DAIKIN

SiUS341615E

R-410A

Service Manual

VRV IV

RXYQ72-408TAYDU
RXYQ72-408TATJU

Heat Pump 60 Hz

VRV IV
RXYQ-TA Series Heat Pump R-410A 60 Hz

ED Reference

For items below, please refer to Engineering Data.

Item		Model	ED No.	Page
Specifications	*VRV* indoor unit	FXFQ-T	EDUS391400-F14	2-4
		FXFQ-P	EDUS391000-F1	2-3
		FXZQ-M	EDUS391300-F9	2-3
		FXUQ-P	EDUS391437-F15	3-4
		FXEQ-P	EDUS391533-F16	3-5
		FXDQ-M	EDUS39-600-F2	3-4
		FXMQ-PB	EDUS391503-F4	3-5
		FXMQ-M	EDUS39-900A-F11	3
		FXHQ-M	EDUS39-600-F5	3
		FXAQ-P	EDUS391100-F6	2-3
		FXLQ-M, FXNQ-M	EDUS391502-F7	4-7
		FXTQ-TA	FXTQ-TA Air Handling Unit	4-5
	Outdoor-air processing unit	FXMQ-MF	EDUS39-900A-F10	4
	Energy recovery ventilator	VAM-G	EDUS711116A	2
Option list	*VRV* indoor unit	FXFQ-T	EDUS391400-F14	43
		FXFQ-P	EDUS391000-F1	40
		FXZQ-M	EDUS391300-F9	48
		FXUQ-P	EDUS391437-F15	36
		FXEQ-P	EDUS391533-F16	27
		FXDQ-M	EDUS39-600-F2	30
		FXMQ-PB	EDUS391503-F4	43
		FXMQ-M	EDUS39-900A-F11	25
		FXHQ-M	EDUS39-600-F5	32
		FXAQ-P	EDUS391100-F6	43
		FXLQ-M, FXNQ-M	EDUS391502-F7	28
		FXTQ-TA	FXTQ-TA Air Handling Unit	47
	Outdoor-air processing unit	FXMQ-MF	EDUS39-900A-F10	32
	Energy recovery ventilator	VAM-G	EDUS711116A	61

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, loose data, get an unexpected result or has 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 (ton)		0.6	0.8	1	1.25	1.5		2	2.5	3	3.5	4	4.5	5	6	8	Power Supply, Standard
Capacity Index		7.5	9.5	12	15	18	20	24	30	36	42	48	54	60	72	96	
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	96M	
Ceiling Suspended Type	FXHQ	—	—	12M	—	—	—	24M	—	36M	—	—	—	—	—	—	
Wall Mounted Type	FXAQ	07P	09P	12P	—	18P	—	24P	—	—	—	—	—	—	—	—	
Floor Standing Type	FXLQ	07M	—	—	—	—	—	—	—	—	—	—	—	—	—	—	VJU9
		—	09M	12M	—	18M	—	24M	—	—	—	—	—	—	—	—	VJU
Concealed Floor Standing Type	FXNQ	07M	—	—	—	—	—	—	—	—	—	—	—	—	—	—	VJU9
		—	09M	12M	—	18M	—	24M	—	—	—	—	—	—	—	—	VJU
Air Handling Unit	FXTQ	—	09TA	12TA	—	18TA	—	24TA	30TA	36TA	42TA	48TA	54TA	60TA	—	—	VJUA(D)

VJ : 1 phase, 208/230 V, 60 Hz
U(VJU): Standard Symbol

1.2 Outdoor Unit

Capacity Range (ton)			6	8	10	12	14	16	18	20	Power Supply, Standard
Capacity Index			72	96	120	144	168	192	216	240	
Heat Pump	460 V	RXYQ-	72TA	96TA	120TA	144TA	168TA	192TA	216TA	240TA	YDU
	208/230 V	RXYQ-	72TA	96TA	120TA	144TA	168TA	192TA	216TA	240TA	TJU

Capacity Range (ton)			22	24	26	28	30	32	34	Power Supply, Standard
Capacity Index			264	288	312	336	360	384	408	
Heat Pump	460 V	RXYQ-	264TA	288TA	312TA	336TA	360TA	384TA	408TA	YDU
	208/230 V	RXYQ-	264TA	288TA	312TA	336TA	360TA	384TA	408TA	TJU

YD : 3 phase, 460 V, 60 Hz
TJ : 3 phase, 208/230 V, 60 Hz
U(TJU): Standard Symbol

1.2.1 Combination of Outdoor Units (Heat Pump 460 V)

RXYQ-TAYDU

Model name	RXYQ72TAYDU	RXYQ96TAYDU	RXYQ120TAYDU	RXYQ144TAYDU	RXYQ168TAYDU
Outdoor unit 1	RXYQ72TAYDU	RXYQ96TAYDU	RXYQ120TAYDU	RXYQ144TAYDU	RXYQ168TAYDU

Model name	RXYQ192TAYDU	RXYQ216TAYDU	RXYQ240TAYDU	RXYQ264TAYDU	RXYQ288TAYDU
Outdoor unit 1	RXYQ72TAYDU	RXYQ96TAYDU	RXYQ120TAYDU	RXYQ120TAYDU	RXYQ144TAYDU
Outdoor unit 2	RXYQ120TAYDU	RXYQ120TAYDU	RXYQ120TAYDU	RXYQ144TAYDU	RXYQ144TAYDU

Model name	RXYQ312TAYDU	RXYQ336TAYDU	RXYQ360TAYDU	RXYQ384TAYDU	RXYQ408TAYDU
Outdoor unit 1	RXYQ144TAYDU	RXYQ168TAYDU	RXYQ120TAYDU	RXYQ96TAYDU	RXYQ96TAYDU
Outdoor unit 2	RXYQ168TAYDU	RXYQ168TAYDU	RXYQ120TAYDU	RXYQ120TAYDU	RXYQ144TAYDU
Outdoor unit 3	—	—	RXYQ120TAYDU	RXYQ168TAYDU	RXYQ168TAYDU

1.2.2 Combination of Outdoor Units (Heat Pump 208/230 V)

RXYQ-TATJU

Model name	RXYQ72TATJU	RXYQ96TATJU	RXYQ120TATJU	RXYQ144TATJU	RXYQ168TATJU
Outdoor unit 1	RXYQ72TATJU	RXYQ96TATJU	RXYQ120TATJU	RXYQ144TATJU	RXYQ168TATJU

Model name	RXYQ192TATJU	RXYQ216TATJU	RXYQ240TATJU	RXYQ264TATJU	RXYQ288TATJU
Outdoor unit 1	RXYQ72TATJU	RXYQ96TATJU	RXYQ120TATJU	RXYQ120TATJU	RXYQ144TATJU
Outdoor unit 2	RXYQ120TATJU	RXYQ120TATJU	RXYQ120TATJU	RXYQ144TATJU	RXYQ144TATJU

Model name	RXYQ312TATJU	RXYQ336TATJU	RXYQ360TATJU	RXYQ384TATJU	RXYQ408TATJU
Outdoor unit 1	RXYQ144TATJU	RXYQ168TATJU	RXYQ120TATJU	RXYQ96TATJU	RXYQ96TATJU
Outdoor unit 2	RXYQ168TATJU	RXYQ168TATJU	RXYQ120TATJU	RXYQ120TATJU	RXYQ144TATJU
Outdoor unit 3	—	—	RXYQ120TATJU	RXYQ168TATJU	RXYQ168TATJU

1.3 Air Treatment Equipment

Outdoor-Air Processing Unit

Series	Model Name			Power Supply, Standard
FXMQ	48MF	72MF	96MF	VJU

Energy Recovery Ventilator (VAM Series)

Series	Model Name				Power Supply, Standard
VAM	300G	470G	600G	1200G	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

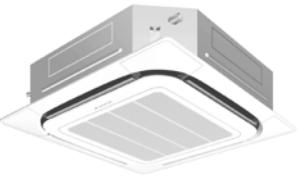
Shown with BYCQ125B-W1

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 BYFQ60B8W1U

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

Air handling unit

FXTQ-TA

Ceiling mounted duct type (Middle and high static pressure)

FXMQ-PB

2.2 Outdoor Unit

Single Outdoor Unit

RXYQ72TA	RXYQ96/120/144/168TA
	

Double Outdoor Unit

RXYQ192TA	RXYQ216/240/264/288/312/336TA
	

Triple Outdoor Unit

RXYQ360/384/408TA


2.3 Air Treatment Equipment

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

3. Combination of Outdoor Units

System capacity		Number of units	Module					Outdoor Unit Multi Connection Piping Kit ★1
ton	HP		72	96	120	144	168	
6	7.5	1	●					—
8	10	1		●				
10	12.5	1			●			
12	15	1				●		
14	17.5	1					●	
16	20	2	●		●			BHFR22P100U
18	22.5	2		●	●			
20	25	2			●●			
22	27.5	2			●	●		
24	30	2				●●		
26	323.5	2				●	●	
28	35	2					●●	
30	37.5	3			●●●			BHFR22P151U
32	40	3		●	●		●	
34	42.5	3		●		●	●	

Note: ★1 For multiple connection, the outdoor unit multi connection piping kit (separately sold) is required.

4. Capacity Range

4.1 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			Type of connected air treatment equipments	
		When using only FXDQ, FXMQ-PB, FXAQ	When using only FXTQ, or at least one FXFQ07 or FXFQ09	Other indoor unit models	FXMQ-MF	
					When FXMQ-MF is only connected	When FXMQ-MF and indoor units are connected
Single outdoor units	50%	200% ∗1	130%	200% ∗1	100%	100% ∗2
Double outdoor units				160% ∗1		
Triple outdoor units				130%		

Notes: ∗1. If the operational capacity of indoor units is more than 130%, low airflow operation is enforced in all the indoor units. Refer to the table below.

∗2. When outdoor-air processing units (FXMQ-MF) and standard indoor units are connected, the total connection capacity of the outdoor-air processing units (FXMQ-MF) must not exceed 30% of the capacity index of the outdoor units. And the connection ratio must not exceed 100%.

Indoor unit fan tap setting

Indoor units fan speed limitation related to connection capacity and outdoor air temperature for energy saving.
Default value = 0

Value [2-34]	Indoor unit fan tap setting
0	Fan speed is limited to L tap when indoor units capacity ≥ 130%.
1	In heating mode, fan speed is limited to L tap when indoor units capacity ≥ 130%.
2	Fan speed follows a setting of the remote controller (not limited by indoor units connection capacity).
3	Fan speed is limited to L tap when outdoor air temperature goes down to below 29.5°C (85.1°F). It returns to remote controller setting when outdoor air temperature goes up to over 32.5°C (90.5 °F).
4	Fan speed is limited to L tap when outdoor air temperature goes down to below 23.5°C (74.3°F). It returns to remote controller setting when outdoor air temperature goes up to over 26.5°C (79.7°F).
5	Fan speed is limited to L tap when outdoor air temperature goes down to below 19.3°C (66.7°F). It returns to remote controller setting when outdoor air temperature goes up to over 22.3°C (72.1°F).

4.2 Outdoor Unit Combinations

Capacity Range	6 ton	8 ton	10 ton	12 ton	14 ton	16 ton	18 ton	20 ton	22 ton
RXYQ	72TAYDU 72TATJU	96TAYDU 96TATJU	120TAYDU 120TATJU	144TAYDU 144TATJU	168TAYDU 168TATJU	192TAYDU 192TATJU	216TAYDU 216TATJU	240TAYDU 240TATJU	264TAYDU 264TATJU
Max. Number of Connectable Indoor Units	12	16	20	25	29	33	37	41	45
Total Capacity Index of Indoor Units to be Connected ∗1	36~93 (144)	48~124 (192)	60~156 (240)	72~187 (288)	84~218 (336)	96~249 (307)	108~280 (346)	120~312 (384)	132~343 (422)

Capacity Range	24 ton	26 ton	28 ton	30 ton	32 ton	34 ton	36 ton	38 ton
RXYQ	288TAYDU 288TATJU	312TAYDU 312TATJU	336TAYDU 336TATJU	360TAYDU 360TATJU	384TAYDU 384TATJU	408TAYDU 408TATJU	432TAYDU 432TATJU	456TAYDU 456TATJU
Max. Number of Connectable Indoor Units	49	54	58	62	64	64	64	64
Total Capacity Index of Indoor Units to be Connected ∗1	144~374 (461)	156~405 (499)	168~436 (538)	180~468 (468)	192~499 (499)	204~530 (530)	216~561 (561)	228~592 (592)

Note: ∗1. Values inside brackets are based on connection of indoor units rated at maximum capacity, 200% for single outdoor units, 160% for double outdoor units, and 130% for triple outdoor units.

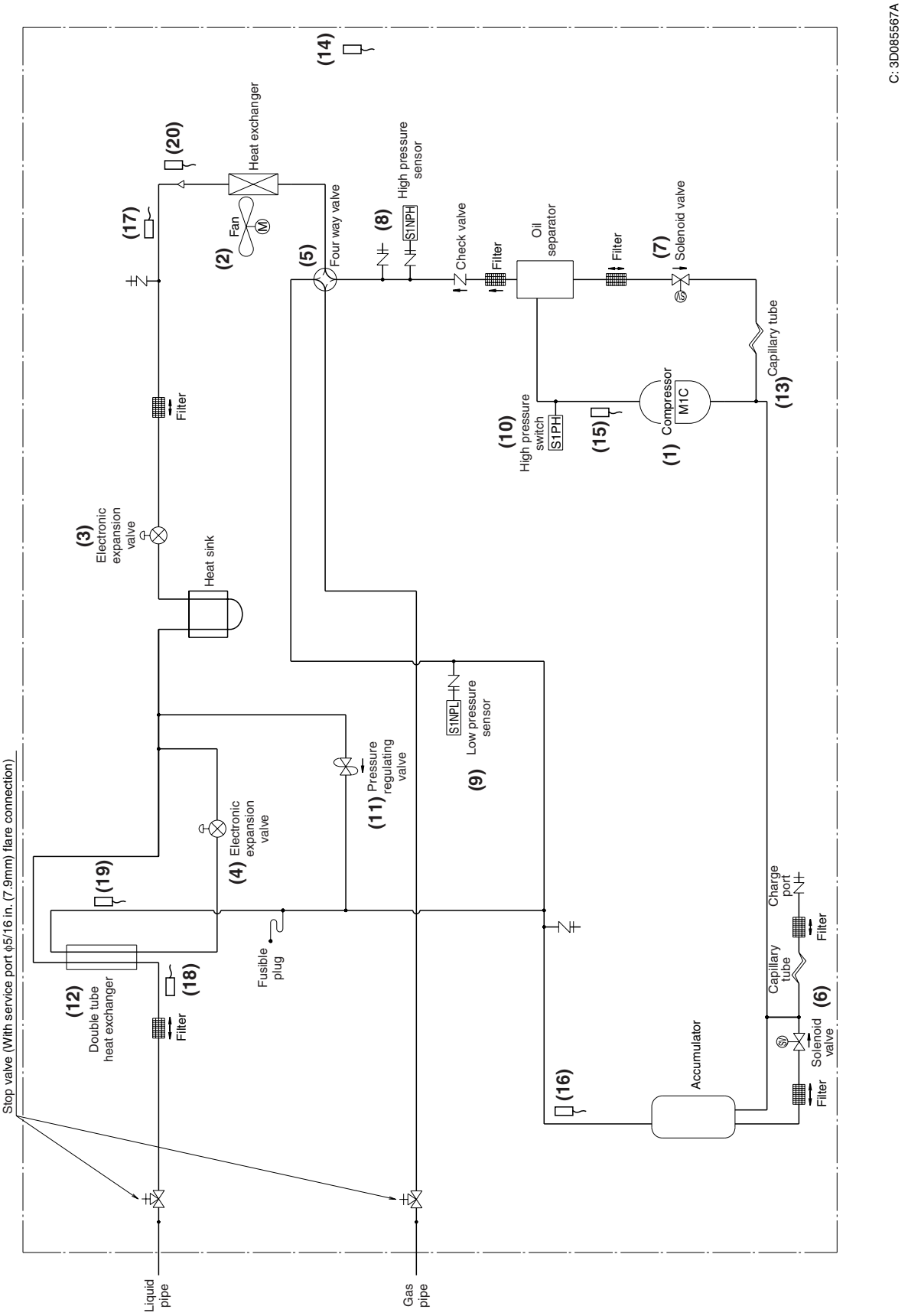
Part 2
Refrigerant Circuit

1. Refrigerant Circuit

1.1 Outdoor Unit

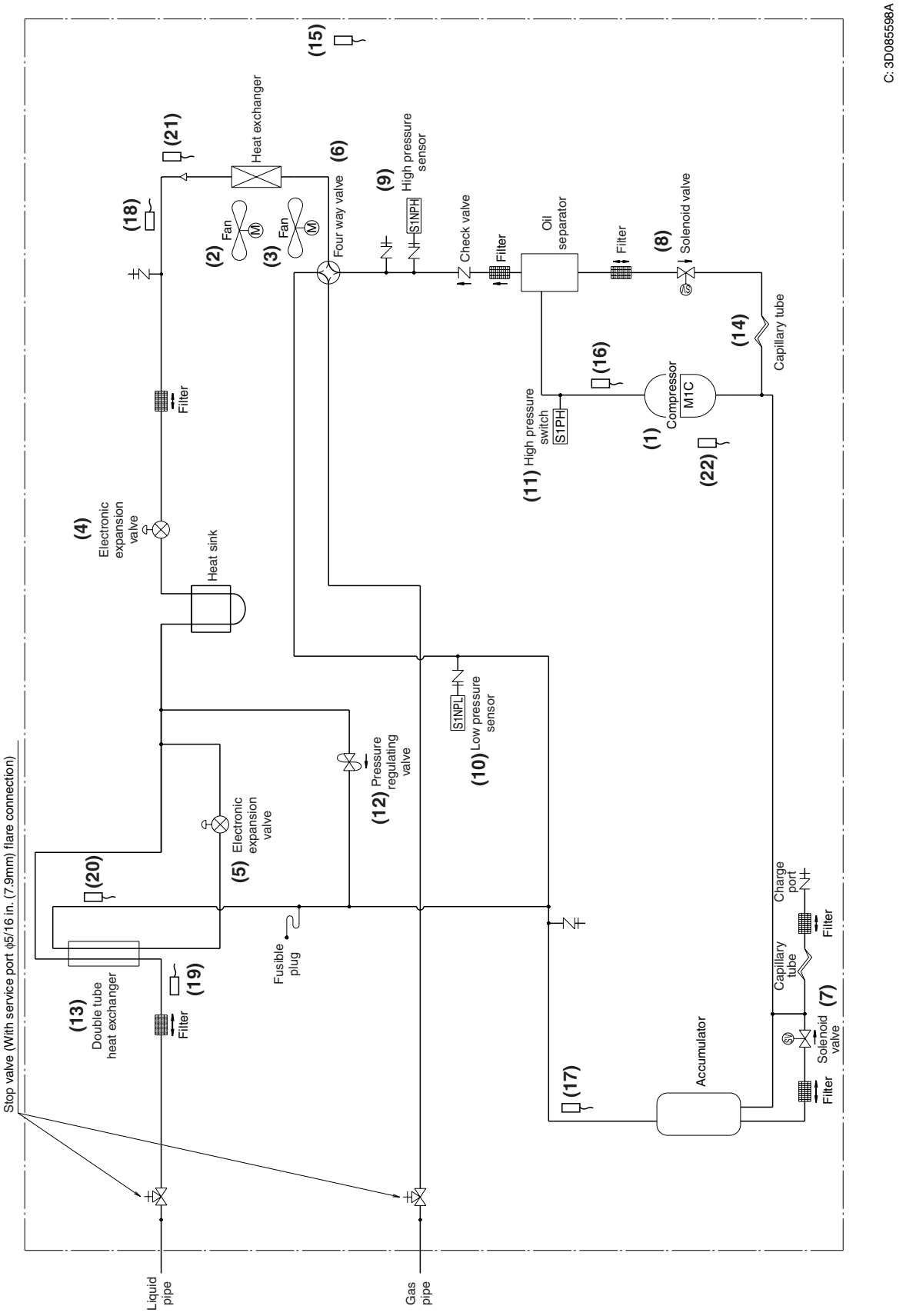
1.1.1 RXYQ72TAYDU, RXYQ72TATJU

No. in piping diagram	Electric symbol	Name	Function
(1)	M1C	Inverter compressor	Inverter driven compressor is operated in multi-steps according to Te.
(2)	M1F	Inverter fan	Because the system is an air heat exchange type, the fan is operated at 10-step rotation speed by using the inverter.
(3)	Y1E	Electronic expansion valve (Main)	Fully open during cooling operation.
(4)	Y2E	Electronic expansion valve (Injection)	PI control is applied to keep the outlet superheated degree of subcooling heat exchanger constant.
(5)	Y1S	Solenoid valve (Four way valve)	Used to switch the operation mode between cooling and heating.
(6)	Y2S	Solenoid valve (Accumulator oil return)	Used to return oil from the accumulator to the compressor.
(7)	Y3S	Solenoid valve (Oil return)	Used to control the amount of oil from the oil separator to the compressor.
(8)	S1NPH	High pressure sensor	Used to detect high pressure.
(9)	S1NPL	Low pressure sensor	Used to detect low pressure.
(10)	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.
(11)	—	Pressure regulating valve	This valve opens at a pressure of 4.0 MPa (580 psi) for prevention of pressure increase, thus resulting in no damage of functional parts due to the increase of pressure in transportation or storage.
(12)	—	Subcooling heat exchanger	Used to subcooling liquid refrigerant from the electronic expansion valve.
(13)	—	Capillary tube	Used to return the refrigerating oil separated through the oil separator to the compressor.
(14)	R1T	Thermistor (Outdoor air)	Used to detect outdoor air temperature, correct discharge pipe temperature, and others.
(15)	R21T	Thermistor (Discharge pipe)	Used to detect discharge pipe temperature, make the temperature protection control of compressor, and others.
(16)	R3T	Thermistor (Accumulator inlet)	Used to detect gas pipe temperature at the accumulator inlet.
(17)	R4T	Thermistor (Heat exchanger liquid pipe)	This detects temperature of liquid pipe between the air heat exchanger and main electronic expansion valve. Used to make judgements on the recover or discharge refrigerants to the refrigerant regulator.
(18)	R5T	Thermistor (Subcooling heat exchanger liquid pipe)	This detects temperature of liquid pipe between the main electronic expansion valve and subcooling heat exchanger.
(19)	R6T	Thermistor (Subcooling heat exchanger gas pipe)	This detects temperature of gas pipe on the evaporation side of subcooling heat exchanger. Used to exercise the constant control of superheated degree at the outlet of subcooling heat exchanger.
(20)	R7T	Thermistor (Heat exchanger deicer)	Used to detect liquid pipe temperature of air heat exchanger.


C: 3D085567A
Stop valve (With service port φ5/16 in. (7.9mm) flare connection)
Liquid pipe
Gas pipe
(1) Compressor M1C
(2) Fan M
(3) Electronic expansion valve
(4) Electronic expansion valve
(5) Four way valve
(6) Solenoid valve
(7) Solenoid valve
(8) High pressure sensor S1NPH
(9) Low pressure sensor S1NPL
(10) High pressure switch S1PH
(11) Pressure regulating valve
(12) Double tube heat exchanger
(13) Capillary tube
(14)
(15)
(16)
(17)
(18)
(19)
(20)
Heat exchanger
Heat sink
Check valve
Oil separator
Filter
Accumulator
Fusible plug
Capillary tube
Charge port

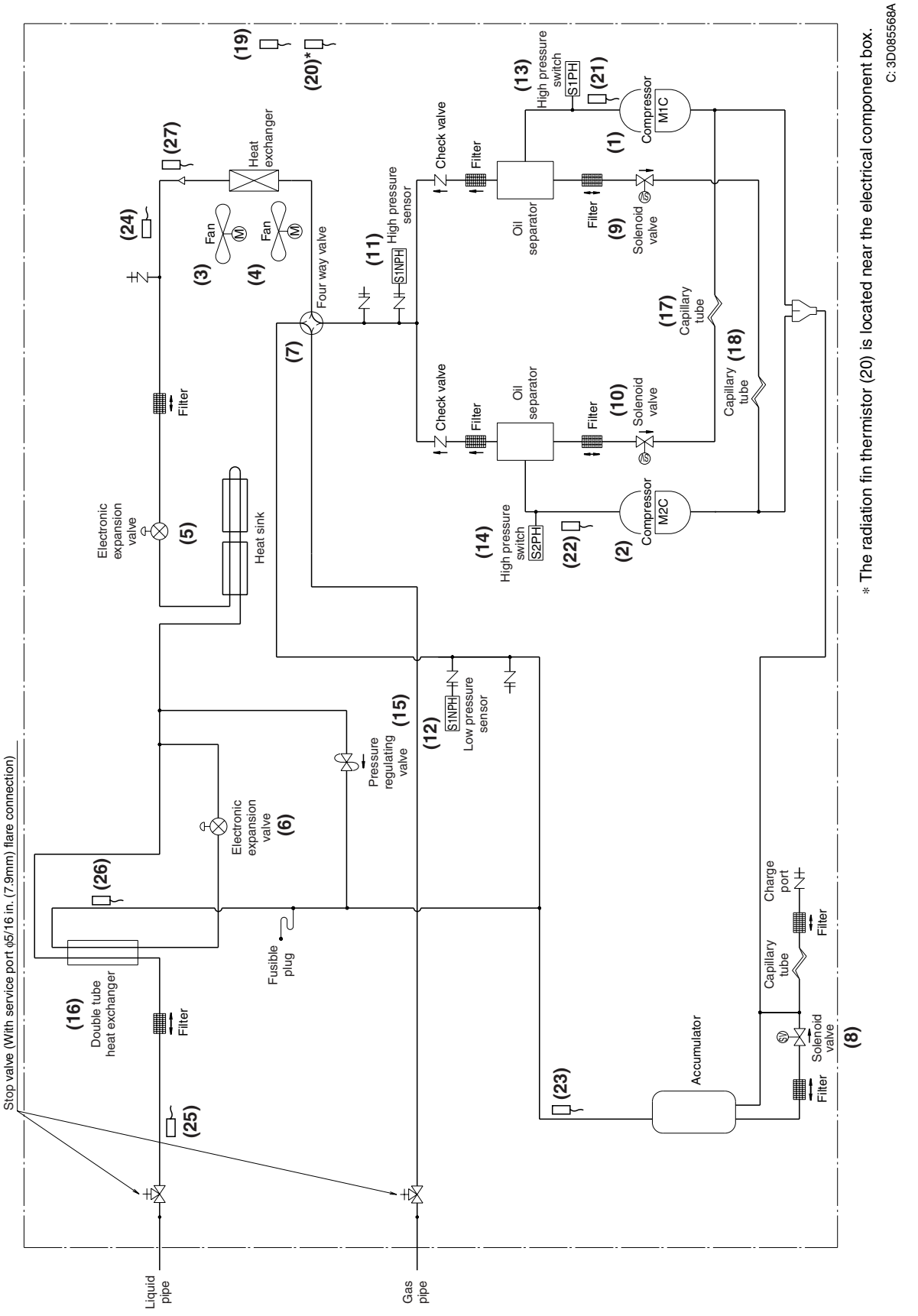
1.1.2 RXYQ96/120TAYDU, RXYQ96/120TATJU

No. in piping diagram	Electric symbol	Name	Function
(1)	M1C	Inverter compressor	Inverter compressor is operated in multi-steps according to Te.
(2)	M1F	Inverter fan	Because the system is an air heat exchange type, the fan is operated at 10-step rotation speed by using the inverter.
(3)	M2F		
(4)	Y1E	Electronic expansion valve (Main)	Fully open during cooling operation.
(5)	Y2E	Electronic expansion valve (Injection)	PI control is applied to keep the outlet superheated degree of subcooling heat exchanger constant.
(6)	Y1S	Solenoid valve (Four way valve)	Used to switch the operation mode between cooling and heating.
(7)	Y2S	Solenoid valve (Accumulator oil return)	Used to return oil from the accumulator to the compressor.
(8)	Y3S	Solenoid valve (Oil return)	Used to control the amount of oil from the oil separator to the compressor.
(9)	S1NPH	High pressure sensor	Used to detect high pressure.
(10)	S1NPL	Low pressure sensor	Used to detect low pressure.
(11)	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.
(12)	—	Pressure regulating valve	This valve opens at a pressure of 4.0 MPa (580 psi) for prevention of pressure increase, thus resulting in no damage of functional parts due to the increase of pressure in transportation or storage.
(13)	—	Subcooling heat exchanger	Used to subcooling liquid refrigerant from the electronic expansion valve.
(14)	—	Capillary tube	Used to return the refrigerating oil separated through the oil separator to the compressor.
(15)	R1T	Thermistor (Outdoor air)	Used to detect outdoor air temperature, correct discharge pipe temperature, and others.
(16)	R21T	Thermistor (Discharge pipe)	Used to detect discharge pipe temperature, make the temperature protection control of compressor, and others.
(17)	R3T	Thermistor (Accumulator inlet)	Used to detect gas pipe temperature at the accumulator inlet.
(18)	R4T	Thermistor (Heat exchanger liquid pipe)	This detects temperature of liquid pipe between the air heat exchanger and main electronic expansion valve. Used to make judgements on the recover or discharge refrigerants to the refrigerant regulator.
(19)	R5T	Thermistor (Subcooling heat exchanger liquid pipe)	This detects temperature of liquid pipe between the main electronic expansion valve and subcooling heat exchanger.
(20)	R6T	Thermistor (Subcooling heat exchanger gas pipe)	This detects temperature of gas pipe on the evaporation side of subcooling heat exchanger. Used to exercise the constant control of superheated degree at the outlet of subcooling heat exchanger.
(21)	R7T	Thermistor (Heat exchanger deicer)	Used to detect liquid pipe temperature of air heat exchanger.
(22)	R8T	Thermistor (Compressor body)	Detects compressor surface temperature, this switch is activated at surface temperature of 120°C (248°F) or more to stop the compressor operation.


C: 3D085598A
Stop valve (With service port ϕ5/16 in. (7.9mm) flare connection)
Liquid pipe
Gas pipe
(1) Compressor M1C
(2) Fan
(3) Fan
(4) Electronic expansion valve
(5) Electronic expansion valve
(6) Four way valve
(7) Solenoid valve
(8) Solenoid valve
(9) High pressure sensor S1NPH
(10) Low pressure sensor S1NPL
(11) High pressure switch S1PH
(12) Pressure regulating valve
(13) Double tube heat exchanger
(14) Capillary tube
(15)
(16)
(17)
(18)
(19)
(20)
(21)
(22)
Heat exchanger
Heat sink
Fusible plug
Check valve
Oil separator
Filter
Accumulator
Capillary tube
Charge port

1.1.3 RXYQ144/168TAYDU, RXYQ144/168TATJU

No. in piping diagram	Electric symbol	Name	Function
(1)	M1C	Inverter compressor	Inverter compressor is operated in multi-steps according to Te.
(2)	M2C		
(3)	M1F	Inverter fan	Because the system is an air heat exchange type, the fan is operated at 10-step rotation speed by using the inverter.
(4)	M2F		
(5)	Y1E	Electronic expansion valve (Main)	Fully open during cooling operation.
(6)	Y2E	Electronic expansion valve (Injection)	PI control is applied to keep the outlet superheated degree of subcooling heat exchanger constant.
(7)	Y1S	Solenoid valve (Four way valve)	Used to switch the operation mode between cooling and heating.
(8)	Y2S	Solenoid valve (Accumulator oil return)	Used to return oil from the accumulator to the compressor.
(9)	Y3S	Solenoid valve (Oil return 1)	Used to control the amount of oil from the oil separator to the compressor.
(10)	Y4S	Solenoid valve (Oil return 2)	
(11)	S1NPH	High pressure sensor	Used to detect high pressure.
(12)	S1NPL	Low pressure sensor	Used to detect low pressure.
(13)	S1PH	High pressure switch (For M1C compressor)	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.
(14)	S2PH	High pressure switch (For M2C compressor)	
(15)	—	Pressure regulating valve	This valve opens at a pressure of 4.0 MPa (580 psi) for prevention of pressure increase, thus resulting in no damage of functional parts due to the increase of pressure in transportation or storage.
(16)	—	Subcooling heat exchanger	Used to subcooling liquid refrigerant from the electronic expansion valve.
(17)	—	Capillary tube	Used to return the refrigerating oil separated through the oil separator to the compressor.
(18)	—		
(19)	R1T	Thermistor (Outdoor air) (A1P)	Used to detect outdoor air temperature, correct discharge pipe temperature, and others.
(20)	R1T	Thermistor (Radiation fin) (A3P)	RXYQ144/168TATJU only • Used for outdoor unit fan speed control. • Used for inverter radiation fin temperature control. • Used for pressure difference control.
(21)	R21T	Thermistor (M1C discharge pipe)	Used to detect discharge pipe temperature, make the temperature protection control of compressor, and others.
(22)	R22T	Thermistor (M2C discharge pipe)	
(23)	R3T	Thermistor (Accumulator inlet)	Used to detect gas pipe temperature at the accumulator inlet.
(24)	R4T	Thermistor (Heat exchanger liquid pipe)	This detects temperature of liquid pipe between the air heat exchanger and main electronic expansion valve. Used to make judgements on the recover or discharge refrigerants to the refrigerant regulator.
(25)	R5T	Thermistor (Subcooling heat exchanger liquid pipe)	This detects temperature of liquid pipe between the main electronic expansion valve and subcooling heat exchanger.
(26)	R6T	Thermistor (Subcooling heat exchanger gas pipe)	This detects temperature of gas pipe on the evaporation side of subcooling heat exchanger. Used to exercise the constant control of superheated degree at the outlet of subcooling heat exchanger.
(27)	R7T	Thermistor (Heat exchanger deicer)	Used to detect liquid pipe temperature of air heat exchanger.

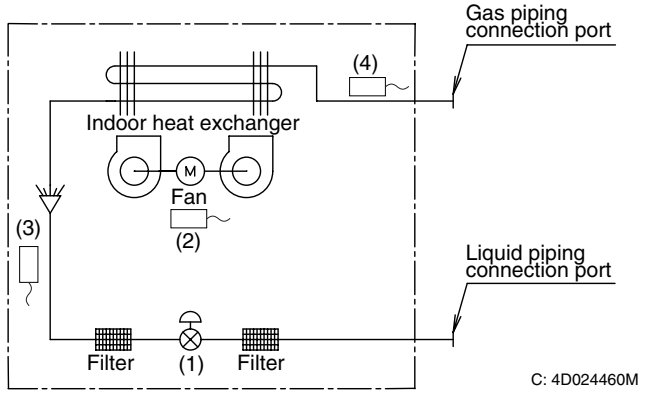

Stop valve (With service port ϕ5/16 in. (7.9mm) flare connection)
Liquid pipe
Gas pipe
(1) Compressor M1C
(2) Compressor M2C
(3) Fan
(4) Fan
(5) Electronic expansion valve
(6) Electronic expansion valve
(7) Four way valve
(8) Solenoid valve
(9) Solenoid valve
(10) Solenoid valve
(11) High pressure sensor S1NPH
(12) Low pressure sensor S1NPH
(13) High pressure switch S1PH
(14) High pressure switch S2PH
(15) Pressure regulating valve
(16) Double tube heat exchanger
(17) Capillary tube
(18) Capillary tube
(19)
(20)*
(21)
(22)
(23)
(24)
(25)
(26)
(27)
Heat exchanger
Heat sink
Oil separator
Oil separator
Check valve
Check valve
Filter
Filter
Filter
Filter
Filter
Filter
Filter
Fusible plug
Accumulator
Capillary tube
Charge port
Solenoid valve
* The radiation fin thermistor (20) is located near the electrical component box.
C: 3D085568A

1.2 Indoor Unit

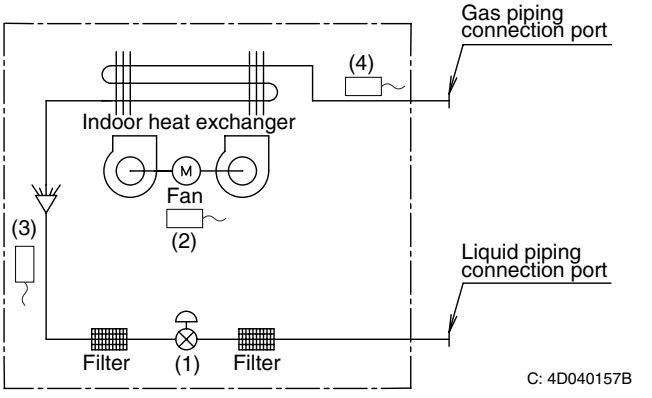
No. in piping diagram	Name	Symbol			Function
		Except FXMQ-PB, FXTQ-TA	FXMQ-PB	FXTQ-TA	
(1)	Electronic expansion valve	Y1E	Y1E	Y1E	Used for gas superheated degree control while in cooling or subcooled degree control while in heating.
(2)	Suction air thermistor	R1T	R1T	R1T (∗1)	Used for thermostat control.
(3)	Liquid pipe thermistor	R2T	R2T	R2T	Used for gas superheated degree control while in cooling or subcooled degree control while in heating.
(4)	Gas pipe thermistor	R3T	R3T	R3T	Used for gas superheated degree control while in cooling.
(5)	Discharge air thermistor	—	R4T	—	Used for discharge air temperature control.

∗1. R1T is for remote controller thermistor or optional remote sensor.

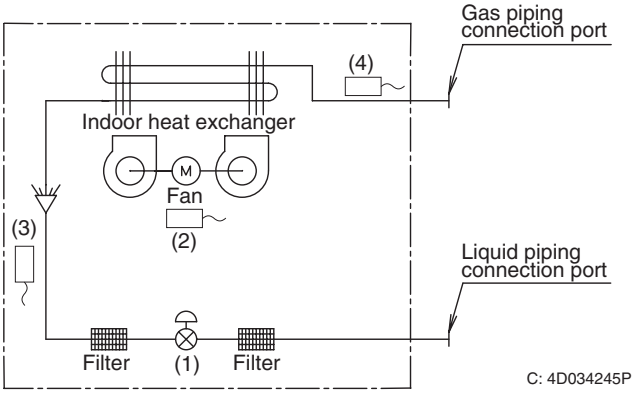
■ **FXFQ-T, FXFQ-P, FXHQ-M**



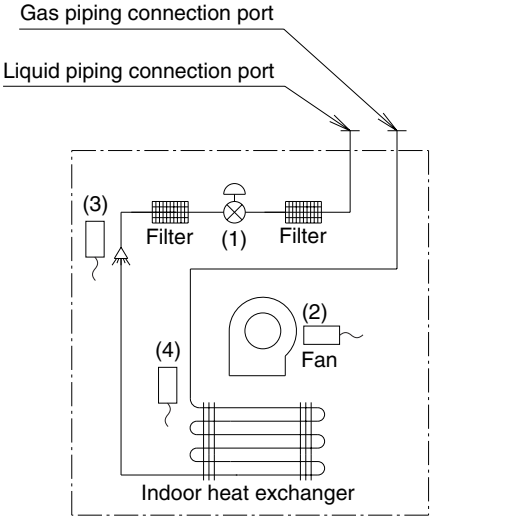
■ **FXZQ-M**



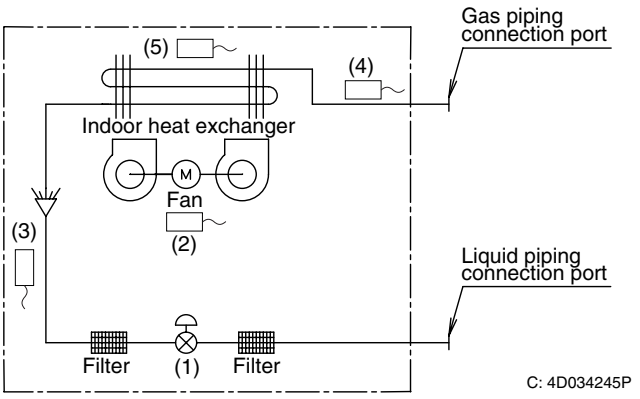
■ **FXUQ-P, FXEQ-P, FXMQ-M, FXAQ-P, FXLQ-M, FXNQ-M**



■ **FXDQ-M**

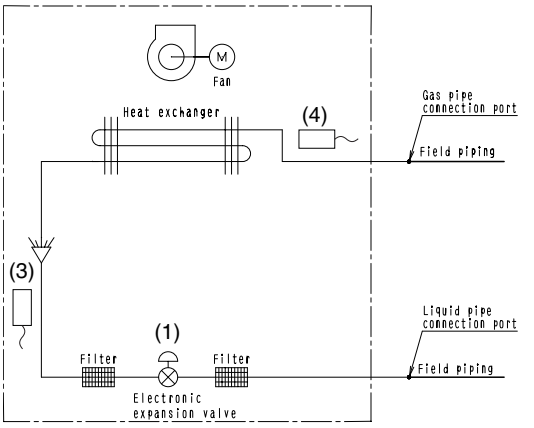


■ **FXMQ-PB**



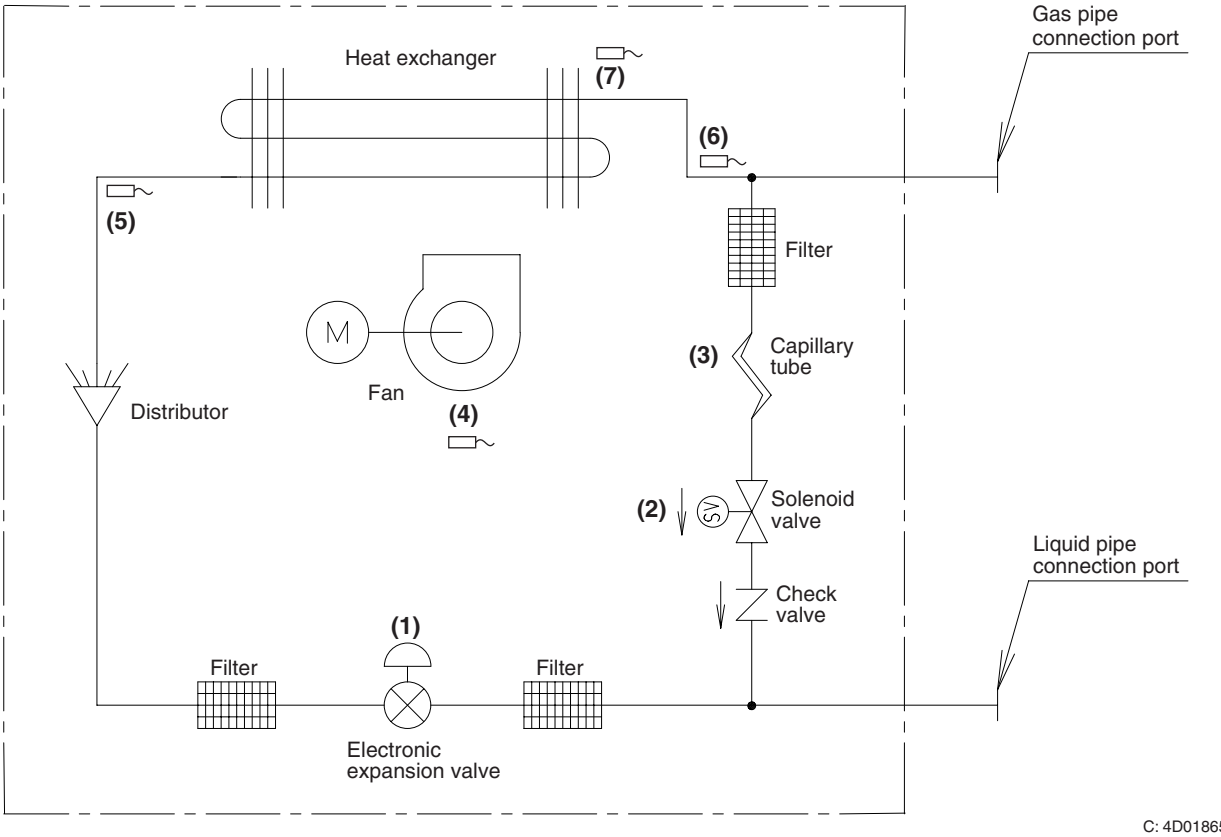
C: 4D034245P

■ **FXTQ-TA**



C: 4D068194

1.3 Outdoor-Air Processing Unit



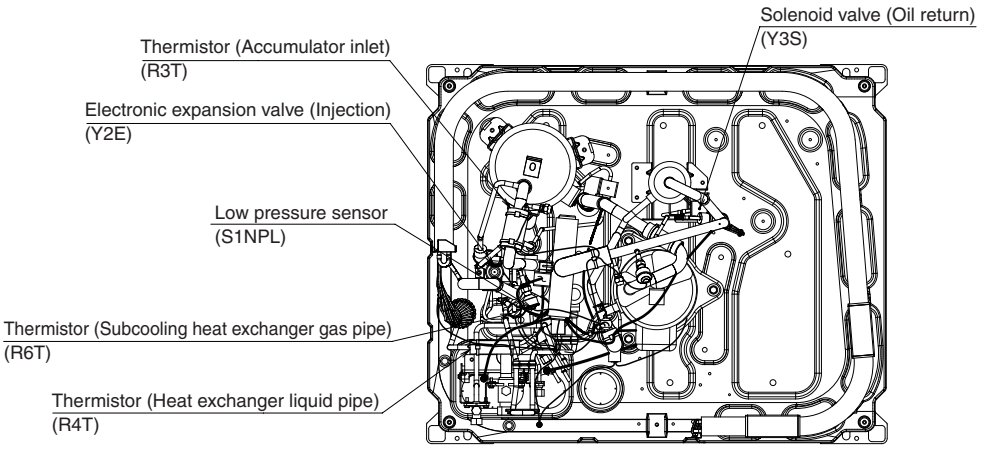
No. in piping diagram	Electric symbol	Name	Function
(1)	Y1E	Electronic expansion valve	Used to control the flow rate of refrigerant, and make the SH control (∗1) while in cooling.
(2)	Y1S	Solenoid valve	Used to bypass hot gas while in heating with thermostat OFF. Closed while in cooling.
(3)	—	Capillary tube	Used to reduce pressure from high to low in bypassing hot gas.
(4)	R1T	Suction air thermistor	Used to turn ON or OFF the thermostat.
(5)	R2T	Liquid pipe thermistor	Used to control the opening degree of electronic expansion valve under the SC control (∗2).
(6)	R3T	Gas pipe thermistor	Used to control the opening degree of electronic expansion valve under the SH control.
(7)	R4T	Discharge air thermistor	Used to control the electronic expansion valve opening and thermostat ON/OFF so as to keep the discharge air temperature at the set temperature.

Note: ∗1. SH control: Superheated control of heat exchanger outlet
∗2. SC control: Subcooling control of heat exchanger outlet

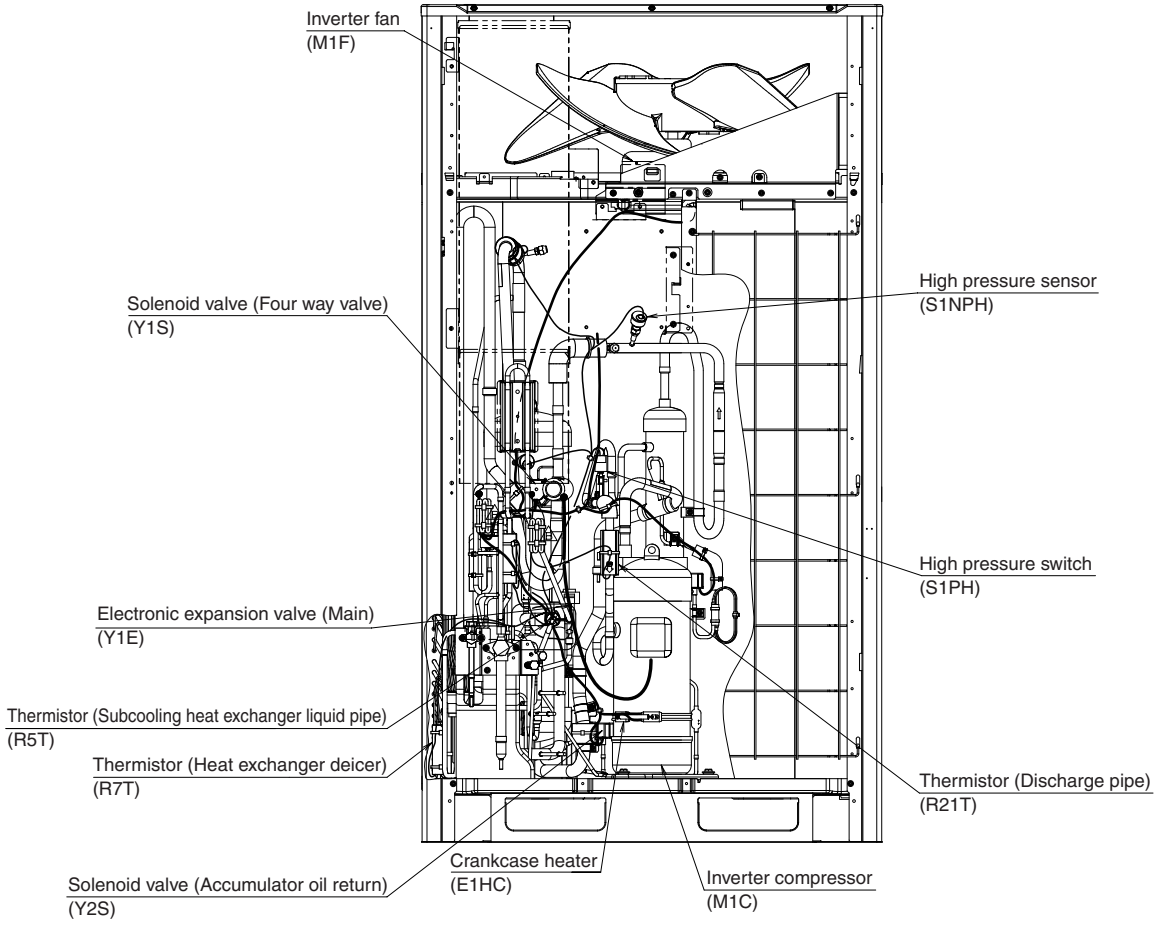
2. Functional Parts Layout

2.1 RXYQ72TAYDU

Top View



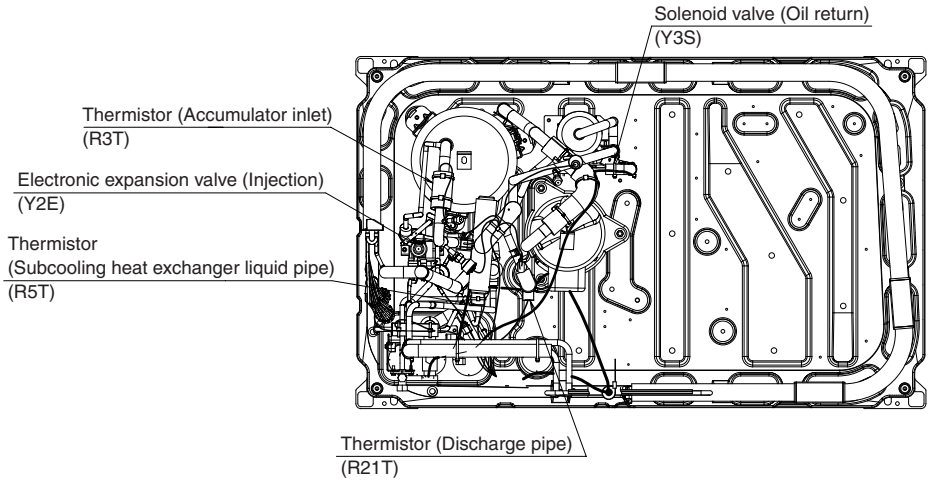
Front View



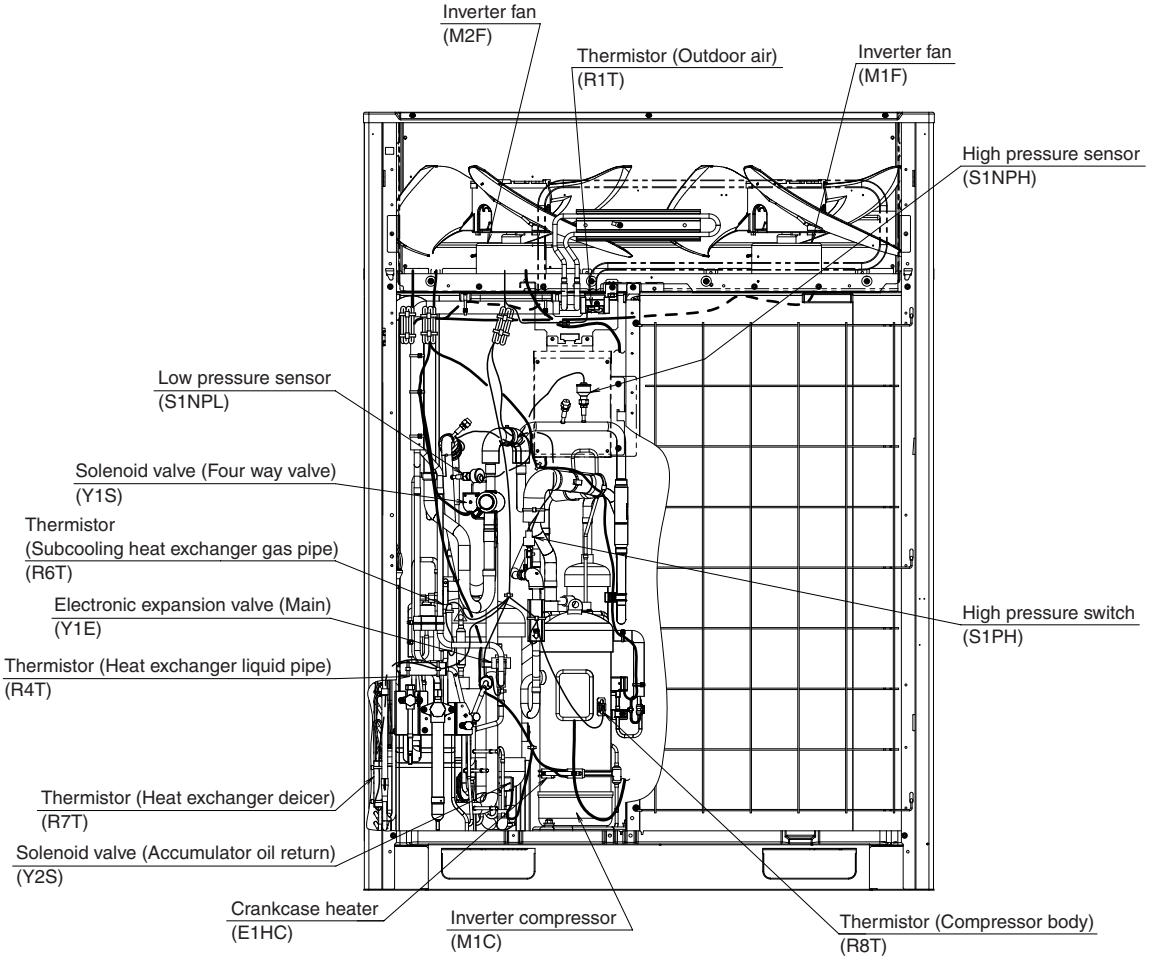
C: 1P350704C

2.2 RXYQ96/120TAYDU

Top View



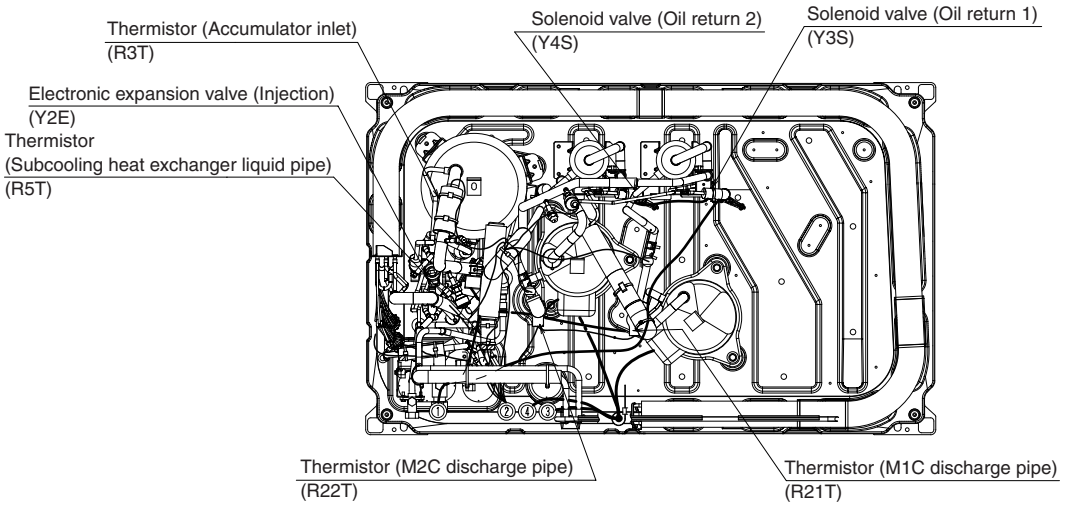
Front View



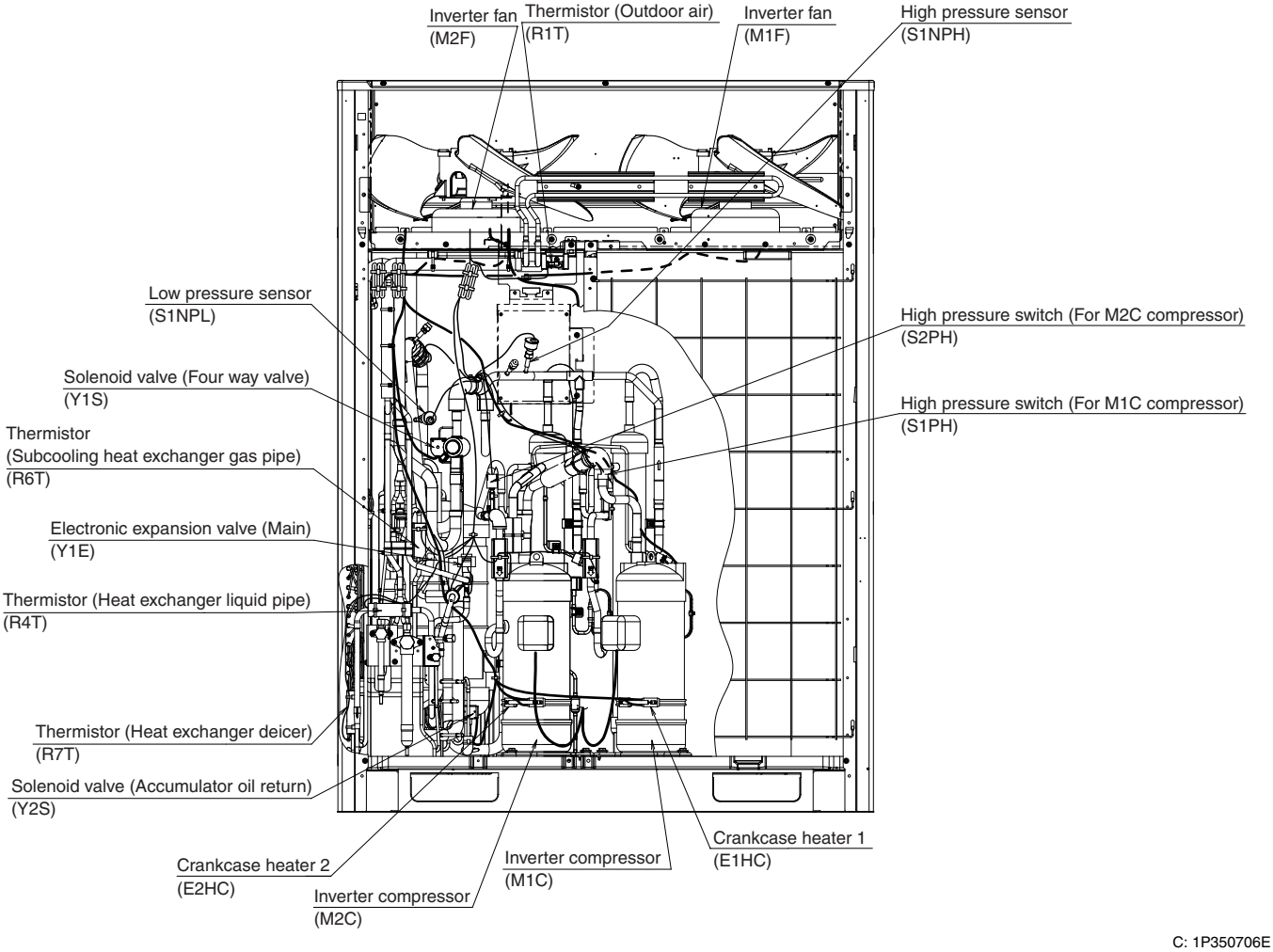
C: 1P350705F

2.3 RXYQ144/168TAYDU

Top View



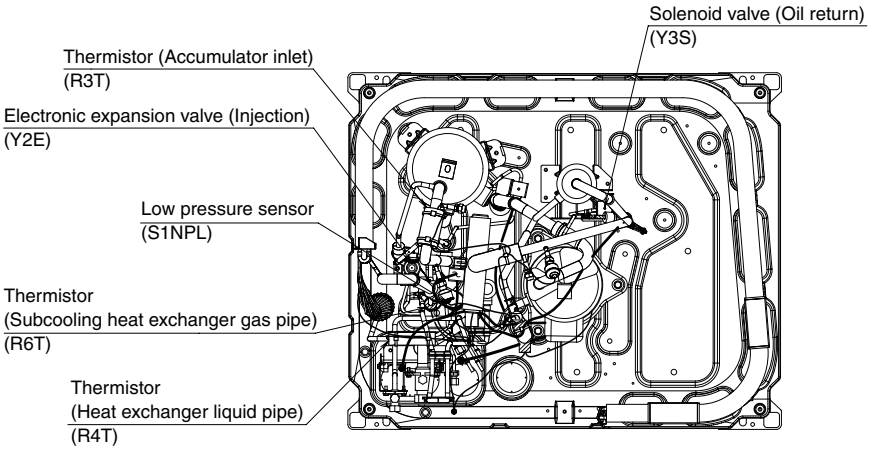
Front View



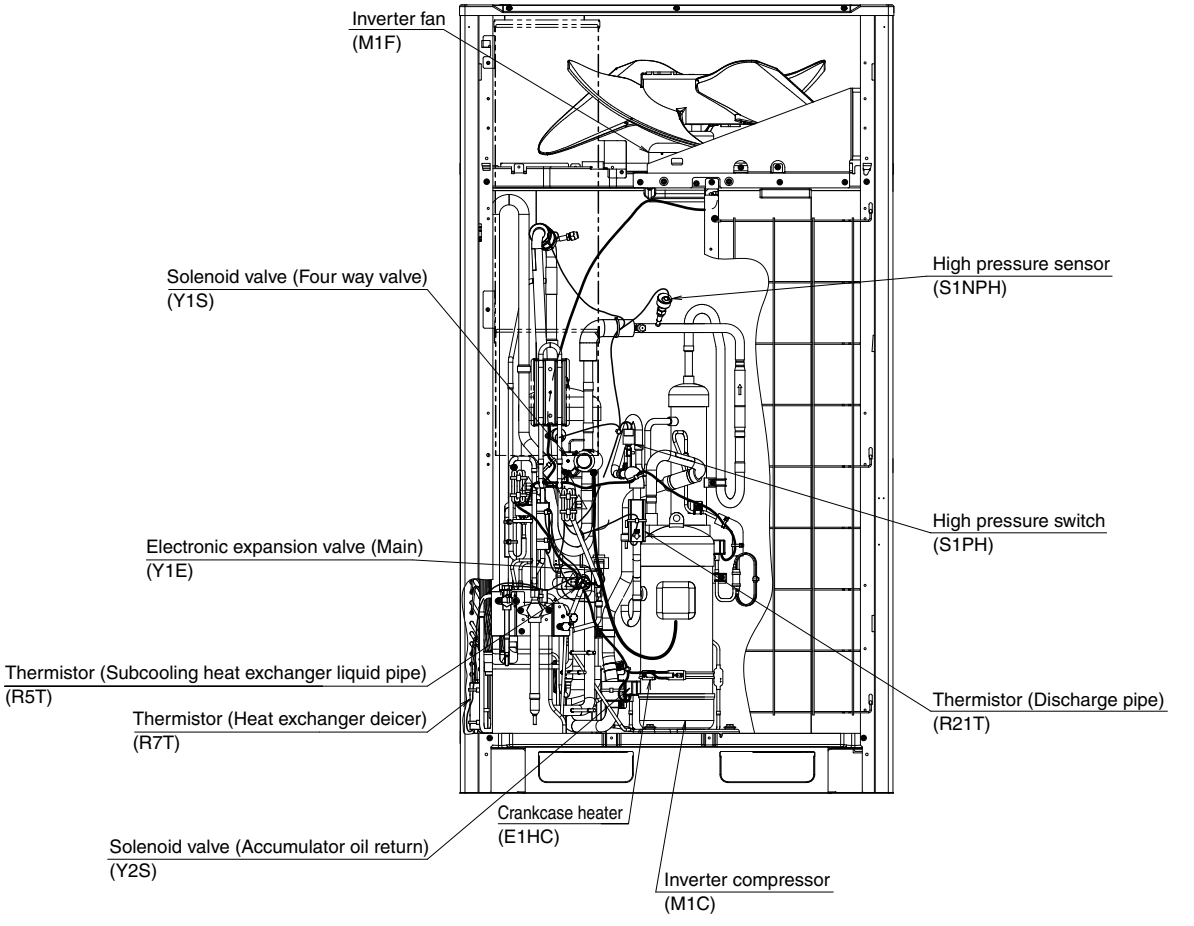
C: 1P350706E

2.4 RXYQ72TATJU

Top View



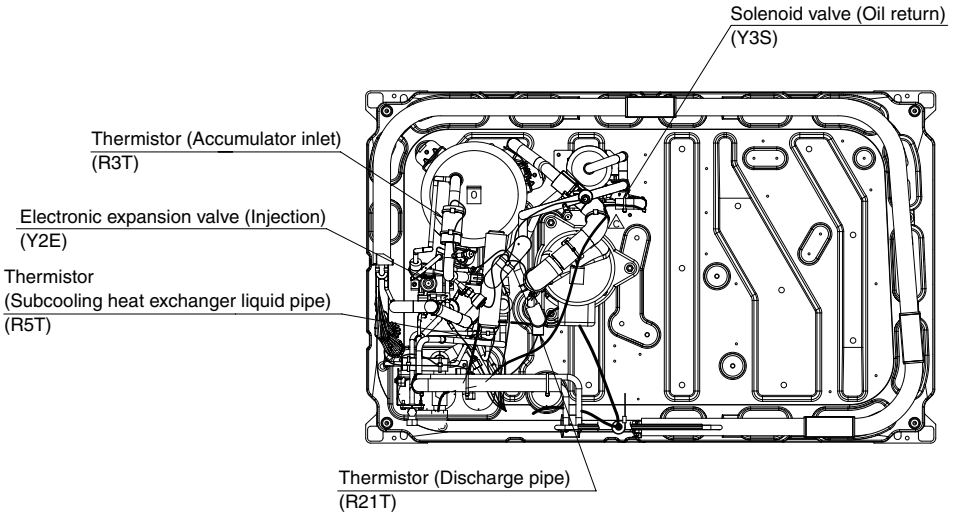
Front View



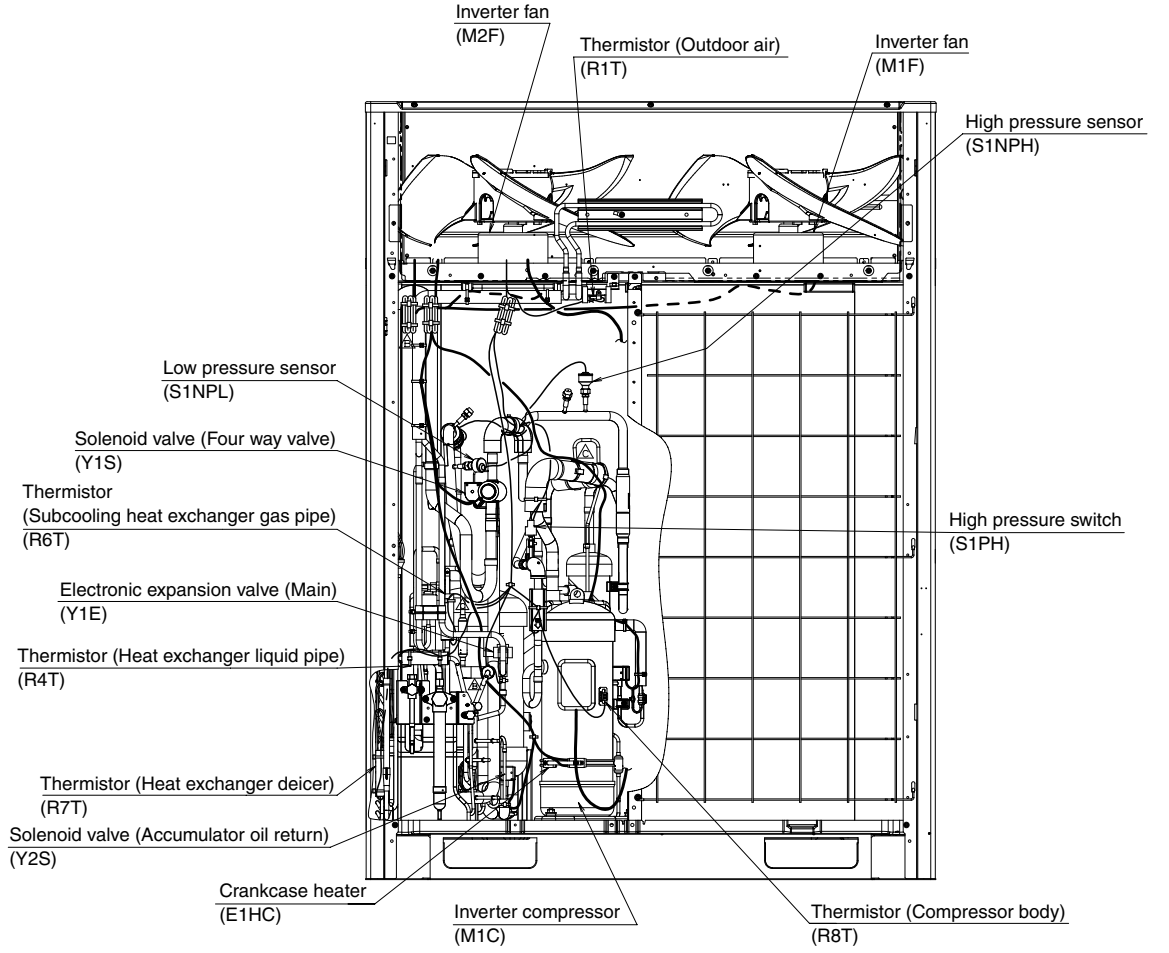
C: 1P350701C

2.5 RXYQ96/120TATJU

Top View



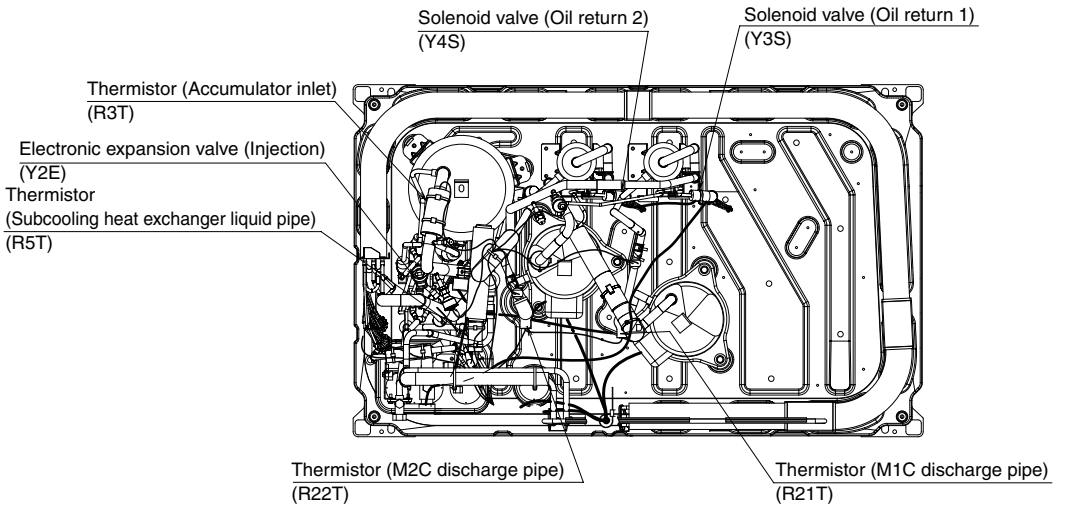
Front View



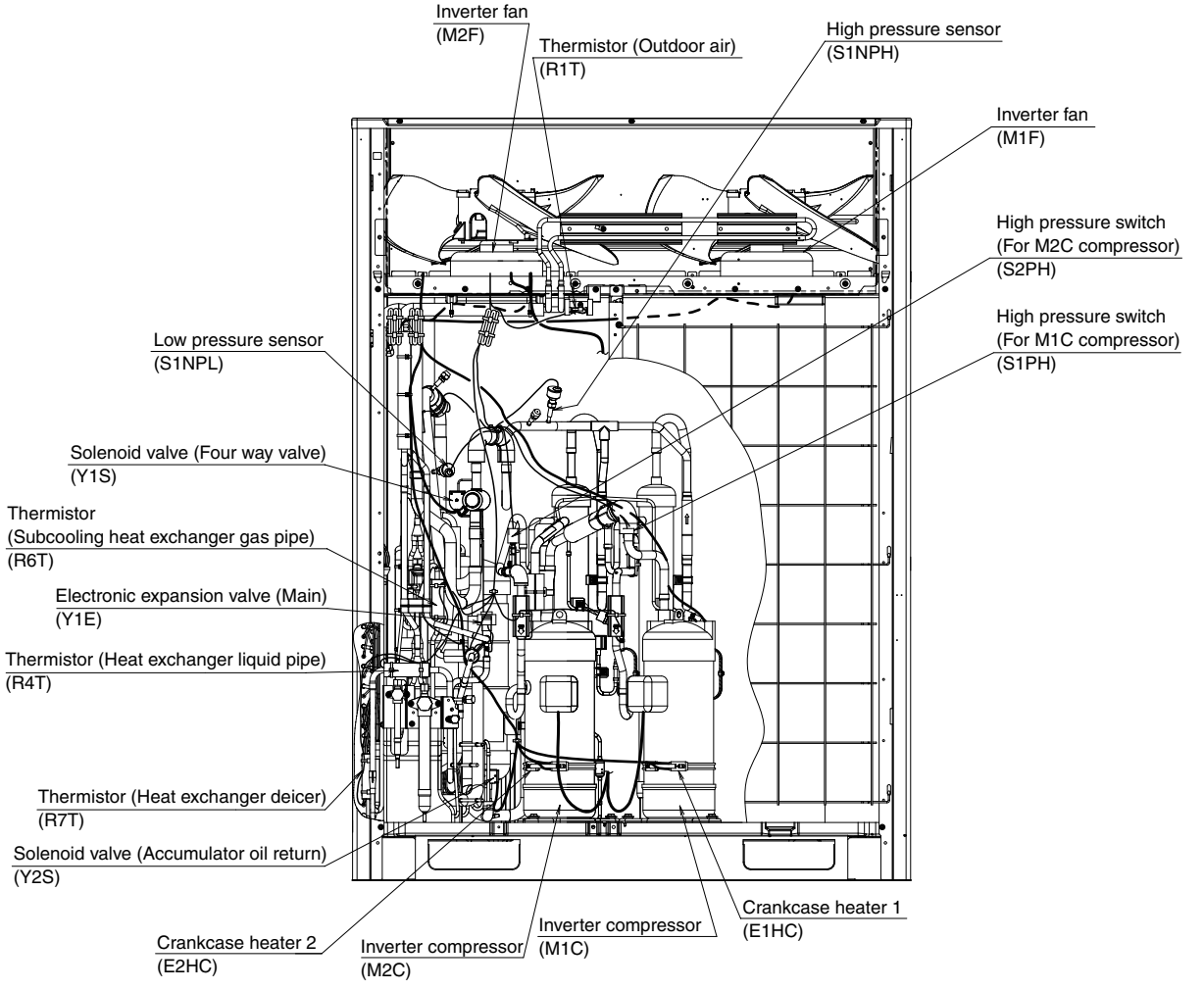
C: 1P350702E

2.6 RXYQ144/168TATJU

Top View



Front View



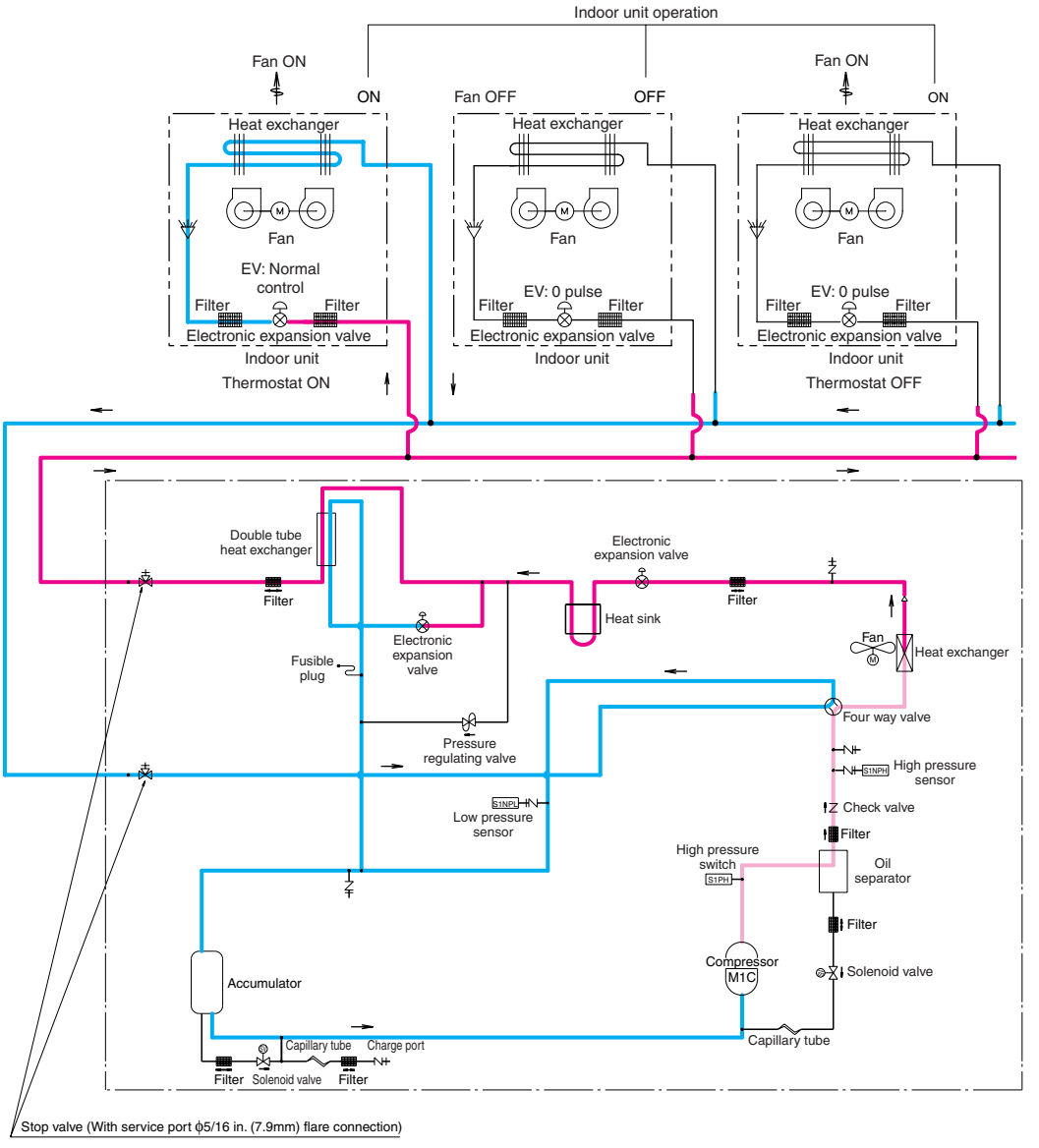
C: 1P350703F

3. Refrigerant Flow for Each Operation Mode

3.1 RXYQ72TAYDU, RXYQ72TATJU

3.1.1 Cooling Operation

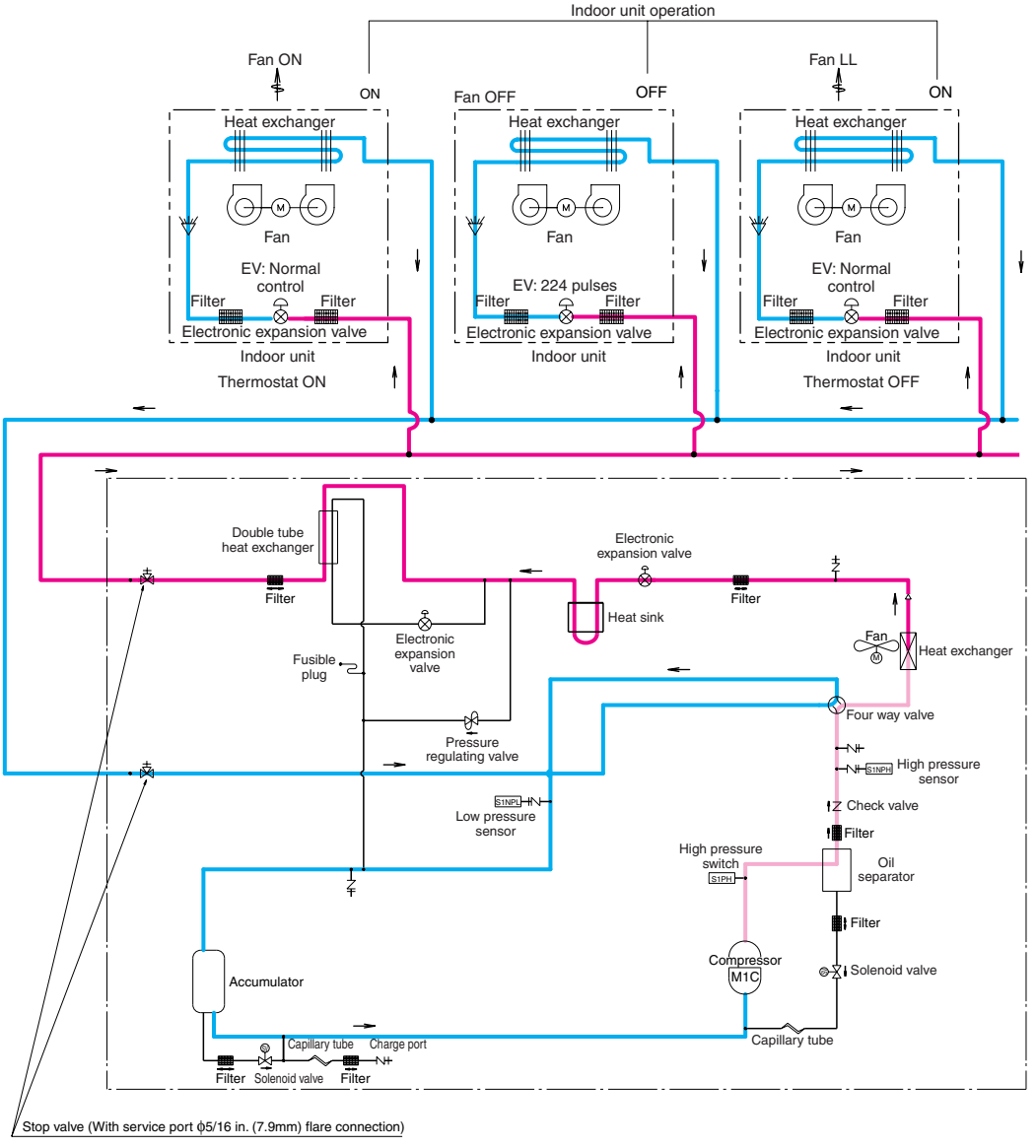
High temperature, high pressure, gas
High temperature, high pressure, liquid
Low temperature, low pressure



C: 3D085567A

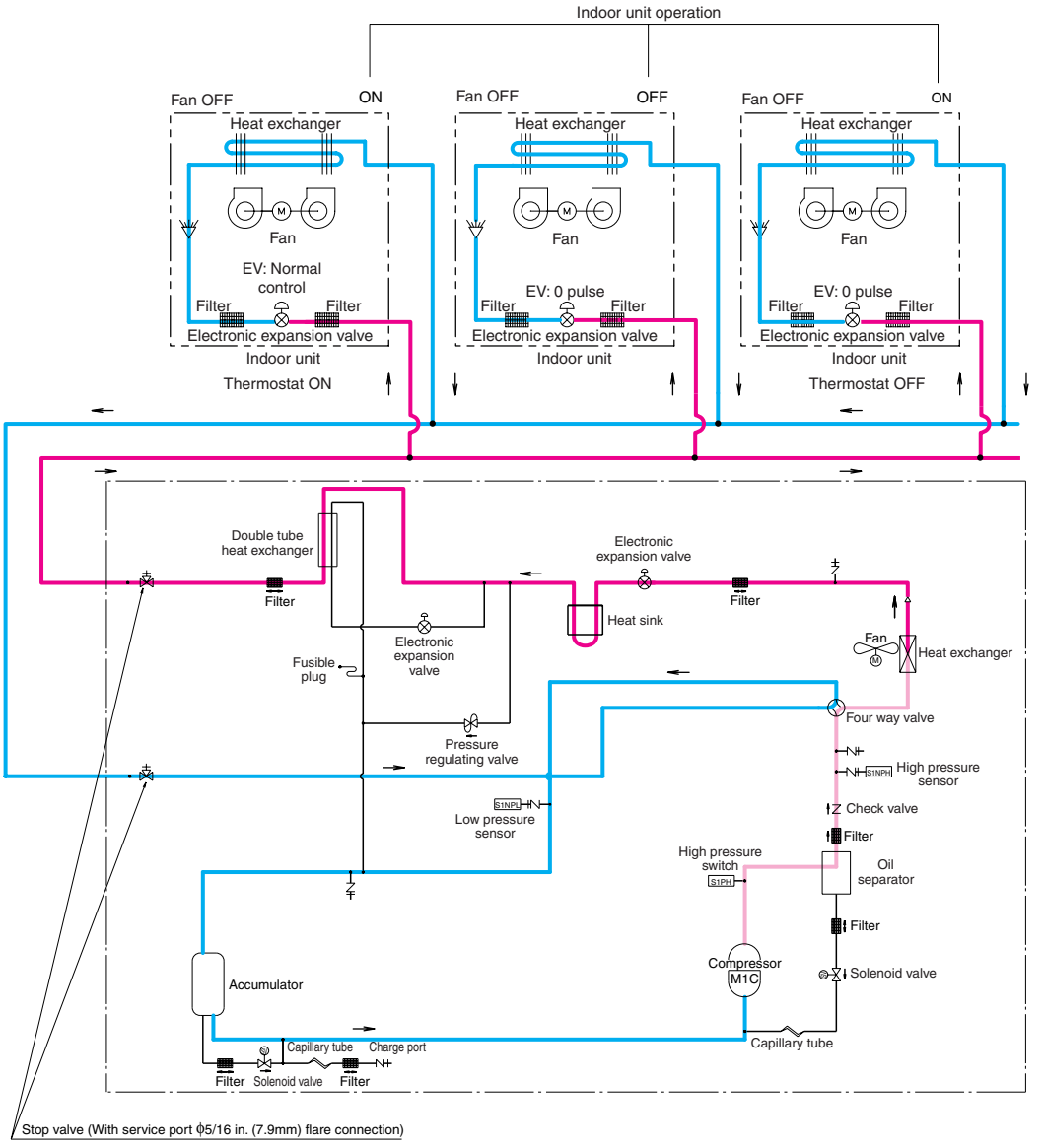
3.1.2 Cooling Oil Return Operation

High temperature, high pressure, gas
High temperature, high pressure, liquid
Low temperature, low pressure



3.1.3 Heating Oil Return, Defrost Operation

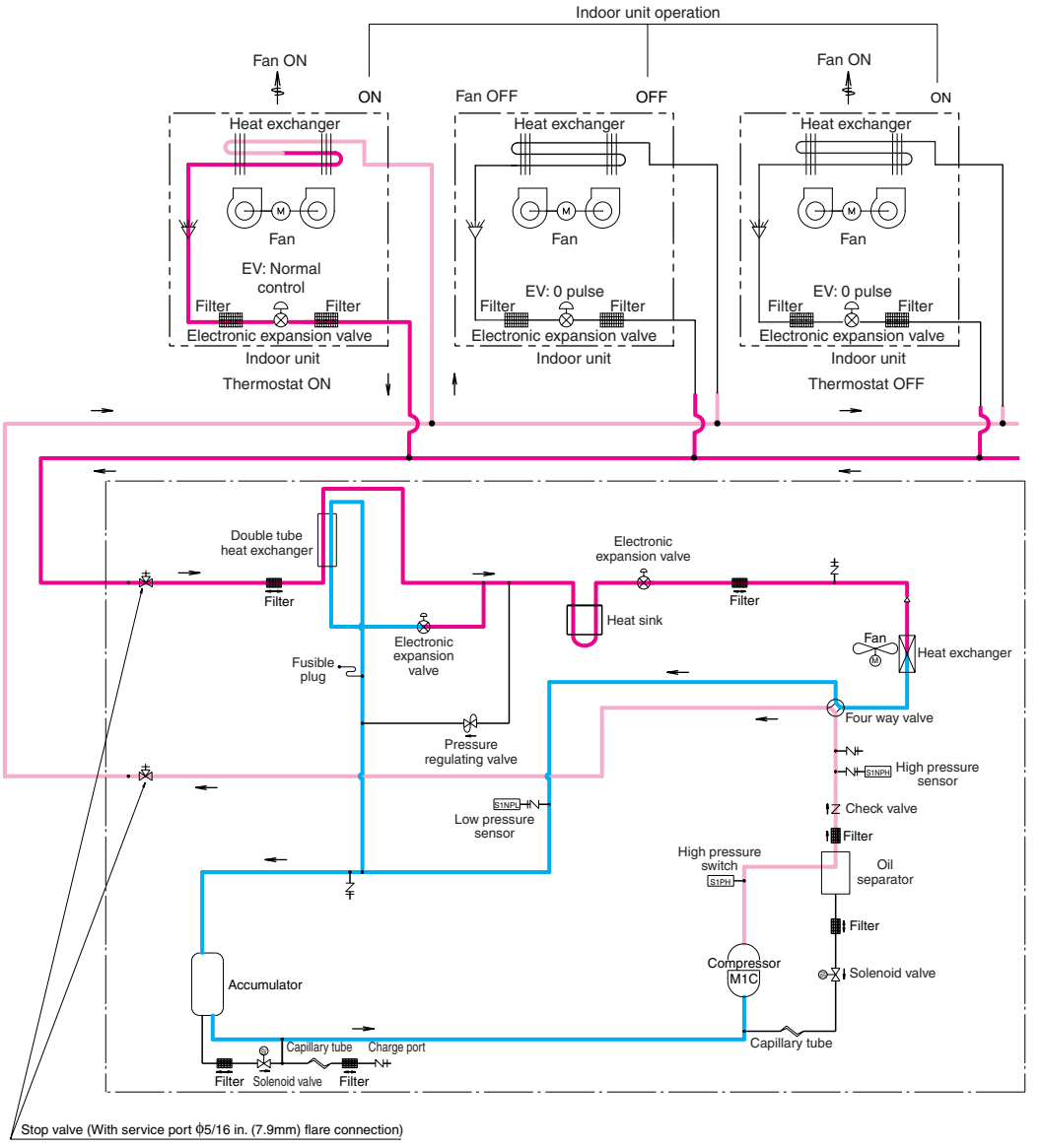
High temperature, high pressure, gas
High temperature, high pressure, liquid
Low temperature, low pressure



C: 3D085567A

3.1.4 Heating operation

High temperature, high pressure, gas
High temperature, high pressure, liquid
Low temperature, low pressure

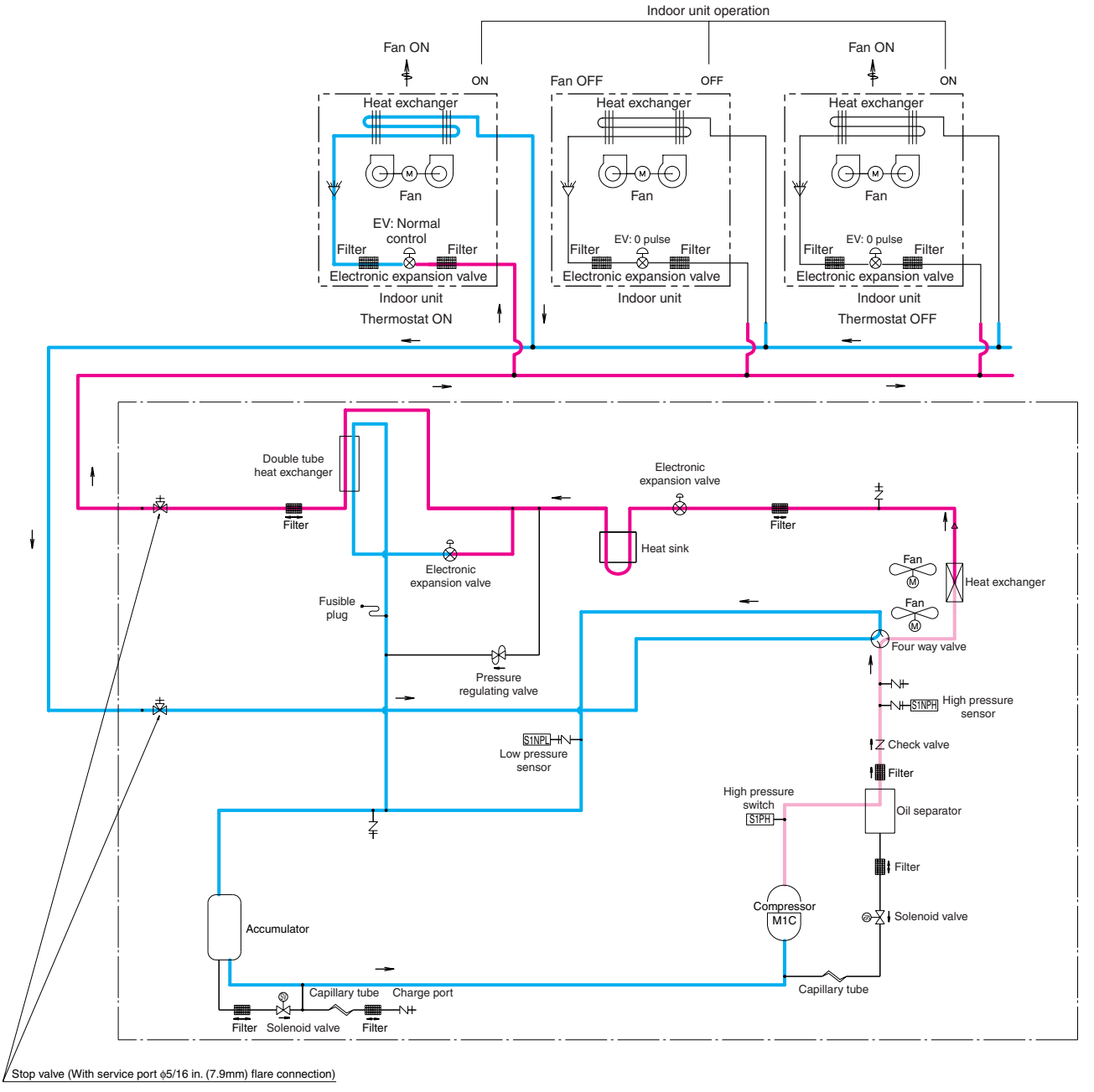


C: 3D085567A

3.2 RXYQ96/120TAYDU, RXYQ96/120TATJU

3.2.1 Cooling Operation

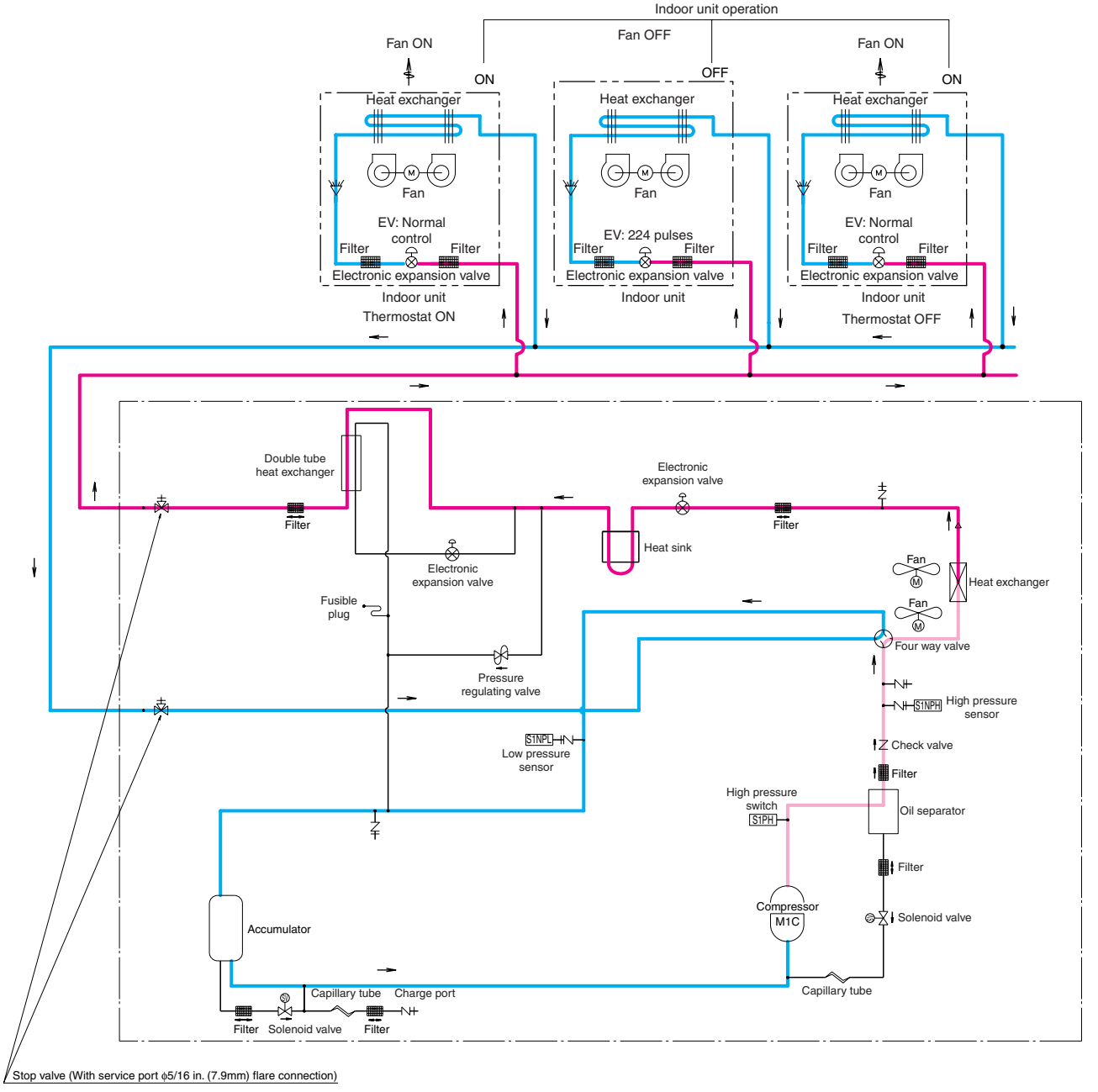
High temperature, high pressure, gas
High temperature, high pressure, liquid
Low temperature, low pressure



C: 3D085598A

3.2.2 Cooling Oil Return Operation

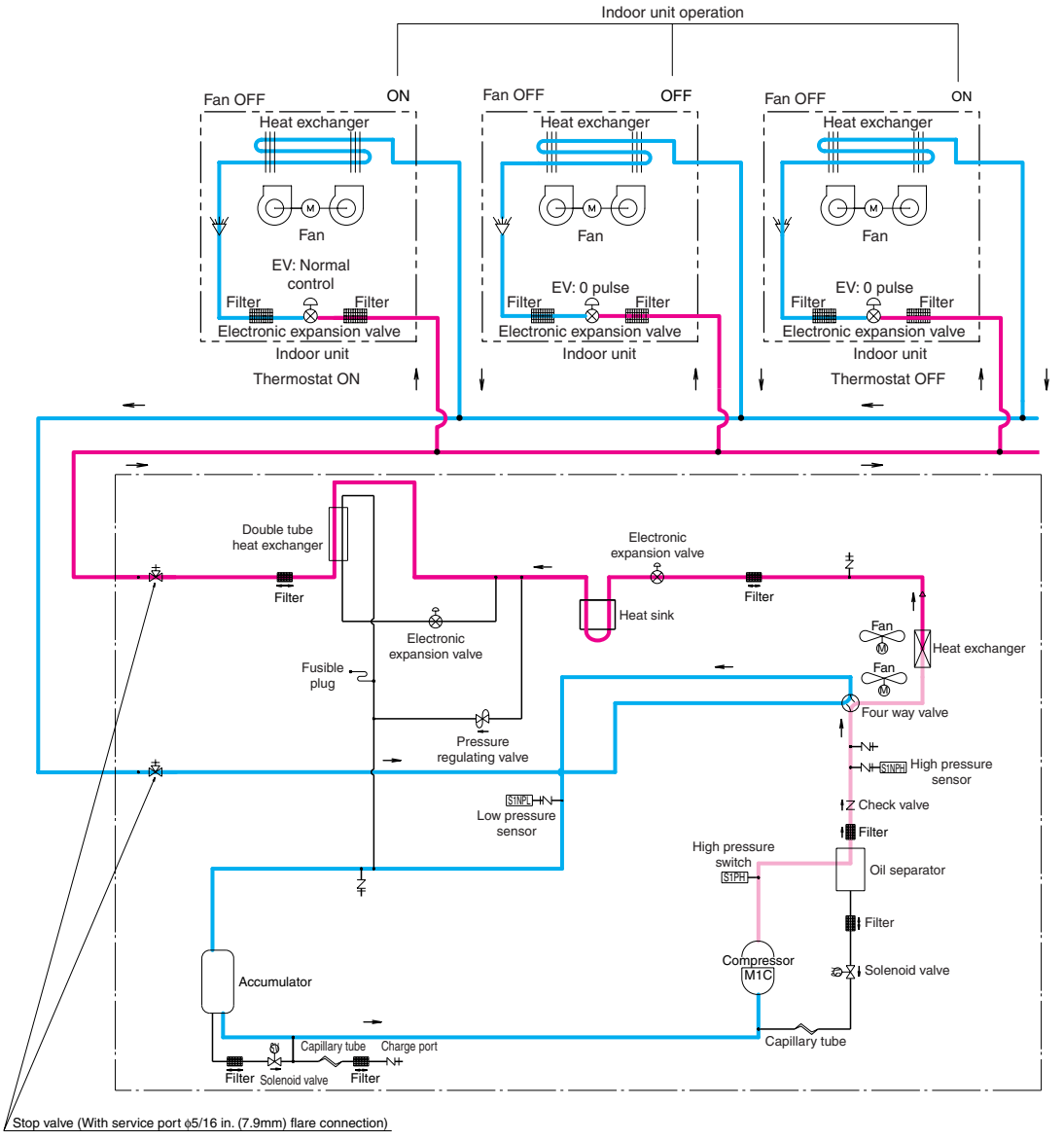
High temperature, high pressure, gas
High temperature, high pressure, liquid
Low temperature, low pressure



C: 3D085598A

3.2.3 Heating Oil Return, Defrost Operation

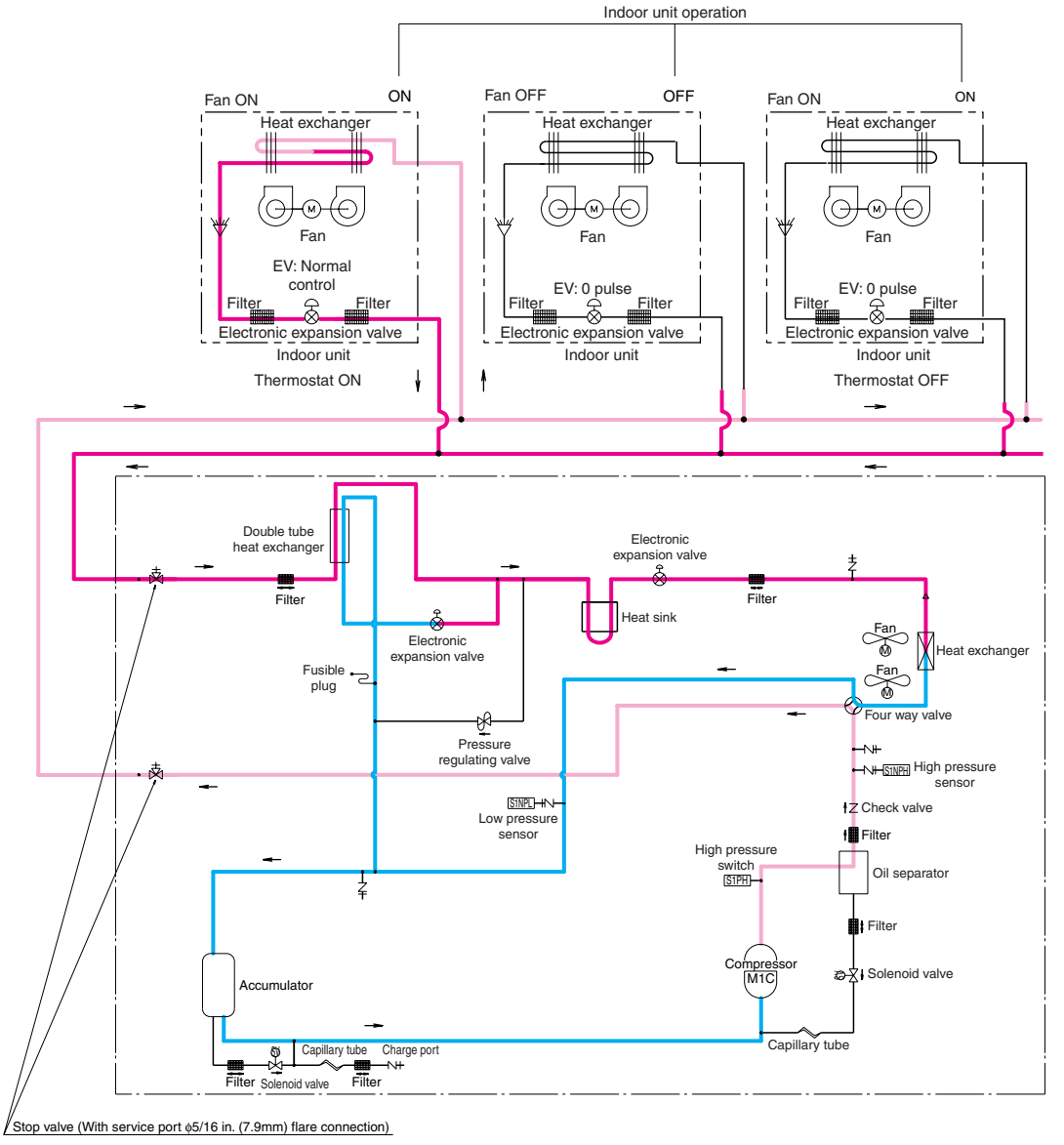
High temperature, high pressure, gas
High temperature, high pressure, liquid
Low temperature, low pressure



C: 3D085598A

3.2.4 Heating Operation

High temperature, high pressure, gas
High temperature, high pressure, liquid
Low temperature, low pressure

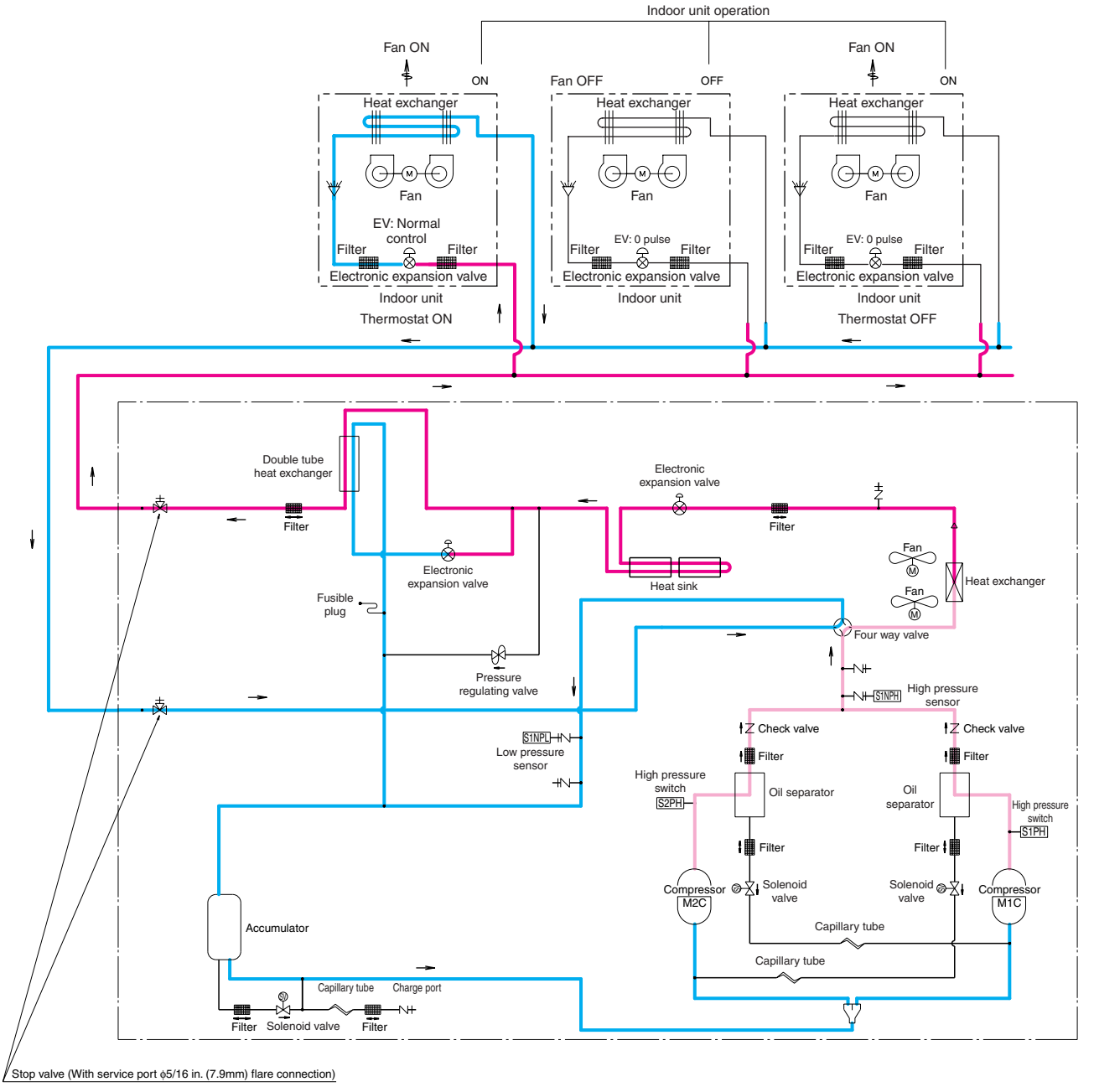


C: 3D085598A

3.3 RXYQ144/168TAYDU, RXYQ144/168TATJU

3.3.1 Cooling Operation

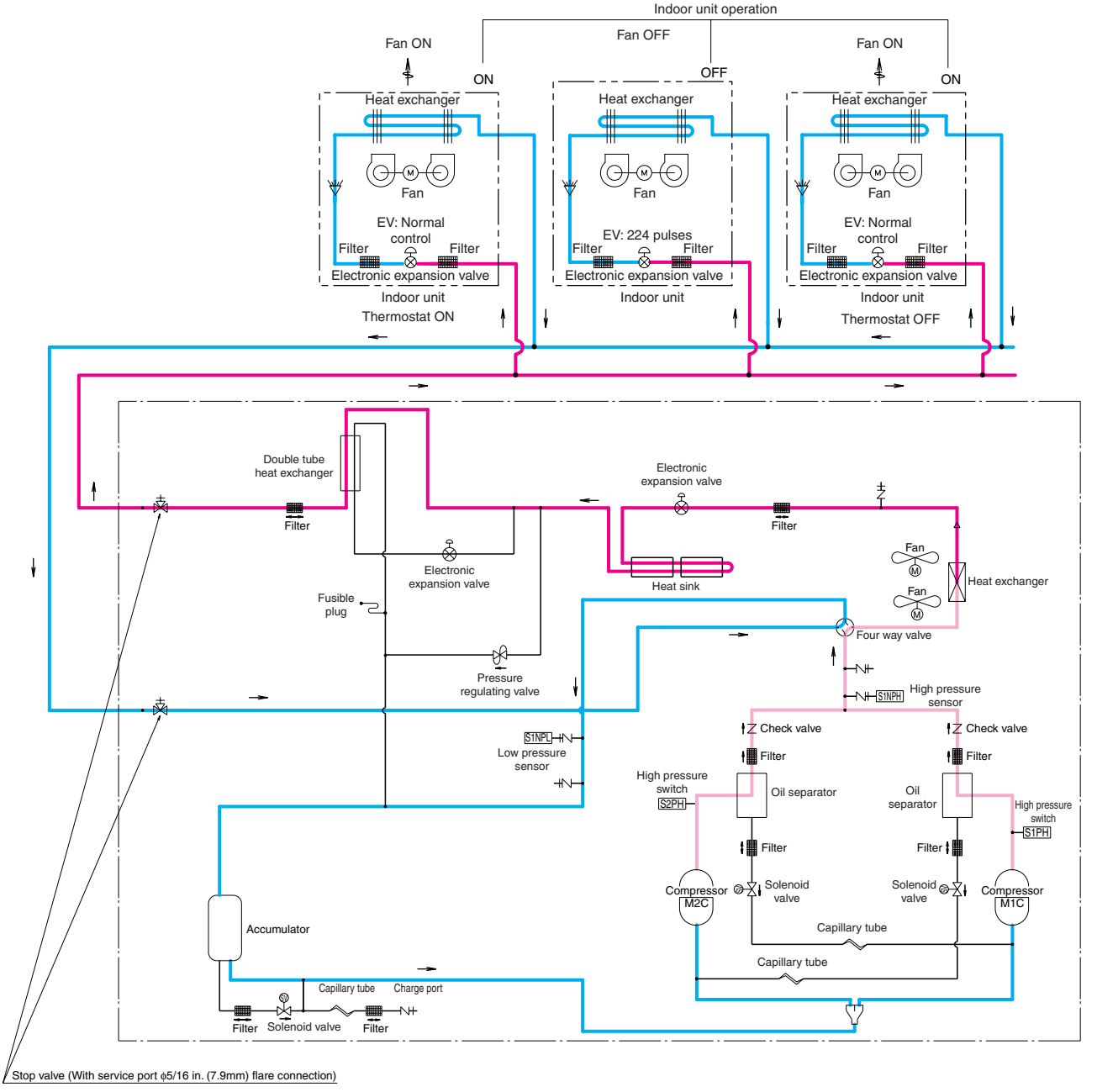
High temperature, high pressure, gas
High temperature, high pressure, liquid
Low temperature, low pressure



C: 3D085568A

3.3.2 Cooling Oil Return Operation

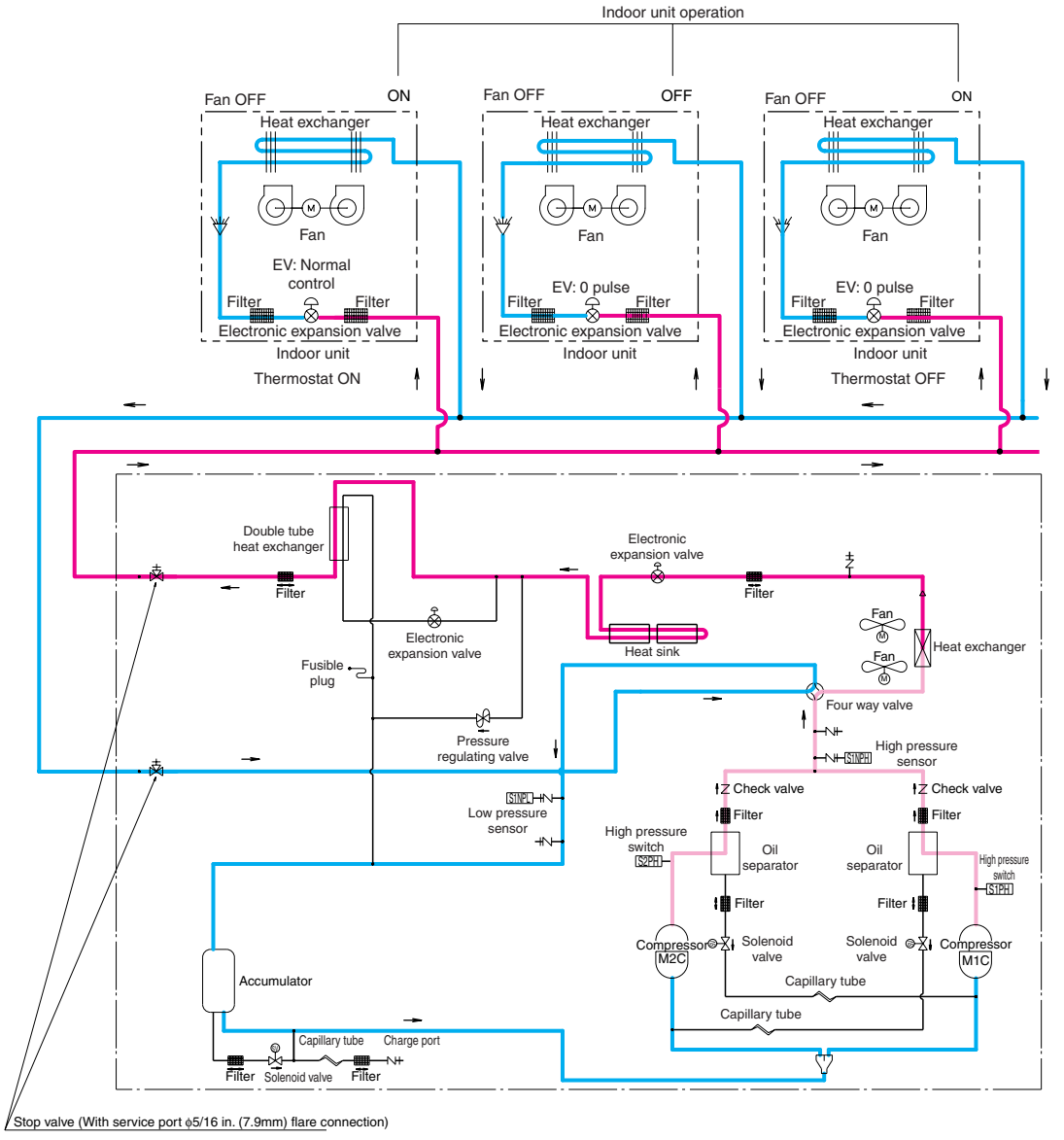
High temperature, high pressure, gas
High temperature, high pressure, liquid
Low temperature, low pressure



C: 3D085568A

3.3.3 Heating Oil Return, Defrost Operation

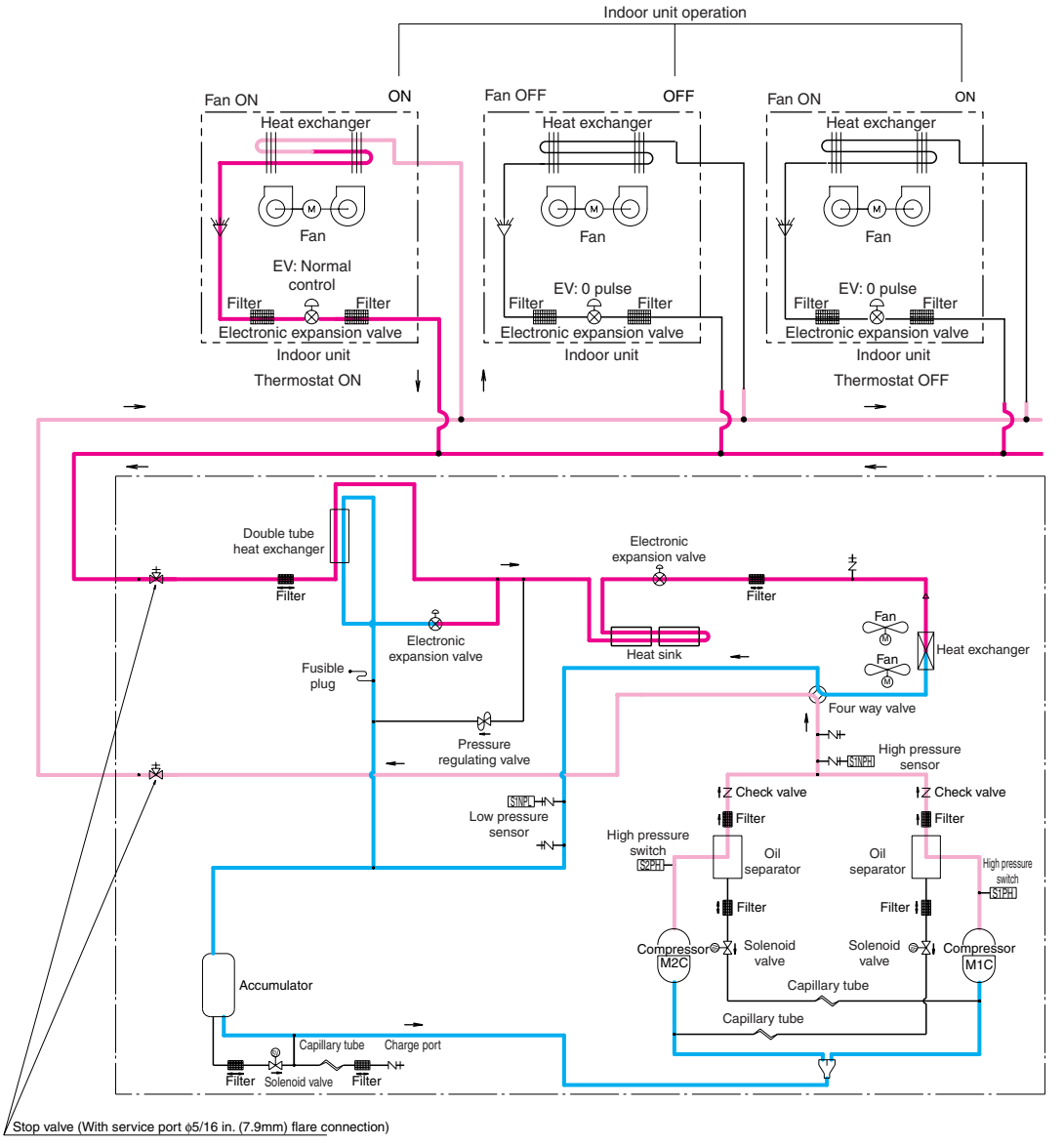
High temperature, high pressure, gas
High temperature, high pressure, liquid
Low temperature, low pressure



C: 3D085568A

3.3.4 Heating Operation

High temperature, high pressure, gas
High temperature, high pressure, liquid
Low temperature, low pressure



C: 3D085568A

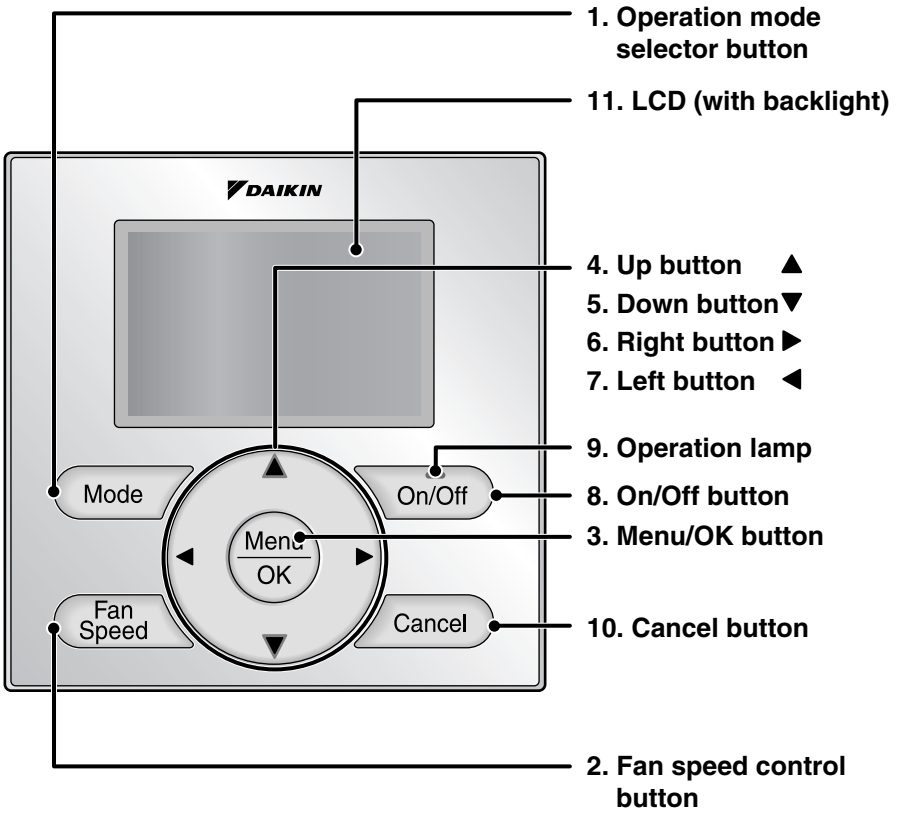
Part 3
Remote Controller

1. Applicable Models

Series	Wired remote controller	Wireless remote controller
	Navigation	
FXFQ-T	BRC1E73	–
FXFQ-P		
FXZQ-M		BRC7E830
FXUQ-P		–
FXEQ-P		
FXDQ-M		BRC4C82
FXMQ-PB		
FXMQ-M		
FXHQ-M		BRC7E83
FXAQ-P		BRC7E818
FXLQ-M		–
FXNQ-M		
FXTQ-TA		BRC4C82

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.

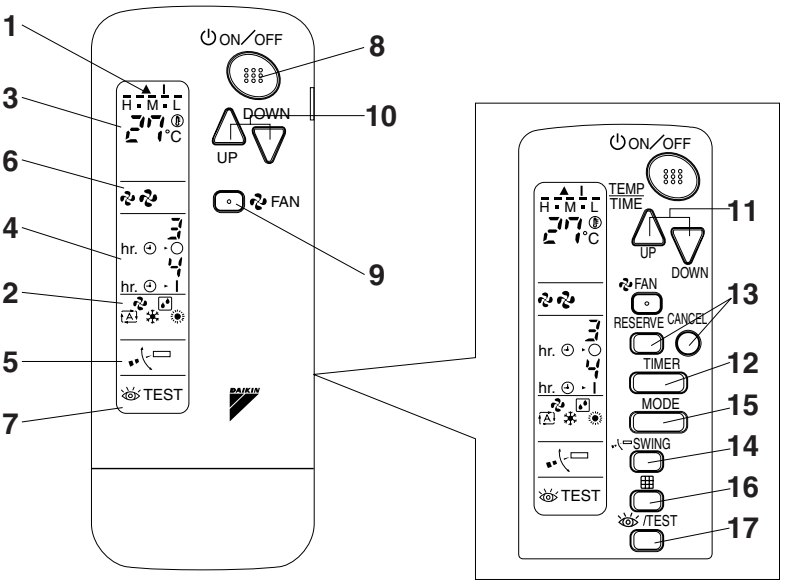
8. On/Off button
- Press this button and system will start.
- Press this button again to stop the system.

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

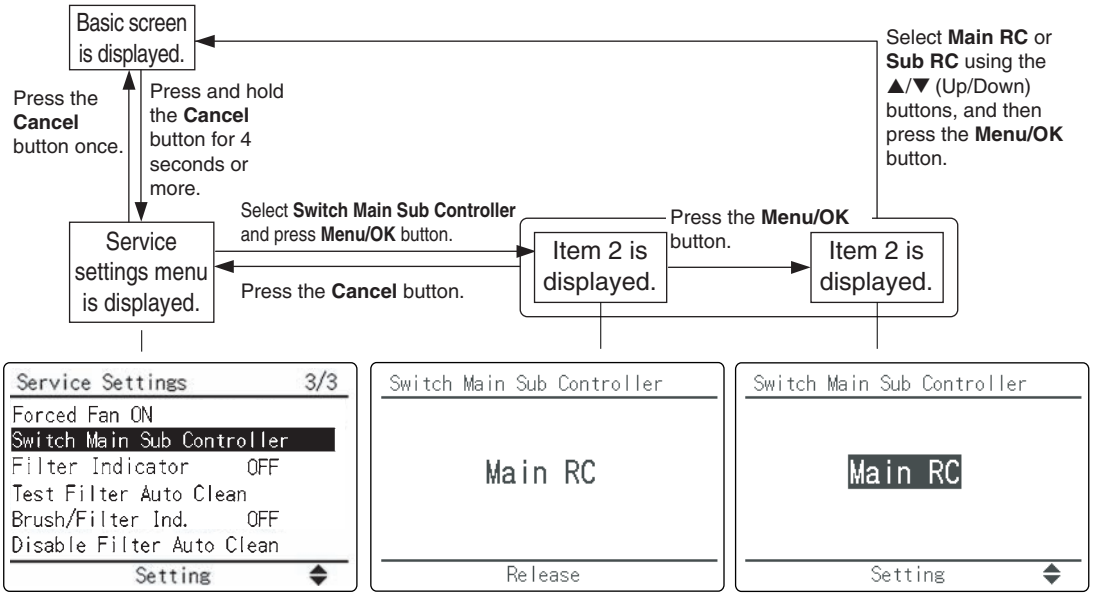
Situation

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)		

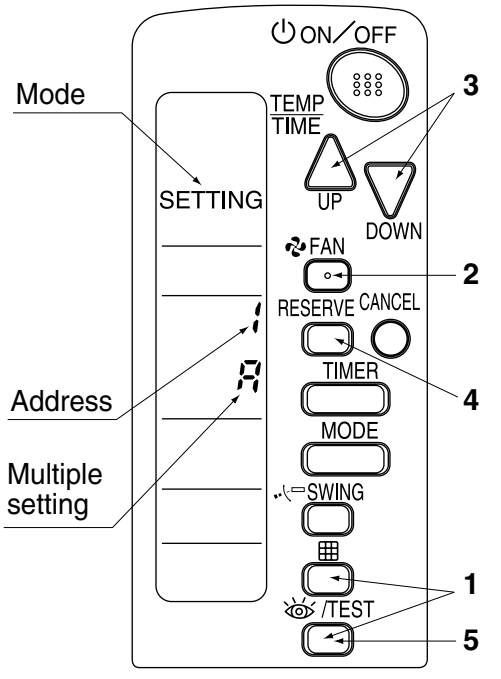
Setting the Address for the Wireless Remote Controller

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.

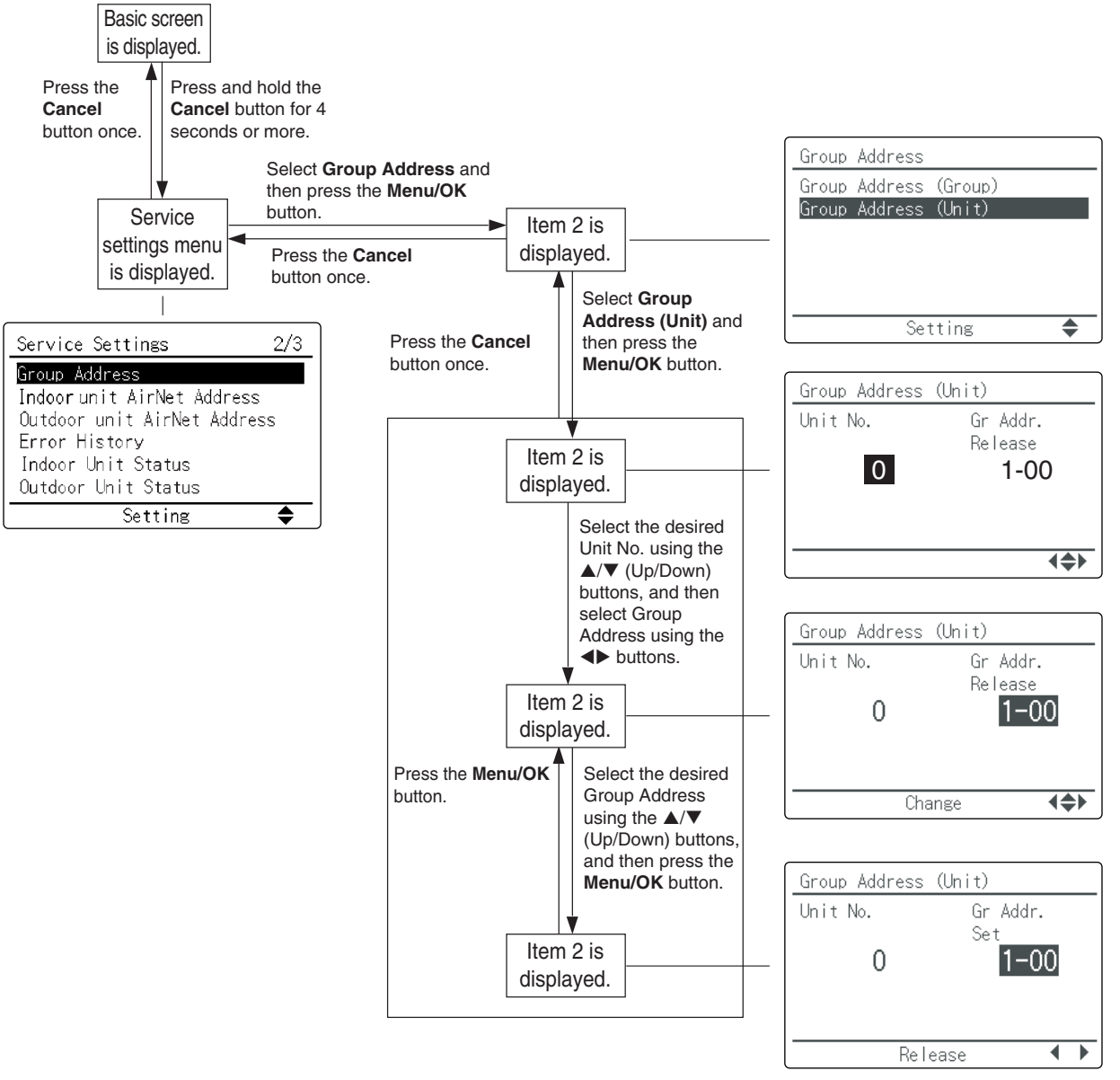


4. Centralized Control Group No. Setting

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.

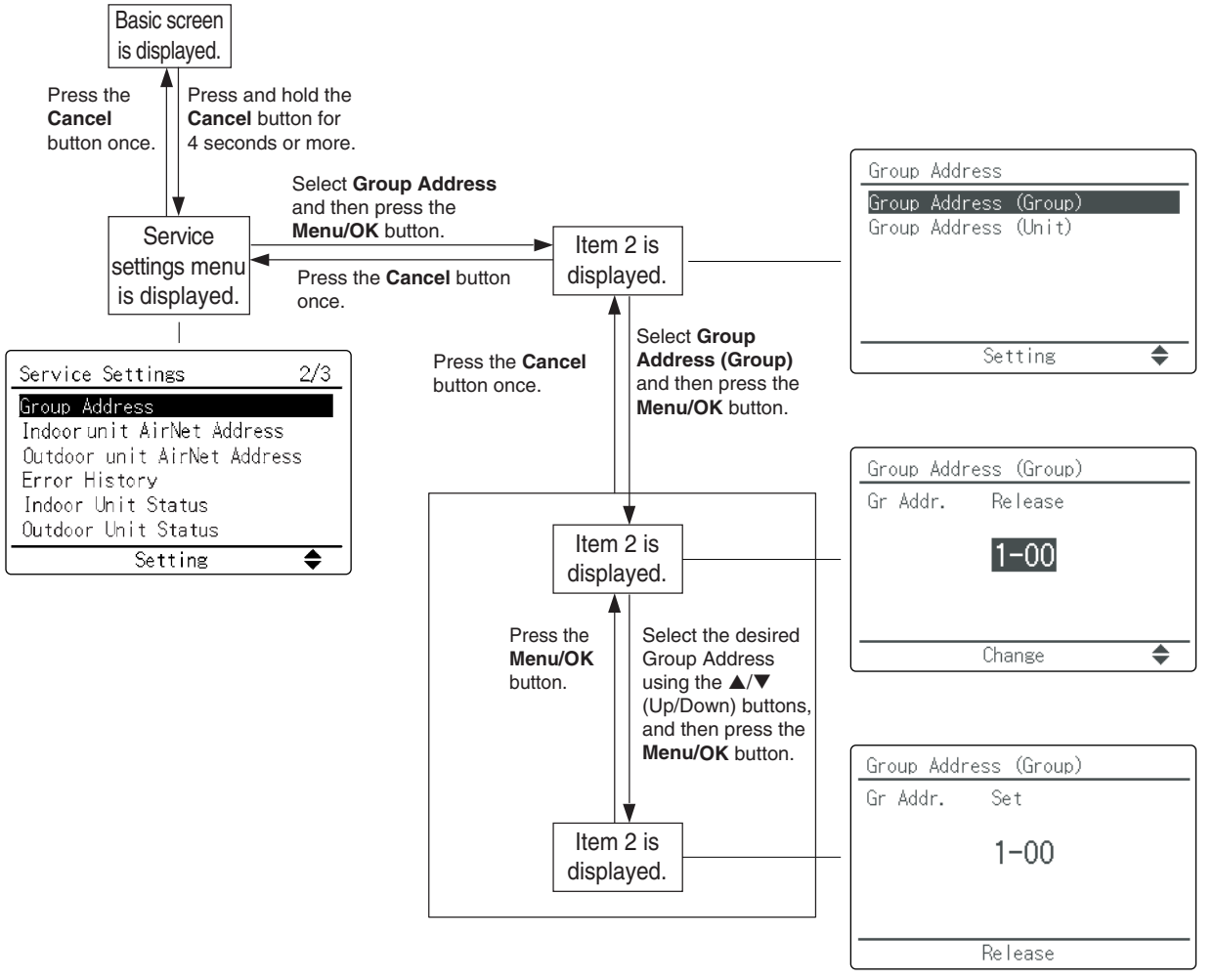
Note:

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

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.

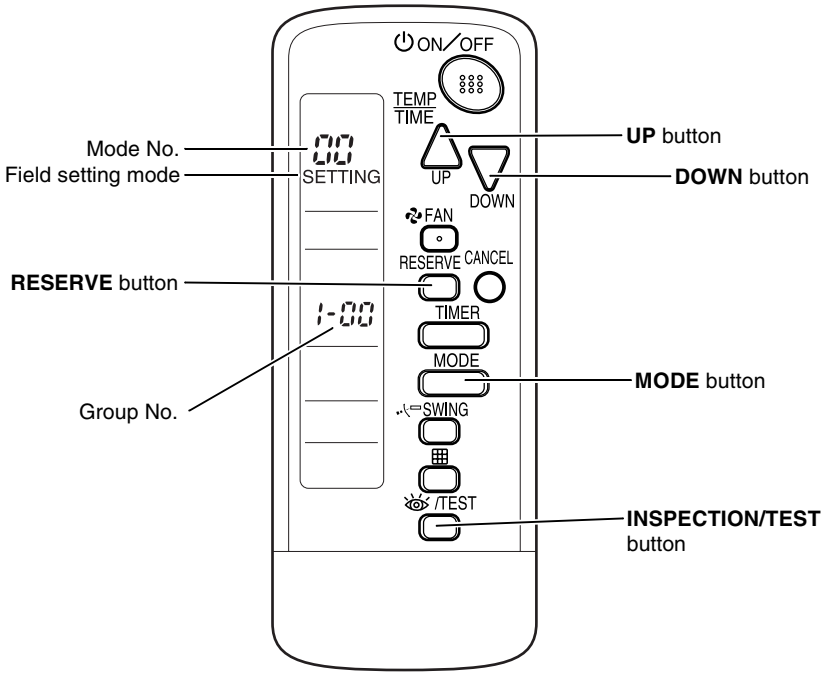
Group Address (Group)



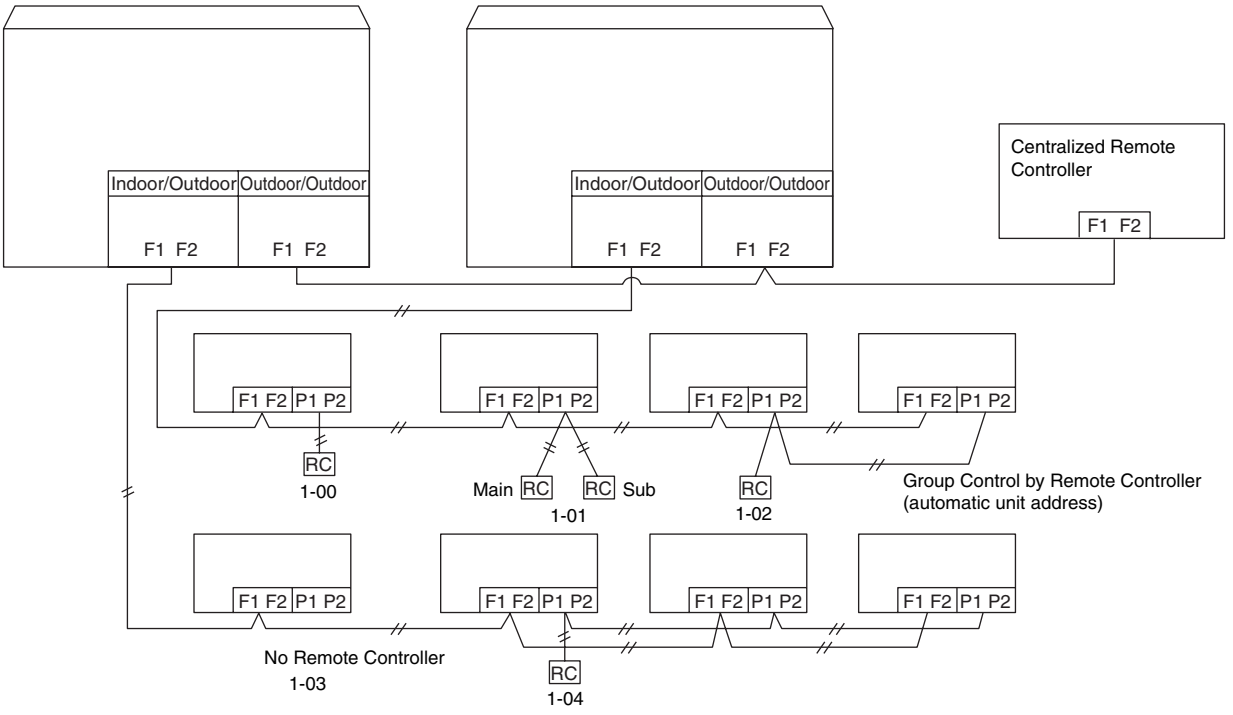
4.2 Wireless Remote Controller

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. 00 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



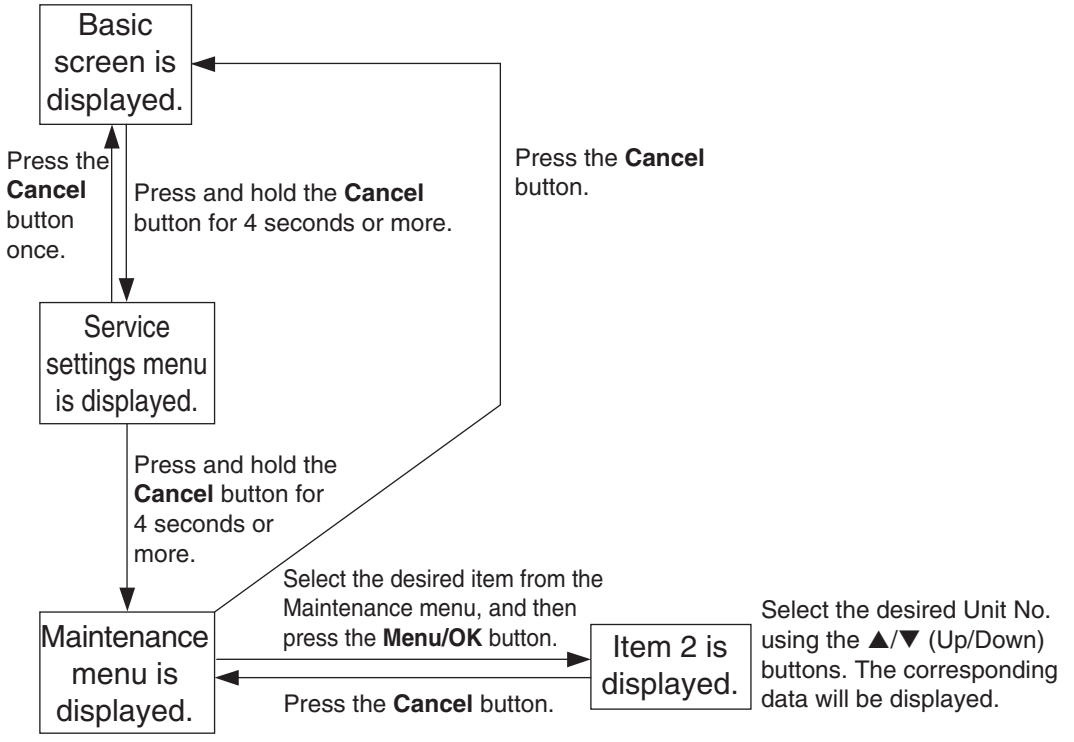
Caution

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 (∗1)
	3. Speed	Fan speed (rpm) (∗2)
	4. FLAP	Airflow direction
	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 (∗3)
	9. TBF	Anti-freezing control ON/OFF

Maintenance Menu	Item 2	Remarks
Indoor Unit Status	10.FLOAT	FLOAT SWITCH ON/OFF
	11.T1/T2	T1/T2 input from outside ON/OFF
	12.Th1	Suction air thermistor
	13.Th2	Heat exchanger liquid pipe thermistor
	14.Th3	Heat exchanger gas pipe thermistor
	15.Th4	Discharge air thermistor
	16.Th5	—
	17.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
	6. Th1	—
	7. Th2	—
	8. Th3	—
	9. Th4	—
	10. Th5	—
	11. Th6	—
Forced Defrost	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 (°C) Suction air thermistor (°C) Heat exchanger liquid pipe thermistor (°C) Heat exchanger gas pipe thermistor (°C) 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.

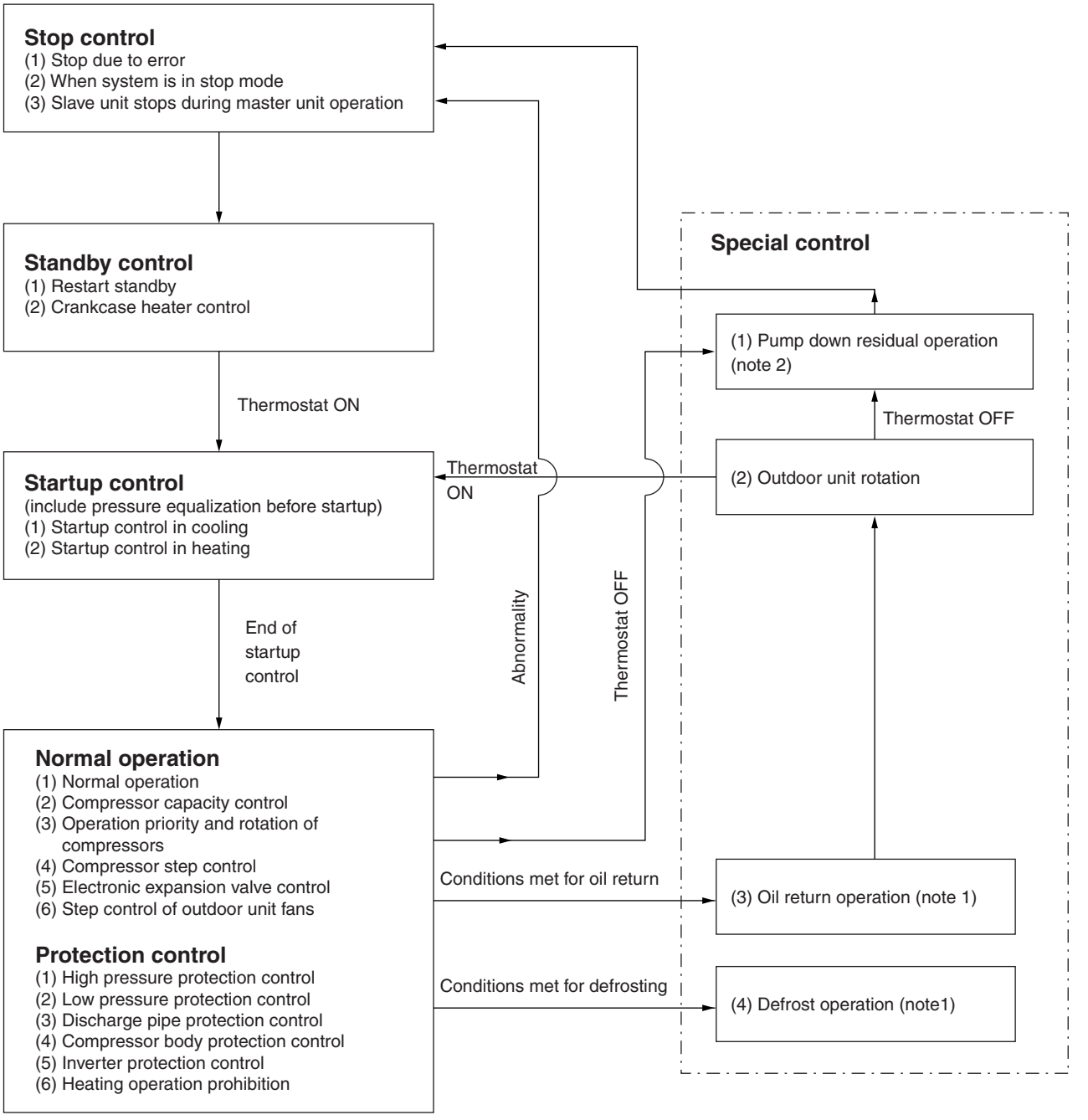
∗1. (For FXTQ-TA models)
The actual fan speed is converted into the fan tap to be displayed. Therefore, if the fan speed is changed by controls or external factors, the airflow rate set with the remote controller may differ from the fan tap display.

∗2. (For FXTQ-TA models)
0 rpm is displayed even if the fan is rotating.

∗3. (For FXTQ-TA models)
The ON/OFF status of the humidifier connected to HUMIDIFIER on the X1M terminal of the indoor unit PCB is not displayed. The ON/OFF status of the humidifier connected to the wiring adaptor is displayed.

Part 4
Functions and Control

1. Operation Flowchart (Outdoor Unit)



Note:
1. In the event 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 the oil return operation or defrost operation.
2. Not performed during cooling mode.

2. Stop Control

2.1 Stop due to Error

In order to protect compressors, if any of the abnormal state occurs, the system will stop with thermostat OFF and the error will be determined when the retry times reaches certain number.
(Refer to "Error Code and Description" (page 171~) of the troubleshooting for the items to determine the error.)

2.2 When System is in Stop Mode

The four way valves both for heat exchanger switch and piping switch retain the condition before they were stopped.

2.3 Slave Unit Stops during Master Unit Operation

When slave unit is stopped (because of low demand), conditions for this unit is set same as system stop. System stops till this unit is required to operate (increase of load).

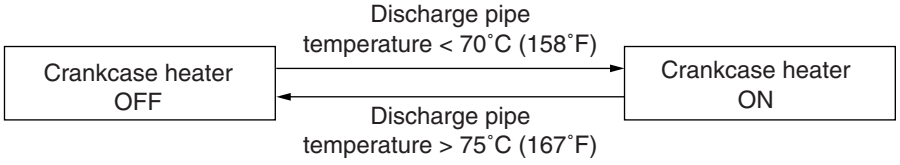
3. Standby Control

3.1 Restart Standby

Used to forcedly stop the compressor for a period of 3 minutes, in order to prevent the frequent ON/OFF of the compressor and equalize the pressure within the refrigerant system.
In addition, the outdoor fan carry out the residual operation for a while to suppress the acceleration of the pressure equalizing and melting of the refrigerant to the evaporator.

3.2 Crankcase Heater Control

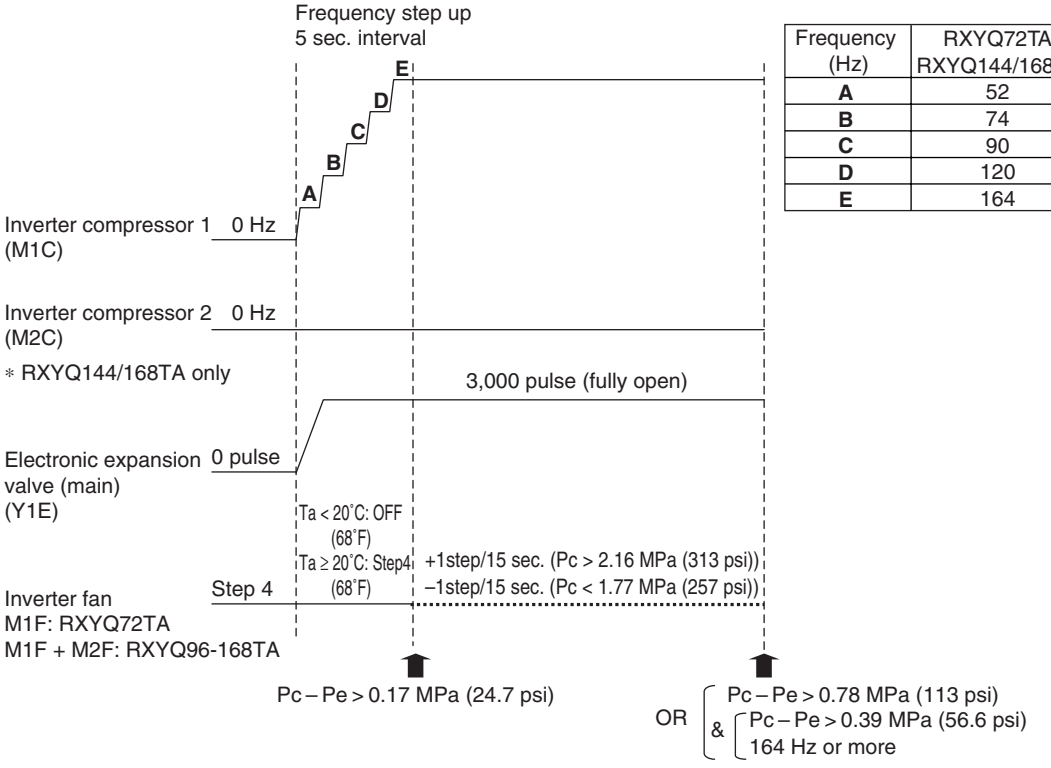
In order to prevent the refrigerant from melting in the compressor oil in the stopped mode, this mode is used to control the crankcase heater.



4. Startup Control

This control is used to equalize the pressure in the front and back of the compressor prior to the startup of the compressor, thus reducing startup loads. Furthermore, the inverter is turned ON to charge the capacitor.
To avoid stresses to the compressor due to oil return or else after the startup, the following control is made and the position of the four way valve is also determined. Start both the master and the slave units simultaneously to position the four way valve.

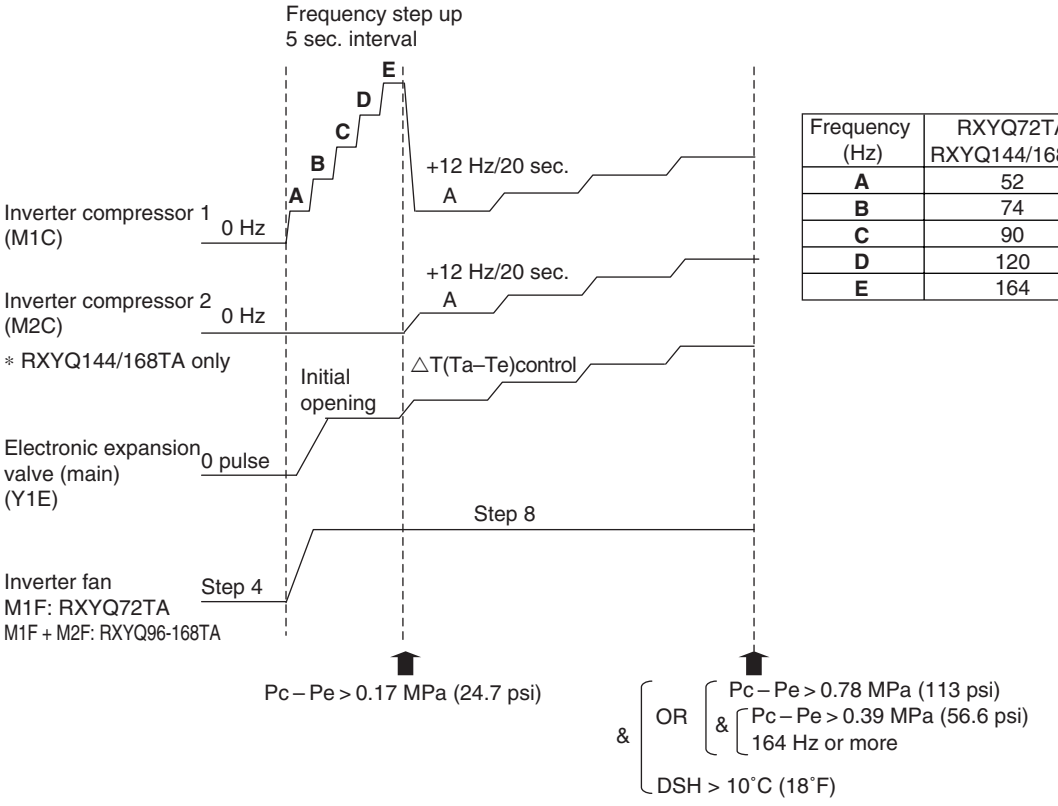
4.1 Startup Control in Cooling



Frequency (Hz)	RXYQ72TA RXYQ144/168TA	RXYQ96/120TA
A	52	60
B	74	75
C	90	90
D	120	120
E	164	180

Pc : High pressure sensor detection value
Pe : Low pressure sensor detection value
Ta : Outdoor air temperature
Te : Low pressure equivalent saturation temperature

4.2 Startup Control in Heating



Frequency (Hz)	RXYQ72TA RXYQ144/168TA	RXYQ96/120TA
A	52	60
B	74	75
C	90	90
D	120	120
E	164	180

Pc : High pressure sensor detection value
Pe : Low pressure sensor detection value
Ta : Outdoor air temperature
Te : Low pressure equivalent saturation temperature

5. Basic Control

5.1 Normal Operation

Tc : High pressure equivalent saturation temperature
Te : Low pressure equivalent saturation temperature
DSH: Discharge pipe superheated degree

Cooling

Part Name	Electric Symbol	RXYQ72-120TA	RXYQ144/168TA	Function of Functional Part
Inverter compressor 1	M1C	●	●	PI control by Te target depends on field setting 2-8 and 2-81.
Inverter compressor 2	M2C	–	●	
Inverter fan 1	M1F	●	●	Fan speed 9 steps to keep minimum Tc target 34°C (93.2°F).
Inverter fan 2	M2F	(●)*1	●	
Electronic expansion valve (Main)	Y1E	●	●	0 pulse: closed (thermostat OFF), 3,000 pulses: open (thermostat ON).
Electronic expansion valve (Injection)	Y2E	●	●	0-480 pulses at compressor ON
Four way valve	Y1S	●	●	OFF
Solenoid valve (Accumulator oil return)	Y2S	●	●	Close if DSH < 15°C (27°F)
Solenoid valve (Oil return 1)	Y3S	●	●	Only close if Pc – Pe < 0.3 MPa (43.5 psi) (when compressor OFF)
Solenoid valve (Oil return 2)	Y4S	–	●	

●: equipped
–: not equipped
∗1: RXYQ96/120TA only

Heating

Part Name	Electric Symbol	RXYQ72-120TA	RXYQ144/168TA	Function of Functional Part
Inverter compressor 1	M1C	●	●	PI control by Tc target depends on field setting 2-9 and 2-82.
Inverter compressor 2	M2C	–	●	
Inverter fan 1	M1F	●	●	Fan step 7 (normal Tc and Te) or Fan step 8 (high load).
Inverter fan 2	M2F	(●)*1	●	
Electronic expansion valve (Main)	Y1E	●	●	0 pulse: closed (thermostat OFF), 0-3,000 pulses: SH control 5°C (9°F).
Electronic expansion valve (Injection)	Y2E	●	●	0-480 pulses at compressor ON: based on indoor demand.
Four way valve	Y1S	●	●	ON
Solenoid valve (Accumulator oil return)	Y2S	●	●	Close if DSH < 15°C (27°F)
Solenoid valve (Oil return 1)	Y3S	●	●	Only close if Pc – Pe < 0.3 MPa (43.5 psi) (when compressor OFF)
Solenoid valve (Oil return 2)	Y4S	–	●	

●: equipped
–: not equipped
∗1: RXYQ96/120TA only

5.2 Compressor Capacity Control

Tc : High pressure equivalent saturation temperature

Te : Low pressure equivalent saturation temperature

Capacity steps

The compressor rotation speed is changed according to the control pressure.

- Cooling: suction pressure sensor value is converted into evaporating saturated temperature (relation between pressure and evaporating temperature based on characteristics of refrigerant R-410A). For detailed explanation refer to chapter field settings (Description field settings (mode 2: m2) on outdoor unit main PCB on page 145 and installation manual outdoor chapter “Energy saving and optimum operation”).
  - Initial selection is made between Automatic, Fixed, or High sensible.
  - During operation, the outdoor target evaporating temperature can be changed based on the selected sub function, taking indoor load into account.
- Heating: discharge pressure sensor value is converted into condensing saturation temperature.
  - Initial selection is made between Automatic, Fixed, or High sensible.
  - During operation, the outdoor target condensing temperature can be changed based on the selected sub function, taking indoor load into account.
- The initial target saturated temperature can be changed. For details refer to Description field settings (mode 2: m2) on outdoor unit main PCB on page 145: for Cooling: Te set based on field setting 2-8, for heating: Tc set based on field setting 2-9.
- During operation, outdoor control will take into account the pressure drop so that at indoor units, the pre-set target temperature is reached (average). The estimated pressure drop is calculated based on:
  - Pressure drop characteristics found during test-operation outdoor (step 7). At several evaporating temperature, outdoor control stores difference between outdoor evaporating temperature and average of indoor heat exchanger (indoor evaporating temperature).
  - To have judgement of gas speed in main suction pipe, control takes the capacity step of the outdoor unit into account. In function of pressure drop characteristics at the different compressor capacity steps, control concludes the category of system pipe lay out (long, medium, short).
- Target Te outdoor (cooling) = Te set – estimated pressure drop – A.
- Target Tc outdoor (heating) = Tc set + estimated pressure drop + A.
- Correction factor A depends on the absolute value of the difference between indoor air inlet temperature and a set temperature after startup period.

5.3 Operating Priority and Rotation of Compressors

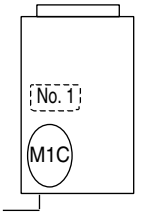
Each compressor operates in the following order of priority.
In the case of multi-outdoor-unit system, each compressor operates in any of Pattern 1 through Pattern 3 according to the rotation of outdoor units.

M1C: Inverter compressor 1
M2C: Inverter compressor 2

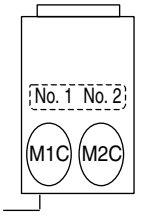
Pattern 1 Pattern 2 Pattern 3

Single Outdoor Unit

RXYQ72-120TA

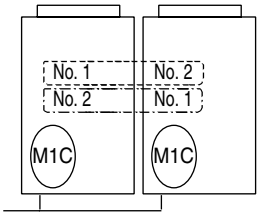


RXYQ144-168TA

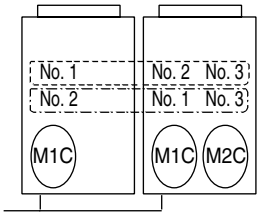


Double Outdoor Units

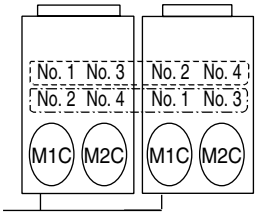
RXYQ192-240TA



RXYQ264TA

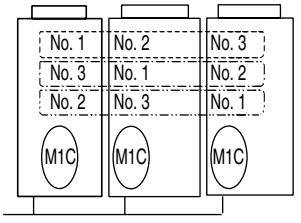


RXYQ288-336TA

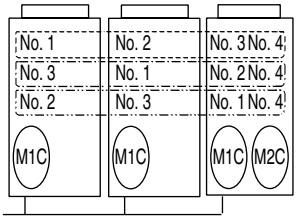


Triple Outdoor Units

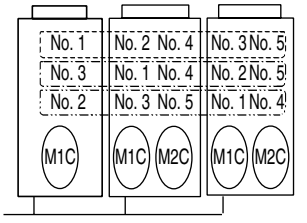
RXYQ360TA



RXYQ384TA



RXYQ408TA



Note:
1. In the case of combination of triple outdoor units, the above diagram shows master unit, slave unit 1, and slave unit 2 from left to right.
2. Compressors may operate in any pattern other than those mentioned above according to the operating status.

5.4 Compressor Step Control

- The actual rotation speed per second of the compressor (rps) depends on the type of compressor:

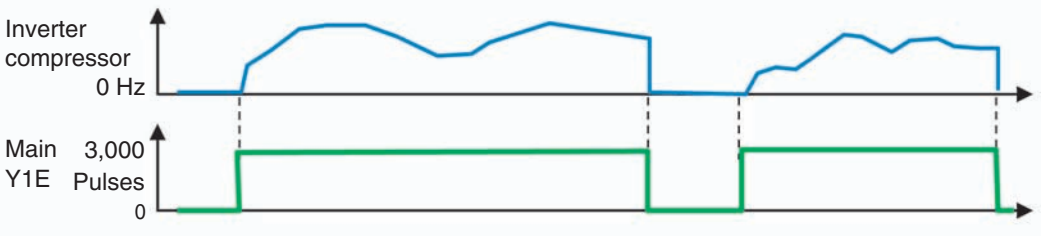
Compressor	Actual rotation speed	TAYDU			TATJU		
		72	96/120	144/168	72	96/120	144/168
JT1GCVDWYR	rps = frequency/2	●	–	●●	–	–	–
JT15JBVDWYR	rps = frequency/3	–	●	–	–	–	–
JT100GCVDKW	rps = frequency/2	–	–	–	●	–	●●
JT150JBVDW	rps = frequency/3	–	–	–	–	●	–

- The change of compressor capacity step corresponds to 1 rps / step.
- The control can skip an number of steps to reach faster the target saturated temperature.

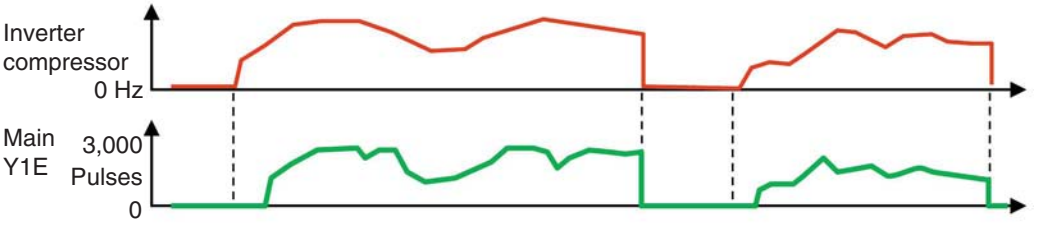
5.5 Electronic Expansion Valve Control

Electronic expansion valve Y1E

- Cooling: electronic expansion valve is used only at fully closed or fully open condition:
  - Compressor(s) OFF: fully closed (0 pulse)
  - Compressor ON:
    - Fully open (3,000 pulses): if level difference outdoor above indoor units within 50 m (164 ft) (field setting 2-49-0).
    - Limited open: if level difference outdoor maximum 90 m (295 ft) above indoor units (field setting 2-49-1).



- Heating: electronic expansion valve is used in PID control suction superheat:
  - Compressor(s) OFF: fully closed (0 pulse)
  - Compressor ON:
    - At startup: closed (check suction pressure drops)
    - Modulated opening by:
      - Suction superheat = accumulator inlet temperature – evaporating temperature.
      - Discharge superheat = discharge pipe temperature – condensing temperature.
      - Preventive change when compressor capacity step changes.
      - Limited opening when condensing temperate exceeds target condensing.



5.6 Step Control of Outdoor Fans

Used to control the revolutions of outdoor unit fans in the steps listed in table below, according to condition changes.

Step	Fan revolutions (rpm)				
	RXYQ72TA	RXYQ96/120TA		RXYQ144/168TA	
		M1F	M2F	M1F	M2F
0	0	0	0	0	0
1	350	360	0	380	0
2	370	470	0	470	0
3	400	570	0	570	0
4	460	360	360	380	380
5	560	550	520	550	520
6	710	865	665	865	665
7Y	750	940	910	940	910
7X	Cooling: 821 Heating: 800	963	933	1136	1106
8	Cooling: 821 Heating: 800	1097	1067	1360	1180

Note: 1. Figures listed above are all those controlled while in standard mode, which vary when the system is set to high static pressure or capacity priority mode.

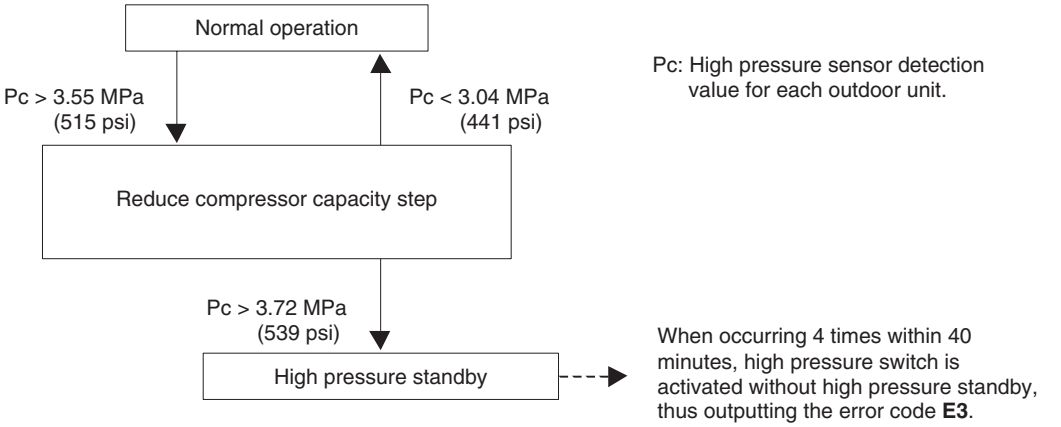
6. Protection Control

6.1 High Pressure Protection Control

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

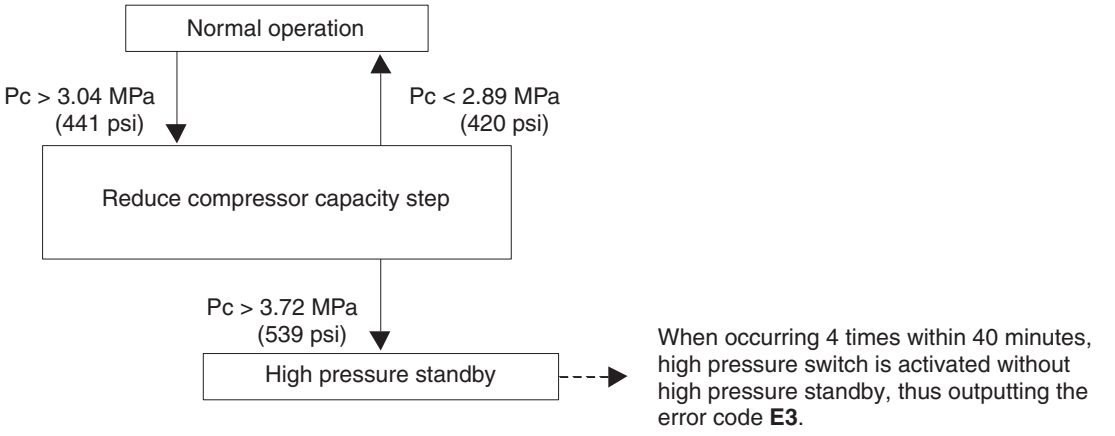
Cooling

The following control is performed in the entire system.



Heating

The following control is performed in the entire system.

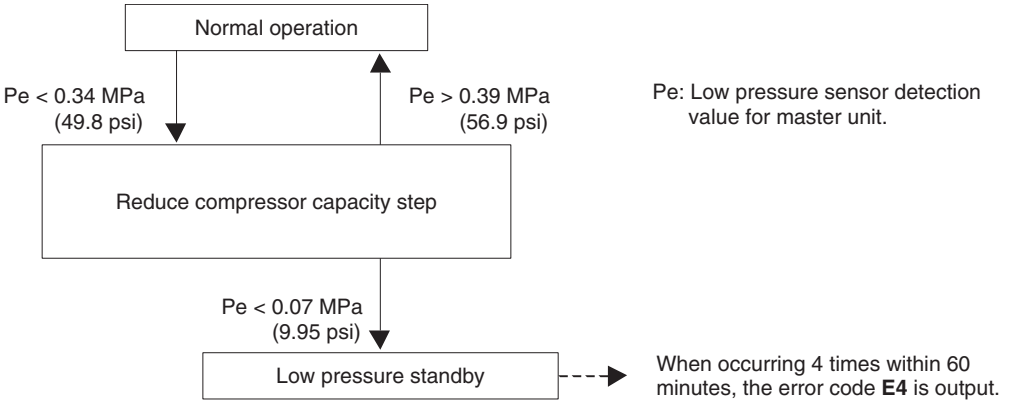


6.2 Low Pressure Protection Control

This low pressure protection control is used to protect compressors against the transient decrease of low pressure.

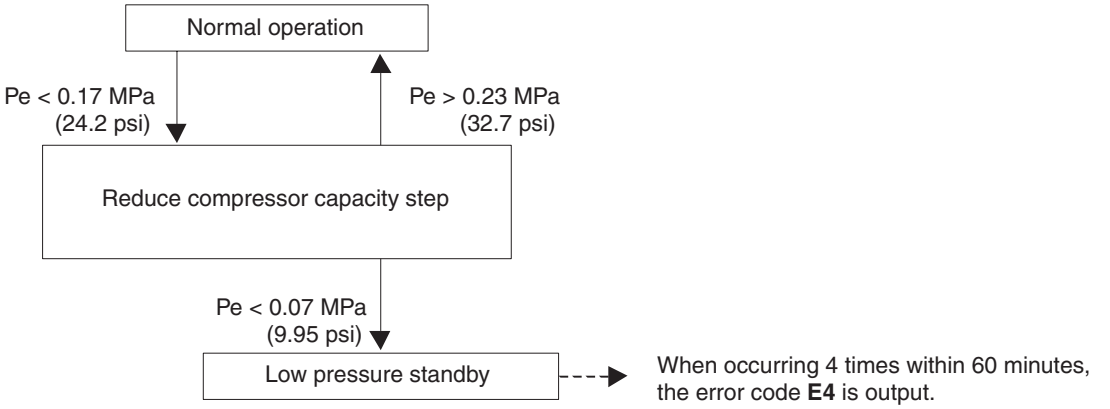
Cooling

Because of common low pressure, the following control is performed in the system.



Heating

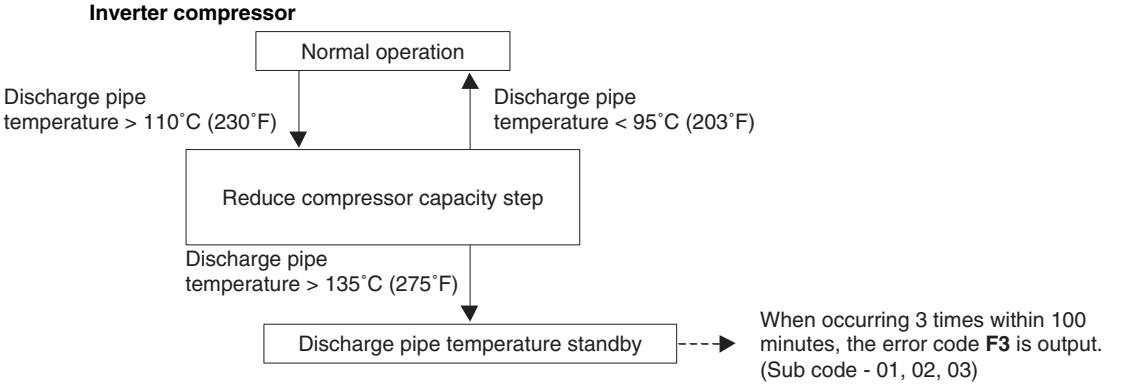
The following control is performed in the system.



6.3 Discharge Pipe Protection Control

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

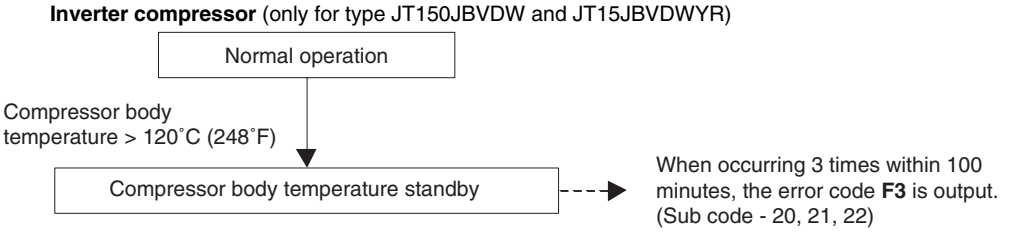
The following control is performed for each compressor of single unit as well as multi units.



6.4 Compressor Body Protection Control

This compressor body protection control is used to protect the compressor internal temperature against an error or transient increase of compressor body temperature.

The following control is performed for each compressor of single unit as well as multi units.



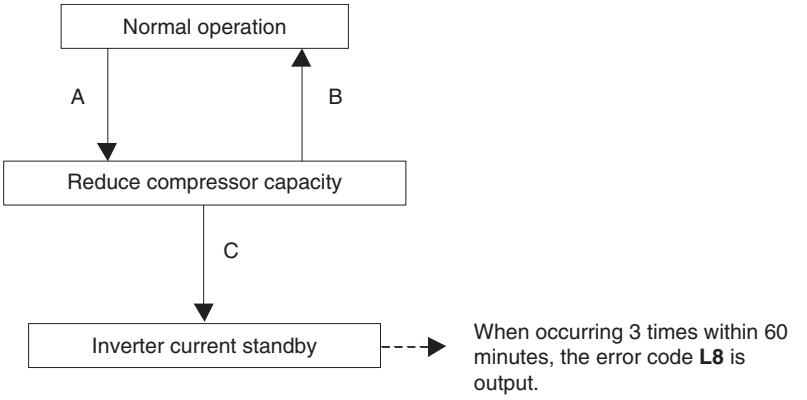
6.5 Inverter Protection Control

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

In the case of multi-outdoor-unit system, each inverter compressor performs these controls in the following sequence.

Inverter overcurrent protection control

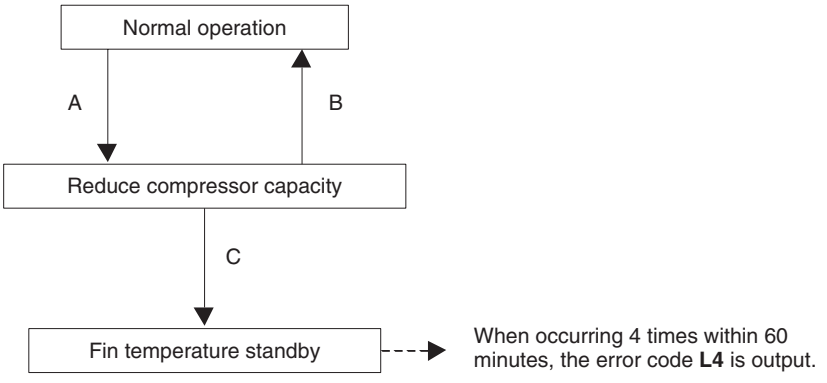
Perform the following control of integrated as well as multi units for each inverter compressor.



Model	Condition	RXYQ72TA	RXYQ96/120TA	RXYQ144/168TA	
		M1C	M1C	M1C	M2C
TAYDU	A	> 11.0 A	> 18.0 A	> 11.5 A	> 11.5 A
	B	< 11.0 A	< 18.0 A	< 11.5 A	< 11.5 A
	C	> 13.0 A	> 21.5 A	> 13.0 A	> 13.0 A
TATJU	A	> 27.6 A	> 33.8 A	> 27.6 A	> 27.6 A
	B	< 26.5 A	< 32.5 A	< 26.5 A	< 26.5 A
	C	> 33.5 A	> 45.0 A	> 33.5 A	> 33.5 A

Radiation fin temperature control

Perform the following control of integrated as well as multi units for each inverter compressor.



Model	Condition	RXYQ72TA	RXYQ96/120TA	RXYQ144/168TA	
		M1C	M1C	M1C	M2C
TAYDU	A	≥ 100°C (212°F)	≥ 82°C (180°F)	≥ 98°C (208°F)	≥ 98°C (208°F)
	B	< 97°C (207°F)	< 79°C (174°F)	< 95°C (203°F)	< 95°C (203°F)
	C	≥ 105°C (221°F)	≥ 86°C (187°F)	≥ 105°C (221°F)	≥ 105°C (221°F)
TATJU	A	≥ 83°C (181°F)	≥ 83°C (181°F)	≥ 82°C (180°F)	≥ 82°C (180°F)
	B	< 80°C (176°F)	< 80°C (176°F)	< 79°C (174°F)	< 79°C (174°F)
	C	≥ 105°C (221°F)	≥ 105°C (221°F)	≥ 85°C (185°F)	≥ 85°C (185°F)

6.6 Heating Operation Prohibition

- When outdoor air temperature becomes high, outdoor unit cannot perform heating because:
  - Low pressure sensor can give pressure value above upper limit of sensor: error **JC**.
  - Mechanical internal load on compressor increases.
  - Low compression ratio can result in insufficient compressor internal oil lubrication.
- Heating is disabled when outdoor air temperature raises above 26°C (78.8°F).
  - Forced thermostat-OFF indoor units.
  - Outdoor fan operates at step 1.
- Heating returns available when outdoor air temperature drops below 24°C (75.2°F).

7. Special Control

7.1 Pump Down Residual Operation

Pc : High pressure sensor detection value

Pe : Low pressure sensor detection value

- To avoid refrigerant emigration when outdoor unit stops operation (thermostat or safety), all electronic expansion valves are closed.

7.2 Outdoor Unit Rotation

In the case of multi-outdoor-unit system, this outdoor unit rotation is used to prevent the compressor from burning out due to unbalanced oil level between outdoor units.

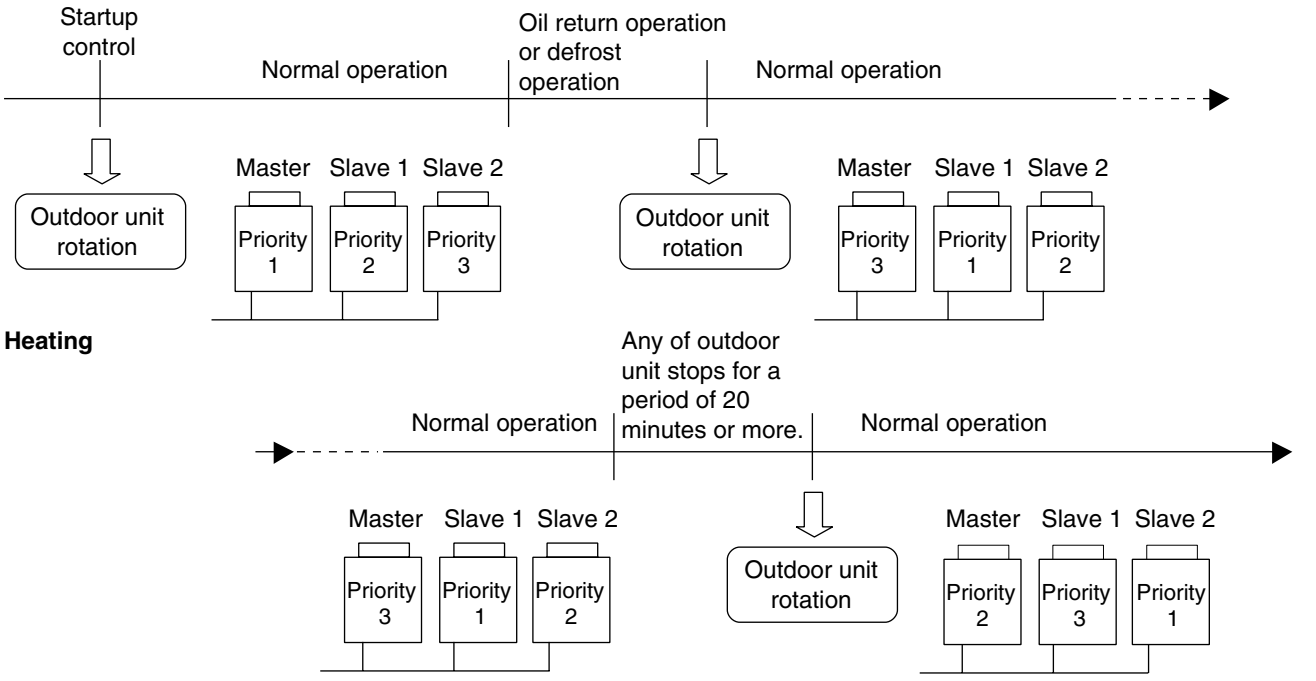
Details of outdoor unit rotation

In the case of multi-outdoor-unit system, each outdoor unit is given an operating priority for the control.
Outdoor unit rotation makes it possible to change the operating priority of outdoor units.
Thus, the system becomes free of compressors that stop over an extended period of time at the time of partial loading, preventing unbalanced oil level.

Timing of outdoor unit rotation

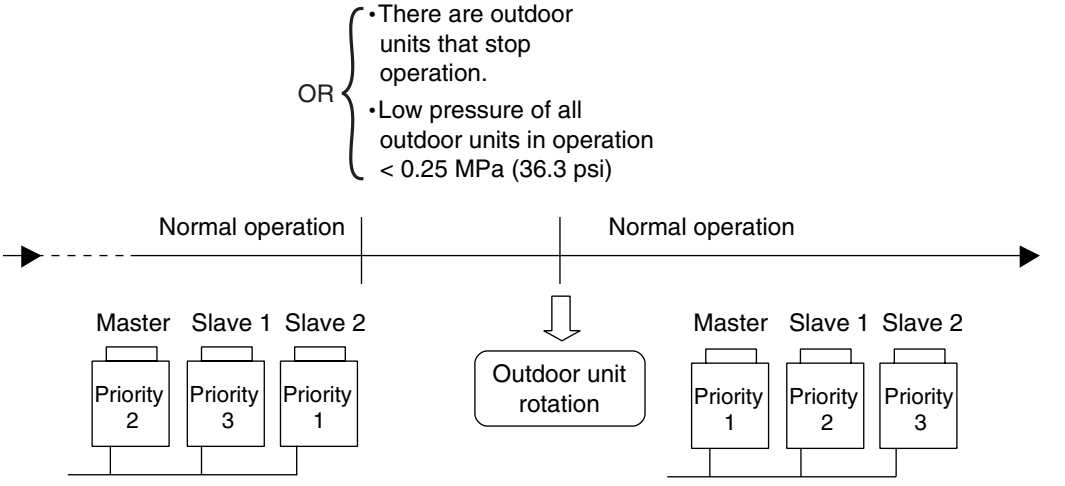
OR
- After oil return operation
- After defrost operation
- At the beginning of the startup control
- When any of outdoor unit stops for a period of 20 minutes or more (in heating).
- There are outdoor units that stop operation (in cooling).
- Low pressure of all outdoor units in operation is less than 0.25 MPa (36.3 psi) (in cooling).

Example) The following diagram shows outdoor unit rotation in combination of 3 outdoor units.



Heating

Cooling



Note: 1. "Master unit", "slave unit 1" and "slave unit 2" in this section are the names for installation. They are determined in installation work, and not changed thereafter. (These names are different from "master unit" and "slave unit" for control.)
The outdoor unit connected the control wires (F1 and F2) for the indoor unit should be designated as master unit.
Consequently, The LED display on the main PCB for "master unit", "slave unit 1" and "slave unit 2" do not change.

7.3 Oil Return Operation

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

Tc : High pressure equivalent saturation temperature

Te : Low pressure equivalent saturation temperature

Ts1: Suction pipe temperature detected by thermistor R3T

7.3.1 Oil Return Operation in Cooling

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 2 hours after power supply is turned ON and then every 8 hours.)

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

Part Name	Electric Symbol	RXYQ72-120TA	RXYQ144/168TA	Function of Functional Part
Inverter compressor 1	M1C	●	●	Capacity step PI control
Inverter compressor 2	M2C	—	●	
Inverter fan 1	M1F	●	●	TC control
Inverter fan 2	M2F	(●)*1	●	
Electronic expansion valve (Main)	Y1E	●	●	3,000 pulses
Electronic expansion valve (Injection)	Y2E	●	●	0 pulse
Four way valve	Y1S	●	●	ON
Solenoid valve (Accumulator oil return)	Y2S	●	●	ON
Solenoid valve (Oil return 1)	Y3S	●	●	ON
Solenoid valve (Oil return 2)	Y4S	—	●	
Ending conditions				& (· A lapse of 3 minutes. OR (· Ts1–Te < 3˚C (5.4˚F) · A lapse of 6 minutes while the frequency is more than that of oil return operation.))

●: equipped

–: not equipped

∗1: RXYQ96/120TA only

Indoor unit actuator		Cooling oil return operation
Fan	Thermostat ON unit	Remote controller setting
	Stopping unit	OFF
	Thermostat OFF unit	Remote controller setting
Electronic expansion valve	Thermostat ON unit	Normal control
	Stopping unit	224 pulses
	Thermostat OFF unit	Normal control with forced thermostat ON

7.3.2 Oil Return Operation in Heating

Starting conditions

Part Name	Electric Symbol	RXYQ72-120TA	RXYQ144/168TA	Function of Functional Part
Inverter compressor 1	M1C	●	●	RXYQ72TA: 266 Hz RXYQ96/120TA: 188 Hz RXYQ144/168TA: 252 Hz + 252 Hz
Inverter compressor 2	M2C	—	●	
Inverter fan 1	M1F	●	●	With high pressure OFF ←→ Step 4 ←→ Step 6
Inverter fan 2	M2F	(●)*1	●	
Electronic expansion valve (Main)	Y1E	●	●	RXYQ72TA: 480 pulses RXYQ96-168TA: 3,000 pulses
Electronic expansion valve (Injection)	Y2E	●	●	0 pulse
Four way valve	Y1S	●	●	OFF
Solenoid valve (Accumulator oil return)	Y2S	●	●	ON
Solenoid valve (Oil return 1)	Y3S	●	●	ON
Solenoid valve (Oil return 2)	Y4S	—	●	
Ending conditions				OR (• A lapse of 6 min. • Ts1 – Te < 3°C (5.4°F)

●: equipped
–: not equipped
*1: RXYQ96/120TA only

Indoor unit actuator		Heating oil return operation
Fan	Thermostat ON unit	OFF
	Stopping unit	OFF
	Thermostat OFF unit	OFF
Electronic expansion valve	Thermostat ON unit	Oil return EV opening degree
	Stopping unit	Oil return EV opening degree
	Thermostat OFF unit	Oil return EV opening degree

7.4 Defrost Operation

To defrost the outdoor heat exchanger while in evaporator, the defrost operation is conducted to recover the heating capacity.
Tc : High pressure equivalent saturation temperature
Te : Low pressure equivalent saturation temperature

Starting conditions

Referring to the set conditions for the following items, start the defrost operation.
• Heat transfer coefficient of the outdoor heat exchanger
• Heat exchanger deicer temperature (Tb)
• Timer (Set to 2 hours at minimum.)
Furthermore, the heat transfer coefficient of the outdoor unit Evaporator is computed from Tc, Te, and compressor loads.

Part Name	Electric Symbol	RXYQ72-120TA	RXYQ144/168TA	Operation
Inverter compressor 1	M1C	●	●	RXYQ72TA: 266 Hz RXYQ96/120TA: 188 Hz RXYQ144/168TA: 252 Hz + 252 Hz
Inverter compressor 2	M2C	—	●	
Inverter fan 1	M1F	●	●	With high pressure OFF ←→ Step 4 ←→ Step 6
Inverter fan 2	M2F	(●)*1	●	
Electronic expansion valve (Main)	Y1E	●	●	RXYQ72TA: 480 pulses RXYQ96-168TA: 3,000 pulses
Electronic expansion valve (Injection)	Y2E	●	●	0 pulse
Four way valve	Y1S	●	●	OFF
Solenoid valve (Accumulator oil return)	Y2S	●	●	ON
Solenoid valve (Oil return 1)	Y3S	●	●	ON
Solenoid valve (Oil return 2)	Y4S	—	●	
Ending conditions				OR (• A lapse of 15 min. • Tb > 11°C (51.8°F) continues for 30 sec. or more

●: equipped
–: not equipped
∗1: RXYQ96/120TA only

Indoor unit actuator		During defrost
Fan	Thermostat ON unit	OFF
	Stopping unit	OFF
	Thermostat OFF unit	OFF
Electronic expansion valve	Thermostat ON unit	Defrost EV opening degree
	Stopping unit	Defrost EV opening degree
	Thermostat OFF unit	Defrost EV opening degree

7.5 Drain Pan Heater (Option)

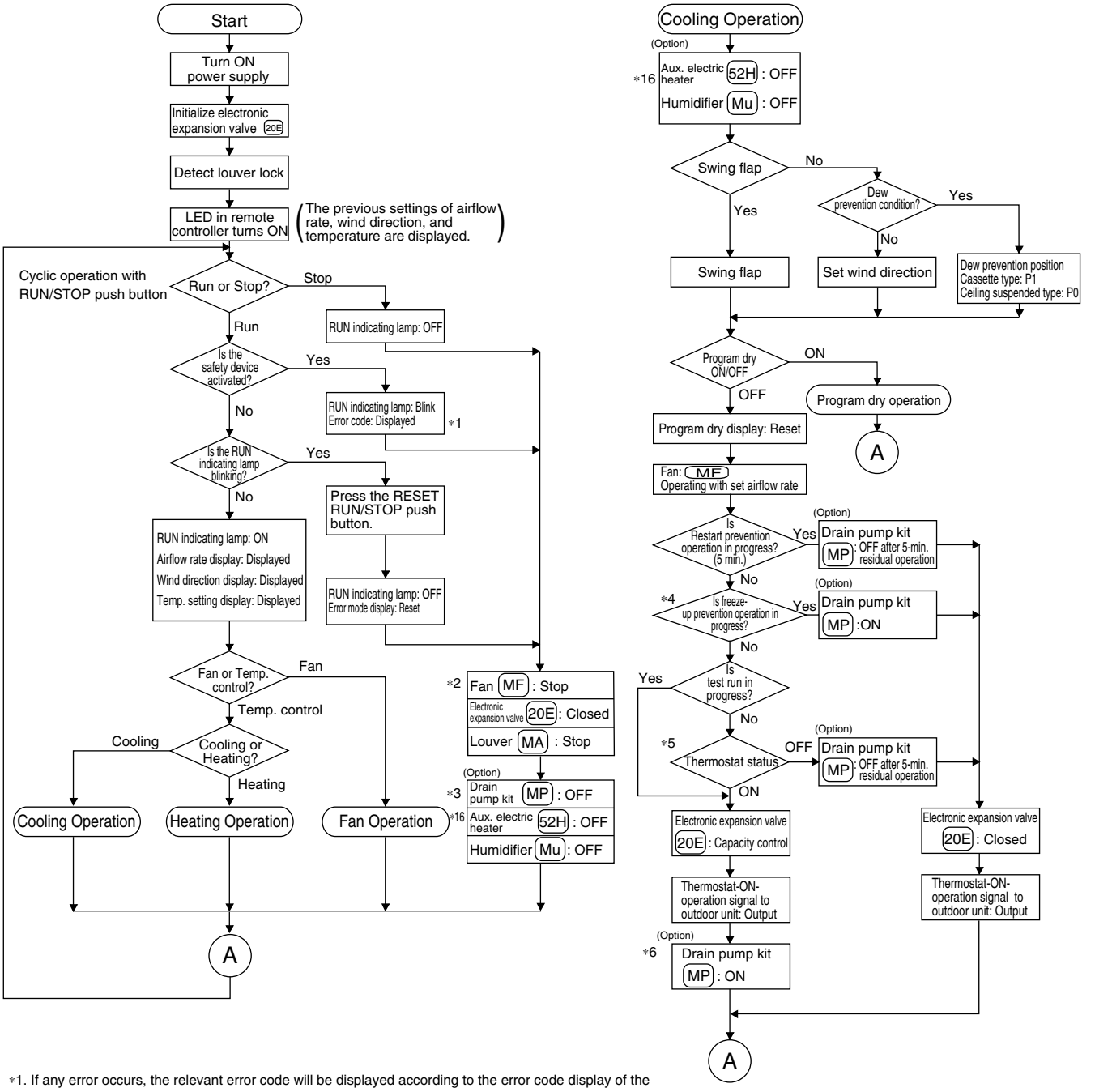
When the drain pan heater is connected, it operates below.

Operating conditions

& (• Outdoor air temperature < 3°C (37.4 °F)
• During defrost operation)

8. Outline of Control (Indoor Unit)

8.1 Operation Flowchart



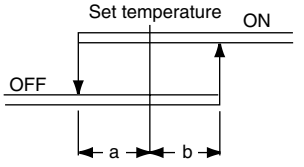
*1. If any error occurs, the relevant error code will be displayed according to the error code display of the remote controller.

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

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

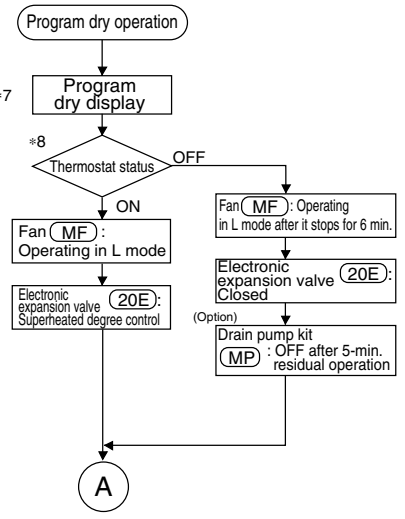
*4. If the evaporator inlet temperature is kept at not more than –5°C (23˚F) for a period of cumulative 10 min. or not more than –1°C (30.2˚F) for a cumulative period of 40 min., freeze-up prevention operation will be conducted. If the evaporator inlet temperature is kept at not less than 7°C (44.6˚F)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

*5. Thermostat status



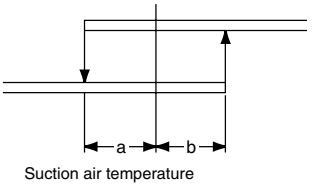
a = b = 1˚C (1.8˚F) or 0.5˚C (0.9˚F)
The values a and b depend on the field setting 12(22)-2.

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

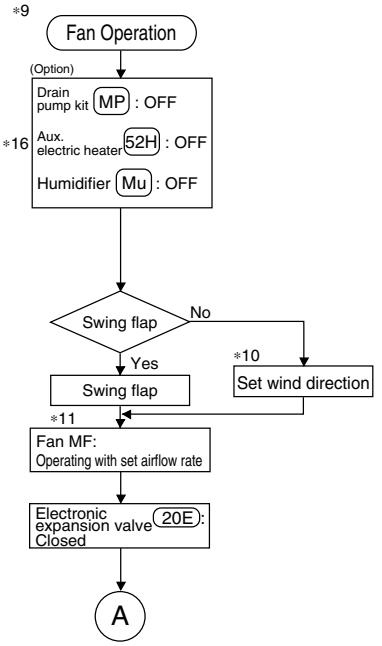


∗7. Program dry display
No set temperature and airflow rate of the remote controller are displayed.

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



Suction air temperature

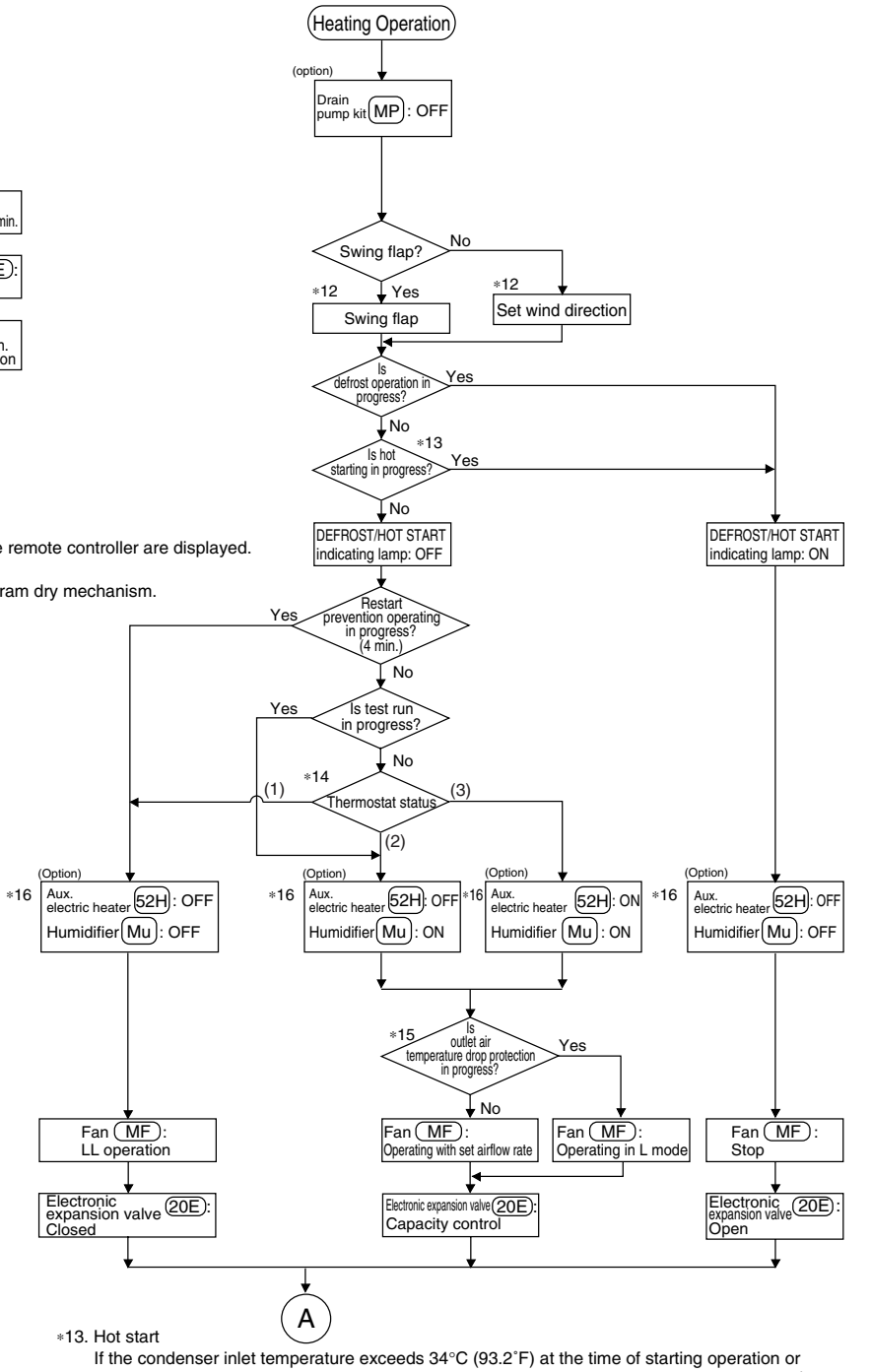


∗9. Fan operation
By setting the remote controller to Fan, the fan will operate with thermostat OFF in set temperature control operation mode.

∗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.

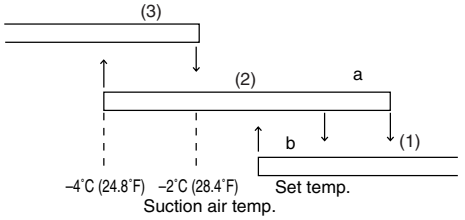
∗11. Fan
According to fan speed instruction from the remote controller, the fan is put into operation in LL mode while in heating operation.

∗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.

∗16. The control of auxiliary electric heater connected to FXTQ-TA models differ from this flowchart. For details, refer to "Heater Control (FXTQ-TA Models)" on page 89.

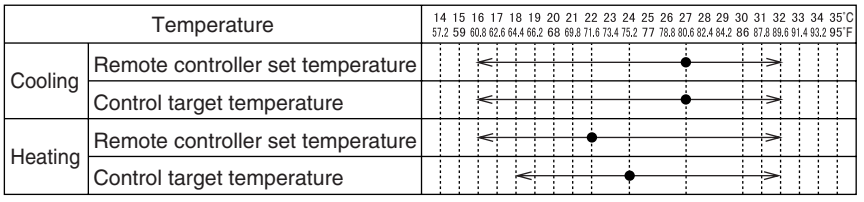
8.2 Set Temperature and Control Temperature

8.2.1 Without Optional Infrared Floor Sensor

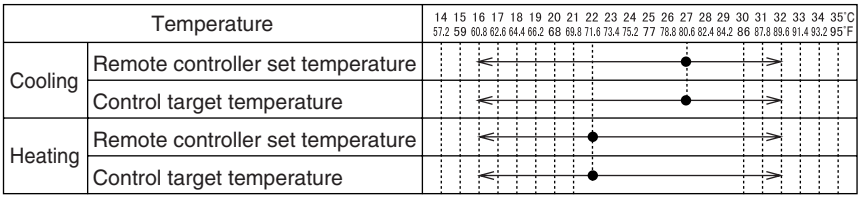
The relationship between remote controller set temperature and control target temperature is described below.

- 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)**



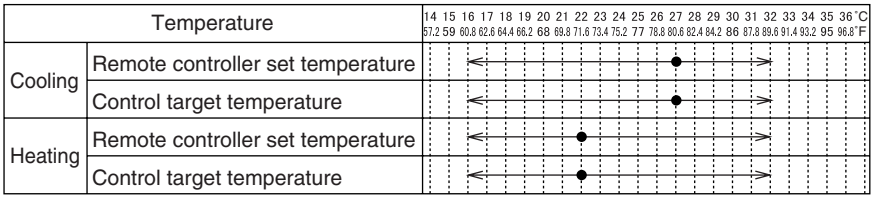
Examples are given to illustrate a control target temperature that satisfies the remote controller set temperature.

8.2.2 With Optional Infrared Floor Sensor

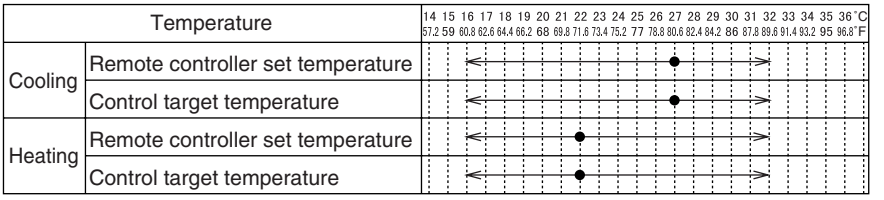
The relationship between remote controller set temperature and control target temperature is described below.

- 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.

8.3 Remote Controller Thermistor

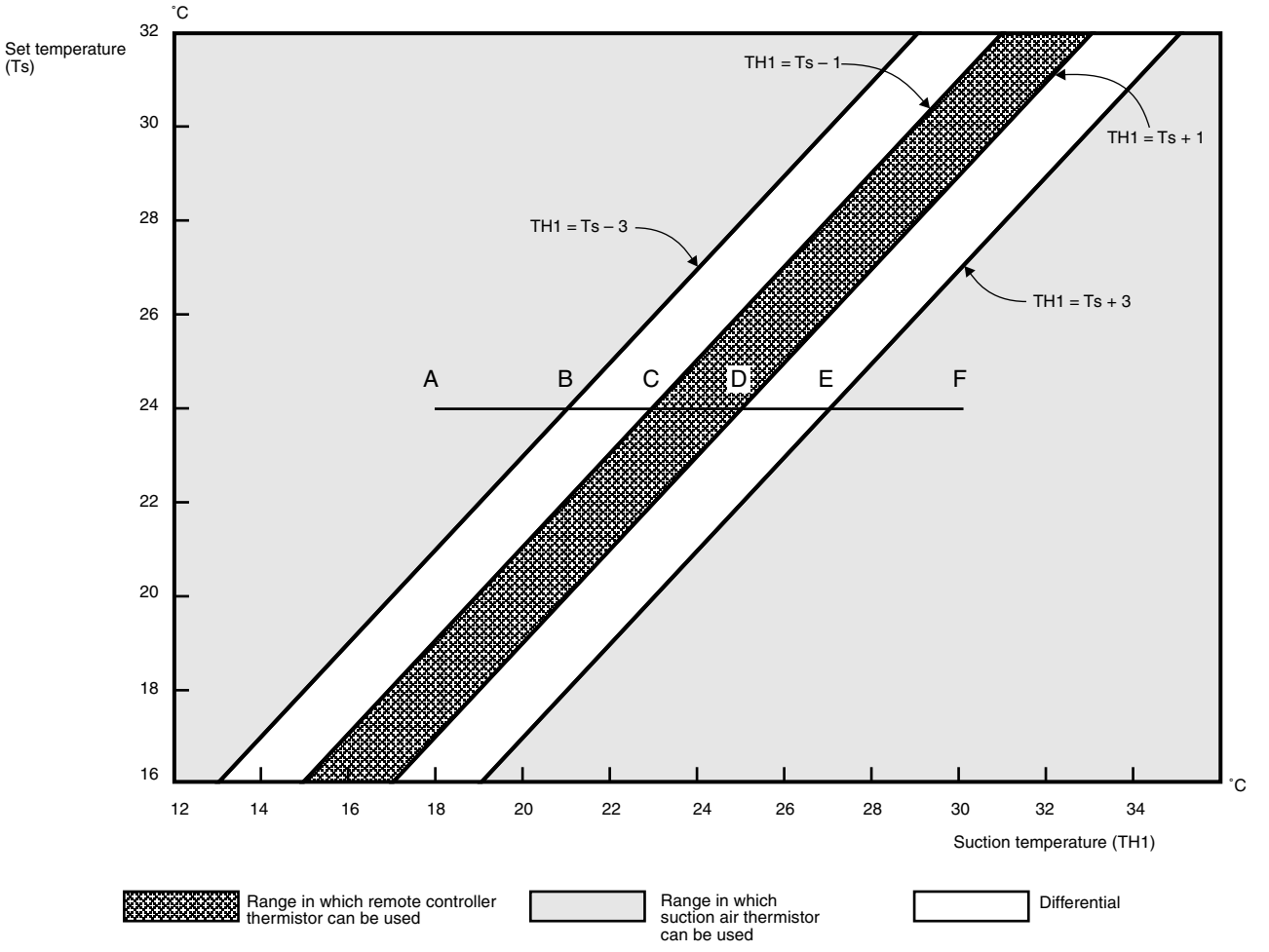
Temperature is controlled by both the remote controller thermistor and suction air thermistor for the indoor unit. (This is however limited to when the field setting for the remote controller thermistor is set to Use.)

Note: When outdoor air is introduced to the air-conditioner with mixed into indoor air, the room temperature may fail to be set temperature, since TS and TH1 do not enter the area of “use range of remote control thermistor.” In such a case, put the remote sensor (optional accessory) in your room, and use it with setting “do not use remote control thermostat.”

∗ FXTQ-TA models do not have this control because they do not have suction air thermistor. The thermistor is selectable manually when remote sensor (optional accessory) is installed.

Cooling

If there is a significant difference in the set temperature and the suction temperature, fine adjustment control is carried out using a suction air thermistor, or using the remote controller thermistor near the position of the user when the suction temperature is near the set temperature.



■ **Assuming the set temperature in the figure above is 24°C (75°F), and the suction temperature has changed from 18°C (64°F) to 30°C (86°F) (A → F):**

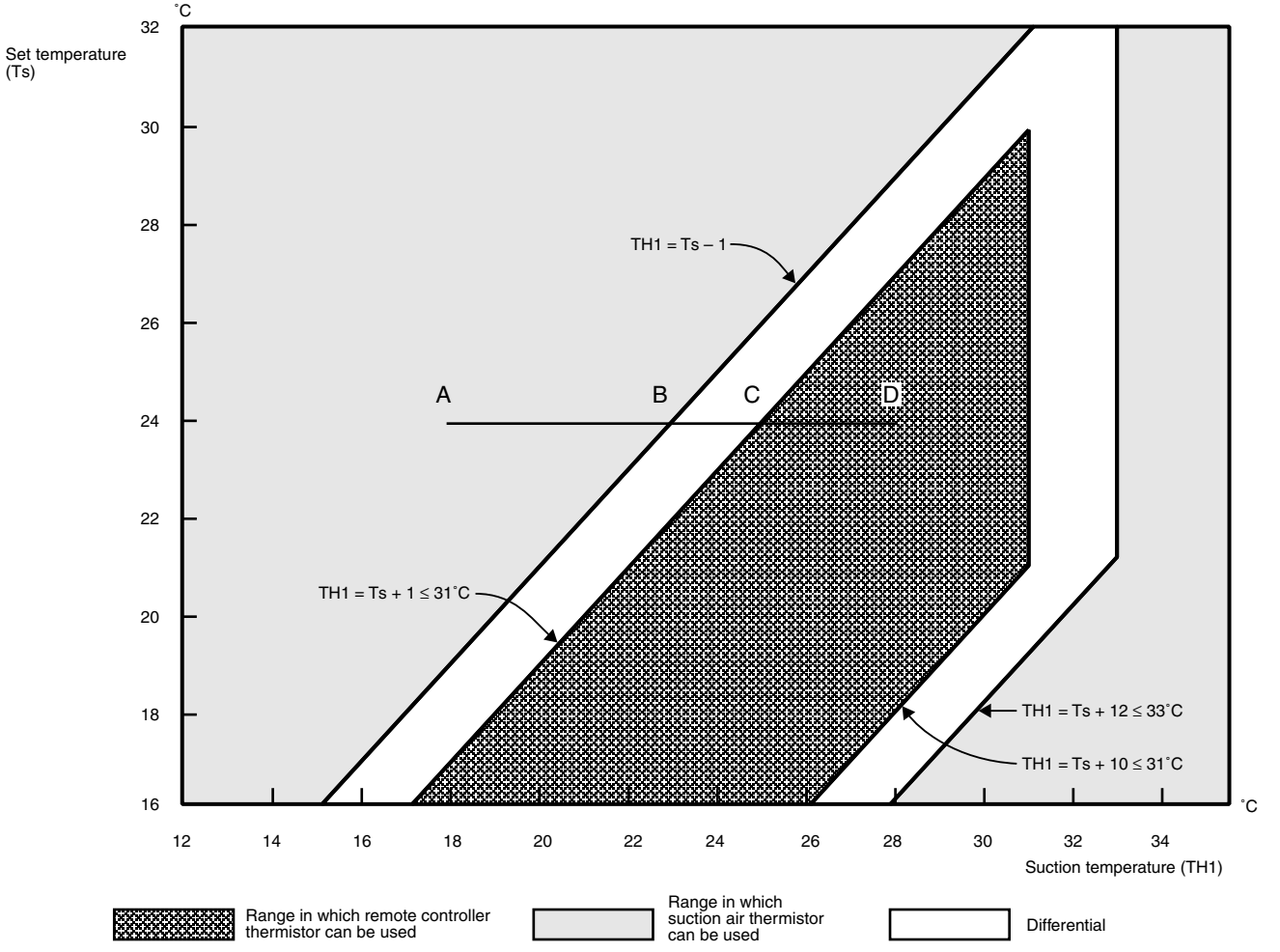
(This example also assumes there are several other air conditioners, and the suction temperature changes even when the thermostat is off.)
Suction air thermistor is used for temperatures from 18°C (64°F) to 23°C (73°F) (A → C).
Remote controller thermistor is used for temperatures from 23°C (73°F) to 27°C (81°F) (C → E).
Suction air thermistor is used for temperatures from 27°C (81°F) to 30°C (86°F) (E → F).

■ **Assuming suction temperature has changed from 30°C (86°F) to 18°C (64°F) (F → A):**

Suction air thermistor is used for temperatures from 30°C (86°F) to 25°C (77°F) (F → D).
Remote controller thermistor is used for temperatures from 25°C (77°F) to 21°C (70°F) (D → B).
Suction air thermistor is used for temperatures from 21°C (70°F) to 18°C (64°F) (B → A).

Heating

When heating, the hot air rises to the top of the room, resulting in the temperature being lower near the floor where the occupants are. When controlling by suction air thermistor only, the indoor unit may therefore be turned off by the thermostat before the lower part of the room reaches the set temperature. The temperature can be controlled so the lower part of the room where the occupants are does not become cold by widening the range in which remote controller thermistor can be used so that suction temperature is higher than the set temperature.



■ **Assuming the set temperature in the figure above is 24°C (75°F), and the suction temperature has changed from 18°C (64°F) to 28°C (82°F) (A → D):**

(This example also assumes there are several other air conditioners, and the suction temperature changes even when the thermostat sensor is off.)
Suction air thermistor is used for temperatures from 18°C (64°F) to 25°C (77°F) (A → C).
Remote controller thermistor is used for temperatures from 25°C (77°F) to 28°C (82°F) (C → D).

■ **Assuming suction temperature has changed from 28°C (82°F) to 18°C (64°F) (D → A):**

Remote controller thermistor is used for temperatures from 28°C (82°F) to 23°C (73°F) (D → B).
Suction air thermistor is used for temperatures from 23°C (73°F) to 18°C (64°F) (B → A).

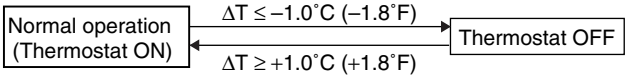
8.4 Thermostat Control

8.4.1 Without Optional Infrared Floor Sensor

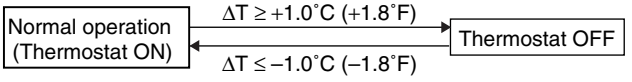
Whether the thermostat is turned on or off is determined by the difference between the remote controller set temperature and the actual detected room temperature (∗1).

Normal operation

· Cooling operation

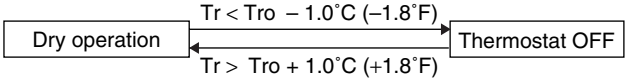


· Heating operation

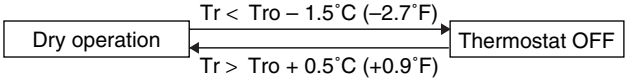


Dry operation

· When Tro < 24.5°C (76.1°F)

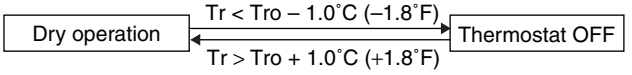


· When Tro ≥ 24.5°C (76.1°F)



FXTQ-TA only

If the field setting 14(24)-5 is set to **02**, Tro will be the same as the cooling set temperature at the time of starting dry operation.



∗1: The thermistor for room temperature detection depends on the field setting 10(20)-2.

∗2: Description of symbols

ΔT : Room temperature – Remote controller set temperature

Tro : Room temperature at the start of dry operation

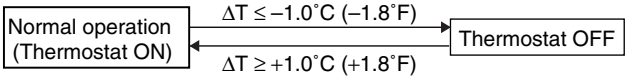
Tr : Room temperature

8.4.2 With Optional Infrared Floor Sensor

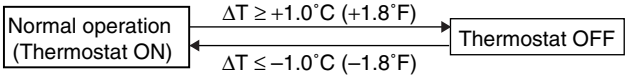
Whether the thermostat is turned on or off is determined by the difference between the remote controller set temperature and the detected temperature around people.

Normal operation

· Cooling operation

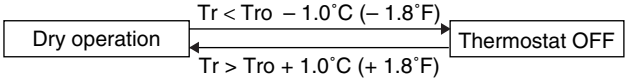


· Heating operation

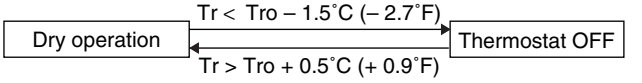


Dry operation

· When Tro ≤ 24.5°C (76.1°F)



· When Tro > 24.5°C (76.1°F)



∗: Description of symbols
ΔT : Room temperature or temperature around people – Remote controller set temperature
Tro : Room temperature or temperature around people at the start of dry operation
Tr : Room temperature or temperature around people

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.

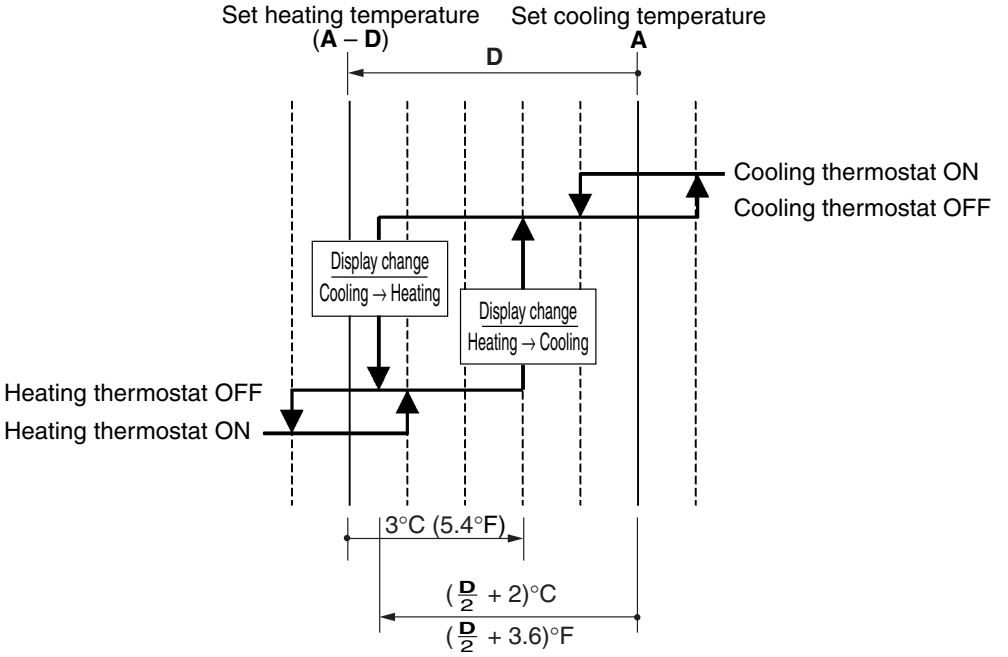
8.4.3 Thermostat Control with Operation Mode Set to AUTO

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 referring to page 96 and later (Field Setting from Remote Controller).

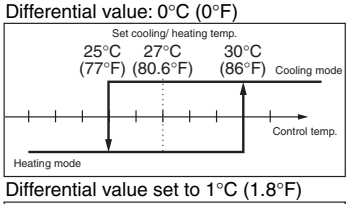
Mode No.	First code No.	Contents of setting	Second code No.							
			01	02	03	04	05	06	07	08
12	4	Differential value while in AUTO operation mode	0°C 0°F	1°C 1.8°F	2°C 3.6°F	3°C 5.4°F	4°C 7.2°F	5°C 9.0°F	6°C 10.8°F	7°C 12.6°F

: Factory setting

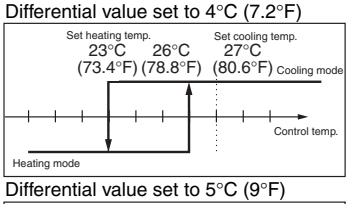


(Ex.) When automatic cooling temperature is set to 27°C (80.6°F):

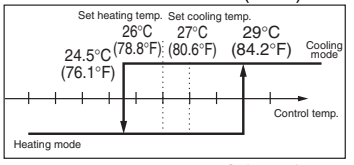
Differential value: 0°C (0°F)



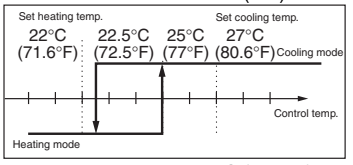
Differential value set to 4°C (7.2°F)



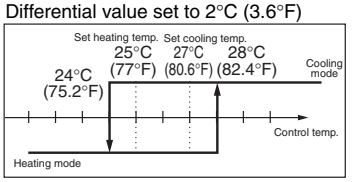
Differential value set to 1°C (1.8°F)



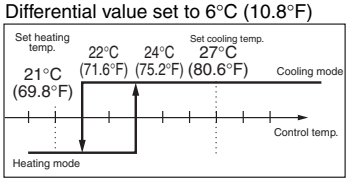
Differential value set to 5°C (9°F)



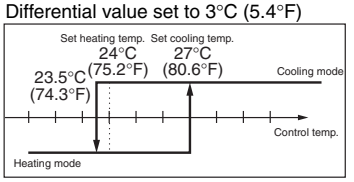
Differential value set to 2°C (3.6°F)



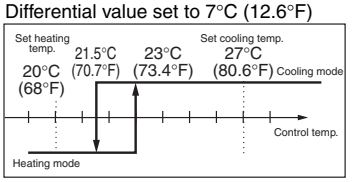
Differential value set to 6°C (10.8°F)



Differential value set to 3°C (5.4°F)

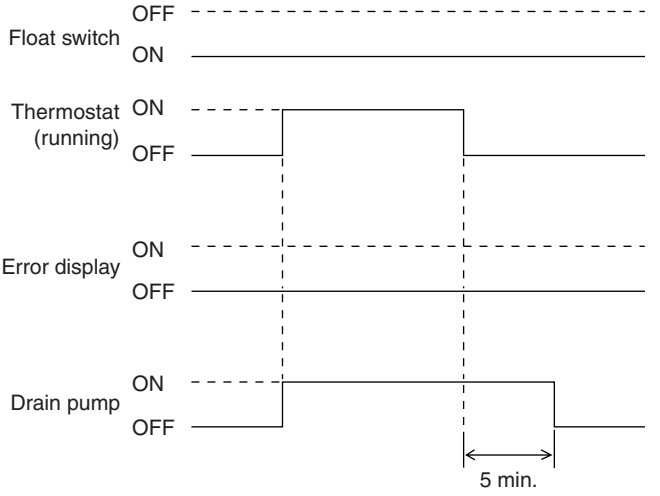


Differential value set to 7°C (12.6°F)



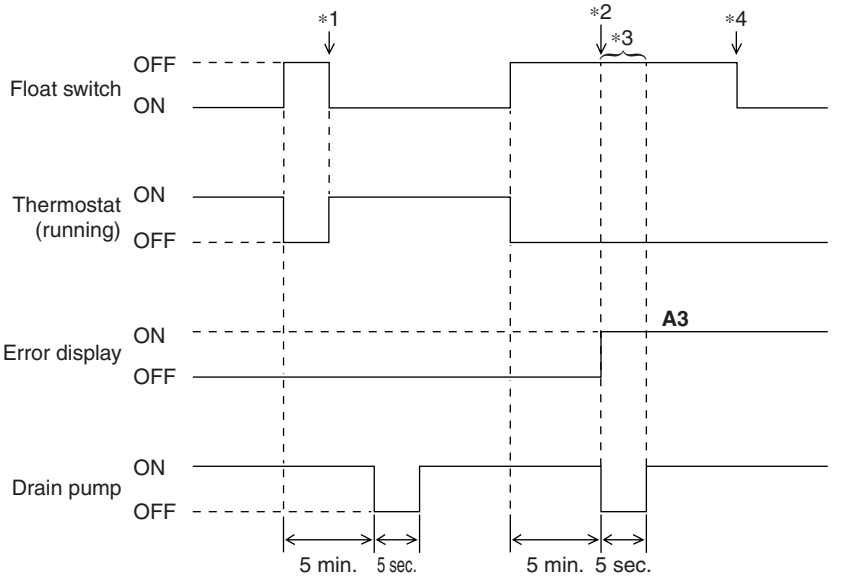
8.5 Drain Pump Control

8.5.1 Normal Operation



- The float switch is ON 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.

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



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

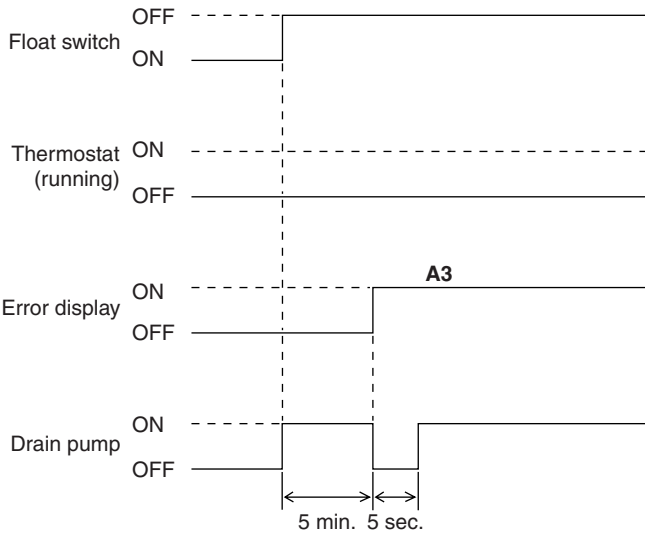
∗1. If the float switch turns ON again during the residual operation of the drain pump, cooling operation also turns on again (thermostat ON).

∗2. If the float switch remains OFF even after the residual operation of the drain pump has ended, the error code **A3** is displayed on the remote controller.

∗3. The drain pump turns OFF once residual operation has ended, then turns ON again after 5 seconds.

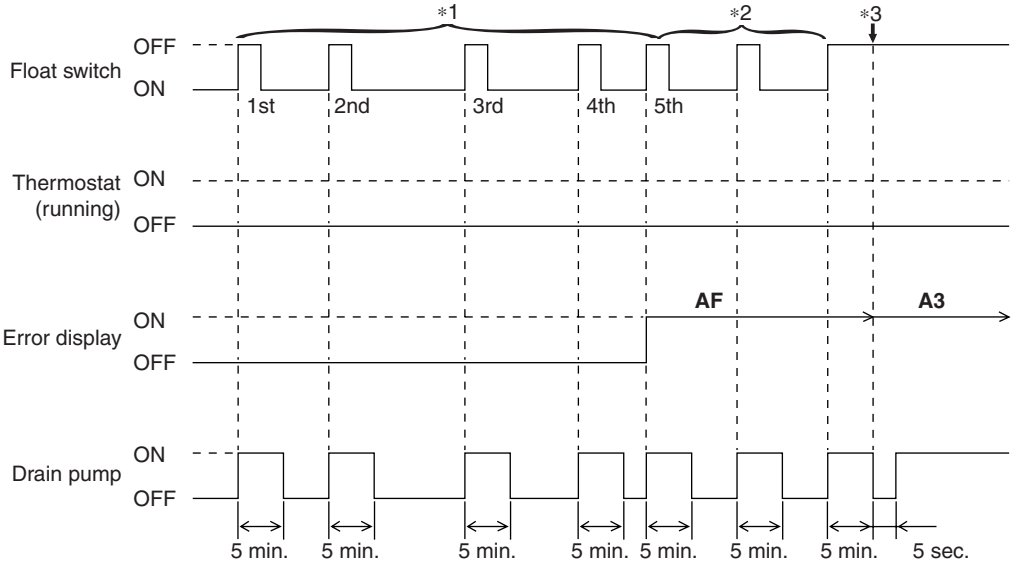
∗4. After **A3** is displayed and the unit comes to an abnormal stop, the thermostat will remain OFF even if the float switch turns ON again.

8.5.3 If the Float Switch is OFF with the Thermostat OFF in Cooling Operation



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

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



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

∗1: If the float switch continues to turn OFF and ON 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 OFF even after the residual operation of the drain pump has ended, the error code **A3** will be displayed on the remote controller.

8.6 Control of Electronic Expansion Valve

Electronic expansion valves in indoor units have the functions of conducting superheated degree control in cooling operation and subcooling degree control in heating operation. However, if the indoor units receive any control command such as a protection control command or a special control command from the outdoor unit, the units will give a 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 smaller, SHS becomes higher.

• Subcooling 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 subcooling 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 subcooling degree (SCS).
At that time, corrections to the subcooling degree are made according to differences (ΔT) between set temperature and suction air temperatures.

SC = Tc – Tl
SC: Condenser outlet subcooling 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 subcooling 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 smaller, SCS becomes higher.

8.7 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:

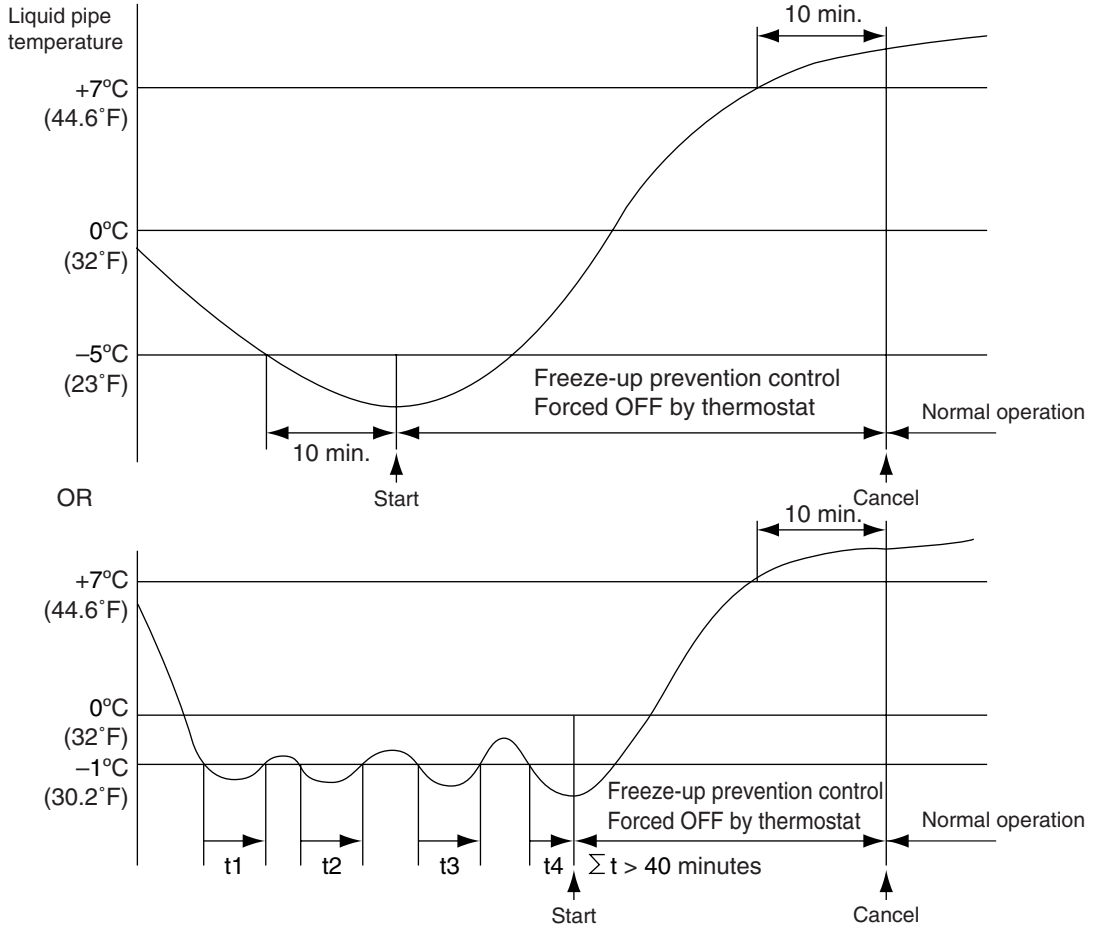
Liquid pipe temperature ≤ – 1°C (30.2°F) (for total of 40 minutes)

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

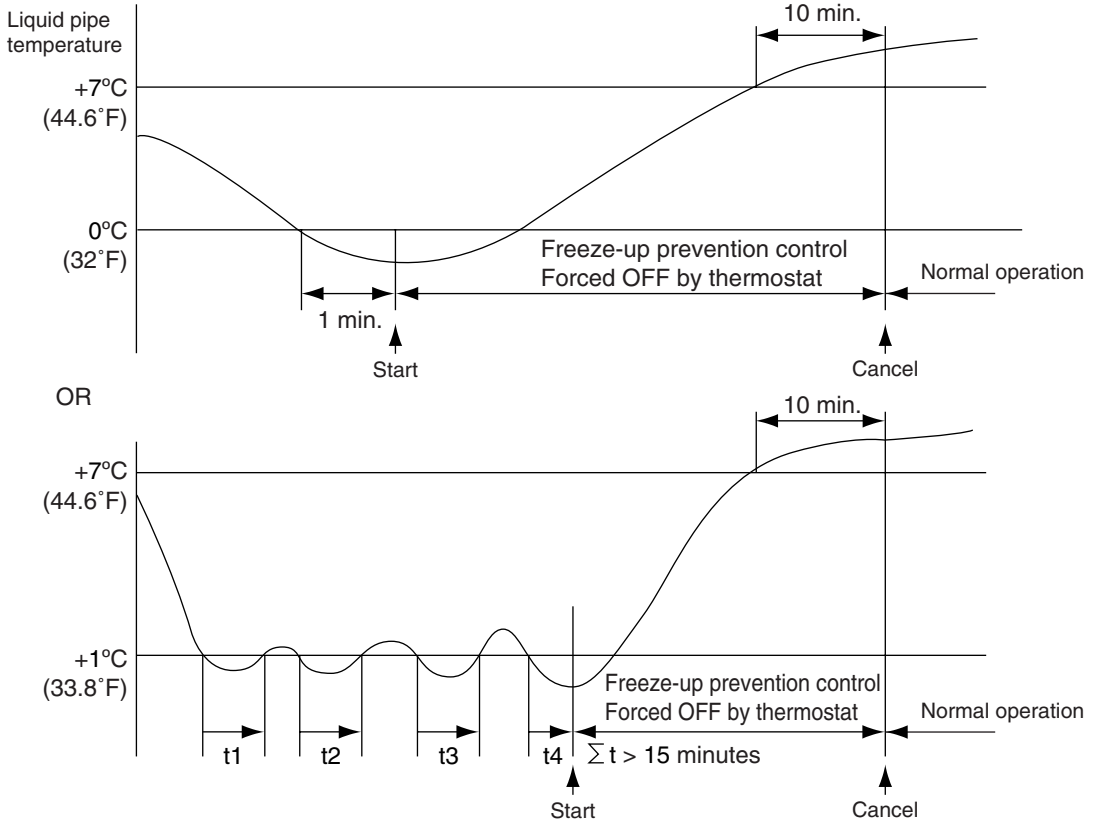
· For comfort, suppression of frequent thermostat ON/OFF is necessary.

· 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 FXFQ, FXZQ or FXUQ, 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.)



8.8 List of Swing Flap Operations

Swing flaps operate as shown in table below.

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

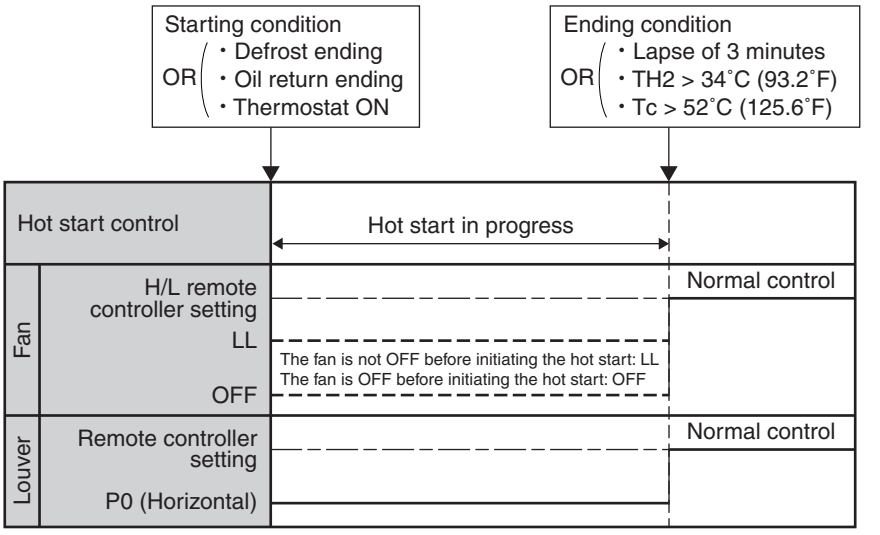
Note: ∗1. L or LL only on FXFQ models

8.9 Hot Start Control (In Heating Only)

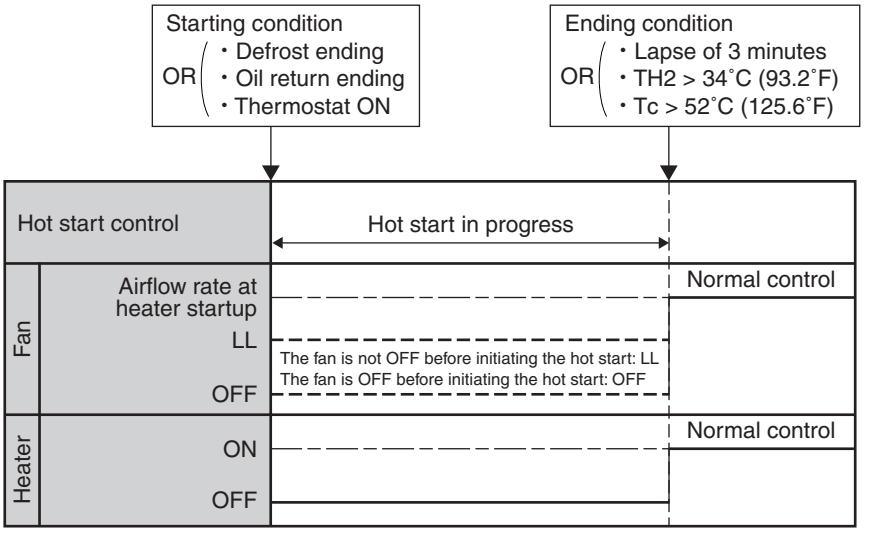
At startup with thermostat ON or after the completion of defrosting in heating operation, the indoor fan is controlled to prevent cold air from blasting out and ensure startup capacity.

TH2 : Temperature detected with the gas thermistor

Tc : High pressure equivalent saturated temperature

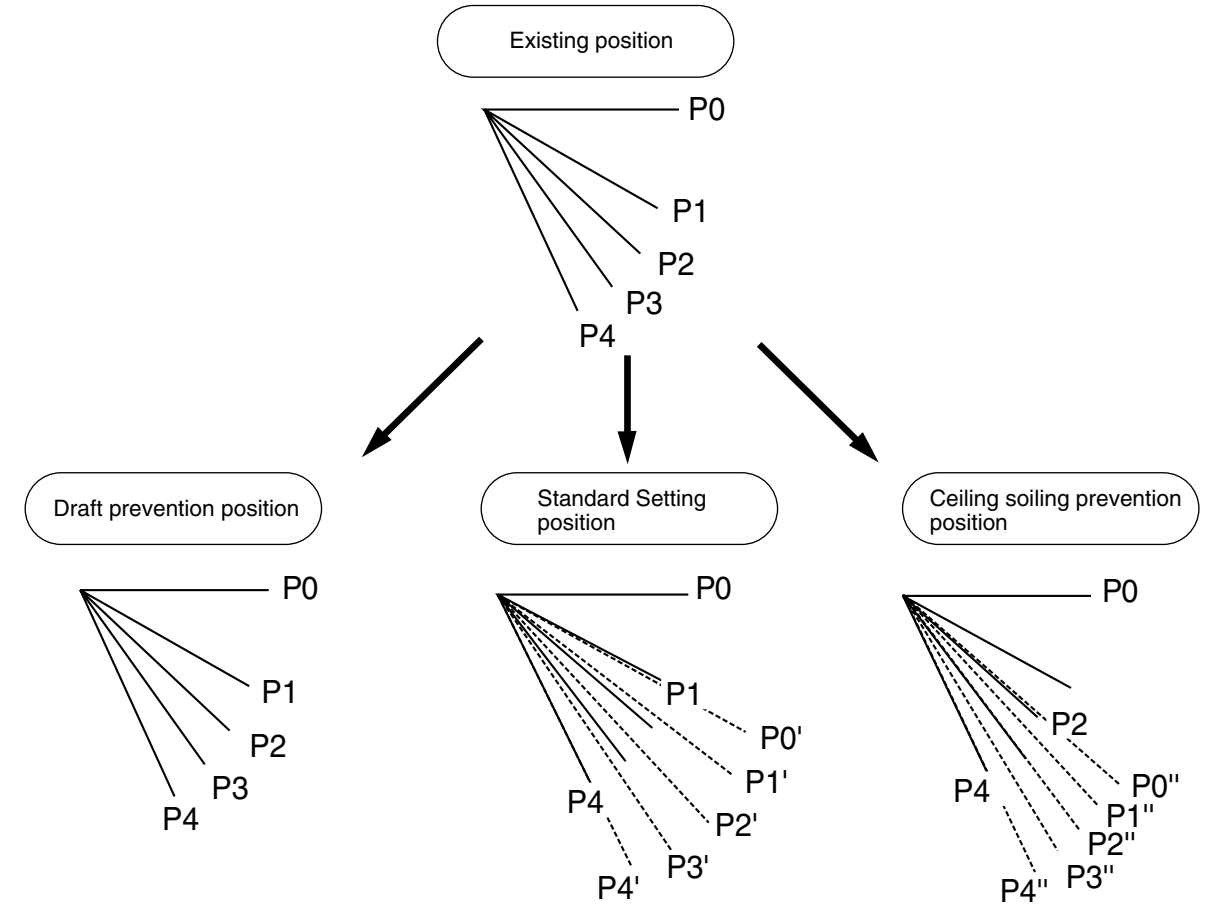


■ **When the heater of FXTQ is to be used**



8.10 Louver Control for Preventing Ceiling Dirt

We have added a control feature that allows you to select the range of 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 FXFQ, FXZQ and FXEQ models)



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				
Dirt 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

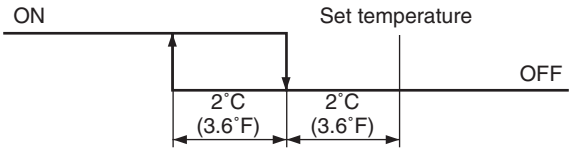
8.11 Heater Control (Except FXTQ-TA Models)

Note: Optional PCB KRP1B ... is required.

The heater control is conducted in the following manner.

Normal control

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

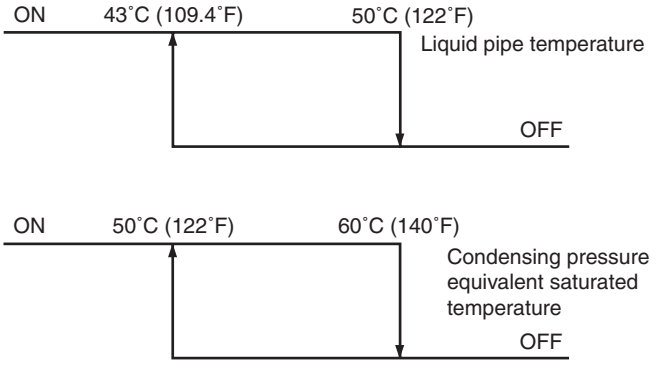


Overload control

When the system is overloaded in heating, the heater will be turned OFF in the following 2 manners.

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

(2) The 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 with or without heater equipped.)

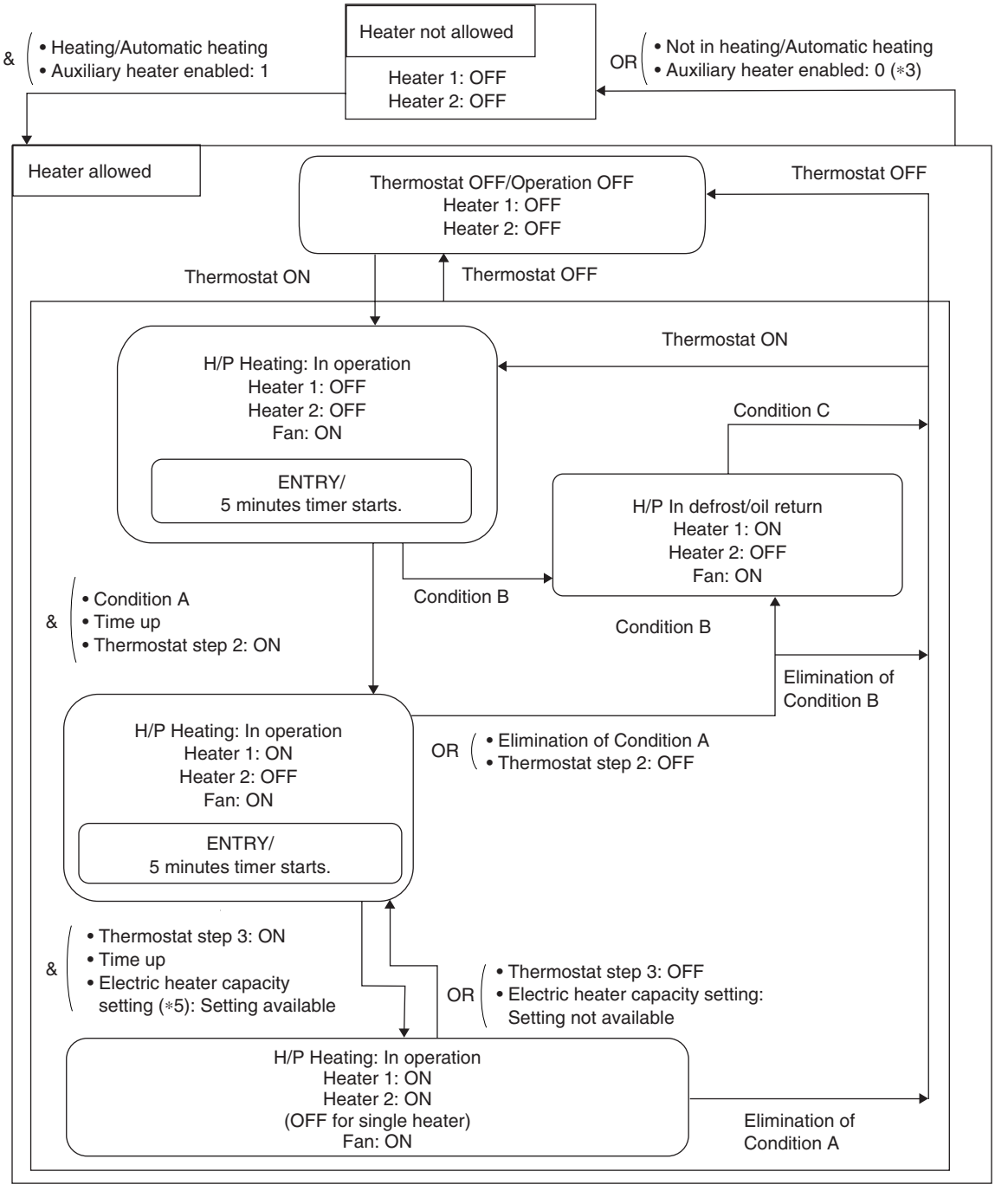
Residual operation time: 100 seconds on ceiling suspended type or 60 seconds on other types

8.12 Heater Control (FXTQ-TA Models)

Note: Optional heater kit HKS... is required.
For FXTQ models, heater ON/OFF output from wiring adaptor interlocks with the operation of heater kit HKS….(When the heater 1 turns ON/OFF, heater output of wiring adaptor turns ON/OFF.) Fan residual operation also interlocks with the fan residual operation of heater kit HKS…. The residual time will be 90 seconds. (Refer to Fan Control (Heater Residual) (FXTQ-TA Models) on page 93.)

8.12.1 Auxiliary Electric Heater Control

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



Condition A

& (
- No fan motor system error
- High pressure condition: ON (∗1)
- Liquid pipe temperature condition: ON (∗2)
- OR (& (• Heater ON permission (Defrost/oil Return): 0 (∗4) • Not during defrost/oil return) • Heater ON permission (Defrost/oil return): 1 (∗4))

)

Condition B

& (
- No fan motor system error
- During defrost/oil return
- Heater ON permission (Defrost/oil return): 1 (∗4)

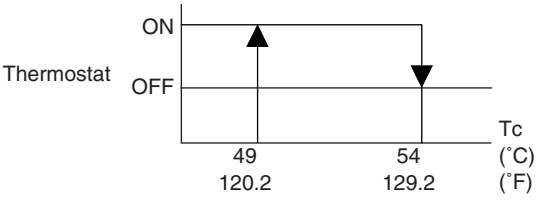
)

Condition C

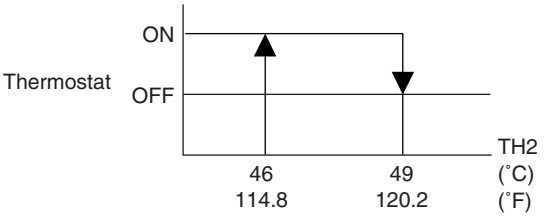
OR (
- Not during defrost/oil return
- Fan motor system error
- Heater ON permission (Defrost/oil return): 0 (∗4)

)

Note: ∗1: High pressure condition



∗2: Liquid pipe temperature condition



∗3. Auxiliary heater enabled

1: & (• Electric heater setting (Field setting 11(21)-3): 2, 4, 6, 8, 10, 12 (∗6) • Electric heater capacity setting ≠ 01)

0: Other than the above

∗4. Heater ON permission (Defrost/oil return)

1: Electric heater setting (Field setting 11(21)-3): 8, 10, 12 (∗6)

0: Electric heater setting (Field setting 11(21)-3): 2, 4, 6 (∗6)

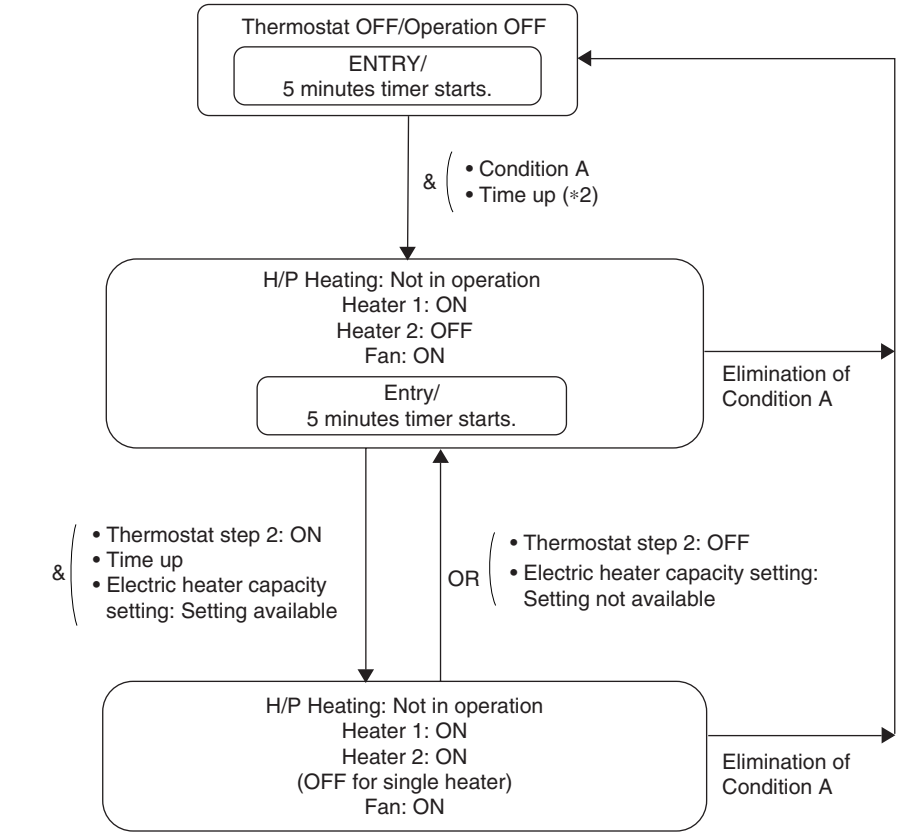
∗5. Field setting 11(21)-5. Refer to page 107.

∗6. Refer to page 107.

8.12.2 Heat Pump Lockout Control

For heating operation, users can select to use electric heater. 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 electric heater as manual backup operation. The ON/OFF conditions for the electric heater are shown below.



Condition A

&
- Heating or automatic heating mode
- Thermostat step 1: ON
- No fan motor system error
- Hot-water heater: 1 (ON)
- Heater backup prohibiting conditions (∗1) not met (Elimination of Condition B)

Condition B: Heater backup prohibiting conditions (∗1)

OR
- Indoor unit error (Abnormal stop)
- Indoor unit error (Remote controller thermistor error)
- Indoor unit error (Remote sensor error)
- Electric heater capacity setting: 01 (No heater kit)

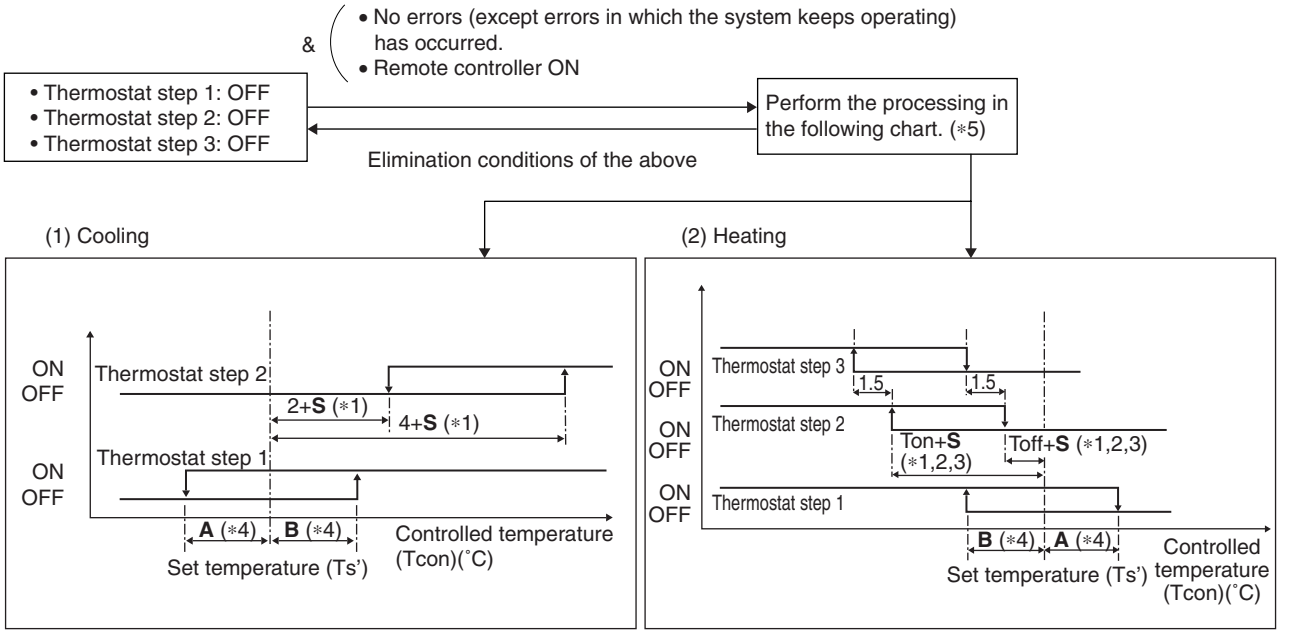
Note:
∗1. The heater backup prohibiting conditions are prioritized. Even when the heater ON conditions are met, the heater is turned OFF when the prohibiting conditions are met.
∗2. When the remote controller is ON, Time-up will be set to the initial value.

8.13 3 Step Thermostat Processing (FXTQ-TA Models)

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 as follows.
Thermostat step 2, 3: Auxiliary electric heater control
Thermostat step 1, 2: Heat pump lockout control
For more details of the heater, refer to Heater Control (FXTQ-TA Models) on page 89.

Detail



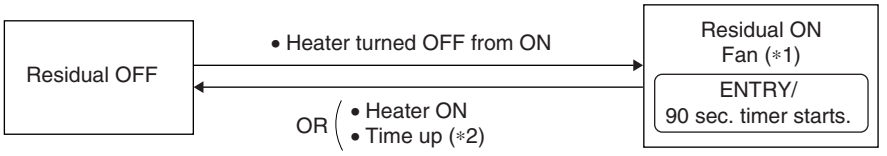
Note:
∗1. **S** value varies automatically based on the room temperature trend.
∗2. Ton + **S** > –**B** (°C), Toff + **S** < **A** (°C)
∗3. For parameters, refer to page 106.
∗4. **A** and **B** values vary automatically based on the field setting 12(22)-2.
∗5. If, directly after a change in conditions, it is such that the thermostat could be either ON or OFF (controlled temperature is within ranges **A** and **B**), the thermostat will be switched to ON.

8.14 Fan Control (Heater Residual) (FXTQ-TA Models)

Outline

If the indoor heater turned OFF from ON during heating operation, the fan will keep operating for further period of time in order to cool the heater.

Detail

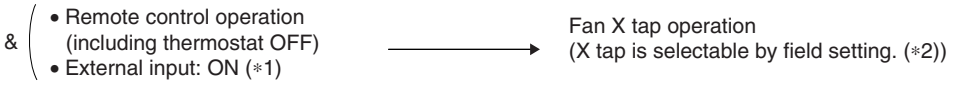


∗1. When the heater is ON, the airflow rate of the fan will be whichever is the largest between the CFM dictated by the heater's own capacity, or the fan tap CFM determined by other controls.
∗2. Fan residual operation will continue, even if the indoor unit is turned off with the remote controller operation button.

8.15 Interlocked with External Equipment (FXTQ-TA Models)

8.15.1 Air Purifier (UV lamp)

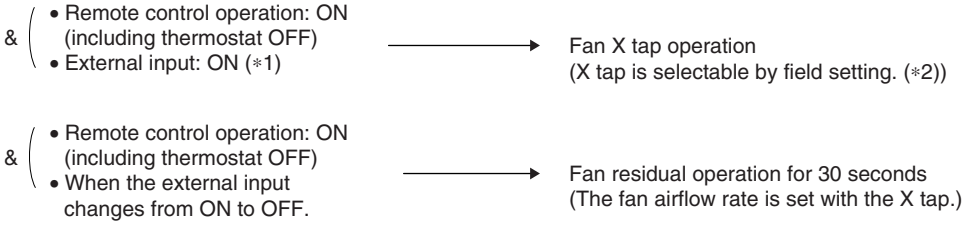
When an air purifier is connected onsite, the fan is operated with the airflow rate set of the remote controller or with the H tap.



∗1. External input ON is an input signal to the X1M-AIR CLEANER terminal on the PCB.
∗2. Field setting 14(24)-4. Refer to page 113.

8.15.2 Humidifier

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



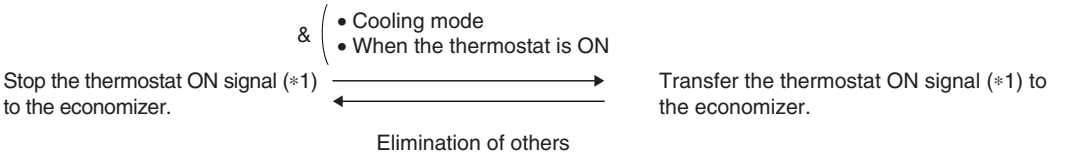
∗1. External input ON is an input signal to the X1M-HUMIDIFIER terminal on the PCB.
∗2. Field setting 14(24)-4. Refer to page 113.

Note: This control is not applicable to the humidifier connected to the wiring adaptor, but to the humidifier connected to HUMIDIFIER on the X1M terminal of the indoor unit PCB.

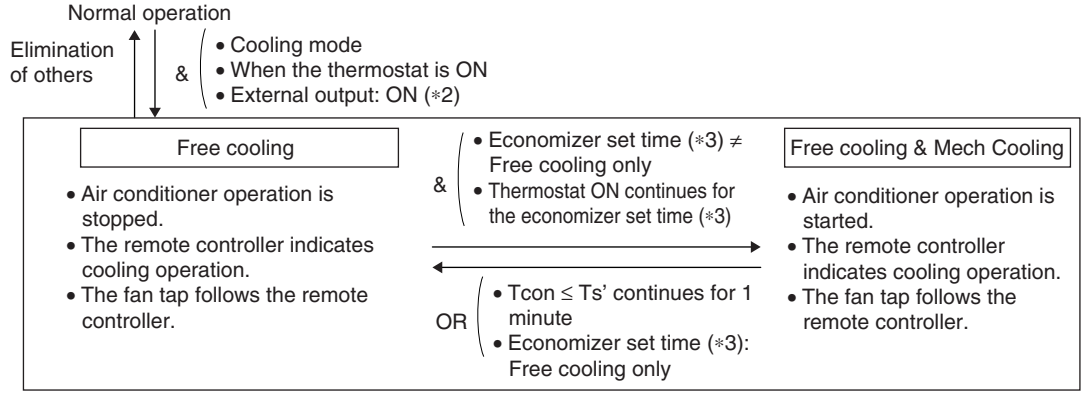
8.15.3 Economizer

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.

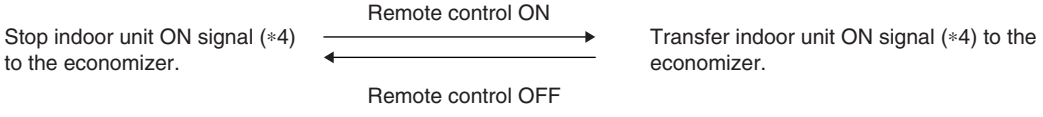
■ **Thermostat ON signal**



■ **Operation**



■ **Indoor unit ON signal**



∗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 X2M-ECONOMIZER2 on the PCB.
∗2. External input ON is an input signal to the X1M-ECONOMIZER1 terminal on the PCB.
∗3. Refer to Optional Kit Setting (UV lamp + Humidifier + Economizer) (for FXTQ-TA model) on page 113.
∗4. Remote control ON signal: Contact output which shows the operating status of the indoor unit.
This signal turns on the relay X2M-CONTROL ON/OFF on the PCB.

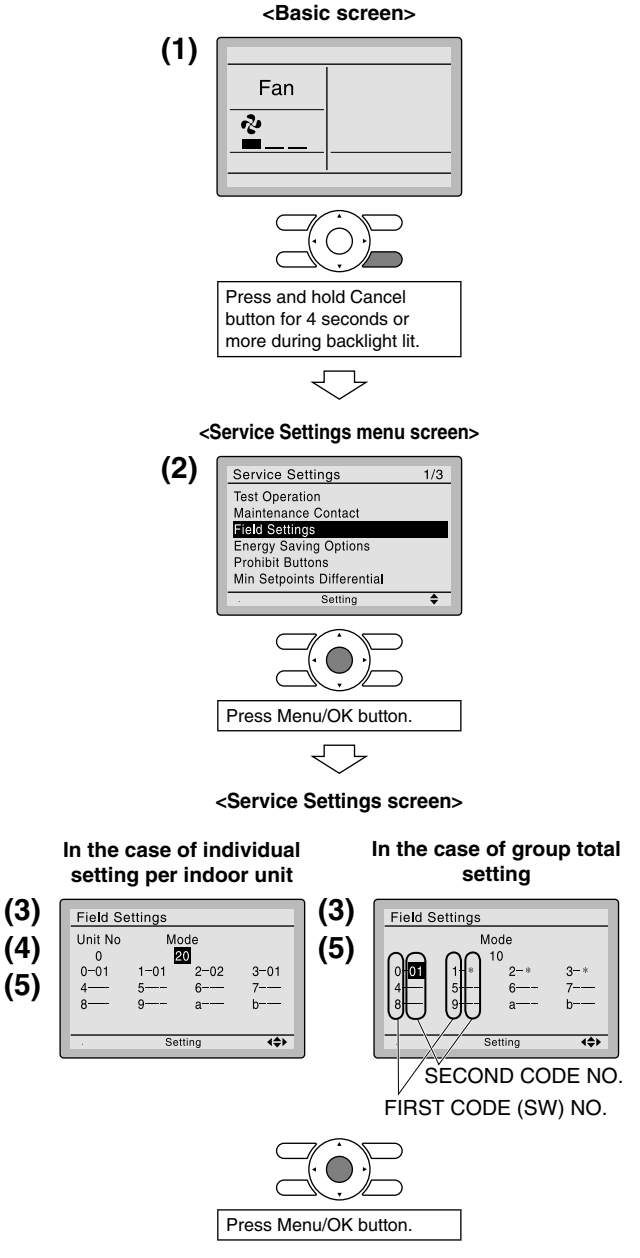
Part 5
Field Settings

1. 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 field setting in accordance with the following description.
Wrong setting may cause error.
(When optional accessory is mounted on the indoor unit, setting for the indoor unit may be required to change. Refer to information in the option handbook.)

1.1 Wired Remote Controller

1.1.1 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.

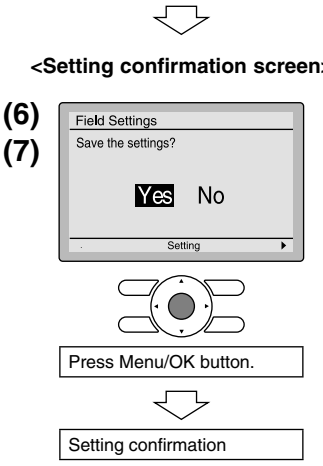
3. Highlight the mode, and select desired “Mode No.” by using ▲▼ (Up/Down) button.

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)**".

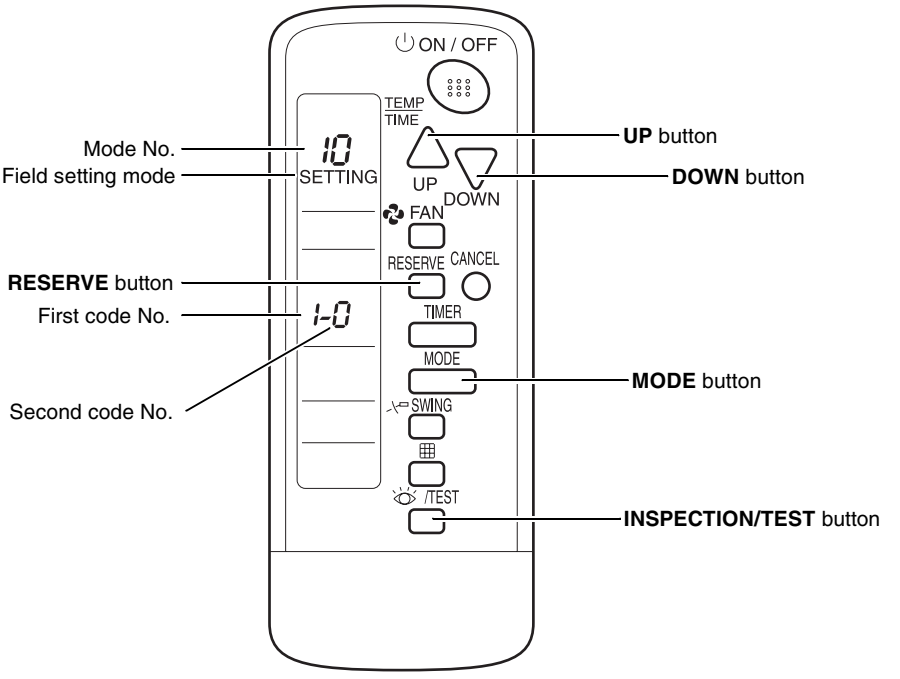
9. After all setting changes are completed, press Cancel button twice.

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.

1.2 Wireless Remote Controller

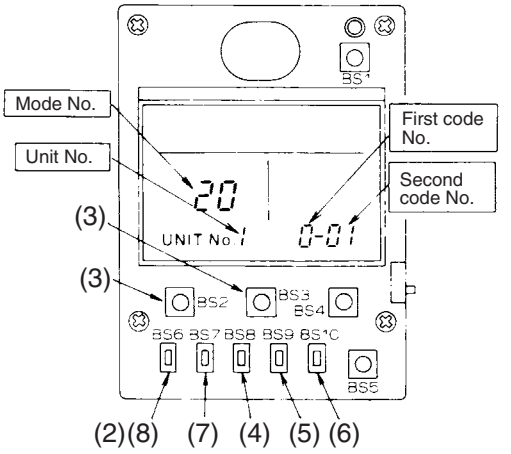


To set the field settings, you have to change:

- 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.

1.3 Simplified Remote Controller



1. Remove the upper part of remote controller.
2. When in the normal mode, press the **BS6** button (2) (field setting) to enter the field setting mode.
3. Select the desired MODE No. with the **BS2** button (3) (temperature setting ▲) and the **BS3** button (3) (temperature setting ▼).
4. During group control, when setting by each indoor unit (mode No. 20, 22, and 23 have been selected), press the **BS8** (4) button (unit No.) and select the indoor unit No. to be set. (This operation is unnecessary when setting by group.)
5. Press the **BS9** button (5) (set A) and select first code No.
6. Press the **BS10** button (6) (set B) and select second code No.
7. Press the **BS7** button (7) (set/cancel) once and the present settings are confirmed.
8. Press the **BS6** button (8) (field setting) to return to the normal mode.

1.4 Setting Contents and Code No. for Indoor Units

: Factory setting

Mode No. (∗2)	First Code No.	Setting Contents		Second Code No.					
				01		02		03	04
10(20)	0	Filter sign setting (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.	—	—
			Long life filter		Approx. 2,500 hrs.		Approx. 1,250 hrs.		
			Standard filter		Approx. 200 hrs.		Approx. 100 hrs.		
	1	Ultra long life filter sign setting		Long life filter		Ultra long life filter		—	—
	1 (∗7)	Filter cleaning sign time (Light/Heavy)		2,500/1,250		10,000/5,000		—	—
	2	Selection of thermistor		Remote controller + Suction air thermistor		Only suction air thermistor		Only remote controller thermistor	—
	2 (∗6)	Remote sensor and remote controller thermistor		—		Only remote sensor		Only remote controller thermistor	—
	3	Filter cleaning sign		Displayed		Not displayed		—	—
	6	Remote controller thermostat control during the group control		Remote controller thermostat control is not permitted		Remote controller thermostat control is permitted		—	—
	7 (∗9)	Time for absence area detection		30 minutes		60 minutes		—	—
11(21)	1	Auxiliary electric heater ON temperature: Ton		Refer to page 106 for detail.					
	2	Auxiliary electric heater OFF temperature: Toff							
	3	Setting the airflow rate when heating		Standard		Slightly increased		Increased	—
	3 (∗6)	Electric heater setting		Refer to page 107 for details.					
	5 (∗6)	Electric heater capacity setting		Refer to page 107 for details.					
	6 (∗9)	Setting the rate of human detection		High sensitivity		Low sensitivity		Standard sensitivity	Infrared presence sensor disabled
	7	Airflow adjustment		OFF		Completion of airflow adjustment		Start of airflow adjustment	—
	8 (∗9)	Compensating the temperature around people		Suction air temperature only		Priorities given on the suction air temperature		Standard	Priorities given on the floor temperature
	9 (∗9)	Compensating the floor temperature		–4°C (–7.2°F)		–2°C (–3.6°F)		0°C (0°F)	+2°C (+3.6°F)
12(22)	0	Optional output switching (field selection of output for adaptor for wiring)		Refer to page 109 for detail.					
	1	External ON/OFF input (Set when ON/OFF is to be controlled from outside.)		Refer to page 109 for detail.					
	2	Thermostat switching (Set when remote sensor is to be used)		1°C (1.8°F)		0.5°C (0.9°F)		—	—
	3	Airflow setting when heating thermostat is OFF		LL tap		Set fan speed		OFF (∗8)	—
	4	Setting of operation mode to AUTO (automatic temperature differential setting for *VRV* system Heat Recovery series cool/heat)		Refer to page 110 for detail.					
	5	Auto restart after power failure reset		Not equipped		Equipped		—	—
	6	Airflow setting when cooling thermostat is OFF		LL tap		Set fan speed		OFF (∗8)	—

Mode No. (∗2)	First Code No.	Setting Contents	Second Code No.			
			01	02	03	04
13(23)	0	Setting of airflow rate	Standard	High ceiling 1	High ceiling 2	—
	1	Airflow direction setting (Set when a blocking pad kit has been installed.)	F (4 directions)	T (3 directions)	W (2 directions)	—
	2	Swing pattern settings	All direction synchronized swing	—	Facing swing	—
	3	Operation of downward flow flap	Equipped	Not equipped	—	—
	4	Setting of airflow direction adjustment range	Draft prevention	Standard	Ceiling soiling prevention	—
	5	Setting of static pressure selection	Standard	High static pressure	—	—
	6	External static pressure settings	Refer to page 112 for detail.			
14 (24)	4 (*6)	Optional kit setting (UV lamp + humidifier + economizer)	Refer to page 113 for details.			
	5 (*6)	Residential dry	Set temperature: room temperature	Set temperature: same as cooling set temperature	—	—
15(25)	0	Drain pump operation settings	—	ON	OFF	—
	1	Humidification when heating thermostat is OFF	Not equipped	Equipped	—	—
	2	Setting of direct duct connection (when the indoor unit and energy recovery ventilator unit are connected by duct directly.) (∗5)	Not equipped	Equipped	—	—
	3	Interlocked operation between humidifier and drain pump	Not equipped	Equipped	—	—
	5	Individual setting of ventilation	Not equipped	Equipped	—	—
1b (2b)	3	Display of contact center	Displayed	Not displayed	—	—
	4	Display of error codes on the remote controller	—	Two-digit display	—	Four-digit display
	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.
	14	Setting "restricted / permitted" of airflow block	Refer to page 115 for detail.			
1c (2c)	0	Room temperature display	Room temperature is not displayed	Room temperature is displayed	—	—

Note :

1. Settings are made simultaneously for the entire group, however, if you select the mode No. inside parentheses, you can also set by each individual unit. Setting changes however cannot be checked except in the individual mode for those 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 the remote controller is resetting when returning to the normal mode.

∗5. If the setting mode to “Equipped”, energy recovery ventilator fan conducts the fan residual operation by linking to indoor unit.

∗6. Only for FXTQ-TA models

∗7. Only for FXTQ-TA, FXDQ-M models

∗8. If the airflow setting when thermostat is OFF is set to OFF (12(22)-3-03, 12(22)-6-03), the air in the indoor unit will be stagnant and suction air thermistor may not detect room temperature correctly, resulting in problems that thermostat will not be ON easily.
Use optional remote sensor in such conditions, or set the field setting 10(20)-2 to **03** (only remote controller thermistor).

∗9. Only for FXFQ-T and FXUQ-P sensing models

1.4.1 Applicable Range of Field setting

Setting Modes	Ceiling mounted cassette type		4-way blow ceiling suspended cassette type	One way blow cassette type	Slim ceiling mounted duct type	Ceiling mounted duct type	Ceiling suspended type	Wall mounted type	Floor standing type	Concealed floor standing type	Air handling unit
	Round flow	4 way flow									
	FXFQ	FXZQ	FXUQ	FXEQ	FXDQ	FXMQ	FXHQ	FXAQ	FXLQ	FXNQ	FXTQ
Filter sign	●	●	●	●	●	●	●	●	●	●	●
Ultra long life filter sign	●	●	—	—	—	—	—	—	—	—	—
Remote controller	●	●	●	●	●	●	●	●	●	●	●
Set fan speed when thermostat OFF	●	●	●	●	●	●	●	●	●	●	●
Airflow adjustment ceiling height	●	—	●	●	—	—	●	—	—	—	—
Airflow direction	●	●	●	●	—	—	—	—	—	—	—
Airflow direction adjustment (Down flow operation)	—	—	—	●	—	—	—	—	—	—	—
Airflow direction adjustment range	●	●	—	●	—	—	—	—	—	—	—
Field setting fan speed selection	●	—	—	—	● (∗1)	● (∗1)	—	—	—	—	—
Auxiliary electric heater ON/OFF temperature	● (FXFQ-T only)	—	●	—	—	●	—	—	●	●	●

● : Available

— : Not available

∗1. Static pressure selection

1.4.2 Detailed Explanation of Setting Modes

Filter Sign Setting

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

Ultra Long Life Filter Sign Setting

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

Filter Cleaning Sign Time

The filter cleaning sign display time can be changed.

■ **FXTQ-TA**

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

Selection of Thermistor

Select a thermistor to control room temperature.

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

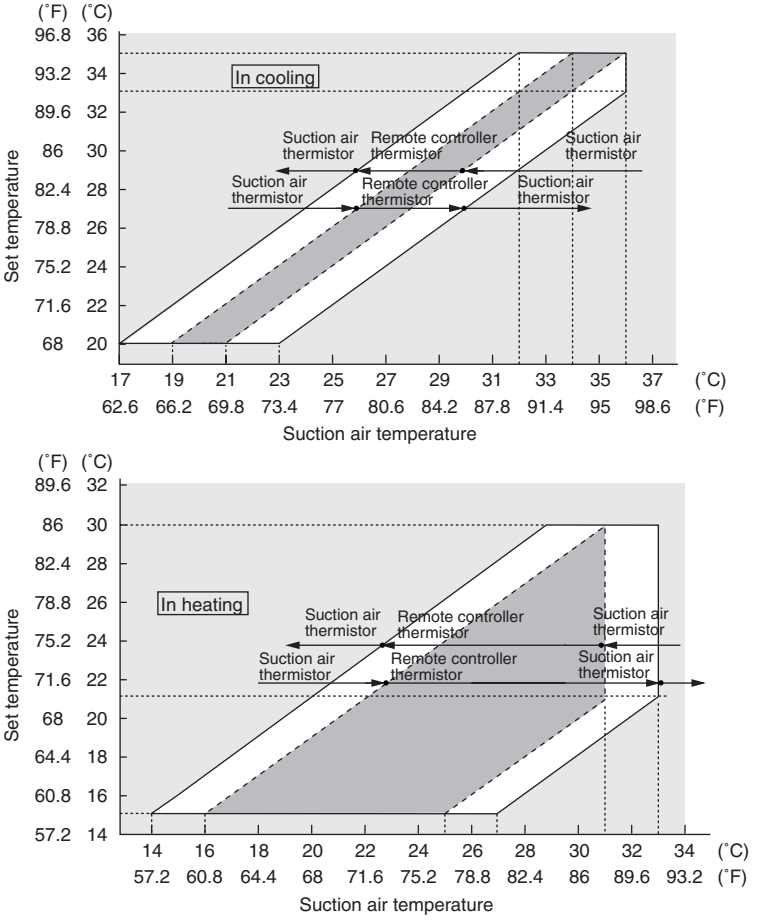
Mode No.	First Code No.	Second Code No.	Contents
10 (20)	2	01	Remote controller thermistor and suction air thermistor for indoor unit
		02	Suction air thermistor for indoor unit
		03	Remote controller thermistor

The factory setting for the Second Code No. is **01** and room temperature is controlled by the suction air thermistor 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.

■ **FXTQ-TA**

Mode No.	First Code No.	Second Code No.	Contents
10 (20)	2	01	—
		02	Remote sensor thermistor
		03	Remote controller thermistor

When the Second Code No. is set to **02**, room temperature is controlled by the remote sensor thermistor.
When the Second Code No. is set to **03**, room temperature is controlled by the remote controller thermistor.



■ 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		—	—	✓	✓	✓	—
			Only the suction air thermistor is used		Standard setting (Factory setting)		
		The infrared floor sensor is not used		Priority given to the suction air temperature (∗)		Priority given to the floor temperature (∗)	Only the remote controller thermistor is used

∗ Refer to 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.

Filter Cleaning Sign

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

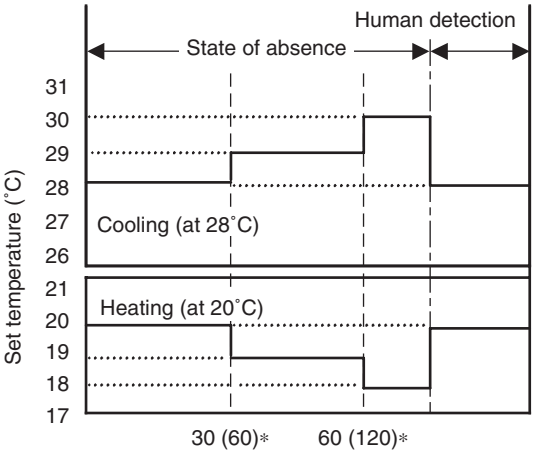
Mode No.	First Code No.	Second Code No.	Contents
10 (20)	3	01	Displayed
		02	Not displayed

∗ Filter cleaning sign is not displayed when an Auto-clean Panel is connected.

Time for Absence Area Detection (For units with an Infrared Presence Sensor only)

By selecting the energy-saving operation mode in the absence, the target temperature is shifted to the energy-saving end by 1°C (maximum 2°C) after the state of absence continues for a certain period of time.
Absent time defined for detection can be selected as follows:

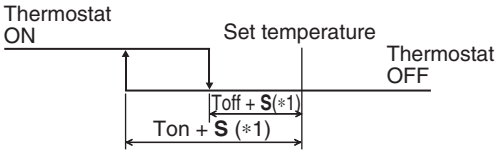
Mode No.	First Code No.	Second Code No.	Contents
10 (20)	7	01	30 minutes
		02	60 minutes



∗ The values in parentheses represent the time when Second code No. is "02."

- The set temperature displayed on the remote controller remains same even if the target temperature is shifted.
- As soon as people is detected while the temperature is shifted, this control will be cancelled (reset).

Auxiliary Electric Heater ON/OFF Temperature



Note: ∗1. **S** value varies automatically based on the room temperature trend.

■ **FXFQ-T, FXMQ-PB**

Mode No.	First Code No.	Symbol	Second Code No.					
			01	02	03	04	05	06
11 (21)	1	Ton	–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)
		Toff	–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)

■ **FXUQ-P, FXEQ-P, FXLQ-M, FXNQ-M, FXTQ-TA**

Mode No.	First Code No.	Symbol	Second Code No.					
			01	02	03	04	05	06
11 (21)	1	Ton	–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	Toff	–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 Ton and Toff as below due to 2°C (3.6°F) hysteresis required for reliability.

Second Code No.			Ton					
			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)
Toff	06	0.5°C (0.9°F)	●	●	●	●	●	●
	05	0°C (0°F)	●	●	●	●	●	—
	04	–0.5°C (–0.9°F)	●	●	●	●	—	—
	03	–1°C (–1.8°F)	●	●	●	—	—	—
	02	–1.5°C (–2.7°F)	●	●	—	—	—	—
	01	–2°C (–3.6°F)	●	—	—	—	—	—

● : Available
— : Not available

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.

Electric Heater Setting (for FXTQ-TA model)

Mode No.	First Code No.	Second Code No.	Contents	
			Heater operation	Electric heater run for defrost/oil return operation
11 (21)	3	01	Electric heater with heat pump not allowed	Not allowed
		02	Electric heater with heat pump allowed	Not allowed
		07	Electric heater with heat pump not allowed	Allowed
		08	Electric heater with heat pump allowed	Allowed

Electric Heater Capacity Setting (for FXTQ-TA model)

Model	Mode No.	First Code No.	Second Code No.									
			01	02	03	04	05	06	07	08	09	10
			Heater (kW)									
			No heater kit	3	5	6	8	10	15	19	20	25
FXTQ09TAVJUA	11 (21)	5	●	●	●	—	—	—	—	—	—	—
FXTQ09TAVJUD			●	●	●	—	—	—	—	—	—	—
FXTQ12TAVJUA			●	●	●	●	—	—	—	—	—	—
FXTQ12TAVJUD			●	●	●	●	—	—	—	—	—	—
FXTQ18TAVJUA			●	●	●	●	●	●	—	—	—	—
FXTQ18TAVJUD			●	●	●	●	●	●	—	—	—	—
FXTQ24TAVJUA			●	●	●	●	●	●	—	—	—	—
FXTQ24TAVJUD			●	●	●	●	●	●	—	—	—	—
FXTQ30TAVJUA			●	●	●	●	●	●	—	—	—	—
FXTQ30TAVJUD			●	●	●	●	●	●	—	—	—	—
FXTQ36TAVJUA			●	●	●	●	●	●	—	—	—	—
FXTQ36TAVJUD			●	●	●	●	●	●	—	—	—	—
FXTQ42TAVJUA			●	—	●	●	●	●	●	●	—	—
FXTQ42TAVJUD			●	—	●	●	●	●	●	●	—	—
FXTQ48TAVJUA			●	—	●	●	●	●	●	●	—	—
FXTQ48TAVJUD			●	—	●	●	●	●	●	●	—	—
FXTQ54TAVJUA			●	—	●	●	●	●	●	—	●	●
FXTQ54TAVJUD			●	—	●	●	●	●	●	—	●	●
FXTQ60TAVJUA			●	—	●	●	●	●	●	—	●	●
FXTQ60TAVJUD			●	—	●	●	●	●	●	—	●	●

● : Available

— : Not available

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

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 discharge 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

Compensating the Temperature around People (For units with the infrared presence sensor only)

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

The temperature around human 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 human can be changed with this setting.

- To reflect the effect of the temperature around the ceiling, select the "Priorities given on the suction air temperature" (the Second code No. **02**).
- To reflect the effect of the temperature around the floor, select the "Priorities 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	Priorities given on the suction air temperature
		03	Standard
		04	Priorities given on the floor temperature

Compensating the Floor Temperature (For units with the infrared presence sensor only)

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)

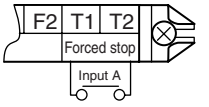
Optional Output Switching

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.

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 electrical component 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

Thermostat Switching

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)

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 tap
		02	Set fan speed
		03	OFF

Setting of Operation Mode to AUTO

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 (9.0°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.

Auto Restart after Power Failure Reset

Mode No.	First Code No.	Second Code No.	Contents
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 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. 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).

Airflow 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 tap
		02	Set fan speed
		03	OFF

Setting of Airflow Rate

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
		02	Slight increase
		03	Normal increase

■ **FXFQ07-24T, FXFQ09-30P, FXUQ18/24P**

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	Lower than 2.7 m (8-3/4 ft)	Lower than 3.0 m (10 ft)	Lower than 3.5 m (11-1/2 ft)
		02	High Ceiling 1	Lower than 3.0 m (10 ft)	Lower than 3.3 m (10-3/4 ft)	Lower than 3.8 m (12-1/2 ft)
		03	Higher Ceiling 2	Lower than 3.5 m (11-1/2 ft)	Lower than 3.5 m (11-1/2 ft)	—

■ **FXFQ30-48T, FXFQ36/48P, FXUQ30/36P**

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	Lower than 3.2 m (10-1/2 ft)	Lower than 3.6 m (12 ft)	Lower than 4.2 m (13-3/4 ft)
		02	High Ceiling 1	Lower than 3.6 m (12 ft)	Lower than 4.0 m (13-1/8 ft)	Lower than 4.2 m (13-3/4 ft)
		03	Higher Ceiling 2	Lower than 4.2 m (13-3/4 ft)	Lower than 4.2 m (13-3/4 ft)	—

Airflow Direction Setting

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

Swing Pattern Settings
(For units with the infrared presence sensor only)

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

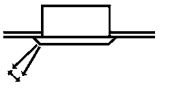
Operation of Downward Flow Flap (for FXEQ model)

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

Setting of Airflow Direction Adjustment Range

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.

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))

External Static Pressure Settings (for FXMQ-PB 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).

Optional Kit Setting (UV lamp + Humidifier + Economizer) (for FXTQ-TA model)

Mode No.	First Code No.	Second Code No.	Contents	
			UV lamp + humidifier fan speed	Economizer setting for Mech standby duration (minutes)
14 (24)	4	01	Refer to controller	10
		02	High	10
		03	Refer to controller	20
		04	High	20
		05	Refer to controller	30
		06	High	30
		07	Refer to controller	40
		08	High	40
		09	Refer to controller	50
		10	High	50
		11	Refer to controller	60
		12	High	60
		13	Refer to controller	Free cooling only
		14	High	Free cooling only

Residential Dry (for FXTQ-TA model)

Mode No.	First Code No.	Second Code No.	Contents
14 (24)	5	01	Set temperature: room temperature
		02	Set temperature: same as cooling set temperature

Drain Pump Operation Settings (for FXMQ-PB model)

The drain pump operation can be disabled for natural drainage by changing the following field setting.

Mode No.	First Code No.	Second Code No.	Contents
15 (25)	0	01	—
		02	ON
		03	OFF

Humidification when Heating Thermostat is OFF

Setting to "Humidification Setting" turns ON the humidifier if suction air temperature is 20°C (68°F) or above and turns OFF the humidifier if suction air temperature is 18°C (64.4°F) or below when the heating thermostat is OFF.

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

Setting of Direct Duct Connection

This is used when "fresh air intake kit equipped with fan" is connected. The indoor fan carries out residual operation for one 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	Without direct duct connection
		02	With direct duct connection equipped with fan

Interlocked Operation between Humidifier and Drain Pump

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	Individual operation of humidifier
		02	Interlocked operation between humidifier and drain pump

Individual Setting of Ventilation

This is set to perform individual operation of Energy recovery ventilator using the remote controller/central unit when Energy recovery ventilator is built in.
(Switch only when Energy recovery ventilator is built in.)

Mode No.	First Code No.	Second Code No.	Contents
15 (25)	5	01	Not equipped
		02	Individual operation of ventilation

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

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

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 **04** to cancel it.

Setting "Restricted / Permitted" of Airflow Block (For units with the infrared presence sensor 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 block 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

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 to display "Room temperature display" 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.

1.4.3 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		2500hr	1250hr	—	—	—	—	—	—	—	—	—	—	—	—	—
	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 ★
	4	Discharge pipe temperature (heating)	°C	18	19	20	21	22	23	24	25	26	27	28	29	30 ★	30 ★	30 ★
			°F	64.4	66.2	68	69.8	71.6	73.4	75.2	77	78.8	80.6	82.4	84.2	86 ★	86 ★	86 ★

1.4.4 Setting of Operation Control Mode from Remote Controller (Field Setting)

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.)
Central remote controller is normally available for operations. (Except when centralized monitor is connected)

1.4.5 Contents of Control Modes

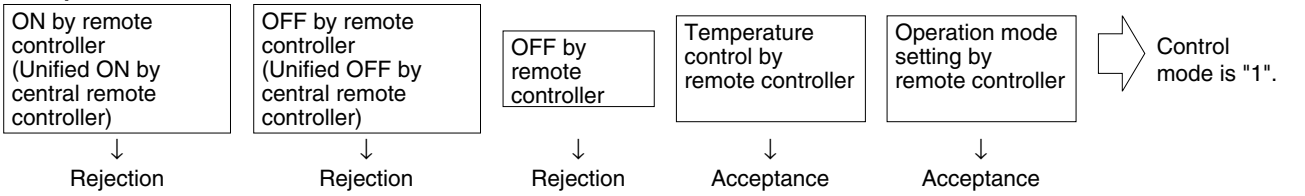
20 modes consisting of combinations of the following 5 operation modes with temperature and operation mode setting by remote controller can be set and displayed by operation modes 0 through 19.

- ON/OFF control impossible by remote controller
  Used when you want to turn ON/OFF by central 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 central remote controller only, and OFF by remote controller only.
- Centralized
  Used when you want to turn ON by central 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 central 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 central remote controller when time of system start is programmed.

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 central remote controller, or operation controlled by timer	Unified OFF, individual stop by central 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
					Rejection	17
Timer operation possible by remote controller	Acceptance (During timer at ON position only)	Rejection (During timer at OFF 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.

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

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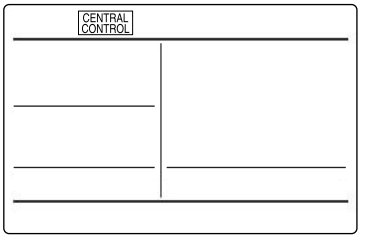


2. Field Settings for Outdoor Unit

This section shows a list of field setting items possible to set at time of initial startup. For details of DIP switch setting, setting mode ("mode 2") and monitoring mode ("mode 1"), refer to information on one after the following page onwards.

2.1 Function Setting

Following settings may be required to set to comply to specific application requirements.

No	Setting item	Contents and objective of setting	Overview of setting procedure
1	Setting of COOL/ HEAT selection	■ To select cooling or heating mode by one of the following methods: 1. From 1 indoor unit remote controller (default). 2. From the optional COOL/HEAT switch. Optional board “BRP2A81∗1” required in outdoor unit. 3. Multiple outdoor systems from 1 indoor unit remote controller. 4. Multiple outdoor systems from the optional COOL/HEAT switch. Optional board “BRP2A81” required in 1 outdoor unit per zone.	2.1: Optional COOL/HEAT switch “KRC19-26B”. 2.2: Set DIP switch DS1-1 on the outdoor board to “OUT” (upper). 2.3: Install option “BRP2A81∗1” in outdoor unit. 3.1: Set the system to “MASTER” or “SLAVE” using mode 2-*0*. 3.2: Set COOL/HEAT zone address mode 2-*1*. 4: Combine 2 and 3.
2	Setting of low noise operation	A. To reduce operation noise level through reduction of the upper limit of the fan using external input (use outdoor fan step 8 for normal operation). 1. Level 1: upper than fan step 6. 2. Level 2: upper fan step 5 + upper limit compressor capacity step mid level. 3. Level 3: upper fan step 5 + upper limit compressor capacity step low level.	■ Use the optional board “DTA104A61∗2”. ■ Set “mode 2” No. *12-1*. ■ Choose level by “mode 2” No. *25*. ■ If required, set the “Capacity priority setting” to “ON”, by “mode 2” No. *29-1*.
		B. To perform automatic night-time low noise operation. Start time: selectable from 20:00 to 24:00 hours (step by 2 hours). End time: selectable from 06:00 to 08:00 hours (step by 1 hour). (Note that the set time is estimated according to outdoor air temperature.)	■ Select required level by mode 2-*22*. ■ Select start time with mode 2-*26*. ■ Select end time with mode 2-*27*. ■ Select capacity priority setting if required by mode 2-*29-1*.

For detailed description about each setting, refer to “Description Field Settings (mode 2: m2) on Outdoor Unit Main PCB” on page 145.

Note:

∗1. ABC I/P PCB kit for *VRV* IV.

∗2. External control adaptor for outdoor unit.

No	Setting item	Contents and objective of setting	Overview of setting procedure
3	Setting of demand operation	■ To limit power consumption: upper limit set on the compressor operating frequency. ■ Demand 1: % current limit 1. ■ Demand 2: % current limit 2. ■ Demand 3: forced thermostat OFF (only indoor fan operation is possible).	■ Use the optional board “DTA104A61”. ■ Wire external signal(s) to the optional adaptor “DTA104A61”.
			■ Activate input optional board “DTA104A61” “mode 2” No. *12-1*. ■ Select level of demand 1, by mode 2-*30*. ■ Select level of demand 2, by mode 2-*31*.
			■ If fixed demand control is required (without adaptor “DTA104A61”), set level by mode 2-*32*.
4	Setting of AIRNET address	■ Make “AIRNET” address when it is connected to AIRNET monitoring, or to view detail in the map on Service Checker type III.	■ Set AIRNET address with mode 2-*13*.
5	High level difference outdoor to indoor	■ Required setting when level difference between outdoor and indoor units of same refrigerant exceeds standard level.	■ Set “mode 2” No. 35 to “1” if outdoor is > 40 m (131 ft) below indoor unit. ■ Set “mode 2” No. 49 to “1” if outdoor is > 50 m (164 ft) above indoor unit.
6	Setting of high static pressure	■ Set “high static pressure” in order to operate the system with duct to the outdoor unit (used at concealed installation on floors or balconies).	■ Set “mode 2” No. 18 to “ON”.
7	Evaporating temperature setting (cooling performance)	■ Setting to choose the reaction time of outdoor control on change of outdoor and cooling indoor load.	■ Set “mode 2” No. 8 to choose cooling capacity control logic between fixed, automatic or high sensible. ■ Set “mode 2” No. 81 to choose Te adjustment at start up between Powerful, Quick, Mild or Eco.
8	Condensing temperature setting (heating performance)	■ Setting to choose the reaction time of outdoor control on change of outdoor and heating indoor load.	■ Set “mode 2” No. 9 to choose heating capacity control logic between fixed, automatic or high sensible. ■ Set “mode 2” No. 82 to choose Tc adjustment at start up between Powerful, Quick, Mild or Eco.

For detailed description about each setting, refer to “Description Field Settings (mode 2: m2) on Outdoor Unit Main PCB” on page 145.

2.2 Settings by DIP Switches

2.2.1 COOL/HEAT Selection

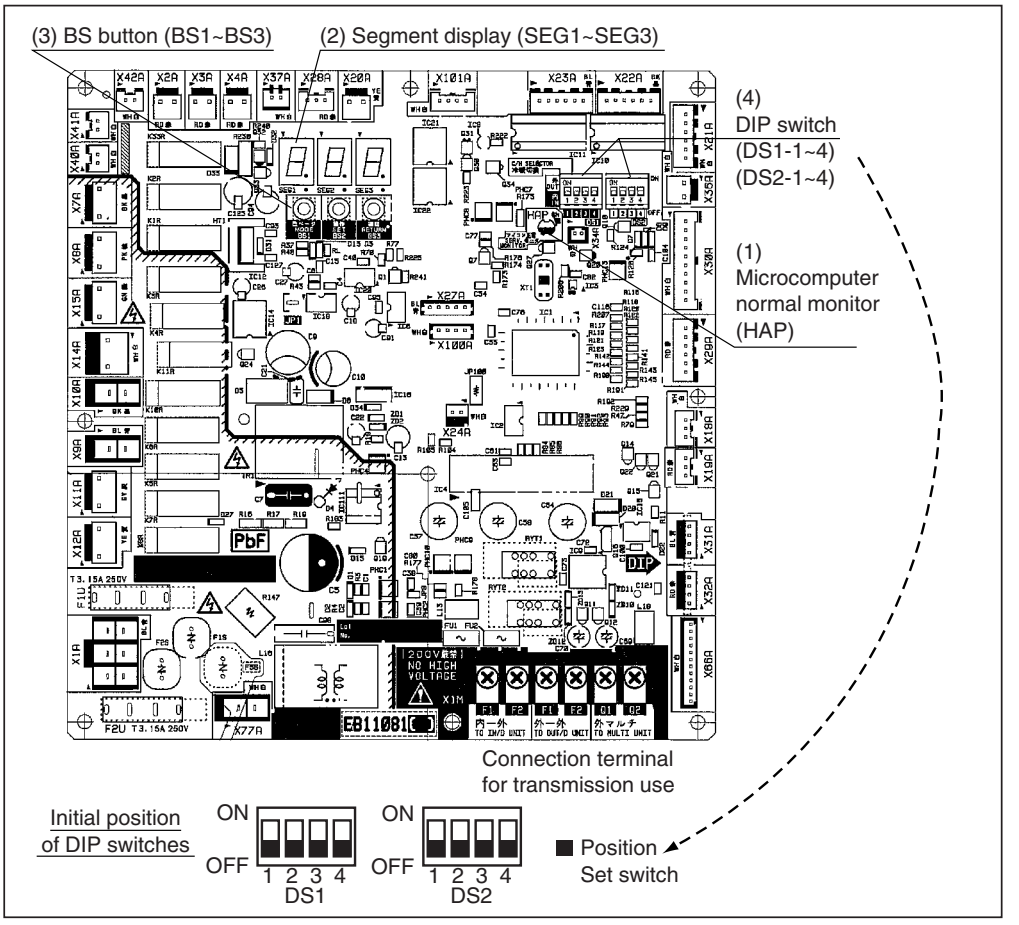
For factory mounted board only use DIP switch DS1-1 if required.

DIP switch		Setting item	Description
No.	Setting		
DS1-1	ON	COOL/HEAT select	Used to choose source to select Cooling/Heating/fan only. Source can be or indoor remote controller, or optional cool/heat switch wired to option “BRP2A81”.
	OFF (Factory setting)		
DS1-2 ~DS1-4	ON	not used	Do not change the factory settings.
	OFF (Factory setting)		

2.2.2 DIP Switch Setting Mounting a Spare PCB

Caution:

- After replacement with spare PCB, be sure to make settings shown in the table on the following page. The procedure for making settings of spare PCB is different from that used for factory settings described above. Be sure to refer to the table shown on the following page in order to make settings of spare PCB after replacement.
- Enforce a re-initialization of communication: hold press button BS3 “RETURN” for minimum 5 seconds.
- After initialization, a test operation is required from outdoor unit (hold BS2 “SET” till indication **t01** appears).



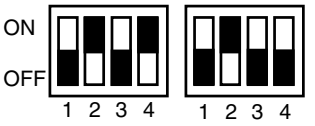
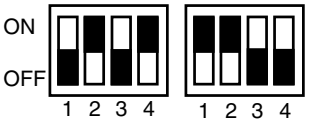
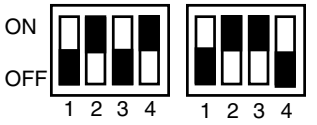
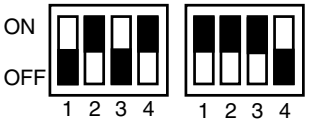
(1) Microcomputer normal monitor
This monitor blinks while in normal operation, and turns ON or OFF when an error occurs.

(2) 7 segment display
· Used to check the transmission.
· Used to display the transmission state between indoor and outdoor units.
· Used to display the contents of error.
· Used to display the contents of field setting.

(3) BS button
Used to change mode.

(4) DIP switch
Used to make field settings.

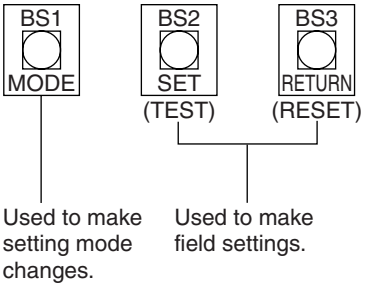
The figure below shows the required position of the DIP switches on spare PCB for RXYQ-TA. Change DIP switches at time of power disconnected.

Application model	The setting method (■represents the position of switches)	
RXYQ72TA		Set DS1-2, DS1-4 and DS2-2 to ON.
RXYQ96/120TA		Set DS1-2, DS1-4, DS2-1 and DS2-2 to ON.
RXYQ144TA		Set DS1-2, DS1-4, DS2-2 and DS2-3 to ON.
RXYQ168TA		Set DS1-2, DS1-4, DS2-1, DS2-2 and DS2-3 to ON.

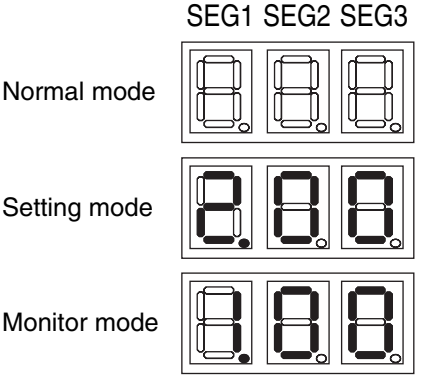
2.3 Settings by BS Buttons

The following settings can be made using the BS buttons on the PCB.
In case of a multi outdoor system, make these settings with the master outdoor unit (settings made with a slave unit are disabled).

BS buttons

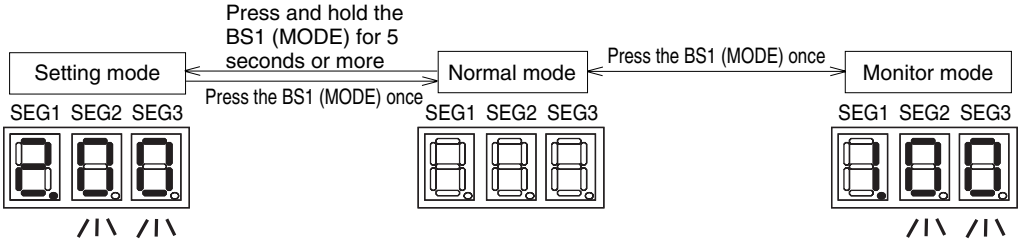


7 segment display (SEG1-3)

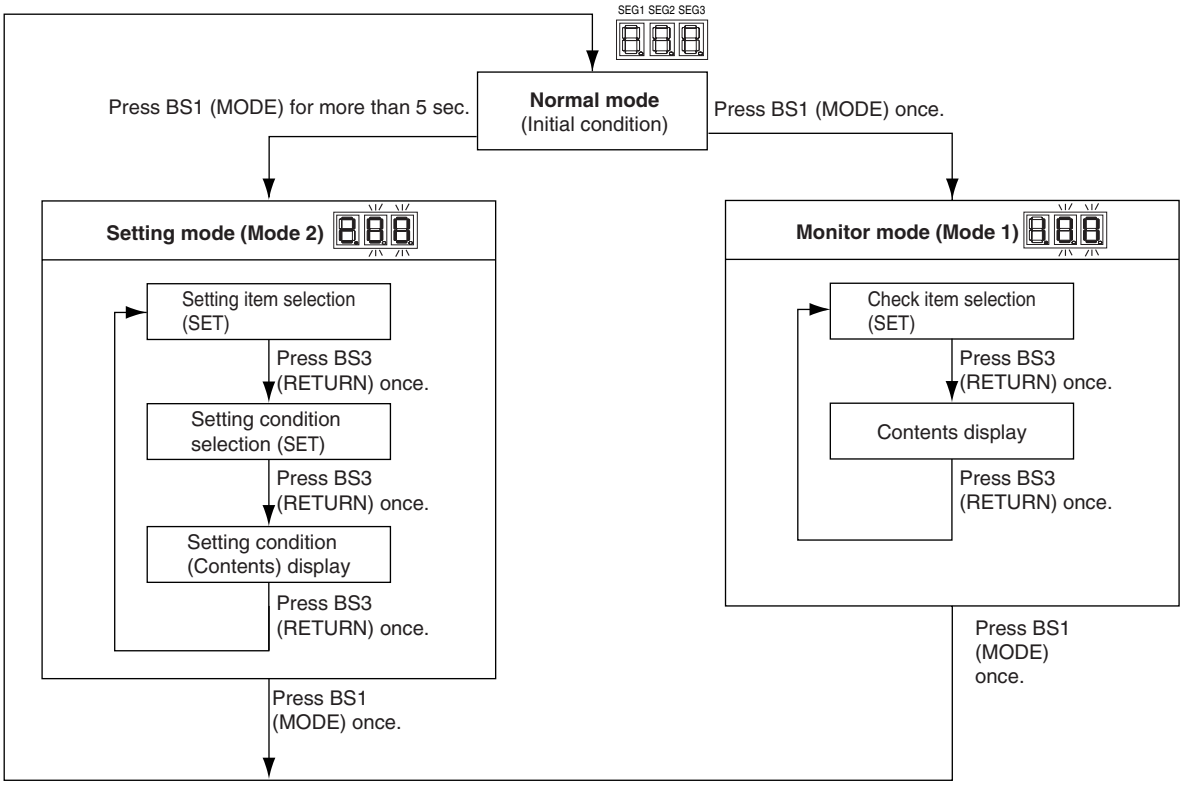


- Normal mode:
  - Blank: If no abnormality is detected and initialization of communication was completed.
  - Flashing combination of letter and number (4 digits): Error code detected by outdoor control or trouble by communication.
- Setting mode: Used to make changes to operating status, performance settings or address setting.
- Monitor mode: Used to verify contents of settings, quantity of units, current value of some parameters during operation of outdoor unit.

- **Mode changing procedure can be selected using the BS1 (MODE) button as shown below:**

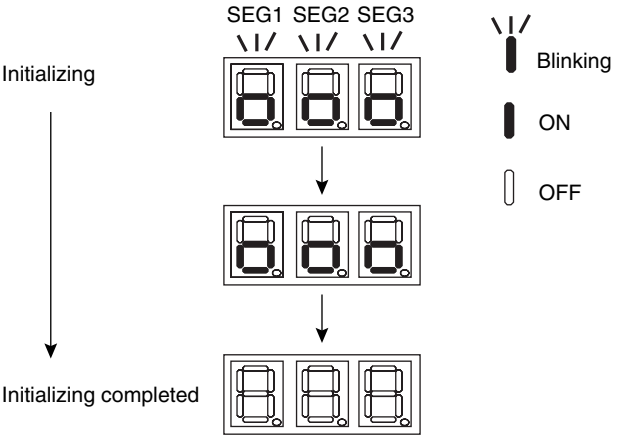


■ **Selection between Normal mode, Monitor mode (Mode 1) and Setting mode (Mode 2).**

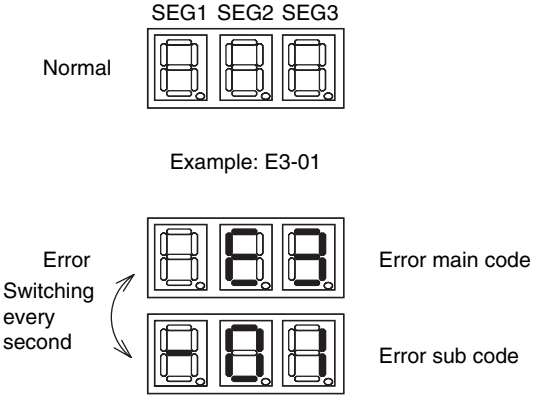


2.4 Normal Mode

1. Indoor/outdoor transmission status: Used to check for the initial status of indoor/outdoor transmission.



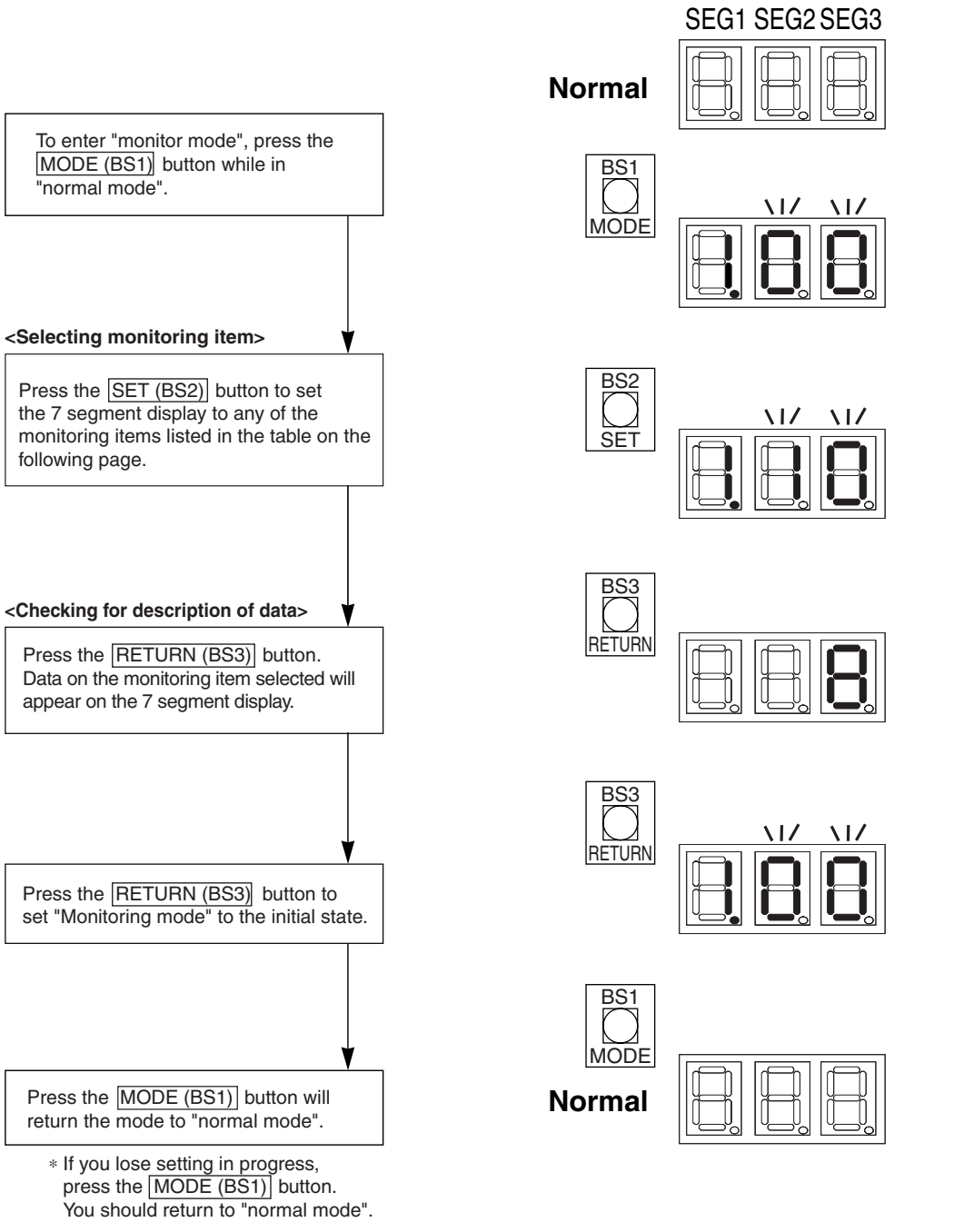
2. Error contents: Used to display an error content.



2.5 Monitor Mode (Mode 1)

In the monitor mode, information can be retrieved about settings related to performance, addresses, number of units and actual operation data.

2.5.1 Retrieve Data by Using BS Button Outdoor Unit Main PCB



Legend Segment : OFF : ON : BLINKS : hold 5 seconds

2.5.2 Retrievable Data by “Configurator”

Mode 1	Setting	Description
1 - 0	Master / slave 1 / slave 2	Shows whether the unit you check is a master
1 - 10	Total connected indoor units	Shows the total number of connected indoor units
1 - 13	Total connected outdoor units	Shows the total number of outdoor units
1 - 17	Contents of error (latest)	Shows the latest error code
1 - 18	Contents of error (1 cycle before)	Shows the 2nd last error code
1 - 19	Contents of error (2 cycle before)	Shows the 3rd last error code
1 - 23	Contents of retry (latest)	Latest system retry
1 - 24	Contents of retry (1 cycle before)	Previous system retry (1)
1 - 25	Contents of retry (2 cycle before)	Previous system retry (2)
1 - 34	Days remaining till the next automatic leak detection	Shows the remaining days till the next automatic leak
1 - 35	Result of the last leak detection operation	Shows the result of the latest automatic leak detection
1 - 36	Result of the last leak detection operation (1 before)	Shows the result of the 2nd last automatic leak detection
1 - 37	Result of the last leak detection operation (2 before)	Shows the result of the 3rd last automatic leak detection
1 - 38	Number of connected RA DX indoor units	Shows the number of RA DX indoor units connected to the system
1 - 39	Number of connected hydrobox indoor units	Shows the number of hydroboxes indoor units connected to the system

No. *1	Monitoring item				Data display			
	Item	7 segment display			Contents	7 segment display		
		SEG 1	SEG 2	SEG 3		SEG 1	SEG 2	SEG 3
0	Master/slave outdoor unit	1.	0	0	Undefined Master unit Slave 1 unit Slave 2 unit			- 0 1 2
1	Low noise operation state	1.	0	1	In normal operation In low noise operation			0 1
2	Demand operation state	1.	0	2	In normal operation In demand operation			0 1
3	Automatic backup operation state	1.	0	3	OFF ON			0 1
4	Defrost selection setting	1.	0	4	Slow defrost Normal Quick defrost			0 1 2
5	Te setting	1.	0	5	Automatic Low 3°C (37.4°F) Normal 6°C (42.8°F) High sensible 7°C (44.6°F) High sensible 8°C (46.4°F) High sensible 9°C (48.2°F) High sensible 10°C (50.0°F) High sensible 11°C (51.8°F)			0 1 2 3 4 5 6 7
6	Tc setting	1.	0	6	Automatic Low sensible 41°C (105.8°F) Low sensible 42°C (107.6°F) Low sensible 43°C (109.4°F) Low sensible 44°C (111.2°F) Low sensible 45°C (113.0°F) Normal 46°C (114.8°F) High 49°C (120.2°F)			0 1 2 3 4 5 6 7
7	COOL/HEAT unified address	1.	0	7	Possible 0-31		- 3	0 1
8	Low noise/demand address	1.	0	8	Possible 0-31		- 3	0 1
9	AIRNET address	1.	0	9	Possible 0-63		- 6	0 3
10	Number of indoor unit connected (refer to *2)	1.	1	0	Possible 0-63		- 6	0 3
13	Number of outdoor units (refer to *3)	1.	1	3	Possible 0-63		- 6	0 3
15	Number of units in zone	1.	1	5	Possible 0-63		- 6	0 3
16	Number of all indoor units of several systems if “F1F2 OUT/D is wired between systems (refer to *4)	1.	1	6	Possible 0-128	- 1	- 2	0 8
17	Description of error (latest)	1.	1	7	Refer to information in "2.5.3 Check for Descriptions of Errors/Retries".			
18	Description of error (1 cycle before)	1.	1	8				
19	Description of error (2 cycles before)	1.	1	9				

*1: Numbers in the "No." column represent the number of times to press the BS button.

*2: Number of indoor units connected: represents the number of indoor units connected to a single outdoor system.

*3: Number of outdoor units: represents the number of outdoor units connected to a single DIII-NET that is a communication line.

*4: Number of terminal units: represents the number of indoor units connected to a single DIII-NET that is a communication line.

No. *1	Monitoring item				Data display			
	Item	7 segment display			Contents	7 segment display		
		SEG 1	SEG 2	SEG 3		SEG 1	SEG 2	SEG 3
23	Description of retry (latest)	1.	2	3	Refer to information in "2.5.3 Check for Descriptions of Errors/Retries".			
24	Description of retry (1 cycle before)	1.	2	4				
25	Description of retry (2 cycles before)	1.	2	5				
28	Number of outdoor units connected to a multi system	1.	2	8	Possible 0-63		- 6	0 3
32	Outdoor board status judgement	1	3	2	0: standard judgement 1: normal 2: abnormal			0 1 2
33	Number of abnormal status judgement outdoor unit PCB	1	3	3	Possible 0-15		- 1	0 5
38	Number of connected RA indoor (through BP unit)	1	3	8	Possible 0-63		- 6	0 3
40	Cooling comfort setting (see mode 2 No. 8)	1	4	0	Possible 0-7			0 7
41	Heating comfort setting (see mode 2 No. 9)	1	4	1	Possible 0-6			0 6
42 *2	High pressure (psi)	1	4	2	Possible 0.1-9.99	0. 9.	1 9	0 9
43 *2	Low pressure (psi)	1	4	3	Possible 0.1-9.99	0. 9.	1 9	0 9
44 *2	Compressor total frequency (Hz)	1	4	4	0-999	0 9	0 9	0 9
45 *2	Opening pulses EV main “Y1E” (pulses / 10)	1	4	5	0-999	0 9	0 9	0 9
46 *2	Discharge pipe temperature R21T (°C)	1	4	6	–99-999	- 9	9 9	9 9
47 *2	Discharge pipe temperature R22T (°C)	1	4	7	–99-999	- 9	9 9	9 9
48 *2	Compressor body temperature R8T (°C)	1	4	8	–99-999	- 9	9 9	9 9
49 *2	Air temperature R1T (°C)	1	4	9	–99-999	- 9	9 9	9 9
50 *2	Accumulator inlet temperature R3T (°C)	1	5	0	–99-999	- 9	9 9	9 9
51 *2	Gas outlet sub-cool heat-exchanger R6T (°C)	1	5	1	–99-999	- 9	9 9	9 9
52 *2	Coil temperature R7T (°C)	1	5	2	–99-999	- 9	9 9	9 9
53 *2	Compressor operation hours / 100	1	5	3	0-999	0 9	0 9	0 9

*1: Numbers in the "No." column represent the number of times to press the BS button.

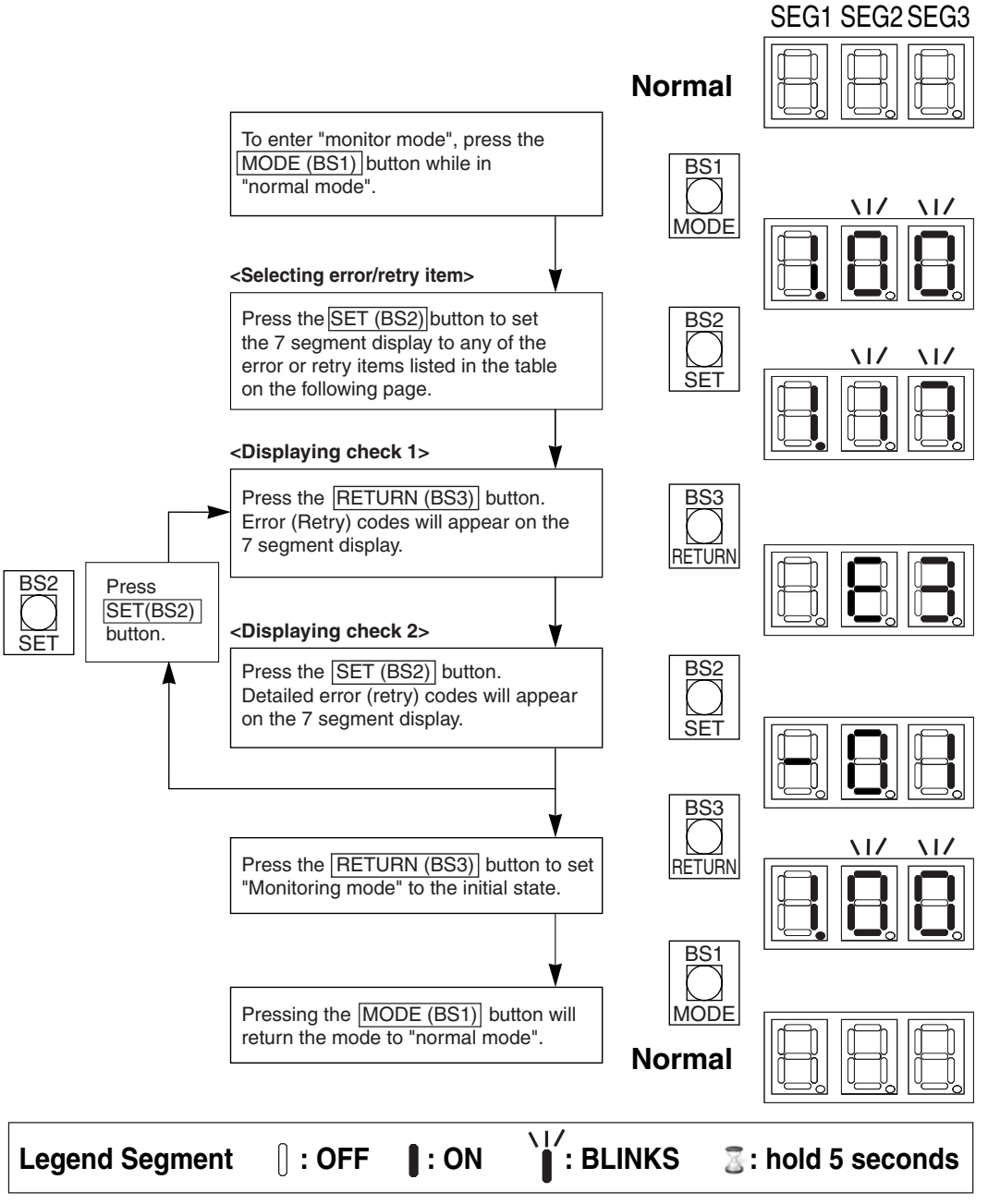
*2: Available from software ID “30-28” (to check current software version, refer to monitor mode No. 20).

2.5.3 Check for Descriptions of Errors/Retries

Follow the procedure described below. This procedure is different than indicated in previous “Monitor mode”.

The error codes for forced stop outdoor or retry are item:

- 17, 18, 19: description of error (outdoor system stopped operation).
- 23, 24, 25: description of retry.



- The tables on next pages show a full list of possible error codes displayed on the 3 digit 7 segment display of the outdoor unit. The error code contains an upper and lower digit. To scroll between upper and lower error digit, use the “Set” button BS2 when the select number in the monitoring mode is chosen:
  - No. 17-19 for error: system operated stopped.
  - No. 23-25 for retry: system attempts to keep operation.
- The errors cover problems detected in the outdoor unit or the communication.
- Errors detected on the indoor unit are not shown on the outdoor display. For inspecting error code on indoor unit, please consult:
  - Display of the remote controller connected to the indoor units.
  - If there are no remote controllers, there should be a central control device set up. Prior to start up, make the necessary group number settings on each indoor unit.

Error code		Description of error	Upper code			Lower code		
			SEG 1	SEG 2	SEG 3	SEG 1	SEG 2	SEG 3
E1	- 1	Outdoor unit PCB error		E	1	-	0	1
	- 2	Defective outdoor unit PCB				-	0	2
E2	- 1	Ground leakage detection error – Master unit		E	2	-	0	1
	- 2	Ground leakage detection error – Slave unit 1				-	0	2
	- 3	Ground leakage detection error – Slave unit 2				-	0	3
	- 6	Missing of ground leakage detection core – Master unit				-	0	6
	- 7	Missing of ground leakage detection core – Slave unit 1				-	0	7
	- 8	Missing of ground leakage detection core – Slave unit 2				-	0	8
E3	- 1	Actuation of high pressure switch – Master unit		E	3	-	0	1
	- 2	High pressure - refrigerant overcharge or closed stop valve – Master unit				-	0	2
	- 3	Actuation of high pressure switch – Slave unit 1				-	0	3
	- 4	High pressure - refrigerant overcharge or closed stop valve – Slave unit 1				-	0	4
	- 5	Actuation of high pressure switch – Slave unit 2				-	0	5
	- 6	High pressure - refrigerant overcharge or closed stop valve – Slave unit 2				-	0	6
	- 13	Liquid stop valve check error – Master unit				-	1	3
	- 14	Liquid stop valve check error – Slave unit 1				-	1	4
	- 15	Liquid stop valve check error – Slave unit 2				-	1	5
	- 18	Overall retry of high pressure switch				-	1	8
E4	- 1	Low pressure sensor error – Master unit		E	4	-	0	1
	- 2	Low pressure sensor error – Slave unit 1				-	0	2
	- 3	Low pressure sensor error – Slave unit 2				-	0	3
E5	- 1	Inverter compressor 1 lock – Master unit		E	5	-	0	1
	- 2	Inverter compressor 1 lock – Slave unit 1				-	0	2
	- 3	Inverter compressor 1 lock – Slave unit 2				-	0	3
	- 7	Inverter compressor 2 lock – Master unit				-	0	7
	- 8	Inverter compressor 2 lock – Slave unit 1				-	0	8
	- 9	Inverter compressor 2 lock – Slave unit 2				-	0	9
E7	- 1	Fan motor 1 lock – Master unit		E	7	-	0	1
	- 2	Fan motor 2 lock – Master unit				-	0	2
	- 5	Fan motor 1 momentary overcurrent – Master unit				-	0	5
	- 6	Fan motor 2 momentary overcurrent – Master unit				-	0	6
	- 9	Fan motor 1 IPM error – Master unit				-	0	9
	- 10	Fan motor 2 IPM error – Master unit				-	0	9
	- 13	Fan motor 1 lock – Slave unit 1				-	1	3
	- 14	Fan motor 2 lock – Slave unit 1				-	1	4
	- 17	Fan motor 1 momentary overcurrent – Slave unit 1				-	1	7
	- 18	Fan motor 2 momentary overcurrent – Slave unit 1				-	1	8
	- 21	Fan motor 1 IPM error – Slave unit 1				-	2	1
	- 22	Fan motor 2 IPM error – Slave unit 1				-	2	2
	- 25	Fan motor 1 lock – Slave unit 2				-	2	5
	- 26	Fan motor 1 lock – Slave unit 2				-	2	6
	- 29	Fan motor 1 momentary overcurrent – Slave unit 2				-	2	9
	- 30	Fan motor 2 momentary overcurrent – Slave unit 2				-	3	0
	- 33	Fan motor 1 IPM error – Slave unit 2				-	3	3
	- 34	Fan motor 2 IPM error – Slave unit 2				-	3	4

Error code			Description of error	Upper code			Lower code		
				SEG 1	SEG 2	SEG 3	SEG 1	SEG 2	SEG 3
E9	-	1	Electronic expansion valve 2 coil (Y2E) error – Master unit		E	9	-	0	1
	-	3	Electronic expansion valve 3 coil (Y3E) error – Master unit				-	0	3
	-	4	Electronic expansion valve 1 coil (Y1E) error – Master unit				-	0	4
	-	5	Electronic expansion valve 2 coil (Y2E) error – Slave unit 1				-	0	5
	-	6	Electronic expansion valve 3 coil (Y3E) error – Slave unit 1				-	0	6
	-	7	Electronic expansion valve 1 coil (Y1E) error – Slave unit 1				-	0	7
	-	8	Electronic expansion valve 2 coil (Y2E) error – Slave unit 2				-	0	8
	-	9	Electronic expansion valve 3 coil (Y3E) error – Slave unit 2				-	0	9
	-	10	Electronic expansion valve 1 coil (Y1E) error – Slave unit 2				-	1	0
	-	20	Defective electronic expansion valve 1 coil (Y1E) – Master unit				-	2	0
	-	21	Defective electronic expansion valve 1 coil (Y1E) – Slave unit 1				-	2	1
	-	22	Defective electronic expansion valve 1 coil (Y1E) – Slave unit 2				-	2	2
	-	23	Defective electronic expansion valve 2 coil (Y2E) – Master unit				-	2	3
	-	24	Defective electronic expansion valve 2 coil (Y2E) – Slave unit 1				-	2	4
	-	25	Defective electronic expansion valve 2 coil (Y2E) – Slave unit 2				-	2	5
F3	-	1	Discharge pipe high temperature error – Master unit		F	3	-	1	1
	-	3	Discharge pipe high temperature error – Slave unit 1				-	1	3
	-	5	Discharge pipe high temperature error – Slave unit 2				-	1	5
	-	20	Compressor overheat error – Master unit				-	2	0
	-	21	Compressor overheat error – Slave unit 1				-	2	1
	-	22	Compressor overheat error – Slave unit 2				-	2	2
F4	-	1	Wet alarm		F	4	-	0	1
	-	2	Wet alarm for inverter compressor 1 – Master unit				-	0	2
	-	3	Wet alarm for inverter compressor 2 – Master unit				-	0	3
	-	4	Wet alarm for inverter compressor 1 – Slave unit 1				-	0	4
	-	5	Wet alarm for inverter compressor 2 – Slave unit 1				-	0	5
	-	6	Wet alarm for inverter compressor 1 – Slave unit 2				-	0	6
	-	7	Wet alarm for inverter compressor 2 – Slave unit 2				-	0	7
	-	8	Wet error for inverter compressor 1 – Master unit				-	0	8
	-	9	Wet error for inverter compressor 2 – Master unit				-	0	9
	-	10	Wet error for inverter compressor 1 – Slave unit 1				-	1	0
	-	11	Wet error for inverter compressor 2 – Slave unit 1				-	1	1
	-	12	Wet error for inverter compressor 1 – Slave unit 2				-	1	2
	-	13	Wet error for inverter compressor 2 – Slave unit 2				-	1	3
	-	14	Indoor unit failure alarm				-	1	4
F6	-	2	Refrigerant overcharged		F	6	-	0	2
H3	-	2	Connection error (Control & inverter PCB 1 (A3P)) – Master unit		H	3	-	0	2
	-	3	Connection error (Control & inverter PCB 2 (A6P)) – Master unit				-	0	3
	-	4	Connection error (Control & inverter PCB 1 (A3P)) – Slave unit 1				-	0	4
	-	5	Connection error (Control & inverter PCB 2 (A6P)) – Slave unit 1				-	0	5
	-	6	Connection error (Control & inverter PCB 1 (A3P)) – Slave unit 2				-	0	6
	-	7	Connection error (Control & inverter PCB 2 (A6P)) – Slave unit 2				-	0	7

Error code			Description of error	Upper code			Lower code		
				SEG 1	SEG 2	SEG 3	SEG 1	SEG 2	SEG 3
H7	-	1	Fan motor 1 signal detection error – Master unit		H	7	-	0	1
	-	2	Fan motor 2 signal detection error – Master unit				-	0	2
	-	5	Fan motor 1 signal detection error – Slave unit 1				-	0	5
	-	6	Fan motor 2 signal detection error – Slave unit 1				-	0	6
	-	9	Fan motor 1 signal detection error – Slave unit 2				-	0	9
	-	10	Fan motor 2 signal detection error – Slave unit 2				-	1	0
H9	-	1	Defective outdoor air thermistor – Master unit		H	9	-	0	1
	-	2	Defective outdoor air thermistor – Slave unit 1				-	0	2
	-	3	Defective outdoor air thermistor – Slave unit 2				-	0	3
J3	-	16	Defective discharge pipe 1 thermistor: Open – Master unit		J	3	-	1	6
	-	17	Defective discharge pipe 1 thermistor: Short – Master unit				-	1	7
	-	22	Defective discharge pipe 1 thermistor: Open – Slave unit 1				-	2	2
	-	23	Defective discharge pipe 1 thermistor: Short – Slave unit 1				-	2	3
	-	28	Defective discharge pipe 1 thermistor: Open – Slave unit 2				-	2	8
	-	29	Defective discharge pipe 1 thermistor: Short – Slave unit 2				-	2	9
J3	-	18	Defective discharge pipe 2 thermistor: Open – Master unit		J	3	-	1	8
	-	19	Defective discharge pipe 2 thermistor: Short – Master unit				-	1	9
	-	24	Defective discharge pipe 2 thermistor: Open – Slave unit 1				-	2	4
	-	25	Defective discharge pipe 2 thermistor: Short – Slave unit 1				-	2	5
	-	30	Defective discharge pipe 2 thermistor: Open – Slave unit 2				-	3	0
	-	31	Defective discharge pipe 2 thermistor: Short – Slave unit 2				-	3	1
J3	-	47	Defective compressor body thermistor: Open – Master unit		J	3	-	4	7
	-	48	Defective compressor body thermistor: Short – Master unit				-	4	8
	-	49	Defective compressor body thermistor: Open – Slave unit 1				-	4	9
	-	50	Defective compressor body thermistor: Short – Slave unit 1				-	5	0
	-	51	Defective compressor body thermistor: Open – Slave unit 2				-	5	1
	-	52	Defective compressor body thermistor: Short – Slave unit 2				-	5	2
J3	-	56	Discharge pipe warning – Master unit		J	3	-	5	6
	-	57	Discharge pipe warning – Slave unit 1				-	5	7
	-	58	Discharge pipe warning – Slave unit 2				-	5	8
J5	-	1	Defective accumulator inlet thermistor – Master unit		J	5	-	0	1
	-	3	Defective accumulator inlet thermistor – Slave unit 1				-	0	3
	-	5	Defective accumulator inlet thermistor – Slave unit 2				-	0	5
	-	15	Error detection of accumulator inlet thermistor – Master unit				-	1	5
	-	16	Error detection of accumulator inlet thermistor – Slave unit 1				-	1	6
	-	17	Error detection of accumulator inlet thermistor – Slave unit 2				-	1	7
J6	-	1	Defective heat exchanger thermistor – Master unit		J	6	-	0	1
	-	2	Defective heat exchanger thermistor – Slave unit 1				-	0	2
	-	3	Defective heat exchanger thermistor – Slave unit 2				-	0	3
J7	-	6	Defective subcooling liquid pipe thermistor (R5T) – Master unit		J	7	-	0	6
	-	7	Defective subcooling liquid pipe thermistor (R5T) – Slave unit 1				-	0	7
	-	8	Defective subcooling liquid pipe thermistor (R5T) – Slave unit 2				-	0	8

Error code			Description of error	Upper code			Lower code		
				SEG 1	SEG 2	SEG 3	SEG 1	SEG 2	SEG 3
U8	-	1	Defective heat exchanger liquid pipe thermistor (R4T) – Master unit		U	8	-	0	1
	-	2	Defective heat exchanger liquid pipe thermistor (R4T) – Slave unit 1				-	0	2
	-	3	Defective heat exchanger liquid pipe thermistor (R4T) – Slave unit 2				-	0	3
U9	-	1	Defective sub-cool heat exchanger outlet thermistor – Master unit		U	9	-	0	1
	-	2	Defective sub-cool heat exchanger outlet thermistor – Slave unit 1				-	0	2
	-	3	Defective sub-cool heat exchanger outlet thermistor – Slave unit 2				-	0	3
	-	8	Error detection - Failure of sub-cool heat exchanger outlet thermistor – Master unit				-	0	8
	-	9	Error detection - Failure of sub-cool heat exchanger outlet thermistor – Slave unit 1				-	0	9
	-	10	Error detection - Failure of sub-cool heat exchanger outlet thermistor – Slave unit 2				-	1	0
UR	-	6	Defective high pressure sensor: Open – Master unit		U	R	-	0	6
	-	7	Defective high pressure sensor: Short – Master unit				-	0	7
	-	8	Defective high pressure sensor: Open – Slave unit 1				-	0	8
	-	9	Defective high pressure sensor: Short – Slave unit 1				-	0	9
	-	10	Defective high pressure sensor: Open – Slave unit 2				-	1	0
	-	11	Defective high pressure sensor: Short – Slave unit 2				-	1	1
UE	-	6	Defective low pressure sensor: Open – Master unit		U	C	-	0	6
	-	7	Defective low pressure sensor: Short – Master unit				-	0	7
	-	8	Defective low pressure sensor: Open – Slave unit 1				-	0	8
	-	9	Defective low pressure sensor: Short – Slave unit 1				-	0	9
	-	10	Defective low pressure sensor: Open – Slave unit 2				-	1	0
	-	11	Defective low pressure sensor: Short – Slave unit 2				-	1	1
L1	-	1	Instantaneous overcurrent - Inverter compressor 1 – Master unit		L	1	-	0	1
	-	2	Defective current sensor - Inverter compressor 1 – Master unit				-	0	2
	-	3	Current offset - Inverter compressor 1 – Master unit				-	0	3
	-	4	Failure power transistors - Inverter compressor 1 – Master unit				-	0	4
	-	5	Jumper settings Inverter - Inverter compressor 1 – Master unit				-	0	5
	-	17	Instantaneous overcurrent - Inverter compressor 2 – Master unit				-	1	7
	-	18	Defective current sensor - Inverter compressor 2 – Master unit				-	1	8
	-	19	Current offset - Inverter compressor 2 – Master unit				-	1	9
	-	20	Defective power transistors - Inverter compressor 2 – Master unit				-	2	0
	-	21	Jumper settings Inverter - Inverter compressor 2 – Master unit				-	2	1
	-	28	Defective inverter fan motor 1 - Master unit – ROM				-	2	8
	-	29	Defective inverter fan motor 2 - Master unit – ROM				-	2	9
	-	36	Defective inverter compressor 1 - Master unit – ROM				-	3	6
	-	37	Defective inverter compressor 2 - Master unit – ROM				-	3	7
	-	47	Power supply inverter compressor 1 error – Master unit				-	4	7
	-	48	Power supply inverter compressor 2 error – Master unit				-	4	8

Error code			Description of error	Upper code			Lower code		
				SEG 1	SEG 2	SEG 3	SEG 1	SEG 2	SEG 3
L1	-	7	Instantaneous overcurrent - Inverter compressor 1 – Slave unit 1		L	1	-	0	7
	-	8	Defective current sensor - Inverter compressor 1 – Slave unit 1				-	0	8
	-	9	Current offset - Inverter compressor 1 – Slave unit 1				-	0	9
	-	10	Defective power transistors - Inverter compressor 1 – Slave unit 1				-	1	0
	-	15	Jumper settings inverter - Inverter compressor 1 – Slave unit 1				-	1	5
	-	22	Instantaneous overcurrent - Inverter compressor 2 – Slave unit 1				-	2	2
	-	23	Defective current sensor - Inverter compressor 2 – Slave unit 1				-	2	3
	-	24	Current offset - Inverter compressor 2 – Slave unit 1				-	2	4
	-	25	Defective power transistors - Inverter compressor 2 – Slave unit 1				-	2	5
	-	26	Jumper settings inverter - Inverter compressor 2 – Slave unit 1				-	2	6
	-	32	Defective inverter fan motor 1 ROM – Slave unit 1				-	3	2
	-	33	Defective inverter fan motor 2 ROM – Slave unit 1				-	3	3
	-	38	Defective inverter compressor 1 ROM – Slave unit 1				-	3	8
	-	39	Defective inverter compressor 2 ROM – Slave unit 1				-	3	9
	-	49	Power supply inverter compressor 1 error – Slave unit 1				-	4	9
	-	50	Power supply inverter compressor 2 error – Slave unit 1				-	5	0
L1	-	11	Instantaneous overcurrent - Inverter compressor 1 – Slave unit 2		L	1	-	1	1
	-	12	Defective current sensor - Inverter compressor 1 – Slave unit 2				-	1	2
	-	13	Current offset - Inverter compressor 1 – Slave unit 2				-	1	3
	-	14	Defective power transistors - Inverter compressor 1 – Slave unit 2				-	1	4
	-	16	Jumper settings inverter - Inverter compressor 1 – Slave unit 2				-	1	6
	-	34	Defective inverter fan motor 1 ROM – Slave unit 2				-	3	4
	-	35	Defective inverter fan motor 2 ROM – Slave unit 2				-	3	5
	-	40	Defective inverter compressor 1 ROM – Slave unit 2				-	4	0
	-	41	Defective inverter compressor 2 ROM – Slave unit 2				-	4	1
	-	42	Instantaneous overcurrent - Inverter compressor 2 – Slave unit 2				-	4	2
	-	43	Defective current sensor - Inverter compressor 2 – Slave unit 2				-	4	3
	-	44	Current offset - Inverter compressor 2 – Slave unit 2				-	4	4
	-	45	Defective power transistors - Inverter compressor 2 – Slave unit 2				-	4	5
	-	46	Jumper settings inverter - Inverter compressor 2 – Slave unit 2				-	4	6
	-	51	Power supply inverter compressor 1 error – Slave unit 2				-	5	1
	-	52	Power supply inverter compressor 2 error – Slave unit 2				-	5	2

Error code		Description of error	Upper code			Lower code		
			SEG 1	SEG 2	SEG 3	SEG 1	SEG 2	SEG 3
L4	- 1	Radiation fin temperature rise: INV. PCB 1 – Master		L	4	-	0	1
	- 2	Radiation fin temperature rise: INV. PCB 1 – Slave 1				-	0	2
	- 3	Radiation fin temperature rise: INV. PCB 1 – Slave 2				-	0	3
	- 9	Radiation fin temperature rise: INV. PCB 2 – Master				-	0	9
	- 10	Radiation fin temperature rise: INV. PCB 2 – Slave 1				-	1	0
	- 11	Radiation fin temperature rise: INV. PCB 2 – Slave 2				-	1	1
L5	- 3	Inverter compressor 1 momentary overcurrent (Master)		L	5	-	0	3
	- 5	Inverter compressor 1 momentary overcurrent (Slave 1)				-	0	5
	- 7	Inverter compressor 1 momentary overcurrent (Slave 2)				-	0	7
	- 14	Inverter compressor 2 momentary overcurrent (Master)				-	1	4
	- 15	Inverter compressor 2 momentary overcurrent (Slave 1)				-	1	5
	- 16	Inverter compressor 2 momentary overcurrent (Slave 2)				-	1	6
L8	- 3	Inverter compressor 1 overcurrent (Master)		L	8	-	0	3
	- 6	Inverter compressor 1 overcurrent (Slave 1)				-	0	6
	- 7	Inverter compressor 1 overcurrent (Slave 2)				-	0	7
	- 11	Inverter compressor 2 overcurrent (Master)				-	1	1
	- 12	Inverter compressor 2 overcurrent (Slave 1)				-	1	2
	- 13	Inverter compressor 2 overcurrent (Slave 2)				-	1	3
L9	- 1	Inverter compressor 1 startup error (Master)		L	9	-	0	1
	- 5	Inverter compressor 1 startup error (Slave 1)				-	0	5
	- 6	Inverter compressor 1 startup error (Slave 2)				-	0	6
	- 10	Inverter compressor 2 startup error (Master)				-	1	0
	- 11	Inverter compressor 2 startup error (Slave 1)				-	1	1
	- 12	Inverter compressor 2 startup error (Slave 2)				-	1	2
LC	- 14	Transmission error (Between outdoor units, inverter PCB 1) (Master)		L	C	-	1	4
	- 15	Transmission error (Between outdoor units, inverter PCB 1) (Slave 1)				-	1	5
	- 16	Transmission error (Between outdoor units, inverter PCB 1) (Slave 2)				-	1	6
	- 19	Transmission error (Between outdoor units, fan PCB 1) (Master)				-	1	9
	- 20	Transmission error (Between outdoor units, fan PCB 1) (Slave 1)				-	2	0
	- 21	Transmission error (Between outdoor units, fan PCB 1) (Slave 2)				-	2	1
	- 24	Transmission error (Between outdoor units, fan PCB 2) (Master)				-	2	4
	- 25	Transmission error (Between outdoor units, fan PCB 2) (Slave 1)				-	2	5
	- 26	Transmission error (Between outdoor units, fan PCB 2) (Slave 2)				-	2	6
	- 30	Transmission error (Between outdoor units, inverter PCB 2) (Master)				-	3	0
	- 31	Transmission error (Between outdoor units, inverter PCB 2) (Slave 1)				-	3	1
	- 32	Transmission error (Between outdoor units, inverter PCB 2) (Slave 2)				-	3	2
	- 33	Transmission error (Between outdoor units, sub PCB) “EKBPHPCBT7” (Master) or set 2-52-2 without sub board				-	3	3
	- 34	Transmission error (Between outdoor units, sub PCB) “EKBPHPCBT7” (Slave 1) or set 2-52-2 without sub board				-	3	4
	- 35	Transmission error (Between outdoor units, sub PCB) “EKBPHPCBT7” (Slave 2) or set 2-52-2 without sub board				-	3	5

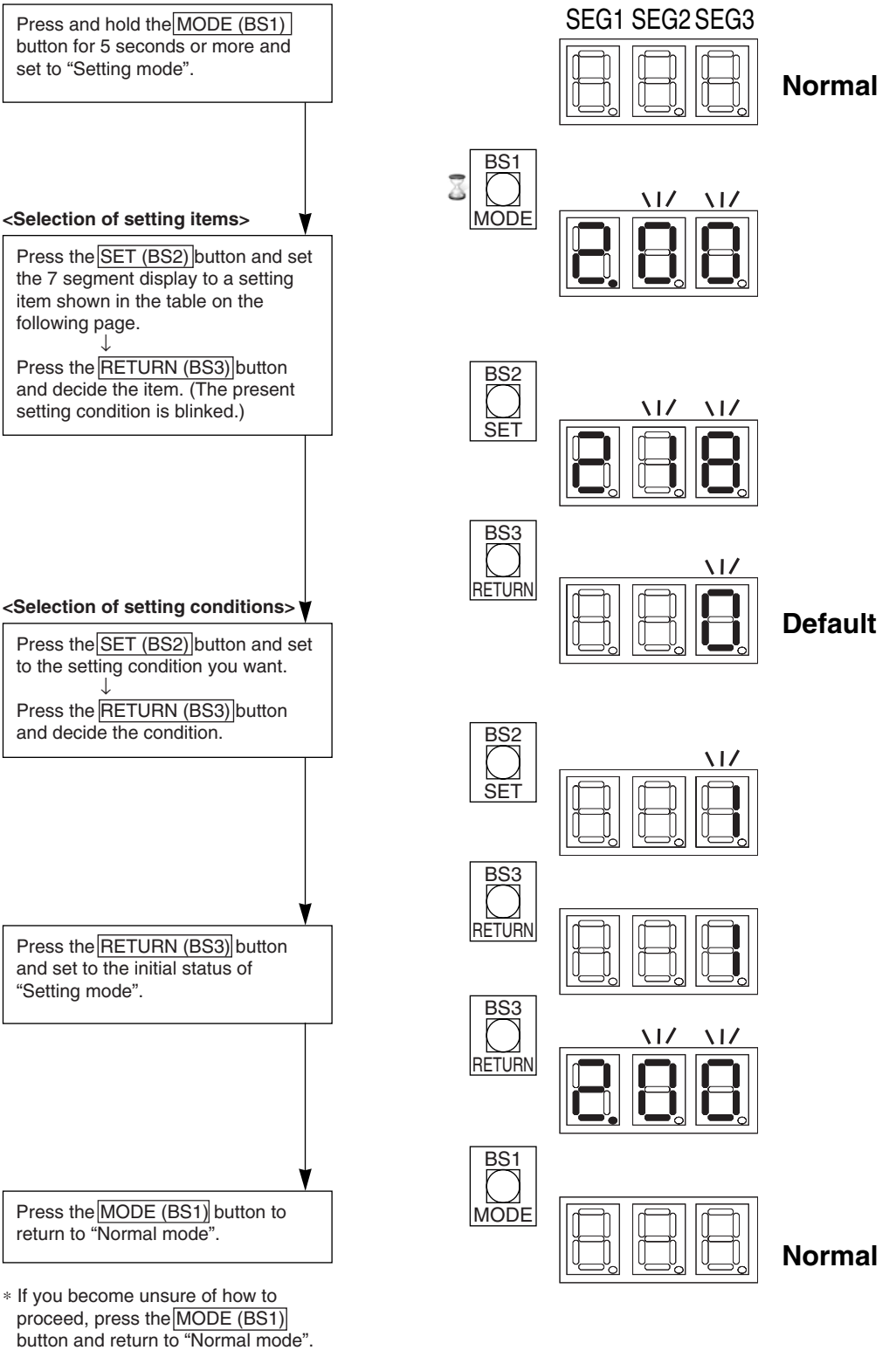
Error code			Description of error	Upper code			Lower code		
				SEG 1	SEG 2	SEG 3	SEG 1	SEG 2	SEG 3
P1	-	1	Inverter 1 power supply unbalanced voltage (Master)		P	1	-	0	1
	-	2	Inverter 1 power supply unbalanced voltage (Slave 1)				-	0	2
	-	3	Inverter 1 power supply unbalanced voltage (Slave 2)				-	0	3
	-	7	Inverter 2 power supply unbalanced voltage (Master)				-	0	7
	-	8	Inverter 2 power supply unbalanced voltage (Slave 1)				-	0	8
	-	9	Inverter 2 power supply unbalanced voltage (Slave 2)				-	0	9
P3	-	1	Defective reactor thermistor 1 (Master: Inverter PCB 1)		P	3	-	0	1
	-	2	Defective reactor thermistor 1 (Slave 1: Inverter PCB 1)				-	0	2
	-	3	Defective reactor thermistor 1 (Slave 2: Inverter PCB 1)				-	0	3
	-	4	Defective reactor thermistor 2 (Master: Inverter PCB 1)				-	0	4
	-	5	Defective reactor thermistor 2 (Slave 1: Inverter PCB 1)				-	0	5
	-	6	Defective reactor thermistor 2 (Slave 2: Inverter PCB 1)				-	0	6
	-	7	Defective reactor thermistor 1 (Master: Inverter PCB 2)				-	0	7
	-	8	Defective reactor thermistor 1 (Slave 1: Inverter PCB 2)				-	0	8
	-	9	Defective reactor thermistor 1 (Slave 2: Inverter PCB 2)				-	0	9
	-	10	Defective reactor thermistor 2 (Master: Inverter PCB 2)				-	1	0
	-	11	Defective reactor thermistor 2 (Slave 1: Inverter PCB 2)				-	1	1
	-	12	Defective reactor thermistor 2 (Slave 2: Inverter PCB 2)				-	1	2
P4	-	1	Defective Radiation fin thermistor (Master: Inverter PCB 1)		P	4	-	0	1
	-	4	Defective Radiation fin thermistor (Slave 1: Inverter PCB 1)				-	0	4
	-	5	Defective Radiation fin thermistor (Slave 2: Inverter PCB 1)				-	0	5
	-	6	Defective Radiation fin thermistor (Master: Inverter PCB 2)				-	0	6
	-	7	Defective Radiation fin thermistor (Slave 1: Inverter PCB 2)				-	0	7
	-	8	Defective Radiation fin thermistor (Slave 2: Inverter PCB 2)				-	0	8
PJ	-	4	Incorrect type of inverter PCB 1 (Master)		P	J	-	0	4
	-	5	Incorrect type of inverter PCB 1 (Slave 1)				-	0	5
	-	6	Incorrect type of inverter PCB 1 (Slave 2)				-	0	6
	-	9	Incorrect type of fan PCB 1 (Master)				-	0	9
	-	10	Incorrect type of fan PCB 2 (Master)				-	1	0
	-	12	Incorrect type of inverter PCB 2 (Master)				-	1	2
	-	13	Incorrect type of inverter PCB 2 (Slave 1)				-	1	3
	-	14	Incorrect type of inverter PCB 2 (Slave 2)				-	1	4
	-	15	Incorrect type of fan PCB 1 (Slave 1)				-	1	5
	-	16	Incorrect type of fan PCB 1 (Slave 2)				-	1	6
	-	17	Incorrect type of fan PCB 2 (Slave 1)				-	1	7
	-	18	Incorrect type of fan PCB 2 (Slave 2)				-	1	8

Error code			Description of error	Upper code			Lower code		
				SEG 1	SEG 2	SEG 3	SEG 1	SEG 2	SEG 3
U0	-	5	Refrigerant shortage alarm		U	0	-	0	5
	-	6	Refrigerant shortage alarm				-	0	6
	-	8	Refrigerant shortage (Master)				-	0	8
	-	9	Refrigerant shortage (Slave 1)				-	0	9
	-	10	Refrigerant shortage (Slave 2)				-	1	0
U1	-	1	Reverse phase/open phase of power supply (Master)		U	1	-	0	1
	-	4	Reverse phase of power supply (when power ON) (Master)				-	0	4
	-	5	Reverse phase/open phase of power supply (Slave 1)				-	0	5
	-	6	Reverse phase of power supply (when power ON) (Slave 1)				-	0	6
	-	7	Reverse phase/open phase of power supply (Slave 2)				-	0	7
	-	8	Reverse phase of power supply (when power ON) (Slave 2)				-	0	8
U2	-	1	Shortage of inverter 1 power supply voltage (Master)		U	2	-	0	1
	-	2	Open phase of inverter 1 power supply (Master)				-	0	2
	-	3	Defective capacitor in inverter 1 main circuit (Master)				-	0	3
	-	8	Shortage of inverter 1 power supply voltage (Slave 1)				-	0	8
	-	9	Open phase of inverter 1 power supply (Slave 1)				-	0	9
	-	10	Defective capacitor in inverter 1 main circuit (Slave 1)				-	1	0
	-	11	Shortage of inverter 1 power supply voltage (Slave 2)				-	1	1
	-	12	Open phase of inverter 1 power supply (Slave 2)				-	1	2
	-	13	Defective capacitor in inverter 1 main circuit (Slave 2)				-	1	3
	-	22	Shortage of inverter 2 power supply voltage (Master)				-	2	2
	-	23	Open phase of inverter 2 power supply (Master)				-	2	3
	-	24	Defective capacitor in inverter 2 main circuit (Master)				-	2	4
	-	25	Shortage of inverter 2 power supply voltage (Slave 1)				-	2	5
	-	26	Open phase of inverter 2 power supply (Slave 1)				-	2	6
	-	27	Defective capacitor in inverter 2 main circuit (Slave 1)				-	2	7
	-	28	Shortage of inverter 2 power supply voltage (Slave 2)				-	2	8
	-	29	Open phase of inverter 2 power supply (Slave 2)				-	2	9
	-	30	Defective capacitor in inverter 2 main circuit (Slave 2)				-	3	0
U3	-	2	Initial installation alarm / Test operation failed due to indoor unit error		U	3	-	0	2
	-	3	Test operation not conducted				-	0	3
	-	4	Abnormal end of test operation				-	0	4
	-	5	Premature end of test operation during initial transmission error – check indoor unit error U4 / U9				-	0	5
	-	6	Premature end of test operation during normal transmission error				-	0	6
	-	7	Premature end of test operation due to transmission error				-	0	7
	-	8	Premature end of test operation due to transmission error of all units				-	0	8
U4	-	1	Transmission error between indoor and outdoor units		U	4	-	0	1
	-	3	Transmission error between indoor unit and system: check indoor unit error				-	0	3
	-	15	Outdoor unable to start test operation because some indoor detects error				-	1	5

Error code			Description of error	Upper code			Lower code		
				SEG 1	SEG 2	SEG 3	SEG 1	SEG 2	SEG 3
U7	-	1	Error when external control adaptor for outdoor unit is installed		U	7	-	0	1
	-	2	Alarm when external control adaptor for outdoor unit is installed				-	0	2
	-	3	Transmission error between master and slave 1 units				-	0	3
	-	4	Transmission error between master and slave 2 units				-	0	4
	-	5	Multi system error				-	0	5
	-	6	Error in address settings of slave 1 and 2				-	0	6
	-	7	Connection of four or more outdoor units in the same system				-	0	7
	-	11	Error in indoor unit connection capacity for test operation				-	1	1
U9	-	1	Other indoor units abnormality		U	9	-	0	1
UA	-	17	Connection of excessive indoor units		U	A	-	1	7
	-	18	Connection of wrong models of indoor units				-	1	8
	-	20	Improper combination of outdoor units				-	2	0
	-	21	Connection error				-	2	1
	-	29	Branch selector BSVQ-P connected to heat pump system				-	2	9
	-	31	Multi-unit combination error				-	3	1
	-	38	Daikin Altherma indoor unit detected				-	3	8
	-	39	Other hydrobox type than HXY-A unit detected				-	3	9
	-	50	RA connected to BP units and HXY-A unit detected				-	5	0
	-	51	Only HXY-a unit(s) connected, minimum 50% DX indoor need				-	5	1
UF	-	1	Wrong wiring check error		U	F	-	0	1
	-	5	Defective stop valve for test operation				-	0	5
UH	-	1	Wiring error		U	H	-	0	1
UJ	-	1	Defective active filter (Master)		U	J	-	0	1
	-	2	Defective active filter (Slave 1)				-	0	2
	-	3	Defective active filter (Slave 2)				-	0	3

Caution Code			Description code	Upper code		
				SEG 1	SEG 2	SEG 3
	P	2	Auto charge more than 5 minutes “t03” blinking		P	2
		8	Auto charge abnormal end freeze up indoor		P	8
		E	Auto charge nearly terminated		P	E
		9	Auto charge normal terminated		P	9
E	-	1	Conditions not met to perform leak test	E	-	1
	-	2	Indoor air average below 10°C (50°F) for leak test	E	-	2
	-	3	Outdoor air below 0°C (32°F) for leak test	E	-	3
	-	4	Abnormal low pressure during leak test	E	-	4
	-	5	Some indoor not compatible for leak test	E	-	5

2.6 Setting Mode (Mode 2)



∗ If you become unsure of how to proceed, press the MODE (BS1) button and return to “Normal mode”.

Legend Segment : OFF : ON : BLINKS : hold 5 seconds

2.6.1 List of Setting Mode (Mode 2)

This overview shows the available settings by using the press buttons on the outdoor unit PCB.

No. *1	Item	Description	7 segment display			Description	7 segment display Range		
			SEG 1	SEG 2	SEG 3		SEG 1	SEG 2	SEG 3
0	COOL/HEAT selection	Several systems as 1 zone change over COOL/HEAT: ■ INDIVIDUAL: *VRV* indoor unit or A-B-C input set mode. ■ MASTER: System is the COOL/HEAT master unit. ■ SLAVE: System is not a COOL/HEAT master.	2.	0	0	**Individual** Unified master Unified slave			**0** 1 2
1	COOL/HEAT unified address	Used to make address setting for unified cooling/heating operation.	2.	0	1	Address **0** ~ 31		~ 3	**0** 1
2	Low noise/ demand address	Used to make address setting for low noise/ demand operation.	2.	0	2	Address **0** ~ 31		~ 3	**0** 1
5	Indoor fan forced H	Used to force the fan of indoor unit to H tap.	2.	0	5	**Normal operation** Indoor fan H			**0** 1
6	Forced thermostat	Used to force all indoor units to operate forced thermostat ON.	2.	0	6	**Normal operation** Forced thermostat ON			**0** 1
8	Te setting	Used to make setting of targeted evaporating temperature for cooling operation.	2.	0	8	**Auto** (6-11°C) (42.8-51.8°F) Standard: 6°C (42.8°F) High sensible: 7°C (44.6°F) High sensible: 8°C (46.4°F) High sensible: 9°C (48.2°F) High sensible: 10°C (50.0°F) High sensible: 11°C (51.8°F)			**0** 2 3 4 5 6 7
9	Tc setting	Used to make setting of targeted condensing temperature for heating operation.	2.	0	9	**Auto** (38-46°C) (100.4-114.8°F) Low: 41°C (105.8°F) Normal: 43°C (109.4°F) High: 46°C (114.8°F)			**0** 1 3 6
12	External low noise setting/ demand setting	Used to receive external low noise or demand signal.	2.	1	2	Input LNO/DE : **NO** : YES			**0** 1
13	AIRNET address	Used to set address of AIRNET	2.	1	3	Address **0** ~ 63		~ 6	**0** ~ 3
16	Heat pump lockout 1	Used for heat pump lockout	2.	1	6	**OFF** ON			**0** 1
18	High ESP setting FAN	Fan high static pressure setting	2.	1	8	**OFF** ON			**0** 1
20	Additional refrigerant charge	Used to perform additional refrigerant charging operation (compressor operation).	2.	2	0	Refrigerant charging **OFF** ON			 **0** 1
21	Refrigerant recovery and vacuuming	Used to set the system to refrigerant recovery mode (without compressor run).	2.	2	1	Refrigerant recovery **OFF** ON			 **0** 1
22	Automatic night-time low noise operation	Automatic night-time low noise operation. Time for the operation is subject to the start and end time settings.	2.	2	2	**OFF** Level 1 Level 2 Level 3			**0** 1 2 3
25	External low noise level	Low noise level when the external low noise signal is input at option DTA104A61.	2.	2	5	Level 1 **Level 2** Level 3			1 **2** 3

No. *1	Item	Description	7 segment display			Description	7 segment display Range		
			SEG 1	SEG 2	SEG 3		SEG 1	SEG 2	SEG 3
26	Automatic night-time low noise operation start	Time to start automatic “night-time low noise” operation. (“Night-time low noise” level setting should also be made.)	2.	2	6	About 20:00			1
						About 22:00			**2**
						About 24:00			3
27	Automatic night-time low noise operation stop	Time to stop automatic “night-time low noise” operation. (“Night-time low noise” level setting should also be made.)	2.	2	7	About 06:00			1
						About 07:00			2
						About 08:00			**3**
28	Power transistor check	Used to troubleshoot DC compressor. Inverter waveforms are output without wire connections to the compressor. It is useful to determine whether the relevant trouble has resulted from the compressor or inverter PCB.	2.	2	8	**OFF**			**0**
						ON (10 Hz)			1
29	Capacity priority setting	Cancel the low noise level control if capacity is required while low noise operation or night-time low noise operation is in progress.	2.	2	9	**OFF**			**0**
						ON			1
30	Demand 1 setting	Used to make a change to the targeted power consumption level when the demand 1 control signal is inputted.	2.	3	0	Level 1 (60%)			1
						Level 2 (65%)			2
						Level 3 (70%)			**3**
						Level 4 (75%)			4
						Level 5 (80%)			5
						Level 6 (85%)			6
						Level 7 (90%)			7
						Level 8 (95%)			8
31	Demand 2 setting	Used to use a targeted power current level when the demand 2 control signal is input.	2.	3	1	**Level 1 (40%)**			**1**
						Level 2 (50%)			2
						Level 3 (55%)			3
32	Normal demand setting	Used to set permanent demand 1 or 2 control without inputting any external signal.	2.	3	2	**OFF**			**0**
						Demand 1 (2-30)			1
						Demand 2 (2-31)			2
34	Indoor fan tap setting	Indoor fan speed is limited to L tap depending on connection capacity and outdoor air temperature (Ta).	2.	3	4	**Indoor capacity ≥ 130%**			**0**
						Indoor capacity ≥ 130% in heating			1
						Remote controller setting (Not limited)			2
						Limited when Ta < 29.5°C (85.1°F) Returned when Ta > 32.5°C (90.5°F)			3
						Limited when Ta < 23.5°C (74.3°F) Returned when Ta > 26.5°C (79.7°F)			4
						Limited when Ta < 19.3°C (66.7°F) Returned when Ta > 22.3°C (72.1°F)			5
35	Outdoor > 40 m (131 ft) below indoor	To increase Tc target heating.	2.	3	5	Level > 40 m (131 ft)			0
						Level max. 40 m (131 ft)			**1**
									6
						Do not use			7
37	Heat pump lockout 2	Used for heat pump lockout	2.	3	7	**OFF**			**0**
						Mode 1			1
						Mode 2			2
						Mode 3			3
						Mode 4			4
						Mode 5			5
						Mode 6			6
38	Emergency operation (master)	To prohibit a compressor or complete in “Master”. Since module is permanent disabled, immediately replace the defective component(s).	2.	3	8	**OFF**			**0**
						Master INV. 1 OFF			1
						Master INV. 2 OFF			2
						Master unit OFF			3
39	Emergency operation (slave 1)	To prohibit a compressor or complete “Slave 1”. Since module is permanent disabled, immediately replace the defective component(s).	2.	3	9	**OFF**			**0**
						Slave 1 INV. 1 OFF			1
						Slave 1 INV. 2 OFF			2
						Slave 1 unit OFF			3

No. *1	Item	Description	7 segment display			Description	7 segment display Range		
			SEG 1	SEG 2	SEG 3		SEG 1	SEG 2	SEG 3
40	Emergency operation (slave 2)	To prohibit a compressor or complete “Slave 2”. Since module is permanent disabled, immediately replace the defective component(s).	2.	4	0	**OFF**			**0**
						Slave 2 INV. 1 OFF			1
						Slave 2 INV. 2 OFF			2
						Slave 2 unit OFF			3
42	Outdoor fan	Outdoor fan noise countermeasure (limit fan speed).	2.	4	2	**Standard**			**0**
						Mode A			1
						Mode B			2
49	Outdoor > 50 m (164 ft) above indoor	Height difference setting max. 90 m (295 ft).	2.	4	9	**Off (max. 50 m (164 ft))**			**0**
						On (max 90 m (295 ft))			1
51	Sequence multi outdoor	Sequence addressing between master and slave units.	2	5	1	**Automatic**			**0**
						Forced master			1
						Forded slave 1			2
						Forced slave 2			3
81	Cooling comfort setting	Cooling comfort setting	2.	8	1	Eco			0
						Mild			**1**
						Quick			2
						Powerful			3
82	Heating comfort setting	Heating comfort setting	2.	8	2	Eco			0
						Mild			**1**
						Quick			2
						Powerful			3
83	Master user interface setting	Master user interface allocation in case *VRV* DX indoor units and RA DX indoor units are used at the same time	2.	8	3	*VRV* DX master			0
						RA DX master			**1**
84	Initial opening EEV BP unit at heating mode	Initial opening EEV BP unit at heating thermostat-ON	2.	8	4	**400 pulse**			**0**
						500 pulse			1
						600 pulse			2
						300 pulse			3
90	Indoor unit without power	Multi-tenant function setting	2.	9	0	**Invalid**			**0**
						Valid			1
94	Heat pump lockout temperature	Heat pump is locked out when the outdoor ambient temperature is smaller than the heat pump lockout temperature.	2.	9	4	**–26.1°C (–15°F)**			**0**
						–23.3°C (–10°F)			1
						–20.5°C (–5°F)			2
						–17.7°C (0°F)			3
						–15°C (5°F)			4
						–12.2°C (10°F)			5
						–9.4°C (15°F)			6
						–6.6°C (20°F)			7
						–3.8°C (25°F)			8
						–1.1°C (30°F)			9
						1.6°C (35°F)		1	0
						4.4°C (40°F)		1	1
						7.2°C (45°F)		1	2
						10°C (50°F)		1	3
						Forced heat pump lockout		1	4
95	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.	2.	9	5	2.8°C (5°F)			0
						5.6°C (10°F)			**1**
						8.3°C (15°F)			2

No. *1	Item	Description	7 segment display			Description	7 segment display Range		
			SEG 1	SEG 2	SEG 3		SEG 1	SEG 2	SEG 3
96	Auxiliary heater maximum allowable temperature	Auxiliary heater is allowed to energize when the ambient temperature is smaller than the auxiliary heater maximum allowable temperature.	2.	9	6	–17.7°C (0°F)			0
						–15°C (5°F)			1
						–12.2°C (10°F)			2
						–9.4°C (15°F)			3
						–6.6°C (20°F)			4
						–3.8°C (25°F)			5
						–1.1°C (30°F)			6
						1.6°C (35°F)			**7**
						4.4°C (40°F)			8
						7.2°C (45°F)			9
						10°C (50°F)		1	0
						12.7°C (55°F)		1	1
						15.5°C (60°F)		1	2
						18.3°C (65°F)		1	3
						Auxiliary heater always not allowed		1	4
						Auxiliary heater always allowed		1	5
97	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.	2.	9	7	2.8°C (5°F)			0
						5.6°C (10°F)			**1**
						8.3°C (15°F)			2

*1: Numbers in the "No." column represent the number of times to press the BS button.

* : Setting does not return to factory setting when exit mode 2. To cancel the function, change setting manually to factory setting.

* : Once function is activated **t01** appears. To stop current function, press once BS3 “Return” button.

For detailed description about each setting, refer to “Description Field Settings (mode 2: m2) on Outdoor Unit Main PCB” on page 145.

Indication **bold** means factory setting.

2.6.2 Description Field Settings (mode 2: m2) on Outdoor Unit Main PCB

[2-0]: Cool/Heat selection setting

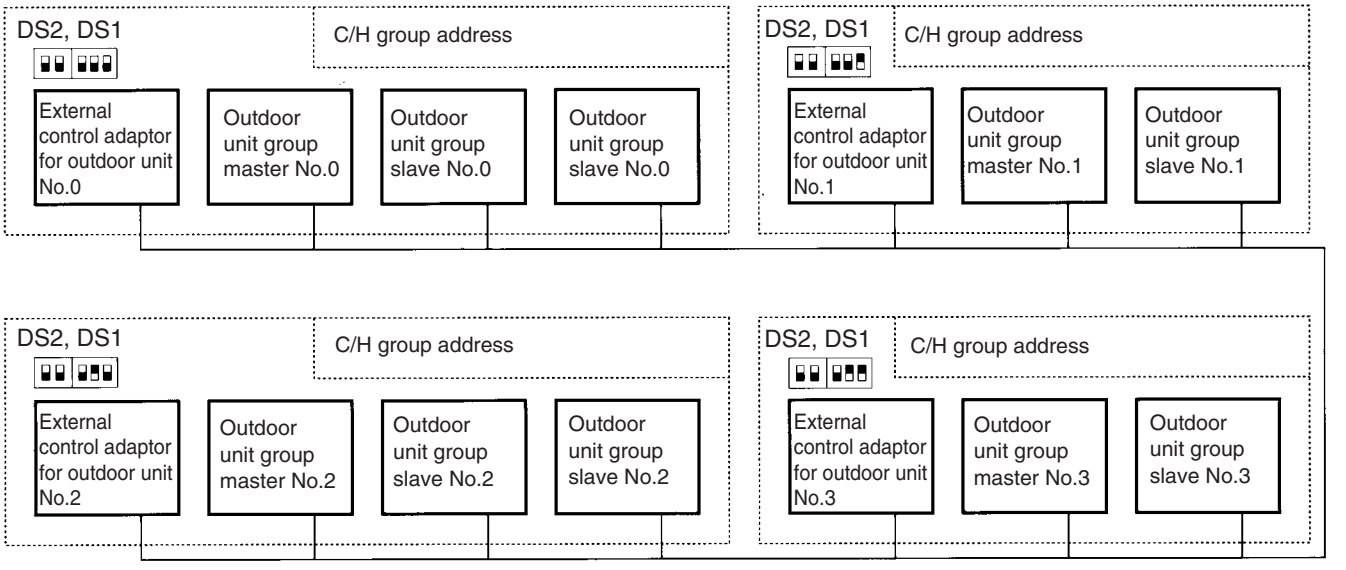
Cool/Heat selection setting is used in case the optional Cool/Heat selector (KRC19-26A) is used. Depending on the outdoor unit setup (single outdoor unit setup or multi outdoor unit setup), the correct setting should be chosen. More details on how to use the Cool/Heat selector option can be found in the manual of the Cool/Heat selector.

- Default value: 0.
- 0: Each individual outdoor unit can select Cool/Heat operation (by Cool/Heat selector if installed), or by defining master indoor user interface (see setting [2-83])
- 1: Master unit decides Cool/Heat operation when outdoor units are connected in multiple system combination
- 2: Sub unit for Cool/Heat operation when outdoor units are connected in multiple system combination

[2-1]: Cool/heat unified address

Address for cool/heat unified operation.

- When multiple heat pump systems need to change over together between cooling and heating (example multiple systems serve indoor units in landscape area). Per zone the optional PCB DTA104A61/62 needs to be installed. Recommended location is in one of the *VRV* indoor units belonging to the system that will be set as “Master cool/heat unit” (field setting 2-0-1).
- The address set to the multiple systems need to operate as a zone, should be same as the address set by the DIP switches on the related optional PCB DTA104A61/62.



- Default value: 0.
- Field setting: 1-31.
- The source for cool/heat selection can be:
  - Indoor unit: when outdoor unit DIP switch DS1-1 is at the “OFF” position.
  - Cool/heat switch: set DIP switch DS1-1 on outdoor unit PCB to “ON”. Operation mode according to connections A-B-C to optional PCB “BRP2A81”.

[2-2]: Low noise/demand address

Address for low noise/demand operation.

- 1 or more systems (maximum 10 systems wired by “F1F2 OUT/D”) can operate use the LNO (Low Noise Operation) or/and the DE (Demand Control) by instruction of field supplied input to optional PCB DTA104A61/62.
- To link the system to the corresponding DTA104A61/62, set the address same as the DIP switches position on the related optional PCB DTA104A61/62.
- Ensure that also field setting 2-12-1 is set to enable input from optional PCB DTA104A61/62.

[2-5]: Cross wiring check
- Default value: 0. Not active.
- Set 1: force all connected indoor units to operate the indoor fan on high speed. This setting can be made to check which units are missing in the communication if the number of indoor units do not correspond to the system lay out. Ensure that after cross wiring check was confirmed, to return setting to default 2-5-0. Once setting 2-5-1 is active, it is not automatically returning to default when exit mode 2.

[2-6]: Forced thermostat ON command all connected indoor units
- Default value: 0. Not active.
- Set 1: force all connected indoor units to operate under “Test” (forced thermostat ON command to outdoor). Ensure that when the forced thermostat ON needs to be ended, to return setting to default 2-6-0. Once setting 2-6-1 is active, it is not automatically returning to default when exit mode 2.

[2-8]: Te target temperature during cooling operation

Value [2-8]	Te target
0 (default)	Auto (6-11°C) (42.8-51.8°F)
2	6°C (42.8°F)
3	7°C (44.6°F)
4	8°C (46.4°F)
5	9°C (48.2°F)
6	10°C (50°F)
7	11°C (51.8°F)

[2-9]: Tc target temperature during heating operation

Value [2-9]	Tc target
0 (default)	Auto (38-46°C) (100.4-114.8°F)
1	41°C (105.8°F)
3	43°C (109.4°F)
6	46°C (114.8°F)

[2-12]: Enable the night-time low noise function and/or power consumption limitation via external control adaptor (DTA104A61/62)
If the system needs to be running under night-time low noise operation or under power consumption limitation conditions when an external signal is sent to the unit, this setting should be changed. This setting will only be effective when the optional external control adaptor (DTA104A61/62) is installed.
Default value: 0
To activate this function: 1

[2-13]: AIRNET address
- When an AIRNET system will be used, outdoor unit needs an AIRNET address.
- Also to facilitate the recognition of a system in the map lay out of the service checker type III, set each system a unique address between 1 and 63.
- When duplicating of AIRNET address, **UC** error code will appear on central control.

[2-16]: Heat pump lockout 1
Heat pump is always locked out when this setting is ON. If the indoor fan control needs to be changed or the auto-backup function is required, refer to the setting [2-37].

Value [2-16]	Heat pump lockout 1
0 (default)	OFF
1	ON

[2-18]: Fan high static pressure setting

In order to increase the static pressure the outdoor fan is delivering, this setting should be activated. For details about this setting, see technical specifications.

Default value: 0
To activate this function: 1

[2-20]: Manual additional refrigerant charge

In order to add the additional refrigerant charge amount in a manual way (without automatic refrigerant charging functionality), following setting should be applied.

Default value: 0
To activate this function: 1

To stop the manual additional refrigerant charge operation (when the required additional refrigerant amount is charged), press BS3. If this function was not aborted by pressing BS3, the unit will stop its operation after 30 minutes.
If 30 minutes was not sufficient to add the needed refrigerant amount, the function can be reactivated by changing the field setting again.

[2-21]: Refrigerant recovery/vacuuming mode

In order to achieve a free pathway to reclaim refrigerant out of the system or to remove residual substances or to vacuum the system it is necessary to apply a setting which will open required valves in the refrigerant circuit so the reclaim of refrigerant or vacuuming process can be done properly.

Default value: 0
To activate this function: 1

To stop the refrigerant recovery/vacuuming mode, press BS3. If BS3 is not pressed, the system will remain in refrigerant recovery/vacuuming mode.

[2-22]: Automatic night-time low noise setting and level during night time

By changing this setting, you activate the automatic night-time low noise operation function of the unit and define the level of operation. Depending on the chosen level, the noise level will be lowered (3: Level 3 < 2: Level 2 < 1: Level 1).
The start and stop moments for this function are defined under setting [2-26] and [2-27].

Default value: 0
To activate this function: 1, 2, or 3

[2-25]: Night-time low noise operation level via the external control adaptor

If the system needs to be running under night-time low noise operation conditions when an external signal is sent to the unit, this setting defines the level of night-time low noise that will be applied (3: Level 3 < 2: Level 2 < 1: Level 1).
This setting will only be effective when the optional external control adaptor (DTA104A61/62) is installed and the setting [2-12] was activated.

Default value: 2
To change the level: 1 or 3

[2-26]: Night-time low noise operation start time

Value [2-26]	Start time automatic night-time low noise operation (approximately)
1	20:00
2 (default)	22:00
3	24:00

This setting is used in conjunction with setting [2-22].

[2-27]: Night-time low noise operation stop time

Value [2-27]	Start time automatic night-time low noise operation (approximately)
1	6:00
2	7:00
3 (default)	8:00

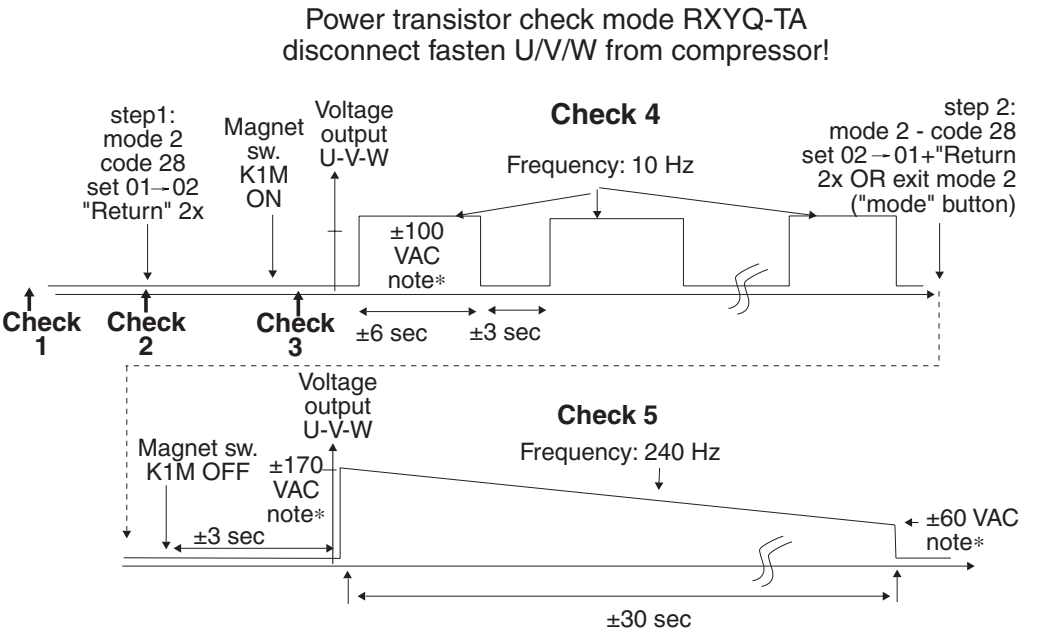
This setting is used in conjunction with setting [2-22].

[2-28]: Power transistor check mode

To evaluate the output of the power transistors. Use this function in case error code is displayed related to defective inverter PCB or inverter compressor is locked.

- Default value: 0. Power transistor check mode is not active.
- Field setting 1: Power transistor check mode is active.
  - Function:
    - Inverter PCB gives output of 10 Hz in sequence by all 6 transistors. Remove the U/V/W terminals of the inverter compressor, and connect to the inverter checker module. If all 6 LEDs blink, the transistors switch correctly.
    - When the power transistor check mode is interrupted, after internal power circuit is disconnected on the inverter PCB, 2 LEDs will light up to indicate discharge of the DC voltage. Wait till the LEDs are OFF before returning fasten terminals back to the compressor terminals.
  - Minimum requirements to refer to the result on the inverter checker module:
    - All 3 phases and neutral are available, and
    - Inverter PCB control is active. Check if the green LED “HAP” on the inverter PCBs are blinking normal (approx. 1/ second). If LEDs are OFF, need to exit the “standby mode” of the inverter:
      - Disconnect and reconnect power supply control PCB, or
      - Forced thermostat ON condition, or
        - Make shortly set 2-6-1 (forced thermostat ON indoor), or 2-20-1 (manual refrigerant charge).
        - Once the LED is blinking on the inverter PCB, change related setting immediately back to set 0 to deactivate related function.
    - Diode module generates the required 500 VDC.
  - Cautions:
    - In case there is more than 1 compressor in a system (outdoor is 14 HP or larger, or multi outdoor configuration) all compressor inverter PCBs will perform the power transistor check. In such case, disconnect U/V/W fasten terminals on all compressors. Avoid accidental touch of fasten terminals to short circuit or earth leak to casing.
    - To stop the power transistor check mode, change setting to default 2-28-0.
    - Output to U/V/W will also stop when outdoor unit main PCB decides standby mode of inverter circuit.

- Next time graph shows the different steps during the power transistor check mode.
  - Switching sequence during power transistor check mode:



Check 1 : AC power input (connector X10A on A2P: inverter compressor) 380-415 V unbalance max.2%.
Check 2 : relay "K1M" on inverter PCB switches : check DC voltage on P&N increase to ±500 VDC.
Check 3 : DC = 1.42 x VAC power supply L1-L3 : check at connector X3A (8-12 HP), or X5,6A (14-20 HP).
Check 4 : AC UVW 10 Hz intermediate : check difference within 10 V (at fasten U/V/W)
Check 5 : AC UVW 240 Hz continuous output while voltage drop (discharge capacitors DC) check difference between UVW within 10 V. 2 LEDs (V phase) brightness reduce till of.

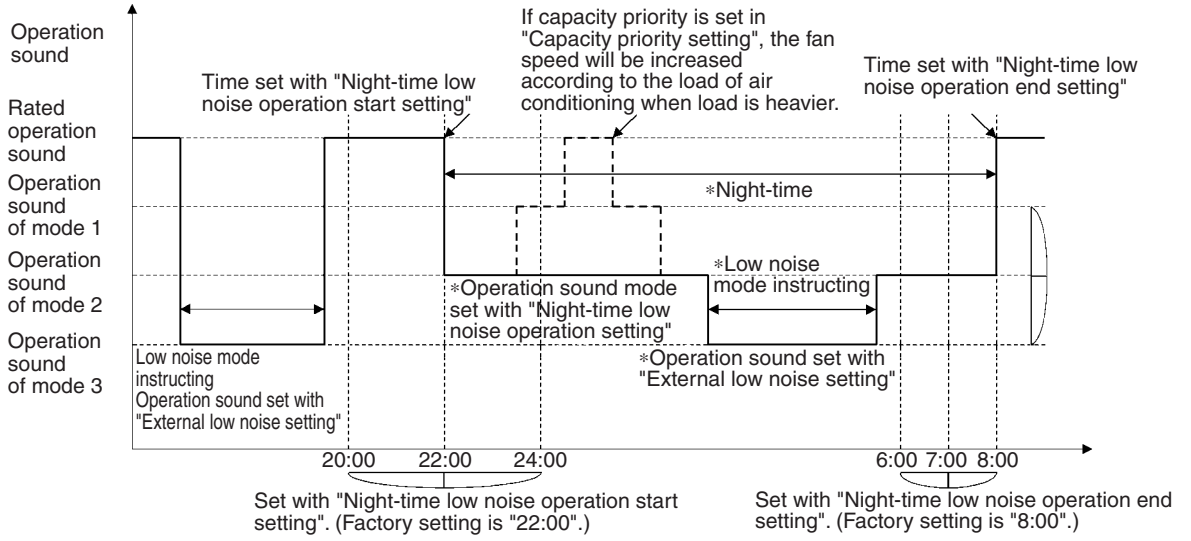
*note : actual voltage value depends on meter characteristics

[2-29]: Capacity priority

When the night-time low noise operation is in use, performance of system might drop because airflow rate of outdoor unit is reduced.

- Default value: 0. Capacity priority cannot be used.
- Field setting 1: Capacity priority can temporary cancel the night-time low noise operation. Capacity priority can be initiated when certain operation parameters approach the safety setting:
  - Raise in high pressure during cooling.
  - Drop in low pressure during heating.
  - Raise of discharge pipe temperature.
  - Raise of inverter current.
  - Raise of fin temperature inverter PCB.

■ When operation parameters return to normal range, the capacity priority is switched OFF, enable to reduce airflow rate depending on night-time low noise operation is still required (end time for night-time low noise operation is not reached or external input night-time low noise operation is still closed).



[2-30]: Power consumption limitation level (step 1) via the external control adaptor (DTA104A61/62)

If the system needs to be running under power consumption limitation conditions when an external signal is sent to the unit, this setting defines the level power consumption limitation that will be applied for step 1. The level is according to the table.

Value [2-30]	Power consumption limitation (approximately)
1	60%
2	65%
3 (default)	70%
4	75%
5	80%
6	85%
7	90%
8	95%

[2-31]: Power consumption limitation level (step 2) via the external control adaptor (DTA104A61/62)

If the system needs to be running under power consumption limitation conditions when an external signal is sent to the unit, this setting defines the level power consumption limitation that will be applied for step 2. The level is according to the table.

Value [2-31]	Power consumption limitation (approximately)
1 (default)	40%
2	50%
3	55%

[2-32]: Forced, all time, power consumption limitation operation (no external control adaptor is required to perform power consumption limitation)

If the system always needs to be running under power consumption limitation conditions, this setting activates and defines the level power consumption limitation that will be applied continuously. The level is according to the table.

Value [2-32]	Restriction reference
0 (default)	Function not active
1	Follows [2-30] setting
2	Follows [2-31] setting

[2-34]: Indoor fan tap setting

Indoor fan speed limitation related to connection capacity and outdoor air temperature for energy saving.

Value [2-34]	Indoor fan tap setting
0 (default)	Fan speed is limited to L tap when indoor units capacity ≥ 130%.
1	In heating mode, fan speed is limited to L tap when indoor units capacity ≥ 130%.
2	Fan speed follows a setting of the remote controller (not limited by indoor units connection capacity).
3	Fan speed is limited to L tap when outdoor air temperature goes down to below 29.5°C (85.1°F). It returns to remote controller setting when outdoor air temperature goes up to over 32.5°C (90.5 °F).
4	Fan speed is limited to L tap when outdoor air temperature goes down to below 23.5°C (74.3°F). It returns to remote controller setting when outdoor air temperature goes up to over 26.5°C (79.7°F).
5	Fan speed is limited to L tap when outdoor air temperature goes down to below 19.3°C (66.7°F). It returns to remote controller setting when outdoor air temperature goes up to over 22.3°C (72.1°F).

[2-35]: Height difference setting

Default value: 1

In case the outdoor unit is installed in the lowest position (indoor units are installed on a higher position than outdoor units) and the height difference between the highest indoor unit and the outdoor unit exceeds 40 m (131 ft), the setting [2-35] should be changed to 0.

[2-37]: Heat pump lockout 2

Heat pump is locked out when this setting and an external input to ABC terminal are made.

Automatic lockout

When this setting is made, the auto-backup function will automatically be activated. This will allow the auxiliary or secondary heat source to be automatically energized in the event of a system failure related to outdoor units.

Value [2-37]	Heat pump lockout 2
0 (default)	OFF
1	Mode 1
2	Mode 2
3	Mode 3
4	Mode 4
5	Mode 5
6	Mode 6

Mode	Description	Actions					
		Field setting	Shorted between	Heating Thermo-on		Heating Thermo-off	
				Heater	Fan	Heater	Fan
Mode 1	Lockout is controlled by an external input to ABC terminal	2-37: Mode 1	A-C	ON	ON (H/L)	OFF	LL (∗2)
			B-C				OFF
Mode 2 (∗1)		2-37: Mode 2	A-C		LL		LL (∗2)
			B-C		OFF		OFF
Mode 3	Lockout is controlled by the outdoor temperature and setpoint which is configured by the setting [2-94] and [2-95]	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				

∗1. For a heater which does not need airflow

∗2. Depends on the indoor unit field setting 12(22)-3.

[2-38]: Emergency operation “Master”

To disable permanent compressor operation: in case of single module or “Master” unit of a multi outdoor system, this setting allows:

- Default value: 0. Compressor operation enabled.
- Field setting:
  - Set 1: inverter 1 compressor is disabled.
  - Set 2: inverter 2 compressor is disabled. Only to make in case of 12/14 ton. Note that compressor 2 is left side located.
  - Set 3: all compressors in this master module are disabled permanent.

[2-39]: Emergency operation “Slave 1”

To disable permanent compressor operation of “Slave 1” unit of a multi outdoor system (RXYQ-TA):

- Default value: 0. Compressor operation enabled.
- Field setting:
  - Set 1: inverter 1 compressor is disabled.
  - Set 2: inverter 2 compressor is disabled. Only to make in case of 12/14 ton. Note that compressor 2 is left side located.
  - Set 3: all compressors in this master module are disabled permanent.

[2-40]: Emergency operation “Slave 2”

To disable permanent compressor operation of “Slave 2” unit of a multi outdoor system (RXYQ-TA):

- Default value: 0. Compressor operation enabled.
- Field setting:
  - Set 1: inverter 1 compressor is disabled.
  - Set 2: inverter 2 compressor is disabled. Only to make in case of 12/14 ton. Note that compressor 2 is left side located.
  - Set 3: all compressors in this master module are disabled permanent.

Combination table setting 2-38, 2-39 and 2-40:

disable	Master/ individual	Slave 1	Slave 2
compressor 1	2-38-1	2-39-1	2-40-1
compressor 2	2-38-2	2-39-2	2-40-2
module	2-38-3	2-39-3	2-40-3

[2-42]: Outdoor fan noise countermeasure

Change fans rotational speed and reduce noise by the interference of air blow noise between outdoor units.

- Default value: 0
- Field setting:
  - Mode A: 1
  - Mode B: 2

[2-49]: Height difference setting

Default value: 0.

In case the outdoor unit is installed in the highest position (indoor units are installed on a lower position than outdoor units) and the height difference between the lowest indoor unit and the outdoor unit exceeds 50 m (164 ft), the setting [2-49] has to be changed to 1.

[2-51]: Master/Slave setting Multi

When 2 or 3 modules are installed as a multi-outdoor (by common refrigerant piping and wiring by terminals Q1Q2) configuration is automatically detected. In certain cases, the sequence of the slave units need to be set manually (in case of AIRNET monitoring).

- Default value: 0. Automatic detection.
- Field setting: ensure that the modules in a multi are set different status. Even some modules in a multi are set manually to same status, U7 error will appear.
  - 1: forced “Master” (F1F2/Ind terminals should be connected to indoor units).
  - 2: forced “Slave 1” (only Q1Q2 terminals should be wired to “Master” module).
  - 3: forced “Slave 2” (only Q1Q2 terminals should be wired to “Master” module).

[2-81]: Cooling comfort setting

Value [2-81]	**Cooling comfort setting**
0	Eco
1 (default)	Mild
2	Quick
3	Powerful

This setting is used in conjunction with setting [2-8].

[2-82]: Heating comfort setting

Value [2-82]	Heating comfort setting
0	Eco
1 (default)	Mild
2	Quick
3	Powerful

This setting is used in conjunction with setting [2-9].

[2-83]: Master user interface allocation in case VRV indoor units and RA indoor units are used at the same time
By changing setting [2-83], you can allow the VRV indoor unit to be the operation mode selector (system power OFF/ON is required after applying this setting).
- 1: RA indoor unit has mode selection right (default setting).
- 0: VRV indoor unit has mode selection right.

[2-84]: Initial opening electronic expansion valve BP unit heating thermostat-ON
- Default value: 0 (400 pulse)
- Field setting 1: 500 pulse, 2: 600 pulse, 3: 300 pulse.

[2-90]: Indoor unit without power
U4 error generation.
In case an indoor unit needs maintenance or repair on the electric side, it is possible to keep the rest of the *VRV* DX indoor units operating without power supply to some indoor unit(s).
- Default value: 0 (not active)
- Field setting 1: Possible for operate system when some indoor units are temporary without power supply. Following conditions need to fulfil:
  - Maximum equivalent piping length of the farthest indoor less than 120 m (394 ft).
  - Index indoor units power simultaneously less than 30% of the nominal outdoor.
  - Total capacity is less than 30% of the nominal one of the outdoor unit.
  - Operation time is limited to 24 hours period.
  - It is recommended to shut down connected indoor units at the same floor.
  - Not possible to use service mode operation (e.g. recovery mode).
  - Backup operation has priority over this special feature.

[2-94]: Heat pump lockout temperature

Heat pump is locked out when the outdoor ambient temperature is smaller than the heat pump lockout temperature.

This is only effective when the heat pump lockout 2 setting [2-37] is Mode 3 to 6.

Value [2-78]	Heat pump lockout temperature
0 (default)	–26.1°C (–15°F)
1	–23.3°C (–10°F)
2	–20.5°C (–5°F)
3	–17.7°C (0°F)
4	–15°C (5°F)
5	–12.2°C (10°F)
6	–9.4°C (15°F)
7	–6.6°C (20°F)
8	–3.8°C (25°F)
9	–1.1°C (30°F)
10	1.6°C (35°F)
11	4.4°C (40°F)
12	7.2°C (45°F)
13	10°C (50°F)
14	Forced heat pump lockout

[2-95]: Heat pump lockout release differential

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

Value [2-79]	Heat pump lockout release differential
0	2.8°C (5°F)
1 (default)	5.6°C (10°F)
2	8.3°C (15°F)

[2-96]: Auxiliary heater maximum allowable temperature

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

Value [2-97]	Auxiliary heater maximum allowable temperature
0	–17.7°C (0°F)
1	–15°C (5°F)
2	–12.2°C (10°F)
3	–9.4°C (15°F)
4	–6.6°C (20°F)
5	–3.8°C (25°F)
6	–1.1°C (30°F)
7 (default)	1.6°C (35°F)
8	4.4°C (40°F)
9	7.2°C (45°F)
10	10°C (50°F)
11	12.7°C (55°F)
12	15.5°C (60°F)
13	18.3°C (65°F)
14	Auxiliary heater always not allowed
15	Auxiliary heater always allowed

[2-97]: 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.

Value [2-98]	Auxiliary heater maximum allowable temperature release differential
0	2.8°C (5°F)
1 (default)	5.6°C (10°F)
2	8.3°C (15°F)

3. Test Operation

3.1 Checks before Test Operation

Before carrying out a test operation, proceed as follows:

Step	Action
1	Make sure the voltage at the primary side of the safety breaker is: (230 V or 460 V) ± 10% for 3-phase units
2	Fully open the liquid and the gas stop valve.

3.2 Checkpoints

To carry out a test operation, check the following:

- Check that the temperature setting of the remote controller is at the lowest level in cooling mode or use test mode.
- Go through the following checklist:

Checkpoints	Cautions or warnings
Are all units securely installed?	● Dangerous for turning over during storm ● Possible damage to pipe connections
Is the earth wire installed according to the applicable local standard?	Dangerous if electric leakage occurs
Are all air inlets and outlets of the indoor and outdoor units unobstructed?	● Poor cooling ● Poor heating
Does the drain flow out smoothly?	Water leakage
Is piping adequately heat-insulated?	Water leakage
Have the connections been checked for gas leakage?	● Poor cooling ● Poor heating ● Stop
Is the supply voltage conform to the specifications on the name plate?	Incorrect operation
Are the cable sizes as specified and according to local regulations?	Damage of cables
Are the remote controller signals received by the unit?	No operation

3.3 Check Work Prior to Turn Power Supply ON

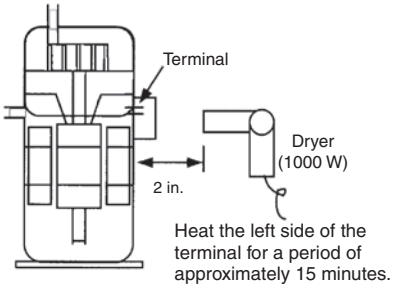
Check that the installation work for the indoor and outdoor units has been performed in accordance with the instructions in the Installation Manual.

Check the below items.
- Power wiring
- Control transmission wiring between units
- Earth wire
- Branch switch
- Earth leakage circuit breaker

⇩

- Is the wiring performed as specified?
- Are the branch switches and earth leakage circuit breakers wired correctly?
- Is the designated wire used?
- Is the wiring screw of wiring not loose?
- Is the grounding work completed?
- Is the insulation of the main power supply circuit deteriorated?
  Use a 500 V megger tester to measure the insulation. (∗1)
  Do not use a megger tester for other circuits than 400 V or 200 V circuit.

∗1: Measure to be taken against decreased insulation resistance in the compressor
If the compressor is left to stand for an extended period of time after the refrigerant charge with the stop valve open and the power supply OFF, the refrigerant may be mixed in the compressor, thus decreasing the insulation resistance.
Heat the compressor as shown on the right and then recheck the insulation.



Check on refrigerant piping / insulation materials

⇩

- Is the pipe size proper? Are the design pressures for the gas pipe and liquid pipe more than 4.0 MPa (580 psi)?
- Is the pipe insulation material installed securely?
  Liquid and gas pipes need to be insulated. (Otherwise causes water leak.)

Check air tight test and vacuum drying.

⇩

- Have the air tight test and the vacuum drying been conducted according to the procedure in the Installation Manual?

Check on amount of additional refrigerant charge

⇩

- Is a proper quantity of refrigerant charged?
  ∗ When the refrigerant level is insufficient, leave the liquid and gas stop valves closed and charge with liquid refrigerant via the liquid stop valve service port. (∗ Do not charge via the gas stop valve service port. Doing so will result in error.)
- Is the amount of additional refrigerant charge recorded in the Service Precaution label?

Check the stop valves for conditions.

- Check to be sure the stop valves are under the following conditions.

Liquid side stop valve	Gas side stop valve
Open	Open

3.4 Turn Power ON

Turn outdoor unit and indoor unit power ON.

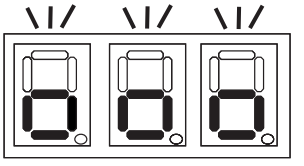
⇩

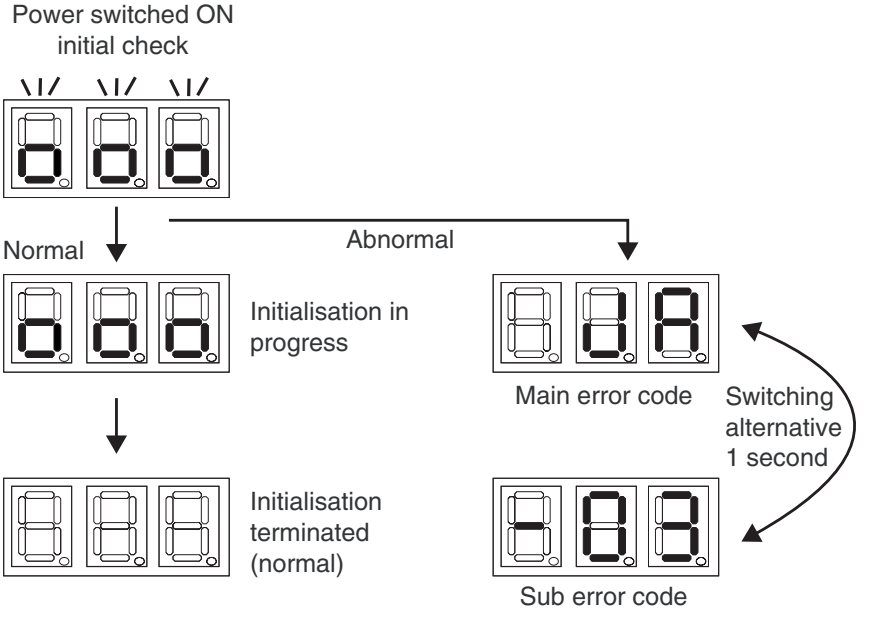
Check the 7 segment display of the outdoor unit PCB.

⇩

- Be sure to turn the power ON 6 hours before starting operation to protect compressors. (to power ON crankcase heater)

- Check to be sure the transmission is normal.
  In a normal condition, the 7-segment display is OFF. Please refer to the following figure for other states.





(∗) The master unit is the outdoor unit to which the transmission wiring for the indoor units is connected.
The other outdoor units are slave units.

Make field settings with outdoor unit PCB.

⇩

Conduct check operations.

⇩

Check for normal operation.

- Make field settings if needed.
  (For the setting procedure, refer to information in "Field Settings for Outdoor Unit" on page 118 onward.)
  For the outdoor-multi system, make field settings with the master unit.
  (Field settings made with the slave unit will be all invalid.)

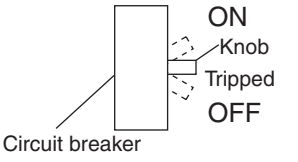
The check operations shown below will be automatically initiated.
- Check for erroneous wirings
- Check for failure to open stop valves
- Check for excessive refrigerant refilling
- Automatic judgement of piping length

- Before starting the normal operation after the completion of check operations, make sure indoor and outdoor units normally operate.

Part 6
Service Diagnosis

1. Symptom-based Troubleshooting

1.1 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.

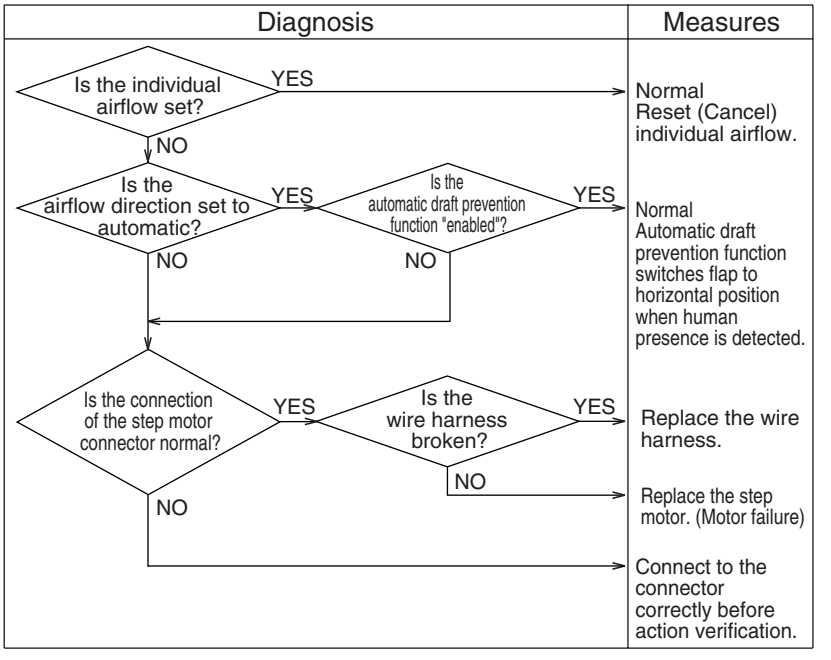
	Symptom		Supposed Cause	Countermeasure
6	COOL/HEAT selection is disabled.	The remote controller displays **UNDER CENTRALIZED CONTROL.**	This remote controller has no option to select cooling operation.	Use a remote controller with option to select cooling operation.
		The remote controller displays **UNDER 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) that has flowed 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 defrost 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 defrost 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 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 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.

1.2 With 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.

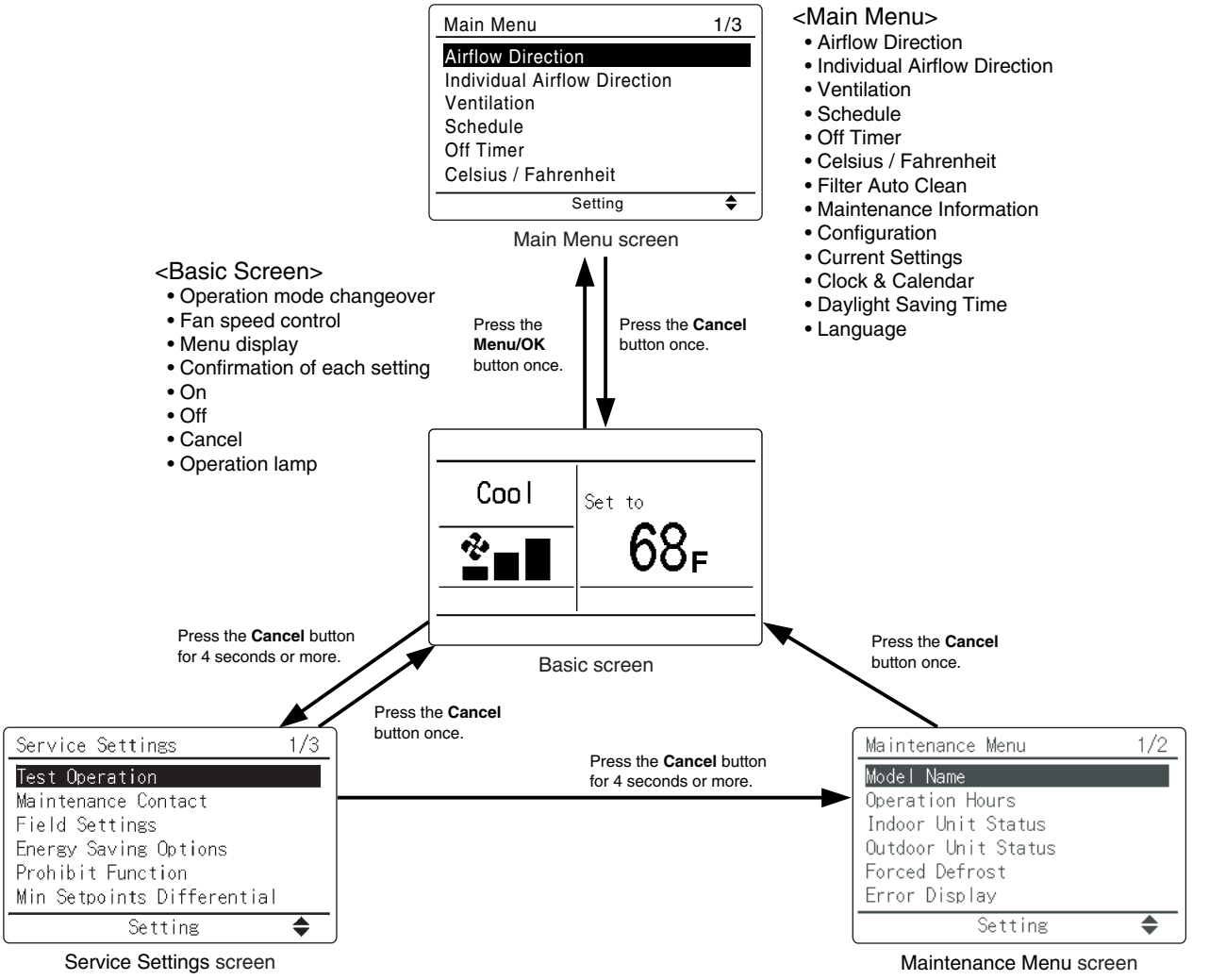
Error diagnosis of "Louver operation different from setting"



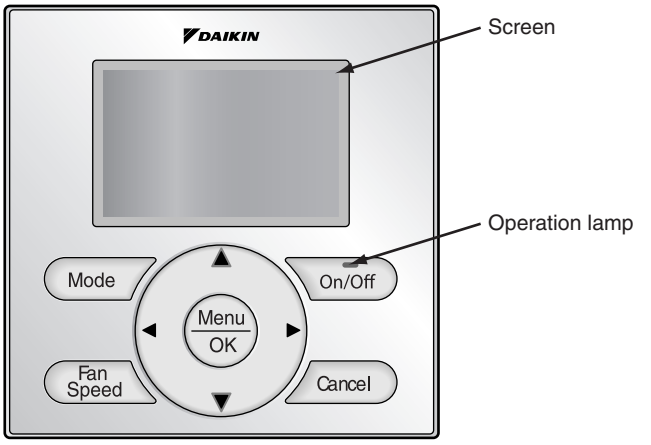
2. Service Check Function

2.1 Wired Remote Controller

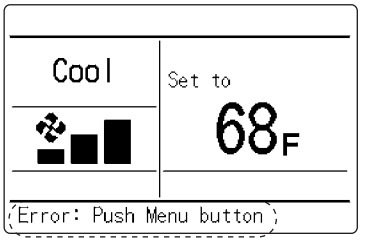
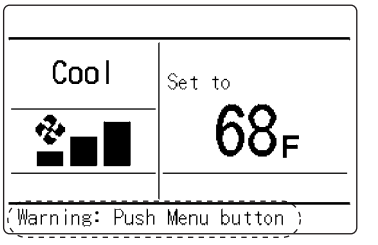
2.1.1 BRC1E73



The following will be 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.



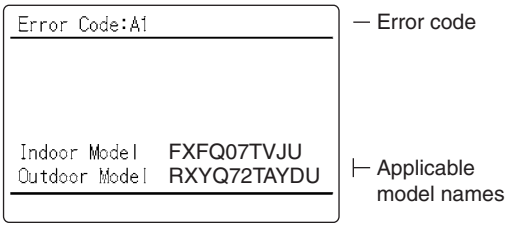
(1) Check if it is an error or warning.

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

(2) Taking corrective action.

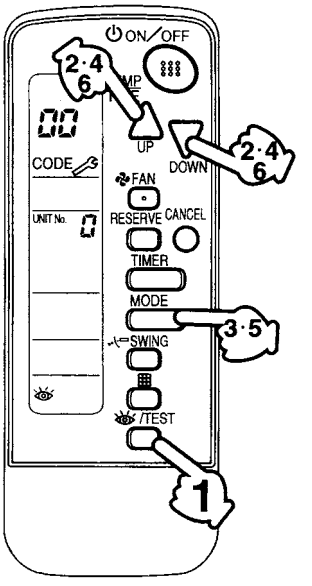
Press the **Menu/OK** button to check the error code.

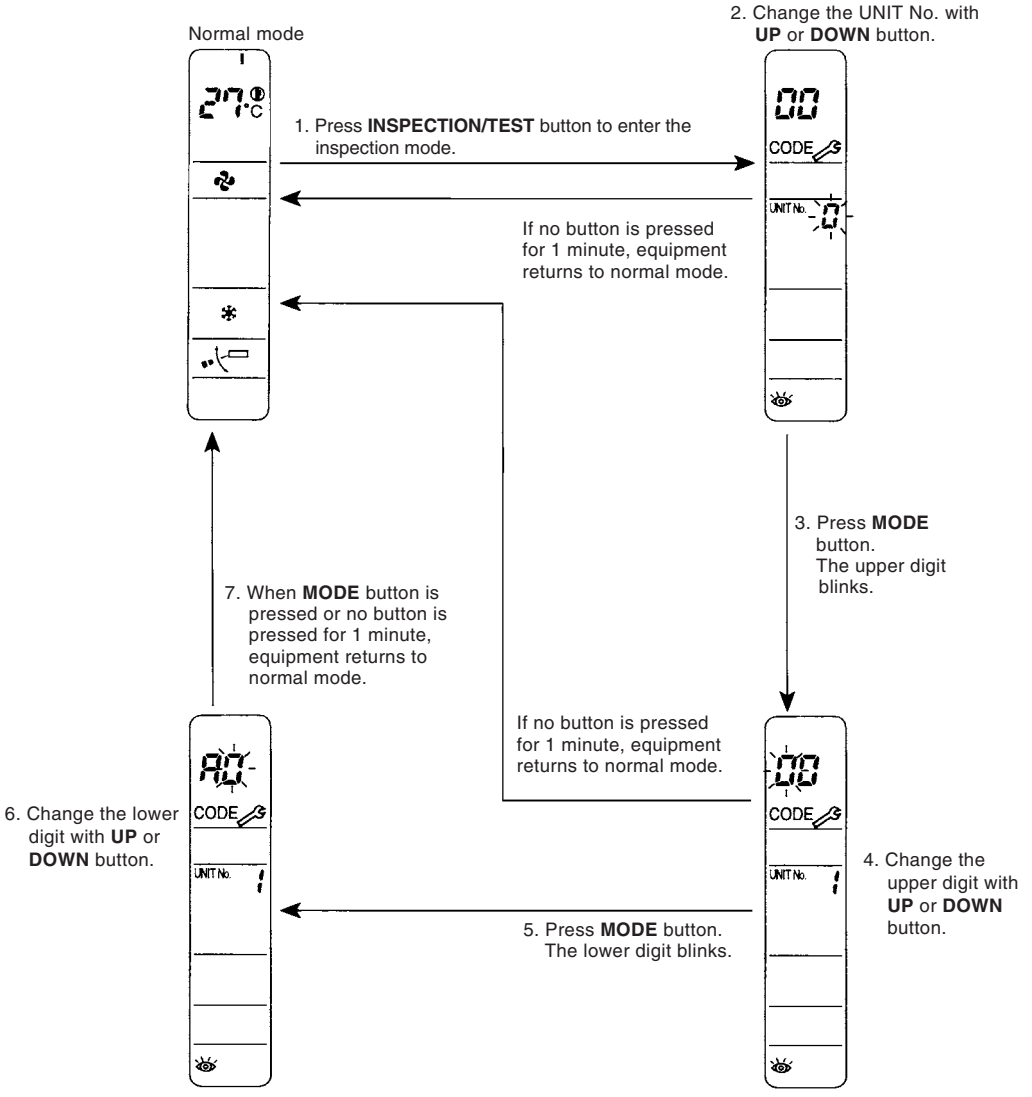
Take the corrective action specific to the model.



2.2 Wireless Remote Controller

If unit stops due to an error, the operation indicating LED on the signal receiving part of indoor unit blinks. 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⇨H⇨F⇨L⇨P⇨U⇨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⇦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.

2.3 Error Codes and Descriptions

○: ON ●: OFF ◑: Blink

	Error code	Operation lamp	Error contents	Reference page
Indoor Unit	A0	◑	External protection device abnormality	174
	A1	◑	Indoor unit PCB abnormality	176
	A3	◑	Drain level control system abnormality	177
	A6	◑	Fan motor lock, overload	179
			Indoor fan motor abnormality	182
			Overload/overcurrent/lock of indoor fan motor	186
			Blower motor not running	187
			Indoor fan motor status abnormality	188
			Low indoor airflow	189
	A7 (∗1)	○	Swing flap motor abnormality	190
	A8	◑	Power supply voltage abnormality	192
			Blower motor stops for over/under voltage	193
	A9	◑	Electronic expansion valve coil abnormality, dust clogging	194
	AF (∗1)	○	Drain level above limit	195
	AJ	◑	Capacity determination device abnormality	196
	C1	◑	Transmission abnormality between indoor unit PCB and fan PCB	197
			Blower motor communication error	199
	C4	◑	Heat exchanger liquid pipe thermistor abnormality	200
	C5	◑	Heat exchanger gas pipe thermistor abnormality	200
	C6	◑	Combination error between indoor unit PCB and fan PCB	201
			Blower motor HP mismatch	202
			Indoor blower does not have required parameters to function	203
	C9 (∗2)	◑	Suction air thermistor abnormality	200
			Remote sensor abnormality	204
	CA	◑	Discharge air thermistor abnormality	200
	CC	○	Humidity sensor system abnormality	205
	CE (∗1)	○	Infrared presence/floor sensor error	206
	CJ (∗2)	○	Remote controller thermistor abnormality	211
Outdoor Unit	E1	◑	Outdoor unit main PCB abnormality	212
	E2	◑	Current leakage detection Missing of leakage detection core	213 214
	E3	◑	Actuation of high pressure switch	215
	E4	◑	Actuation of low pressure sensor	217
	E5	◑	Inverter compressor motor lock	219
	E6	◑	Compressor damage alarm	221
	E7	◑	Outdoor fan motor abnormality	223
	E9	◑	Electronic expansion valve coil abnormality	226
	F3	◑	Discharge pipe temperature abnormality	228
	F4	◑	Wet alarm	230
	F6	◑	Refrigerant overcharged	232
	H3	◑	Harness abnormality (between outdoor unit main PCB and inverter PCB)	233
	H7	◑	Outdoor fan motor signal abnormality	234
	H9	◑	Outdoor air thermistor (R1T) abnormality	235
	J3	◑	Discharge pipe thermistor (R21T, R22T) abnormality Compressor body thermistor (R8T) abnormality	235
	J5	◑	Accumulator inlet thermistor (R3T) abnormality	235
	J6	◑	Heat exchanger deicer thermistor (R7T) abnormality	235
	J7	◑	Subcooling heat exchanger liquid pipe thermistor (R5T) abnormality	235
	J8	◑	Heat exchanger liquid pipe thermistor (R4T) abnormality	235
	J9	◑	Heat exchanger gas pipe thermistor (R6T) abnormality	235

○: ON ●: OFF ◑: Blink

	Error code	Operation lamp	Error contents	Reference page
Outdoor Unit	JA	◑	High pressure sensor abnormality	237
	JC	◑	Low pressure sensor abnormality	239
	L1	◑	Inverter PCB abnormality	241
	L3	◑	Reactor temperature rise abnormality	243
	L4	◑	Inverter radiation fin temperature rise abnormality	244
	L5	◑	Inverter compressor instantaneous overcurrent	245
	L8	◑	Inverter compressor overcurrent	247
	L9	◑	Inverter compressor startup abnormality	249
	LC	◑	Transmission error between inverter PCB and outdoor unit main PCB	252
	P1	◑	Power supply voltage imbalance	254
	P3	◑	Reactor temperature abnormality	256
	P4 (∗1)	◑	Inverter radiation fin temperature abnormality	257
	PJ	◑	Field setting after replacing outdoor unit main PCB abnormality or combination of PCB abnormality	259
System	U0 (∗1)	○	Refrigerant shortage	260
	U1	◑	Reverse phase, open phase	261
	U2	◑	Power supply insufficient or instantaneous abnormality	262
	U3	◑	Check operation not executed	265
	U4	◑	Transmission error between indoor units and outdoor units	266
	U5	◑	Transmission error between remote controller and indoor unit	269
	U7	◑	Transmission error between outdoor units	270
	U8	◑	Transmission error between main and sub remote controllers	276
	U9	◑	Transmission error between indoor unit and outdoor unit in the same system	277
	UA	◑	Improper combination of indoor unit and outdoor unit, indoor unit and remote controller	278
			Incorrect electric heater capacity setting	283
	UC (∗1)	○	Address duplication of centralized controller	284
	UE	◑	Transmission error between centralized controller and indoor unit	285
	UF	◑	System not set yet	288
	UH	◑	System abnormality, refrigerant system address undefined	289

Note: ∗1. The system can keep operating, however, be sure to check and repair.
∗2. The system may or may not continue operation depending on the conditions.

2.4 Error Codes - Sub Codes

If an error code like the one shown below is displayed when the navigation remote controller (BRC1E series) is in use, make a detailed diagnosis or a diagnosis of the relevant unit.

2.4.1 Indoor Unit

Error code	Troubleshooting	
	Description of error	Description of diagnosis
A0 - 01	External protection device abnormality	Refer to page 175.
A6 - 01	Fan motor locked	A locked fan motor current has been detected. Turn the fan by hand to check for the connection of connectors.
A6 - 10	Fan overcurrent error	A fan motor overcurrent has been detected. Check for the connection of the connector between the fan motor and the fan PCB. If the connection is normal, replace the fan motor. If this still cannot solve the error, replace the fan PCB.
A6 - 11	Fan position detection error	An error in the detection of position of the fan motor. Check for the connection of the connector between the fan motor and the fan PCB. If the connection is normal, replace the fan motor. If this still cannot solve the error, replace the fan PCB.
A6 - 20	Indoor fan motor status abnormality	Refer to page 188.
A6 - 21	Indoor fan motor insufficient airflow abnormality	Refer to page 189.
A8 - 01	Power supply voltage error	Check for the input voltage of the fan motor.
A9 - 01	Electronic expansion valve error	There is an error in the electronic expansion valve coil or a connector disconnected.
A9 - 02	Refrigerant leakage detection error	Refrigerant leaks even if the electronic expansion valve is closed. Replace the electronic expansion valve.
AH - 03	Transmission error (between the self-cleaning decoration panel and the indoor unit) (when the self-cleaning decoration panel is mounted)	Check for the connection of the harness connector between the panel PCB and the indoor unit PCB.
AH - 04	Dust detection sensor error (when the self-cleaning decoration panel is mounted)	Check for the connections of the connector X12A on the panel PCB and the connectors X18A and X19A on the sensor PCB.
AH - 05	Dust collection sign error (when the self-cleaning decoration panel is mounted)	Check for clogging with dust at the dust collection port as well as in the brush unit, S-shaped pipe, and dust box. Furthermore, check for any stains of the light receiving and emitting parts of the infrared unit.
AH - 06	Air filter rotation error (when the self-cleaning decoration panel is mounted)	Check for anything getting in the way of rotating the filter (e.g. the filter comes off or the drive gear is clogged with foreign matter).
AH - 07	Damper rotation error (when the self-cleaning decoration panel is mounted)	The damper does not rotate normally. Check for any foreign matter around the damper and for the operation of the gear and limit switch.
AH - 08	Filter self-cleaning operation error (when the self-cleaning decoration panel is mounted)	The unit has not yet completed the filter self-cleaning operation even after the lapse of specified period of time. Check for any external noise, etc.
AH - 09	Filter self-cleaning operation start disabled error (when the self-cleaning decoration panel is mounted)	The unit has been put into a state in which the filter self-cleaning operation is disabled. Check the unit for the operating conditions.
AJ - 01	Capacity setting error	There is an error in the capacity setting of the indoor unit PCB.
AJ - 02	Electronic expansion valve setting error	There is a fault in the setting of the gear type electronic expansion valve/direct acting type electronic expansion valve.
C1 - 01	Transmission abnormality between indoor unit PCB and fan PCB	Check for the conditions of transmission between the indoor unit PCB and the fan PCB.
C1 - 07	Blower motor communication error	Refer to page 199.
C6 - 01	Defective combination of indoor unit PCB and the fan PCB Blower motor HP mismatch	A combination of indoor unit PCB and the fan PCB is defective. Check whether the capacity setting adaptor is correct and the type of the fan PCB is correct.
C6 - 02	Indoor blower does not have required parameters to function	Refer to page 203.
U4 - 01	Indoor-outdoor transmission error	Refer to the **U4** flow chart.
UA - 13	Refrigerant type error	The type of refrigerant used for the indoor unit is different from that used for the outdoor unit.
UA - 15	Not applicable for self-cleaning decoration panel [when the self-cleaning decoration panel is mounted]	An outdoor unit is not applicable for the self-cleaning decoration panel is connected.
UA - 17	Incorrect electric heater capacity setting	Refer to page 283.

2.4.2 Outdoor Unit

Refer to page 131.

3. Troubleshooting by Error Code

3.1 External Protection Device Abnormality

3.1.1 External Protection Device Abnormality (All Indoor Unit Models)

Error Code **A0**

Applicable Models All indoor unit models

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

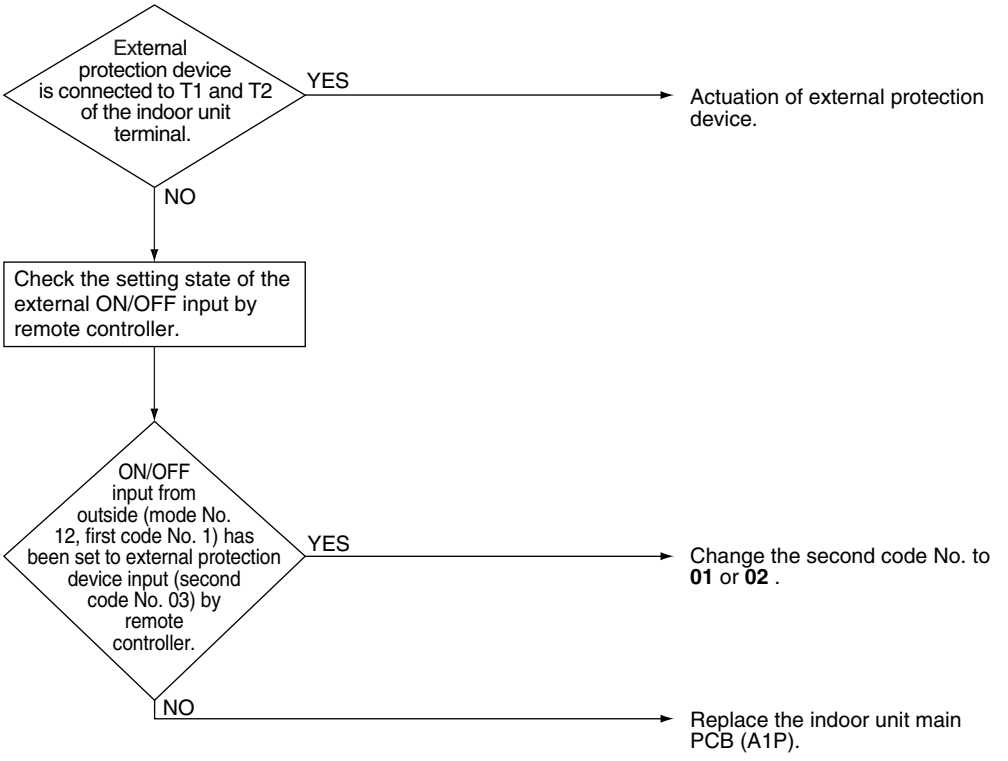
Error Decision Conditions When an open circuit occurs between external input terminals with the remote controller set to "external ON/OFF terminal".

Supposed Causes

- Actuation 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.



3.1.2 External Protection Device Abnormality (FXTQ-TA Only)

Error Code **A0-01**

Applicable Models FXTQ-TA

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

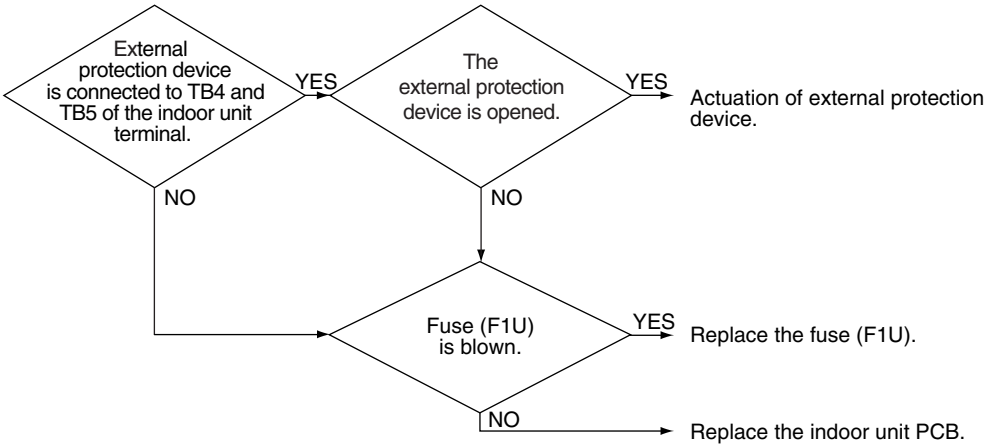
Error Decision Conditions When an open circuit occurs between external input terminals.

Supposed Causes

- Actuation of external protection device
- Defective indoor unit PCB
- Indoor unit fuse blown

Troubleshooting

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



3.2 Indoor Unit PCB Abnormality

Error Code **A1**

Applicable Models All indoor unit models

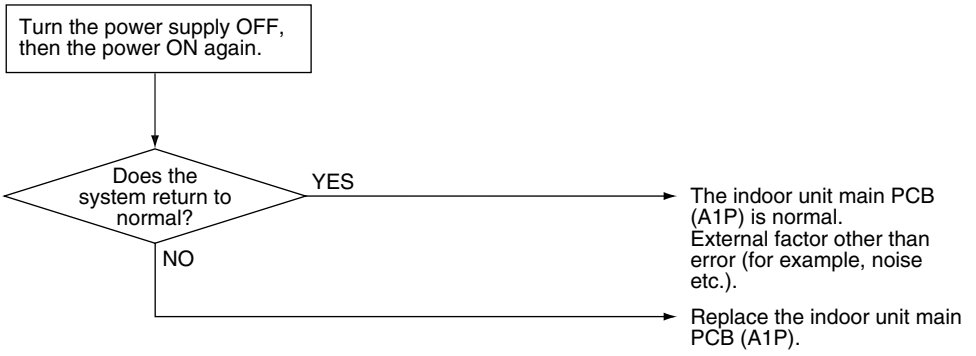
Method of Error Detection Check data from EEPROM.

Error Decision Conditions When data could not 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.



3.3 Drain Level Control System 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

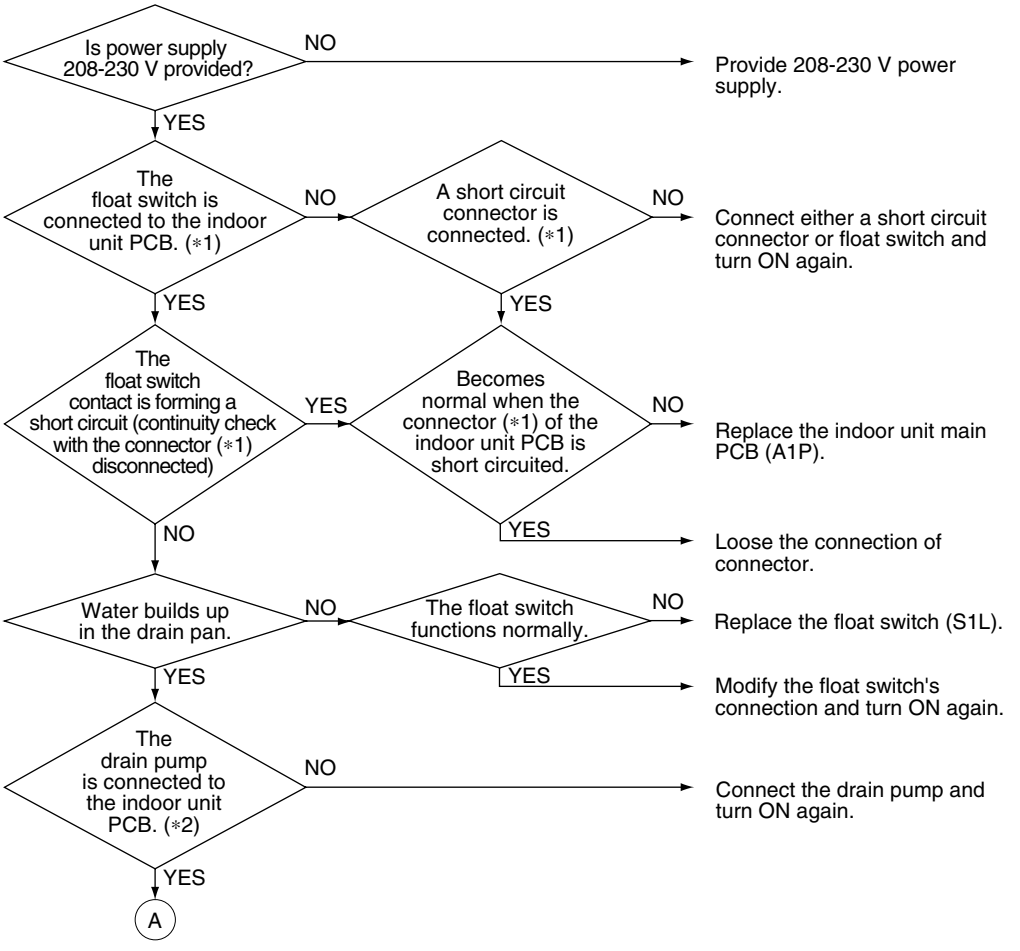
Error Decision Conditions When rise of water level is not a condition and the float switch goes OFF.

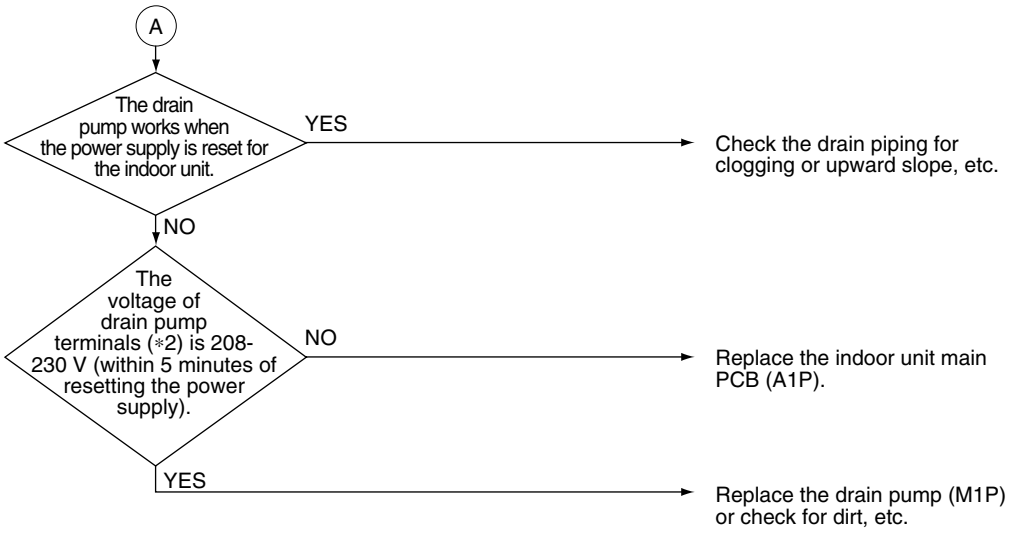
Supposed Causes

- 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 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:

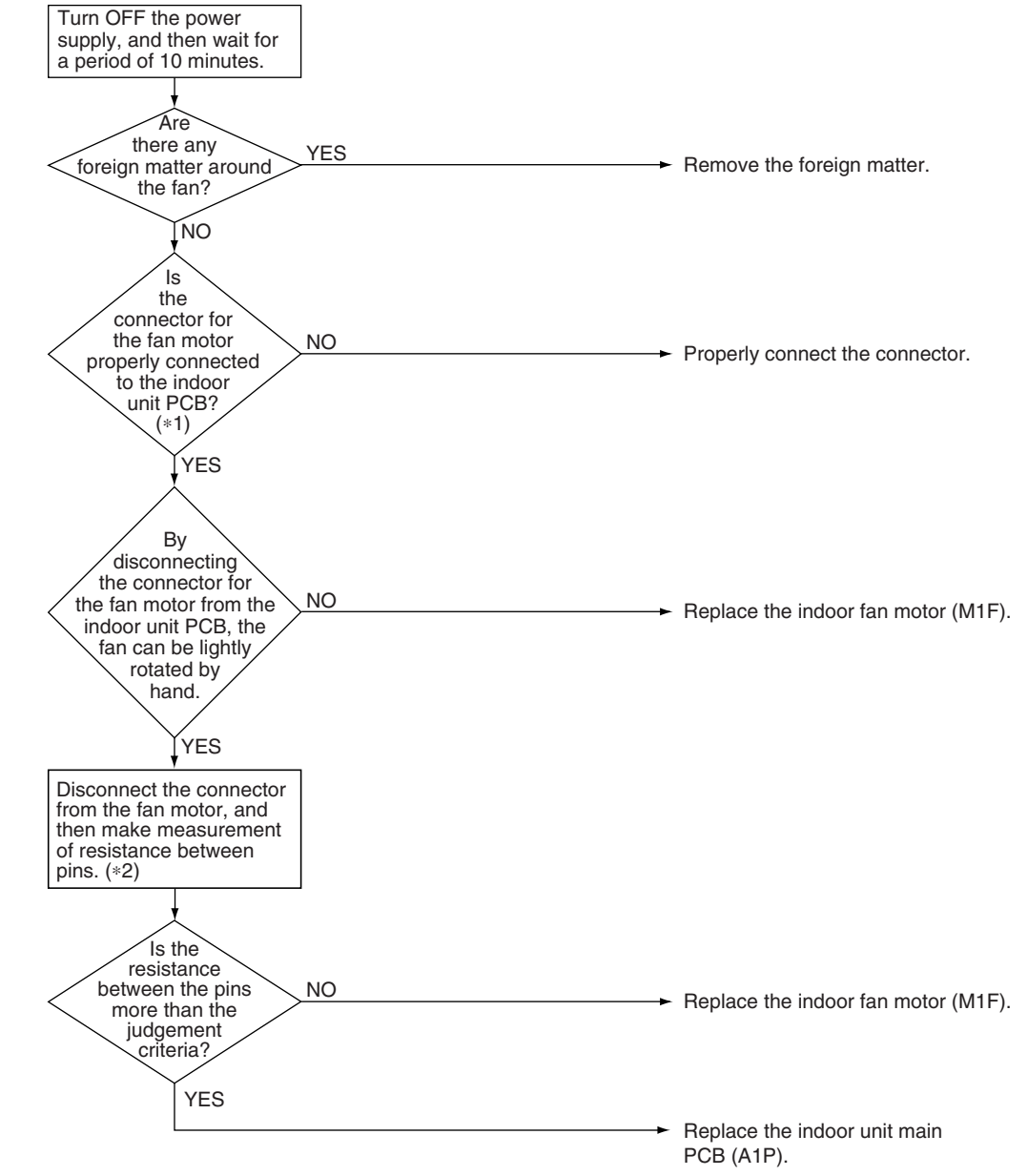
Model	∗1: Float switch (S1L) / short circuit connector	∗2: Drain pump (M1P) connector	Note
FXFQ-T	X15A	X10A	–
FXFQ-P	X15A	X25A	–
FXZQ-M	X8A	X25A	–
FXUQ-P	X15A	X25A	–
FXEQ-P	X15A	X25A	–
FXDQ-M	X8A	X25A	–
FXMQ-PB	X15A	X25A	–
FXMQ-M	X8A	–	Option
FXAQ-P	X15A	–	Option

3.4 Fan Motor 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

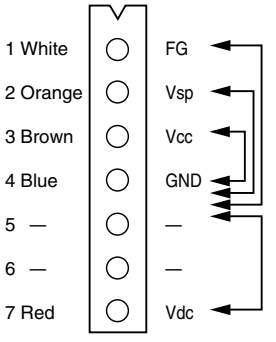
Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.

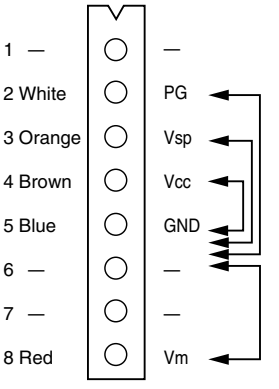


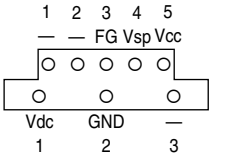
Note: ∗1: Check the following connectors.

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

3.5 Indoor Fan Motor Abnormality

3.5.1 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 revolutions detection signal output from the fan motor.

Error Decision Conditions

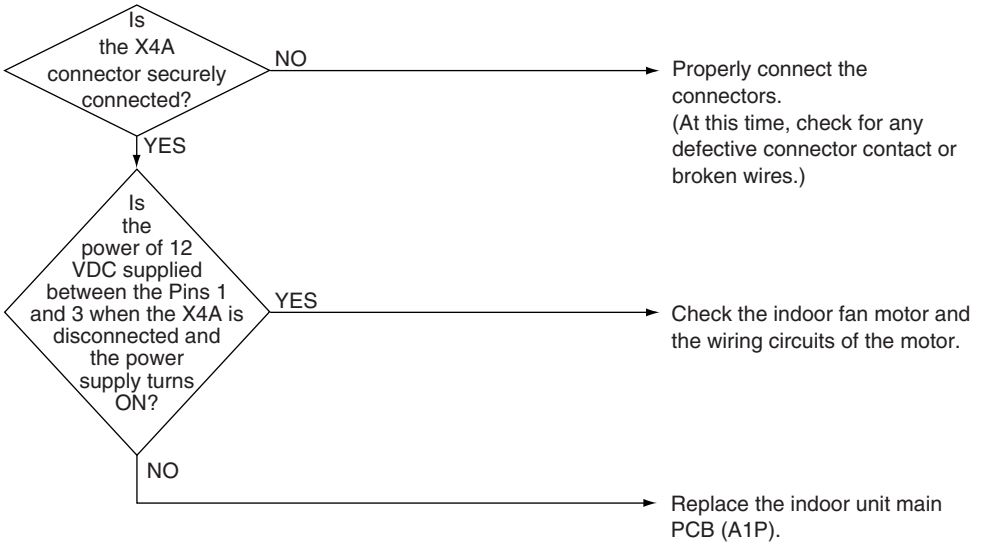
When no revolutions can be detected even at the maximum output voltage to the fan

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.

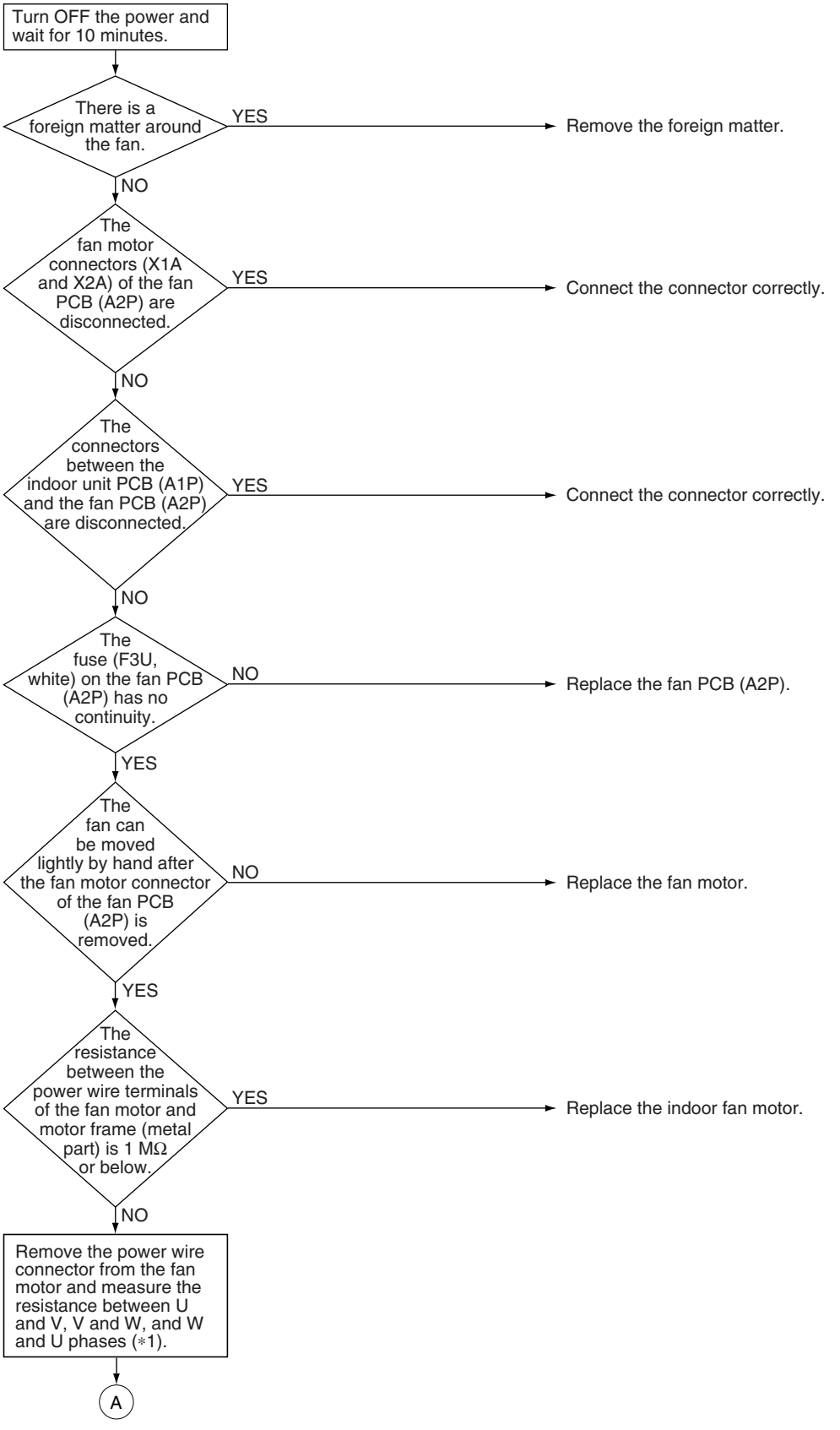


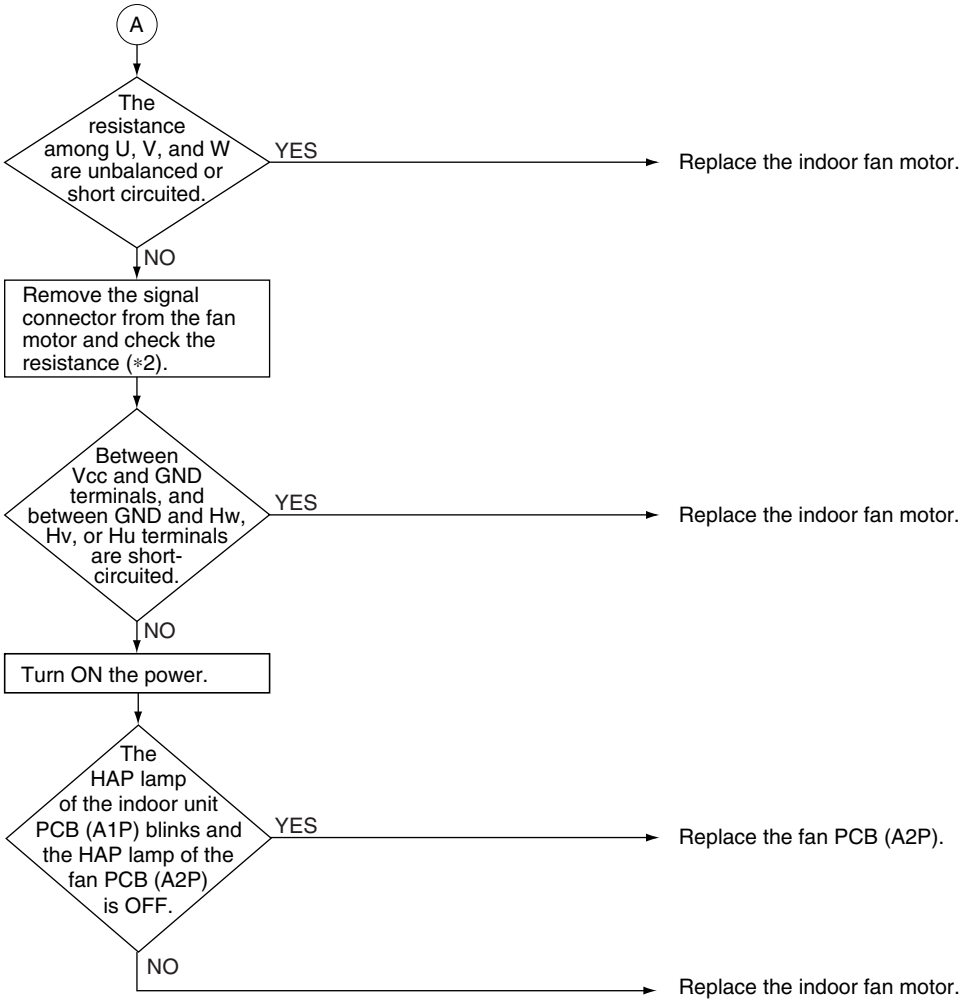
3.5.2 Indoor Fan Motor Abnormality (FXMQ15-54PB Models)

Error Code	**A6**
Applicable Models	FXMQ15-54PB
Method of Error Detection	Error from the current flow on the fan PCB Error from the rotation speed 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 rotation speed is less than a certain level for 6 seconds. ■ A position error in the fan rotor continues for 5 seconds or more.
Supposed Causes	■ The clogging of a foreign matter ■ The disconnection of the fan motor connectors (X1A and X2A) ■ The disconnection of the connectors between the indoor unit PCB (A1P) and fan PCB (A2P) ■ Defective fan PCB (A2P) ■ Defective fan motor

Troubleshooting

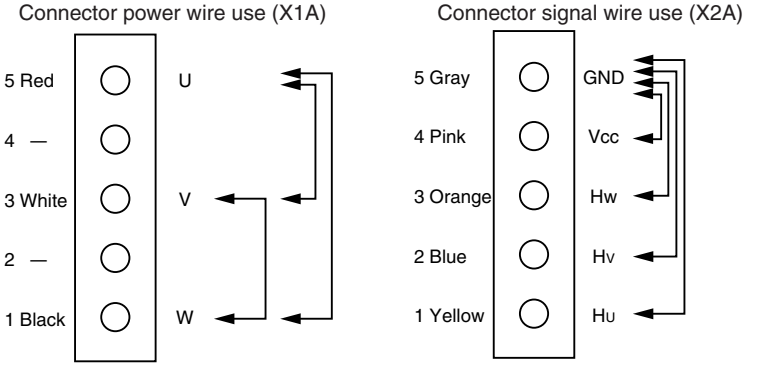
Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.





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).



3.6 Overload/Overcurrent/Lock of Indoor Fan Motor

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.

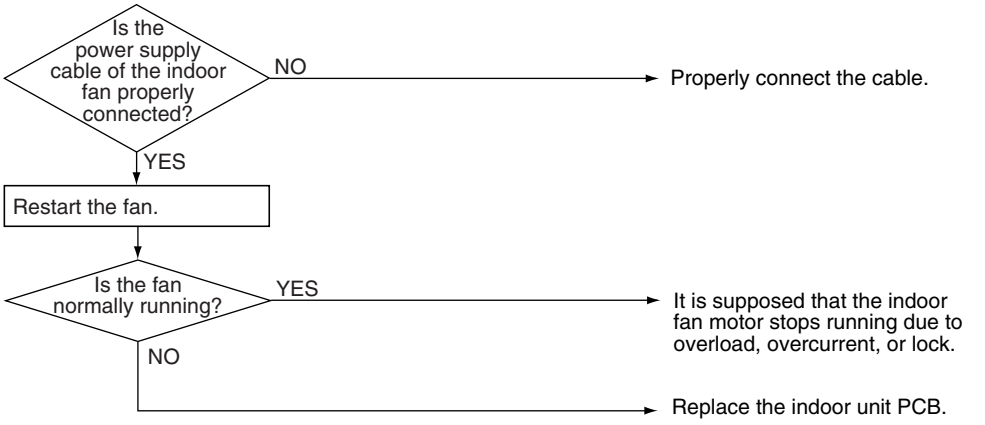
Error Decision Conditions When it is not detected that the individual power supply for the indoor fan turns ON while in operation.

Supposed Causes

- Defective power supply for the indoor 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.



3.7 Blower Motor Not Running

Error Code

A6

Applicable Models

FXTQ-TA

Outline

Error is issued if the indoor unit determines that the indoor fan motor cannot rotate, regardless of the rotation command from indoor unit.

Error Decision Conditions

- Determining successive abnormalities
  Checks the rotation speed at 5-second intervals using the feedback of the fan motor.
  If that figure falls below 50 rpm 5 times successively, it is deemed abnormal operation.
  If, during operation, the rotation command is stopped, the 5-second interval check is halted and the counted number will be cleared.

- Determining long-term abnormalities
  Checks the rotation speed at 5-second intervals using the feedback of the fan motor.
  Performs rotation sampling 720 times (takes approx. one hour), and if the rotation speed falls below 50 rpm over 100 times, it is deemed abnormal operation.
  When the sampling reaches 720 times, the counted number will be cleared and the 720 times sampling restarts.
  If, during this, the rotation command is stopped, the 5-second interval check is halted, but the counted number will be kept.
  When the rotation command is restarted, the checks will resume.

Error Reset Conditions

Reset by remote controller

Supposed Causes

- Fan or motor obstruction
- Power interruption (low voltage)
- Incorrect or loose wiring

Corrective Actions

- Check for obstruction on the fan or motor.
- Verify the input voltage at the motor.
- Check wiring or tighten wiring connections if needed.
- Replace the indoor unit PCB or motor.

3.8 Indoor Fan Motor Status Abnormality

Error Code	**A6-20**
Applicable Models	FXTQ-TA
Outline	The indoor unit periodically receives control status information from the fan motor. Error is issued when the information shows abnormality.
Error Decision Conditions	If the information shows Power Limit or Temp Limit status, it will be deemed a MOTOR LIMIT abnormal operation. (The system can keep operating.) If the information shows Motor Lost Control or Current Trip status, it will be deemed a MOTOR TRIP abnormal operation. (The system stops operating.)
Error Reset Conditions	If the indoor unit stops receiving abnormal information, the error will be cleared.
Supposed Causes	■ Fan or motor obstruction ■ Blocked filters ■ Power interruption (low voltage) ■ Incorrect wiring ■ Blockage in the airflow (ductwork) or ductwork undersized ■ High loading conditions
Corrective Actions	■ Check for obstruction on the fan, motor, or ductwork. ■ Clean filters. ■ Check filters, grille, duct system, heat exchanger air inlet/outlet for blockages. ■ Verify the input voltage at the motor. ■ Check wiring. ■ Replace motor.

3.9 Low Indoor Airflow

Error Code

A6-21

Applicable Models

FXTQ-TA

Outline

Error is issued if the indoor unit determines that the indoor fan motor rotation is insufficient, regardless of the rotation command from indoor unit.

Error Decision Conditions

- Determining successive abnormalities
  Checks the rotation speed at 5-second intervals using the feedback of the fan motor.
  If that figure exceeds 50 rpm and falls below 150 rpm 10 times successively, it is deemed abnormal operation.
  If, during operation, the rotation command is stopped, the 5-second interval check is halted and the counted number will be cleared.
- Determining long-term abnormalities
  Checks the rotation speed at 5-second intervals using the feedback of the fan motor.
  Performs rotation sampling 720 times (takes approx. one hour), and if the rotation speed exceeds 50 rpm and falls below 150 rpm over 360 times, it is deemed abnormal operation.
  When the counter reaches 720 times, the counted number will be cleared and the 720 times sampling restarts.
  If, during this, the rotation command is stopped, the 5-second interval check is halted, but the counted number will be kept.
  When the rotation command is restarted, the checks will resume.

Error Reset Conditions

- Determining successive abnormalities
  Checks the rotation speed at 5-second intervals using the feedback of the fan motor.
  If that figure exceeds 150 rpm even once, the error will be cleared.
- Determining long-term abnormalities
  Checks the rotation speed at 5-second intervals using the feedback of the fan motor.
  If that figure exceeds 150 rpm 36 times successively, the error will be cleared.
  At that point, the counted number and sampling number will be cleared, and the 720 times sampling starts again from the beginning.

Supposed Causes

- Fan or motor obstruction
- Blocked filters
- Restrictive ductwork or ductwork undersized
- Wiring disconnected
- Wrong outdoor and indoor combination
- Indoor fan motor failure

Corrective Actions

- Check for obstruction on the fan or motor.
- Check ductwork and filter for blockage.
- Clean filters.
- Remove obstruction. Verify all registers are fully open.
- Check the connections and the rotation of the motor.
- Verify the input voltage at the motor.
- Verify ductwork is appropriately sized for system. Resize or replace ductwork if needed.
- Replace motor.

3.10 Swing Flap Motor Abnormality

Error Code **A7**

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

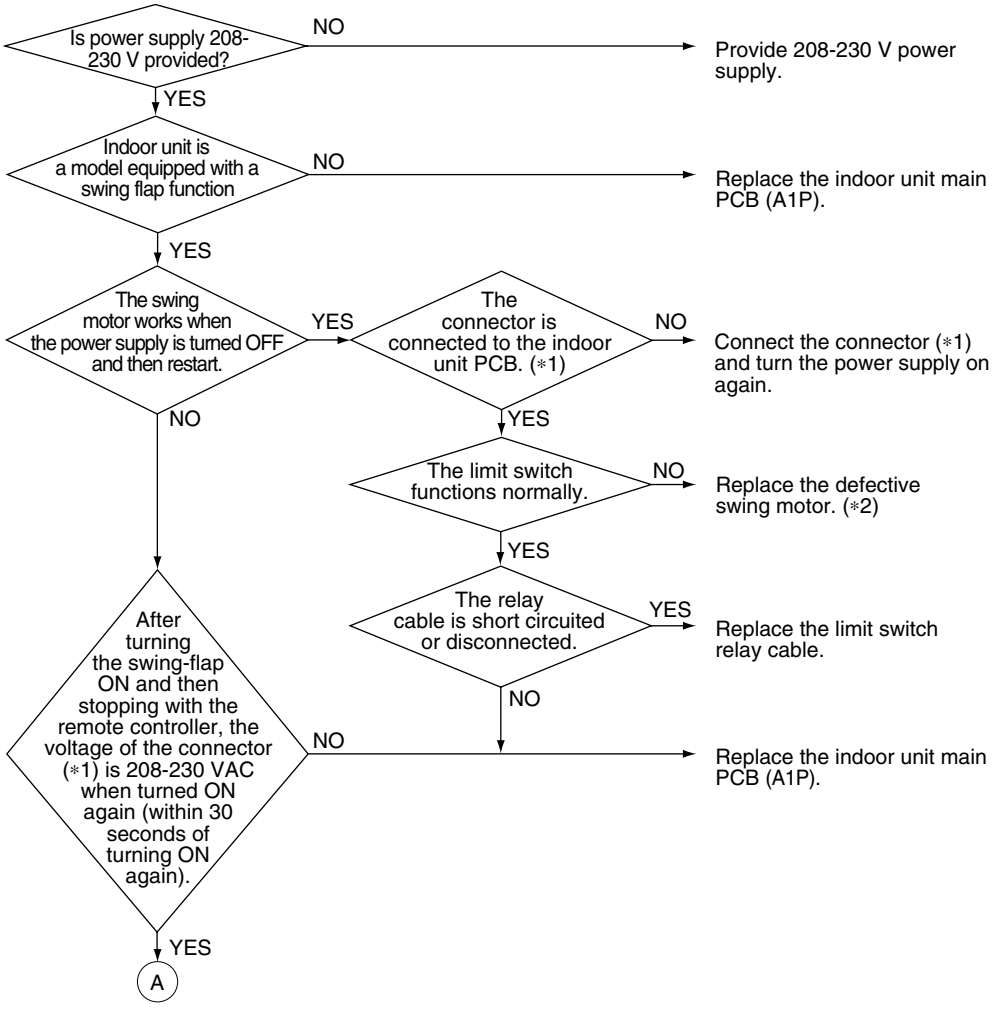
Method of Error Detection Utilizes ON/OFF of the limit switch when the motor turns.

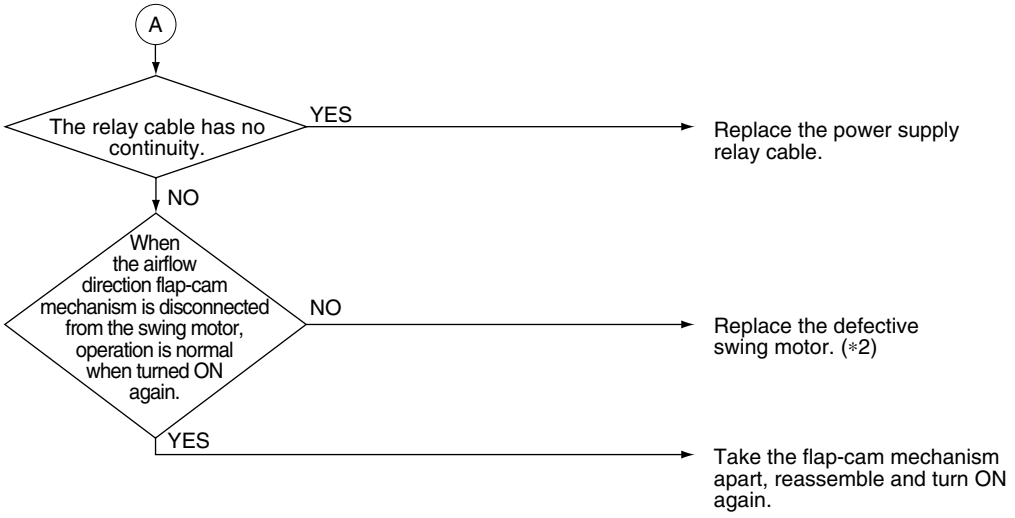
Error Decision Conditions When ON/OFF of the micro-switch for positioning cannot be reversed even though the swing flap motor is energized for a specified amount of time (about 30 seconds).
∗ Error code is displayed but the system operates continuously.

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-M	X28A	M1S
FXUQ-P	X36A	M1S, M2S, M3S, M4S
FXEQ-P	X36A	M1S, M2S, M3S, M4S
FXHQ-M	X6A	M1S
FXAQ-P	X36A	M1S

3.11 Power Supply Voltage Abnormality

Error Code **A8**

Applicable Models FXMQ-PB

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

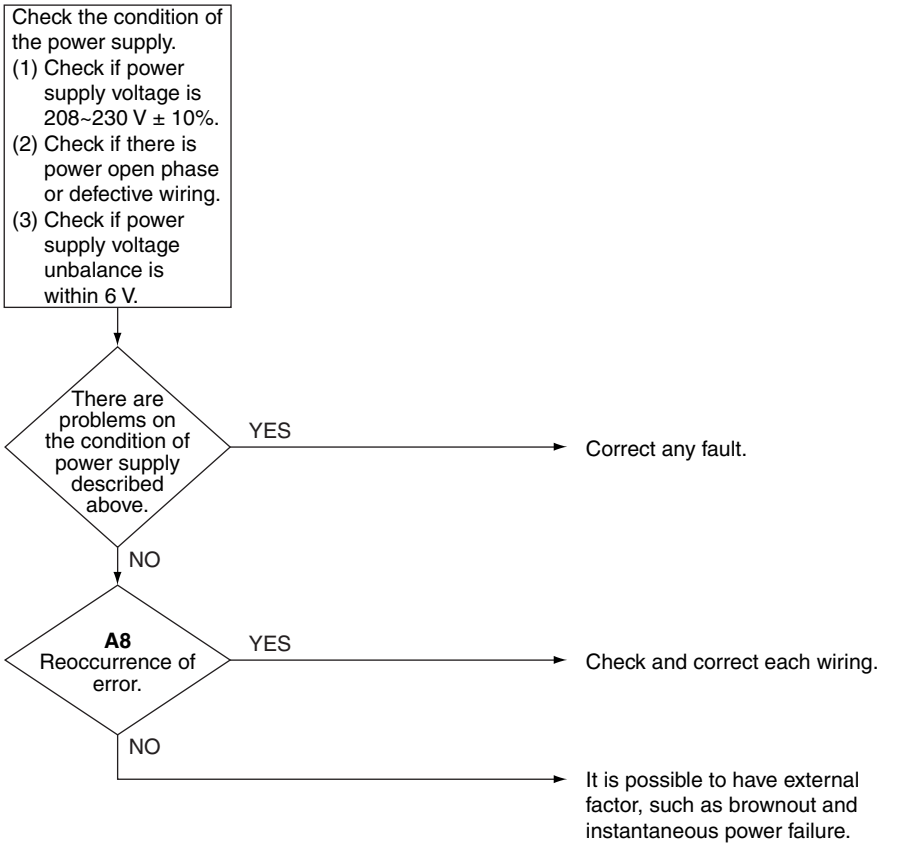
Error Decision Conditions When the input voltage of fan motor is 150 V or less, or 386 V or more.

Supposed Causes

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

Troubleshooting

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



3.12 Blower Motor Stops for Over/Under Voltage

Error Code

A8

Applicable Models

FXTQ-TA

Outline

The indoor unit periodically receives control status information from the fan motor.
Error is issued when the information shows abnormality.

Error Decision Conditions

If the information shows Over/Under Voltage status, it will be deemed a MOTOR VOLTS abnormal operation.

Error Reset Conditions

If the information is normal, the error will be cleared.

Supposed Causes

- High AC line voltage to indoor blower motor
- Low AC line voltage to indoor blower motor
- Incorrect wiring

Corrective Actions

- Verify line voltage to indoor blower motor is within the range specified on the ID blower rating plate.
- Check power to indoor blower motor.
- Check wiring.
- Replace motor.

3.13 Electronic Expansion Valve Coil Abnormality, Dust Clogging

Error Code **A9**

Applicable Models All indoor unit models

Method of Error Detection
Check coil condition of electronic expansion valve by using microcomputer.
Check dust clogging condition of electronic expansion valve main body by using microcomputer.

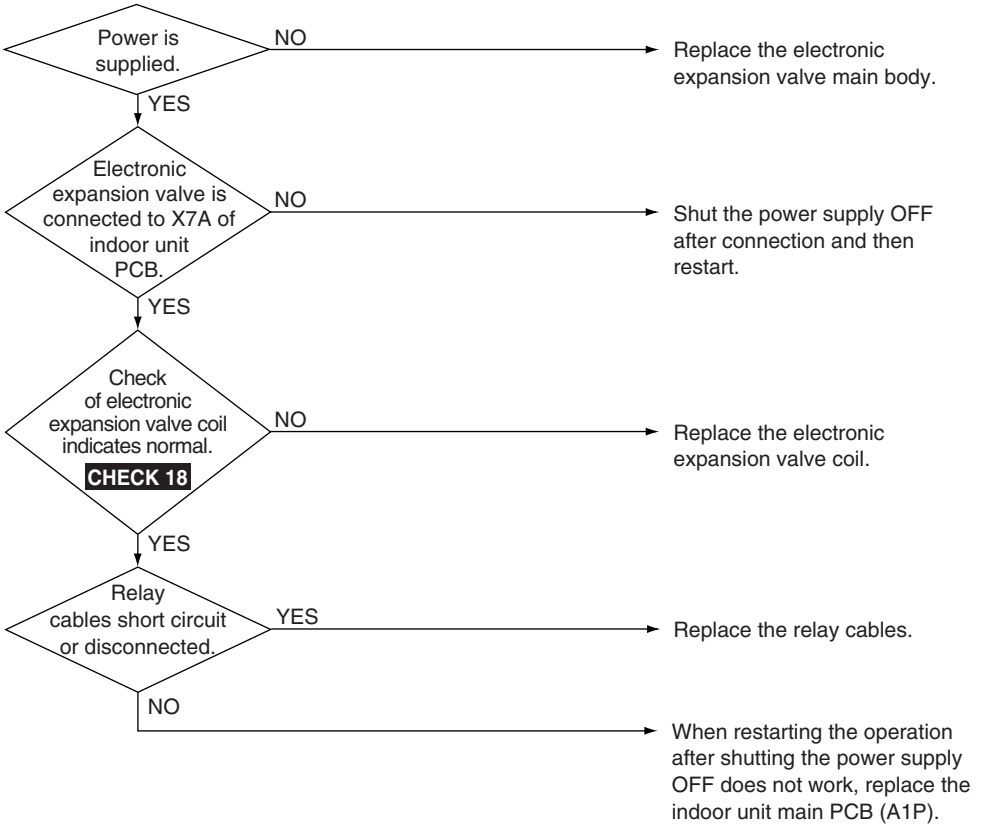
Error Decision Conditions
Pin input for electronic expansion valve coil is abnormal when initializing microcomputer.
Either of the following conditions is seen/caused/ occurs while the unit stops operation.
- R1T – R2T > 8°C (14.4°F)
- R2T shows fixed degrees or below.

R1T: temperature of suction air
R2T: temperature of liquid pipe of heat exchanger

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.



CHECK 18 Refer to page 305.

3.14 Drain Level above Limit

Error Code

AF

Applicable Models

FXFQ, FXZQ, FXEQ, 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

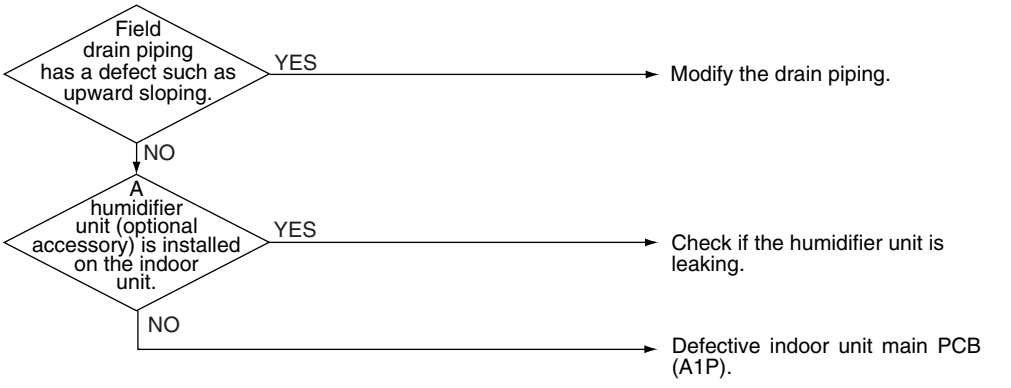
When the float switch changes from ON to OFF while the compressor is not in operation.
∗ Error code is displayed but the system operates continuously.

Supposed Causes

- Humidifier unit (optional accessory) leaking
- Defective drain pipe (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.



3.15 Capacity Determination Device Abnormality

Error Code

AJ

Applicable Models

All indoor unit models

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

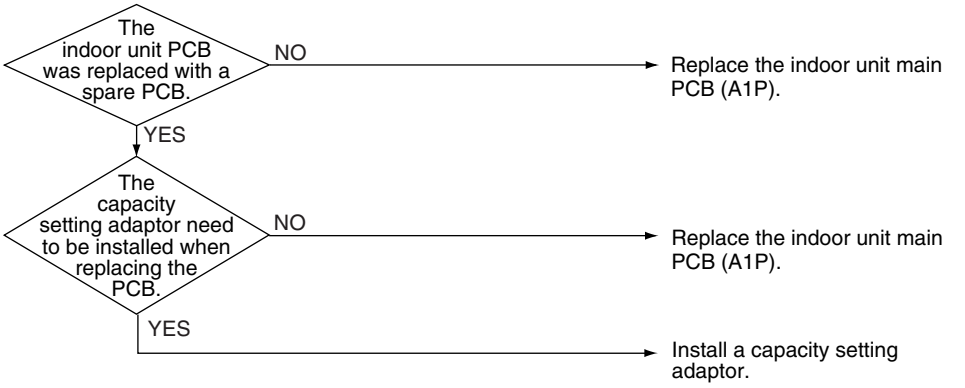
When the capacity code is not saved to the PCB, and the capacity setting adaptor is not connected.
When a capacity that does not exist for that unit is set.

Supposed Causes

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

Troubleshooting

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



3.16 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 microcomputer.

Error Decision Conditions

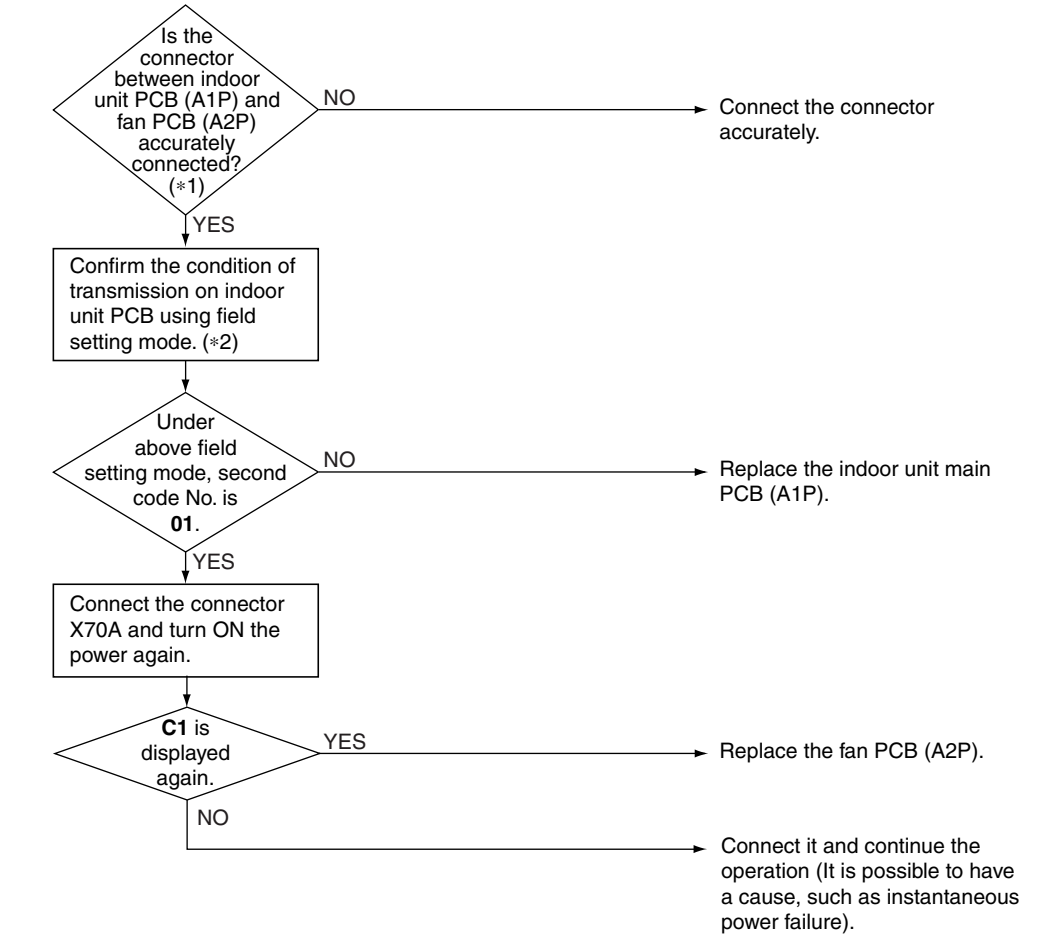
When normal transmission is not conducted for certain duration.

Supposed Causes

- Connection defective 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 connector 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 connector X70A of indoor unit 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.

3.17 Blower Motor Communication Error

Error Code	**C1-07**
Applicable Models	FXTQ-TA
Outline	Error is issued if transmission abnormalities occur between indoor unit and fan motor.
Error Decision Conditions	If the response message from the fan motor is an abnormal message, and determined as such by the indoor unit, the indoor unit will execute a retry. If everything fails for 5 seconds, it is deemed to be a transmission abnormality.
Error Reset Conditions	If the indoor unit receives even a single normal response message from the fan motor, the error will be cleared.
Supposed Causes	■ Incorrect or loose wiring ■ Power interruption (low voltage)
Corrective Actions	■ Check wiring or tighten wiring connections if needed. ■ Verify the input voltage at the motor. ■ Replace the indoor unit PCB or motor.

3.18 Thermistor Abnormality

Error Code

C4, C5, C9, CA

Applicable Models

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

Method of Error Detection

The error is detected by temperature detected by thermistor.

Error Decision Conditions

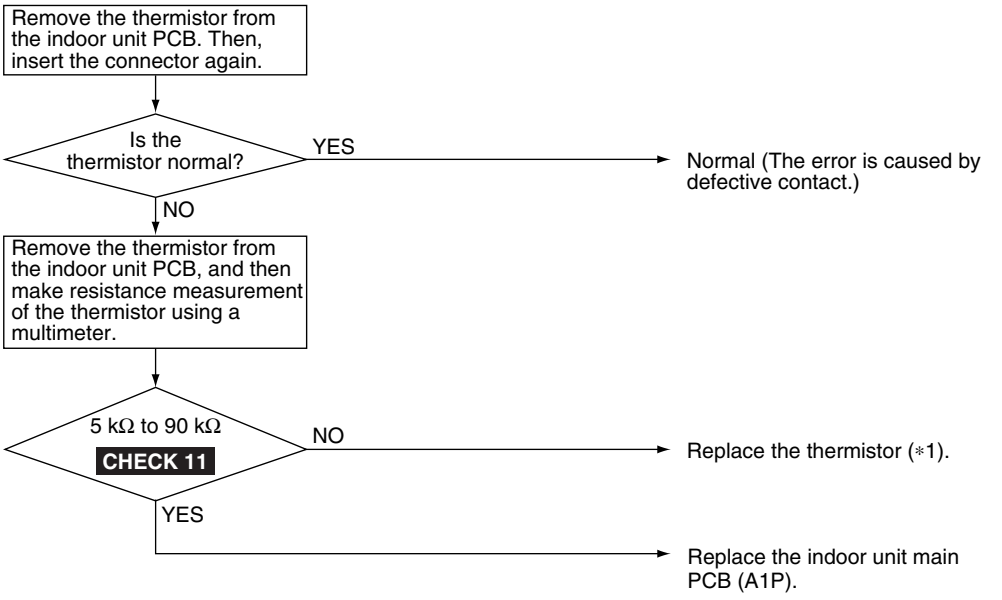
The thermistor becomes disconnected or shorted while the unit is running.

Supposed Causes

- Defective thermistor
- Defective indoor unit PCB
- Defective connector connection
- Broken or disconnected wire

Troubleshooting

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



Note: ∗1. Error code and thermistor

Error Code	Thermistor	Except FXMQ-PB and FXTQ-TA	FXMQ-PB	FXTQ-TA
C4	Heat exchanger liquid pipe thermistor	R2T	R2T	R2T
C5	Heat exchanger gas pipe thermistor	R3T	R3T	R3T
C9	Suction air thermistor	R1T	R1T	∗2
CA	Discharge air thermistor	—	R4T	—

∗2. Refer to page 204 for **C9** for FXTQ-TA models.

CHECK 11 Refer to page 299.

3.19 Combination Error between Indoor Unit PCB and Fan PCB

Error Code C6

Applicable Models FXMQ-PB

Method of Error Detection Check the condition of transmission with fan PCB (A2P) using indoor unit main PCB (A1P).

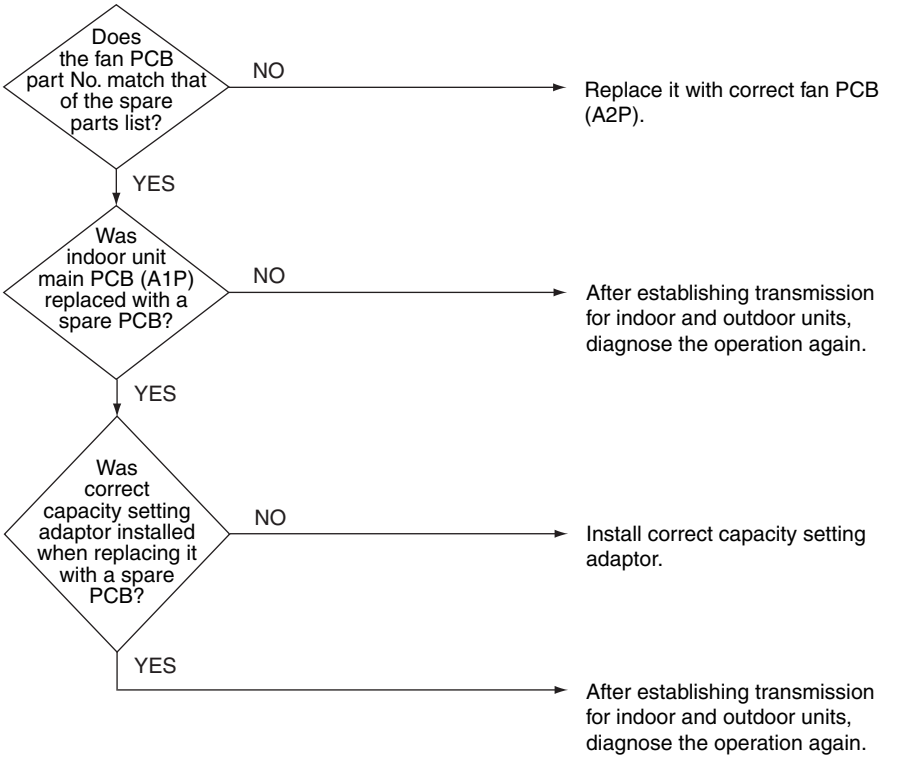
Error Decision Conditions When the communication data of fan PCB (A2P) is determined as incorrect.

Supposed Causes

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

Troubleshooting

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



3.20 Blower Motor HP Mismatch

Error Code	**C6-01**
Applicable Models	FXTQ-TA
Outline	Error is issued if the manufacturer ID and output of the connected fan motor do not match those recognized by the indoor unit.
Error Decision Conditions	Gathers information on the manufacturer ID and output of the fan motor when initializing the fan motor. If those figures are not the values recognized by the indoor unit, it will be deemed abnormal operation. If deemed abnormal operation, it will keep retrying until the figures match.
Error Reset Conditions	If the manufacturer ID and output match, the error will be cleared.
Supposed Causes	■ Incorrect size motor ■ Indoor unit capacity setting error
Corrective Actions	■ Correct motor installation. ■ Correct the indoor unit capacity setting.

3.21 Indoor Blower Does Not Have Required Parameters to Function

Error Code

C6-02

Applicable Models

FXTQ-TA

Outline

Indoor units perform required settings for control on the fan motor, but if the minimum required settings are not made then information indicating as such will be included among the periodic control status information.
Error is issued when the information shows abnormality.

Error Decision Conditions

If the parameter information shows abnormality, it will be deemed abnormal operation.
At that point, parameter settings when initializing the fan motor will be implemented from the beginning.

Error Reset Conditions

If the parameter information is normal, the error will be cleared.

Supposed Causes

- Locked motor rotor condition

Corrective Actions

- Check for locked rotor condition.
- Replace the indoor unit PCB or motor.

3.22 Remote Sensor Abnormality

Error Code C9

Applicable Models FXTQ-TA

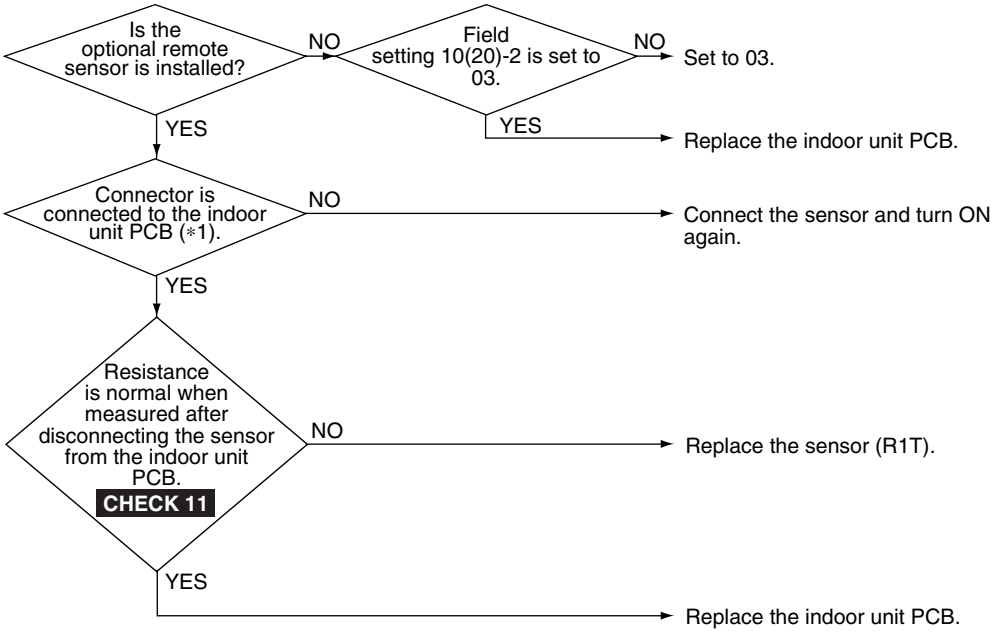
Method of Error Detection The error is detected by remote sensor temperature.

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

Supposed Causes
- Defective indoor unit thermistor (R1T) for room temperature
- Defective indoor unit PCB

Troubleshooting

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



Note: *1. Connector and indoor unit PCB

Connector for remote sensor	PCB
X4A	A1P

CHECK 11 Refer to page 299.

3.23 Humidity Sensor System Abnormality

Error Code **CC**

Applicable Models FXFQ

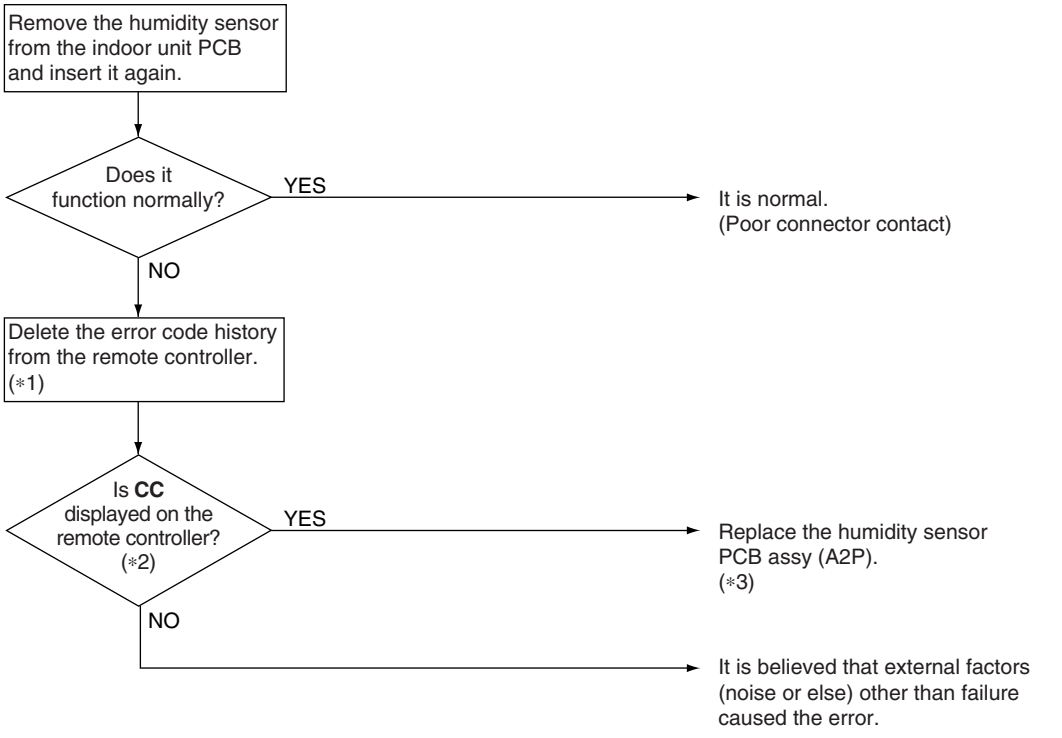
Method of Error Detection Even if an error occurs, operation still continues.
Error is detected according to the moisture (output voltage) detected by the moisture sensor.

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** 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).

3.24 Infrared Presence/Floor Sensor Error

Error Code

CE

Applicable Models

FXFQ-T, FXUQ-P

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

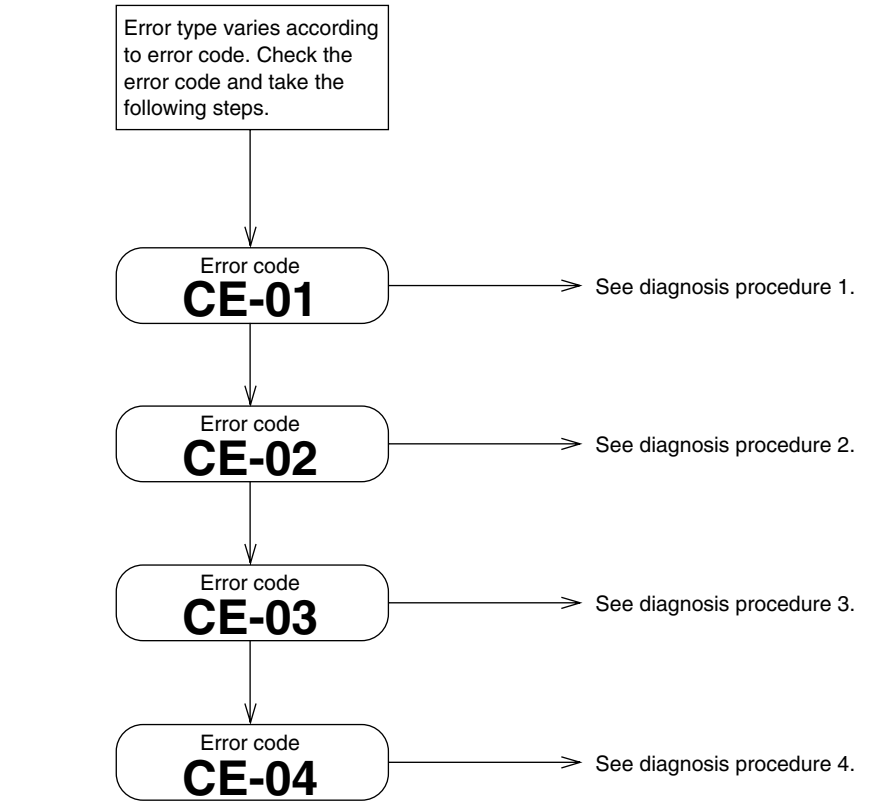
Error is detected based on sensor output signals

Supposed Causes

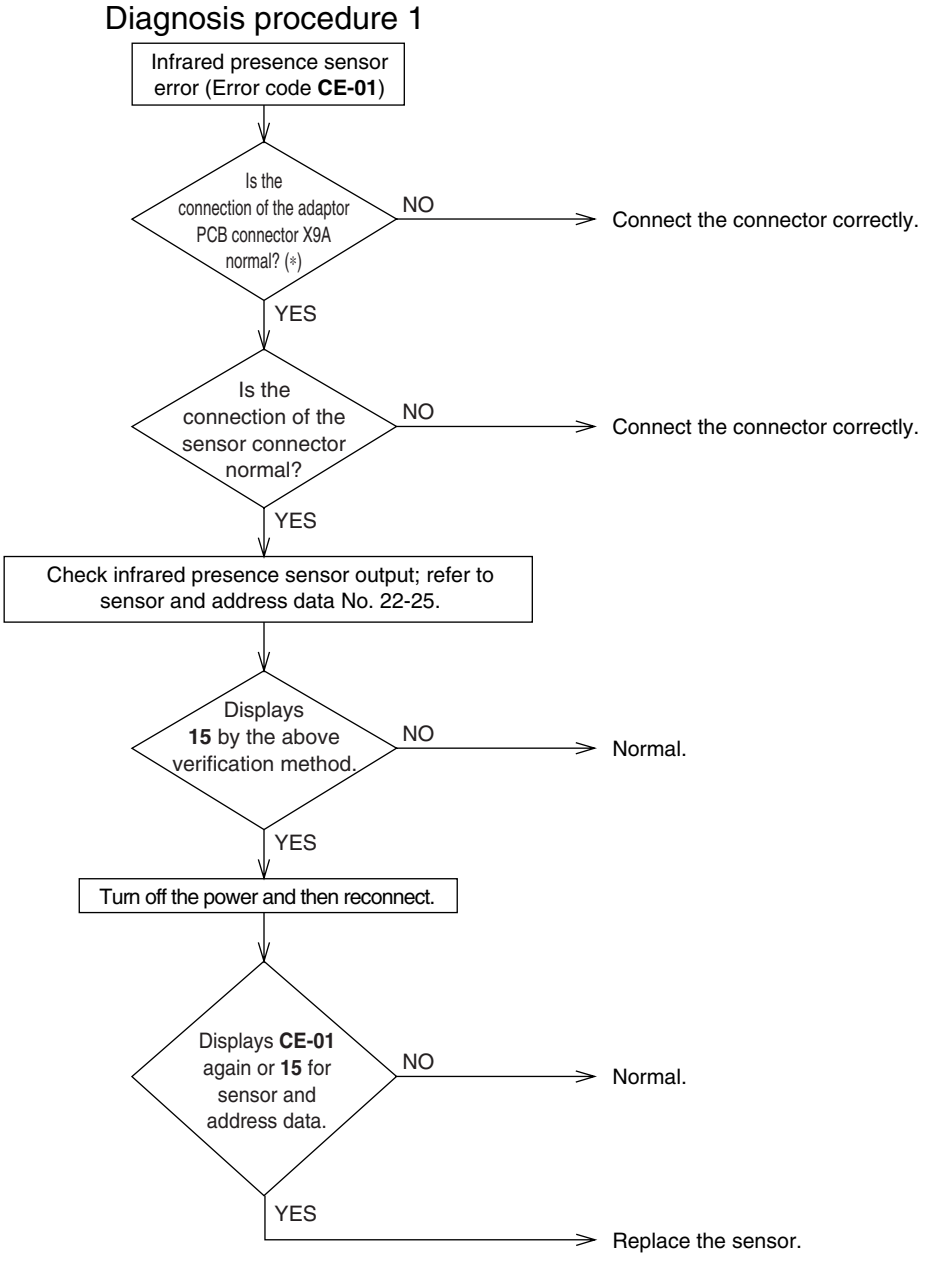
- Defective or disconnected infrared presence sensor connector: **CE-01**
- Defective infrared floor sensor (Temperature compensation circuit disconnection): **CE-02**
- Defective infrared floor sensor (Temperature compensation short circuit): **CE-03**
- Defective infrared floor sensor element: **CE-04**

Troubleshooting

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

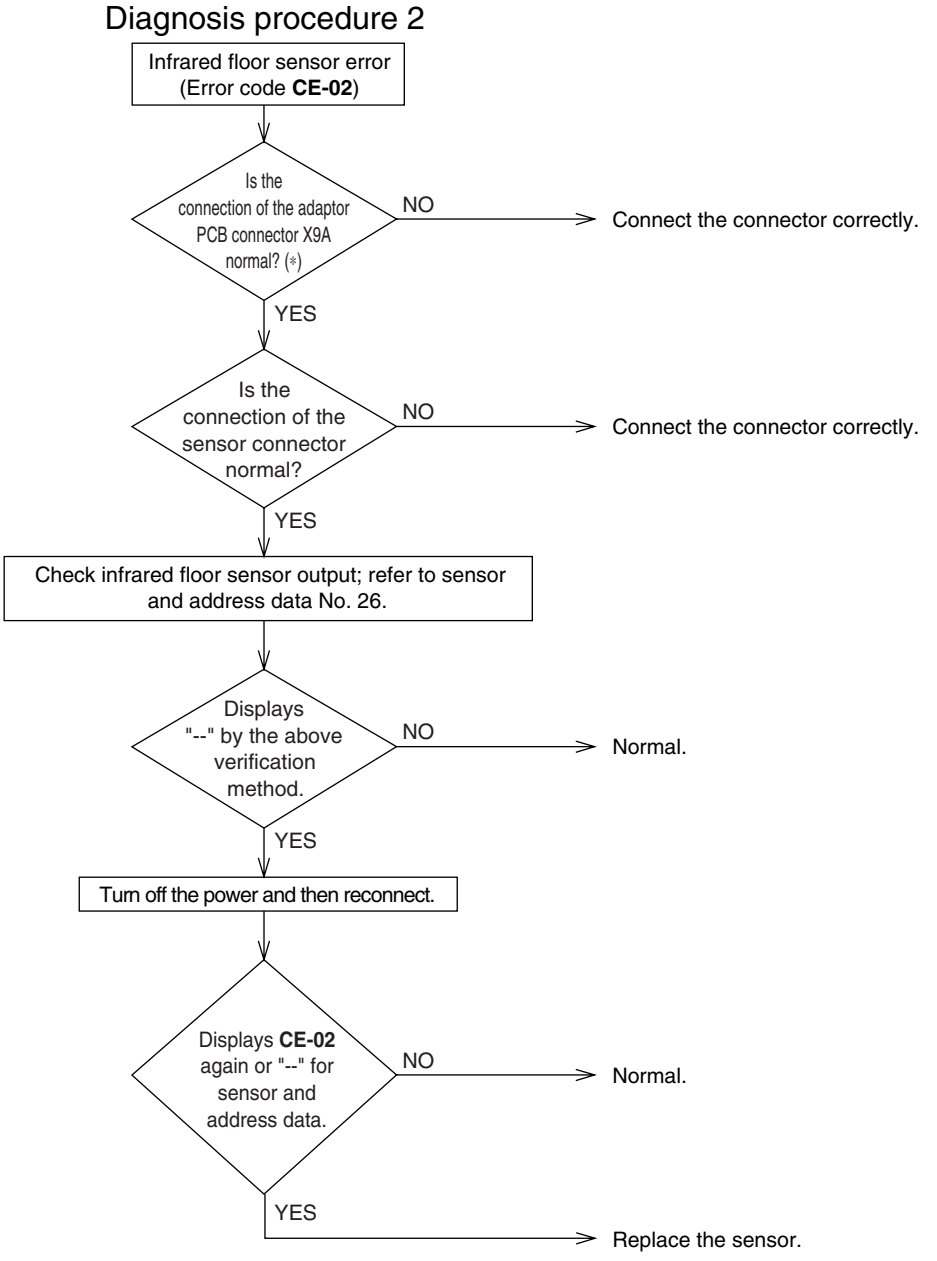


Troubleshooting



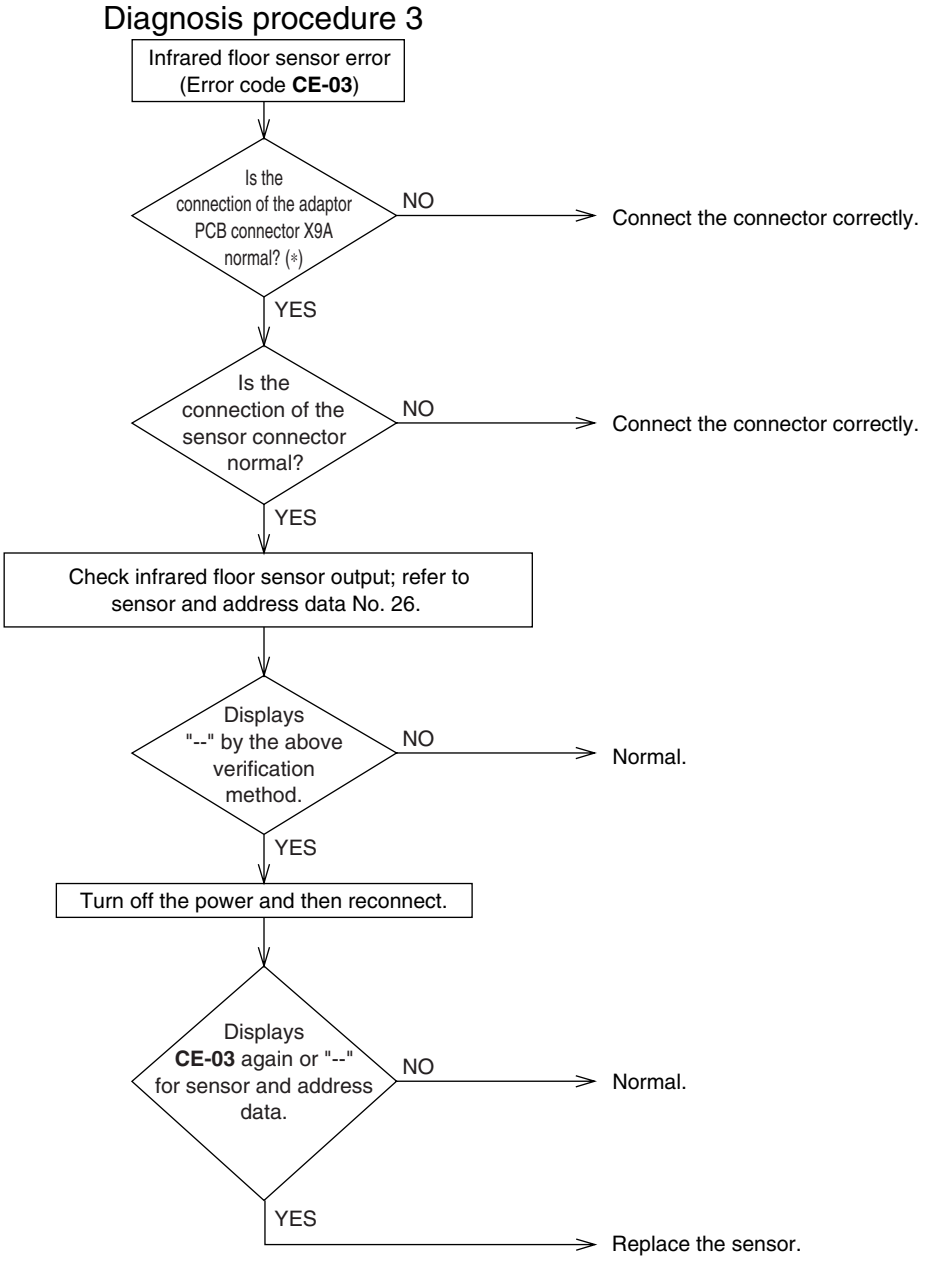
* Check whether A3P connector is well connected or not.

Troubleshooting



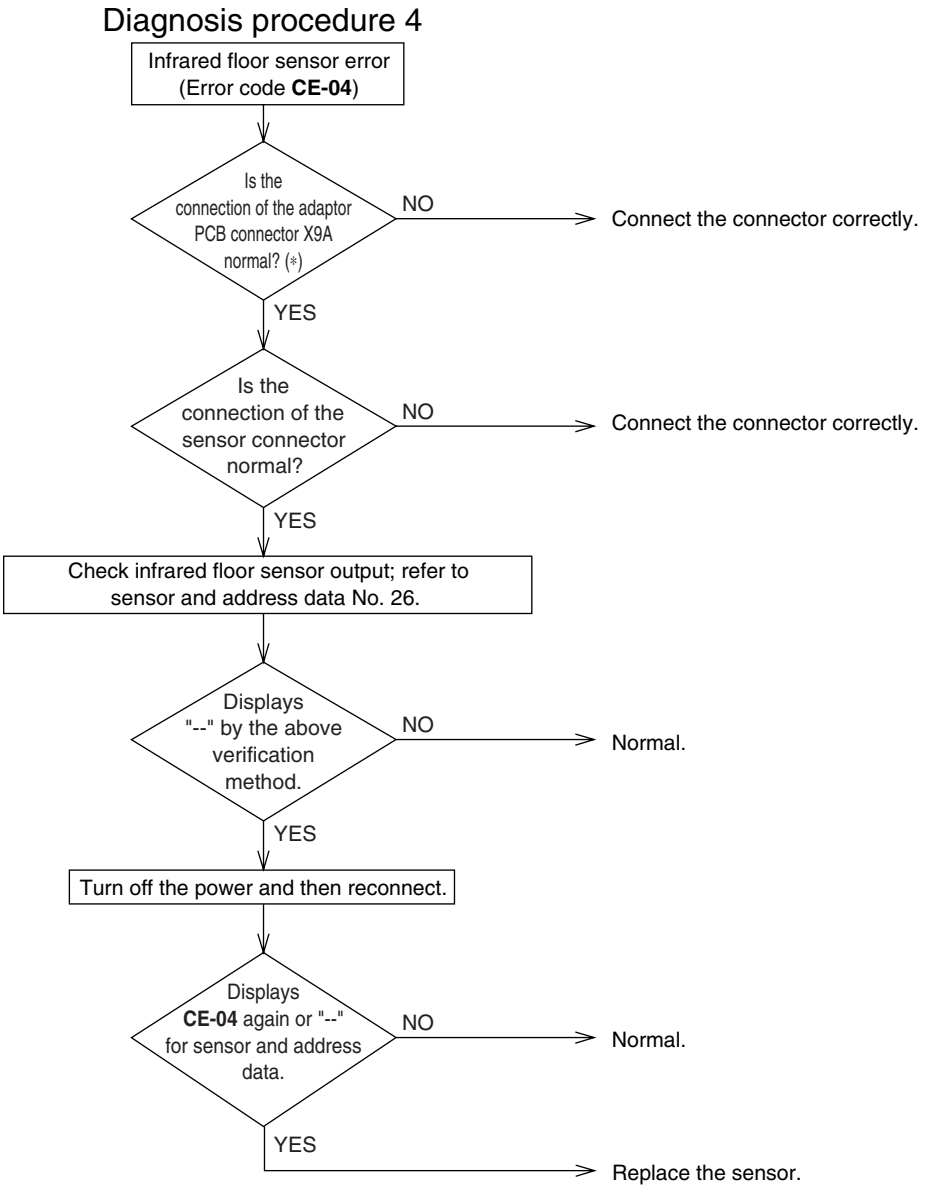
* Check whether A2P connector is well connected or not.

Troubleshooting



* Check whether A2P connector is well connected or not.

Troubleshooting



* Check whether A2P connector is well connected or not.

3.25 Remote Controller Thermistor Abnormality

Error Code

CJ

Applicable Models

All indoor unit models

Method of Error Detection

Error detection is carried out by temperature detected by the remote controller thermistor.

Error Decision Conditions

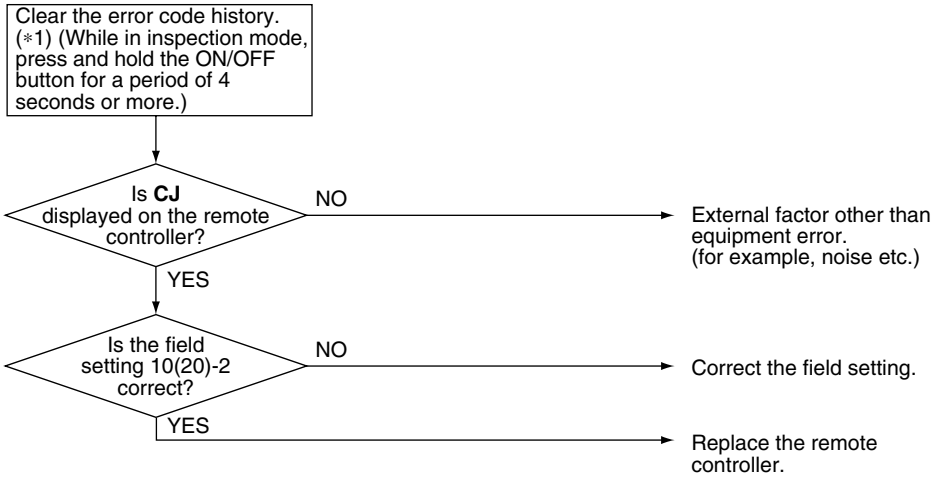
The remote controller thermistor becomes disconnected or shorted while the unit is running.

Supposed Causes

- Defective remote controller thermistor
- 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 the history of error codes.
Press the ON/ OFF button for 4 seconds and more while the error code is displayed in the inspection mode.

3.26 Outdoor Unit Main PCB Abnormality

Error Code **E1**

Applicable Models All outdoor unit models

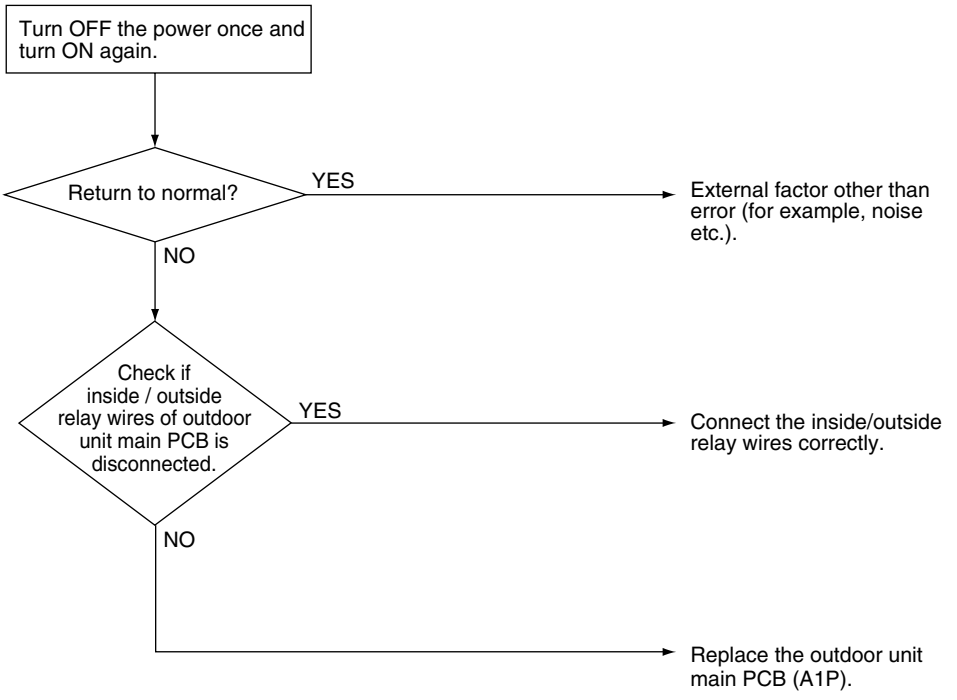
Method of Error Detection Abnormality is detected under the communication conditions in the hardware section between the indoor unit and outdoor unit.

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 unit main PCB (A1P)
- 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.



3.27 Current Leakage Detection

Error Code

E2
Sub code: -01 to -03

Applicable Models

All outdoor unit models

Method of Error Detection

Current leakage is detected in the earth leakage detection circuit. Error is detected on the outdoor unit main PCB.

Error Decision Conditions

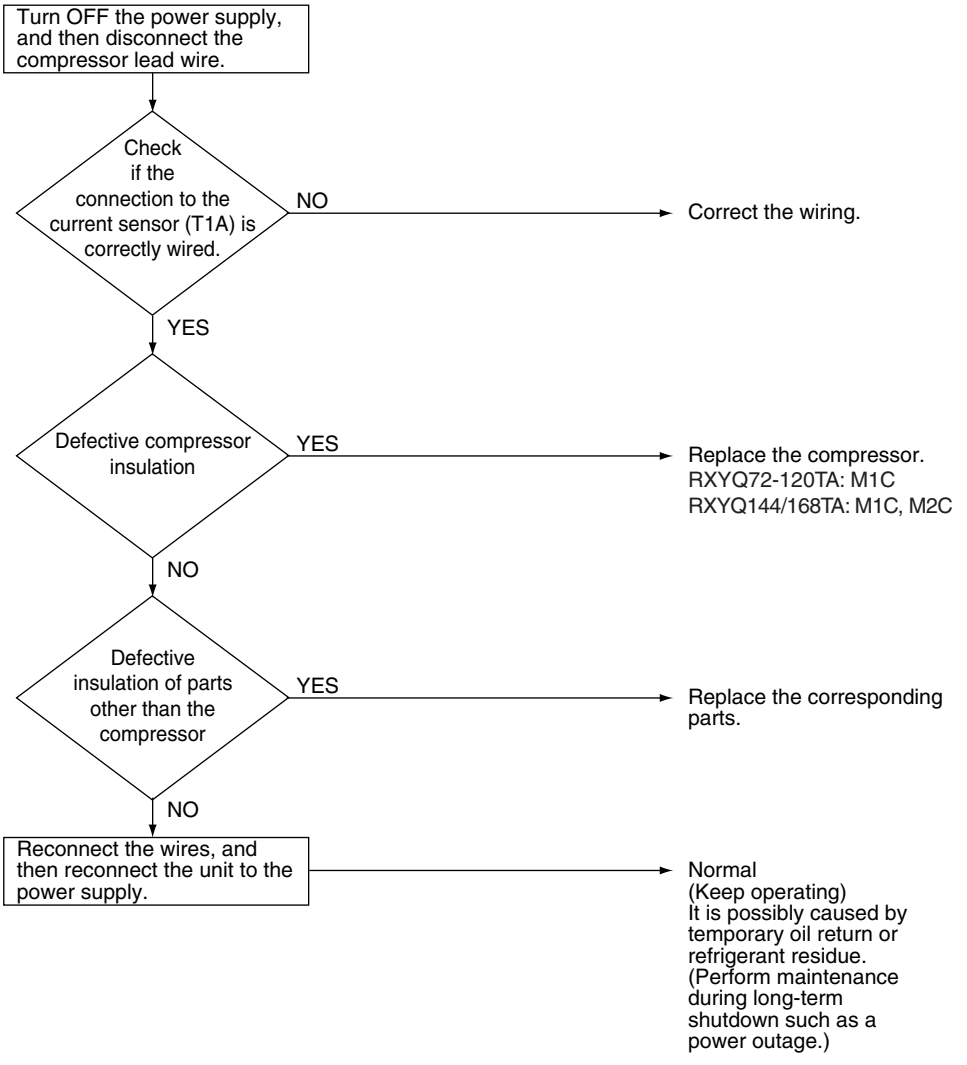
When leakage current is detected.

Supposed Causes

- Earth fault
- Defective wiring with the current sensor
- Temporary liquid back or refrigerant stagnation

Troubleshooting

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



3.28 Missing of Leakage Detection Core

Error Code

E2
Sub code: -06 to -08

Applicable Models

All outdoor unit models

Method of Error Detection

Detect error according to whether or not there is continuity across the connector (X101A).

Error Decision Conditions

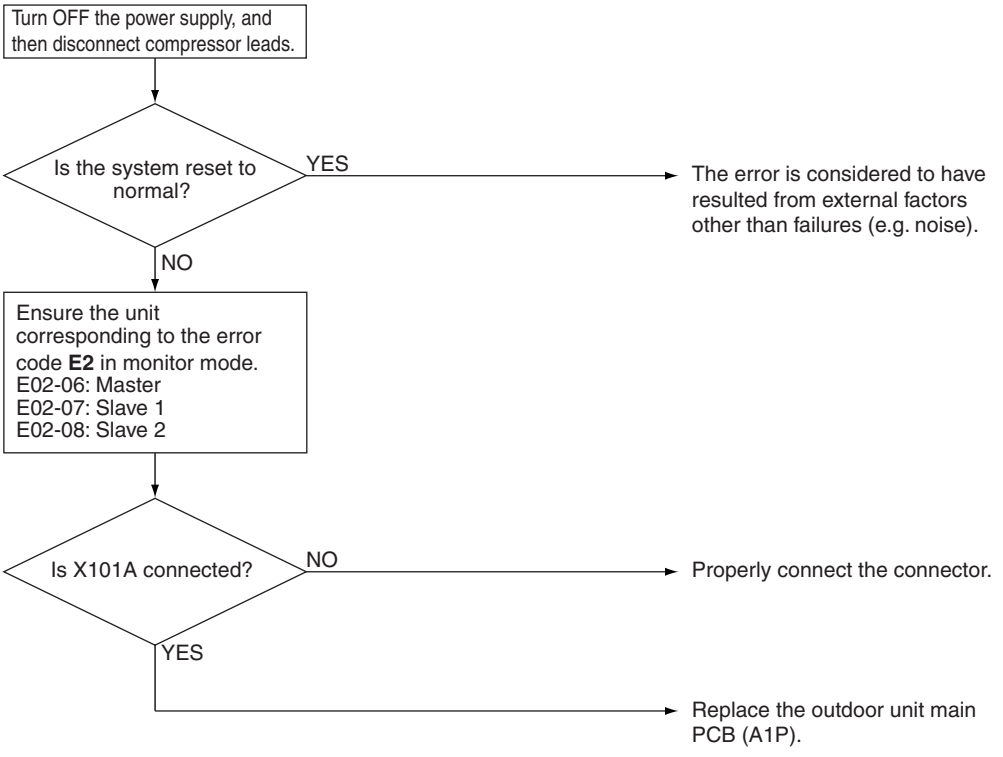
When no current flows at the time of turning ON the power supply.

Supposed Causes

- Disconnection of connector (X101A)
- Wiring disconnection
- Defective outdoor unit main PCB

Troubleshooting

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



3.29 Actuation of High Pressure Switch

Error Code **E3**

Applicable Models All outdoor unit models

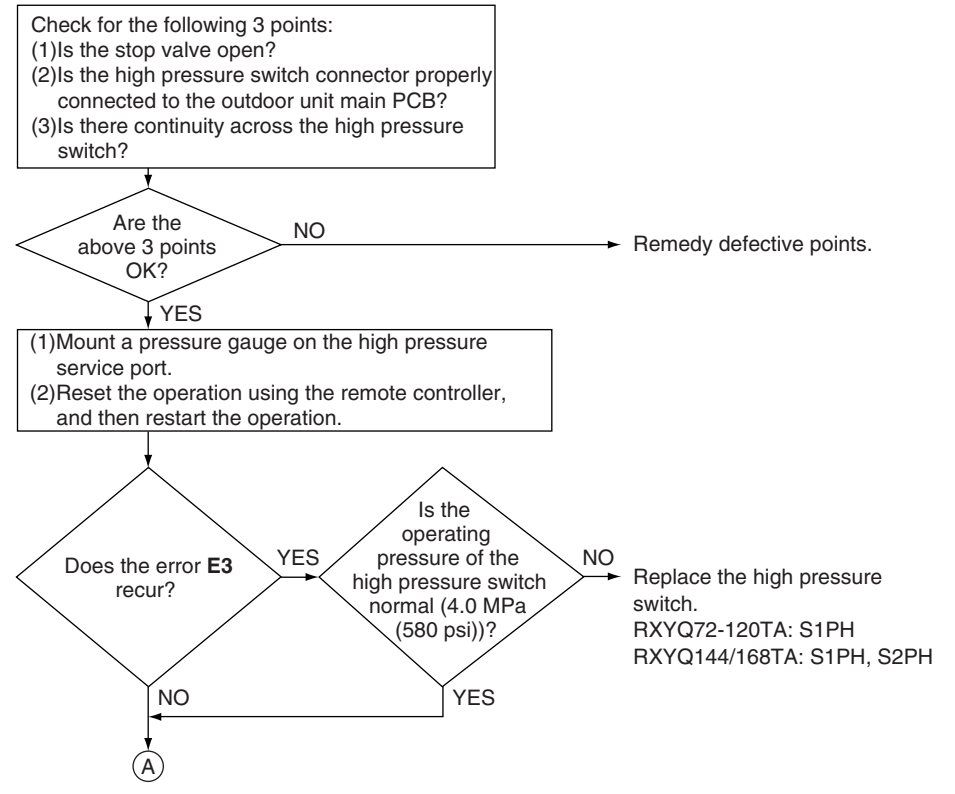
Method of Error Detection Detect continuity across the high pressure switch in the protection device circuit.

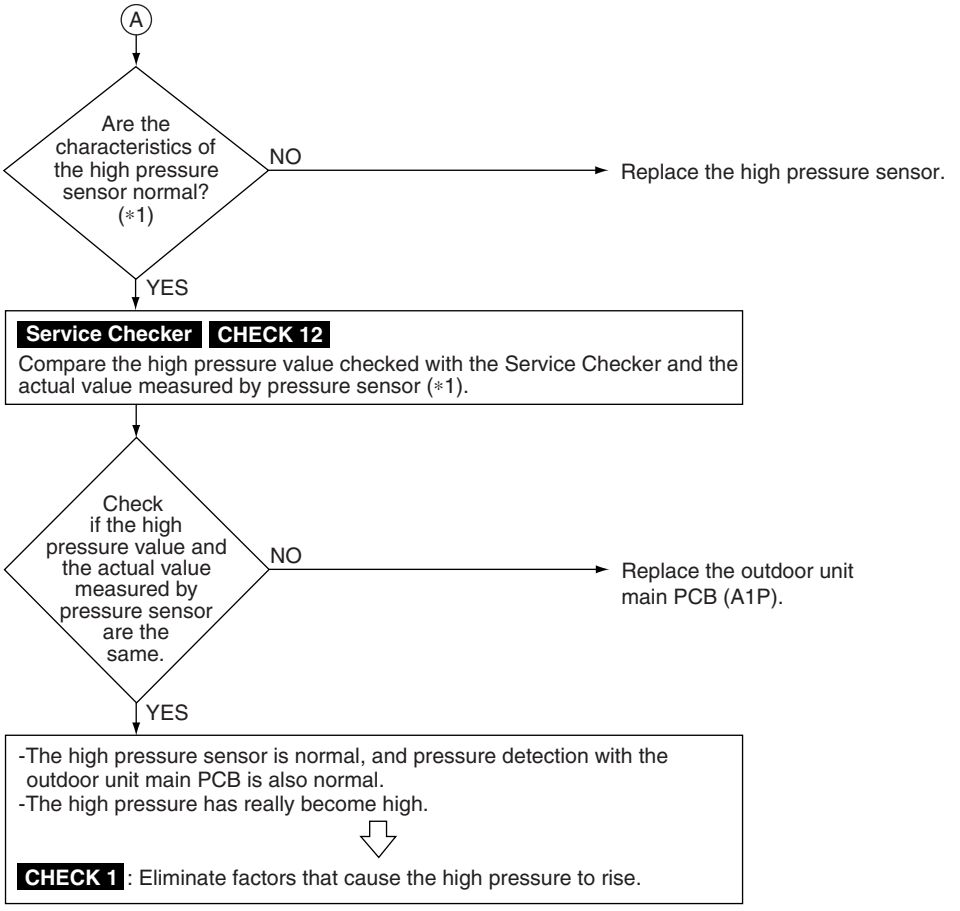
Error Decision Conditions
When part of the protection device circuit opens.
(Reference) Operating pressure of the high pressure switch:
- Operating pressure: 4.0 MPa (580 psi)
- Resetting pressure: 3.0 MPa (435 psi)

Supposed Causes
- Activation of high pressure switch
- Defective high pressure switch
- Defective outdoor unit main PCB (A1P)
- Momentary 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 voltage measured by the pressure sensor and that read by the pressure gauge.
(The pressure sensor makes measurement of voltage at its connector block to convert it to pressure. **CHECK 12**)

CHECK 1 Refer to page 291.

CHECK 12 Refer to page 302.

3.30 Actuation of Low Pressure Sensor

Error Code **E4**

Applicable Models All outdoor unit models

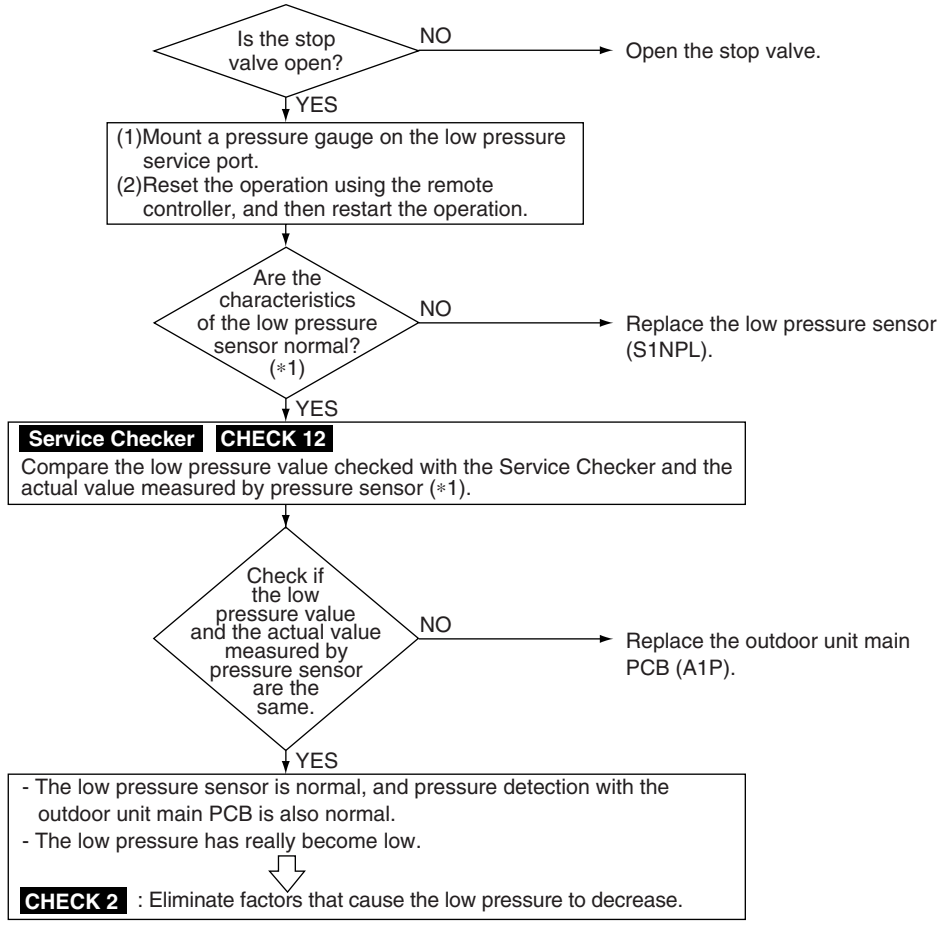
Method of Error Detection Make judgement of pressure detected by the low pressure sensor with the outdoor unit main PCB.

Error Decision Conditions When low pressure caused a drop while the compressor is in operation:
- Operating pressure: 0.07 MPa (10.2 psi)

Supposed Causes
- Abnormally drop in low pressure
- Defective low pressure sensor
- Defective outdoor unit main PCB
- The 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 voltage measured by the pressure sensor and that read by the pressure gauge.
(The pressure sensor makes measurement of voltage at its connector block to convert it to pressure. **CHECK 12**)

CHECK 2 Refer to page 292.

CHECK 12 Refer to page 302.

3.31 Inverter Compressor Motor Lock

Error Code **E5**

Applicable Models All outdoor unit models

Method of Error Detection Outdoor unit 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.

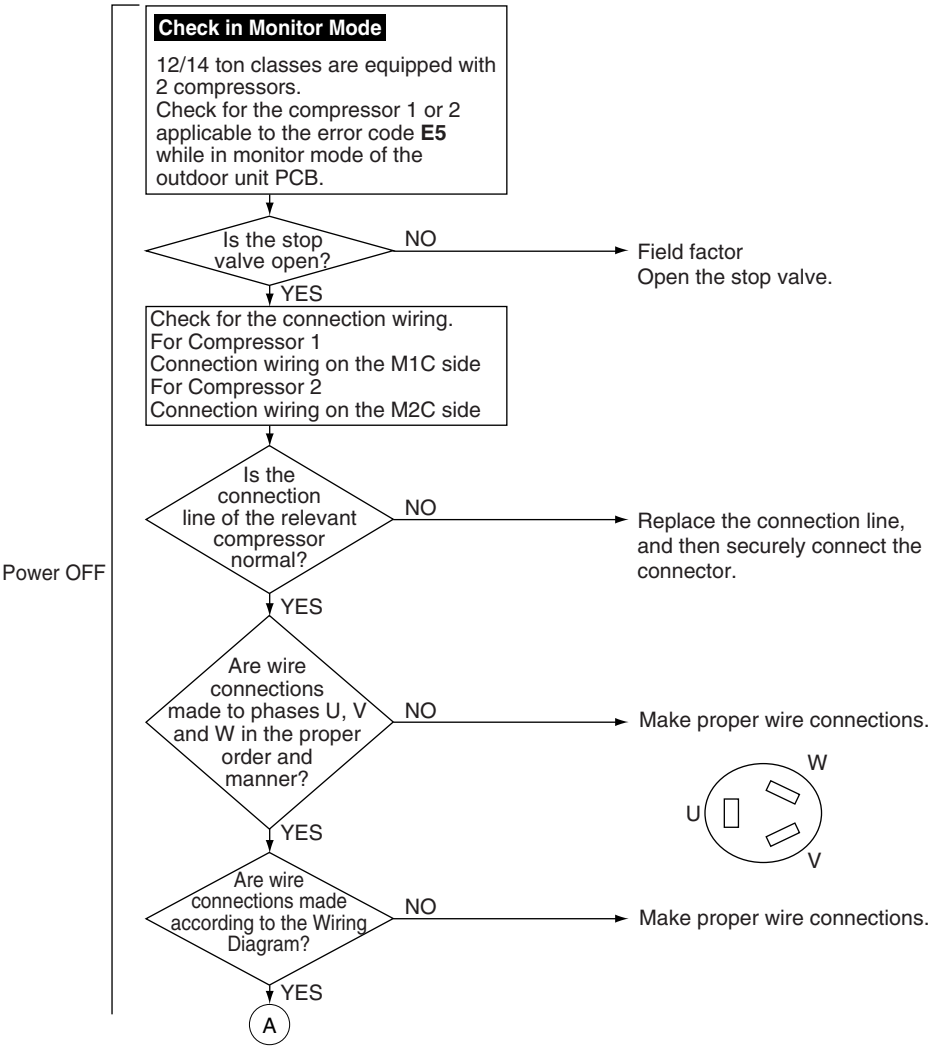
Error Decision Conditions When the inverter compressor motor does not operate even by starting it in forced startup mode.

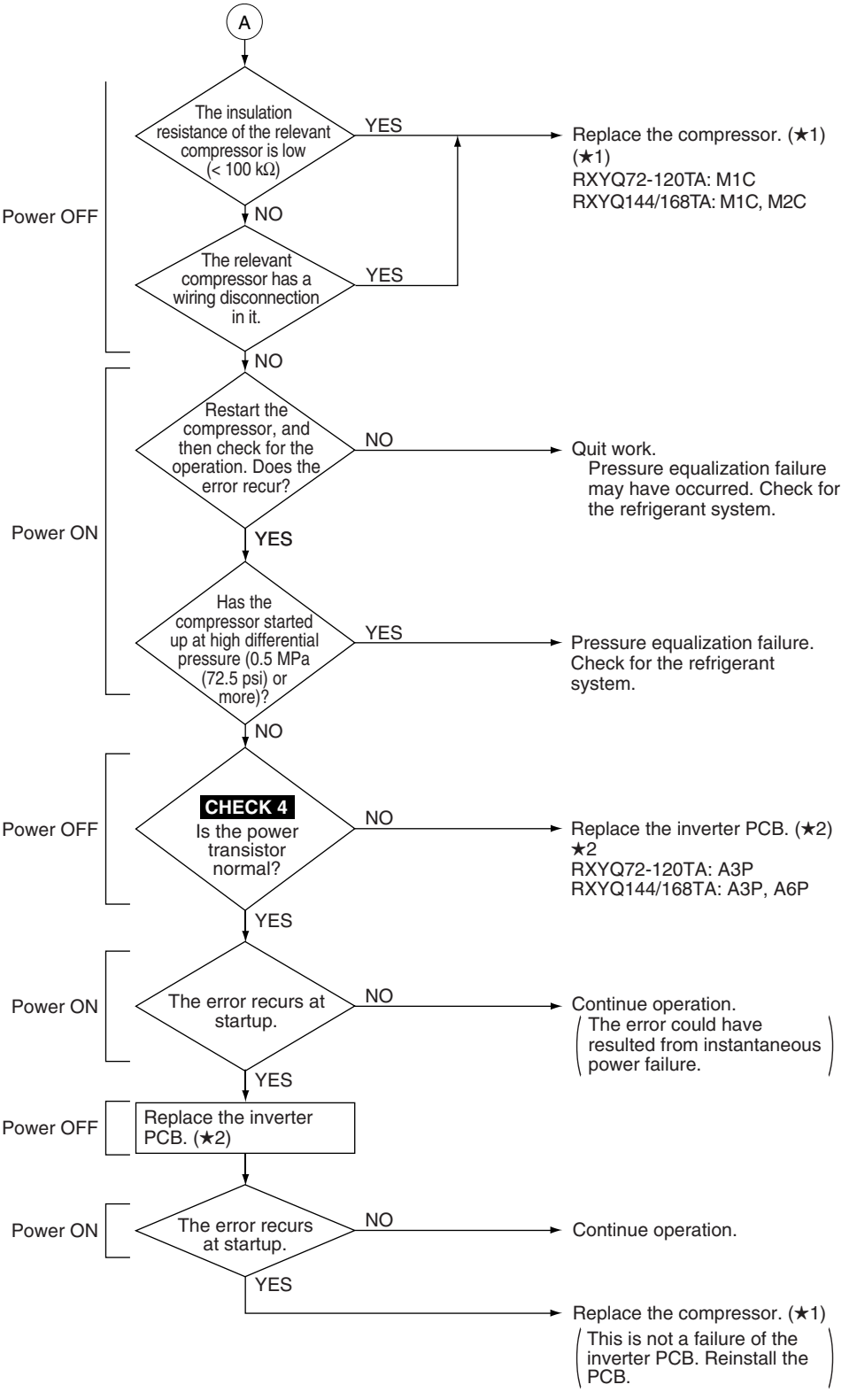
Supposed Causes

- Inverter compressor lock
- High differential pressure (0.5 MPa (72.5 psi) or more)
- UVW connection error
- Defective inverter PCB
- The 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.





CHECK 4 Refer to page 295.

3.32 Compressor Damage Alarm

Error Code **E6**

Applicable Models All outdoor unit models

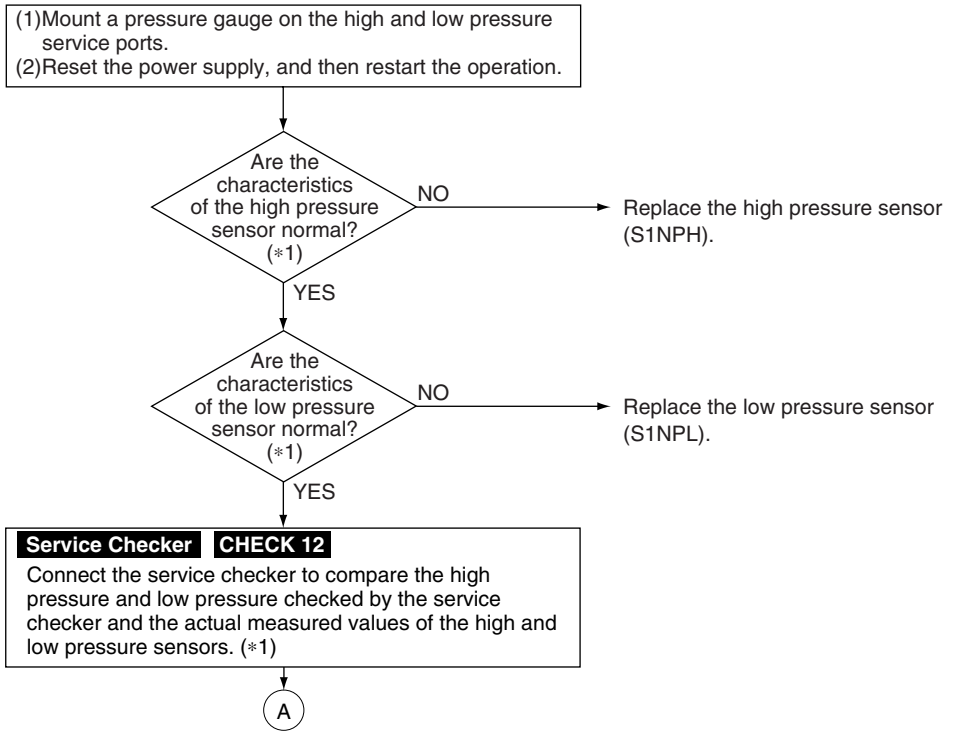
Method of Error Detection Determine the symptom to be error by detecting the revolutions of the compressor and pressure values detected by the high and low pressure sensors, and further making a comparison between a theoretical current value of the compressor calculated from parameters detected and an actual current value detected by the power transistor.

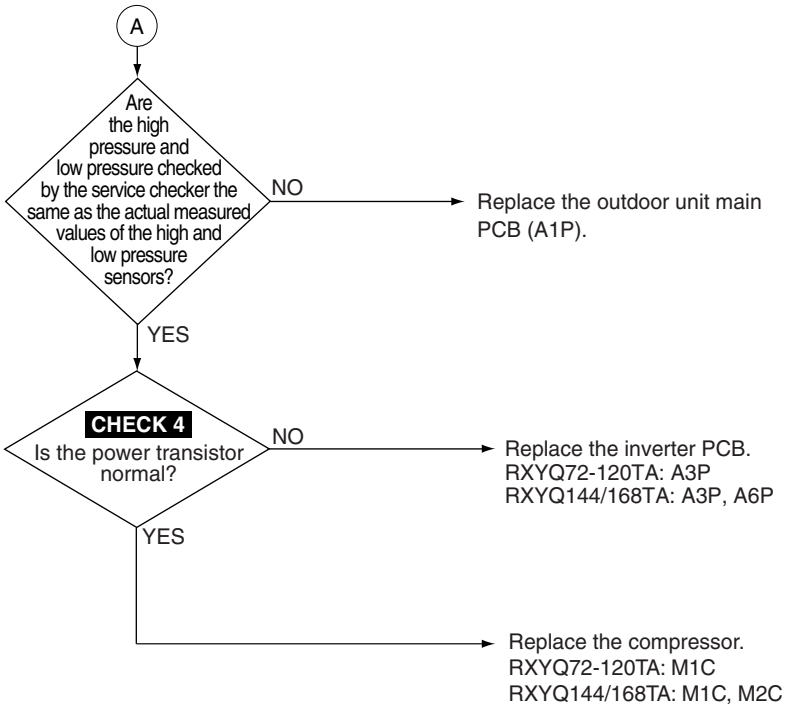
Error Decision Conditions When a state in which the actual current value of the compressor is abnormally high (by 130% or more) compared to the theoretical current value continues for a period of 30 minutes.
∗ In case of a system with multi outdoor units, the system will return an alarm if there is any operational unit other than that applicable to **E6** or determine to be error if not.

Supposed Causes
- Defective compressor
- Defective high pressure sensor
- Defective low pressure sensor
- Defective outdoor unit main PCB
- Defective inverter PCB

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 voltage measured by the pressure sensor and that read by the pressure gauge.
(The pressure sensor makes measurement of voltage at its connector block to convert it to pressure. **CHECK 12**)

CHECK 4 Refer to page 295.

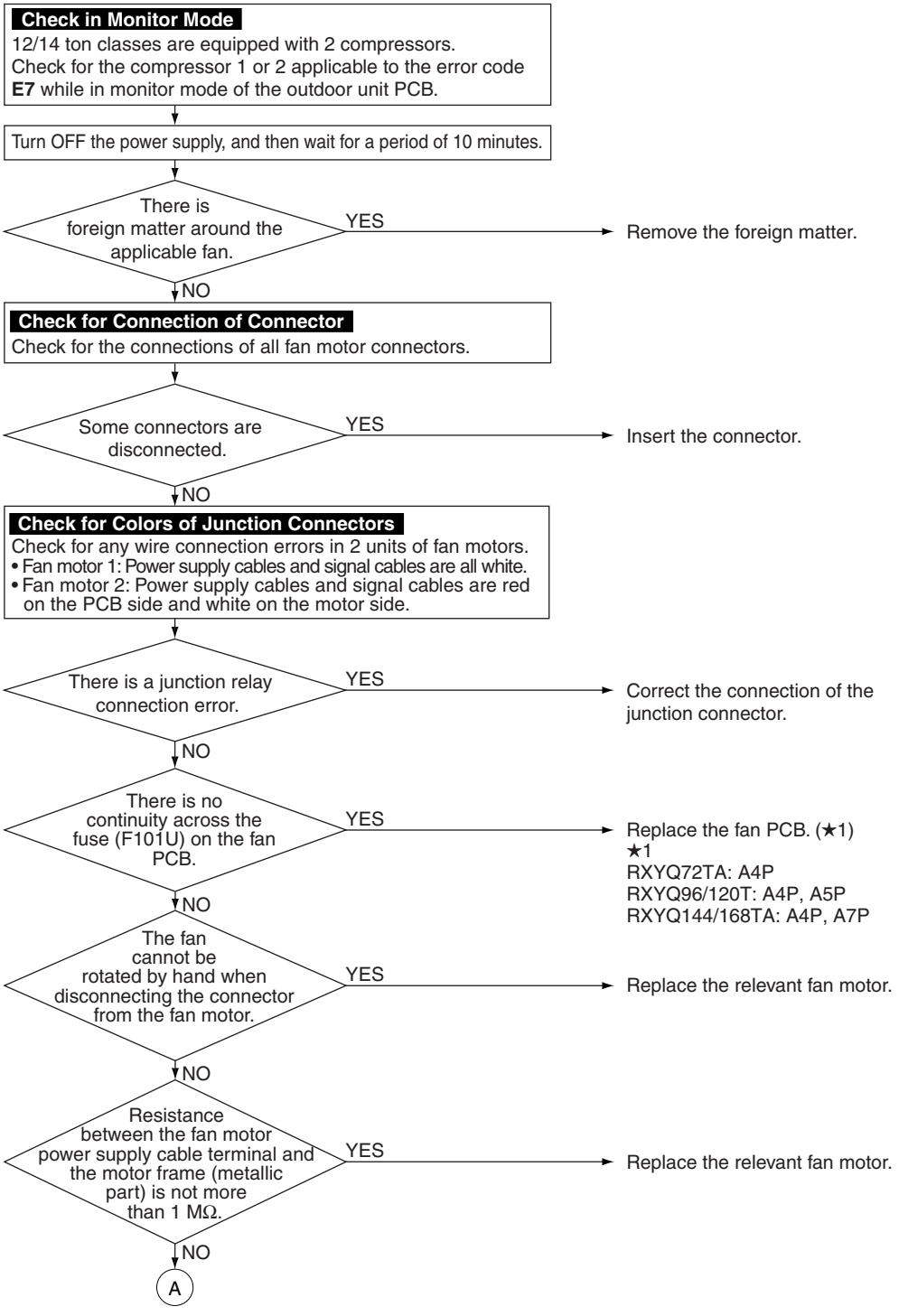
CHECK 12 Refer to page 302.

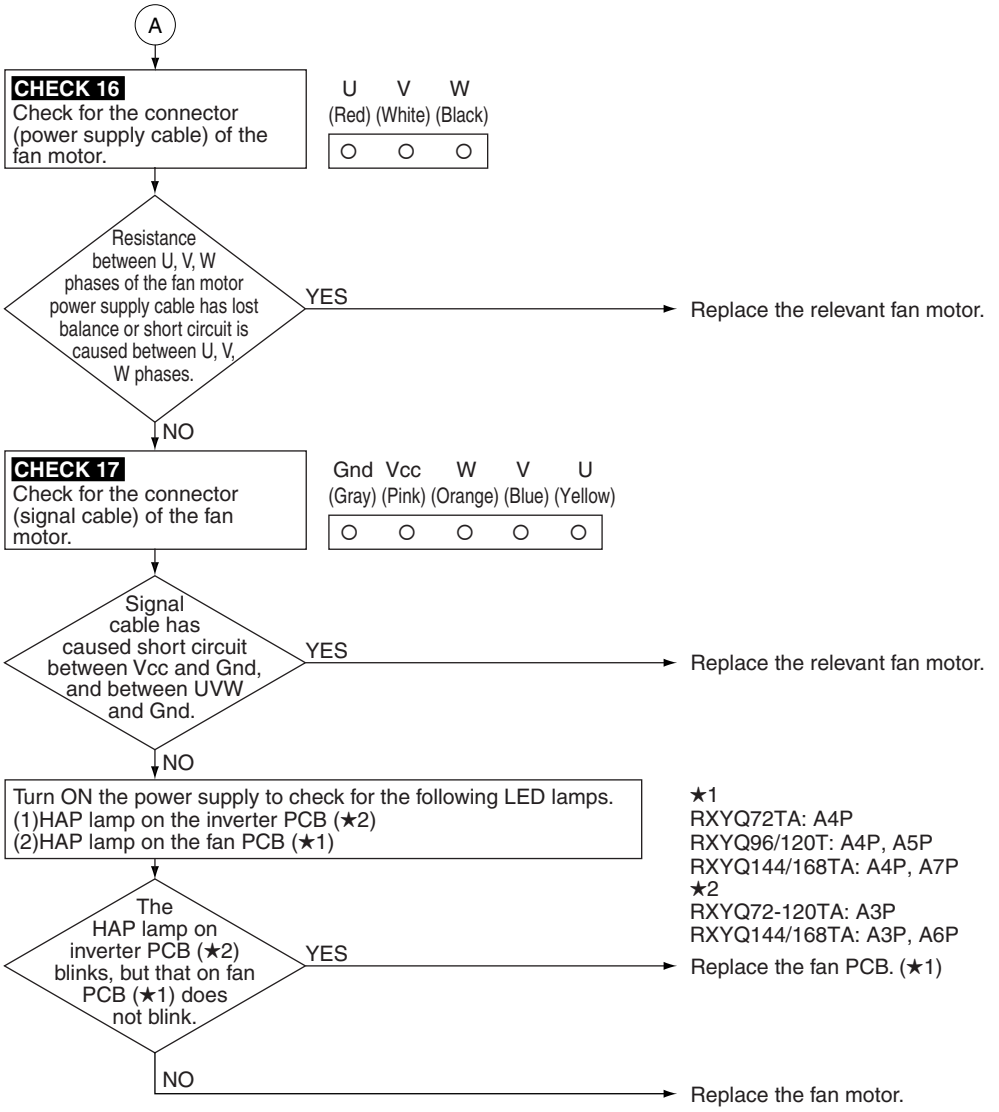
3.33 Outdoor Fan Motor Abnormality

Error Code	**E7**
Applicable Models	All outdoor unit models
Method of Error Detection	■ Detect according to the value of current flowing through the inverter PCB (or fan PCB in case of Fan Motor 2). ■ Detect error of the fan motor system according to the fan revolutions detected by the hall IC during the fan motor runs.
Error Decision Conditions	■ Overcurrent is detected from the inverter PCB or the fan PCB (Detecting overcurrent 4 times will shut down the system). ■ The fan revolutions fall below a given level for a period of 6 seconds while in fan motor rotation mode (Detecting shortage of revolutions will shut down the system).
Supposed Causes	■ Fan motor failure ■ Neglect to connect or defective connection of harness/connector between the fan motor and the PCB ■ Fan does not rotate due to foreign matter caught in it. ■ Clearing condition: fan motor performs normal operation for a period of 5 minutes

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 304.

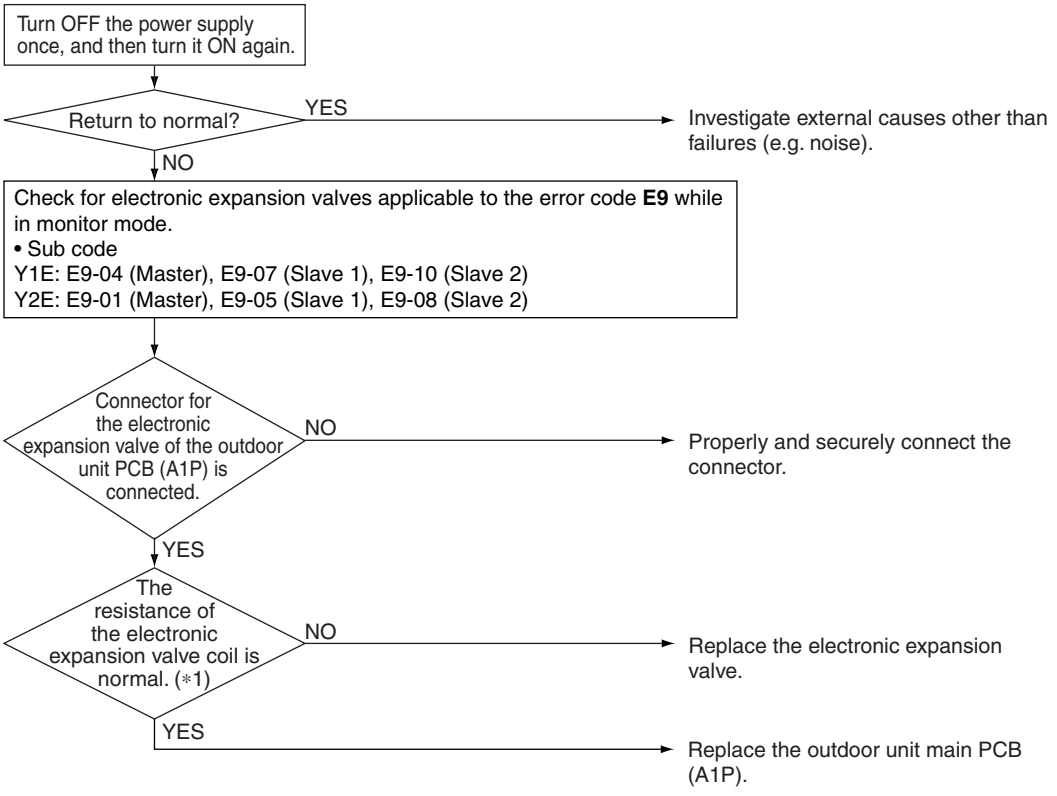
CHECK 17 Refer to page 304.

3.34 Electronic Expansion Valve Coil Abnormality

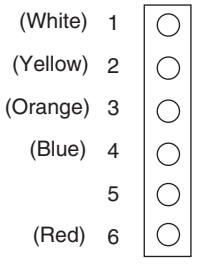
Error Code	**E9**
Applicable Models	All outdoor unit models
Method of Error Detection	Detect according to whether or not there is continuity across the electronic expansion valve coils (Y1E, Y2E).
Error Decision Conditions	When no current flows through common (COM[+]) at the time of turning ON the power supply.
Supposed Causes	■ Disconnection of connectors from electronic expansion valves (Y1E, Y2E) ■ Defective electronic expansion valve coil ■ Defective outdoor unit main PCB

Troubleshooting

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



Note: ∗1. Make measurement of resistance between individual pins to ensure that it falls within the range of 40 to 50 Ω.



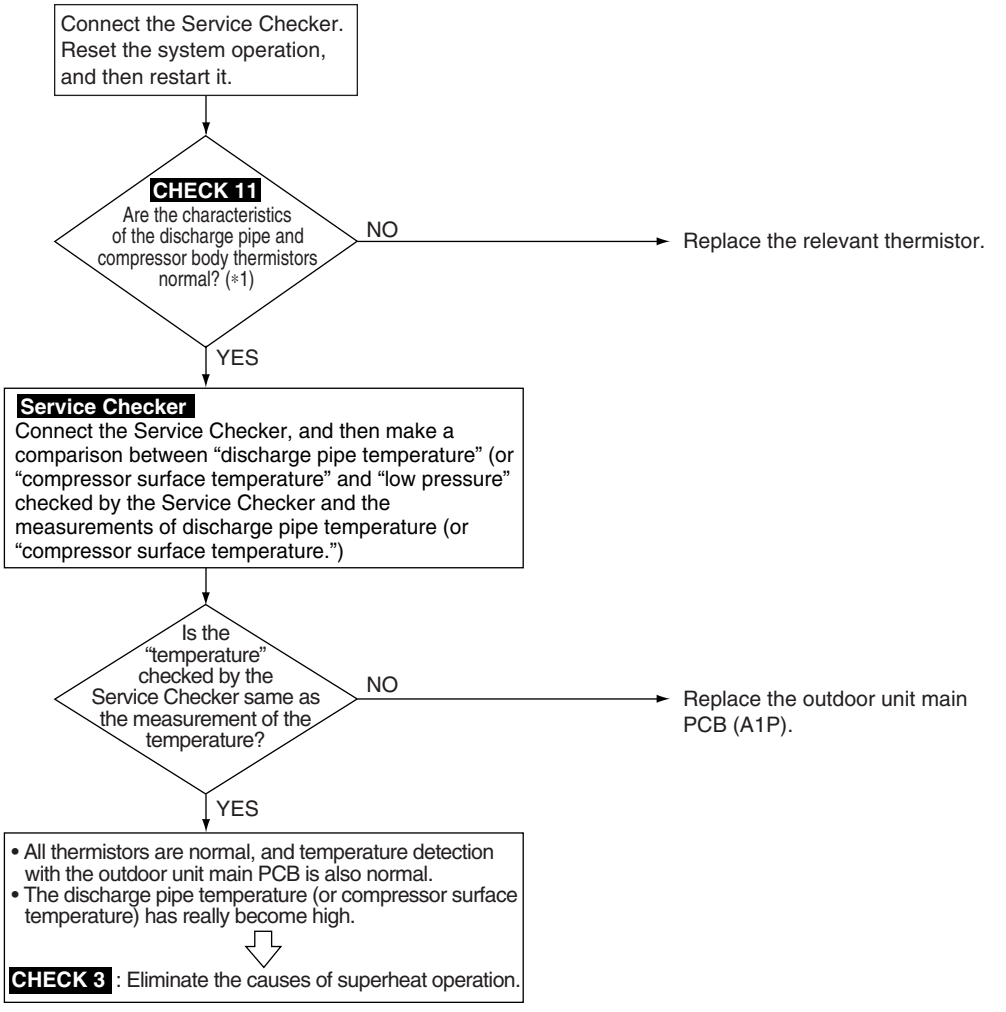
Measurement Point	Acceptance Criteria
1 – 6	40 ~ 50 Ω
2 – 6	
3 – 6	
4 – 6	

3.35 Discharge Pipe Temperature Abnormality

Error Code	**F3**
Applicable Models	All outdoor unit models
Method of Error Detection	Detect according to temperature detected with the discharge pipe or compressor body thermistor.
Error Decision Conditions	■ When discharge pipe temperature becomes abnormally high (i.e., 135°C (275°F) or more) ■ When discharge pipe temperature sharply rises (remains at 120°C (248°F) or more for a period of consecutive 10 minutes) ■ When compressor surface temperature becomes abnormally high (i.e., 120°C (248°F) or more) ■ When compressor surface temperature sharply rises (remains at 110°C (230°F) or more for a period of consecutive 10 minutes)
Supposed Causes	■ Abnormal discharge pipe temperature ■ Defective discharge pipe thermistor ■ Abnormal compressor surface temperature ■ Defective compressor body thermistor ■ Defective outdoor unit main PCB

Troubleshooting

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



Note: ∗1. Thermistors

Applicable Thermistor	RXYQ72TA		RXYQ96/120TA		RXYQ144/168TA	
	Electric symbol	Connector	Electric symbol	Connector	Electric symbol	Connector
Discharge pipe (M1C) thermistor	R21T	X29A	R21T	X29A (Group connector)	R21T	X29A (Group connector)
Discharge pipe (M2C) thermistor	—	—	—		R22T	
Compressor body thermistor	—	—	R8T		—	

CHECK 3 Refer to page 293.

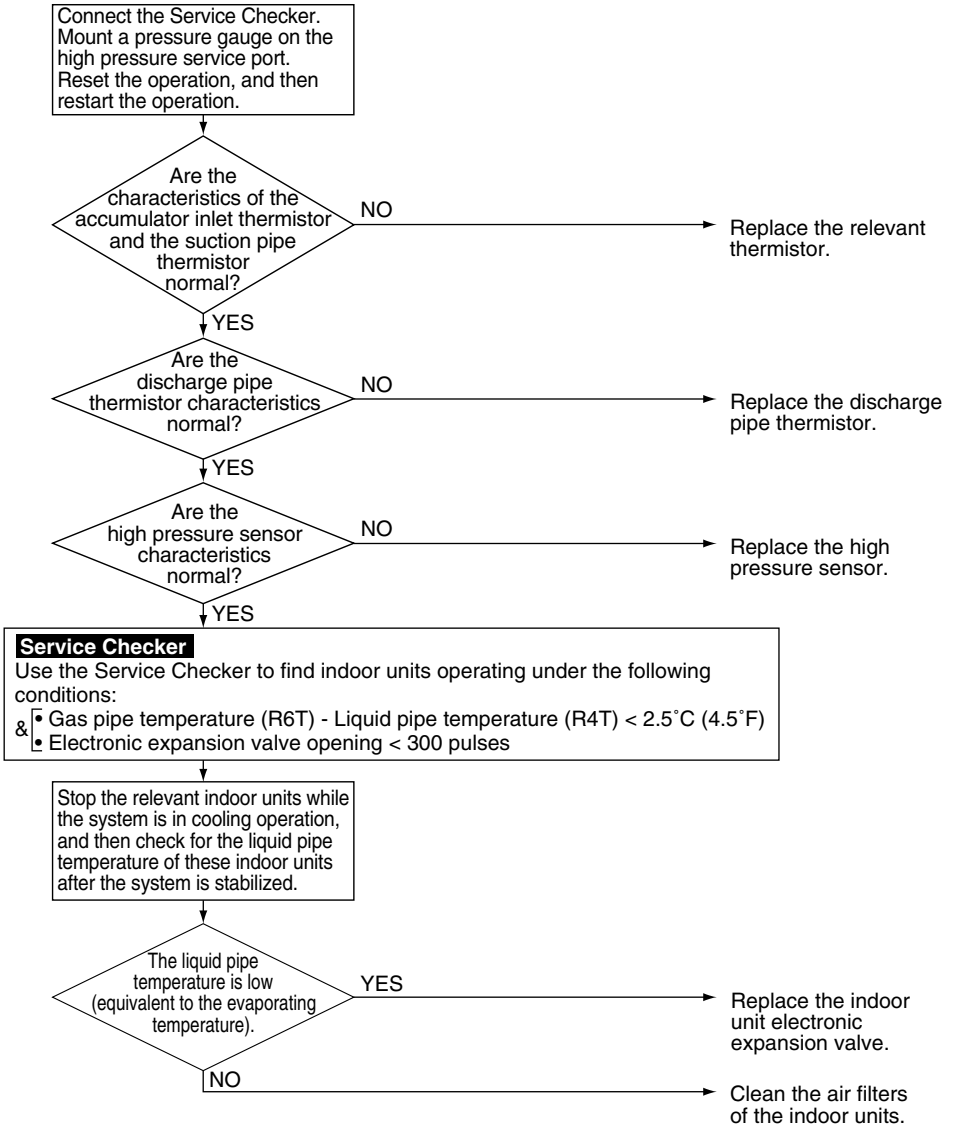
CHECK 11 Refer to page 299.

3.36 Wet Alarm

Error Code	**F4**
Applicable Models	All outdoor unit models
Method of Error Detection	In cooling operation, detect the condition under which liquid refrigerant returns to the compressor, according to the temperature and pressure of each part.
Error Decision Conditions	When the following wet state continues for a period of 90 minutes, an alert is issued. An error is defined for 120 minutes. ■ Wet state in outdoor units When the following wet state continues for a period of 45 minutes, an alert is issued. ■ Wet state in some of indoor units
Supposed Causes	■ Defective suction pipe thermistor ■ Defective discharge pipe thermistor ■ Defective high pressure sensor ■ Defective indoor unit electronic expansion valve ■ Dirty air filter

Troubleshooting

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



3.37 Refrigerant Overcharged

Error Code **F6**

Applicable Models All outdoor unit models

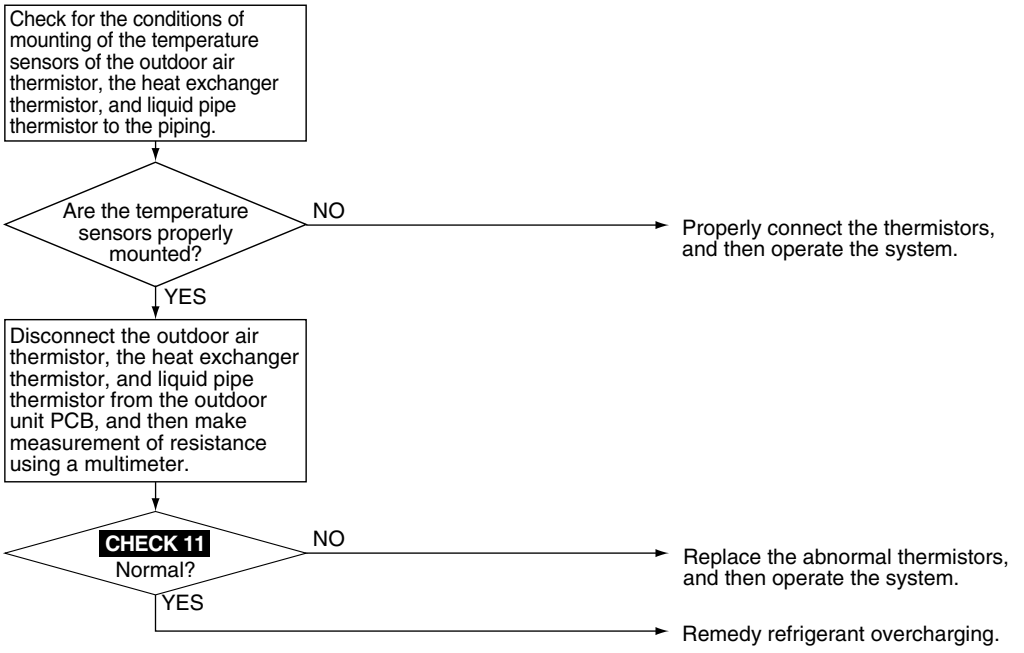
Method of Error Detection Detect overcharged refrigerant according to outdoor air temperature, heat exchanger deicer temperature, and liquid pipe temperature during check operation.

Error Decision Conditions When the amount of refrigerant, which is calculated using outdoor air temperature, heat exchanger deicer temperature, and liquid pipe temperature during check operation, exceeds the regular charge amount by 30% or more
(If refrigerant is charged slightly over the regular charge amount, **F6** may be displayed on the remote controller.)

Supposed Causes
- Refrigerant overcharged
- Disconnection of outdoor air thermistor
- Disconnection of heat exchanger deicer thermistor
- Disconnection of liquid pipe temperature 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 299.

3.38 Harness Abnormality (between Outdoor Unit Main PCB and Inverter PCB)

Error Code

H3

Applicable Models

All outdoor unit models

Method of Error Detection

Check for the transmission conditions of the following jumpers between the PCB using microcomputer:

- 6-10 ton
  Between X28A (A1P) and X6A (A3P)
- 12/14 ton
  Between X28A (A1P) and X6A (A3P)
  Between X61A (A3P) and X6A (A6P)

Error Decision Conditions

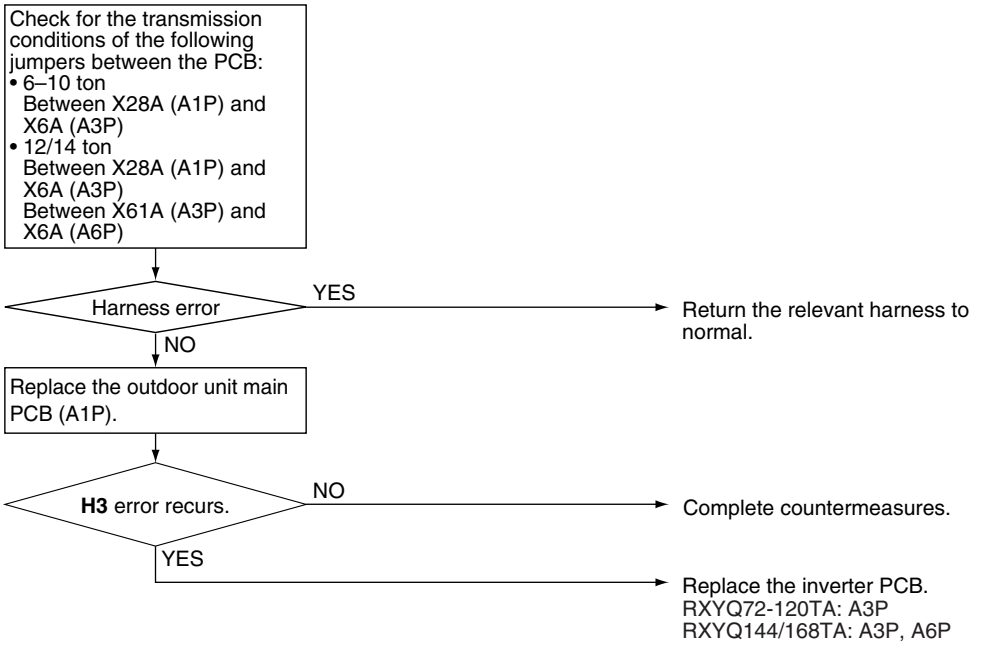
When normal transmission between PCB is disabled during the compressor stops running.

Supposed Causes

- Defective connection of jumpers between PCB
- Defective outdoor unit main PCB (A1P)
- Defective inverter PCB

Troubleshooting

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



3.39 Outdoor Fan Motor Signal Abnormality

Error Code **H7**

Applicable Models All outdoor unit models

Method of Error Detection Detect of abnormal signal from fan motor.

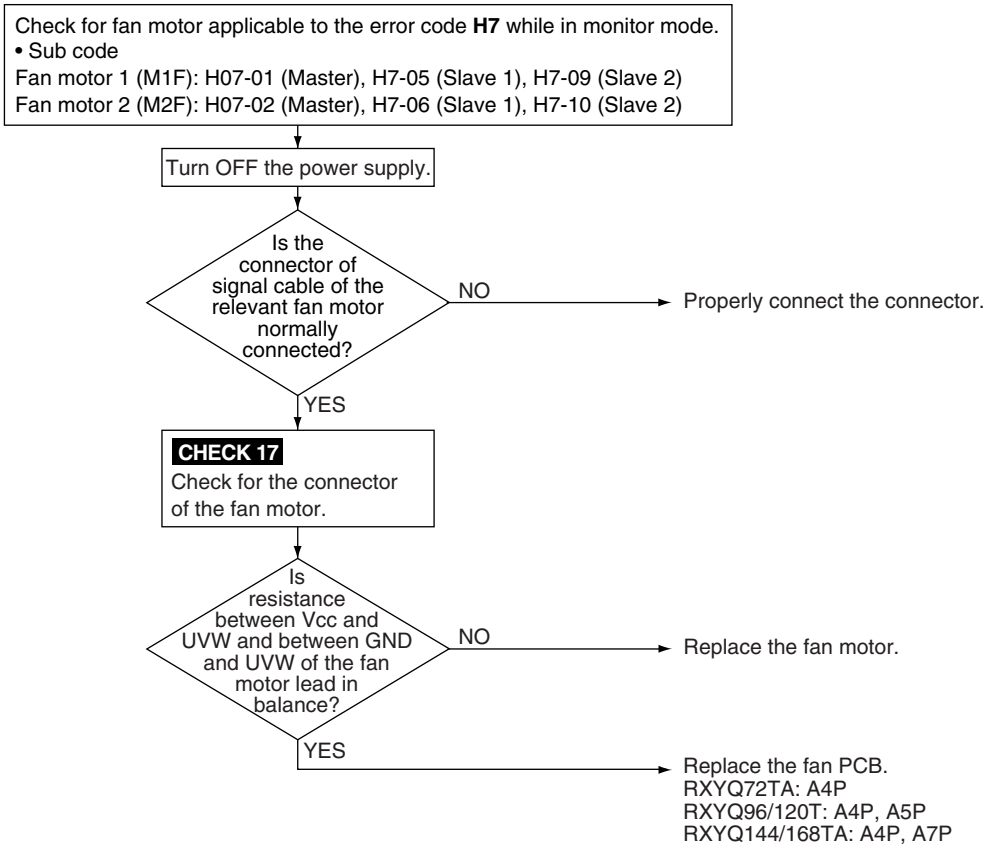
Error Decision Conditions An abnormal signal is detected at startup of the fan motor operation.

Supposed Causes

- Abnormal signal from fan motor (Circuit failure)
- Disconnection/Short circuit in fan motor leads or disconnection of connector
- Defective inverter PCB (A3P, A6P)

Troubleshooting

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



CHECK 17 Refer to page 304.

3.40 Thermistor Abnormality

Error Code **H9, J3, J5, J6, J7, J8, J9**

Applicable Models All outdoor unit models

Method of Error Detection Detect according to temperature detected with individual thermistors.

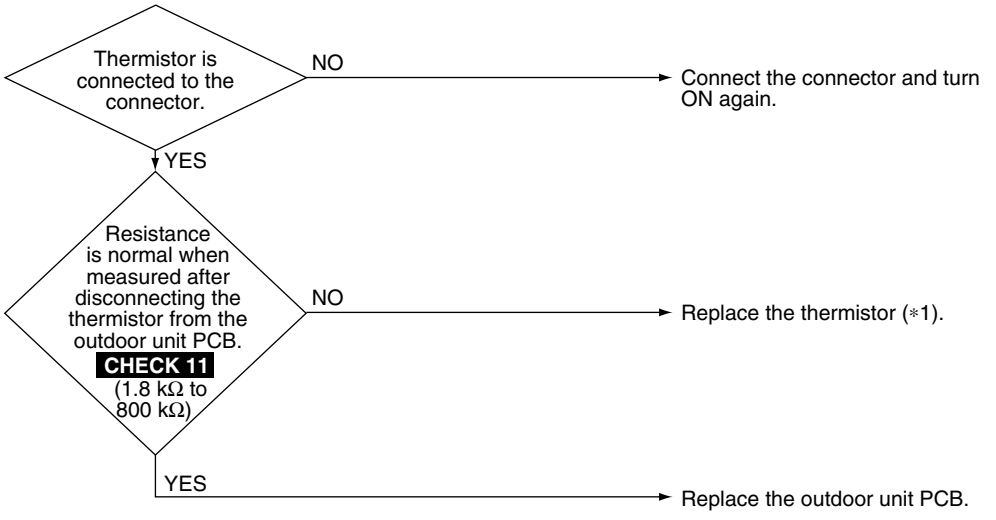
Error Decision Conditions The system is in operation and the thermistor causes wiring disconnection or short circuit in it.

Supposed Causes

- Defective connection of thermistor
- Defective thermistor
- Defective outdoor unit PCB

Troubleshooting

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



Note: ∗1. Error codes and thermistors

Error Code	Applicable Thermistor	RXYQ72TA		RXYQ96/120TA		RXYQ144/168TA	
		Electric symbol	Connector	Electric symbol	Connector	Electric symbol	Connector
H9	Outdoor air thermistor	R1T	X18A	R1T	X18A	R1T	X18A
J3	Discharge pipe (M1C) thermistor	R21T	X29A	R21T	X29A (Group connector)	R21T	X29A (Group connector)
	Discharge pipe (M2C) thermistor	—	—	—		R22T	
	Compressor body thermistor	—	—	R8T		—	
J5	Accumulator inlet thermistor	R3T	X30A (Group connector)	R3T	X30A (Group connector)	R3T	X30A (Group connector)
J6	Heat exchanger deicer thermistor	R7T		R7T		R7T	
J7	Subcooling heat exchanger liquid pipe thermistor	R5T		R5T		R5T	
J8	Heat exchanger liquid pipe thermistor	R4T		R4T		R4T	
J9	Subcooling heat exchanger gas pipe thermistor	R6T		R6T		R6T	

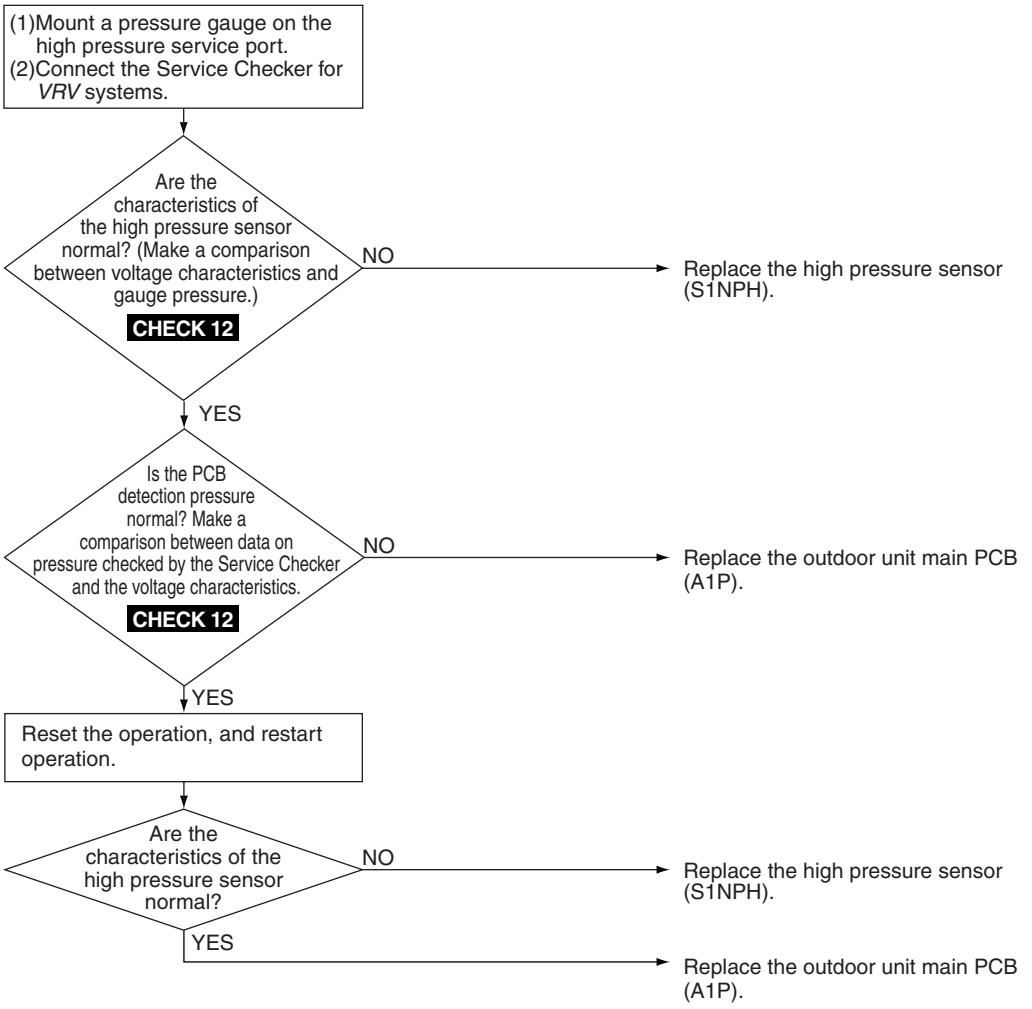
CHECK 11 Refer to page 299.

3.41 High Pressure Sensor Abnormality

Error Code	**JA**
Applicable Models	All outdoor unit models
Method of Error Detection	Detect according to temperature detected with 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 in mistake for high pressure sensor ■ Defective outdoor unit main PCB ■ Defective connection of high pressure sensor

Troubleshooting

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



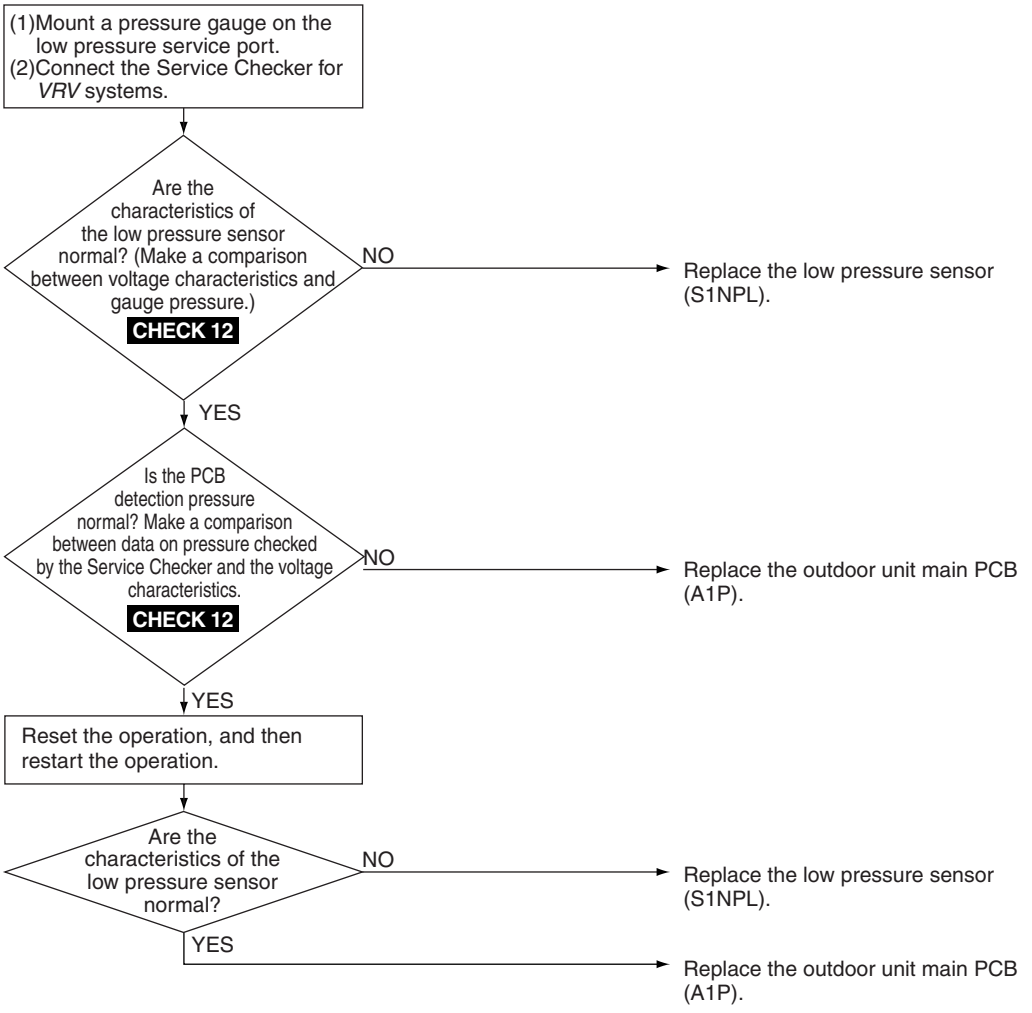
CHECK 12 Refer to page 302.

3.42 Low Pressure Sensor Abnormality

Error Code	**JC**
Applicable Models	All outdoor unit models
Method of Error Detection	Detect according to temperature detected with the 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 in mistake for low pressure sensor ■ Defective outdoor unit PCB ■ Defective connection 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 302.

3.43 Inverter PCB Abnormality

Error Code

L1

Applicable Models

All outdoor unit models

Method of Error Detection

- Detect according to current value detected during the output of waveform before compressor startup
- Detect according to current value detected with the current sensor during synchronous operation for startup

Error Decision Conditions

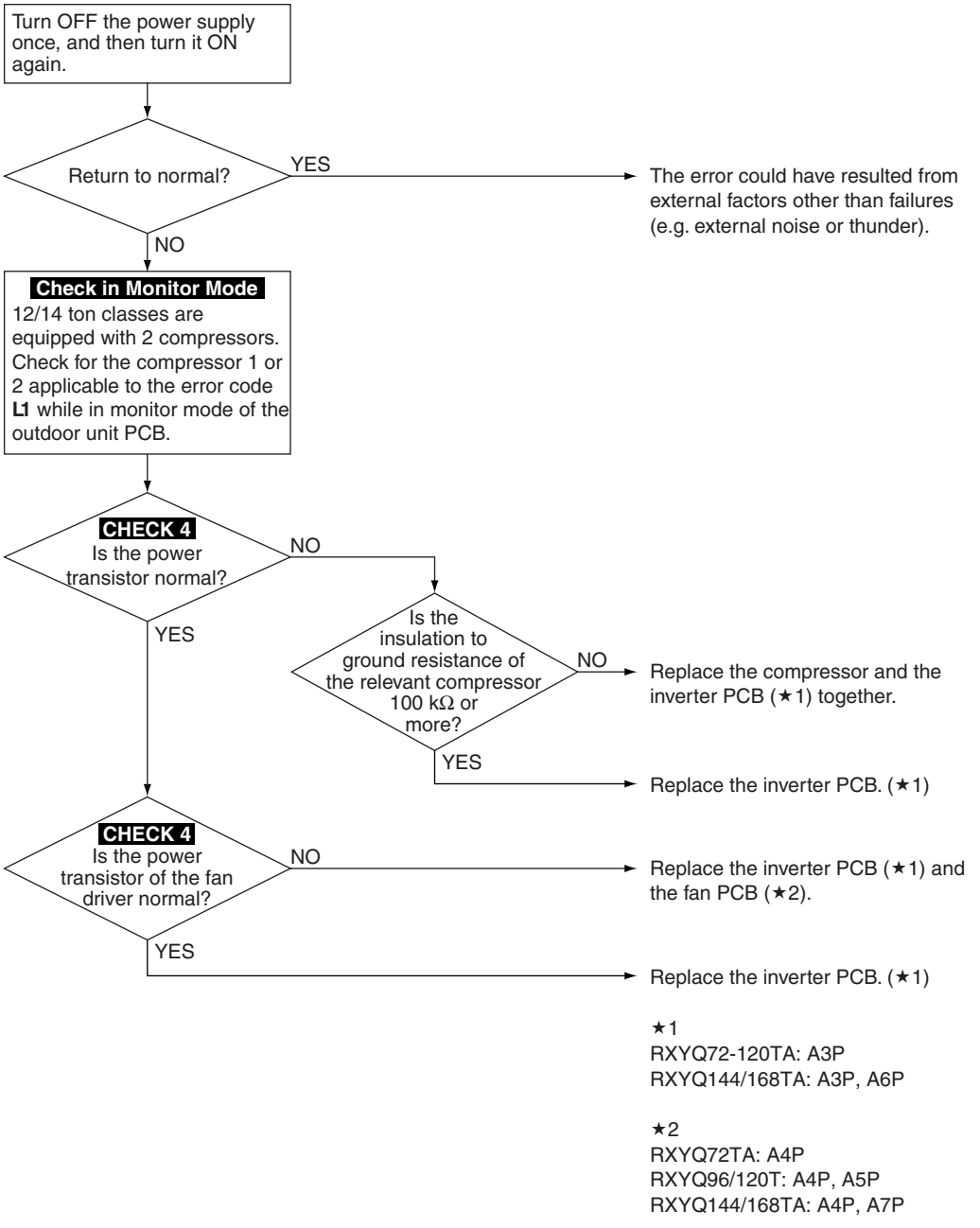
- When overcurrent (OCP) flows during the output of waveform
- When the current sensor error during synchronous operation
- When IPM error occurs

Supposed Causes

- Inverter PCB
  - 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.



★1
RXYQ72-120TA: A3P
RXYQ144/168TA: A3P, A6P

★2
RXYQ72TA: A4P
RXYQ96/120T: A4P, A5P
RXYQ144/168TA: A4P, A7P

CHECK 4 Refer to page 295.

3.44 Reactor Temperature Rise Abnormality

Error Code

L3

Applicable Models

All outdoor unit models

Method of Error Detection

Detect according to the value detected with the reactor surface thermistor.

Error Decision Conditions

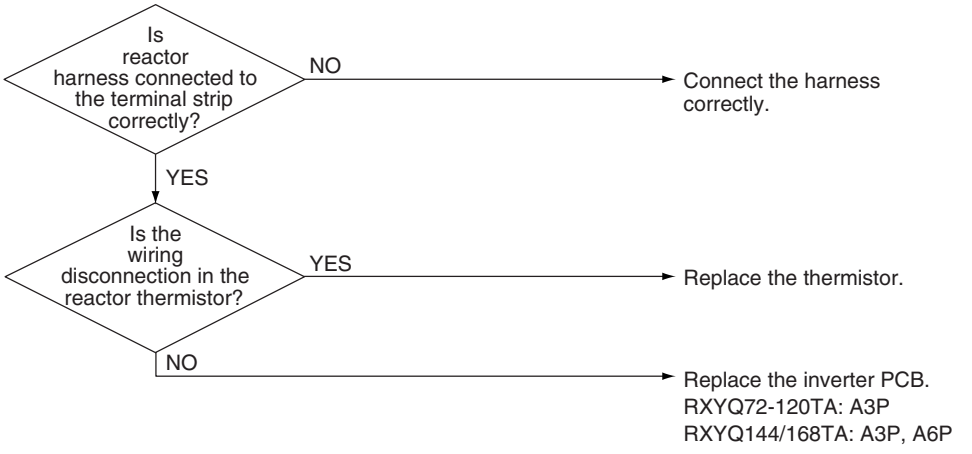
When the temperature detected with the reactor surface thermistor is more than the specified temperature.

Supposed Causes

- Defective connection of harness
- Defective reactor surface thermistor
- Defective inverter PCB

Troubleshooting

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



3.45 Inverter Radiation Fin Temperature Rise Abnormality

Error Code

L4

Applicable Models

All outdoor unit models

Method of Error Detection

Detect temperature of power module of the inverter PCB.

Error Decision Conditions

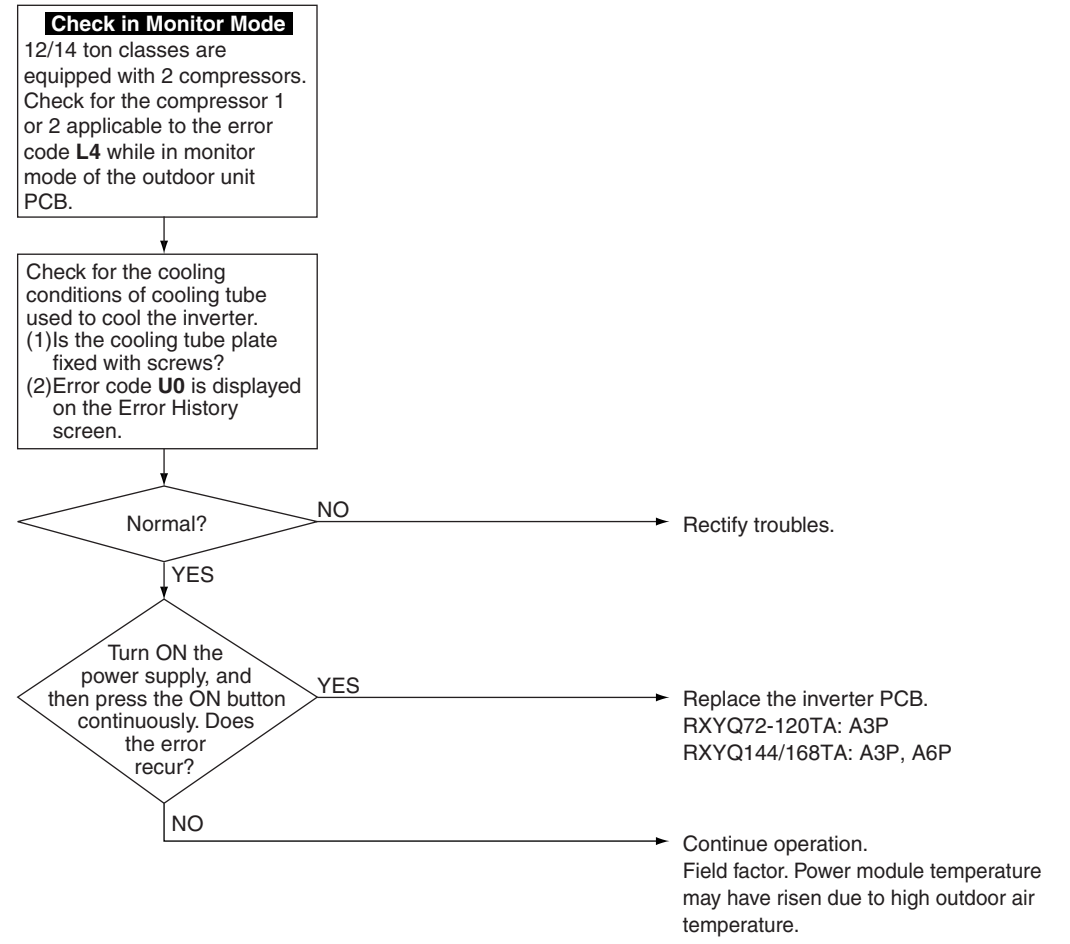
Thermistor located inside the power module of the inverter PCB for compressor and fan motor. Cooling tube plate poor heat-exchange.

Supposed Causes

- Cooling tube plate not fixed with screws
- **U0** error
- Defective inverter PCB
- High outdoor air temperature

Troubleshooting

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



3.46 Inverter Compressor Instantaneous Overcurrent

Error Code **L5**

Applicable Models All outdoor unit models

Method of Error Detection Detect current flowing through the power transistor.

Error Decision Conditions When instantaneously overcurrent flows through the power transistor (∗1)

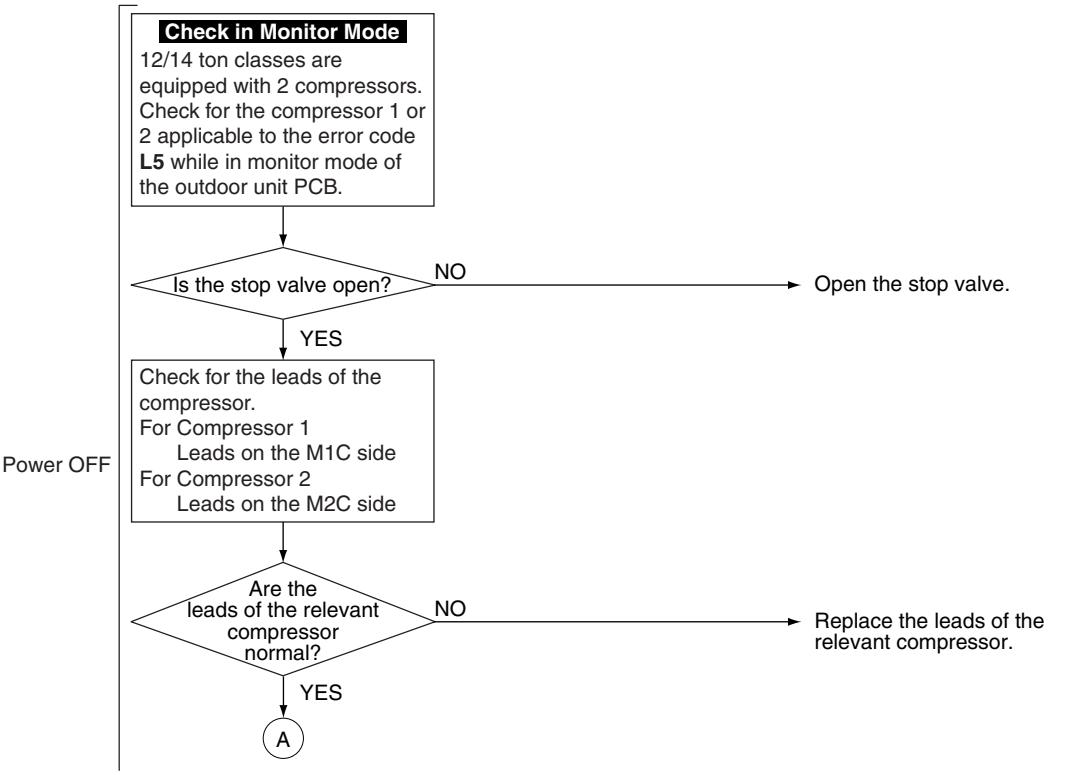
Supposed Causes

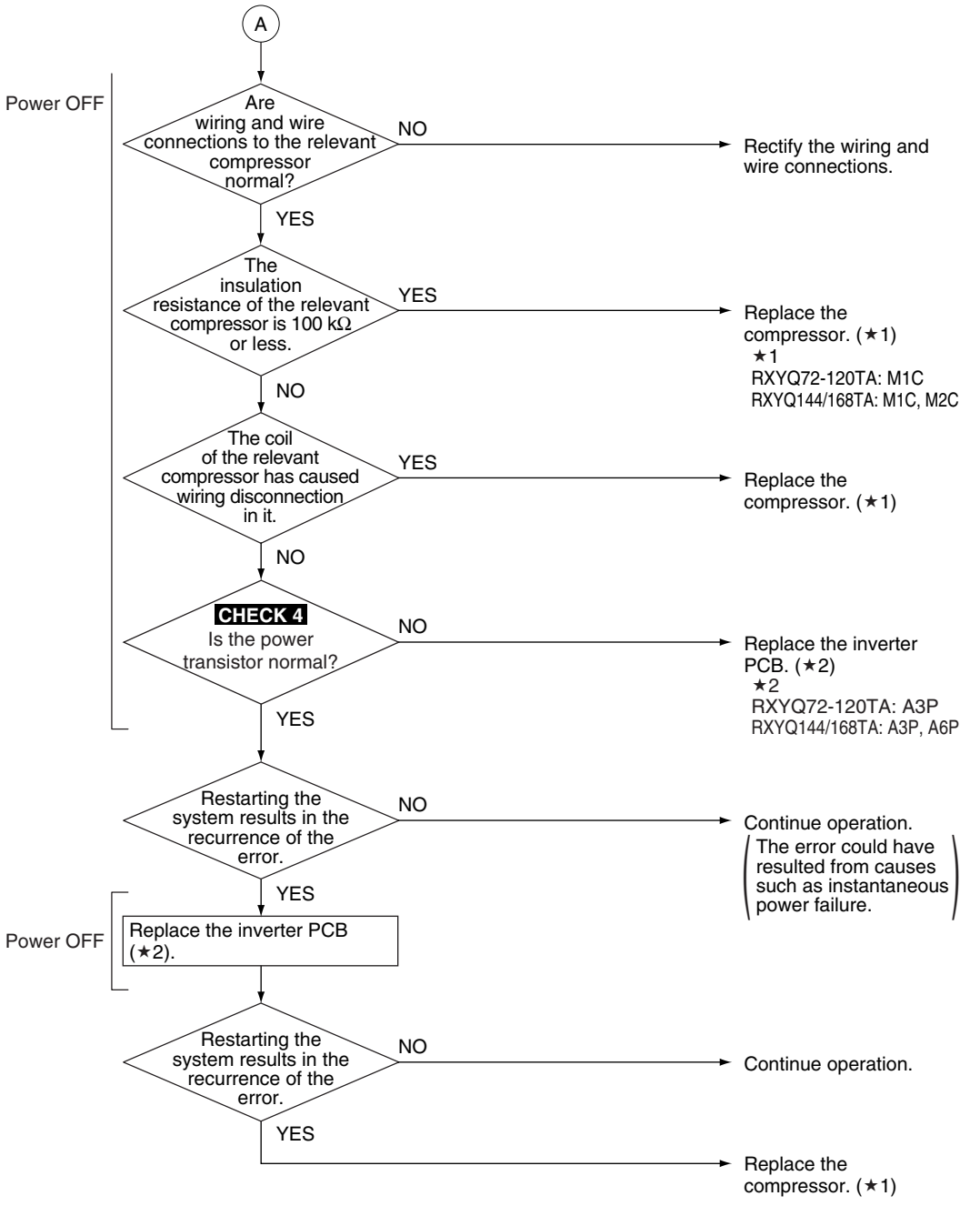
- Defective compressor coil (such as wiring disconnection or insulation failure)
- Compressor startup failure (mechanical lock)
- Defective inverter PCB

Troubleshooting

Compressor inspection

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





Note: ∗1.

Model	RXYQ72TA	RXYQ96/120TA	RXYQ144/168TA	
	M1C	M1C	M1C	M2C
TAYDU	32.4 A	53.7 A	63.2 A	63.2 A
TATJU	63.2 A	85.6 A	63.2 A	63.2 A

CHECK 4 Refer to page 295.

3.47 Inverter Compressor Overcurrent

Error Code **L8**

Applicable Models All outdoor unit models

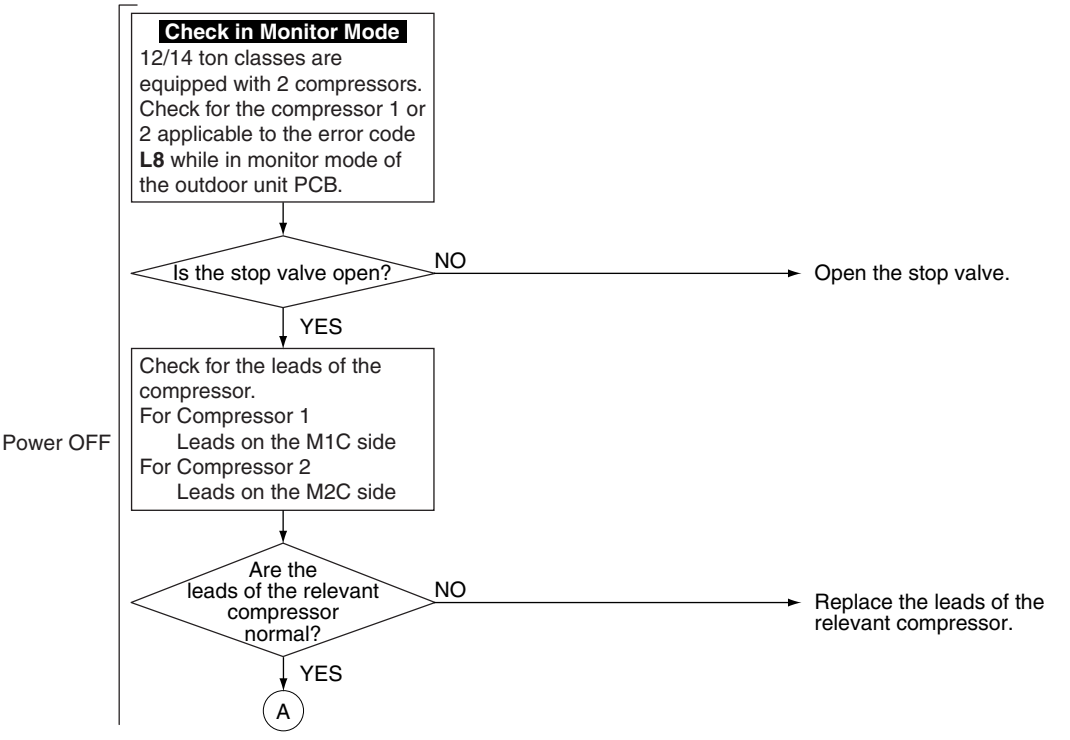
Method of Error Detection Detect current flowing through the power transistor.

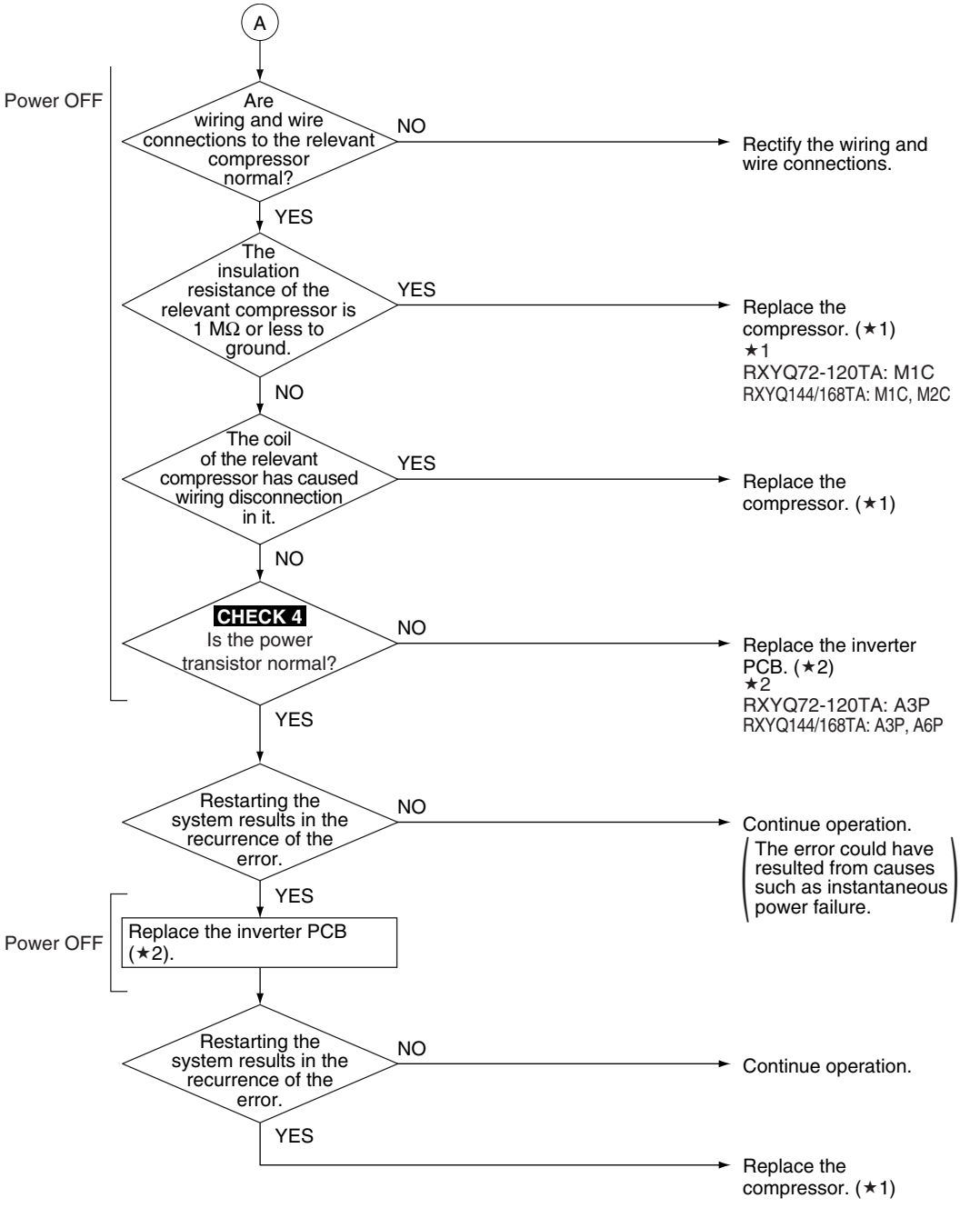
Error Decision Conditions When the secondary-side inverter current exceeds: ∗1

Supposed Causes
- Compressor overloaded
- Wiring disconnection in compressor coil
- Disconnection of compressor wiring
- Defective inverter PCB

Troubleshooting

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





Note: ∗Trigger point

Model	RXYQ72TA	RXYQ96/120TA	RXYQ144/168TA	
	M1C	M1C	M1C	M2C
TAYDU	13.0 A	13.0 A	13.0 A	13.0 A
TATJU	33.5 A	45.0 A	33.5 A	33.5 A

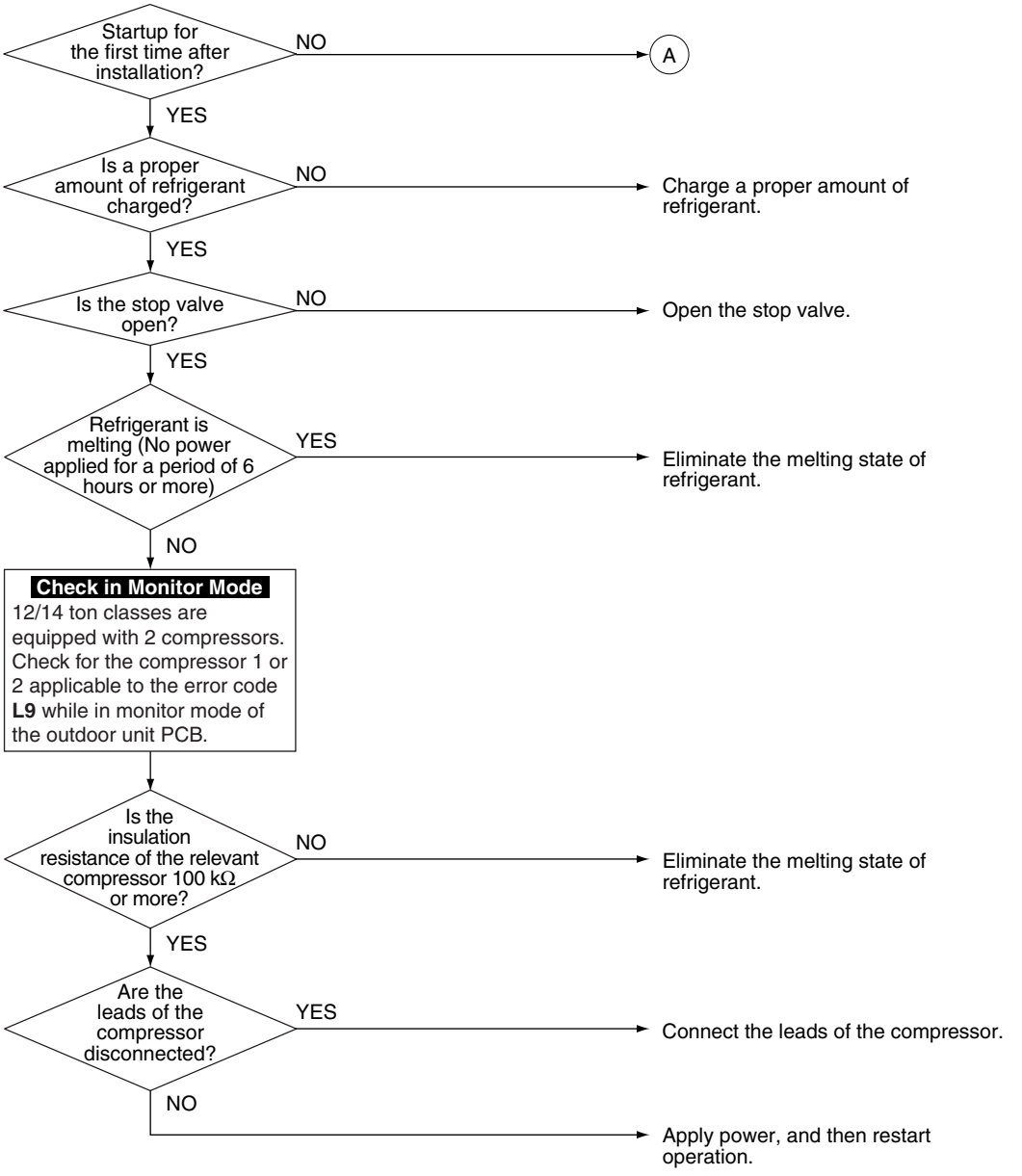
CHECK 4 Refer to page 295.

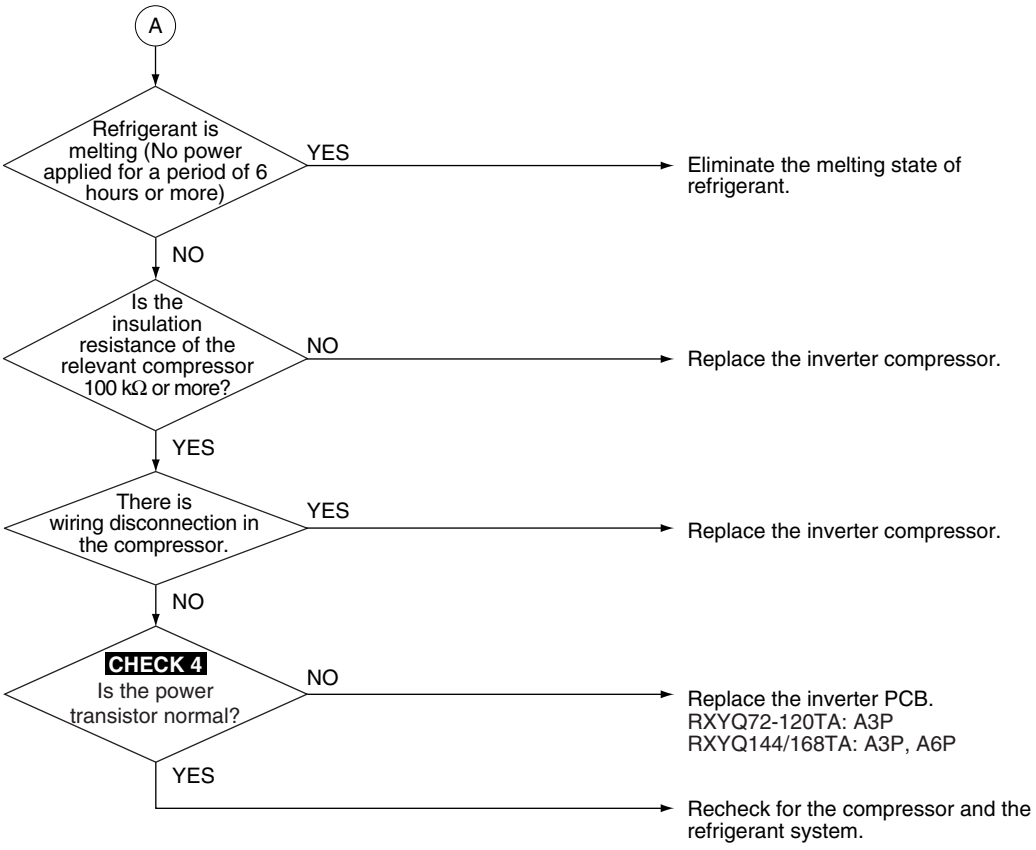
3.48 Inverter Compressor Startup Abnormality

Error Code	**L9**
Applicable Models	All outdoor unit models
Method of Error Detection	Detect error according to the signal waveform of compressor.
Error Decision Conditions	When compressor startup operation has not been completed.
Supposed Causes	■ The stop valve is not opened ■ Defective compressor ■ Error in wire connections to compressor ■ Large differential pressure before compressor startup ■ Defective inverter 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 295.

3.49 Transmission Error between Inverter PCB and Outdoor Unit Main PCB

Error Code

LC

Applicable Models

All outdoor unit models

Method of Error Detection

Check for the transmission conditions between the inverter PCB and the outdoor unit main PCB using a microcomputer.

Error Decision Conditions

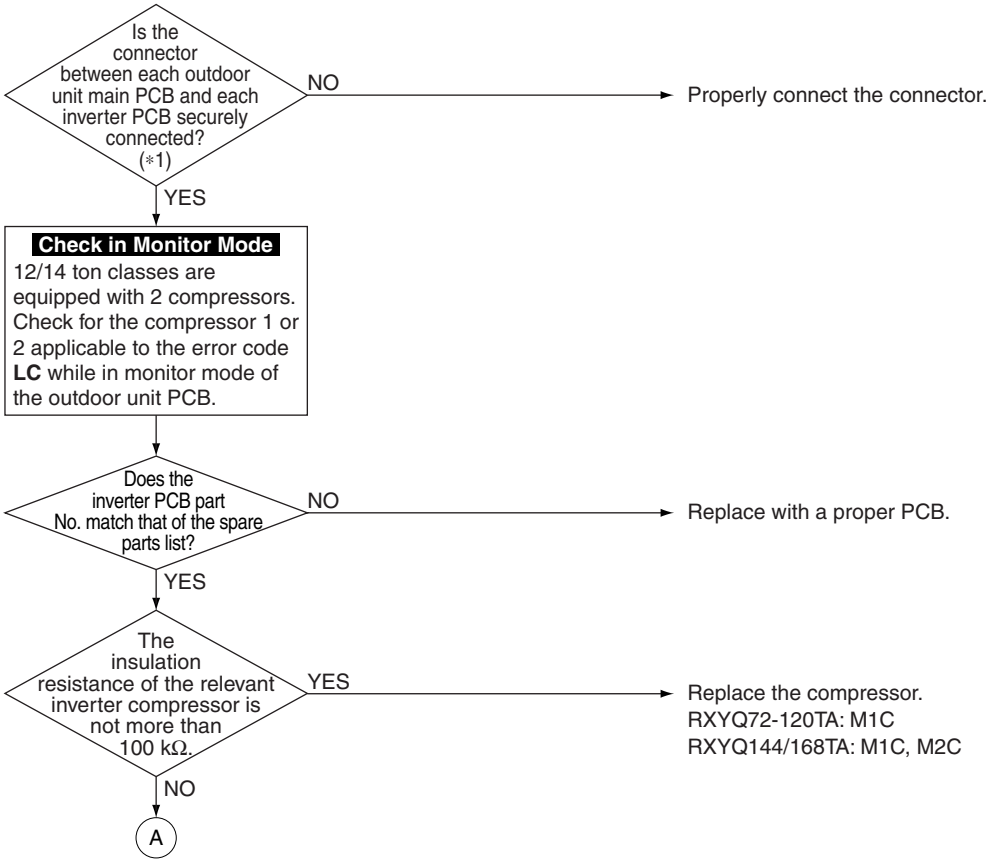
When normal transmission is disabled for a given period of time or more.

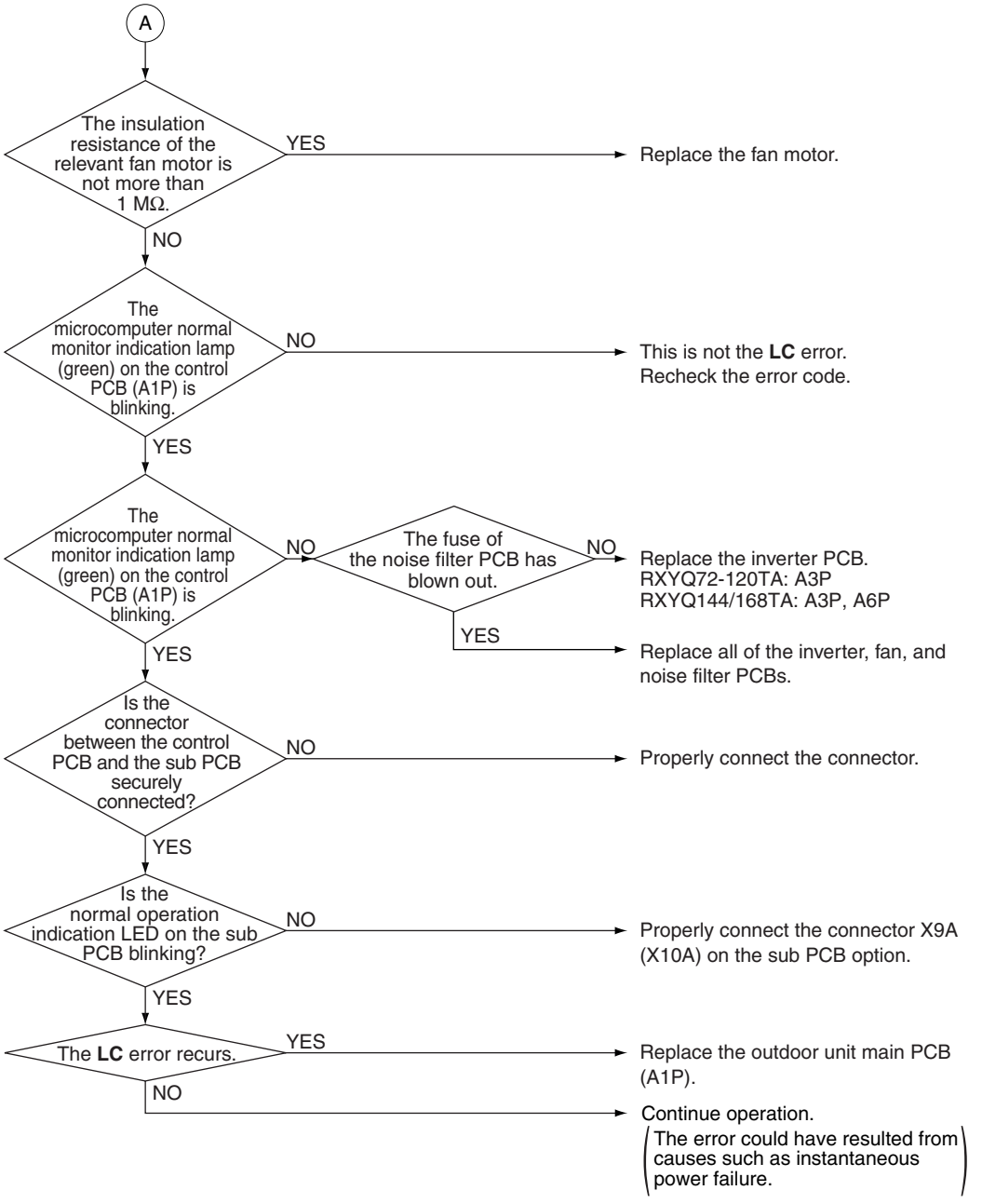
Supposed Causes

- Defective connection between the inverter PCB and the outdoor unit main PCB
- Defective outdoor unit main PCB (transmission block)
- Defective noise filter
- External factors (e.g. noise)
- 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.





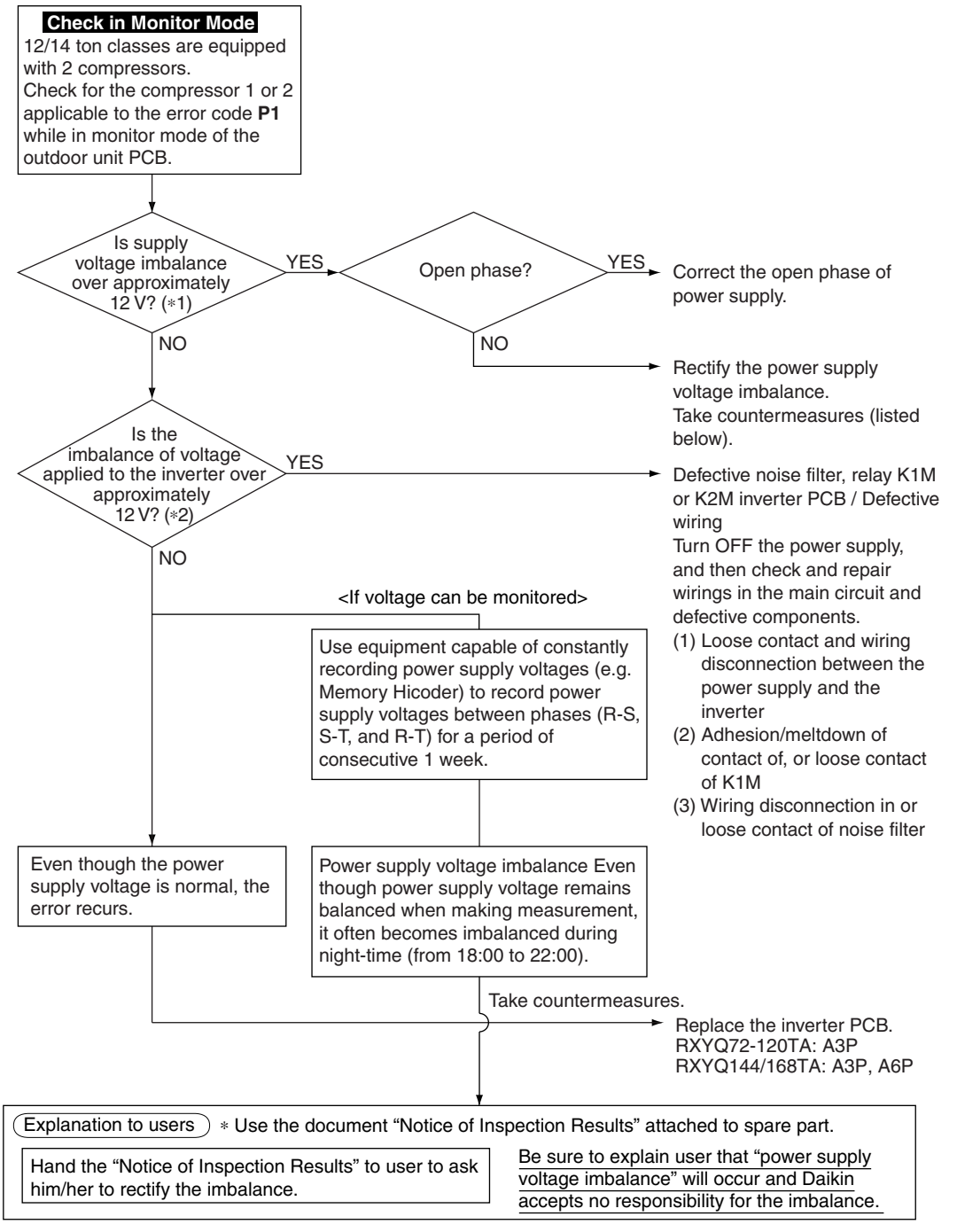
Note: ∗1. Connect and disconnect the connector once to ensure that it is securely connected.

3.50 Power Supply Voltage Imbalance

Error Code	**P1**
Applicable Models	All outdoor unit models
Method of Error Detection	Detect voltage imbalance through PCB.
Error Decision Conditions	When power supply voltage imbalance exceeds approximately 12 V. Error is not decided while the unit operation is continued. **P1** will be displayed by pressing the inspection button.
Supposed Causes	■ Open phase ■ Interphase voltage imbalance ■ Defective capacitor in the main circuit ■ Defective inverter PCB ■ Defective K1M, K2M (inverter PCB) ■ Defective wiring in the main circuit

Troubleshooting

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



Note:
∗1. Make measurement of voltage at the power supply terminal block (X1M).
∗2. Make measurement of voltage at the L1, L2 and L3 terminals of diode module located on the inverter PCB during the compressor is in operation.

3.51 Reactor Temperature Abnormality

Error Code **P3**

Applicable Models All outdoor unit models

Method of Error Detection Detect according to the value detected with the reactor surface thermistor.

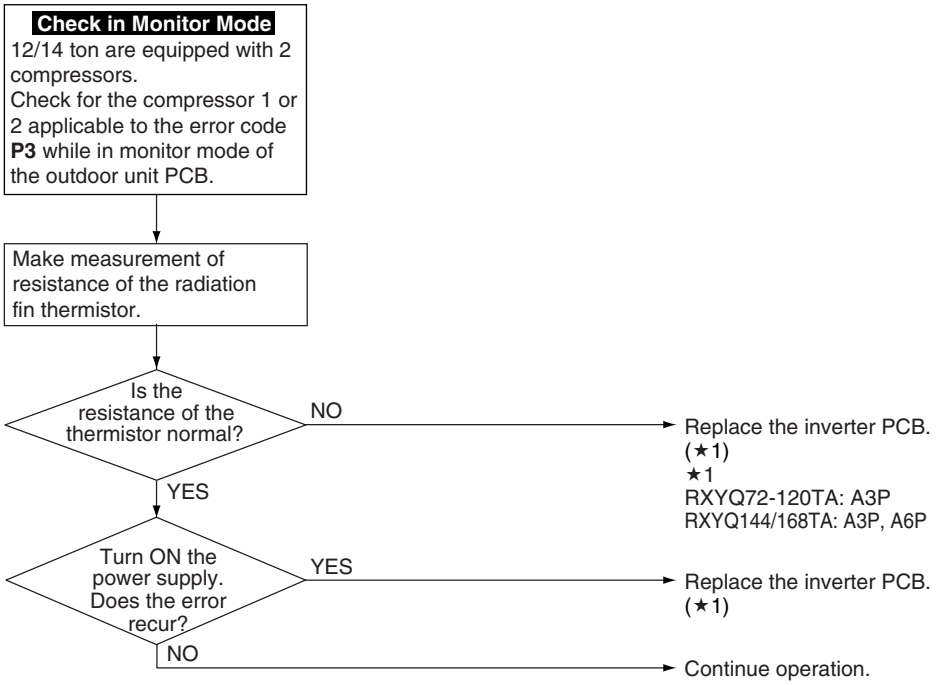
Error Decision Conditions The system is in operation and the thermistor causes wiring disconnection or short circuit in it.

Supposed Causes

- Defective connection of thermistor
- Defective reactor thermistor
- Defective inverter PCB

Troubleshooting

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

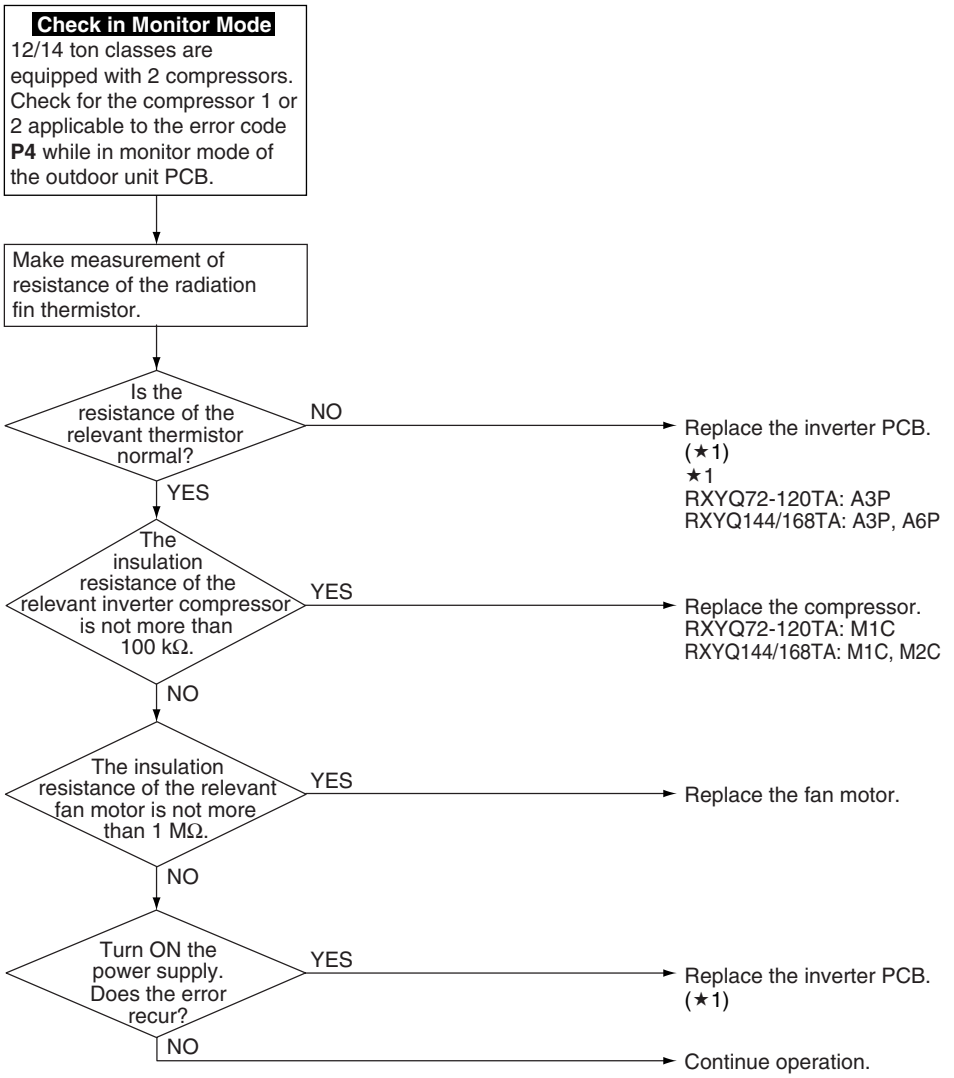


3.52 Inverter Radiation Fin Temperature Abnormality

Error Code	**P4**
Applicable Models	All outdoor unit models
Method of Error Detection	Detect the resistance of the following thermistors during the compressor stops running: (1) Radiation fin thermistor. (2) Thermistor located in PCB circuit. (3) Heat sink thermistor.
Error Decision Conditions	When the resistance of the thermistor comes to a value equivalent to open or short circuit. 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 inverter 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.



3.53 Field Setting after Replacing Outdoor Unit Main PCB Abnormality or Combination of PCB Abnormality

Error Code

PJ

Applicable Models

All outdoor unit models

Method of Error Detection

This error is detected according to communications with the inverter PCB.

Error Decision Conditions

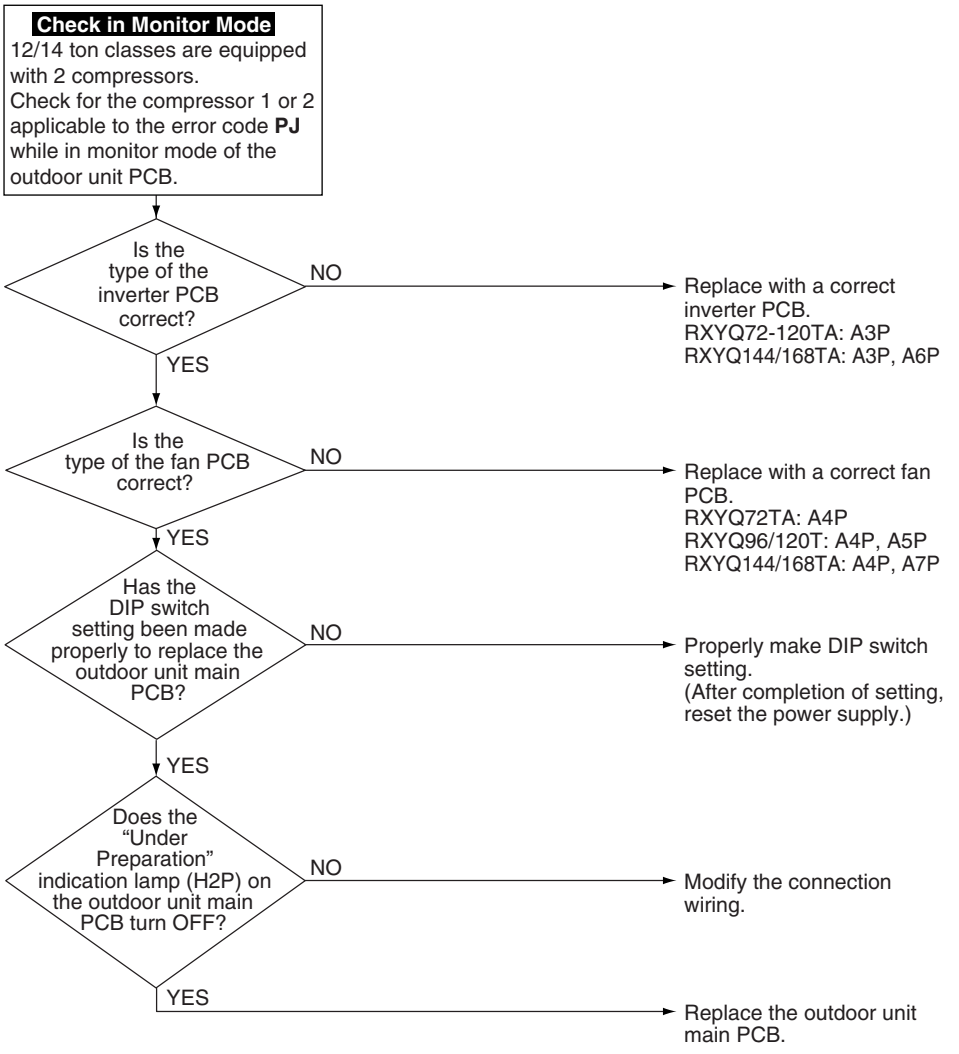
Make judgement according to communication data on whether or not the type of the inverter PCB is correct.

Supposed Causes

- Mismatching of type of PCB
- Improper (or no) field setting after replacing outdoor unit main PCB

Troubleshooting

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



3.54 Refrigerant Shortage

Error Code **U0**

Applicable Models All outdoor unit models

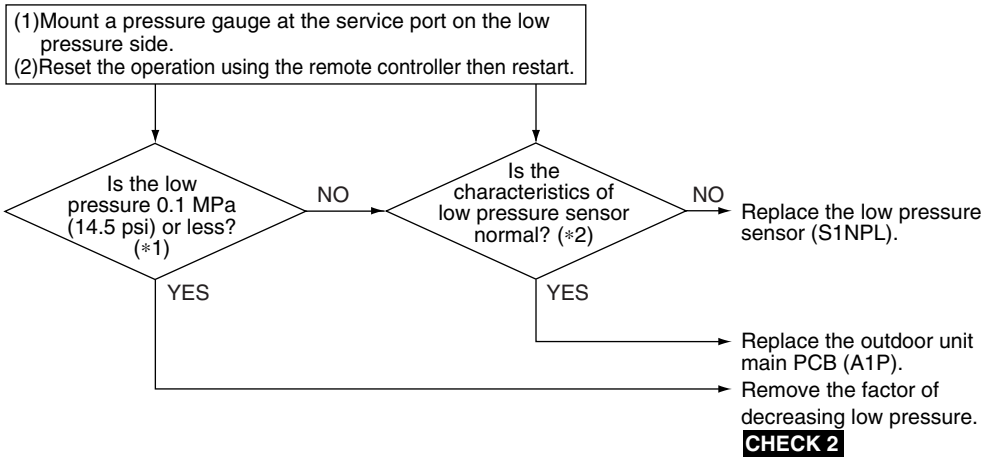
Method of Error Detection Detect refrigerant shortage according to a low pressure level or a difference in heat exchanger temperature from the suction pipe.

Error Decision Conditions Low pressure becomes 0.1 MPa (14.5 psi) or less.
∗ Error is not determined. The unit continues the operation.

Supposed Causes
- Refrigerant shortage and refrigerant clogging (wrong piping)
- Defective thermistor
- Defective low pressure sensor
- Defective outdoor unit main PCB

Troubleshooting

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



Note:
∗1. Check the low pressure value by using pressure gauge in operation.
∗2. Compare the actual measurement value by pressure sensor with the value by the pressure gauge.
(To gain actual measurement value by pressure sensor, measure the voltage at the connector [between (2)-(3)] and then convert the value into pressure. **CHECK 12**)

CHECK 2 Refer to page 292.

CHECK 12 Refer to page 302.

3.55 Reverse Phase, Open Phase

Error Code U1

Applicable Models All outdoor unit models

Method of Error Detection The phase of each phase are detected by reverse phase detection circuit and right phase or reverse phase are judged.

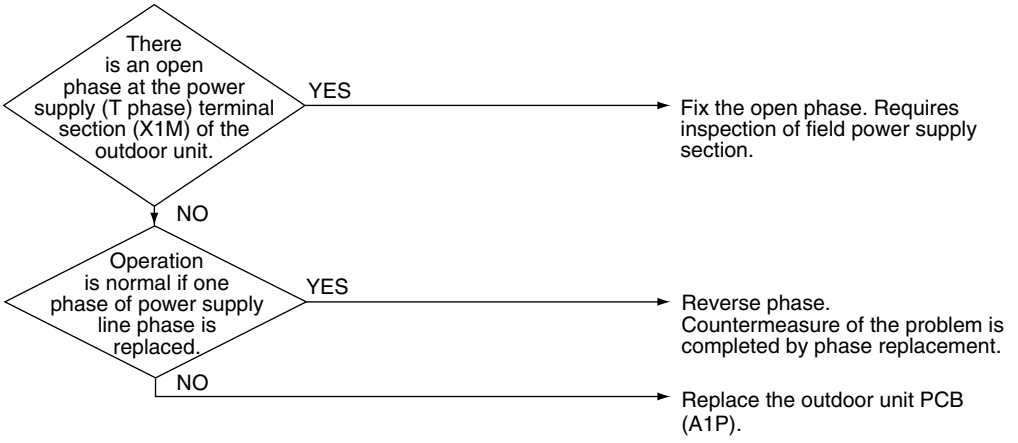
Error Decision Conditions When a power supply is reverse phase, or T phase is open phase.

Supposed Causes

- Power supply reverse phase
- T phase open phase
- Defective outdoor unit PCB

Troubleshooting

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

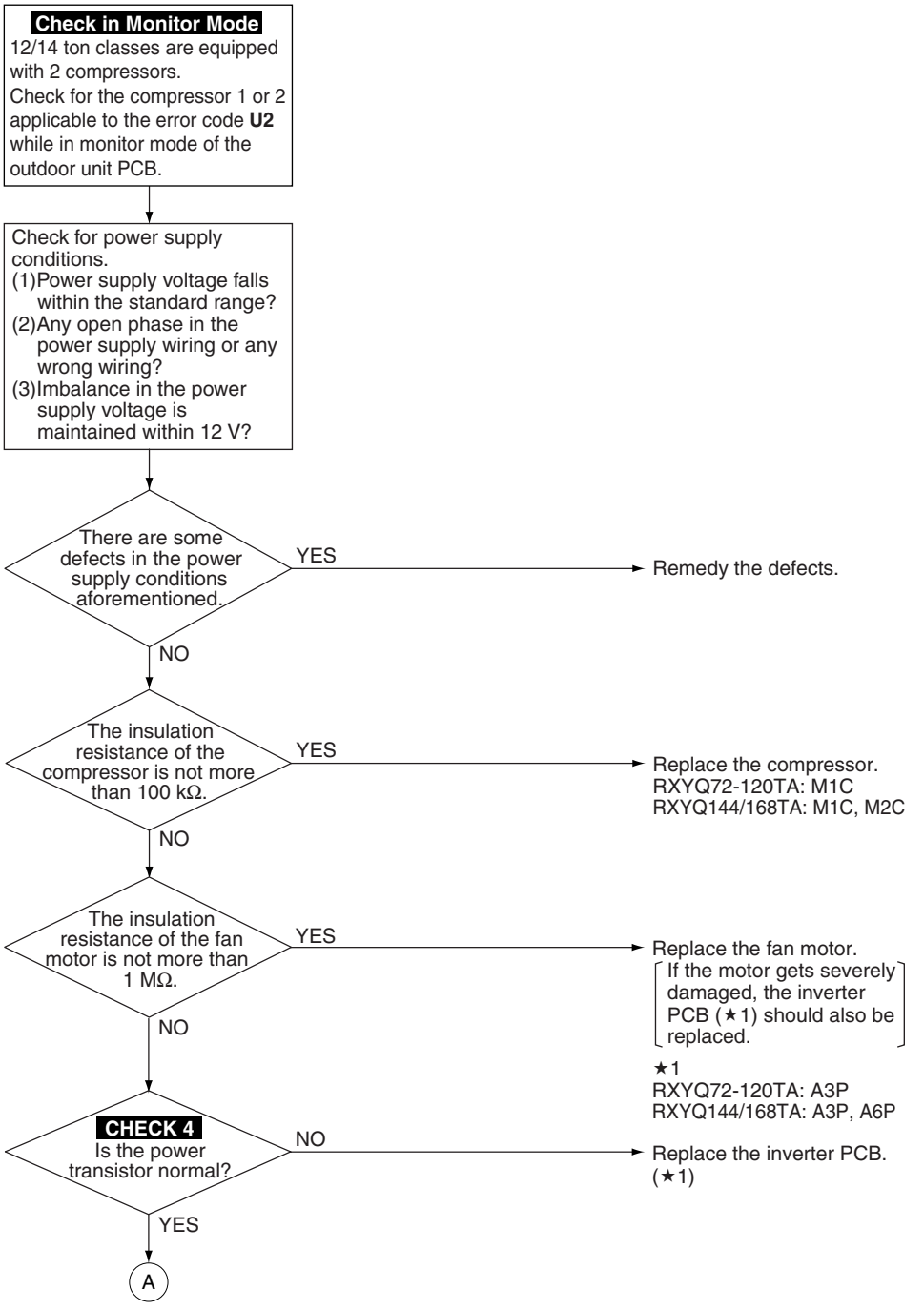


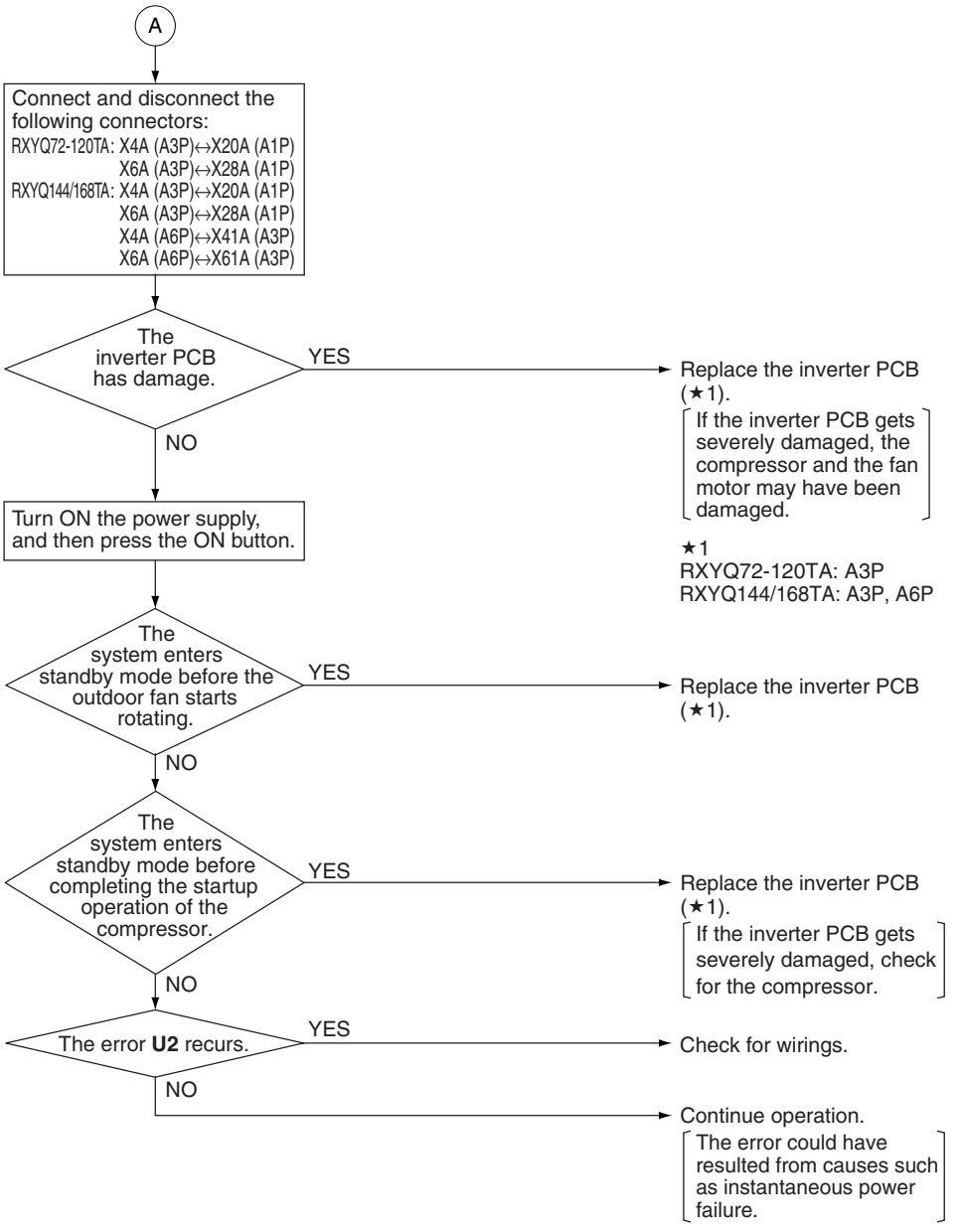
3.56 Power Supply Insufficient or Instantaneous Abnormality

Error Code	**U2**
Applicable Models	All outdoor unit models
Method of Error Detection	Detect the voltage of capacitor of the main circuit in the inverter PCB.
Error Decision Conditions	When the voltage in the DC circuit (between diode module and power module) falls below specified voltage.
Supposed Causes	■ Abnormal power supply voltage ■ Instantaneous power failure ■ Open phase ■ Defective inverter PCB ■ Defective outdoor unit main PCB ■ Defective compressor ■ Defective main circuit wiring ■ Defective fan motor ■ Defective connection of signal cable

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 295.

3.57 Check Operation not Executed

Error Code U3

Applicable Models All outdoor unit models

Method of Error Detection Check operation is executed or not executed

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.

The contents of individual failures vary with sub code. Ensure the sub code, and then go to the following:

- **U3-03** → Conduct the test operation. (The test operation has not been conducted.)
- **U3-04** → Check for the refrigerant piping, and then conduct the test operation.
- **U3-05** → Conduct the test operation (due to the premature end of the test operation).
- **U3-06** → Conduct the test operation (due to the premature end of the test operation).
- **U3-07** → Check for transmission between indoor and outdoor units, and then conduct the test operation.
- **U3-08** → Check for transmission between indoor and outdoor units, and then conduct the test operation.

3.58 Transmission Error between Indoor Units and Outdoor Units

Error Code

U4

Applicable Models

All indoor unit models
All outdoor unit models

Method of Error Detection

Microcomputer checks if transmission between indoor and outdoor units is normal.

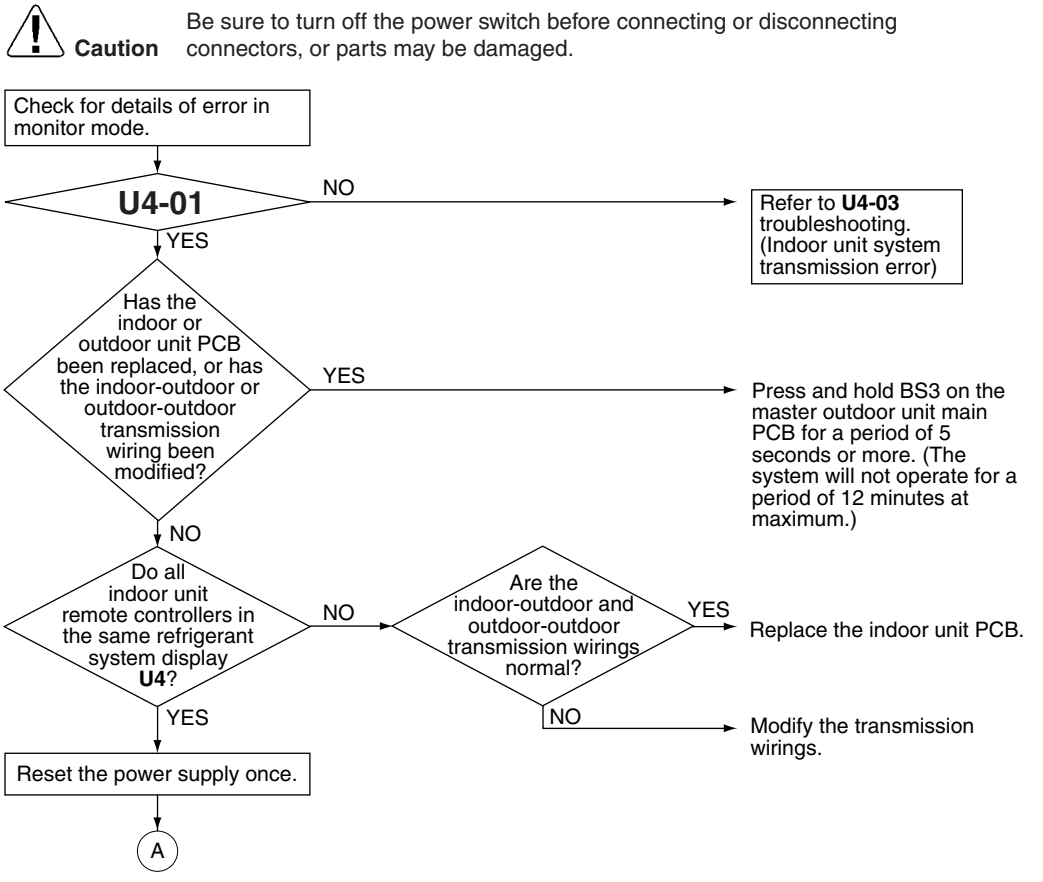
Error Decision Conditions

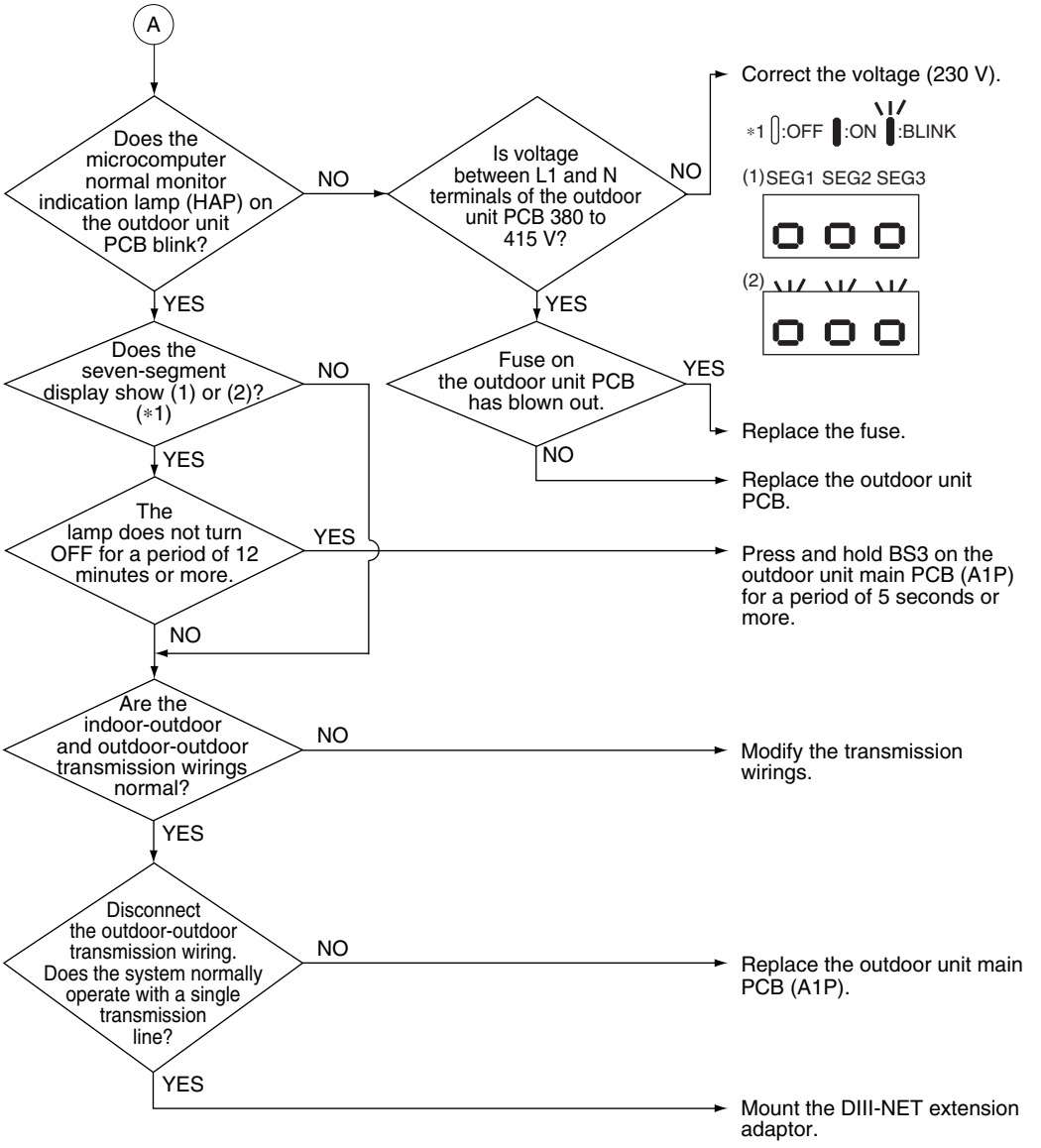
When transmission is not carried out normally for a certain amount of time

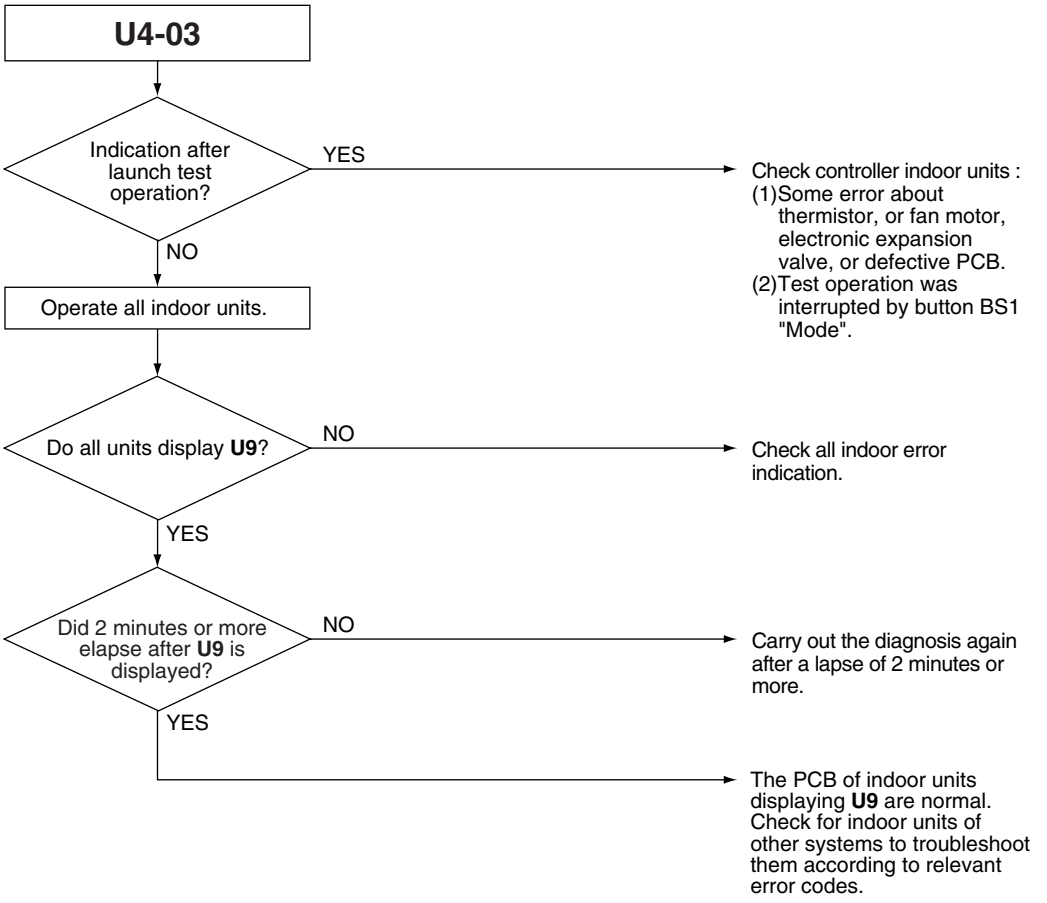
Supposed Causes

- Short circuit in indoor-outdoor or outdoor-outdoor transmission wiring (F1 / F2), or wrong wiring
- Outdoor unit power supply is OFF
- System address does not match
- Defective indoor unit PCB
- Defective outdoor unit PCB

Troubleshooting




A
Does the microcomputer normal monitor indication lamp (HAP) on the outdoor unit PCB blink?
NO
Is voltage between L1 and N terminals of the outdoor unit PCB 380 to 415 V?
NO
Correct the voltage (230 V).
∗1 :OFF :ON :BLINK
(1) SEG1 SEG2 SEG3
(2)
YES
YES
Does the seven-segment display show (1) or (2)? (∗1)
NO
Fuse on the outdoor unit PCB has blown out.
YES
Replace the fuse.
NO
Replace the outdoor unit PCB.
YES
The lamp does not turn OFF for a period of 12 minutes or more.
YES
Press and hold BS3 on the outdoor unit main PCB (A1P) for a period of 5 seconds or more.
NO
Are the indoor-outdoor and outdoor-outdoor transmission wirings normal?
NO
Modify the transmission wirings.
YES
Disconnect the outdoor-outdoor transmission wiring. Does the system normally operate with a single transmission line?
NO
Replace the outdoor unit main PCB (A1P).
YES
Mount the DIII-NET extension adaptor.


U4-03
Indication after launch test operation?
YES
Check controller indoor units :
(1)Some error about thermistor, or fan motor, electronic expansion valve, or defective PCB.
(2)Test operation was interrupted by button BS1 "Mode".
NO
Operate all indoor units.
Do all units display U9?
NO
Check all indoor error indication.
YES
Did 2 minutes or more elapse after U9 is displayed?
NO
Carry out the diagnosis again after a lapse of 2 minutes or more.
YES
The PCB of indoor units displaying U9 are normal. Check for indoor units of other systems to troubleshoot them according to relevant error codes.

3.59 Transmission Error between Remote Controller and Indoor Unit

Error Code U5

Applicable Models All indoor unit models

Method of Error Detection Microcomputer checks if transmission between indoor unit and remote controller is normal.

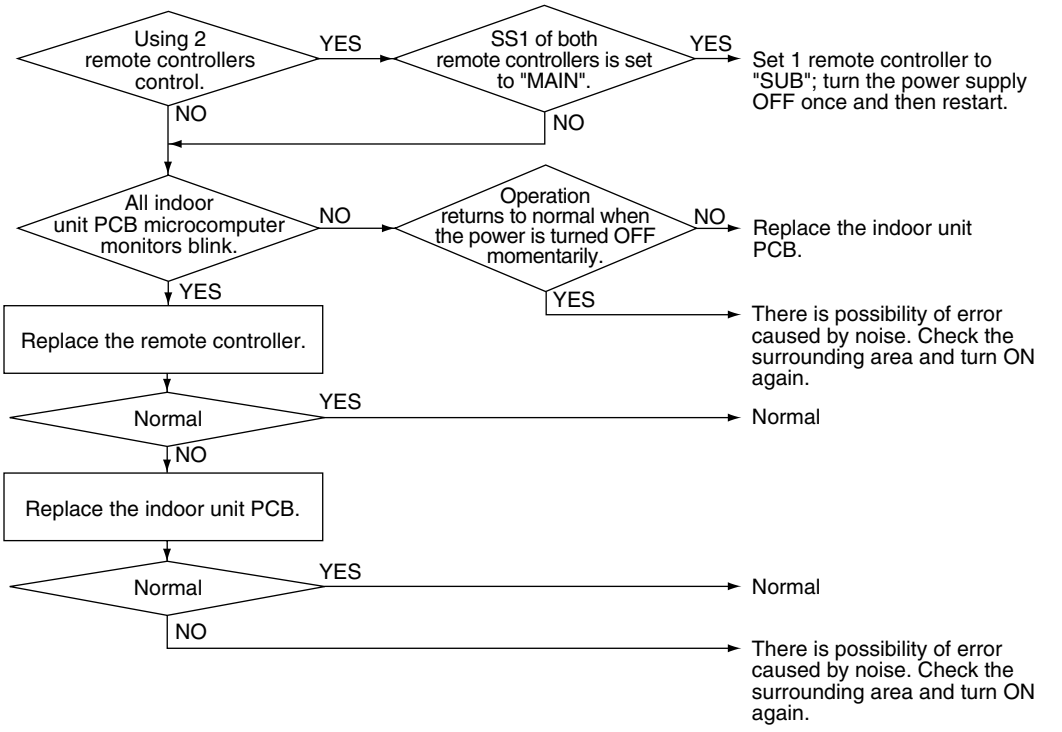
Error Decision Conditions Transmission is not carried out normally for a certain amount of time.

Supposed Causes

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

Troubleshooting

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



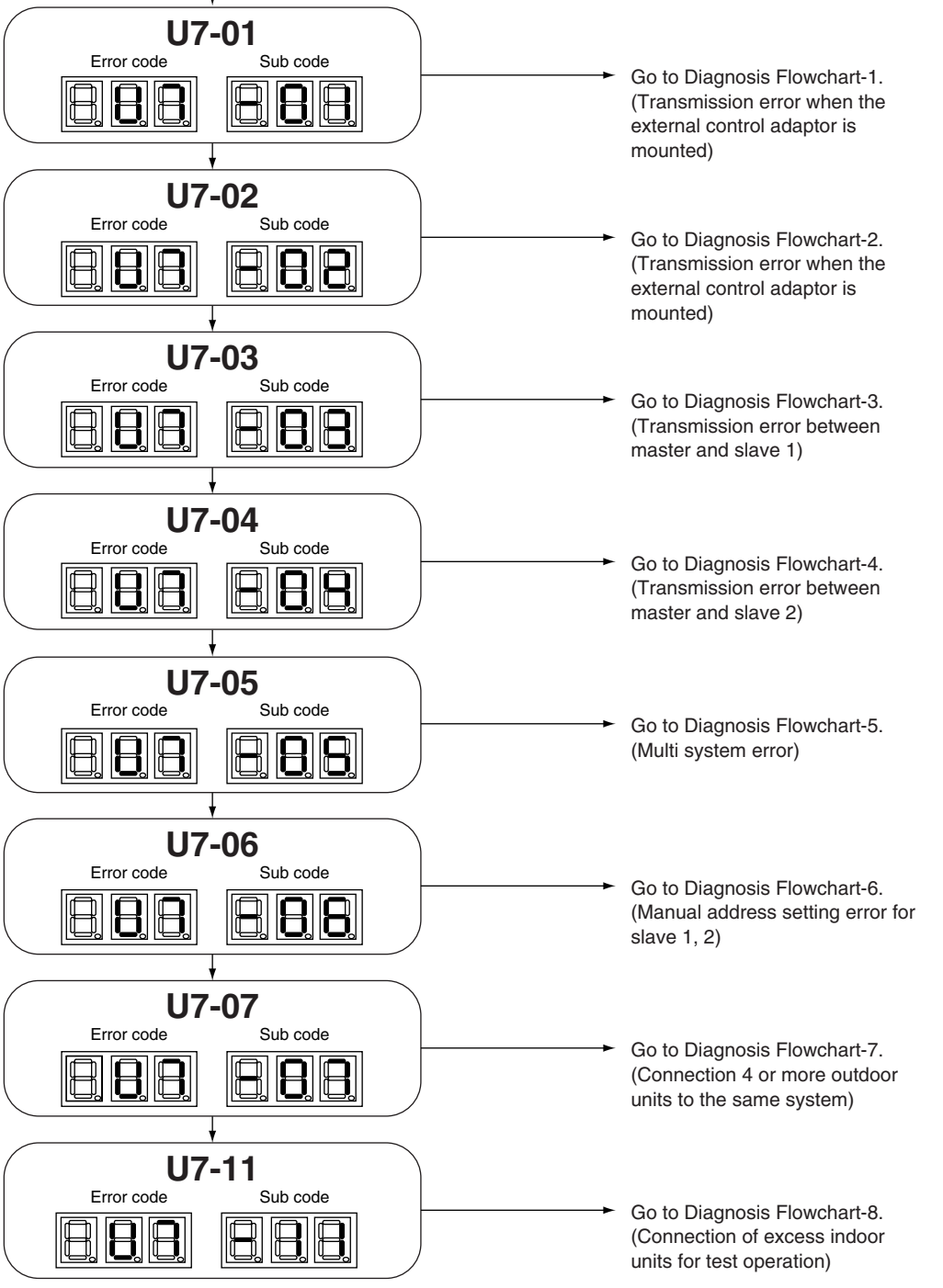
3.60 Transmission Error between Outdoor Units

Error Code	**U7**
Applicable Models	All outdoor unit models
Method of Error Detection	Microcomputer checks if transmission between outdoor units is normal.
Error Decision Conditions	When transmission is not carried out normally for a certain amount of time
Supposed Causes	■ Connection error of transmission wirings between outdoor unit and external control adaptor for outdoor unit ■ Connection error of transmission wirings between outdoor units ■ Cool/Heat selection setting error ■ Cool/Heat unified address setting error (functional unit, external control adaptor for outdoor unit) ■ Defective outdoor unit PCB ■ Defective external control adaptor for outdoor unit

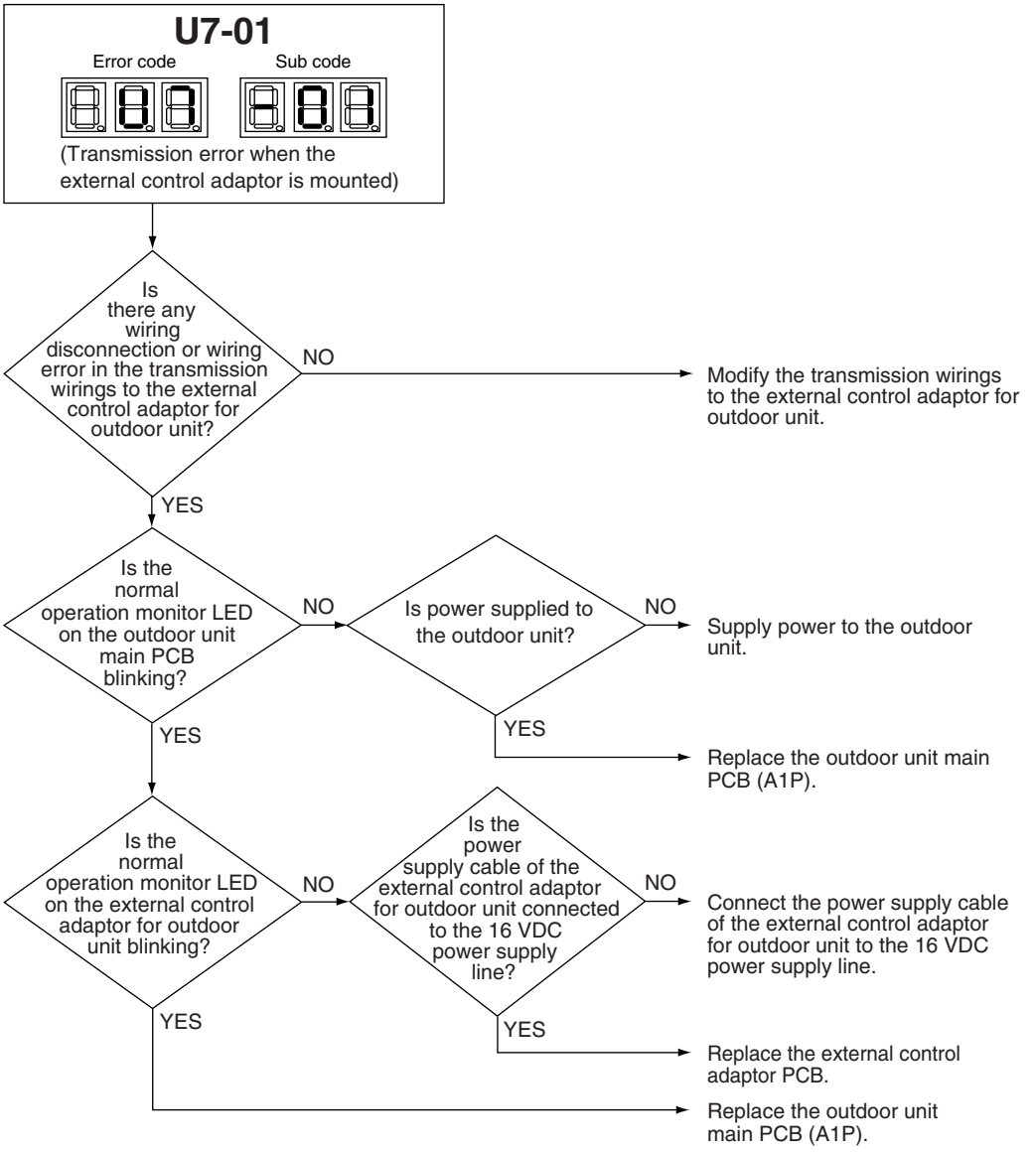
Troubleshooting

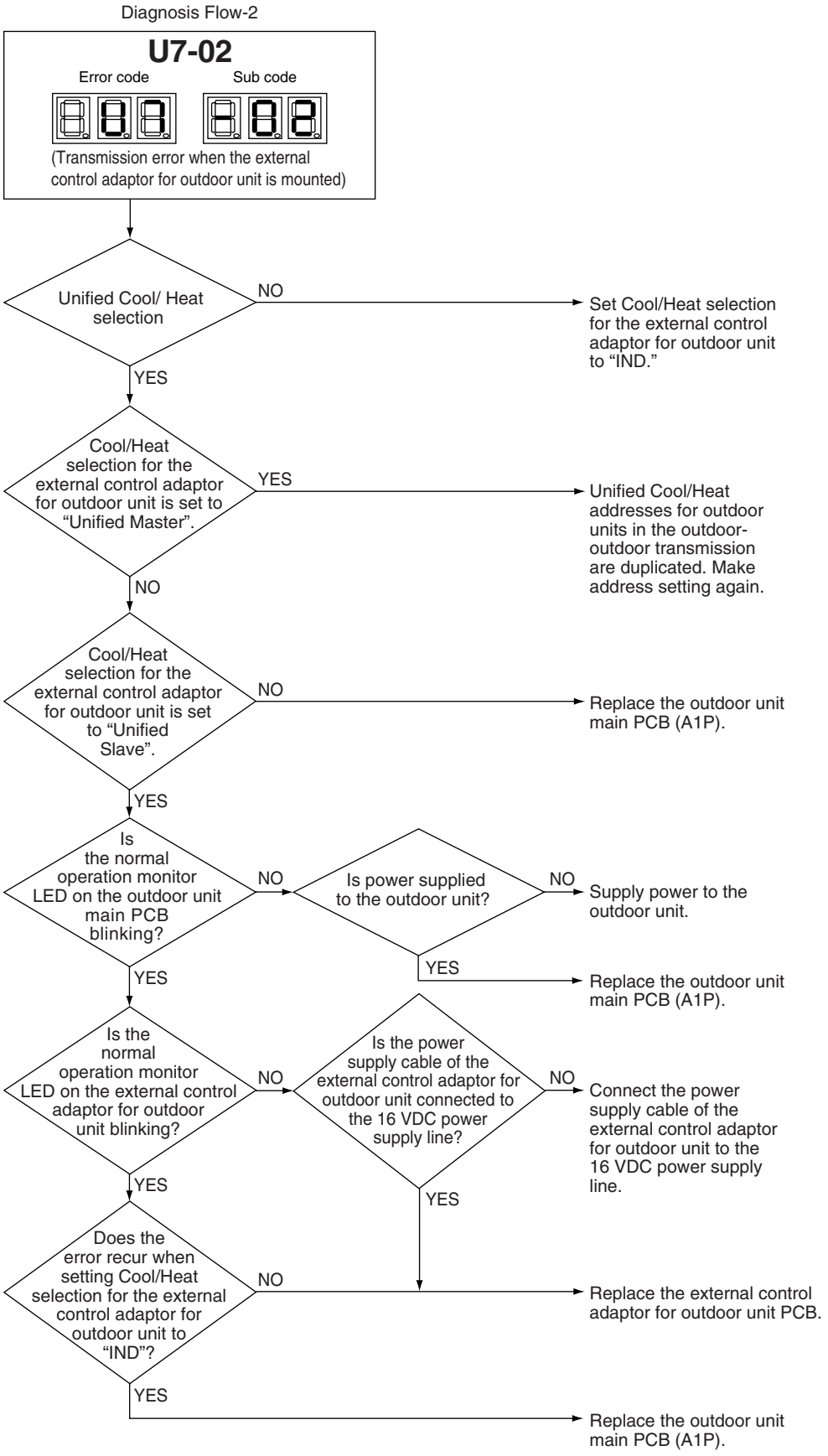
Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.

Ensure the sub code or the lamp display of monitor mode, and then go to the following:



Diagnosis Flow-1




Diagnosis Flow-2
U7-02
Error code
Sub code
(Transmission error when the external control adaptor for outdoor unit is mounted)
Unified Cool/ Heat selection
NO
Set Cool/Heat selection for the external control adaptor for outdoor unit to “IND.”
YES
Cool/Heat selection for the external control adaptor for outdoor unit is set to “Unified Master”.
YES
Unified Cool/Heat addresses for outdoor units in the outdoor-outdoor transmission are duplicated. Make address setting again.
NO
Cool/Heat selection for the external control adaptor for outdoor unit is set to “Unified Slave”.
NO
Replace the outdoor unit main PCB (A1P).
YES
Is the normal operation monitor LED on the outdoor unit main PCB blinking?
NO
Is power supplied to the outdoor unit?
NO
Supply power to the outdoor unit.
YES
Replace the outdoor unit main PCB (A1P).
YES
Is the normal operation monitor LED on the external control adaptor for outdoor unit blinking?
NO
Is the power supply cable of the external control adaptor for outdoor unit connected to the 16 VDC power supply line?
NO
Connect the power supply cable of the external control adaptor for outdoor unit to the 16 VDC power supply line.
YES
YES
Does the error recur when setting Cool/Heat selection for the external control adaptor for outdoor unit to “IND”?
NO
Replace the external control adaptor for outdoor unit PCB.
YES
Replace the outdoor unit main PCB (A1P).

Diagnosis Flow-3

U7-03

Error code Sub code

(Transmission error between master and slave 1)

The multi transmission wirings to multi slave 1 have caused wiring disconnection in them or are being disconnected.

NO → Replace the outdoor unit main PCB (A1P) for multi slave 1.

YES → Modify the outdoor unit multi transmission wirings, and then reset the power supply.

Diagnosis Flow-4

U7-04

Error code Sub code

(Transmission error between master and slave 2)

The multi transmission wirings to multi slave 2 have caused wiring disconnection in them or are being disconnected.

NO → Replace the outdoor unit main PCB (A1P) for multi slave 2.

YES → Modify the outdoor unit multi transmission wirings, and then reset the power supply.

Diagnosis Flow-5

U7-05

Error code Sub code

(Multi system error)

Is the model of outdoor unit RXYQ72-168TA?

YES → Replace the outdoor unit main PCB (A1P).

NO → Disconnect the outdoor unit multi transmission wirings, and then reset the power supply.

Diagnosis Flow-6

U7-06

Error code Sub code

(Manual address setting error for slave 1, 2)

One of outdoor unit multi transmission wirings has caused wiring disconnection in it or been disconnected.

NO → Replace the outdoor unit main PCB (A1P).

YES → Modify the outdoor unit multi transmission wirings, and then reset the power supply.

Diagnosis Flow-7

U7-07

Error code Sub code

(Connection 4 or more outdoor units to the same system)

4 or more outdoor units are connected using the outdoor unit multi transmission wirings.

NO → Replace the outdoor unit main PCB (A1P).

YES → Modify the outdoor unit multi transmission wirings, and then reset the power supply.

Diagnosis Flow-8

U7-11

Error code Sub code

(Connection of excess indoor units for test operation)

There is an error in the connection of indoor-outdoor, indoor-indoor, and outdoor multi transmission wirings.

YES → Rectify the error in the connection of transmission wirings, and then reset the power supply.

NO → The capacity to connect indoor units falls within the specified range.

NO → Check the capacity to connect indoor units.

YES → Replace the outdoor unit main PCB (A1P).

3.61 Transmission Error between Main and Sub Remote Controllers

Error Code

U8

Applicable Models

All indoor unit models

Method of Error Detection

In case of controlling with 2 remote controller, check the system using microcomputer if signal transmission between indoor unit and remote controller (main and sub remote controller) is normal.

Error Decision Conditions

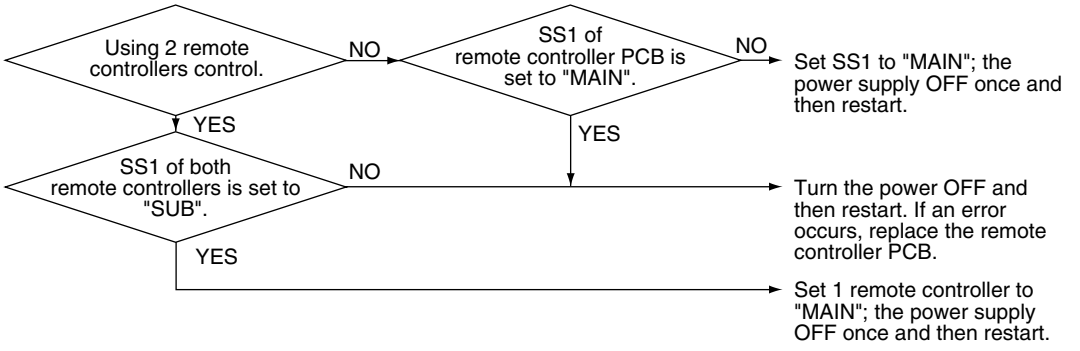
When transmission is not carried out normally for a certain amount of time.

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.



3.62 Transmission Error between Indoor Unit and Outdoor Unit in the Same System

Error Code **U9**

Applicable Models
All indoor unit models
All outdoor unit models

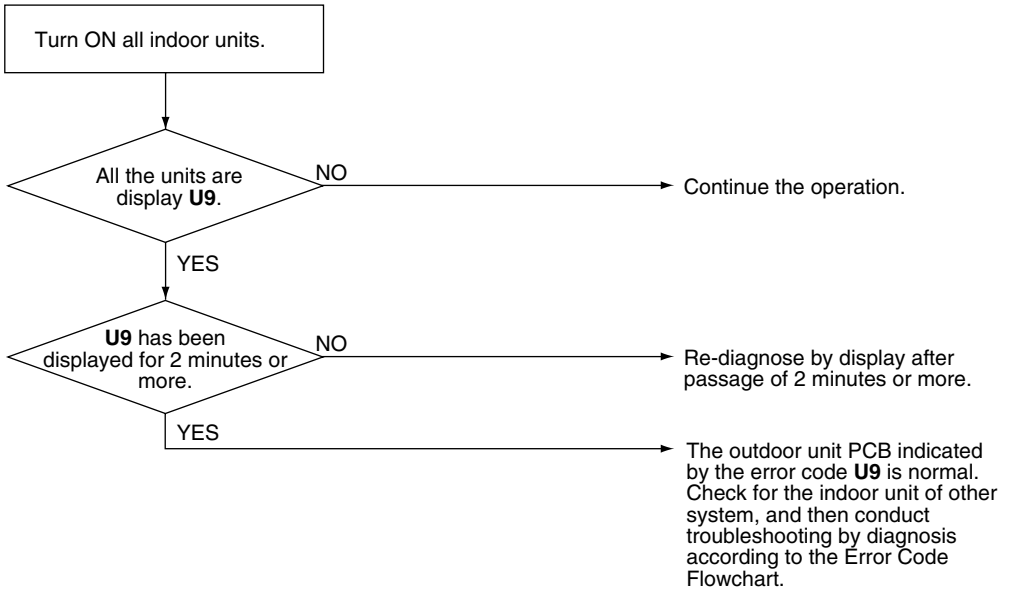
Method of Error Detection
Detect the error signal for the other indoor unit within the circuit by outdoor unit main PCB.

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

Supposed Causes
- Transmission error between other indoor and outdoor units
- Defective electronic expansion valve of other indoor unit
- Defective indoor unit PCB of other indoor unit
- 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.

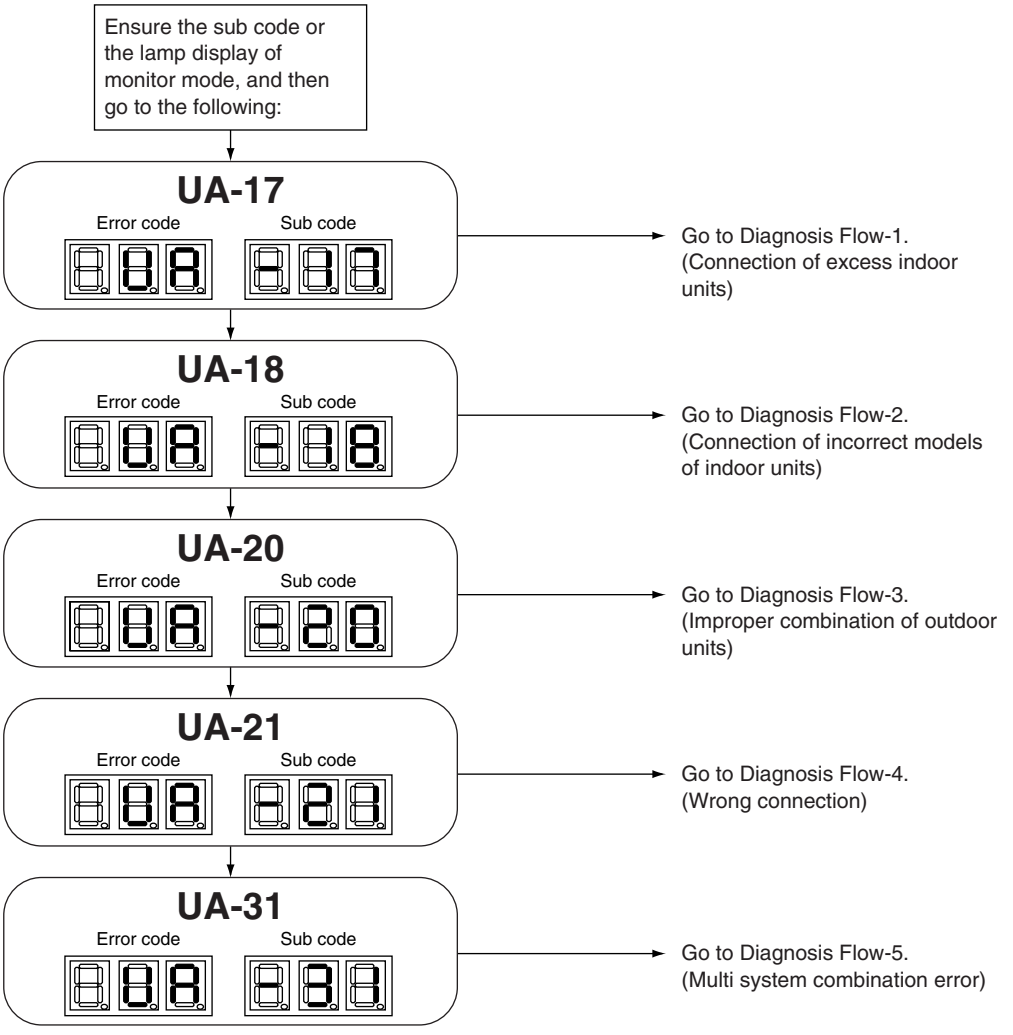


3.63 Improper Combination of Indoor Unit and Outdoor Unit, Indoor Unit and Remote Controller

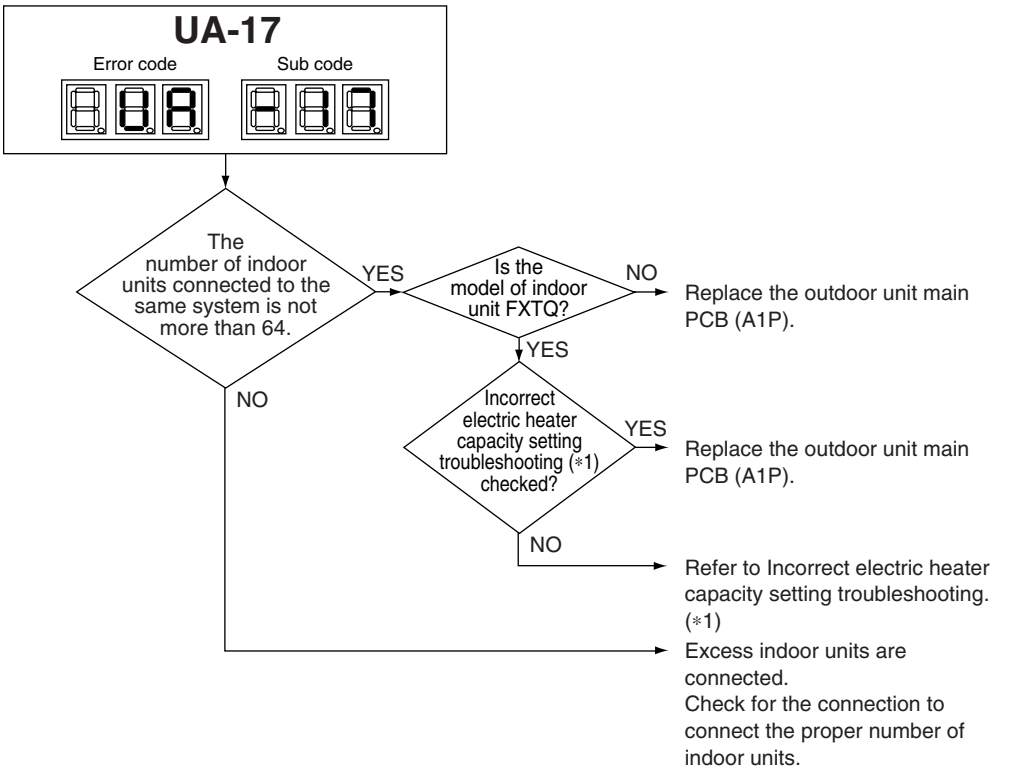
Error Code	**UA**
Applicable Models	All indoor unit models All outdoor unit models
Method of Error Detection	A difference occurs in data by the type of refrigerant between indoor and outdoor units. The number of indoor units connected is out of the allowable range.
Error Decision Conditions	The error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

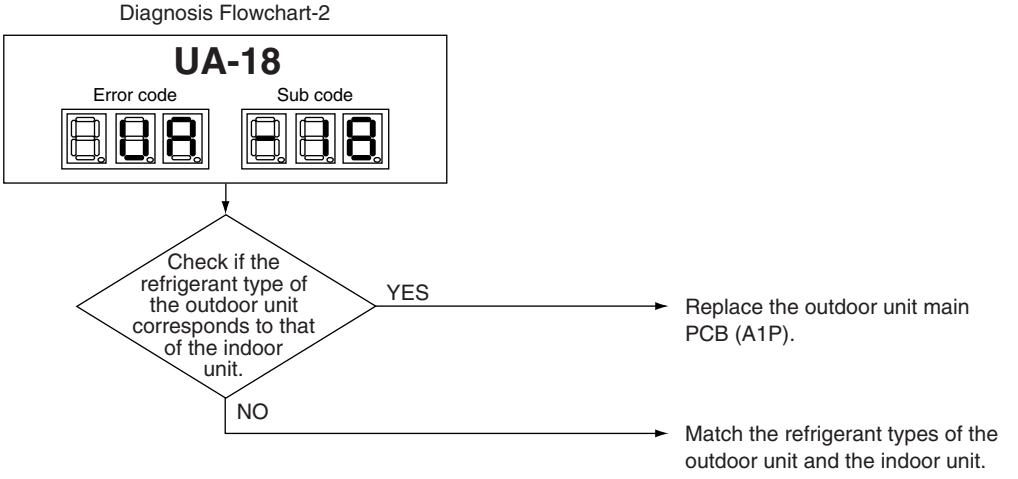


Diagnosis Flowchart-1

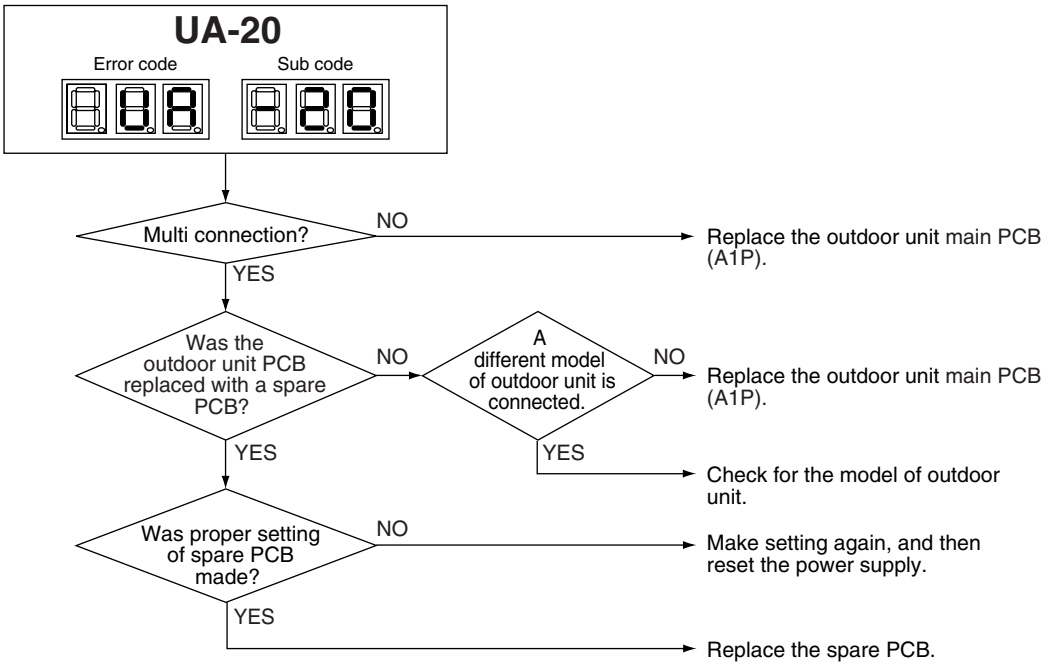


Note: ∗1. Refer to page 283.

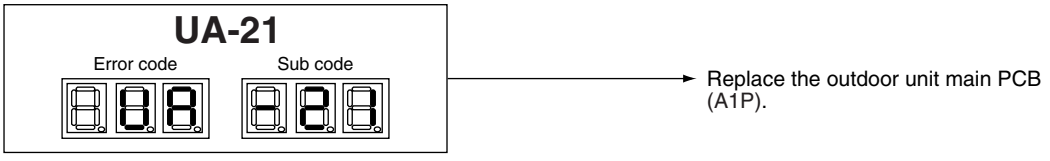
Diagnosis Flowchart-2



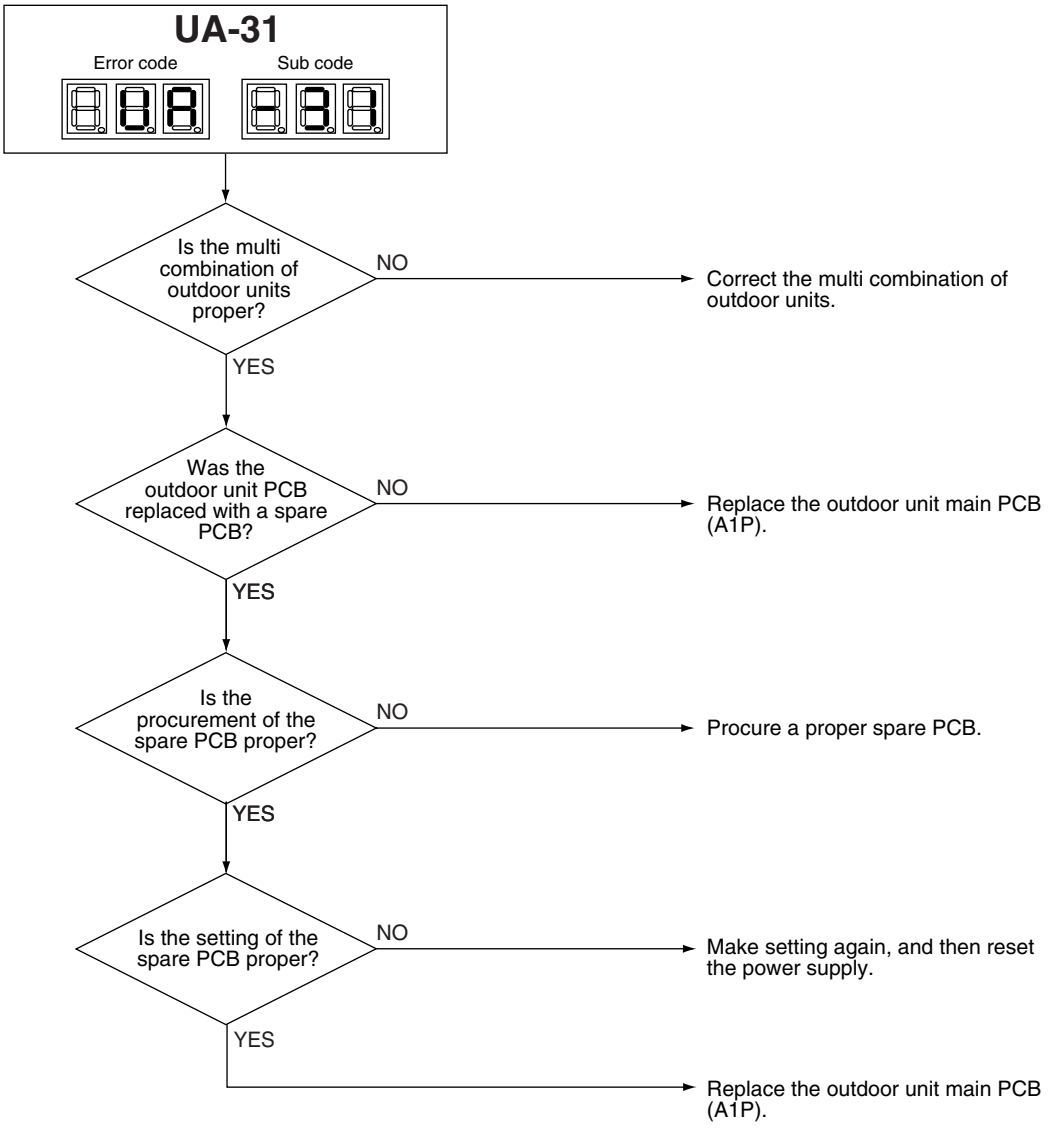
Diagnosis Flowchart-3



Diagnosis Flowchart-4



Diagnosis Flowchart-5



3.64 Incorrect Electric Heater Capacity Setting

Error Code **UA-17**

Applicable Models FXTQ-TA

Outline After attaching optional electric heater, if the electric heater capacity setting (11(21)-5) is made mistakenly for heaters not featured in the lineup, heating via unintended levels of airflow will be prevented.
However, the electric heater will be operable for convenience.

Error Decision Conditions Checks when the capacity setting (11(21)-5) of the electric heater has been set to a non-applicable value.

Operation After Error Codes Decided

- The error code **UA-17** is displayed on the remote controller.
- Indoor units can operate continuously.
- Incorrect setting is kept.
- Even if the ON condition for electric heater 2 is established, only electric heater 1 will be set to ON.
  (Electric heater 1 set to ON, electric heater 2 set to OFF)
  (In order to deliver in terms of user-friendliness and safety, the electric heater can operate at the lowest possible power levels.)
- The airflow of the fan during operation of the electric heater will be set to the largest value within the CFM dictated by the capacity of each of the electric heaters (electric heater 1, electric heater 2 both set to ON).
- All other operations are the same as during normal operation.

3.65 Address Duplication of Centralized Controller

Error Code

UC

Applicable Models

All indoor unit models
Centralized controller

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.

The centralized address is duplicated. → Make setting change so that the centralized address will not be duplicated.

3.66 Transmission Error between Centralized Controller and Indoor Unit

Error Code

UE

Applicable Models

All indoor unit models Schedule timer
Central remote controller

Method of Error Detection

Microcomputer checks if transmission between indoor unit and centralized controller is normal.

Error Decision Conditions

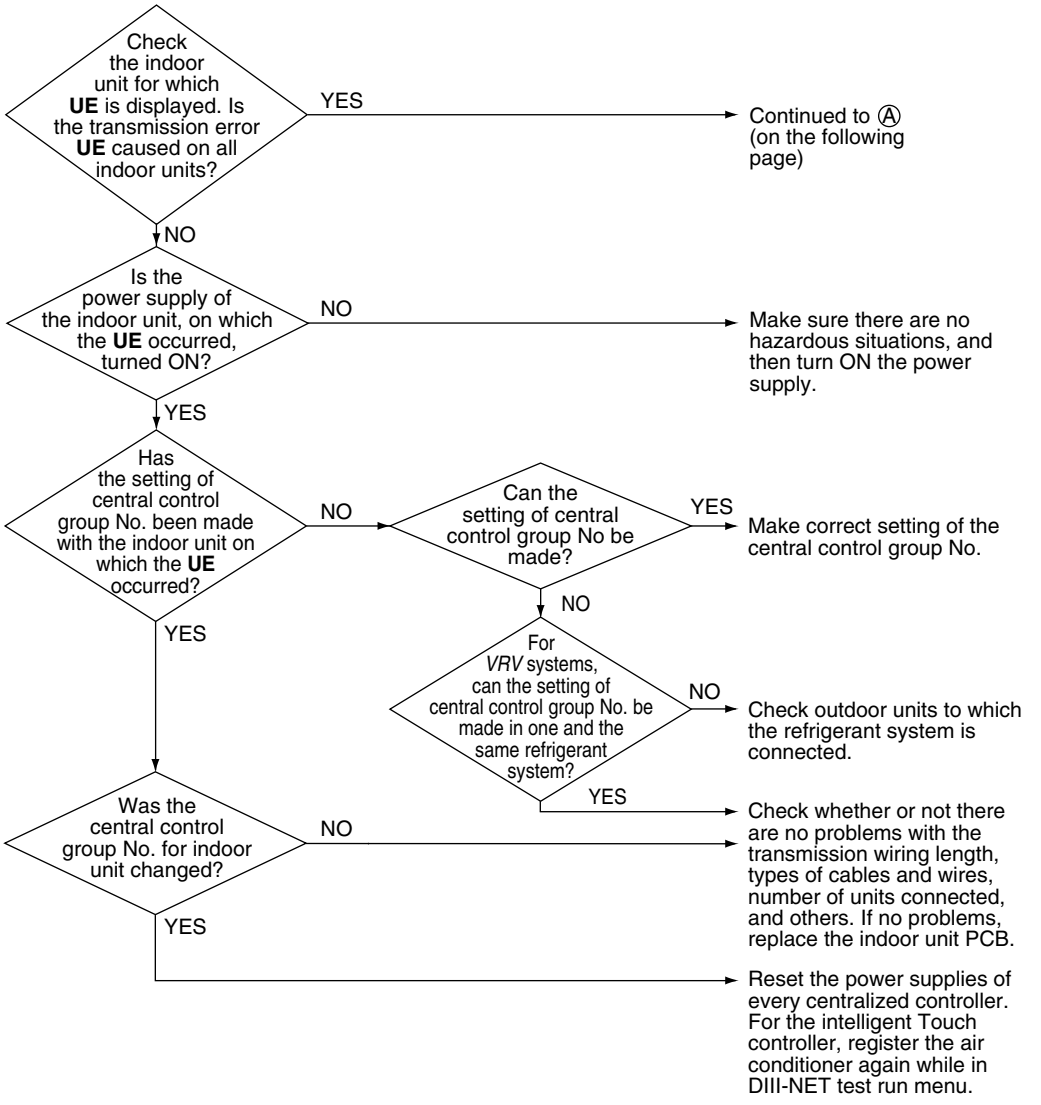
When transmission is not carried out normally for a certain amount of time

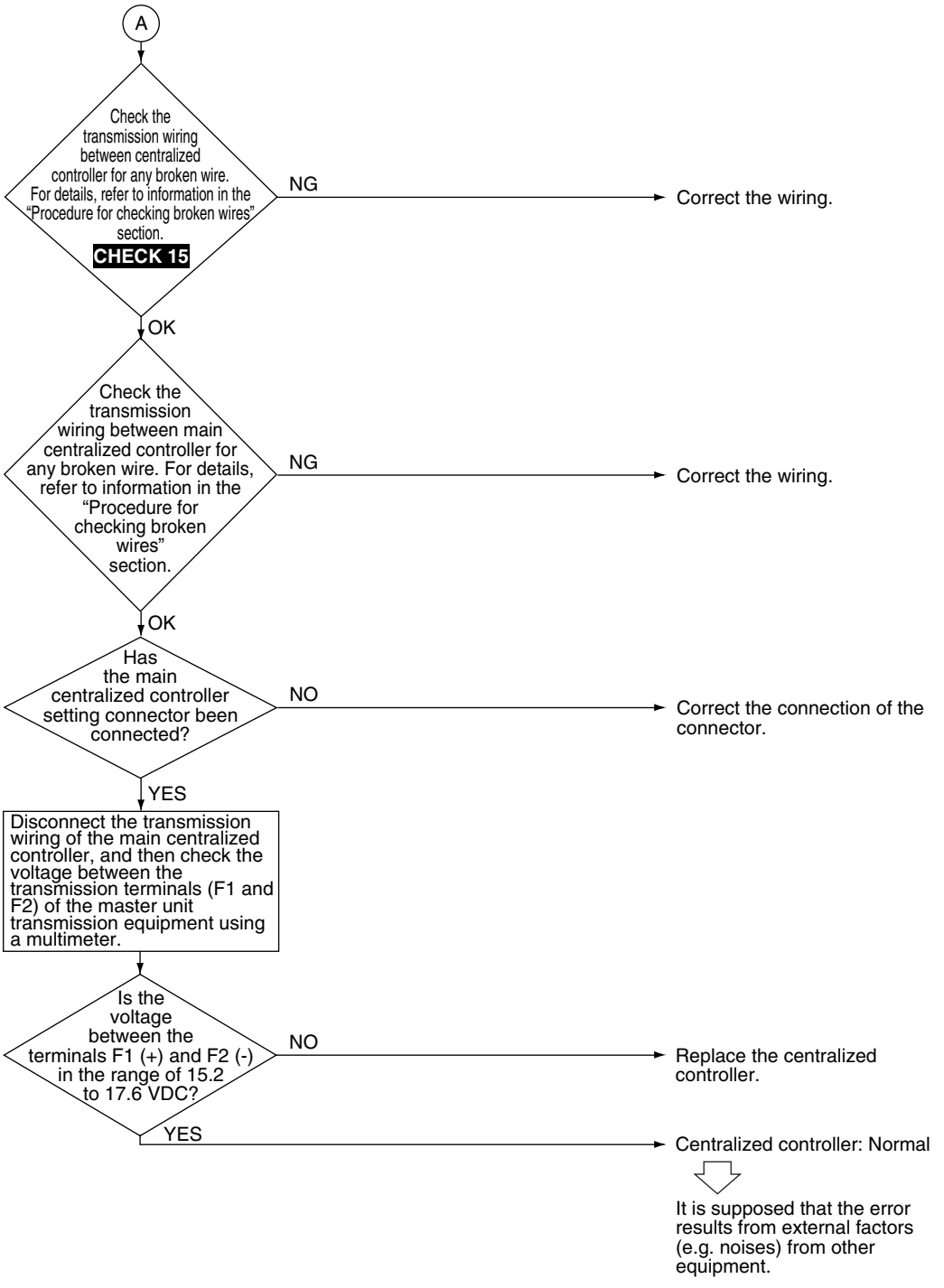
Supposed Causes

- Transmission error between optional controllers for centralized controller and indoor unit
- Connector for setting main controller is disconnected.
  (or disconnection of connector for independent / combined use changeover switch.)
- Defective PCB for central remote 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.





CHECK 15 Refer to page 303.

3.67 System not Set yet

Error Code UF

Applicable Models
All indoor unit models
All outdoor unit models

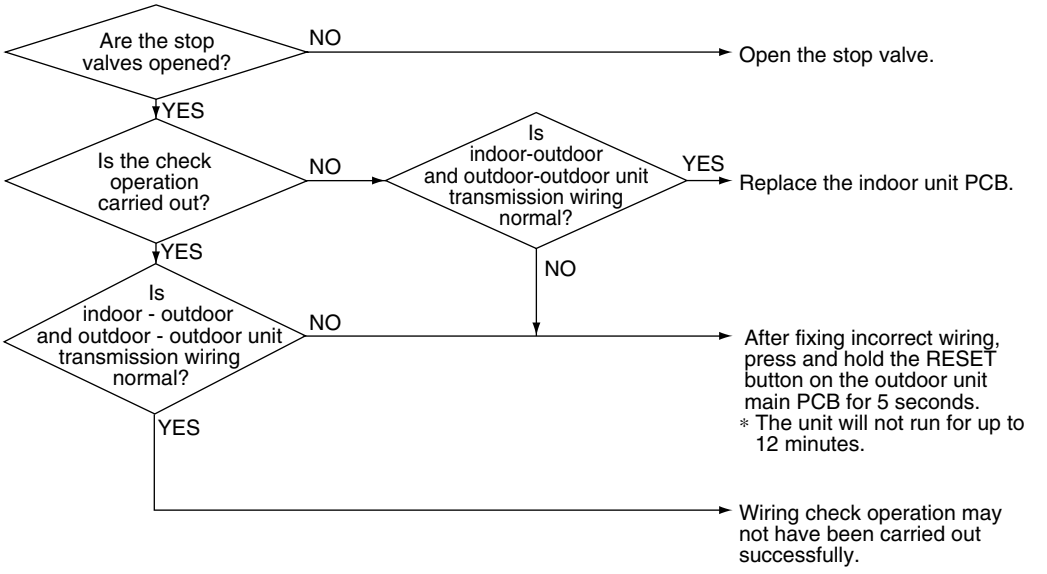
Method of Error Detection
On check operation, the number of indoor units in terms of transmission is not corresponding to that of indoor units that have made changes in temperature.

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.



3.68 System Abnormality, Refrigerant System Address Undefined

Error Code

UH

Applicable Models

All indoor unit models
All outdoor unit models

Method of Error Detection

Detect an indoor unit with no auto address setting.

Error Decision Conditions

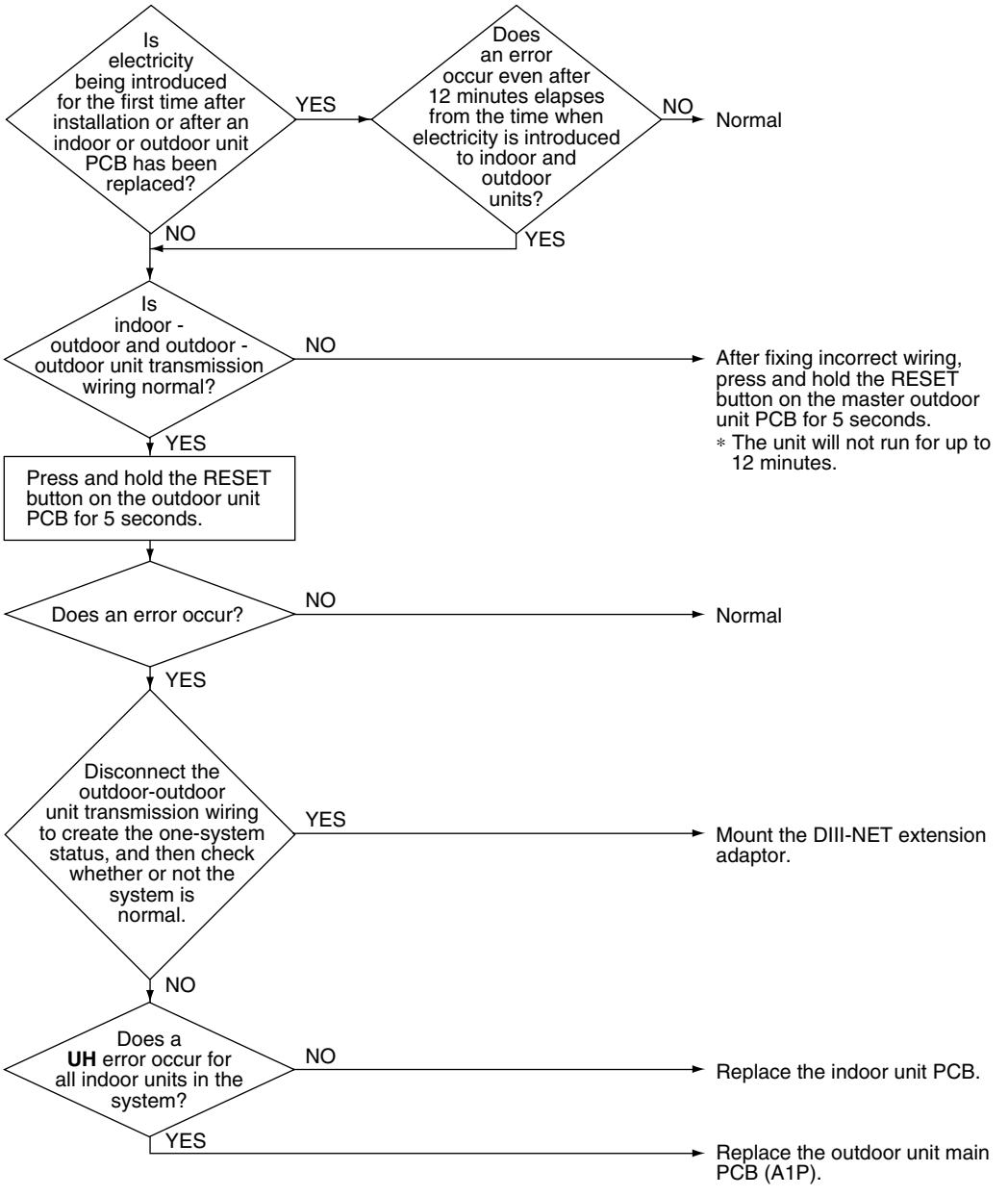
The error decision is made as soon as the abnormality aforementioned is detected.

Supposed Causes

- Improper connection of transmission wiring between indoor-outdoor units and outdoor-outdoor units
- Defective indoor unit PCB
- Defective outdoor unit PCB

Troubleshooting

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

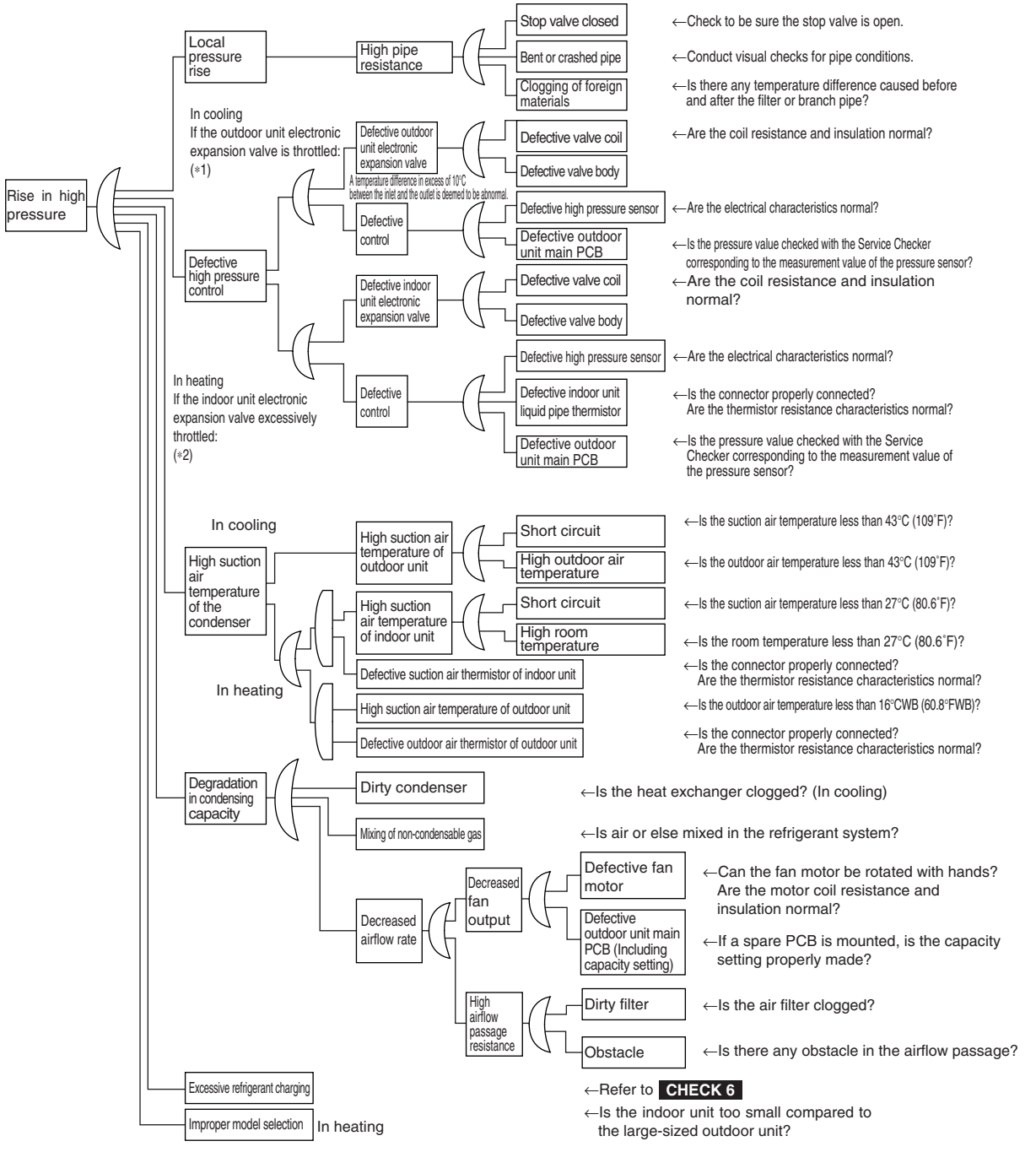


4. Check

4.1 High Pressure Check

CHECK 1

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

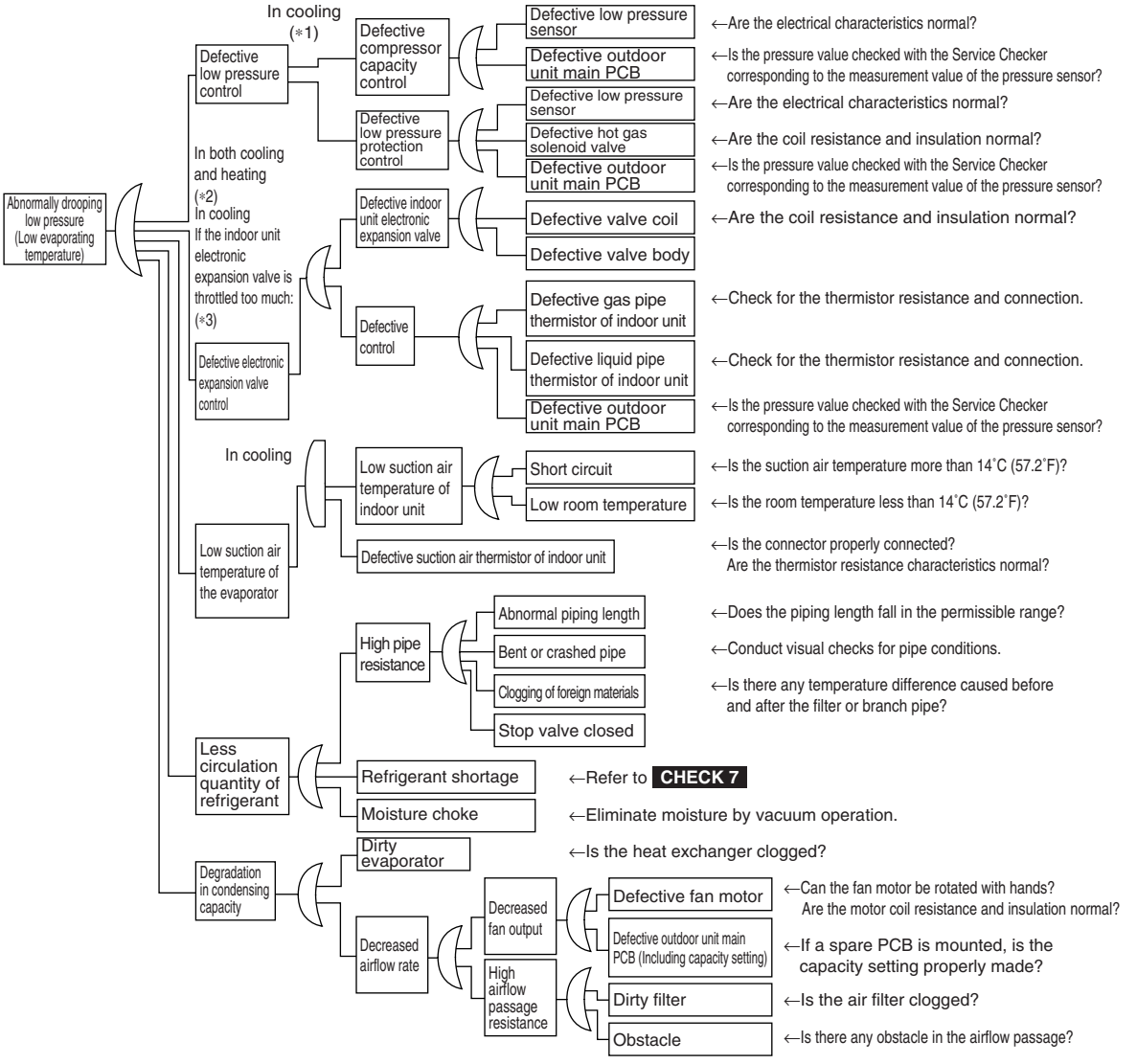


Note: *1. In cooling, it is normal if the outdoor unit electronic expansion valve (main) is fully open.
*2. In heating, the indoor unit electronic expansion valve is used for “subcooling degree control”.

4.2 Low Pressure Check

CHECK 2

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

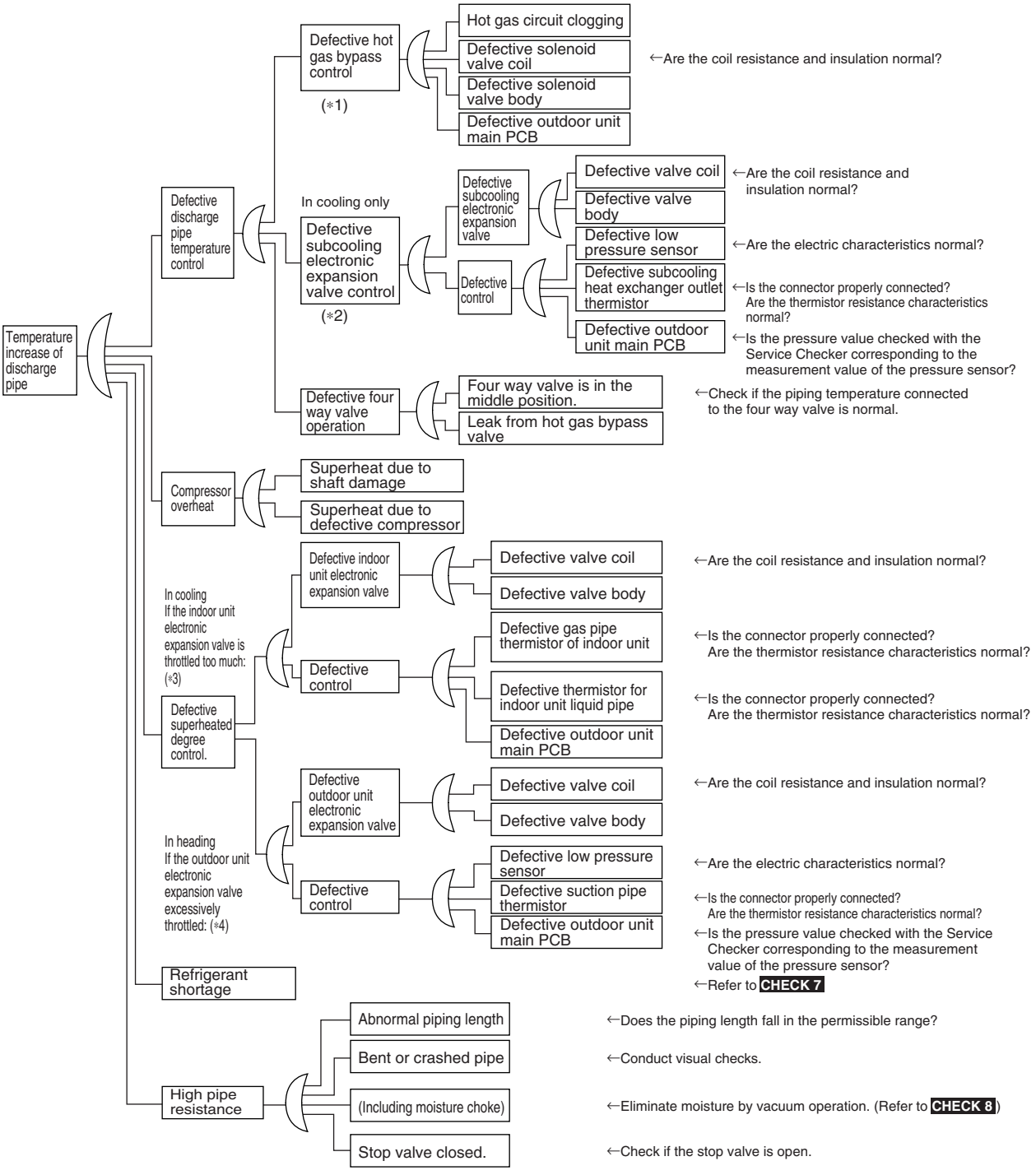


Note:
∗1. For details of compressor capacity control while in cooling.
∗2. The “low pressure protection control” includes low pressure protection control and hot gas bypass control.
∗3. In cooling, the indoor unit electronic expansion valve is used for “superheated degree control”.

4.3 Superheat Operation Check

CHECK 3

Identify the defective points referring to the failure factor analysis (FTA) as follows.



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 (main).

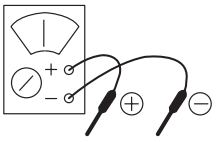
∗5. Judgement criteria of superheat operation:
(1) Suction gas superheated degree: 10°C (50°F) and over. (2) Discharge gas superheated degree: 45°C (113°F) and over, except immediately after compressor starts up or is running under drooping control.
(Use the above values as a guide. Depending on the other conditions, the unit may be normal despite the values within the above range.)

4.4 Power Transistor Check

CHECK 4

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
Multimeter



* Prepare the analog type of multimeter.
  For the digital type of multimeter, those with diode check function are available for the checking.

Point of Measurement and Judgement Criteria
Turn OFF the power supply. Then, after a lapse of 10 minutes or more, make measurement of resistance.

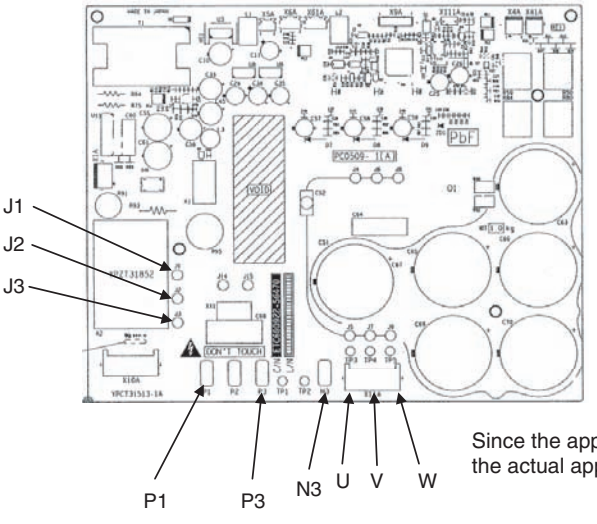
When using the analog type of multimeter, make measurement in resistance measurement mode in the x1kΩ range.

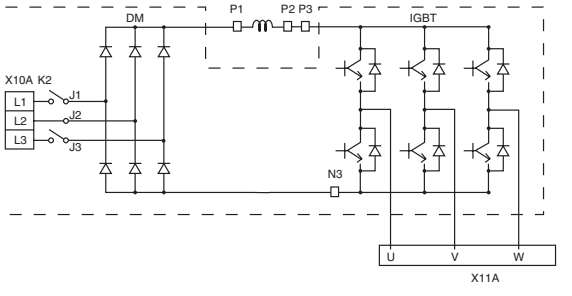
No.	Measuring point		Judgement Criteria	Remarks
	+	−		
1	P2	U	2 ~ 15 kΩ	
2	P2	V		
3	P2	W		
4	U	P2	15 kΩ and more (including ∞)	Due to condenser charge and so on, resistance measurement may require some time.
5	V	P2		
6	W	P2		
7	N3	U		
8	N3	V		
9	N3	W		
10	U	N3	2 ~ 15 kΩ	
11	V	N3		
12	W	N3		

When using the digital type of multimeter, make measurement in diode check mode (→)

No.	Measuring point		Judgement Criteria	Remarks
	+	−		
1	P2	U	1.2 V and more	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 more	Due to condenser charge and so on, resistance measurement may require some time.
11	V	N3		
12	W	N3		

PCB and Circuit Diagram





Since the appearance of PCB shown in this outline drawing is different from the actual appearance, use it as a reference drawing.

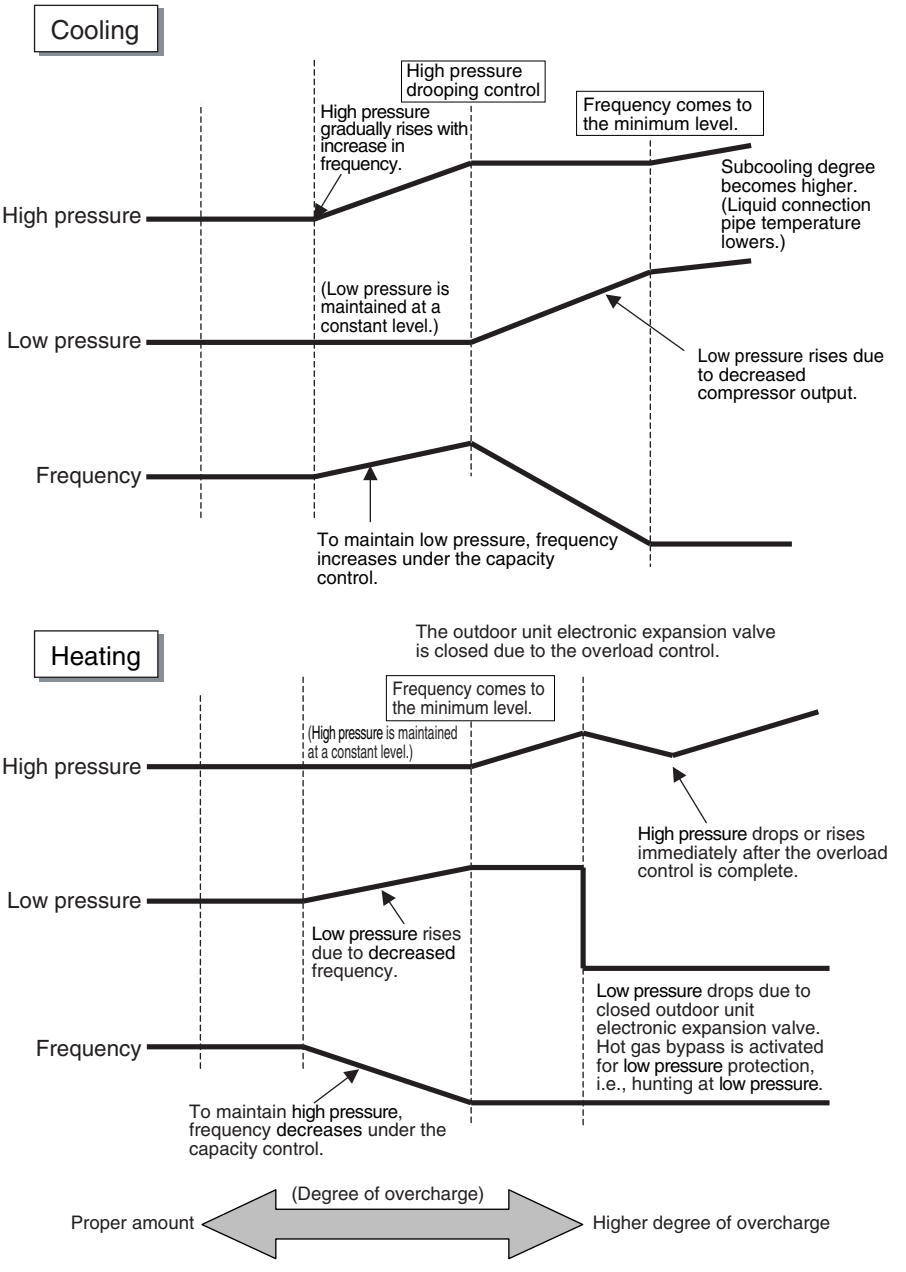
4.5 Refrigerant Overcharge Check

CHECK 6

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.



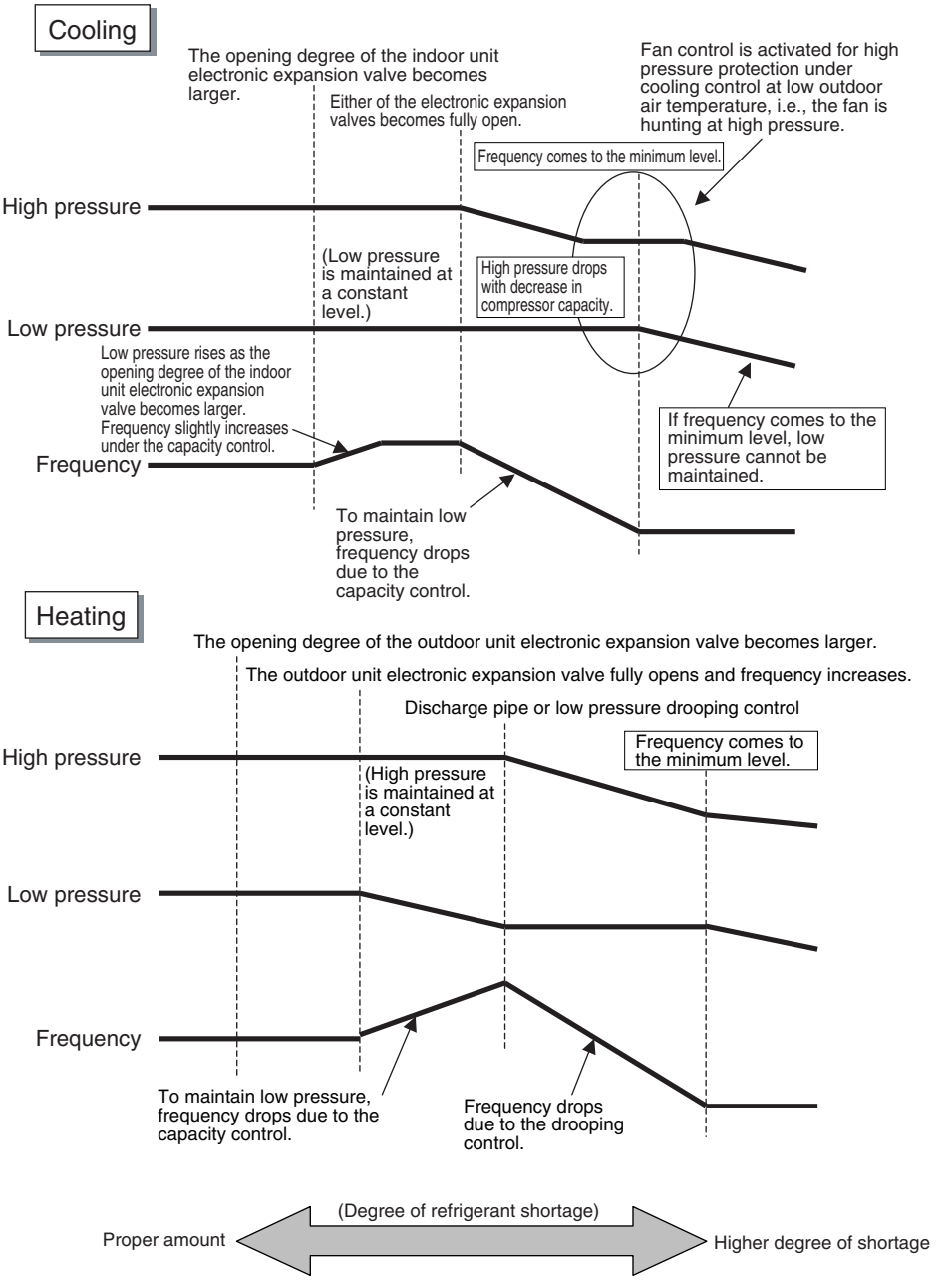
4.6 Refrigerant Shortage Check

CHECK 7

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).



4.7 Vacuuming and Dehydration Procedure

CHECK 8

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) (5 torr, -755 mmHg).
- Connect manifold gauges to the service ports of liquid pipe and gas pipe and run the vacuum pump for a period of 2 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 2 hours, moisture will have entered the system or refrigerant leakage will have been caused. In this case, conduct evacuation for a period of another 1 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 3 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 1 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 1) Normal vacuuming and dehydration described above.

(2) Vacuum break
- Pressurize with nitrogen gas up to 0.05 MPa (7.25 psi).

(3) Vacuuming and dehydration
- Conduct vacuuming and dehydration for a period of 1 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 2 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 1 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:

4.8 Thermistor Check

CHECK 11

Thermistor type of indoor units

Model	Suction air thermistor	Indoor heat exchanger (liquid) thermistor	Indoor heat exchanger (gas) thermistor	Discharge air thermistor
	R1T	R2T	R3T	R4T
FXFQ-T	Type C	Type A	Type J	–
FXFQ-P	Type D			–
FXZQ-M	Type B			–
FXUQ-P	Type C			–
FXEQ-P	Type B			–
FXDQ-M				–
FXMQ-PB				Type J
FXMQ-M				–
FXHQ-M				–
FXAQ-P				–
FXLQ-M				–
FXNQ-M				–
FXTQ-TA	–		Type A	–

Thermistor type of outdoor units

Model	Thermistor		Type
RXYQ72TA	R1T	Outdoor air	E
	R21T	Discharge pipe	H
	R3T	Accumulator inlet	A
	R4T	Heat exchanger liquid pipe	A
	R5T	Subcooling heat exchanger liquid pipe	A
	R6T	Subcooling heat exchanger gas pipe	A
	R7T	Hear exchanger deicer	A
RXYQ96/120TA	R1T	Outdoor air	E
	R21T	Discharge pipe	H
	R3T	Accumulator inlet	A
	R4T	Heat exchanger liquid pipe	A
	R5T	Subcooling heat exchanger liquid pipe	A
	R6T	Subcooling heat exchanger gas pipe	A
	R7T	Hear exchanger deicer	A
	R8T	M1C body	H
RXYQ144/168TA	R1T	Outdoor air (A1P)	E
	R1T	Radiation fin (A3P) (TATJU only)	F
	R21T R22T	Discharge pipe	H
	R3T	Accumulator inlet	A
	R4T	Heat exchanger liquid pipe	A
	R5T	Subcooling heat exchanger liquid pipe	A
	R6T	Subcooling heat exchanger gas pipe	A
	R7T	Hear exchanger deicer	A

Table 2

Thermistor temperature		Resistance (kΩ)			
(°C)	(°F)	Type A	Type B	Type C	Type D
–30	–22	363.8	361.7719	–	336.7
–25	–13	266.8	265.4704	–	253.1
–20	–4	197.8	196.9198	–	191.2
–15	5	148.2	147.5687	–	144.1
–10	14	112.0	111.6578	111.8	109.6
–5	23	85.52	85.2610	85.42	84.05
0	32	65.84	65.6705	65.80	64.99
5	41	51.05	50.9947	51.07	50.64
10	50	39.91	39.9149	39.97	39.74
15	59	31.44	31.4796	31.51	31.41
20	68	24.95	25.0060	25.02	24.98
25	77	19.94	20.0000	20.00	20.00
30	86	16.04	16.1008	16.10	16.12
35	95	12.99	13.0426	13.04	13.07
40	104	10.58	10.6281	10.63	10.67
45	113	8.669	8.7097	8.711	8.757
50	122	7.143	7.1764	7.179	7.227
55	131	5.918	5.9407	–	5.997
60	140	4.928	4.9439	–	5.001
65	149	4.123	4.1352	–	4.191
70	158	3.467	3.4757	–	3.528
75	167	–	2.9349	–	2.984
80	176	–	2.4894	–	2.534
85	185	–	2.1205	–	2.161
90	194	–	1.8138	–	1.850
95	203	–	1.5575	–	1.590
100	212	–	1.3425	–	1.371
105	221	–	1.1614	–	1.188
Drawing No.		3SA48002 3SA48004 3SA48018 3SA48019 (AD94A045) 3SA48013 (AD100026)	3SA48001 (AD87A001)	3SA48016 (AD100008)	4P159172 (AD010555)

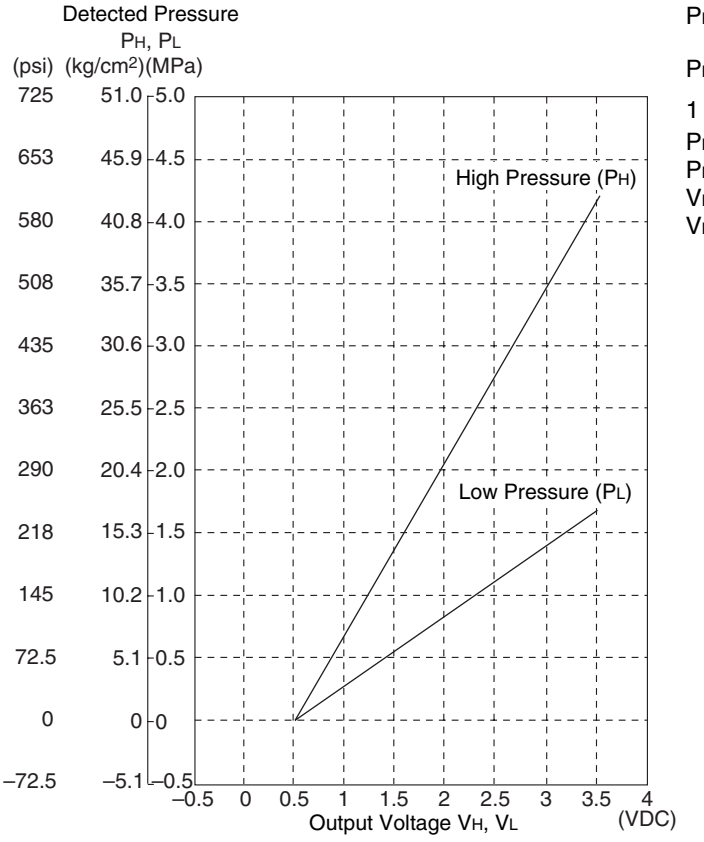
∗The data is for reference purpose only.

Thermistor temperature		Resistance (kΩ)			
(°C)	(°F)	Type E	Type F	Type H	Type J
–30	–22	362.4862	354.1	3257.371	359.8518
–25	–13	265.9943	259.7	2429.222	265.0699
–20	–4	197.3083	192.6	1827.883	197.1476
–15	5	147.8597	144.2	1387.099	147.7348
–10	14	111.8780	109.1	1061.098	111.7984
–5	23	85.4291	83.25	817.9329	85.3927
0	32	65.8000	64.10	635.0831	65.8000
5	41	51.0954	49.70	496.5712	51.1273
10	50	39.9938	38.85	391.0070	40.0423
15	59	31.5417	30.61	309.9511	31.5974
20	68	25.0554	24.29	247.2696	25.1125
25	77	20.0395	19.41	198.4674	20.0949
30	86	16.1326	15.61	160.2244	16.1860
35	95	13.0683	12.64	130.0697	13.1222
40	104	10.6490	10.30	106.1517	10.7042
45	113	8.7269	8.439	87.0725	8.7834
50	122	7.1905	6.954	71.7703	7.2479
55	131	5.9524	5.761	59.4735	6.0131
60	140	4.9536	4.797	49.5180	5.0144
65	149	4.1434	4.014	41.4168	4.2021
70	158	3.4825	3.375	34.7923	3.5381
75	167	2.9407	2.851	29.3499	2.9925
80	176	2.4943	2.418	24.8586	2.5420
85	185	2.1247	2.060	21.1360	2.1671
90	194	1.8173	1.762	18.0377	1.8554
95	203	1.5605	1.513	15.4487	1.5949
100	212	1.3451	1.304	13.2768	1.3764
105	221	1.1636	1.128	11.4395	1.1923
110	230	–	0.9790	9.8902	1.0365
115	239	–	0.8527	8.5788	0.9042
120	248	–	0.7450	7.4650	0.7914
125	257	–	0.6530	6.5156	0.6950
130	266	–	0.5741	5.7038	0.6121
135	275	–	–	5.0073	0.5408
140	284	–	–	4.4080	0.4791
145	293	–	–	3.8907	0.4257
150	302	–	–	3.4429	0.3792
Drawing No.		3SA48003 (AD87A001)	3PA61998 (AD92A057)	3SA48006 (AD87A001J)	3SA48005 (AD87A001)

∗The data is for reference purpose only.

4.9 Pressure Sensor Check

CHECK 12



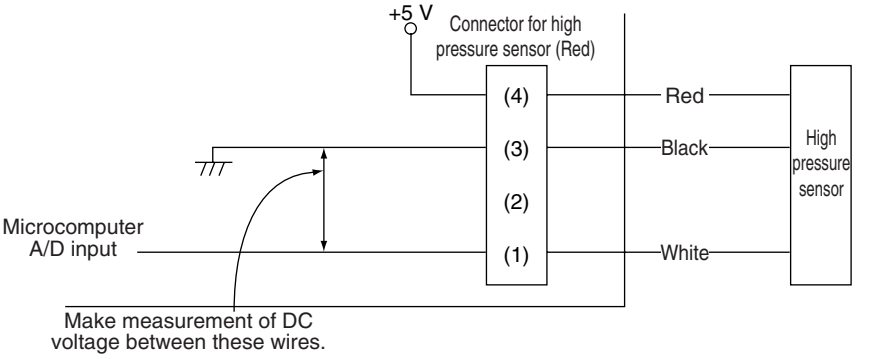
$$P_H\ (MPa) = \frac{4.15}{3.0} \times V_H - \frac{4.15}{3.0} \times 0.5$$

$$P_L\ (MPa) = \frac{1.7}{3.0} \times V_L - \frac{1.7}{3.0} \times 0.5$$

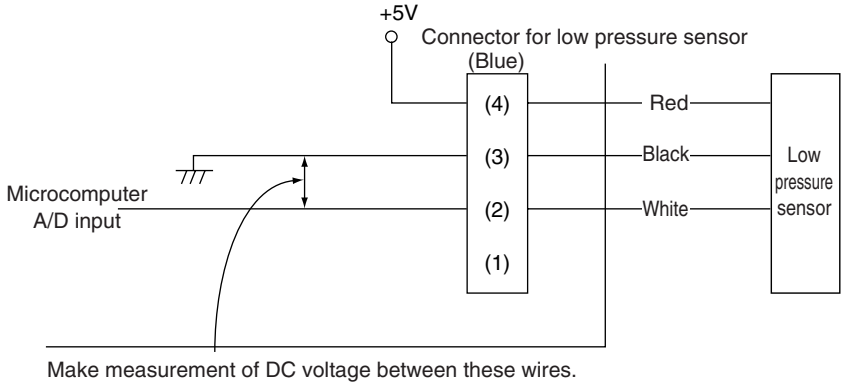
1 MPa = 145 psi

P_H : High pressure (MPa)
P_L : Low pressure (MPa)
V_H : Output Voltage (High Side) (VDC)
V_L : Output Voltage (Low Side) (VDC)

Voltage Measurement Point of the High Pressure Sensor



Voltage Measurement Point of the Low Pressure Sensor

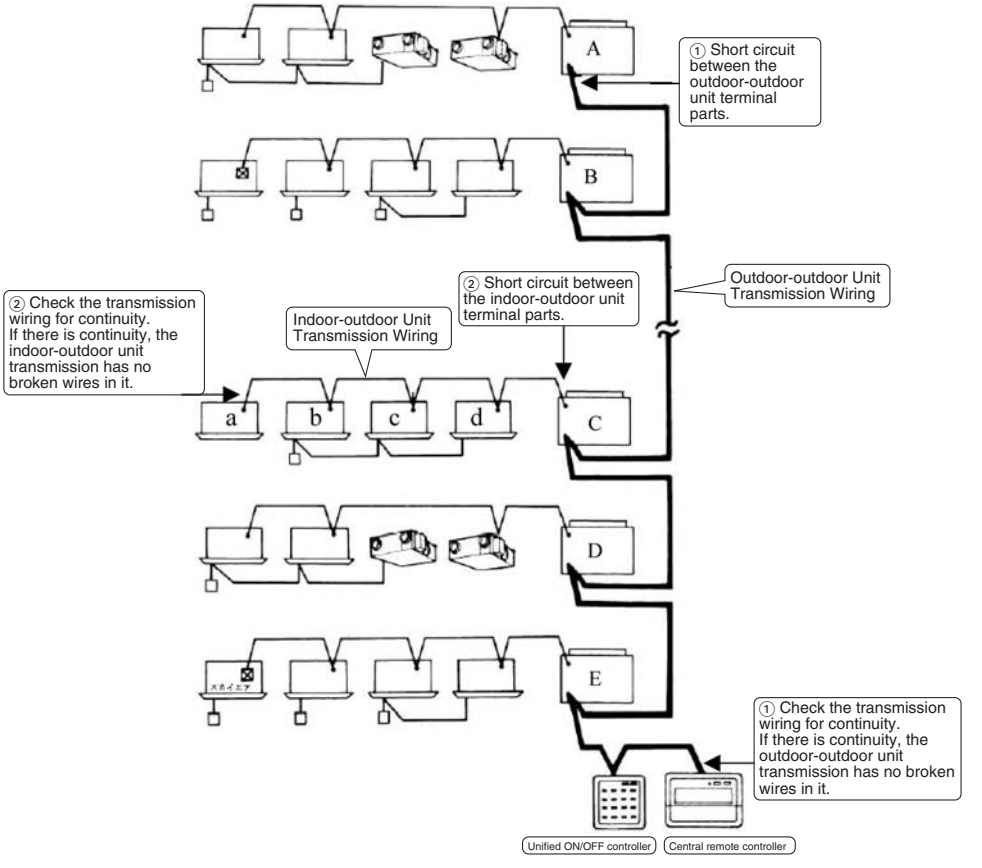


4.10 Broken Wire Check of the Relay Wires

CHECK 15

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 the "Outdoor Unit A" that is farthest from the central remote controller, and then conduct continuity checks between the transmission wiring terminal blocks F1 and F2 of the central remote controller using a multimeter. 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 the "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 as well, conduct continuity checks between the outdoor-outdoor unit terminal of the "Outdoor Unit E", between the outdoor-outdoor unit terminal of the "Outdoor Unit D", between the outdoor-outdoor unit terminal of the "Outdoor Unit C", … in the order described, thus identifying the place with continuity.
   If the place with continuity can be identified, there may be broken wires in places before the said place with continuity.

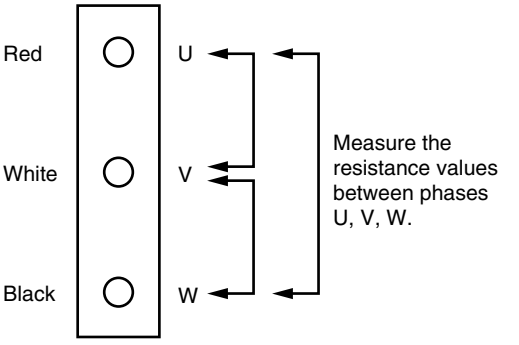
2. Procedure for checking indoor-outdoor unit transmission wiring for broken wires (for checking the indoor-outdoor unit transmission wiring of the "Outdoor Unit C" for broken wires)
   Turn OFF the power supply to all equipment, short circuit between the indoor-outdoor unit terminal F1 and F2 in the "Outdoor Unit C, and then conduct continuity checks between the transmission wirings F1 and F2 of the "Indoor Unit a" that is farthest from the "Outdoor Unit C" using a multimeter. If there is continuity between the said transmission wirings, 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 the "Outdoor Unit C" short circuited, identify the place with continuity in the transmission wiring of the "Indoor Unit b", transmission wiring of the "Indoor Unit c", and transmission wiring of the "Indoor Unit d" in the order described.
   If the place with continuity can be identified, there may be broken wires in places before the said place with continuity.



4.11 Fan Motor Connector Check (Power Supply Cable)

CHECK 16

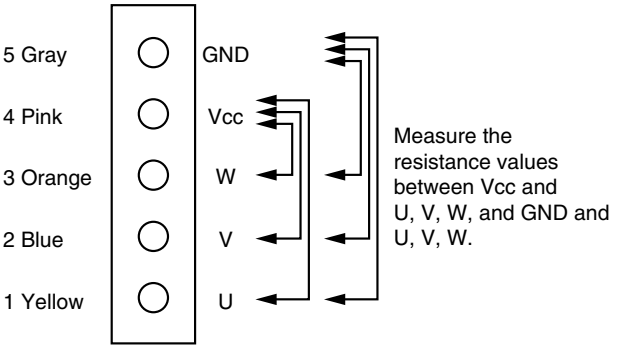
(1) Turn OFF the power supply.
Measure the resistance between phases of U, V, W at the motor side connectors (3-core wire) to check that the values are balanced and there is no short circuiting, while connector or relay connector is disconnected.



4.12 Fan Motor Connector Check (Signal Cable)

CHECK 17

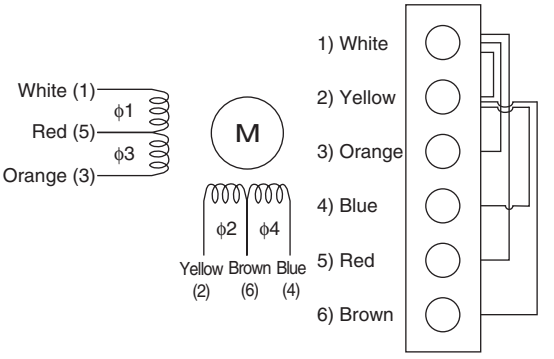
(1) Turn OFF the power supply.
(2) Measure the resistance between Vcc and each phase of U, V, W, and GND and each phase at the motor side connectors (5-core wire) to check that the values are balanced within the range of ± 20 %, while connector or relay connector is disconnected.
Furthermore, to use a multimeter for measurement, connect the probe of negative pole to Vcc and that of positive pole to GND.



4.13 Electronic Expansion Valve Coil Check

CHECK 18

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:

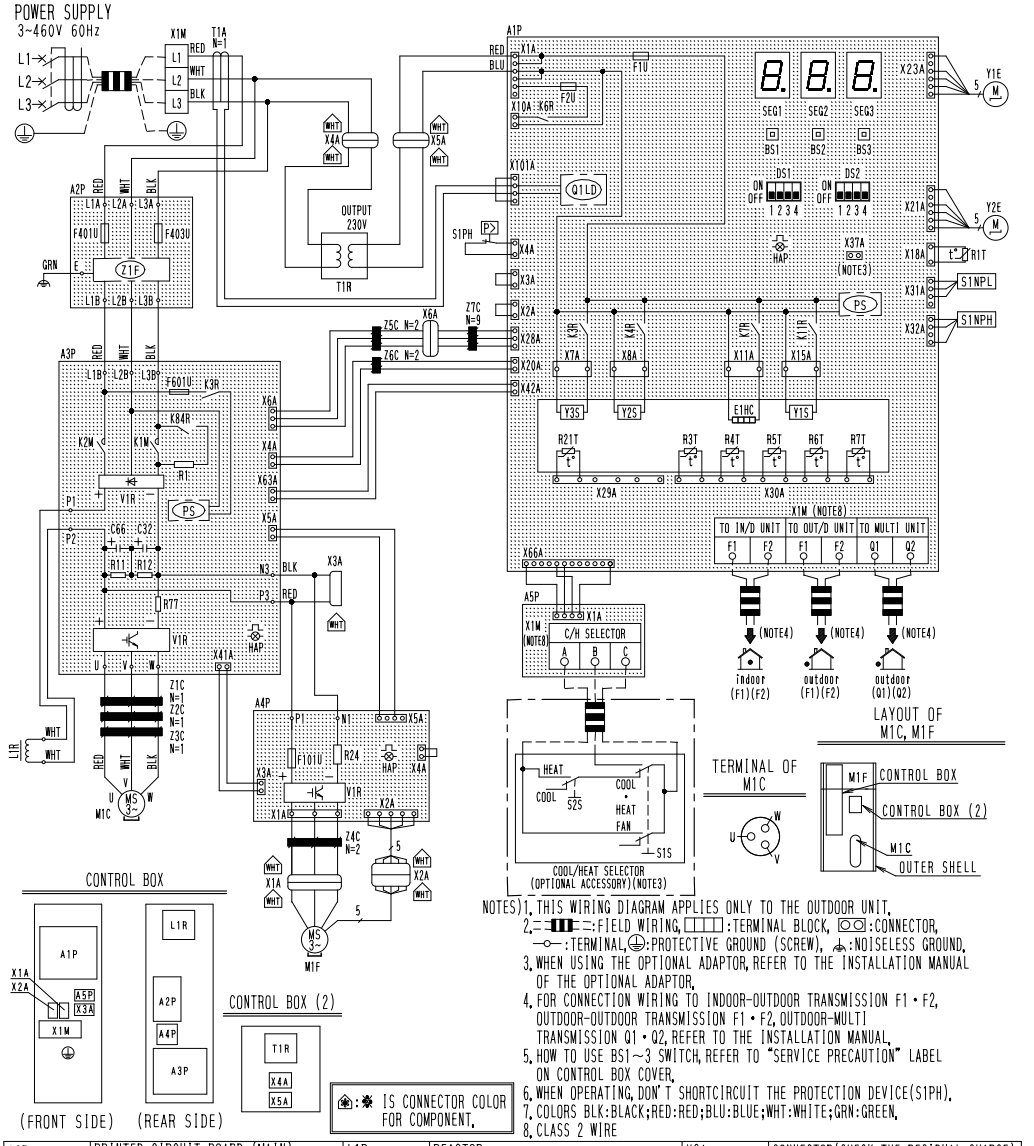
1. No continuity between (1) and (2)
2. Resistance value between (1) and (3) is approx. 300 Ω
3. Resistance value between (1) and (5) is approx. 150 Ω
4. Resistance value between (2) and (4) is approx. 300 Ω
5. Resistance value between (2) and (6) is approx. 150 Ω

Part 7
Appendix

1. Wiring Diagrams

1.1 Outdoor Unit

RXYQ72TAYDU



NOTES)
1. THIS WIRING DIAGRAM APPLIES ONLY TO THE OUTDOOR UNIT.
2. : FIELD WIRING, : TERMINAL BLOCK, : CONNECTOR, : TERMINAL, : PROTECTIVE GROUND (SCREW), : NOISELESS GROUND.
3. WHEN USING THE OPTIONAL ADAPTOR, REFER TO THE INSTALLATION MANUAL OF THE OPTIONAL ADAPTOR.
4. FOR CONNECTION WIRING TO INDOOR-OUTDOOR TRANSMISSION F1 • F2, OUTDOOR-OUTDOOR TRANSMISSION F1 • F2, OUTDOOR-MULTI TRANSMISSION Q1 • Q2, REFER TO THE INSTALLATION MANUAL.
5. HOW TO USE BS1~3 SWITCH, REFER TO "SERVICE PRECAUTION" LABEL ON CONTROL BOX COVER.
6. WHEN OPERATING, DON'T SHORTCIRCUIT THE PROTECTION DEVICE(S1PH).
7. COLORS BLK:BLACK;RED:RED;BLU:BLUE;WHT:WHITE;GRN:GREEN.
8. CLASS 2 WIRE

A1P	PRINTED CIRCUIT BOARD (MAIN)	L1R	REACTOR	X3A	CONNECTOR(CHECK THE RESIDUAL CHARGE)
A2P	PRINTED CIRCUIT BOARD (NOISE FILTER)	M1C	MOTOR (COMPRESSOR)	X4A, X5A	CONNECTOR(T1R)
A3P	PRINTED CIRCUIT BOARD (INV)	M1F	MOTOR (FAN)	X6A	CONNECTOR(Z7C)
A4P	PRINTED CIRCUIT BOARD (FAN)	PS	SWITCHING POWER SUPPLY(A1P, A3P)	X1M	TERMINAL STRIP (POWER SUPPLY)
A5P	PRINTED CIRCUIT BOARD (ABC I/P)	Q1LD	LEAKAGE DETECTION CIRCUIT(A1P)	X1M	TERMINAL STRIP (CONTROL)(A1P)
BS1~BS3	PUSH BUTTON SWITCH(A1P) (MODE, SET, RETURN)	R1T	THERMISTOR (AIR)(A1P)	X1M	TERMINAL STRIP (ABC I/P)(A5P)
		R21T	THERMISTOR(M1C DISCHARGE)	Y1E	ELECTRONIC EXPANSION VALVE (MAIN)
C32, C66	CAPACITOR(A3P)	R3T	THERMISTOR (ACCUMULATOR)	Y2E	ELECTRONIC EXPANSION VALVE (INJECTION)
DS1, DS2	DIP SWITCH(A1P)	R4T	THERMISTOR (HEAT EXC. LIQUID)		
E1HC	CRANKCASE HEATER	R5T	THERMISTOR (SUBCOOL LIQUID)	Y1S	SOLENOID VALVE (4WAY VALVE)
F1U, F2U	FUSE(A1P)	R6T	THERMISTOR (SUBCOOL GAS)	Y2S	SOLENOID VALVE (ACCUMULATOR OIL RETURN)
F101U	FUSE(A4P)	R7T	THERMISTOR (DEICER)		
F401U, F403U	FUSE(A2P)	R1	RESISTOR(CURRENT LIMITING) (A3P)	Y3S	SOLENOID VALVE(OS OIL RETURN)
F601U	FUSE(A3P)	R11, R12	RESISTOR(A3P)	Z1C~Z7C	NOISE FILTER (FERRITE CORE)
HAP	PILOTLAMP(A1P, A3P, A4P) (SERVICE MONITOR-GREEN)	R24	RESISTOR(CURRENT SENSOR)(A4P)	Z1F	NOISE FILTER(A2P) (WITH SURGE ABSORBER)
		R77	RESISTOR(CURRENT SENSOR)(A3P)		
K1M, K2M	MAGNETIC CONTACTOR(A3P)	S1NPH	PRESSURE SENSOR (HIGH)		
K3R	MAGNETIC RELAY(A3P)	S1NPL	PRESSURE SENSOR (LOW)		
K3R	MAGNETIC RELAY (Y3S)(A1P)	S1PH	PRESSURE SWITCH (HIGH)	CONNECTOR FOR OPTIONAL ACCESSORIES	
K84R	MAGNETIC RELAY (A3P)	SEG1~SEG3	7-SEGMENT DISPLAY(A1P)	X37A	CONNECTOR (POWER ADAPTER)(A1P)
K4R	MAGNETIC RELAY (Y2S)(A1P)	T1A	CURRENT SENSOR		
K6R	MAGNETIC RELAY (OPTION)(A1P)	T1R	TRANSFORMER(460V/230V)	COOL/HEAT SELECTOR	
K7R	MAGNETIC RELAY (E1HC)(A1P)	V1R	POWER MODULE(A3P)(A4P)	S1S	SELECTOR SWITCH(FAN/COOL • HEAT)
K11R	MAGNETIC RELAY (Y1S)(A1P)	X1A, X2A	CONNECTOR(M1F)	S2S	SELECTOR SWITCH(COOL/HEAT)

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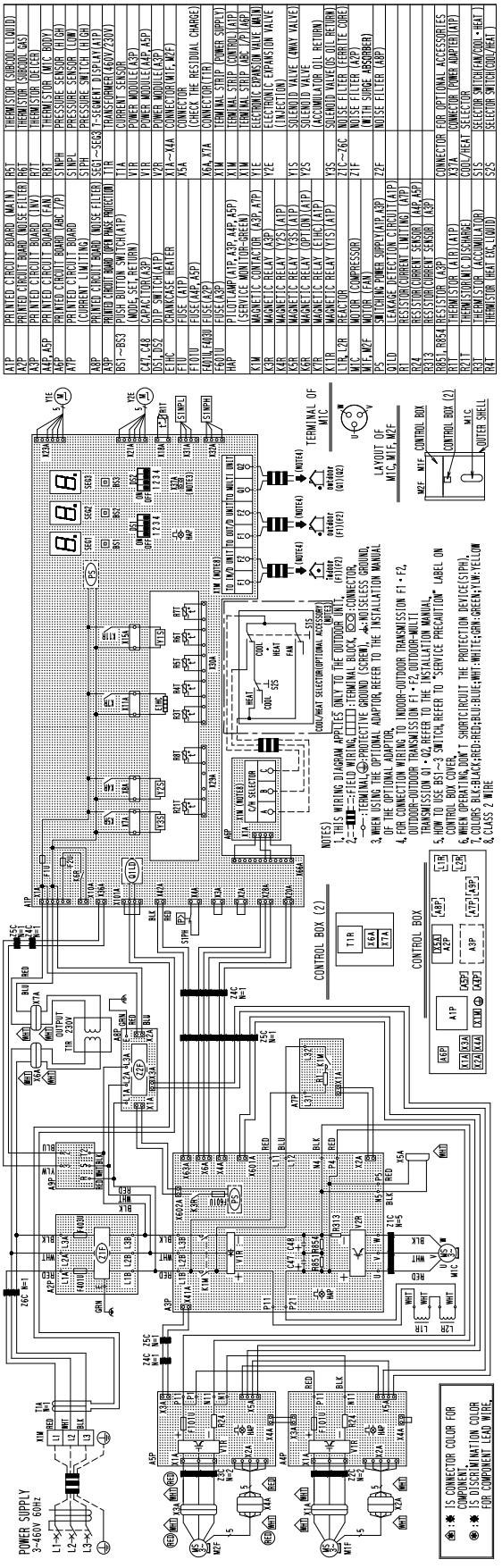
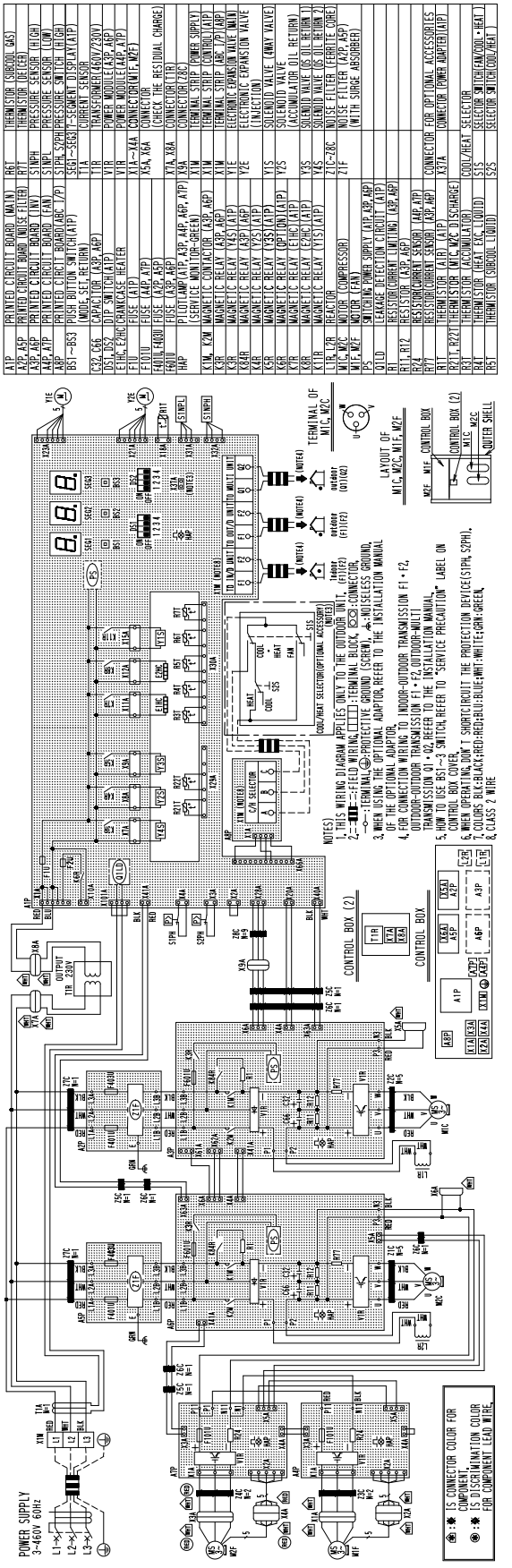
RXYQ96/120TAYDU

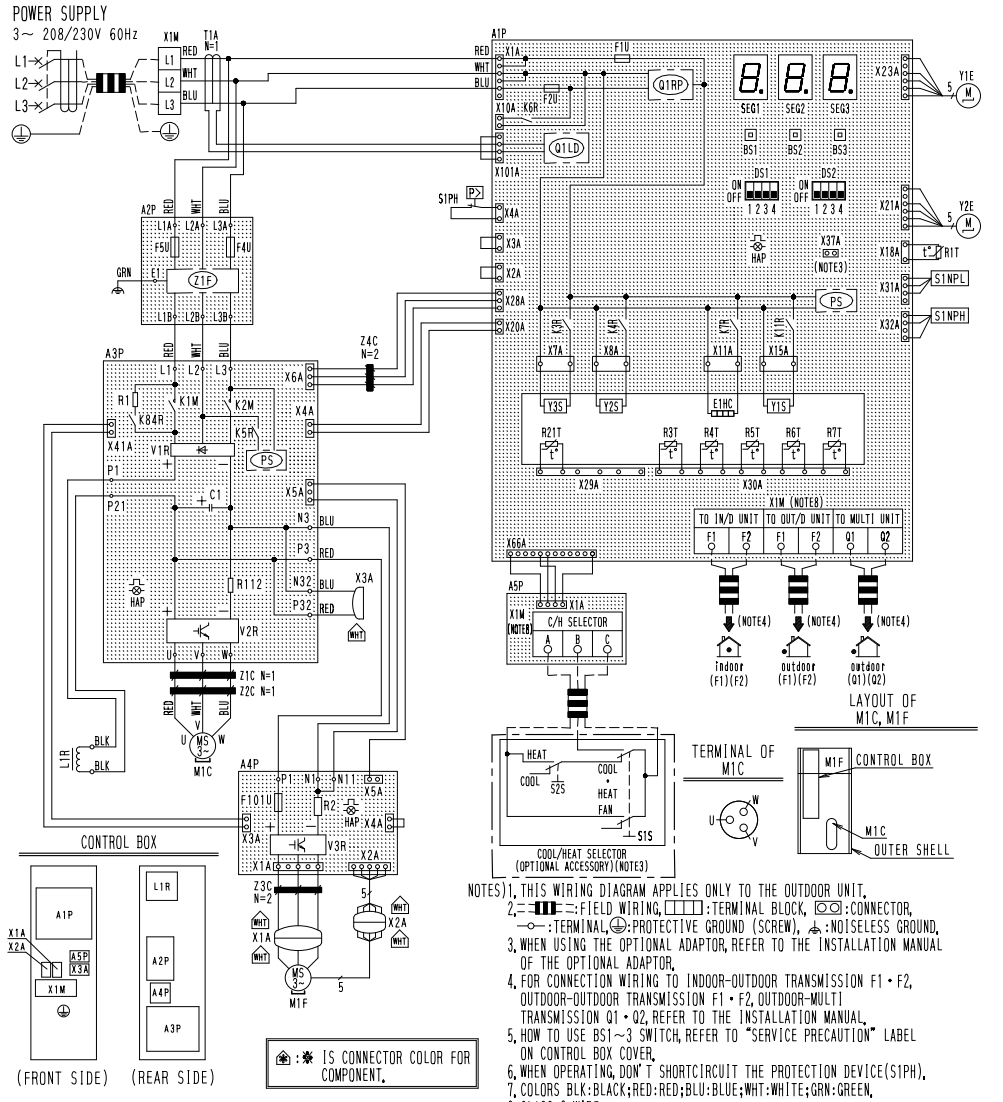


RXYQ144/168TAYDU



2D106440A

RXYQ72TATJU

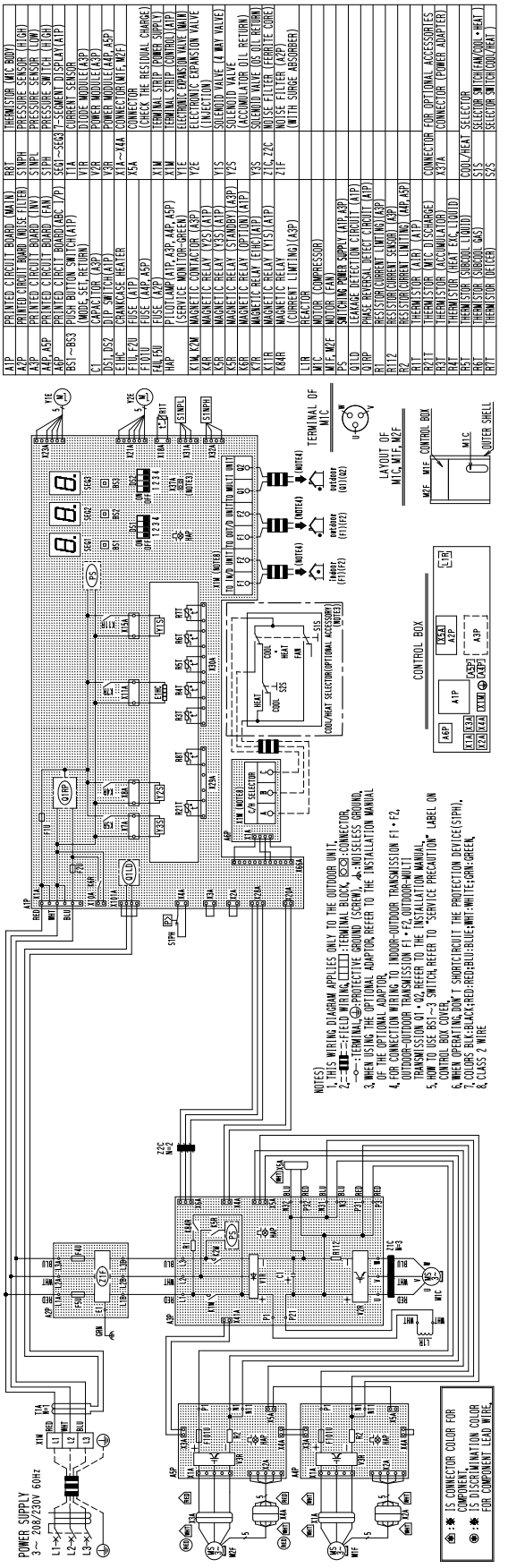


NOTES) 1. THIS WIRING DIAGRAM APPLIES ONLY TO THE OUTDOOR UNIT.
2. : FIELD WIRING, : TERMINAL BLOCK, : CONNECTOR, : TERMINAL, : PROTECTIVE GROUND (SCREW), : NOISELESS GROUND.
3. WHEN USING THE OPTIONAL ADAPTOR, REFER TO THE INSTALLATION MANUAL OF THE OPTIONAL ADAPTOR.
4. FOR CONNECTION WIRING TO INDOOR-OUTDOOR TRANSMISSION F1・F2, OUTDOOR-OUTDOOR TRANSMISSION F1・F2, OUTDOOR-MULTI TRANSMISSION Q1・Q2, REFER TO THE INSTALLATION MANUAL.
5. HOW TO USE BS1～3 SWITCH, REFER TO "SERVICE PRECAUTION" LABEL ON CONTROL BOX COVER.
6. WHEN OPERATING, DON'T SHORTCIRCUIT THE PROTECTION DEVICE(S1PH).
7. COLORS BLK:BLACK;RED:RED;BLU:BLUE;WHT:WHITE;GRN:GREEN.
8. CLASS 2 WIRE

A1P	PRINTED CIRCUIT BOARD (MAIN)	M1C	MOTOR (COMPRESSOR)	X3A	CONNECTOR(CHECK THE RESIDUAL CHARGE)
A2P	PRINTED CIRCUIT BOARD (NOISE FILTER)	M1F	MOTOR (FAN)	X1M	TERMINAL STRIP (POWER SUPPLY)
A3P	PRINTED CIRCUIT BOARD (INV)	PS	SWITCHING POWER SUPPLY(A1P, A3P)	X1M	TERMINAL STRIP (CONTROL)(A1P)
A4P	PRINTED CIRCUIT BOARD (FAN)	Q1LD	LEAKAGE DETECTION CIRCUIT(A1P)	X1M	TERMINAL STRIP (ABC I/P)(A5P)
A5P	PRINTED CIRCUIT BOARD (ABC I/P)	Q1RP	PHASE REVERSAL DETECT CIRCUIT(A1P)	Y1E	ELECTRONIC EXPANSION VALVE (MAIN)
BS1～BS3	PUSH BUTTON SWITCH(A1P) (MODE, SET, RETURN)	R1T	THERMISTOR (AIR)(A1P)	Y2E	ELECTRONIC EXPANSION VALVE (INJECTION)
		R21T	THERMISTOR(M1C DISCHARGE)		
C1	CAPACITOR(A3P)	R3T	THERMISTOR (ACCUMULATOR)	Y1S	SOLENOID VALVE (4WAY VALVE)
DS1, DS2	DIP SWITCH(A1P)	R4T	THERMISTOR (HEAT EXC. LIQUID)	Y2S	SOLENOID VALVE (ACCUMULATOR OIL RETURN)
E1HC	CRANKCASE HEATER	R5T	THERMISTOR (SUBCOOL LIQUID)		
F1U, F2U	FUSE(A1P)	R6T	THERMISTOR (SUBCOOL GAS)	Y3S	SOLENOID VALVE (OS OIL RETURN)
F101U	FUSE(A4P)	R7T	THERMISTOR (DEICER)	Z1C～Z4C	NOISE FILTER (FERRITE CORE)
F4U, F5U	FUSE(A2P)	R112	RESISTOR(CURRENT SENSOR)(A3P)	Z1F	NOISE FILTER(A2P) (WITH SURGE ABSORBER)
HAP	PILOTLAMP(A1P, A3P, A4P) (SERVICE MONITOR-GREEN)	R2	RESISTOR(CURRENT SENSOR)(A4P)		
		R1	RESISTOR(CURRENT LIMITING)(A3P)		
K1M, K2M	MAGNETIC CONTACTOR(A3P)	S1NPH	PRESSURE SENSOR (HIGH)		
K3R	MAGNETIC RELAY(Y3S)(A1P)	S1NPL	PRESSURE SENSOR (LOW)		
K4R	MAGNETIC RELAY (Y2S)(A1P)	S1PH	PRESSURE SWITCH (HIGH)		
K5R	MAGNETIC RELAY (STANDBY)(A3P)	SEG1～SEG3	7-SEGMENT DISPLAY(A1P)	CONNECTOR FOR OPTIONAL ACCESSORIES	
K6R	MAGNETIC RELAY (OPTION)(A1P)	T1A	CURRENT SENSOR	X37A	CONNECTOR (POWER ADAPTER)
K7R	MAGNETIC RELAY (E1HC)(A1P)	V1R	DIODE MODULE(A3P)		
K11R	MAGNETIC RELAY (Y1S)(A1P)	V2R	POWER MODULE(A3P)	COOL/HEAT SELECTOR	
K84R	MAGNETIC RELAY (CURRENT LIMITING)(A3P)	V3R	POWER MODULE(A4P)	S1S	SELECTOR SWITCH(FAN/COOL・HEAT)
L1R	REACTOR	X1A, X2A	CONNECTOR(M1F)	S2S	SELECTOR SWITCH(COOL/HEAT)

3D106435A

RXYQ96/120TATJU



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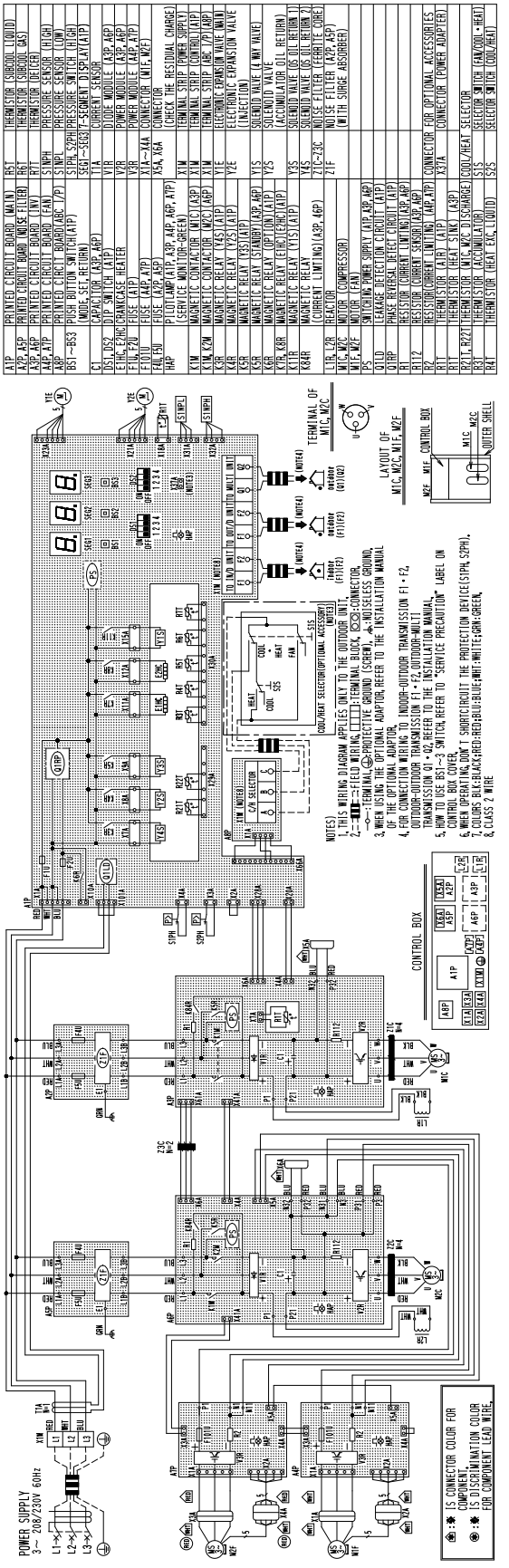
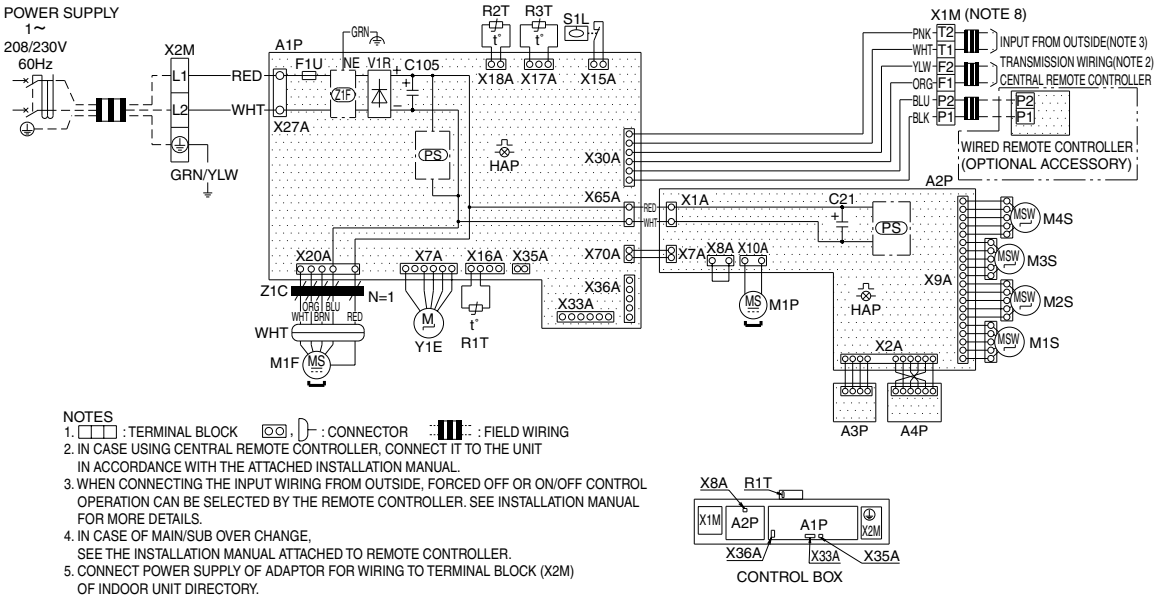


1.2 Indoor Unit

FXFQ07/09/12/15/18/24/30/36/48TVJU

INDOOR UNIT	
A1P	PRINTED CIRCUIT BOARD
A2P	PRINTED CIRCUIT BOARD
A3P	PRINTED CIRCUIT BOARD (INFRARED FLOOR SENSOR)
A4P	PRINTED CIRCUIT BOARD (INFRARED PRESENCE SENSOR)
C21	CAPACITOR
C105	CAPACITOR
F1U	FUSE(T, 3.15A, 250V)
HAP	FLASHING LAMP(A1P, A2P) (SERVICE MONITOR GREEN)
M1F	MOTOR(INDOOR FAN)
M1P	MOTOR(DRAIN PUMP)
M1S ~ M4S	MOTOR(SWING BLADE)
R1T	THERMISTOR(AIR)
R2T-R3T	THERMISTOR(COIL)
S1L	FLOAT SWITCH
V1R	DIODE BRIDGE
X1M	TERMINAL BLOCK
X2M	TERMINAL BLOCK
Y1E	ELECTRONIC EXPANSION VALVE
Z1C	FERRITE CORE
Z1F	NOISE FILTER
PS	POWER SUPPLY CIRCUIT(A1P, A2P)
CONNECTOR FOR OPTIONAL PARTS	
X8A	CONNECTOR(SELF CLEAN PANEL)
X33A	CONNECTOR (ADAPTOR FOR WIRING)
X35A	CONNECTOR (POWER SUPPLY FOR ADAPTOR)
X36A	CONNECTOR(SELF CLEAN PANEL)

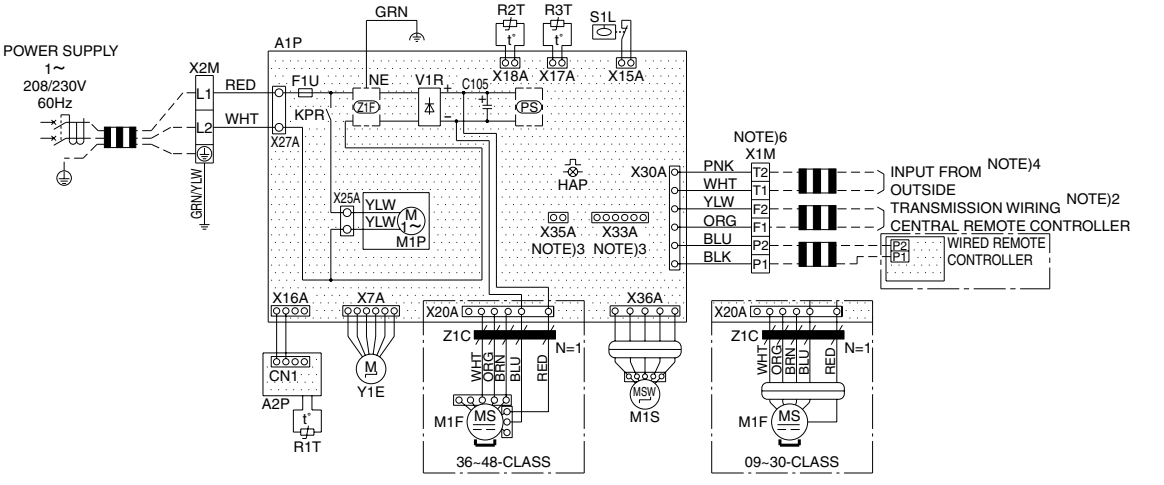


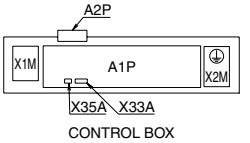
NOTES
1. : TERMINAL BLOCK , : CONNECTOR : FIELD WIRING
2. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTALLATION MANUAL.
3. WHEN CONNECTING THE INPUT WIRING FROM OUTSIDE, FORCED OFF OR ON/OFF CONTROL OPERATION CAN BE SELECTED BY THE REMOTE CONTROLLER. SEE INSTALLATION MANUAL FOR MORE DETAILS.
4. IN CASE OF MAIN/SUB OVER CHANGE, SEE THE INSTALLATION MANUAL ATTACHED TO REMOTE CONTROLLER.
5. CONNECT POWER SUPPLY OF ADAPTOR FOR WIRING TO TERMINAL BLOCK (X2M) OF INDOOR UNIT DIRECTORY.
6. X8A, X33A, X35A, X36A ARE CONNECTED WHEN THE OPTIONAL ACCESSORIES ARE BEING USED. IN CASE OF USING A SELF CLEAN PANEL, SEE THE WIRING DIAGRAM OF IT.
7. SYMBOLS SHOW AS FOLLOWS: RED: RED BLK: BLACK WHT: WHITE YLW: YELLOW GRN: GREEN ORG: ORANGE BRN: BROWN PNK: PINK BLU: BLUE
8. CLASS 2 WIRE

3D086460A

FXFQ09/12/18/24/30/36/48PVJU

INDOOR UNIT	
A1P	PRINTED CIRCUIT BOARD
A2P	PRINTED CIRCUIT BOARD
C105	CAPACITOR
F1U	FUSE (Ⓑ, 5A, 250V)
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR GREEN)
KPR	MAGNETIC RELAY (M1P)
M1F	MOTOR (INDOOR FAN)
M1P	MOTOR (DRAIN PUMP)
M1S	MOTOR (SWING FLAP)
R1T	THERMISTOR (AIR)
R2T	THERMISTOR (COIL LIQUID)
R3T	THERMISTOR (COIL GAS)
S1L	FLOAT SWITCH
V1R	DIODE BRIDGE
X1M	TERMINAL STRIP
X2M	TERMINAL STRIP
Y1E	ELECTRONIC EXPANSION VALVE
Z1C	FERRITE CORE
Z1F	NOISE FILTER
PS	POWER SUPPLY CIRCUIT
CONNECTOR FOR OPTIONAL ACCESSORIES	
X33A	CONNECTOR (ADAPTOR FOR WIRING)
X35A	CONNECTOR (GROUP CONTROL ADAPTOR)



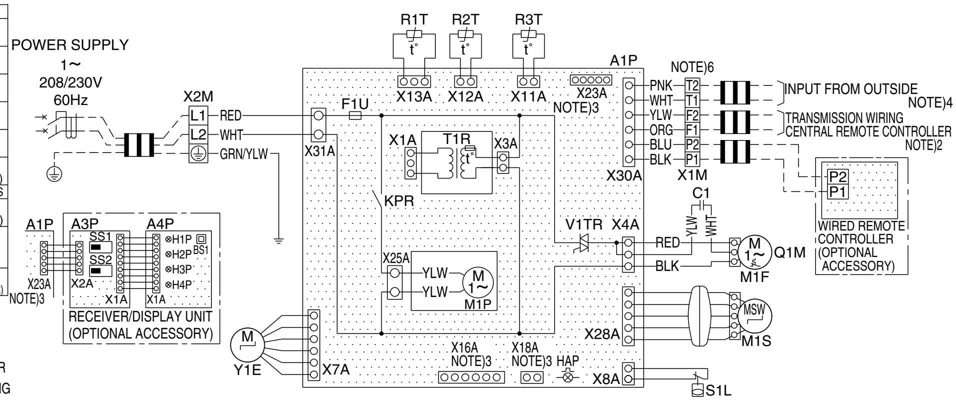


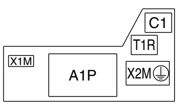
NOTES)
1. : TERMINAL, • : CONNECTOR, : FIELD WIRING, : PROTECTIVE GROUND (SCREW), : NOISELESS GROUND
2. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTALLATION MANUAL.
3. X33A AND X35A ARE CONNECTED WHEN THE OPTIONAL ACCESSORIES ARE USED.
4. WHEN CONNECTING THE INPUT WIRES FROM OUTSIDE, FORCED OFF OR ON/OFF CONTROL OPERATION CAN BE SELECTED BY THE REMOTE CONTROLLER. SEE INSTALLATION MANUAL FOR MORE DETAILS.
5. SYMBOLS SHOW AS FOLLOWS: RED: RED BLK: BLACK WHT: WHITE YLW: YELLOW GRN: GREEN ORG: ORANGE BRN: BROWN PNK: PINK GRY: GRAY BLU: BLUE
6. CLASS 2 WIRE

3D070301G

FXZQ07/09/12/15/18MVJU9

A1P	PRINTED CIRCUIT BOARD	BS1	BS BUTTON (ON/OFF)
C1	CAPACITOR (M1F)	H1P	PILOT LAMP (ON-RED)
F1U	FUSE (B, 5A, 250V)		
HAP	PILOT LAMP (SERVICE MONITOR GREEN)	H2P	PILOT LAMP (TIMER-GREEN)
KPR	MAGNETIC RELAY (M1P)	H3P	PILOT LAMP (FILTER SIGN-RED)
M1F	FAN MOTOR		
M1P	DRAIN PUMP MOTOR	H4P	PILOT LAMP (DEFROST-ORANGE)
M1S	SWING LOUVER MOTOR		
Q1M	THERMAL PROTECTOR (M1F EMBEDDED)	SS1	SELECTOR SWITCH (MAIN/SUB)
R1T	THERMISTOR (AIR)		
R2T	THERMISTOR (COIL-LIQUID)	SS2	SELECTOR SWITCH (WIRELESS ADDRESS SET)
R3T	THERMISTOR (COIL-GAS)		
S1L	FLOAT SWITCH	CONNECTOR FOR OPTIONAL PARTS	
T1R	TRANSFORMER (208-230V/25V)	X16A	CONNECTOR (ADAPTOR FOR WIRING)
V1TR	TRIAC		
X1M	TERMINAL BLOCK	X18A	CONNECTOR (WIRING ADAPTOR FOR ELECTRICAL APPENDICES)
X2M	TERMINAL BLOCK		
Y1E	ELECTRONIC EXPANSION VALVE		
WIRELESS REMOTE CONTROLLER (RECEIVER/DISPLAY UNIT)		X23A	CONNECTOR (WIRELESS REMOTE CONTROLLER)
A3P	PRINTED CIRCUIT BOARD		
A4P	PRINTED CIRCUIT BOARD		





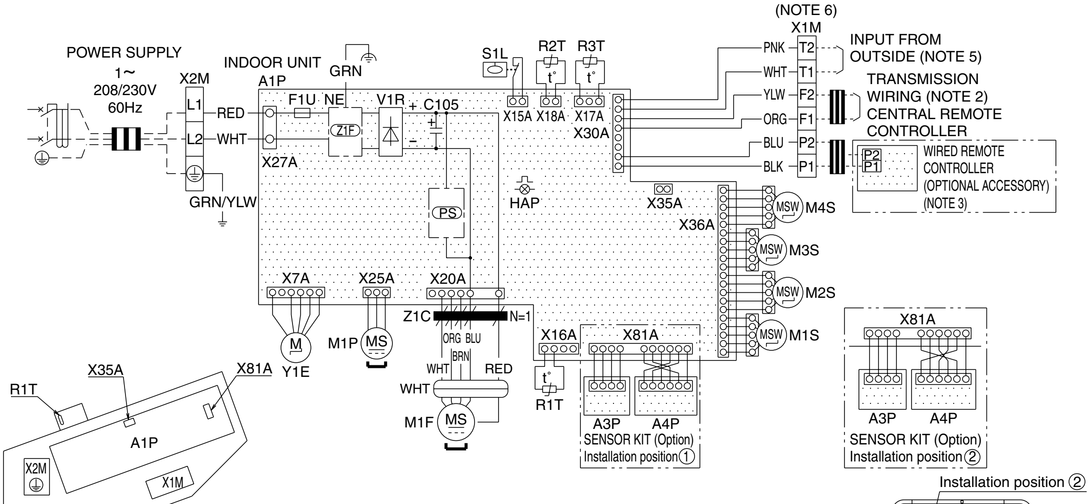
CONTROL BOX

NOTES)
1. : TERMINAL
: CONNECTOR
: FIELD WIRING
: PROTECTIVE GROUND (SCREW)
2. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTALLATION MANUAL.
3. X16A, X18A AND X23A ARE CONNECTED WHEN THE OPTIONAL ACCESSORIES ARE USED.
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 TO THE UNIT.
5. SYMBOLS SHOW AS FOLLOWS: RED: RED BLK: BLACK WHT: WHITE YLW: YELLOW PNK: PINK ORG: ORANGE GRN: GREEN BLU: BLUE
6. CLASS 2 WIRE

3D080350C

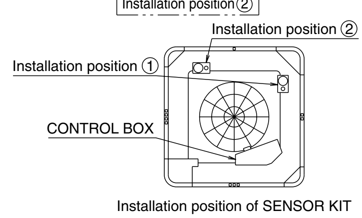
FXUQ18/24/30/36PVJU

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 M3S•M4S	MOTOR (SWING BLADE)
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)



CONTROL BOX

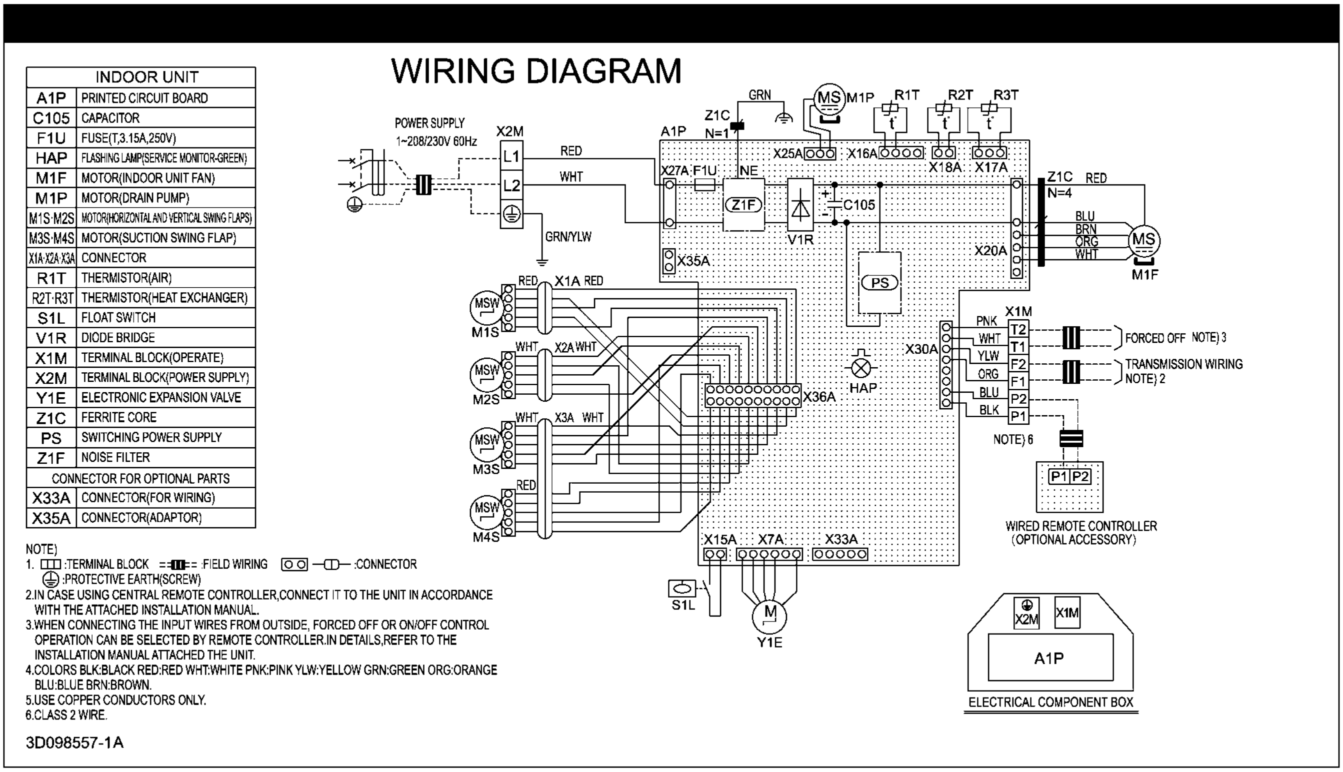
NOTES
1. : TERMINAL BLOCK , : CONNECTOR : FIELD WIRING
2. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTALLATION MANUAL.
3. IN CASE OF MAIN/SUB CHANGEOVER, SEE THE INSTALLATION MANUAL ATTACHED TO REMOTE CONTROLLER.
4. SYMBOLS SHOW AS FOLLOWS: BLK: BLACK RED: RED BLU: BLUE WHT: WHITE YLW: YELLOW GRN: GREEN ORG: ORANGE BRN: BROWN PNK: PINK.
5. WHEN CONNECTING THE INPUT WIRING FROM OUTSIDE, FORCED OFF OR ON/OFF CONTROL OPERATION CAN BE SELECTED BY THE REMOTE CONTROLLER. SEE INSTALLATION MANUAL FOR MORE DETAILS.
6. CLASS 2 WIRE



Installation position of SENSOR KIT

3D090218

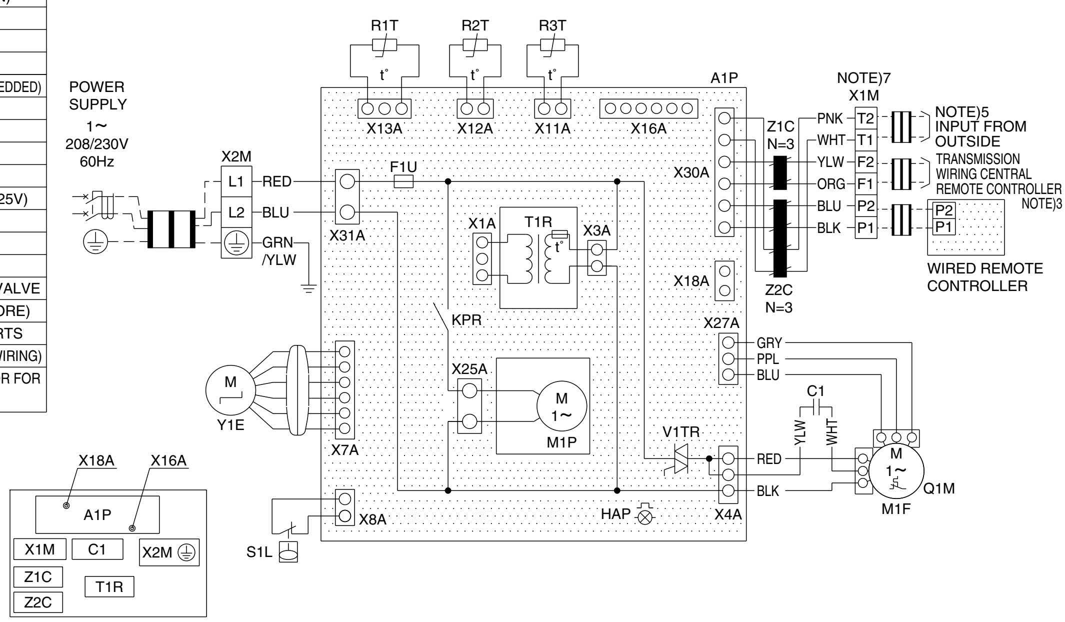
FXEQ07/09/12/15/18/24PVJU



3D098557A

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)

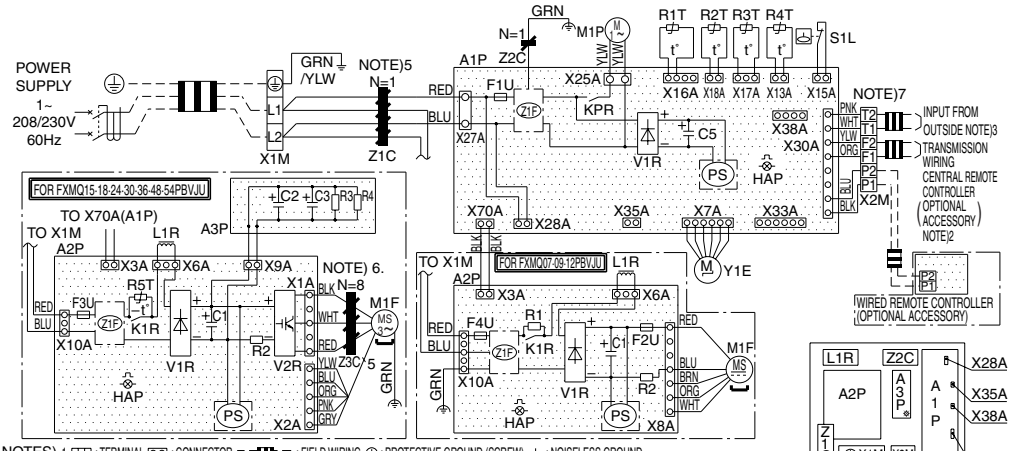


NOTES)
1. : TERMINAL
: CONNECTOR
2. : FIELD WIRING
3. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTALLATION MANUAL.
4. REMOTE CONTROLLER MODEL VARIES ACCORDING TO THE COMBINATION SYSTEM, CONFIRM ENGINEERING DATA AND CATALOGS, ETC. BEFORE CONNECTING.
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.
6. SYMBOLS SHOW AS FOLLOWS: RED: RED BLK: BLACK WHT: WHITE YLW: YELLOW PPL: PURPLE GRY: GRAY BLU: BLUE PNK: PINK ORG: ORANGE GRN: GREEN
7. CLASS 2 WIRE

3D050501B

FXMQ07/09/12/15/18/24/30/36/48/54PBVJU

INDOOR UNIT		R3T	THERMISTOR (GAS)
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, Z2C, Z3C	FERRITE CORE
K1R	MAGNETIC RELAY		
L1R	REACTOR	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)		

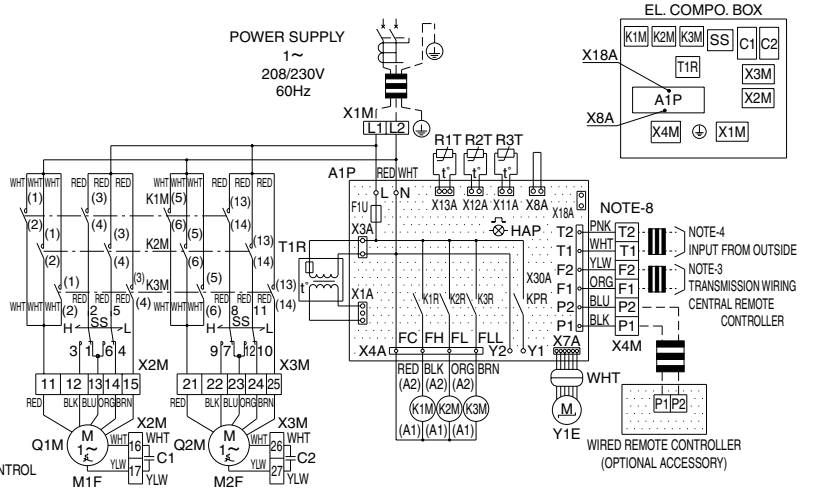


NOTES)
1. : TERMINAL, : CONNECTOR, : FIELD WIRING, : PROTECTIVE GROUND (SCREW), : NOISELESS GROUND
2. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTALLATION MANUAL.
3. WHEN CONNECTING THE INPUT WIRES FROM OUTSIDE, FORCED OFF OR ON/OFF CONTROL OPERATION CAN BE SELECTED BY REMOTE CONTROLLER. IN DETAILS, REFER TO THE INSTALLATION MANUAL ATTACHED THE UNIT.
4. COLORS BLK: BLACK RED:RED BLU:BLUE WHT:WHITE PNK:PINK YLW:YELLOW BRN:BROWN GRY:GRAY GRN:GREEN ORG:ORANGE.
5. FOR FXMQ15·18·24·30·36·48·54·PBVJU ARE N=2
6. ONLY FOR FXMQ54PBVJU
7. CLASS 2 WIRE

3D093209A

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)		
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR-GREEN)	T1R	TRANSFORMER (208V/230V 25VA)
		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.

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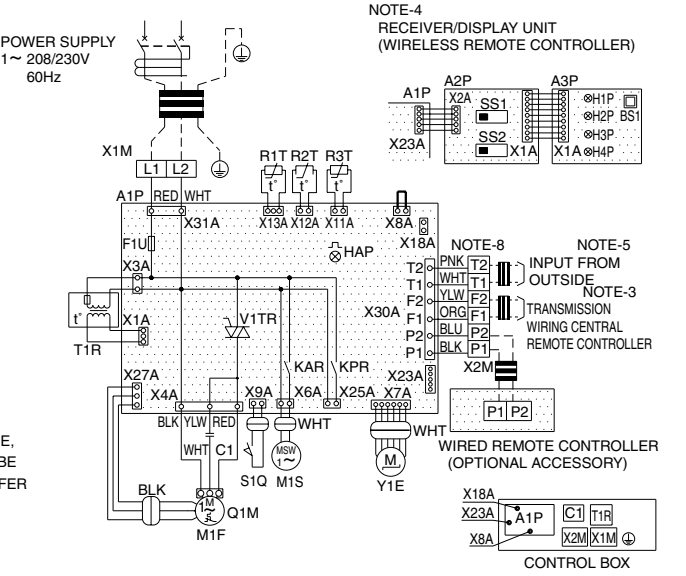
FXHQ12/24/36MVJU

INDOOR UNIT	
A1P	PRINTED CIRCUIT BOARD
C1	CAPACITOR (M1F)
F1U	FUSE (Ⓑ5A, 250V)
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR-GREEN)
KAR	MAGNETIC RELAY (M1S)
KPR	MAGNETIC RELAY
M1F	MOTOR (INDOOR FAN)
M1S	MOTOR (SWING FLAP)
Q1M	THERMO. SWITCH (M1F EMBEDDED)
R1T	THERMISTOR (AIR)
R2T	THERMISTOR (COIL LIQUID)
R3T	THERMISTOR (COIL GAS)
S1Q	LIMIT SWITCH (SWING FLAP)
T1R	TRANSFORMER (208-230V/25V)
V1TR	TRIAC
X1M	TERMINAL BLOCK (POWER)
X2M	TERMINAL BLOCK (CONTROL)
Y1E	ELECTRONIC EXPANSION VALVE
RECEIVER/DISPLAY UNIT (ATTACHED TO WIRELESS REMOTE CONTROLLER)	
A2P	PRINTED CIRCUIT BOARD
A3P	PRINTED CIRCUIT BOARD
BS1	BS BUTTON (ON/OFF)
H1P	LIGHT EMITTING DIODE (ON-RED)
H2P	LIGHT EMITTING DIODE (TIMER-GREEN)
H3P	LIGHT EMITTING DIODE (FILTER SIGN-RED)
H4P	LIGHT EMITTING DIODE (DEFROST-ORANGE)
SS1	SELECTOR SWITCH (MAIN/SUB)
SS2	SELECTOR SWITCH (WIRELESS ADDRESS SET)
CONNECTOR FOR OPTIONAL PARTS	
X18A	CONNECTOR (WIRING ADAPTOR FOR ELECTRICAL APPENDICES)
X23A	CONNECTOR (WIRELESS REMOTE CONTROLLER)

NOTES)
1. : TERMINAL BLOCK, : CONNECTOR
   : SHORT CIRCUIT CONNECTOR
2. : FIELD WIRING
3. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTALLATION MANUAL.
4. X23A IS CONNECTED WHEN THE WIRELESS REMOTE CONTROLLER KIT IS BEING USED.
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 THE UNIT.
6. SYMBOLS SHOW AS FOLLOWS.
   (BLU: BLUE BLK: BLACK ORG: ORANGE PNK: PINK
   RED: RED WHT: WHITE YLW: YELLOW)
7. USE COPPER CONDUCTORS ONLY.
8. CLASS 2 WIRE



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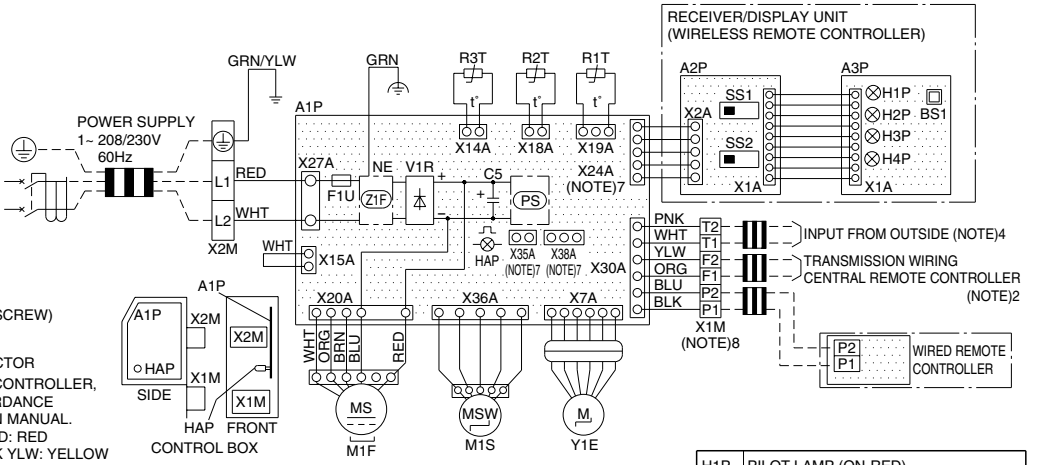
FXAQ07/09/12/18/24PVJU



(NOTES)
1. : TERMINAL
   : FIELD WIRING
   : CONNECTOR
   : CONNECTOR
   : PROTECTIVE GROUND (SCREW)
   : NOISELESS GROUND
   : SHORT CIRCUIT CONNECTOR
2. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTALLATION MANUAL.
3. SYMBOLS SHOWS AS FOLLOWS: RED: RED WHT: WHITE GRN: GREEN PNK: PINK YLW: YELLOW BLK: BLACK ORG: ORANGE BRN: BROWN BLU: BLUE
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 TO THE UNIT.
5. REMOTE CONTROLLER MODEL VARIES ACCORDING TO THE COMBINATION SYSTEM, CONFIRM ENGINEERING DATA AND CATALOGS, ETC. BEFORE CONNECTING.
6. CONFIRM THE METHOD OF SETTING THE SELECTOR SWITCH (SS1, SS2) OF WIRELESS REMOTE CONTROLLER BY INSTALLATION MANUAL AND ENGINEERING DATA, ETC.
7. X15A, X24A, X35A AND X38A ARE CONNECTED WHEN THE OPTIONAL ACCESSORIES ARE BEING USED.
8. CLASS 2 WIRE

INDOOR UNIT					
A1P	PRINTED CIRCUIT BOARD	V1R	DIODE BRIDGE	H1P	PILOT LAMP (ON-RED)
C5	CAPACITOR	X1M	TERMINAL BLOCK (CONTROL)	H2P	PILOT LAMP (TIMER-GREEN)
F1U	FUSE (T3.15AH 250V)	X2M	TERMINAL BLOCK (POWER)	H3P	PILOT LAMP (FILTER SIGN-RED)
HAP	FLASHING LAMP (SERVICE MONITOR GREEN)	Y1E	ELECTRONIC EXPANSION VALVE	H4P	PILOT LAMP (DEFROST-ORANGE)
		Z1F	NOISE FILTER	SS1	SELECTOR SWITCH (MAIN/SUB)
		PS	SWITCHING POWER SUPPLY	SS2	SELECTOR SWITCH (WIRELESS ADDRESS SET)
M1F	MOTOR (INDOOR FAN)	RECEIVER/DISPLAY UNIT (ATTACHED TO WIRELESS REMOTE CONTROLLER)		CONNECTOR FOR OPTIONAL PARTS	
M1S	MOTOR (SWING FLAP)			X15A	CONNECTOR (FLOAT SWITCH)
R1T	THERMISTOR (AIR)	A2P	PRINTED CIRCUIT BOARD	X24A	CONNECTOR (WIRELESS REMOTE CONTROLLER)
R2T	THERMISTOR (COIL LIQUID PIPE)	A3P	PRINTED CIRCUIT BOARD	X35A	CONNECTOR (GROUP CONTROL ADAPTOR)
R3T	THERMISTOR (COIL GAS PIPE)	BS1	BS BUTTON (ON/OFF)	X38A	CONNECTOR (ADAPTOR FOR MULTI TENANT)

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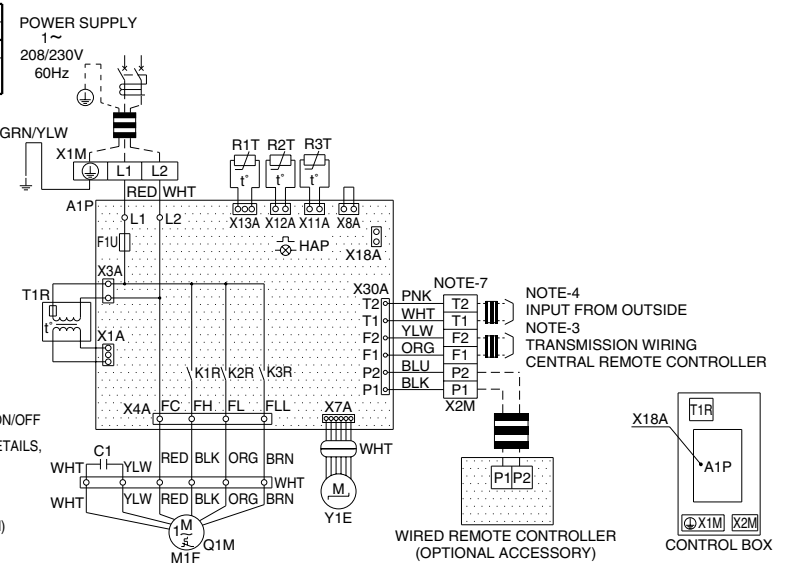
FXLQ07MVJU9, FXLQ09/12/18/24MVJU
FXNQ07MVJU9, FXNQ09/12/18/24MVJU

INDOOR UNIT	
A1P	PRINTED CIRCUIT BOARD
C1	CAPACITOR (M1F)
F1U	FUSE (Ⓑ, 5A, 250V)
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR-GREEN)
K1R-K3R	MAGNETIC RELAY (M1F)
M1F	MOTOR (INDOOR FAN)
Q1M	THERMO. SWITCH (M1F EMBEDDED)
R1T	THERMISTOR (AIR)
R2T-R3T	THERMISTOR (COIL)
T1R	TRANSFORMER (208-230V/25V)
X1M	TERMINAL BLOCK (POWER)
X2M	TERMINAL BLOCK (CONTROL)
Y1E	ELECTRONIC EXPANSION VALVE
CONNECTOR FOR OPTIONAL PARTS	
X18A	CONNECTOR (WIRING ADAPTOR FOR ELECTRICAL APPENDICES)

NOTES)

1. □□□ : TERMINAL BLOCK, ⊙⊙ , ⊃— : CONNECTOR, —o— TERMINAL
2. ⋮▮▮⋮ : FIELD WIRING, ⊙⊙ SHORT CIRCUIT CONNECTOR
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 TO THE UNIT.
5. SYMBOLS SHOW AS FOLLOWS. (PNK: PINK WHT: WHITE YLW: YELLOW ORG: ORANGE BLU: BLUE BLK: BLACK RED: RED BRN: BROWN GRN: GREEN)
6. USE COPPER CONDUCTORS ONLY.
7. CLASS 2 WIRE.



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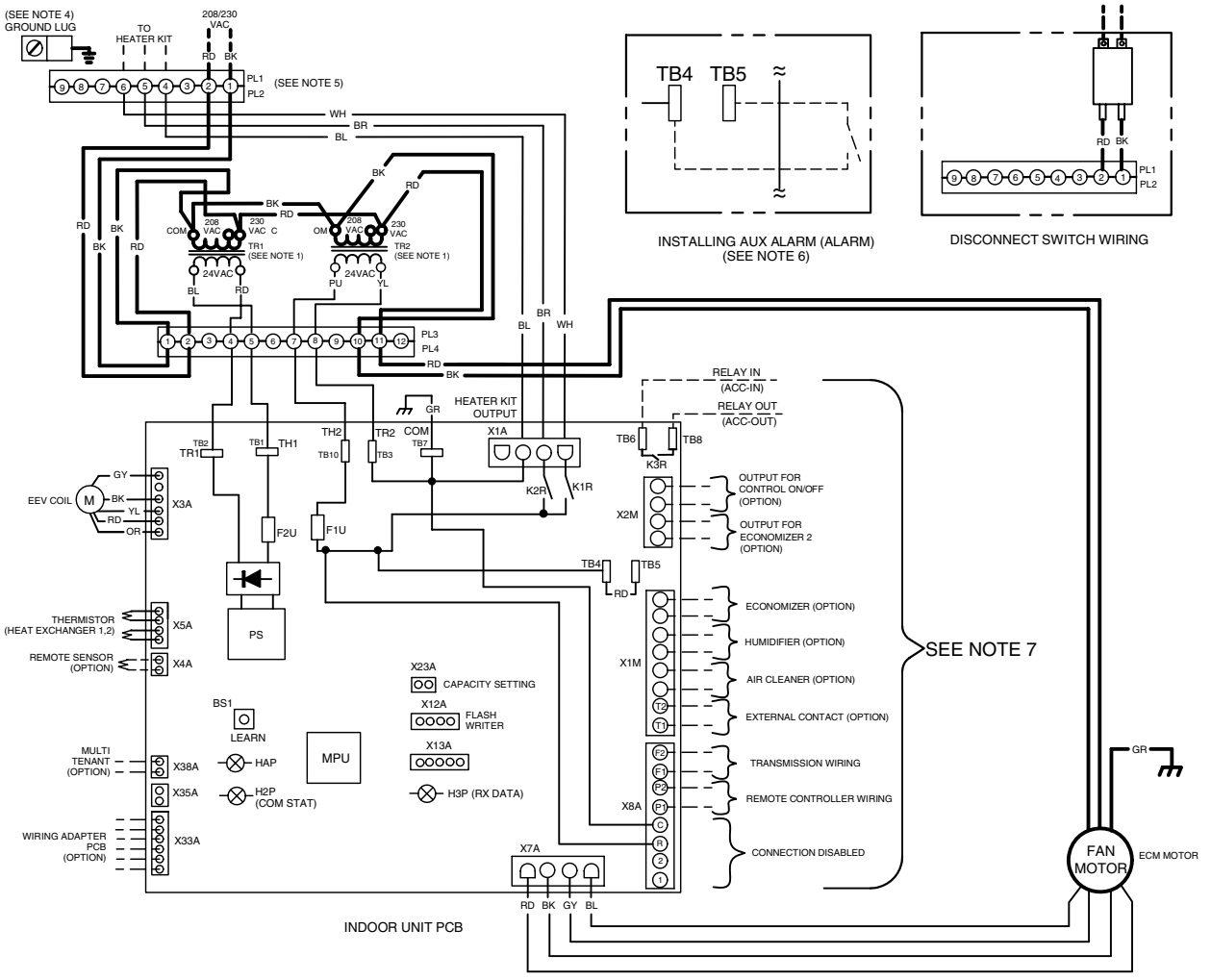
FXTQ09/12/18/24/30/36/42/48/54/60TAVJUA(D)



NOTES:
1. PLACE RED WIRES ON 208 V TERMINAL OF 2-TRANSFORMER (TR1/TR2) FOR 208 VAC OPERATION.
2. MANUFACTURER'S SPECIFIED REPLACEMENT PARTS MUST BE USED WHEN SERVICING.
3. IF ANY OF THE ORIGINAL WIRES AS SUPPLIED WITH THIS UNIT MUST BE REPLACED, IT MUST BE REPLACED WITH WIRING MATERIAL HAVING A TEMPERATURE RATING OF AT LEAST 105˚C. USE COPPER CONDUCTORS ONLY.
4. UNIT MUST BE PERMANENTLY GROUNDED AND CONFIRM TO N.E.C AND LOCAL CODES.
5. DISCARD CONNECTOR PL1 WHEN INSTALLING OPTIONAL HEAT KIT.
6. REMOVE SHORT RED CIRCUITING WIRE AND PUT AUX ALARM SWITCH WHEN INSTALLING AUX ALARM SWITCH.
7. USE N.E.C CLASS 2 WIRE.

INTEGRATED CONTROL:
- LOW VOLTAGE
- LOW VOLTAGE FIELD
- HIGH VOLTAGE
- HIGH VOLTAGE FIELD
- JUNCTION
- TERMINAL
- PLUG CONNECTION
- EQUIPMENT GND
- FIELD GROUND

COLOR CODES:
- BL - BLUE
- RD - RED
- YL - YELLOW
- OR - ORANGE
- BK - BLACK
- GY - GREY
- BR - BROWN
- GR - GREEN
- WH - WHITE
- PU - PURPLE

COMPONENT CODES:
- PL1, PL2 — POWER/HEATER KIT/ DISCONNECT SWITCH CONNECTOR
- TR1, TR2 — TRANSFORMER
- F1U, F2U — FUSE LINK
- PL3, PL4 — TRANSFORMER CONNECTOR

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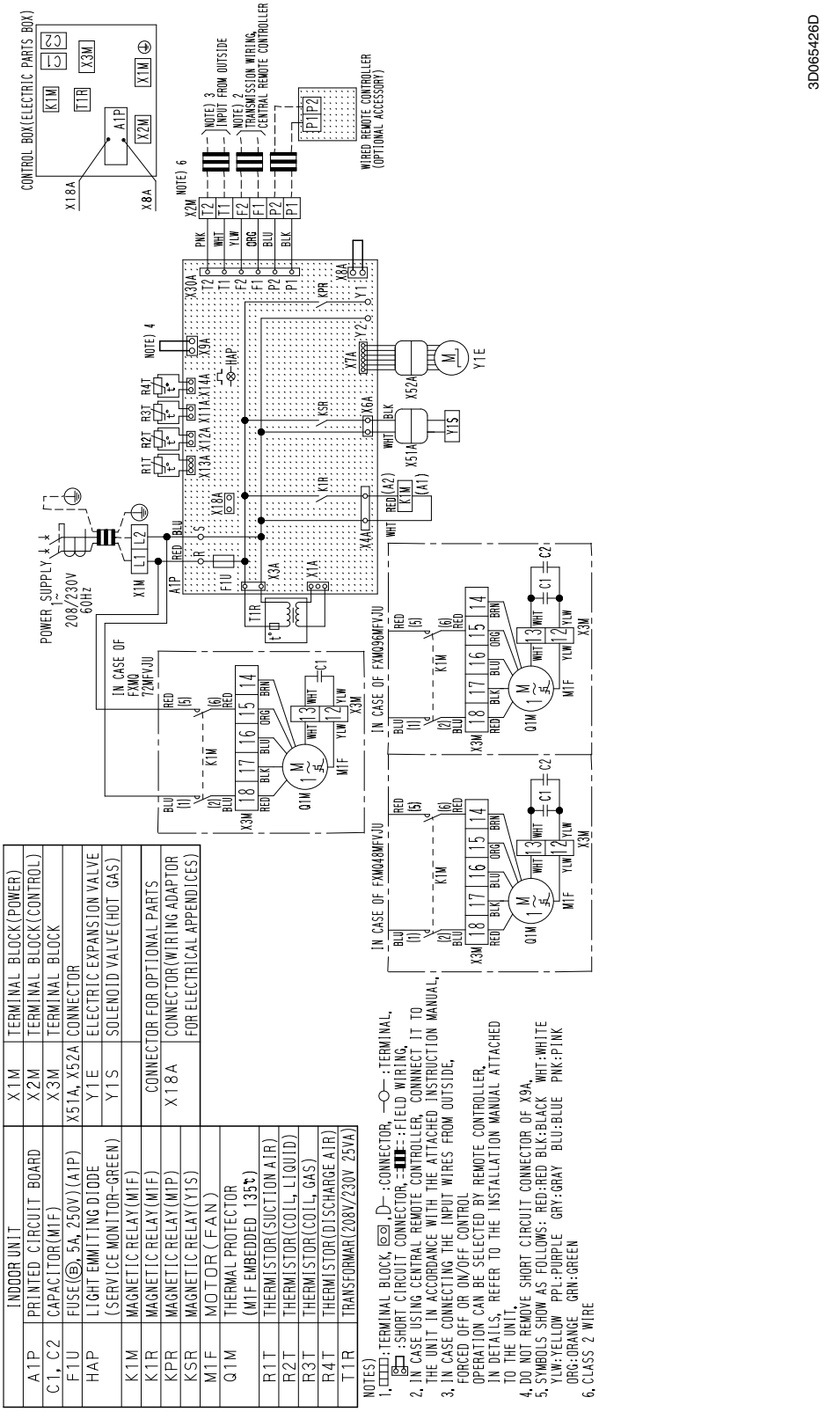
1.3 Air Treatment Equipment

1.3.1 Outdoor-air Processing Unit

FXMQ48/72/96MFVJU

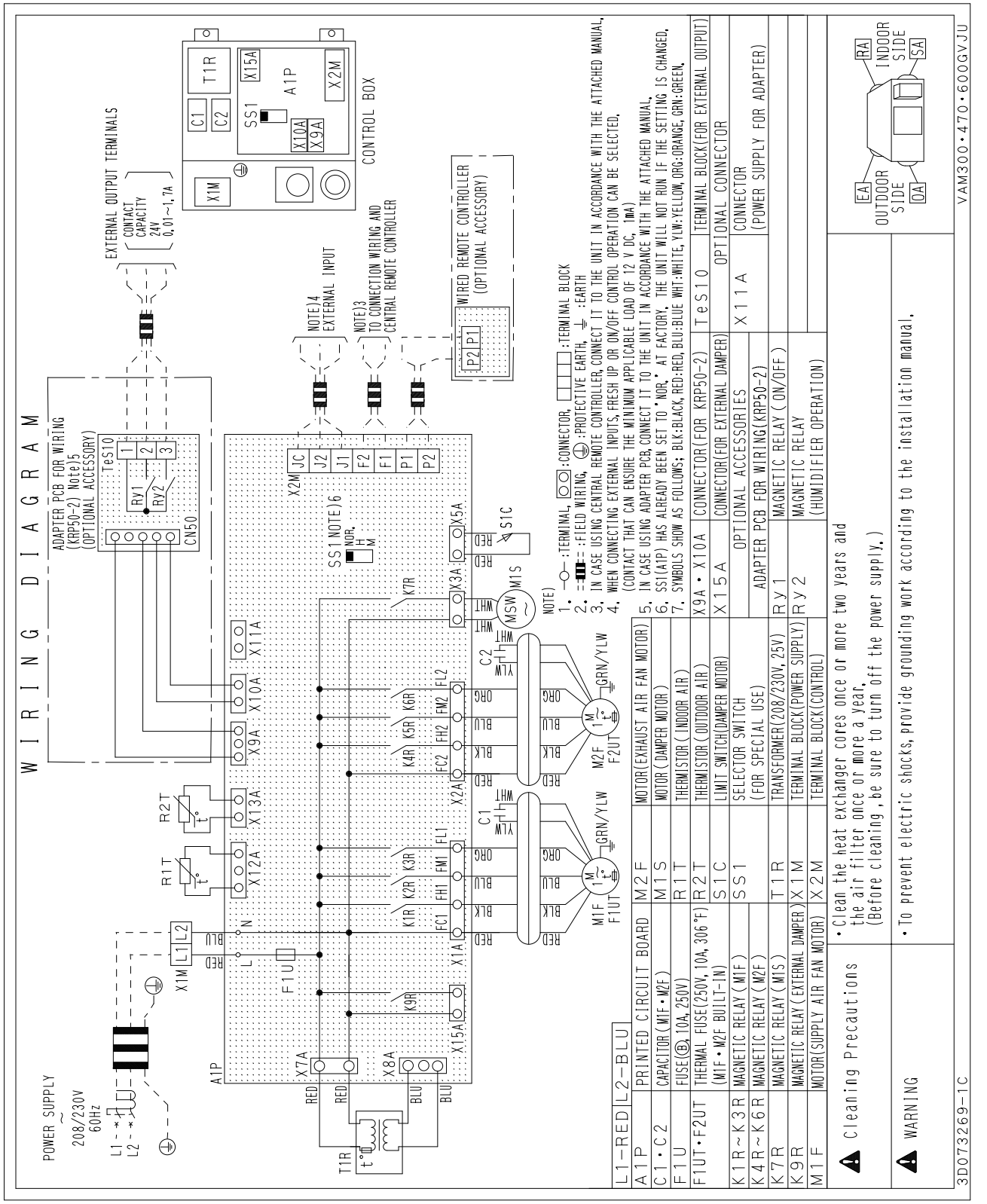


	INDOOR UNIT	X1M	TERMINAL BLOCK(POWER)
A1P	PRINTED CIRCUIT BOARD	X2M	TERMINAL BLOCK(CONTROL)
C1, C2	CAPACITOR(M1F)	X3M	TERMINAL BLOCK
F1U	FUSE(Ⓑ, 5A, 250V)(A1P)	X51A, X52A	CONNECTOR
HAP	LIGHT EMMITING DIODE (SERVICE MONITOR-GREEN)	Y1E	ELECTRIC EXPANSION VALVE
		Y1S	SOLENOID VALVE(HOT GAS)
K1M	MAGNETIC 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)		

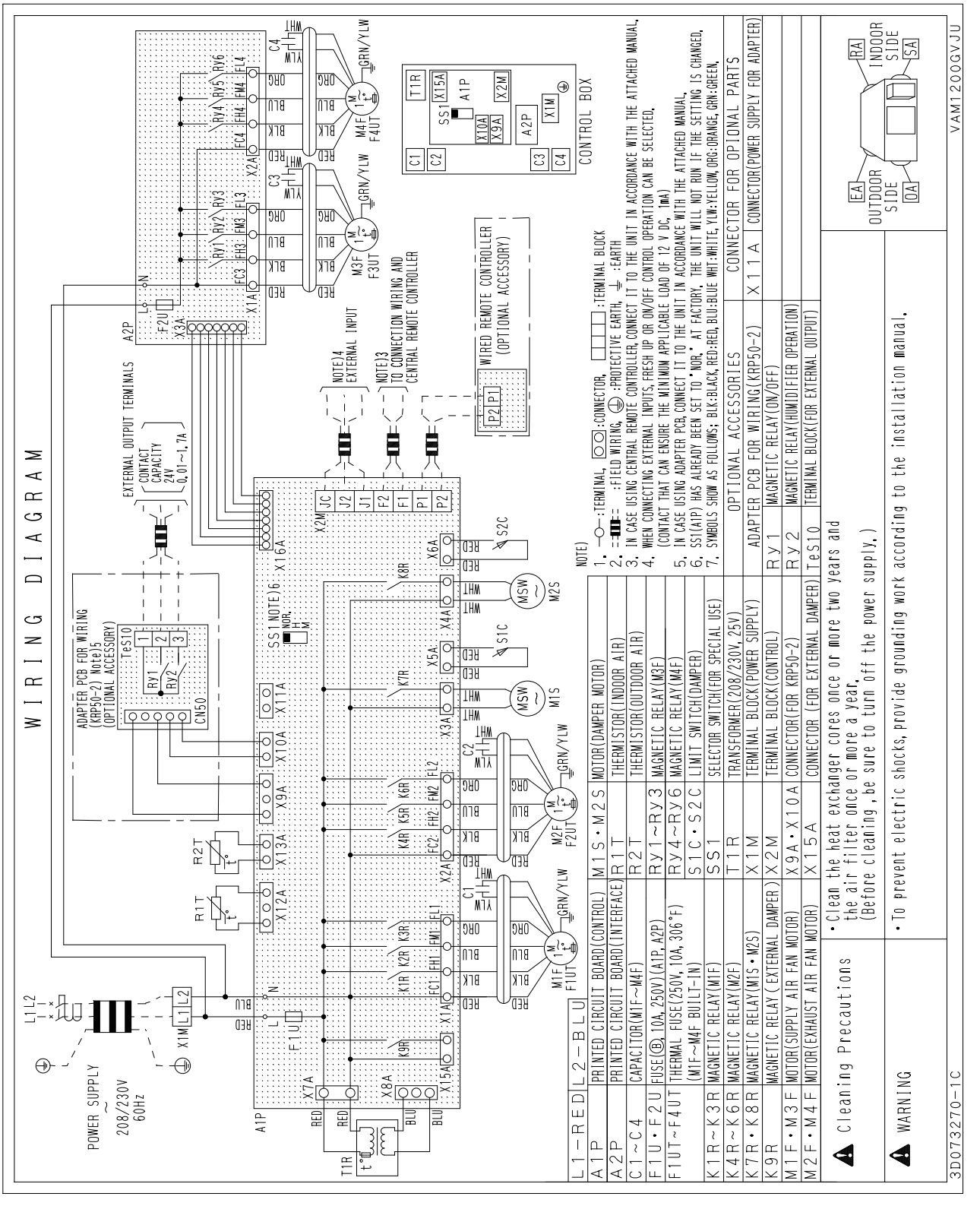
NOTES)
1. □□□:TERMINAL BLOCK, ⊡⊡:CONNECTOR, —○—:TERMINAL, ⊡:SHORT CIRCUIT CONNECTOR, -▮▮-:FIELD WIRING.
2. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTRUCTION MANUAL.
3. IN CASE CONNECTING THE INPUT WIRES FROM OUTSIDE, FORCED OFF OR ON/OFF CONTROL OPERATION CAN BE SELECTED BY REMOTE CONTROLLER. IN DETAILS, REFER TO THE INSTALLATION MANUAL ATTACHED TO THE UNIT.
4. DO NOT REMOVE SHORT CIRCUIT CONNECTOR OF X9A.
5. SYMBOLS SHOW AS FOLLOWS; RED:RED BLK:BLACK WHT:WHITE YLW:YELLOW PPL:PURPLE GRY:GRAY BLU:BLUE PNK:PINK ORG:ORANGE GRN:GREEN
6. CLASS 2 WIRE

1.3.2 Energy Recovery Ventilator (VAM Series)

VAM300/470/600GVJU



VAM1200GVJU



Revision History

Month / Year	Version	Revised contents
02 / 2017	SiUS341615E	First edition

Warning

- Daikin products are manufactured for export to numerous countries throughout the world. Prior to purchase, please confirm with your local authorized 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 unauthorized 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 inquiries, 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 February 2017 but subject to change without notice.

SiUS341615E
02/2017 AK.K