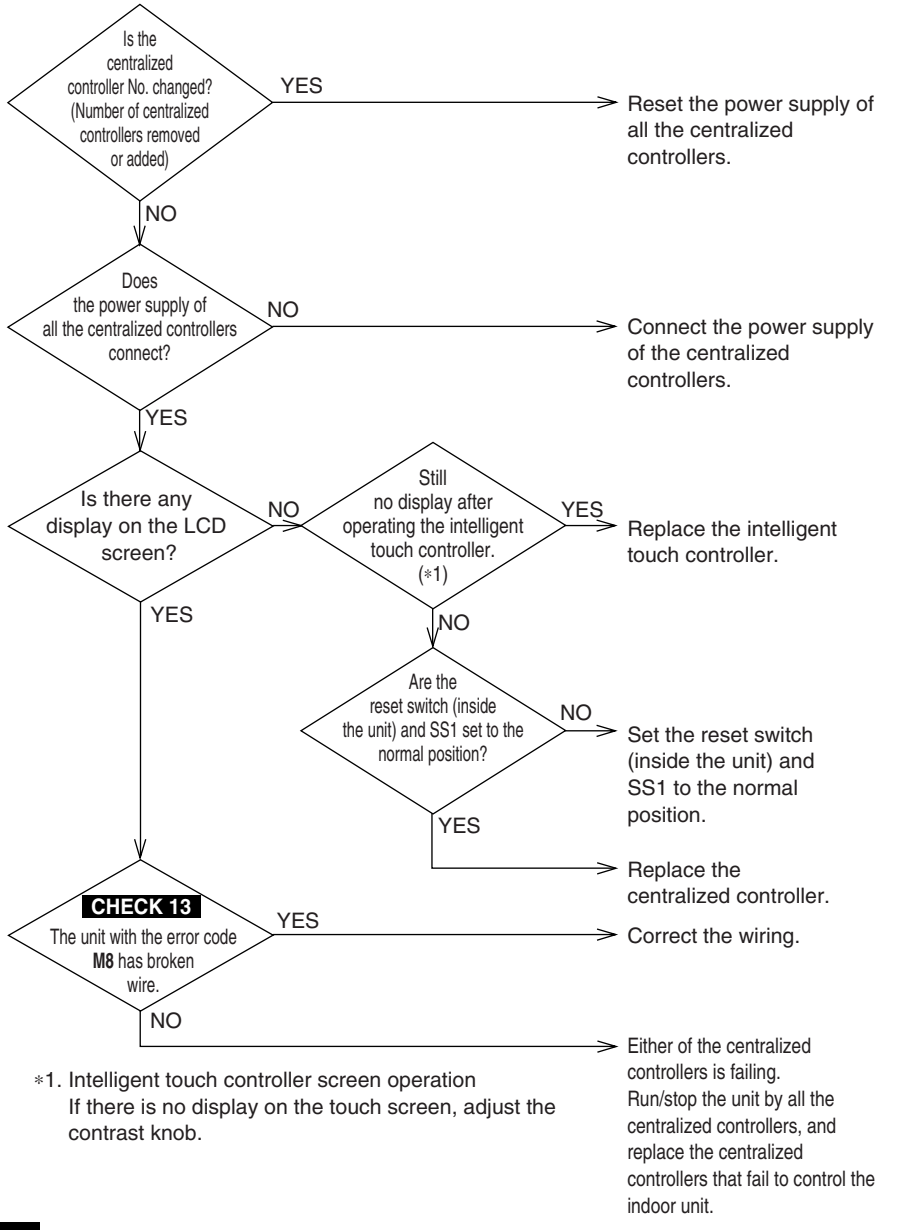


4.51 Transmission Error (between Centralized Controllers)

Error Code	**M8**
Applicable Models	Centralized controller intelligent touch controller Schedule timer
Method of Error Detection	DIII-NET communication data is used to detect the error. (Automatic reset)
Error Decision Conditions	When the slave centralized controller is activated, there is no master centralized controller. The previously connected centralized controller is not responding.
Supposed Causes	■ Transmission defect between centralized controllers ■ Defective centralized controller PCB

Troubleshooting

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



*1. Intelligent touch controller screen operation
If there is no display on the touch screen, adjust the contrast knob.

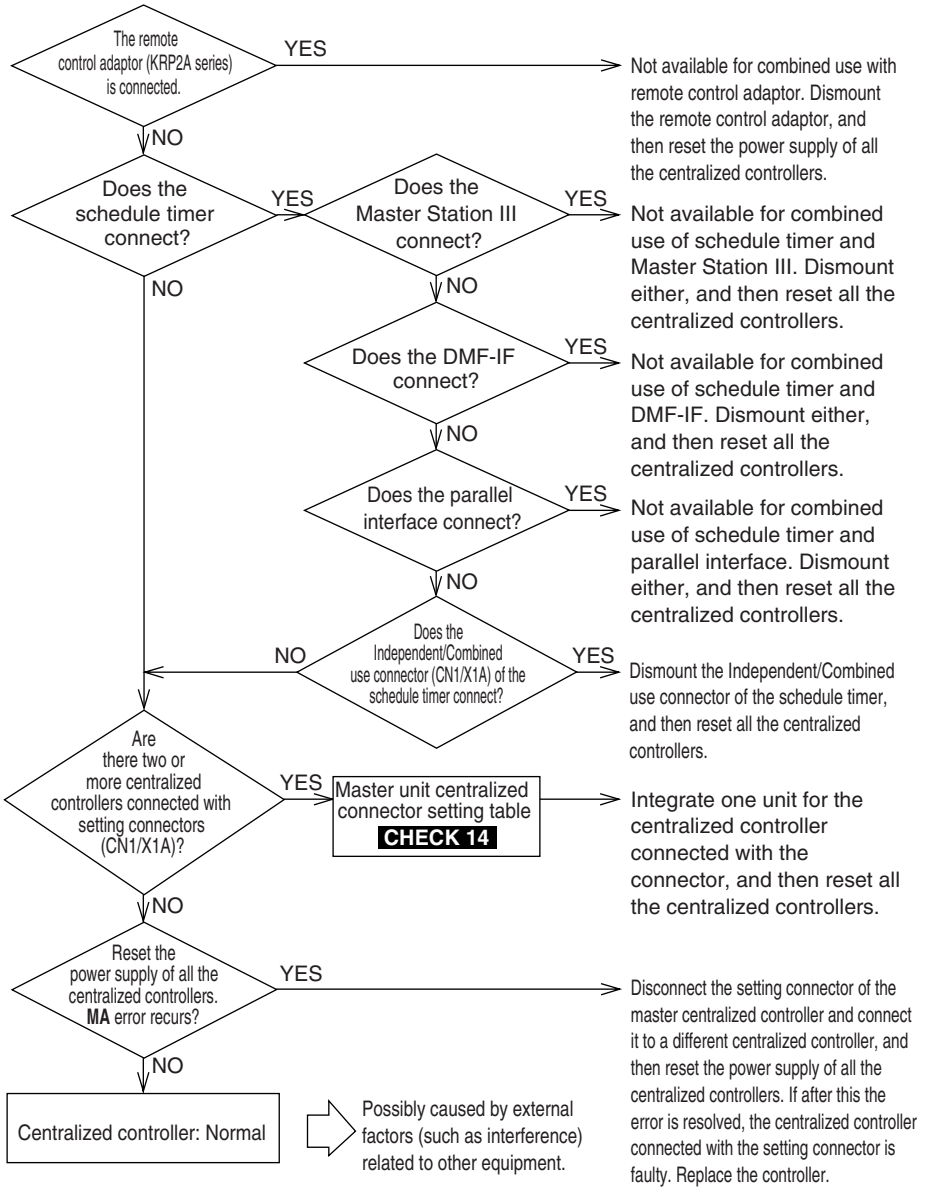
CHECK 13 Refer to page 236.

4.52 Poor Centralized Controller Combination

Error Code	**MA**
Applicable Models	Centralized controller intelligent touch controller Schedule timer
Method of Error Detection	DIII-NET communication data is used to detect the error.
Error Decision Conditions	There are other centralized controllers but the schedule timer is set for individual use. There are multiple master centralized controllers. There is a remote control adaptor.
Supposed Causes	■ Poor centralized controller combination ■ Multiple master centralized controllers ■ Defective centralized controller PCB

Troubleshooting

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



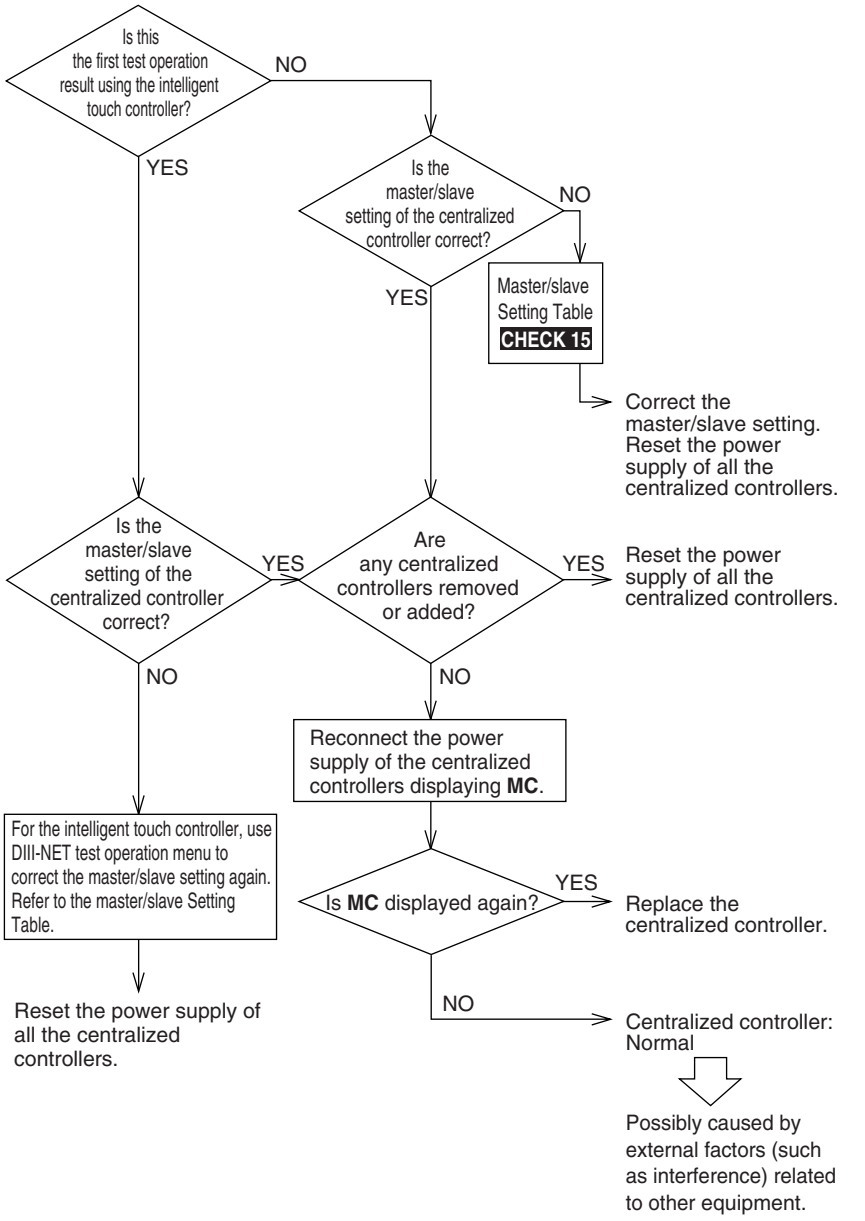
CHECK 14 Refer to page 237.

4.53 Address Duplication, Poor Setting

Error Code	**MC**
Applicable Models	Centralized controller intelligent touch controller Schedule timer
Method of Error Detection	DIII-NET communication data is used to detect the error.
Error Decision Conditions	Multiple centralized controllers or intelligent touch controllers are connected, and the controllers are both set as master centralized controllers or slave centralized controllers. Two schedule timers are connected.
Supposed Causes	■ Centralized controller address duplication

Troubleshooting

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



CHECK 15 Refer to page 238.

4.54 The Operation Lamp Blinks

Error Code

—

Applicable Models

ON/OFF controller
All indoor units

Method of Error Detection

DIII-NET communication data is used to detect the error.

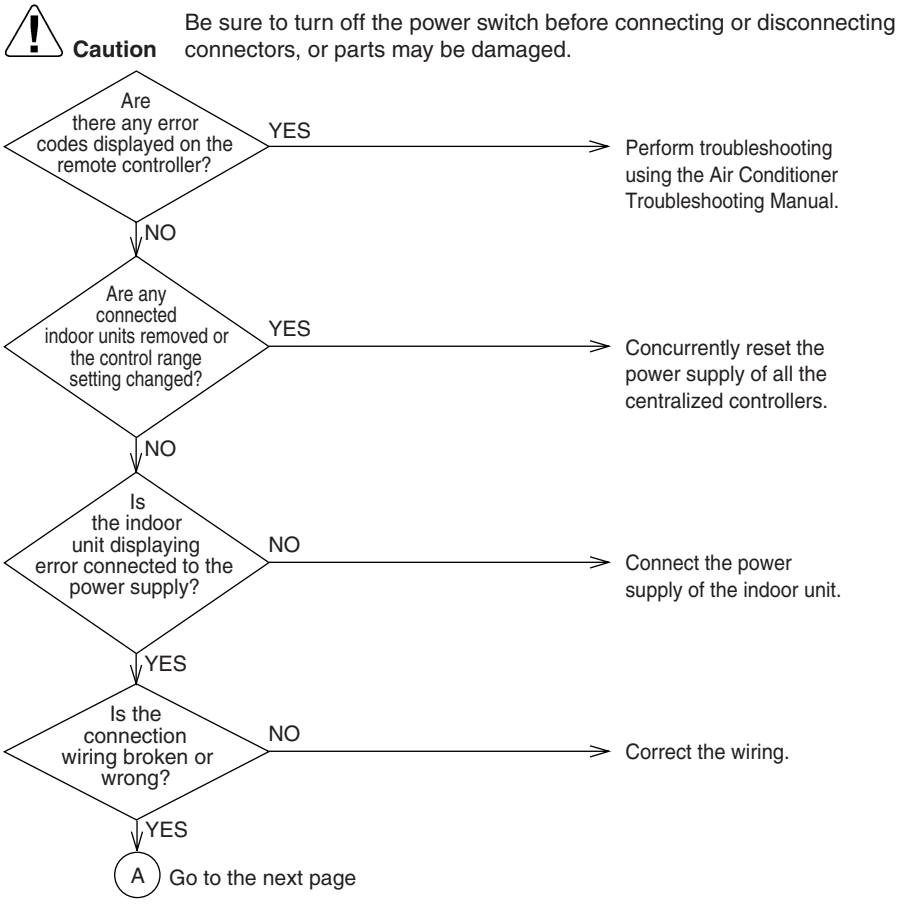
Error Decision Conditions

—

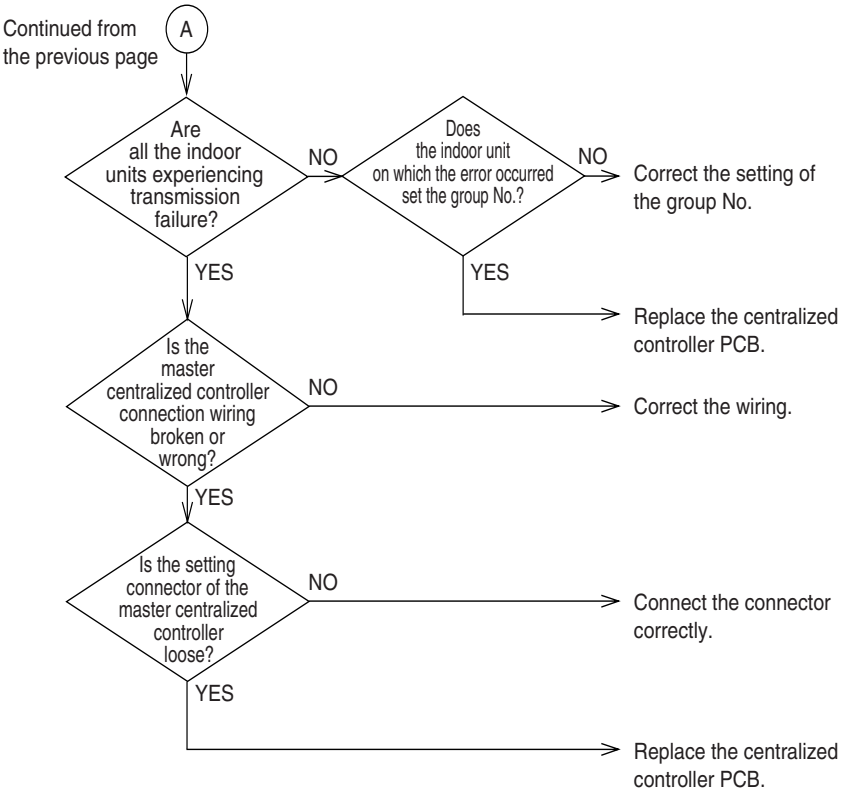
Supposed Causes

- Defective transmission between the centralized controller and an indoor unit
- Loosened setting connector of the master centralized controller
- Defective ON/OFF controller PCB
- Defective indoor unit PCB
- Defective air conditioner

Troubleshooting



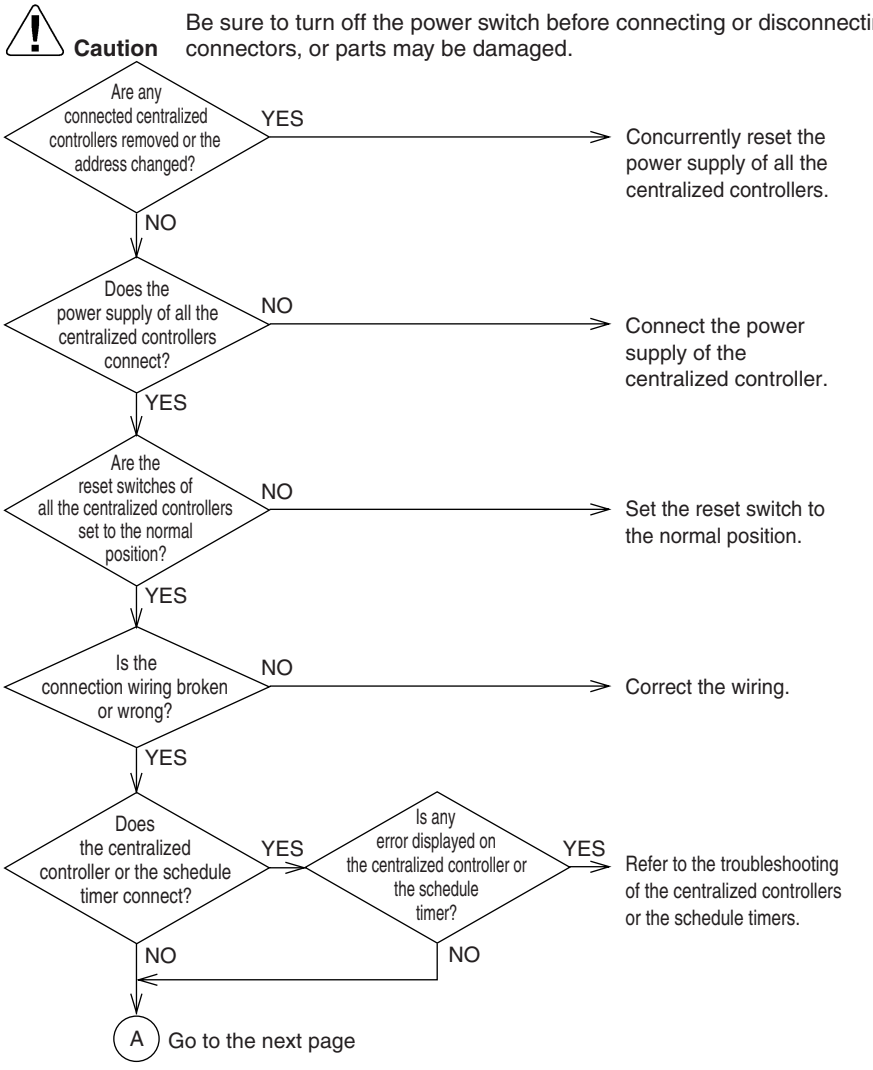
Troubleshooting



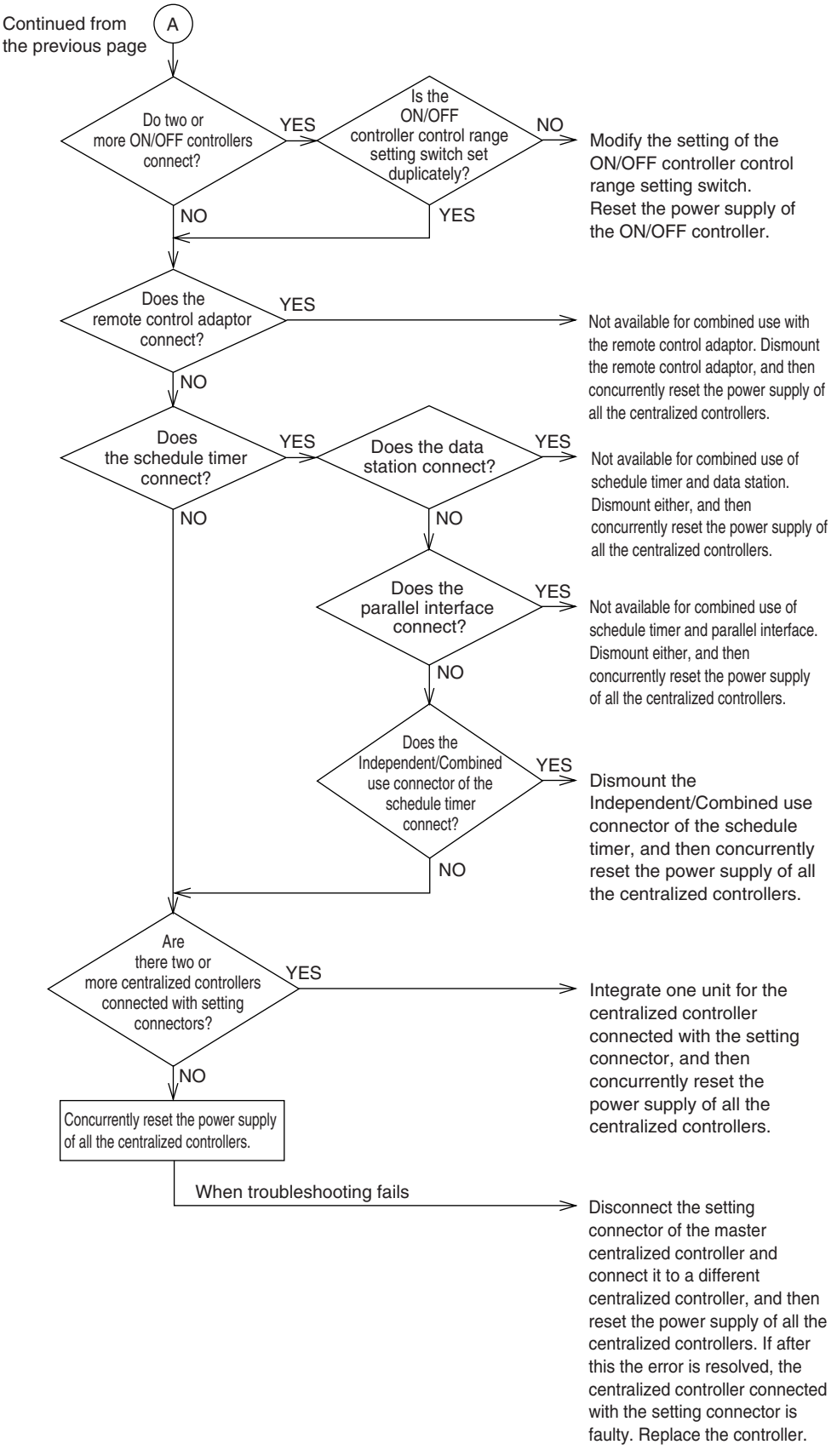
4.55 Central Control Indicator Lamp Blinks (One blink)

Error Code	—
Applicable Models	ON/OFF controller Centralized controller
Method of Error Detection	DIII-NET communication data is used to detect the error.
Error Decision Conditions	The previously connected centralized controller is not responding. Control range duplication There are multiple master centralized controllers. There are other centralized controllers but the schedule timer is set for individual use. There is a remote control adapter.
Supposed Causes	■ Centralized controller address duplication ■ Poor centralized controller combination ■ Multiple master centralized controllers ■ Transmission defect between centralized controllers ■ Defective centralized controller PCB

Troubleshooting



Troubleshooting



4.56 Central Control Indicator Lamp Blinks (Two blinks)

Error Code

—

Applicable Models

ON/OFF controller

Method of Error Detection

DIII-NET communication data is used to detect the error.

Error Decision Conditions

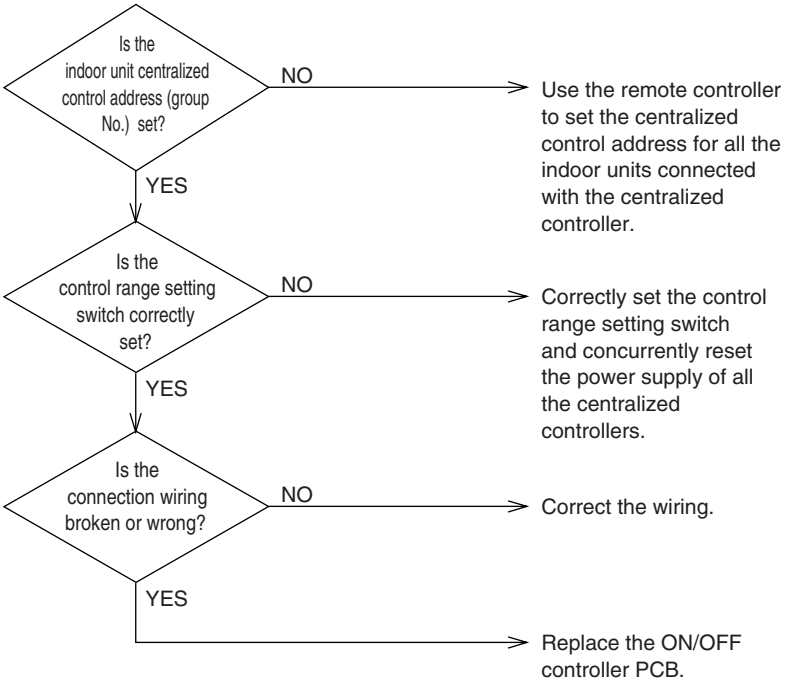
The indoor unit has no centralized control address set
No indoor unit within the control range

Supposed Causes

- The indoor unit has no centralized control address set (Group No.)
- Control range setting switch set incorrectly
- Wiring connection error

Troubleshooting

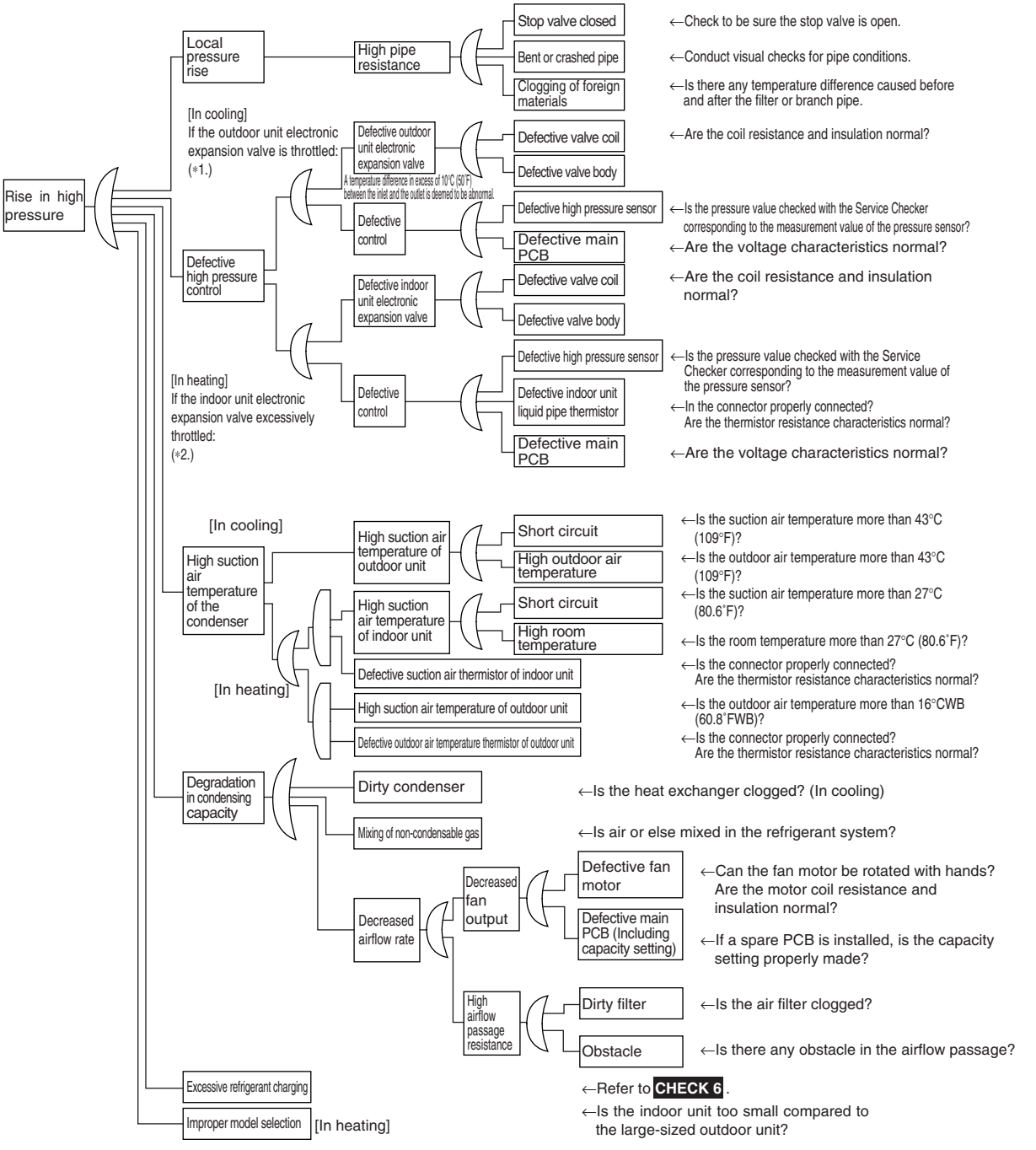
Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



4.57 Check

CHECK 1 **Check for causes of rise in high pressure**

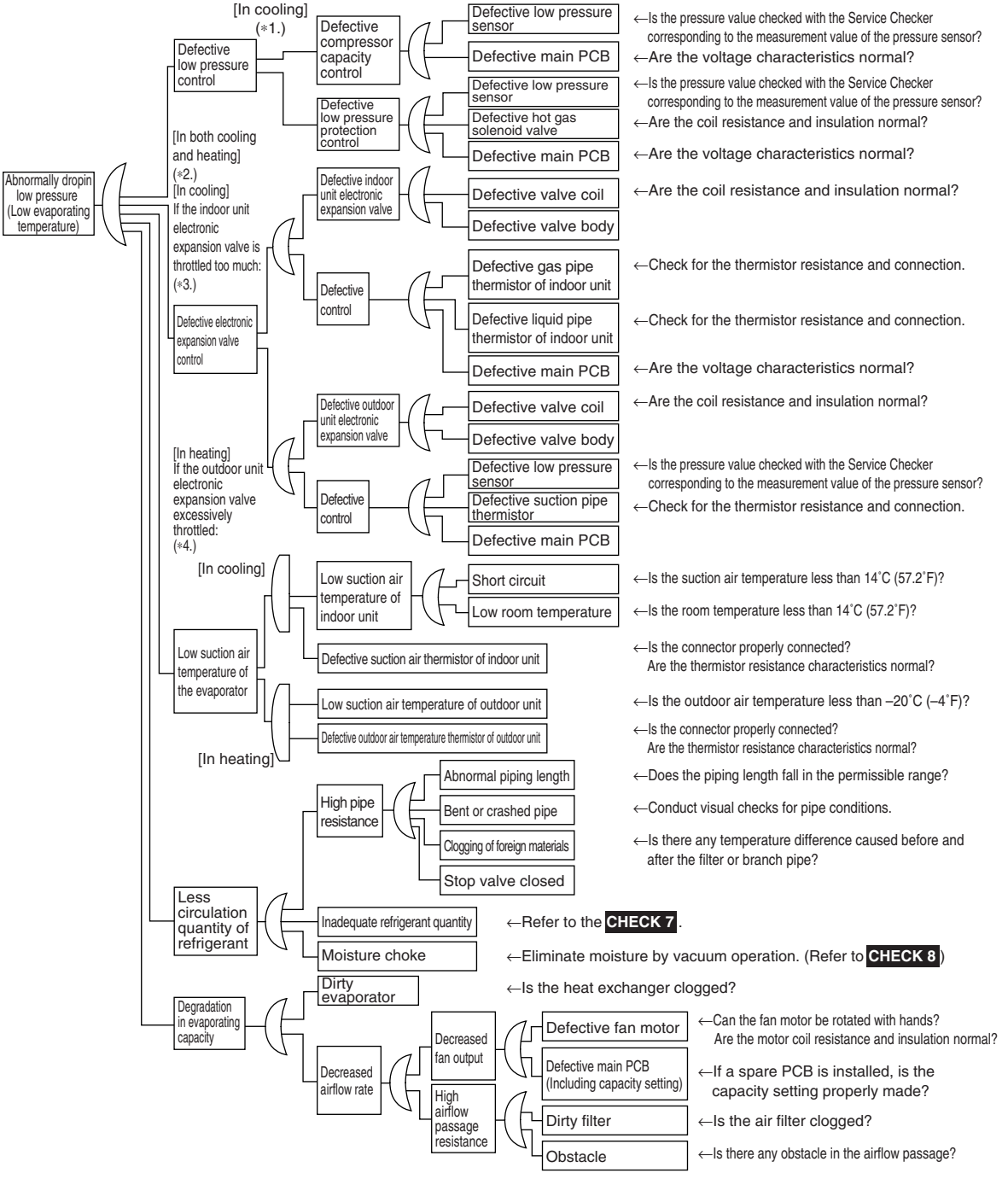
Referring to the Fault Tree Analysis (FTA) shown below, probe the defective points.



Note: *1: In cooling, it is normal if the outdoor unit electronic expansion valve is fully open.
*2: In heating, the indoor unit electronic expansion valve is used for subcooling degree control.

CHECK 2 Check for causes of drop in low pressure

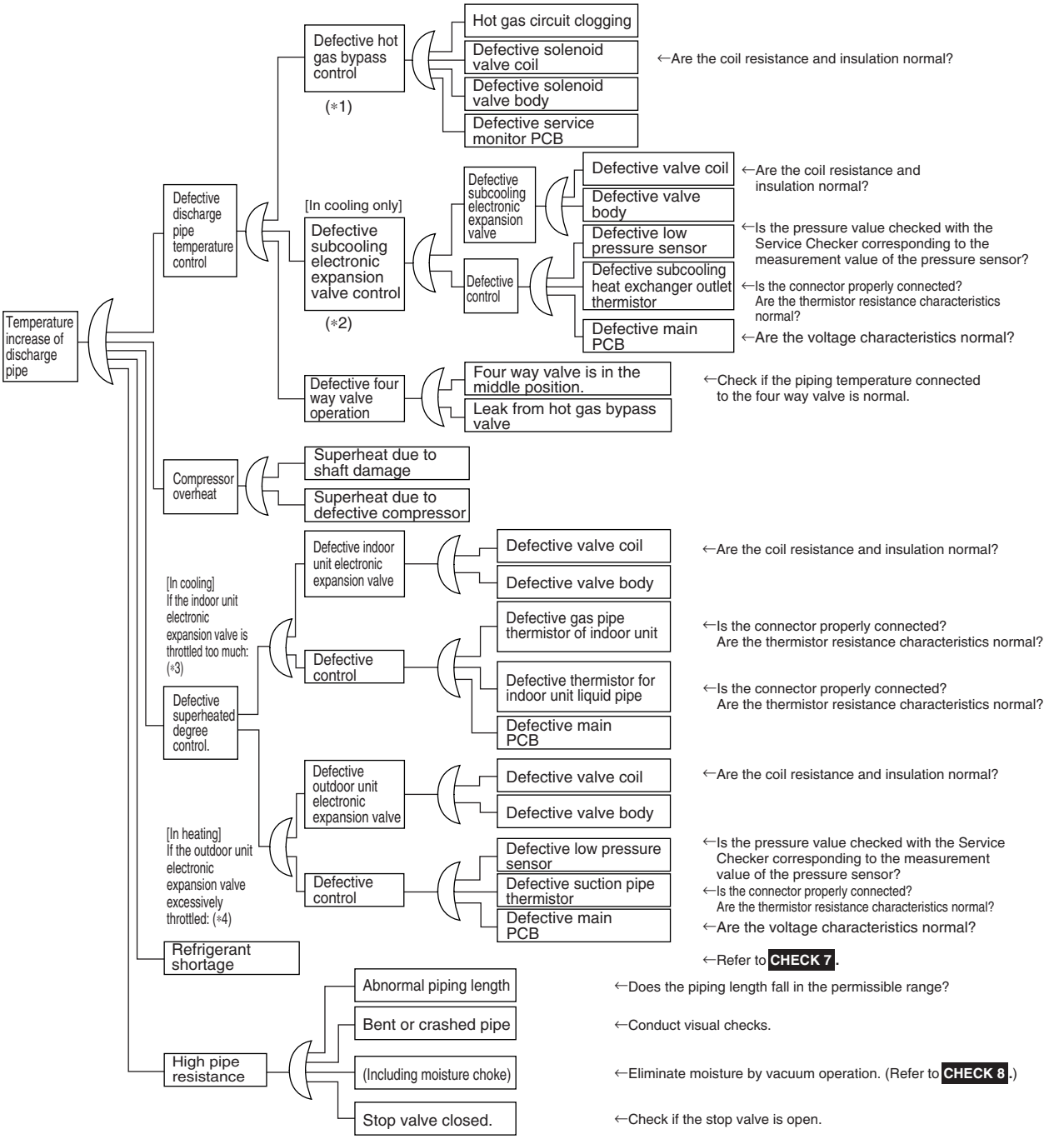
Referring to the Fault Tree Analysis (FTA) shown below, probe the defective points.



Note:
- ∗1: For details of compressor capacity control while in cooling, refer to Compressor PI control.
- ∗2: The low pressure protection control includes low pressure protection control and hot gas bypass control.
- ∗3: In cooling, the indoor unit electronic expansion valve is used for superheated degree control.
- ∗4: In heating, the outdoor unit electronic expansion valve is used for superheated degree control of outdoor unit heat exchanger.

CHECK 3 Check the factors of superheat operation

Referring to the Fault Tree Analysis (FTA) shown below, probe the defective points.

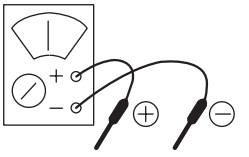


Note:
- *1: Refer to Low pressure protection control for hot gas bypass control.
- *2: Refer to Subcooling electronic expansion valve control.
- *3: Superheating temperature control in cooling is conducted by indoor unit electronic expansion valve.
- *4: Superheating temperature control in heating is conducted by outdoor unit electronic expansion valve.
- *5: Judgement criteria of superheat operation: (1) Suction gas superheated degree: 10°C (50°F) and over. (2) Discharge gas superheated degree: 45°C (113°F) and over, except immediately after compressor starts up or is running under drooping control.
  (Use the above values as a guide. Depending on the other conditions, the unit may be normal despite the values within the above range.)

CHECK 4 Power transistor check

Perform the following procedures prior to check.
(1) Power Off.
(2) Remove all the wiring connected to the PCB where power transistors are mounted on.

[Preparation]
· Tester



* Preparing a tester in the analog system is recommended. A tester in the digital system with diode check function will be usable.

[Point of Measurement and Judgement Criteria]
· Measure the resistance value using a tester at each point of measurement below, 10 minutes later after power OFF.

To use analog tester:
Measurement in the resistance value mode in the range of multiplying 1 kΩ.

No.	Point of Measurement		Judgement Criteria	Remarks
	+	–		
1	P2	U	2 ~ 15 kΩ	
2	P2	V		
3	P2	W		
4	U	P2	15 kΩ and above (including ∞)	Due to condenser charge and so on, resistance measurement may require some time.
5	V	P2		
6	W	P2		
7	N3	U		
8	N3	V		
9	N3	W		
10	U	N3	2 ~ 15 kΩ	
11	V	N3		
12	W	N3		

To use digital tester:
Measurement is executed in the diode check mode.(→|—)

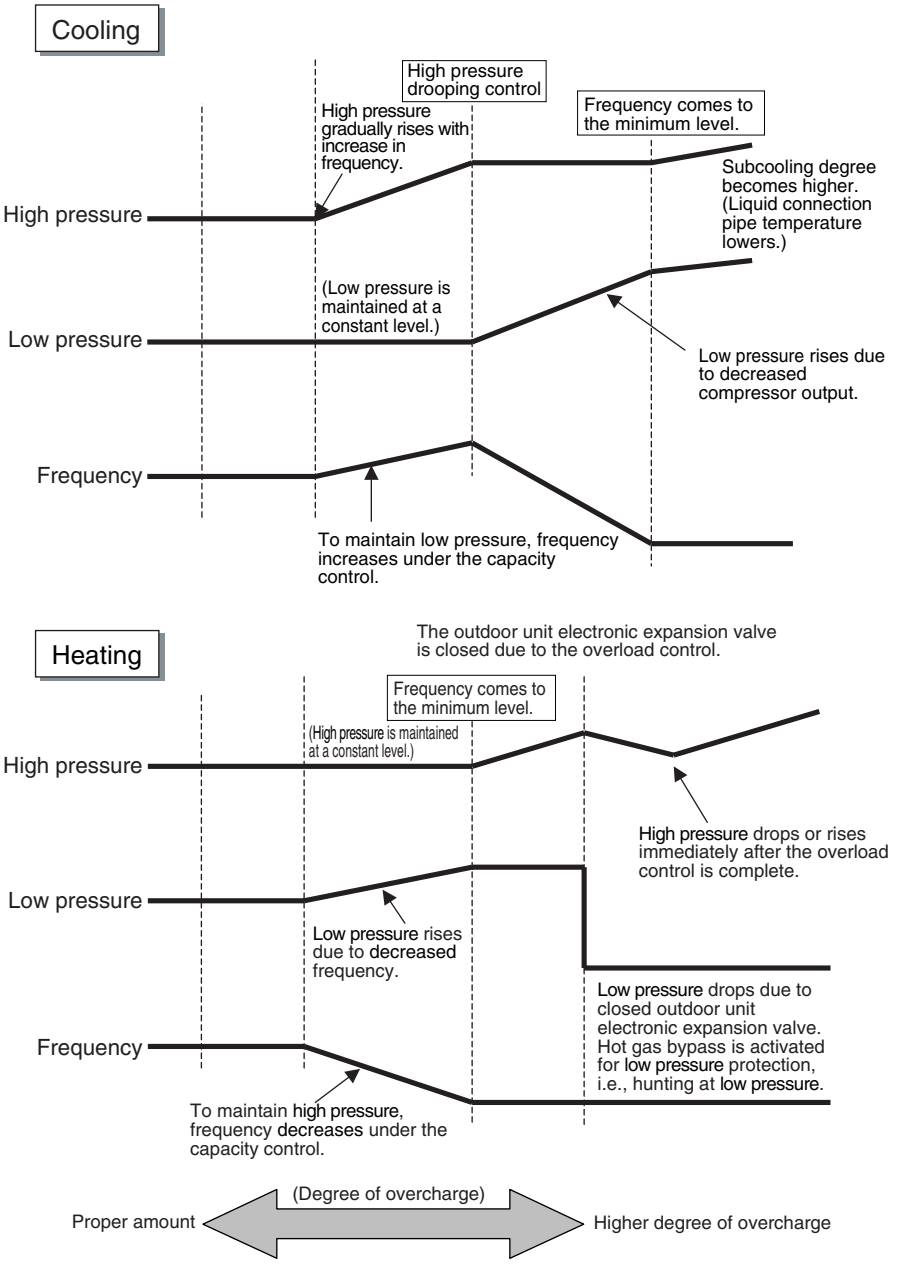
No.	Point of Measurement		Judgement Criteria	Remarks
	+	–		
1	P2	U	1.2 V and over	Due to condenser charge and so on, resistance measurement may require some time.
2	P2	V		
3	P2	W		
4	U	P2	0.3 ~ 0.7 V	
5	V	P2		
6	W	P2		
7	N3	U		
8	N3	V		
9	N3	W		
10	U	N3	1.2 V and over	Due to condenser charge and so on, resistance measurement may require some time.
11	V	N3		
12	W	N3		

CHECK 6 Check for overcharge of refrigerant

In case of *VRV* Systems, the only way to judge as the overcharge of refrigerant is with operating conditions due to the relationship to pressure control and electronic expansion valve control. As information for making a judgement, refer to the information below.

Diagnosis of overcharge of refrigerant

1. High pressure rises. Consequently, overload control is conducted to cause insufficient cooling capacity.
2. The superheated degree of suction gas lowers (or the wet operation is performed). Consequently, the compressor becomes lower in discharge pipe temperature despite of pressure loads.
3. The subcooled degree of condensate rises. Consequently, in heating, the temperature of discharge air through the subcooled section becomes lower.

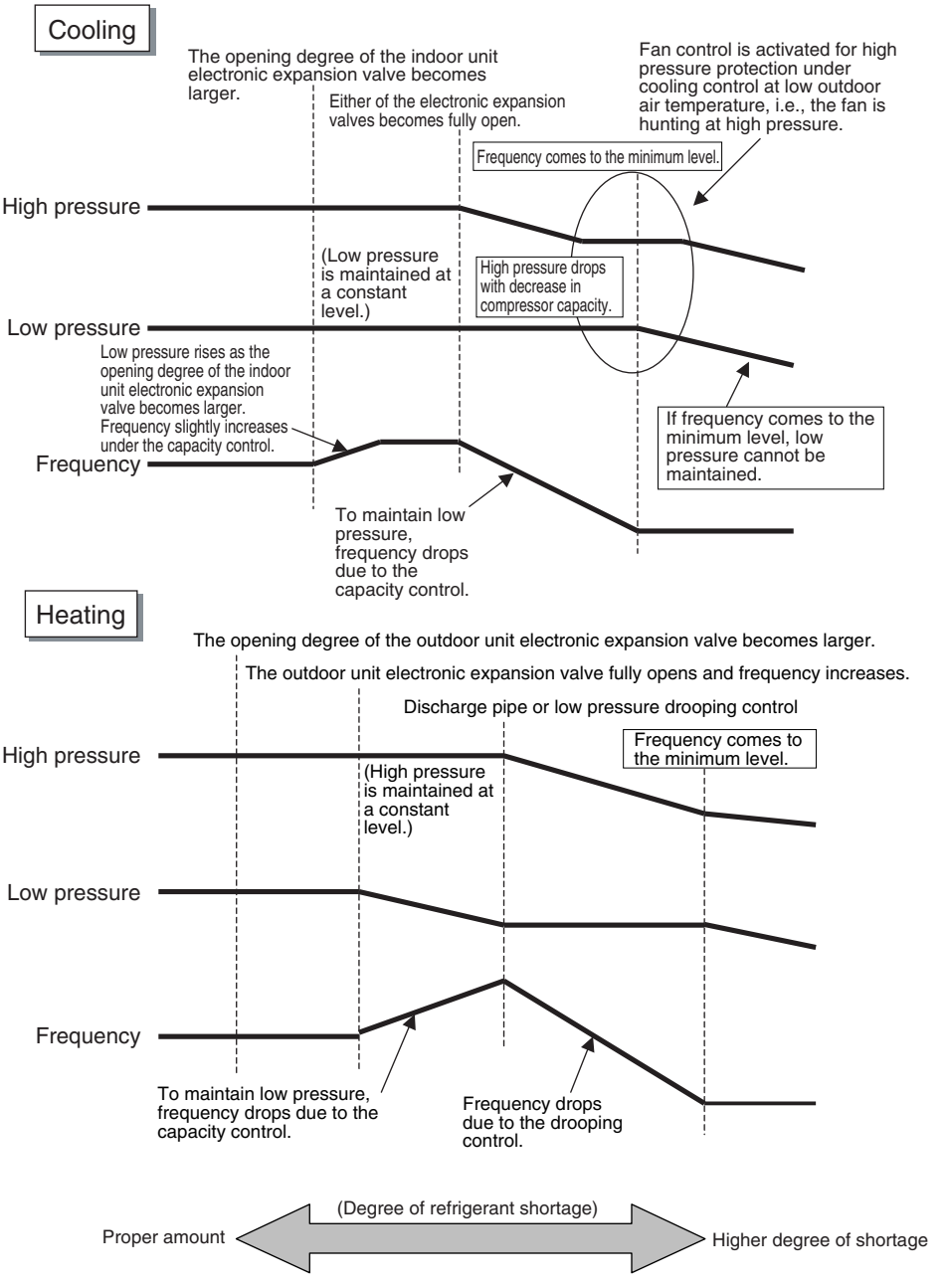


CHECK 7 Check for shortage of refrigerant

In case of *VRV* Systems, the only way to judge as the shortage of refrigerant is with operating conditions due to the relationship to pressure control and electronic expansion valve control. As information for making a judgement, refer to the information below.

Diagnosis of shortage of refrigerant

1. The superheated degree of suction gas rises. Consequently, the compressor discharge gas temperature becomes higher.
2. The superheated degree of suction gas rises. Consequently, the electronic expansion valve turns open.
3. Low pressure drops to cause the unit not to demonstrate cooling capacity (heating capacity).



CHECK 8 **Vacuuming and dehydration procedure**

Conduct vacuuming and dehydration in the piping system following the procedure for Normal vacuuming and dehydration described below.
Furthermore, if moisture may get mixed in the piping system, follow the procedure for Special vacuuming and dehydration described below.

Normal vacuuming and dehydration

(1) Vacuuming and dehydration
- Use a vacuum pump that enables vacuuming up to –100.7 kPa (–14.6 psi).
- Connect manifold gauges to the service ports of liquid pipe and gas pipe and run the vacuum pump for a period of two or more hours to conduct evacuation to –100.7 kPa (–14.6 psi) or less.
- If the degree of vacuum does not reach –100.7 kPa (–14.6 psi) or less even though evacuation is conducted for a period of two hours, moisture will have entered the system or refrigerant leakage will have been caused. In this case, conduct evacuation for a period of another one hour.
- If the degree of vacuum does not reach –100.7 kPa (–14.6 psi) or less even though evacuation is conducted for a period of three hours, conduct the leak tests.

(2) Leaving in vacuum state
- Leave the compressor at the degree of vacuum of –100.7 kPa (–14.6 psi) or less for a period of one hour or more, and then check to be sure that the vacuum gauge reading does not rise. (If the reading rises, moisture may have remained in the system or refrigerant leakage may have been caused.)

(3) Additional refrigerant charge
- Purge air from the manifold gauge connection hoses, and then charge a necessary amount of refrigerant.

Special vacuuming and dehydration

In case of moisture may get mixed in the piping*

(1) Vacuuming and dehydration
- Follow the same procedure as that for Normal vacuuming and dehydration described above.

(2) Vacuum break
- Pressurize with nitrogen gas up to 0.05 MPa (7.3 psi).

(3) Vacuuming and dehydration
- Conduct vacuuming and dehydration for a period of one hour or more. If the degree of vacuum does not reach –100.7 kPa (–14.6 psi) or less even though evacuation is conducted for a period of two hours or more, repeat vacuum break - vacuuming and dehydration.

(4) Leaving in vacuum state
- Leave the compressor at the degree of vacuum of –100.7 kPa (–14.6 psi) or less for a period of one hour or more, and then check to be sure that the vacuum gauge reading does not rise.

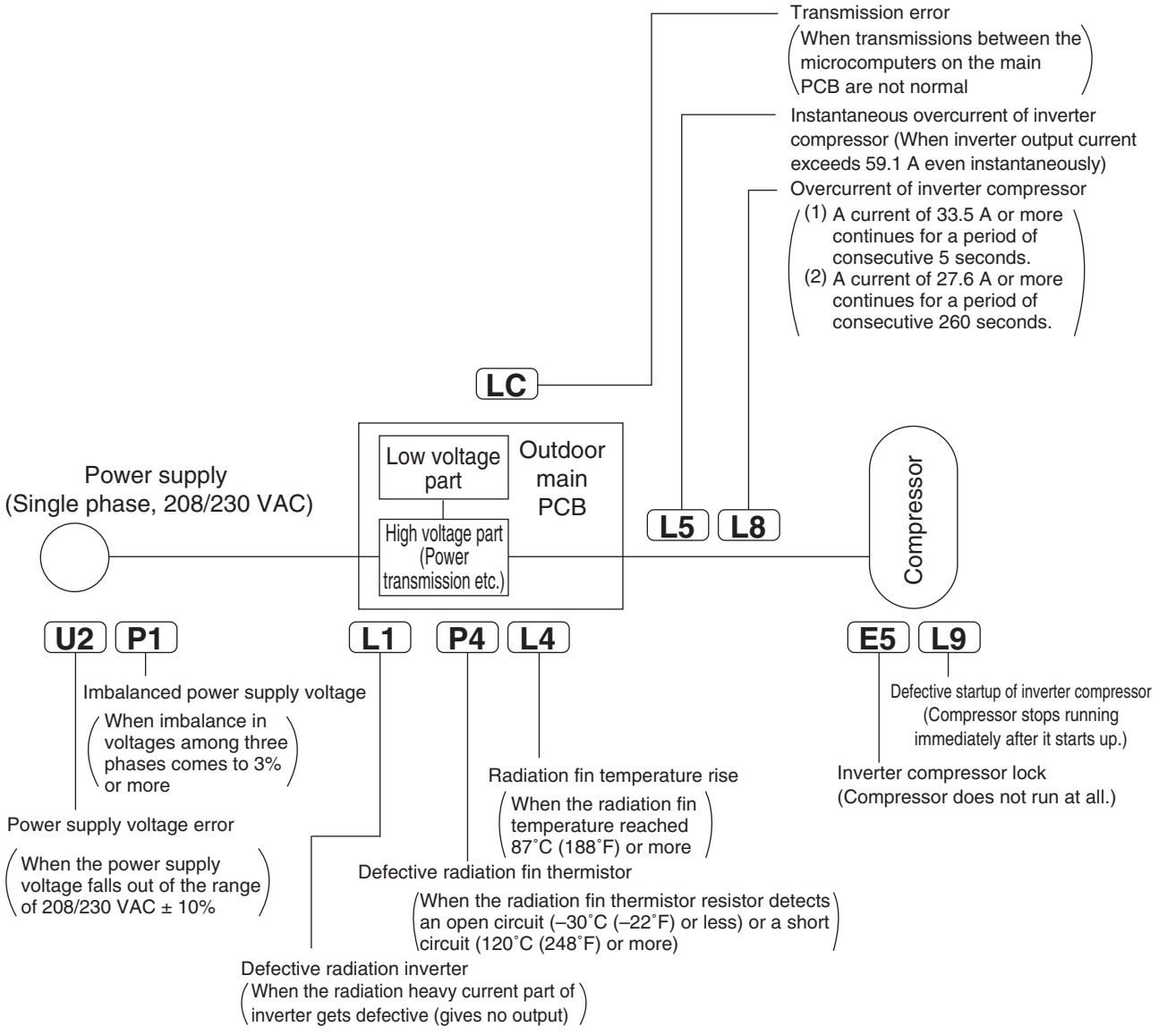
(5) Additional refrigerant charge
- Purge air from the manifold gauge connection hoses, and then charge a necessary amount of refrigerant.

* In case of construction during rainy reason, if dew condensation occurs in the piping due to extended construction period, or rainwater or else may enter the piping during construction work:

CHECK 9 List of inverter-related error codes

	Code	Name	Condition for determining error	Major cause
Compressor current	**L5**	Instantaneous overcurrent of inverter compressor	• Inverter output current exceeds 59.1 A even instantaneously.	• Liquid sealing • Defective compressor • Defective inverter PCB
	L8	Overcurrent of inverter compressor (Electronic superheating protection sensor)	• Compressor overload running A current of 33.5 A or more continues for a period of consecutive 5 seconds or that of 27.6 A or more continues for a period of consecutive 260 seconds. • The inverter loses synchronization.	• Back-flow of compressor liquid • Sudden changes in loads • Disconnected compressor wiring • Defective PCB
Protection device and others	**E5**	Inverter compressor lock	• The compressor is in the locked status (does not rotate).	• Defective compressor
	L1	Defective PCB (for inverter compressor)	• No output is given.	• Defective heavy current part of compressor
	L4	Radiation fin temperature rise	• The radiation fin temperature reaches 87°C (188°F) or more (while in operation).	• Defective fan • Running in overload for an extended period of time • Defective PCB
	L9	Defective startup of inverter compressor	• The compressor motor fails to start up.	• Liquid sealing or defective compressor • Excessive oil or refrigerant • Defective PCB
	LC	Transmission error (between microcomputers on the outdoor main PCB)	• No communications are carried out across the microcomputers on the outdoor main PCB.	• Defective outdoor main PCB
	P1	Imbalanced power supply	• Power supply voltages get significantly imbalanced among three phases.	• Power supply error (imbalanced voltages of 2% or more) • Defective PCB • Dead PCB
	P4	Defective radiation fin thermistor	• The radiation fin thermistor gets short circuited or open.	• Defective radiation fin thermistor
	U2	Power supply voltage error	• The inverter power supply voltage is high or low.	• Power supply error • Defective PCB

CHECK 10 Concept of inverter-related error codes



CHECK 11 Thermistor Resistance / Temperature Characteristics

Thermistor type of indoor units

Model	R1T Suction air thermistor	R2T Indoor heat exchanger (liquid) thermistor	R3T Indoor heat exchanger (gas) thermistor	R4T Discharge air thermistor
FXFQ-T	Type C	Type A	Type J	–
FXFQ-P	Type D			–
FXZQ	Type B			–
FXUQ	Type C			–
FXEQ	Type B			–
FXDQ				–
FXMQ-PB				Type J
FXMQ-M				–
FXHQ				–
FXAQ				–
FXLQ				–
FXNQ				–
FXTQ				–

Thermistor type of outdoor units

Model	Thermistor		Type
RXTQ36TAVJU	R1T	Outdoor air	E
	R2T	Discharge	G
	R3T	Suction 1	A
	R4T	Heat exchanger	A
	R5T	Suction 2	A
	R7T	Liquid	A
	R10T	Radiation fin	K
RXTQ48TAVJU	R1T	Outdoor air	E
	R2T	Discharge	G
	R3T	Suction 1	A
	R4T	Heat exchanger	A
	R5T	Suction 2	A
	R7T	Liquid	A
	FINTH	Radiation fin	F
RXTQ60TAVJU	R1T	Outdoor air	E
	R2T	Discharge	G
	R3T	Suction 1	A
	R4T	Heat exchanger	A
	R5T	Suction 2	A
	R6T	Subcooling	A
	R7T	Liquid	A
	FINTH	Radiation fin	F

Table 2

Thermistor temperature		Resistance (kΩ)				
(°C)	(°F)	Type A	Type B	Type C	Type D	Type E
–30	–22	363.8	361.7719	–	336.7	362.4862
–25	–13	266.8	265.4704	–	253.1	265.9943
–20	–4	197.8	196.9198	–	191.2	197.3083
–15	5	148.2	147.5687	–	144.1	147.8597
–10	14	112.0	111.6578	111.8	109.6	111.8780
–5	23	85.52	85.2610	85.42	84.05	85.4291
0	32	65.84	65.6705	65.80	64.99	65.8000
5	41	51.05	50.9947	51.07	50.64	51.0954
10	50	39.91	39.9149	39.97	39.74	39.9938
15	59	31.44	31.4796	31.51	31.41	31.5417
20	68	24.95	25.0060	25.02	24.98	25.0554
25	77	19.94	20.0000	20.00	20.00	20.0395
30	86	16.04	16.1008	16.10	16.12	16.1326
35	95	12.99	13.0426	13.04	13.07	13.0683
40	104	10.58	10.6281	10.63	10.67	10.6490
45	113	8.669	8.7097	8.711	8.757	8.7269
50	122	7.143	7.1764	7.179	7.227	7.1905
55	131	5.918	5.9407	–	5.997	5.9524
60	140	4.928	4.9439	–	5.001	4.9536
65	149	4.123	4.1352	–	4.191	4.1434
70	158	3.467	3.4757	–	3.528	3.4825
75	167	–	2.9349	–	2.984	2.9407
80	176	–	2.4894	–	2.534	2.4943
85	185	–	2.1205	–	2.161	2.1247
90	194	–	1.8138	–	1.850	1.8173
95	203	–	1.5575	–	1.590	1.5605
100	212	1.339	1.3425	–	1.371	1.3451
105	221	–	1.1614	–	1.188	1.1636
Drawing No.		3SA48002 3SA48004 3SA48018 3SA48019 (AD94A045)	3SA48001 (AD87A001)	3SA48016 (AD100008)	4P159172 (AD010555)	3PA50504 (AD87A001)

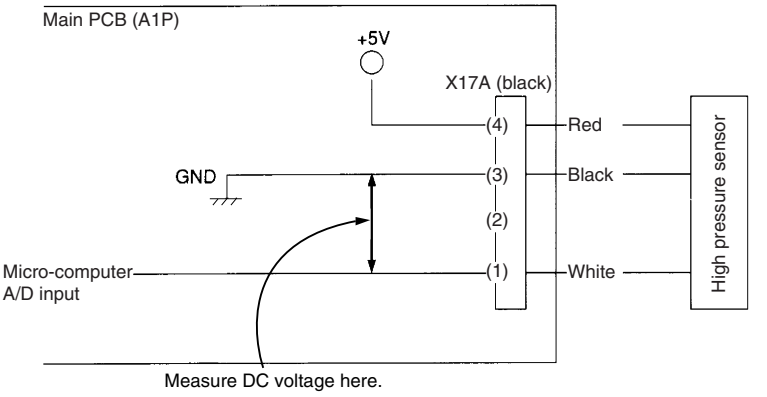
∗The data is for reference purpose only.

Thermistor temperature		Resistance (kΩ)				
(°C)	(°F)	Type F	Type G	Type H	Type J	Type K
–30	–22	354.1	4759	3257.371	359.8518	350.6
–25	–13	259.7	3454	2429.222	265.0699	257.4
–20	–4	192.6	2534	1827.883	197.1476	191.0
–15	5	144.2	1877	1387.099	147.7348	143.2
–10	14	109.1	1404	1061.098	111.7984	108.4
–5	23	83.25	1059	817.9329	85.3927	82.83
0	32	64.10	806.5	635.0831	65.8000	63.80
5	41	49.70	618.9	496.5712	51.1273	49.53
10	50	38.85	478.8	391.0070	40.0423	38.75
15	59	30.61	373.1	309.9511	31.5974	30.56
20	68	24.29	292.9	247.2696	25.1125	24.26
25	77	19.41	231.4	198.4674	20.0949	19.40
30	86	15.61	184.1	160.2244	16.1860	15.62
35	95	12.64	147.4	130.0697	13.1222	12.65
40	104	10.30	118.7	106.1517	10.7042	10.31
45	113	8.439	96.13	87.0725	8.7834	8.447
50	122	6.954	78.29	71.7703	7.2479	6.962
55	131	5.761	64.10	59.4735	6.0131	5.769
60	140	4.797	52.76	49.5180	5.0144	4.805
65	149	4.014	43.63	41.4168	4.2021	4.021
70	158	3.375	36.26	34.7923	3.5381	3.381
75	167	2.851	30.27	29.3499	2.9925	2.856
80	176	2.418	25.38	24.8586	2.5420	2.422
85	185	2.060	21.37	21.1360	2.1671	2.063
90	194	1.762	18.06	18.0377	1.8554	1.764
95	203	1.513	15.33	15.4487	1.5949	1.515
100	212	1.304	13.06	13.2768	1.3764	1.305
105	221	1.128	11.17	11.4395	1.1923	1.128
110	230	0.9790	9.585	9.8902	1.0365	0.9781
115	239	0.8527	8.254	8.5788	0.9042	0.8506
120	248	0.7450	7.131	7.4650	0.7914	0.7420
125	257	0.6530	6.181	6.5156	0.6950	0.6495
130	266	0.5741	5.374	5.7038	0.6121	0.5700
135	275	–	4.686	5.0073	0.5408	–
140	284	–	4.098	4.4080	0.4791	–
145	293	–	3.594	3.8907	0.4257	–
150	302	–	3.161	3.4429	0.3792	–
Drawing No.		3PA61998 (AD92A057)	3SA48009 (AD970175)	3SA48006 (AD87A001J)	3SA48005 (AD87A001)	3P204139-3 (AD070077)

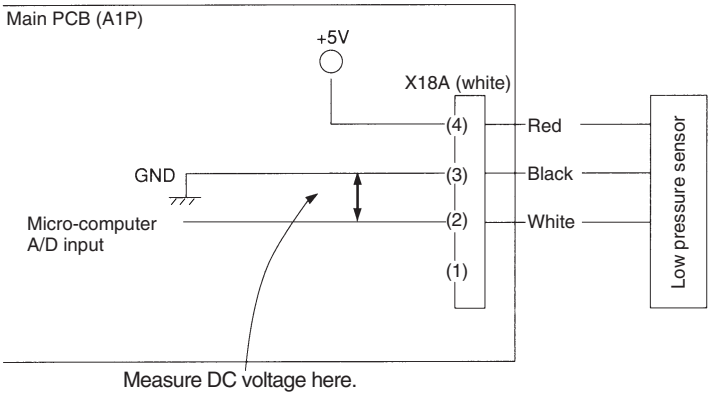
∗The data is for reference purpose only.

CHECK 12 Voltage measurement Point

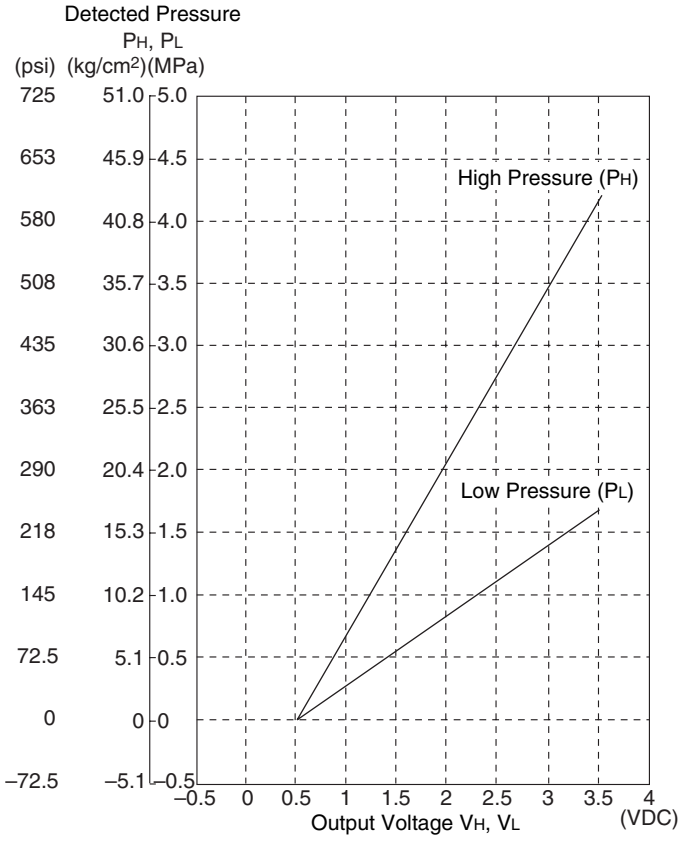
High pressure sensor



Low pressure sensor



Pressure sensor and voltage characteristics



$P_H\ (MPa) = \frac{4.15}{3.0} \times V_H - \frac{4.15}{3.0} \times 0.5$

$P_L\ (MPa) = \frac{1.7}{3.0} \times V_L - \frac{1.7}{3.0} \times 0.5$

1 MPa = 145 psi

P_H : High pressure (MPa)

P_L : Low pressure (MPa)

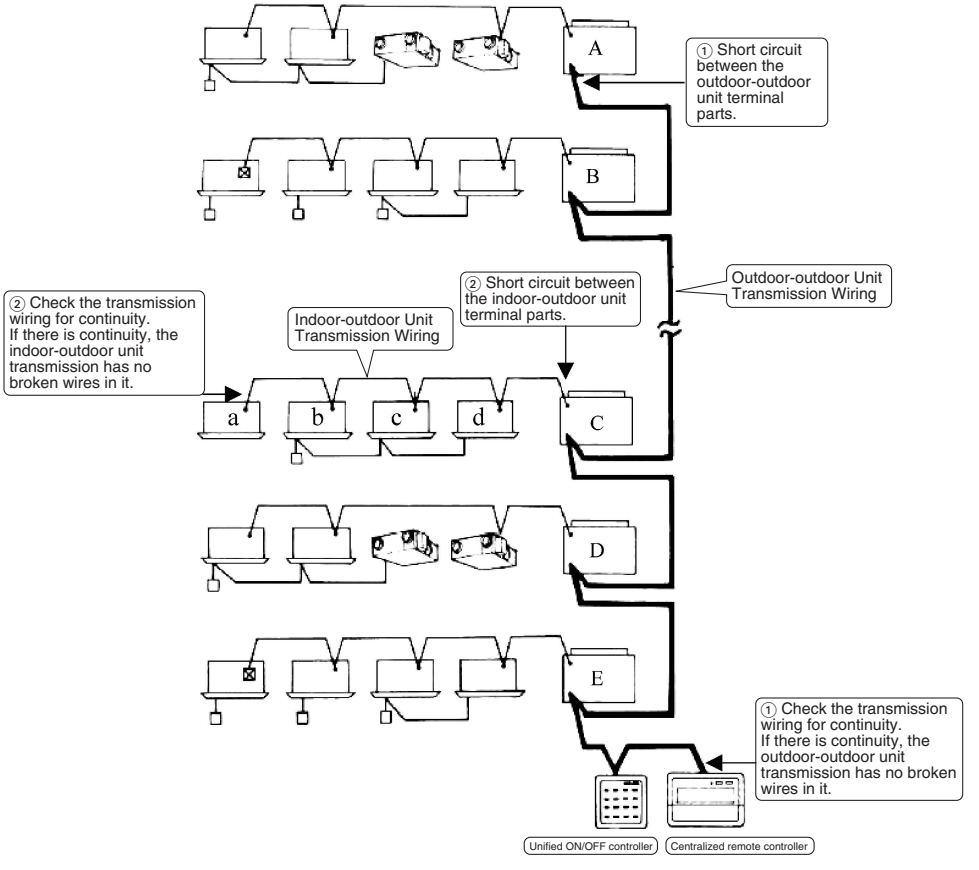
V_H : Output Voltage (High Side) (VDC)

V_L : Output Voltage (Low Side) (VDC)

CHECK 13 Broken wire check for the connecting wires

1. Procedure for checking outdoor-outdoor unit transmission wiring for broken wires:
   On the system shown below, turn OFF the power supply to all equipment, short circuit between the outdoor-outdoor unit terminal F1 and F2 in "Outdoor Unit A" farthest from the centralized remote controller, and then conduct continuity checks between the transmission wiring terminal blocks F1 and F2 of the centralized remote controller using a multiple meter. If there is continuity between the said terminal blocks, the outdoor-outdoor unit transmission wiring has no broken wires in it.
   If there is no continuity, the transmission wiring may have broken wires. With the outdoor-outdoor unit terminal of "Outdoor Unit A" short circuited, conduct continuity checks between the transmission wiring terminal blocks F1 and F2 of the unified ON/OFF controller. If there is no continuity, conduct continuity checks between the outdoor-outdoor unit terminal of "Outdoor Unit E", between the outdoor-outdoor unit terminal of "Outdoor Unit D", between the outdoor-outdoor unit terminal of "Outdoor Unit C", etc. in the order described, thus identifying the areas with continuity.
   If the areas with continuity can be identified, there may be broken wires in places before those areas.

2. Procedure for checking indoor-outdoor unit transmission wiring for broken wires (for checking the indoor-outdoor unit transmission wiring of "Outdoor Unit C" for broken wires)
   Turn OFF the power supply to all equipment, short circuit between the indoor-outdoor unit terminal F1 and F2 in "Outdoor Unit C", and then conduct continuity checks between the transmission wiring F1 and F2 of "Indoor Unit a" farthest from "Outdoor Unit C" using a multiple meter. If there is continuity between the transmission wiring, the indoor-outdoor unit transmission wiring has no broken wires in it.
   If there is no continuity, the transmission wiring may have broken wires. With the indoor-outdoor unit terminal of "Outdoor Unit C" short circuited, identify the areas with continuity in the transmission wiring of "Indoor Unit b", transmission wiring of "Indoor Unit c", and transmission wiring of "Indoor Unit d" in the order described.
   If the areas with continuity can be identified, there may be broken wires in places before those areas.



CHECK 14 Master unit centralized connector setting table

The master unit centralized setting connector (CN1/X1A) is installed at the factory.

- To independently use a single unit of the intelligent Touch Controller or a single unit of the centralized remote controller, do not dismount the master unit centralized setting connector (i.e., use the connector with the factory setting unchanged).
- To independently use the schedule timer, insert an independent-use setting connector.
  No independent-use setting connector has been installed at the factory. Insert the connector, which is attached to the casing of the master unit, in the PCB (CN1/X1A).
  (Independent-use connector: Master unit centralized setting connector)
- To use two or more centralized controllers in combination, make settings according to the table shown below.

<table>
<tr><th rowspan="2">Pattern</th><th colspan="4">Centralized controller connection pattern</th><th colspan="4">Setting of master unit centralized setting connector (*2)</th></tr>
<tr><th>intelligent Touch Controller</th><th>Centralized remote controller</th><th>Unified ON/OFF controller</th><th>Schedule timer</th><th>intelligent Touch Controller</th><th>Centralized remote controller</th><th>Unified ON/OFF controller</th><th>Schedule timer</th></tr>
<tr><td>(1)</td><td>1 to 2 units</td><td></td><td></td><td>× (*1)</td><td>Only a single unit: "Provided", Others: "Not provided"</td><td></td><td></td><td></td></tr>
<tr><td>(2)</td><td rowspan="2">1 unit</td><td rowspan="2">1 unit</td><td></td><td>× (*1)</td><td rowspan="2">Provided</td><td rowspan="2">Not provided</td><td></td><td></td></tr>
<tr><td>(3)</td><td rowspan="2">1 to 8 units</td><td>× (*1)</td><td rowspan="2">All "Not provided"</td><td></td></tr>
<tr><td>(4)</td><td>1 to 2 units</td><td></td><td>× (*1)</td><td>Only a single unit: "Provided", Others: "Not provided"</td><td></td></tr>
<tr><td>(5)</td><td></td><td rowspan="4">1 to 4 units</td><td></td><td></td><td></td><td rowspan="4">Only a single unit: "Provided", Others: "Not provided"</td><td></td><td></td></tr>
<tr><td>(6)</td><td></td><td rowspan="2">1 to 16 units</td><td>1 unit</td><td></td><td rowspan="2">All "Not provided"</td><td>Not provided</td></tr>
<tr><td>(7)</td><td></td><td></td><td></td><td></td></tr>
<tr><td>(8)</td><td></td><td></td><td>1 unit</td><td></td><td></td><td>Not provided</td></tr>
<tr><td>(9)</td><td></td><td></td><td rowspan="2">1 to 16 units</td><td></td><td></td><td></td><td rowspan="2">Only a single unit: "Provided", Others: "Not provided"</td><td></td></tr>
<tr><td>(10)</td><td></td><td></td><td>1 unit</td><td></td><td></td><td>Not provided</td></tr>
<tr><td>(11)</td><td></td><td></td><td></td><td>1 unit</td><td></td><td></td><td></td><td>Provided</td></tr>
</table>

Note:

*1 The intelligent Touch Controller and the schedule timer are not available for combined use.

*2 The intelligent Touch Controller, centralized remote controller, and the unified ON/OFF controller have been set to "Provided with the master unit centralized setting connector" at the factory. The schedule timer has been set to "Not provided with the master unit centralized setting connector" at the factory, which is attached to the casing of the master unit.

CHECK 15 Master-slave unit setting table

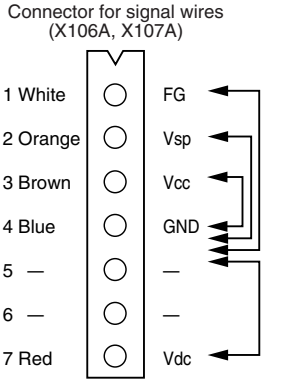
Combination of intelligent Touch Controller and Centralized Remote Controller

*	#1		#2		#3		#4	
Pattern	1-00~4-15	Master/ Slave	5-00~8-15	Master/ Slave	1-00~4-15	Master/ Slave	5-00~8-15	Master/ Slave
①	CRC	Master	CRC	Master	CRC	Slave	CRC	Slave
②	CRC	Master	—	—	CRC	Slave	—	—
③	intelligent Touch Controller	Master	—	—	intelligent Touch Controller	Slave	—	—
④	CRC	Master	—	—	intelligent Touch Controller	Slave	—	—
⑤	intelligent Touch Controller	Master	—	—	CRC	Slave	—	—
⑥	CRC	Master	—	—	—	—	—	—
⑦	intelligent Touch Controller	Master	—	—	—	—	—	—

Note: CRC (Centralized remote controller): DCS302CA61
intelligent Touch Controller: DCS601C51
∗The patterns marked with "∗" have nothing to do with those described in the list of setting of master unit centralized setting connector.

CHECK 16 Fan motor check

(1) Turn OFF the power supply.
(2) Remove the connector (X106A, X107A) on the PCB to measure the resistance value.
Judgment criteria: resistance value between each phase is within ±20%

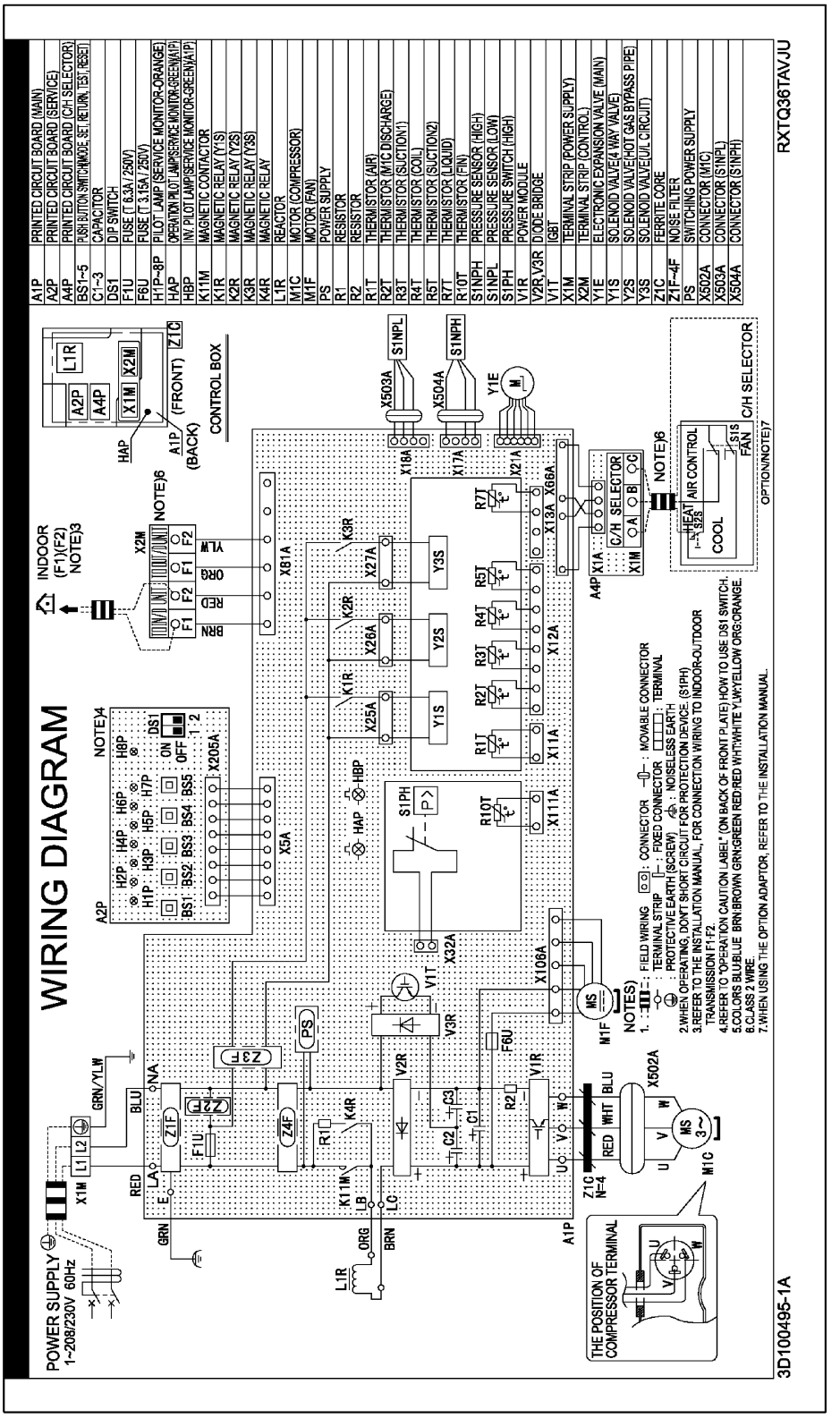


Part 7
Appendix

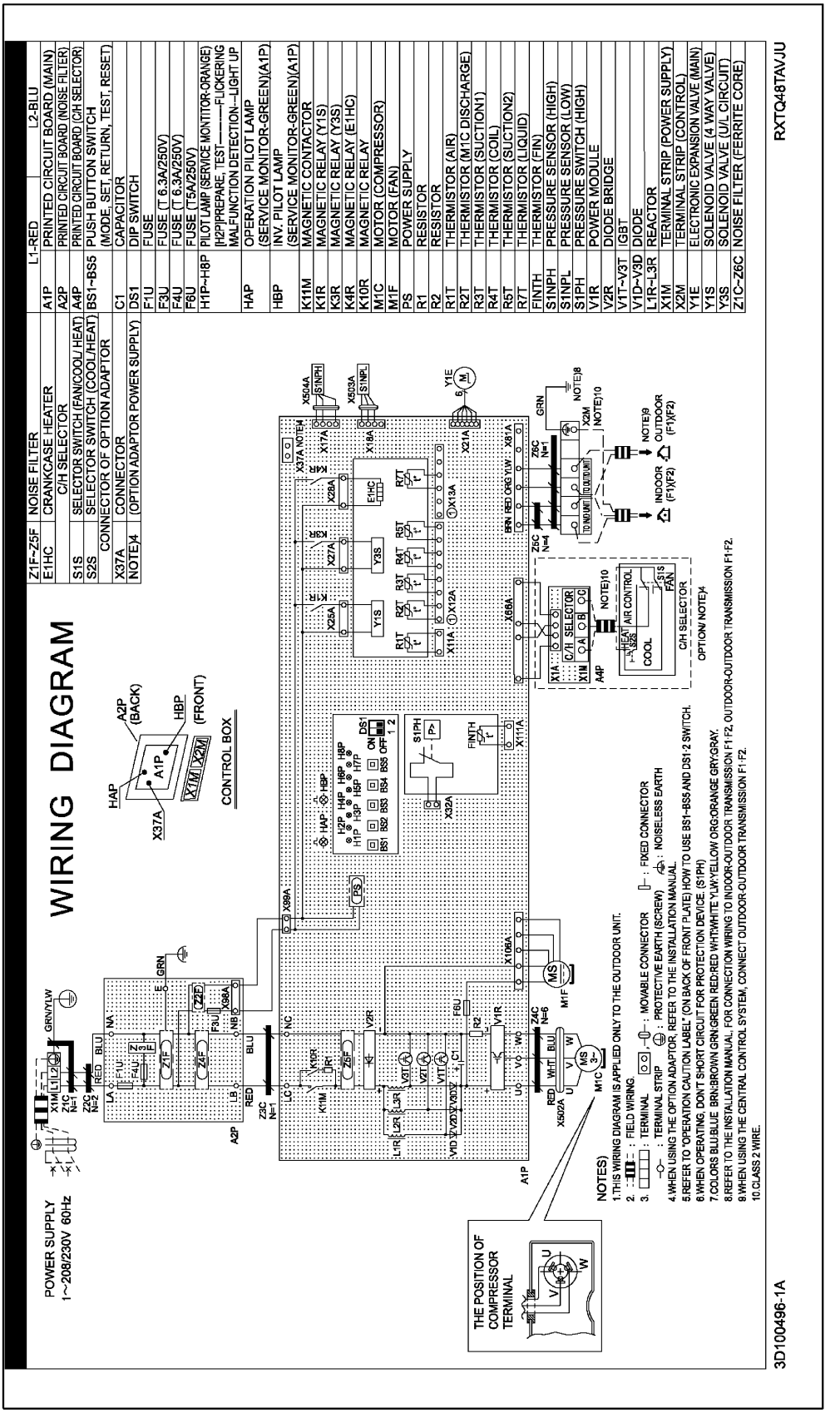
1. Wiring Diagrams

1.1 Outdoor Unit

RXTQ36TAVJU

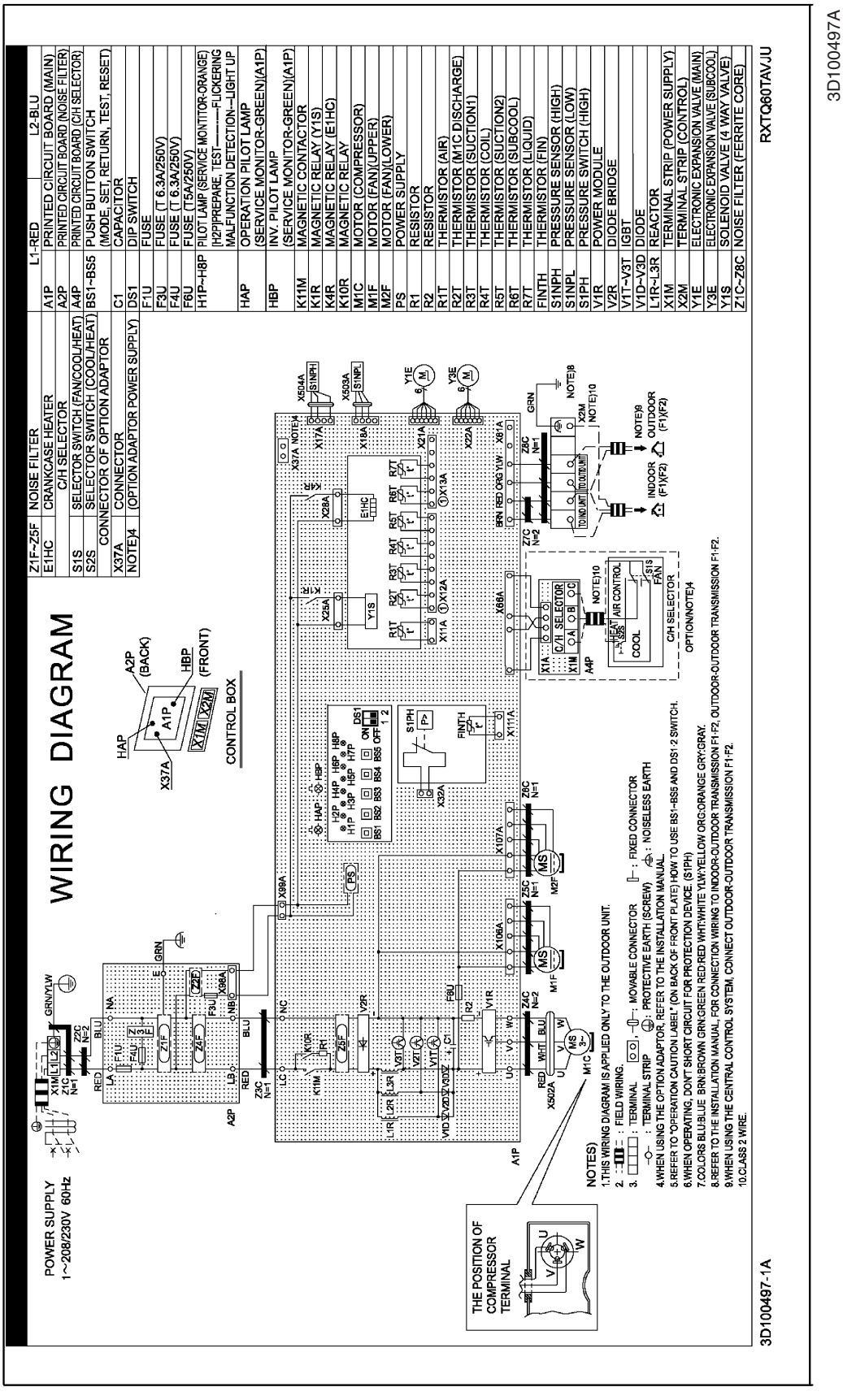


RXTQ48TAVJU



	L1-RED	L2-BLU
Z1F~Z5F	NOISE FILTER	
E1HC	CRANKCASE HEATER	A1P PRINTED CIRCUIT BOARD (MAIN)
	C/H SELECTOR	A2P PRINTED CIRCUIT BOARD (NOISE FILTER)
S1S	SELECTOR SWITCH (FAN/COOL/ HEAT)	A4P PRINTED CIRCUIT BOARD (C/H SELECTOR)
S2S	SELECTOR SWITCH (COOL/HEAT)	BS1~BS5 PUSH BUTTON SWITCH
	CONNECTOR OF OPTION ADAPTOR	(MODE, SET, RETURN, TEST, RESET)
X37A	CONNECTOR	C1 CAPACITOR
NOTE)4	(OPTION ADAPTOR POWER SUPPLY)	DS1 DIP SWITCH
		F1U FUSE
		F3U FUSE (T 6.3A/250V)
		F4U FUSE (T 6.3A/250V)
		F6U FUSE (T5A/250V)
		H1P~H8P PILOT LAMP (SERVICE MONITOR-ORANGE)
		H2P|PREPARE, TEST———FLICKERING
		MALFUNCTION DETECTION—LIGHT UP
		HAP OPERATION PILOT LAMP
		(SERVICE MONITOR-GREEN)(A1P)
		HBP INV. PILOT LAMP
		(SERVICE MONITOR-GREEN)(A1P)
		K11M MAGNETIC CONTACTOR
		K1R MAGNETIC RELAY (Y1S)
		K3R MAGNETIC RELAY (Y3S)
		K4R MAGNETIC RELAY (E1HC)
		K10R MAGNETIC RELAY
		M1C MOTOR (COMPRESSOR)
		M1F MOTOR (FAN)
		PS POWER SUPPLY
		R1 RESISTOR
		R2 RESISTOR
		R1T THERMISTOR (AIR)
		R2T THERMISTOR (M1C DISCHARGE)
		R3T THERMISTOR (SUCTION1)
		R4T THERMISTOR (COIL)
		R5T THERMISTOR (SUCTION2)
		R7T THERMISTOR (LIQUID)
		F1NTH THERMISTOR (FIN)
		S1NPH PRESSURE SENSOR (HIGH)
		S1NPL PRESSURE SENSOR (LOW)
		S1PH PRESSURE SWITCH (HIGH)
		V1R POWER MODULE
		V2R DIODE BRIDGE
		V1T~V3T IGBT
		V1D~V3D DIODE
		L1R~L3R REACTOR
		X1M TERMINAL STRIP (POWER SUPPLY)
		X2M TERMINAL STRIP (CONTROL)
		Y1E ELECTRONIC EXPANSION VALVE (MAIN)
		Y1S SOLENOID VALVE (4 WAY VALVE)
		Y3S SOLENOID VALVE (U/L CIRCUIT)
		Z1C~Z6C NOISE FILTER (FERRITE CORE)

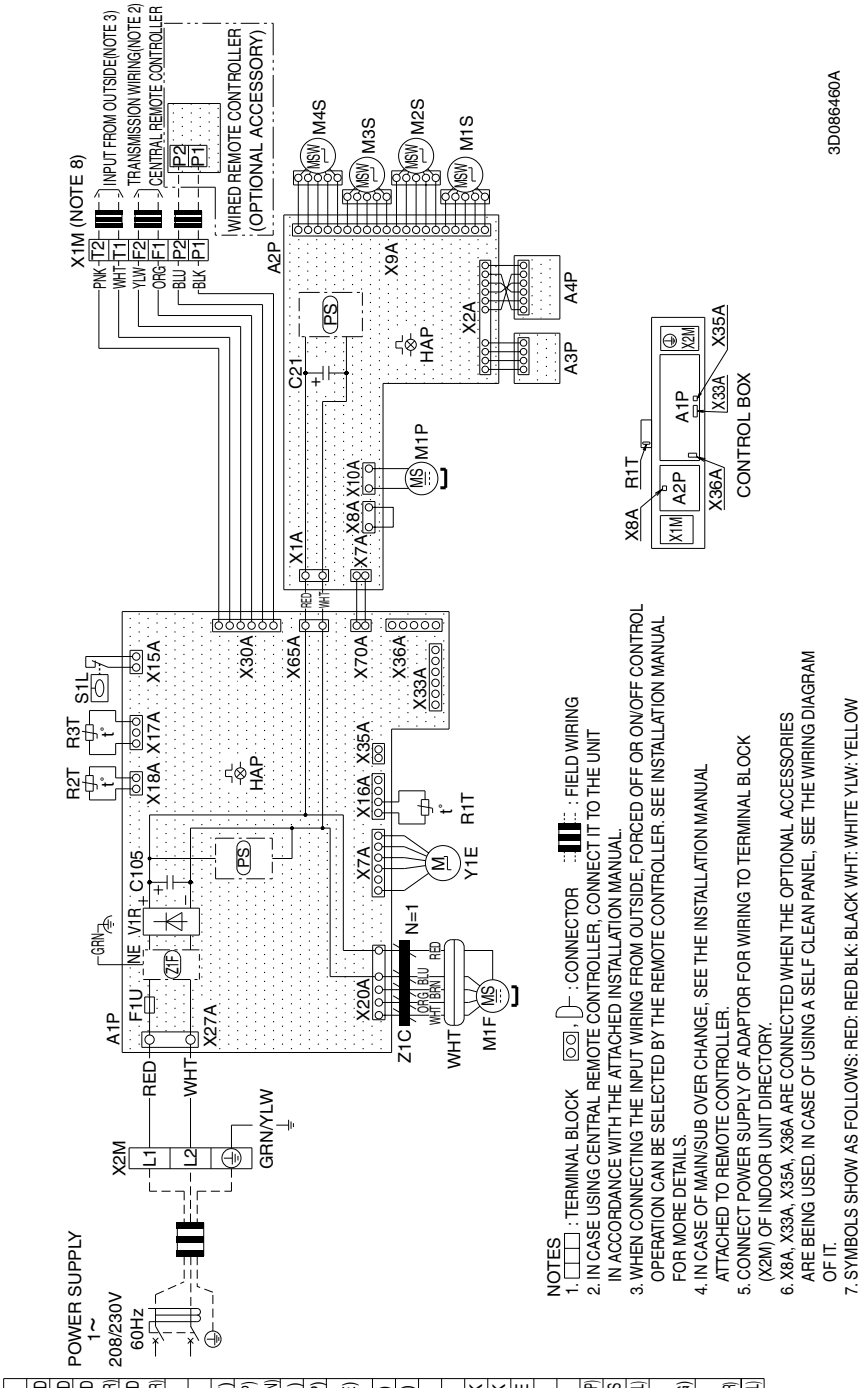
RXTQ60TAVJU



		L1-RED	L2-BLU
Z1F~Z5F	NOISE FILTER	A1P	PRINTED CIRCUIT BOARD (MAIN)
E1HC	CRANKCASE HEATER	A2P	PRINTED CIRCUIT BOARD (NOISE FILTER)
	C/H SELECTOR	A4P	PRINTED CIRCUIT BOARD (C/H SELECTOR)
S1S	SELECTOR SWITCH (FAN/COOL/HEAT)	BS1~BS5	PUSH BUTTON SWITCH (MODE, SET, RETURN, TEST, RESET)
S2S	SELECTOR SWITCH (COOL/HEAT)	C1	CAPACITOR
	CONNECTOR OF OPTION ADAPTOR	DS1	DIP SWITCH
X37A	CONNECTOR	F1U	FUSE
NOTE)4	(OPTION ADAPTOR POWER SUPPLY)	F3U	FUSE (T 6.3A/250V)
		F4U	FUSE (T 6.3A/250V)
		F6U	FUSE (T5A/250V)
		H1P~H8P	PILOT LAMP (SERVICE MONITOR-ORANGE) (H2P)PREPARE, TEST———FLICKERING MALFUNCTION DETECTION—LIGHT UP
		HAP	OPERATION PILOT LAMP (SERVICE MONITOR-GREEN)(A1P)
		HBP	INV. PILOT LAMP (SERVICE MONITOR-GREEN)(A1P)
		K11M	MAGNETIC CONTACTOR
		K1R	MAGNETIC RELAY (Y1S)
		K4R	MAGNETIC RELAY (E1HC)
		K10R	MAGNETIC RELAY
		M1C	MOTOR (COMPRESSOR)
		M1F	MOTOR (FAN)(UPPER)
		M2F	MOTOR (FAN)(LOWER)
		PS	POWER SUPPLY
		R1	RESISTOR
		R2	RESISTOR
		R1T	THERMISTOR (AIR)
		R2T	THERMISTOR (M1C DISCHARGE)
		R3T	THERMISTOR (SUCTION1)
		R4T	THERMISTOR (COIL)
		R5T	THERMISTOR (SUCTION2)
		R6T	THERMISTOR (SUBCOOL)
		R7T	THERMISTOR (LIQUID)
		FINTH	THERMISTOR (FIN)
		S1NPH	PRESSURE SENSOR (HIGH)
		S1NPL	PRESSURE SENSOR (LOW)
		S1PH	PRESSURE SWITCH (HIGH)
		V1R	POWER MODULE
		V2R	DIODE BRIDGE
		V1T~V3T	IGBT
		V1D~V3D	DIODE
		L1R~L3R	REACTOR
		X1M	TERMINAL STRIP (POWER SUPPLY)
		X2M	TERMINAL STRIP (CONTROL)
		Y1E	ELECTRONIC EXPANSION VALVE (MAIN)
		Y3E	ELECTRONIC EXPANSION VALVE (SUBCOOL)
		Y1S	SOLENOID VALVE (4 WAY VALVE)
		Z1C~Z8C	NOISE FILTER (FERRITE CORE)

1.2 Indoor Unit

FXFQ07/09/12/15/18/24/30/36/48TVJU



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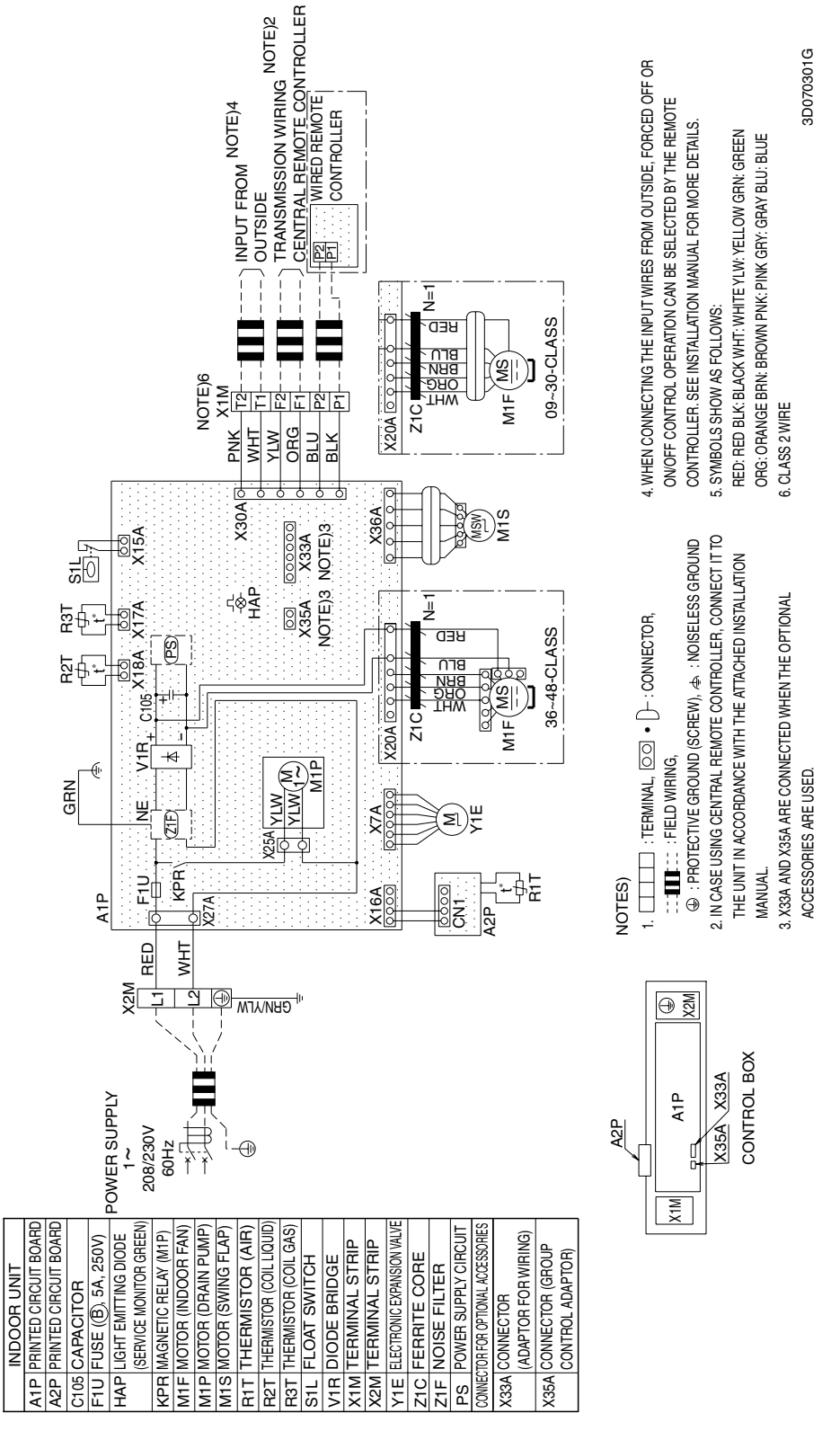

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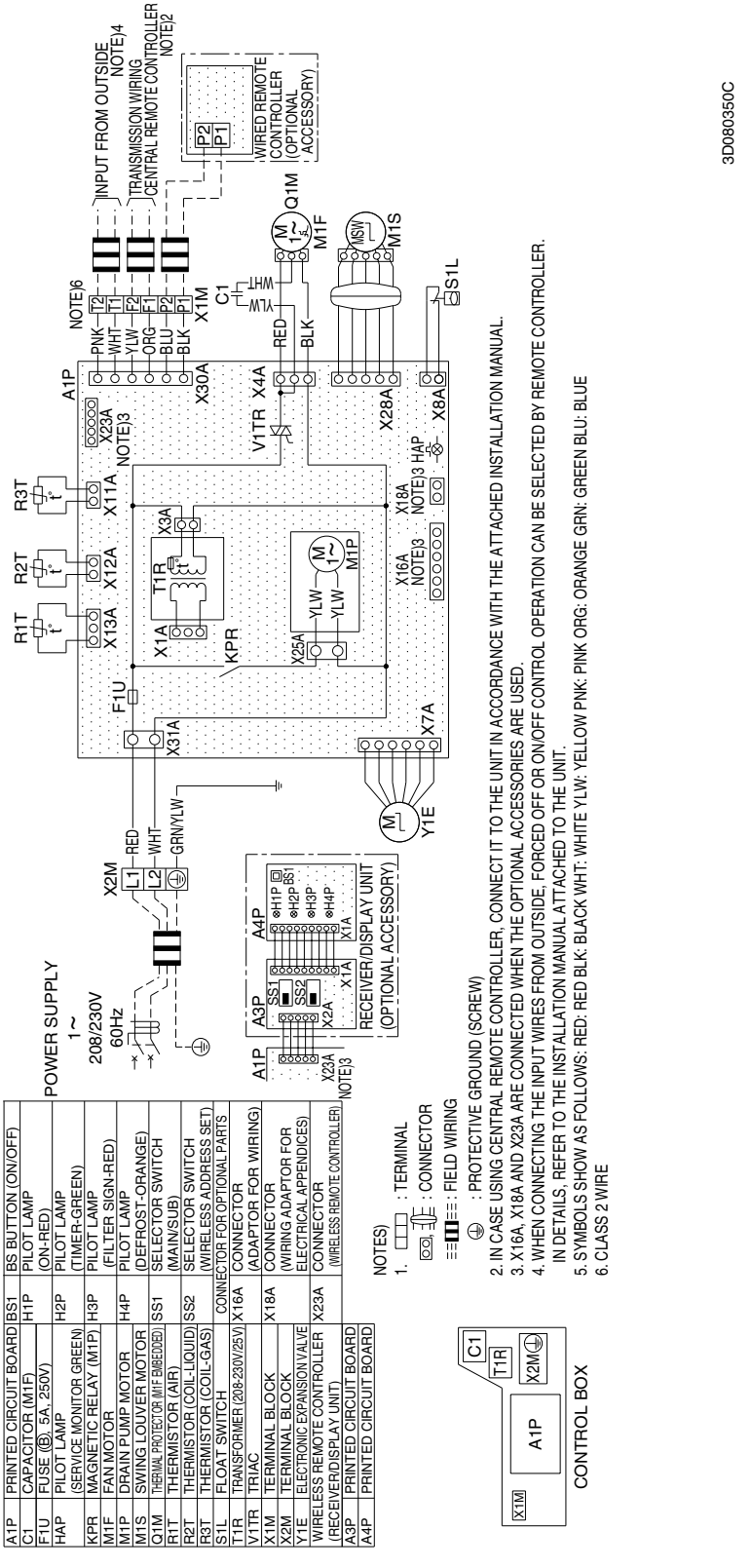
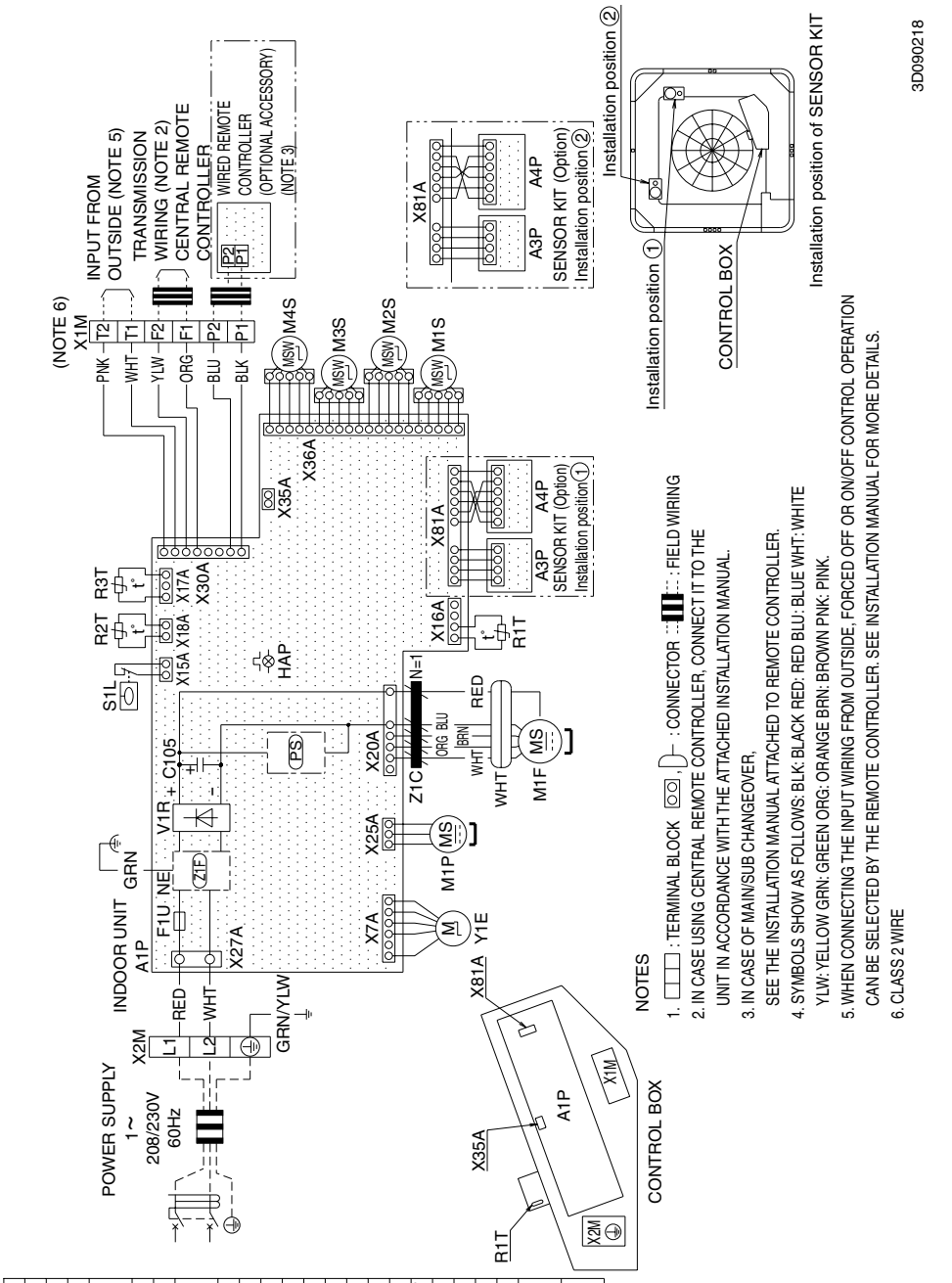
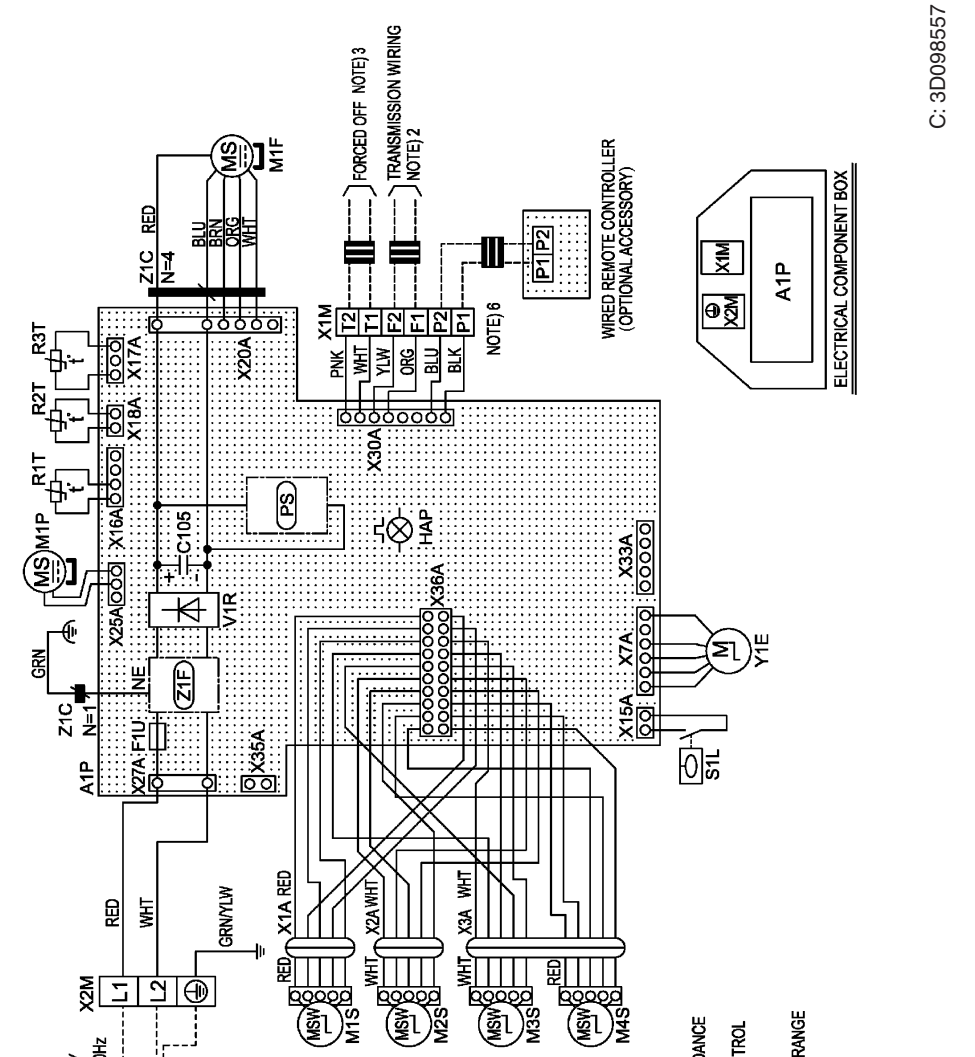


FXUQ18/24/30/36PVJU



	INDOOR UNIT
A1P	PRINTED CIRCUIT BOARD
C105	CAPACITOR (M1F)
F1U	FUSE
HAP	FLASHING LAMP (SERVICE MONITOR GREEN)
M1F	MOTOR (INDOOR FAN)
M1P	MOTOR (DRAIN PUMP)
M1S/M2S	MOTOR (SWING BLADE)
M3S/M4S	
R1T	THERMISTOR (AIR)
R2T/R3T	THERMISTOR (COIL)
S1L	FLOAT SWITCH
V1R	DIODE BRIDGE
X1M	TERMINAL BLOCK
X2M	TERMINAL BLOCK
Y1E	ELECTRONIC EXPANSION VALVE
Z1F	NOISE FILTER
Z1C	FERRITE CORE
PS	POWER SUPPLY CIRCUIT
	SENSOR KIT
A3P	PRINTED CIRCUIT BOARD
A4P	PRINTED CIRCUIT BOARD
	CONNECTOR FOR OPTIONAL PARTS
X35A	CONNECTOR (POWER SUPPLY FOR ADAPTOR)
X81A	CONNECTOR (SENSOR KIT)

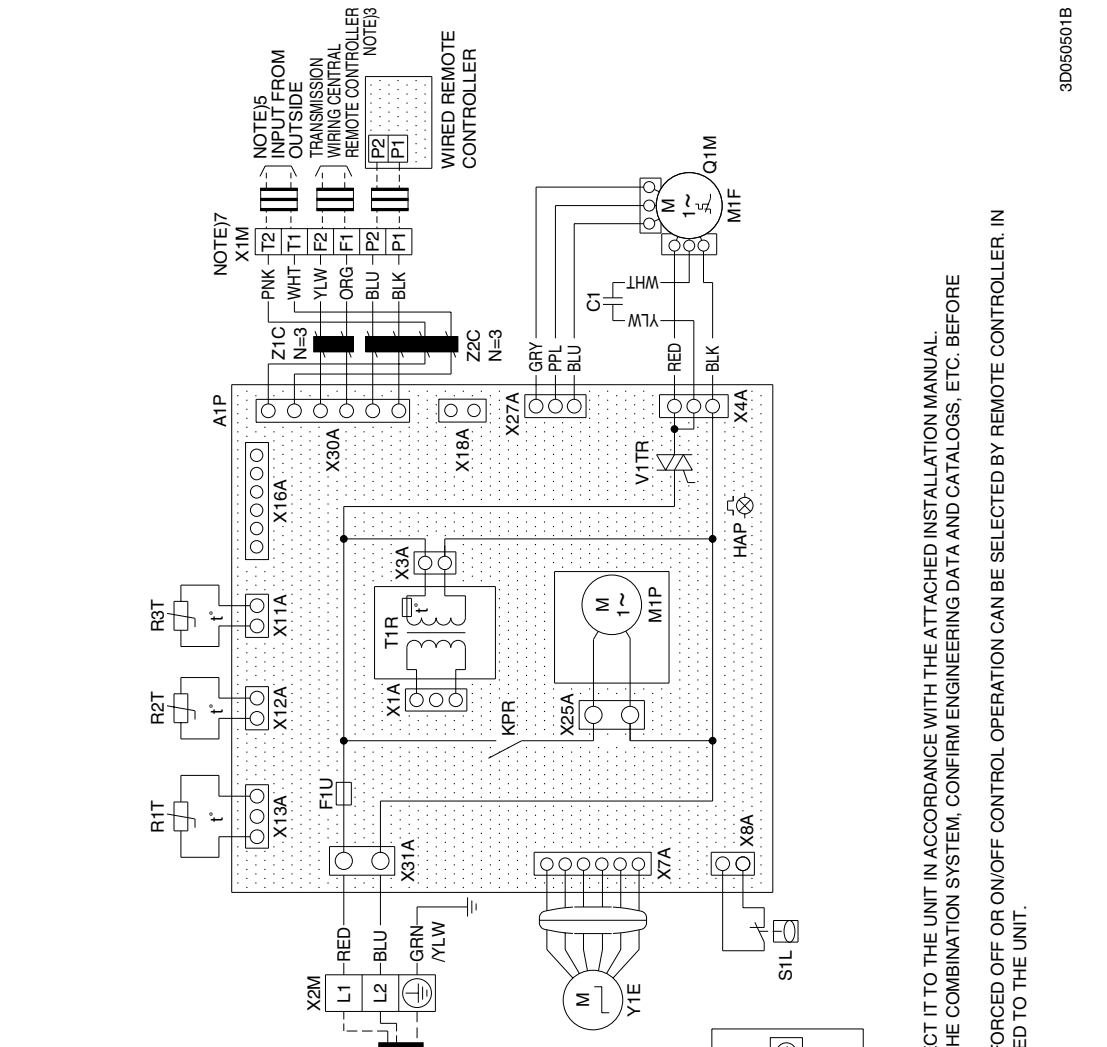
FXEQ07/09/12/15/18/24PVJU



INDOOR UNIT	
A1P	PRINTED CIRCUIT BOARD
C105	CAPACITOR
F1U	FUSE(T3.15A,250V)
HAP	FLASHING LAMP(SERVICE MONITOR-GREEN)
M1F	MOTOR(INDOOR UNIT FAN)
M1P	MOTOR(DRAIN PUMP)
M1S·M2S	MOTOR(HORIZONTAL AND VERTICAL SWING FLAPS)
M3S·M4S	MOTOR(SUCTION SWING FLAP)
X1A·X2A·X3A	CONNECTOR
R1T	THERMISTOR(AIR)
R2T·R3T	THERMISTOR(HEAT EXCHANGER)
S1L	FLOAT SWITCH
V1R	DIODE BRIDGE
X1M	TERMINAL BLOCK(OPERATE)
X2M	TERMINAL BLOCK(POWER SUPPLY)
Y1E	ELECTRONIC EXPANSION VALVE
Z1C	FERRITE CORE
PS	SWITCHING POWER SUPPLY
Z1F	NOISE FILTER
CONNECTOR FOR OPTIONAL PARTS	
X33A	CONNECTOR(FOR WIRING)
X35A	CONNECTOR(ADAPTOR)

NOTE)
1. : TERMINAL BLOCK : FIELD WIRING : CONNECTOR
   : PROTECTIVE EARTH(SCREW)
2. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTALLATION MANUAL.
3. WHEN CONNECTING THE INPUT WIRES FROM OUTSIDE, FORCED OFF OR ON/OFF CONTROL OPERATION CAN BE SELECTED BY REMOTE CONTROLLER. IN DETAILS, REFER TO THE INSTALLATION MANUAL ATTACHED THE UNIT.
4. COLORS BLK:BLACK RED:RED WHT:WHITE PNK:PINK YLW:YELLOW GRN:GREEN ORG:ORANGE BLU:BLUE BRN:BROWN.
5. USE COPPER CONDUCTORS ONLY.
6. CLASS 2 WIRE.

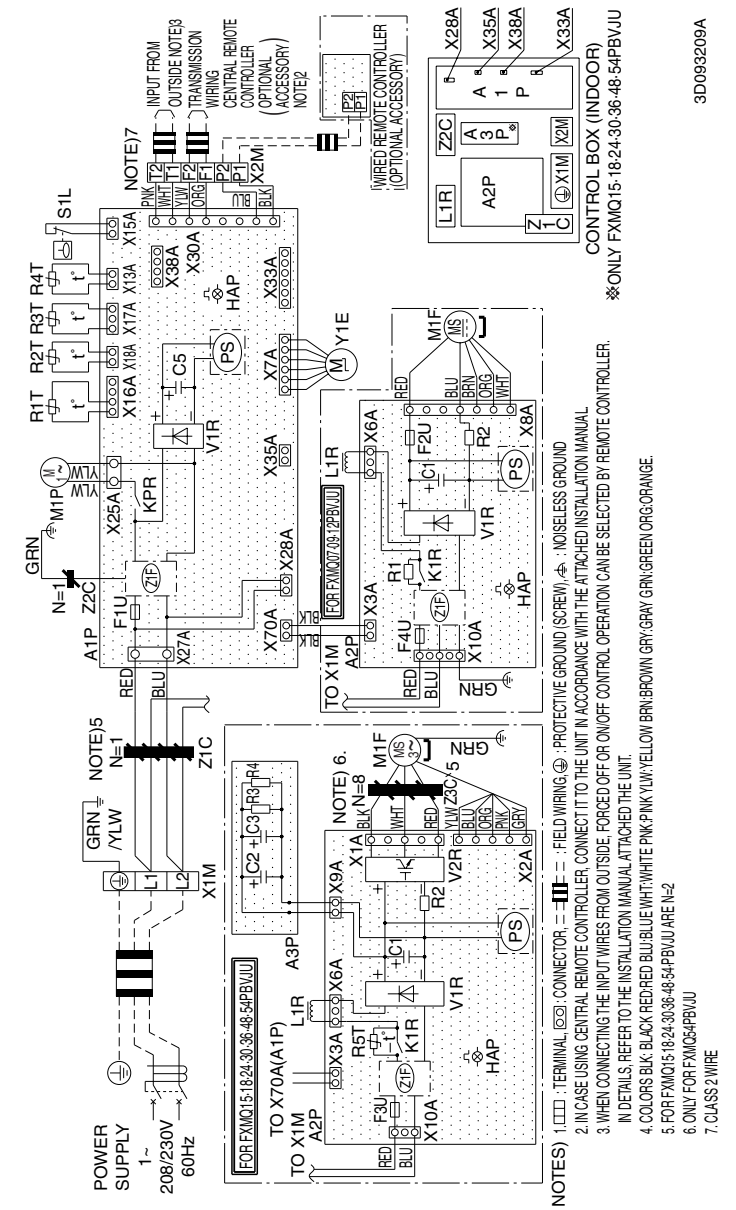
FXDQ07/09/12/18/24MVJU



A1P	PRINTED CIRCUIT BOARD
C1	CAPACITOR (M1F)
F1U	FUSE (F5A/250V)
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR GREEN)
KPR	MAGNETIC RELAY (M1P)
M1F	MOTOR (INDOOR FAN)
M1P	MOTOR (DRAIN PUMP)
Q1M	THERMAL PROTECTOR (M1F EMBEDDED)
R1T	THERMISTOR (AIR)
R2T	THERMISTOR (COIL-1)
R3T	THERMISTOR (COIL-2)
S1L	FLOAT SWITCH
T1R	TRANSFORMER (208-230V/25V)
V1TR	PHASE CONTROL CIRCUIT
X1M	TERMINAL BLOCK
X2M	TERMINAL BLOCK
Y1E	ELECTRONIC EXPANSION VALVE
Z1C-Z2C	NOISE FILTER (FERRITE CORE)
	CONNECTOR FOR OPTIONAL PARTS
X16A	CONNECTOR (ADAPTOR FOR WIRING)
X18A	CONNECTOR (WIRING ADAPTOR FOR ELECTRICAL APPENDICES)

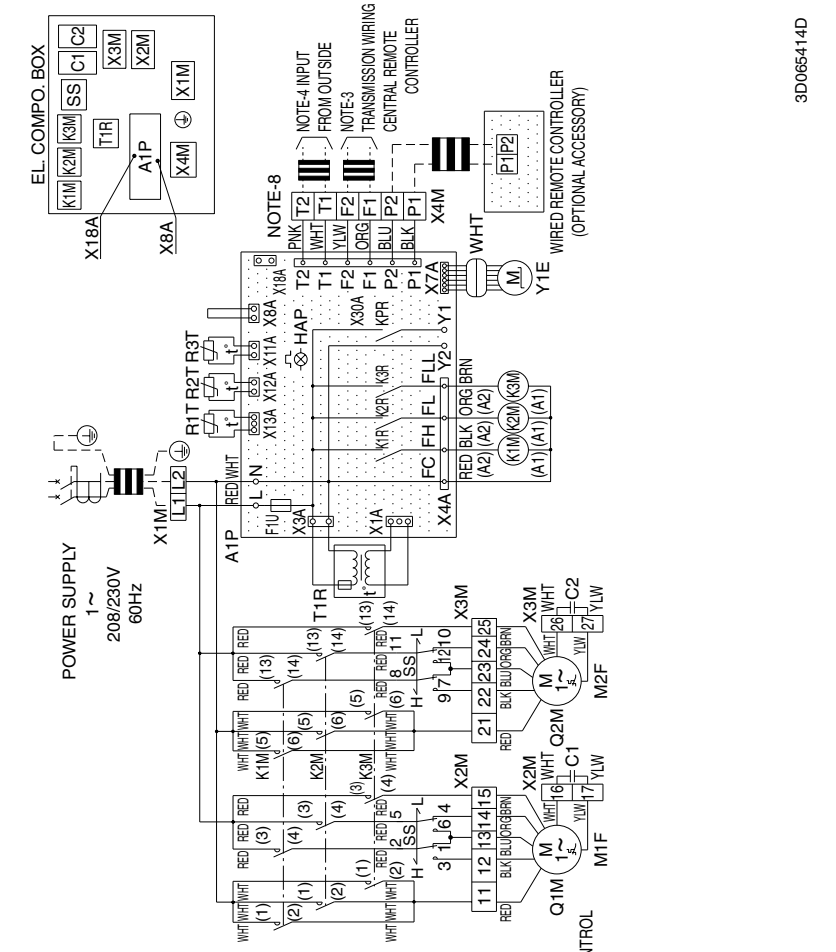
NOTES)
1. □□□: TERMINAL, ⊂⊃: CONNECTOR
2. : FIELD WIRING
3. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTALLATION MANUAL.
4. REMOTE CONTROLLER MODEL VARIES ACCORDING TO THE COMBINATION SYSTEM, CONFIRM ENGINEERING DATA AND CATALOGS, ETC. BEFORE CONNECTING.
5. WHEN CONNECTING THE INPUT WIRES FROM OUTSIDE, FORCED OFF OR ON/OFF CONTROL OPERATION CAN BE SELECTED BY REMOTE CONTROLLER. IN DETAILS, REFER TO THE INSTALLATION MANUAL ATTACHED TO THE UNIT.

FXMQ07/09/12/15/18/24/30/36/48/54PBVJU



	INDOOR UNIT		
A1P	PRINTED CIRCUIT BOARD	R4T	THERMISTOR (DISCHARGE AIR)
A2P	PRINTED CIRCUIT BOARD (FAN)	R5T	THERMISTOR NTC (CURRENT LIMITING)
A3P	PRINTED CIRCUIT BOARD (CAPACITOR)	S1L	FLOAT SWITCH
C1, C2, C3, C5	CAPACITOR	V1R	DIODE BRIDGE (A1P, A2P)
		V2R	POWER MODULE
F1U	FUSE (T, 3.15A, 250V)	X1M	TERMINAL BLOCK (POWER SUPPLY)
F2U	FUSE (T, 5A, 250V)		
F3U	FUSE (T, 6.3A, 250V)	X2M	TERMINAL BLOCK (CONTROL)
F4U	FUSE (T, 6.3A, 250V)		
HAP	FLASHING LAMP (A1P, A2P) (SERVICE MONITOR GREEN)	Y1E	ELECTRONIC EXPANSION VALVE
KPR	MAGNETIC RELAY	Z1C	FERRITE CORE
K1R	MAGNETIC RELAY	Z2C	
L1R	REACTOR	Z3C	
		Z1F	NOISE FILTER (A1P, A2P)
M1F	MOTOR (INDOOR FAN)		CONNECTOR FOR OPTIONAL ACCESSORIES
M1P	MOTOR (DRAIN PUMP)		
PS	POWER SUPPLY CIRCUIT (A1P, A2P)	X28A	CONNECTOR (POWER SUPPLY FOR WIRING)
R1	RESISTOR (CURRENT LIMITING)	X33A	CONNECTOR (ADAPTOR FOR WIRING)
R2	CURRENT SENSING DEVICE	X35A	CONNECTOR (POWER SUPPLY FOR ADAPTOR)
R3, R4	RESISTOR (ELECTRIC DISCHARGE)	X38A	CONNECTOR (ADAPTOR FOR MULTI TENANT)
R1T	THERMISTOR (SUCTION AIR)		
R2T	THERMISTOR (LIQUID)		

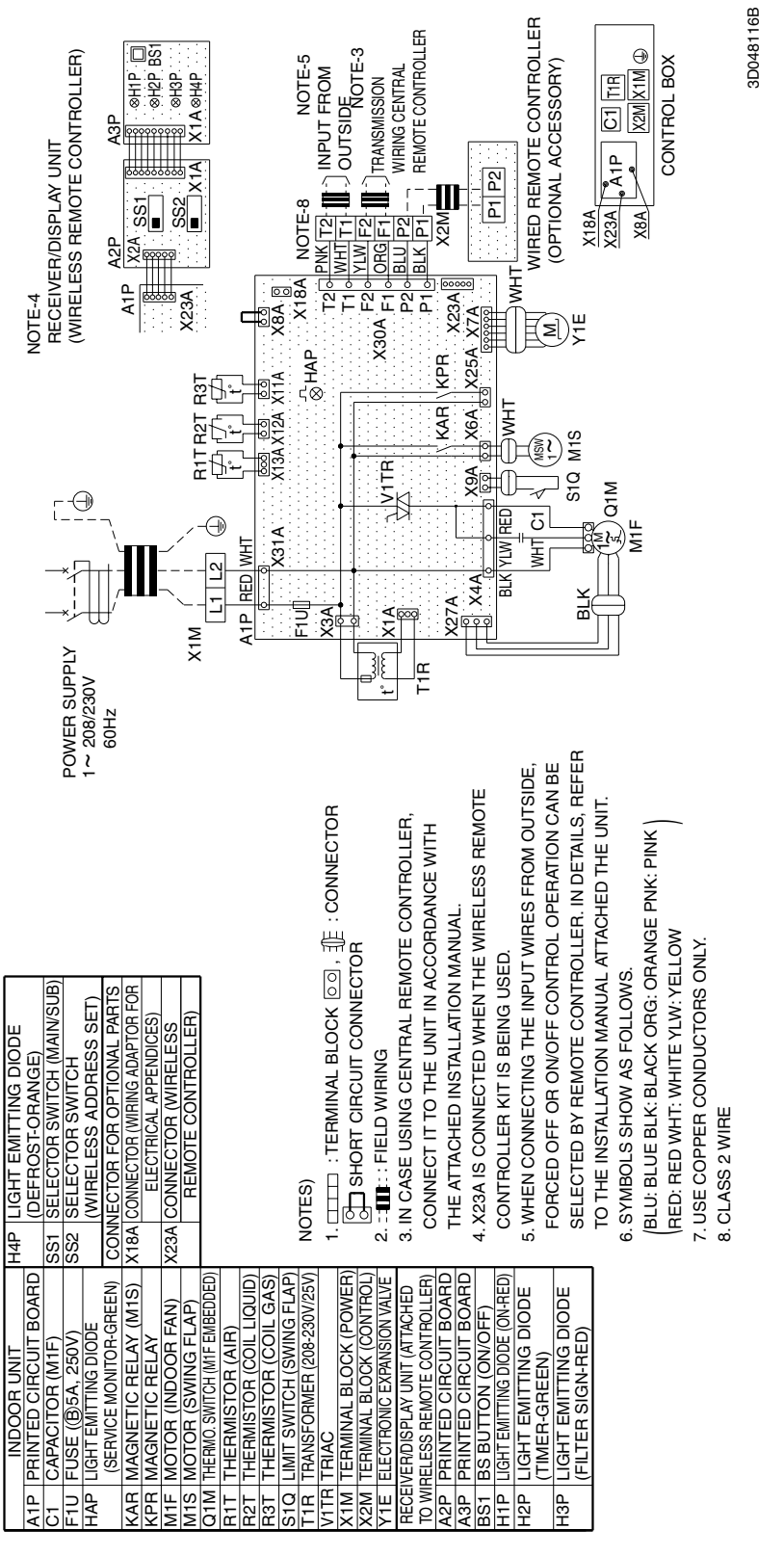
FXMQ72/96MVJU



INDOOR UNIT		R1T	THERMISTOR (AIR)
A1P	PRINTED CIRCUIT BOARD	R2T•R3T	THERMISTOR (COIL)
C1•C2	CAPACITOR (M1F•2F)	SS	SELECTOR SWITCH (STATIC PRESSURE)
F1U	FUSE (Ⓑ, 5A, 250V)	T1R	TRANSFORMER (208V/230V 25VA)
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR-GREEN)	X1M	TERMINAL BLOCK (POWER)
K1M	MAGNETIC CONTACTOR (M1F•2F)	X2M•X3M	TERMINAL BLOCK
K2M	MAGNETIC CONTACTOR (M1F•2F)	X4M	TERMINAL BLOCK (CONTROL)
K3M	MAGNETIC CONTACTOR (M1F•2F)	Y1E	ELECTRONIC EXPANSION VALVE
K1R•K3R	MAGNETIC RELAY (M1F•2F)		CONNECTOR FOR OPTIONAL PARTS
KPR	MAGNETIC RELAY (M1P)	X8A	CONNECTOR (FLOAT SWITCH)
M1F•M2F	MOTOR (INDOOR FAN)	X18A	CONNECTOR (WIRING ADAPTOR FOR ELECTRICAL APPENDICES)
Q1M•Q2M	THERMO. SWITCH (M1F•2F EMBEDDED)		

NOTES)
1. □□□ : TERMINAL BLOCK
   ⊡, ⊏⊐ : CONNECTOR
   ⊠ : SHORT CIRCUIT CONNECTOR
   —○— : TERMINAL
2. : ▮▮ : FIELD WIRING
3. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTALLATION MANUAL.
4. WHEN CONNECTING THE INPUT WIRES FROM OUTSIDE, FORCED OFF OR ON/OFF CONTROL OPERATION CAN BE SELECTED BY REMOTE CONTROLLER. IN DETAILS, REFER TO THE INSTALLATION MANUAL ATTACHED THE UNIT.
5. SYMBOLS SHOW AS FOLLOWS. (PNK: PINK WHT: WHITE YLW: YELLOW ORG: ORANGE BLU: BLUE BLK: BLACK RED: RED BRN: BROWN)
6. USE COPPER CONDUCTORS ONLY.
7. IN CASE HIGH E.S.P. OPERATION, CHANGE THE SWITCH (SS) FOR "H".
8. CLASS 2 WIRE.

FXHQ12/24/36MVJU



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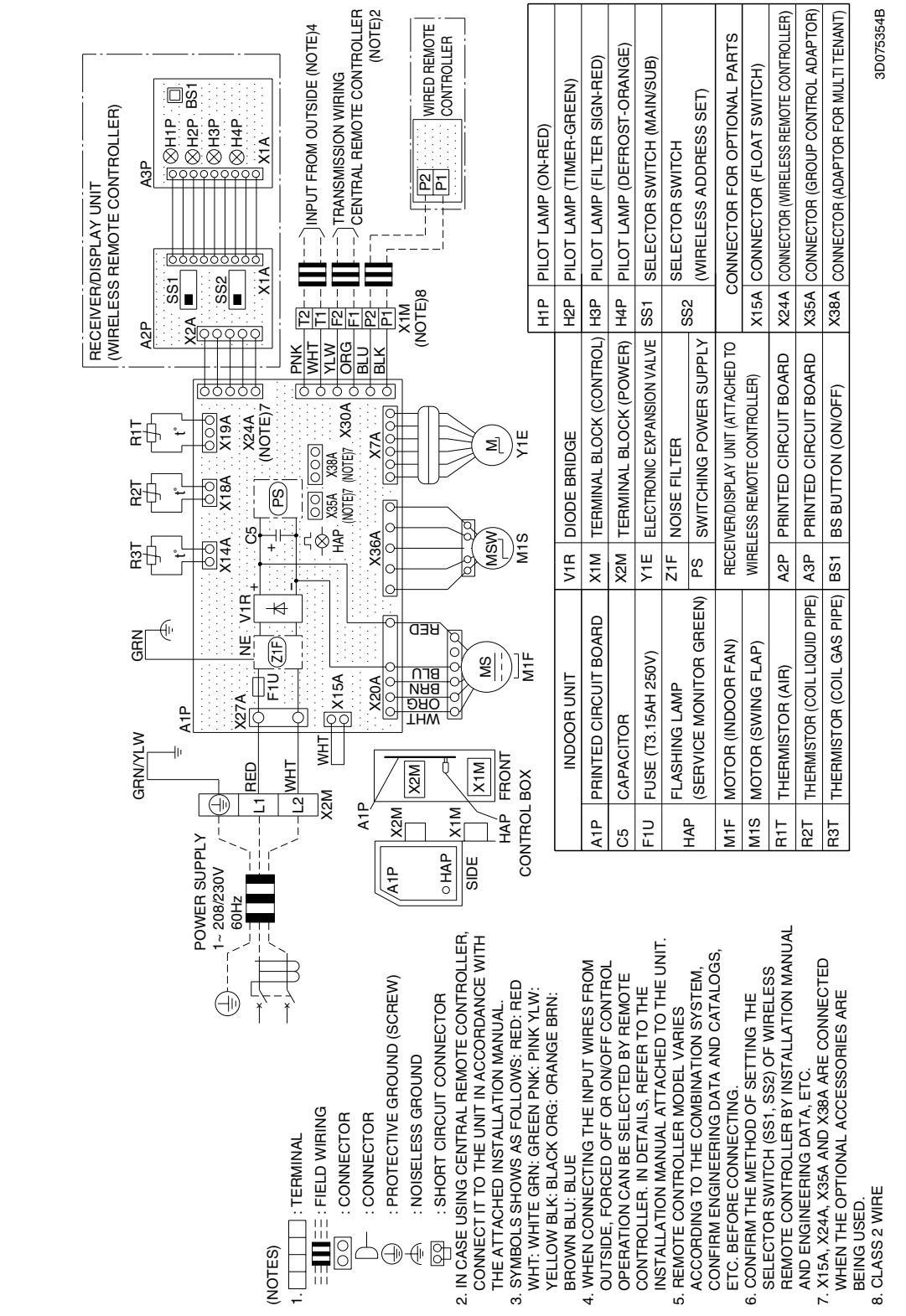

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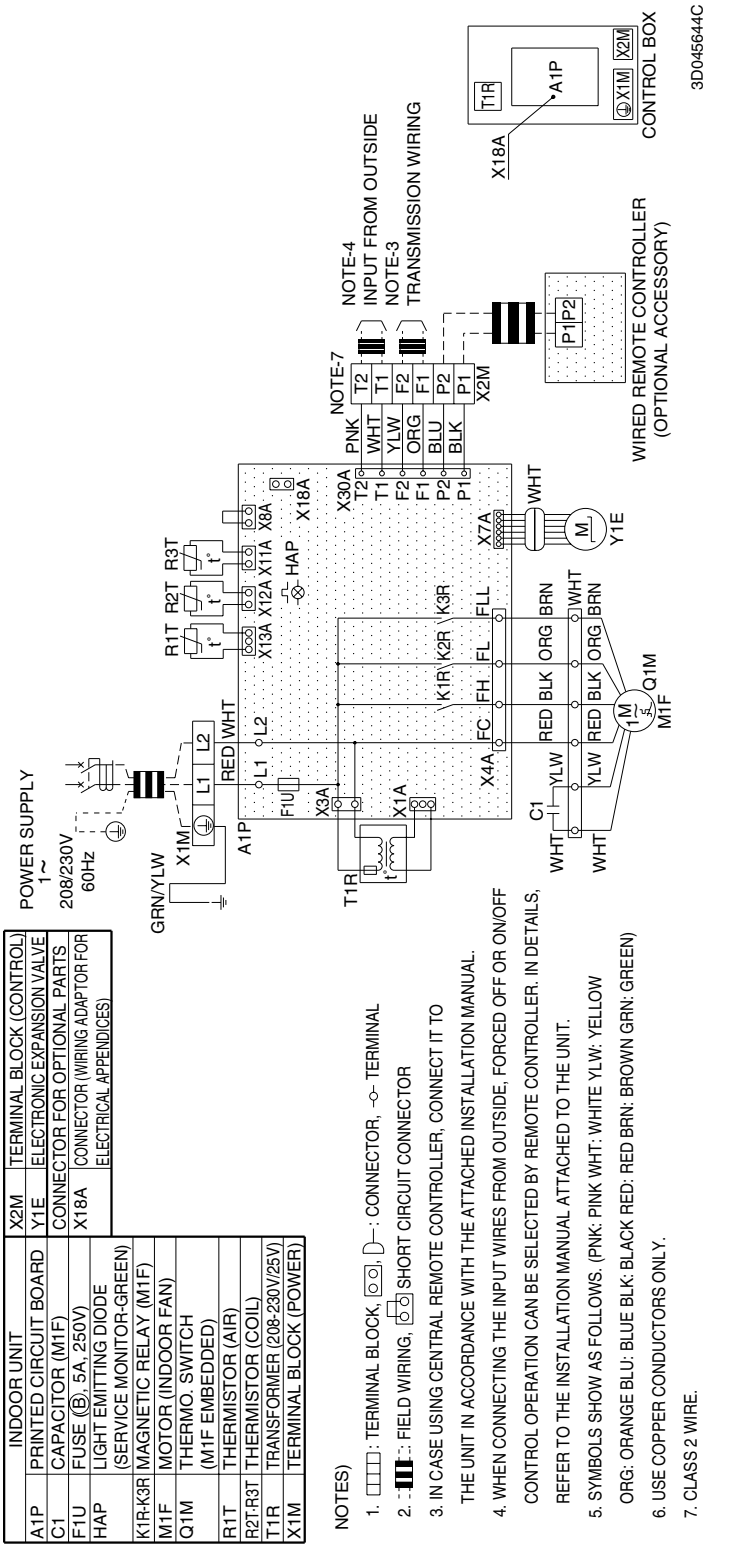

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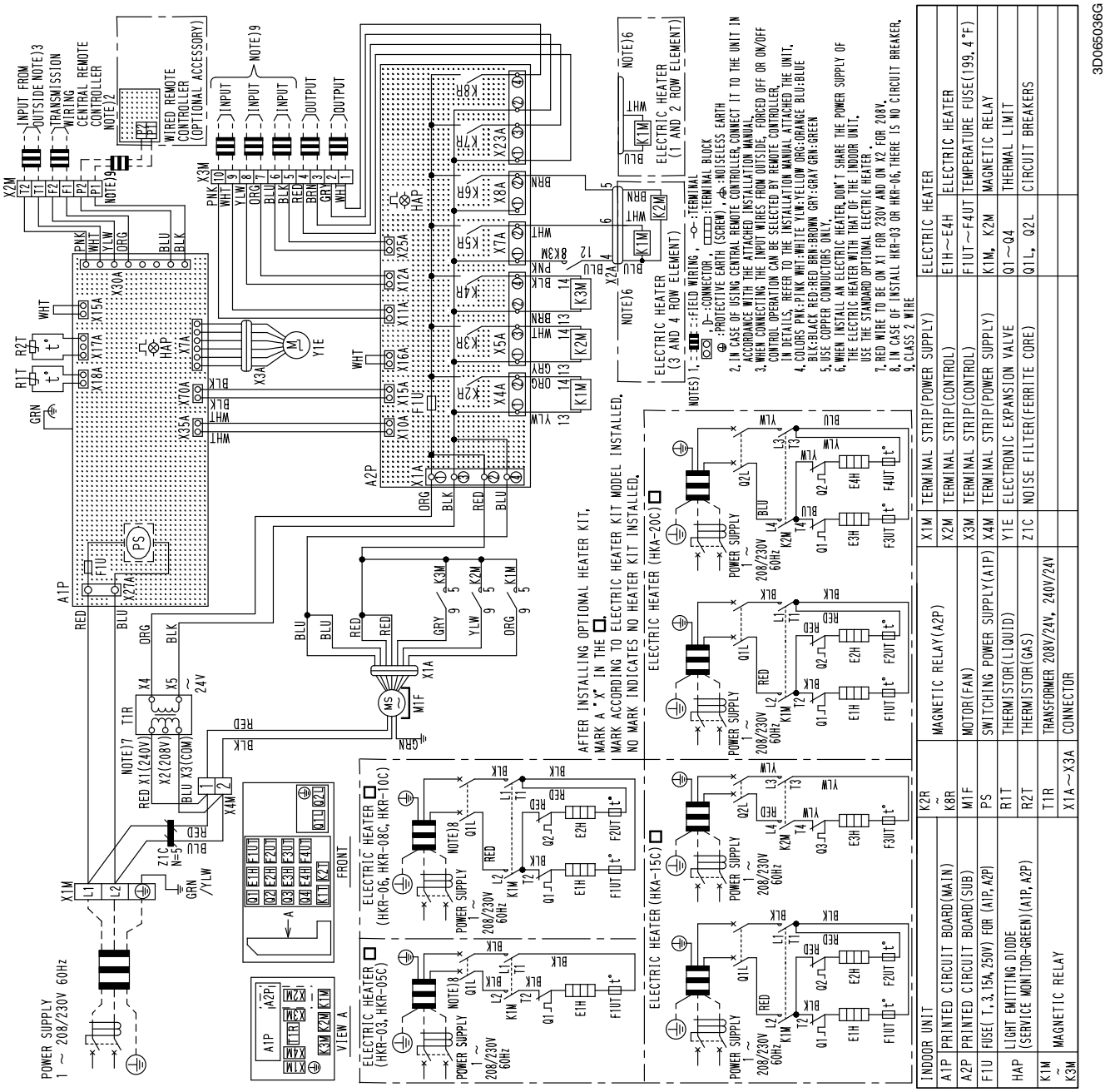
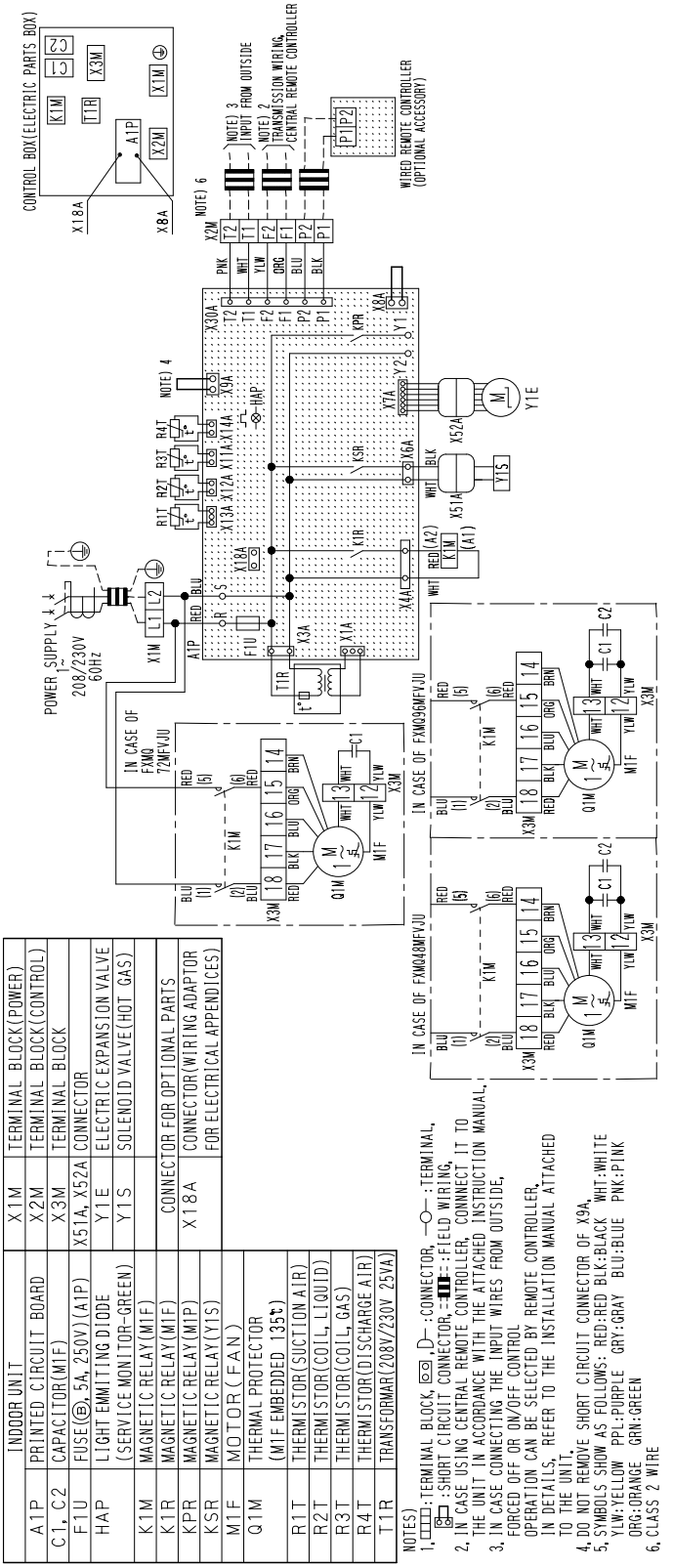


1.3 Air Treatment Equipment

1.3.1 Outdoor Air Processing Unit

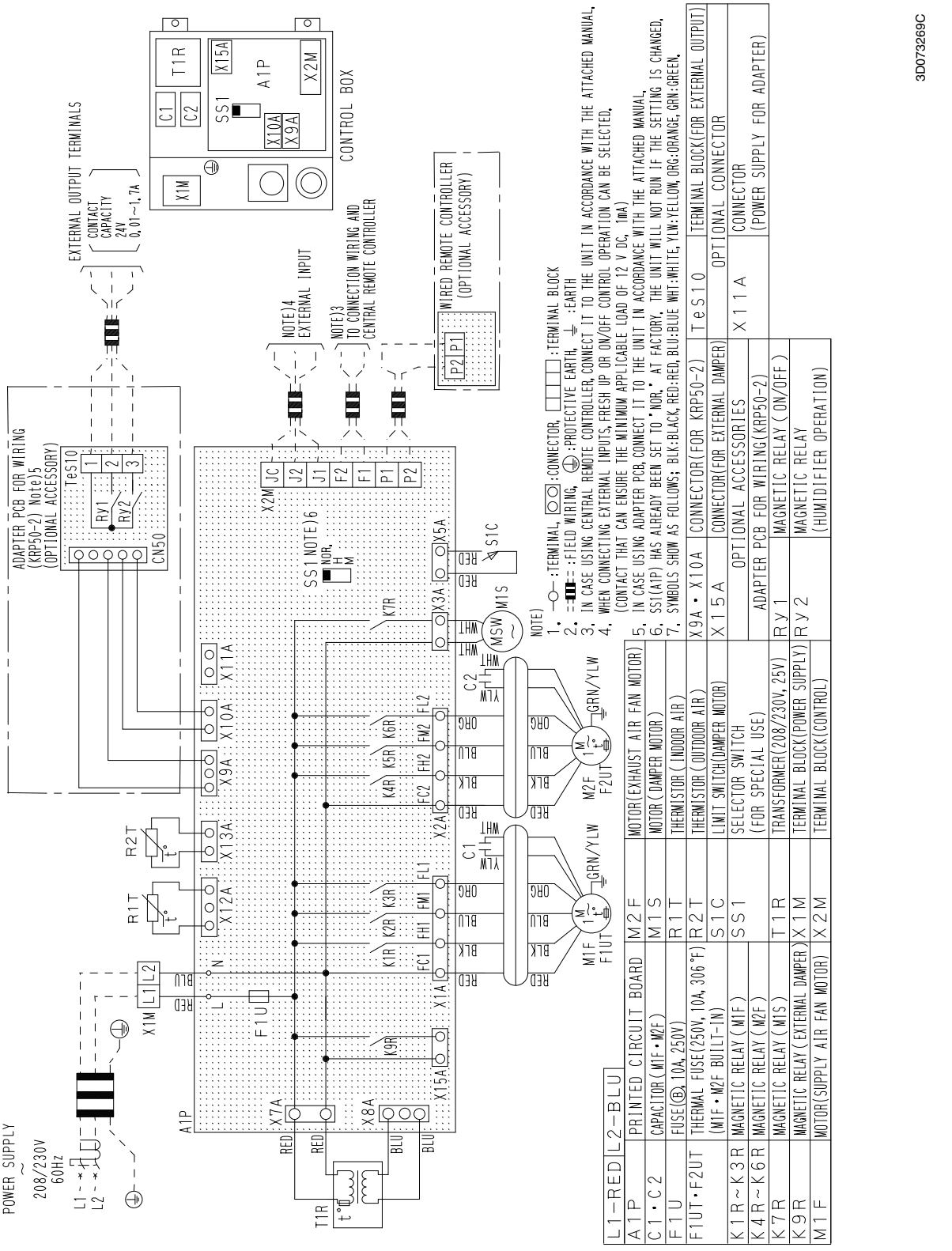
FXMQ48/72MFVJU



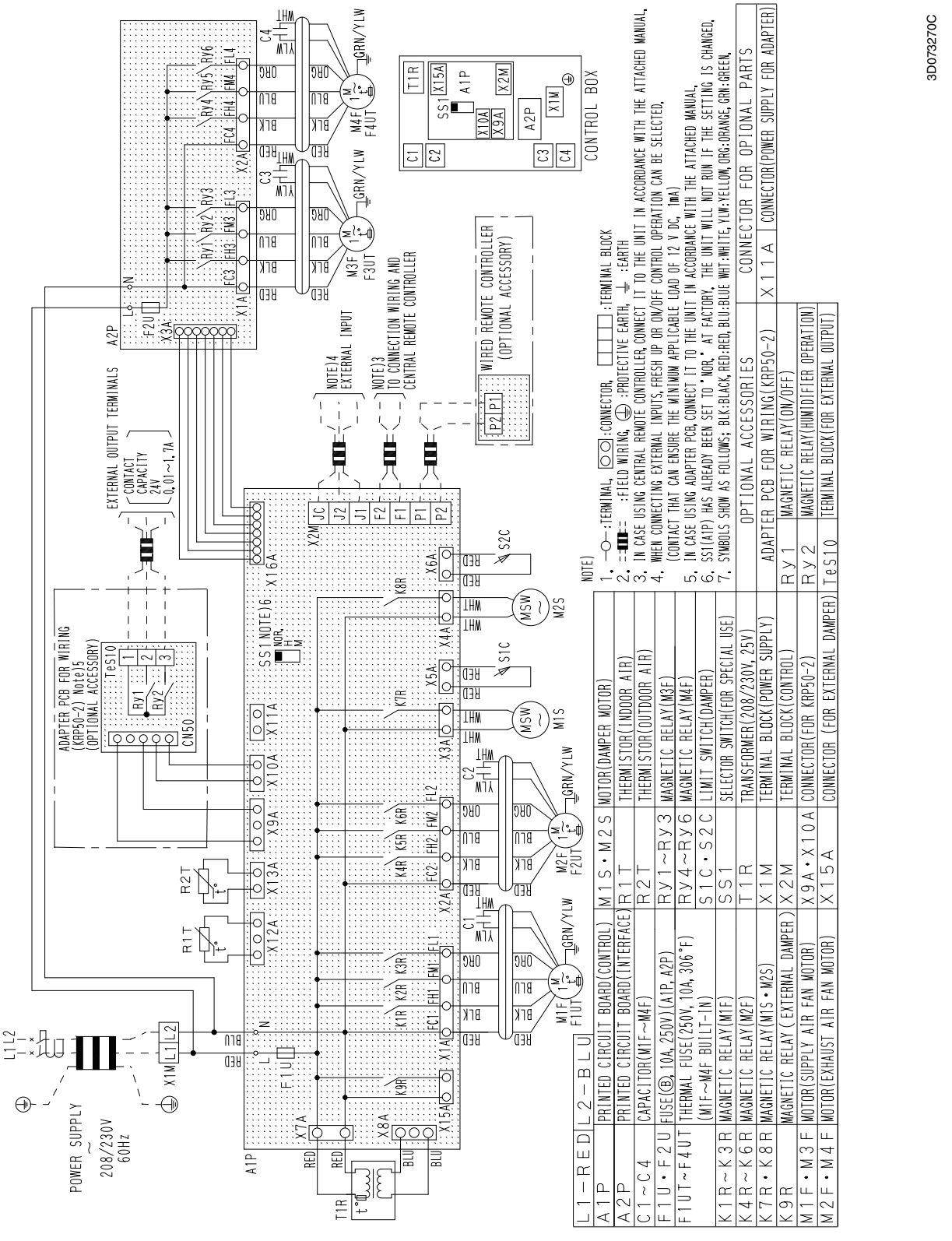
INDOOR UNIT		X1M	TERMINAL BLOCK(POWER)
A1P	PRINTED CIRCUIT BOARD	X2M	TERMINAL BLOCK(CONTROL)
C1, C2	CAPACITOR(M1F)	X3M	TERMINAL BLOCK
F1U	FUSE(@5A, 250V)(A1P)	X51A, X52A	CONNECTOR
HAP	LIGHT EMMITING DIODE (SERVICE MONITOR-GREEN)	Y1E	ELECTRIC EXPANSION VALVE
		Y1S	SOLENOID VALVE(HOT GAS)
K1M	MAGNETIC RELAY(M1F)		
K1R	MAGNETIC RELAY(M1F)		CONNECTOR FOR OPTIONAL PARTS
KPR	MAGNETIC RELAY(M1P)	X18A	CONNECTOR(WIRING ADAPTOR FOR ELECTRICAL APPENDICES)
KSR	MAGNETIC RELAY(Y1S)		
M1F	MOTOR(FAN)		
Q1M	THERMAL PROTECTOR (M1F EMBEDDED 135℃)		
R1T	THERMISTOR(SUCTION AIR)		
R2T	THERMISTOR(COIL, LIQUID)		
R3T	THERMISTOR(COIL, GAS)		
R4T	THERMISTOR(DISCHARGE AIR)		
T1R	TRANSFORMAR(208V/230V 25VA)		

1.3.2 Energy Recovery Ventilator (VAM Series)

VAM300/470/600GVJU



VAM1200GVJU



L1-RED L2-BLU			
A1P	PRINTED CIRCUIT BOARD(CONTROL)	M1S・M2S	MOTOR(DAMPER MOTOR)
A2P	PRINTED CIRCUIT BOARD(INTERFACE)	R1T	THERMISTOR(INDOOR AIR)
C1~C4	CAPACITOR(M1F~M4F)	R2T	THERMISTOR(OUTDOOR AIR)
F1U・F2U	FUSE(®, 10A, 250V)(A1P, A2P)	Ry1~Ry3	MAGNETIC RELAY(M3F)
F1UT~F4UT	THERMAL FUSE(250V, 10A, 306°F) (M1F~M4F BUILT-IN)	Ry4~Ry6	MAGNETIC RELAY(M4F)
		S1C・S2C	LIMIT SWITCH(DAMPER)
K1R~K3R	MAGNETIC RELAY(M1F)	SS1	SELECTOR SWITCH(FOR SPECIAL USE)
K4R~K6R	MAGNETIC RELAY(M2F)	T1R	TRANSFORMER(208/230V, 25V)
K7R・K8R	MAGNETIC RELAY(M1S・M2S)	X1M	TERMINAL BLOCK(POWER SUPPLY)
K9R	MAGNETIC RELAY (EXTERNAL DAMPER)	X2M	TERMINAL BLOCK(CONTROL)
M1F・M3F	MOTOR(SUPPLY AIR FAN MOTOR)	X9A・X10A	CONNECTOR(FOR KRP50-2)
M2F・M4F	MOTOR(EXHAUST AIR FAN MOTOR)	X15A	CONNECTOR (FOR EXTERNAL DAMPER)

OPTIONAL ACCESSORIES		CONNECTOR FOR OPTIONAL PARTS	
ADAPTER PCB FOR WIRING(KRP50-2)		X11A	CONNECTOR(POWER SUPPLY FOR ADAPTER)
Ry1	MAGNETIC RELAY(ON/OFF)		
Ry2	MAGNETIC RELAY(HUMIDIFIER OPERATION)		
TeS10	TERMINAL BLOCK(FOR EXTERNAL OUTPUT)		

Revision History

Month / Year	Version	Revised contents
06 / 2016	SiUS331604E	First edition

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

●Specifications, designs and other content appearing in this brochure are current as of June 2016 but subject to change without notice.

SiUS331604E
06/2016 AK.K