DAIKIN

SiUS331604EF

R-410A

Service Manual

VRV IV-S

RXTQ-TA Series
RXTQ-TB Series

Heat Pump 60 Hz

Introduction

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.

	This manual is for the person in charge of maintenance and inspection.

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 an item for which caution must be exercised.
The pictogram shows the item to which attention must be paid.
◯ This symbol indicates a prohibited action.
The prohibited item or action is shown in the illustration or near the symbol.
● This symbol indicates an action that must be taken, or an 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 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 inspect 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.	

Warning	
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.	
Do not turn the air conditioner on or off by plugging in or unplugging the power cable. Plugging in 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-410A refrigerant models, be sure to use pipes, flare nuts and tools intended for the exclusive use with the R-410A refrigerant. The use of materials for other 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-410A) in the refrigerant system. If air enters the refrigerant system, an 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 the 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.	
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.	

Warning	
Do not mix air or gas other than the specified refrigerant (R-410A) in the refrigerant system. If air enters the refrigerant system, an excessively high pressure results, causing equipment damage and injury.	
If the refrigerant gas leaks, be sure to locate the leaking point and repair it before charging the refrigerant. After charging the refrigerant, make sure that there is no leak. If the leaking point 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 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.	
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 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.	

Caution	
Be sure to measure insulation resistance after the repair, and make sure that the resistance is 1 MΩ or greater. 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	**Warning** is used when there is danger of personal injury.
 Caution	Caution	**Caution** is used when there is danger that the reader, through incorrect manipulation, may damage equipment, lose data, get an unexpected result or have to restart (part of) a procedure.
 Note	Note	**Note** provides information that is not indispensable, but may nevertheless be valuable to the reader, such as tips and tricks.
 Reference	Reference	**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.

3. Revision History

Month / Year	Version	Revised contents
06 / 2016	SiUS331604E	First edition
05 / 2017	SiUS331604EA	Model addition: RXTQ36TAVJ9
07 / 2018	SiUS331604EB	Model addition: FXZQ05-18TAVJU, FXSQ05-54TAVJU, FXTQ09-60TAVJUA, FXTQ09-60TAVJUD
03 / 2020	SiUS331604EC	Model addition: RXTQ36TAVJ9A, RXTQ48-60TAVJUA
11 / 2022	SiUS331604ED	Model addition: RXTQ36-60TBVJUA, FXZQ05-18TBVJU, FXUQ18-36PAVJU, FXSQ05-54TBVJU, FXMQ15-54TBVJU, BRC1H71W
03 / 2023	—	Correction of field settings
06 / 2023	SiUS331604EE	Correction of field settings
10 / 2023	SiUS331604EF	Model addition: RXTQ36-60TBVJUB, FXFQ07-54AAVJU, FXTQ09-60TBVJUA, FXTQ09-60TBVJUD

Part 1
General Information

1. Model Names and Power Supply

1.1 Outdoor Unit

Capacity range (ton)		3	4	5	Power supply, Standard
Capacity index		36	48	57	
Heat Pump	RXTQ	36TA	48TA	60TA	VJU
		36TA	—	—	VJ9
		36TA	—	—	VJ9A
		—	48TA	60TA	VJUA
		36TB	48TB	60TB	VJUA VJUB

VJ: 1 phase, 208/230 V, 60 Hz
U(VJU): Standard symbol
A, B: Minor revision

1.2 Indoor Unit

Capacity range (ton)		0.5	0.6	0.8	1	1.25	1.5		2	2.5	3	3.5	4	4.5	5	Power supply, Standard
Capacity index		5.8	7.5	9.5	12	15	18	20	24	30	36	42	48	54	60	
Ceiling mounted cassette (Round flow with sensing) type	FXFQ	—	07AA	09AA	12AA	15AA	18AA	—	24AA	30AA	36AA	—	48AA	54AA	—	VJU
		—	07T	09T	12T	15T	18T	—	24T	30T	36T	—	48T	—	—	
Ceiling mounted cassette (Round flow) type		—	—	09P	12P	—	18P	—	24P	30P	36P	—	48P	—	—	
VISTA^{TM} 2'×2' cassette type	FXZQ	05TA	07TA	09TA	12TA	15TA	18TA	—	—	—	—	—	—	—	—	
		05TB	07TB	09TB	12TB	15TB	18TB	—	—	—	—	—	—	—	—	
4-way ceiling mounted cassette (2'×2') type		—	07M	09M	12M	15M	18M	—	—	—	—	—	—	—	—	VJU9
4-way blow ceiling suspended type	FXUQ	—	—	—	—	—	—	18P	24P	30P	36P	—	—	—	—	VJU
		—	—	—	—	—	—	18PA	24PA	30PA	36PA	—	—	—	—	
One way blow cassette type	FXEQ	—	07P	09P	12P	15P	18P	—	24P	—	—	—	—	—	—	
Slim ceiling mounted duct type	FXDQ	—	07M	09M	12M	—	18M	—	24M	—	—	—	—	—	—	
MSP concealed ducted type	FXSQ	05TA	07TA	09TA	12TA	15TA	18TA	—	24TA	30TA	36TA	—	48TA	54TA	—	
		05TB	07TB	09TB	12TB	15TB	18TB	—	24TB	30TB	36TB	—	48TB	54TB	—	
Ceiling mounted duct type (Middle and high static pressure)	FXMQ	—	07PB	09PB	12PB	15PB	18PB	—	24PB	30PB	36PB	—	48PB	54PB	—	
Ceiling mounted duct type (High static pressure)		—	—	—	—	15TB	18TB	—	24TB	30TB	36TB	—	48TB	54TB	—	
Ceiling suspended type	FXHQ	—	—	—	12M	—	—	—	24M	—	36M	—	—	—	—	
Wall mounted type	FXAQ	—	07P	09P	12P	—	18P	—	24P	—	—	—	—	—	—	
Floor standing type	FXLQ	—	07M	09M	12M	—	18M	—	24M	—	—	—	—	—	—	
Concealed floor standing type	FXNQ	—	07M	09M	12M	—	18M	—	24M	—	—	—	—	—	—	
Vertical air handling unit	FXTQ	—	—	—	12PA	—	18PA	—	24PA	30PA	36PA	42PA	48PA	54PA	—	
Air handling unit		—	—	09TA	12TA	—	18TA	—	24TA	30TA	36TA	42TA	48TA	54TA	60TA	VJUA
		—	—	09TB	12TB	—	18TB	—	24TB	30TB	36TB	42TB	48TB	54TB	60TB	
		—	—	09TA	12TA	—	18TA	—	24TA	30TA	36TA	42TA	48TA	54TA	60TA	VJUD
		—	—	09TB	12TB	—	18TB	—	24TB	30TB	36TB	42TB	48TB	54TB	60TB	

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

1.3 Air Treatment Equipment

Outdoor-Air Processing Unit

Series	Model name		Power supply, Standard
FXMQ	48MF	72MF	VJU

Energy Recovery Ventilator (VAM series)

Series	Model name				Power supply, Standard
VAM	300G	470G	600G	1200G	VJU

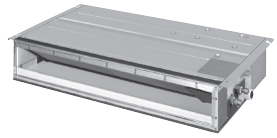
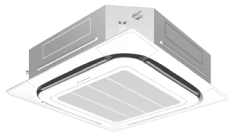
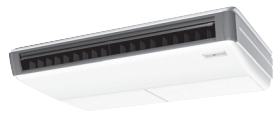
VJ: 1 phase, 208/230 V, 60 Hz
U(VJU): Standard symbol

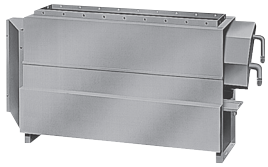
2. External Appearance

2.1 Outdoor Unit

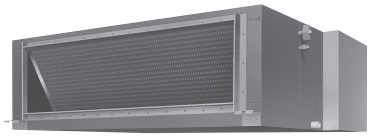
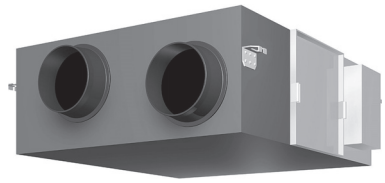
3, 4 ton		
 RXTQ36TAVJU RXTQ36TAVJ9 RXTQ36TAVJ9A RXTQ48TAVJU RXTQ48TAVJUA	 RXTQ36TBVJUA RXTQ48TBVJUA	 RXTQ36TBVJUB RXTQ48TBVJUB
5 ton		
 RXTQ60TAVJU RXTQ60TAVJUA	 RXTQ60TBVJUA	 RXTQ60TBVJUB

2.2 Indoor Unit

Ceiling mounted cassette (Round flow with sensing) type FXFQ-AA  Shown with BYCQ54EEFU	Slim ceiling mounted duct type FXDQ-M 
Ceiling mounted cassette (Round flow with sensing) type FXFQ-T  Shown with BYCQ125B-W1	MSP concealed ducted type FXSQ-TA FXSQ-TB 
Ceiling mounted cassette (Round flow) type FXFQ-P  Shown with BYCP125K-W1	Ceiling mounted duct type (Middle and high static pressure) FXMQ-PB 
VISTA^{TM} 2'×2' cassette type FXZQ-TA FXZQ-TB  Shown with BYFQ60C3W1W/ BYFQ60C3W2W  Shown with BYFQ60C3W1S	Ceiling mounted duct type (High static pressure) FXMQ-TB 
4-way ceiling mounted cassette (2'×2') type FXZQ-M  Shown with BYFQ60B8W1U	Ceiling suspended type FXHQ-M 
4-way blow ceiling suspended type FXUQ-P FXUQ-PA 	Wall mounted type FXAQ-P 
One way blow cassette type FXEQ-P 	Floor standing type FXLQ-M 

Concealed floor standing type FXNQ-M 	Air handling unit FXTQ-TA FXTQ-TB 
Vertical air handling unit FXTQ-PA 	—

2.3 Air Treatment Equipment

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

3. Capacity Range

3.1 Connection Ratio

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

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

3.2 Outdoor Unit Combinations

Model	RXTQ36TAVJU RXTQ36TAVJ9 RXTQ36TAVJ9A RXTQ36TBVJUA RXTQ36TBVJUB	RXTQ48TAVJU RXTQ48TAVJUA RXTQ48TBVJUA RXTQ48TBVJUB	RXTQ60TAVJU RXTQ60TAVJUA RXTQ60TBVJUA RXTQ60TBVJUB
Capacity range (ton)	3	4	5
Capacity index	36	48	57.5
Maximum number of connectable indoor units	6	8	9
Total capacity index of indoor units to be connected	18.0 ~ 46.8	24.0 ~ 62.4	28.8 ~ 74.8

4. Specifications

Model name				RXTQ36TAVJU RXTQ36TAVJ9	RXTQ48TAVJU	RXTQ60TAVJU
Power supply				1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 Cooling capacity	Nominal		Btu/h (kW)	36,000 (10.6)	48,000 (14.1)	57,500 (16.9)
	Rated			34,200 (10.0)	45,500 (13.3)	57,500 (16.9)
★2 Heating capacity	Nominal		Btu/h (kW)	40,000 (11.7)	52,000 (15.2)	57,000 (16.7)
	Rated			37,000 (10.8)	49,500 (14.5)	57,000 (16.7)
Casing color				Ivory white	Ivory white	Ivory white
Dimensions: (H × W × D)			in (mm)	39 × 37 × 12-5/8 (990 × 940 × 320)	39 × 37 × 12-5/8 (990 × 940 × 320)	52-15/16 × 35-7/16 × 12-5/8 (1,345 × 900 × 320)
Heat exchanger				Cross fin coil	Cross fin coil	Cross fin coil
Compressor	Type			Hermetically sealed swing type	Hermetically sealed swing type	Hermetically sealed swing type
	Motor output		kW	1.9	3.0	3.5
	Starting method			Soft start	Soft start	Soft start
Fan	Type			Propeller fan	Propeller fan	Propeller fan
	Motor output		kW	0.200	0.200	0.070 × 2
	Airflow rate		cfm (m^3/min)	2,682 (76)	2,682 (76)	3,741 (106)
	Drive			Direct drive	Direct drive	Direct drive
Sound pressure level (Reference data)	Cooling		dBA	58	58	57
	Heating		dBA	61	61	59
Sound power level (Reference data)	Cooling		dB	75	76	74
	Heating		dB	79	78	77
Connecting pipes	Liquid pipe		in (mm)	ϕ 3/8 (9.5) C1220T (Flare connection)	ϕ 3/8 (9.5) C1220T (Flare connection)	ϕ 3/8 (9.5) C1220T (Flare connection)
	Gas pipe		in (mm)	ϕ 5/8 (15.9) C1220T (Flare connection)	ϕ 5/8 (15.9) C1220T (Flare connection)	ϕ 3/4 (19.1) C1220T (Flare connection)
Mass			lbs (kg)	172 (78)	176 (80)	225 (102)
Safety devices				High pressure switch, Fan driver overload protector, Inverter overload protector, Fusible plug, Fuse	High pressure switch, Fan driver overload protector, Inverter overload protector, Fusible plug, Fuse	High pressure switch, Fan driver overload protector, Inverter overload protector, Fusible plug, Fuse
Defrost method				Reverse cycle defrosting	Reverse cycle defrosting	Reverse cycle defrosting
Capacity control			%	14-100	14-100	14-100
Refrigerant	Refrigerant name			R-410A	R-410A	R-410A
	Charge		lbs (kg)	6.4 (2.9)	7.5 (3.4)	7.9 (3.6)
	Control			Electronic expansion valve	Electronic expansion valve	Electronic expansion valve
Standard accessories				Installation manual, Operation manual, Drain socket, Clamps	Installation manual, Operation manual, Drain socket, Clamps	Installation manual, Operation manual, Drain socket, Clamps, Auxiliary piping
Drawing No.				4D101444E	4D101445C	4D101443C

Notes:

★1. Indoor temp.: 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp.: 95°FDB (35.0°CDB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).

★2. Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 47°FDB (8.3°CDB), 43°FWB (6.1°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).

Model name				RXTQ36TAVJ9A	RXTQ48TAVJUA	RXTQ60TAVJUA
Power supply				1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 Cooling capacity		Nominal	Btu/h (kW)	36,000 (10.6)	48,000 (14.1)	57,500 (16.9)
		Rated		34,200 (10.0)	45,500 (13.3)	57,500 (16.9)
★2 Heating capacity		Nominal	Btu/h (kW)	40,000 (11.7)	52,000 (15.2)	57,000 (16.7)
		Rated		37,000 (10.8)	49,500 (14.5)	57,000 (16.7)
Casing color				Ivory white	Ivory white	Ivory white
Dimensions: (H × W × D)			in (mm)	39 × 37 × 12-5/8 (990 × 940 × 320)	39 × 37 × 12-5/8 (990 × 940 × 320)	52-15/16 × 35-7/16 × 12-5/8 (1,345 × 900 × 320)
Heat exchanger				Cross fin coil	Cross fin coil	Cross fin coil
Compressor	Type			Hermetically sealed swing type	Hermetically sealed swing type	Hermetically sealed swing type
	Motor output		kW	1.9	3.0	3.5
	Starting method			Soft start	Soft start	Soft start
Fan	Type			Propeller fan	Propeller fan	Propeller fan
	Motor output		kW	0.200	0.200	0.070 × 2
	Airflow rate		cfm (m^3/min)	2,682 (76)	2,682 (76)	3,741 (106)
	Drive			Direct drive	Direct drive	Direct drive
Sound pressure level (Reference data)		Cooling	dBA	58	58	57
		Heating	dBA	61	61	59
Sound power level (Reference data)		Cooling	dB	75	76	74
		Heating	dB	79	78	77
Connecting pipes	Liquid pipe		in (mm)	ϕ 3/8 (9.5) C1220T (Flare connection)	ϕ 3/8 (9.5) C1220T (Flare connection)	ϕ 3/8 (9.5) C1220T (Flare connection)
	Gas pipe		in (mm)	ϕ 5/8 (15.9) C1220T (Flare connection)	ϕ 5/8 (15.9) C1220T (Flare connection)	ϕ 3/4 (19.1) C1220T (Flare connection)
Mass			lbs (kg)	172 (78)	176 (80)	225 (102)
Safety devices				High pressure switch, Fan driver overload protector, Inverter overload protector, Fusible plug, Fuse	High pressure switch, Fan driver overload protector, Inverter overload protector, Fusible plug, Fuse	High pressure switch, Fan driver overload protector, Inverter overload protector, Fusible plug, Fuse
Defrost method				Reverse cycle defrosting	Reverse cycle defrosting	Reverse cycle defrosting
Capacity control			%	14-100	14-100	14-100
Refrigerant	Refrigerant name			R-410A	R-410A	R-410A
	Charge		lbs (kg)	6.4 (2.9)	7.5 (3.4)	7.9 (3.6)
	Control			Electronic expansion valve	Electronic expansion valve	Electronic expansion valve
Standard accessories				Installation manual, Operation manual, Drain socket, Clamps	Installation manual, Operation manual, Drain socket, Clamps	Installation manual, Operation manual, Drain socket, Clamps, Auxiliary piping
Drawing No.				4D126371	4D126373	4D126375

Notes:

★1. Indoor temp.: 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp.: 95°FDB (35.0°CDB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).

★2. Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 47°FDB (8.3°CDB), 43°FWB (6.1°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).

Model name				RXTQ36TBVJUA	RXTQ48TBVJUA	RXTQ60TBVJUA
Power supply				1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 Cooling capacity	Nominal		Btu/h (kW)	36,000 (10.6)	48,000 (14.1)	57,500 (16.9)
	Rated (Non-ducted)			34,200 (10.0)	45,500 (13.3)	57,500 (16.9)
	Rated (Ducted)			34,200 (10.0)	45,500 (13.3)	57,500 (16.9)
★2 Heating capacity	Nominal		Btu/h (kW)	40,000 (11.7)	52,000 (15.2)	57,000 (16.7)
	Rated (Non-ducted)			37,000 (10.8)	49,500 (14.5)	57,000 (16.7)
	Rated (Ducted)			37,000 (10.8)	46,000 (13.5)	57,000 (16.7)
Casing color				Ivory white	Ivory white	Ivory white
Dimensions: (H × W × D)			in (mm)	39 × 37 × 12-5/8 (990 × 940 × 320)	39 × 37 × 12-5/8 (990 × 940 × 320)	52-15/16 × 35-7/16 × 12-5/8 (1,345 × 900 × 320)
Heat exchanger				Cross fin coil	Cross fin coil	Cross fin coil
Compressor	Type			Hermetically sealed swing type	Hermetically sealed swing type	Hermetically sealed swing type
	Motor output		kW	1.9	3.0	3.5
	Starting method			Soft start	Soft start	Soft start
Fan	Type			Propeller fan	Propeller fan	Propeller fan
	Motor output		kW	0.200	0.200	0.070 × 2
	Airflow rate		cfm (m^3/min)	2,682 (76)	2,682 (76)	3,741 (106)
	Drive			Direct drive	Direct drive	Direct drive
Sound pressure level (Reference data)	Cooling		dBA	58	58	57
	Heating		dBA	61	61	59
Sound power level (Reference data)	Cooling		dB	75	76	74
	Heating		dB	79	78	77
Connecting pipes	Liquid pipe		in (mm)	ϕ 3/8 (9.5) C1220T (Flare connection)	ϕ 3/8 (9.5) C1220T (Flare connection)	ϕ 3/8 (9.5) C1220T (Flare connection)
	Gas pipe		in (mm)	ϕ 5/8 (15.9) C1220T (Flare connection)	ϕ 5/8 (15.9) C1220T (Flare connection)	ϕ 3/4 (19.1) C1220T (Flare connection)
Mass			lbs (kg)	172 (78)	176 (80)	225 (102)
Safety devices				High pressure switch, Fan driver overload protector, Inverter overload protector, Fusible plug, Fuse	High pressure switch, Fan driver overload protector, Inverter overload protector, Fusible plug, Fuse	High pressure switch, Fan driver overload protector, Inverter overload protector, Fusible plug, Fuse
Defrost method				Reverse cycle defrosting	Reverse cycle defrosting	Reverse cycle defrosting
Capacity control			%	14-100	14-100	14-100
Refrigerant	Refrigerant name			R-410A	R-410A	R-410A
	Charge		lbs (kg)	6.4 (2.9)	7.5 (3.4)	7.9 (3.6)
	Control			Electronic expansion valve	Electronic expansion valve	Electronic expansion valve
Standard accessories				Installation manual, Operation manual, Drain socket, Clamps	Installation manual, Operation manual, Drain socket, Clamps	Installation manual, Operation manual, Drain socket, Clamps, Auxiliary piping
Drawing No.				4D142995B	4D142996B	4D142997B

Notes:

★1. Indoor temp.: 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp.: 95°FDB (35.0°CDB) / Equivalent piping length: 25 ft (7.6 m), height difference: 0 ft (0 m).

★2. Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 47°FDB (8.3°CDB), 43°FWB (6.1°CWB) / Equivalent piping length: 25 ft (7.6 m), height difference: 0 ft (0 m).

Model name				RXTQ36TBVJUB	RXTQ48TBVJUB	RXTQ60TBVJUB
Power supply				1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 Cooling capacity	Nominal		Btu/h (kW)	36,000 (10.6)	48,000 (14.1)	57,500 (16.9)
	Rated (Non-ducted)			34,200 (10.0)	45,500 (13.3)	57,500 (16.9)
	Rated (Ducted)			34,200 (10.0)	45,500 (13.3)	57,500 (16.9)
★2 Heating capacity	Nominal		Btu/h (kW)	40,000 (11.7)	52,000 (15.2)	57,000 (16.7)
	Rated (Non-ducted)			37,000 (10.8)	47,500 (13.9)	57,000 (16.7)
	Rated (Ducted)			37,000 (10.8)	46,000 (13.5)	57,000 (16.7)
Casing color				Ivory white	Ivory white	Ivory white
Dimensions: (H × W × D)			in (mm)	39 × 37 × 12-5/8 (990 × 940 × 320)	39 × 37 × 12-5/8 (990 × 940 × 320)	52-15/16 × 35-7/16 × 12-5/8 (1,345 × 900 × 320)
Heat exchanger				Cross fin coil	Cross fin coil	Cross fin coil
Compressor	Type			Hermetically sealed swing type	Hermetically sealed swing type	Hermetically sealed swing type
	Motor output		kW	1.9	3.0	3.5
	Starting method			Soft start	Soft start	Soft start
Fan	Type			Propeller fan	Propeller fan	Propeller fan
	Motor output		kW	0.200	0.200	0.070 × 2
	Airflow rate		cfm (m^3/min)	2,682 (76)	2,682 (76)	3,741 (106)
	Drive			Direct drive	Direct drive	Direct drive
Sound pressure level (Reference data)		Cooling	dBA	58	58	57
		Heating	dBA	61	61	59
Sound power level (Reference data)		Cooling	dB	75	76	74
		Heating	dB	79	78	77
Connecting pipes	Liquid pipe		in (mm)	ϕ 3/8 (9.5) C1220T (Flare connection)	ϕ 3/8 (9.5) C1220T (Flare connection)	ϕ 3/8 (9.5) C1220T (Flare connection)
	Gas pipe		in (mm)	ϕ 5/8 (15.9) C1220T (Flare connection)	ϕ 5/8 (15.9) C1220T (Flare connection)	ϕ 3/4 (19.1) C1220T (Flare connection)
Mass			lbs (kg)	172 (78)	176 (80)	225 (102)
Safety devices				High pressure switch, Fan driver overload protector, Inverter overload protector, Fusible plug, Fuse	High pressure switch, Fan driver overload protector, Inverter overload protector, Fusible plug, Fuse	High pressure switch, Fan driver overload protector, Inverter overload protector, Fusible plug, Fuse
Defrost method				Reverse cycle defrosting	Reverse cycle defrosting	Reverse cycle defrosting
Capacity control			%	14-100	14-100	14-100
Refrigerant	Refrigerant name			R-410A	R-410A	R-410A
	Charge		lbs (kg)	6.4 (2.9)	7.5 (3.4)	7.9 (3.6)
	Control			Electronic expansion valve	Electronic expansion valve	Electronic expansion valve
Standard accessories				Installation manual, Operation manual, Clamps	Installation manual, Operation manual, Clamps	Installation manual, Operation manual, Clamps, Auxiliary piping
Drawing No.				4D148294	4D148295	4D148296

Notes:

★1. Indoor temp.: 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp.: 95°FDB (35.0°CDB) / Equivalent piping length: 25 ft (7.6 m), height difference: 0 ft (0 m).

★2. Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 47°FDB (8.3°CDB), 43°FWB (6.1°CWB) / Equivalent piping length: 25 ft (7.6 m), height difference: 0 ft (0 m).

Part 2
Refrigerant Circuit

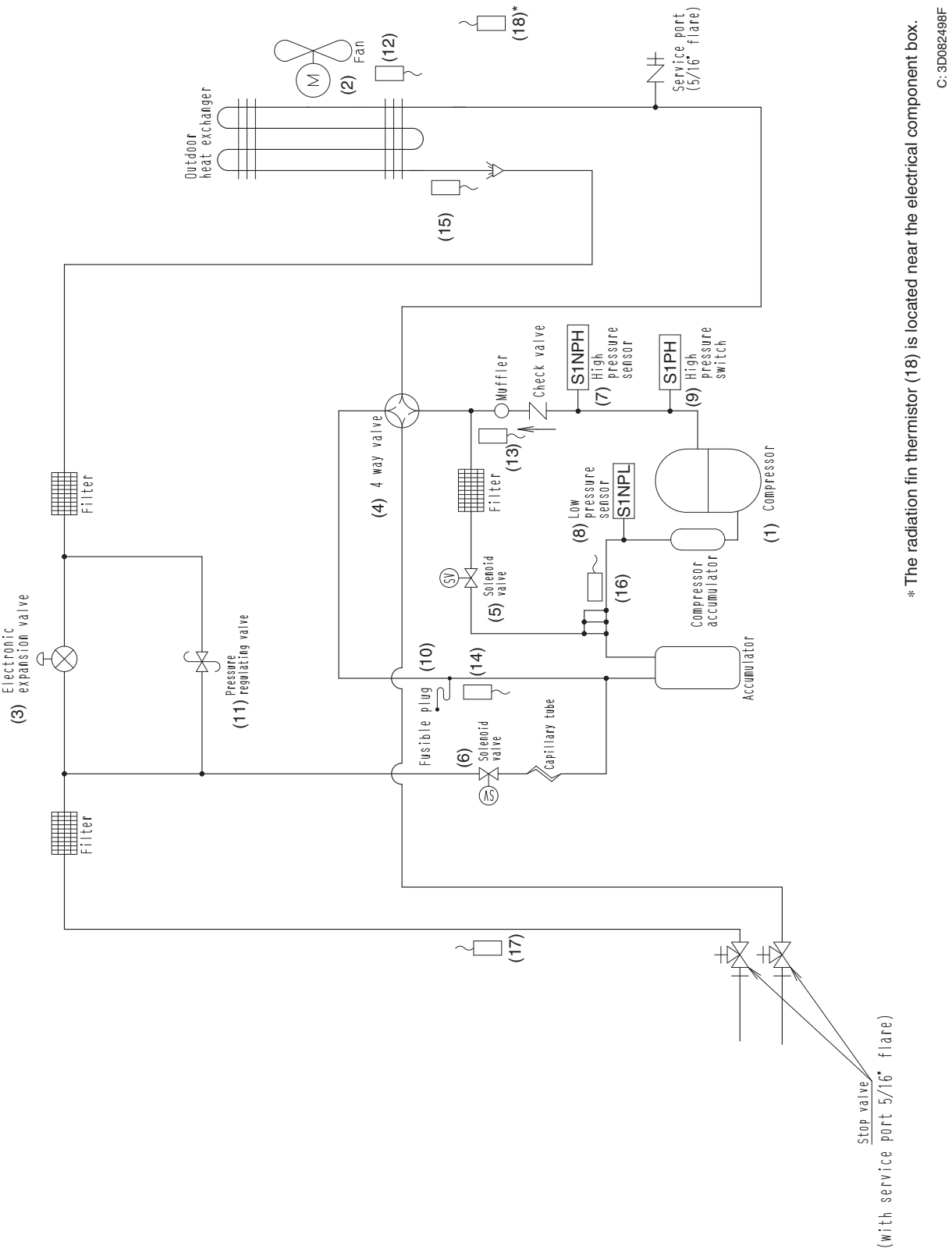
1. Refrigerant Circuit (Piping Diagrams)

1.1 Outdoor Unit

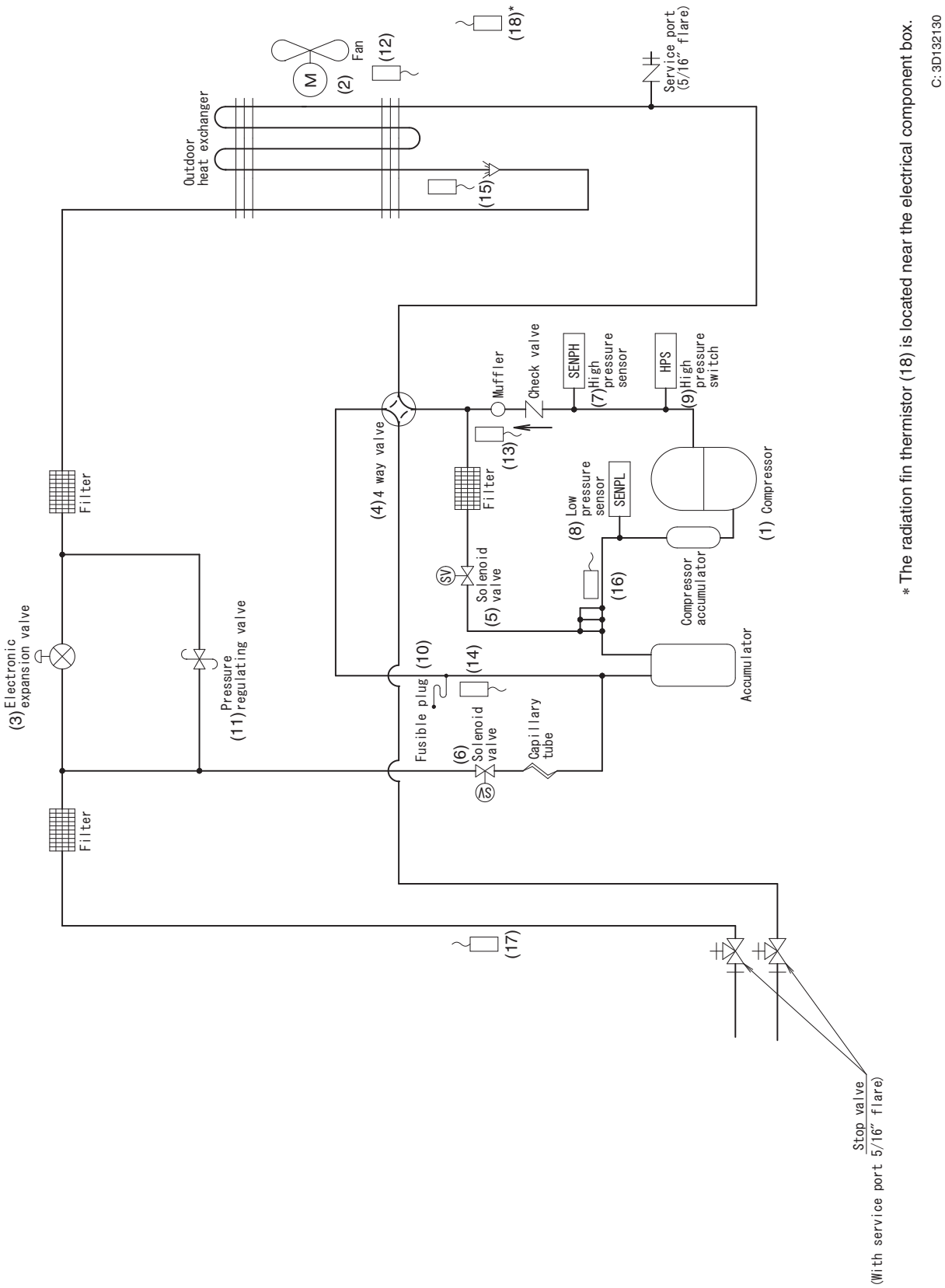
1.1.1 36 Class

No. in piping diagram	Electric symbol	Name	Function
(1)	M1C	Compressor	Compressor is operated in multi-steps according to Te and Tc.
(2)	M1F	Fan motor	Because the system is of an air heat exchange type, the fan is operated at 8-step rotation speed by using the inverter.
(3)	Y1E	Electronic expansion valve (Main)	While in heating operation, PI control is applied to keep the outlet superheating degree of air heat exchanger constant.
(4)	Y1S	Four way valve	Used to switch the operation mode between cooling and heating.
(5)	Y2S	Solenoid valve (Hot gas)	Used to prevent the low pressure from transient falling.
(6)	Y3S	Solenoid valve (Liquid injection)	Used for high pressure protection and discharge pipe temperature protection.
(7)	S1NPH	High pressure sensor	Used to detect high pressure.
(8)	S1NPL	Low pressure sensor	Used to detect low pressure.
(9)	S1PH	High pressure switch	In order to prevent the increase of high pressure when an error occurs, this switch is activated at high pressure of 4.0 MPa (580 psi) or more to stop the compressor operation.
(10)	—	Fusible plug	In order to prevent the increase of pressure when abnormal heating is caused by fire or others, the fusible part of the plug is molten at a temperature of 70 to 75°C (158 to 167°F) to release the pressure into the atmosphere.
(11)	—	Pressure regulating valve (Receiver to discharge pipe)	This valve opens at a pressure of 4.0 MPa (580 psi) for prevention of pressure increase, thus resulting in no damage of functional parts due to the increase of pressure in transportation or storage.
(12)	R1T	Thermistor (Outdoor air)	Used to detect outdoor air temperature, correct discharge pipe temperature, and for other purposes.
(13)	R2T	Thermistor (Discharge pipe)	Used to detect discharge pipe temperature, make the temperature protection control of compressor, and for other purposes.
(14)	R3T	Thermistor (Suction pipe 1)	Used to detect suction pipe temperature, keep the suction superheating degree constant in heating operation, and for other purposes.
(15)	R4T	Thermistor (Heat exchanger deicer)	Used to detect liquid pipe temperature of air heat exchanger, determine defrosting operation, and for other purposes.
(16)	R5T	Thermistor (Suction pipe 2)	Used to the calculation of an internal temperature of compressor, and for other purposes.
(17)	R7T	Thermistor (Liquid pipe)	Used to detect refrigerant overcharge in check operation, and for other purposes.
(18)	R10T (FINTH)	Thermistor (Radiation fin)	Used for outdoor fan speed control and inverter radiation fin temperature control.
(19)	Q1E	Overload protector	Detects compressor surface temperature, this switch is activated at surface temperature of 125°C (257°F) or more to stop the compressor. (TBVJUB models only)

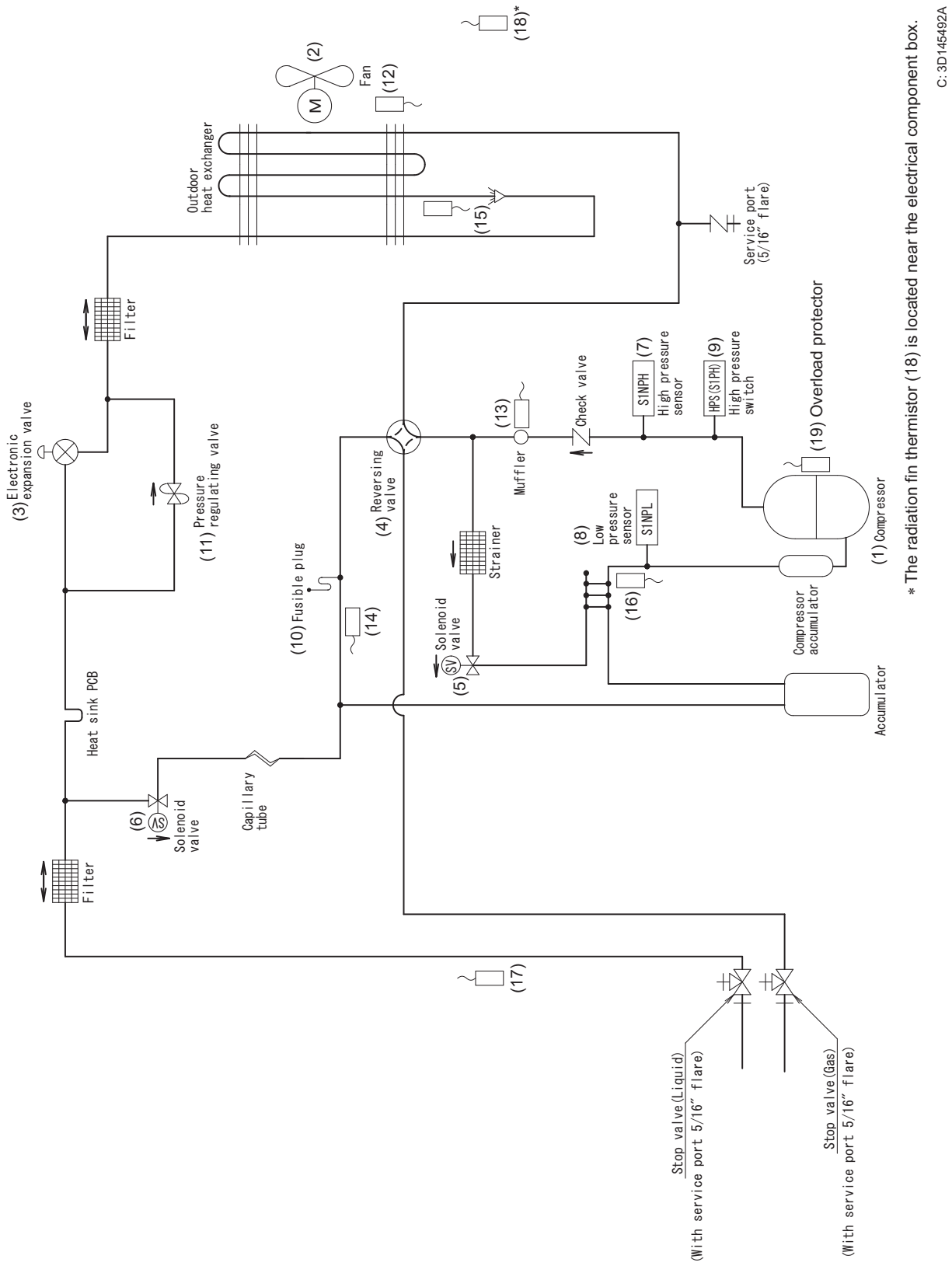
RXTQ36TAVJU, RXTQ36TAVJ9



RXTQ36TAVJ9A, RXTQ36TBVJUA



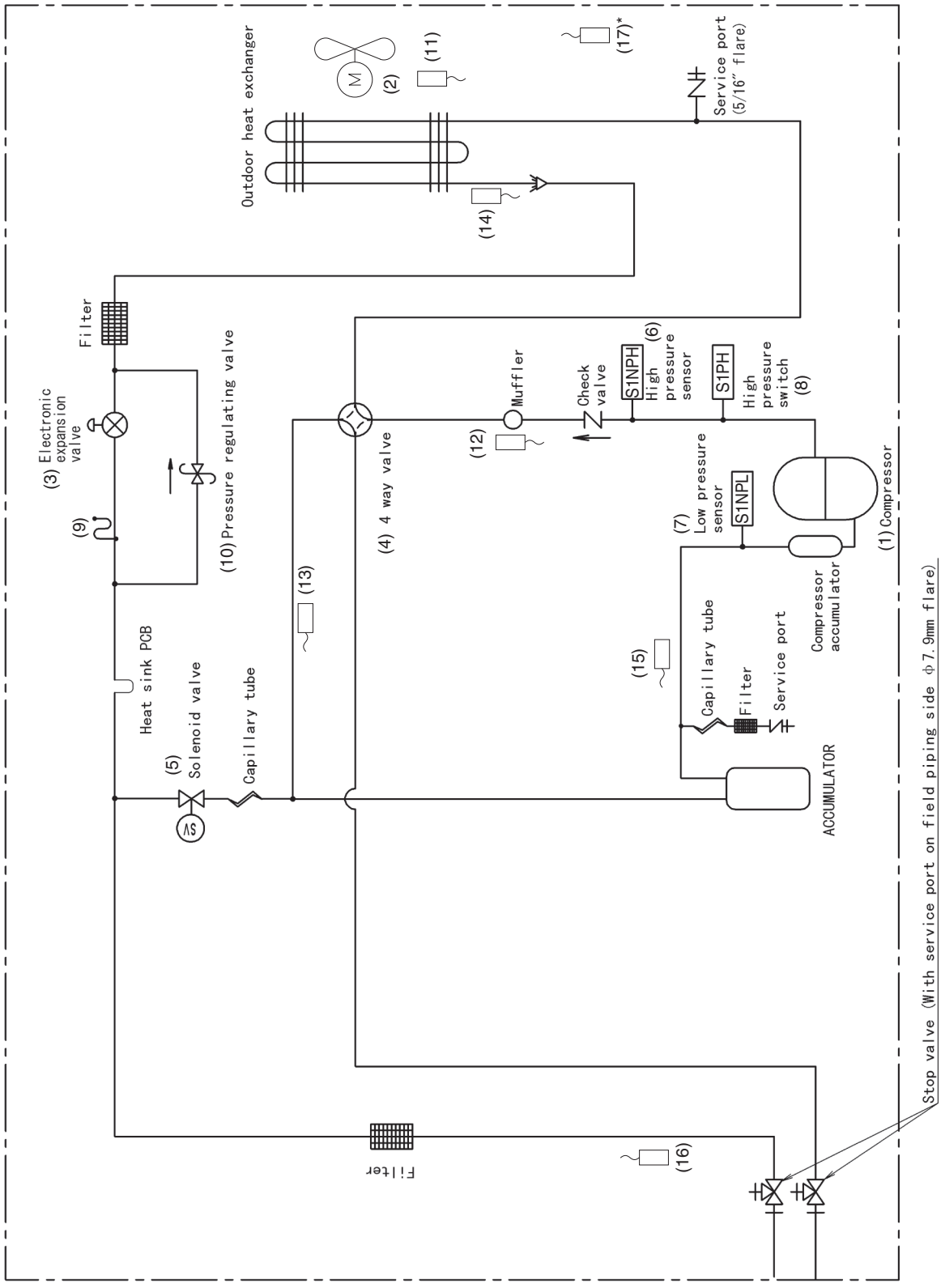
RXTQ36TBVJUB



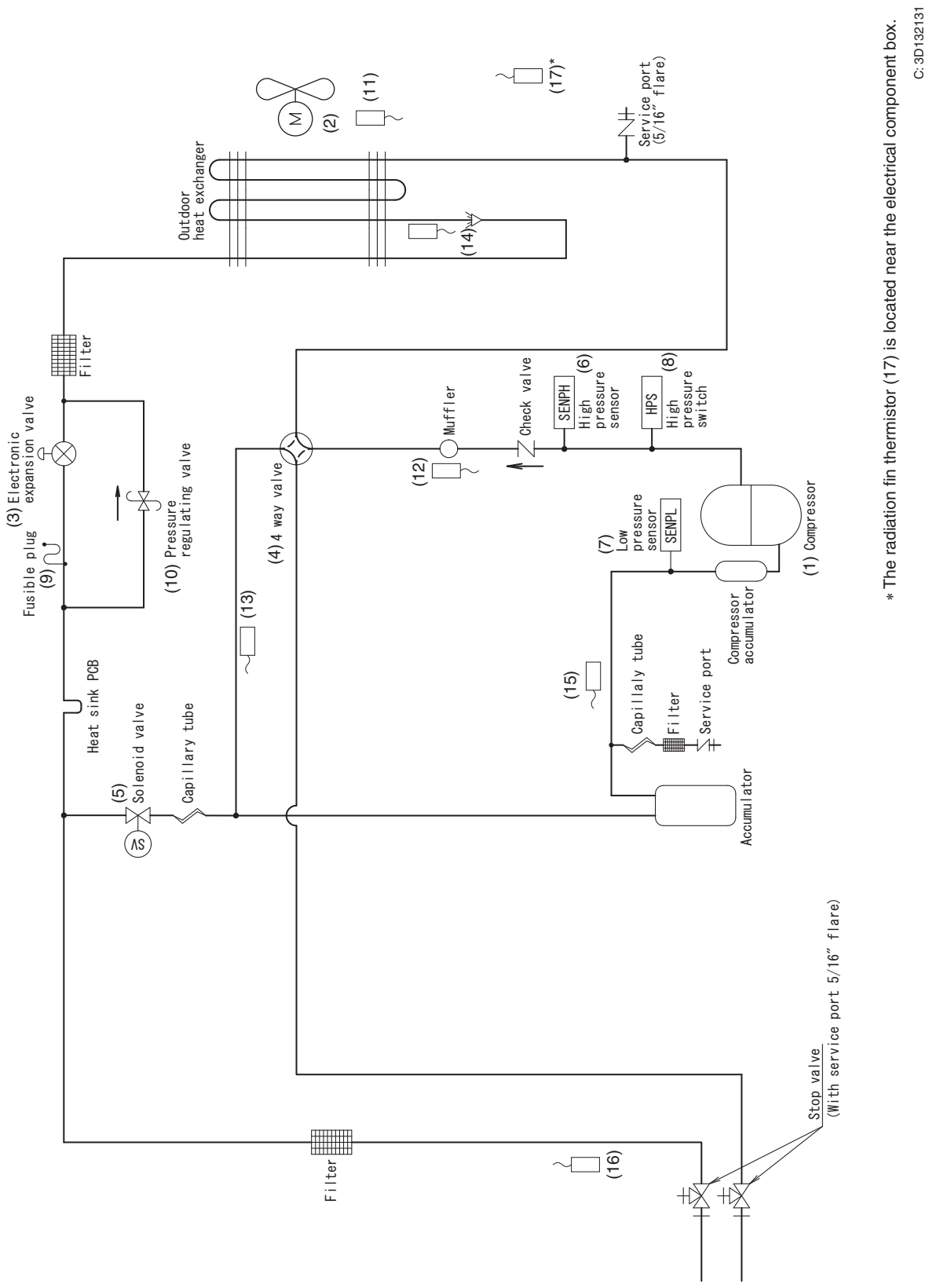
1.1.2 48 Class

No. in piping diagram	Electric symbol	Name	Function
(1)	M1C	Compressor	Compressor is operated in multi-steps according to Te and Tc.
(2)	M1F	Fan motor	Because the system is of an air heat exchange type, the fan is operated at 8-step rotation speed by using the inverter.
(3)	Y1E	Electronic expansion valve (Main)	While in heating operation, PI control is applied to keep the outlet superheating degree of air heat exchanger constant.
(4)	Y1S	Four way valve	Used to switch the operation mode between cooling and heating.
(5)	Y3S	Solenoid valve (Liquid injection)	Used for high pressure protection and discharge pipe temperature protection.
(6)	S1NPH	High pressure sensor	Used to detect high pressure.
(7)	S1NPL	Low pressure sensor	Used to detect low pressure.
(8)	S1PH	High pressure switch	In order to prevent the increase of high pressure when an error occurs, this switch is activated at high pressure of 4.0 MPa (580 psi) or more to stop the compressor operation.
(9)	—	Fusible plug	In order to prevent the increase of pressure when abnormal heating is caused by fire or others, the fusible part of the plug is molten at a temperature of 70 to 75°C (158 to 167°F) to release the pressure into the atmosphere.
(10)	—	Pressure regulating valve (Receiver to discharge pipe)	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.
(11)	R1T	Thermistor (Outdoor air)	Used to detect outdoor air temperature, correct discharge pipe temperature, and for other purposes.
(12)	R2T	Thermistor (Discharge pipe)	Used to detect discharge pipe temperature, make the temperature protection control of compressor, and for other purposes.
(13)	R3T	Thermistor (Suction pipe 1)	Used to detect suction pipe temperature, keep the suction superheating degree constant in heating operation, and for other purposes.
(14)	R4T	Thermistor (Heat exchanger deicer)	Used to detect liquid pipe temperature of air heat exchanger, determine defrosting operation, and for other purposes.
(15)	R5T	Thermistor (Suction pipe 2)	Used to the calculation of an internal temperature of compressor, and for other purposes.
(16)	R7T	Thermistor (Liquid pipe)	Used to detect refrigerant overcharge in check operation, and for other purposes.
(17)	FINTH	Thermistor (Radiation fin)	Used for outdoor fan speed control and inverter radiation fin temperature control.
(18)	Q1E	Overload protector	Detects compressor surface temperature, this switch is activated at surface temperature of 125°C (257°F) or more to stop the compressor. (TBVJUB models only)

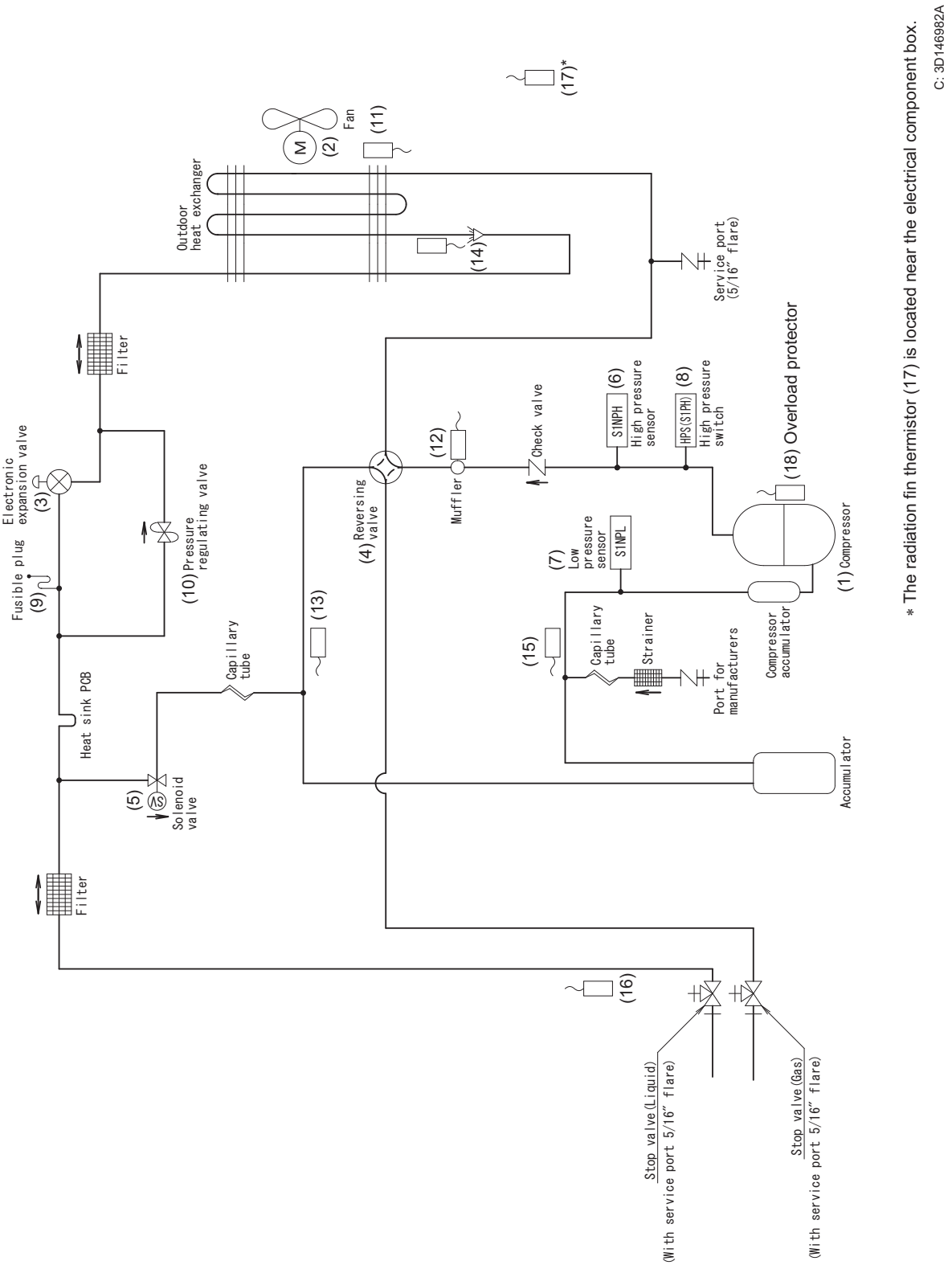
RXTQ48TAVJU



RXTQ48TAVJUA, RXTQ48TBVJUA



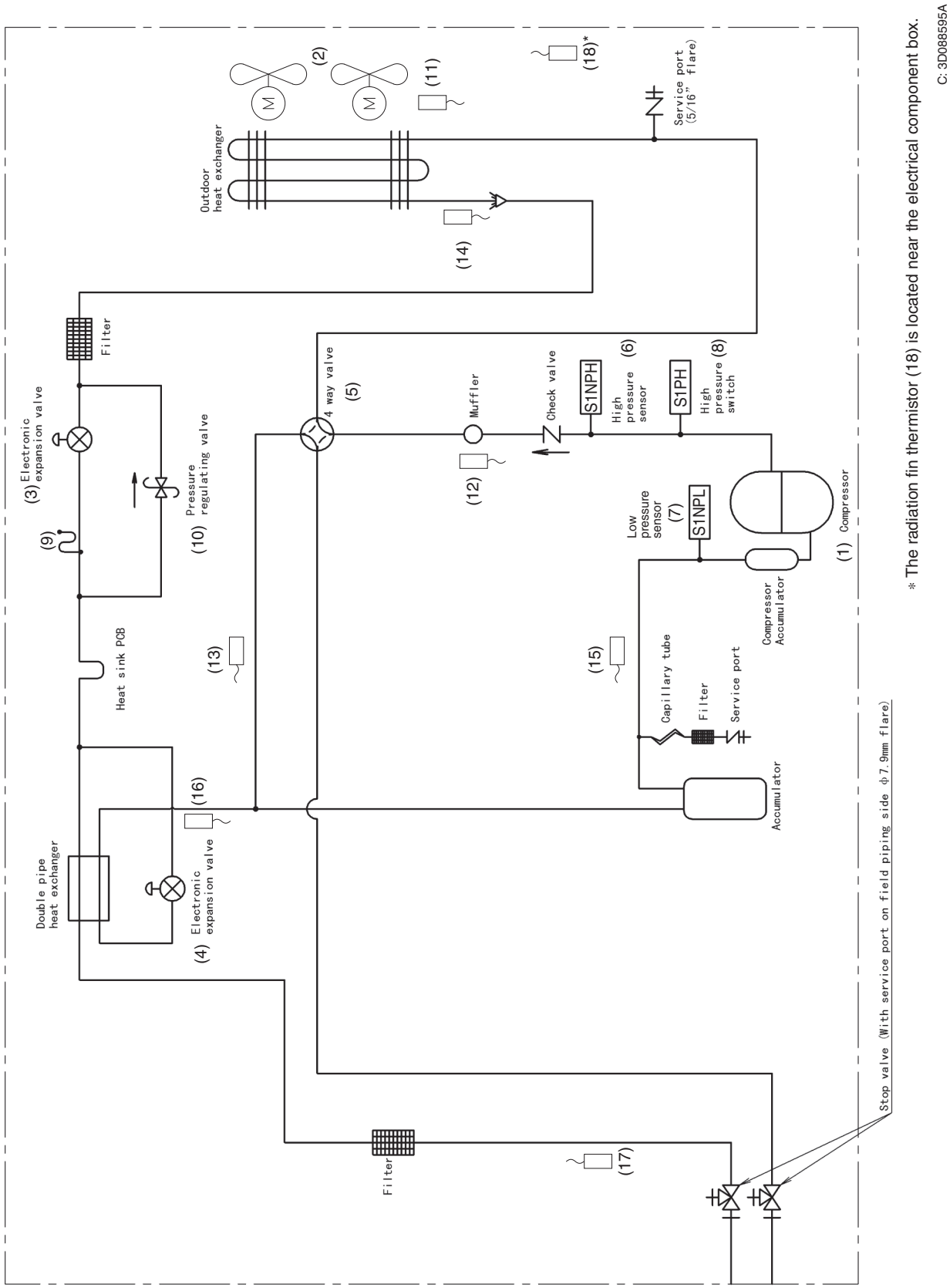
RXTQ48TBVJUB



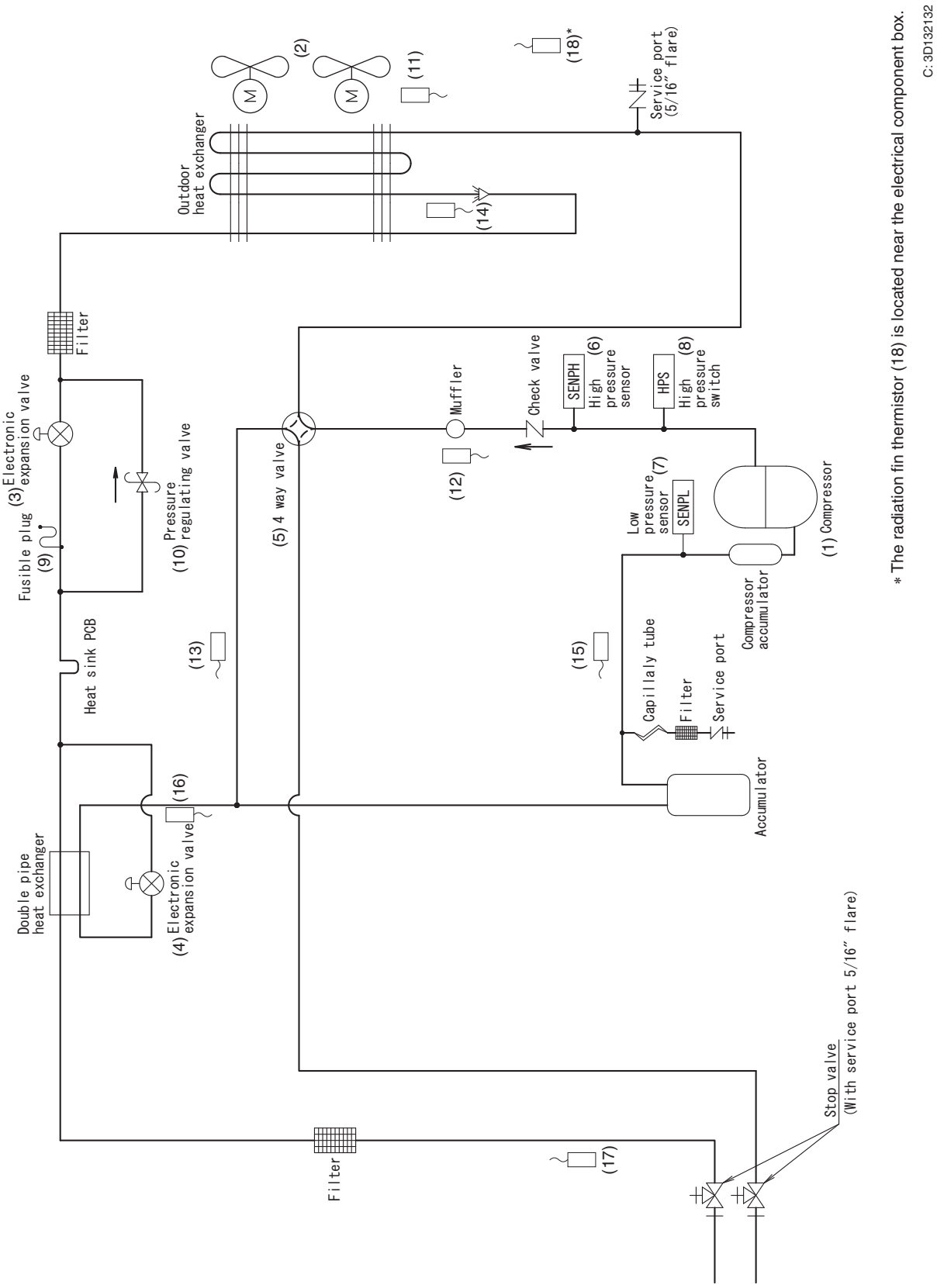
1.1.3 60 Class

No. in piping diagram	Electric symbol	Name	Function
(1)	M1C	Compressor	Compressor is operated in multi-steps according to Te and Tc.
(2)	M1F M2F	Fan motor	Because the system is of an air heat exchange type, the fan is operated at 8-step rotation speed by using the inverter.
(3)	Y1E	Electronic expansion valve (Main)	While in heating operation, PI control is applied to keep the outlet superheating degree of air heat exchanger constant.
(4)	Y3E	Electronic expansion valve (Subcooling)	PI control is applied to keep the outlet superheating degree of subcooling heat exchanger constant.
(5)	Y1S	Four way valve	Used to switch the operation mode between cooling and heating.
(6)	S1NPH	High pressure sensor	Used to detect high pressure.
(7)	S1NPL	Low pressure sensor	Used to detect low pressure.
(8)	S1PH	High pressure switch	In order to prevent the increase of high pressure when an error occurs, this switch is activated at high pressure of 4.0 MPa (580 psi) or more to stop the compressor operation.
(9)	—	Fusible plug	In order to prevent the increase of pressure when abnormal heating is caused by fire or others, the fusible part of the plug is molten at a temperature of 70 to 75°C (158 to 167°F) to release the pressure into the atmosphere.
(10)	—	Pressure regulating valve (Receiver to discharge pipe)	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.
(11)	R1T	Thermistor (Outdoor air)	Used to detect outdoor air temperature, correct discharge pipe temperature, and for other purposes.
(12)	R2T	Thermistor (Discharge pipe)	Used to detect discharge pipe temperature, make the temperature protection control of compressor, and for other purposes.
(13)	R3T	Thermistor (Suction pipe 1)	Used to detect suction pipe temperature, keep the suction superheating degree constant in heating operation, and for other purposes.
(14)	R4T	Thermistor (Heat exchanger deicer)	Used to detect liquid pipe temperature of air heat exchanger, determine defrosting operation, and for other purposes.
(15)	R5T	Thermistor (Suction pipe 2)	Used to the calculation of an internal temperature of compressor, and for other purposes.
(16)	R6T	Thermistor (Subcooling heat exchanger gas pipe)	Used to detect gas pipe temperature on the evaporation side of subcooling heat exchanger, keep the superheating degree at the subcooling heat exchanger constant, and for other purposes.
(17)	R7T	Thermistor (Liquid pipe)	Used to detect refrigerant overcharge in check operation, and for other purposes.
(18)	FINTH	Thermistor (Radiation fin)	Used for outdoor fan speed control and inverter radiation fin temperature control.
(19)	Q1E	Overload protector	Detects compressor surface temperature, this switch is activated at surface temperature of 125°C (257°F) or more to stop the compressor. (TBVJUB models only)

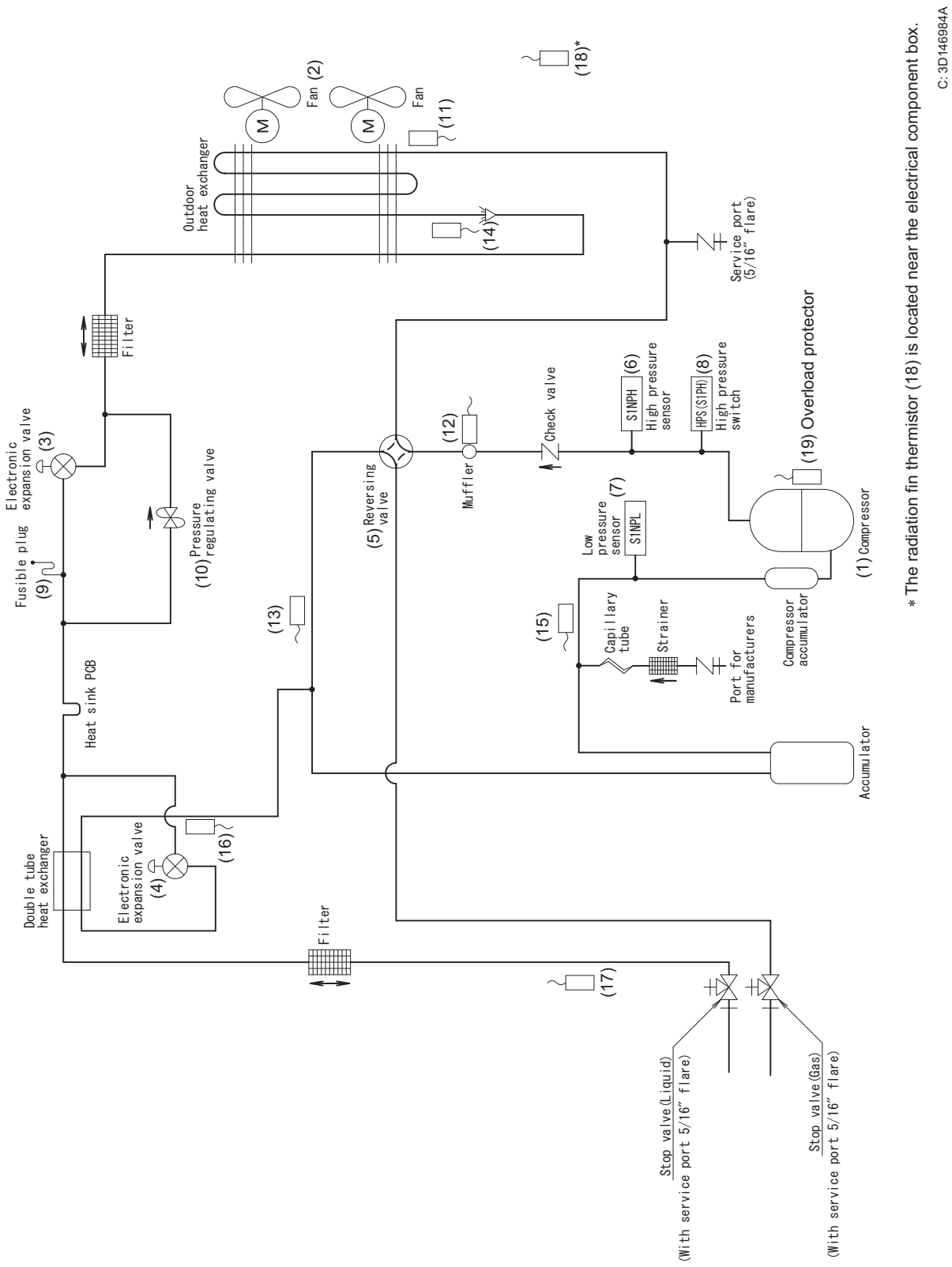
RXTQ60TAVJU



RXTQ60TAVJUA, RXTQ60TBVJUA



RXTQ60TBVJUB

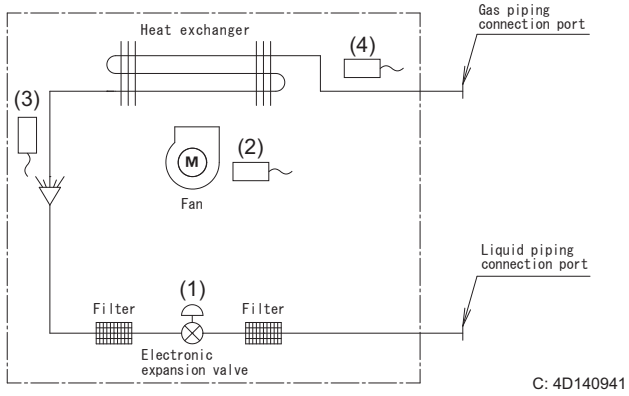


1.2 Indoor Unit

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

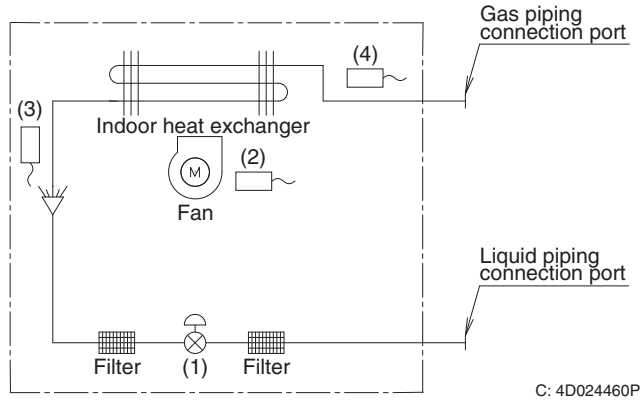
∗1. R1T is for remote controller thermistor or optional remote sensor.

■ **FXFQ-AA**



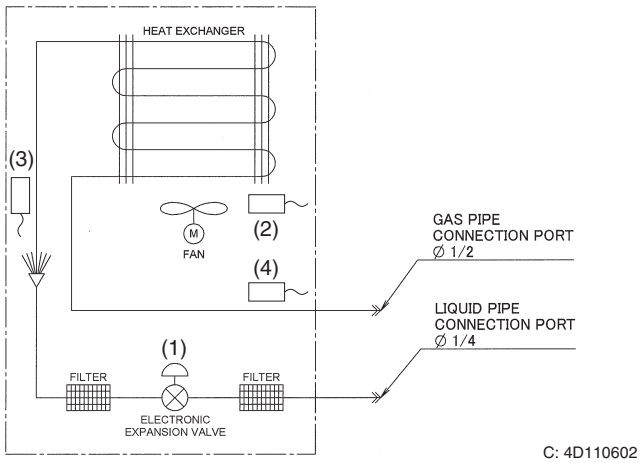
C: 4D140941

■ **FXFQ-T, FXFQ-P, FXHQ-M**



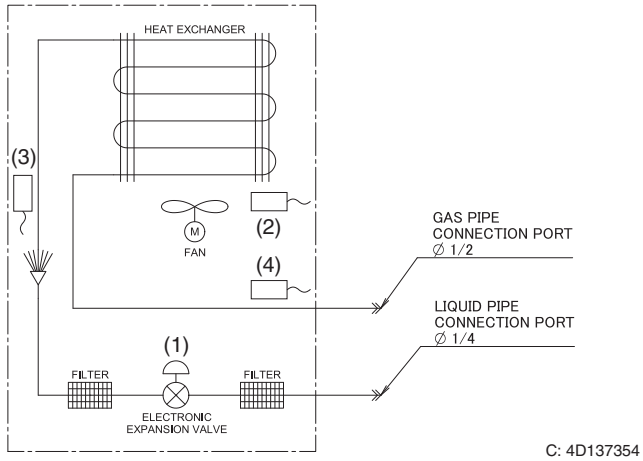
C: 4D024460P

■ **FXZQ-TA**



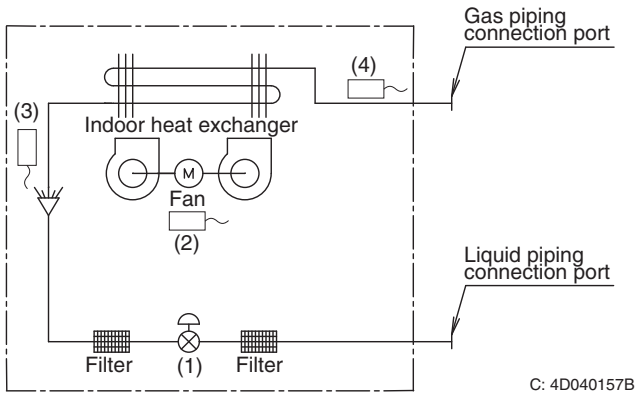
C: 4D110602

■ **FXZQ-TB**



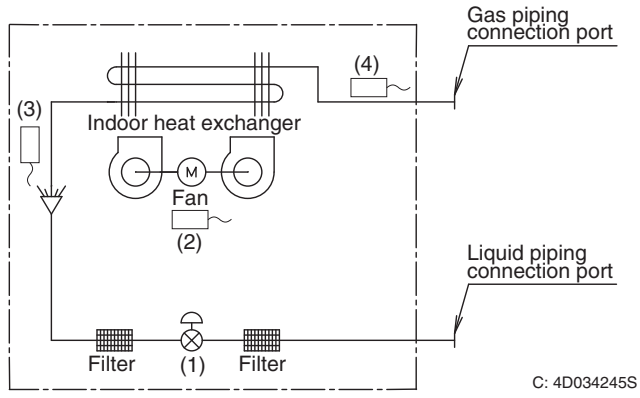
C: 4D137354

■ **FXZQ-M**



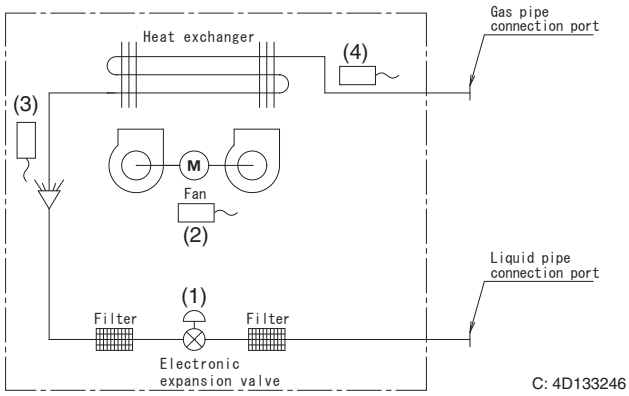
C: 4D040157B

■ **FXUQ-P, FXEQ-P, FXSQ-TA, FXAQ-P, FXLQ-M, FXNQ-M**



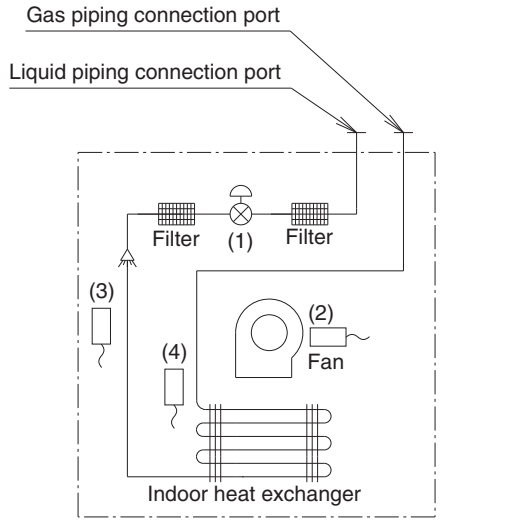
C: 4D034245S

■ **FXUQ-PA**



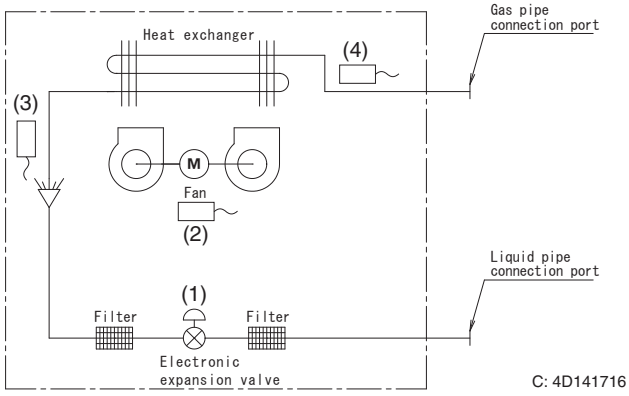
C: 4D133246

■ **FXDQ-M**



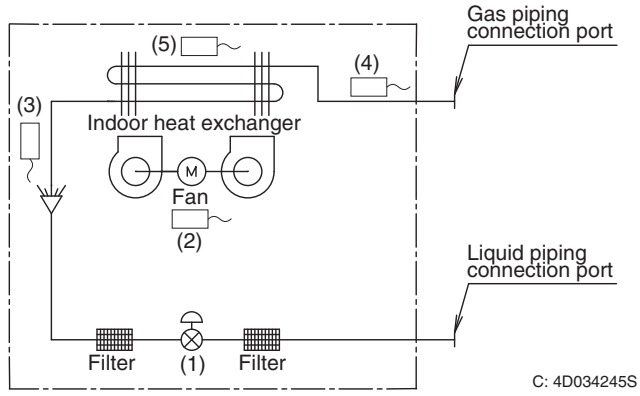
C: 4D043864N

■ **FXSQ-TB, FXMQ-TB**



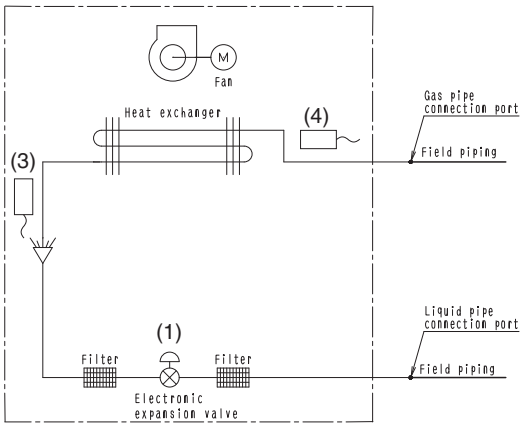
C: 4D141716

■ **FXMQ-PB**



C: 4D034245S

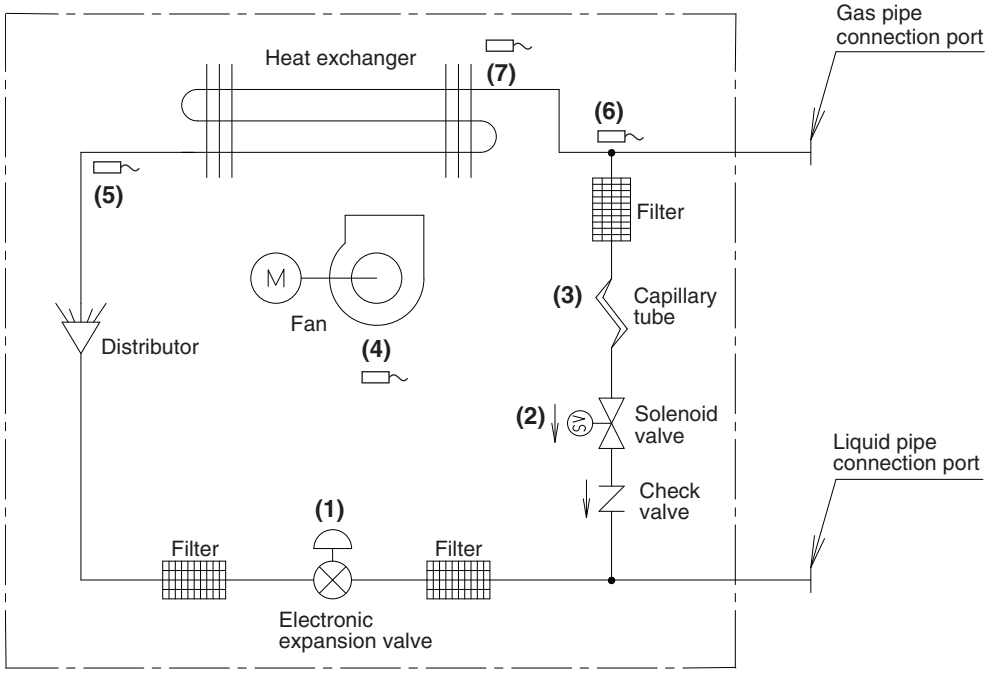
■ **FXTQ-PA, FXTQ-TA, FXTQ-TB**



C: 4D068194

1.3 Outdoor-Air Processing Unit

FXMQ48/72MFVJU



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.

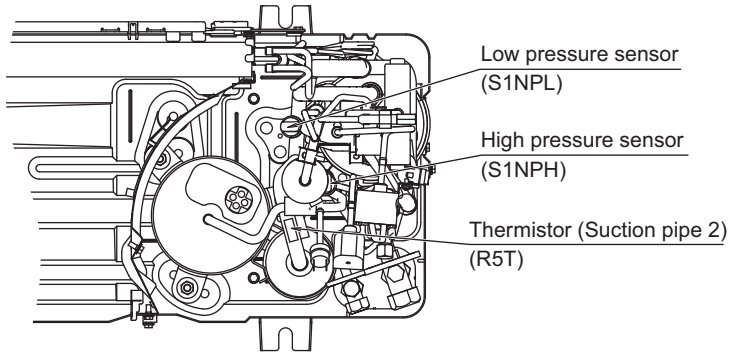
Note(s)

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

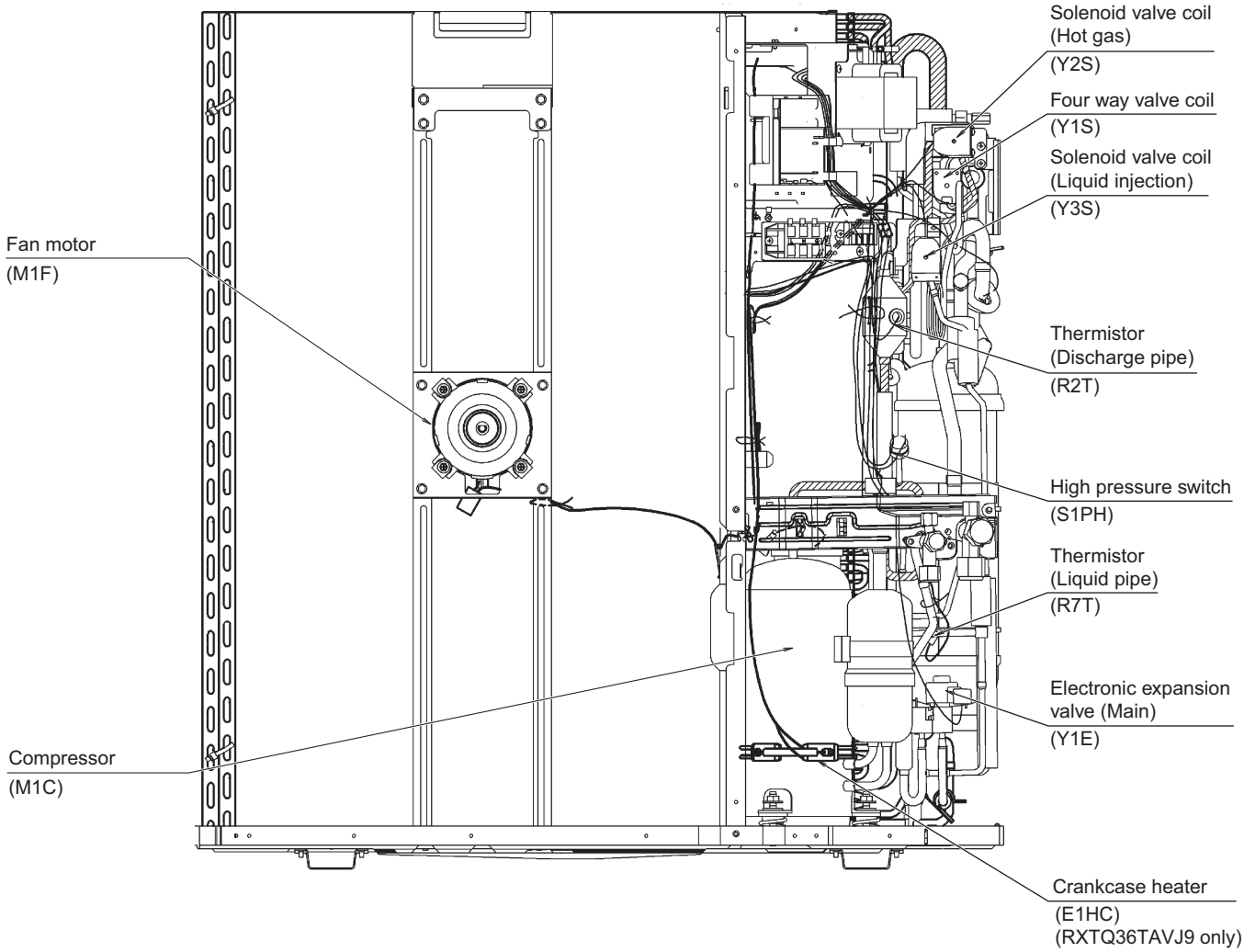
2. Functional Parts Layout

2.1 RXTQ36TAVJU, RXTQ36TAVJ9

Top view

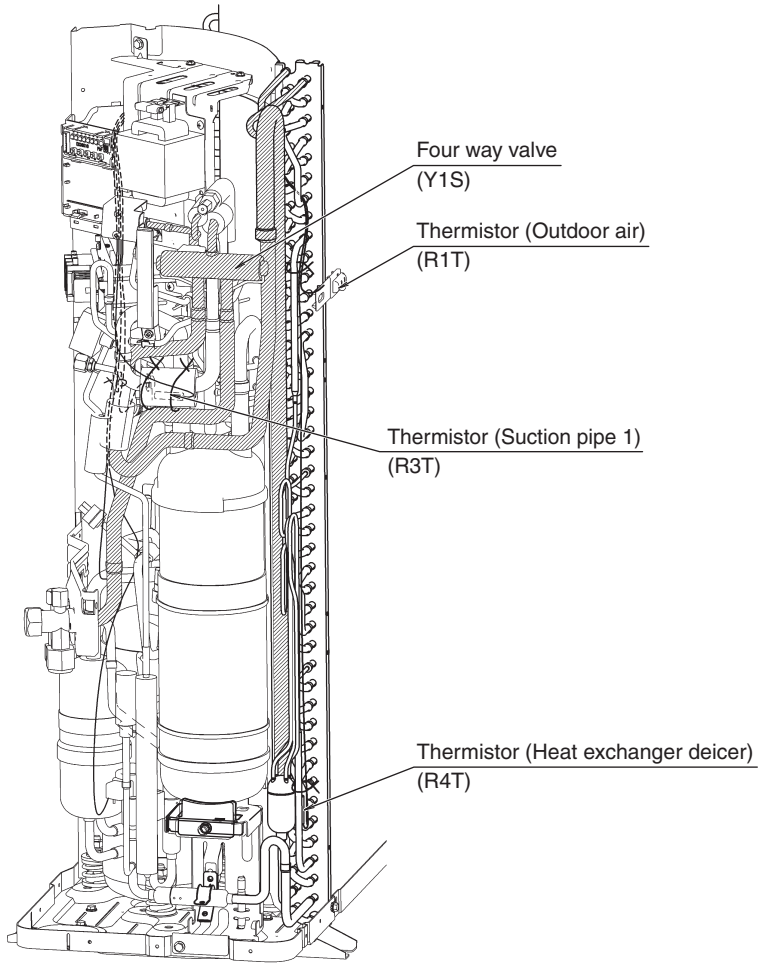


Front view



C: 1P342997N

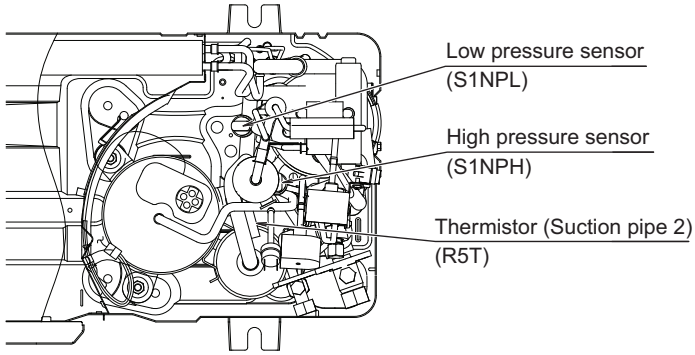
Side view



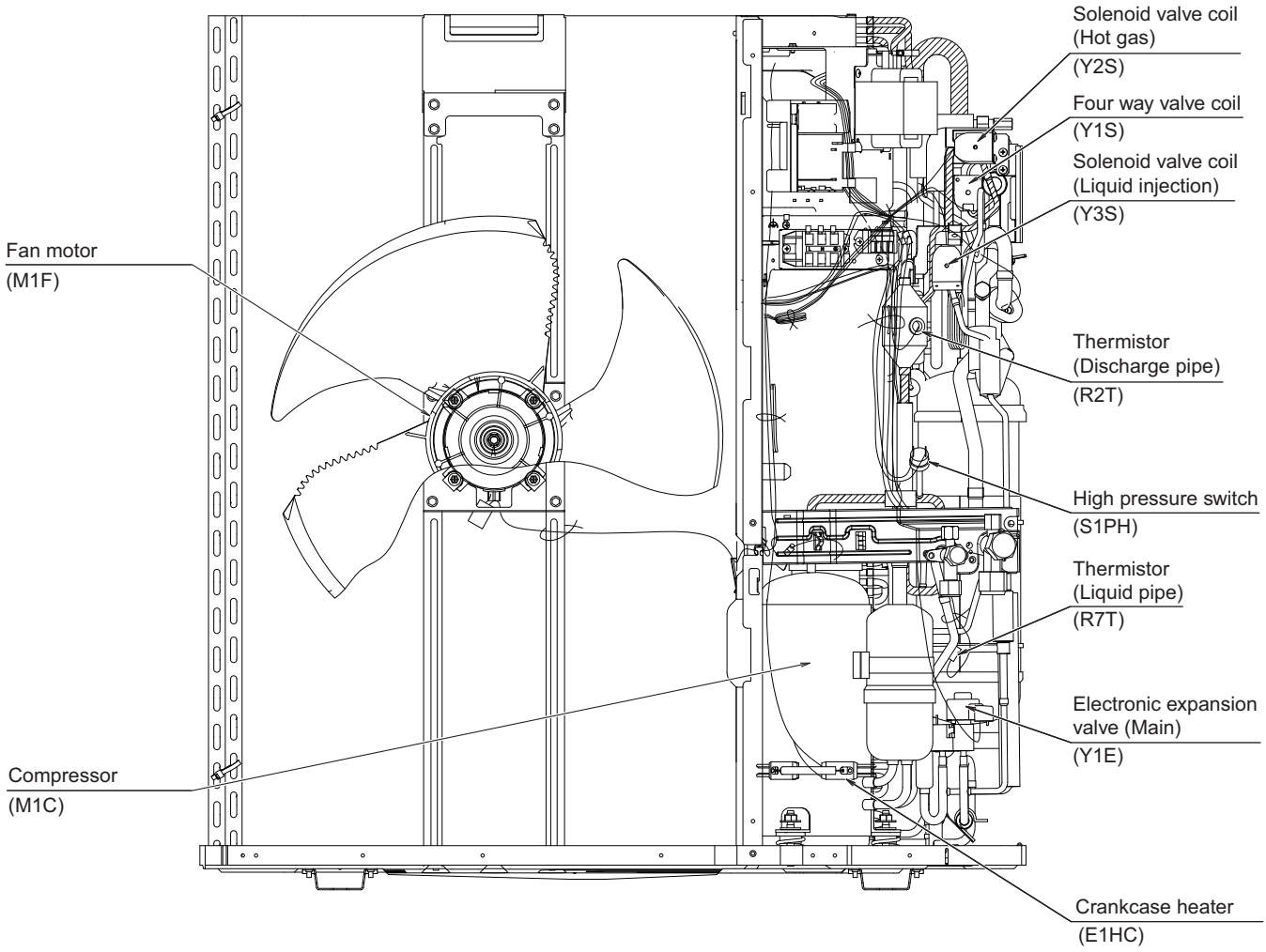
C: 1P342997N

2.2 RXTQ36TAVJ9A, RXTQ36TBVJUA

Top view

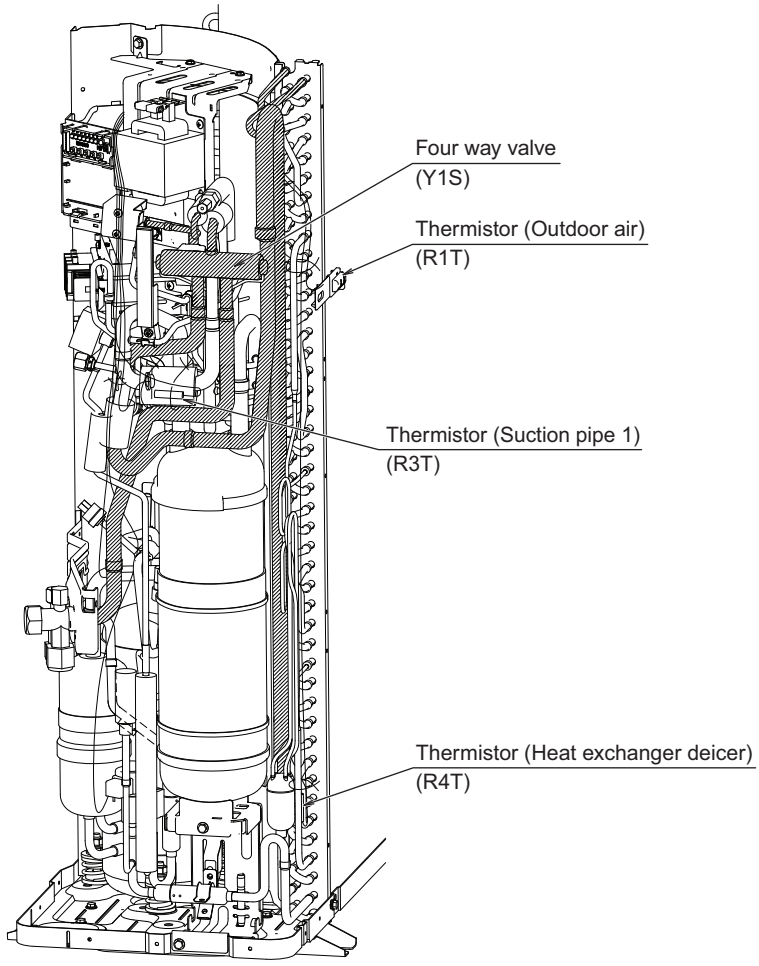


Front view



C: 1P589934G

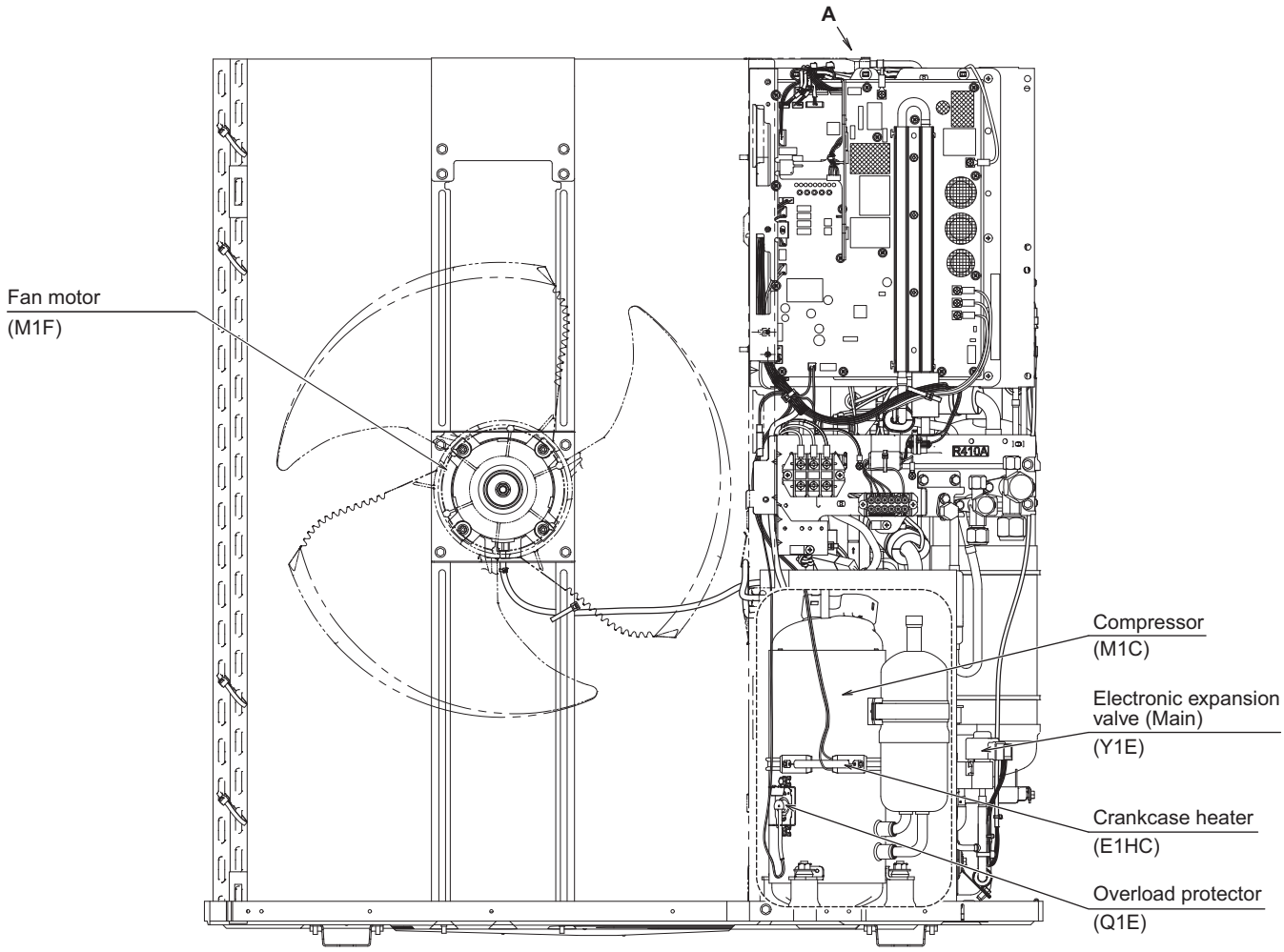
Side view



C: 1P589934G

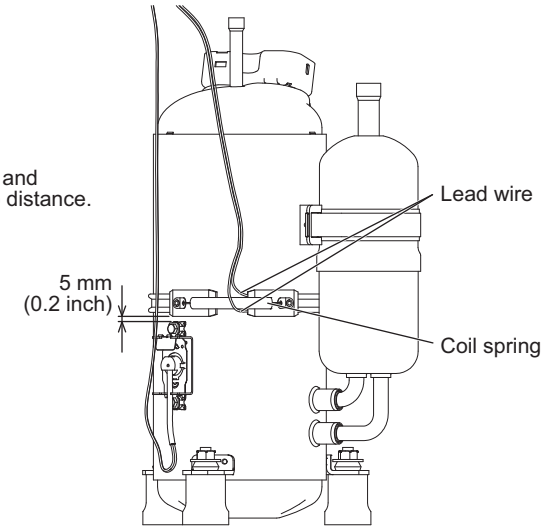
2.3 RXTQ36TBVJUB

Front view



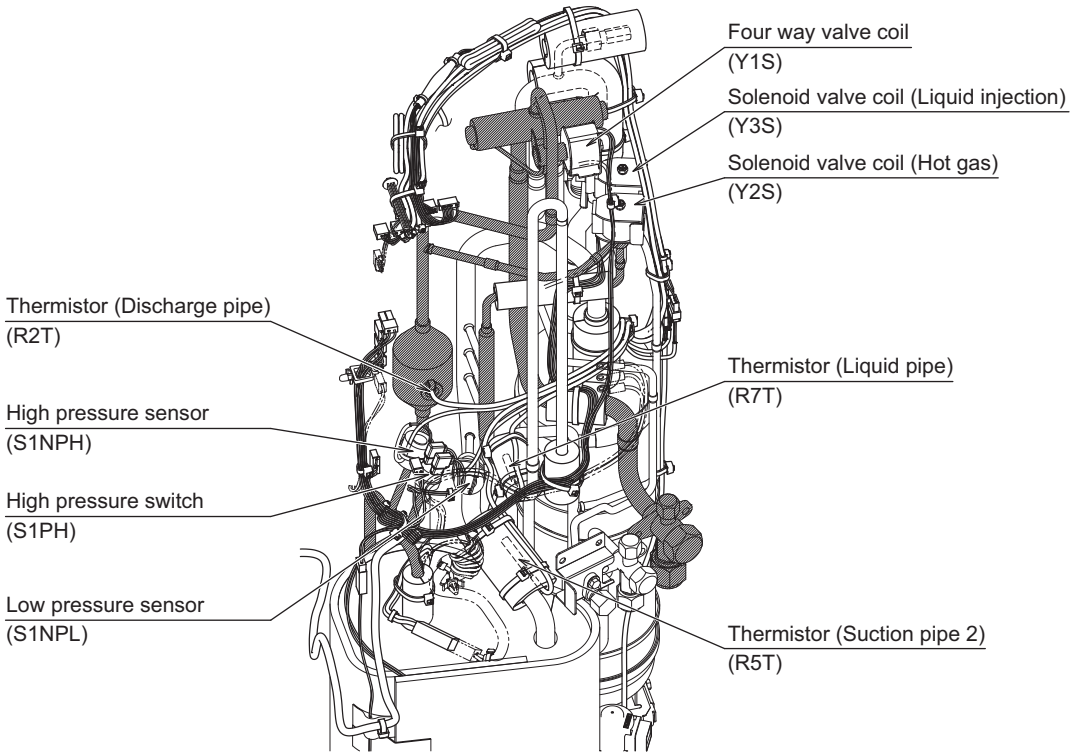
Precautions when installing the crankcase heater (E1HC)

1. The crankcase heater must not come into contact with Q1E fixture and should be mounted above the Q1E fixture with about 5 mm (0.2 inch) distance.
2. Put the coil spring of the heater between the lead wires.

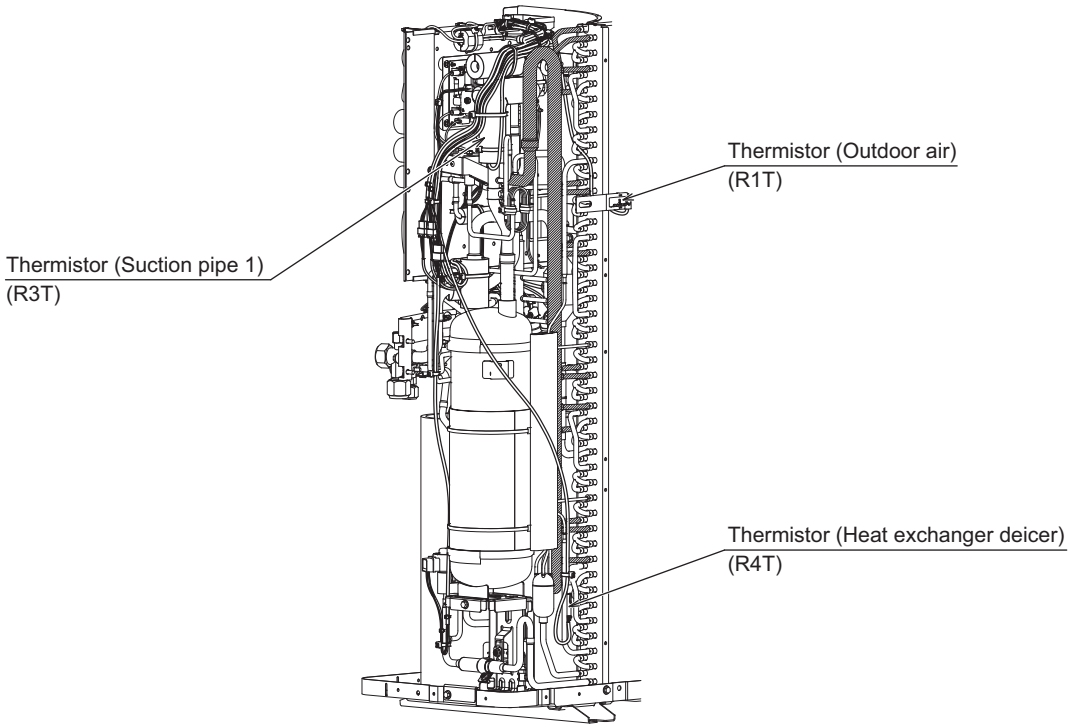


C: 1P728686G

Arrow view A



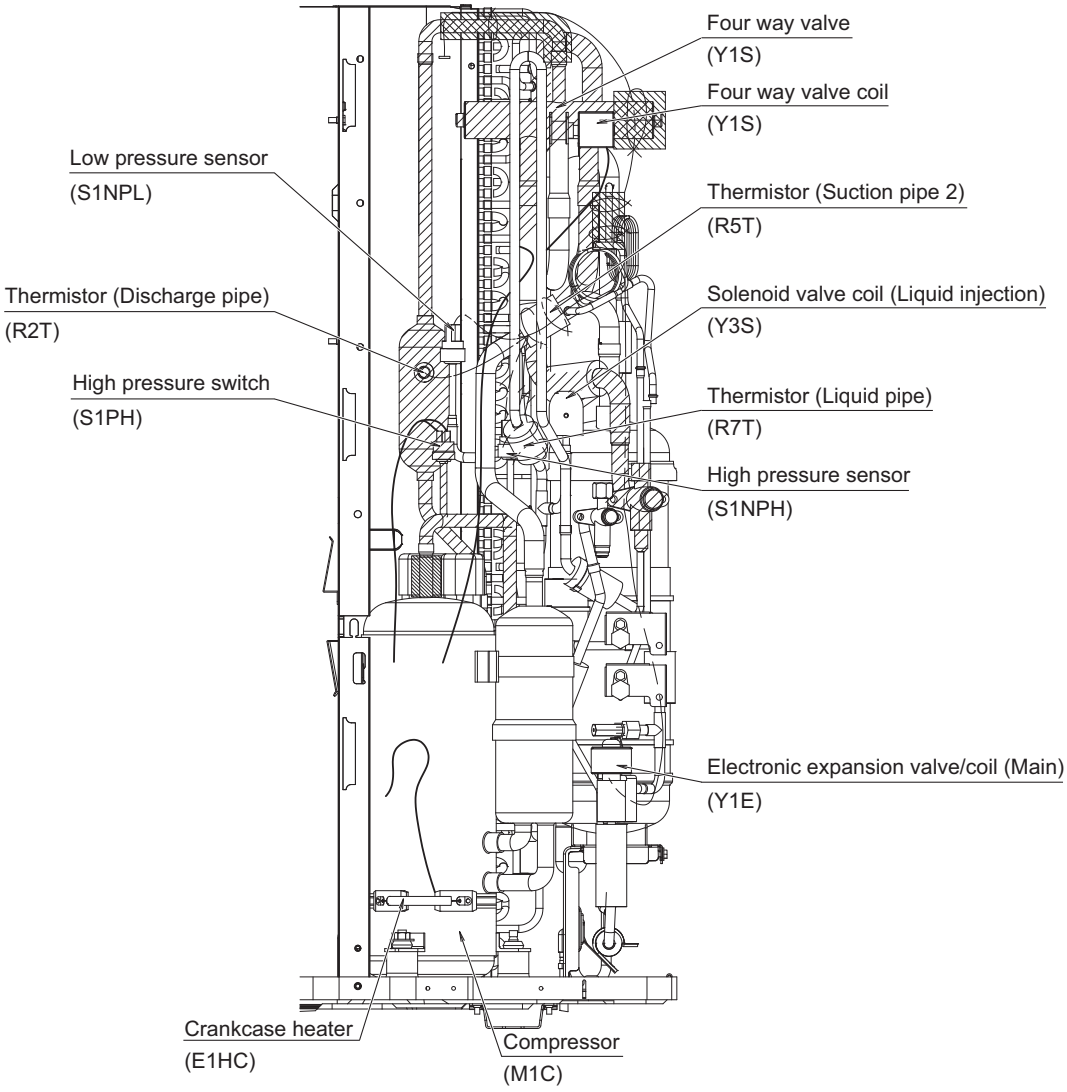
Back view



C: 1P728686G

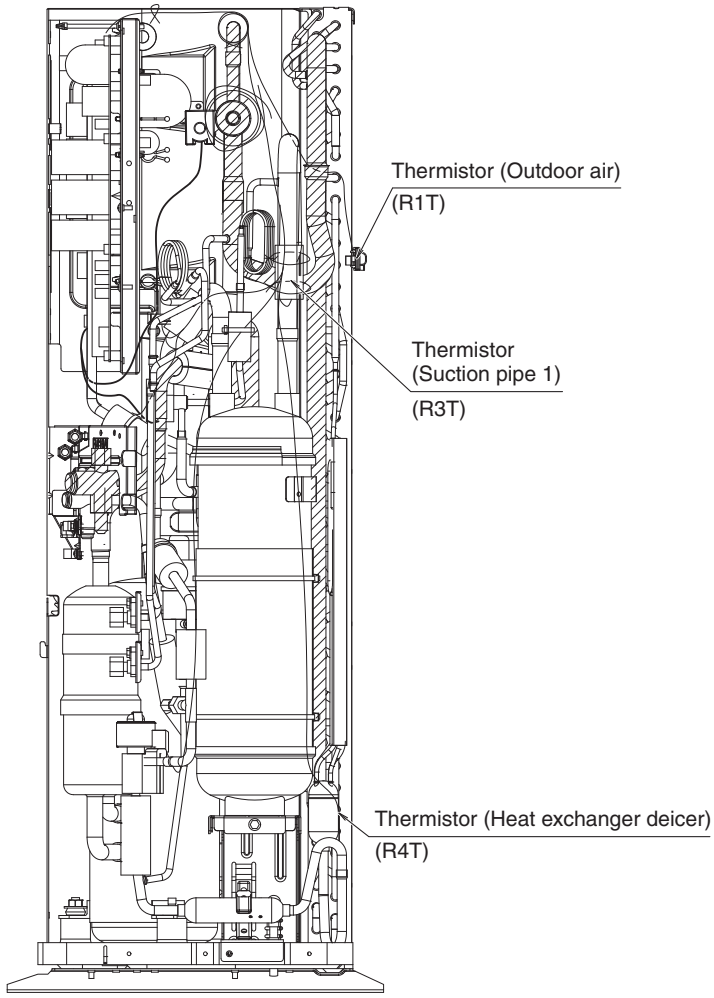
2.4 RXTQ48TAVJU

Front view



C: 1P374828X

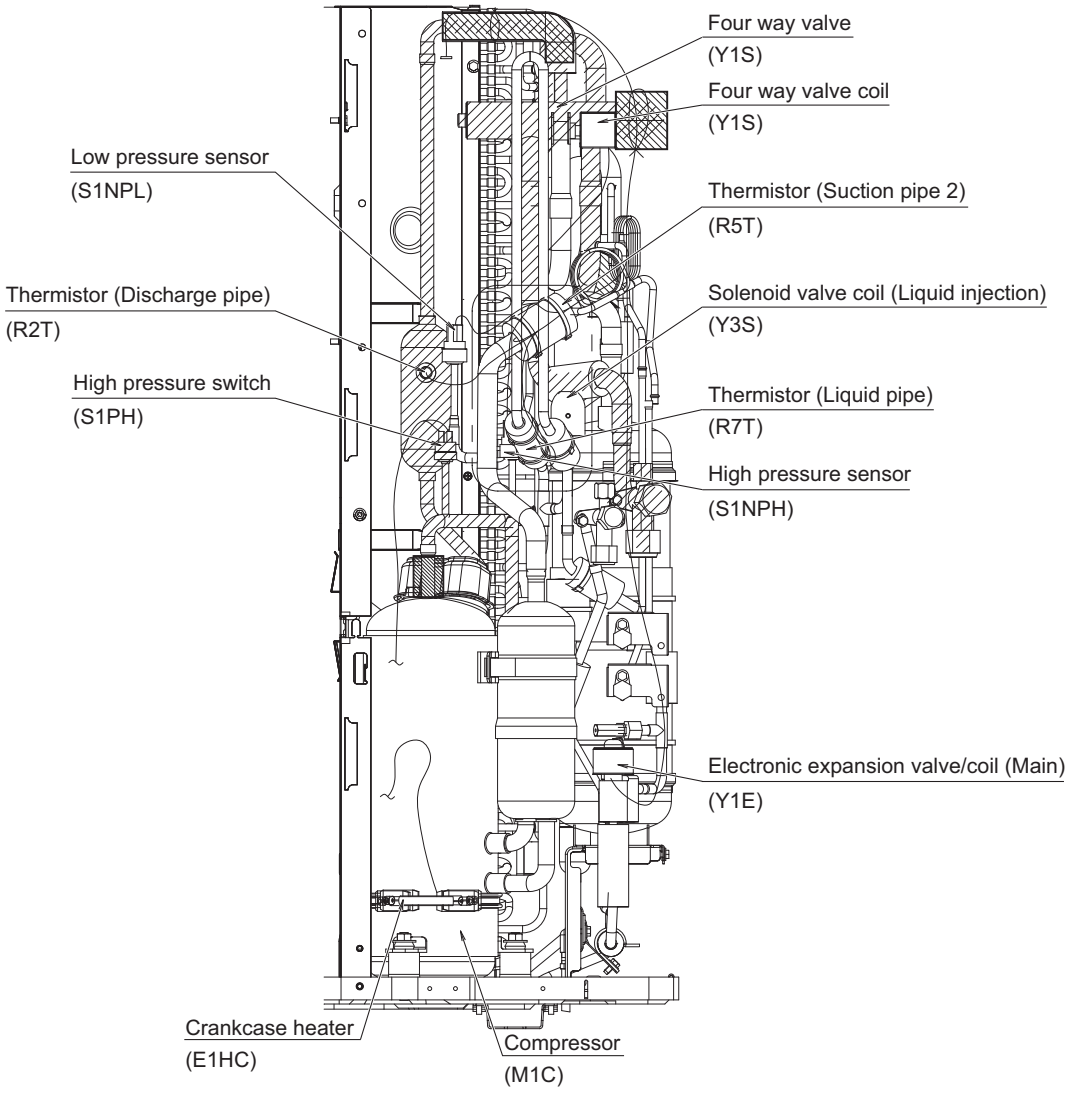
Side view



C: 1P374828X

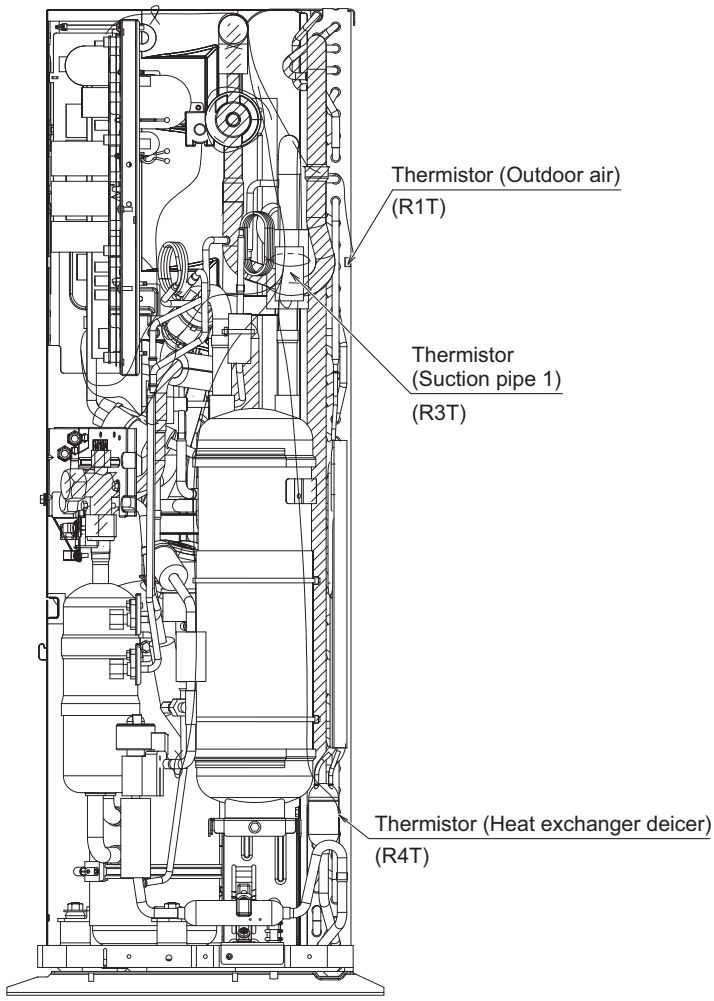
2.5 RXTQ48TAVJUA, RXTQ48TBVJUA

Front view



C: 1P589935F

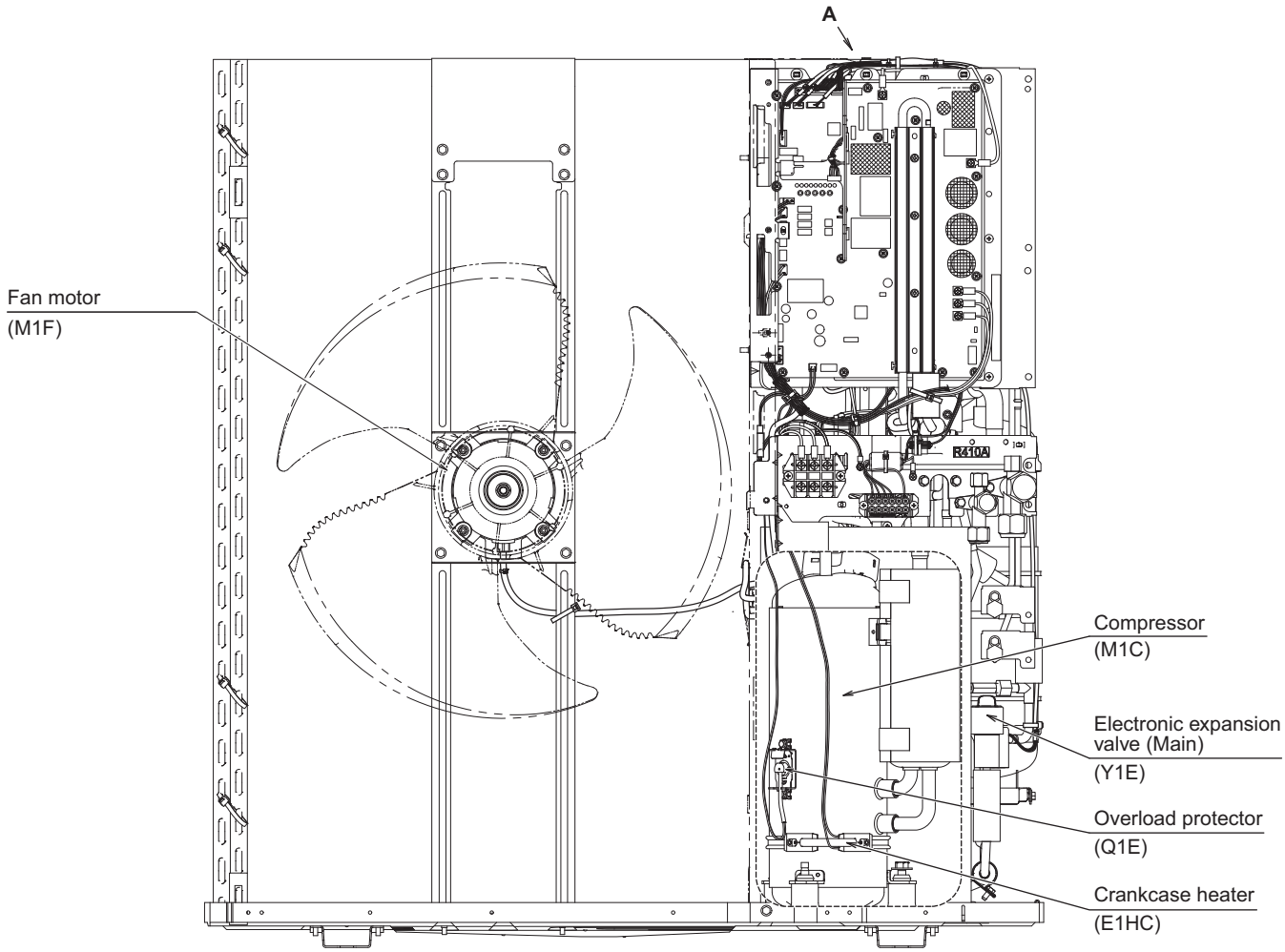
Side view



C: 1P589935F

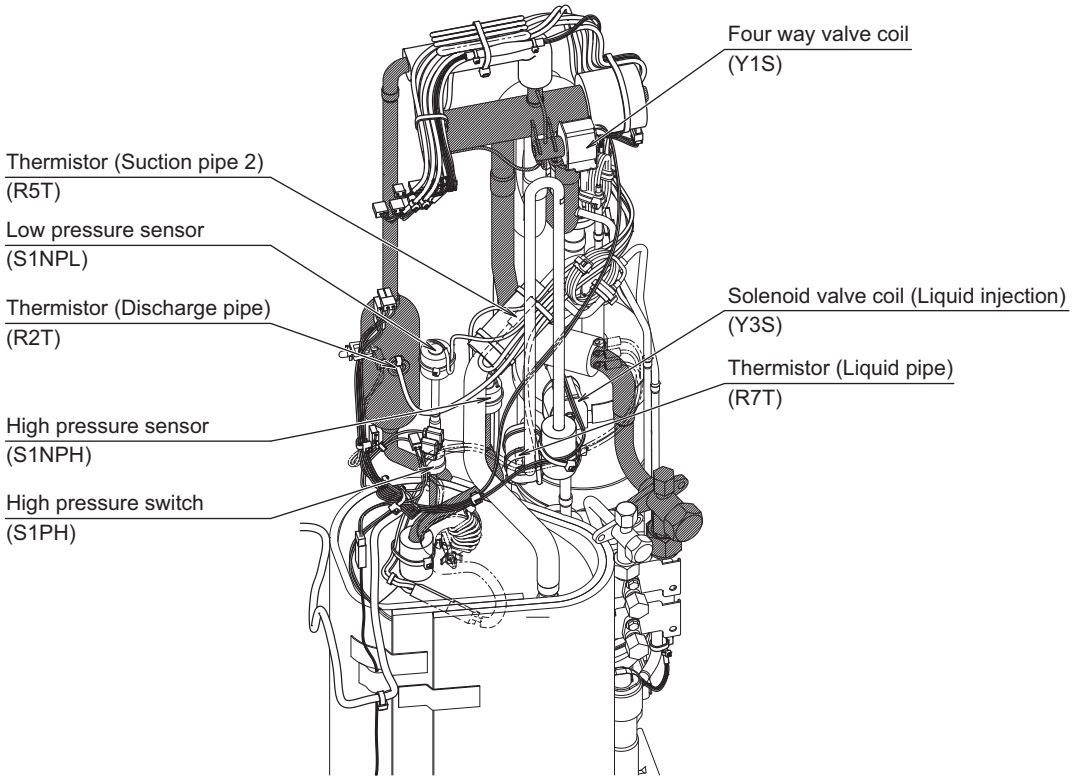
2.6 RXTQ48TBVJUB

Front view

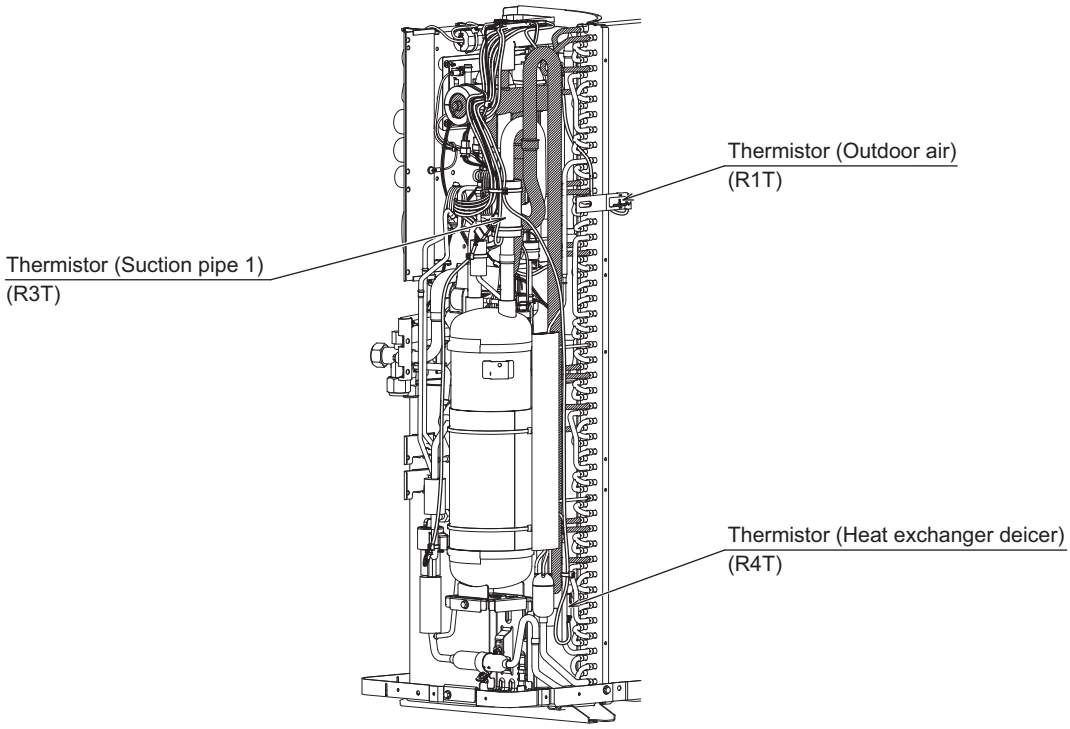


C: 1P734117F

Arrow view A



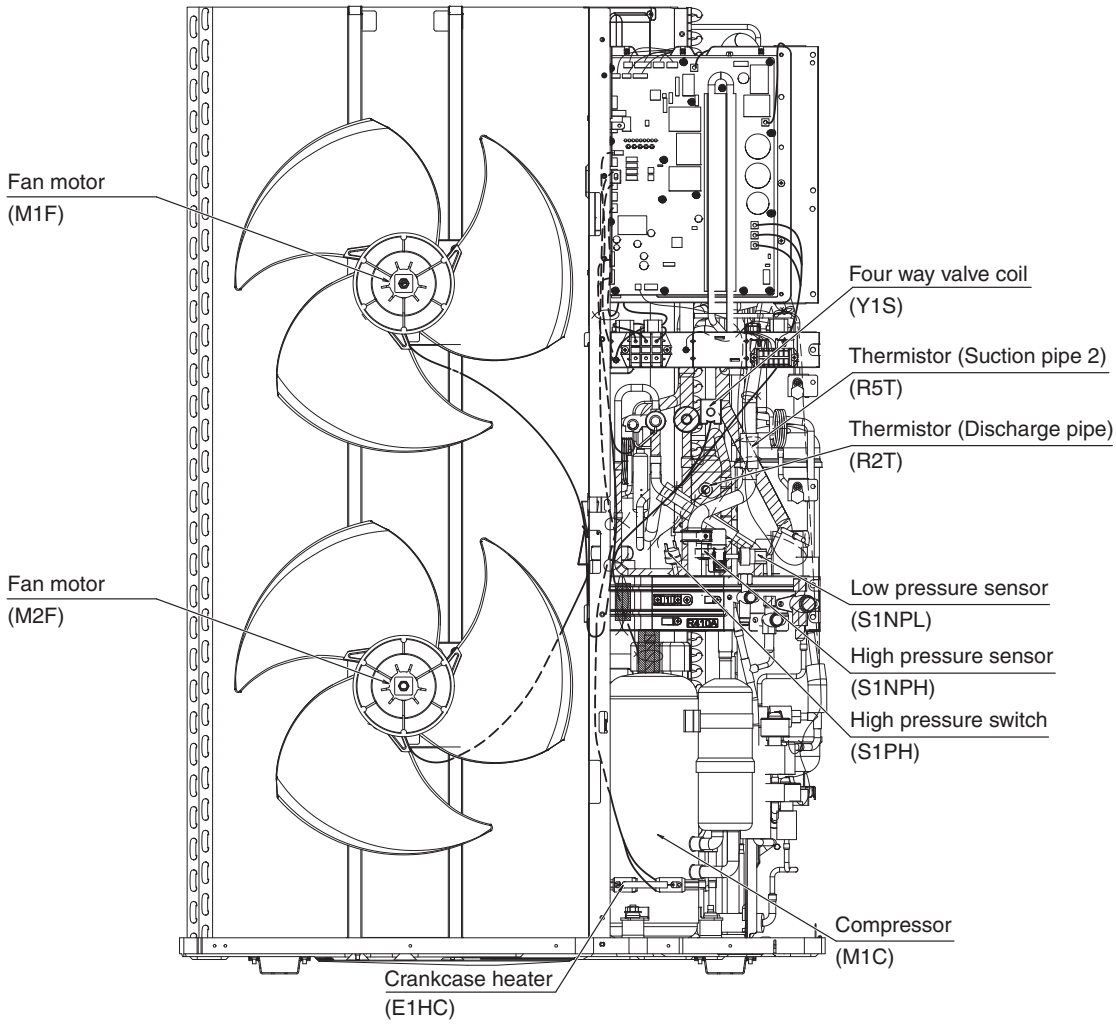
Back view



C: 1P734117F

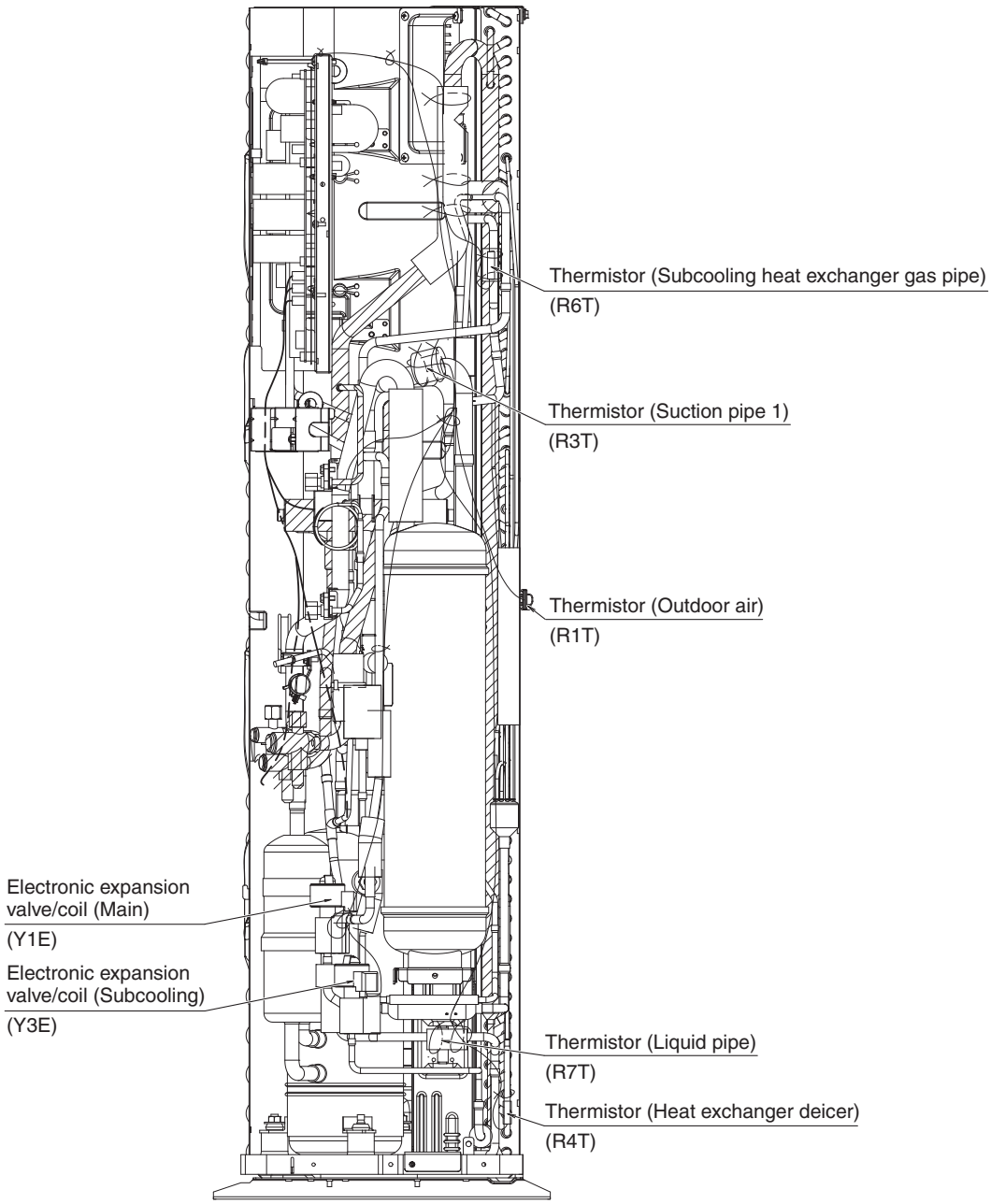
2.7 RXTQ60TAVJU

Front view



C: 1P441643Q

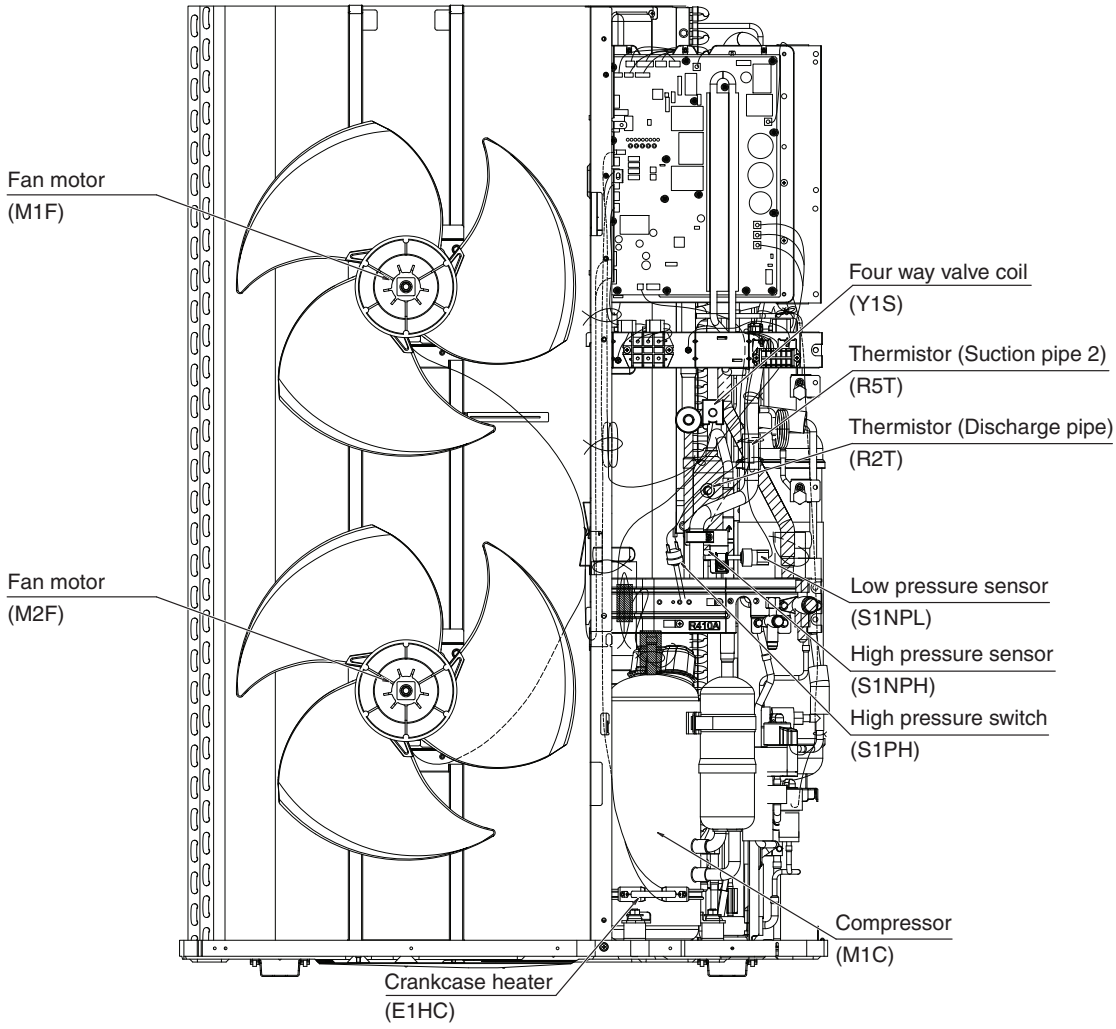
Side view



C: 1P441643Q

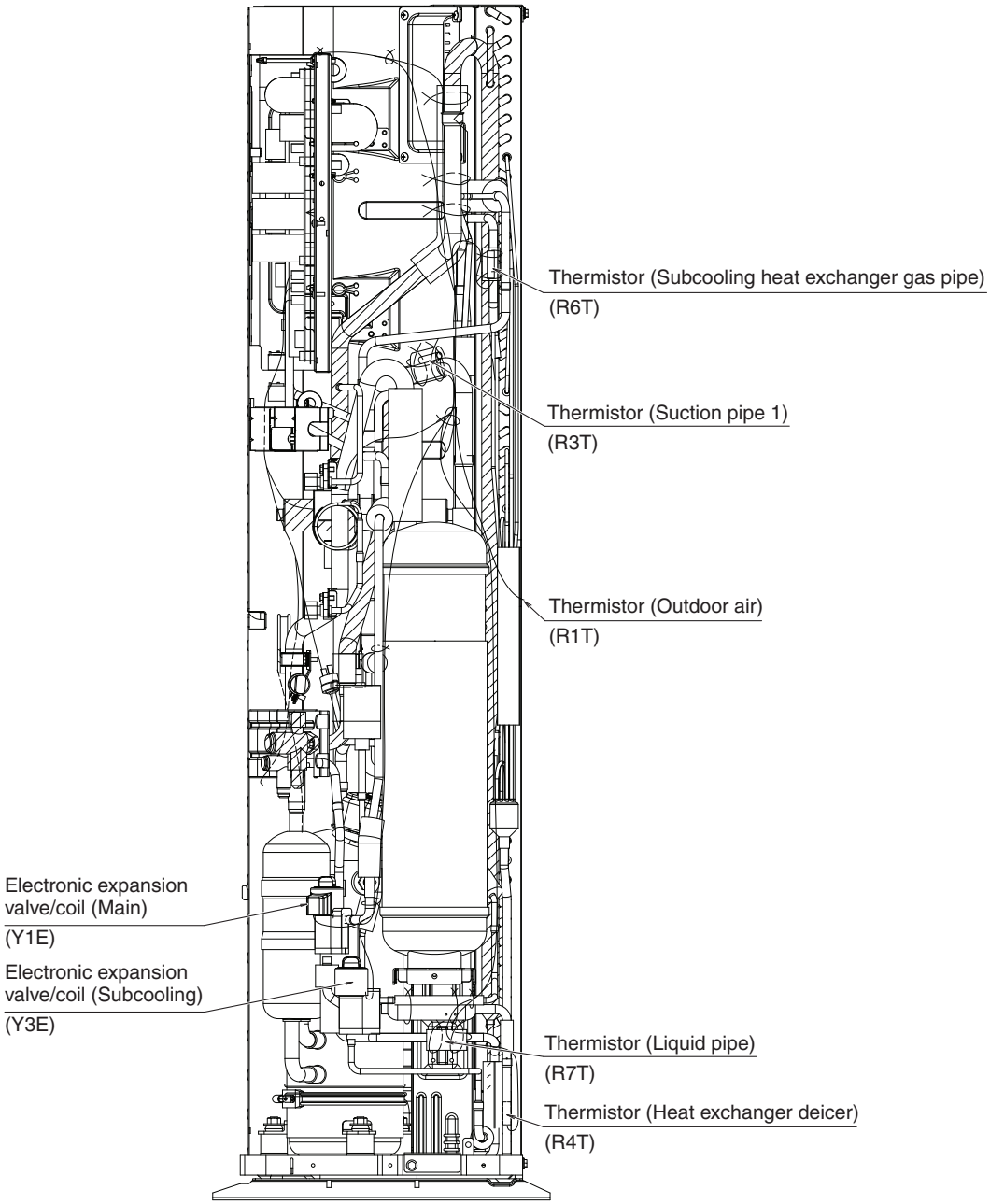
2.8 RXTQ60TAVJUA, RXTQ60TBVJUA

Front view



C: 1P589937E

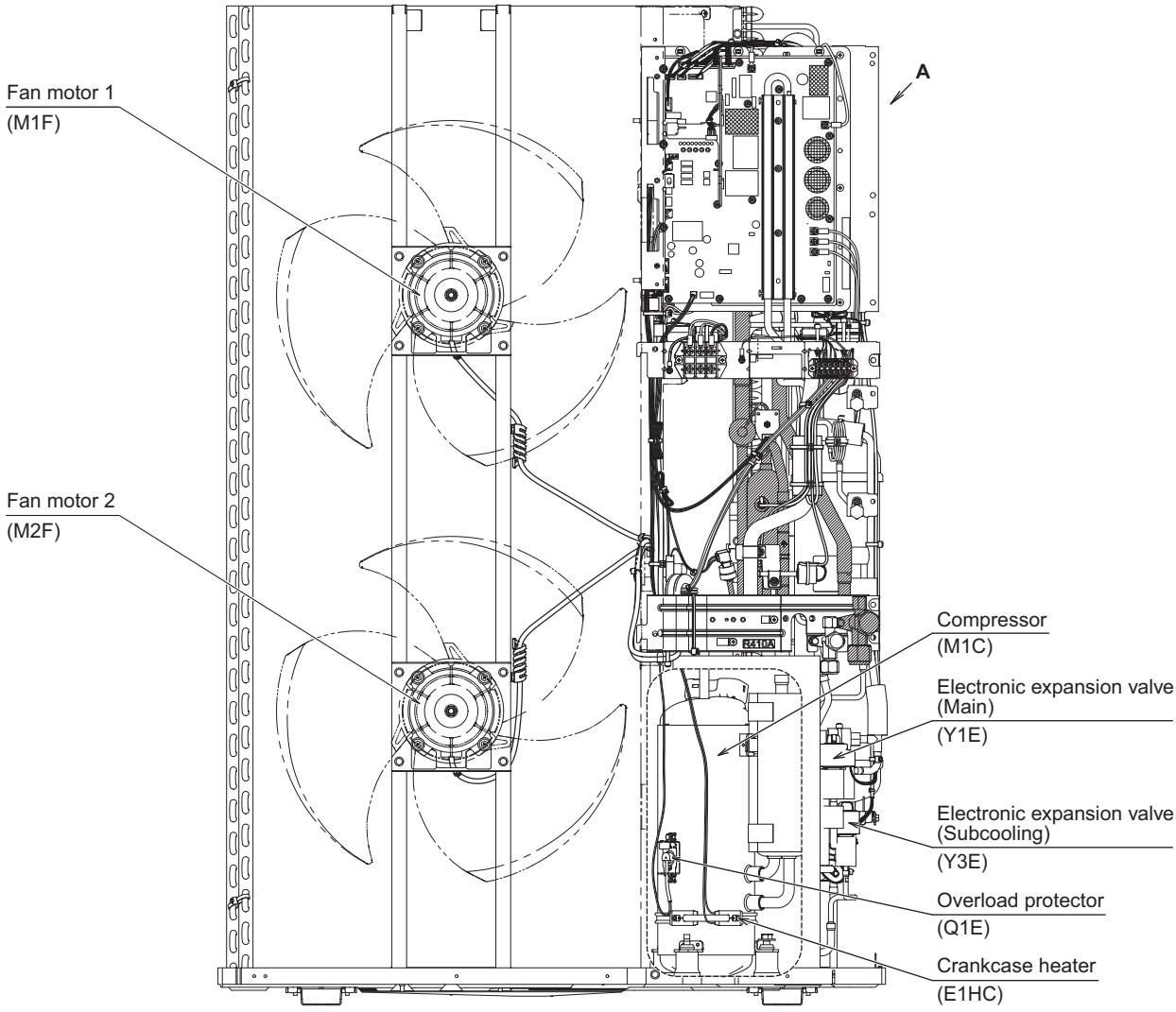
Side view



C: 1P589937E

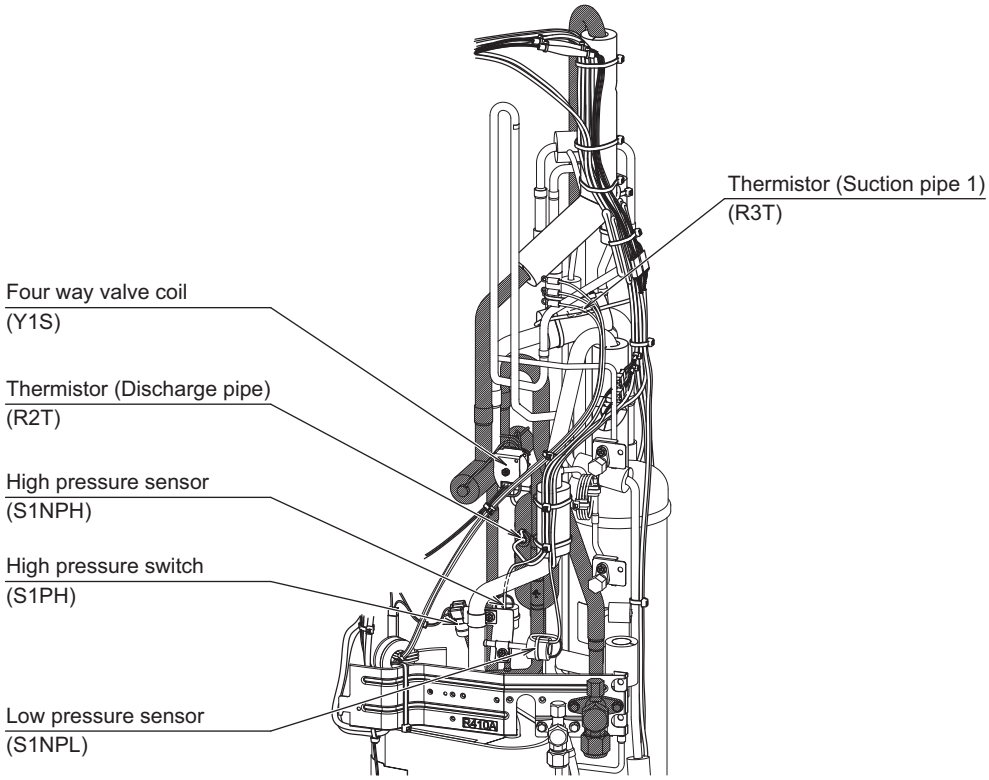
2.9 RXTQ60TBVJUB

Front view

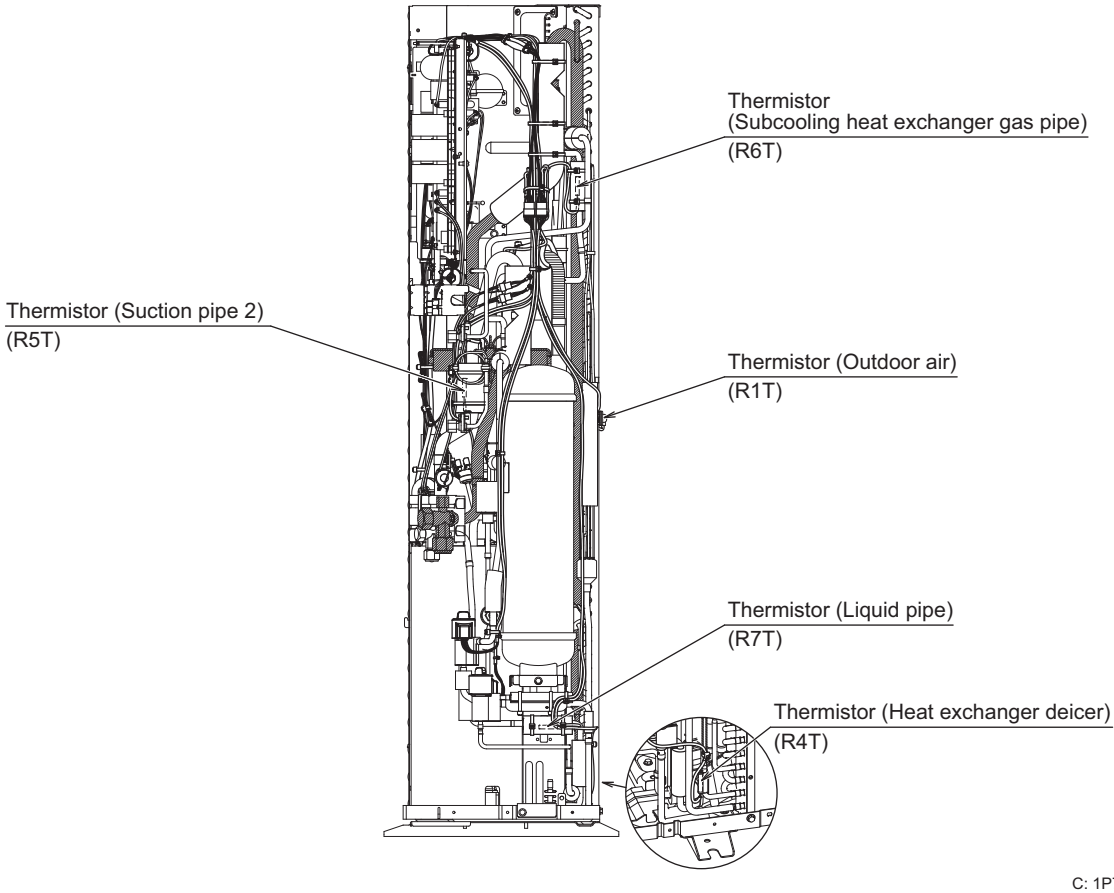


C: 1P735532G

Arrow view A



Side view



C: 1P735532G

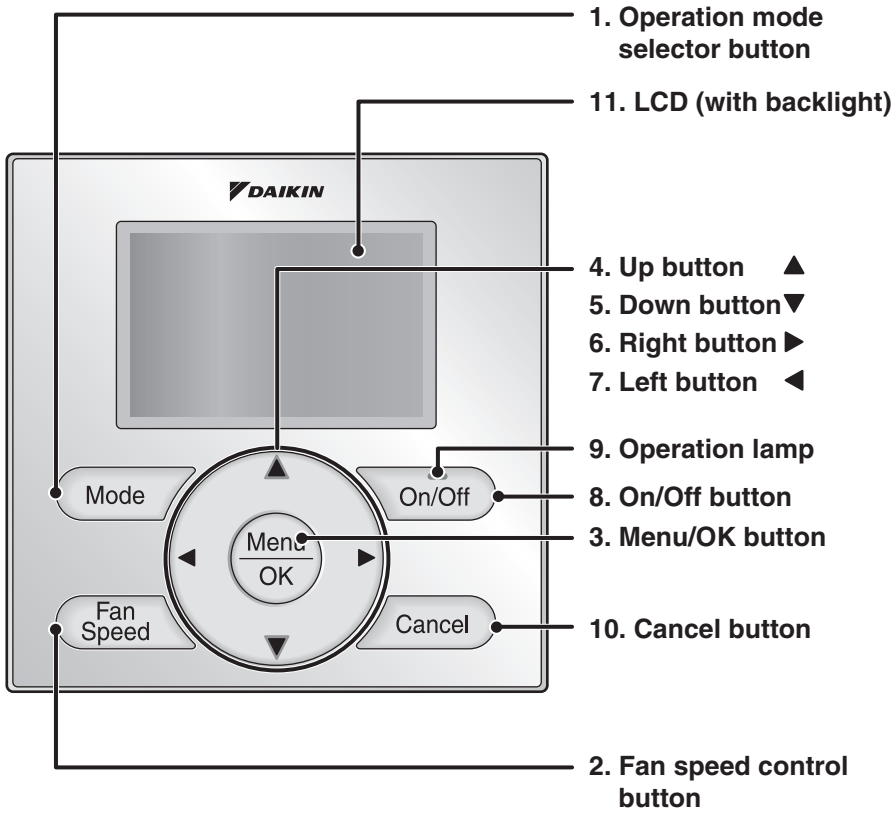
Part 3
Remote Controller

1. Applicable Models

Series	Wired remote controller		Wireless remote controller
	Navigation	Madoka	
FXFQ-AA	BRC1E73	BRC1H71W	—
FXFQ-T			
FXFQ-P			
FXZQ-TA			BRC082A42W (for BYFQ60C3W1W) BRC082A42S (for BYFQ60C3W1S) BRC082A41W (for BYFQ60B3W1)
FXZQ-TB			BRC082A42W (for BYFQ60C3W2W) BRC082A41W (for BYFQ60B3W1)
FXZQ-M			BRC7E830
FXUQ-P			—
FXUQ-PA			
FXEQ-P			
FXDQ-M			BRC4C82
FXSQ-TA			BRC082A43
FXSQ-TB			
FXMQ-PB			BRC4C82 (Fan: 2 steps) BRC082A43 (Fan: 3 steps)
FXMQ-TB			BRC082A43
FXHQ-M			BRC7E83
FXAQ-P			BRC7E818
FXLQ-M			—
FXNQ-M			
FXTQ-PA			BRC4C82
FXTQ-TA			
FXTQ-TB			
FXMQ-MF			
VAM-G			—

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(s)

- 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.

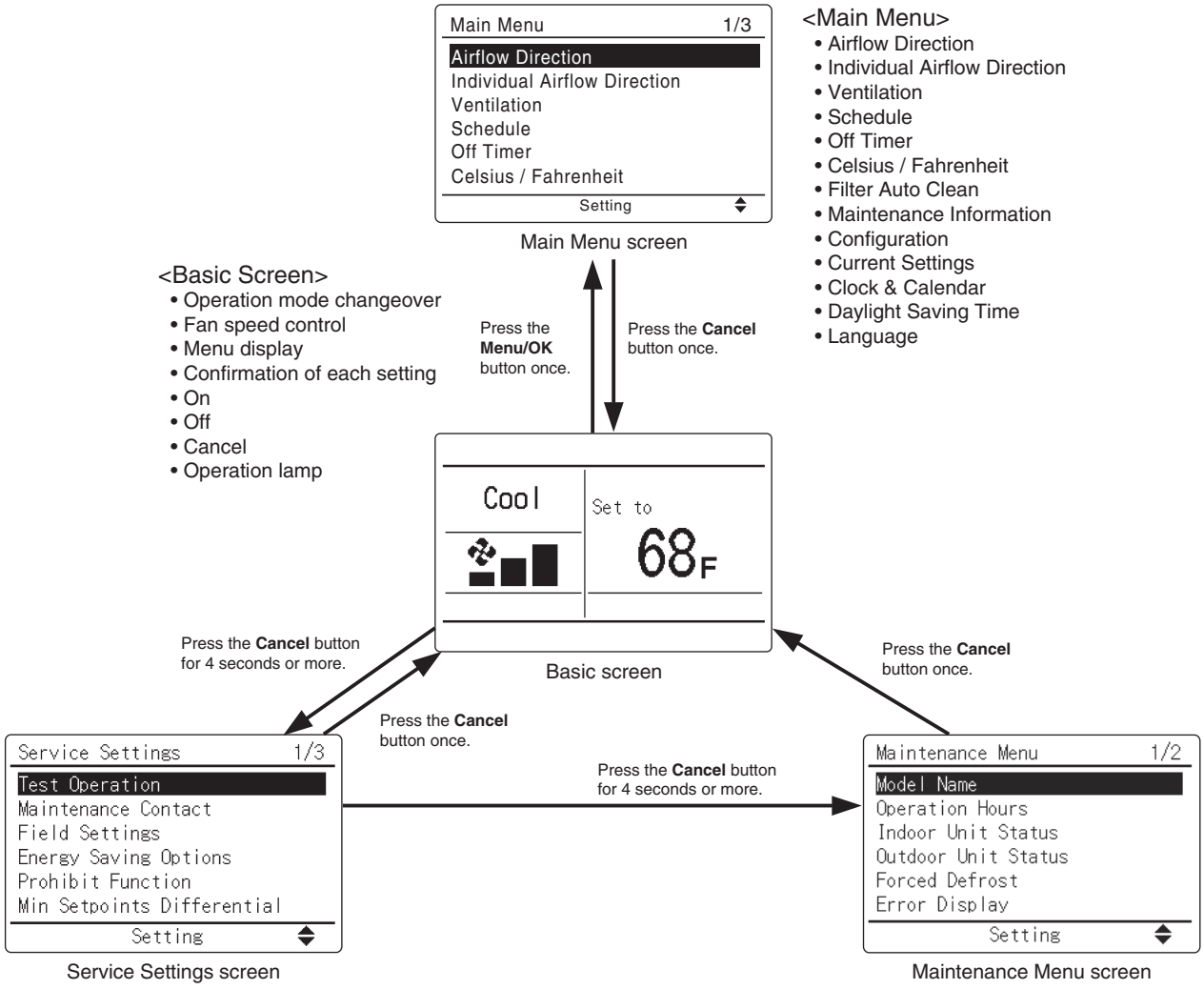
8. On/Off button
- Press this button and system will start.
- Press this button again to stop the system.

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.

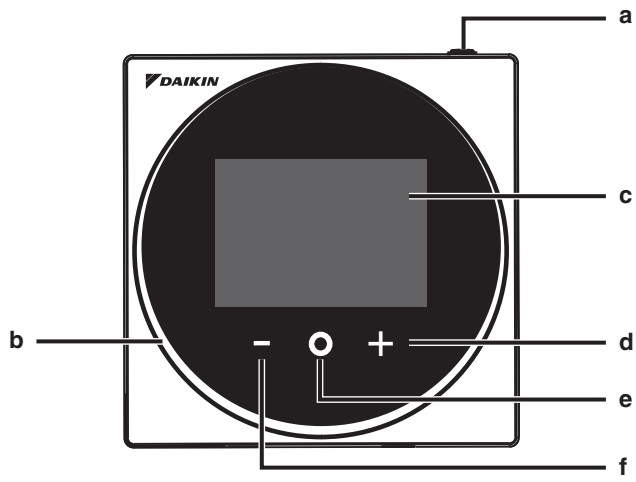
11. LCD (with backlight)
- The backlight will be illuminated for approximately 30 seconds by pressing any button.
- If two remote controllers are used to control a single indoor unit, only the controller accessed first will have backlight functionality.

Service Check Function



2.2 BRC1H71W

2.2.1 Button Locations and Descriptions



a ⏻ ON/OFF button
- Press this button to turn on the system.
- Press this button again to turn off the system.

b Status indicator (LED)
- During operation, the light ring around the display lights up blue/red/green.
  Lights up blue: Operating, Blinks red: Error is occurring, Lights up/blinks green: Bluetooth connecting

c LCD
- Displays the current setpoint and air conditioner operation status.

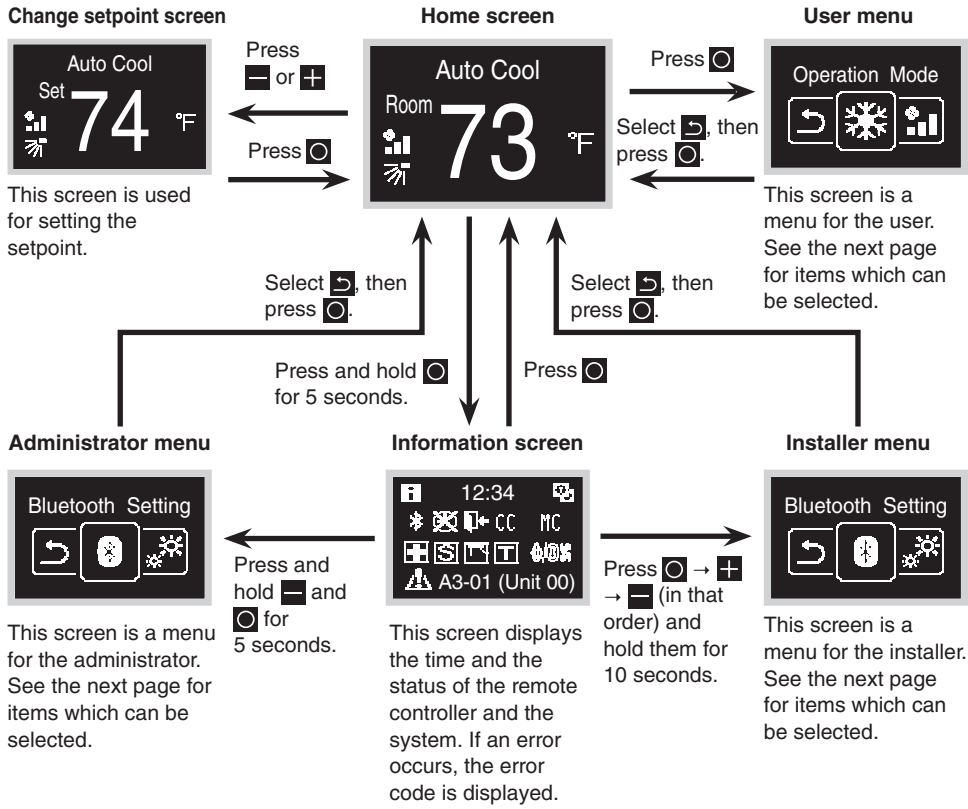
d + NAVIGATE/ADJUST button
- Navigate right.
- Adjust a setting.

e ○ SELECT/ACTIVATE/SET button
- From the home screen, enter the user menu.
- From the user menu, enter one of the submenus.
- From their respective submenu, activate an operation/ventilation mode.

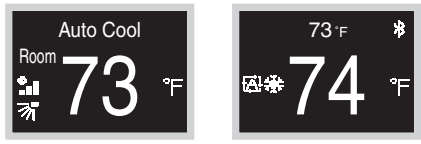
f − NAVIGATE/ADJUST button
- Navigate left.
- Adjust the setting.

2.2.2 Overview of Screens

The following is just an example. The items available for setting vary depending on the indoor unit you are using. If there is no button operation for about 10 seconds, the screen returns to the home screen.



There are 2 screen display modes, text mode and icon mode.
Change the mode according to your preference.
* All of the above explanations are shown with screens from text mode.



Text mode Icon mode

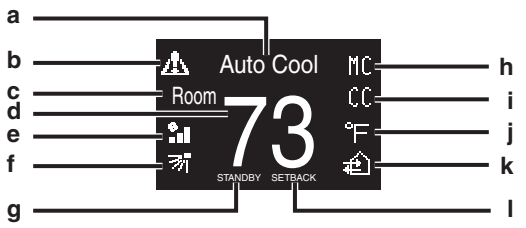
2.2.3 Setting Screen List

Setting list			User menu	Administrator menu	Installer menu
Icon	Name	Description			
Depends on current setting	Operation Mode	Operation mode setting	●		
Depends on current setting	Fan Speed	Airflow rate setting	●		
Depends on current setting	Airflow Direction	Airflow direction 1 setting	●		
Depends on current setting	Vertical Airflow	Airflow direction 2 setting	●		
Depends on current setting	Ventilation Mode	Ventilation mode setting	●		
Depends on current setting	Ventilation Rate	Ventilation rate setting	●		
	Adjust LED (ON)	LED brightness adjustment when backlight lights up	●		
	Adjust LED (OFF)	LED brightness adjustment when backlight lights up dimly	●		
	Celsius/Fahrenheit	Fahrenheit/Celsius changeover	●		
	Setpoint	Setpoint setting when in auto operation mode	●		
	Sign Reset	Filter sign reset	●		

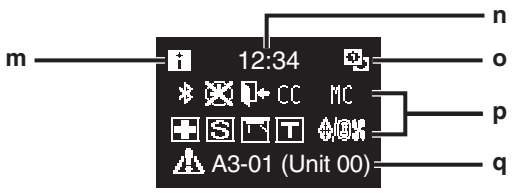
Setting list			User menu	Administrator menu	Installer menu
Icon	Name	Description			
	Bluetooth Setting	Bluetooth setting		●	●
	Backlight	Backlight brightness setting		●	●
	Contrast	Contrast setting		●	●
	Clock Setting	Clock setting		●	●
	Standard Temp	Scale reference temperature setting		●	●
	About	Administrator information		●	●
	Admin Password	Administrator password setting		●	
	Installer Password	Installer password setting			●
	Field Setting	Field Setting			●
	R/C Setting	R/C Setting			●
	Address Setting	Address Setting			●
	Forced Fan ON	Forced Fan ON Setting			●
	Rel Master Control	Release changeover master			●

2.2.4 Names and Functions

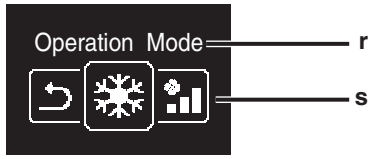
Home screen



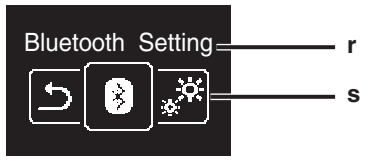
Information screen



User menu/Administrator menu/Installer menu



User menu



Administrator menu/Installer menu

Screen display explanation

a Operation mode/OFF display
- Displays the operation status.

b Error/Filter/Test icon
- Error, filter and test icons are displayed.

c Room/Set
- Indicates whether it's a room temperature display (Room) or setpoint display (Set).

d Room temperature/Set temperature
- Displays the current room or setpoint temperature.

e Fan speed
- Displays the set fan speed.

f Airflow direction
- Displays the set airflow direction.

g STANDBY
- Displays during defrost/hot start.

h Changeover controlled by the master indoor unit
- Displayed when another indoor unit on the system has the authority to change the operation mode between cool and heat.

i Under centralized control
- Displayed if the system is under the management of a multi-zone controller (Optional) and the operation of the system through the remote controller is limited.

j Fahrenheit/Celsius
- Depending on the setting, Fahrenheit/ Celsius display can be selected.

k Ventilation operation/Air Purify
- Displayed when a Heat Reclaim Ventilator is connected.

l Setback
- Blinks during setback operation.
- Displayed during setback setting.

m Information icon

n Clock (24 hours time display)

o MAIN/SUB remote controller sign

p Status
- Notifies the status.

q Error display
- If an error occurs, the icon, an error code and unit number are displayed.

r Settings menu name

s Settings menu icon

INFORMATION

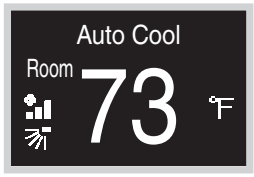
Depending on the connected model, some items may not be displayed.
The controller is equipped with a power-saving function that darkens the display if there is no operation for a certain period of time. To make the screen light up again, press one of the buttons.
Note that pressing one of the buttons will only make the display bright again, not cause remote controller operation.

* All screens shown are from text mode.

Home screen list

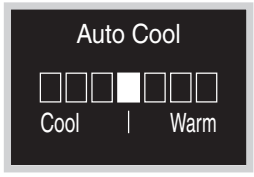
There are 4 types of home screen.
The home screen type can be changed by the remote controller setting.

Text mode

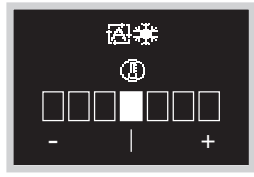


Icon mode

Text mode (Scale screen)



Icon mode (Scale screen)



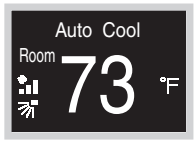
When in the scale screen, the setpoint can be changed in the range of ±3°C/°F of the reference temperature.
The reference temperature can be changed from the smartphone application or the remote controller (from the administrator menu).

2.2.5 Information Screen

The functions of the connected indoor unit are displayed as icons.

How to display the information screen

Home screen



Text mode

Icon mode

Press and hold ◯ on the Home screen for 5 seconds.

Information screen

The screen switches to the Information screen.

How to exit the information screen

Information screen

Press ◯ or there is no button operation for about 10 seconds, the screen returns to the home screen.

About icons on the information screen

The items displayed vary depending on the indoor unit you are using.

Icon	Name	Description
	**Information**	Indicates an information screen.
	**MAIN/SUB remote controller**	Displayed when used as the MAIN/SUB remote controller. 1=main, 2=sub
	**Bluetooth***	Indicates that the controller is communicating with a mobile device, for use with the app.
	**Clock not set**	Indicates that the clock needs to be set again.
	**Setback**	Indicates that the indoor unit is operating under setback conditions.
	**Under centralized control**	Indicates that the system is controlled by central control equipment (optional accessory) and that control of the system by the controller is limited.
	**Changeover controlled by the master indoor unit**	**Displayed:** The remote controller does not have master control. Unable to select heating/cooling operation. **Blinking:** None of the remote controllers in the system have master control. Can be set as the master controller during this time. **Not Displayed:** The remote controller has master control. Able to select heating/cooling operation.
	**Backup**	Indicates that backup operation is being carried out.
	**Energy savings**	Indicates that the system's energy consumption is being limited, and that it is running with restricted capacity.
	**Individual airflow direction**	Indicates that the individual airflow direction setting is enabled.
	**Test operation**	Indicates that Test Operation mode is active.
	**Stand by for Defrost/ Hot start**	Indicates that the defrost/hot start mode is active.
	**Self-cleaning filter operation**	Indicates that self-cleaning filter operation is active.
	**Inspection**	Indicates that the indoor or outdoor unit is being inspected.
	**Periodic inspection**	Indicates that the indoor or outdoor unit is being inspected.
	**Ventilating operation**	Indicates that ventilating operation is being carried out.
	**Warning**	Indicates that an error occurred, or that an indoor unit component needs to be maintained.

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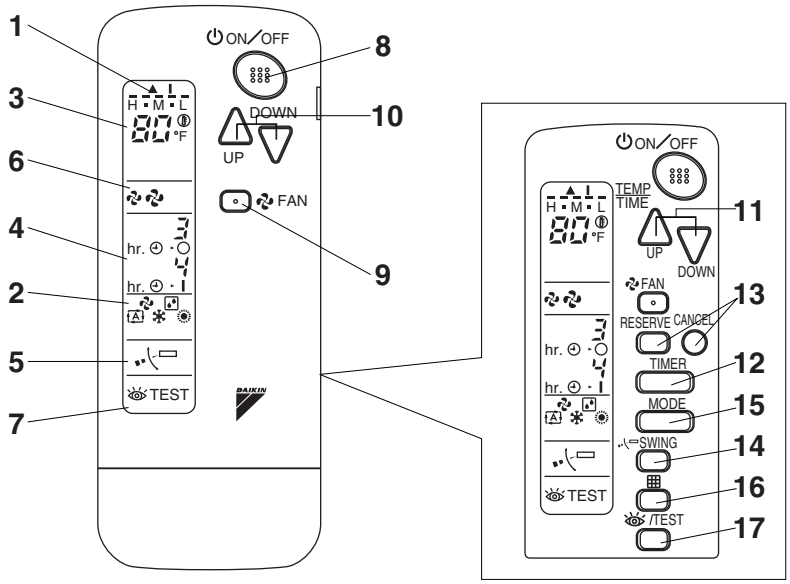
2.3 Wireless Remote Controller



1	**DISPLAY ▲ (SIGNAL TRANSMISSION)**
	This lights up when a signal is being transmitted.
2	**DISPLAY (OPERATION MODE)**
	This display shows the current OPERATION MODE.
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 (AIRFLOW 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	**AIRFLOW 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

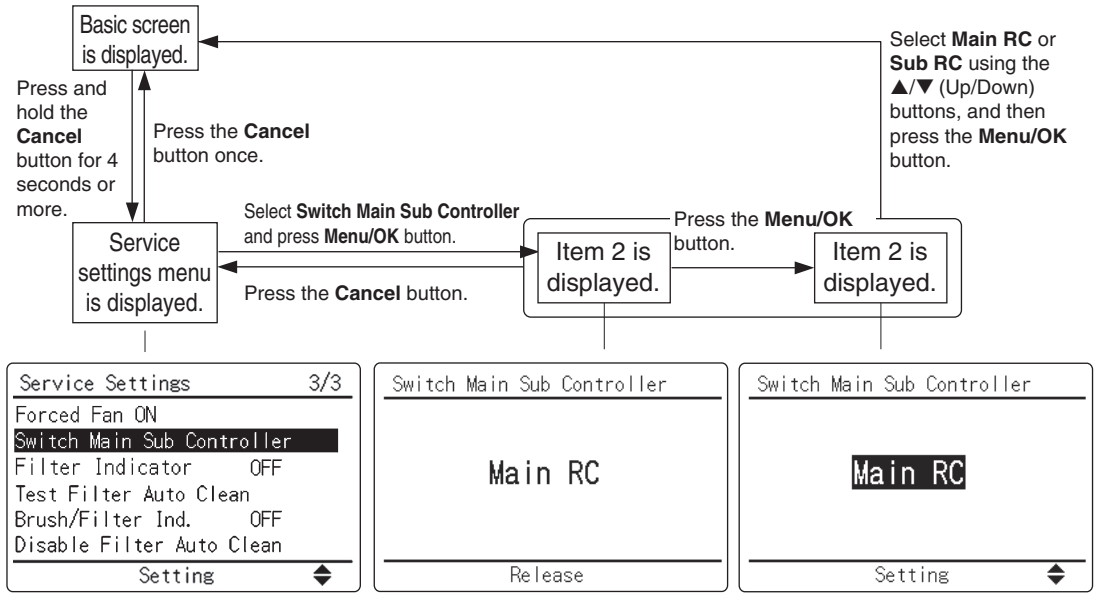
The Main/Sub setting is necessary when 1 indoor unit is controlled by 2 remote controllers. When you use 2 remote controllers (control panel and separate remote controller), set one to Main and the other to Sub.

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:

3.1.1 Field Settings

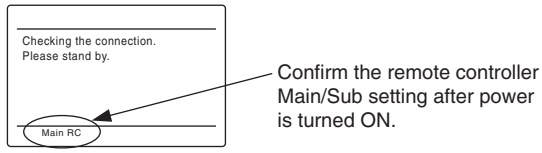
The designation of the main and sub remote controllers can be swapped. Note that this change requires turning the power OFF and then ON again.



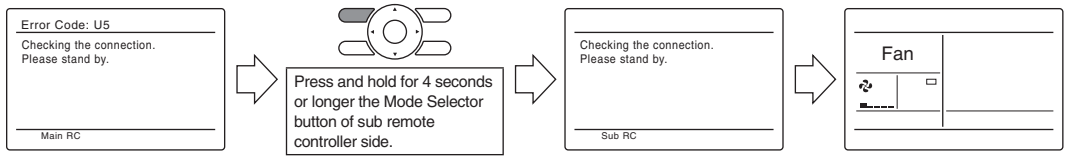
3.1.2 When an Error Occurred

U5: there are 2 main remote controllers when power is turned ON
→Change the setting from Main to Sub on the remote controller you want to be Sub.
U8: there are 2 sub remote controllers when power is turned ON
→Change the setting from Sub to Main on the remote controller you want to be Main.

How to confirm Main/Sub setting
The Main/Sub setting of the remote controller is displayed on the bottom of the screen while **Checking the connection. Please stand by.** is displayed.



How to change Main/Sub setting
You may change the Main/Sub setting of the remote controller while **Checking the connection. Please stand by.** is displayed by pressing and holding the **Mode Selector** button for 4 seconds or longer.

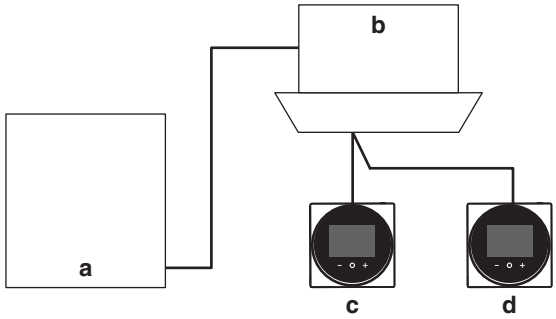


Note(s)

1. It is not possible to change the Main/Sub setting from Main to Sub when only one remote controller is connected.
2. When 2 remote controllers are being used, it is not possible to change the setting from Main to Sub if one of the remote controllers is already set as Main.

3.2 BRC1H71W

3.2.1 Main and Sub Controller



a Outdoor unit
b Indoor unit
c Main remote controller
d Sub remote controller

- On the information screen, main/sub status is indicated by the following icons:

Icon	Description
	Main
	Sub

INFORMATION

It is only possible to use a main and a sub controller of the same type.

INFORMATION

If a sub controller does not display the home screen 2 minutes after its designation, turn off the power and check the wiring.

INFORMATION

After re-designating a controller, the system requires a power reset.

INFORMATION

The following functions are not available for sub controllers:
- “Auto” operation mode
- Individual airflow direction
- Filter auto clean
- Setback temperature setpoints
- Draft prevention

3.2.2 Designating a Controller as Main or Sub

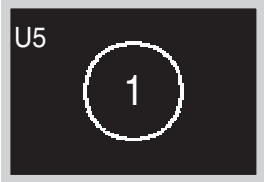
Prerequisite: A remote controller is already connected to the indoor unit.

Connect a second controller.
After turning on the power, perform setting of the second controller.

Result: It will start up automatically.

▼

Home screen



Wait for a U5 or U8 error code to appear on the screen.
Screen display explanation
1 main
2 sub

▼

Home screen

When the U5 error code appears, press — and hold until "2" appears on the screen.
When the U8 error code appears, press — and hold until "1" appears on the screen.

Result:
A controller displaying 1 is set as main, and a controller displaying 2 is set as sub.

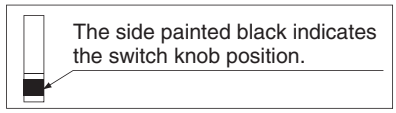
INFORMATION

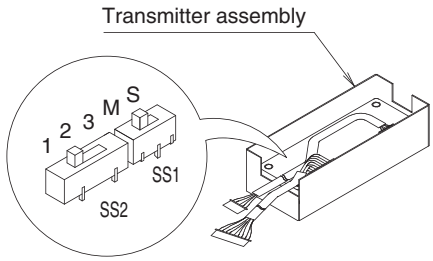
If sub remote controller is not set at power-on in the case of one indoor unit controlled by two remote controllers, Error Code: U5 is displayed in the connection checking screen.
If the sub remote controller does not display the home screen two minutes after its designation, turn off the power and check the wiring.

3.3 When Wireless Remote Controller is Used Together

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

Main/Sub	Main	Sub
Main/Sub switch (SS1)		





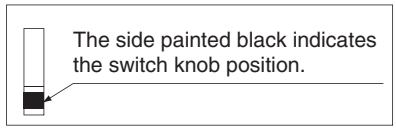
4. Address Setting for Wireless Remote Controller

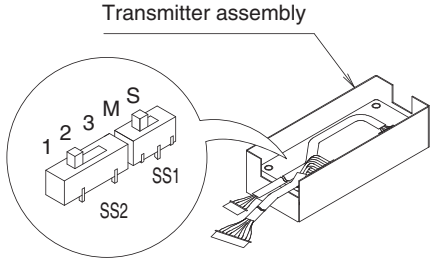
If setting multiple wireless remote controllers to operate in one room, perform address setting for the receiver and the wireless remote controller.
(This includes an individual remote controller control using the group operation.)
(For the wiring for the group operation, please refer to the installation manual attached to the indoor unit.)

Setting for signal receiver PCB

The address for the receiver is set to 1 at the factory. To change the setting, set the wireless address switch (SS2) on the signal receiver PCB according to the table below.

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

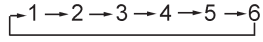




Setting for wireless remote controller

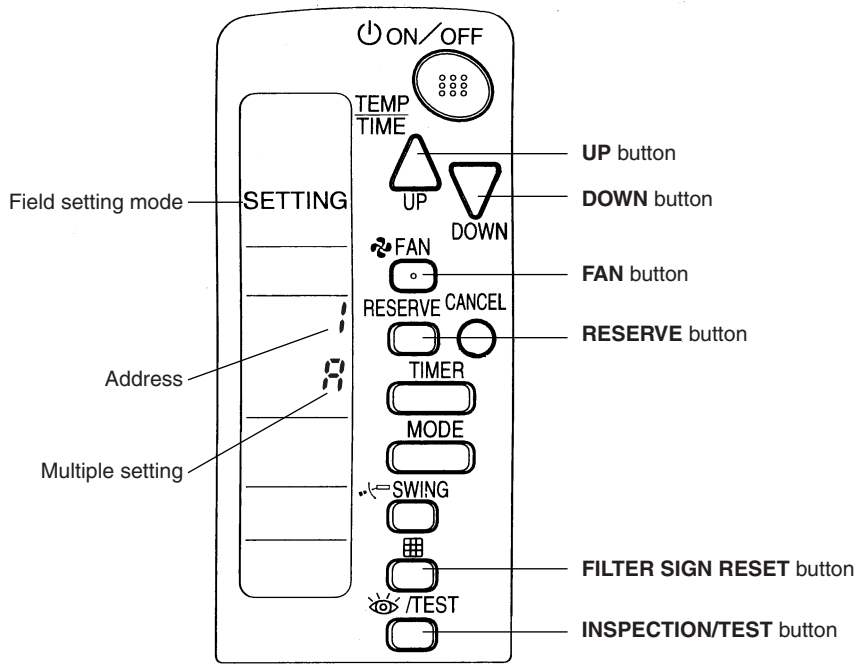
The address for the wireless remote controller is set to 1 at the factory. To change the setting, proceed as follows:

1. Press **FILTER SIGN RESET** button and **INSPECTION/TEST** button at the same time for 4 seconds to enter field setting mode. (**SETTING** is indicated on the display.)
2. Press **FAN** button and select **A** or **b**. Each time the button is pressed, the display switches between **A** and **b**.
3. Press **UP** button or **DOWN** button to select an address from 1-3 as same as the receiver. Address can be set from 1-6, but the receiver does not work with addresses 4-6.



4. Press **RESERVE** button to confirm the setting.

5. Press **INSPECTION/TEST** button for 1 second to return to normal mode.



Multiple Settings A/b

The command such as operation mode or temperature setting by this remote controller will be rejected when the target indoor unit operation is restricted as by an external control such as centralized control.

Since the setting acceptance is hard to discriminate with such circumstances there are two setting options provided to enable discriminating by a beeping sound according to the operation:

A: Standard or **b**: Multi System. Set the setting according to the customer's intention.

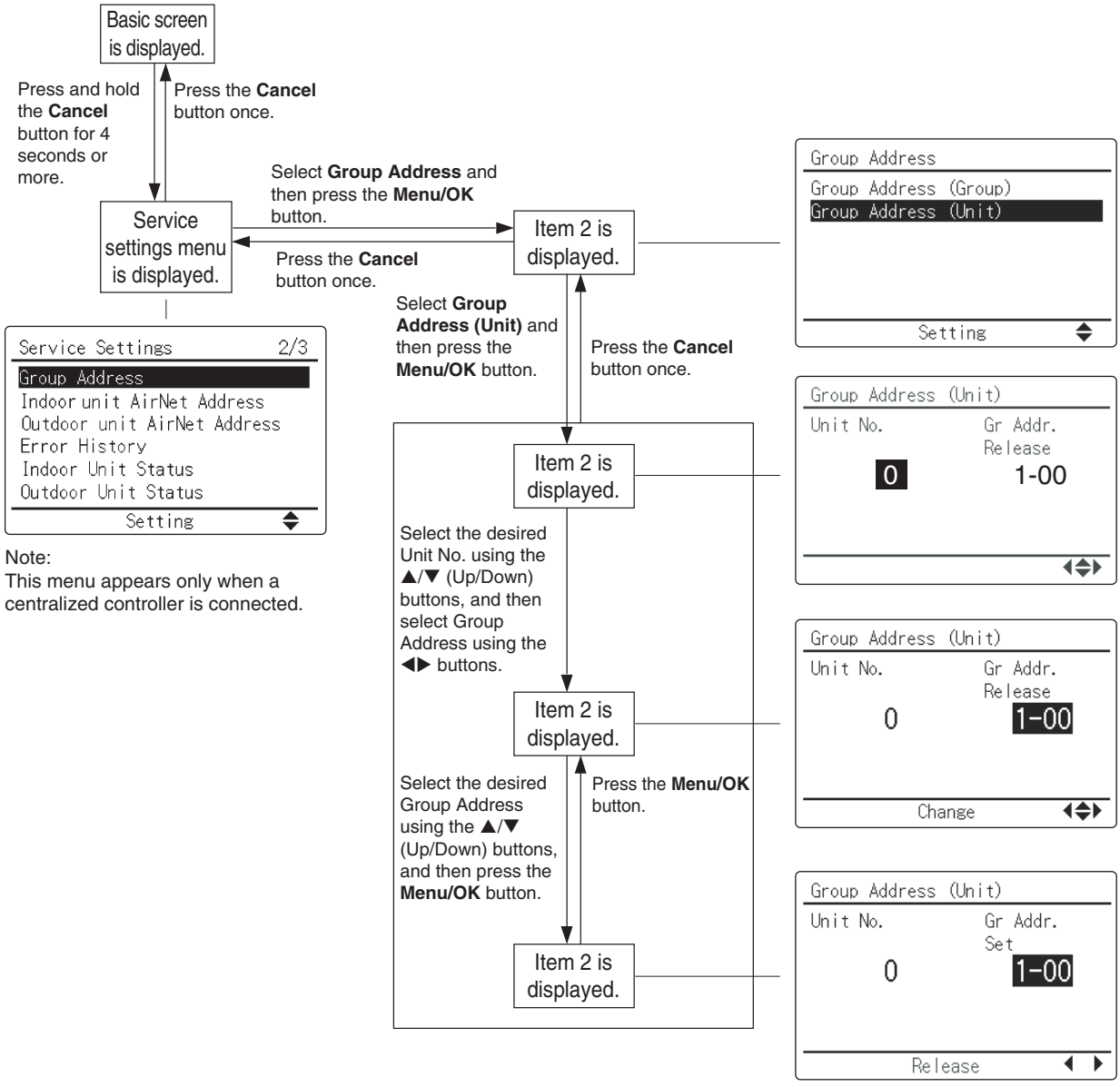
Remote Controller		Indoor Unit	
Multiple setting	Display on remote controller	Behavior to the remote controller operation when the functions are restricted as by an external control.	Other than the left
A: Standard (factory set)	All items displayed.	Accepts the functions except restricted. (Sounds one long beep or three short beeps) There may be a difference from the indoor unit status with remote controller display.	Accepts all items transmitted (Sounds two short beeps) The remote controller display agrees with the indoor unit status.
b: Multi System	Display only items transmitted for a while.	**When some restricted functions are included in the transmitted items** Accepts the functions except restricted. (Sounds one long beep or three short beeps) There may be a difference from the indoor unit status with remote controller display. **When no restricted function is included** Accepts all items transmitted (Sounds two short beeps) The remote controller display agrees with the indoor unit status.	

5. Centralized Control Group No. Setting

5.1 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



Note:
This menu appears only when a centralized controller is connected.

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.

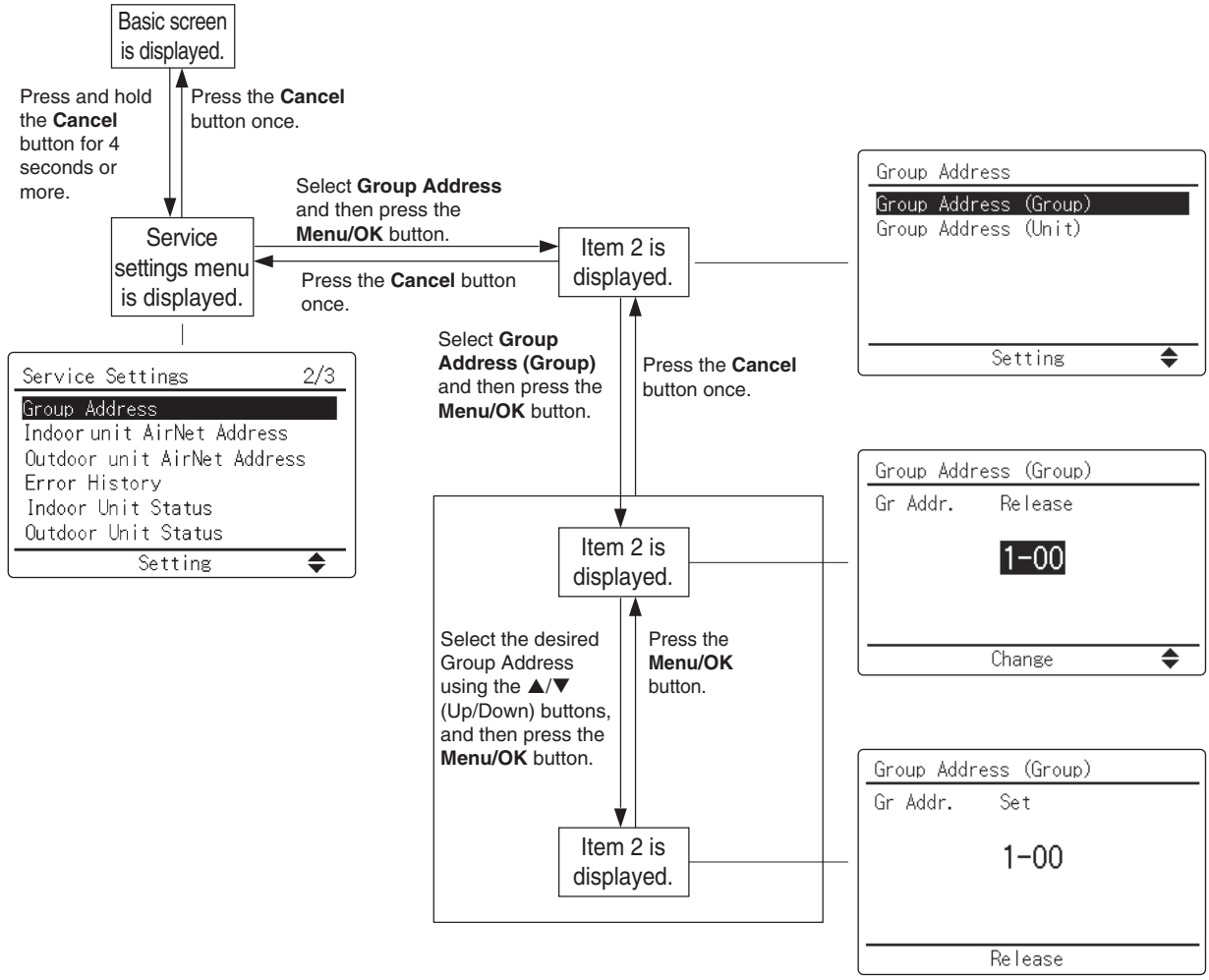
Note(s)

- 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 installation table. Be sure to keep the installation table with the operation manual for maintenance.

Group Address (Group)



5.2 BRC1H71W

Group Address

- Assign the group address and unit number for centralized control.
- The group and unit address can only be set when a centralized controller is connected. This menu is only visible when a centralized controller is connected.
- The group and unit address can be “set” and “released”.

NOTICE

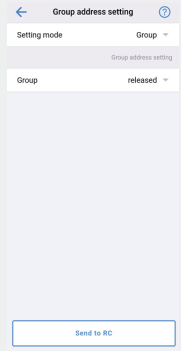
Don’t forget to release the group address before disconnecting the centralized controller because the menu will not be accessible afterwards.

Manual setting mode

- Installer setting
- RC settings
- Maintenance

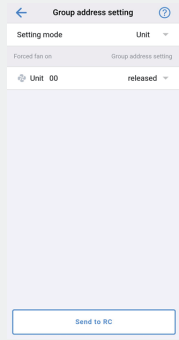
Group address setting Main

Set the indoor unit group address. After all settings are complete, press the “Send to RC” button.



Manual setting mode

- Installer setting
- RC settings
- Maintenance



▶ **Setting mode**

You can switch between setting the indoor unit group address for each group, or for each unit.

Manual setting mode

- Installer setting
- RC settings
- Maintenance

▶ **Group**

Set the group address on a per-group basis.

* Set a group address only for the MAIN unit.

▶ **Unit**

Set the group address on a per-unit basis.

▶ **Forced fan on**

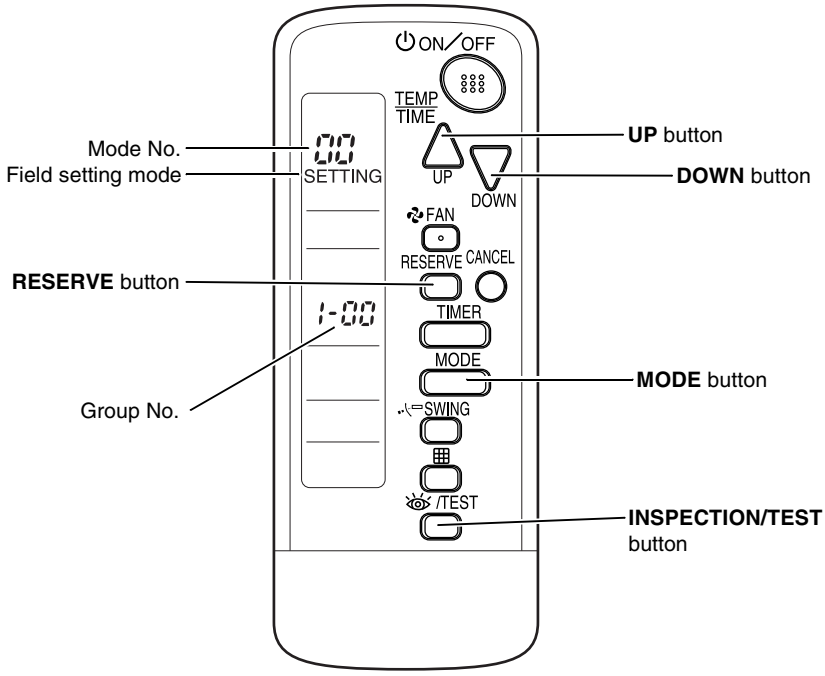
Force operation of the fan of the unit number whose icon has been tapped. You can confirm the location of the device on which you are performing settings.

5.3 Wireless Remote Controller

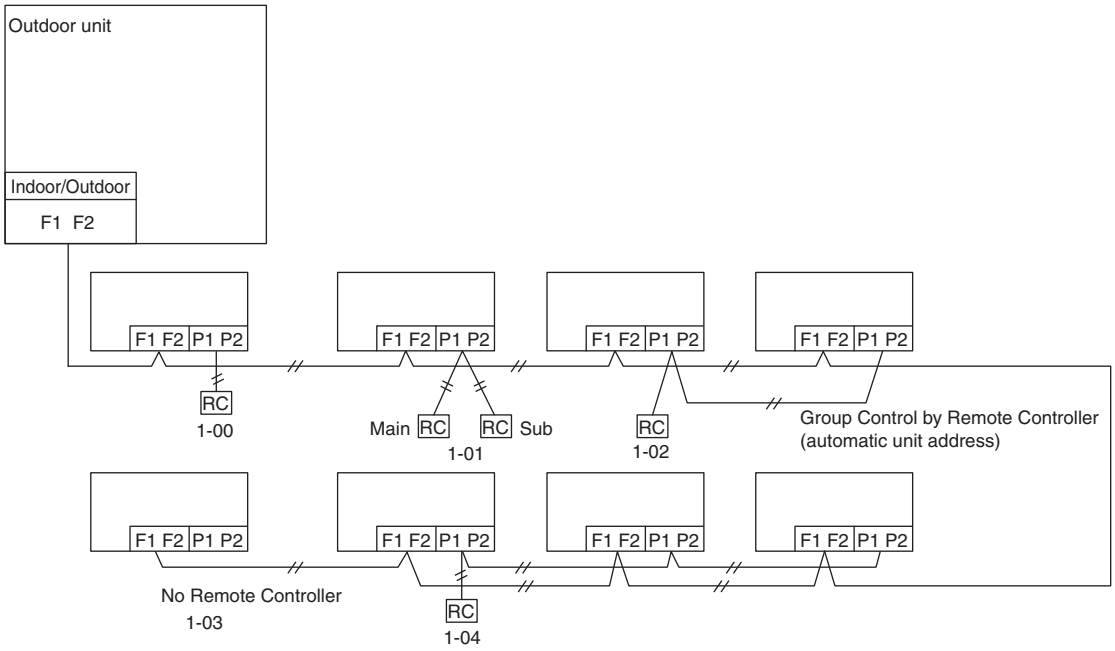
Group No. setting by wireless remote controller for centralized control

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.



5.4 Group No. Setting Example

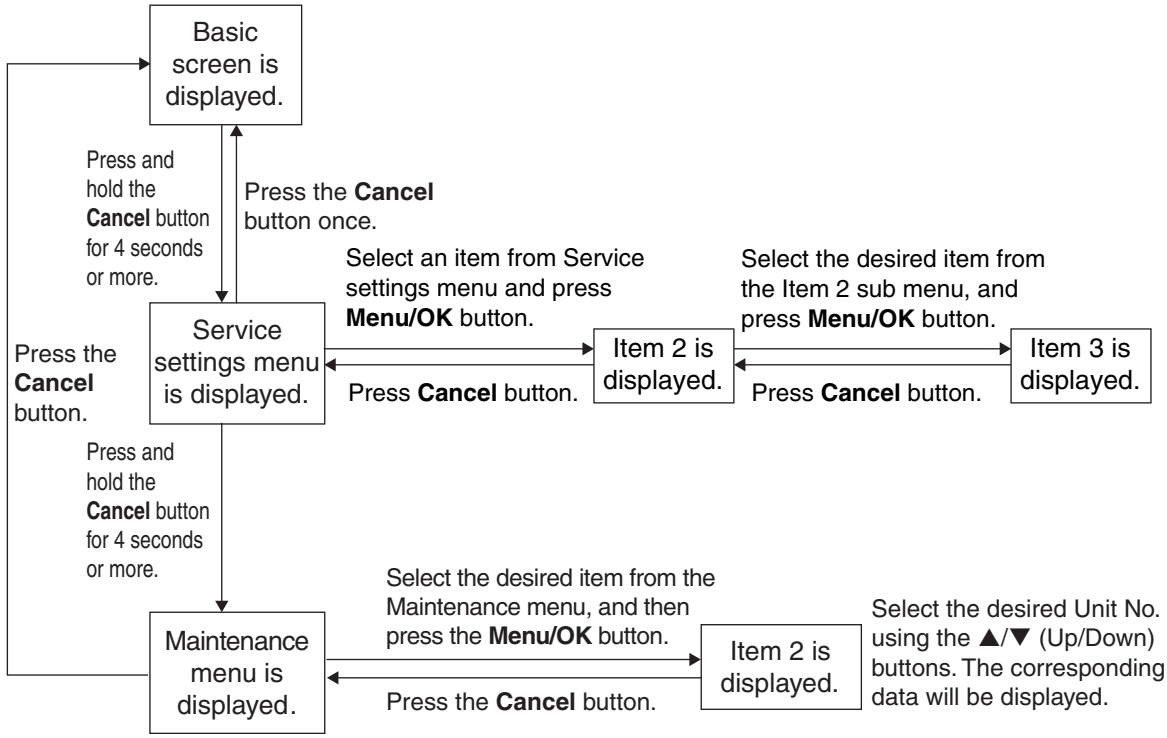


Caution When turning the power supply on, the unit may often not accept any operation after all indications were displayed once for about 1 minute on the liquid crystal display. This is not an operative fault.

6. Service Settings Menu, Maintenance Menu

6.1 BRC1E73

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



6.1.1 Service Settings Menu

Service settings menu	Item 2	Remarks
Test Operation	—	—
Maintenance Contact	None	—
	Maintenance Contact	—, 0 to 9 (in order)
Field Settings	Indoor Unit No.	—
	Mode No.	—
	First Code No.	—
	Second Code No.	—
Energy Saving Options	Setpoint Range Limitation	Temperature
	Setback Configuration	Recovery Differential
	Auto-setback by Sensor	Enable/Disable, Settings
	Auto-off by Sensor	Enable/Disable, Auto-off in (hours)
Prohibit Function	Prohibit Buttons	Up/Down, Left, Right, On/Off, Mode, Fan Speed
	Prohibit Mode	Fan, Cool, Heat, Auto, Dry, Vent Clean
Min setpoints Differential	None, Single SP, 0 to 8°F	—
Group Address	Group Address (Group)	Gr Addr. Set
	Group Address (Unit)	Unit No., Gr Addr. Set
Indoor unit Airnet Address	Unit No., Address Set	—
Outdoor unit Airnet Address	Unit No., Address Set	—
Error History	RC Error History	Unit No., Error, Date, Time (Up to 10 errors received by the remote controller can be displayed.)
	Indoor Unit Error History	Unit No., Error, Date, Time (Up to 5 errors from the indoor unit error record can be displayed.)
Indoor Unit Status	Unit No.	—
	Th1	Suction air thermistor
	Th2	Heat exchanger liquid pipe thermistor
	Th3	Heat exchanger gas pipe thermistor
	Th4	Discharge air thermistor
	Th5	Remote controller thermistor (FXSQ-TA, FXSQ-TB, FXMQ-TB, FXTQ-TA, FXTQ-TB) Floor temperature thermistor (FXFQ-AA, FXFQ-T, FXZQ-TA, FXZQ-TB, FXUQ-P, FXUQ-PA, FXEQ-P)
	Th6	Control temperature (FXFQ-AA, FXFQ-T, FXZQ-TA, FXZQ-TB, FXUQ-P, FXUQ-PA, FXEQ-P, FXSQ-TA, FXSQ-TB, FXMQ-TB, FXTQ-TA, FXTQ-TB)
Outdoor Unit Status	Unit No.	—
	Th1	—
	Th2	—
	Th3	—
	Th4	—
	Th5	—
	Th6	—
Forced Fan ON	Unit No.	—
Switch Main Sub controller	—	—
Filter Indicator	—	—
Test Filter Auto Clean	—	—
Brush / Filter Ind	—	—
Disable Filter Auto Clean	No, Yes	—

6.1.2 Maintenance Menu

Maintenance Menu	Item 2	Remarks
Model Name	Unit No.	Select the unit number you want to check.
	Indoor unit	The model names are displayed. (A model code may be displayed instead, depending on the particular model.)
	Outdoor unit	
Operation Hours	Unit No.	Select the unit number you want to check.
	Indoor unit operation hours	All of these are displayed in hours.
	Indoor fan operation hours	
	Indoor unit energized hours	
	Outdoor unit operation hours	
	Outdoor fan 1 operation hours	
	Outdoor fan 2 operation hours	
	Outdoor compressor 1 operation hours	
	Outdoor compressor 2 operation hours	
Indoor Unit Status	Unit No.	Select the unit number you want to check.
	FAN	Fan tap (∗1)
	Speed	Fan speed (rpm) (∗2)
	FLAP	Swing, fixed
	EV	Degree that electronic expansion valve is open (pulse)
	MP	Drain pump ON/OFF
	EH	Electric heater ON/OFF
	Hu	Humidifier ON/OFF (∗3)
	TBF	Anti-freezing control ON/OFF
	FLOAT	Float switch OPEN/CLOSE
	T1/T2	T1/T2 external input OPEN/CLOSE
	Th1	Suction air thermistor
	Th2	Heat exchanger liquid pipe thermistor
	Th3	Heat exchanger gas pipe thermistor
	Th4	Discharge air thermistor
	Th5	Remote controller thermistor (FXFQ-T, FXSQ-TA, FXSQ-TB, FXMQ-TB, FXTQ-TA, FXTQ-TB) Floor temperature thermistor (FXFQ-AA, FXFQ-T, FXZQ-TA, FXZQ-TB, FXUQ-P, FXUQ-PA, FXEQ-P)
	Th6	Control temperature (FXFQ-AA, FXFQ-T, FXZQ-TA, FXZQ-TB, FXUQ-P, FXUQ-PA, FXEQ-P, FXSQ-TA, FXSQ-TB, FXMQ-TB, FXTQ-TA, FXTQ-TB)
Outdoor Unit Status	Unit No.	Select the Unit No. you want to check.
	FAN step	Fan tap
	COMP	Compressor power supply frequency (Hz)
	EV1	Degree that electronic expansion valve is open (pulse)
	SV1	Solenoid valve ON/OFF
	Th1	—
	Th2	—
	Th3	—
	Th4	—
	Th5	—
	Th6	—
Forced Defrost	Forced defrost ON	Enables the forced defrost operation.
	Forced defrost OFF	Disables the forced defrost operation.

Maintenance Menu	Item 2	Remarks
Error Display	Display error ON	Displays the error on the screen.
	Display error OFF	Displays neither errors nor warnings.
	Display warning ON	Displays a warning on the screen if an error occurs.
	Display warning OFF	No warning is displayed.
Swap Unit No.	Current Unit No.	A unit No. can be transferred to another.
	Transfer Unit No.	
Addressed Sensor Value	Unit No.: 0 - 15	Select the unit number you want to check.
	Code 00: 01: 02: 03: 04: 05: 06: 07: 08: 09: 10 and over:	 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. Differs depending on the connected indoor/outdoor unit.
	Data	The corresponding data will be displayed, based on the unit number and Code selected.

∗1 (For FXTQ-TA, FXTQ-TB 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, FXTQ-TB models)
0 rpm is displayed even if the fan is rotating.

∗3 (For FXTQ-TA, FXTQ-TB 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.

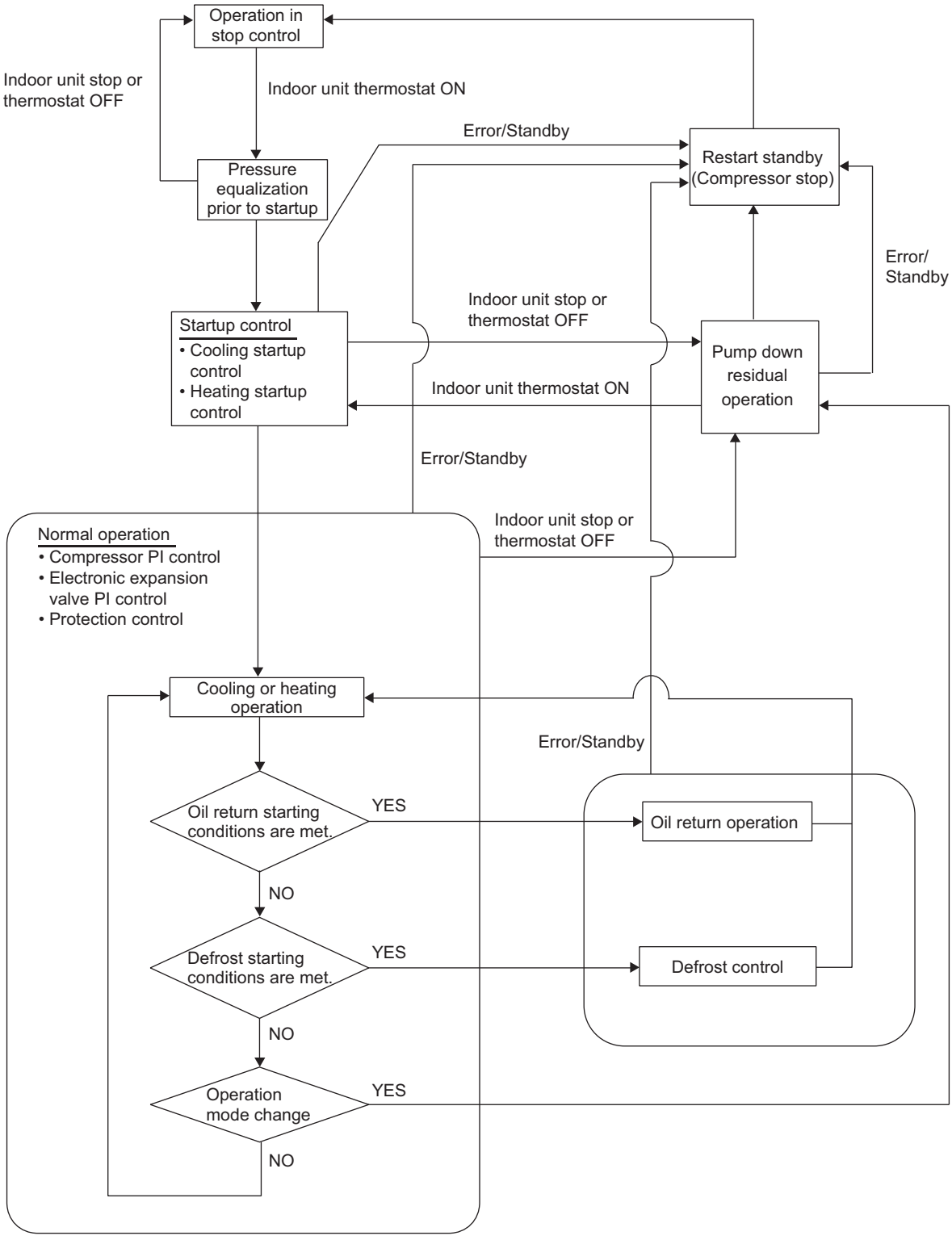
7. Administrator Menu, Installer Menu

7.1 BRC1H71W

Refer to page 62 for details.

Part 4
Functions and Control

1. Operation Mode



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

2. Basic Control

2.1 Normal Operation

Cooling Operation

Outdoor unit actuator	Electric symbol			Operation	Remarks
	36 class	48 class	60 class		
Compressor	M1C	M1C	M1C	Compressor PI control	Used for high pressure protection control, low pressure protection control, discharge pipe temperature protection control, and compressor operating frequency upper limit control with inverter protection control.
Outdoor fan	M1F	M1F	M1F M2F	Cooling fan control	—
Electronic expansion valve (Main)	Y1E	Y1E	Y1E	480 pulse (Fully open)	—
Electronic expansion valve (Subcooling)	—	—	Y3E	PI control	—
Four way valve	Y1S	Y1S	Y1S	OFF	—
Hot gas bypass valve	Y2S	—	—	OFF	This valve turns ON with low pressure protection control.
Liquid injection valve	Y3S	Y3S	—	OFF	This valve turns ON with high discharge temperature protection control.

Heating Operation

Outdoor unit actuator	Electric symbol			Operation	Remarks
	36 class	48 class	60 class		
Compressor	M1C	M1C	M1C	Compressor PI control	Used for high pressure protection control, low pressure protection control, discharge pipe temperature protection control, and compressor operating frequency upper limit control with inverter protection control.
Outdoor fan	M1F	M1F	M1F M2F	STEP 7 or 8	—
Electronic expansion valve (Main)	Y1E	Y1E	Y1E	PI control	—
Electronic expansion valve (Subcooling)	—	—	Y3E	PI control	—
Four way valve	Y1S	Y1S	Y1S	ON	—
Hot gas bypass valve	Y2S	—	—	OFF	This valve turns ON with low pressure protection control.
Liquid injection valve	Y3S	Y3S	—	OFF	This valve turns ON with high discharge temperature protection control.

∗ Heating operation is not functional at an outdoor air temperature of 24°CDB (75.2°FDB) or more.

2.2 Compressor PI Control

Carries out compressor capacity PI control to maintain Te at constant during cooling operation and Tc at constant during heating operation, thus ensuring stable unit performance.
Te: Low pressure equivalent saturation temperature
TeS: Target Te value (varies depending on Te setting, operating frequency, etc.)
Tc: High pressure equivalent saturation temperature
TcS: Target Tc value (varies depending on Tc setting, operating frequency, etc.)

Cooling Operation

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

(1) VRT control (Default)

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

(2) Constant pressure control

The target evaporation temperature is not changed.
Te setting (Make this setting while in setting mode 2-8.)

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

TeS upper limit setting (setting mode 2-11)

Applicable models: RXTQ48/60TBVJUA, RXTQ36/48/60TBVJUB
When the required capacity of all indoor units is small, setting the upper limit of the target temperature to H enables more energy-saving operation.
Note: In high-humidity areas, it is recommended to keep this setting to M or L.

Setting item	Condition		
TeS upper limit setting	L	M (Default)	H

Heating Operation

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

(1) VRT control (Default)

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

(2) Constant pressure control

The target condensation temperature is not changed.
Tc setting (Make this setting while in setting mode 2-9.)

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

TcS lower limit setting (setting mode 2-54)

Applicable models: RXTQ48/60TBVJUA, RXTQ36/48/60TBVJUB
When the required capacity of all indoor units is small, setting the lower limit of the target temperature to L or LL enables more energy-saving operation.
Note: The supply air temperature will become lower than the initial setting. If cold drafts are felt, return the setting to M.

Setting item	Condition			
TcS lower limit setting	LL	L	M (Default)	H

Compressor Frequency

Step	Frequency (Hz)	
	36 class	48/60 class
1	48	45
2	52.5	52.5
3	57	57
4	61.5	61.5
5	67.5	66
6	75	72
7	81	78
8	90	85.5
9	100.5	96
10	105	105
11	111	108
12	114	112.5
13	118.5	115.5
14	129	121.5
15	141	128.1
16	153	145.5
17	163.5	154.5
18	174	163.5
19	181.5	178.5
20	192	196.5
21	201	216
22	211.5	223.5
23	222	232.5
24	228	244.5
25	243	253.5
26	253.5	255
27	265.5	273
28	277.5	288
29	289.5	309
30	301.5	327

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

2.3 Electronic Expansion Valve PI Control

Main Electronic Expansion Valve Control

Carries out main electronic expansion valve (Y1E) PI control to maintain the evaporator outlet superheating degree (SH) at constant during heating operation, thus making maximum use of the outdoor heat exchanger (evaporator).

SH = Ts1 – Te

SH: Evaporator outlet superheating degree
Ts1: Suction pipe temperature detected by thermistor R3T
Te: Low pressure equivalent saturation temperature

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

Subcooling Electronic Expansion Valve Control

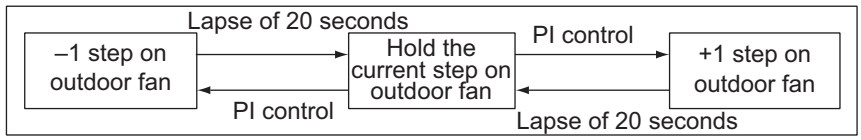
Carries out PI control of subcooling electronic expansion valve (Y3E) to keep the superheating degree (SH) of the outlet gas pipe on the evaporator side for the full use of the subcooling heat exchanger.

SH = Tsh – Te

SH: Evaporator outlet superheating degree
Tsh: Subcooling heat exchanger gas pipe temperature detected by thermistor R6T
Te: Low pressure equivalent saturation temperature

2.4 Cooling Operation Fan Control

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



Fan Steps

Step	Fan speed (rpm)			
	RXTQ36TAVJU RXTQ36TAVJ9 RXTQ36TAVJ9A RXTQ36TBVJUA	RXTQ48TAVJU RXTQ48TAVJUA RXTQ48TBVJUA	RXTQ60TAVJU RXTQ60TAVJUA RXTQ60TBVJUA	
			M1F	M2F
1	200	200	250	0
2	250	250	400	0
3	300	300	285	250
4	480	360	360	325
5	515	430	445	410
6	620	515	580	545
7	830	620	715	680
8	920	920	850	815

Step	Fan speed (rpm)			
	RXTQ36TBVJUB	RXTQ48TBVJUB	RXTQ60TBVJUB	
			M1F	M2F
1	200	200	260	0
2	250	250	400	0
3	300	300	285	250
4	450	350	360	325
5	490	425	435	400
6	605	490	560	525
7	810	605	690	655
8	890	890	820	785

3. Special Control

3.1 Startup Control

This control is used to equalize the pressure in the suction and discharge sides of the compressor prior to compressor startup, 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.

Pc: High pressure sensor detection value

Pe: Low pressure sensor detection value

Ta: Outdoor air temperature

Tc: High pressure equivalent saturation temperature

3.1.1 Startup Control in Cooling

Outdoor unit actuator	Electric symbol			Pressure equalization control prior to startup	Startup control	
	36 class	48 class	60 class		STEP 1	STEP 2
Compressor	M1C	M1C	M1C	0 Hz	Minimum frequency	Increases 2 steps every 20 seconds from minimum frequency until Pc – Pe > 0.39 MPa (56.6 psi) is achieved
Outdoor fan	M1F	M1F	M1F M2F	OFF	Ta < 20°C (68°F): OFF Ta ≥ 20°C (68°F): STEP 4	+1 step/15 sec. (when Pc > 2.16 MPa (313 psi)) –1 step/15 sec. (when Pc < 1.77 MPa (257 psi))
Electronic expansion valve (Main)	Y1E	Y1E	Y1E	0 pulse	480 pulse (Fully open)	480 pulse (Fully open)
Electronic expansion valve (Subcooling)	—	—	Y3E	0 pulse	0 pulse	0 pulse
Four way valve	Y1S	Y1S	Y1S	Holds	OFF	OFF
Hot gas bypass valve	Y2S	—	—	ON	OFF	OFF
Liquid injection valve	Y3S	Y3S	—	OFF	OFF	OFF
Ending conditions				OR • Pc – Pe < 0.3 MPa (43.5 psi) • A lapse of 5 min.	A lapse of 10 sec.	OR • A lapse of 360 sec. • Pc – Pe > 0.39 MPa (56.6 psi) • Tc > 48°C (118°F) • Pe < 0.55 MPa (80 psi)

3.1.2 Startup Control in Heating

Outdoor unit actuator	Electric Symbol			Pressure equalization control prior to startup	Startup control	
	36 class	48 class	60 class		STEP 1	STEP 2
Compressor	M1C	M1C	M1C	0 Hz	Minimum frequency	Increases 2 steps every 20 seconds from minimum frequency until Pc – Pe > 0.39 MPa (56.6 psi) is achieved
Outdoor fan	M1F	M1F	M1F M2F	From starting Ta > 20°C (68°F): STEP 1 Ta ≤ 20°C (68°F): OFF	STEP 8	STEP 8
Electronic expansion valve (Main)	Y1E	Y1E	Y1E	0 pulse	0 pulse	0 pulse
Electronic expansion valve (Subcooling)	—	—	Y3E	0 pulse	0 pulse	0 pulse
Four way valve	Y1S	Y1S	Y1S	Holds	ON	ON
Hot gas bypass valve	Y2S	—	—	ON	OFF	OFF
Liquid injection valve	Y3S	Y3S	—	OFF	OFF	OFF
Ending conditions				OR • Pc – Pe < 0.3 MPa (43.5 psi) • A lapse of 5 min.	A lapse of 10 sec.	OR • A lapse of 130 sec. • Pc > 2.70 MPa (392 psi) • Pc – Pe > 0.39 MPa (56.6 psi)

3.2 Oil Return Control

In order to prevent the compressor from running out of oil, oil return control is conducted to recover oil that has flowed out from the compressor to the system side.
HTdi: Compressor discharge pipe temperature (Tdi) compensated with outdoor air temperature
Pc: High pressure sensor detection value
Pe: Low pressure sensor detection value
Tc: High pressure equivalent saturation temperature
Te: Low pressure equivalent saturation temperature
Ts1: Suction pipe temperature detected by thermistor R3T

3.2.1 Oil Return Control in Cooling

Starting Conditions

- Oil return operation is not conducted before 2 hours have elapsed from the activation of power supply.
- After 2 hours have elapsed, oil return operation starts when the following item meets the reference value.
  - Total amount of oil discharged from the compressor (The total amount of oil discharged from the compressor is computed from Tc, Te, and compressor loads.)
- Oil return operation starts every 8 hours of cumulative operation of the compressor, even if the reference value is not met.

Outdoor unit actuator	Electric symbol			Oil return preparation control	Oil return control	Control after oil return
	36 class	48 class	60 class			
Compressor	M1C	M1C	M1C	Normal control	Control dependent on the values of Pc and Pe (→ Low pressure protection control)	Normal control from current rps
Outdoor fan	M1F	M1F	M1F M2F	Fan control (Normal cooling)	Fan control (Normal cooling)	Fan control (Normal cooling)
Electronic expansion valve (Main)	Y1E	Y1E	Y1E	480 pulse (Fully open)	480 pulse (Fully open)	480 pulse (Fully open)
Electronic expansion valve (Subcooling)	—	—	Y3E	SH control	0 pulse	0 pulse
Four way valve	Y1S	Y1S	Y1S	OFF	OFF	OFF
Hot gas bypass valve	Y2S	—	—	OFF	OFF	OFF
Liquid injection valve	Y3S	Y3S	—	OFF	OFF	OFF
Ending conditions				15 seconds	& (● 3 minutes, OR (● Ts1–Te < 3°C (5.4°F) ● A lapse of 20 minutes ● System rps is larger than oil return rps for more than 6 minutes.))	OR (● 3 minutes ● Pe < 0.6 MPa (87 psi) ● HTdi > 110°C (230°F) ● Pc > 3.6 MPa (522 psi))

Indoor unit actuator		Cooling oil return control
Fan	Thermostat ON unit	Remote controller setting
	Non-operating unit	OFF
	Thermostat OFF unit	Remote controller setting
Electronic expansion valve	Thermostat ON unit	Normal opening
	Non-operating unit	224 pulse
	Thermostat OFF unit	Normal opening with forced thermostat ON

3.2.2 Oil Return Control in Heating

Pc: High pressure sensor detection value
Pe: Low pressure sensor detection value
Tc: High pressure equivalent saturation temperature
Te: Low pressure equivalent saturation temperature
Ts1: Suction pipe temperature detected by thermistor R3T
Tb: Heat exchanger temperature

Starting Conditions

- Oil return operation is not conducted before 2 hours have elapsed from the activation of power supply.
- After 2 hours have elapsed, oil return operation starts when the following item meets the reference value.
  - Total amount of oil discharged from the compressor (The total amount of oil discharged from the compressor is computed from Tc, Te, and compressor loads.)
- Oil return operation starts every 8 hours of cumulative operation of the compressor, even if the reference value is not met.

Outdoor unit actuator	Electric symbol			(A) Oil return preparation control	(B) Oil return control	(C) Control after oil return
	36 class	48 class	60 class			
Compressor	M1C	M1C	M1C	Upper limit control → 0 rps	STEP 25 load (36 class) STEP 21 load (48/60 class)	Increases 2 steps every 20 seconds from minimum frequency until Pc – Pe > 0.4 MPa (58 psi) is achieved.
Outdoor fan	M1F	M1F	M1F M2F	Normal heating control → OFF	OFF	STEP 8
Electronic expansion valve (Main)	Y1E	Y1E	Y1E	SH control → 0 pulse	480 pulse (Fully open)	55 pulse
Electronic expansion valve (Subcooling)	—	—	Y3E	Normal heating control → 0 pulse	0 pulse	0 pulse
Four way valve	Y1S	Y1S	Y1S	ON → OFF	OFF	ON
Hot gas bypass valve	Y2S	—	—	OFF → ON	OFF	ON → OFF
Liquid injection valve	Y3S	Y3S	—	OFF	OFF	OFF
Ending conditions				OR ● Up to 5 minutes 50 seconds ● A lapse of 20 seconds from four way valve ON → OFF	OR ● 16 minutes & ● Tb > 11°C (51.8°F) ● Ts1 – Te < 5°C (9°F)	OR ● 260 seconds ● Pc > 2.7 MPa (391 psi) ● Pc – Pe > 0.4 MPa (58 psi)

∗ Between (A) oil return preparation control and (B) oil return control, and between (B) oil return control and (C) control after oil return, the compressor stops for 1 minute to reduce noise on changing of the four way valve.

Indoor unit actuator		Heating oil return control
Fan	Thermostat ON unit	OFF
	Non-operating unit	OFF
	Thermostat OFF unit	OFF
Electronic expansion valve	Thermostat ON unit	416 pulse
	Non-operating unit	256 pulse
	Thermostat OFF unit	416 pulse

3.3 Defrost Control

Pc: High pressure sensor detection value
Pe: Low pressure sensor detection value
Tb: Heat exchanger deicer temperature
Tc: High pressure equivalent saturation temperature
Te: Low pressure equivalent saturation temperature
Ts1: Suction pipe temperature detected by thermistor R3T
Defrost control is performed to melt frost on the outdoor heat exchanger when heating, and thus recover heating capacity.

Starting Conditions

- Defrost operation is not conducted before 40 minutes have elapsed from the start of heating operation.
- After 40 minutes have elapsed, defrost operation starts when the following items meet the reference values.
  - Heat transfer coefficient of the outdoor heat exchanger (The heat transfer coefficient of the outdoor heat exchanger is computed from Tc, Te, and compressor loads.)
  - Outdoor heat exchanger deicer temperature (Tb)
- Defrost operation starts every 2 hours, even if the reference values are not met.

Outdoor unit actuator	Electric symbol			(A) Defrost preparation control	(B) Defrost control	(C) Control after defrost
	36 class	48 class	60 class			
Compressor	M1C	M1C	M1C	Upper limit control → 0 rps	STEP 25 load (36 class) STEP 21 load (48/60 class)	Increases 2 steps every 20 seconds from minimum frequency until Pc – Pe > 0.4 MPa (58 psi) is achieved.
Outdoor fan	M1F	M1F	M1F M2F	Normal heating control → OFF	OFF	STEP 8
Electronic expansion valve (Main)	Y1E	Y1E	Y1E	SH control → 0 pulse	480 pulse (Fully open)	55 pulse
Electronic expansion valve (Subcooling)	—	—	Y3E	Normal heating control → 0 pulse	0 pulse	0 pulse
Four way valve	Y1S	Y1S	Y1S	ON → OFF	OFF	ON
Hot gas bypass valve	Y2S	—	—	OFF → ON	OFF	ON → OFF
Liquid injection valve	Y3S	Y3S	—	OFF	OFF	OFF
Ending conditions				OR (● Up to 5 minutes 50 seconds ● A lapse of 20 seconds from four way valve ON → OFF)	OR (● 16 minutes & (● Tb > 11°C (51.8°F) ● Ts1 – Te < 5°C (9°F)))	OR (● 260 seconds ● Pc > 2.7 MPa (391 psi) ● Pc – Pe > 0.4 MPa (58 psi))

∗ Between (A) defrost preparation control and (B) defrost control, and between (B) defrost control and (C) control after defrost, the compressor stops for 1 minute to reduce noise on changing of the four way valve.

Indoor unit actuator		Defrost control
Fan	Thermostat ON unit	OFF
	Non-operating unit	OFF
	Thermostat OFF unit	OFF
Electronic expansion valve	Thermostat ON unit	416 pulse
	Non-operating unit	256 pulse
	Thermostat OFF unit	416 pulse

3.4 Pump Down Residual Control

If liquid refrigerant is retained in the evaporator when the compressor is activated, the liquid refrigerant enters the compressor and dilutes oil therein resulting in a decrease of lubricity. Therefore, pump down residual control is performed to collect the refrigerant retained in the evaporator when the compressor stops.

3.4.1 Pump Down Residual Control in Cooling

Outdoor unit actuator	Electric symbol			Pump down residual control	
	36 class	48 class	60 class	Step 1	Step 2
Compressor	M1C	M1C	M1C	STEP 18 load	STEP 6 load
Outdoor fan	M1F	M1F	M1F M2F	Fan control	Fan control
Electronic expansion valve (Main)	Y1E	Y1E	Y1E	480 pulse (Fully open)	480 pulse (Fully open)
Electronic expansion valve (Subcooling)	—	—	Y3E	0 pulse	0 pulse
Four way valve	Y1S	Y1S	Y1S	OFF	OFF
Hot gas bypass valve	Y2S	—	—	OFF	OFF
Liquid injection valve	Y3S	Y3S	—	OFF	OFF
Ending conditions				2 seconds	2 seconds

3.4.2 Pump Down Residual Control in Heating

Outdoor unit actuator	Electric symbol			Pump down residual control
	36 class	48 class	60 class	
Compressor	M1C	M1C	M1C	STEP 18 load (36 class) STEP 9 load (48/60 class)
Outdoor fan	M1F	M1F	M1F M2F	STEP 7
Electronic expansion valve (Main)	Y1E	Y1E	Y1E	0 pulse
Electronic expansion valve (Subcooling)	—	—	Y3E	0 pulse
Four way valve	Y1S	Y1S	Y1S	ON
Hot gas bypass valve	Y2S	—	—	OFF
Liquid injection valve	Y3S	Y3S	—	OFF
Ending conditions				4 seconds (36 class) Up to 3 minutes (48/60 class)

3.5 Restart Standby

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

Outdoor unit actuator	Electric symbol			Operation
	36 class	48 class	60 class	
Compressor	M1C	M1C	M1C	OFF
Outdoor fan	M1F	M1F	M1F M2F	Ta > 30°C (86°F): STEP 4 Ta ≤ 30°C (86°F): OFF
Electronic expansion valve (Main)	Y1E	Y1E	Y1E	0 pulse
Electronic expansion valve (Subcooling)	—	—	Y3E	0 pulse
Four way valve	Y1S	Y1S	Y1S	Holds
Hot gas bypass valve	Y2S	—	—	ON
Liquid injection valve	Y3S	Y3S	—	OFF
Ending conditions				2 minutes

3.6 Stop Control

Actuator operation is cleared when the system is down.

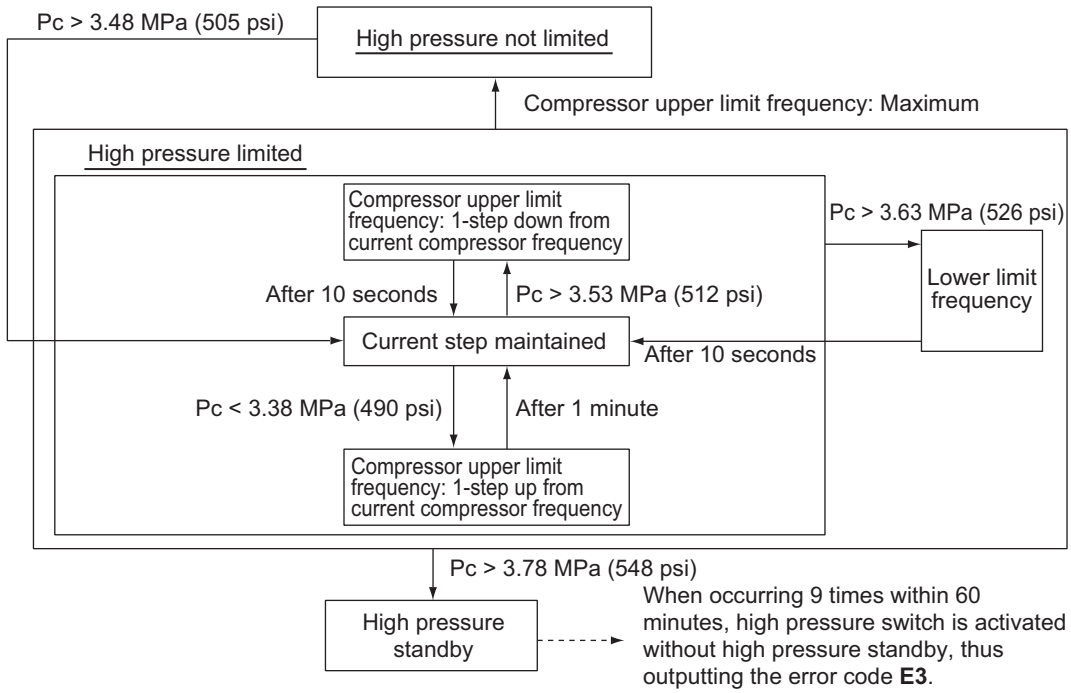
Outdoor unit actuator	Electric symbol			Operation
	36 class	48 class	60 class	
Compressor	M1C	M1C	M1C	OFF
Outdoor fan	M1F	M1F	M1F M2F	OFF
Electronic expansion valve (Main)	Y1E	Y1E	Y1E	0 pulse
Electronic expansion valve (Subcooling)	—	—	Y3E	0 pulse
Four way valve	Y1S	Y1S	Y1S	Holds
Hot gas bypass valve	Y2S	—	—	OFF
Liquid injection valve	Y3S	Y3S	—	OFF
Ending conditions				Indoor unit thermostat is turned ON.

4. Protection Control

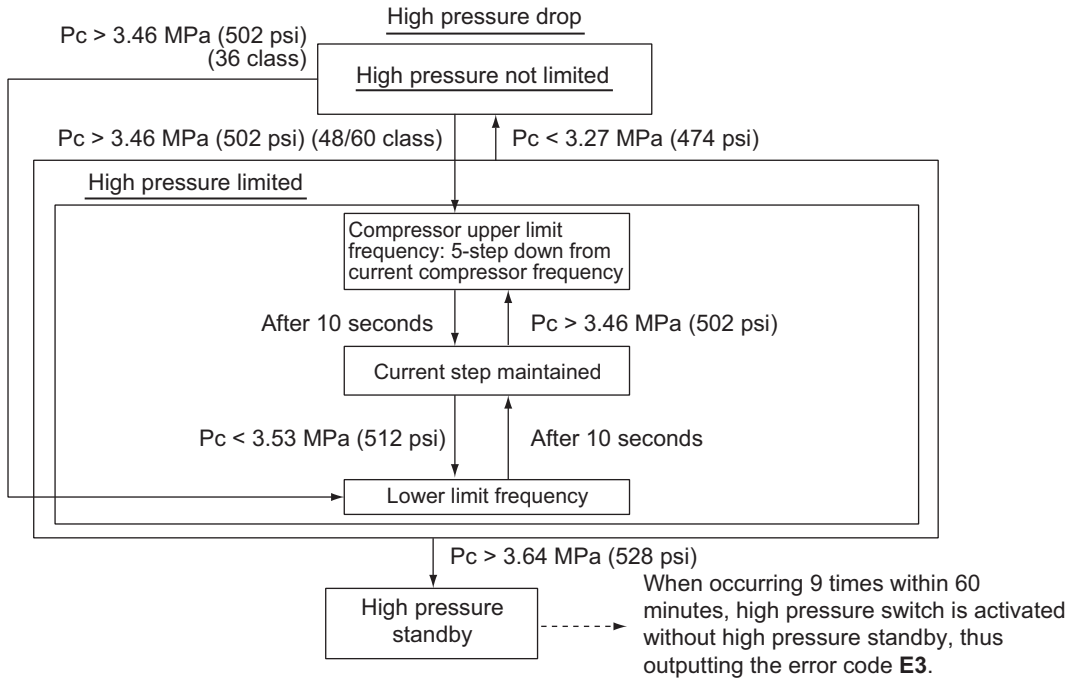
4.1 High Pressure Protection Control

This high pressure protection control is used to prevent the activation of protection devices due to an abnormal increase of high pressure and to protect compressors against the transient increase of high pressure.
Pc: High pressure sensor detection value

Cooling Operation



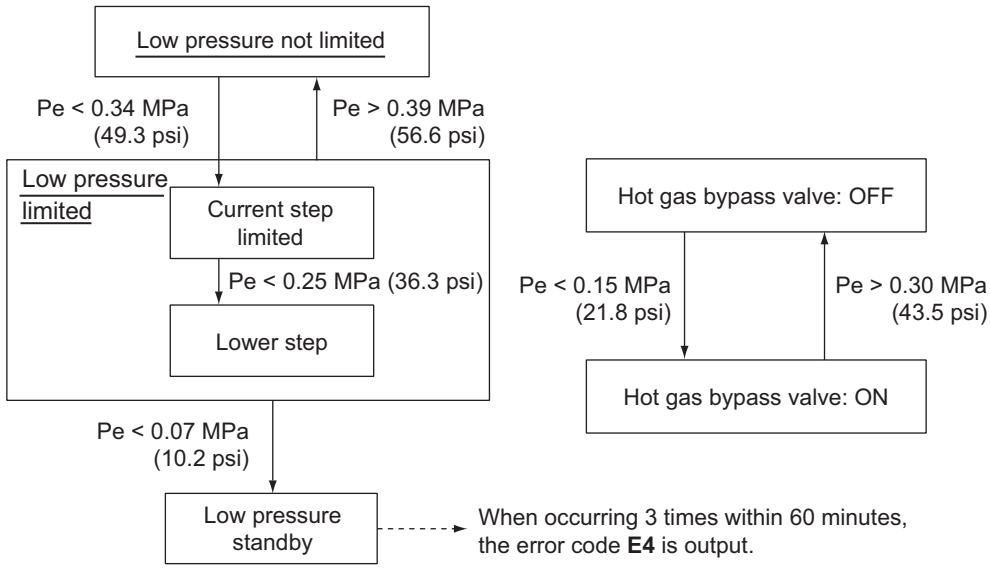
Heating Operation



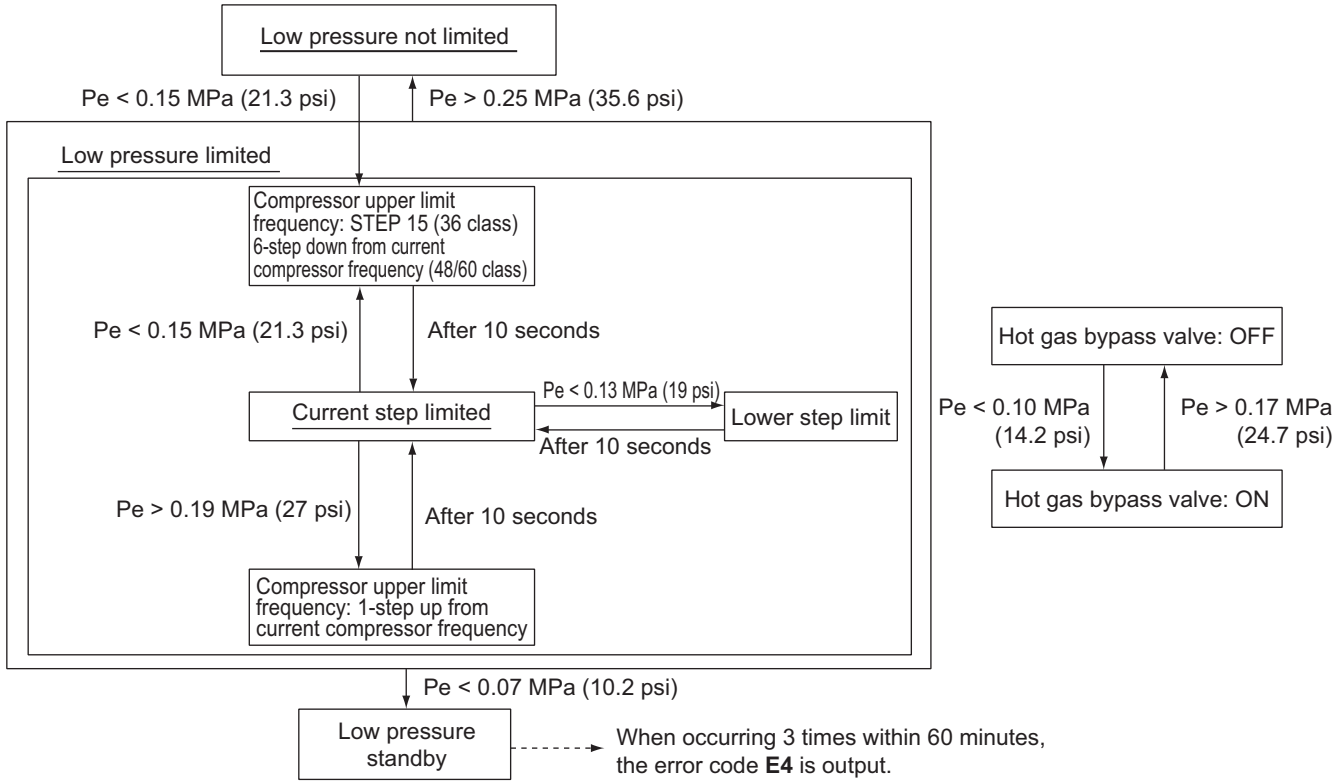
4.2 Low Pressure Protection Control

This low pressure protection control is used to protect compressors against the transient decrease of low pressure.
Pe: Low pressure sensor detection value

Cooling Operation

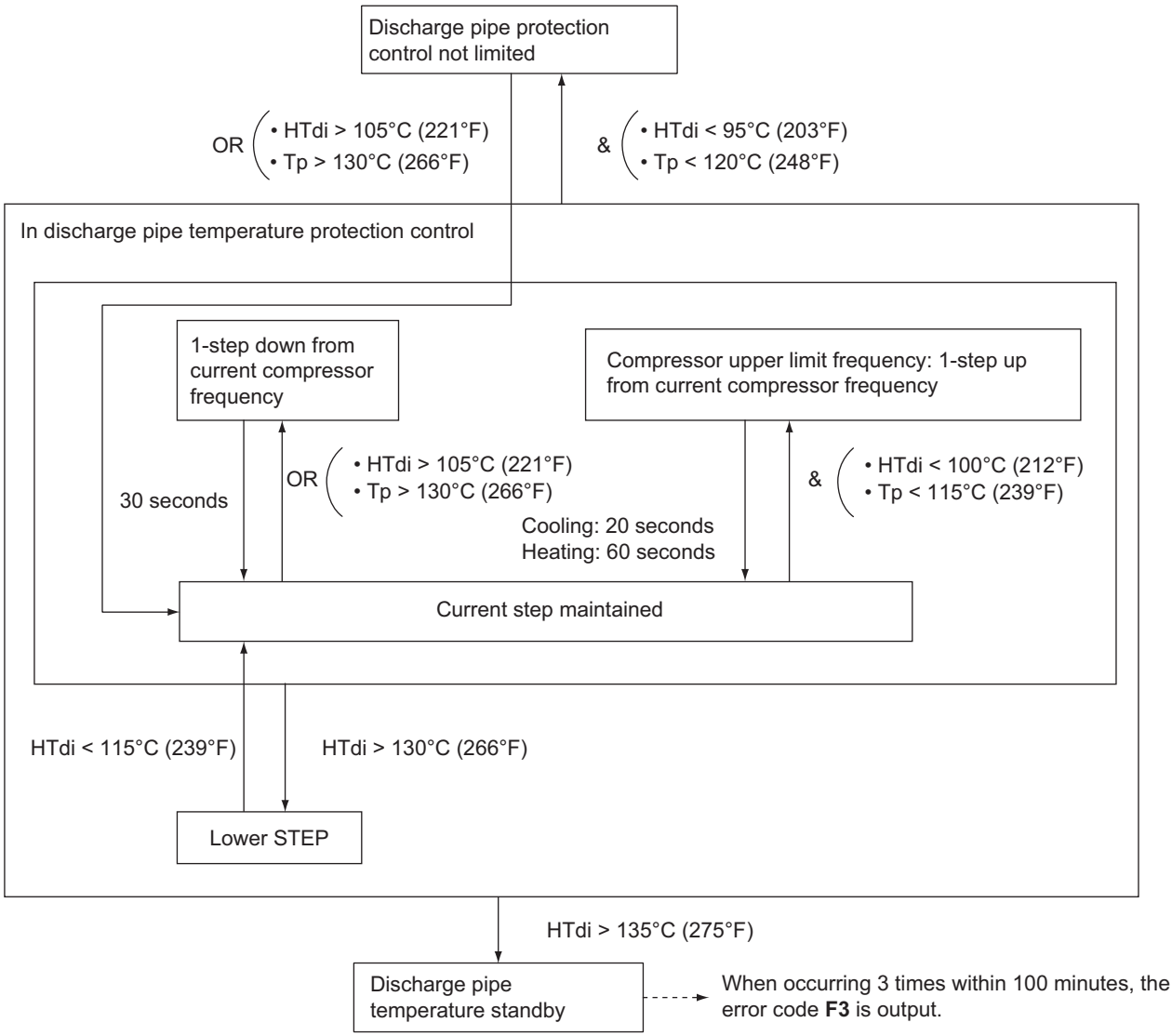


Heating Operation



4.3 Discharge Pipe Temperature Protection Control

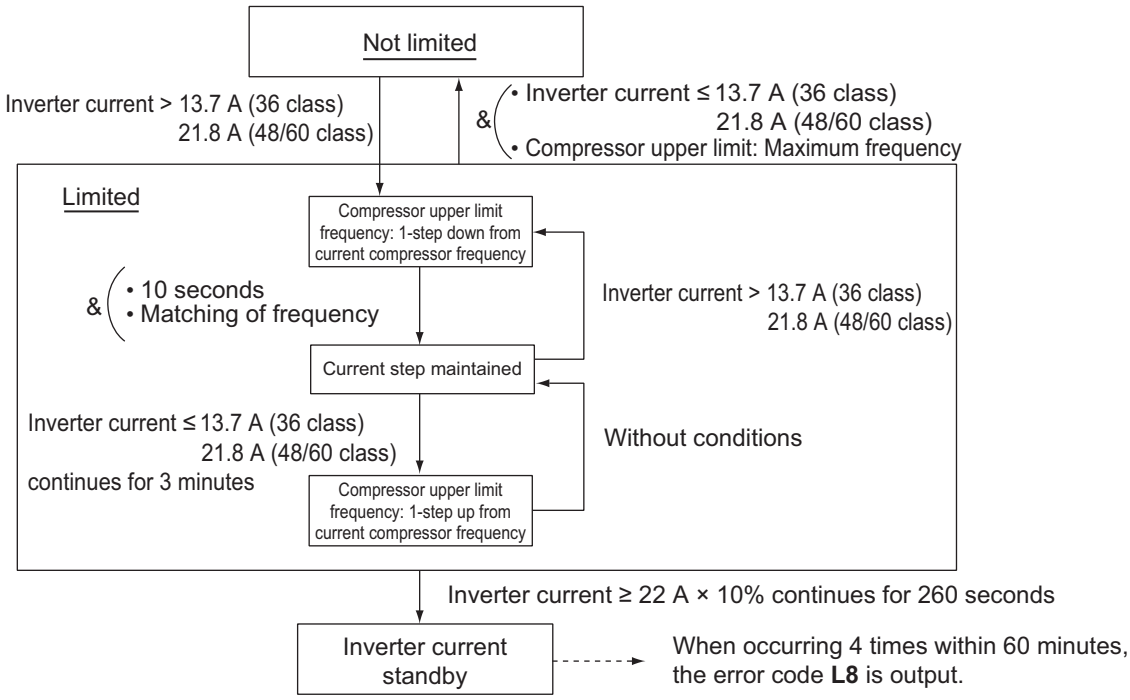
This discharge pipe temperature protection control is used to protect the compressor internal temperature against an error or transient increase of discharge pipe temperature.
HTdi: Value of compressor discharge pipe temperature (Tdi) compensated with outdoor air temperature
Tp: Value of compressor port temperature calculated by Tc, Te, and suction superheating degree.



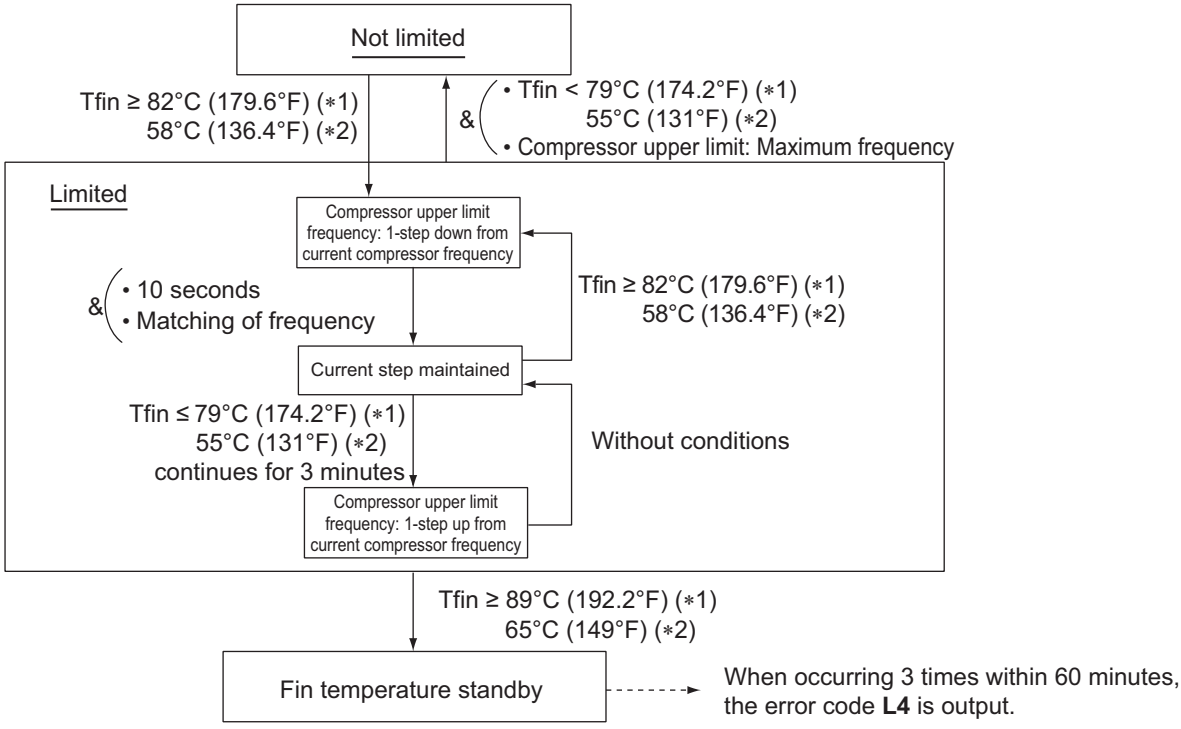
4.4 Inverter Protection Control

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

Inverter overcurrent protection control

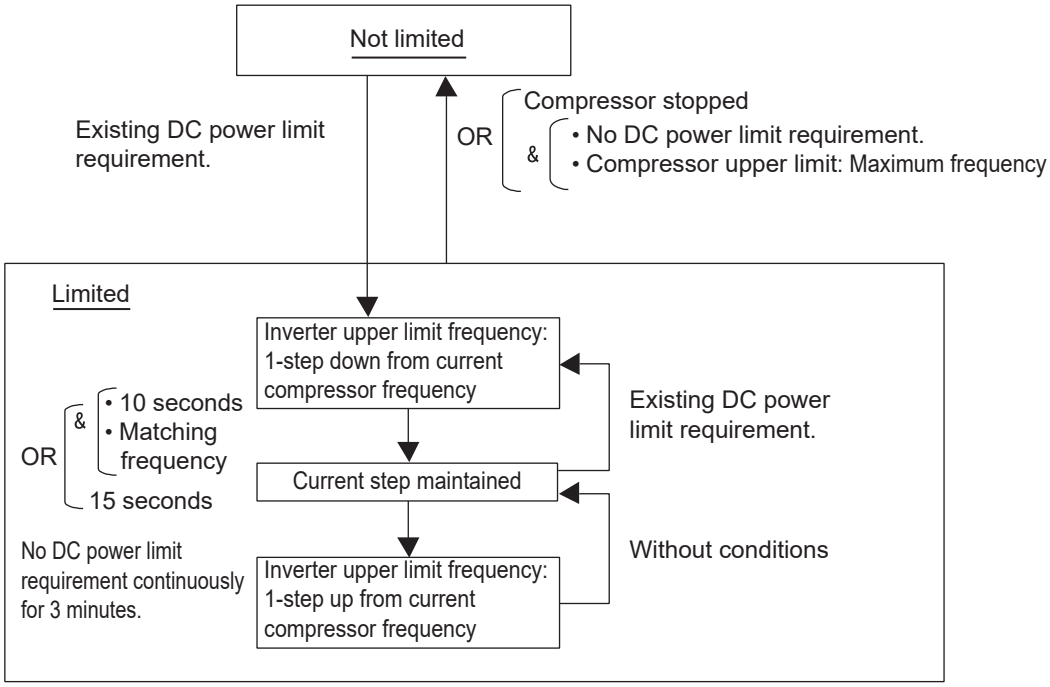


Radiation fin temperature control



∗1. For 36 class (other than TBVJUB models)
∗2. For 48/60 class and RXTQ36TBVJUB

According to the current limit of direct current



5. Other Control

5.1 Demand Operation

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

Demand setting 1

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

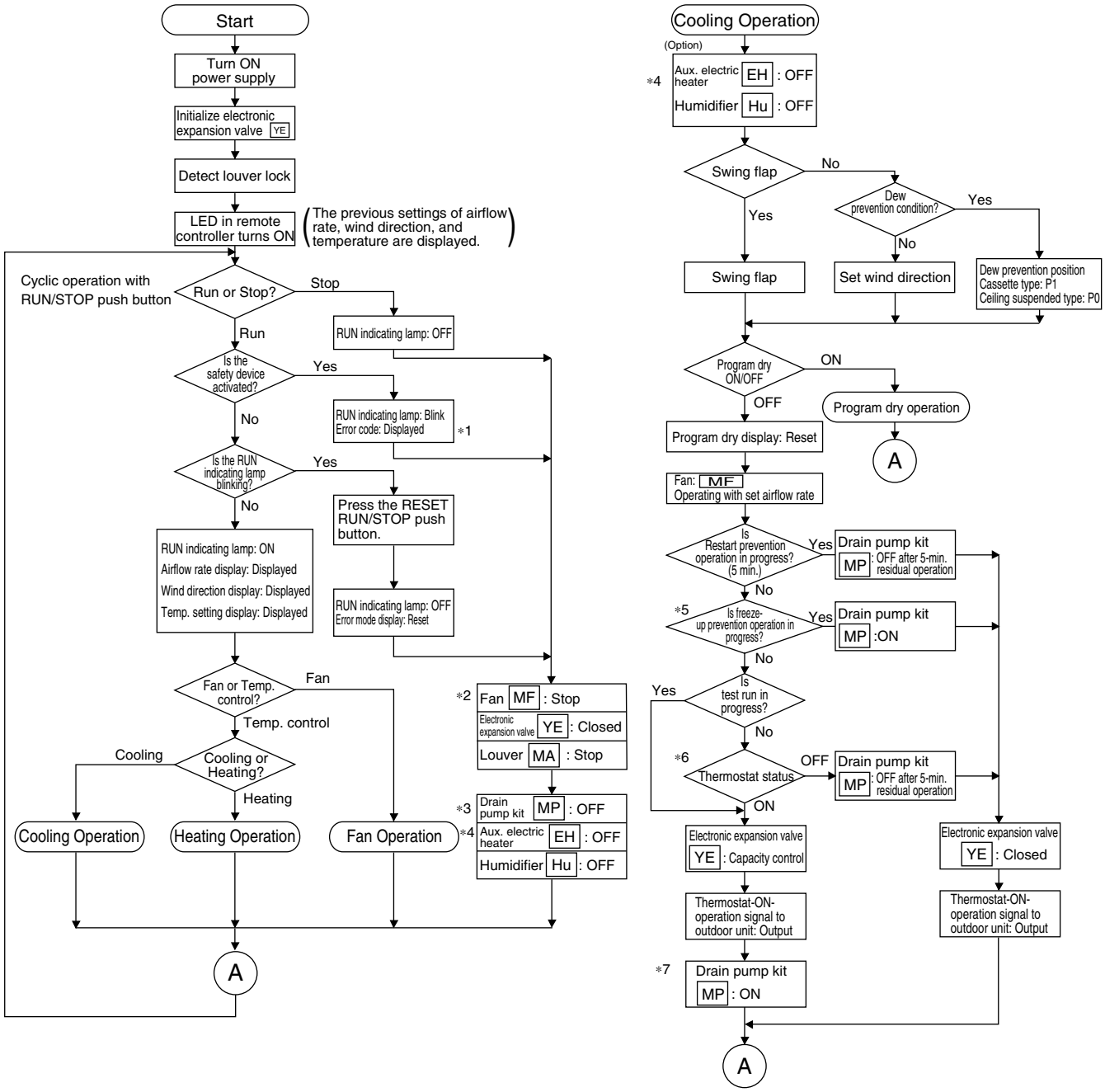
∗ Other protection control functions have precedence over the above operation.

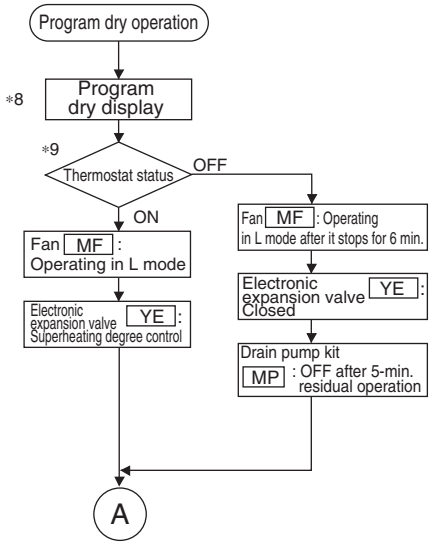
5.2 Heating Operation Prohibition

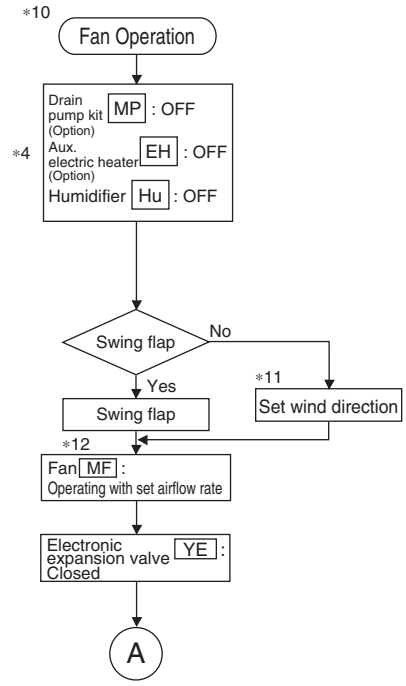
Heating operation is prohibited above 24°CDB (75.2°FDB) outdoor air temperature.

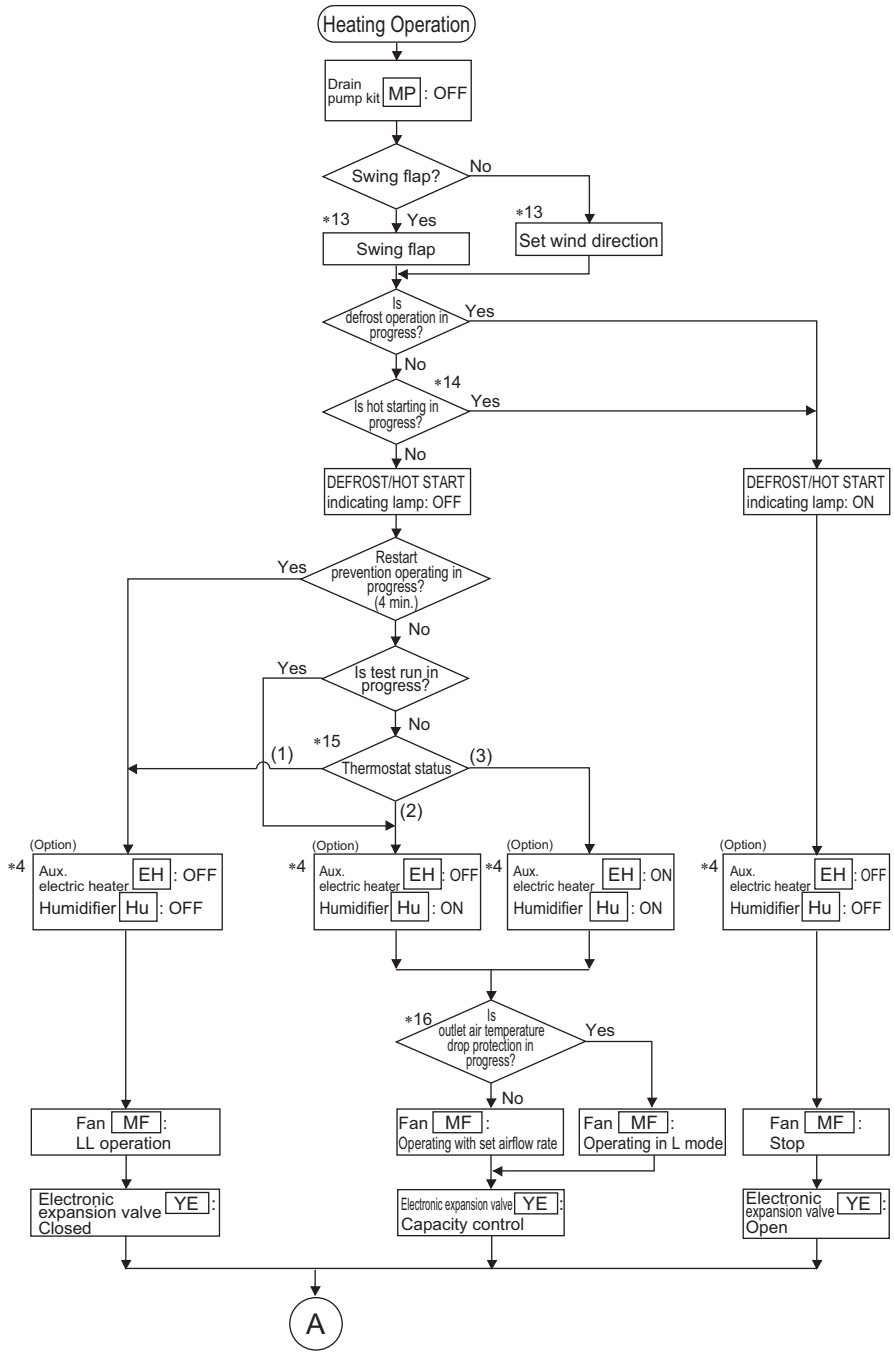
6. Outline of Control (Indoor Unit)

6.1 Operation Flowchart



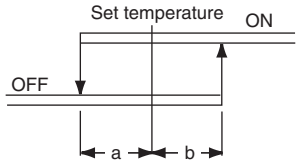

Program dry operation
*8
Program dry display
*9
Thermostat status
OFF
ON
Fan MF : Operating in L mode
Electronic expansion valve YE : Superheating degree control
Fan MF : Operating in L mode after it stops for 6 min.
Electronic expansion valve YE : Closed
Drain pump kit MP : OFF after 5-min. residual operation
A


*10
Fan Operation
Drain pump kit (Option) MP : OFF
*4
Aux. electric heater (Option) EH : OFF
Humidifier Hu : OFF
Swing flap
No
Yes
*11
Set wind direction
Swing flap
*12
Fan MF : Operating with set airflow rate
Electronic expansion valve YE : Closed
A



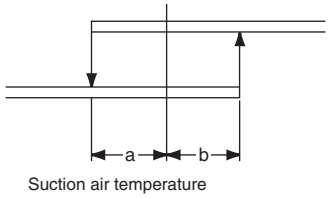
Note(s)

∗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 auxiliary 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. The control of auxiliary electric heater connected to FXTQ-TA, FXTQ-TB models differ from this flowchart. For details, refer to **Heater Control (FXTQ-TA, FXTQ-TB Models)** on page 130.
∗5. 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.
∗6. Thermostat status

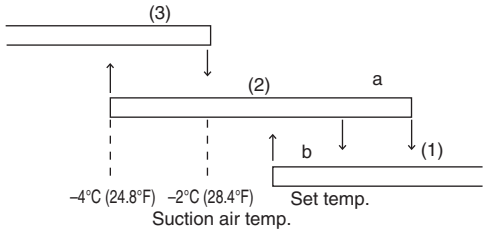


a = b = 1°C (1.8°F) or 0.5°C (0.9°F)
The values a and b depend on the field setting 12(22)-2.

∗7. The following models have the drain pump as standard equipment.
FXFQ-AA, FXFQ-T, FXFQ-P, FXZQ-TA, FXZQ-TB, FXZQ-M, FXUQ-P, FXUQ-PA, FXEQ-P, FXDQ-M, FXSQ-TA, FXSQ-TB, FXMQ-PB, FXMQ-TB
∗8. Program dry display
No set temperature and airflow rate of the remote controller are displayed.
∗9. Thermostat status
Set temperature when operating the program dry mechanism.



∗10. Fan operation
By setting the remote controller to Fan, the fan will operate with thermostat OFF in set temperature control operation mode.
∗11. Set wind direction
According to wind direction instruction from the remote controller, the wind direction is set to 100% horizontal while in heating operation.
∗12. Fan
According to fan speed instruction from the remote controller, the fan is put into operation in LL mode while in heating operation.
∗13. Wind direction
When the heating thermostat turns OFF, the wind direction will be set to 100% horizontal.
∗14. Hot start
After the start of heating operation or the end of defrost operation, the hot start control will terminate if the temperature at the condenser outlet (indoor heat exchanger liquid pipe temperature) exceeds 34°C (93.2°F), or if Tc is above 52°C (125.6°F), or if 3 minutes have elapsed.
∗15. Thermostat status



∗16. 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.
∗17. **Hu** indicates the Humidifier connected to the wiring modification adaptor.
It is not related to the Humidifier terminals on the PCB of FXTQ-TA, FXTQ-TB.

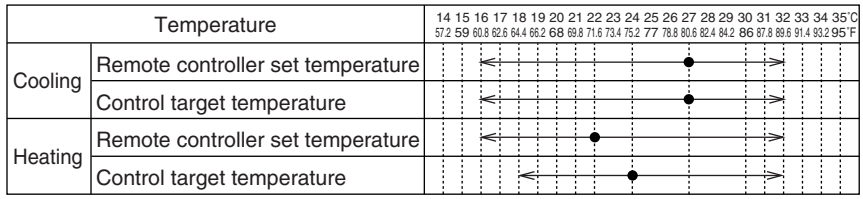
6.2 Set Temperature and Control Target Temperature

6.2.1 Without Infrared Floor Sensor

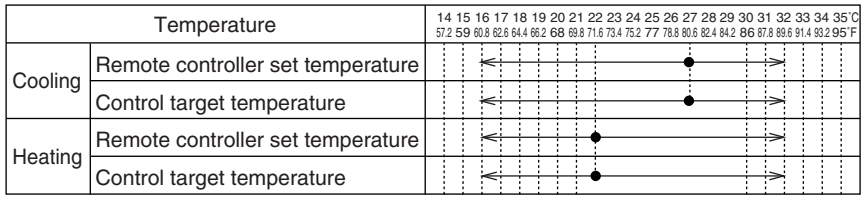
The relationship between remote controller set temperature and control target temperature is described below.

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

■ When setting the suction air thermistor (Default setting)



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



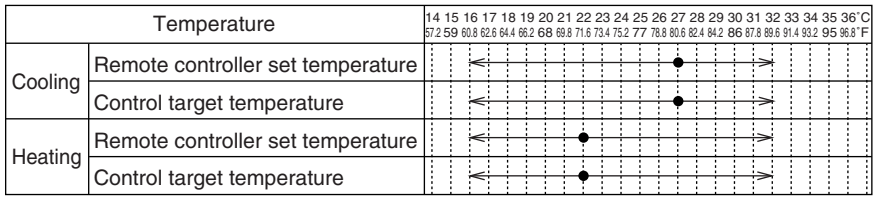
Examples are given to illustrate a control target temperature that satisfies the remote controller set temperature.

6.2.2 With Infrared Floor Sensor

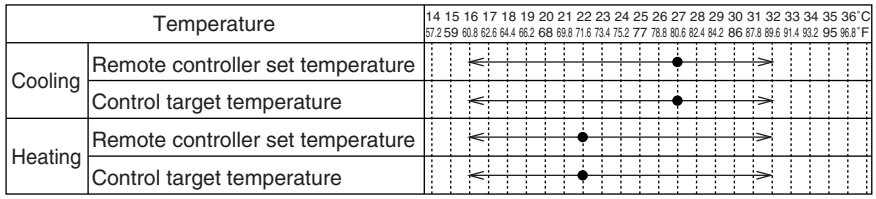
The relationship between remote controller set temperature and control target temperature is described below.

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

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



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



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

Regarding control target temperature

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

What is the temperature around people?

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

6.3 Remote Controller Thermistor

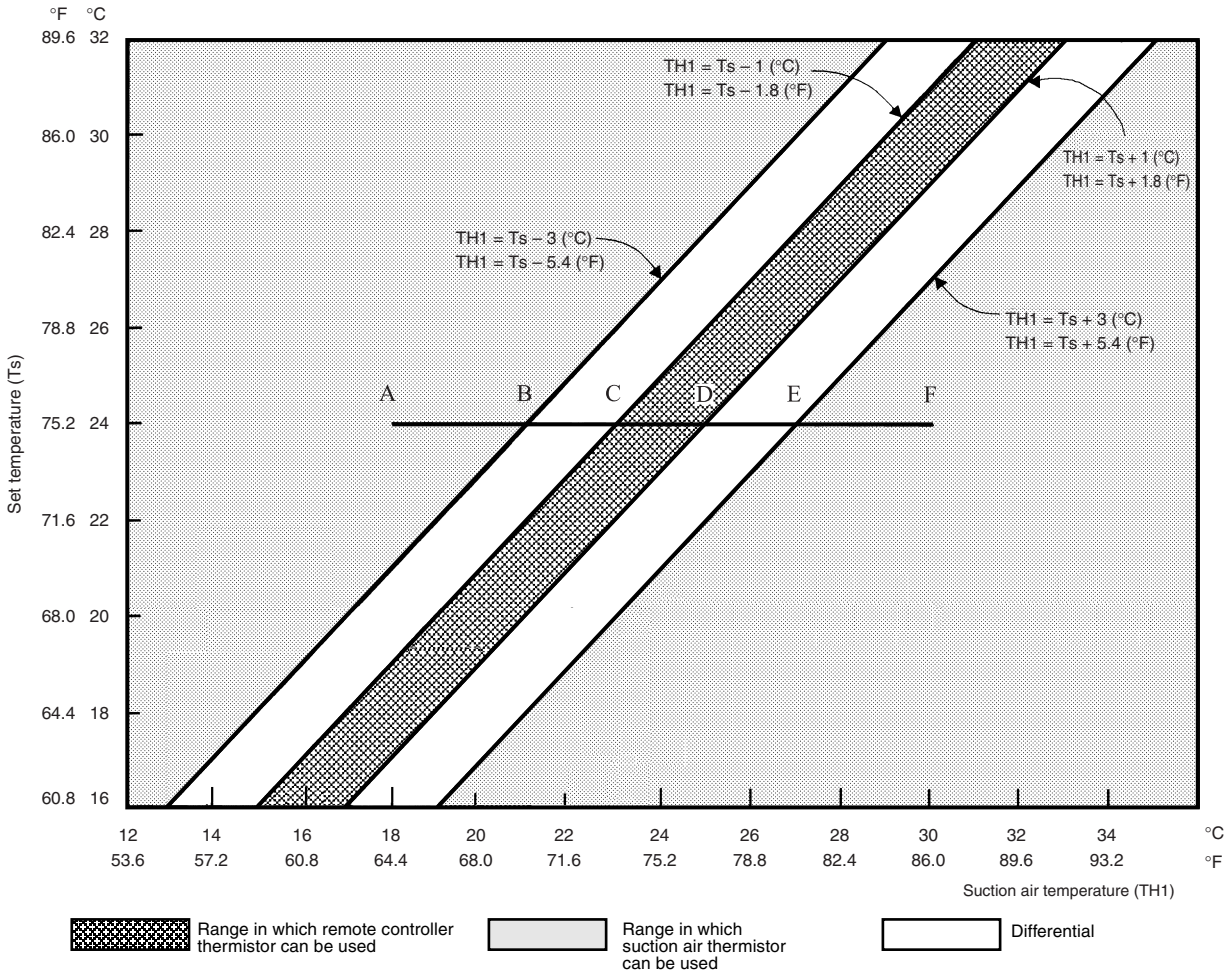
Temperature is controlled by both the remote controller thermistor and suction air thermistor for the indoor unit. (This is however limited to when the field setting for the remote controller thermistor is set to Use.)

Note(s)

When fresh air intake kit is used, outdoor air is mixed with indoor air, and the room temperature may not reach the set temperature, since TS and TH1 do not enter the area in which remote controller thermistor can be used. In such case, install the remote sensor (optional accessory) in your room, and set the field settings to not use the remote controller thermistor.
∗ FXTQ-PA, FXTQ-TA, and FXTQ-TB 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.



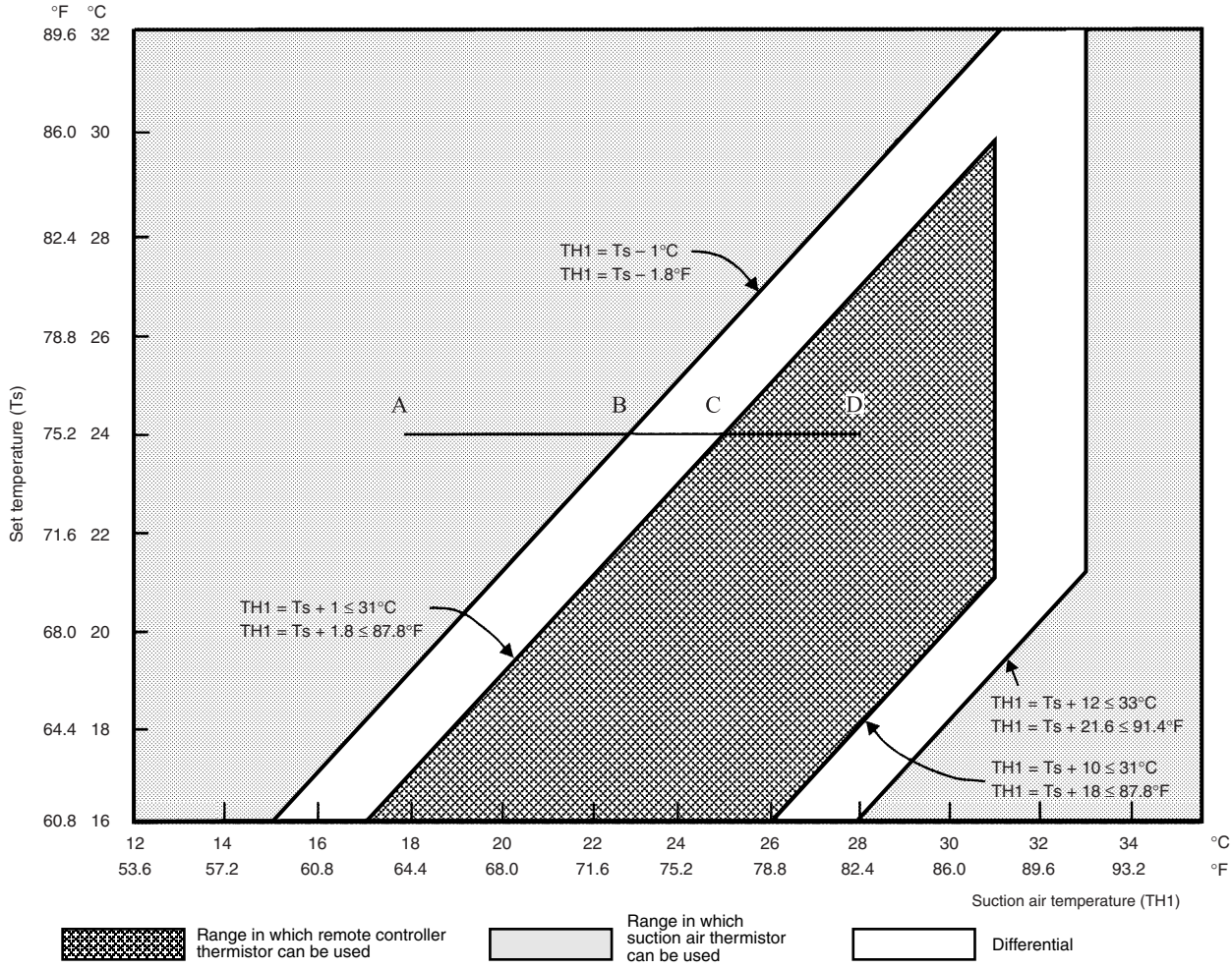
■ **Assuming the set temperature in the figure above is 24°C (75°F), and the suction temperature has changed from 18°C (64°F) to 30°C (86°F) (A → F):**

(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).

6.4 Thermostat Control

The thermostat ON/OFF differential value (factory setting) differs depending on the models.

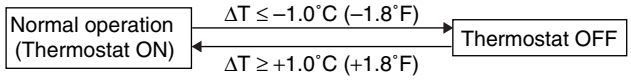
Differential value	Model
1°C (1.8°F)	FXFQ-T, FXFQ-P, FXZQ-TA, FXZQ-M, FXUQ-P, FXEQ-P, FXSQ-TA, FXHQ-M, FXTQ-TA, FXTQ-TB
0.5°C (0.9°F)	FXFQ-AA, FXZQ-TB, FXUQ-PA, FXDQ-M, FXSQ-TB, FXMQ-PB, FXMQ-TB, FXAQ-P, FXLQ-M, FXNQ-M, FXMQ-MF

6.4.1 Without Infrared Floor Sensor

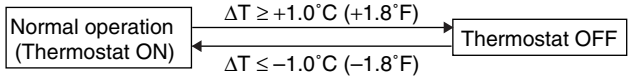
Whether the thermostat is turned ON or OFF is determined by the difference between the remote controller set temperature and the actual detected room temperature (∗1).

Normal operation

- Cooling operation

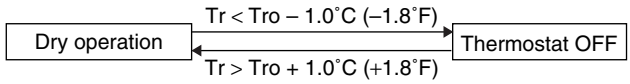


- Heating operation

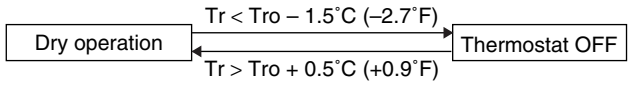


Dry operation

- When Tro < 24.5°C (76.1°F)

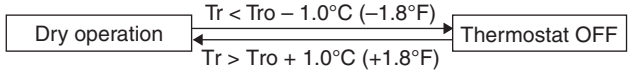


- When Tro ≥ 24.5°C (76.1°F)



FXSQ-TB, FXMQ-TB, FXTQ-TA, FXTQ-TB only

If the field setting 11 (21)-12 (for FXSQ-TB, FXMQ-TB) or 14 (24)-5 (for FXTQ-TA, FXTQ-TB) is set to **02**, Tro will be the same as the cooling set temperature.



ΔT = Room temperature – Remote controller set temperature
Tro: Room temperature at the start of dry operation
Tr: Room temperature

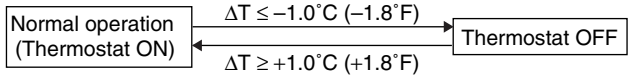
∗1: The thermistor for room temperature detection depends on the field setting 10 (20)-2.

6.4.2 With Infrared Floor Sensor

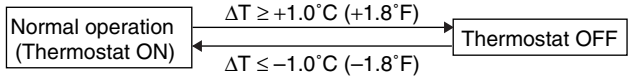
Whether the thermostat is turned on or off is determined by the difference between the remote controller set temperature and the detected temperature around people.

Normal operation

- Cooling operation

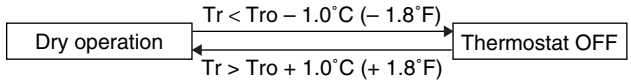


- Heating operation

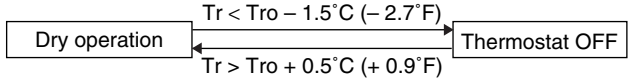


Dry operation

- When Tro ≤ 24.5°C (76.1°F)

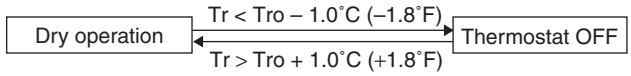


- When Tro > 24.5°C (76.1°F)



FXFQ-AA, FXZQ-TB, FXUQ-PA only

If the field setting 11 (21)-12 is set to **02**, Tro will be the same as the cooling set temperature.



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.

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.

Heating operation

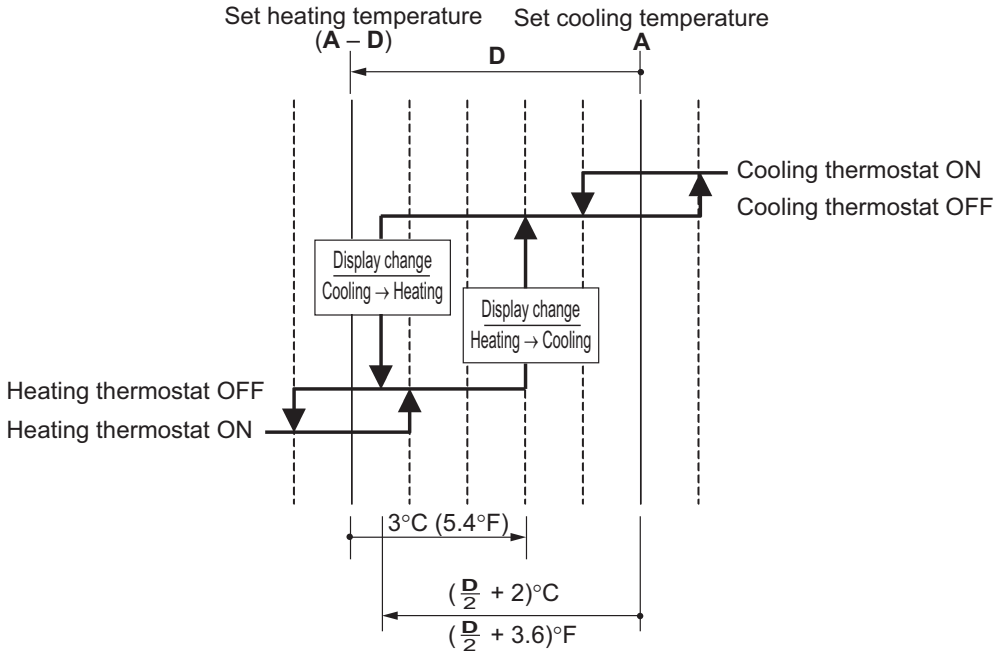
- When the floor temperature is higher than suction air temperature (R1T), R1T will be treated as the control target temperature in operation.
- When the temperature around people is 33°C (91.4°F) or higher, R1T will be treated as the control temperature for operation.

6.4.3 Thermostat Control with Operation Mode Set to AUTO

The system will conduct this temperature control shown below, only when the wireless remote controller or any central remote controller is connected.
Furthermore, setting changes of the differential value (**D**) can be made.

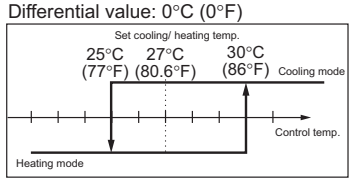
★: Factory setting

Mode No.	First code No.	Contents of setting	Second code No.							
			01★	02	03	04	05	06	07	08
12 (22)	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

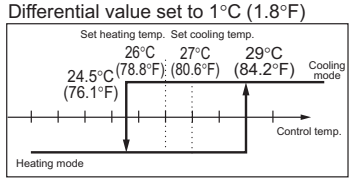


(Ex.) When automatic cooling temperature is set to 27°C (80.6°F):

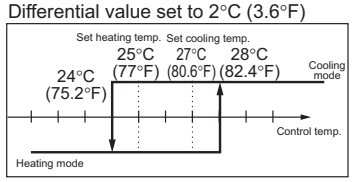
Differential value: 0°C (0°F)



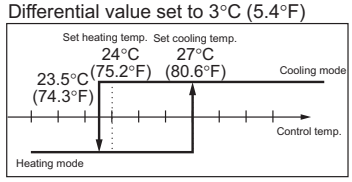
Differential value set to 1°C (1.8°F)



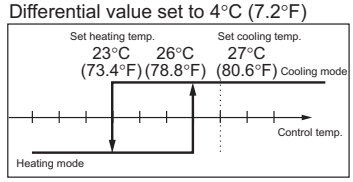
Differential value set to 2°C (3.6°F)



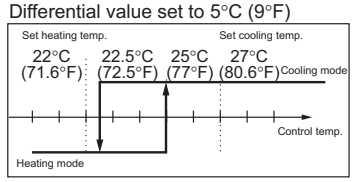
Differential value set to 3°C (5.4°F)



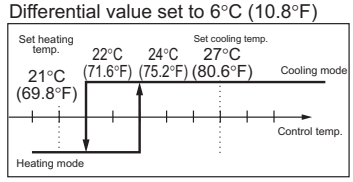
Differential value set to 4°C (7.2°F)



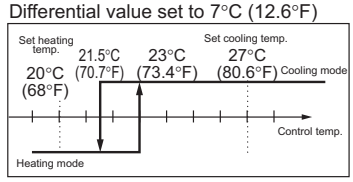
Differential value set to 5°C (9°F)



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

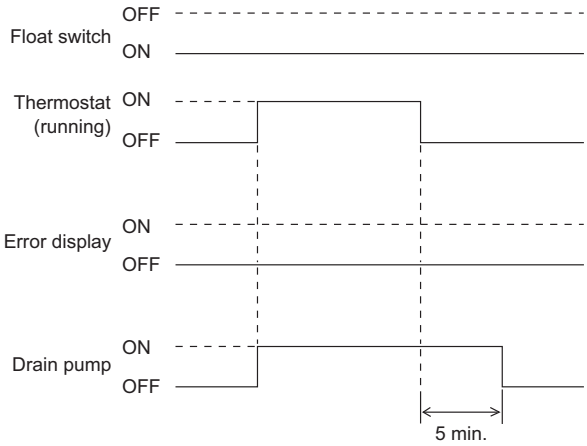


Differential value set to 7°C (12.6°F)



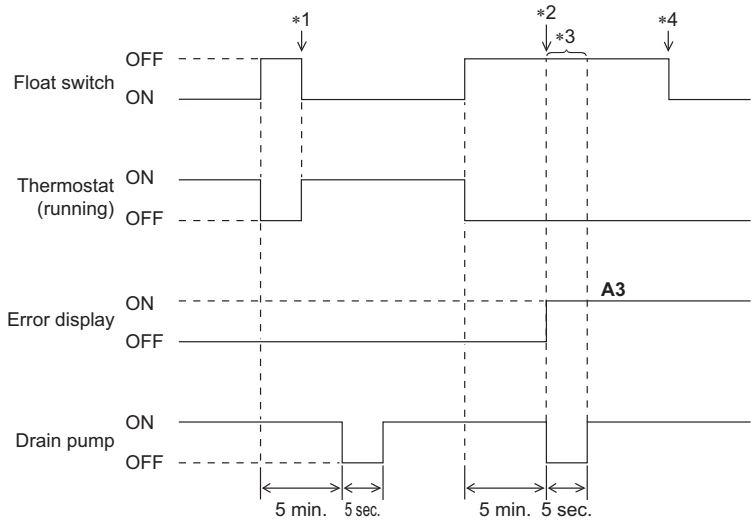
6.5 Drain Pump Control

6.5.1 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.

6.5.2 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.

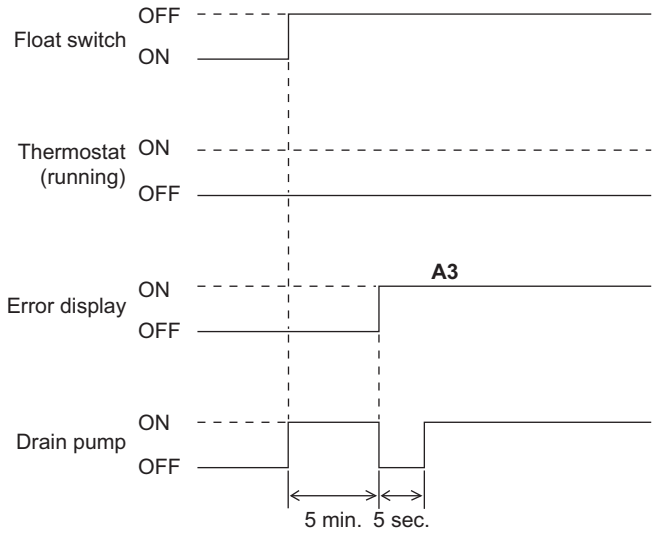
∗1. If the float switch turns ON again during the residual operation of the drain pump, cooling operation also turns on again (thermostat ON).

∗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.

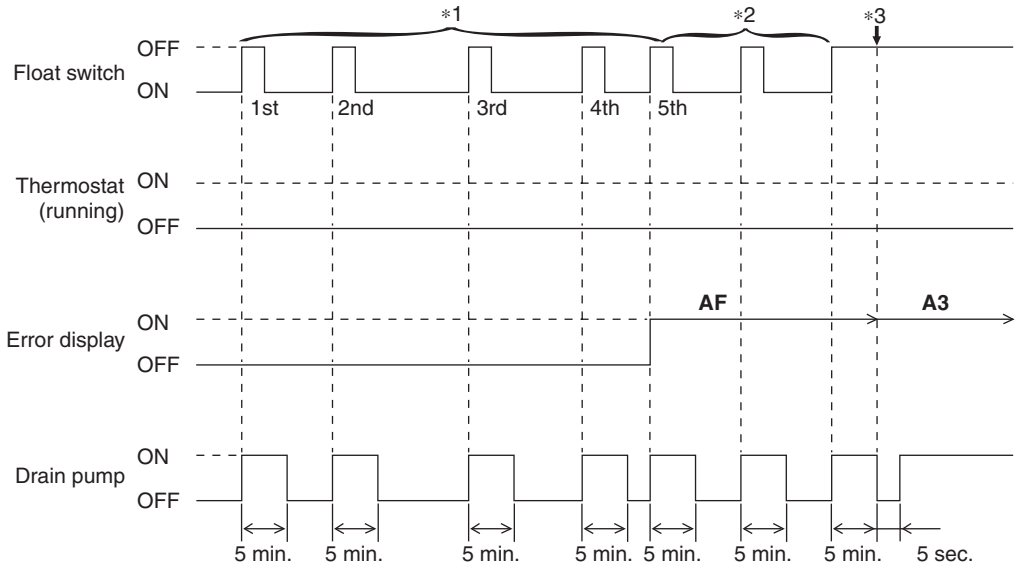
∗4. After **A3** is displayed and the unit comes to an abnormal stop, the thermostat will remain OFF even if the float switch turns ON again.

6.5.3 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.

6.5.4 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.

6.6 Control of Electronic Expansion Valve

Electronic expansion valves in indoor units have the functions of conducting superheating 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.

- **Superheating degree control in cooling operation**

This function is used to adjust the opening of the electronic expansion valve so that superheating 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 superheating degree (SHS).
At that time, correction to the superheating degree is made according to the differences (ΔT) between set temperature and suction air temperature.

SH = Tg – Tl

Where,
SH: Evaporator outlet superheating degree
Tg: Indoor unit gas pipe temperature (R3T)
Tl: Indoor unit liquid pipe temperature (R2T)
SHS: Target superheating degree

SHS (Target SH value)
- 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

Where,
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 subcooling degree

SCS (Target SC value)
- 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.

6.7 Freeze-Up Prevention

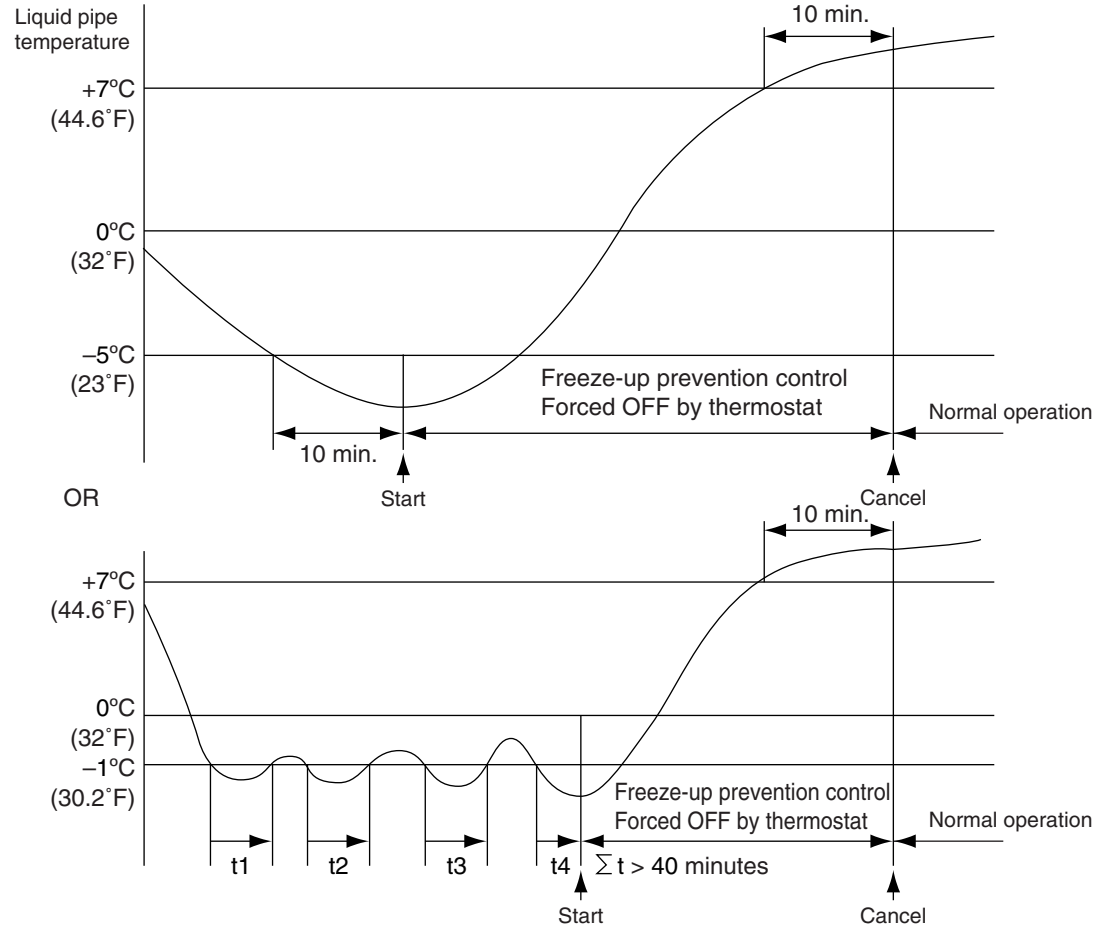
Freeze-Up Prevention by Off Cycle (Indoor Unit)

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)

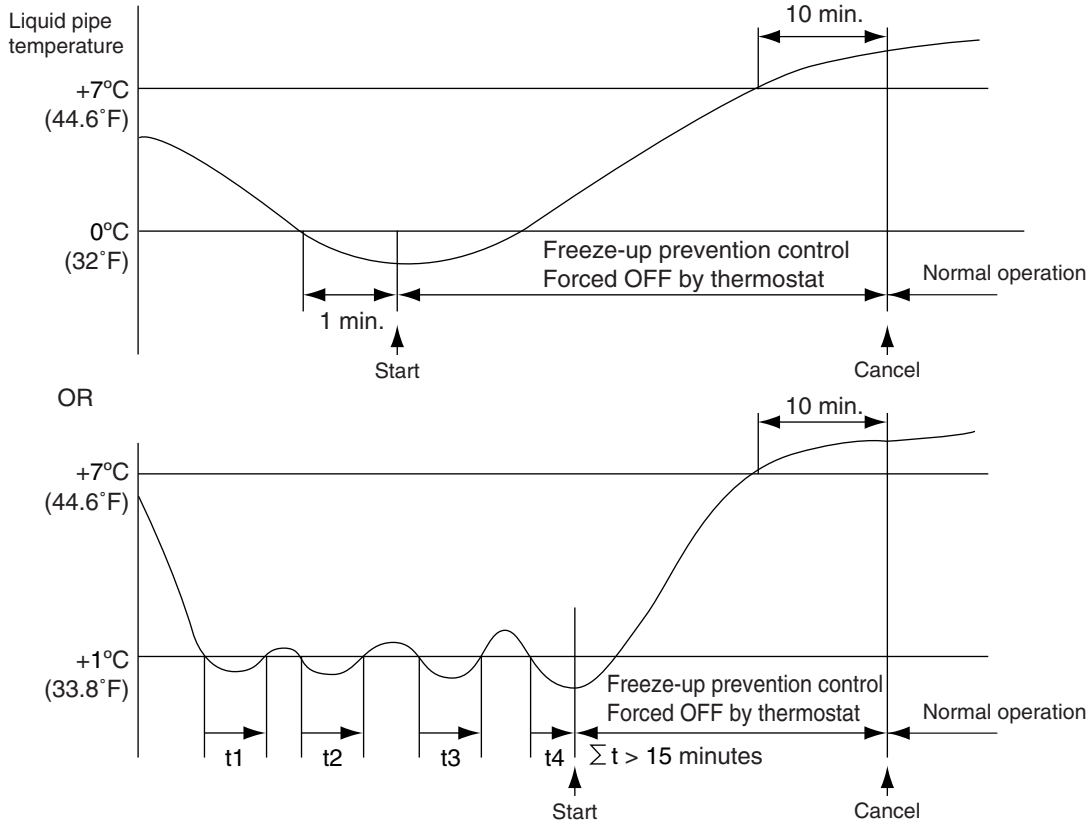
Condition for cancelling:
Liquid pipe temperature ≥ +7°C (44.6°F) (for 10 minutes continuously)



Concept of freeze-up prevention control
System avoids freeze-up
· For comfort, system avoids unnecessary thermostat ON/OFF
· For ensuring compressor reliability, system avoids unnecessary compressor ON/OFF
When freeze-up prevention control starts, system makes sure the frost is completely removed.
· System avoids water leakage.

Note(s)

When the indoor unit is FXFQ-AA, FXFQ-T, FXFQ-P, FXZQ-TA, FXZQ-TB, FXZQ-M, FXUQ-P, or FXUQ-PA, 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 control, the airflow rate is fixed to LL.
(The cancelling conditions are same as the standard.)



6.8 List of Swing Flap Operations

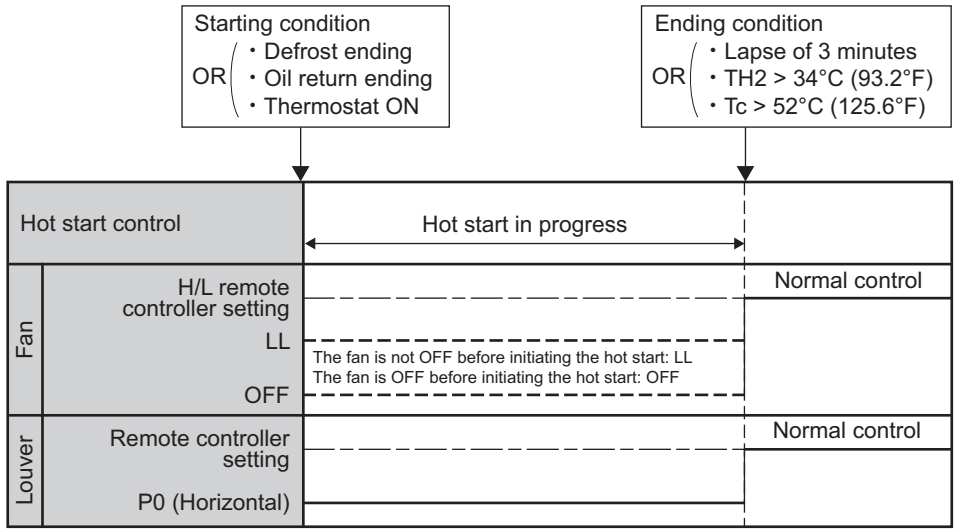
Swing flaps operate as shown in table below.

			Fan	Flap			
				FXFQ-AA FXFQ-T FXFQ-P	FXEQ-P	FXHQ-M	FXZQ-TA FXZQ-TB FXUQ-P FXUQ-PA FXAQ-P
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

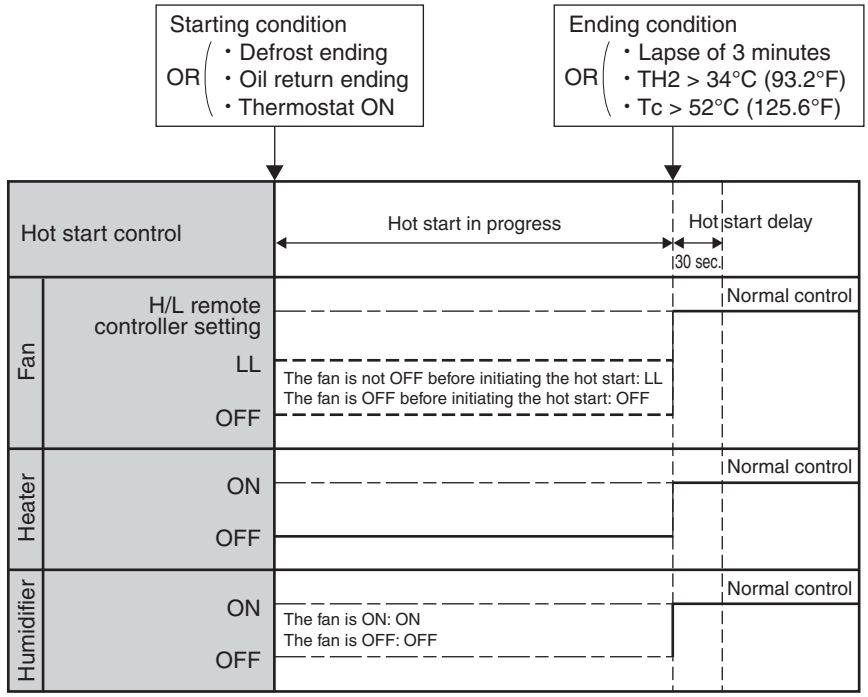
Note(s) ∗1. L or LL only on FXFQ-AA, FXFQ-T, and FXFQ-P models

6.9 Hot Start Control (In Heating Operation Only)

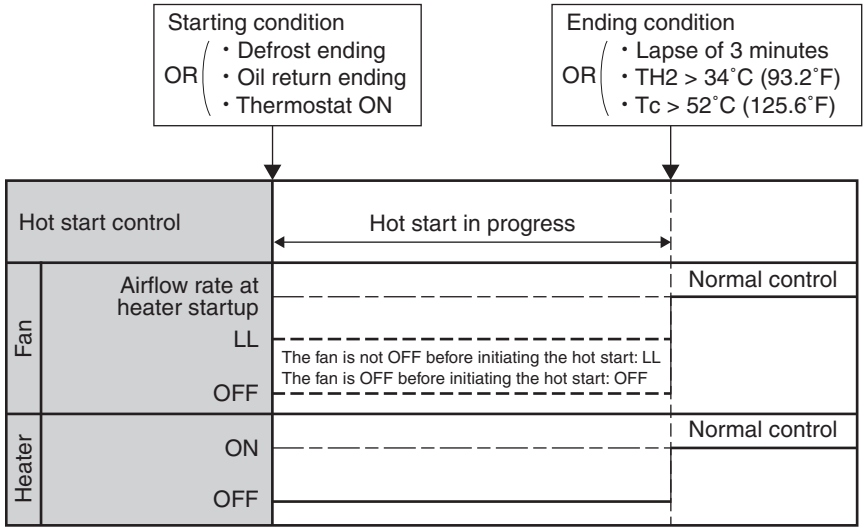
At startup with thermostat ON or after the completion of defrosting in heating operation, the indoor fan is controlled to prevent cold air from blasting out and ensure startup capacity.
TH2: Temperature detected with the gas thermistor
Tc: High pressure equivalent saturated temperature



■ **FXTQ-PA**

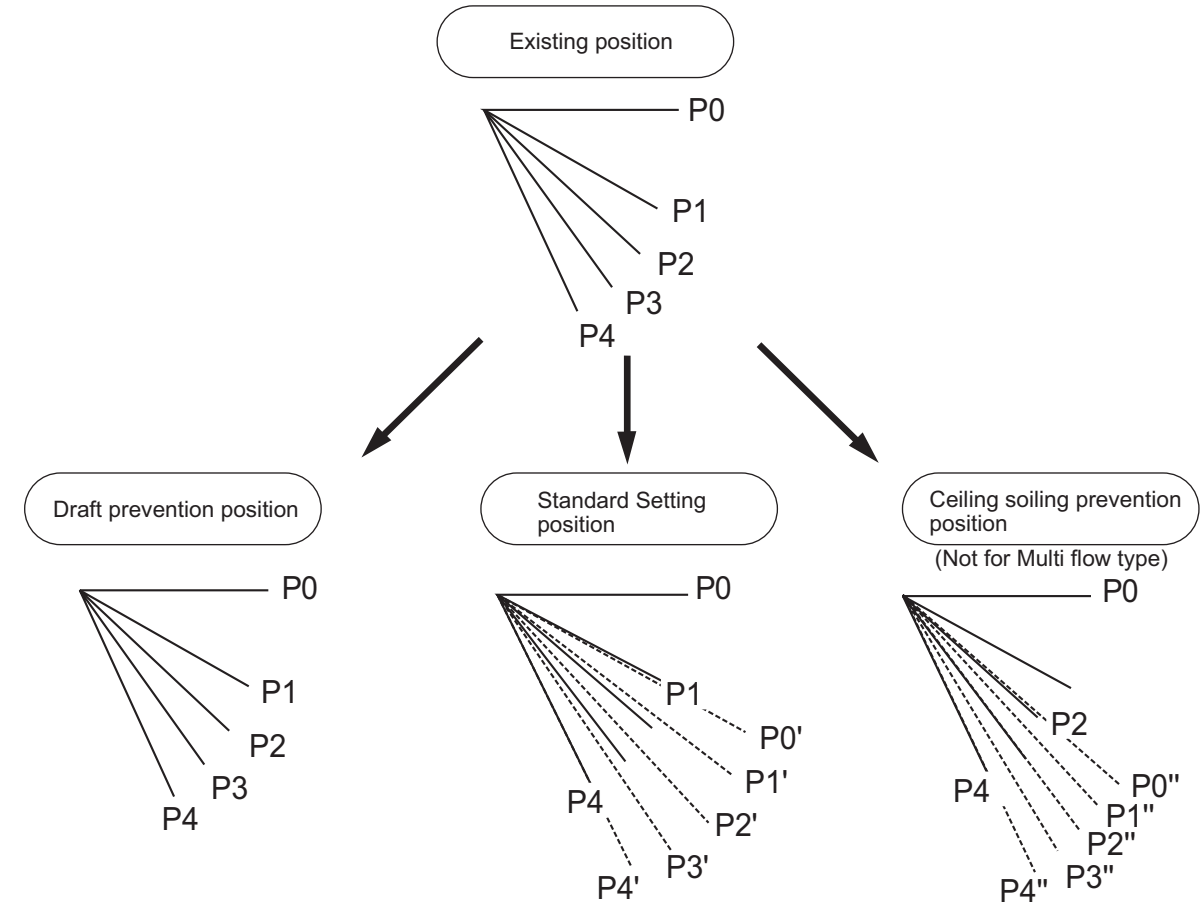


■ **FXTQ-TA, FXTQ-TB (when the heater is to be used)**



6.10 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-AA, FXFQ-T, FXFQ-P, FXZQ-TA, FXZQ-TB, FXZQ-M and FXEQ-P 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-AA, FXFQ-T, FXFQ-P models: draft prevention position
FXZQ-TA, FXZQ-TB, FXZQ-M, FXEQ-P models: standard position

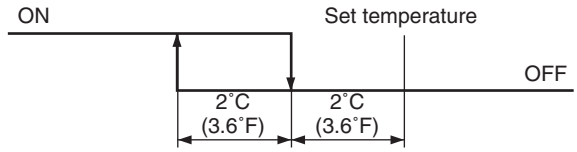
6.11 Heater Control (Except FXTQ-PA, FXTQ-TA, and FXTQ-TB Models)

Note(s) Optional PCB KRP1B... is required.

The heater control is conducted in the following manner.

Normal control

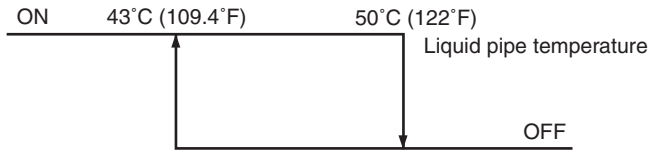
While in heating, the heater control (ON/OFF) is conducted as shown below.



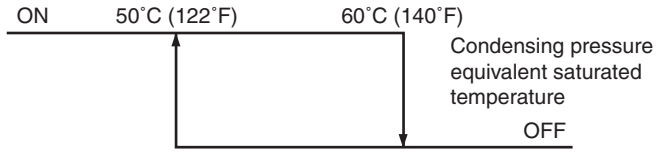
Overload control

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

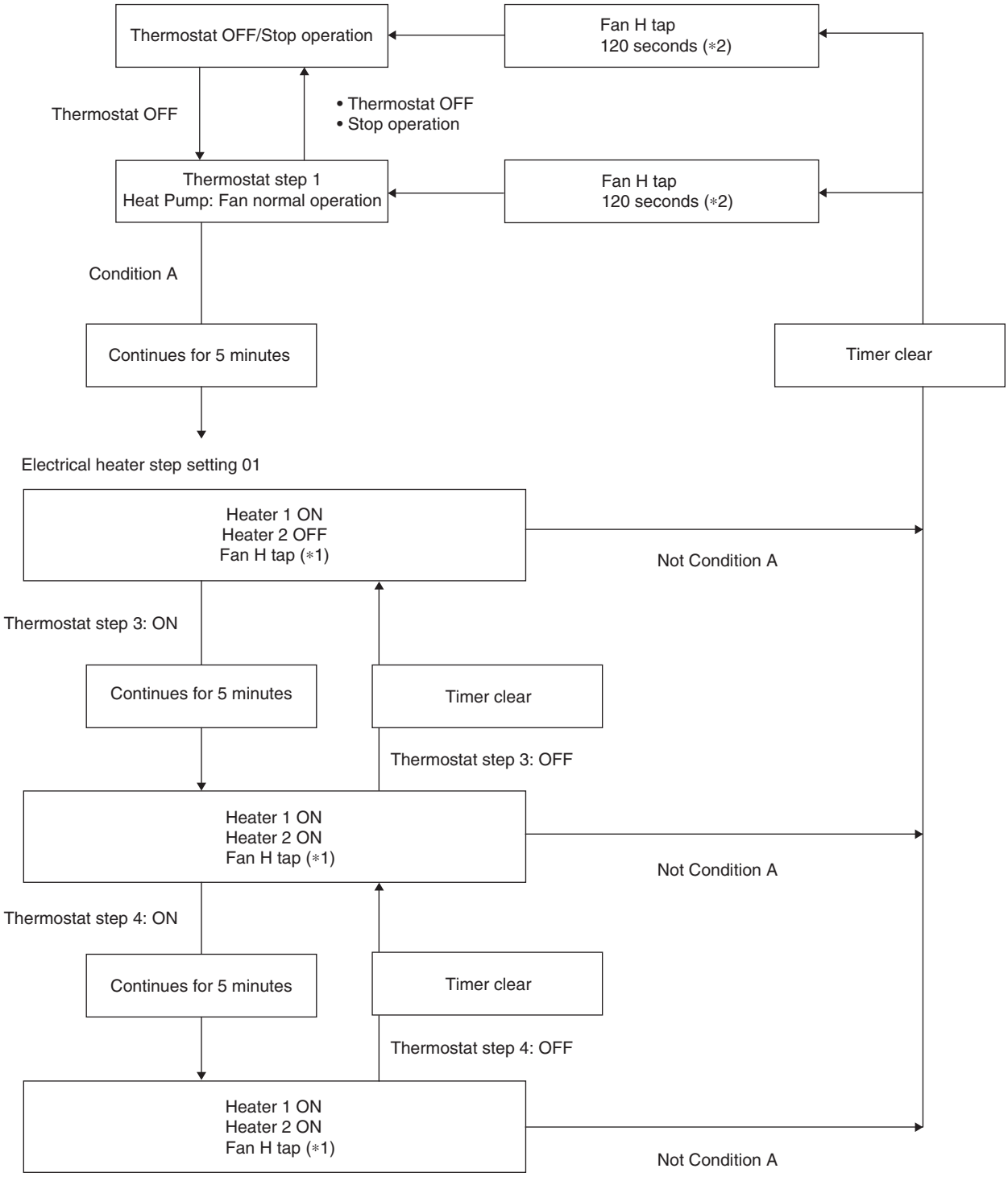
While the heater turns OFF, in order to prevent the activation of the thermal protector, the fan conducts residual operation for a given period of time after the heater turns OFF. (This operation is conducted regardless of with or without heater equipped.)

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

6.12 Heater Control (FXTQ-PA Models)

6.12.1 Auxiliary Electric Heater Control

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



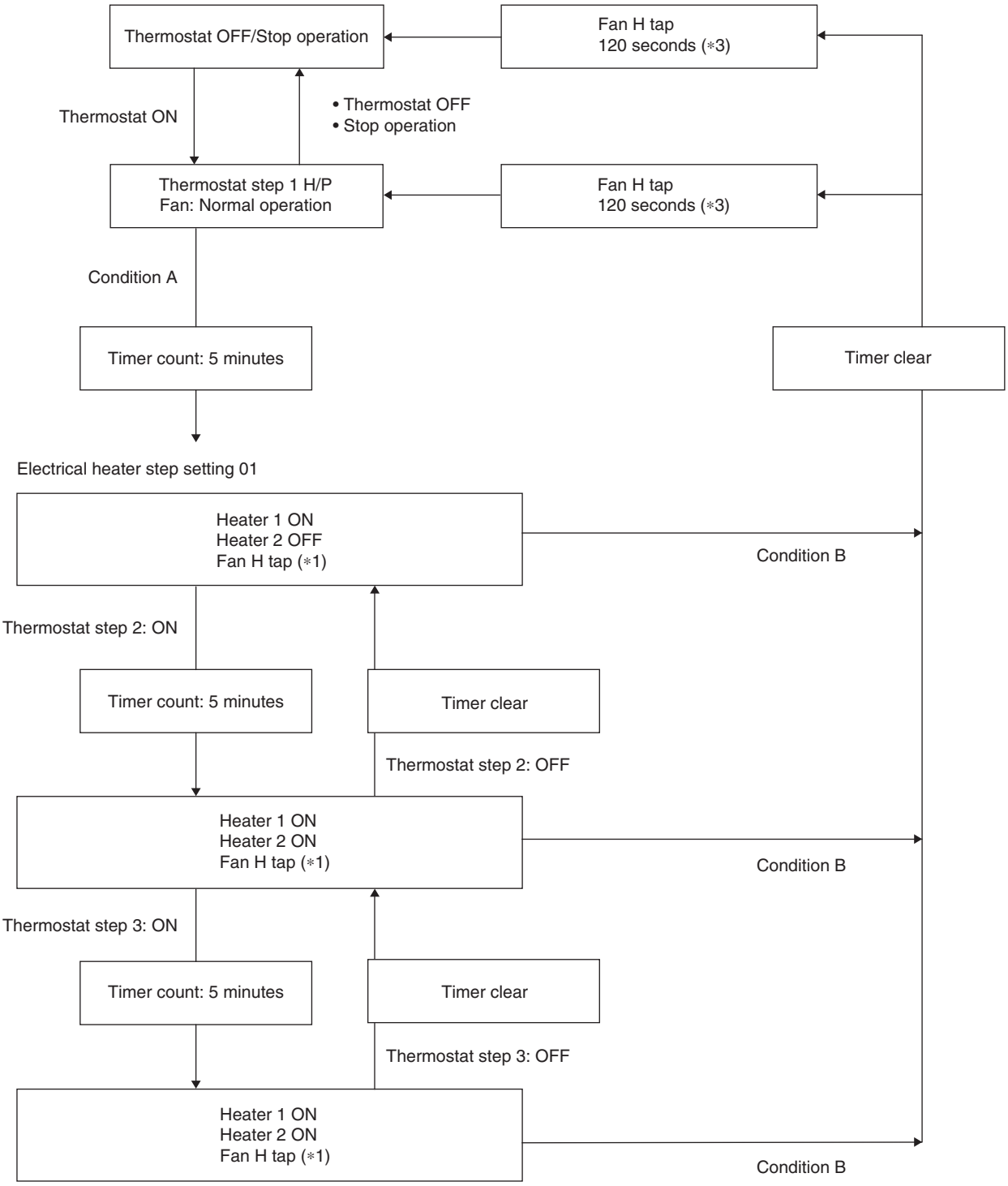
Note(s)

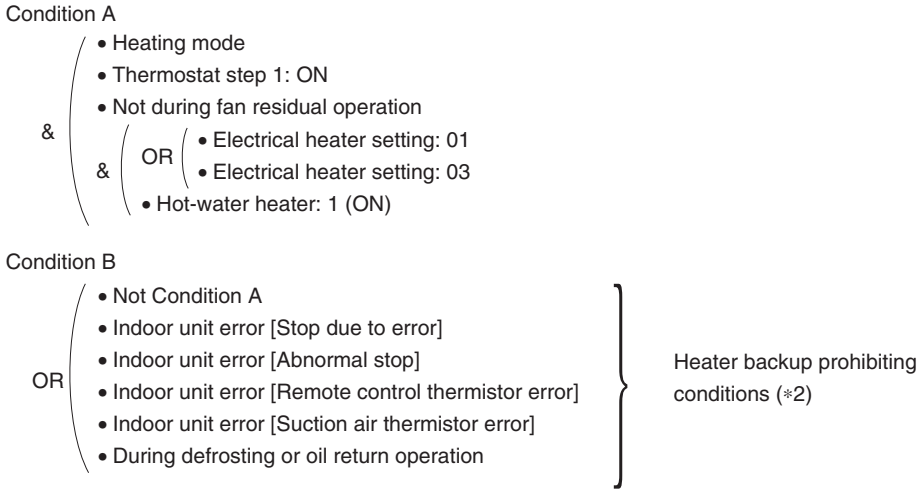
∗1. Fixing of the fan H tap.

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

6.12.2 Heat Pump Lockout Control

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





Note(s)

∗1. Fixing of the fan H tap

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

∗3. The operation must continue for a certain period of time after the heater turns OFF.

∗4. The thermostat steps for this control comply with the 4-Step Thermostat Processing (FXTQ-PA).

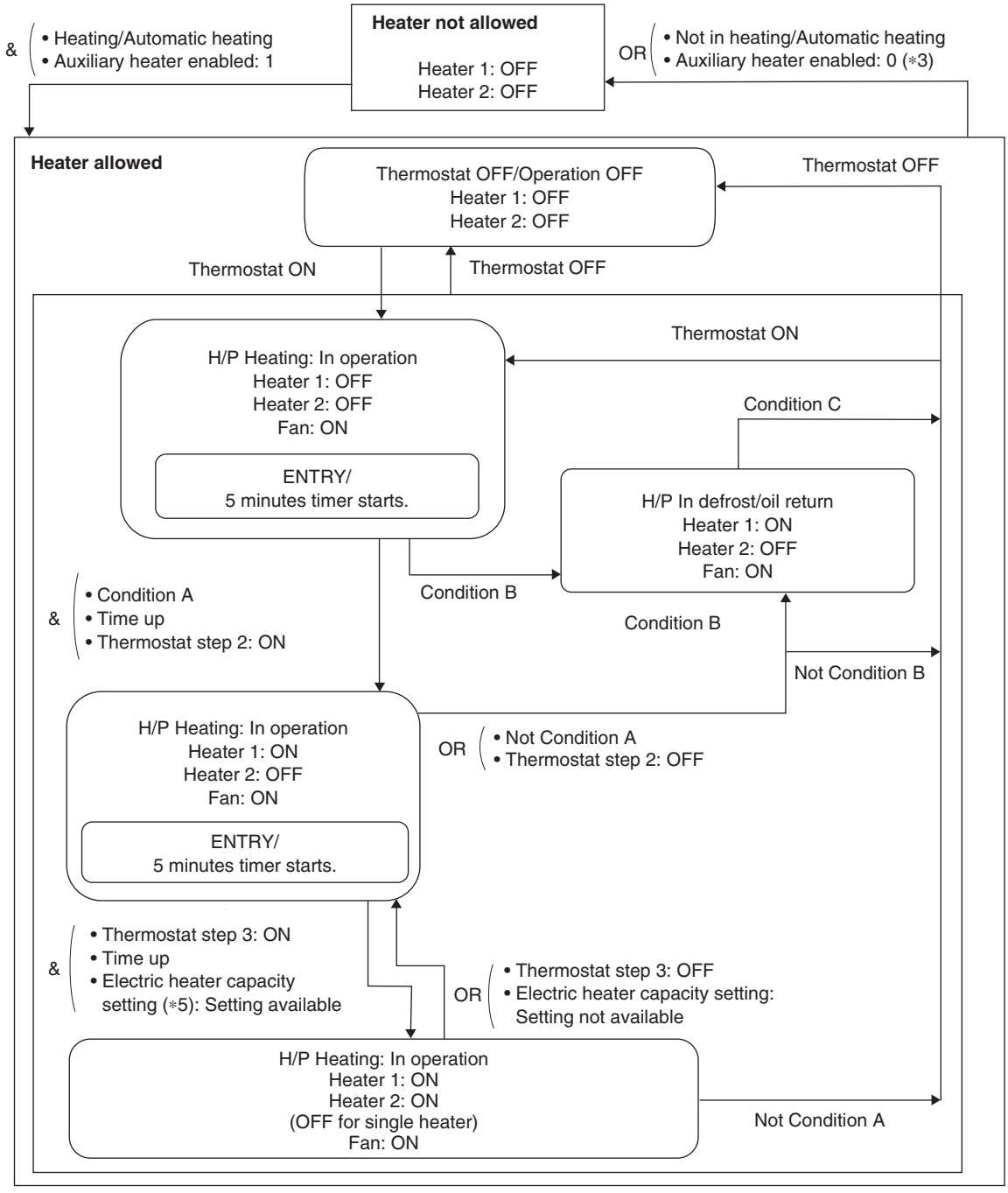
6.13 Heater Control (FXTQ-TA, FXTQ-TB Models)

Note(s)

Optional heater kit HKS... is required.
For FXTQ-TA and FXTQ-TB 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, FXTQ-TB Models)** on page 135.)

6.13.1 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

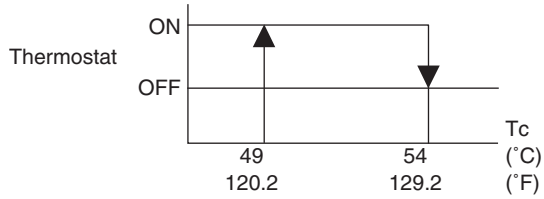
& (• No fan motor system error
• During defrost/oil return
• Heater ON permission (Defrost/oil return): 1 (∗4))

Condition C

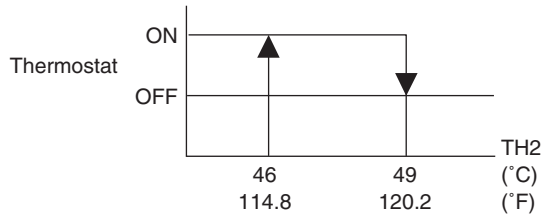
OR (• Not during defrost/oil return
• Fan motor system error
• Heater ON permission (Defrost/oil return): 0 (∗4))

Note(s)

∗1: High pressure condition



∗2: Liquid pipe temperature condition



∗3. Auxiliary heater enabled

1: & (• Electric heater setting (Field setting 11 (21)-3.): **02, 08** (*6)
• Electric heater capacity setting ≠ **01**)
0: Other than the above

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

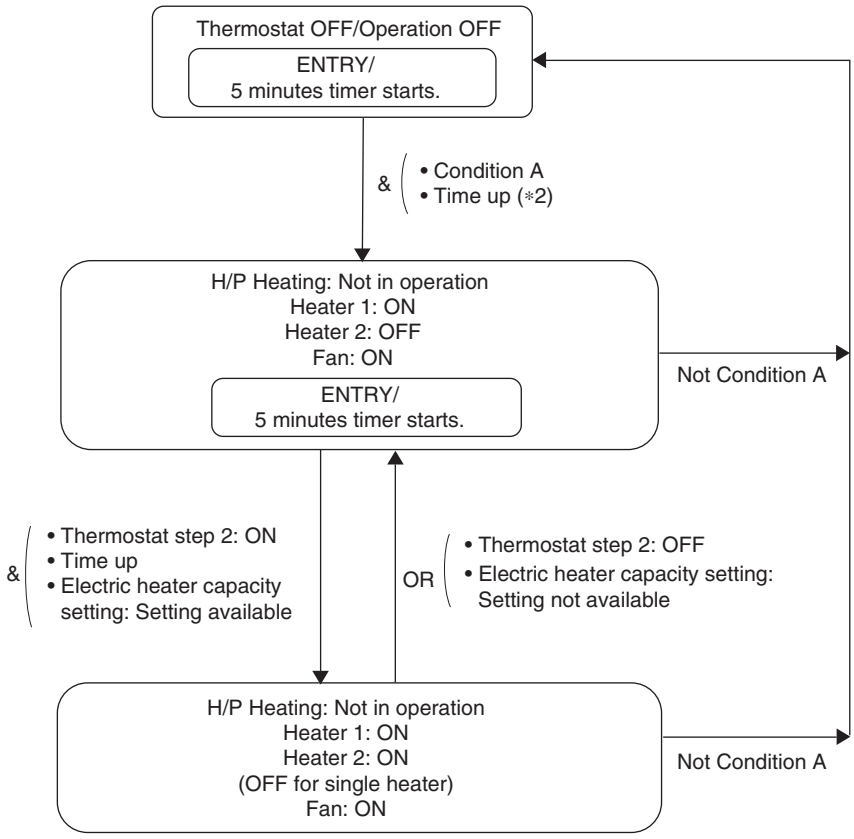
1: Electric heater setting (Field setting 11 (21)-3.): **08** (∗6)
0: Electric heater setting (Field setting 11 (21)-3.): **02** (∗6)

∗5. Field setting 11(21)-5. Refer to page 155.

∗6. Field setting 11(21)-3. Refer to page 154.

6.13.2 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 (Not 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(s)

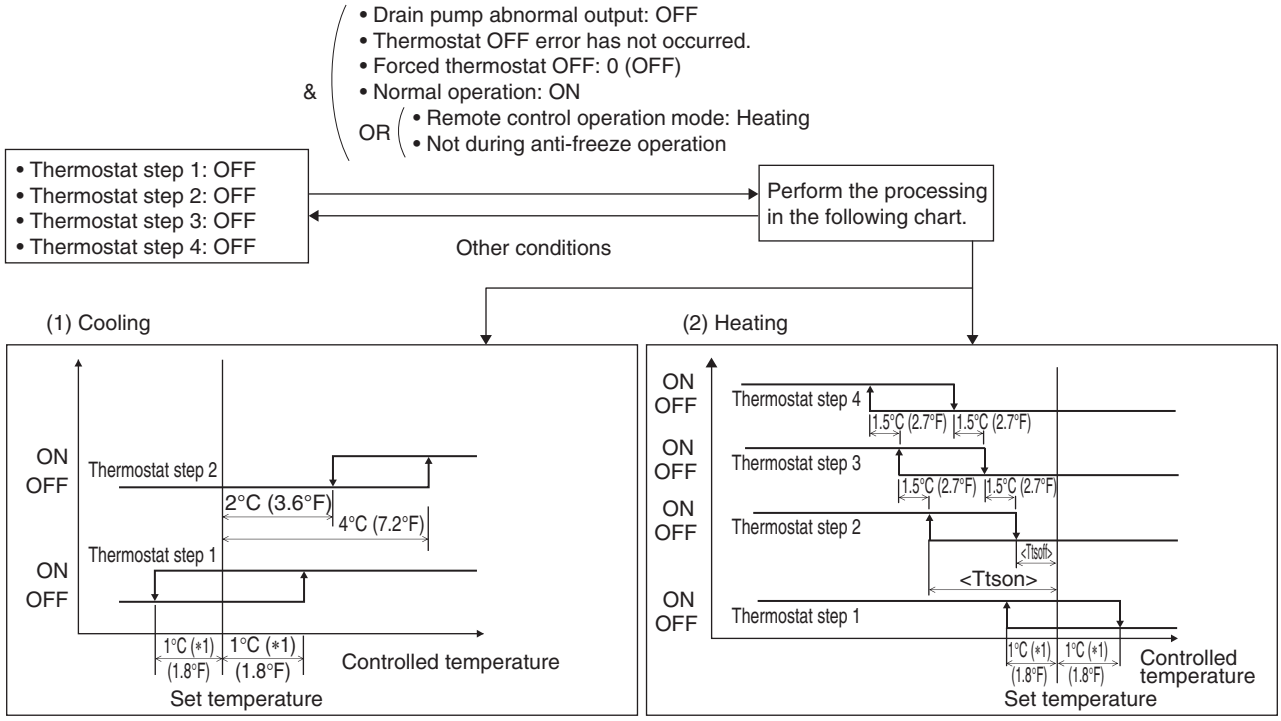
∗1. The heater backup prohibiting conditions are prioritized. Even when the heater ON conditions are met, the heater is turned OFF when the prohibiting conditions are met.
∗2. When the remote controller is ON, Time-up will be set to the initial value.

6.14 4-Step Thermostat Processing (FXTQ-PA 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 in accordance with [Thermostat Step 2, 3, or 4] or [Thermostat Step 1, 2, or 3].
For more details of the heater, refer to **Heater Control (FXTQ-PA Models)** on page 127.

Detail



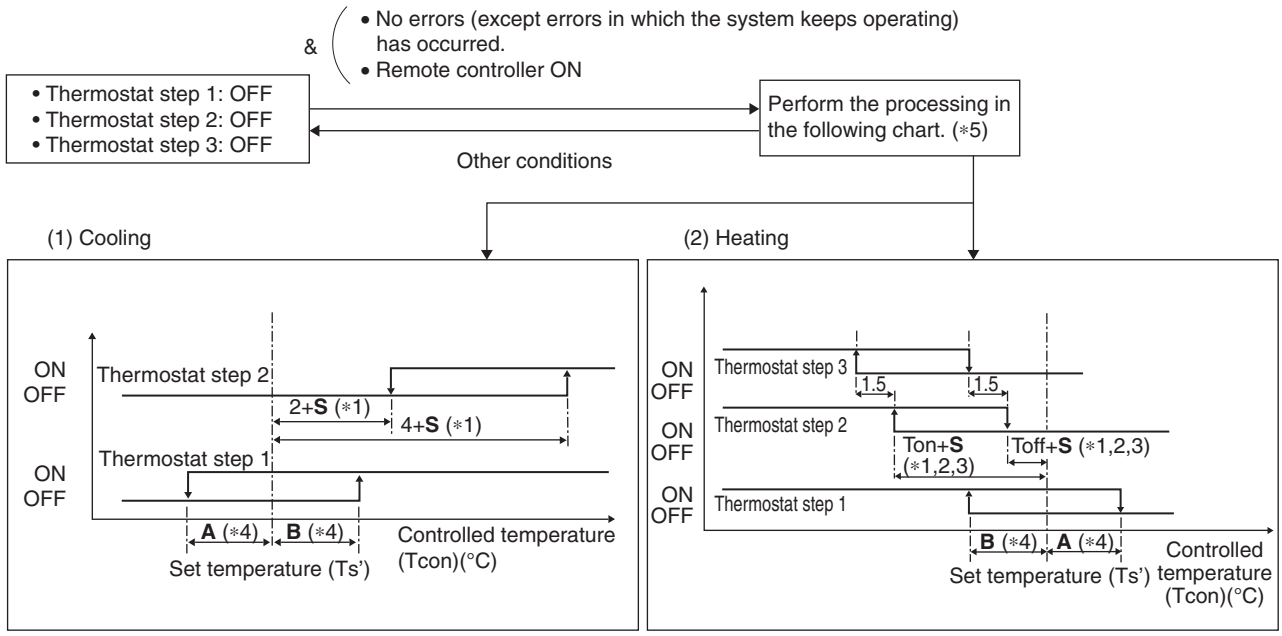
Note(s) ∗1: This value varies according to the field setting 12 (22)-2.

6.15 3-Step Thermostat Processing (FXTQ-TA, FXTQ-TB 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, FXTQ-TB Models)** on page 130.

Detail



Note(s)

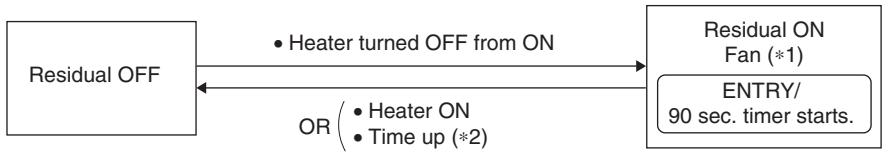
∗1. **S** value varies automatically based on the room temperature trend.
∗2. Ton + **S** > –**B** (°C), Toff + **S** < **A** (°C)
∗3. For parameters, refer to page 153.
∗4. **A** and **B** values vary automatically based on the field setting 12 (22)-2.
∗5. If, directly after a change in conditions, 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.

6.16 Fan Control (Heater Residual) (FXTQ-TA, FXTQ-TB 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



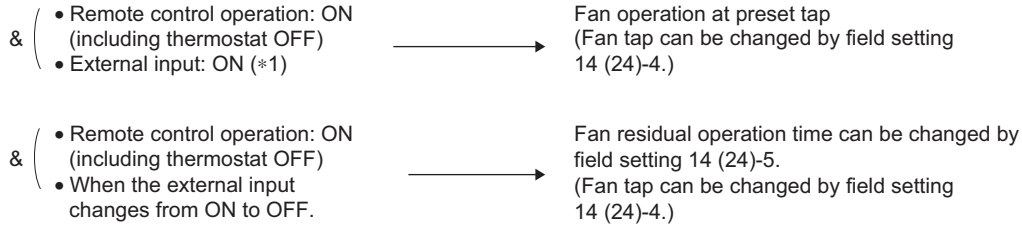
∗1. When the heater is ON, the airflow rate of the fan will be whichever is the largest between the CFM dictated by the heater's own capacity, or the fan tap CFM determined by other controls.

∗2. Fan residual operation will continue, even if the indoor unit is turned off with the remote controller operation button.

6.17 Interlocked with External Equipment (FXTQ-PA Models)

6.17.1 Humidifier

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



Note(s) ∗1. External input ON is an input signal to the X12A terminal on the PCB (A3P).

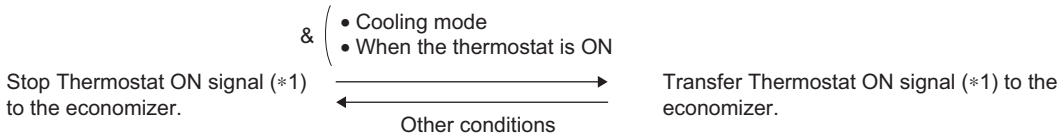
★: Factory setting

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

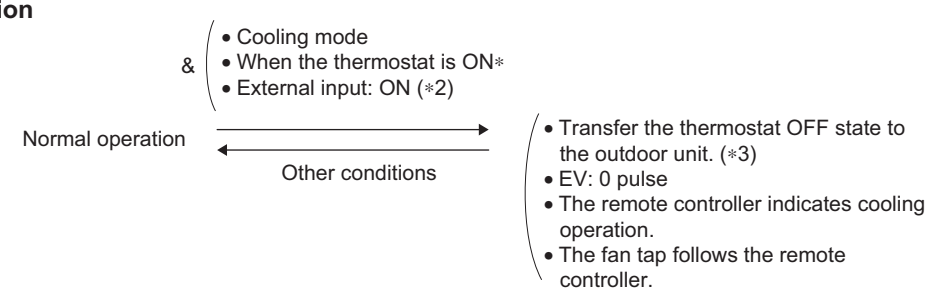
6.17.2 Economizer

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

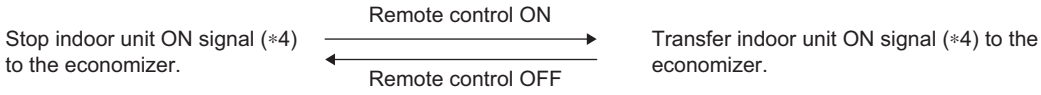
■ **Thermostat ON signal**



■ **Operation**



■ **Indoor unit ON signal**



Note(s)

∗1. Thermostat ON signal: A signal to turn ON the indoor unit thermostat and allow the economizer to open the damper.
It turns ON the relay on the X8A side of X23A on the PCB (A3P).

∗2. External input ON is an input signal to the X11A terminal on the PCB (A3P).

∗3. To stop the compressor while the economizer is in operation to save energy.

∗4. Remote control ON signal: Contact output which shows the operating status of the indoor unit.
This signal turns on the relay on the opposite side of X8A of X23A on the PCB (A3P).

6.17.3 Air Purifier (UV Lamp)

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

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

6.18 Interlocked with External Equipment (FXTQ-TA, FXTQ-TB Models)

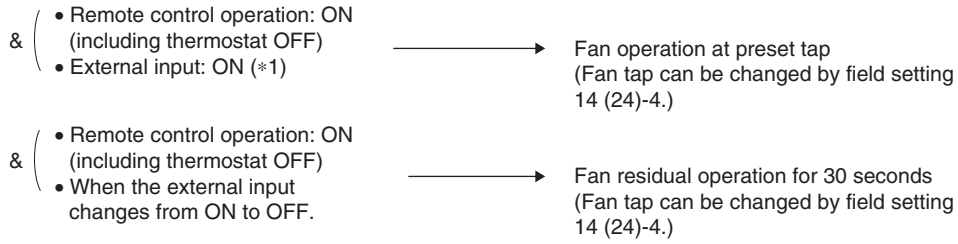
6.18.1 Air Purifier (UV Lamp)

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.

6.18.2 Humidifier

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



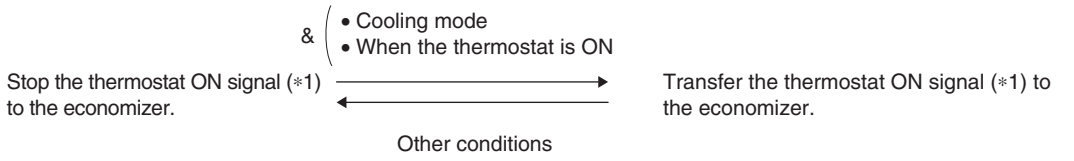
∗1. External input ON is an input signal to the X1M-HUMIDIFIER terminal on the PCB.

Note(s) 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.

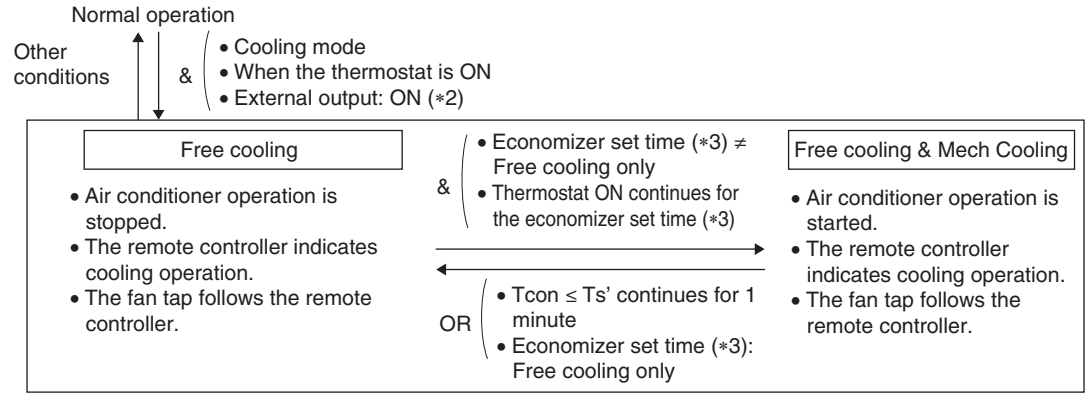
6.18.3 Economizer

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.

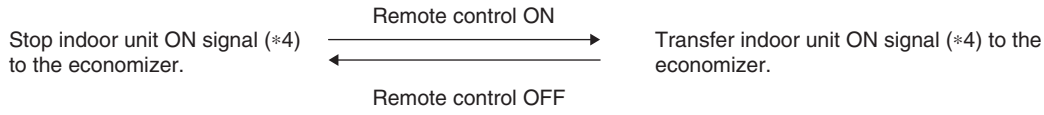
■ **Thermostat ON signal**



■ **Operation**



■ **Indoor unit ON signal**



Note(s)

∗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, FXTQ-TB models)** on page 164.

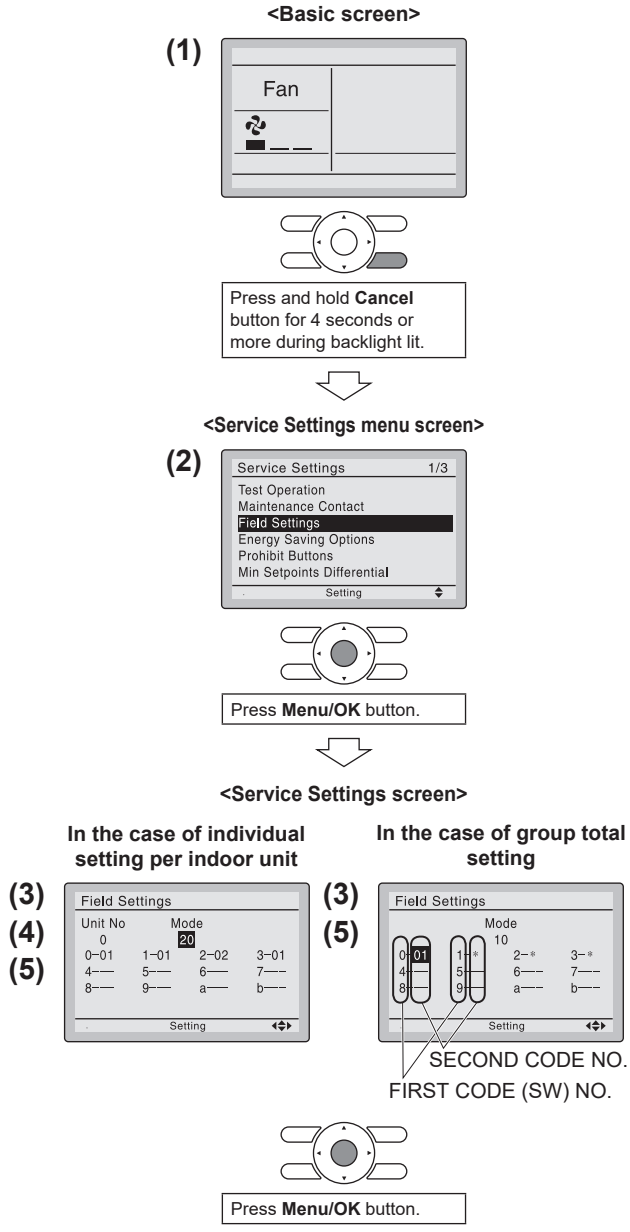
∗4. Remote control ON signal: Contact output which shows the operating status of the indoor unit.
This signal turns on the relay X2M-CONTROL ON/OFF on the PCB.

Part 5
Field Settings and Test Operation

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.)

1.1 BRC1E73

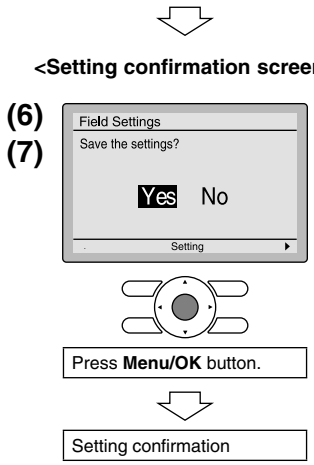


1. Press and hold **Cancel** button for 4 seconds or more.
   Service settings menu is displayed.
2. Select **Field Settings** in the Service Settings menu, and press **Menu/OK** button.
   Field settings screen is displayed.
3. Highlight the mode, and select desired **Mode No.** by using ▲▼ (Up/Down) 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.

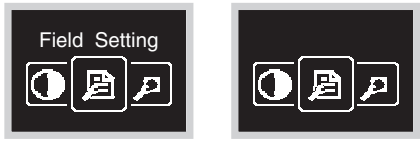
NOTE

- 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 BRC1H71W

Enter the Installer Menu and make settings.

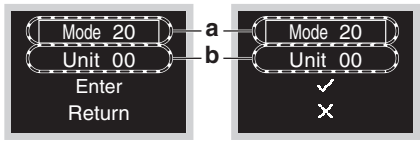
Installer menu screen



Text mode ▼ Icon mode ▼

Press − or + button, for move to "".
If Bluetooth is connected, performing field setting from the remote controller side is impossible.
Disconnect Bluetooth, or perform field setting from the mobile application.

Sub-menu screen



Text mode ▼ Icon mode ▼

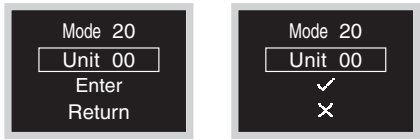
Press + or − button, to select Mode No. and press ○ to enter the field setting menu.
a Mode No.
b Unit No.

Sub-menu screen

Text mode ▼ Icon mode ▼

Press − or + button, to scroll the desired Mode No. and press ○ button.

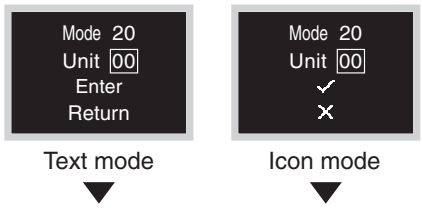
Sub-menu screen



Text mode ▼ Icon mode ▼

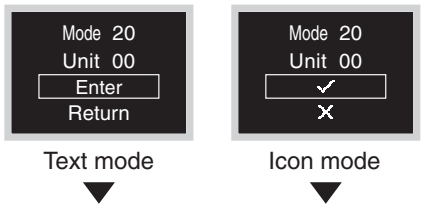
Press − or + button, to select Unit No. and press ○ button.

Sub-menu screen



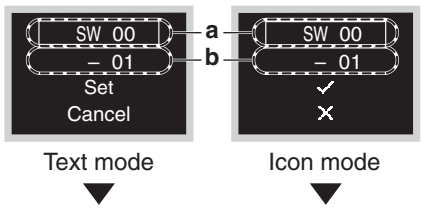
Press − or + button, scroll to the desired Unit No. and then press ○ button to set the selection.

Sub-menu screen



Press − or + button, to select “Enter” or “ ✓ ”, and then press ○ button to set the selection.

Sub-menu screen

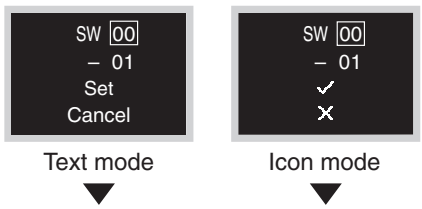


Press − or + button, select First Code No., and then press ○ button.

a First Code No.

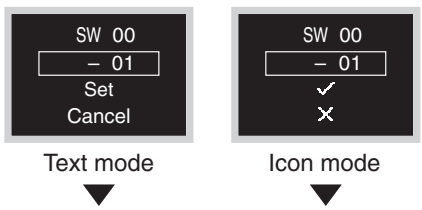
b Second Code No.

Sub-menu screen



Press + or − button, scroll to the desired First code No. and then press ○ button to set the selection.

Sub-menu screen



Press − or + button, to move Second Code No., and then press ○ button.

Sub-menu screen

Text mode

Icon mode

Press [−] or [+] button, to scroll to the desired Second Code No., and then press [○] button.

Sub-menu screen

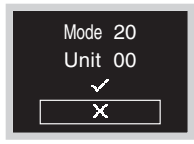
Text mode

Icon mode

Press [−] or [+] button, select “Set” or “✓”, and then press [○] button to save the setting and return to the previous screen.
If the setting is not changed, select “Cancel” or “✗”.

Sub-menu screen

Text mode



Icon mode

Press [−] or [+] button, move to “Return” or “✗”, and then press [○] button to return to the installer menu.
* If the setting has been changed, the screen may return to the home screen without returning to the installer menu.

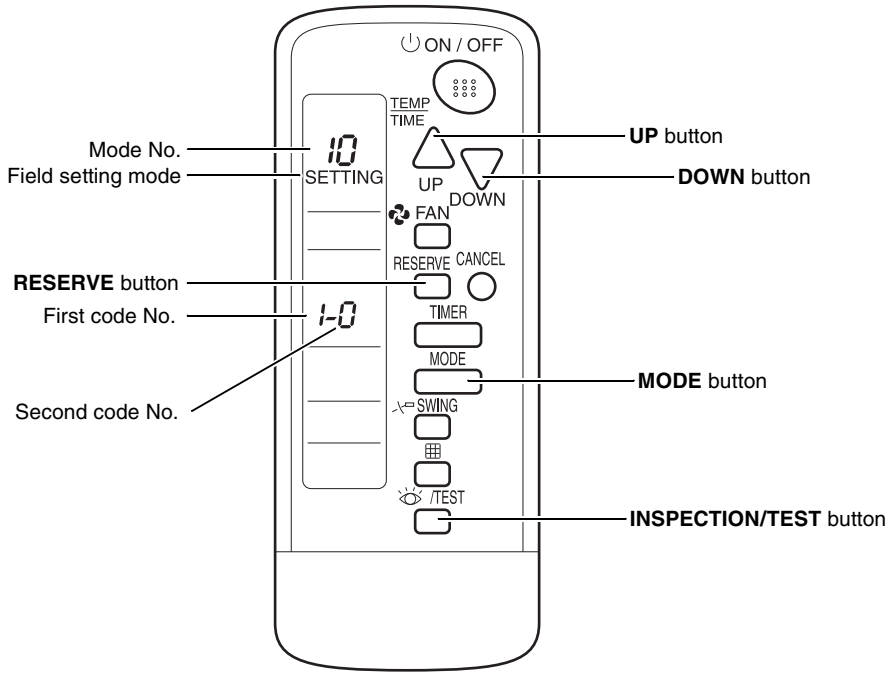
⚠ CAUTION

- The connection of optional accessories to the indoor unit might cause changes to some field settings. For more information, see the installation manual of the optional accessory.
- For details about the specific field settings of each type of indoor unit, see the installation manual of the indoor unit.
- Field settings that are not available for a connected indoor unit are not displayed.
- Field setting default values are different depending on the indoor unit model.

NOTICE

- 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.

1.3 Wireless Remote Controller



To set the field settings, you have to change:

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

To change the field settings, proceed as follows:

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.

1.4 List of Field Settings for Indoor Unit

★: Factory setting

Mode No. (Note 2)	First Code No.	Setting Contents		Second Code No. 01		Second Code No. 02		Second Code No. 03	Second Code No. 04	Reference Page
10 (20)	0	Filter cleaning sign interval	Ultra long life filter	**Light★**	**Approx. 10,000 hrs.★**	Heavy	Approx. 5,000 hrs.	—	—	150
			Long life filter		**Approx. 2,500 hrs.★**		Approx. 1,250 hrs.			
			Standard filter		**Approx. 200 hrs.★**		Approx. 100 hrs.			
	0	Filter sign setting		**Light★**		Heavy		—	—	150
	1	Filter type		**Long life filter★**		Ultra long life filter		—	—	150
	1	Filter cleaning sign interval		**Short interval★**		Long interval		—	—	150
	2	Remote controller thermistor		Refer to page on the right for details.						150
	3	Filter cleaning sign		**Displayed★**		Not displayed		—	—	152
	5	Information for intelligent Touch Manager / intelligent Touch Controller		Refer to page on the right for details.						152
	6	Remote controller thermistor control during group control		**Not permitted★**		Permitted		—	—	151
	7	Time for absence area detection		**30 minutes★**		60 minutes		—	—	152
11 (21)	1	Auxiliary electric heater ON temperature: Ton		Refer to page on the right for details.						153
	1	Auxiliary electric heater ON/OFF temperature: Ton/Toff								
	2	Auxiliary electric heater OFF temperature: Toff								
	3	Setting of airflow rate when heating		**Standard★**		Slightly increased		Increased	—	154
	3	Electric heater setting		Refer to page on the right for details.						154
	5	Electric heater capacity setting		Refer to page on the right for details.						155
	6	Detection rate setting		High sensitivity		Low sensitivity		**Standard sensitivity★**	Infrared presence sensor disabled	155
	7	Automatic airflow adjustment		**OFF★**		Completion of airflow adjustment		Start of airflow adjustment	—	156
	8	Compensating the temperature around people		Suction air temperature only		Priorities given on the suction air temperature		**Standard★**	Priorities given on the floor temperature	157
	9	Compensating the floor temperature when heating		–4°C (–7.2°F)		–2°C (–3.6°F)		**0°C (0°F)★**	+2°C (+3.6°F)	157
	12	Dry mode set temperature		**Room temperature★**		Same as cooling mode set temperature		—	—	157

Mode No. (Note 2)	First Code No.	Setting Contents	Second Code No.				Reference Page
			01	02	03	04	
12 (22)	0	Optional accessories output selection	Refer to page on the right for details.				158
	1	External ON/OFF input	Refer to page on the right for details.				158
	2	Thermostat differential changeover	1°C (1.8°F)	0.5°C (0.9°F)	—	—	158
	3	Airflow setting when heating thermostat is OFF	**LL tap★**	Set fan speed	OFF	—	159
	4	Automatic mode differential	Refer to page on the right for details.				159
	5	Auto restart after power failure	OFF	**ON★**	—	—	159
	6	Airflow setting when cooling thermostat is OFF	LL tap	**Set fan speed★**	OFF	—	160
13 (23)	0	Ceiling height setting, setting of normal airflow	**Standard★**	High ceiling 1	High ceiling 2	—	160
	1	Airflow direction setting	**4-direction airflow★**	3-direction airflow	2-direction airflow	—	161
	2	Swing pattern settings	All direction synchronized swing	—	**Facing swing★**	—	161
	4	Airflow direction adjustment range	Draft prevention	**Standard★**	Ceiling soiling prevention	—	162
	5	Setting of static pressure selection	**Standard★**	High static pressure	—	—	162
	6	External static pressure settings	Refer to page on the right for details.				162
14 (24)	4	Optional kit setting (UV lamp + humidifier + economizer)	Refer to page on the right for details.				164
	5	Dry mode set temperature	**Room temperature★**	Same as cooling mode set temperature	—	—	164
	9	Mold proof operation setting	—	**Standard★**	For high humidity areas	—	164
15 (25)	0	Drain pump operation setting	—	**ON★**	OFF	—	164
	1	Humidification when heating thermostat is OFF	**Not equipped★**	Equipped	—	—	165
	2	Direct duct connection	**Not equipped★**	Equipped	—	—	165
	3	Drain pump and humidifier interlock selection	**Not interlocked★**	Interlocked	—	—	165
	5	Individual ventilation setting	**Normal★**	Individual	—	—	165
1b	4	Display of error codes on the remote controller	—	Two-digit display	—	**Four-digit display★**	165
1c	0	Room temperature display	Not displayed	**Displayed★**	—	—	166
	1	Thermistor sensor for auto changeover and setback control by the remote controller	Utilize the return air thermistor	**Utilize the remote controller thermistor★**	—	—	166
	3	Access permission level setting	**Level 2★**	Level 3	—	—	166
1e	2	Setback availability	**N/A★**	Heat only	Cool only	Cool/heat	166
	14	Setting restricted/permitted for airflow block	Refer to page on the right for details.				167

Note(s)

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.

Field setting	First Code No.	Setting Modes	FXFQ-AA	FXFQ-T	FXFQ-P	FXZQ-TA FXZQ-TB	FXZQ-M	FXUQ-P FXUQ-PA	FXEQ-P	FXDQ-M
10 (20)	0	Filter cleaning sign interval	●	●	●	●	●	●	●	●
	0	Filter sign setting	—	—	—	—	—	—	—	—
	1	Filter type	●	●	●	●	●	●	—	—
	1	Filter cleaning sign interval	—	—	—	—	—	—	—	—
	2	Remote controller thermistor	●	●	●	●	●	●	●	●
	3	Filter cleaning sign	●	●	●	●	●	●	●	●
	5	Information for intelligent Touch Manager/intelligent Touch Controller	●	●	●	●	●	●	●	●
	6	Remote controller thermistor control during group control	●	●	●	●	●	●	●	●
	7	Time for absence area detection	●	●	—	●	—	●	—	—
11 (21)	1	Auxiliary electric heater ON temperature	●	—	—	●	—	●	●	—
	1	Auxiliary electric heater ON/OFF temperature	—	●	—	—	—	—	—	—
	2	Auxiliary electric heater OFF temperature	●	—	—	●	—	●	●	—
	3	Setting of airflow rate when heating	●	●	●	●	—	●	●	—
	3	Electric heater setting	—	—	—	—	—	—	—	—
	5	Electric heater capacity setting	—	—	—	—	—	—	—	—
	6	Detection rate setting	●	●	—	●	—	●	—	—
	7	Automatic airflow adjustment	—	—	—	—	—	—	—	—
	8	Compensating the temperature around people	●	●	—	●	—	●	—	—
	9	Compensating the floor temperature when heating	●	●	—	●	—	●	—	—
	12	Dry mode set temperature	●	—	—	TA: — TB: ●	—	P: — PA: ●	—	—
12 (22)	0	Optional accessories output selection	●	●	●	●	●	●	●	●
	1	External ON/OFF input	●	●	●	●	●	●	●	●
	2	Thermostat differential changeover	●	●	●	●	●	●	●	●
	3	Airflow setting when heating thermostat is OFF	●	●	●	●	●	●	●	●
	4	Automatic mode differential	●	●	●	●	●	●	●	●
	5	Auto restart after power failure	●	●	●	●	●	●	●	●
	6	Airflow setting when cooling thermostat is OFF	●	●	●	●	●	●	●	●
13 (23)	0	Ceiling height setting, setting of normal airflow	●	●	●	●	●	●	●	—
	1	Airflow direction setting	●	●	●	●	●	●	—	—
	2	Swing pattern settings	●	●	—	●	—	●	—	—
	4	Airflow direction adjustment range	●	●	●	●	●	●	●	—
	5	Setting of static pressure selection	—	—	—	—	—	—	—	●
	6	External static pressure settings	—	—	—	—	—	—	—	—
14 (24)	4	Optional kit setting (UV lamp + Humidifier + Economizer)	—	—	—	—	—	—	—	—
	5	Dry mode set temperature	—	—	—	—	—	—	—	—
	9	Mold proof operation setting	—	—	—	—	—	—	●	—
15 (25)	0	Drain pump operation settings	—	—	—	—	—	—	—	—
	1	Humidification when heating thermostat is OFF	●	●	●	●	●	●	●	●
	2	Direct duct connection	●	●	●	●	—	●	●	—
	3	Drain pump and humidifier interlock selection	●	●	●	●	●	●	●	●
	5	Individual ventilation setting	●	●	●	●	●	●	●	●
1b	4	Display of error codes on the remote controller	●	●	●	●	●	●	●	●
1c	0	Room temperature display	●	●	●	●	●	●	●	●
	1	Thermistor sensor for auto changeover and setback control by the remote controller	●	●	●	●	●	●	●	●
	3	Access permission level setting	●	●	●	●	●	●	●	●
1e	2	Setback availability	●	●	●	●	●	●	●	●
	14	Setting restricted/permitted for airflow block	●	●	—	—	—	—	—	—

● : Available
—: Not available

Field setting	First Code No.	Setting Modes	FXSQ-TA FXSQ-TB	FXMQ-PB	FXMQ-TB	FXHQ-M	FXAQ-P	FXLQ-M	FXNQ-M	FXTQ-TA FXTQ-TB
10 (20)	0	Filter cleaning sign interval	●	●	●	●	●	●	●	—
	0	Filter sign setting	—	—	—	—	—	—	—	●
	1	Filter type	●	—	●	—	—	—	—	—
	1	Filter cleaning sign interval	—	—	—	—	—	—	—	●
	2	Remote controller thermistor	●	●	●	●	●	●	●	●
	3	Filter cleaning sign	●	●	●	●	●	●	●	●
	5	Information for intelligent Touch Manager/intelligent Touch Controller	●	●	●	●	●	●	●	●
	6	Remote controller thermistor control during group control	●	●	●	●	●	●	●	●
	7	Time for absence area detection	—	—	—	—	—	—	—	—
11 (21)	1	Auxiliary electric heater ON temperature	●	—	●	—	—	●	●	●
	1	Auxiliary electric heater ON/OFF temperature	—	●	—	—	—	—	—	—
	2	Auxiliary electric heater OFF temperature	●	—	●	—	—	●	●	●
	3	Setting of airflow rate when heating	—	—	—	—	—	—	—	—
	3	Electric heater setting	—	—	—	—	—	—	—	●
	5	Electric heater capacity setting	—	—	—	—	—	—	—	●
	6	Detection rate setting	—	—	—	—	—	—	—	—
	7	Automatic airflow adjustment	●	● (∗1)	●	—	—	—	—	—
	8	Compensating the temperature around people	—	—	—	—	—	—	—	—
	9	Compensating the floor temperature when heating	—	—	—	—	—	—	—	—
	12	Dry mode set temperature	TA: — TB: ●	—	●	—	—	—	—	—
12 (22)	0	Optional accessories output selection	●	●	●	●	●	●	●	●
	1	External ON/OFF input	●	●	●	●	●	●	●	●
	2	Thermostat differential changeover	●	●	●	●	●	●	●	●
	3	Airflow setting when heating thermostat is OFF	●	●	●	●	●	●	●	●
	4	Automatic mode differential	●	●	●	●	●	●	●	●
	5	Auto restart after power failure	●	●	●	●	●	●	●	●
	6	Airflow setting when cooling thermostat is OFF	●	●	●	●	●	●	●	●
13 (23)	0	Ceiling height setting, setting of normal airflow	—	—	—	●	●	—	—	—
	1	Airflow direction setting	—	—	—	—	—	—	—	—
	2	Swing pattern settings	—	—	—	—	—	—	—	—
	4	Airflow direction adjustment range	—	—	—	—	●	—	—	—
	5	Setting of static pressure selection	—	—	—	—	—	—	—	—
	6	External static pressure settings	●	●	●	—	—	—	—	—
14 (24)	4	Optional kit setting (UV lamp + Humidifier + Economizer)	—	—	—	—	—	—	—	●
	5	Dry mode set temperature	—	—	—	—	—	—	—	●
	9	Mold proof operation setting	—	—	—	—	—	—	—	—
15 (25)	0	Drain pump operation settings	—	●	—	—	—	—	—	—
	1	Humidification when heating thermostat is OFF	●	●	●	●	●	●	●	●
	2	Direct duct connection	—	—	—	—	●	—	—	—
	3	Drain pump and humidifier interlock selection	●	●	●	●	●	●	●	—
	5	Individual ventilation setting	●	●	●	●	●	●	●	●
1b	4	Display of error codes on the remote controller	●	●	●	●	●	●	●	●
1c	0	Room temperature display	●	●	●	●	●	●	●	●
	1	Thermistor sensor for auto changeover and setback control by the remote controller	●	●	●	●	●	●	●	●
	3	Access permission level setting	●	●	●	●	●	●	●	●
1e	2	Setback availability	●	●	●	●	●	●	●	●
	14	Setting restricted/permitted for airflow block	—	—	—	—	—	—	—	—

● : Available
—: Not available

Note(s)

∗1. FXMQ07-48PBVJU only

1.5 Details of Field Settings for Indoor Unit

1.5.1 Filter Cleaning Sign Interval, Filter Type

★: Factory setting

Setting	10 (20)-1	**01: Long life filter★**		02: Ultra long life filter	
	Filter contamination heavy/light 10 (20)-0	**Light 01★**	Heavy 02	Light 01	Heavy 02
Model	FXFQ-AA	**2,500 hrs.★**	1,250 hrs.	10,000 hrs.	5,000 hrs.
	FXFQ-T				
	FXFQ-P				
	FXZQ-TA				
	FXZQ-TB				
	FXZQ-M				
	FXUQ-P				
	FXUQ-PA				
	FXEQ-P				
	FXSQ-TA				
	FXSQ-TB				
	FXMQ-PB				
	FXMQ-TB				
	FXHQ-M				
	FXLQ-M				
	FXNQ-M				
	FXDQ-M	**200 hrs.★**	100 hrs.	200 hrs.	100 hrs.
	FXAQ-P				

Setting	10 (20)-1	**01: Short interval★**		02: Long interval	
	Filter contamination heavy/light 10 (20)-0	**Light 01★**	Heavy 02	Light 01	Heavy 02
Model	FXTQ-TA	**2,500 hrs.★**	1,250 hrs.	10,000 hrs.	5,000 hrs.
	FXTQ-TB				

1.5.2 Remote Controller Thermistor

Select a thermistor to control the room temperature.

When the unit is not equipped with an infrared floor sensor: ★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
10 (20)	2	**01★**	**Remote controller thermistor and suction air thermistor★**
		02	Suction air thermistor only
		03	Remote controller thermistor only

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.

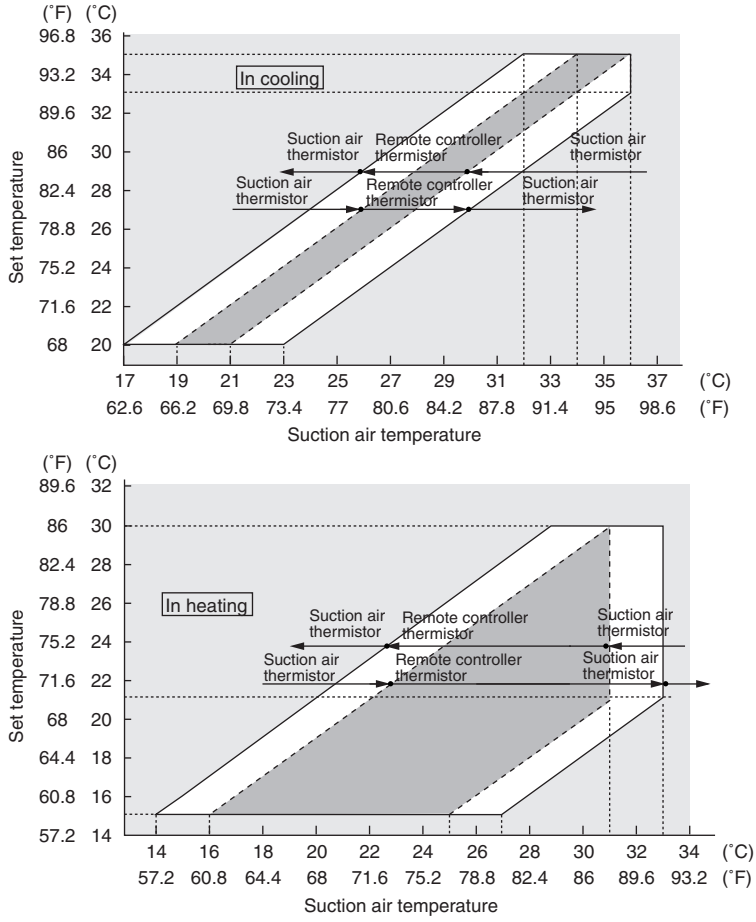
Note(s)

For FXFQ-AA, the factory setting for the Second Code No. is **02**.

■ **FXTQ-TA, FXTQ-TB** ★: Factory setting

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

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: ★: Factory setting

Mode No.	First Code No.	Second Code No.					
10 (20)	2	01	02	02	**02**★	02	03
11 (21)	8	01	01	02	**03**★	04	01
The thermistor to be used		↓	↓	↓	↓	↓	↓
Remote controller thermistor		●	—	—	—	—	●
Suction air thermistor		●	●	●	●	●	—
Infrared floor sensor		—	—	●	●	●	—
		The infrared floor sensor is not used	Only the suction air thermistor is used	Priority given to the suction air temperature (∗)	Standard setting (Factory setting)	Priority given to the floor temperature (∗)	Only the remote controller thermistor is used

∗Refer to **Compensating the Temperature around People** on page 157.

Note(s) 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 control during group control**, select the Second code No. **02** in First code No. **6**.

★: Factory setting

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

Note(s) When the 10 (20)-6 setting is changed to **02**, several indoor units are controlled by one remote controller thermistor, so note that the room temperature might be uneven.

1.5.3 Filter Cleaning Sign

Whether or not to display the sign after operation of a certain duration can be selected.

★: Factory setting

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

∗ Filter cleaning sign is not displayed when a self-cleaning decoration panel is mounted.

1.5.4 Information for intelligent Touch Manager/intelligent Touch Controller

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
10 (20)	5	**01**★	**Only indoor unit sensor value (or remote controller sensor value, if installed.)**★
		02	Sensor values according to 10 (20)-2 and 10 (20)-6.

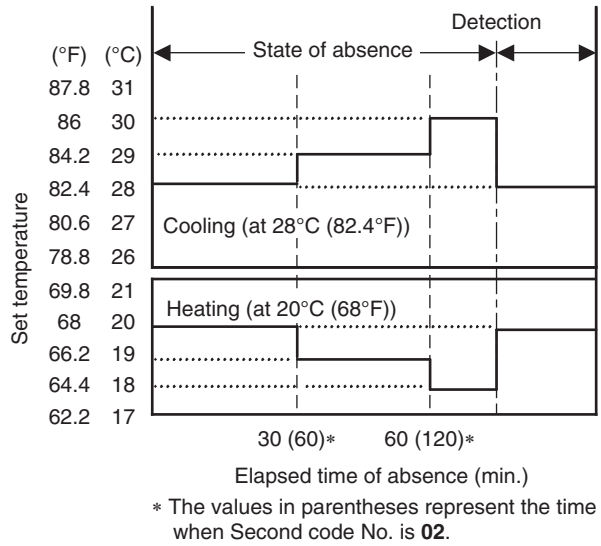
∗ When field setting 10 (20)-6-**02** is set at the same time as 10 (20)-2-**01,02,03,** field setting 10 (20)-2 has priority.
When field setting 10 (20)-6-**01** is set at the same time as 10 (20)-2-**01,02,03,** field setting 10 (20)-6 has priority for group connection, and 10 (20)-2 has priority for individual connection.

1.5.5 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 (1.8°F) (maximum 2°C (3.6°F)) after the state of absence continues for a certain period of time. Absent time defined for detection can be selected as follows:

★: Factory setting

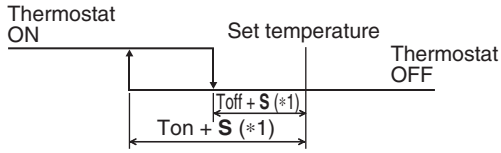
Mode No.	First Code No.	Second Code No.	Contents
10 (20)	7	**01**★	**30 minutes**★
		02	60 minutes



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

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

1.5.6 Auxiliary Electric Heater ON/OFF Temperature



Note(s)

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

■ **FXFQ-T, FXMQ-PB**

★: Factory setting

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)

■ **FXFQ-AA, FXZQ-TA, FXZQ-TB, FXUQ-P, FXUQ-PA, FXEQ-P, FXSQ-TA, FXSQ-TB, FXMQ-TB, FXLQ-M, FXNQ-M, FXTQ-TA, FXTQ-TB**

★: Factory setting

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

1.5.7 Setting of 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.

★: Factory setting

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.

1.5.8 Electric Heater Setting (for FXTQ-TA, FXTQ-TB models)

★: Factory setting

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

1.5.9 Electric Heater Capacity Setting (for FXTQ-TA, FXTQ-TB models)

★: Factory setting

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
FXTQ09TA FXTQ09TB	11 (21)	5	●★	●	●	—	—	—	—	—	—	—
FXTQ12TA FXTQ12TB			●★	●	●	●	—	—	—	—	—	—
FXTQ18TA FXTQ18TB			●★	●	●	●	●	●	—	—	—	—
FXTQ24TA FXTQ24TB			●★	●	●	●	●	●	—	—	—	—
FXTQ30TA FXTQ30TB			●★	●	●	●	●	●	—	—	—	—
FXTQ36TA FXTQ36TB			●★	●	●	●	●	●	—	—	—	—
FXTQ42TA FXTQ42TB			●★	—	●	●	●	●	●	●	—	—
FXTQ48TA FXTQ48TB			●★	—	●	●	●	●	●	●	—	—
FXTQ54TA FXTQ54TB			●★	—	●	●	●	●	●	—	●	●
FXTQ60TA FXTQ60TB			●★	—	●	●	●	●	●	—	●	●

● : Available
— : Not available

1.5.10 Detection Rate Setting (For units with an 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(s)

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.

★: Factory setting

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

1.5.11 Automatic Airflow Adjustment

Make external static pressure setting automatically using automatic airflow adjustment (11 (21)-7), or manually using external static pressure settings (13 (23)-6).
The volume of blow-off air is automatically adjusted to the rated quantity.
Make settings before performing the test operation of the outdoor unit.

Setting procedure

1. Make sure that electric wiring and duct construction have been completed. In particular, if the closing damper is installed on the way of the duct, make sure that it is open. In addition, make sure that a field-supplied air filter is installed within the air passageway on the suction port side.
2. If there are multiple blow-off and suction ports, adjust the throttle part so that the airflow volume ratio of each suction/blow-off port conforms to the designed airflow volume ratio. In that case, operate the unit with fan operation mode. When you want to change the airflow rate, adjust it by pressing the airflow rate control button to select High, Middle or Low.
3. Make settings to adjust the airflow rate automatically. After setting to fan operation mode, enter the field setting mode while operation is stopped and then select the Mode No. 11 (21), set the First Code No. to **7** and the Second Code No. to **03**.
4. After setting, return to the basic screen (to the normal mode in the case of a wireless remote controller) and press the ON/OFF button. Fan operation for automatic airflow adjustment will start with the operation lamp turned ON. Do not adjust the throttle part of the suction and blow-off ports during automatic adjustment. After operation for approximately one to fifteen minutes, airflow adjustment automatically stops with the operation lamp turned OFF.
5. After operation stopped, make sure that the Second Code No. is set to **02** as in the following table by indoor unit with the Mode No. 11 (21). If operation does not stop automatically or the Second Code No. is not set to **02**, return to the step 3 above to make settings again.

★: Factory setting

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

Note(s)

1. Make sure that the external static pressure is within the range of specifications before making settings. If it is outside the range, automatic adjustment fails, which may cause an insufficient airflow volume or leakage of water.
2. If the air passageway including duct or blow-off ports is changed after automatic adjustment, make sure to perform automatic airflow adjustment again.

1.5.12 Compensating the Temperature around People (For units with the infrared floor 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 **02** for the second code.
- To reflect the effect of the temperature around the floor, select **04** for the second code.
- The infrared floor sensor can be disabled by selecting **01** for the second code.

★: Factory setting

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

1.5.13 Compensating the Floor Temperature when Heating (For units with an infrared floor 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.

★: Factory setting

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 (such as concrete, etc.) - There are many heat sources including PC. - There is a non-negligible heat source such as floor heating.	Heating	Excessive heating	+2°C (+3.6°F)
		Insufficient heating	–2°C or –4°C (–3.6°F or –7.2°F)

1.5.14 Dry Mode Set Temperature (for FXFQ-AA, FXZQ-TB, FXUQ-PA, FXSQ-TB, and FXMQ-TB models)

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
11 (21)	12	**01★**	**Room temperature★**
		02	Same as cooling mode set temperature

1.5.15 Optional Accessories Output Selection

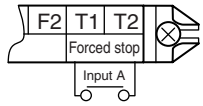
Using this setting, **operation output signal** and **abnormal output signal** can be provided. Output signal is output between terminals X1 and X2 of adaptor for wiring, an optional accessory.

★: Factory setting

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 ON/OFF of remote controller is provided.
		04	In case of Error Display appears on the remote controller, output is provided.
		05	—
		06	—
		07	Only for FXSQ-TA, FXSQ-TB, FXMQ-PB, FXMQ-TB Economizer (field supply) ON/OFF signal is provided.

1.5.16 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.



★: Factory setting

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 FXSQ-TA, FXMQ-PB ON: Economizer (field supply) is connected. OFF: Not connected
		06	—
		07	Only for FXSQ-TB, FXMQ-TB ON: Economizer (field supply) is connected. OFF: Not connected

1.5.17 Thermostat Differential Changeover

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

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

Factory Setting

Model	Second Code No.	Contents
FXFQ-T, FXFQ-P, FXZQ-TA, FXZQ-M, FXUQ-P, FXEQ-P, FXSQ-TA, FXHQ-M, FXTQ-TA, FXTQ-TB	01	1°C (1.8°F)
FXFQ-AA, FXZQ-TB, FXUQ-PA, FXDQ-M, FXSQ-TB, FXMQ-PB, FXMQ-TB, FXAQ-P, FXLQ-M, FXNQ-M, FXMQ-MF	02	0.5°C (0.9°F)

1.5.18 Airflow Setting when Heating Thermostat is OFF

This setting is used to set airflow when heating thermostat is OFF.
If the airflow setting when thermostat is OFF is set to 03: OFF, 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).

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

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
12 (22)	3	**01**★	**LL tap**★
		02	Set fan speed
		03	OFF

1.5.19 Automatic Mode Differential

This setting makes it possible to change differential values for mode selection while in automatic operation mode, only when the wireless remote controller or any central remote controller is connected.

★: Factory setting

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.

1.5.20 Auto Restart after Power Failure

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
12 (22)	5	01	OFF
		02★	**ON**★

When the Auto Restart after Power Failure setting is turned OFF, all the units will remain OFF after power failure, or after the main power supply is restored. When this setting is turned ON (factory setting), the units that were operating before the power failure will automatically restart operation after power failure, or after the main power supply is restored.

Due to the aforementioned, when the Auto Restart after Power Failure setting is ON, be careful for the following situations that may occur.

⚠ Caution

1. The air conditioner will start operation suddenly after power failure, or when the main power supply is restored. The user might be surprised and wonder why the air conditioner turned ON suddenly.
2. During maintenance, if the main power supply is turned OFF while the units are in operation, the units will automatically start operation (the fan will rotate) after the power supply is restored due to completion of the maintenance work.

1.5.21 Airflow Setting when Cooling Thermostat is OFF

This is used to set airflow to LL airflow when cooling thermostat is OFF.
If the airflow setting when thermostat is OFF is set to 03: OFF, 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).

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
12 (22)	6	01	LL tap
		02★	**Set fan speed★**
		03	OFF

1.5.22 Ceiling Height Setting, Setting of Normal Airflow

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

■ **FXFQ07-24AA, FXFQ07-24T, FXFQ09-30P** ★: Factory setting

Mode No.	First Code No.	Second Code No.	Setting	Ceiling Height			
				All round outlet	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 3.1 m (10-1/8 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 3.4 m (11-1/8 ft)	Lower than 3.3 m (10-3/4 ft)	Lower than 3.8 m (12-1/2 ft)
		03	High Ceiling (2)	Lower than 3.5 m (11-1/2 ft)	Lower than 4.0 m (13-1/8 ft)	Lower than 3.5 m (11-1/2 ft)	—

Note(s)

1. The Second Code No. is factory set to Standard/All round outlet. For High ceiling (1) or (2), initial setting by remote controller is required.
2. A closing member kit (optional) is required for 4-, 3-, or 2-direction airflow.

■ **FXFQ30-54AA, FXFQ30-48T, FXFQ36/48P** ★: Factory setting

Mode No.	First Code No.	Second Code No.	Setting	Ceiling Height			
				All round outlet	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 3.4 m (11-1/8 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 3.9 m (12-3/4 ft)	Lower than 4.0 m (13-1/8 ft)	Lower than 4.2 m (13-3/4 ft)
		03	High Ceiling (2)	Lower than 4.2 m (13-3/4 ft)	Lower than 4.5 m (14-3/4 ft)	Lower than 4.2 m (13-3/4 ft)	—

Note(s)

1. The Second Code No. is factory set to Standard/All round outlet. For High ceiling (1) or (2), initial setting by remote controller is required.
2. A closing member kit (optional) is required for 4-, 3-, or 2-direction airflow.

■ **FXUQ-P, FXUQ-PA** ★: Factory setting

Mode No.	First Code No.	Second Code No.	Setting	Ceiling height	
				FXUQ18/24P(A)	FXUQ30/36P(A)
13 (23)	0	**01**★	**Standard**★	**Lower than 2.7 m (8-3/4 ft)**★	**Lower than 3.2 m (10-1/2 ft)**★
		02	High Ceiling 1	Lower than 3.0 m (10 ft)	Lower than 3.6 m (12 ft)
		03	Higher Ceiling 2	Lower than 3.5 m (11-1/2 ft)	Lower than 4.0 m (13 ft)

■ **FXZQ-TA, FXZQ-TB, FXZQ-M, FXEQ-P** ★: Factory setting

Mode No.	First Code No.	Second Code No.	Setting	Ceiling height
13 (23)	0	**01**★	**Standard**★	**Lower than 2.7 m (8-3/4 ft)** ★
		02	High Ceiling 1	Lower than 3.0 m (10 ft)
		03	Higher Ceiling 2	Lower than 3.5 m (11-1/2 ft)

■ **FXHQ-M, FXAQ-P** ★: Factory setting

Mode No.	First Code No.	Second Code No.	Ceiling height
13 (23)	0	**01**★	**Standard**★
		02	Slight increase
		03	Normal increase

1.5.23 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**.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Ceiling height
13 (23)	1	**01**★	**4-direction airflow**★
		02	3-direction airflow
		03	2-direction airflow

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

Set the flap operation in swing mode.

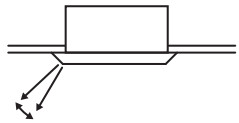
With the factory swing, flaps facing each other are synchronized to operate, and flaps placed side by side are set to swing in an opposite direction to agitate airflow to reduce temperature irregularity. Conventional swing operation (all direction synchronized swing) can be set onsite.

★: Factory setting

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

1.5.25 Airflow Direction Adjustment Range

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



★: Factory setting

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

Note(s)

When the model FXFQ-AA is attached with a closing member kit, set the Second Code No. to **02** or **03**.

1.5.26 Setting of Static Pressure Selection (for FXDQ-M models)

★: Factory setting

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

1.5.27 External Static Pressure Settings

Make external static pressure setting automatically using automatic airflow adjustment (11 (21)-7), or manually using external static pressure settings (13 (23)-6).

■ **FXSQ-TA, FXSQ-TB models**

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
13 (23)	6	03	30 Pa (0.12 inWG) (∗1) (∗2)
		04	40 Pa (0.16 inWG) (∗1) (∗2)
		05★	**50 Pa (0.20 inWG) ★**
		06	60 Pa (0.24 inWG)
		07	70 Pa (0.28 inWG)
		08	80 Pa (0.32 inWG)
		09	90 Pa (0.36 inWG)
		10	100 Pa (0.40 inWG)
		11	110 Pa (0.44 inWG)
		12	120 Pa (0.48 inWG)
		13	130 Pa (0.52 inWG)
		14	140 Pa (0.56 inWG)
		15	150 Pa (0.60 inWG) (∗2)

∗1. FXSQ18-48TA, FXSQ18-48TB cannot be set to 30-40 Pa (0.12-0.16 inWG).

∗2. FXSQ54TA, FXSQ54TB cannot be set to 30-40 Pa (0.12-0.16 inWG) or 150 Pa (0.60 inWG).

■ **FXMQ-PB models** ★: Factory setting

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 **02** for FXMQ07/09/12PB, and **07** for FXMQ15/18/24/30/36/48/54PB 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).

■ **FXMQ-TB models** ★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
13 (23)	6	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)
		09	120 Pa (0.48 inWG)
		10	130 Pa (0.52 inWG)
		11	140 Pa (0.56 inWG)
		12	150 Pa (0.60 inWG) (∗1)
		13	160 Pa (0.64 inWG) (∗1)
		14	180 Pa (0.72 inWG) (∗1)
		15	200 Pa (0.80 inWG) (∗1)

∗1. FXMQ54TB cannot be set to 150-200 Pa (0.60-0.80 inWG).

1.5.28 Optional Kit Setting (UV lamp + Humidifier + Economizer) (for FXTQ-TA, FXTQ-TB models)

★: Factory setting

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★**

1.5.29 Dry Mode Set Temperature (for FXTQ-TA, FXTQ-TB models)

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
14 (24)	5	**01★**	**Room temperature★**
		02	Same as cooling mode set temperature

1.5.30 Mold Proof Operation Setting (for FXEQ-P models)

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
14 (24)	9	01	—
		02★	**Standard★**
		03	For high humidity areas (∗)

∗ Areas with average humidity over 80%.

1.5.31 Drain Pump Operation Settings (for FXMQ-PB models)

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

★: Factory setting

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

1.5.32 Humidification when Heating Thermostat is OFF

Setting to **Equipped** 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.

★: Factory setting

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

1.5.33 Direct Duct Connection

This is used when fresh air intake kit equipped with fan is connected. If the second code is set to **02**: Equipped, energy recovery ventilator fan conducts the fan residual operation by linking to indoor unit. 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.)

★: Factory setting

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

1.5.34 Drain Pump and Humidifier Interlock Selection

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

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
15 (25)	3	**01**★	**Not interlocked**★
		02	Interlocked

1.5.35 Individual Ventilation Setting

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.)

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
15 (25)	5	**01**★	**Normal**★
		02	Individual

1.5.36 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.

★: Factory setting

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

1.5.37 Room Temperature Display

■ **For BRC1E73 only**

It is possible to change whether or not the room temperature is displayed for the detailed display screen.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
1c	0	01	Not displayed.
		02★	**Displayed.**★

1.5.38 Thermistor Sensor for Auto Changeover and Setback Control by the Remote Controller

■ **For BRC1E73 only**

Select a thermistor to utilize for the cool/heat mode automatic changeover and setback functions. The sensed temperature will be displayed on the remote controller as the room temperature.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
1c	1	01	Utilize the return air thermistor
		02★	**Utilize the remote controller thermistor**★

1.5.39 Access Permission Level Setting

■ **For BRC1E73 only**

There are 2 levels as follows:

- Level 2: The following buttons are selectable to be disable or enable.
- Level 3: No buttons are selectable and only **On/Off** button is available.

Button	Level 2	Level 3
▲▼◀▶	Selectable (Enable)	Unselectable (Disable)
On/Off	Selectable (Enable)	Unselectable (Enable)
Mode	Selectable (Enable)	Unselectable (Disable)
Fan Speed	Selectable (Disable)	Unselectable (Disable)
Menu/OK	Unselectable (Disable)	Unselectable (Disable)
Cancel	Unselectable (Disable)	Unselectable (Disable)

( ) shows the factory setting.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
1c	3	**01**★	**Level 2**★
		02	Level 3

1.5.40 Setback Availability

■ **For BRC1E73 only**

Select the operation mode in which the setback function is available.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
1e	2	**01**★	**N/A**★
		02	Heat only
		03	Cool only
		04	Cool/heat

1.5.41 Setting Restricted/Permitted for Airflow Block

■ **For units with the infrared presence/floor sensor only**

The airflow block function cannot be enabled when closure material kit, fresh air intake kit, separately installed natural evaporation type humidifier, or branch air duct is equipped, due to the possibility of dew condensation.

This setting restricts the airflow block function, preventing that the airflow block is inadvertently set to ON. Ensure that **Airflow block restricted** is set when using the options listed above.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
1e	14	**01**★	**Airflow block permitted**★
		02	—
		03	—
		04	—
		05	Airflow block restricted

1.6 List of Field Settings for Outdoor-Air Processing Unit

★: Factory setting

Mode No.	First Code No.	Setting Contents		Second Code No. 01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
10 (20)	0	Filter contamination		**2500 hr ★**	1250 hr	—	—	—	—	—	—	—	—	—	—	—	—	—
	3	Display time to clean air filter calculation		**Display ★**	No display	—	—	—	—	—	—	—	—	—	—	—	—	—
12 (22)	1	External ON/OFF input		**Forced OFF★**	ON/OFF control	—	—	—	—	—	—	—	—	—	—	—	—	—
	5	Power failure automatic reset		Not equipped	**Equipped ★**	—	—	—	—	—	—	—	—	—	—	—	—	—
14 (24)	3	Discharge pipe temperature (cooling)	°C	13	14	15	16	17	**18 ★**	19	20	21	22	23	24	25		
			°F	55.4	57.2	59	60.8	62.6	**64.4 ★**	66.2	68	69.8	71.6	73.4	75.2	77		
	4	Discharge pipe temperature (heating)	°C	18	19	20	21	22	23	24	**25 ★**	26	27	28	29	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		

1.7 Operation Control Mode

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

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

Contents of Control Modes

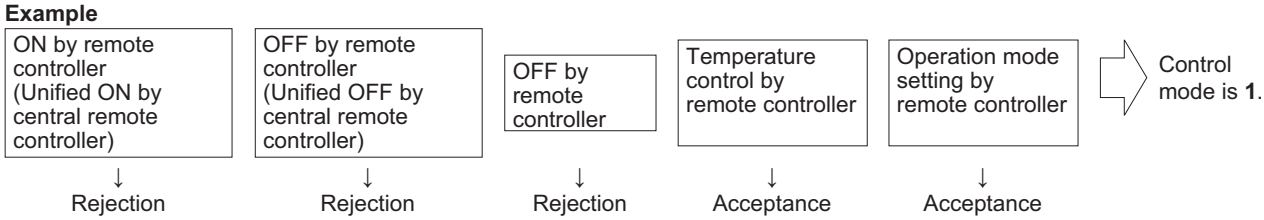
20 modes consisting of combinations of the following 5 operation modes with temperature and operation mode setting by remote controller can be set and displayed by operation modes 0 through 19.

- 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



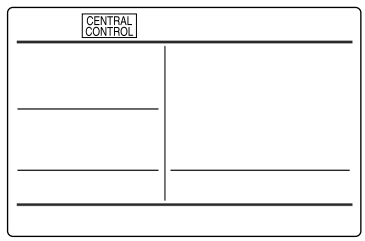
★: Factory setting

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.

BRC1E73

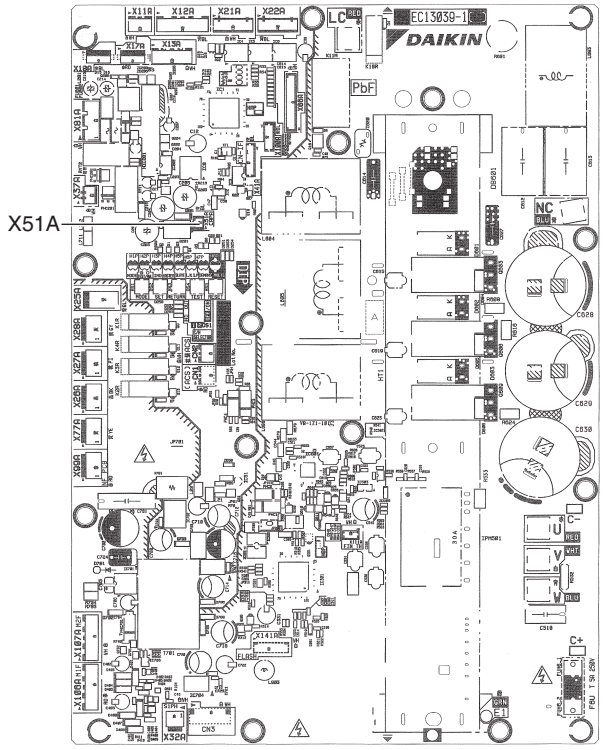


2. Field Settings from Outdoor Unit

2.1 Capacity Setting

Caution **<u>Be sure to carry out capacity setting after changing the main PCB (A1P) to spare PCB.</u>**
(for RXTQ36TBVJUB and 48 class models only)

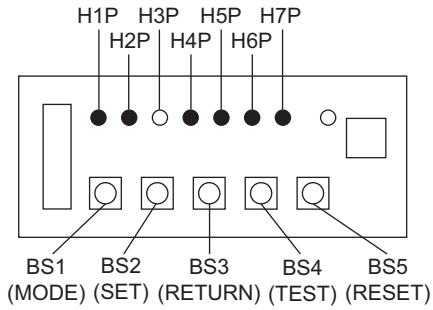
Attach the capacity setting adaptor corresponding to capacity class to connector X51A.
Other than RXTQ36TBVJUB and 48 class models, no capacity setting is required.



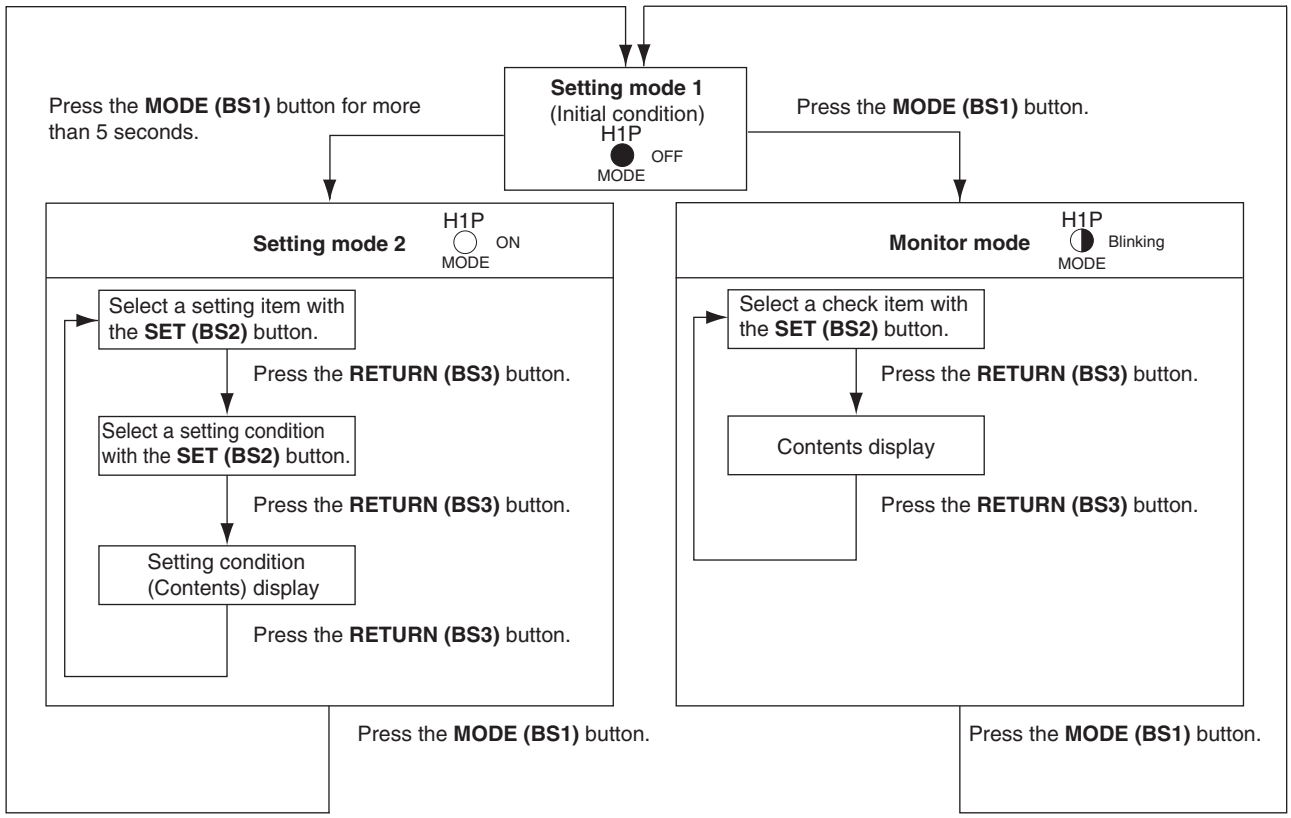
Model	Adaptor type
RXTQ36TBVJUB	J90
48 class	J71

2.2 Setting Mode and Monitor Mode

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



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



2.3 Setting Mode 1

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

1. Set items
   In order to make COOL/HEAT selection in a batch of outdoor unit group, change the setting.

COOL/HEAT selection (IND)	Used to select COOL or HEAT by individual outdoor unit (factory setting).
COOL/HEAT selection (MASTER)	Used to select COOL or HEAT by outdoor unit group with the master unit.
COOL/HEAT selection (SLAVE)	Used to select COOL or HEAT by outdoor unit group with the slave unit.

2. Check items
   The following items can be checked.
   (1) Current operating conditions (Normal / Abnormal / In check operation)
   (2) Setting conditions of COOL/HEAT selection (Individual / Batch master / Batch slave)
   (3) Low noise operating conditions (In normal operation / In low noise operation)
   (4) Demand operating conditions (In normal operation / In demand operation)

Procedure for changing COOL/HEAT selection setting

○ ON / ● OFF / ◑ Blink

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

↓

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

↓

Press the **RETURN** (**BS3**) button to determine the setting. → The system returns to the initial status of setting mode 1.

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

Procedure for checking

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

↓

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

↓

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

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

- Current operating conditions
  - ● Normal
  - ○ Abnormal
  - ◑ In preparation or in check operation
- Setting of COOL/HEAT selection
  - ○ ● ● By individual outdoor unit
  - ● ○ ● In a batch of outdoor unit group with master unit
  - ● ● ○ In a batch of outdoor unit group with slave unit
- Low noise operating conditions
  - ● In normal operation
  - ○ In low noise operation
- Demand operating conditions
  - ● In normal operation
  - ○ In demand operation

2.4 Setting Mode 2

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

↓

Selection of setting items

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

↓

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

↓

Selection of setting conditions

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

↓

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

↓

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

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

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

The numbers in the No. column represent the number of times to press the **SET (BS2)** button
∗1. For RXTQ48/60TBVJUA, RXTQ36/48/60TBVJUB only
∗2. For RXTQ36TBVJUB only

No.	Setting item	Setting item display: MODE H1P	TEST H2P	C/H selection: IND H3P	C/H selection: Master H4P	C/H selection: Slave H5P	Low noise H6P	Demand H7P	Setting condition display (∗ Factory setting)
1	Cool / heat unified address	○	●	●	●	●	●	○	Address / Binary number (6 digits): 0 ○●●●●●●● ∗ ; 1 ○●●●●●●○ ; ~ ; 31 ○●○○○○○○
2	Low noise / demand address	○	●	●	●	●	○	●	Address / Binary number (6 digits): 0 ○●●●●●●● ∗ ; 1 ○●●●●●●○ ; ~ ; 31 ○●○○○○○○
3	Test operation settings	○	●	●	●	●	○	○	Test operation : OFF ○●●●●●○ ∗ ; Test operation : ON ○●●●●○●
5	Indoor unit forced fan H	○	●	●	●	○	●	○	Normal operation ○●●●●●○ ∗ ; Indoor forced fan H ○●●●●○●
6	Indoor unit forced operation	○	●	●	●	○	○	●	Normal operation ○●●●●●○ ∗ ; Indoor forced operation ○●●●●○●
7	SC adjustment	○	●	●	●	○	○	○	ON ○●●●●○● ∗ ; OFF ○●●●●●○
8	Te setting	○	●	●	○	●	●	●	Target Te: 11°C (51.8°F) ○●●●○○○ ; 10°C (50°F) ○●●●○○● ; 9°C (48.2°F) ○●●●○●○ ; 8°C (46.4°F) ○●●●○●● ; Variable (VRT) ○●●●●○○ ∗ ; 6°C (42.8°F) ○●●●●○● ; 3°C (37.4°F) ○●●●●●○
9	Tc setting	○	●	●	○	●	●	○	Target Tc: 52°C (125.6°F) ○●●●○●● ; 46°C (114.8°F) ○●●●●○● ; Variable (VRT) ○●●●●●○ ∗
10	Defrost changeover setting	○	●	●	○	●	○	●	Earlier start defrost ○●●●○●● ; Normal (factory setting) ○●●●●○● ∗ ; Later start defrost ○●●●●●○
11 (∗1)	TeS upper limit setting	○	●	●	○	●	○	○	L ○●●●●●○ ; M ○●●●●○● ∗ ; H ○●●●○●●
12	External low noise / demand setting	○	●	●	○	○	●	●	External low noise/demand: NO ○●●●●●○ ∗ ; External low noise/demand: YES ○●●●●○●
13	AIRNET address	○	●	●	○	○	●	○	Address / Binary number (6 digits): 0 ○●●●●●●● ∗ ; 1 ○●●●●●●○ ; ~ ; 63 ○○○○○○○
16	Setting of heat pump lockout 1	○	●	○	●	●	●	●	OFF ○●●●●●○ ∗ ; ON ○●●●●○●
18 (∗2)	Heating capacity setting	○	●	○	●	●	○	●	OFF ○●●●●●○ ∗ ; ON ○●●●●○●
19	Emergency automatic heat pump lockout	○	●	○	●	●	○	○	ON ○●●●●●○ ∗ ; OFF ○●●●●○●

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

∗1. For RXTQ48/60TBVJUA, RXTQ36/48/60TBVJUB only

∗2. For RXTQ36TBVJUB only

No.	Setting item display								Setting condition display	
	Setting item	MODE H1P	TEST H2P	C/H selection			Low noise H6P	Demand H7P		✻ Factory setting
				IND H3P	Master H4P	Slave H5P				
20	Additional refrigerant charge operation setting	○	●	○	●	○	●	●	Refrigerant charging: OFF	✻
									Refrigerant charging: ON	
21	Refrigerant recovery / vacuuming mode setting	○	●	○	●	○	●	○	Refrigerant recovery / vacuuming: OFF	✻
									Refrigerant recovery / vacuuming: ON	
22	Night-time low noise setting	○	●	○	●	○	○	●	OFF	✻
									Level 1 (outdoor fan with 6 step or lower)	
									Level 2 (outdoor fan with 5 step or lower)	
									Level 3 (outdoor fan with 4 step or lower)	
25	Setting of low noise level	○	●	○	○	●	●	○	Level 1 (outdoor fan with 6 step or lower)	
									Level 2 (outdoor fan with 5 step or lower)	✻
									Level 3 (outdoor fan with 4 step or lower)	
26	Night-time low noise operation start setting	○	●	○	○	●	○	●	About 8:00 PM	
									About 10:00 PM (factory setting)	✻
									About 12:00 AM	
27	Night-time low noise operation end setting	○	●	○	○	●	○	○	About 6:00 AM	
									About 7:00 AM	
									About 8:00 AM (factory setting)	✻
28	Power transistor check mode	○	●	○	○	○	●	●	OFF	✻
									ON	
29	Capacity precedence setting	○	●	○	○	○	●	○	OFF	✻
									ON	
30	Demand setting 1	○	●	○	○	○	○	●	60 % demand	
									70 % demand	✻
									80 % demand	
32	Constant demand setting	○	○	●	●	●	●	●	OFF	✻
									ON	
37	Setting of heat pump lockout 2	○	○	●	●	○	●	○	OFF	✻
									Mode 1	
									Mode 2	
									Mode 3	
									Mode 4	
									Mode 5	
									Mode 6	
41	Cooling comfort setting	○	○	●	○	●	●	○	Eco	
									Mild	✻
									Quick	
									Powerful	
42	Heating comfort setting	○	○	●	○	●	○	●	Eco	
									Mild	✻
									Quick	
									Powerful	
47	Heat pump lockout release differential	○	○	●	○	○	○	○	2.8°C (5°F)	
									5.6°C (10°F)	✻
									8.3°C (15°F)	

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

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

The numbers in the No. column represent the number of times to press the **SET (BS2)** button.
∗1. For RXTQ48/60TBVJUA, RXTQ36/48/60TBVJUB only

2.5 Monitor Mode

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

Selection of check item

Press the **SET (BS2)** button to match the LED status with the item to be checked.

Confirmation on check item

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

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

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

No.	Setting item	LED display							Data display
		H1P	H2P	H3P	H4P	H5P	H6P	H7P	
0	Various setting	◑	●	●	●	●	●	●	See the note below.
1	Cool / heat unified address	◑	●	●	●	●	●	○	Lower 6 digits
2	Low noise / demand address	◑	●	●	●	●	○	●	
3	Not used	◑	●	●	●	●	○	○	
4	AIRNET address	◑	●	●	●	○	●	●	
5	Number of connected indoor units	◑	●	●	●	○	●	○	
7	Number of connected zone units (excluding outdoor and BS unit)	◑	●	●	●	○	○	○	
8	Number of outdoor units	◑	●	●	○	●	●	●	
11	Number of zone units (excluding outdoor and BS unit)	◑	●	●	○	●	○	○	Lower 6 digits
12	Number of terminal blocks	◑	●	●	○	○	●	●	Lower 4 digits: upper
13	Number of terminal blocks	◑	●	●	○	○	●	○	Lower 4 digits: lower
14	Latest error	◑	●	●	○	○	○	●	Refer to the error code table on Part 6.
15	2nd latest error	◑	●	●	○	○	○	○	
16	3rd latest error	◑	●	○	●	●	●	●	
20	Latest retry	◑	●	○	●	○	●	●	
21	2nd latest retry	◑	●	○	●	○	●	○	
22	3rd latest retry	◑	●	○	●	○	○	●	
25	Normal judgment of outdoor units PCB	◑	●	○	○	●	●	○	Lower2 digits: ○● Abnormal ●○ Normal ●● Unjudgment

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

Note(s)

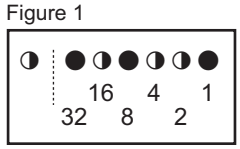
Various Settings

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

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

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

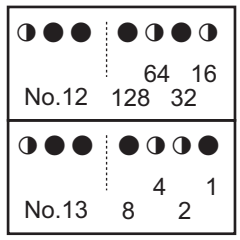
Figure 1



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

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

Figure 2



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

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

2.6 Setting of Low Noise Operation and Demand Operation

Setting of Low Noise Operation

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

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

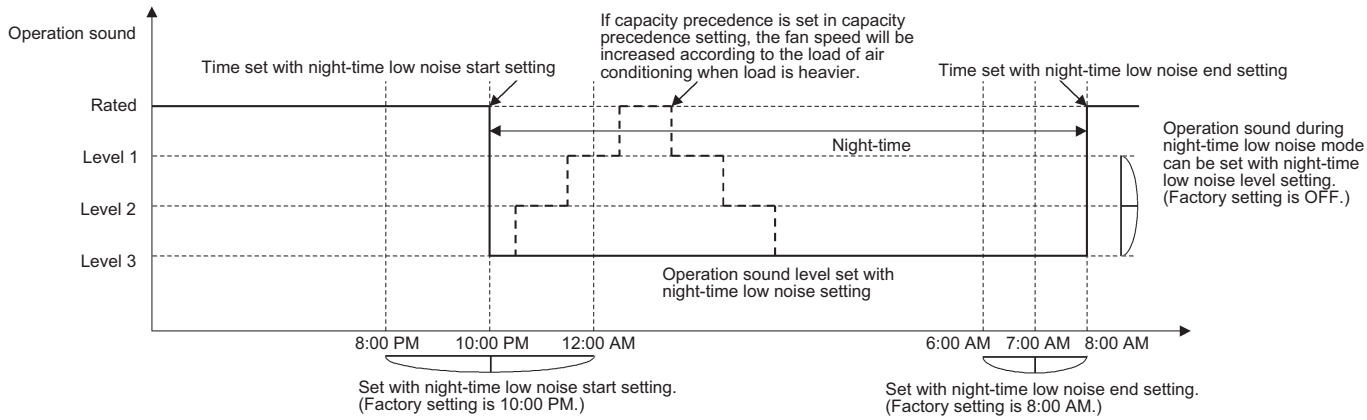
1. While in setting mode 2, select the setting condition (i.e., Mode 1, Mode 2, or Mode 3) for set item No. 22 (Setting of night-time low noise level).

2. If necessary, while in setting mode 2, select the setting condition (i.e., 8:00 PM, 10:00 PM, or 12:00 AM) for set item No. 26 (Setting of start time of night-time low noise operation).
   (Use the start time as a guide since it is estimated according to outdoor temperatures.)

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

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

Image of operation



Setting of Demand Operation

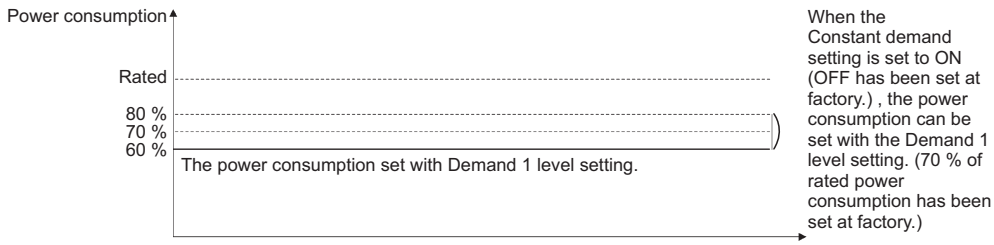
By connecting the external contact input to the demand input of the external control adaptor for outdoor unit (optional), the power consumption of unit operation can be saved suppressing the compressor operating condition.

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

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

1. While in setting mode 2, make setting of the set item No. 32 (Setting of constant demand) to ON.
2. While in setting mode 2, select the set item No. 30 (Setting of Demand 1 level) and then set the setting condition to targeted mode.

Image of operation



Detailed Setting Procedure of Low Noise Operation and Demand Control

1. **Setting mode 1 (H1P OFF)**

In setting mode 2, push the **MODE (BS1)** button one time. → The system enters setting mode 1 and the H1P goes off.
In setting mode 1, the H6P (In low noise operation) and the H7P (In demand control) keep lighting.

2. **Setting mode 2 (H1P ON)**

(1) In setting mode 1, push and hold the **MODE (BS1)** button for more than 5 seconds. → The system enters setting mode 2 and the H1P lights up.
(2) Push the **SET (BS2)** button several times and match the LED display with the Setting No. you want.
(3) Push the **RETURN (BS3)** button one time, and the present setting content is displayed. → Push the **SET (BS2)** button several times and match the LED display with the setting content (as shown on next page) you want.
(4) Push the **RETURN (BS3)** button two times. → The system returns to (1).
(5) Push the **MODE (BS1)** button one time. → The system returns to setting mode 1 and the H1P goes OFF.

○: ON ●: OFF ◑: Blink

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

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

2.7 Setting of Refrigerant Recovery Mode

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

Operation procedure

1. In setting mode 2 with units in stop mode, set the item No.21 (refrigerant recovery / vacuuming mode) to ON. The respective expansion valve of indoor and outdoor units are fully opened. **Test Operation** and **Under Centralized Control** are displayed on the remote controller, and the indoor / outdoor unit operation is prohibited. After setting, do not cancel setting mode 2 until completion of refrigerant recovery operation.
2. Collect the refrigerant using a refrigerant recovery unit. (See the instruction attached to the refrigerant recovery unit for more detail.)
3. Press the **MODE (BS1)** button once and return to setting mode 2.

2.8 Setting of Vacuuming Mode

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

Operating procedure

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

2.9 Final Charge Adjustment

The following operation is needed only when the most adequate refrigerant charge for the best performance is required and the piping length between the outdoor and indoor units is less than 15 m (50 ft). Besides the conditions above, this final adjustment is unnecessary.

Procedure

The outdoor temperature must be between 18°C (65°F) and 40°C (105°F).

1. While in setting mode 2, set the item 2-20 (Additional refrigerant charge operation setting) to ON. (LEDs: ○●)
2. While in setting mode 2, set the item 2-7 (SC adjustment) to ON. (LEDs: ○●)
3. Cooling operation begins; wait until the compressor achieves charge mode rotation speed.
   Charge mode rotation speed achieved: (LEDs: ○◑●●●●○)
   Charge mode rotation speed not yet achieved: (LEDs: ○◑●●●●●)
4. Measure the subcooling temperature at the liquid stop valve.
5. According to the table below, if the subcooling temperature is low, charge refrigerant through the liquid stop valve little by little to raise the temperature to the target value. (The maximum additional charge is 1 kg (2.2 lbs)). If the subcooling temperature is high, remove refrigerant to lower the temperature to the target value.

	Target subcooling
36 class	1.11 ± 0.56°C (2 ± 1°F)
48 class	6.67 ± 0.56°C (12 ± 1°F)
60 class	7.78 ± 0.56°C (14 ± 1°F)

If all connected indoor units are a combination of FXSQ-TB or FXMQ-TB, refer to the table below.

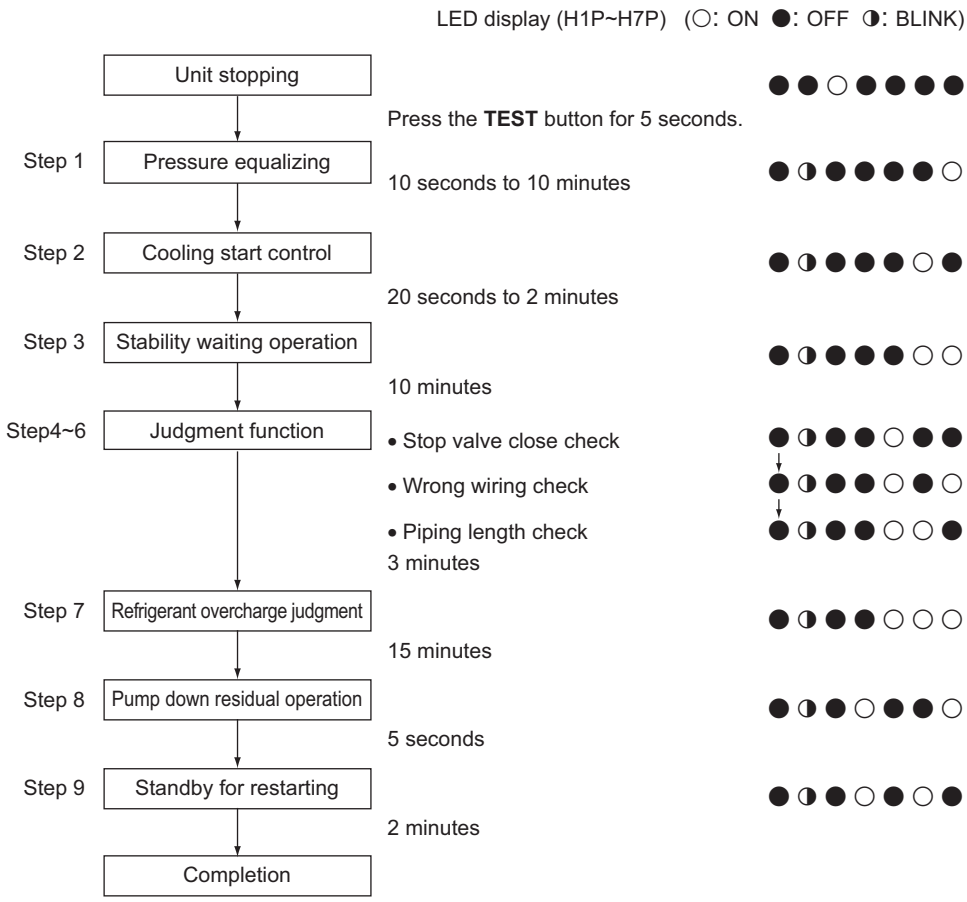
Model	Target subcooling
RXTQ36TB + FXSQ-TB, FXMQ-TB	2.22 ± 0.56°C (4 ± 1°F)
RXTQ48TB + FXSQ-TB, FXMQ-TB	6.11 ± 0.56°C (11 ± 1°F)
RXTQ60TB + FXSQ-TB, FXMQ-TB	5.00 ± 0.56°C (9 ± 1°F)

Note(s)

- The operation is not possible when a vessel is attached to the liquid piping.
- Refrigerant charge mode ends in 60 minutes. If 60 minutes is not long enough, begin the procedure again from step (1).
- When the discharge pipe superheat degree is low, or if the low pressure is too low, forcibly end refrigerant charge mode.

2.10 Check Operation

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



2.11 Setting of Auxiliary Heater Control

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

Auxiliary heater maximum allowable temperature

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

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

Auxiliary heater maximum allowable temperature release differential

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

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

2.12 Setting of Heat Pump Lockout and Emergency Heat Mode

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

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

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

Heat pump lockout temperature

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

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

Heat pump lockout release differential

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

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

Automatic lockout

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

No.	Setting item display								Setting condition display	
	Setting item	MODE H1P	TEST H2P	C/H selection			Low noise H6P	Demand H7P		∗ Factory setting
				IND H3P	Master H4P	Slave H5P				
19	Emergency automatic heat pump lockout	○	●	○	●	●	○	○	ON	∗
									OFF	

3. Test Operation

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

3.1 Check Work Prior to Turning Power Supply ON

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

⇩

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

Check on refrigerant piping / insulation material

⇩

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

Check on amount of refrigerant charge

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

3.2 Turn Power ON

Turn outdoor unit power ON.

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

⇩

Turn indoor unit power ON.

⇩

Carry out field setting on outdoor PCB

3.3 Test Operation

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

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

Before powering on

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

1. Powering on ~ test operation

- Make sure to perform a test run first after installation (If the unit is operated with the indoor unit remote controller but without performing a test operation, the error code **U3** will be indicated on the display of the remote controller and the unit will not operate normally).
- After turning on the power supply, do not touch any switches excluding button switches and changeover switches when setting the outdoor unit PCB (A1P or A2P).
  (For positions of the button switches (BS1~5) and changeover switches (DS1-1, 2) on the PCB, refer to the Service Precautions label)
- Check the state of the outdoor units and faulty wiring with this operation.

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

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

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

Outdoor unit PCB	A1P	A2P for RXTQ36TA, RXTQ36TBVJUA A1P for RXTQ36TBVJUB, 48/60 class						
LED display (Factory setting)	SERVICE MONITORING LAMP	MODE	READY / ABNORMAL	C/H CHANGEOVER			LOW NOISE	DEMAND
				IND	MASTER	SUB		
	HAP	H1P	H2P	H3P	H4P	H5P	H6P	H7P
	◑	●	●	○	●	●	●	●

LED display ● Light OFF ○ Light ON ◑ Blinking

Caution Don't touch the switches other than button switches and changeover switches of the PCB (A1P or A2P) during setting. Doing so may result in electric shock.

(3)
- If customer wishes to perform LOW NOISE operation or DEMAND operation, perform setting with the push buttons (BS1 ~ 5) on outdoor unit PCB (A1P or A2P).
- Operate the push buttons from the opening of the insulating cover. (See Protective range of the Service Precautions label for details)

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

- Set the push buttons (BS1 ~ 5) after making sure the service monitoring lamp has been ON.

- For setting method, see the Service Precautions label attached to the front panel of the outdoor unit. (Be sure to keep a record of the setting items to the Service Precautions label.)
- Don't touch the changeover switches (DS1-1) while setting them. Doing so may result in malfunction.

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

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

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

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

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

About test operation

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

2. For normal operation

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

For wired remote controller

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

For wireless remote controller

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

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

- After test operation is completed, operate the unit normally.
  (Heating is not possible if the outdoor temperature is 24°C (75.2°F) or higher. Refer to the operation manual.)

(1) Check the indoor and outdoor units are in normal operation.
(If a knocking sound produced by liquid compression of the compressor can be heard, stop the unit immediately.)

(2) Operate each indoor unit one by one and check the corresponding outdoor unit is also in operation.

(3) Check to see if cold (or hot) air is coming out from the indoor unit.

(4) Press the fan direction and strength buttons of the indoor unit to see if they operate properly.

About normal operation check

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

3.4 Error Codes and Corresponding Measures

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

Error code		Description	Solution
Primary code	Sub code		
E3	01	High pressure switch activated (S1PH)	Check the stop valve or (field) piping abnormality or the airflow on the air cooling heat exchanger.
	02	• Too much refrigerant charged • Stop valve closed	• Check the amount of refrigerant and recharge the unit. • Open the stop valve.
	13	Stop valve closed (liquid).	Open the liquid stop valve.
	18	• Too much refrigerant charged • Stop valve closed	• Check the amount of refrigerant and recharge the unit. • Open the stop valve.
E4	01	Defective low pressure: • Stop valve closed • Refrigerant undercharged • Defective indoor unit	• Open the stop valve. • Check the amount of refrigerant and recharge the unit. • Check the user interface display. • Check the transmission wiring between the indoor and outdoor units.
E9	01	Defective electronic expansion valve (Subcooling) (60 class: Y3E)	Check the connection of the PCB or the actuator.
	04	Defective electronic expansion valve (Main) (Y1E)	Check the connection of the PCB or the actuator.
F3	01	Discharge pipe temperature too high: • Stop valve closed • Refrigerant undercharged	• Open the stop valve. • Check the amount of refrigerant and recharge the unit.
F6	02	• Too much refrigerant charged • Stop valve closed	• Open the stop valve. • Check the amount of refrigerant and recharge the unit.
H9	01	Defective outdoor air thermistor (R1T)	Check the connection of the PCB or the actuator.
J3	16	Defective discharge pipe thermistor (R2T): Tripping	Check the connection of the PCB or the actuator.
	17	Defective discharge pipe thermistor (R2T): Short circuit	Check the connection of the PCB or the actuator.
J5	01	Defective suction pipe thermistor (R3T and R5T): Tripping	Check the connection of the PCB or the actuator.
J6	01	Defective outdoor heat exchanger deicer thermistor (R4T)	Check the connection of the PCB or the actuator.
J7	01	Defective heat exchanger liquid pipe thermistor (R7T)	Check the connection of the PCB or the actuator.
J9	01	Defective subcooling heat exchanger gas pipe thermistor (R6T: 60 class only)	Check the connection of the PCB or the actuator.
JA	06	Defective high pressure sensor (S1NPH): Tripping	Check the connection of the PCB or the actuator.
	07	Defective high pressure sensor (S1NPH): Short circuit	Check the connection of the PCB or the actuator.
JC	06	Defective low pressure sensor (S1NPL): Tripping	Check the connection of the PCB or the actuator.
	07	Defective low pressure sensor (S1NPL): Short circuit	Check the connection of the PCB or the actuator.
P1	01	Inverter unbalanced power supply voltage	Check if the power supply meets the specifications.
U2	01	Inverter insufficient voltage	Check if the power supply meets the specifications.
	02	Inverter power supply phase missing	Check if the power supply meets the specifications.
U3	03	System test operation not yet executed (Test operation cannot be executed.)	Execute system test operation.

Error code		Description	Solution
Primary code	Sub code		
U4	01	Q1/Q2 or indoor-outdoor units wiring error	Check (Q1/Q2) wiring.
	03	Q1/Q2 or indoor-outdoor units wiring error	Check (Q1/Q2) wiring.
	04	System test operation ends abnormally.	Re-execute the test operation.
U9	01	System mismatch Mismatched indoor unit models used (R-410A, R-407C, RA, Hydrobox, etc.). Defective indoor unit	Check if there are any other defective indoor units and verify if the indoor unit combination meets requirements.
UA	03	Defective indoor unit connection or mismatched models (R-410A, R-407C, RA, Hydrobox, etc.).	Check if there are any other defective indoor units and verify if the indoor unit combination meets requirements.
	18	Defective indoor unit connection or mismatched models (R-410A, R-407C, RA, Hydrobox, etc.).	Check if there are any other defective indoor units and verify if the indoor unit combination meets requirements.
	31	Wrong combination of units (multi-unit system)	Check the compatibility of unit types.
	49	Wrong combination of units (multi-unit system)	Check the compatibility of unit types.
UF	01	Defective automatic addressing (inconsistency)	Check if the quantity of connected units is below the maximum number of units that can be connected (through monitor mode) or if initiation is complete.
	05	Stop valve closed or defective (During system test operation)	Open the stop valve.
UH	01	Defective automatic addressing (inconsistency)	Check if the quantity of connected units is below the maximum number of units that can be connected (through monitor mode) or if initiation is complete.
A0	01	External protection device abnormality	Check if 24 VAC power has been supplied to R and C terminals. Check if TB4 and TB5 terminals have not been opened. Check F1U fuse.

No display on the remote controller

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

Caution

For the plumber

For the electrician

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

3.5 When Turning ON Power First Time

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

Status

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

3.6 When Turning ON Power the Second Time and Subsequent

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

Status

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

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

Be sure to push and hold the **RESET (BS5)** button for 5 seconds. If not, the addition cannot be recognized. In this case, the unit cannot be run for up to 12 minutes to automatically set the address (indoor-outdoor address, etc.)

Status

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

Part 6
Service Diagnosis

1. Servicing Items to be Confirmed

1.1 Troubleshooting

(1) Initial verification and troubleshooting

1. Properly understand the end user's needs and issues.
2. Check the cause of errors according to the description provided by the end user.
3. Check if the remote controller displays any error codes.
   (Or use the outdoor unit monitoring mode to check for errors).
4. If there is no display of error codes, refer to **Symptom-based Troubleshooting** on page 200 for diagnosis.
   If an error code is displayed, refer to troubleshooting flowchart for diagnosis.

(2) Take appropriate measures.

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

(3) Verification after taking appropriate measures

1. Run the unit after repairing the defect to confirm normal unit operation.
2. Record the check results and inform the client.

1.2 Precautions for Maintenance

Pay attention to the following matters in servicing.

(1) Precaution for maintenance

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

(2) Precautions for maintaining the service cover

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

(3) Precautions for maintaining the electrical box

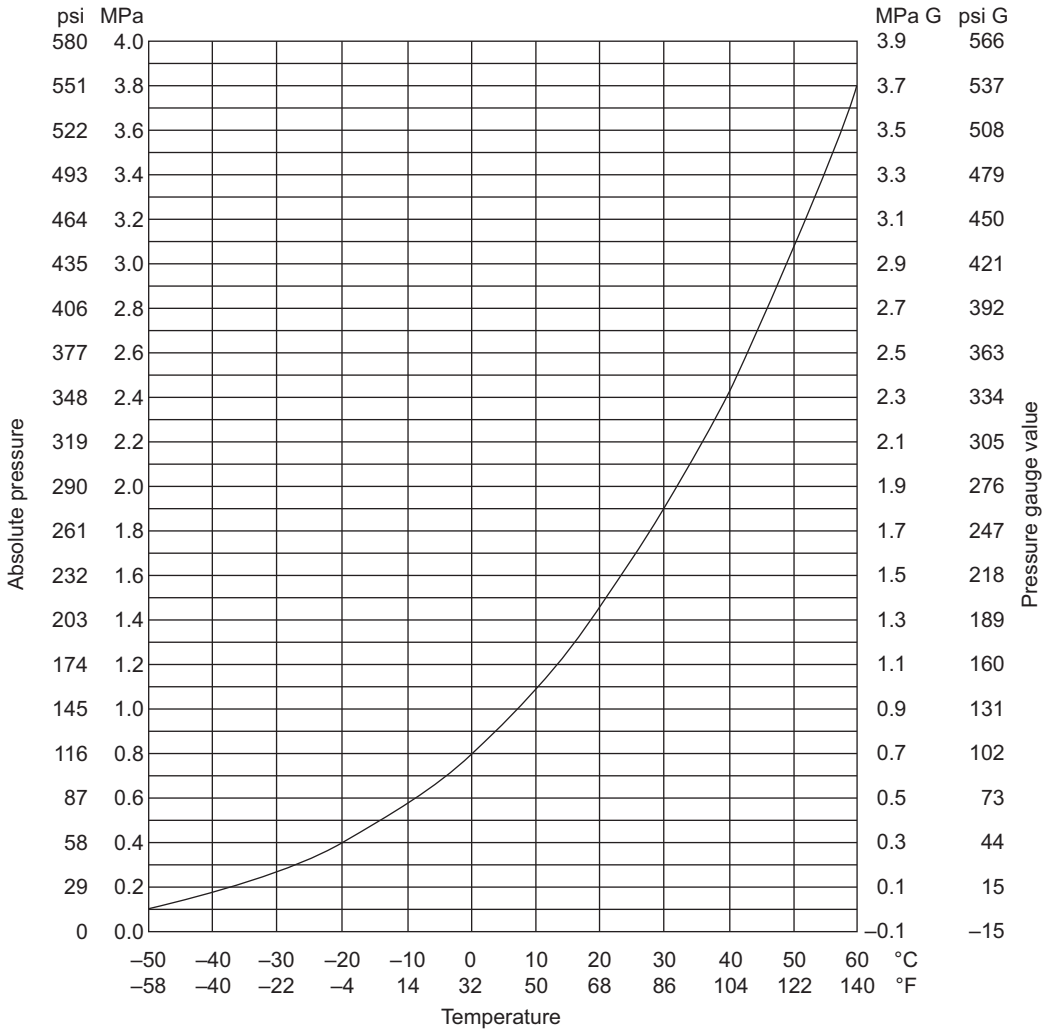
1. Turn off the power for 10 minutes before opening the cover of the electrical box.
2. After opening the cover, use the tester to measure the terminal voltage of the power supply terminal to make sure that the power has been cut.
   Then check if the circuit capacitor voltage is under 50 VDC.
3. To avoid PCB defects, touch the earth terminal of the electrical box with your hand when unplugging the connector to release static electricity.
4. Unplug the connectors X106A and X107A (60 class only), of the outdoor fan motor.
   When unplugging the connectors, do not touch the live parts.
   (When the outdoor fan is rotating because of strong wind, there is a risk of electric shock due to main circuit board capacitor power storage.)
5. After maintenance, reconnect the connectors of the outdoor fan in their original positions.
   - Otherwise, the remote controller will display error code **E7**, preventing normal operation.

(4) Precautions for piping work and refrigerant charging:
This unit uses R-410A refrigerant. Pay attention to the following conditions.

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

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

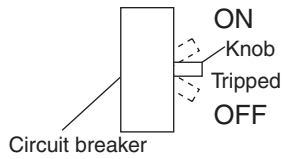
1.3 Refrigerant Properties (R-410A)



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

2. Symptom-based Troubleshooting

2.1 Indoor Unit Overall

	Symptom		Supposed Cause	Countermeasure
1	The system does not start operation at all.		Blowout of fuse(s)	Turn OFF the power supply and then replace the fuse (s).
			Cutout of breaker(s)	• If the knob of any breaker is in its OFF position, turn ON the power supply. • If the knob of any circuit breaker is in its tripped position, do not turn ON the power supply. 
			Power failure	After the power failure is reset, restart the system.
			The connector loose or not fully plugged in	Turn off the power supply to verify the connection of the connector.
2	The system starts operation but makes an immediate stop.		Blocked air inlet or outlet of indoor or outdoor unit	Remove obstacle(s).
			Clogged air filter(s)	Clean the air filter(s).
3	The system does not cool or heat air well.		Blocked air inlet or outlet of indoor or outdoor unit	Remove obstacle(s).
			Clogged air filter(s)	Clean the air filter(s).
			Enclosed outdoor unit(s)	Remove the enclosure.
			Improper set temperature	Set the temperature to a proper degree.
			Airflow rate set to LOW	Set it to a proper airflow rate.
			Improper direction of air diffusion	Set it to a proper direction.
			Open window(s) or door(s)	Shut it tightly.
			IN COOLING Direct sunlight received	Hang curtains or shades on windows.
			IN COOLING Too many persons staying in a room	The model must be selected to match the air conditioning load.
			IN COOLING Too many heat sources (e.g. OA equipment) located in a room	
			IN DRYING The reason is that the dry operation serves not to reduce the room temperature where possible.	Change the system to cooling operation.
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 **CENTRAL 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 central remote controller.
		The system stops immediately after turning ON the power supply.	The system is in preparation mode of microcomputer 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.

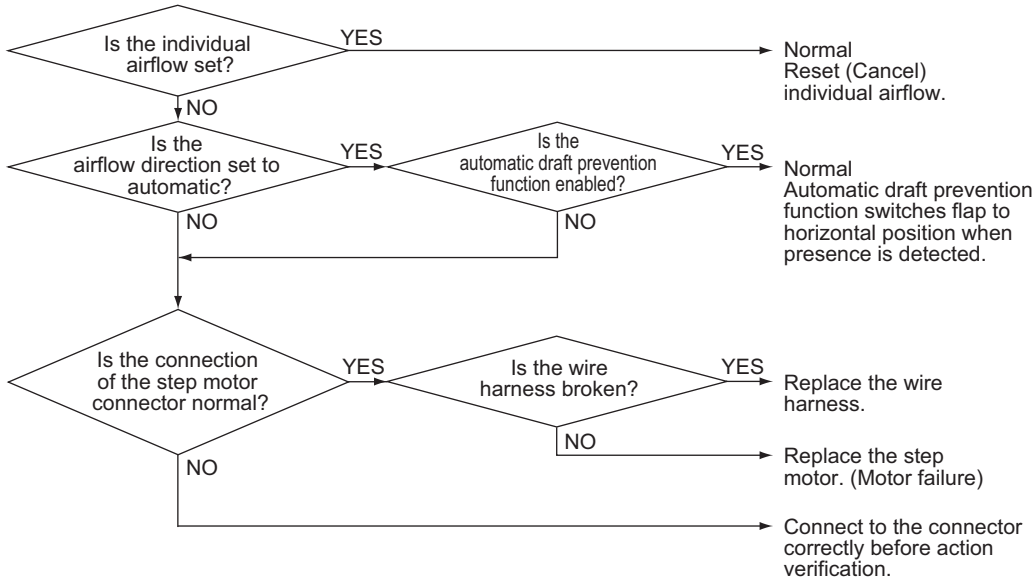
	Symptom		Supposed Cause	Countermeasure
6	COOL/HEAT selection is disabled.	The remote controller displays **CENTRAL CONTROL.**	This remote controller has no option to select cooling operation.	Use a remote controller with option to select cooling operation.
		The remote controller displays **CENTRAL CONTROL,** 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 **CENTRAL 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 **CENTRAL 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 indoor air 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** or **Checking the connection. Please stand by.** 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.

2.2 With Infrared Presence/Floor Sensor

	Condition	Measure
1	Louver operation different from setting or no downward airflow in heating operation	Refer to the flowchart below.
2	Individual airflow direction setting different from the actual airflow direction	Refer to the flowchart below.
3	While not operating, 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.	Refer to **Infrared Presence/Floor Sensor Error (CE)** on page 257.
	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.	
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 outdoor 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	The infrared presence sensor determines that there is someone in the room while no one is there.	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	The infrared presence sensor determines that there is no one in the room while someone is there.	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 when the louver movement differs from the setting

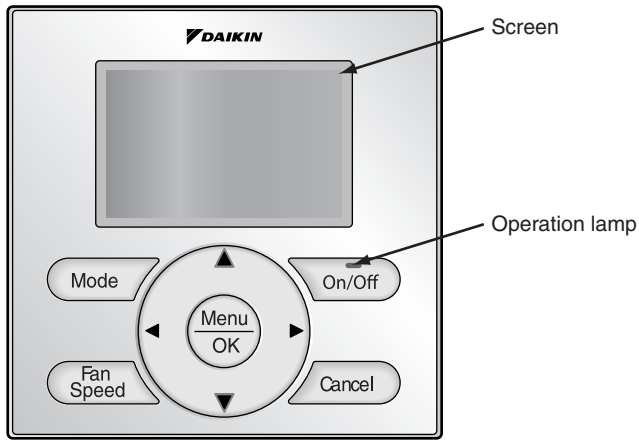


3. Error Code via Remote Controller

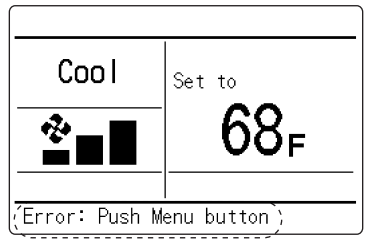
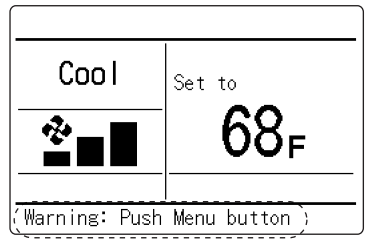
3.1 Wired Remote Controller

3.1.1 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.



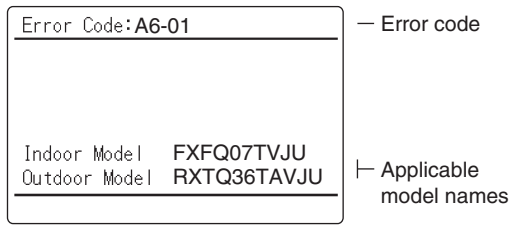
(1) Checking an error or warning.

	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.

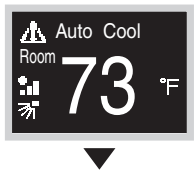
Press the **Menu/OK** button to check the error code.

Take the corrective action specific to the model.



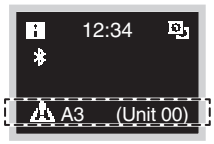
3.1.2 BRC1H71W

Home screen



When the indoor unit is in error, the controller will display ⚠ on the home screen.

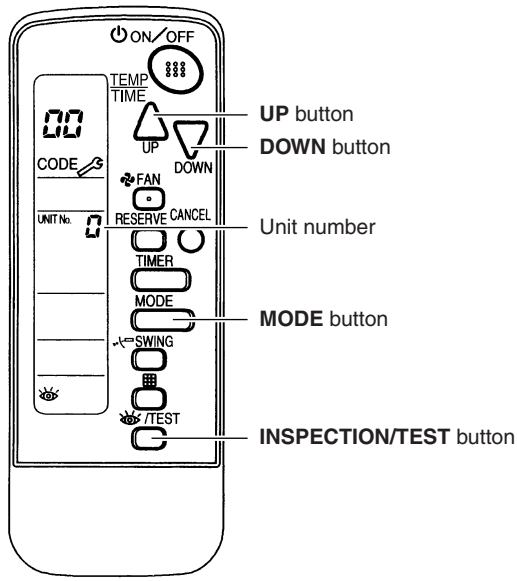
Information screen



Press and hold ◯ on the Home screen for 5 seconds. The unit number and error code will be displayed at the bottom of the information screen.

3.2 Wireless Remote Controller

If the 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 **INSPECTION/TEST** button to enter inspection mode. Then the figure 0 blinks on the unit number display.
2. Press **UP** button or **DOWN** button and change the unit number 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 **MODE** button. The left 0 (upper digit) indication of the error code blinks.
4. Press **UP** button or **DOWN** button to change the error code upper digit until the receiver of the indoor unit starts to beep.

- The upper digit of the code changes as shown below.

⇨ 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.

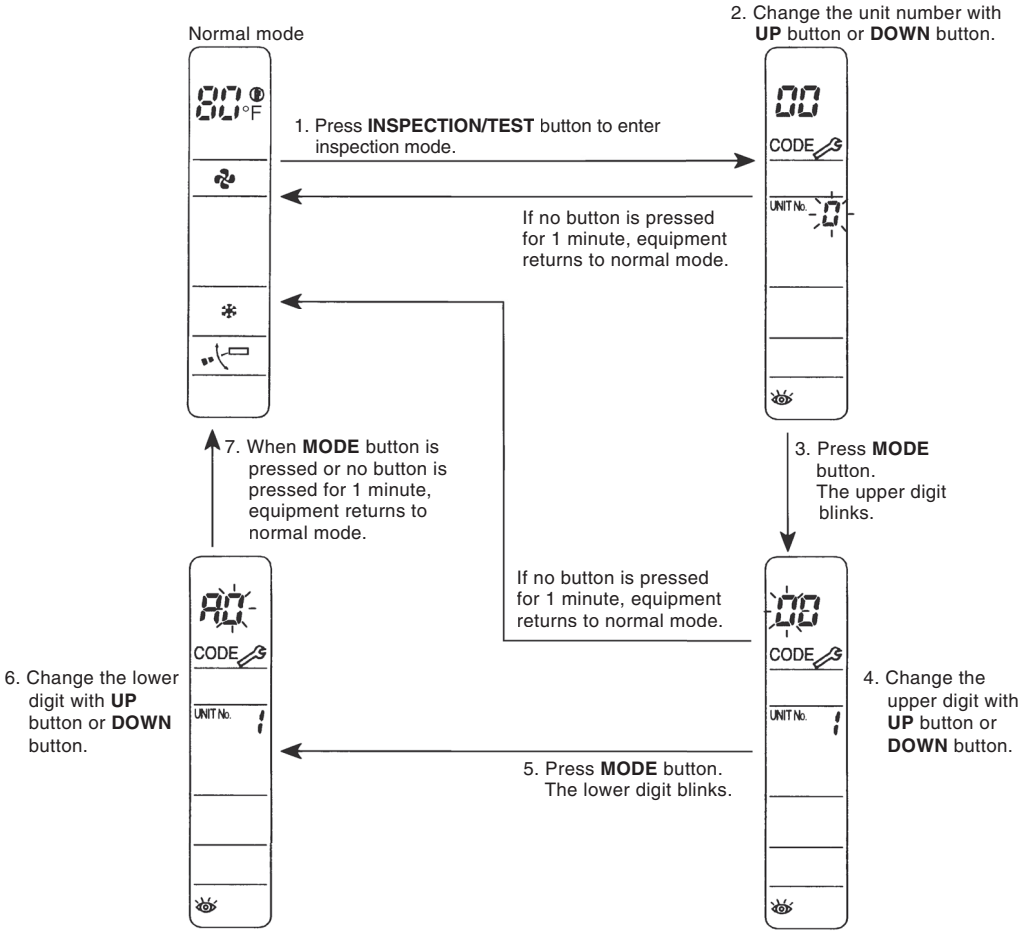
5. Press **MODE** button. The right ♫ (lower digit) indication of the error code blinks.
6. Press **UP** button or **DOWN** button and change the error code lower digit until the receiver of the indoor unit generates a continuous beep.

- The lower digit of the code changes as shown below.

⇨ 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 **MODE** button to return to the normal mode. If you do not press any button for 1 minute, the remote controller automatically returns to the normal mode.



4. Error Code Indication by Outdoor Unit PCB

Monitor mode

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

Selection of setting item

Press the **SET (BS2)** button to match the LED status with the item to be checked.

Latest error	◑●●○○○●
2nd latest error	◑●●○○○○
3rd latest error	◑●○●●●●
Latest retry	◑●○●○●●
2nd latest retry	◑●○●○●○
3rd latest retry	◑●○●○○●

Confirmation of error 1

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

Confirmation of error 2

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

Confirmation of error 3

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

Confirmation of error 4

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

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

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

Detailed description on next page.

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

○: ON ●: OFF ◑: Blink

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

Display of error description (first digit)

Display of error description (second digit)

Display 1 of error in detail

Display 2 of error in detail

∗1		
	● ●	Master
	● ◑	Slave1
	◑ ●	Slave2
	◑ ◑	System

Monitor mode

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

Selection of setting item

Press the **SET (BS2)** button to match the LED status with the item to be checked.

Latest error	◑●●○○○○●
2nd latest error	◑●●○○○○○
3rd latest error	◑●○●●●●●
Latest retry	◑●○●○●●●
2nd latest retry	◑●○●○●○
3rd latest retry	◑●○●○○●

Confirmation of error 1

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

Confirmation of error 2

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

Confirmation of error 3

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

Confirmation of error 4

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

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

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

Detailed description on next page.

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

○: ON ●: OFF ◑: Blink

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

Display of error description (first digit)

Display of error description (second digit)

Display 1 of error in detail

Display 2 of error in detail

＊1

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

5. Troubleshooting by Error Code

5.1 Error Codes and Descriptions

○: ON ●: OFF ◑: Blink

	Error code	Operation lamp	Error contents	Reference page
Indoor Unit	A0	◑	External protection device abnormality	214
	A1	◑	Indoor unit control PCB abnormality	216
	A3	◑	Drain level control system abnormality	217
	A6	◑	Indoor fan motor lock, overload	219
			Indoor fan motor abnormality	221
			Blower motor not running	227
			Indoor fan motor status abnormality	228
			Low indoor airflow	229
	A7 (∗1)	○	Swing flap motor abnormality	230
	A8	◑	Power supply voltage abnormality	232
			Blower motor stops for over/under voltage	233
	A9	◑	Electronic expansion valve coil abnormality, dust clogging	234
	AF (∗1)	○	Drain level above limit	235
	AH	◑	Self-cleaning decoration panel abnormality	236
	AJ	◑	Defective capacity setting	247
	C1	◑	Transmission abnormality between indoor unit control PCB and fan PCB	248
			Blower motor communication error	250
	C4	◑	Indoor heat exchanger liquid pipe thermistor abnormality	251
	C5	◑	Indoor heat exchanger gas pipe thermistor abnormality	251
	C6	◑	Combination error between indoor unit control PCB and fan PCB	252
			Blower motor HP mismatch	253
			Indoor blower does not have required parameters to function	254
	C9	◑	Suction air thermistor abnormality	251
			Remote sensor abnormality	255
	CA	◑	Discharge air thermistor abnormality	251
	CC	○	Humidity sensor system abnormality	256
	CE (∗1)	○	Infrared presence/floor sensor error	257
	CJ (∗2)	○	Remote controller thermistor abnormality	262
Outdoor Unit	E1	◑	Outdoor unit main PCB abnormality	263
	E3	◑	Activation of high pressure switch	264
	E4	◑	Activation of low pressure sensor	266
	E5	◑	Compressor motor lock	267
	E7	◑	Outdoor fan motor abnormality	269
	E9	◑	Electronic expansion valve coil abnormality	271
	F3	◑	Discharge pipe temperature abnormality	272
	F6	◑	Refrigerant overcharged	274
	H9	◑	Outdoor air thermistor (R1T) abnormality	275
	J3	◑	Discharge pipe thermistor (R2T) abnormality	275
	J5	◑	Suction pipe thermistor (R3T, R5T) abnormality	275
	J6	◑	Outdoor heat exchanger deicer thermistor (R4T) abnormality	275
	J7	◑	Outdoor heat exchanger liquid pipe thermistor (R7T) abnormality	275
	J9	◑	Subcooling heat exchanger gas pipe thermistor (R6T) abnormality	275
	JA	◑	High pressure sensor abnormality	276
	JC	◑	Low pressure sensor abnormality	277

	Error code	Operation lamp	Error contents	Reference page
Outdoor Unit	L1	◑	Inverter PCB abnormality	278
	L4	◑	Radiation fin temperature rise abnormality	279
	L5	◑	Compressor instantaneous overcurrent	280
	L8	◑	Compressor overcurrent	281
	L9	◑	Compressor startup abnormality	282
	LC	◑	Transmission error between microcomputers on outdoor unit main PCB	283
	P1	◑	Inverter circuit capacitor high voltage	284
	P4 (∗1)	◑	Radiation fin thermistor abnormality	285
System	U0 (∗1)	○	Refrigerant shortage	286
	U2	◑	Power supply insufficient or instantaneous abnormality	288
	U3	◑	Check operation not executed	290
	U4	◑	Transmission error between indoor units and outdoor units	291
	U5	◑	Transmission error between remote controller and indoor unit	293
	U8	◑	Transmission error between main and sub remote controllers	294
	U9	◑	Transmission error between indoor units and outdoor units in the same system	295
	UA	◑	Improper combination of indoor and outdoor units, indoor units and remote controller	296
			Incorrect electric heater capacity setting	298
	UC (∗1)	○	Address duplication of centralized controller	299
	UE	◑	Transmission error between centralized controller and indoor unit	300
	UF	◑	System not set yet	303
	UH	◑	System abnormality, refrigerant system address undefined	304
	M1	◑	Defective PCB	305
	M8	◑	Transmission error (between centralized controllers)	306
	MA	◑	Poor centralized controller combination	308
	MC	◑	Address duplication, poor setting	310
	—	◑	Operation lamp blinking	312
	—	◑	Central control indicator lamp blinking (one blink)	314
	—	◑	Central control indicator lamp blinking (two blinks)	317

Note(s)

∗1 : The system can keep operating, however, be sure to check and repair.

∗2 : The system may continue operation depending on the conditions.

5.2 Error Codes (Sub Codes)

If an error code like the one shown below is displayed when a wired remote controller is in use, make a detailed diagnosis.

5.2.1 Indoor Unit

Error code	Troubleshooting	
	Error Description	Diagnosis
A0 - 01	External protection device abnormality	Refer to page 215.
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 228.
A6 - 21	Low indoor airflow	Refer to page 229.
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 auto clean operation error (when the self-cleaning decoration panel is mounted)	The unit has not yet completed the filter auto clean operation even after the lapse of specified period of time. Check for any external noise, etc.
AH - 09	Filter auto clean operation start disabled error (when the self-cleaning decoration panel is mounted)	The unit has been put into a state in which the filter auto clean 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 250.
C6 - 01	Defective combination of indoor unit PCB and the fan PCB	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.
	Blower motor HP mismatch	Refer to page 253.
C6 - 02	Indoor blower does not have required parameters to function	Refer to page 254.
U4 - 01	Indoor-outdoor transmission error	Refer to the **U4** flowchart.
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 298.

5.3 External Protection Device Abnormality

5.3.1 External Protection Device Abnormality (Except FXTQ-TA, FXTQ-TB)

Applicable Models

All indoor unit models (except FXTQ-TA, FXTQ-TB)

Error Code

A0

Method of Error Detection

Detects open or short circuit between external input terminals in indoor unit.

Error Decision Conditions

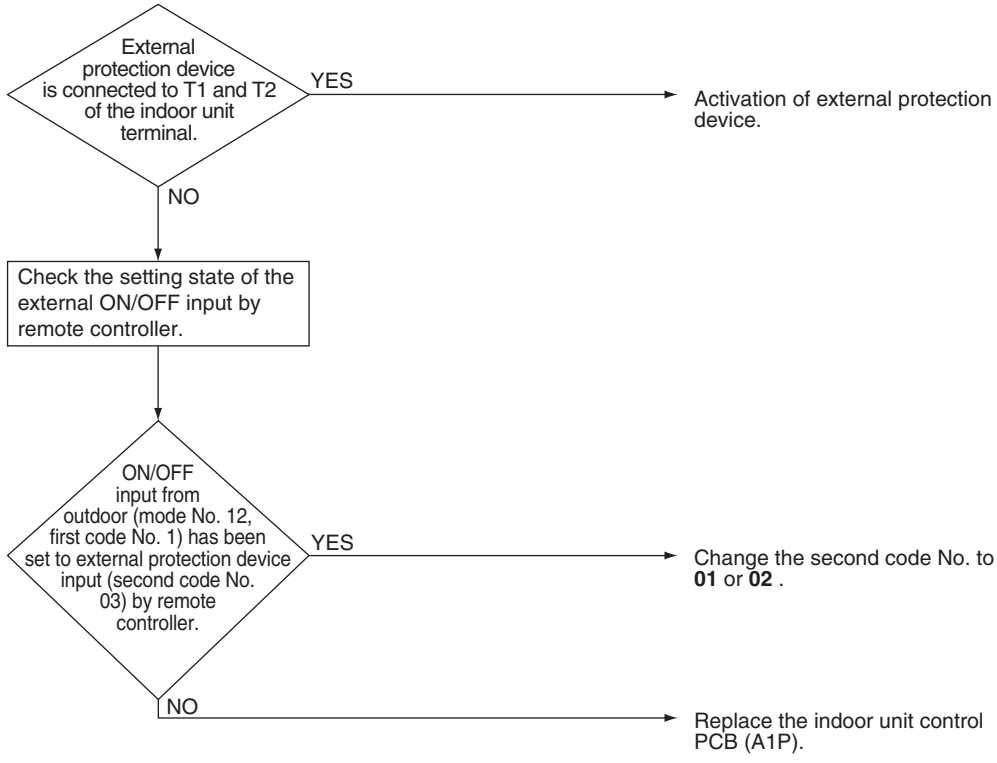
When an open circuit occurs between external input terminals with the remote controller set to external ON/OFF terminal.

Supposed Causes

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

Troubleshooting

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



5.3.2 External Protection Device Abnormality (FXTQ-TA, FXTQ-TB Only)

Applicable Models

FXTQ-TA, FXTQ-TB

Error Code

A0-01

Method of Error Detection

Detect open or short circuit between external input terminals in indoor unit.

Error Decision Conditions

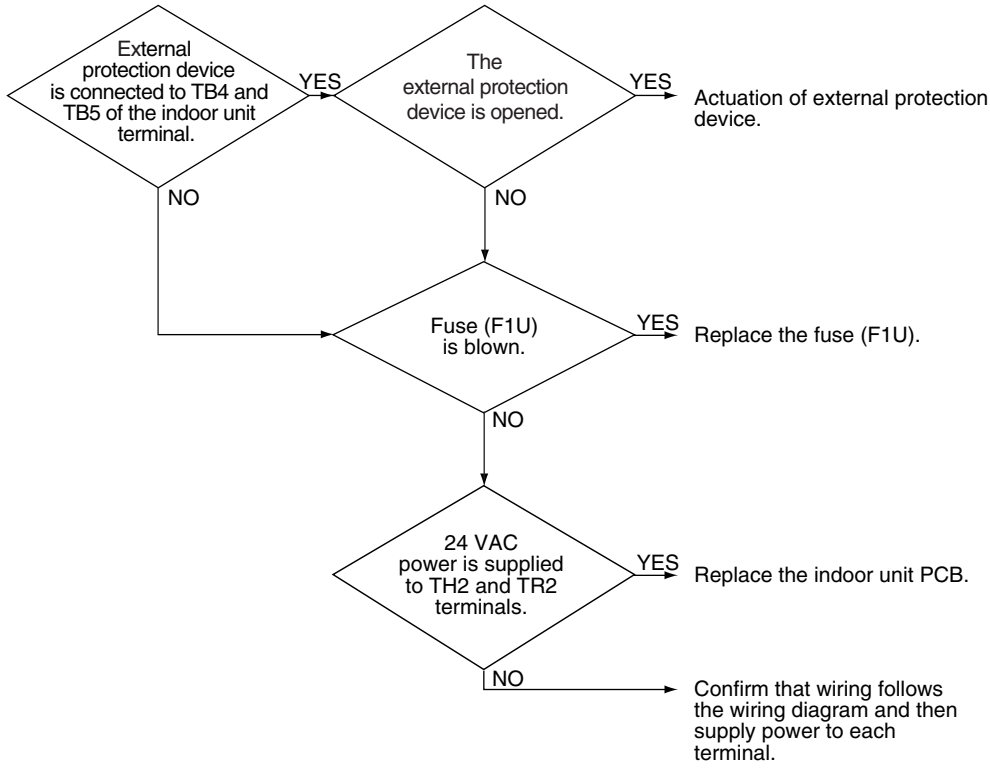
When an open circuit occurs between external input terminals.

Supposed Causes

- Activation of external protection device
- Defective indoor unit PCB
- Indoor unit fuse blown
- 24 VAC power is not supplied to TH2 and TR2 terminals on the indoor unit PCB.

Troubleshooting

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



5.4 Indoor Unit Control PCB Abnormality

Applicable Models

All indoor unit models

Error Code

A1

Method of Error Detection

Check data from EEPROM.

Error Decision Conditions

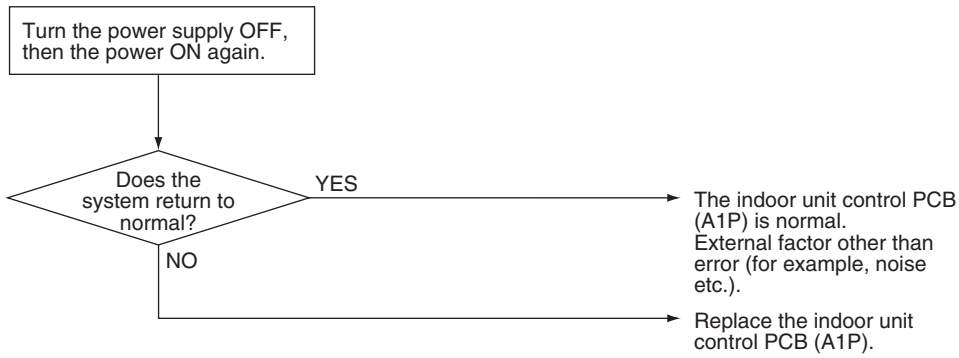
When data could not be correctly received from the EEPROM
EEPROM : Type of nonvolatile memory. Maintains memory contents even when the power supply is turned OFF.

Supposed Causes

- Defective indoor unit control 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.



5.5 Drain Level Control System Abnormality

Applicable Models

FXFQ-AA, FXFQ-T, FXFQ-P, FXZQ-TA, FXZQ-TB, FXZQ-M, FXUQ-P, FXUQ-PA, FXEQ-P, FXDQ-M, FXSQ-TA, FXSQ-TB, FXMQ-PB, FXMQ-TB

Error Code

A3

Method of Error Detection

By float switch OFF detection

Error Decision Conditions

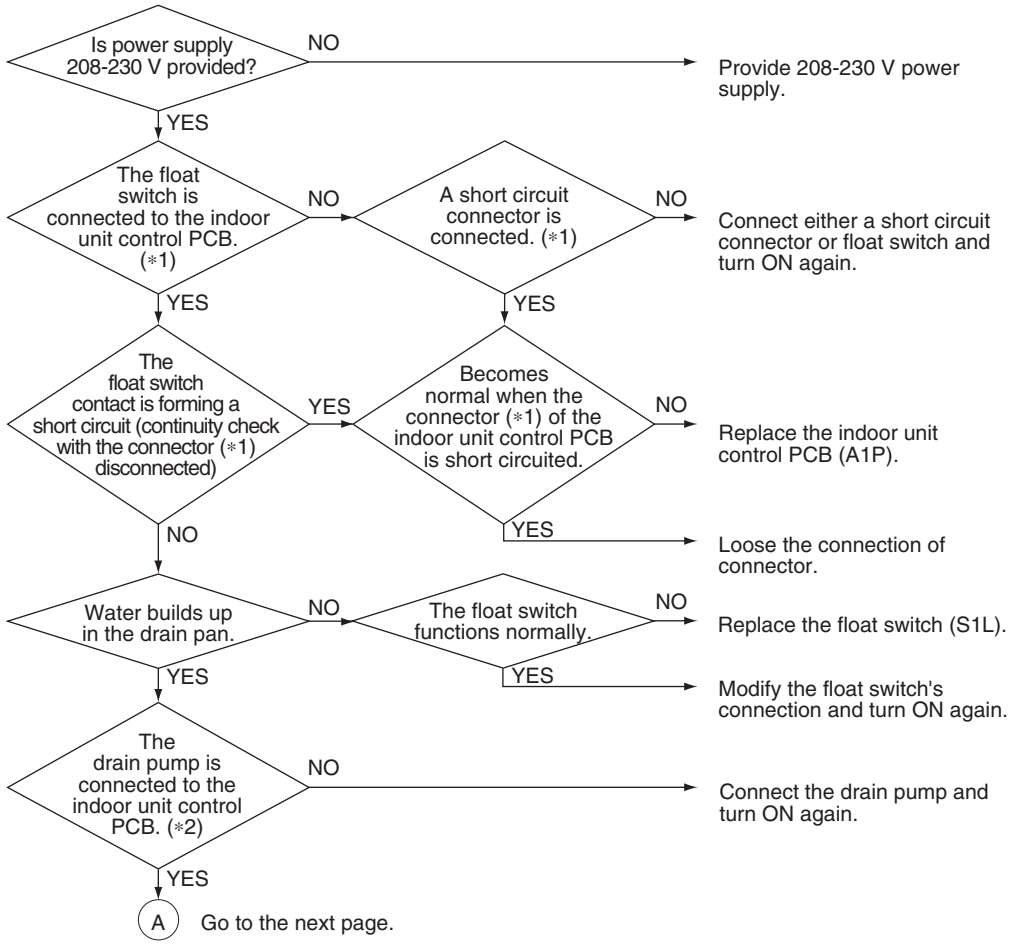
When rise of water level is not a condition and the float switch goes OFF.

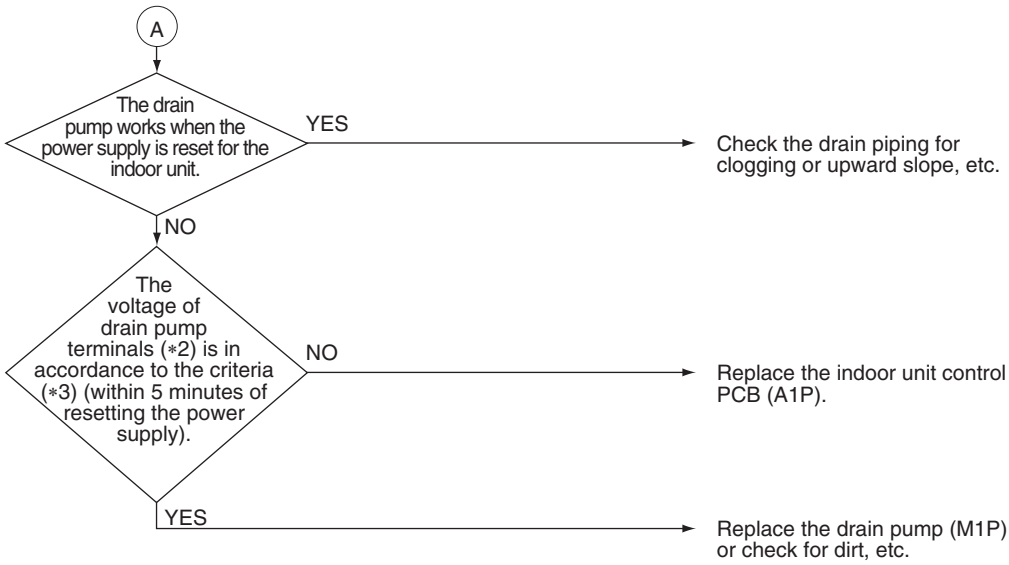
Supposed Causes

- 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 control 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(s)

Model	∗1: Float switch (S1L) / short circuit connector	∗2: Drain pump (M1P) connector	∗3: Drain pump (M1P) voltage
FXFQ-AA	X15A	X25A	13 VDC
FXFQ-T	X15A	X10A	13 VDC
FXFQ-P	X15A	X25A	220-240 VAC
FXZQ-TA	X15A	X102A	13 VDC
FXZQ-TB	X15A	X25A	13 VDC
FXZQ-M	X8A	X25A	220-240 VAC
FXUQ-P	X15A	X25A	13 VDC
FXUQ-PA	X15A	X25A	13 VDC
FXEQ-P	X15A	X25A	13 VDC
FXDQ-M	X8A	X25A	220-240 VAC
FXSQ-TA	X15A	X25A	13 VDC
FXSQ-TB	X15A	X25A	13 VDC
FXMQ-PB	X15A	X25A	220-240 VAC
FXMQ-TB	X15A	X25A	13 VDC

5.6 Indoor Fan Motor Lock, Overload

Applicable Models

FXFQ-T, FXFQ-P, FXZQ-TA, FXZQ-TB, FXUQ-P, FXUQ-PA, FXEQ-P, FXSQ05-48TA, FXSQ05-48TB, FXMQ07-12PB, FXMQ15-24TB, FXAQ-P

Error Code

A6

Method of Error Detection

Abnormal fan revolutions are detected by a signal output from the fan motor.

Error Decision Conditions

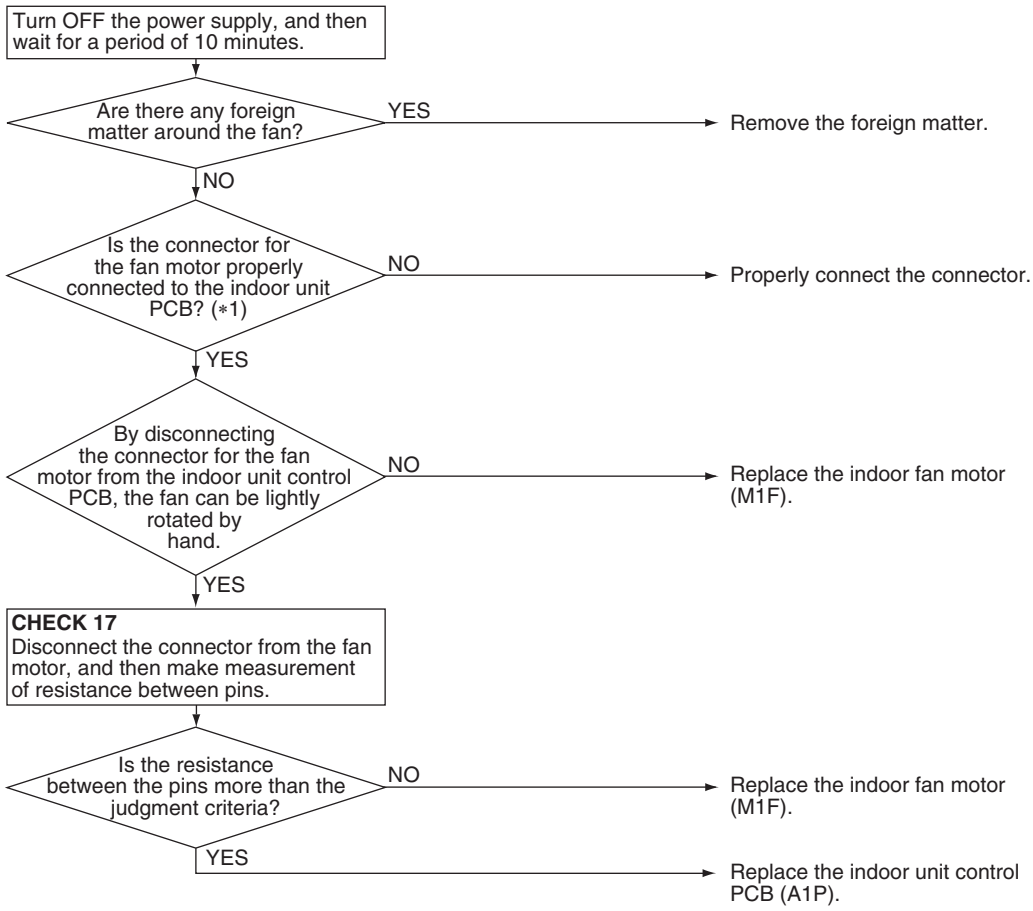
When the fan revolutions do not increase

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 control 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 indoor unit control PCB (A1P) and the fan PCB (A2P) (FXSQ05-48TA, FXSQ05-48TB, FXMQ07-12PB, FXMQ15-24TB only)
- Blowout of the fuse connected between the indoor unit PCB and the fan motor harness

Troubleshooting

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



Note(s) ∗1: Check the following connectors.

Model	Connector	PCB
FXFQ-T	X20A, Relay connector	A1P
FXFQ09-30P	X20A, Relay connector	A1P
FXFQ36/48P	X20A	A1P
FXZQ-TA	X20A, Relay connector	A1P
FXZQ-TB	X20A, Relay connector	A1P
FXUQ-P	X20A, Relay connector	A1P
FXUQ-PA	X20A, Relay connector	A1P
FXEQ-P	X20A	A1P
FXSQ05-48TA	X8A	A2P
FXSQ05-48TB	X8A	A2P
FXMQ07-12PB	X8A	A2P
FXMQ15-24TB	X8A	A2P
FXAQ-P	X20A	A1P

Reference **CHECK 17** Refer to page 336.

5.7 Indoor Fan Motor Abnormality

5.7.1 Indoor Fan Motor Abnormality (FXFQ-AA Models)

Applicable Models

FXFQ-AA

Error Code

A6

Method of Error Detection

- Detection from the current flow on the PCB (A1P)
- Detection from the current flow on the PCB when the fan motor starting operation

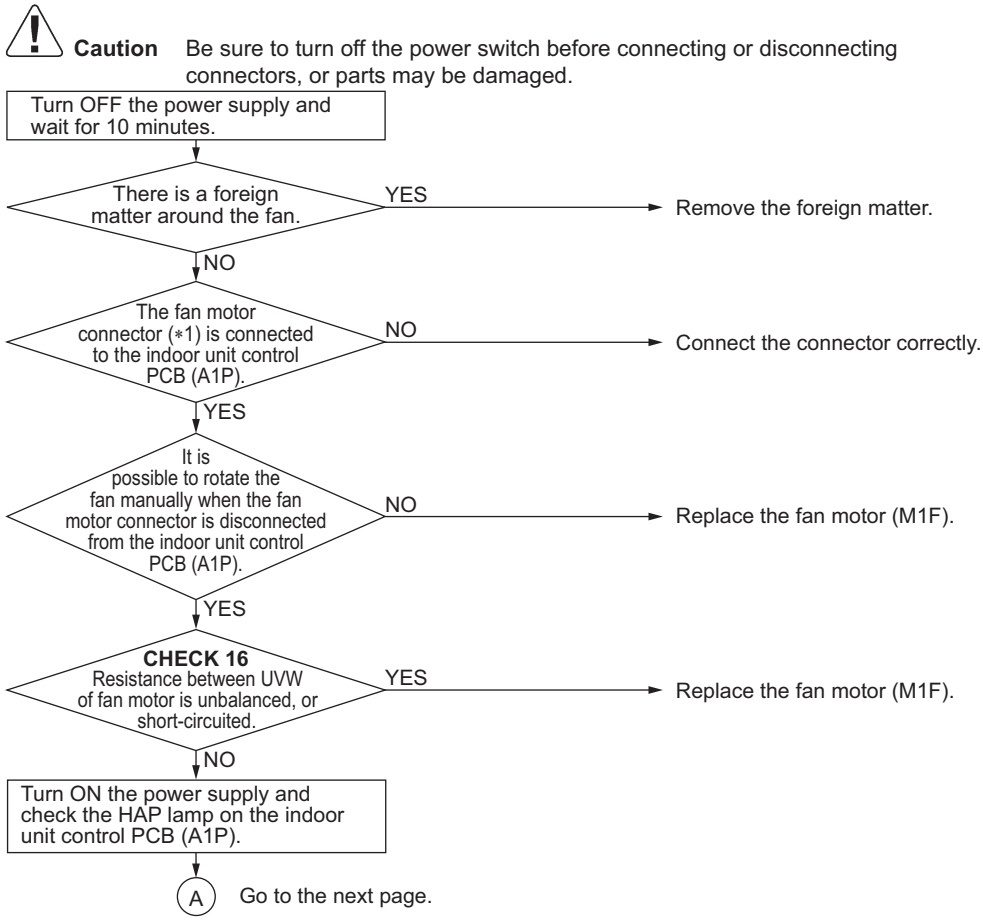
Error Decision Conditions

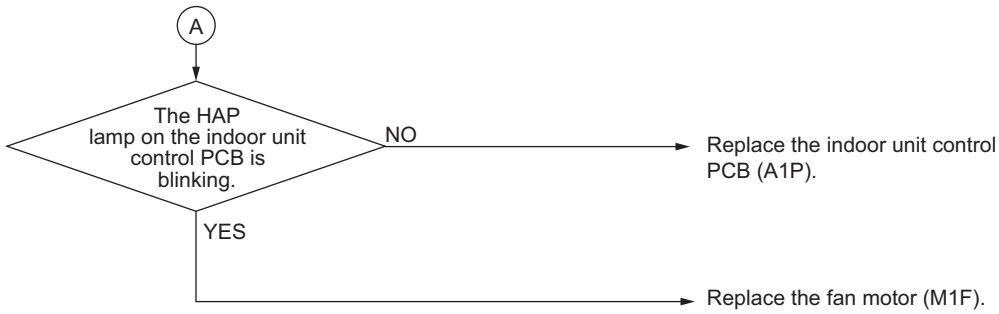
- An overcurrent flows
- The rotation speed is less than a certain level for 6 seconds.
- A position error in the fan rotor continues for 5 seconds or more.

Supposed Causes

- Fan does not rotate due to clogged foreign matter.
- Disconnection, short circuit, or loose connection of the harness of the fan motor
- Fan motor lock (motor-related or external factors)
- Defective fan motor (disconnection or insulation failure)
- Defective indoor unit PCB

Troubleshooting





∗1. Check also if the relay connector between the indoor unit control PCB and the fan motor are correctly connected.

Reference **CHECK 16** Refer to page 335.

5.7.2 Indoor Fan Motor Abnormality (FXDQ-M, FXHQ-M Models)

Applicable Models

FXDQ-M, FXHQ-M

Error Code

A6

Method of Error Detection

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

Error Decision Conditions

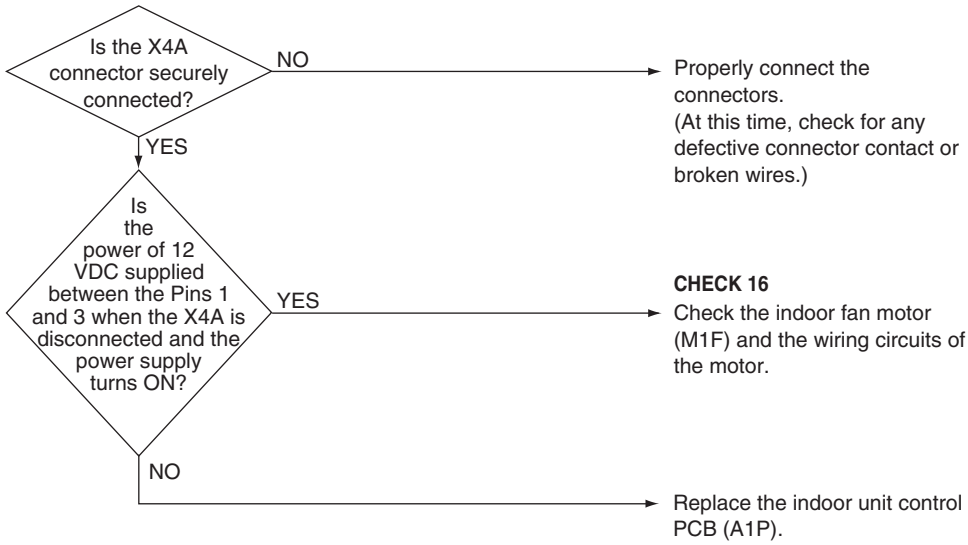
When no revolutions can be detected even at the maximum output voltage to the fan

Supposed Causes

- Defective indoor fan motor
- Broken wires
- Defective contact

Troubleshooting

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



Reference **CHECK 16** Refer to page 335.

5.7.3 Indoor Fan Motor Abnormality (FXSQ54TA, FXSQ54TB, FXMQ15-54PB, FXMQ30-54TB Models)

Applicable Models

FXSQ54TA, FXSQ54TB, FXMQ15-54PB, FXMQ30-54TB

Error Code

A6

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

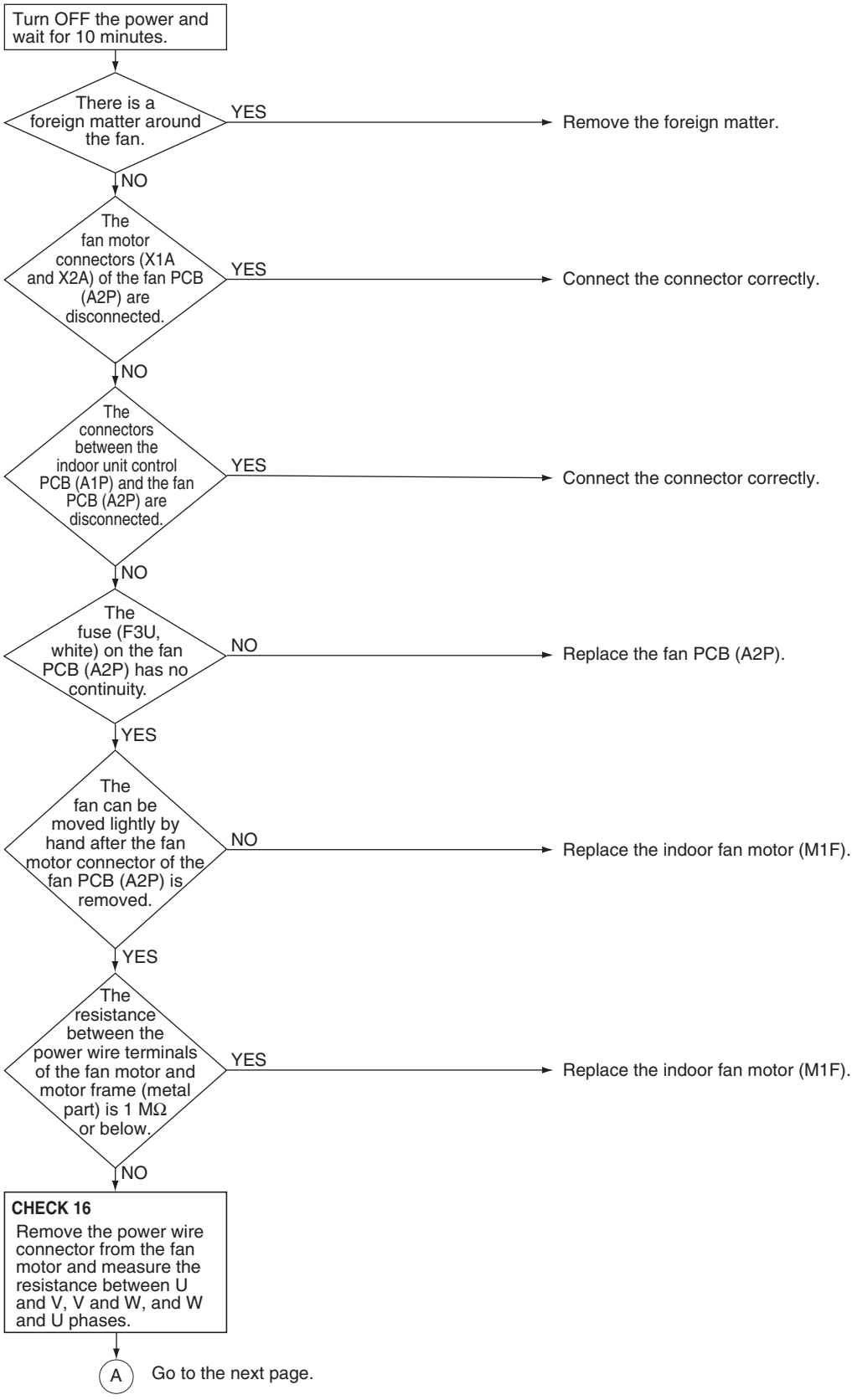
- An overcurrent flows.
- The rotation speed is less than a certain level for 6 seconds.
- A position error in the fan rotor continues for 5 seconds or more.

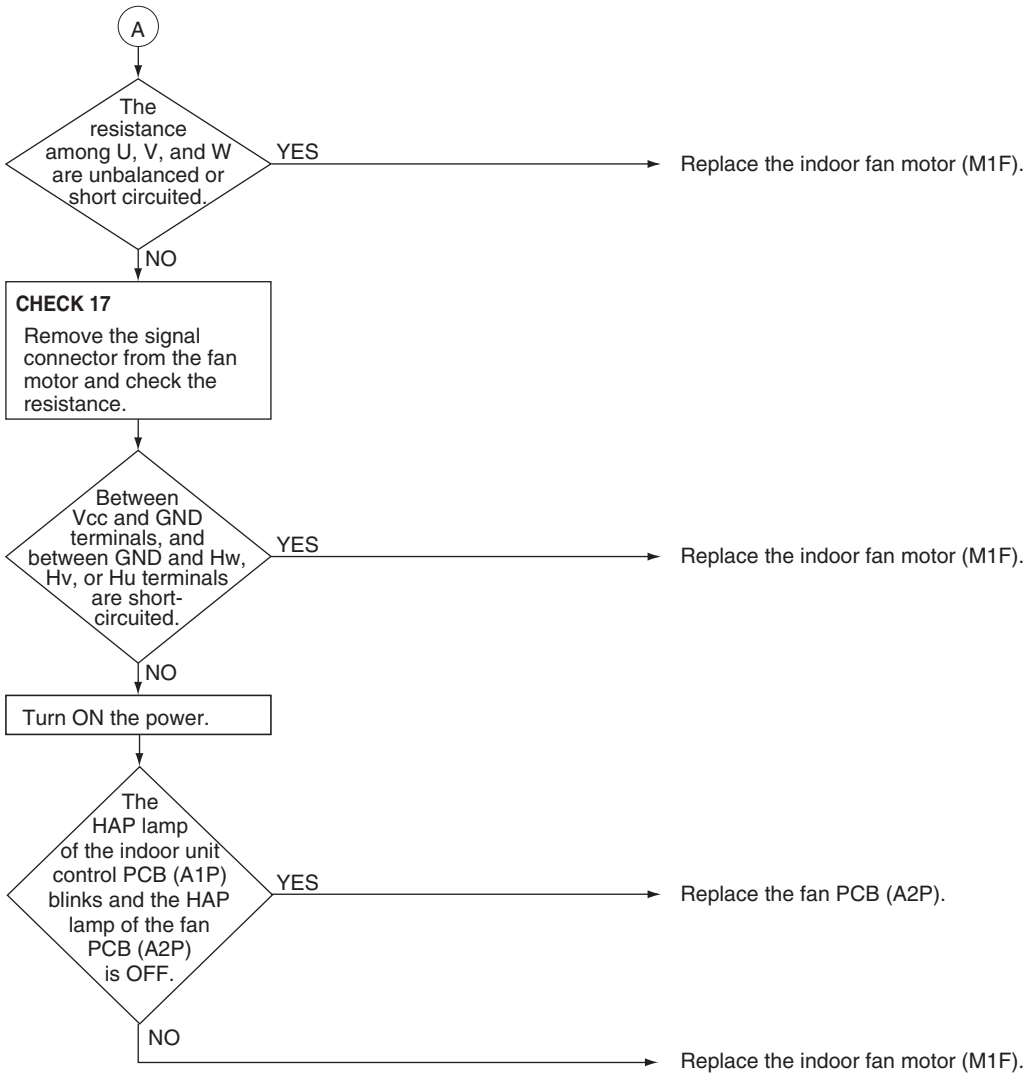
Supposed Causes

- Clogging of a foreign matter
- Disconnection of the fan motor connectors (X1A and X2A)
- Disconnection of the connectors between the indoor unit control 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.





Reference **CHECK 16** Refer to page 335.

Reference **CHECK 17** Refer to page 336.

5.8 Blower Motor Not Running

Applicable Models

FXTQ-TA, FXTQ-TB

Error Code

A6

Outline

Error is issued if the indoor unit determines that the indoor fan motor cannot rotate.

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 for the specified number of consecutive 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 approximately 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 control PCB or motor.

Reference

CHECK 19 Refer to page 340.

5.9 Indoor Fan Motor Status Abnormality

Applicable Models

FXTQ-TA, FXTQ-TB

Error Code

A6-20

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.

Reference

CHECK 19 Refer to page 340.

5.10 Low Indoor Airflow

Applicable Models

FXTQ-TA, FXTQ-TB

Error Code

A6-21

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 approximately 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.

Reference

CHECK 19 Refer to page 340.

5.11 Swing Flap Motor Abnormality

Applicable Models

FXHQ-M, FXAQ-P

Error Code

A7

Method of Error Detection

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

Error Decision Conditions

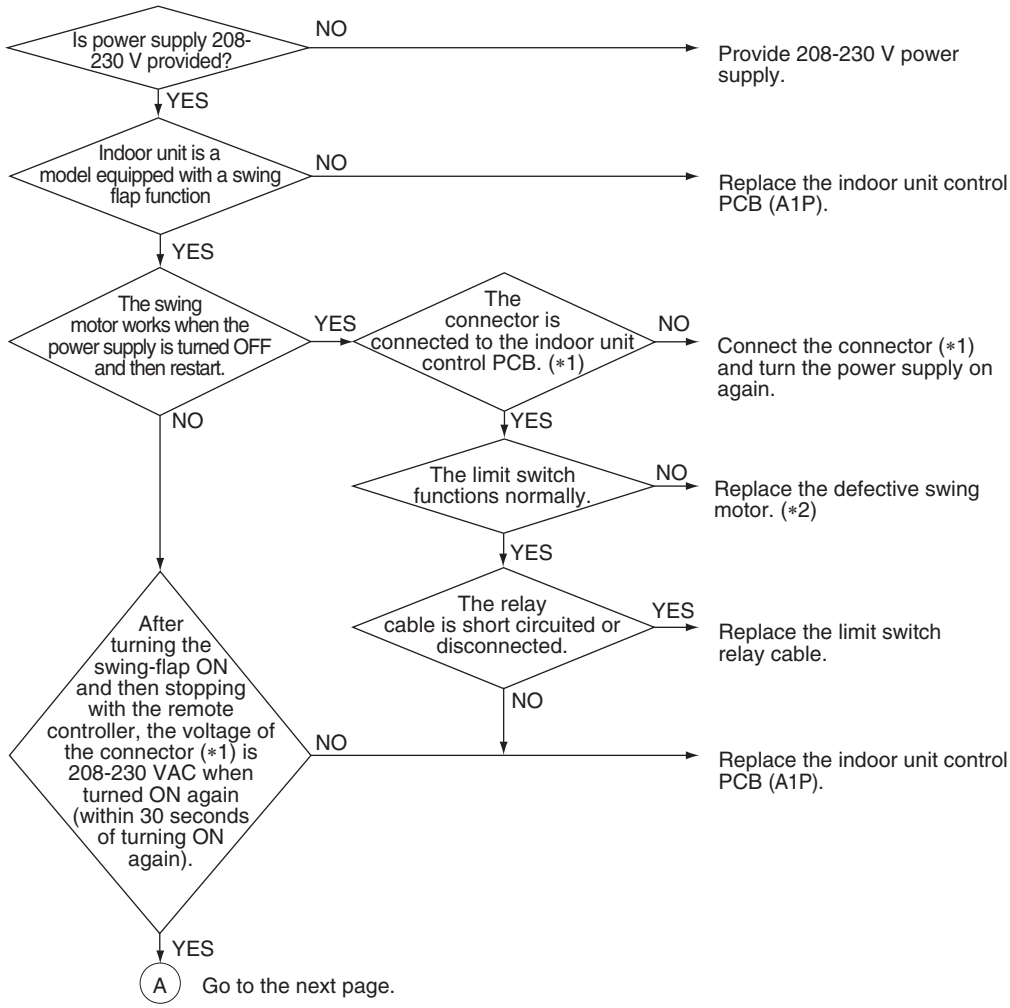
When ON/OFF of the micro-switch for positioning cannot be reversed even though the swing flap motor is energized for a specified amount of time (about 30 seconds).
∗ Error code is displayed but the system operates continuously.

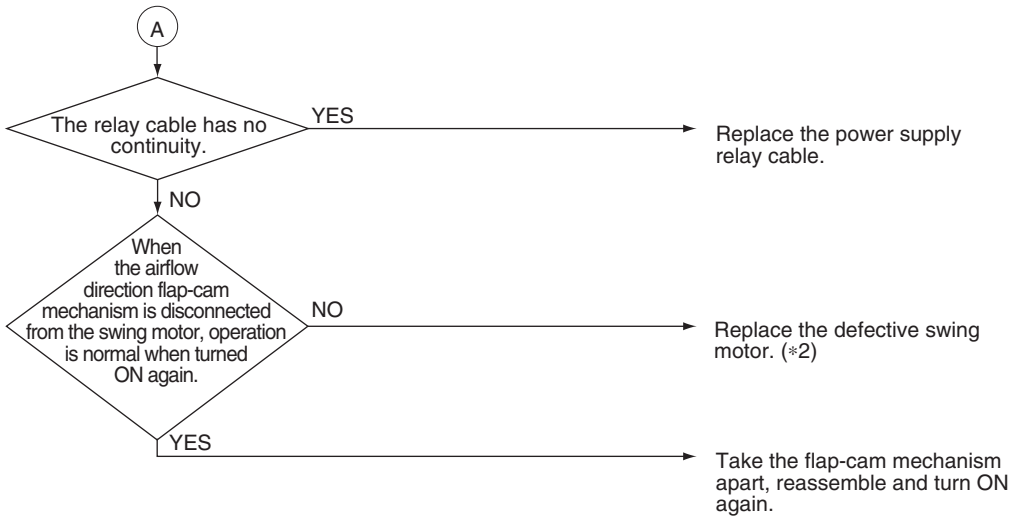
Supposed Causes

- Defective swing motor
- Defective connection cable (power supply and limit switch)
- Defective airflow direction adjusting flap-cam
- Defective indoor unit control 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
FXHQ-M	X6A	M1S
FXAQ-P	X36A	M1S

5.12 Power Supply Voltage Abnormality

Applicable Models

FXSQ-TA, FXSQ-TB, FXMQ-PB, FXMQ-TB

Error Code

A8

Method of Error Detection

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

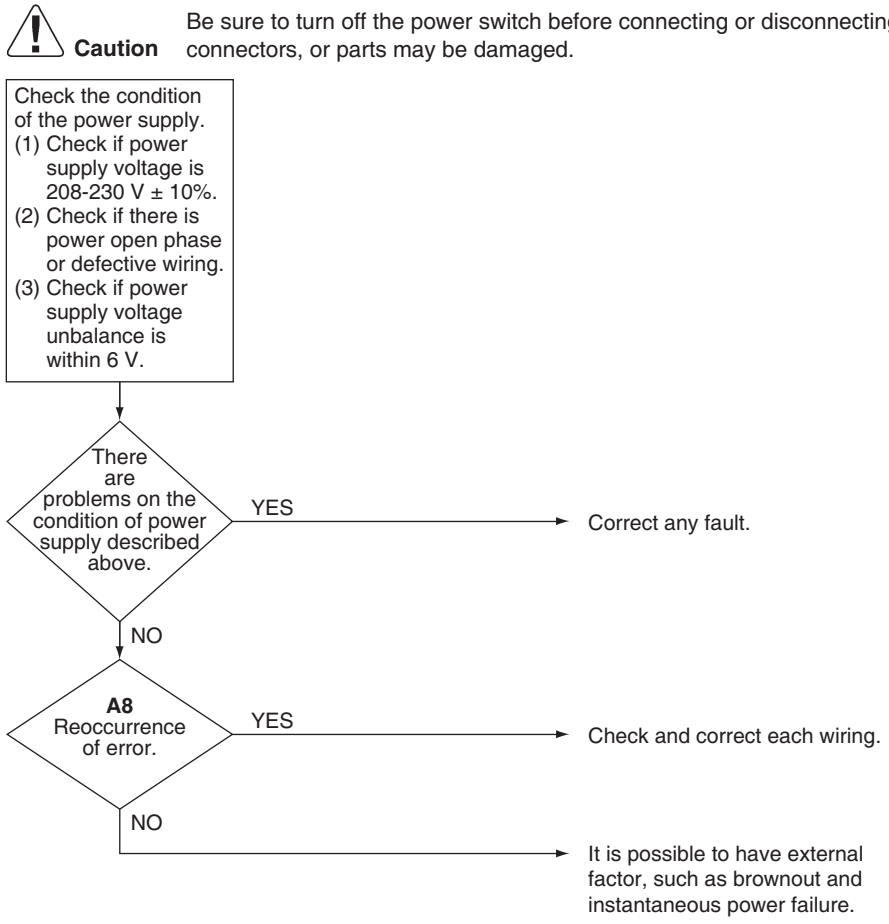
Error Decision Conditions

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

Supposed Causes

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

Troubleshooting



5.13 Blower Motor Stops for Over/Under Voltage

Applicable Models	FXTQ-TA, FXTQ-TB
Error Code	**A8**
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	Reset by remote controller
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.

5.14 Electronic Expansion Valve Coil Abnormality, Dust Clogging

Applicable Models

All indoor unit models

Error Code

A9

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.

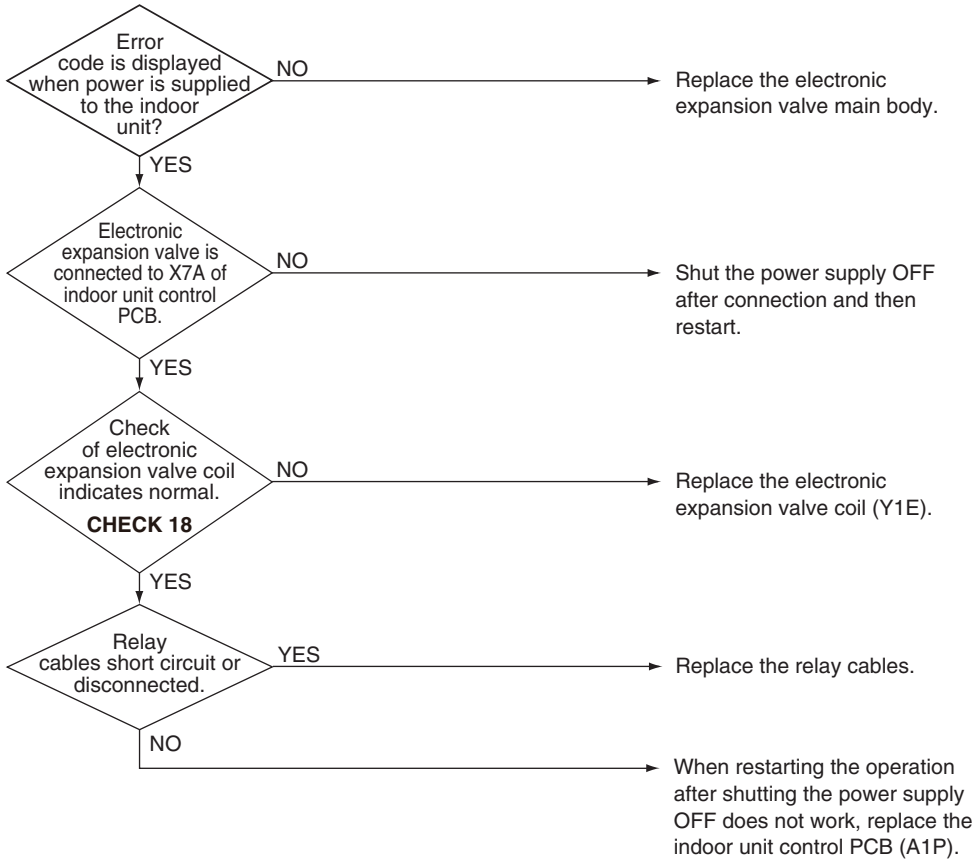
R1T: temperature of suction air
R2T: temperature of liquid pipe of heat exchanger

Supposed Causes

- Defective electronic expansion valve coil
- Defective indoor unit control PCB
- Defective relay cables

Troubleshooting

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



Reference **CHECK 18** Refer to page 338.

5.15 Drain Level above Limit

Applicable Models

FXFQ-AA, FXFQ-T, FXFQ-P, FXZQ-TA, FXZQ-TB, FXZQ-M, FXUQ-P, FXUQ-PA, FXEQ-P, FXDQ-M, FXSQ-TA, FXSQ-TB, FXMQ-PB, FXMQ-TB

Error Code

AF

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

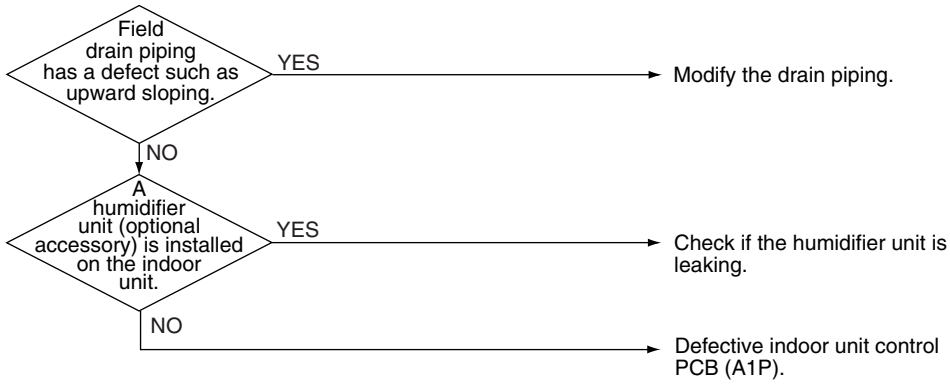
When the float switch changes from ON to OFF while the compressor is not in operation.
* Error code is displayed but the system operates continuously.

Supposed Causes

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

Troubleshooting

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



5.16 Self-Cleaning Decoration Panel Abnormality

Applicable Models

FXFQ-AA (when self-cleaning decoration panel BYCQ54EEGFU is installed)
FXFQ-T (when self-cleaning decoration panel BYCQ125BGW1 is installed)

Error Code

AH

Method of Error Detection

Error is detected by abnormal signal from the self-cleaning decoration panel.

Error Decision Conditions

Any of the following conditions is met while the unit is in operation.

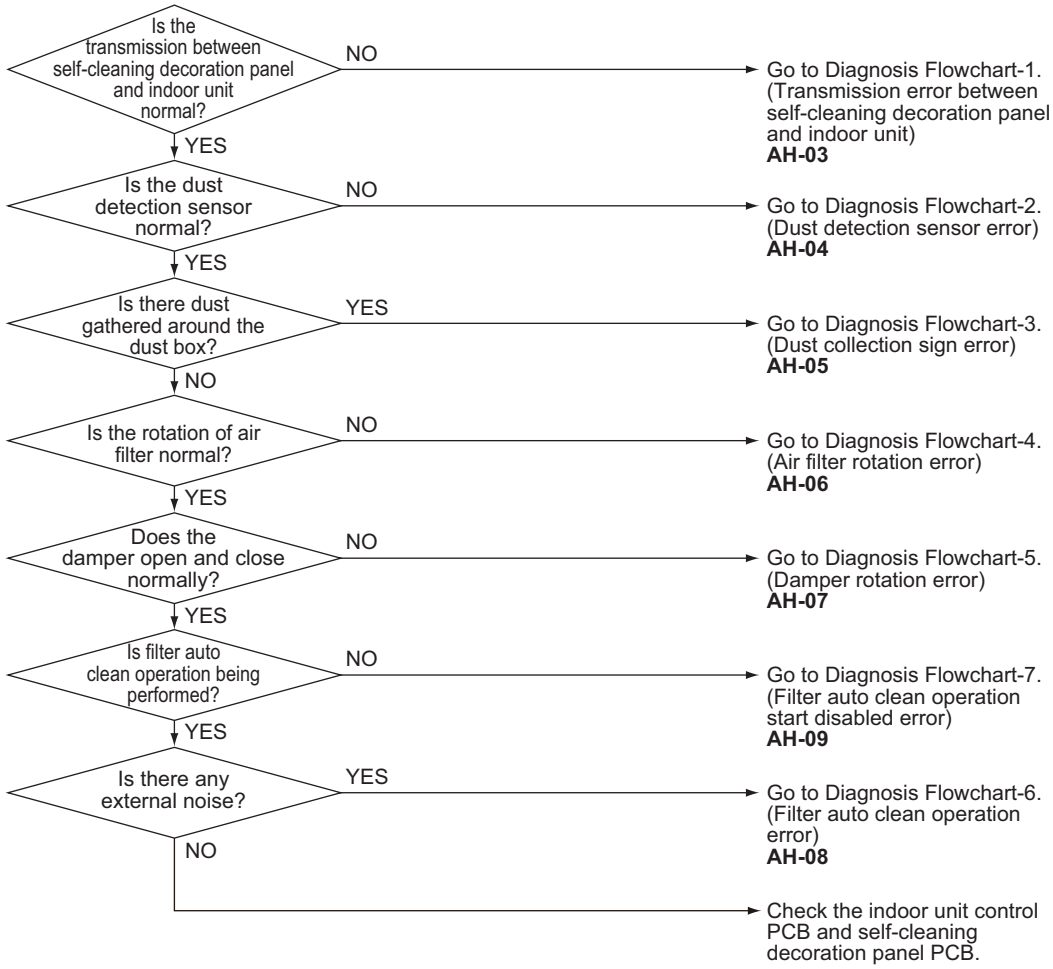
- There is a transmission error between self-cleaning decoration panel and indoor unit.
- Dust detection sensor (light receiving side) is short-circuited.
- The total of fan operation time exceeds a specified value after dust collection sign display.
- Limit switch does not detect when air filter rotates or air filter does not rotate.
- Limit switch does not detect when damper opens (or closes) or damper does not work.
- Filter auto clean operation does not complete even after a specified time has elapsed.
- Filter auto clean operation does not start even after a specified time has elapsed.

Supposed Causes

- Transmission error (between self-cleaning decoration panel and indoor unit)
- Dust detection sensor error
- Dust collection sign
- Air filter rotation error
- Damper rotation error
- Filter auto clean operation error
- Filter auto clean operation start disabled error

Troubleshooting

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

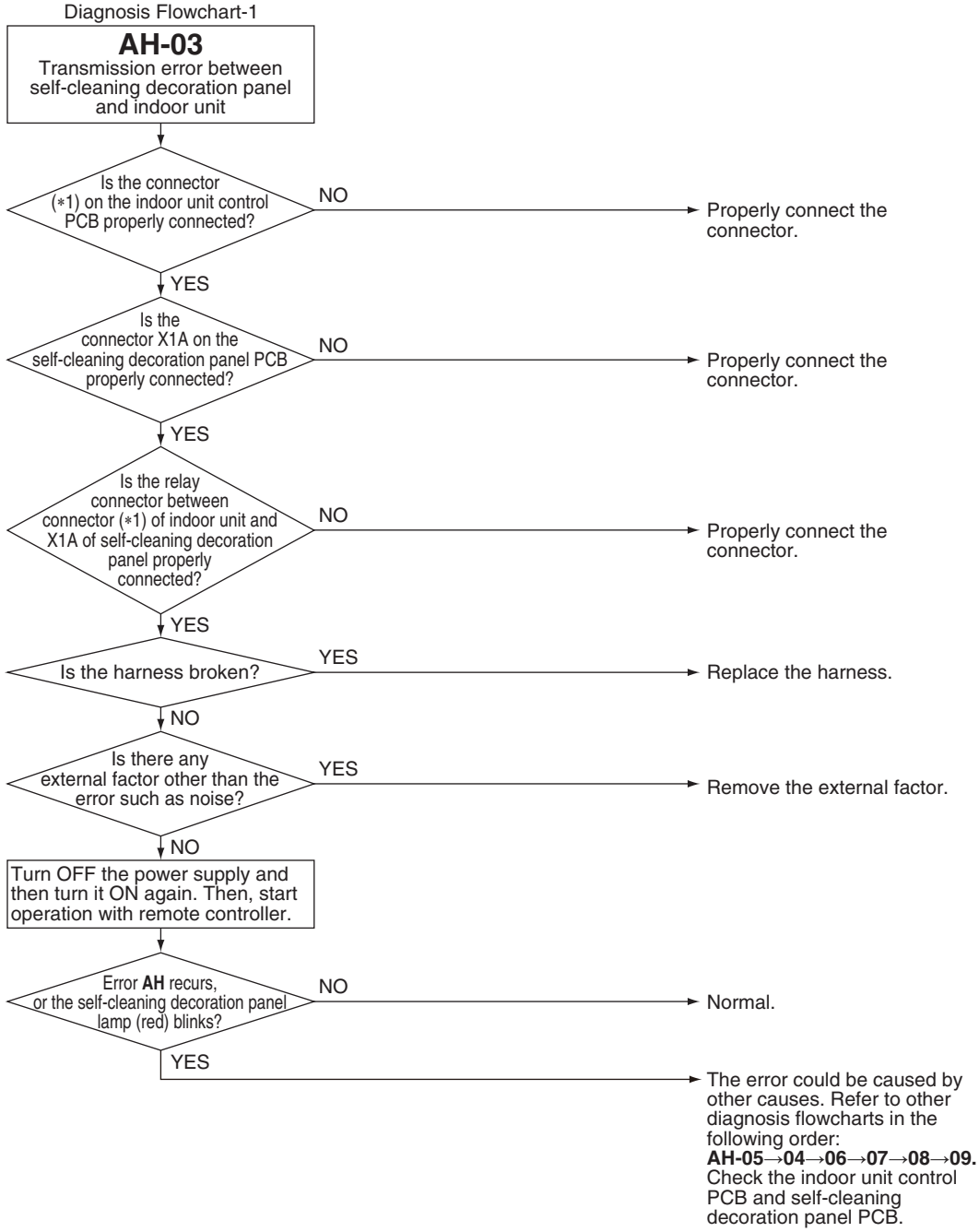


Reference Refer to the diagnosis flowchart below.

Error code	Diagnosis Flowchart
AH-03	Diagnosis Flowchart-1 on page 238
AH-04	Diagnosis Flowchart-2 on page 239
AH-05	Diagnosis Flowchart-3 on page 240
AH-06	Diagnosis Flowchart-4 on page 241
AH-07	Diagnosis Flowchart-5 on page 243
AH-08	Diagnosis Flowchart-6 on page 245
AH-09	Diagnosis Flowchart-7 on page 246

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

Diagnosis Flowchart-1

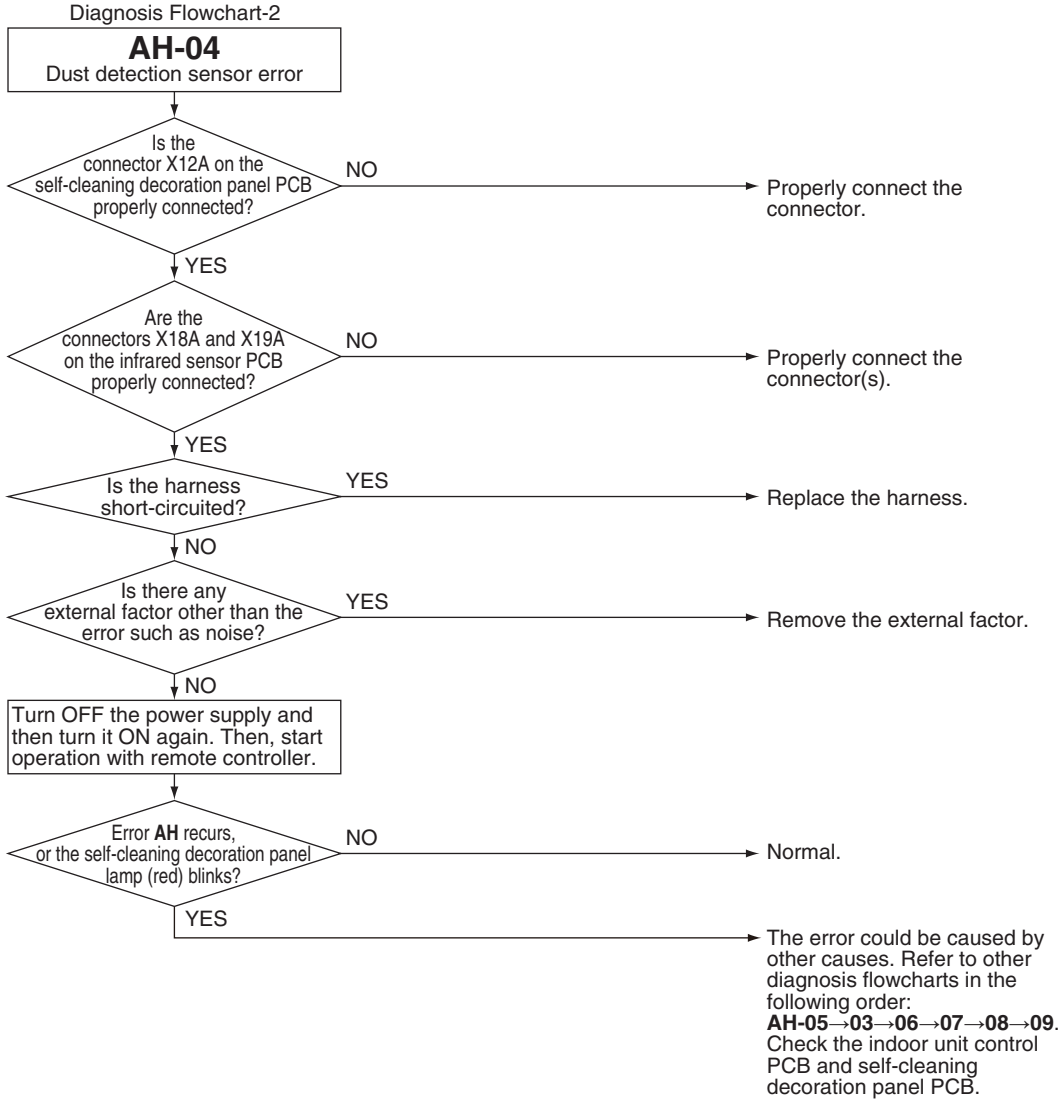


Note(s) ∗1. Connector

Model	Connector
FXFQ-AA	X70A
FXFQ-T	X8A

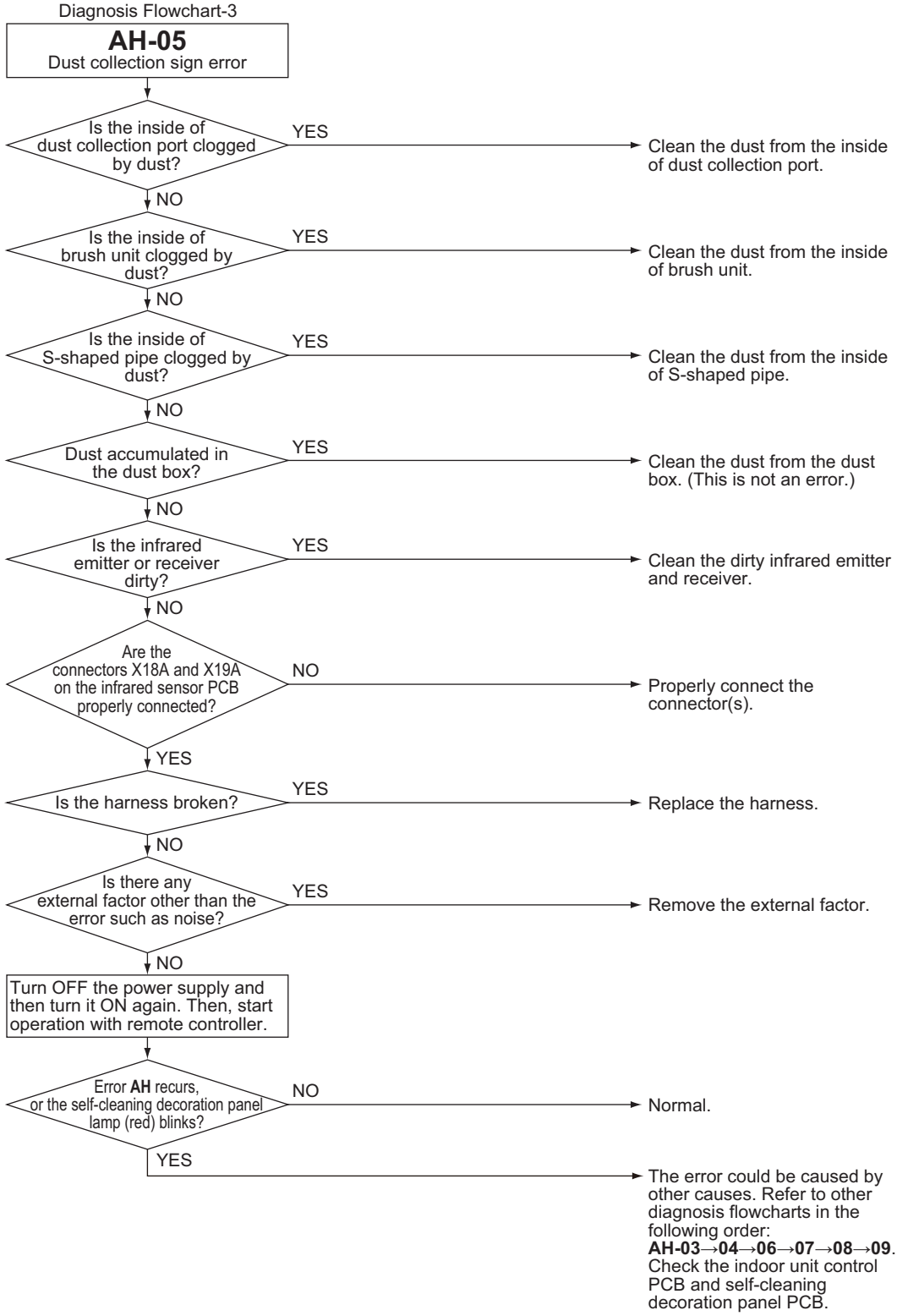
Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.

Diagnosis Flowchart-2



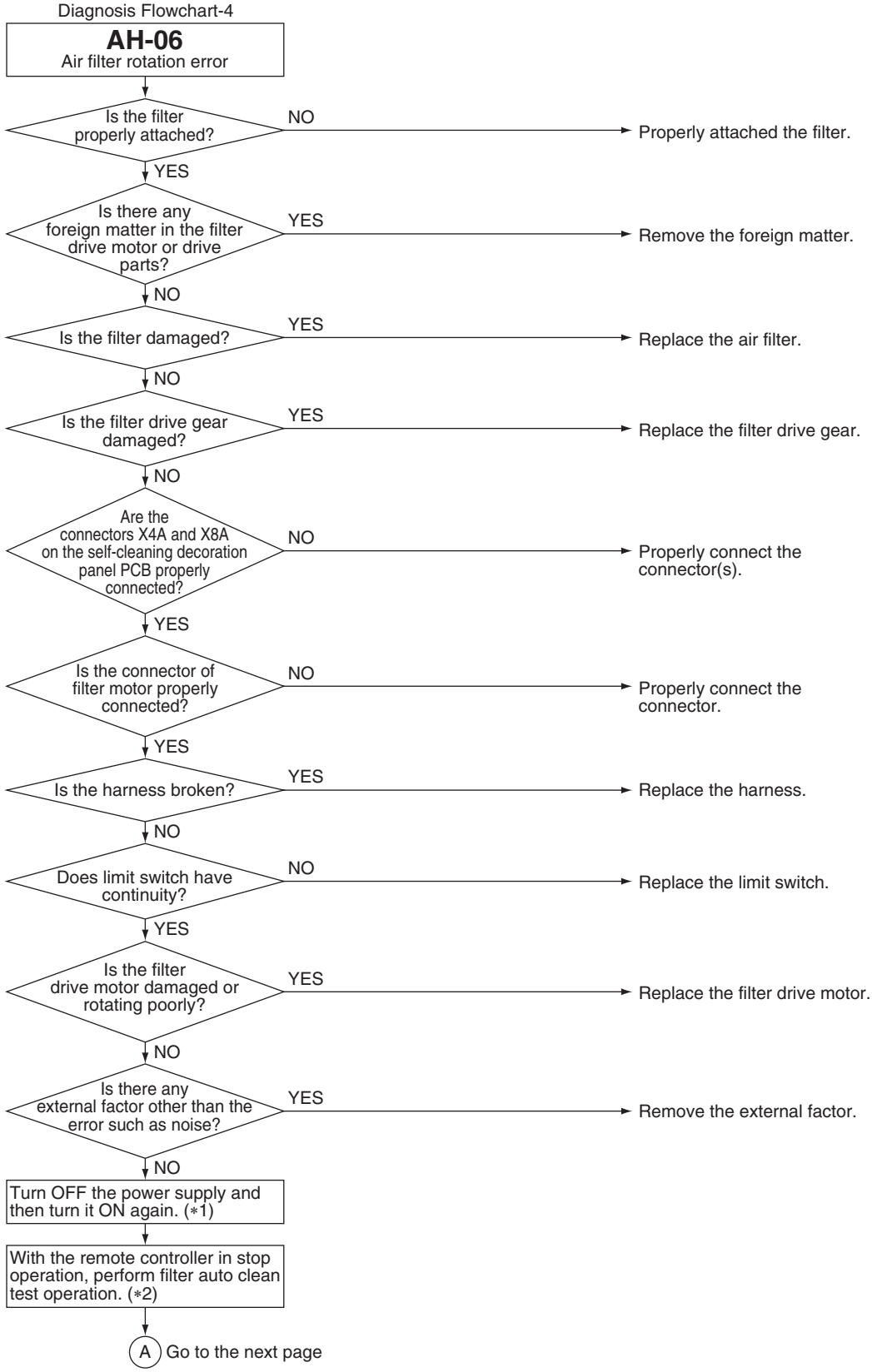
Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.

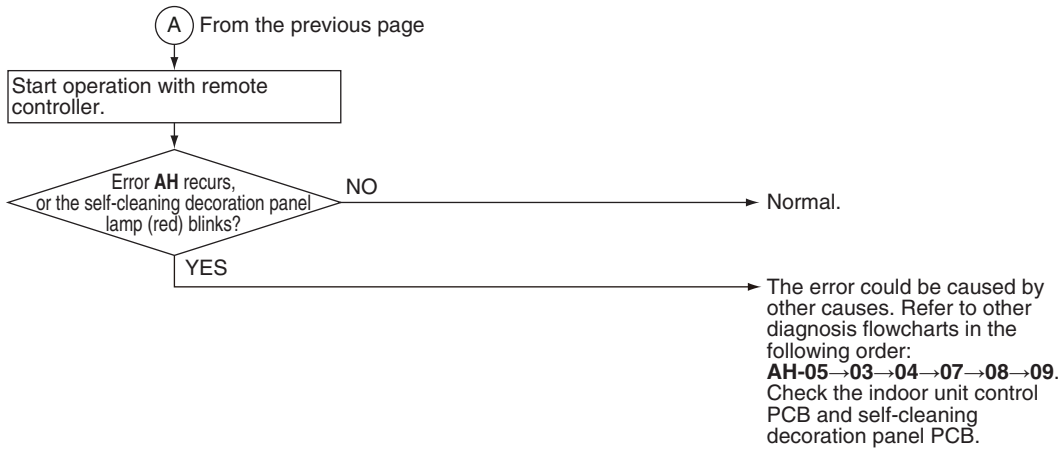
Diagnosis Flowchart-3



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

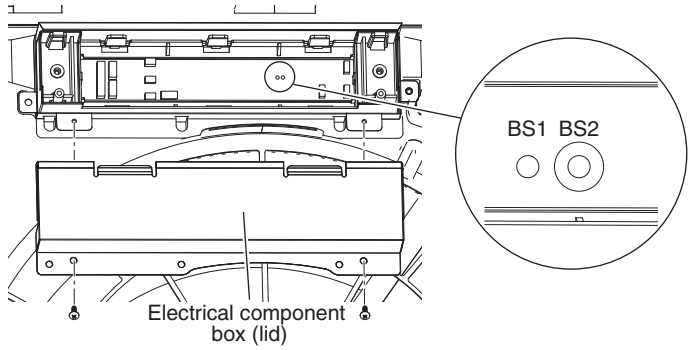
Diagnosis Flowchart-4





Note(s)

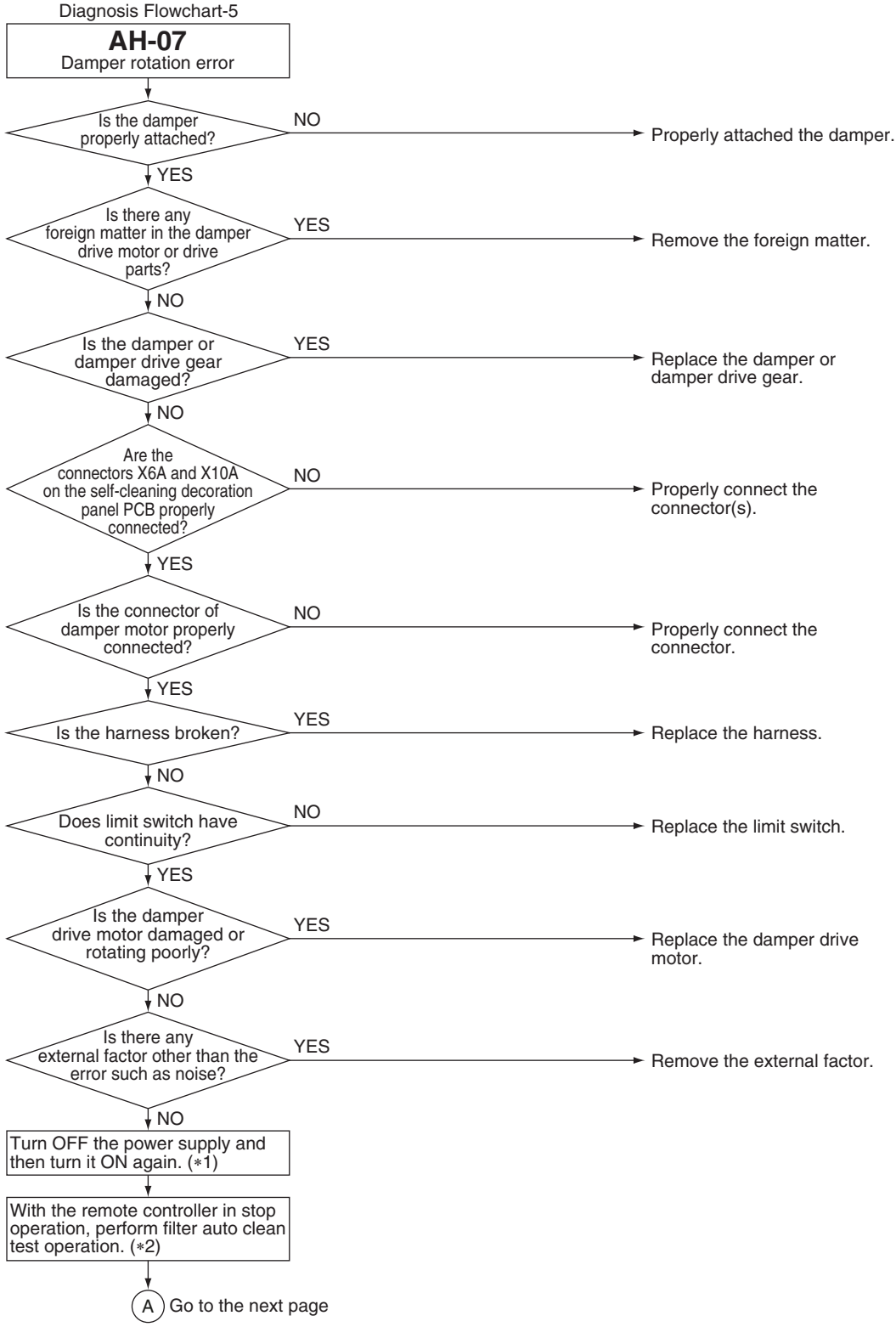
∗1. Temporary error code reset operation can be performed by pressing the push switch button **(BS2)** on the self-cleaning decoration panel PCB

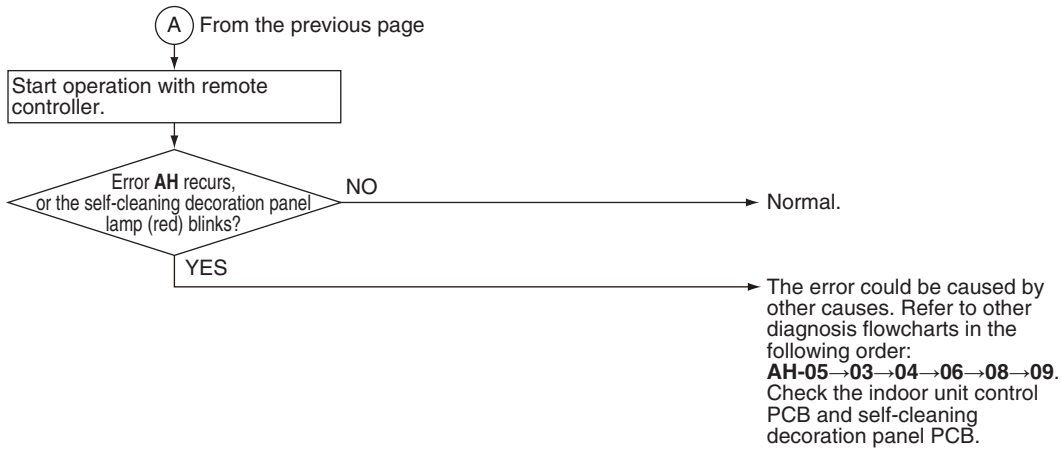


∗2. For details on performing filter auto clean test operation, refer to the operation manual of the self-cleaning decoration panel.

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

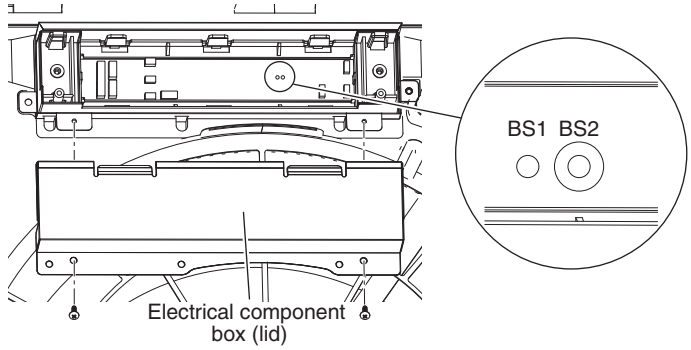
Diagnosis Flowchart-5





Note(s)

∗1. Temporary error code reset operation can be performed by pressing the push switch button **(BS2)** on the self-cleaning decoration panel PCB



∗2. For details on performing filter auto clean test operation, refer to the operation manual of the self-cleaning decoration panel.

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

Diagnosis Flowchart-6

AH-08
Filter auto clean operation error

Is there any external factor other than the error such as noise?
- YES → Remove the external factor.
- NO ↓

Turn OFF the power supply and then turn it ON again. (∗1)

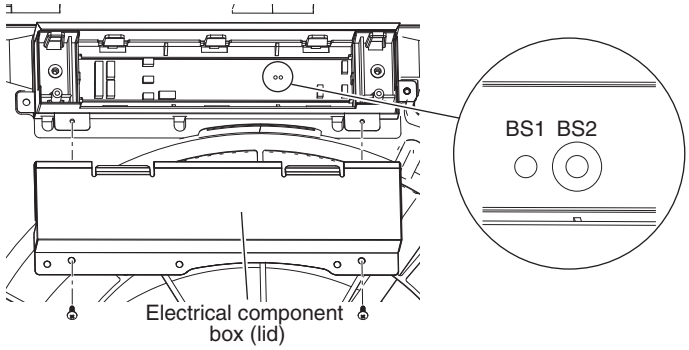
With the remote controller in stop operation, perform filter auto clean test operation. (∗2)

Start operation with remote controller.

Error **AH** recurs, or the self-cleaning decoration panel lamp (red) blinks?
- NO → Normal.
- YES → The error could be caused by other causes. Refer to other diagnosis flowcharts in the following order: **AH-05→03→04→06→07→09**. Check the indoor unit control PCB and self-cleaning decoration panel PCB.

Note(s)

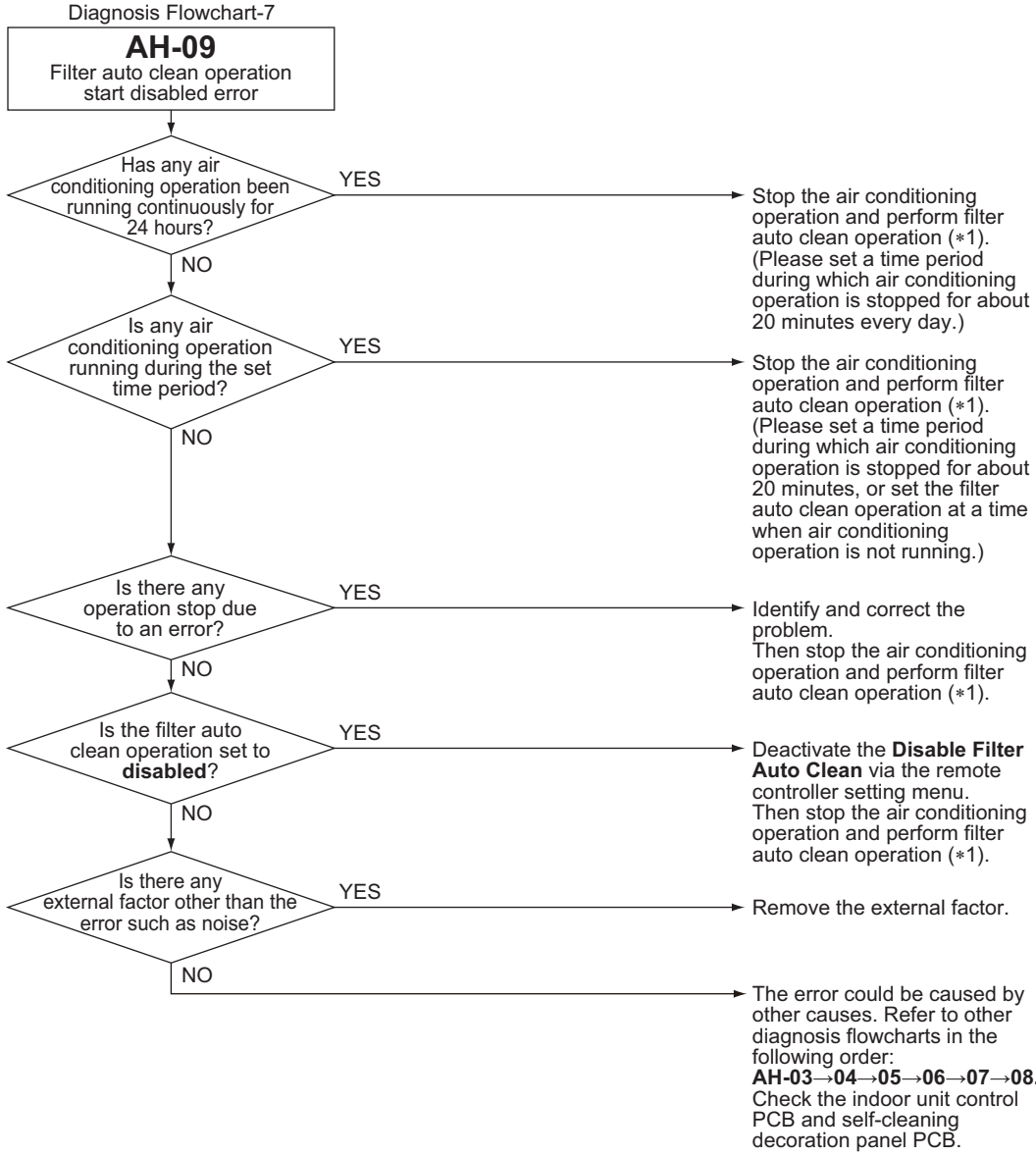
∗1. Temporary error code reset operation can be performed by pressing the push switch button **(BS2)** on the self-cleaning decoration panel PCB



∗2. For details on performing filter auto clean test operation, refer to the operation manual of the self-cleaning decoration panel.

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

Diagnosis Flowchart-7



Note(s)

∗1. If the filter auto clean operation mode is set to a designated time period, perform a filter auto clean operation as described below to clear the **AH** error code. (If scheduled operation time is not set, the filter auto clean operation will be performed automatically after air conditioning operation is stopped, so the following operation is unnecessary.)

1. On the remote controller, select **Filter Auto Clean** menu. The screen will change into a cleaning time period setting screen. Confirm the set time period. (Example: 0:00 to 3:00)
2. Select **Clock & Calendar** on the remote controller and set the current time to the time one minute before the beginning of the time set in step 1. (Example: If the set time is from 0:00 to 3:00, set the current time to 23:59, one minute before 0:00)
3. After about 1 minute, filter auto clean operation will start. (**AH** error cleared)
4. After confirming that the filter auto clean operation is finished, return the time changed in step 2 to the regular time.

5.17 Defective Capacity Setting

Applicable Models

All indoor unit models

Error Code

AJ

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 control PCB, and whether the value is normal or abnormal is determined.

Error Decision Conditions

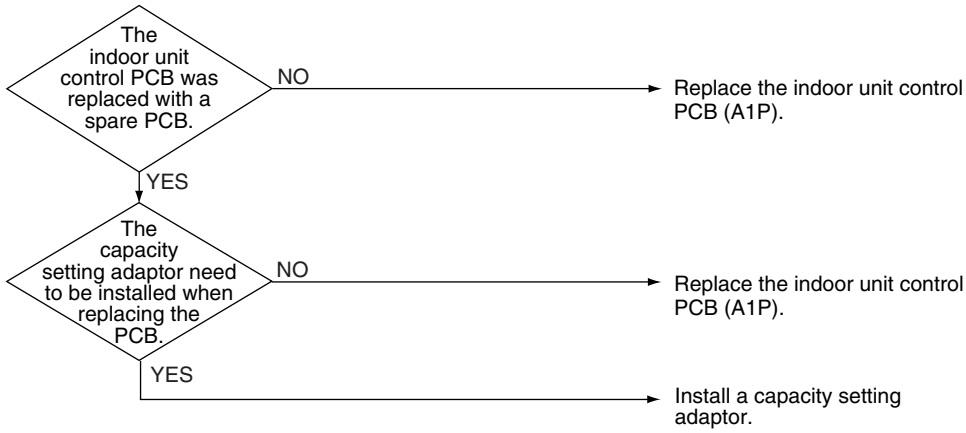
When the capacity code is not saved to the PCB, and the capacity setting adaptor is not connected.
When a capacity that does not exist for that unit is set.

Supposed Causes

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

Troubleshooting

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

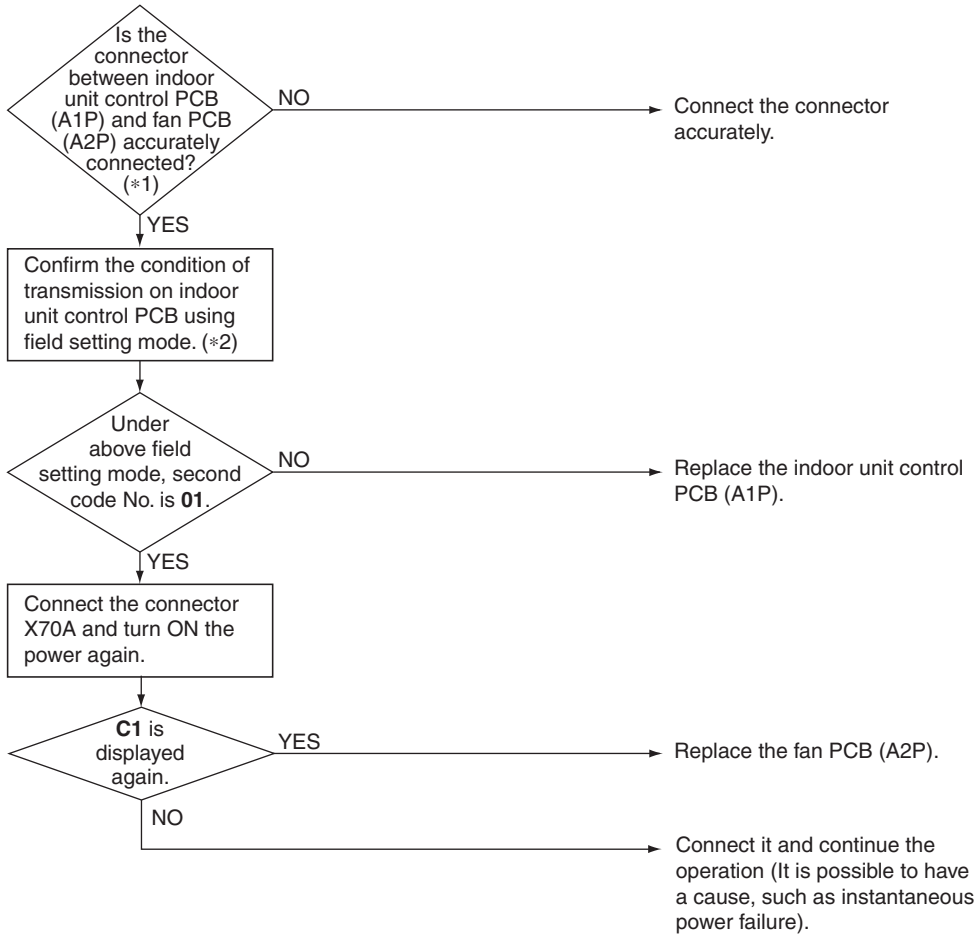


5.18 Transmission Abnormality between Indoor Unit Control PCB and Fan PCB

Applicable Models	FXSQ-TA, FXSQ-TB, FXMQ-PB, FXMQ-TB
Error Code	**C1**
Method of Error Detection	Transmission conditions between the indoor unit control PCB (A1P) and fan PCB (A2P) are checked via microcomputer.
Error Decision Conditions	When normal transmission is not carried out for a certain duration.
Supposed Causes	■ Connection defective the connector between indoor unit control PCB (A1P) and fan PCB (A2P) ■ Defective indoor unit control 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(s)

∗1. Pull out and insert the connector once and check if it is absolutely connected.
∗2. Method to check transmission part of indoor unit control PCB.
(1) Turn OFF the power and remove the connector X70A of indoor unit control 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 control PCB

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

5.19 Blower Motor Communication Error

Applicable Models	FXTQ-TA, FXTQ-TB
Error Code	**C1-07**
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.

5.20 Thermistor Abnormality

Applicable Models

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

Error Code

C4, C5, C9, CA

Method of Error Detection

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

Error Decision Conditions

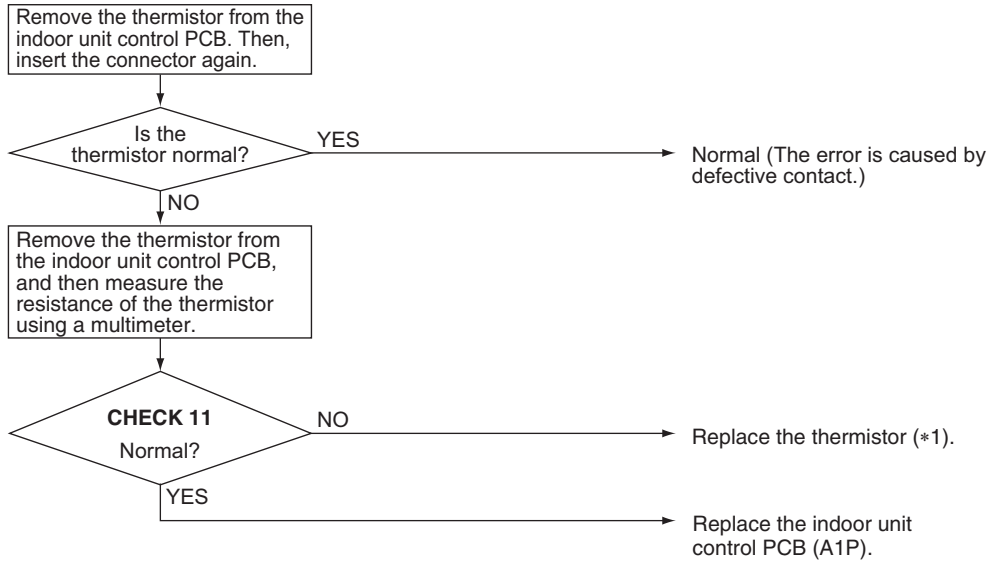
The thermistor becomes disconnected or shorted while the unit is running.

Supposed Causes

- Defective thermistor
- Defective indoor unit control 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(s)

∗1. Error code and thermistor

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

∗2. Refer to page 255 for **C9** for FXTQ-PA, FXTQ-TA, and FXTQ-TB models.

Reference

CHECK 11 Refer to page 329.

5.21 Combination Error between Indoor Unit Control PCB and Fan PCB

Applicable Models

FXSQ-TA, FXSQ-TB, FXMQ-PB, FXMQ-TB

Error Code

C6

Method of Error Detection

Check the condition of transmission with fan PCB (A2P) using indoor unit control PCB (A1P).

Error Decision Conditions

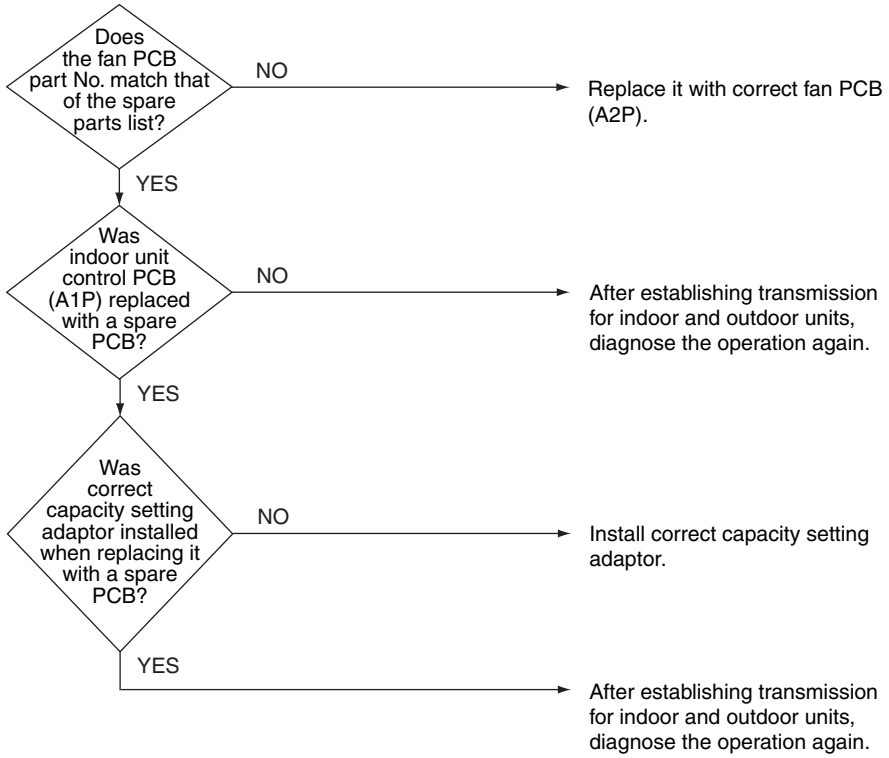
When the communication data of fan PCB (A2P) is determined as incorrect.

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.



5.22 Blower Motor HP Mismatch

Applicable Models	FXTQ-TA, FXTQ-TB
Error Code	**C6-01**
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.

5.23 Indoor Blower Does Not Have Required Parameters to Function

Applicable Models

FXTQ-TA, FXTQ-TB

Error Code

C6-02

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.

5.24 Remote Sensor Abnormality

Applicable Models

FXTQ-PA, FXTQ-TA, FXTQ-TB

Error Code

C9

Method of Error Detection

The error is detected by remote sensor temperature.

Error Decision Conditions

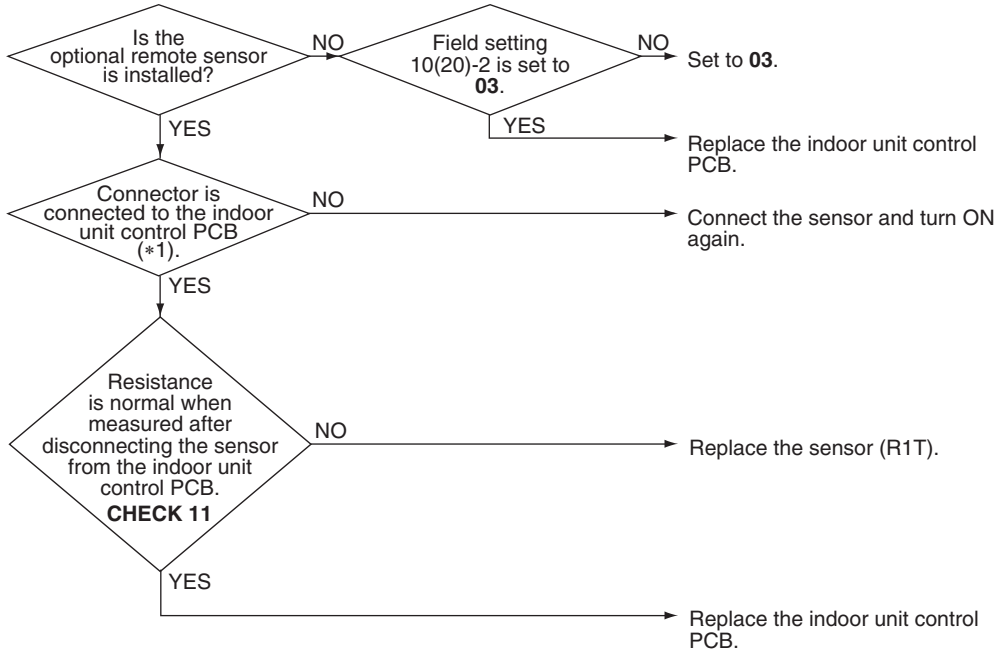
When the remote sensor becomes disconnected or shorted while the unit is running.

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(s)

*1. Connector and indoor unit control PCB

Model	Connector for remote sensor	PCB
FXTQ-PA	X16A	A1P
FXTQ-TA FXTQ-TB	X4A	A1P

Reference

CHECK 11 Refer to page 329.

5.25 Humidity Sensor System Abnormality

Applicable Models

FXFQ-P

Error Code

CC

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

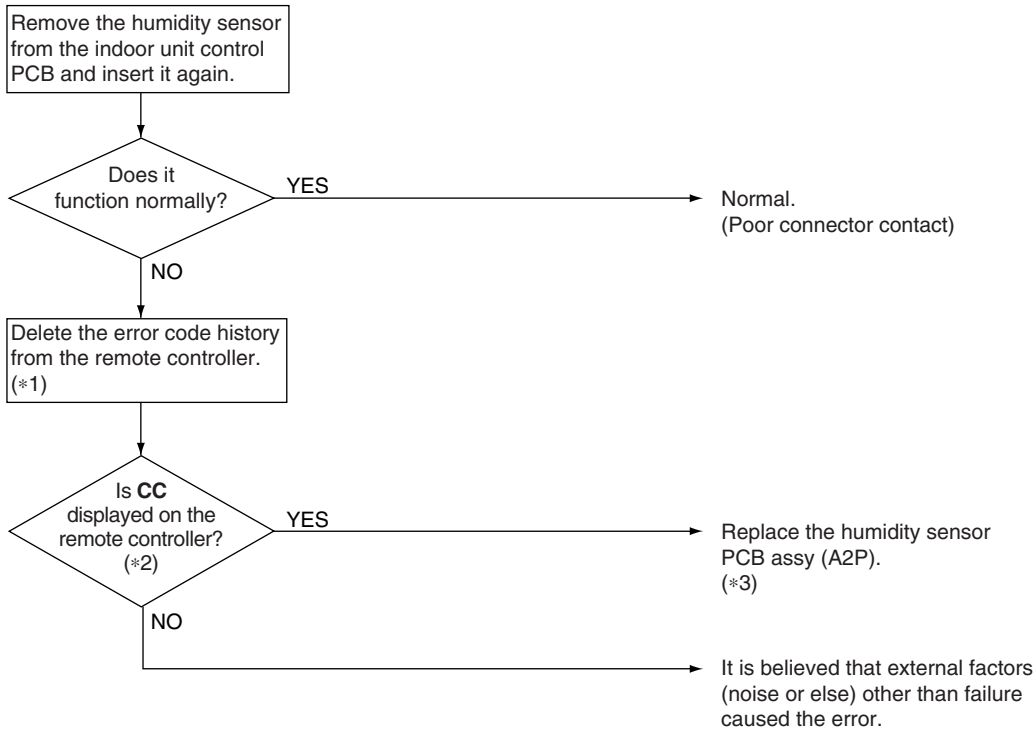
When the moisture sensor is disconnected or short circuited

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(s)

∗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 (A2P) and taking the steps ∗1 and ∗2, replace the indoor unit control PCB (A1P).

5.26 Infrared Presence/Floor Sensor Error

Applicable Models

FXFQ-AA, FXFQ-T, FXZQ-TA, FXZQ-TB, FXUQ-P, FXUQ-PA

Error Code

CE

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

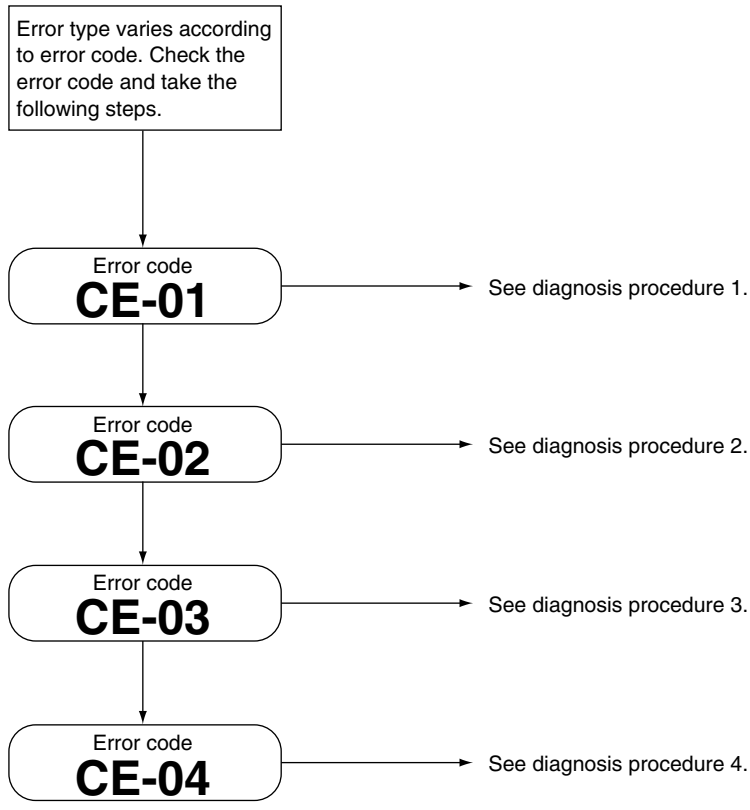
Error is detected based on sensor output signals

Supposed Causes

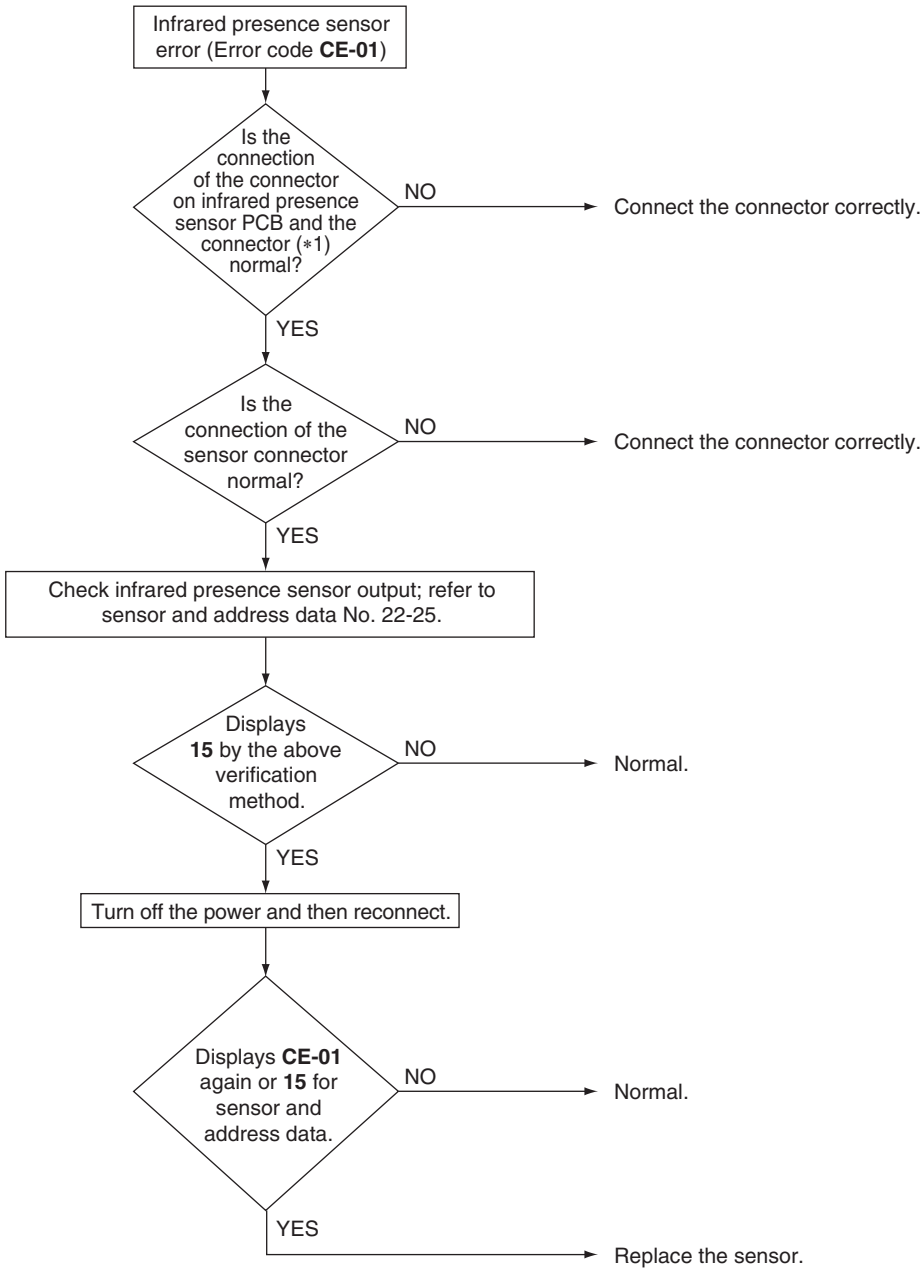
- Defective or disconnected infrared presence sensor connector: **CE-01**
- Defective infrared floor sensor (Temperature compensation circuit disconnection): **CE-02**
- Defective infrared floor sensor (Temperature compensation short circuit): **CE-03**
- Defective infrared floor sensor element: **CE-04**

Troubleshooting

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



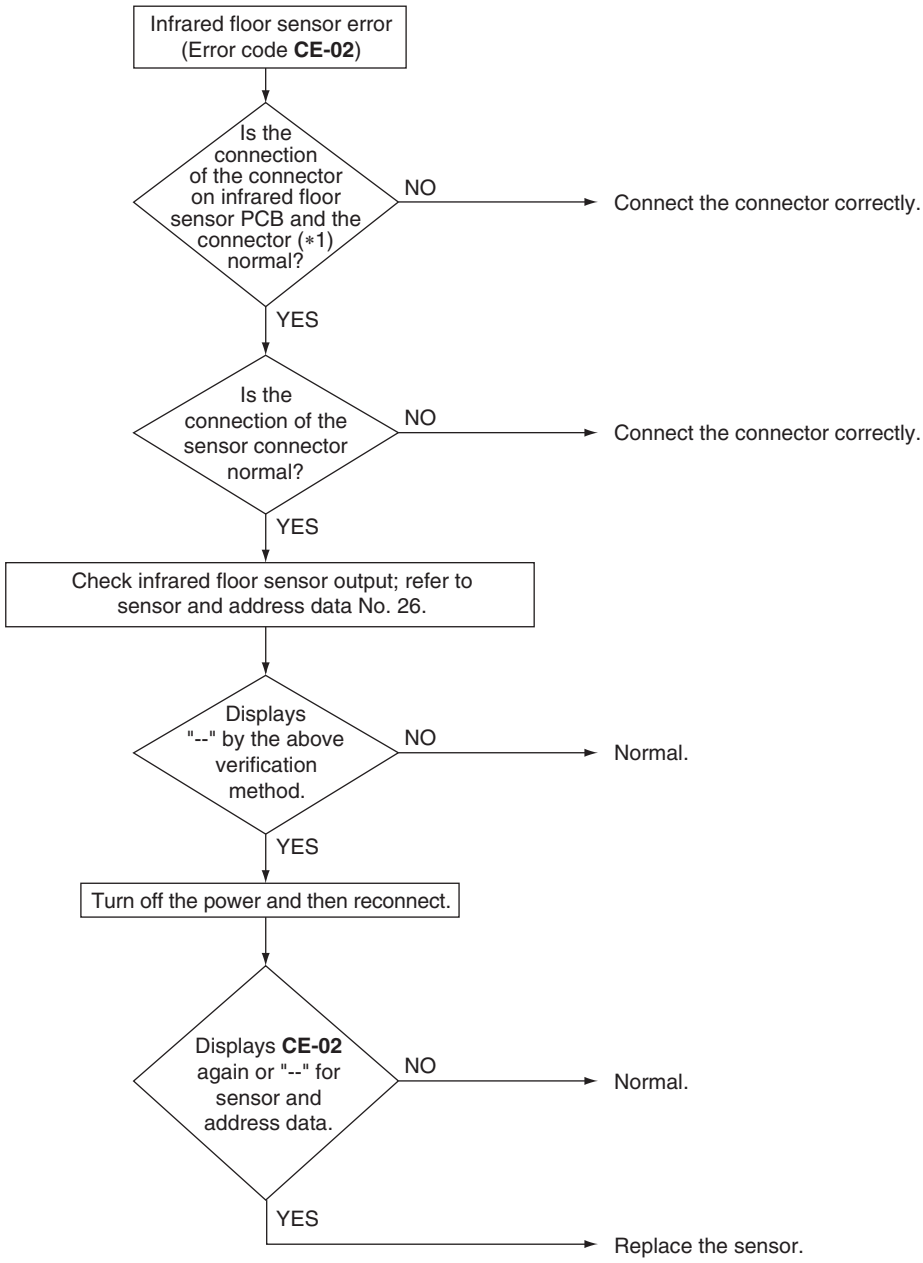
Diagnosis procedure 1



Note(s) ∗1. Infrared presence sensor PCB and connector

Model	Infrared presence sensor PCB	Connector
FXFQ-AA	A3P	X81A (A1P)
FXFQ-T	A4P	X2A (A2P)
FXZQ-TA	A5P	X110A (A6P)
FXZQ-TB	A5P	X81A (A1P)
FXUQ-P	A4P	X81A (A1P)
FXUQ-PA	A4P	X81A (A1P)

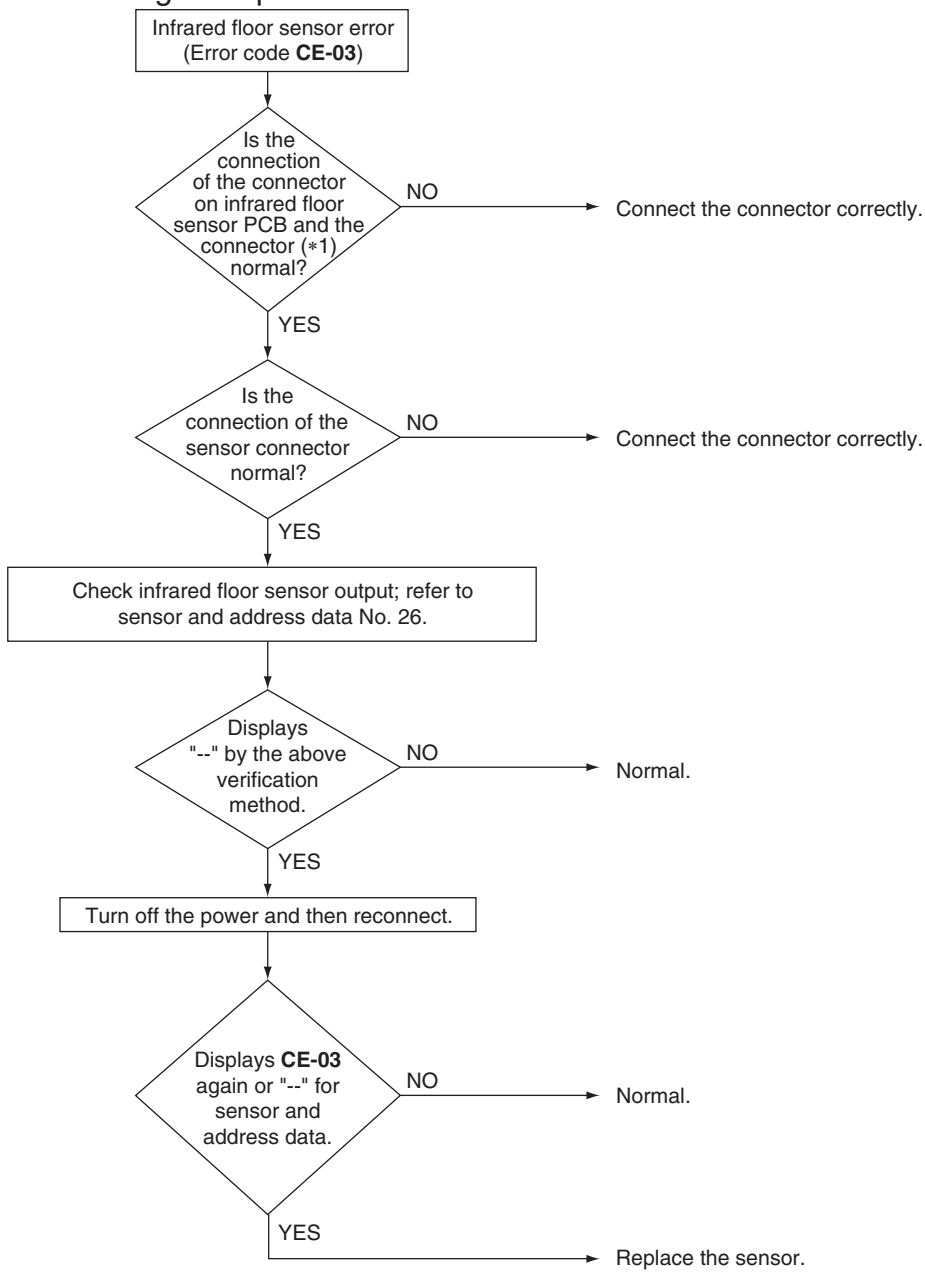
Diagnosis procedure 2



Note(s) ∗1. Infrared floor sensor PCB and connector

Model	Infrared floor sensor PCB	Connector
FXFQ-AA	A2P	X81A (A1P)
FXFQ-T	A3P	X2A (A2P)
FXZQ-TA	A4P	X110A (A6P)
FXZQ-TB	A4P	X81A (A1P)
FXUQ-P	A3P	X81A (A1P)
FXUQ-PA	A3P	X81A (A1P)

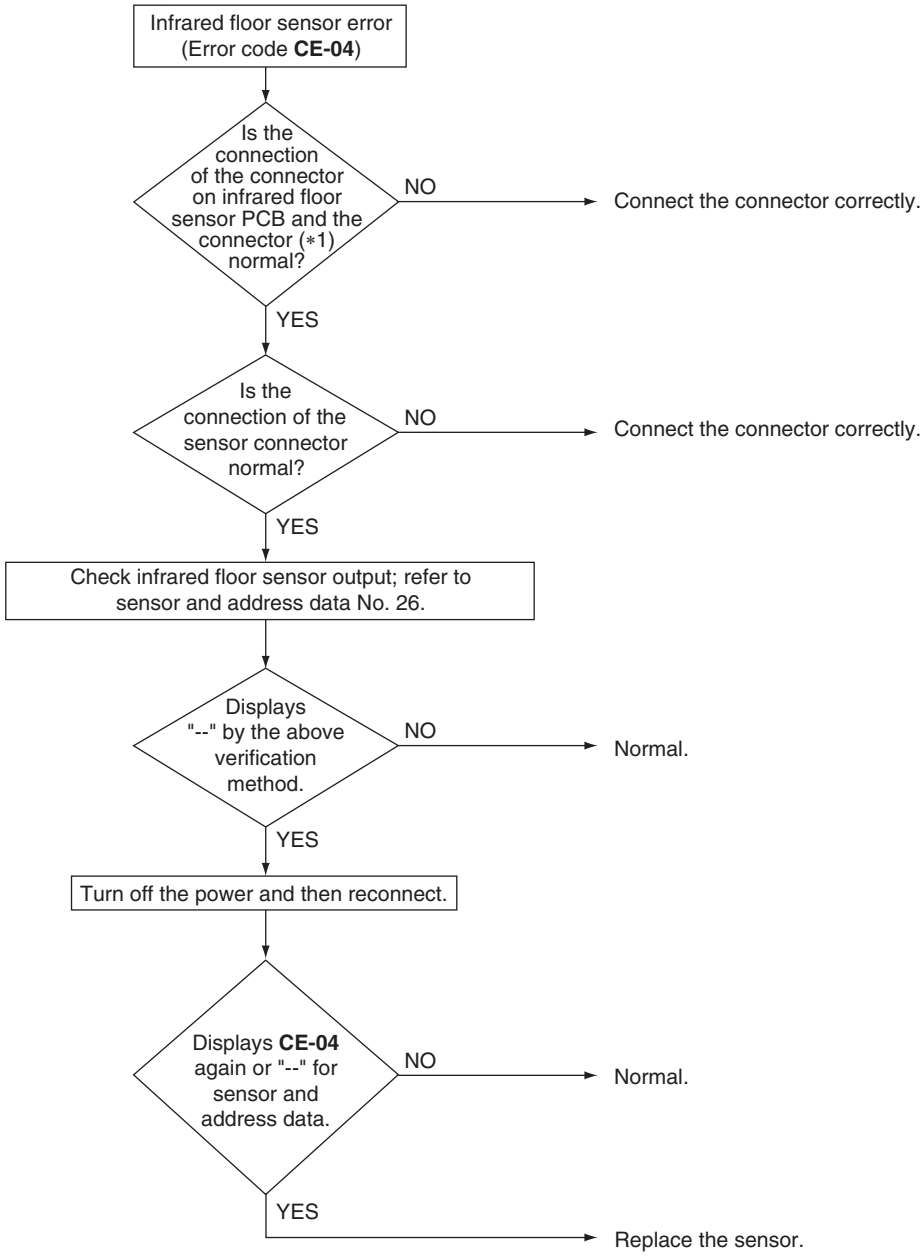
Diagnosis procedure 3



Note(s) ∗1. Infrared floor sensor PCB and connector

Model	Infrared floor sensor PCB	Connector
FXFQ-AA	A2P	X81A (A1P)
FXFQ-T	A3P	X2A (A2P)
FXZQ-TA	A4P	X110A (A6P)
FXZQ-TB	A4P	X81A (A1P)
FXUQ-P	A3P	X81A (A1P)
FXUQ-PA	A3P	X81A (A1P)

Diagnosis procedure 4



Note(s) ∗1. Infrared floor sensor PCB and connector

Model	Infrared floor sensor PCB	Connector
FXFQ-AA	A2P	X81A (A1P)
FXFQ-T	A3P	X2A (A2P)
FXZQ-TA	A4P	X110A (A6P)
FXZQ-TB	A4P	X81A (A1P)
FXUQ-P	A3P	X81A (A1P)
FXUQ-PA	A3P	X81A (A1P)

5.27 Remote Controller Thermistor Abnormality

Applicable Models

All indoor unit models

Error Code

CJ

Method of Error Detection

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

Error Decision Conditions

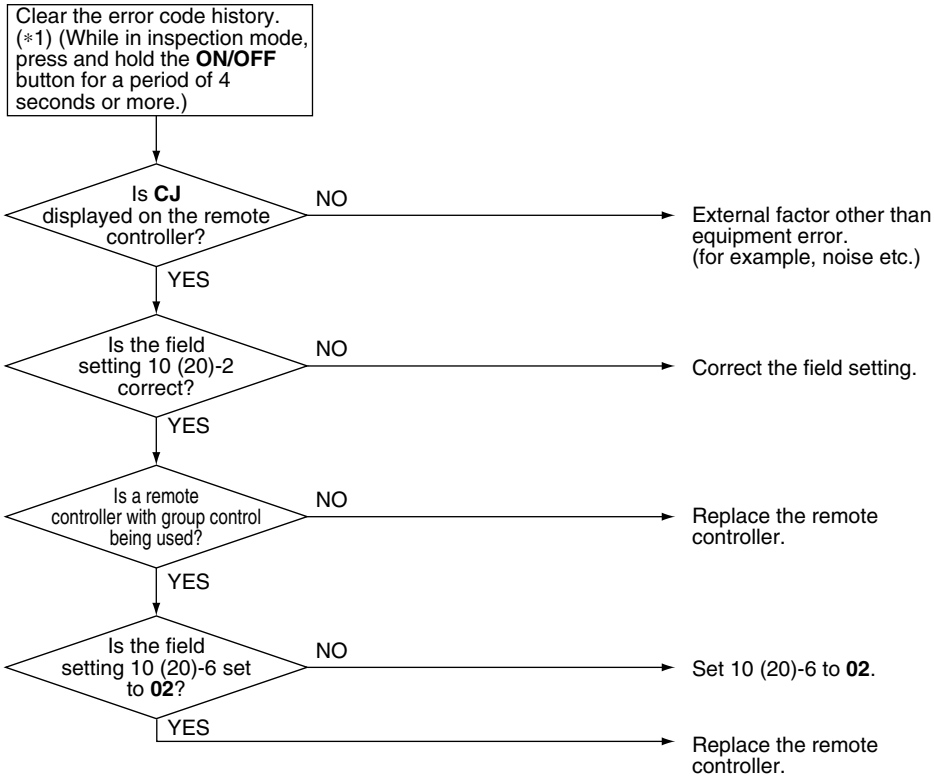
The remote controller thermistor becomes disconnected or shorted while the unit is running.
∗ Error code is displayed but the system operates continuously.

Supposed Causes

- Defective 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(s)

∗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.

5.28 Outdoor Unit Main PCB Abnormality

Applicable Models

All outdoor unit models

Error Code

E1

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

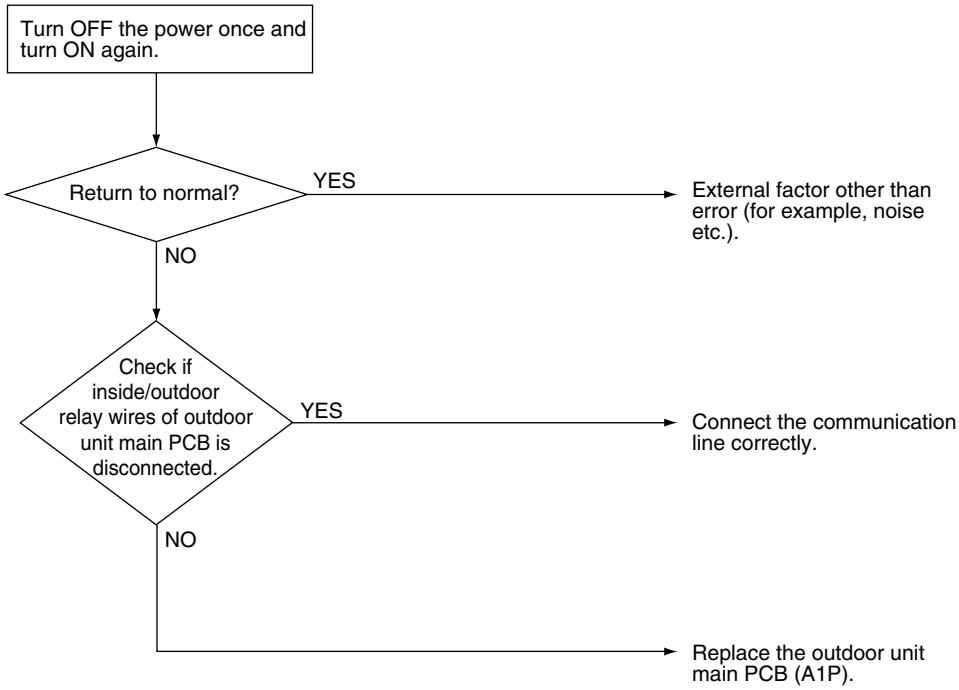
When the communication conditions in the hardware section between the indoor unit and the outdoor unit are not normal.

Supposed Causes

- Defective outdoor unit main PCB (A1P)
- Defective connection communication line between indoor and outdoor units

Troubleshooting

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



5.29 Activation of High Pressure Switch

Applicable Models

All outdoor unit models

Error Code

E3

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

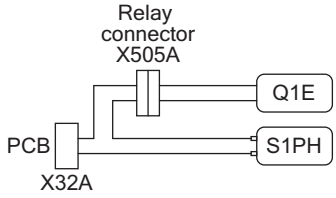
- Activation of high pressure switch
- Defective high pressure switch
- Defective outdoor unit main PCB (A1P)
- Defective overload protector (TBVJUB models only)
- Momentary power failure
- Defective high pressure sensor
- Contact of crankcase heater to overload protector (TBVJUB models only)

Troubleshooting

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

Check for the following points:
(1) Is the stop valve open?
(2) Is the high pressure switch connector properly connected to the outdoor unit main PCB?
(3) Is there continuity across the high pressure switch? (∗1)
(4) Does the overload protector have continuity? (TBVJUB models only)(∗1)
(5) Is the crankcase heater installed correctly? (TBVJUB models only)

∗1. For TBVJUB models, the high pressure switch (S1PH) and the overload protector (Q1E) are connected in series. Please check the continuity of both.



Are the above points OK?

NO → Remedy defective points.

YES

(1) Mount a pressure gauge on the high pressure service port.
(2) Reset the operation using the remote controller, and then restart the operation.

Does the error **E3** recur?

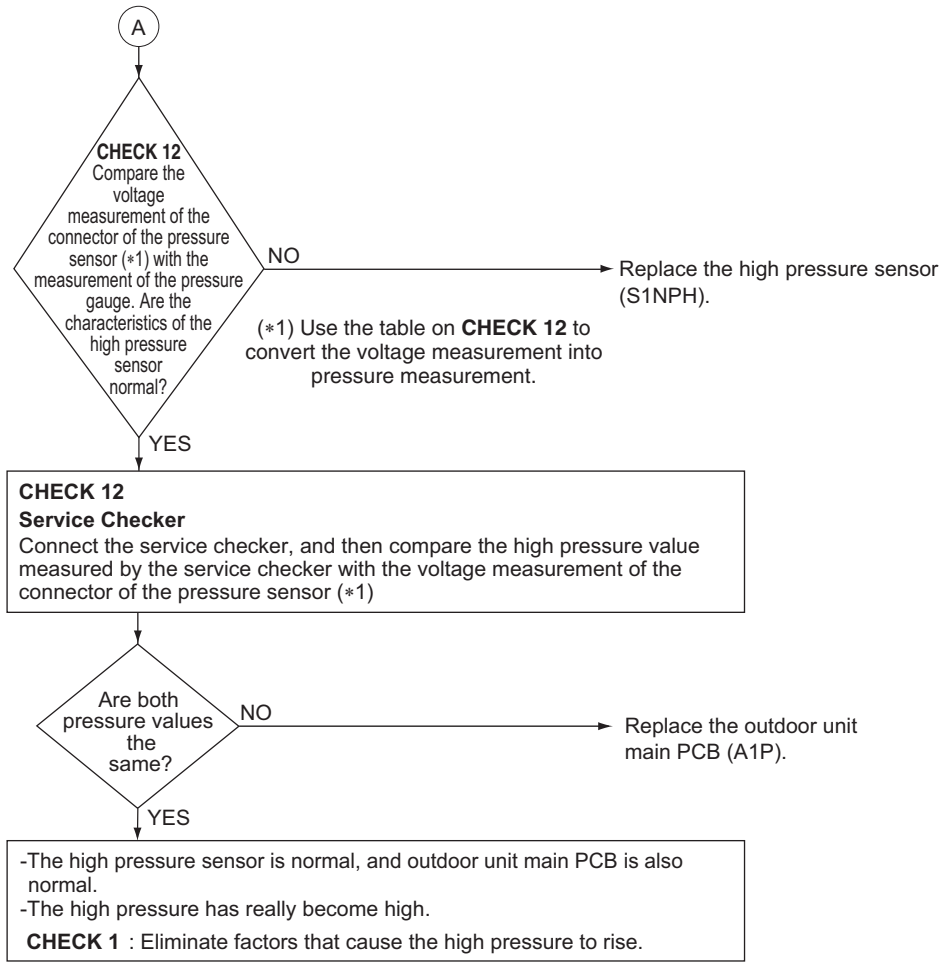
YES → Is the operating pressure of the high pressure switch normal (4.0 MPa (580 psi))?

NO → Replace the high pressure switch (S1PH).

YES

NO

A Go to the next page.



Reference **CHECK 1** Refer to page 318.

Reference **CHECK 12** Refer to page 332.

5.30 Activation of Low Pressure Sensor

Applicable Models

All outdoor unit models

Error Code

E4

Method of Error Detection

Make judgment of pressure detected by the low pressure sensor with the outdoor unit main PCB.

Error Decision Conditions

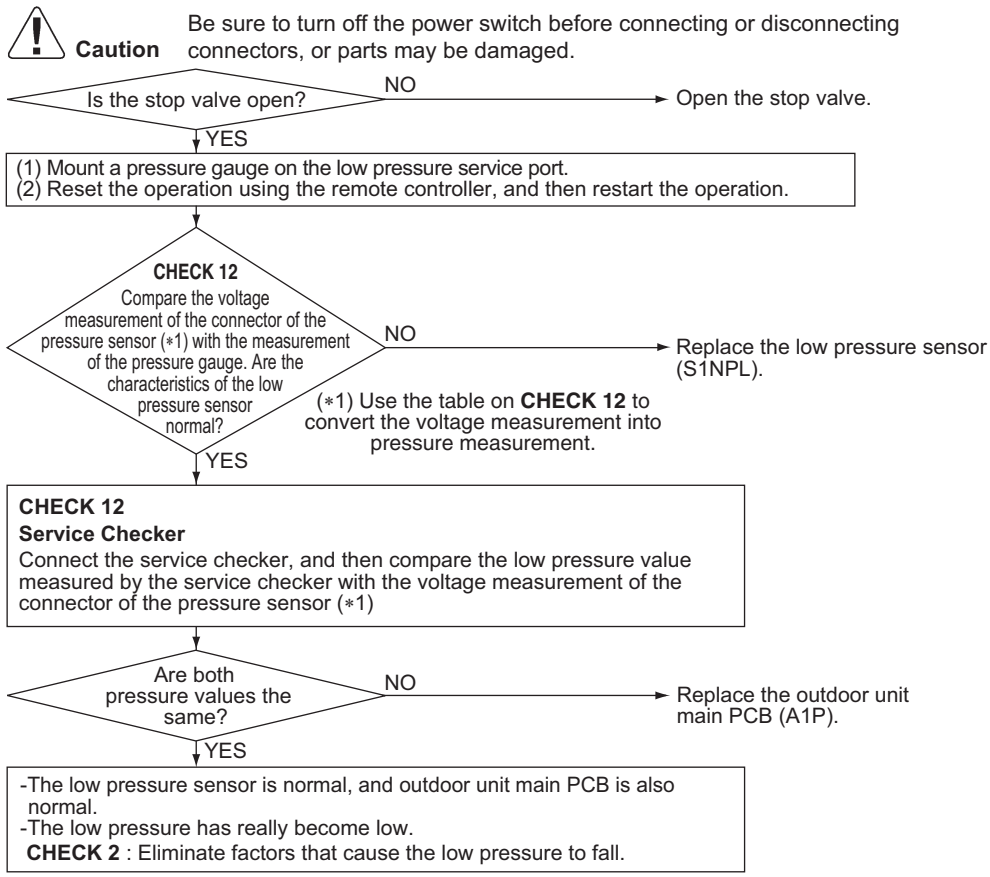
When low pressure caused a drop while the compressor is in operation:

- Operating pressure: 0.07 MPa (10.2 psi)

Supposed Causes

- Abnormal drop in low pressure
- Defective low pressure sensor
- Defective outdoor unit main PCB
- The stop valve is not opened

Troubleshooting



Reference **CHECK 2** Refer to page 319.

Reference **CHECK 12** Refer to page 332.

5.31 Compressor Motor Lock

Applicable Models

All outdoor unit models

Error Code

E5

Method of Error Detection

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

Error Decision Conditions

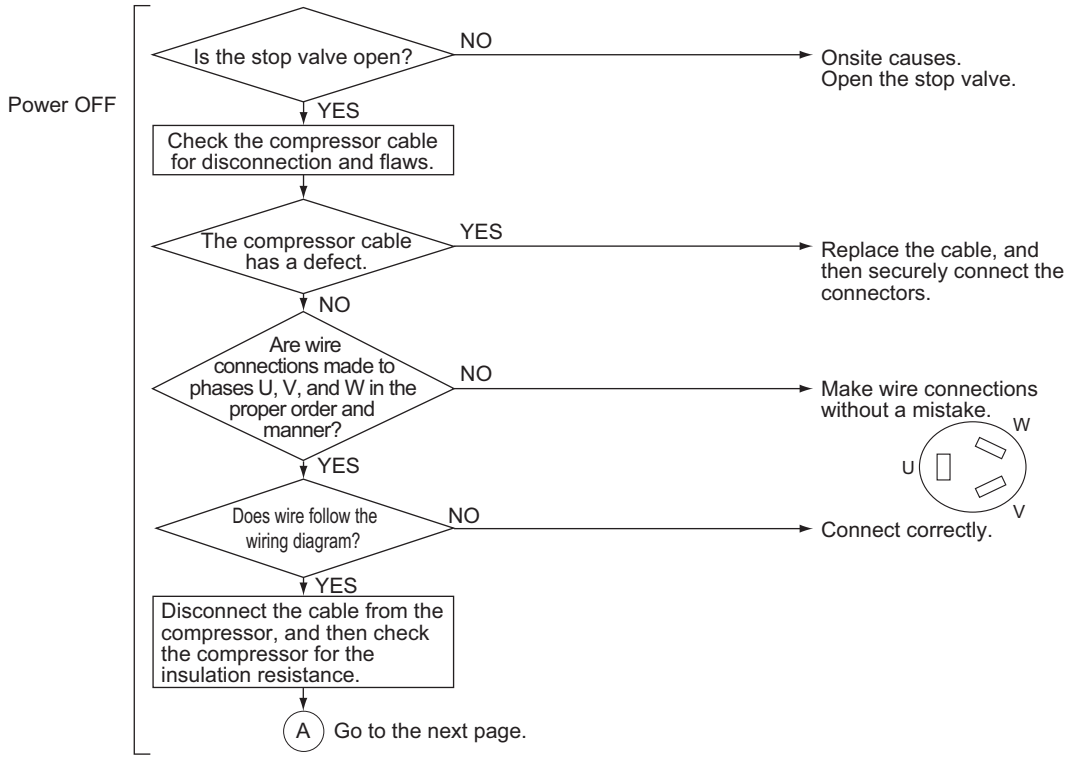
This error will be output when the compressor motor does not start up even in forced startup mode.

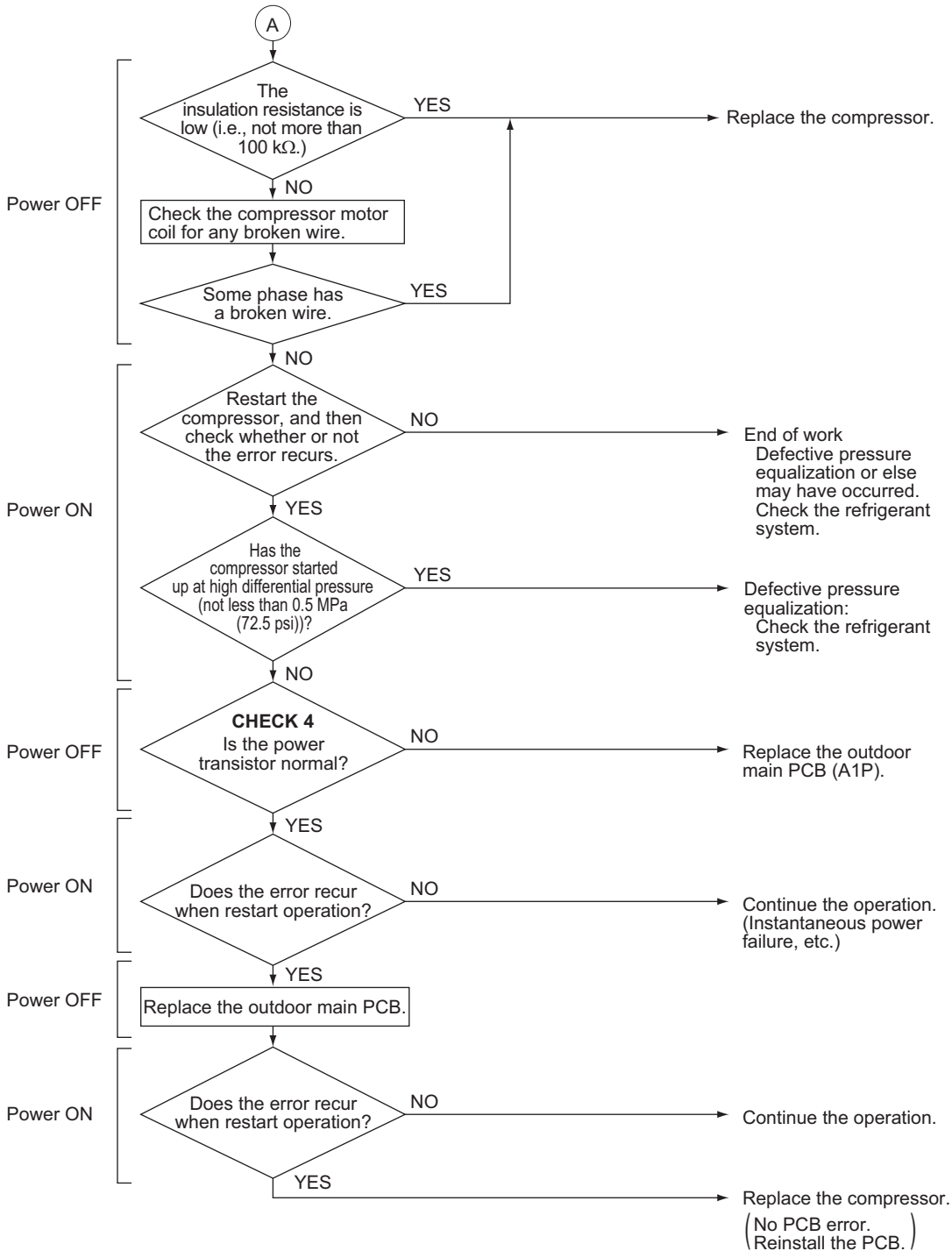
Supposed Causes

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

Troubleshooting

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





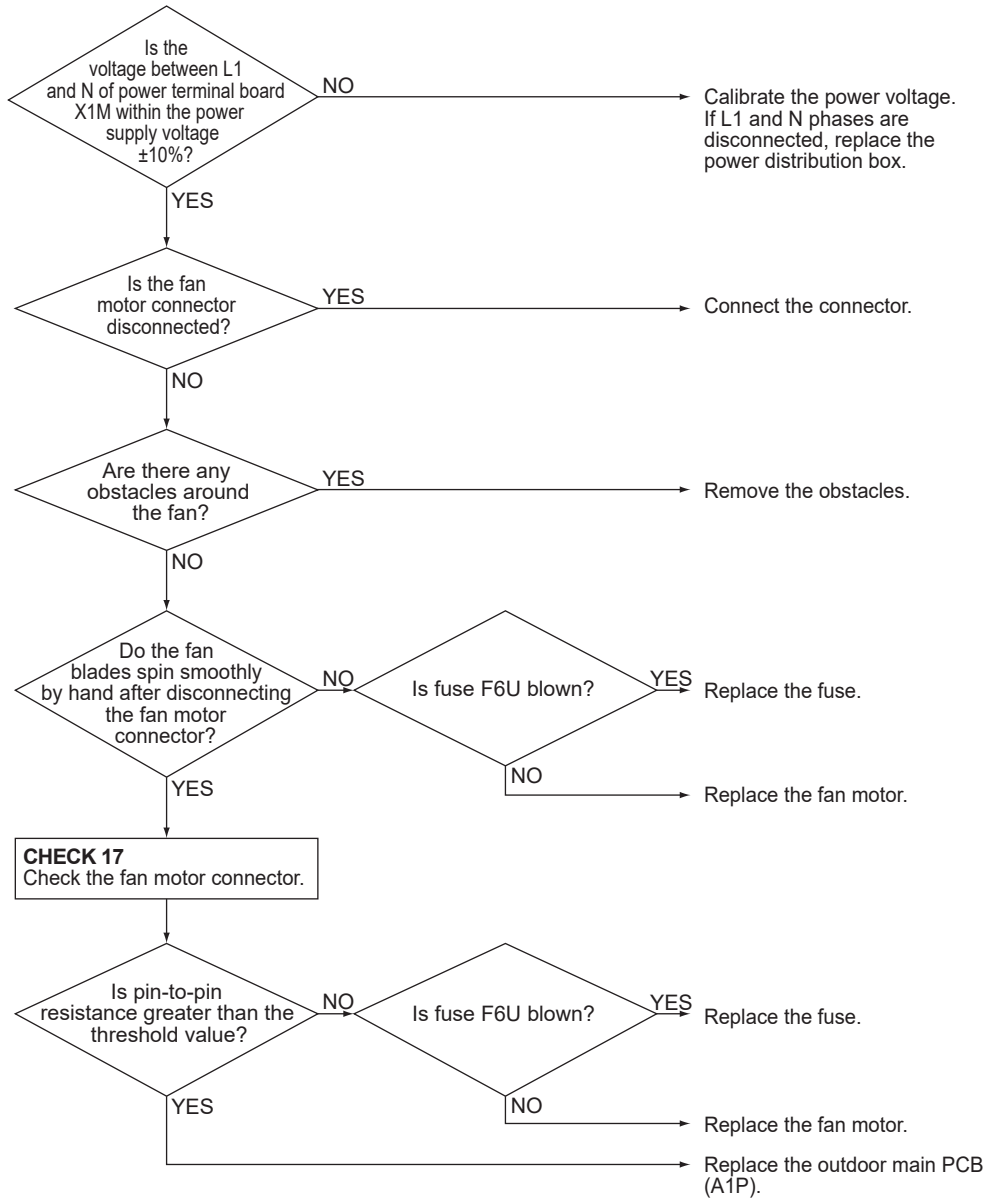
Reference **CHECK 4** Refer to page 323.

5.32 Outdoor Fan Motor Abnormality

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

Troubleshooting

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



Reference **CHECK 17** Refer to page 336.

5.33 Electronic Expansion Valve Coil Abnormality

Applicable Models

All outdoor unit models

Error Code

E9

Method of Error Detection

Check continuity of electronic expansion valve coil.

Error Decision Conditions

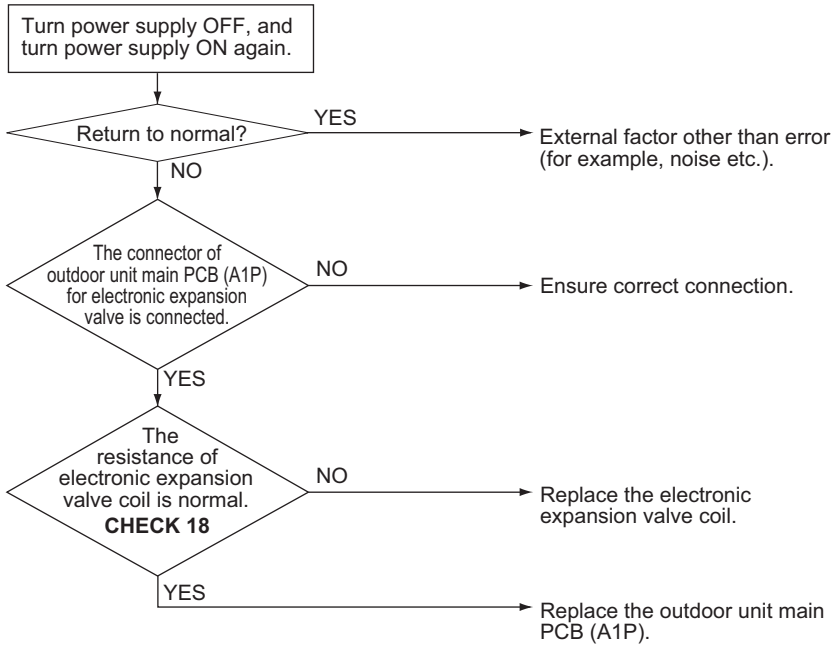
No current is detected in the common (COM [+]) when power supply is ON.

Supposed Causes

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

Troubleshooting

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



Reference **CHECK 18** Refer to page 338.

5.34 Discharge Pipe Temperature Abnormality

Applicable Models

All outdoor unit models

Error Code

F3

Method of Error Detection

Abnormality is detected according to the temperature detected by the discharge pipe thermistor.

Error Decision Conditions

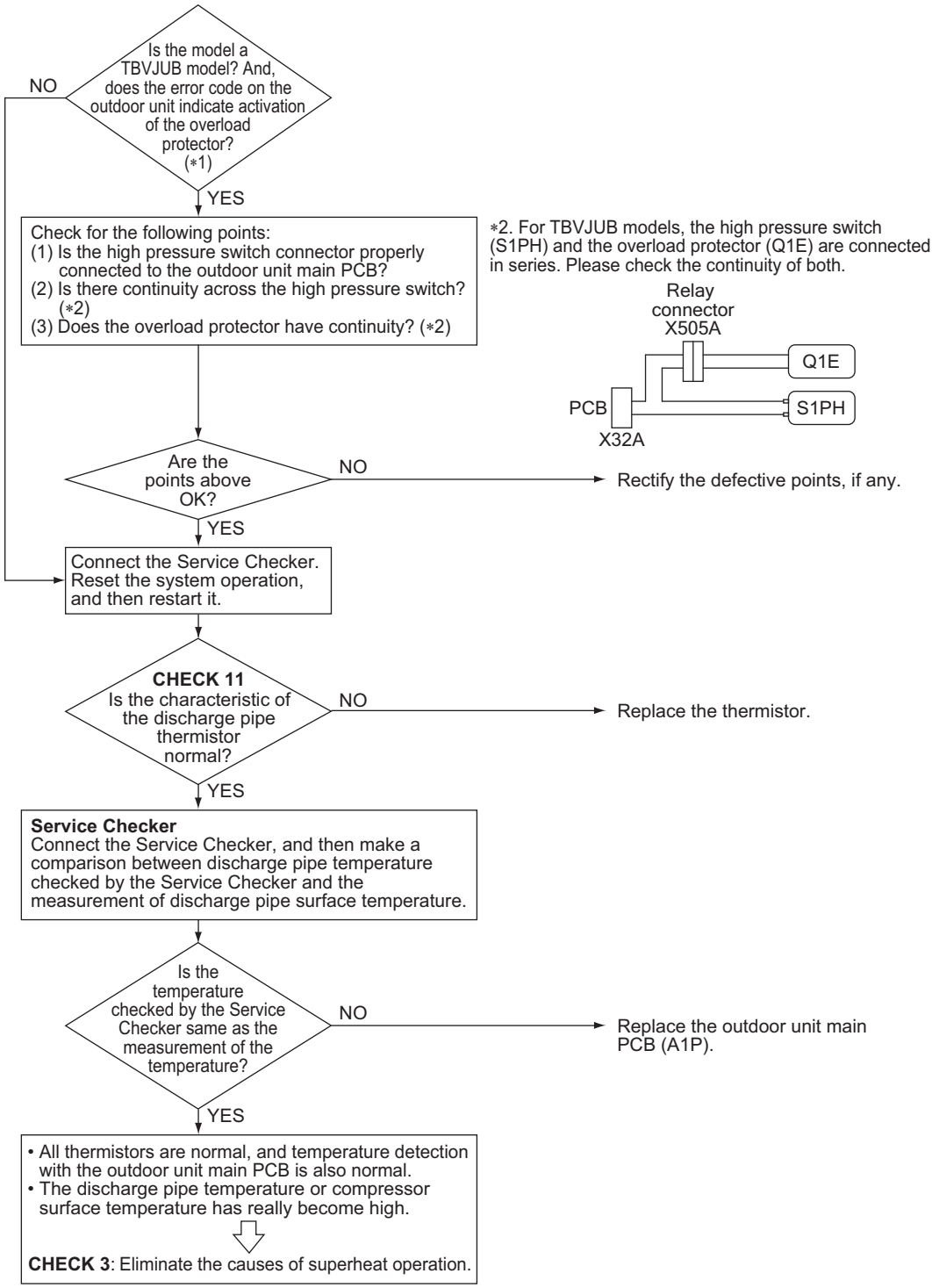
- The discharge pipe temperature rises to an abnormally high level.
- The discharge pipe temperature rises suddenly.
- Error is detected when overload protector Q1E is activated at the operating temperature of 125±3°C (257±5.4°F) (TBVJUB models only).

Supposed Causes

- Defective discharge pipe thermistor (R2T)
- Disconnection of discharge pipe thermistor (R2T)
- Defective outdoor unit PCB
- Activation of overload protector (TBVJUB models only)
- Defective overload protector (TBVJUB models only)
- Defective high pressure switch (TBVJUB models only)

Troubleshooting

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



Note(s) ∗1. Refer to page 207 for error code indication by outdoor unit PCB.

Reference **CHECK 3** Refer to page 321.

Reference **CHECK 11** Refer to page 329.

5.35 Refrigerant Overcharged

Applicable Models

All outdoor unit models

Error Code

F6

Method of Error Detection

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

Error Decision Conditions

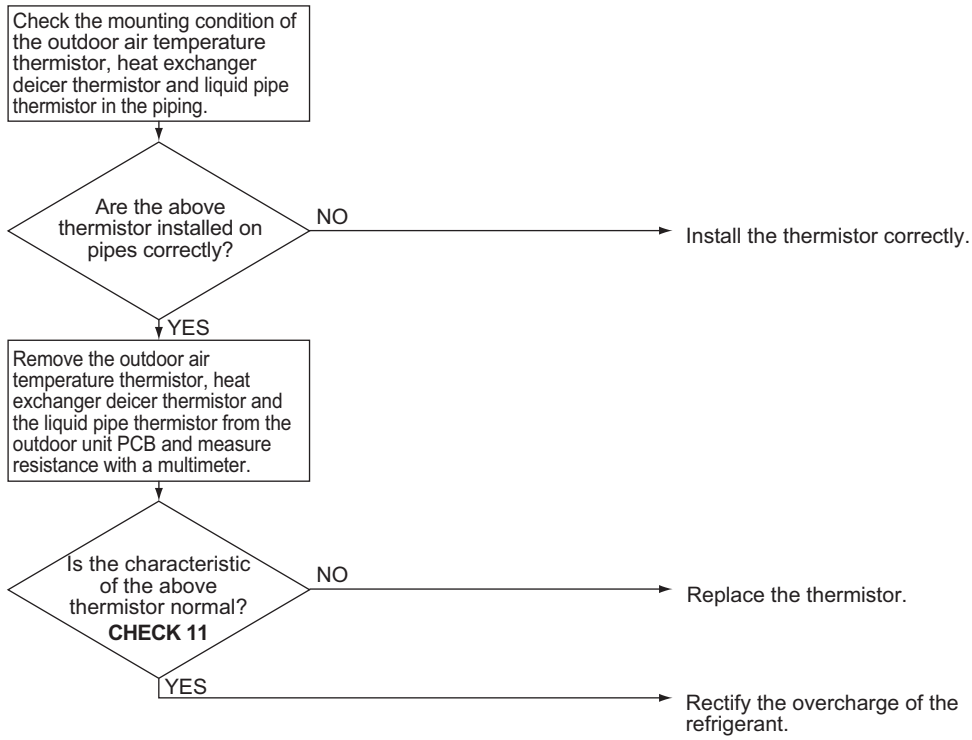
During a check operation, the amount of refrigerant will be calculated based on the outdoor temperature, the heat exchanger deicer temperature, and the liquid pipe temperature. If the calculated amount exceeds the normal amount by 30%, too much refrigerant has been added. (Adding only slightly more than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

Supposed Causes

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

Troubleshooting

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



Reference **CHECK 11** Refer to page 329.

5.36 Thermistor Abnormality

Applicable Models

All outdoor unit models

Error Code

H9, J3, J5, J6, J7, J9

Method of Error Detection

Error is detected from the temperature detected by the thermistor (∗1).

Error Decision Conditions

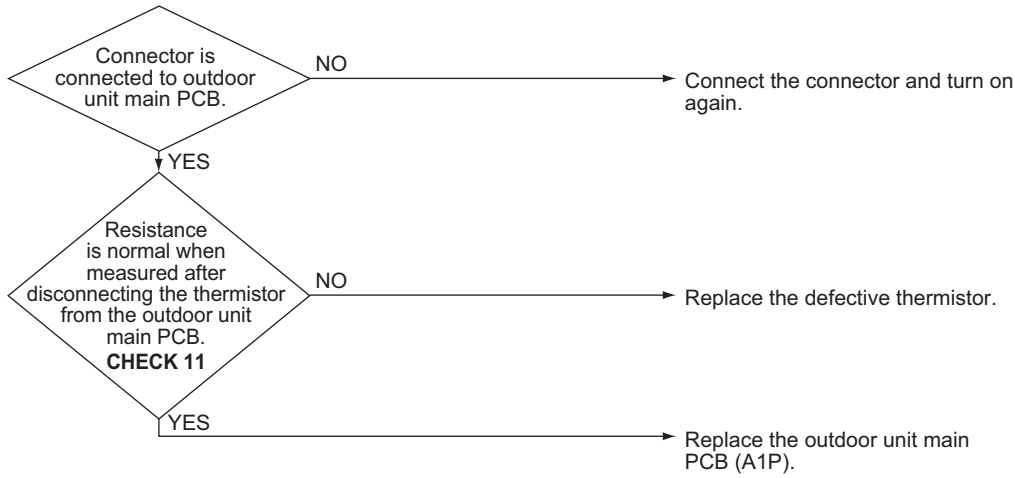
The thermistor has short circuit or open circuit.

Supposed Causes

- Defective thermistor
- Defective outdoor unit main PCB
- Disconnection of thermistor.

Troubleshooting

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



Reference

CHECK 11 Refer to page 329.

Note(s)

∗1. Thermistor

Error code	Thermistor	36/48 class		60 class	
		Symbol	Connector	Symbol	Connector
H9	Outdoor air thermistor	R1T	X11A	R1T	X11A
J3	Discharge pipe thermistor	R2T	X12A	R2T	X12A
J5	Suction pipe thermistor	R3T		R3T	
		R5T		R5T	
J6	Outdoor heat exchanger deicer thermistor	R4T		R4T	
J7	Outdoor heat exchanger liquid pipe thermistor	R7T	X13A	R7T	X13A
J9	Subcooling heat exchanger gas pipe thermistor	—	—	R6T	

5.37 High Pressure Sensor Abnormality

Applicable Models

All outdoor unit models

Error Code

JA

Method of Error Detection

Error is detected from the pressure detected by the high pressure sensor.

Error Decision Conditions

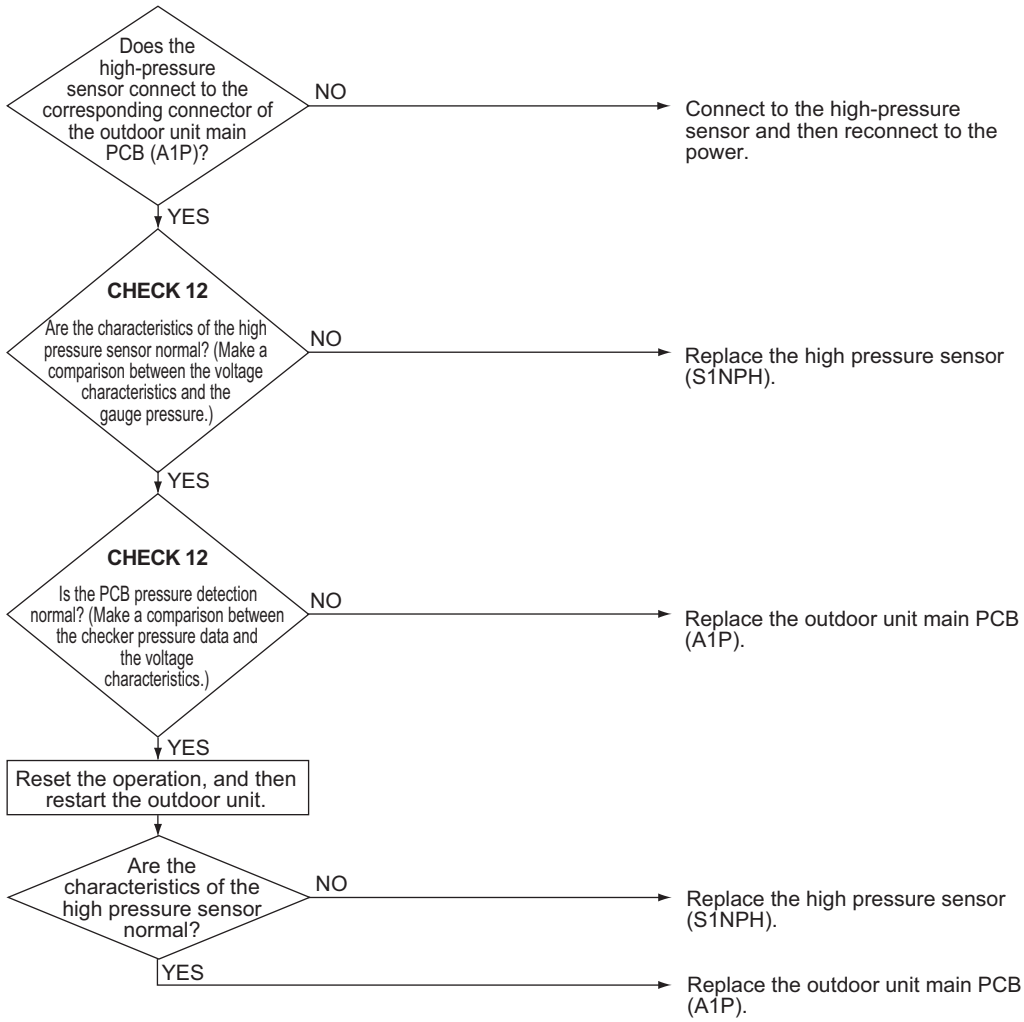
The high pressure sensor is short circuit or open circuit.
Pressure range: 0-4.3 MPa (0-624 psi)

Supposed Causes

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

Troubleshooting

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



Reference **CHECK 12** Refer to page 332.

5.38 Low Pressure Sensor Abnormality

Applicable Models

All outdoor unit models

Error Code

JC

Method of Error Detection

Error is detected from pressure detected by low pressure sensor.

Error Decision Conditions

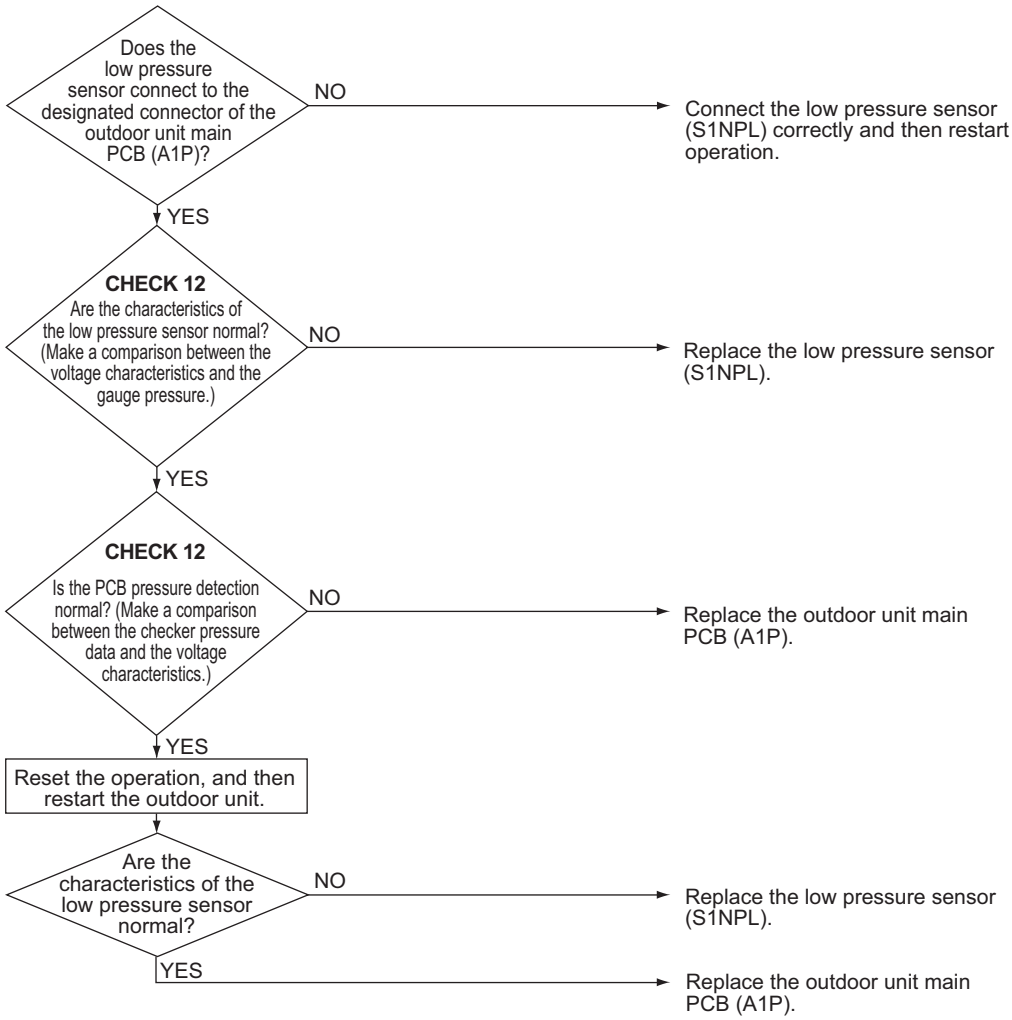
The low pressure sensor is short circuit or open circuit.
Pressure range: 0-1.7 MPa (0-247 psi)

Supposed Causes

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

Troubleshooting

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



Reference **CHECK 12** Refer to page 332.

5.39 Inverter PCB Abnormality

Applicable Models

All outdoor unit models

Error Code

L1

Method of Error Detection

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

Error Decision Conditions

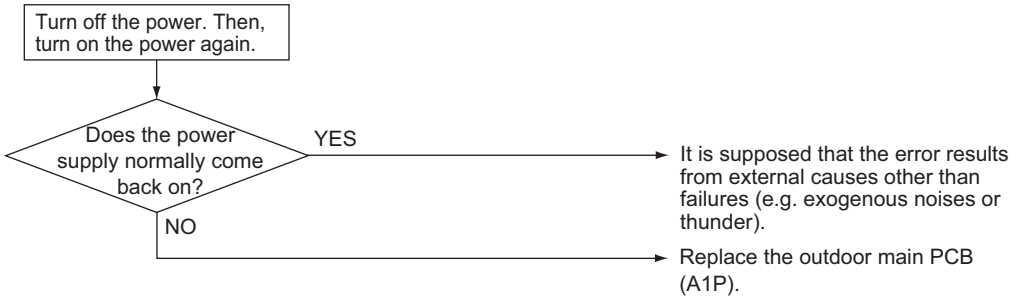
- Overcurrent (OCP) flows during waveform output.
- Error of current sensor during synchronous operation.
- IPM failure.

Supposed Causes

- IPM failure
- Current sensor failure
- Drive circuit failure

Troubleshooting

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



5.40 Radiation Fin Temperature Rise Abnormality

Applicable Models

All outdoor unit models

Error Code

L4

Method of Error Detection

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

Error Decision Conditions

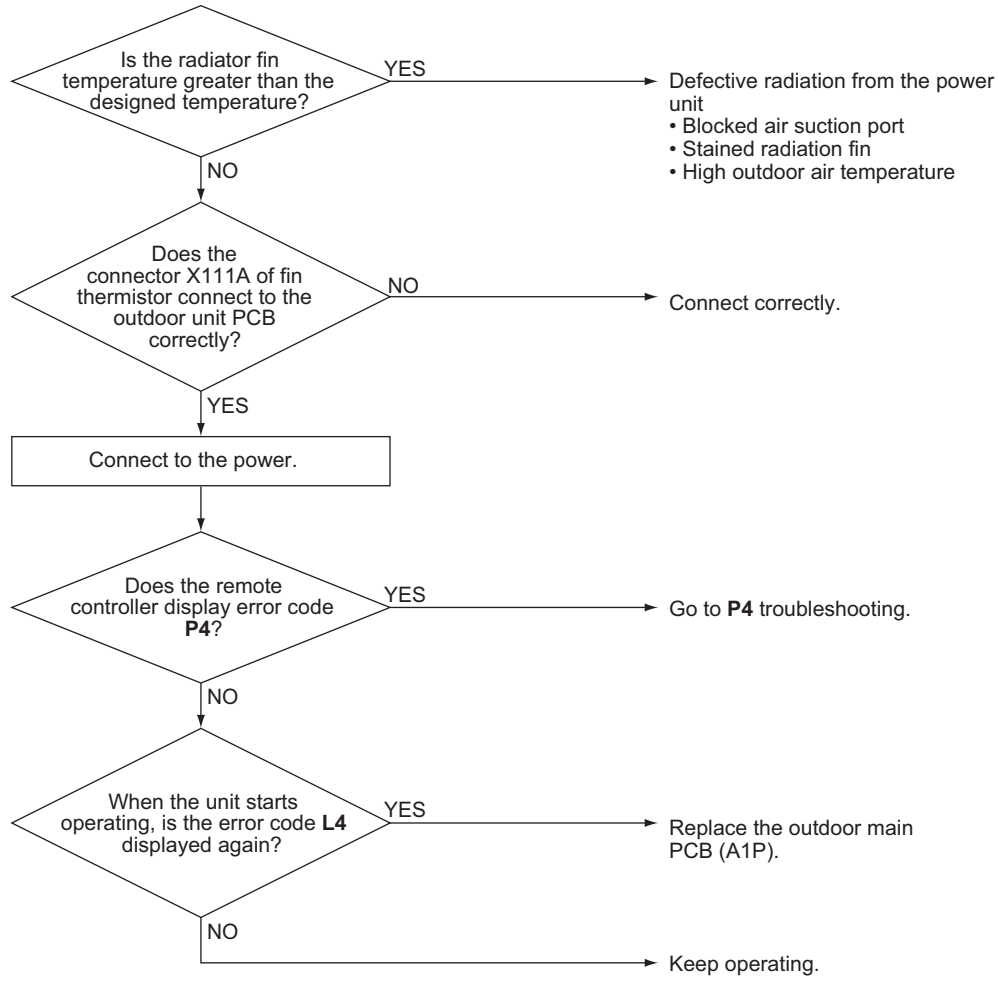
The radiation fin temperature exceeds a certain temperature.

Supposed Causes

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

Troubleshooting

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



5.41 Compressor Instantaneous Overcurrent

Applicable Models

All outdoor unit models

Error Code

L5

Method of Error Detection

Error is detected from current flowing in the power transistor.

Error Decision Conditions

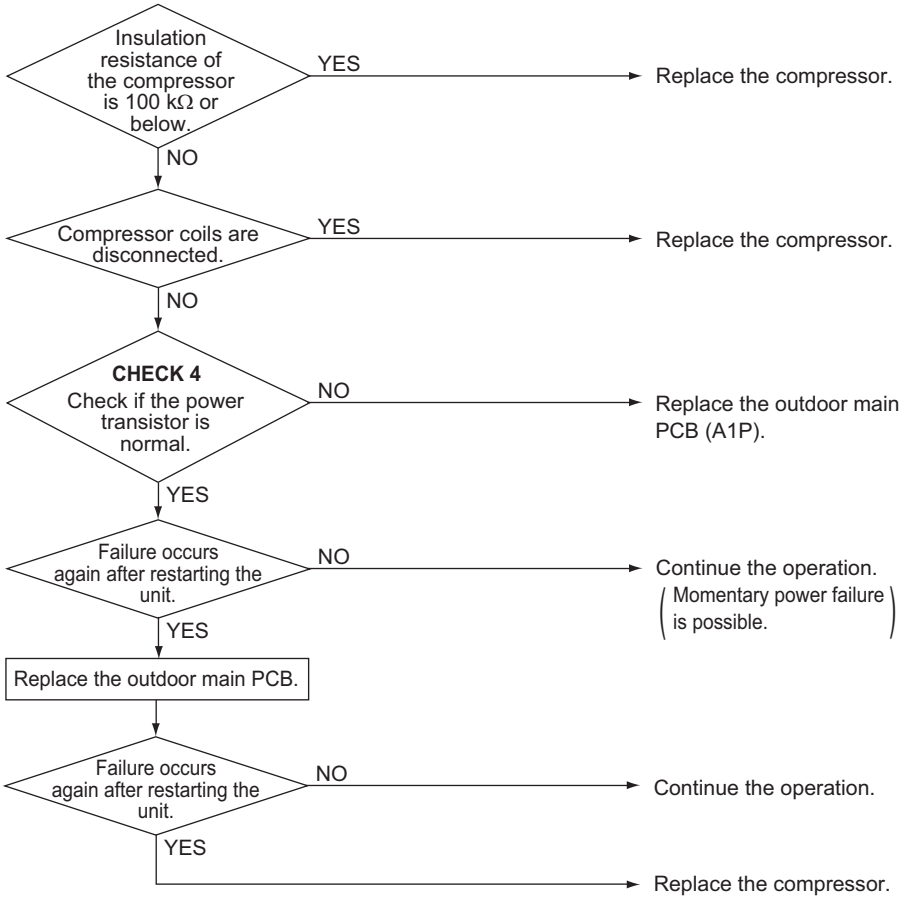
An excessive current flows in the power transistor.

Supposed Causes

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

Troubleshooting

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



Reference **CHECK 4** Refer to page 323.

5.42 Compressor Overcurrent

Applicable Models

All outdoor unit models

Error Code

L8

Method of Error Detection

Error is detected by current flowing in the power transistor.

Error Decision Conditions

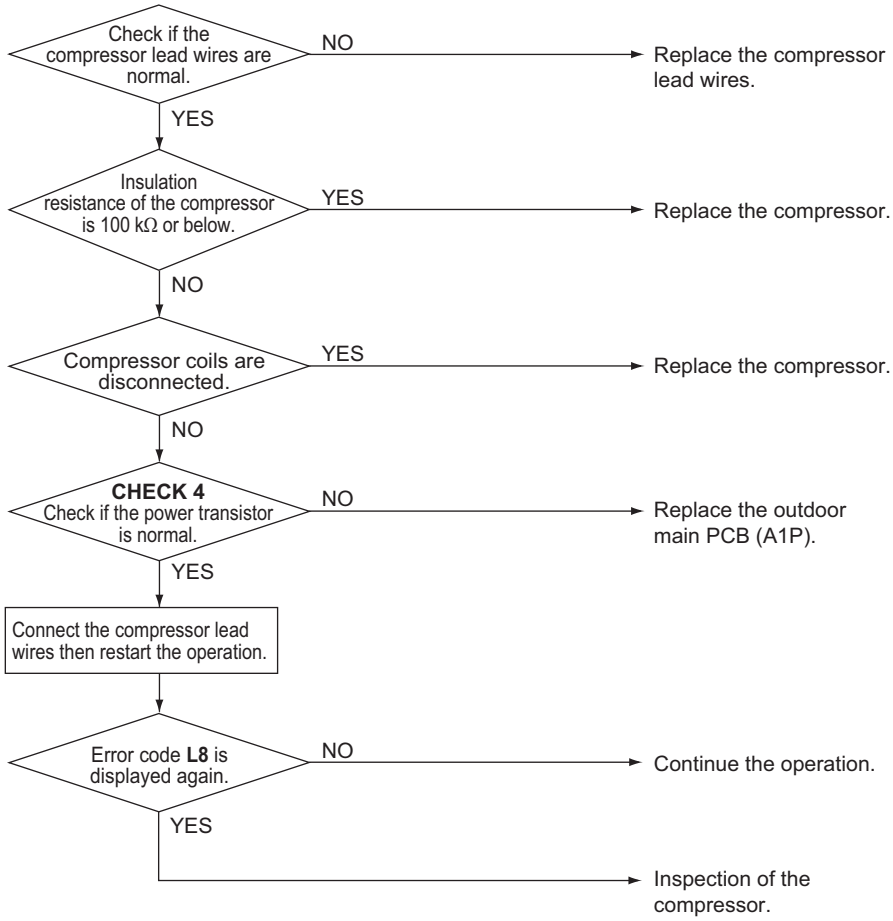
Overload in the compressor is detected.

Supposed Causes

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

Troubleshooting

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



Reference **CHECK 4** Refer to page 323.

5.43 Compressor Startup Abnormality

Applicable Models

All outdoor unit models

Error Code

L9

Method of Error Detection

Error is detected by the power transistor current

Error Decision Conditions

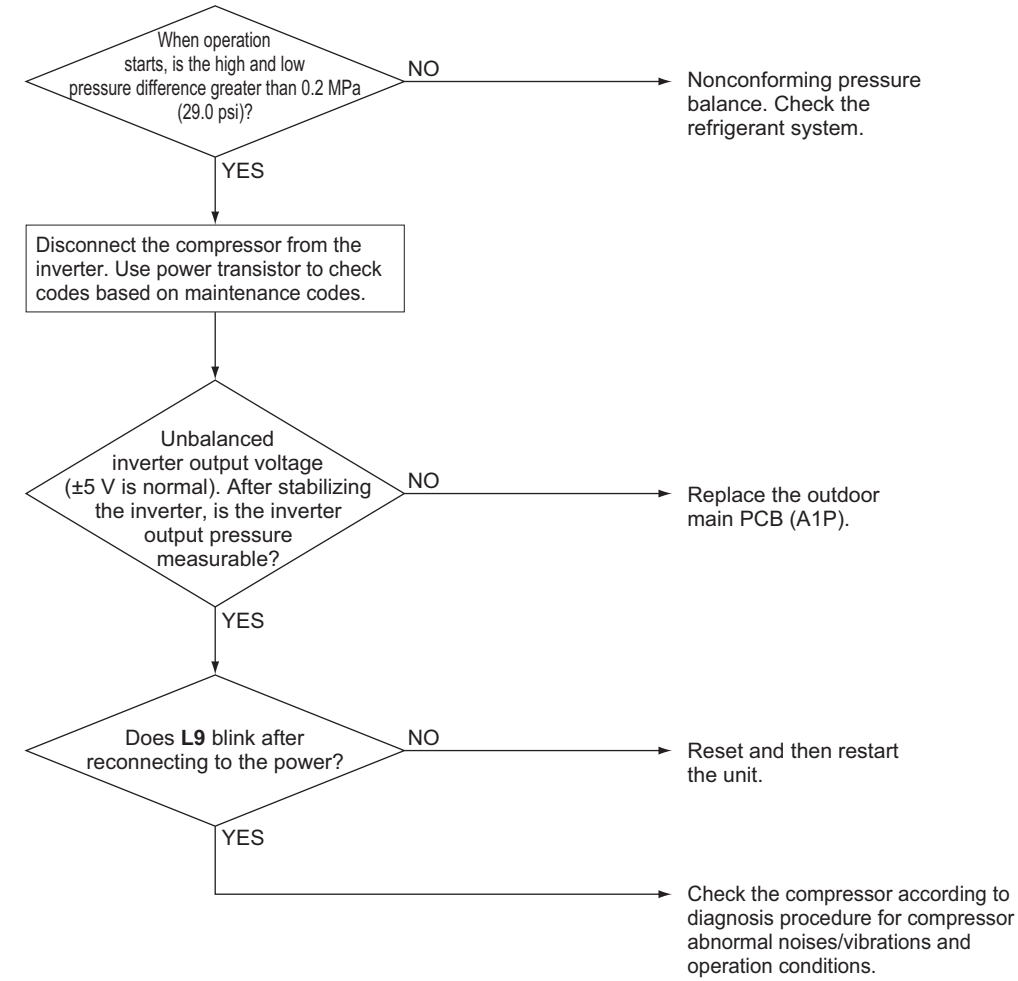
Compressor overload during activation

Supposed Causes

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

Troubleshooting

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



5.44 Transmission Error between Microcomputers on Outdoor Unit Main PCB

Applicable Models

All outdoor unit models

Error Code

LC

Method of Error Detection

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

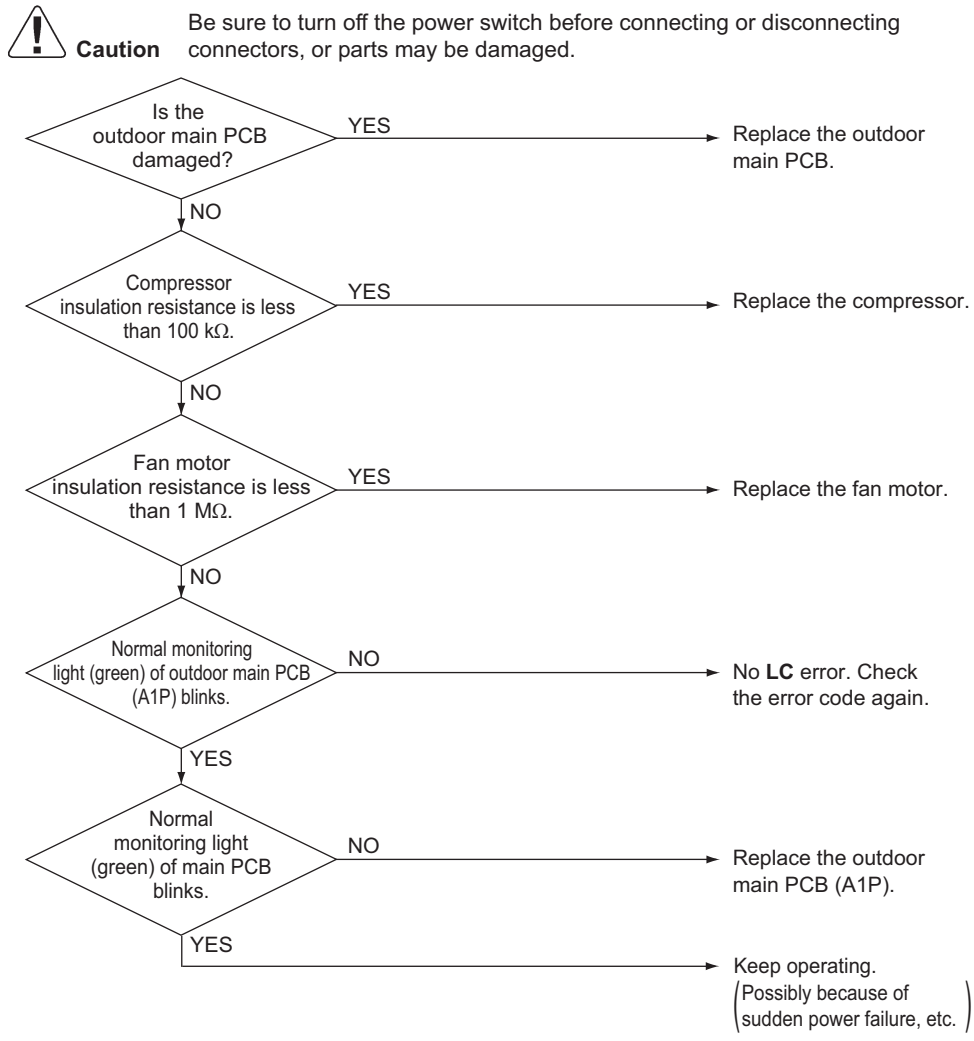
Error Decision Conditions

No normal transmission after a certain period of time

Supposed Causes

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

Troubleshooting



5.45 Inverter Circuit Capacitor High Voltage

Applicable Models

All outdoor unit models

Error Code

P1

Method of Error Detection

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

Error Decision Conditions

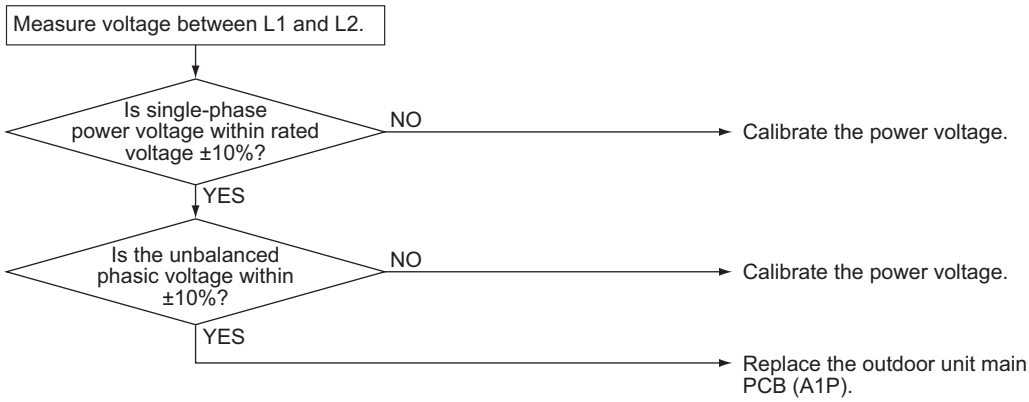
The above-mentioned voltage waveform looks like the waveform of the power supply with a missing phase

Supposed Causes

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

Troubleshooting

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



5.46 Radiation Fin Thermistor Abnormality

Applicable Models

All outdoor unit models

Error Code

P4

Method of Error Detection

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

Error Decision Conditions

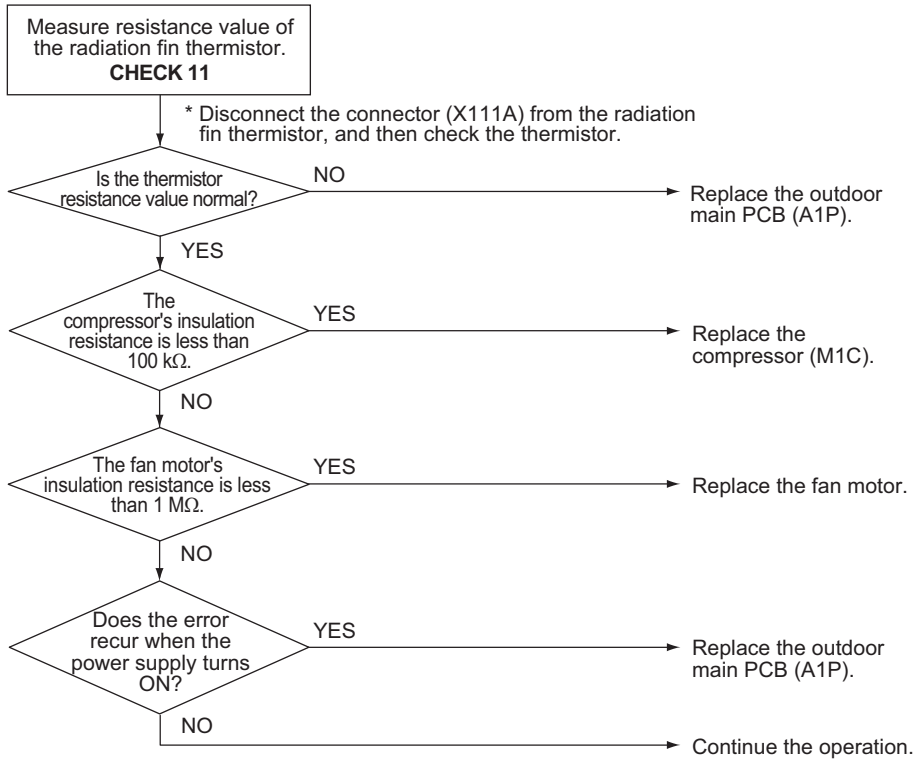
When the resistance value of thermistor becomes a value equivalent to open circuited or short circuited status
∗ Error is not decided while the unit operation is continued.
P4 will be displayed by pressing the inspection button.

Supposed Causes

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

Troubleshooting

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



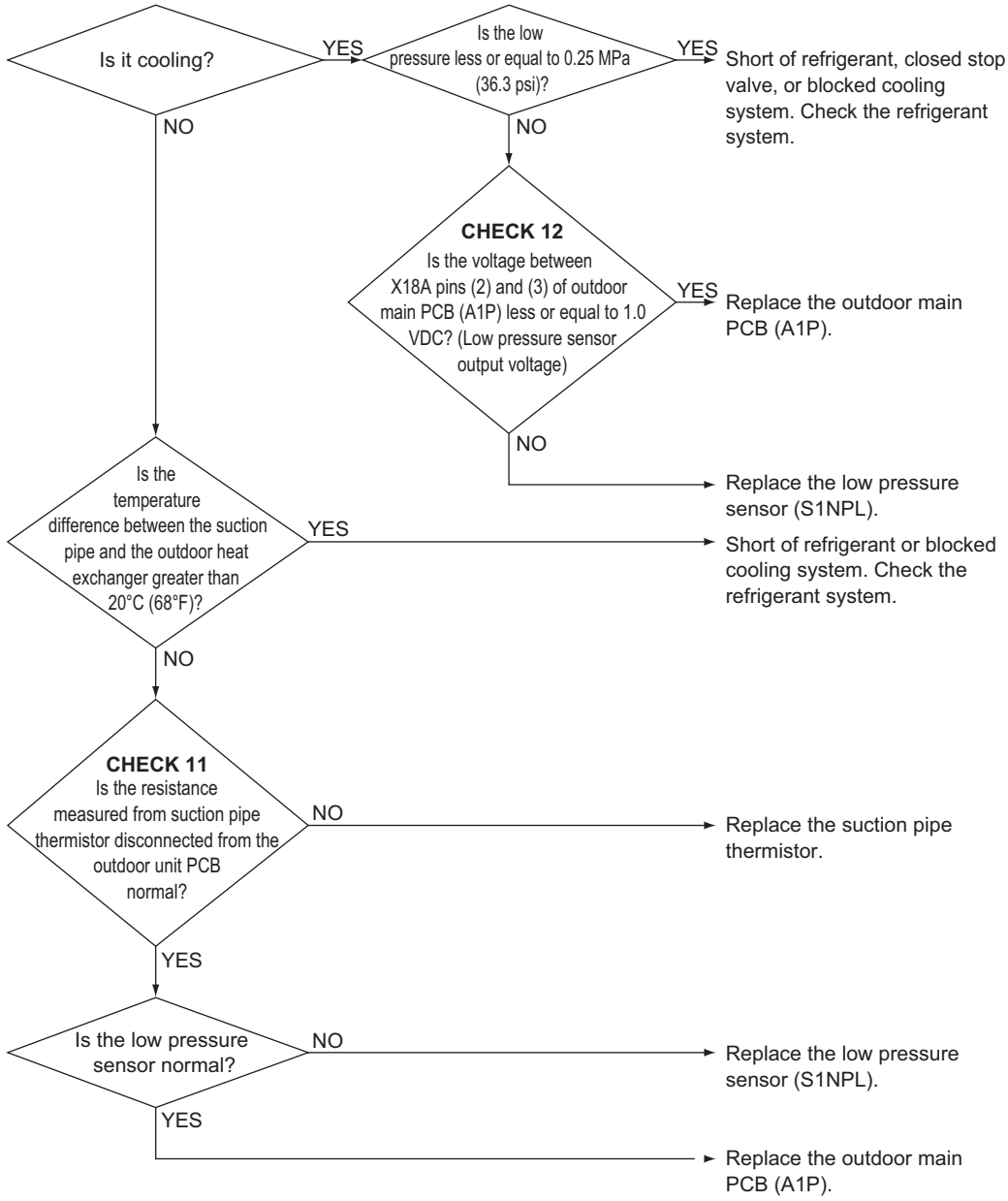
Reference **CHECK 11** Refer to page 329.

5.47 Refrigerant Shortage

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

Troubleshooting

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



Reference **CHECK 11** Refer to page 329.

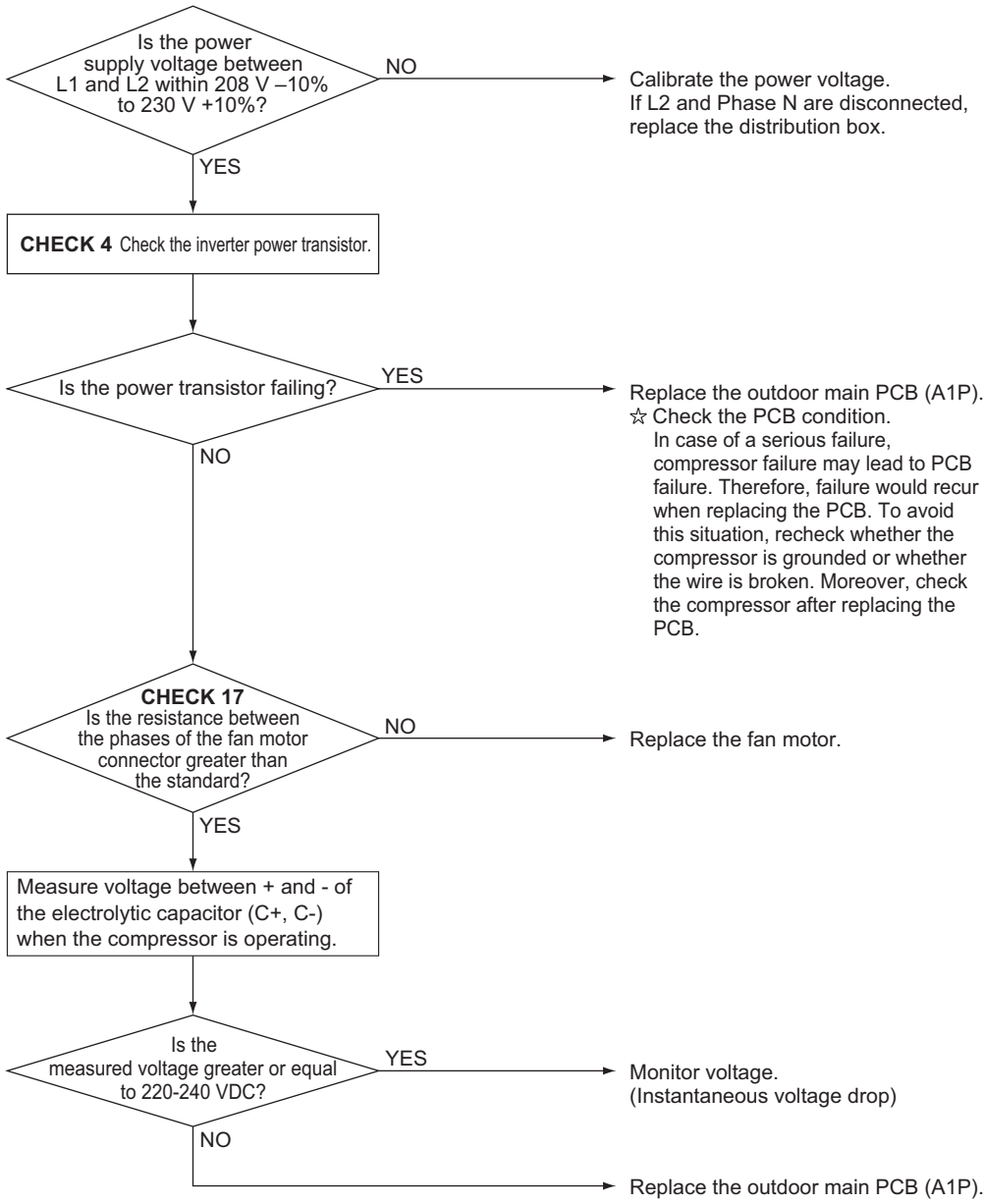
Reference **CHECK 12** Refer to page 332.

5.48 Power Supply Insufficient or Instantaneous Abnormality

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

Troubleshooting

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



Reference **CHECK 4** Refer to page 323.

Reference **CHECK 17** Refer to page 336.

5.49 Check Operation Not Executed

Applicable Models

All outdoor unit models

Error Code

U3

Method of Error Detection

Determined based on whether check operation is executed or not

Error Decision Conditions

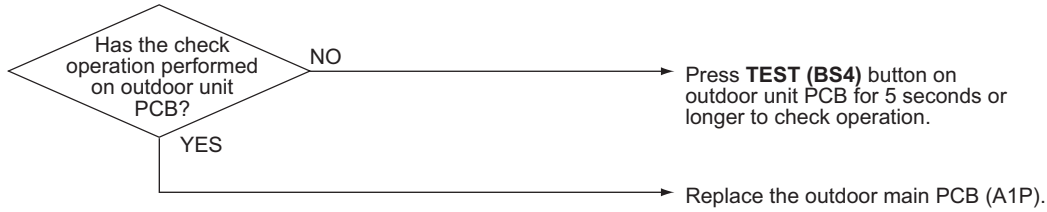
Error is decided when the unit starts operation without check operation.

Supposed Causes

Check operation not executed

Troubleshooting

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



5.50 Transmission Error between Indoor Units and Outdoor Units

Applicable Models
All indoor unit models
All outdoor unit models

Error Code
U4

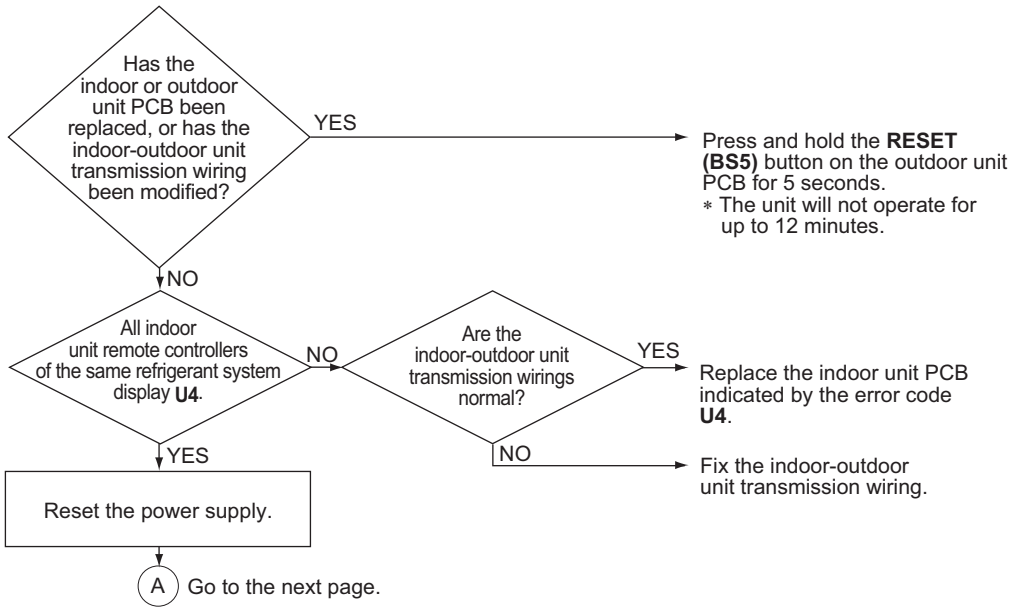
Method of Error Detection
Microcomputer checks if transmission between indoor and outdoor units is normal.

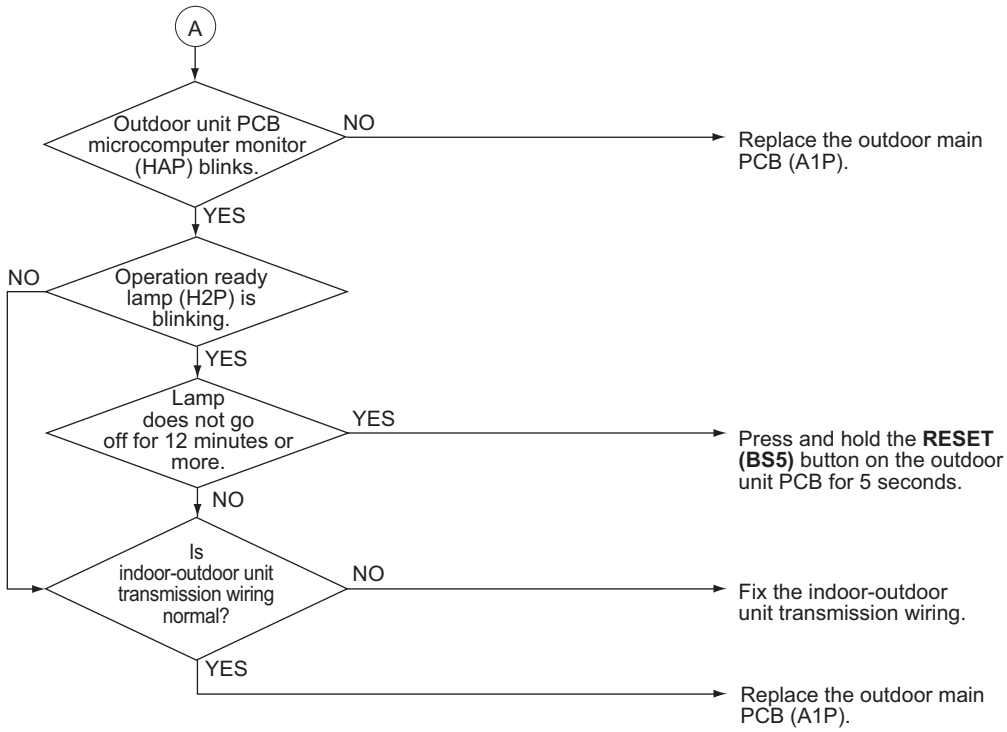
Error Decision Conditions
When transmission is not carried out normally for a certain amount of time

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

Troubleshooting

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




A
Outdoor unit PCB microcomputer monitor (HAP) blinks.
NO
Replace the outdoor main PCB (A1P).
YES
Operation ready lamp (H2P) is blinking.
NO
YES
Lamp does not go off for 12 minutes or more.
YES
Press and hold the RESET (BS5) button on the outdoor unit PCB for 5 seconds.
NO
Is indoor-outdoor unit transmission wiring normal?
NO
Fix the indoor-outdoor unit transmission wiring.
YES
Replace the outdoor main PCB (A1P).

5.51 Transmission Error between Remote Controller and Indoor Unit

Applicable Models

All indoor unit models

Error Code

U5

Method of Error Detection

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

Error Decision Conditions

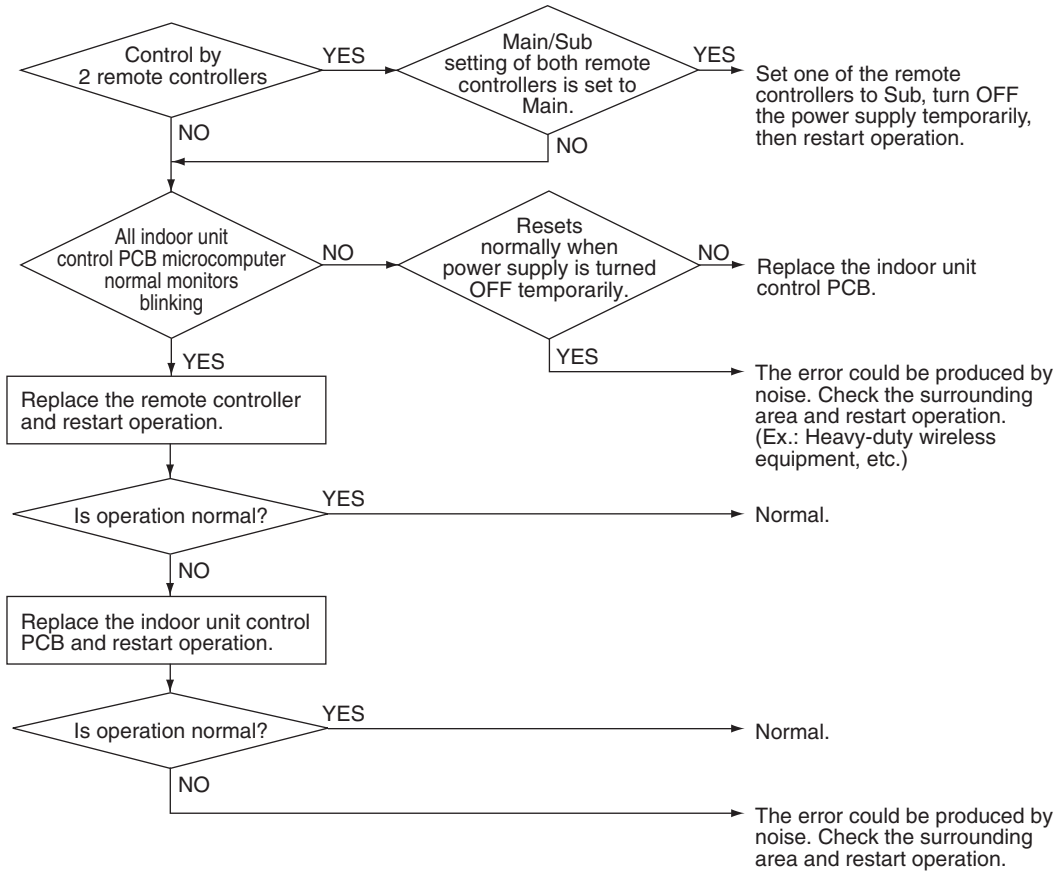
Transmission is not carried out normally for a certain amount of time.

Supposed Causes

- Transmission error between indoor unit and remote controller
- Connection of 2 main remote controllers (when using 2 remote controllers)
- Defective indoor unit control 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.



Reference Refer to page 69 for Main/Sub setting.

5.52 Transmission Error between Main and Sub Remote Controllers

Applicable Models

All indoor unit models

Error Code

U8

Method of Error Detection

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

Error Decision Conditions

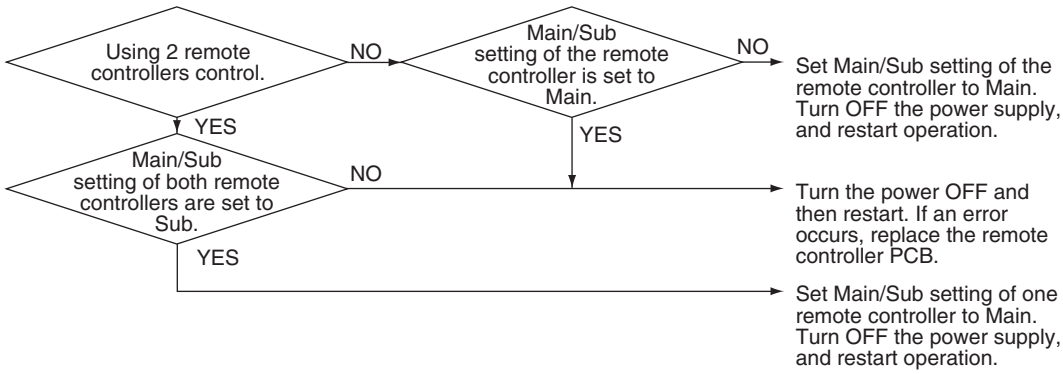
When transmission is not carried out normally for a certain amount of time.

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.



Reference Refer to page 69 for Main/Sub setting.

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

Applicable Models
All indoor unit models
All outdoor unit models

Error Code
U9

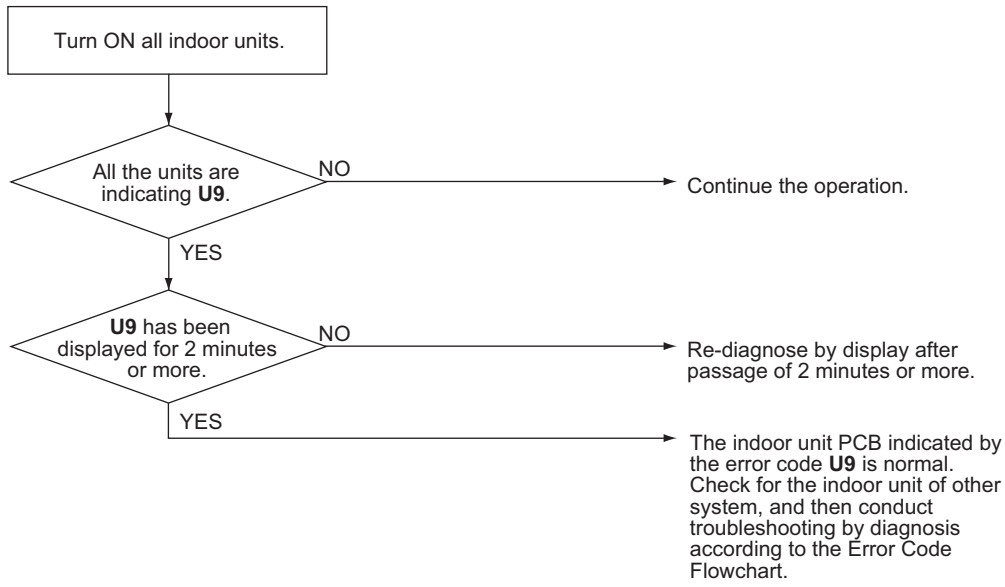
Method of Error Detection
Error signal for the other indoor units is detected within the system by outdoor unit PCB.

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

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

Troubleshooting

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

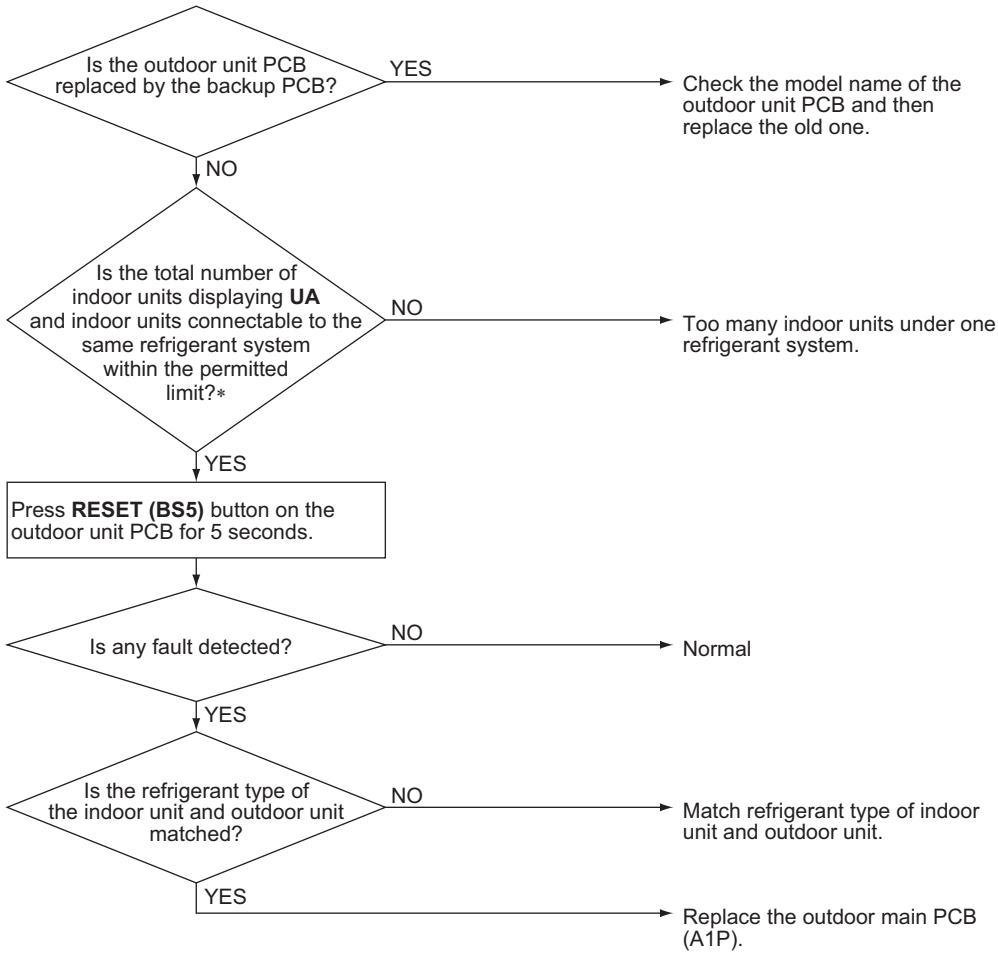


5.54 Improper Combination of Indoor and Outdoor Units, Indoor Units and Remote Controller

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

Troubleshooting

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



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

5.55 Incorrect Electric Heater Capacity Setting

Applicable Models

FXTQ-TA, FXTQ-TB

Error Code

UA-17

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.

5.56 Address Duplication of Centralized Controller

Applicable Models
All indoor unit models
Centralized controller

Error Code
UC

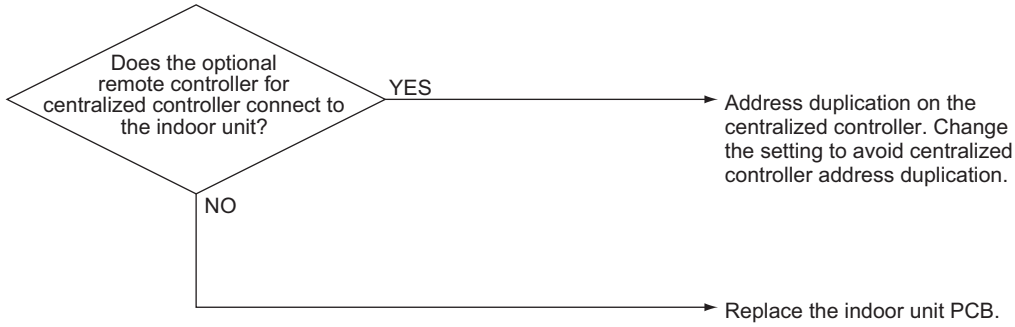
Method of Error Detection
The principal indoor unit detects the same address as that of its own on any other indoor unit.

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.



5.57 Transmission Error between Centralized Controller and Indoor Unit

Applicable Models

All indoor unit models
Centralized controller
Schedule timer
intelligent Touch Controller

Error Code

UE

Method of Error Detection

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

Error Decision Conditions

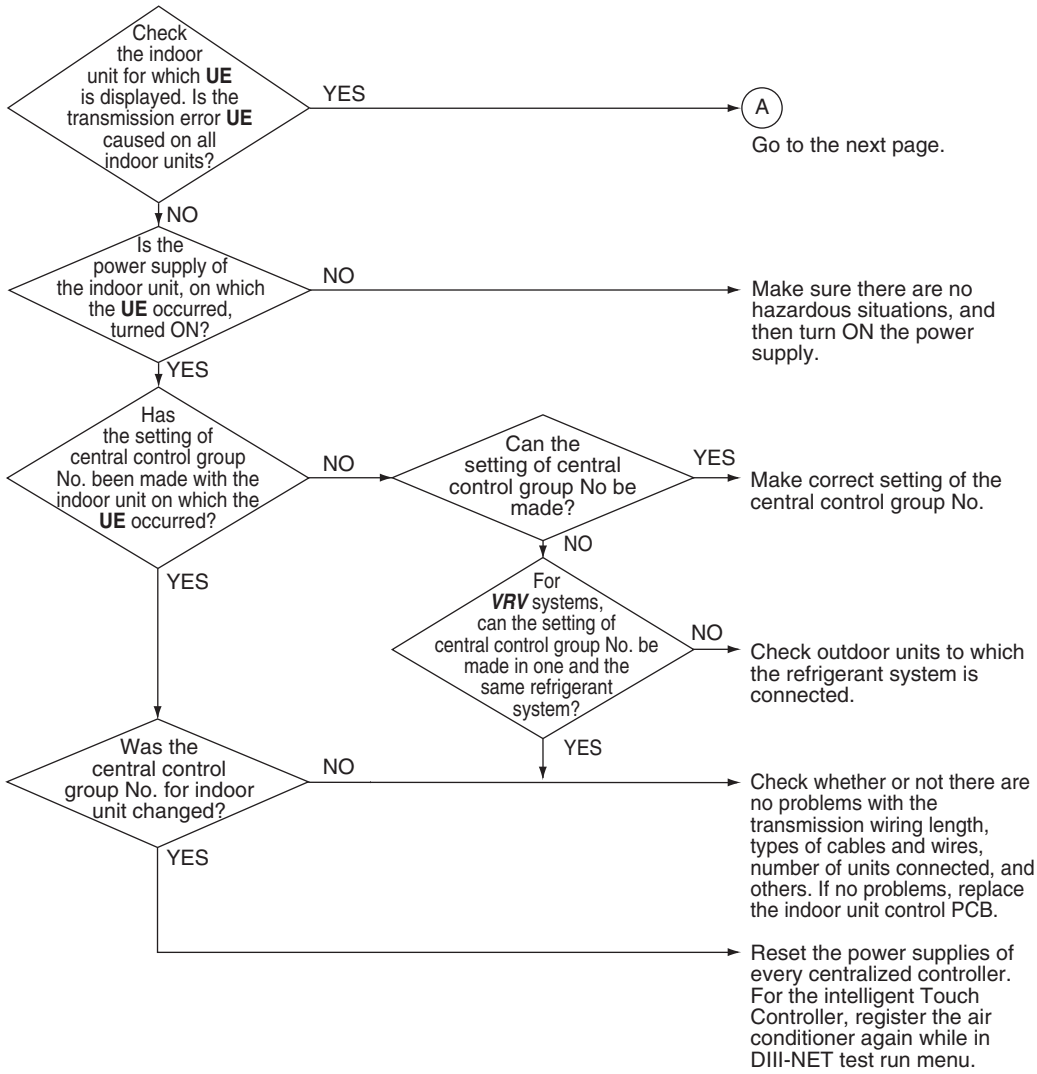
When transmission is not carried out normally for a certain amount of time

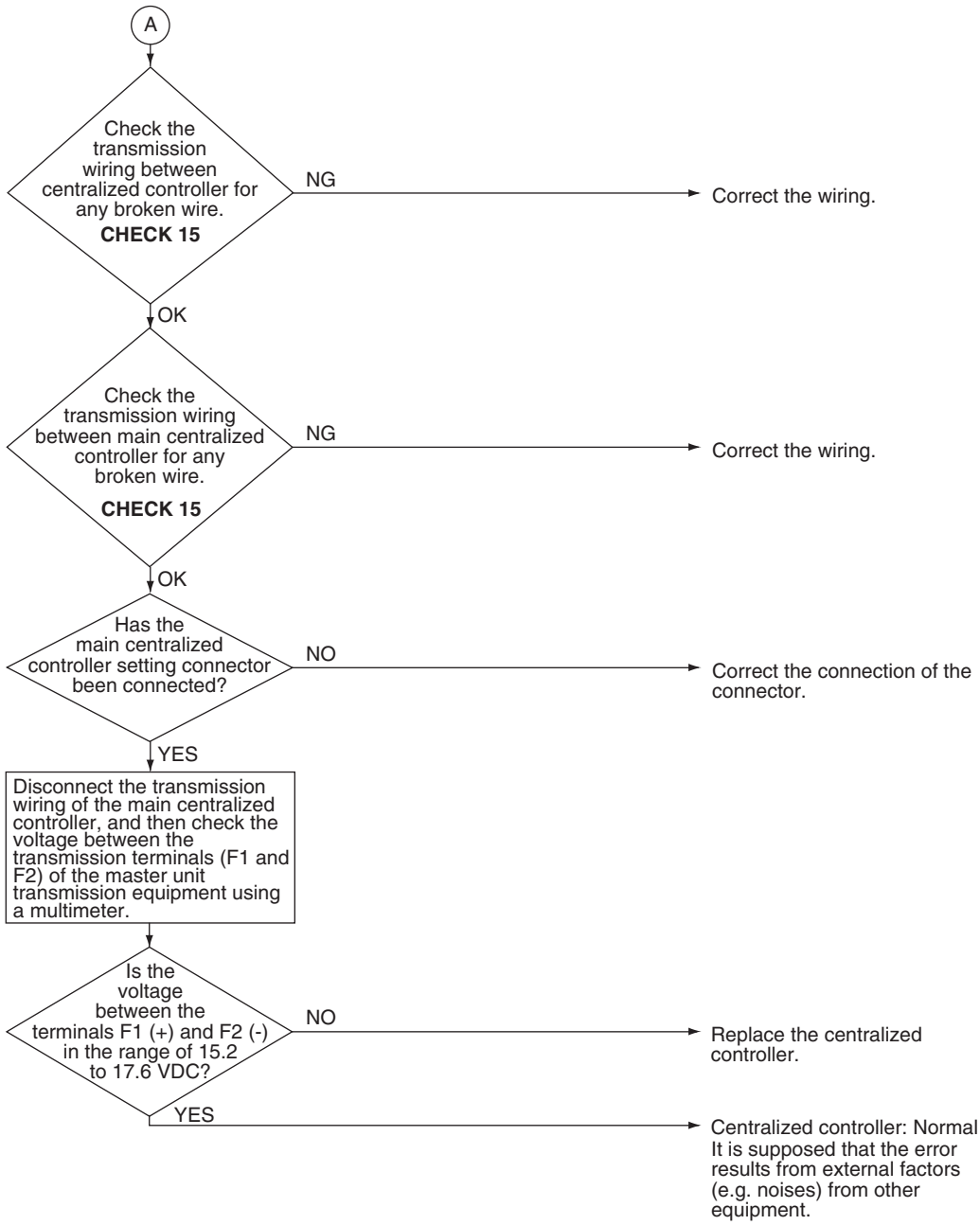
Supposed Causes

- 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 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.





Reference **CHECK 15** Refer to page 334.

5.58 System Not Set Yet

Applicable Models
All indoor unit models
All outdoor unit models

Error Code
UF

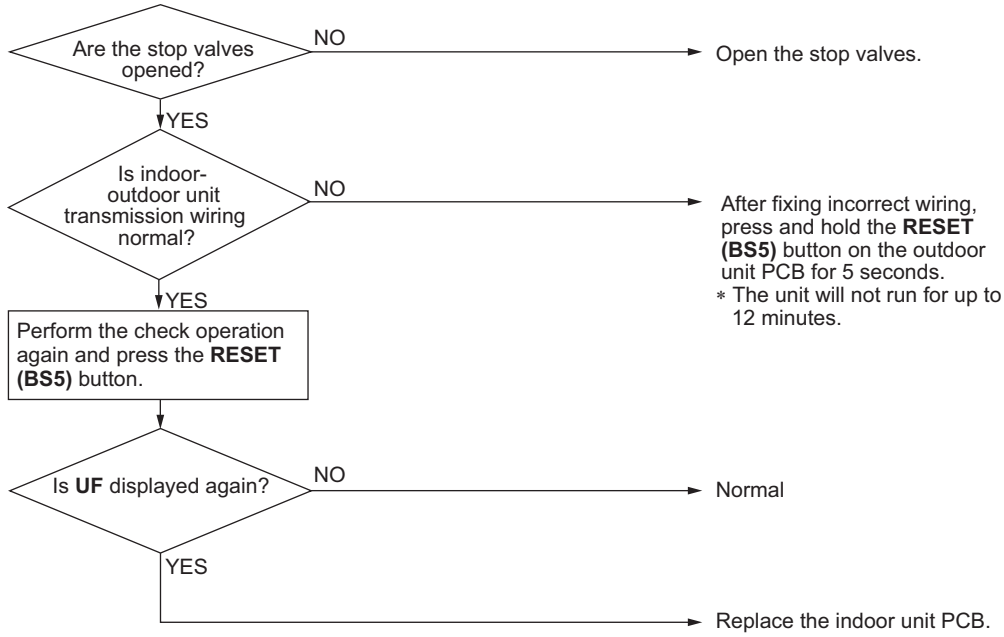
Method of Error Detection
On check operation, the number of indoor units in terms of transmission is not corresponding to that of indoor units that have made changes in temperature.

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
- 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.



5.59 System Abnormality, Refrigerant System Address Undefined

Applicable Models
All indoor unit models
All outdoor unit models

Error Code
UH

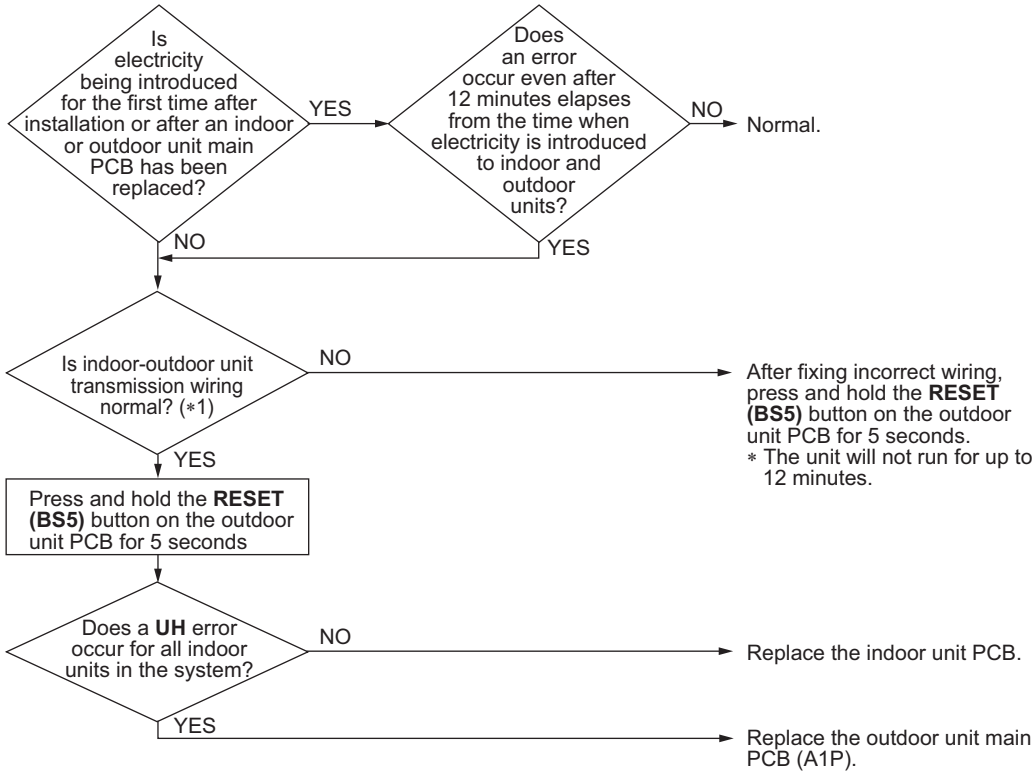
Method of Error Detection
System detects an indoor unit whose address is not defined by automatic address function.
∗ Automatic address refers to the automatic designated address of indoor unit and outdoor unit when connected to the power after installation or wiring replacement (with the **RESET (BS5)** button pressed for more than 5 seconds).

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
- Defective indoor unit PCB
- Defective outdoor unit main PCB (A1P)

Troubleshooting

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



Note(s) ∗1. Refer to installation manual for correct indoor unit and outdoor unit connection wiring.

5.60 Defective PCB

Applicable Models

Centralized controller
intelligent Touch Controller
Schedule timer

Error Code

M1

Method of Error Detection

DIII-NET polarity circuit defective conditions are used to detect the error.

Error Decision Conditions

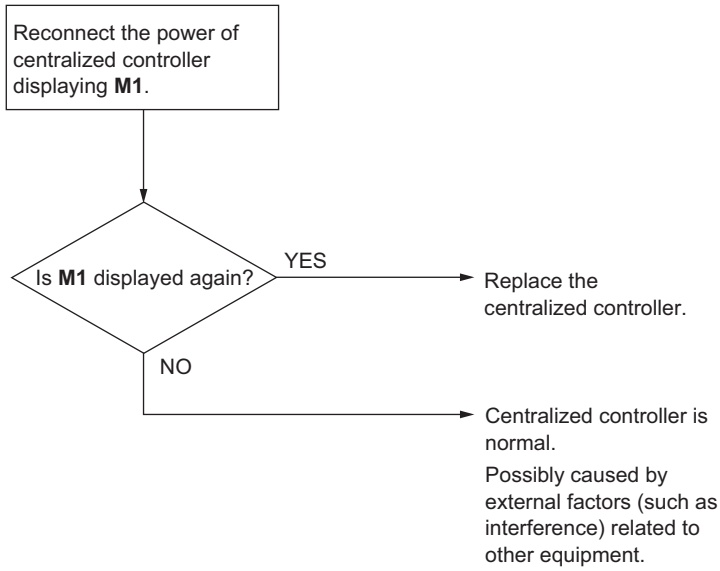
The test detects both positive polarity and negative polarity.

Supposed Causes

- Defective centralized controller PCB
- Defective intelligent touch controller PCB
- Defective schedule timer PCB

Troubleshooting

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

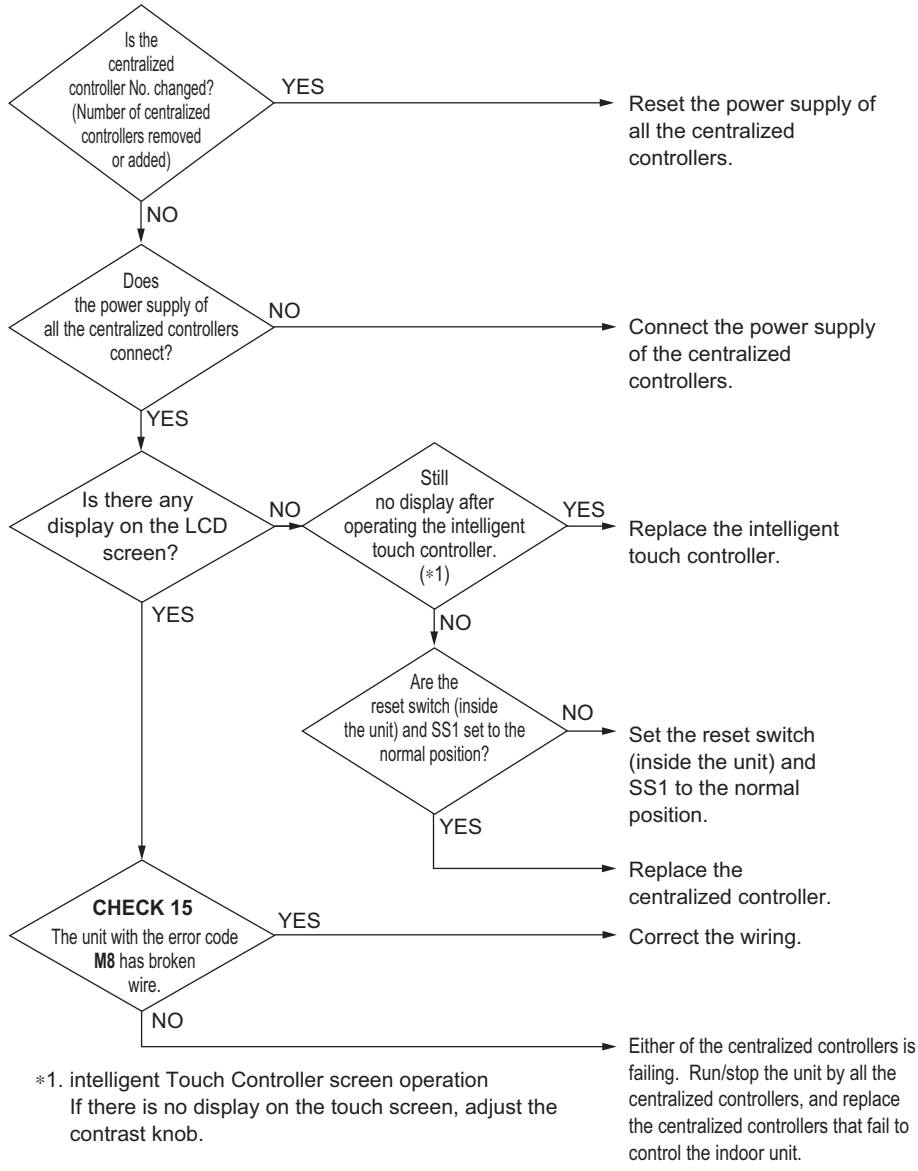


5.61 Transmission Error (between Centralized Controllers)

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

Troubleshooting

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



*1. intelligent Touch Controller screen operation
If there is no display on the touch screen, adjust the contrast knob.

Reference **CHECK 15** Refer to page 334.

5.62 Poor Centralized Controller Combination

Applicable Models

Centralized controller
intelligent Touch Controller
Schedule timer

Error Code

MA

Method of Error Detection

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

Error Decision Conditions

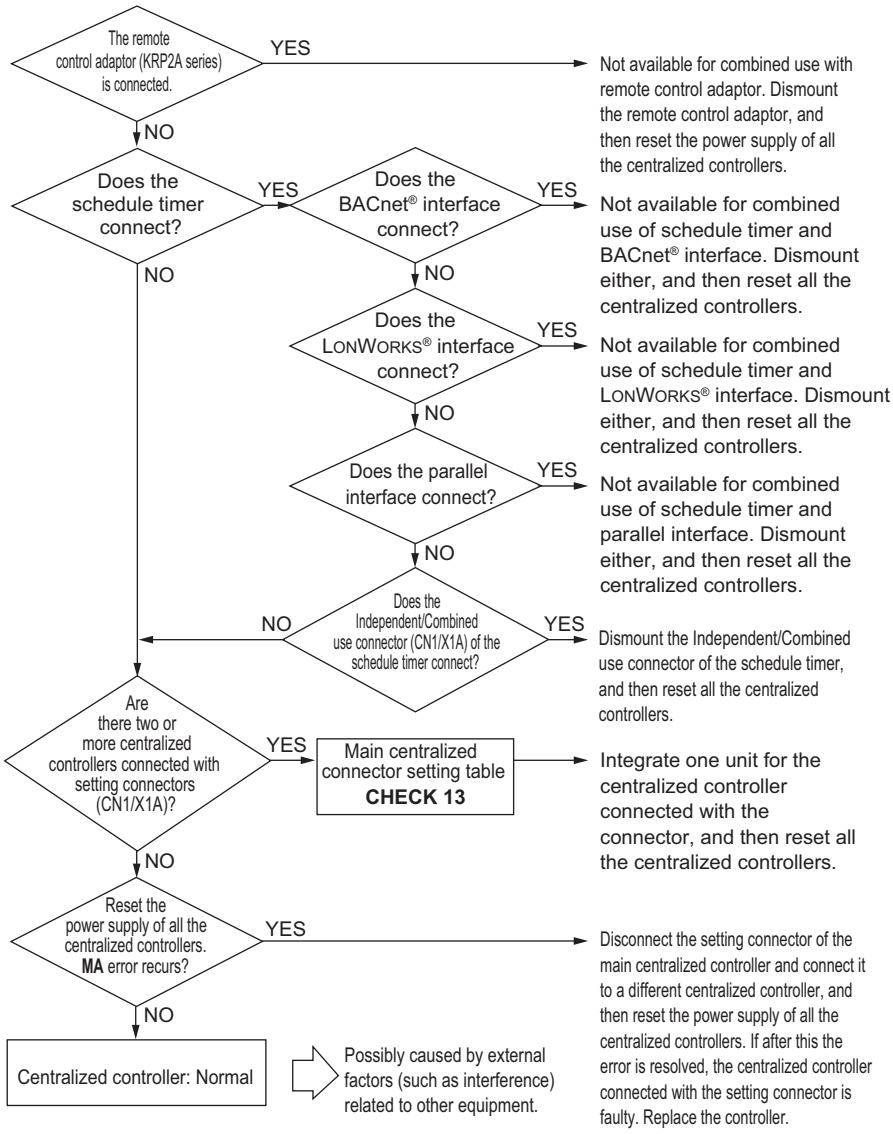
There are other centralized controllers but the schedule timer is set for individual use.
There are multiple main centralized controllers.
There is a remote control adaptor.

Supposed Causes

- Poor centralized controller combination
- Multiple main centralized controllers
- Defective centralized controller PCB

Troubleshooting

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



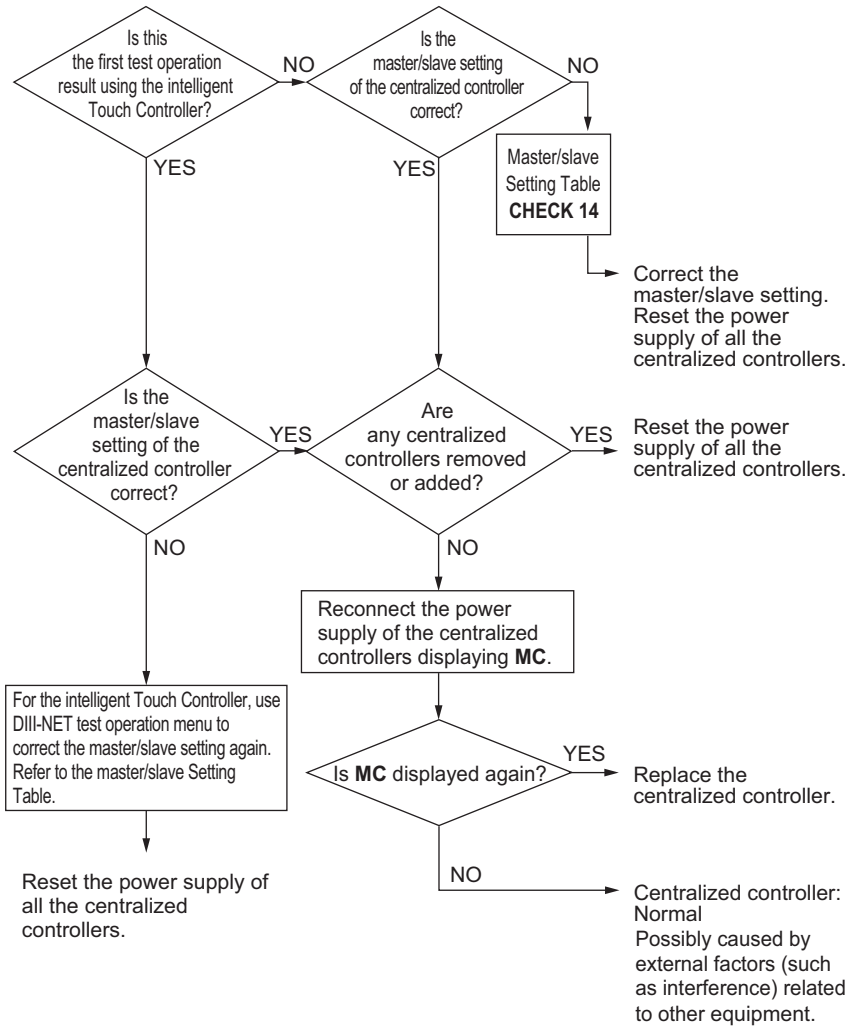
Reference **CHECK 13** Refer to page 333.

5.63 Address Duplication, Poor Setting

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

Troubleshooting

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



Reference **CHECK 14** Refer to page 334.

5.64 Operation Lamp Blinking

Applicable Models
ON/OFF controller
Indoor unit

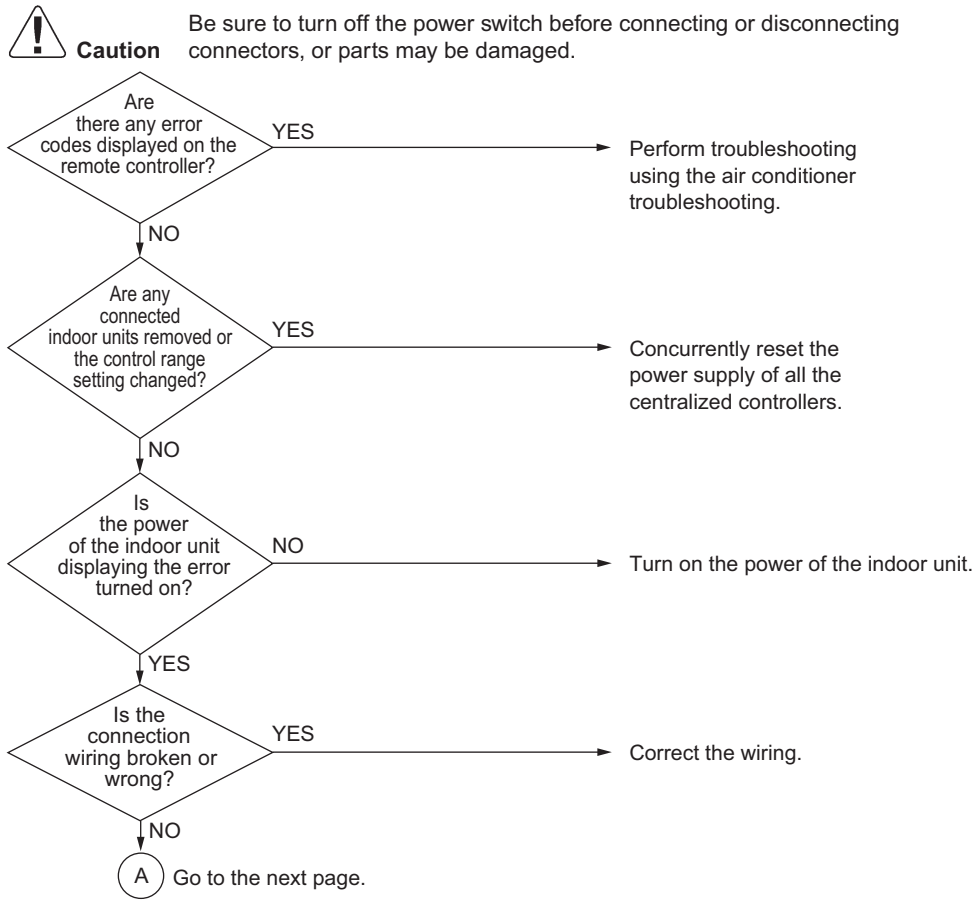
Error Code
—

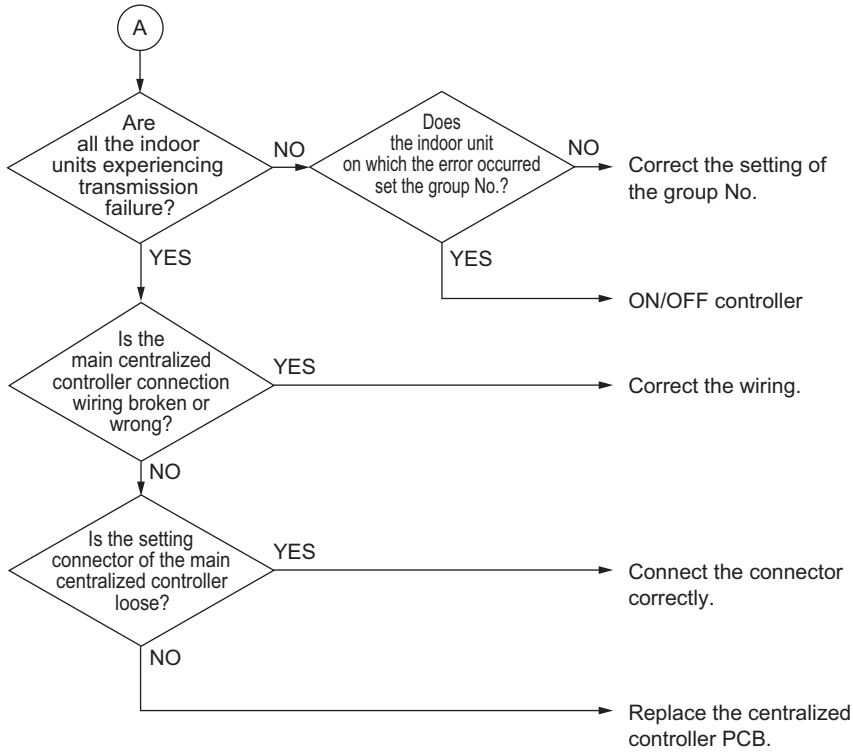
Method of Error Detection
DIII-NET communication data is used to detect the error.

Error Decision Conditions
—

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

Troubleshooting




A
Are all the indoor units experiencing transmission failure?
NO
Does the indoor unit on which the error occurred set the group No.?
NO
Correct the setting of the group No.
YES
YES
ON/OFF controller
Is the main centralized controller connection wiring broken or wrong?
YES
Correct the wiring.
NO
Is the setting connector of the main centralized controller loose?
YES
Connect the connector correctly.
NO
Replace the centralized controller PCB.

5.65 Central Control Indicator Lamp Blinking (One blink)

Applicable Models

ON/OFF controller
Centralized controller
Schedule timer

Error Code

—

Method of Error Detection

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

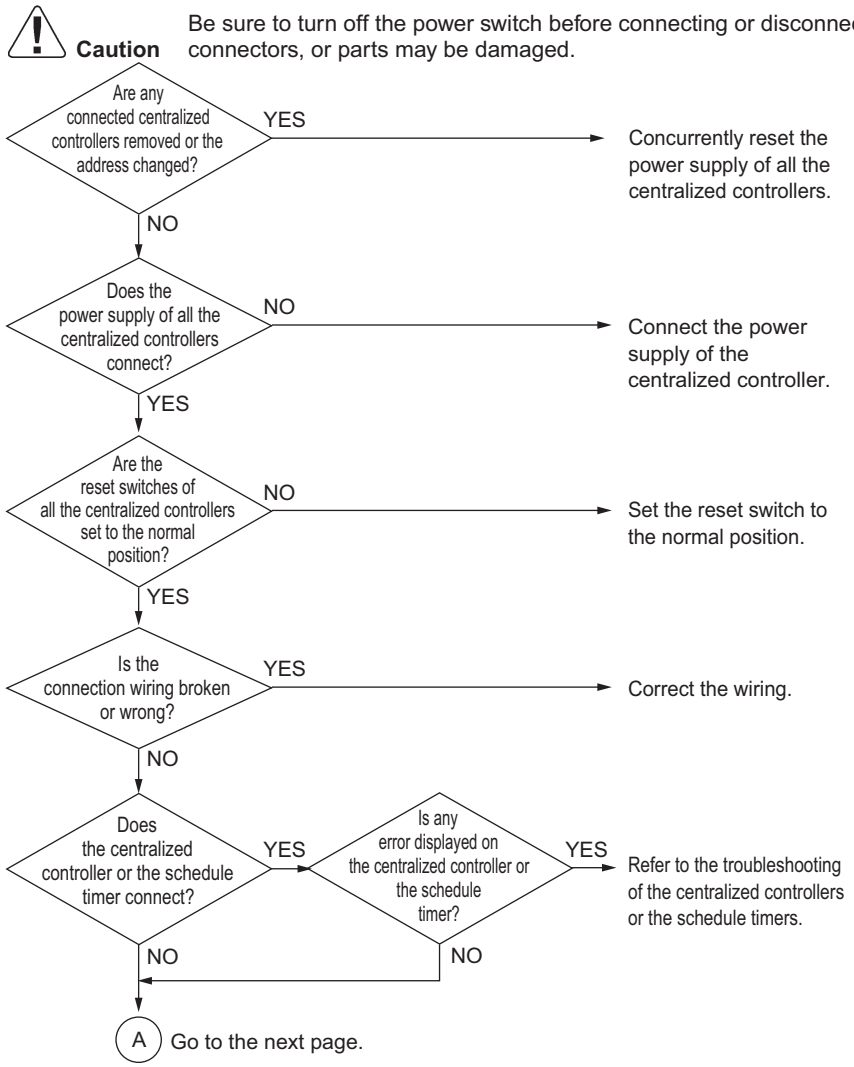
Error Decision Conditions

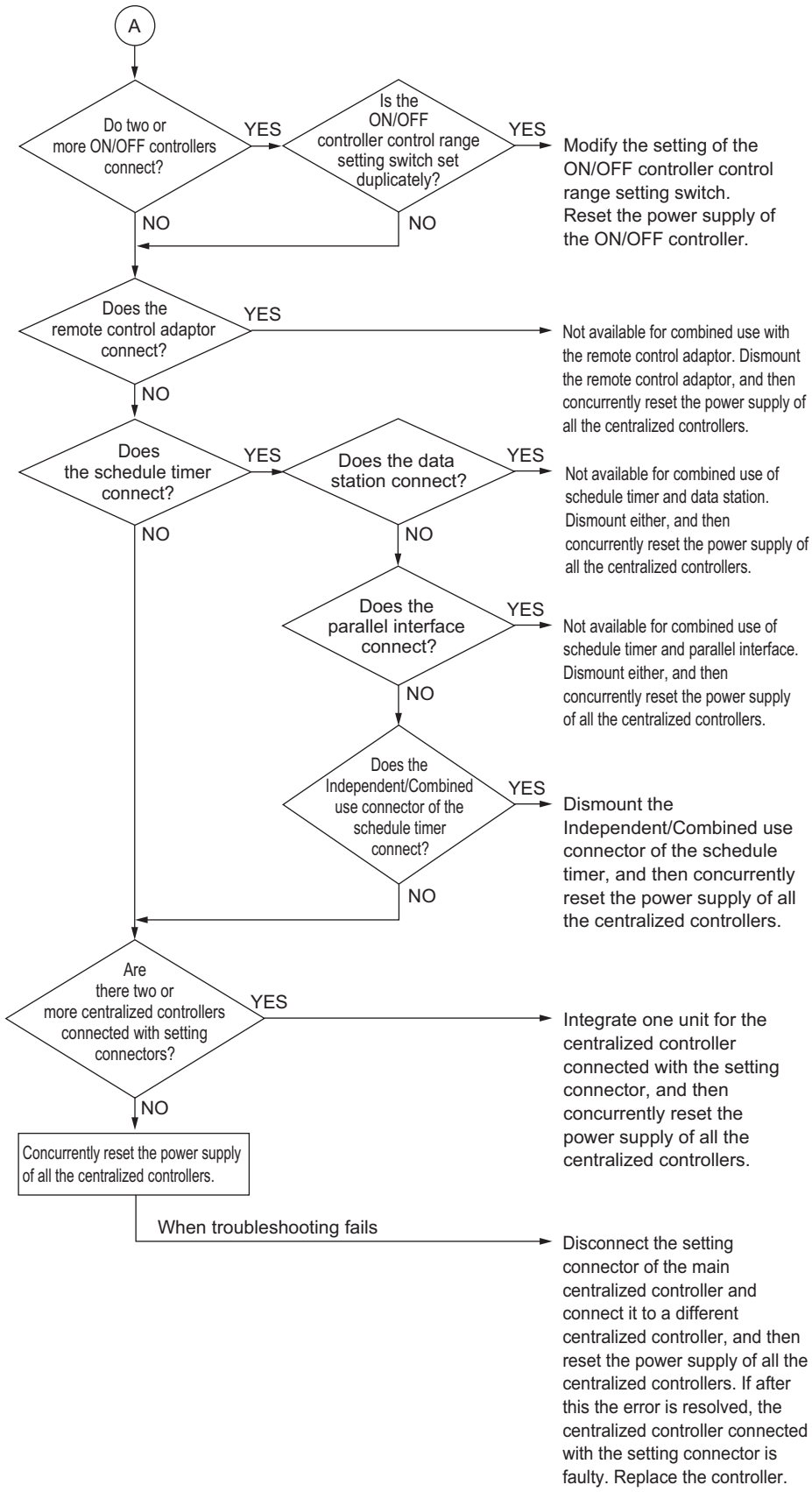
- The previously connected centralized controller is not responding.
- Control range duplication
- There are multiple main centralized controllers.
- There are other centralized controllers but the schedule timer is set for individual use.
- There is a remote control adapter.

Supposed Causes

- Centralized controller address duplication
- Poor centralized controller combination
- Multiple main centralized controllers
- Transmission defect between centralized controllers
- Defective centralized controller PCB

Troubleshooting




A
Do two or more ON/OFF controllers connect?
YES
Is the ON/OFF controller control range setting switch set duplicately?
YES
Modify the setting of the ON/OFF controller control range setting switch. Reset the power supply of the ON/OFF controller.
NO
NO
Does the remote control adaptor connect?
YES
Not available for combined use with the remote control adaptor. Dismount the remote control adaptor, and then concurrently reset the power supply of all the centralized controllers.
NO
Does the schedule timer connect?
YES
Does the data station connect?
YES
Not available for combined use of schedule timer and data station. Dismount either, and then concurrently reset the power supply of all the centralized controllers.
NO
NO
Does the parallel interface connect?
YES
Not available for combined use of schedule timer and parallel interface. Dismount either, and then concurrently reset the power supply of all the centralized controllers.
NO
Does the Independent/Combined use connector of the schedule timer connect?
YES
Dismount the Independent/Combined use connector of the schedule timer, and then concurrently reset the power supply of all the centralized controllers.
NO
Are there two or more centralized controllers connected with setting connectors?
YES
Integrate one unit for the centralized controller connected with the setting connector, and then concurrently reset the power supply of all the centralized controllers.
NO
Concurrently reset the power supply of all the centralized controllers.
When troubleshooting fails
Disconnect the setting connector of the main centralized controller and connect it to a different centralized controller, and then reset the power supply of all the centralized controllers. If after this the error is resolved, the centralized controller connected with the setting connector is faulty. Replace the controller.

5.66 Central Control Indicator Lamp Blinking (Two blinks)

Applicable Models

ON/OFF controller

Error Code

—

Method of Error Detection

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

Error Decision Conditions

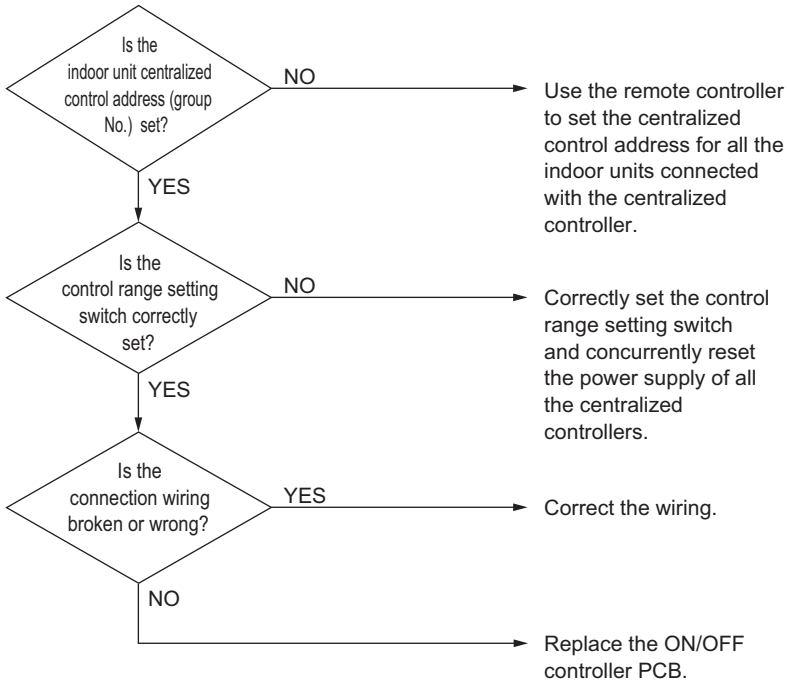
The indoor unit has no centralized control address set
No indoor unit within the control range

Supposed Causes

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

Troubleshooting

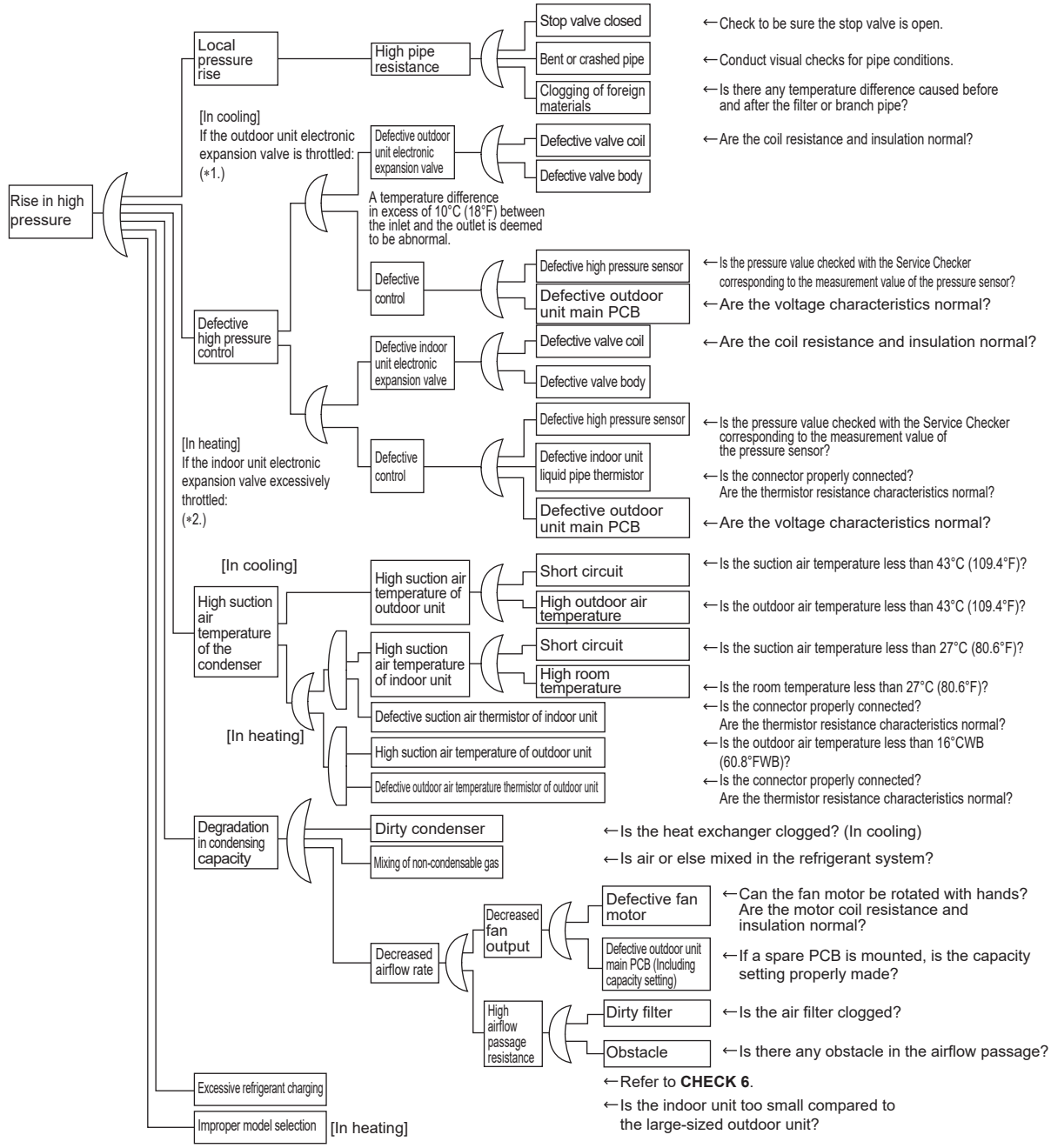
Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



6. Check

6.1 High Pressure Check

CHECK 1 Referring to the Fault Tree Analysis (FTA) shown below, probe the defective points.



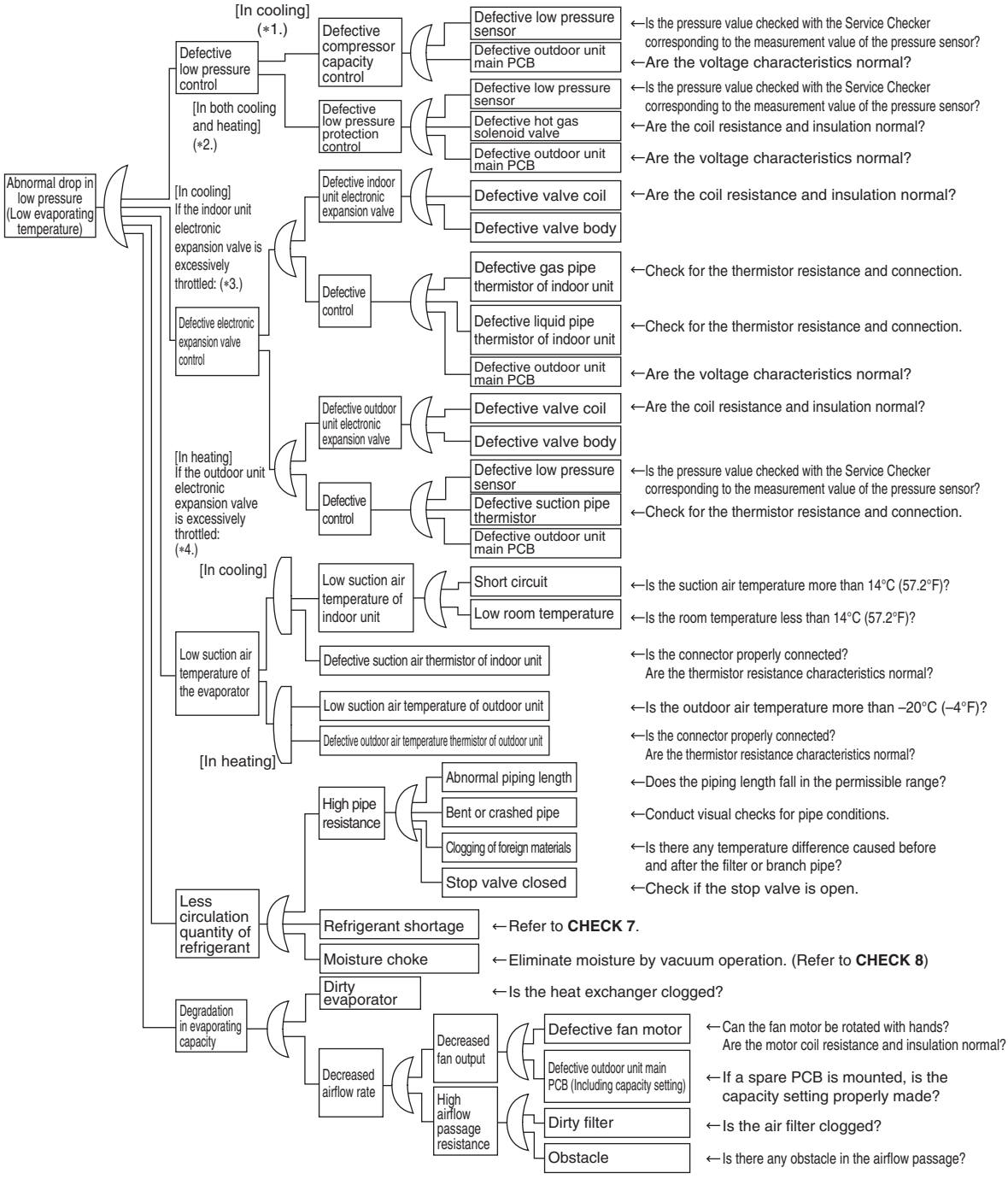
Note(s)

*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.

Reference **CHECK 6** Refer to page 324.

6.2 Low Pressure Check

CHECK 2 Referring to the Fault Tree Analysis (FTA) shown below, probe the defective points



Note(s)

∗1. For details of compressor capacity control while in cooling, refer to Compressor PI control.

∗2. The low pressure protection control includes low pressure protection control and hot gas bypass control.

∗3. In cooling, the indoor unit electronic expansion valve is used for superheating degree control.

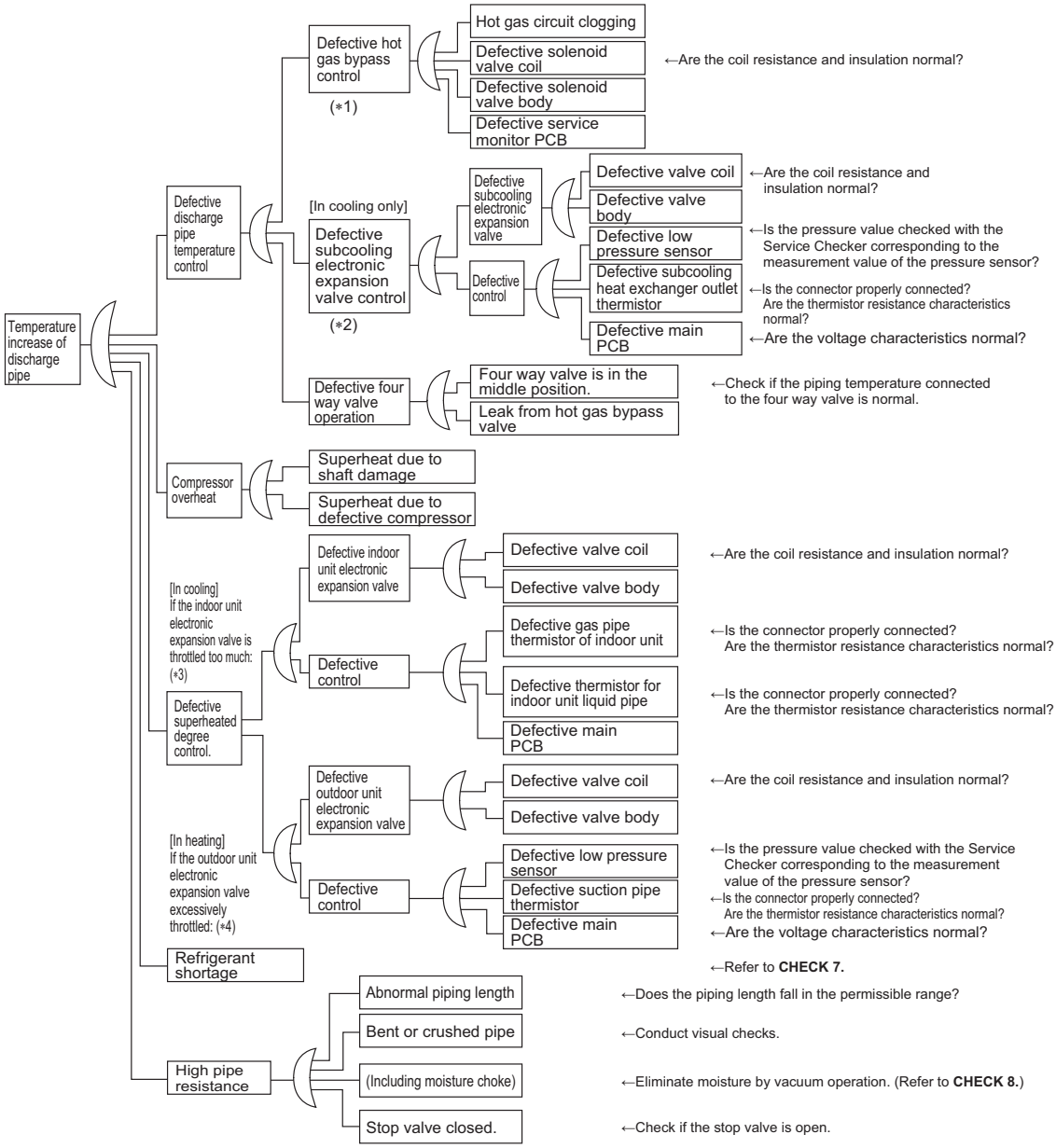
∗4. In heating, the outdoor unit electronic expansion valve (main) is used for superheating degree control of outdoor heat exchanger.

Reference **CHECK 7** Refer to page 325.

Reference **CHECK 8** Refer to page 326.

6.3 Superheat Operation Check

CHECK 3 Referring to the Fault Tree Analysis (FTA) shown below, probe the defective points.



Note(s)

∗1: Refer to Low pressure protection control on page 101.

∗2: Refer to Subcooling electronic expansion valve control on page 91.

∗3: Superheating temperature control in cooling is conducted by indoor unit electronic expansion valve.

∗4: Superheating temperature control in heating is conducted by outdoor unit electronic expansion valve.

∗5: Judgment criteria of superheat operation: (1) Suction gas superheated degree: 10°C (18°F) and over. (2) Discharge gas superheated degree: 45°C (81°F) and over, except immediately after compressor starts up or is running under dropping 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.)

Reference **CHECK 7** Refer to page 325.

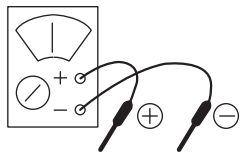
Reference **CHECK 8** Refer to page 326.

6.4 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



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

[Point of Measurement and Judgment Criteria]
· Measure the resistance value using a tester at each point of measurement below, 10 minutes later after power OFF.
To use analog multimeter:
Measurement in the resistance value mode in the range of multiplying 1 kΩ.

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

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

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

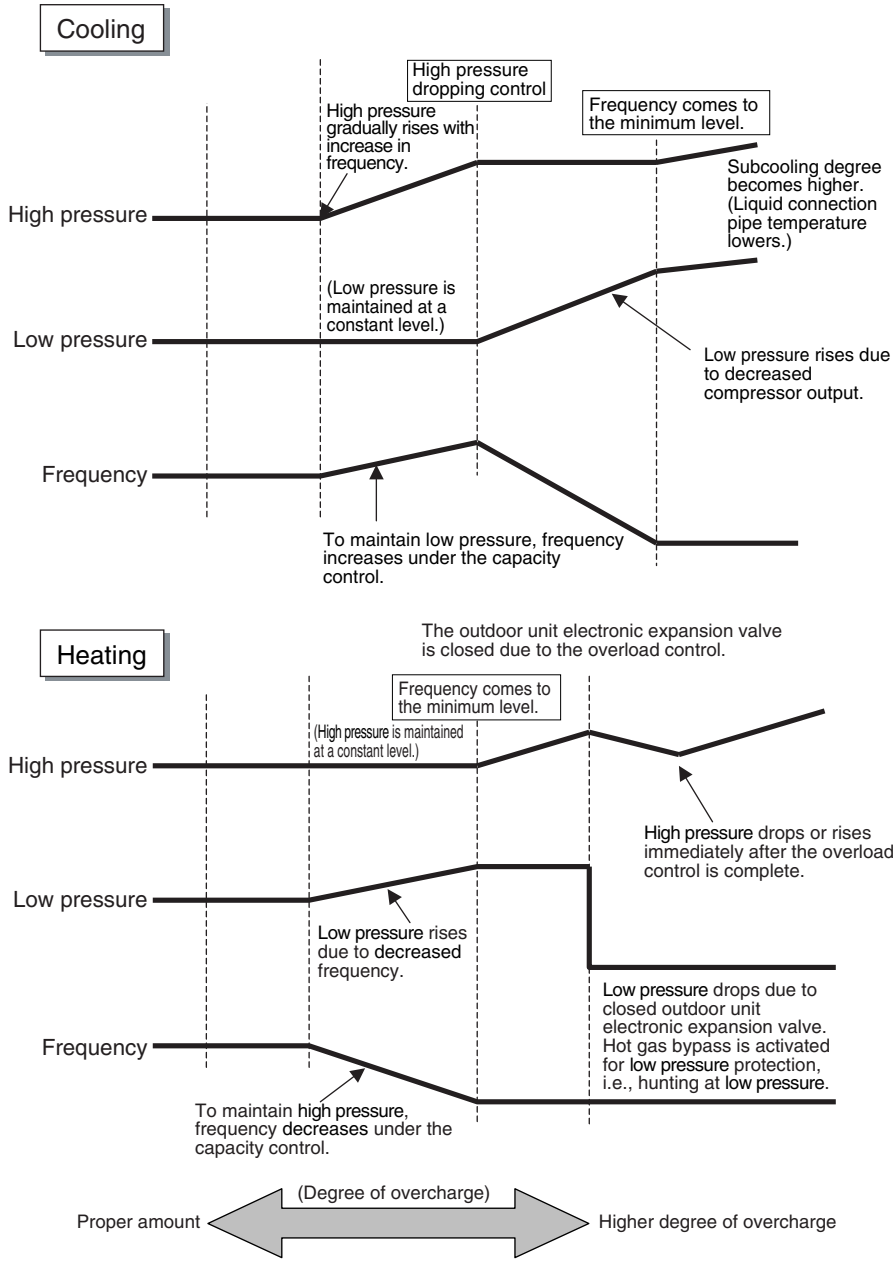
6.5 Refrigerant Overcharge Check

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 judgment, refer to the information below.

Diagnosis of refrigerant overcharge

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



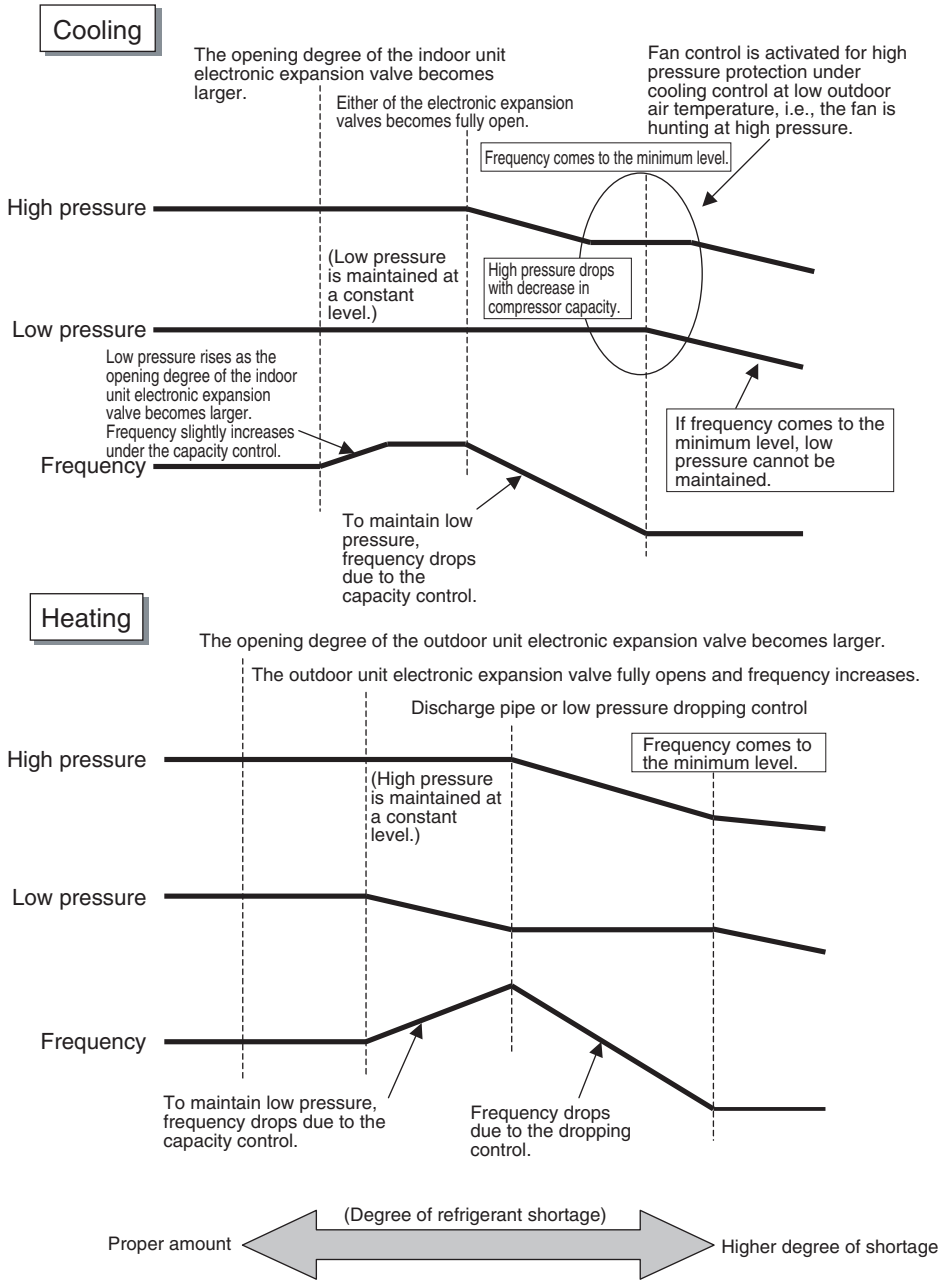
6.6 Refrigerant Shortage Check

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



6.7 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 500 microns.
   - 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 500 microns.
   - If the degree of vacuum does not reach 500 microns 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 500 microns 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 500 microns 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

Use this procedure if moisture may get into the piping, such as construction during the rainy season (dew condensation may occur, or rainwater may enter the piping during construction work).

1. Vacuuming and dehydration
   - Follow the same procedure as that for normal vacuuming and dehydration described above.
2. Vacuum break
   - Pressurize with nitrogen gas up to 375,000 microns.
3. Vacuuming and dehydration
   - Conduct vacuuming and dehydration for a period of 1 hour or more. If the degree of vacuum does not reach 500 microns 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 500 microns 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.

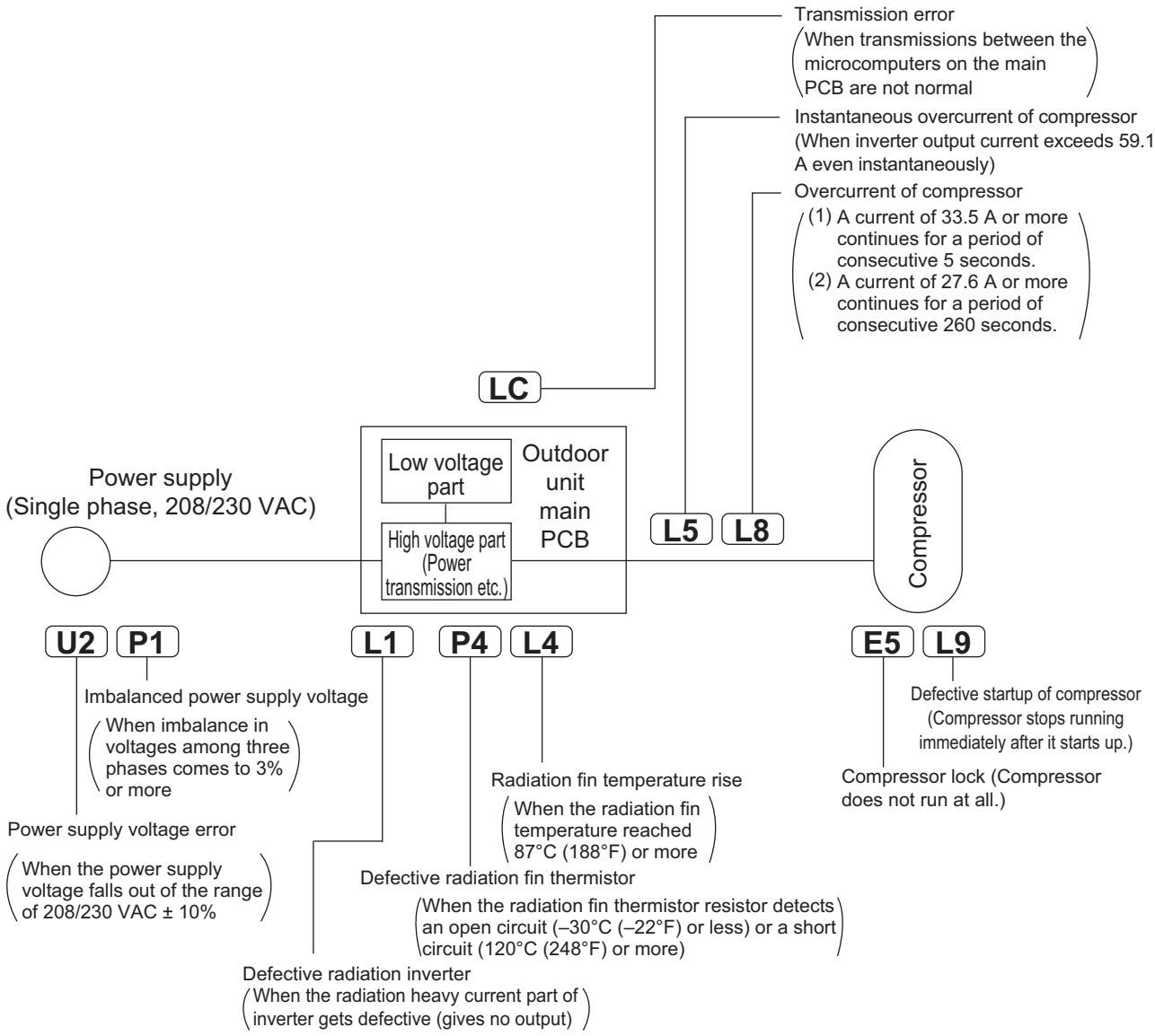
6.8 List of Inverter-Related Error Codes

CHECK 9

	Code	Name	Condition for determining error	Major cause
Compressor current	**L5**	Instantaneous overcurrent of compressor	• Inverter output current exceeds 59.1 A even instantaneously.	• Liquid sealing • Defective compressor • Defective inverter PCB
	L8	Overcurrent of compressor (Electronic superheating protection sensor)	• Compressor overload running A current of 33.5 A or more continues for a period of consecutive 5 seconds or that of 27.6 A or more continues for a period of consecutive 260 seconds. • The inverter loses synchronization.	• Back-flow of compressor liquid • Sudden changes in loads • Disconnected compressor wiring • Defective PCB
Protection device and others	**E5**	Compressor lock	• The compressor is in the locked status (does not rotate).	• Defective compressor
	L1	Defective inverter PCB	• No output is given.	• Defective heavy current part of compressor
	L4	Radiation fin temperature rise	• The radiation fin temperature reaches 87°C (188°F) or more (while in operation).	• Defective fan • Running in overload for an extended period of time • Defective PCB
	L9	Defective startup of compressor	• The compressor motor fails to start up.	• Liquid sealing or defective compressor • Excessive oil or refrigerant • Defective PCB
	LC	Transmission error between microcomputers on the outdoor unit main PCB	• No communications are carried out across the microcomputers on the outdoor unit main PCB.	• Defective outdoor unit main PCB
	P1	Imbalanced power supply	• Power supply voltages get significantly imbalanced among three phases.	• Power supply error (imbalanced voltages of 2% or more) • Defective PCB • Dead PCB
	P4	Defective radiation fin thermistor	• The radiation fin thermistor gets short circuited or open.	• Defective radiation fin thermistor
	U2	Power supply voltage error	• The inverter power supply voltage is high or low.	• Power supply error • Defective PCB

6.9 Concept of Inverter-Related Error Codes

CHECK 10



6.10 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-AA	Type C	Type A	Type A	—
FXFQ-T			Type J	—
FXFQ-P	Type D			—
FXZQ-TA	Type B		Type A	—
FXZQ-TB				—
FXZQ-M			Type J	—
FXUQ-P	Type C		Type A	—
FXUQ-PA				—
FXEQ-P	Type B		Type J	—
FXDQ-M				—
FXSQ-TA			Type A	—
FXSQ-TB				—
FXMQ-PB			Type J	Type J
FXMQ-TB			Type A	—
FXHQ-M			Type J	—
FXAQ-P				—
FXLQ-M				—
FXNQ-M				—
FXTQ-TA	—		Type A	—
FXTQ-TB	—			—
FXMQ-MF	Type B		Type J	Type J

Thermistor type of outdoor units

Electric symbol	Thermistor	Type		
		36 class	48 class	60 class
R1T	Outdoor air	E	E	E
R2T	Discharge pipe	G	G	G
R3T	Suction pipe 1	A	A	A
R4T	Heat exchanger deicer	A	A	A
R5T	Suction pipe 2	A	A	A
R6T	Subcooling heat exchanger gas pipe	—	—	A
R7T	Liquid pipe	A	A	A
R10T/FINTH	Radiation fin	K	K	K

Thermistor temperature		Resistance (kΩ)				
(°C)	(°F)	Type A	Type B	Type C	Type D	Type E
–30	–22	363.8	—	—	336.7	357.9
–25	–13	266.8	—	—	253.1	263.5
–20	–4	197.8	—	—	191.2	196.1
–15	5	148.2	—	—	144.1	147.4
–10	14	112.0	111.1	111.8	109.6	111.8
–5	23	85.52	84.95	85.42	84.05	85.53
0	32	65.84	65.53	65.80	64.99	66.00
5	41	51.05	50.95	51.07	50.64	51.31
10	50	39.91	39.92	39.97	39.74	40.20
15	59	31.44	31.50	31.51	31.41	31.74
20	68	24.95	25.02	25.02	24.98	25.23
25	77	19.94	20.00	20.00	20.00	20.19
30	86	16.04	16.10	16.10	16.12	16.26
35	95	12.99	13.04	13.04	13.07	13.17
40	104	10.58	10.63	10.63	10.67	10.74
45	113	8.669	8.720	8.711	8.757	8.806
50	122	7.143	7.189	7.179	7.227	7.260
55	131	5.918	—	—	5.997	6.014
60	140	4.928	—	—	5.001	5.008
65	149	4.123	—	—	4.191	4.191
70	158	3.467	—	—	3.528	3.525
75	167	—	—	—	2.984	2.978
80	176	—	—	—	2.534	2.527
85	185	—	—	—	2.161	2.153
90	194	—	—	—	1.850	1.843
95	203	—	—	—	1.590	1.583
100	212	1.339	—	—	1.371	1.365
105	221	—	—	—	1.188	1.181
Drawing No.		3SA48002 3SA48004 3SA48018 3SA48019 (AD94A045) 3SA48013 (AD100026)	3SA48001 (AD210486)	3SA48016 (AD100008) 3S480014 (AD150384)	4P159172 (AD010555)	3S480025 (AD180054)

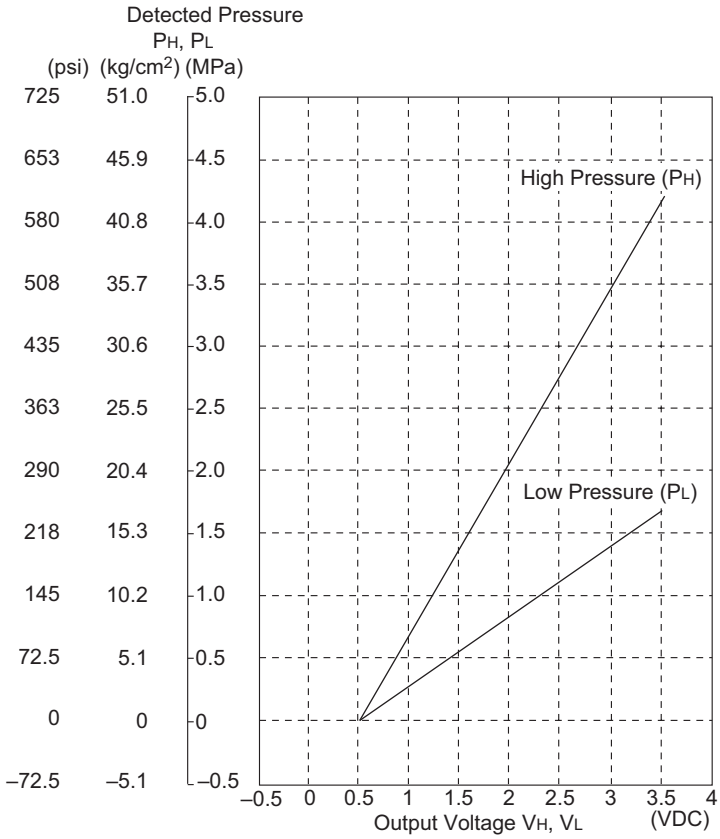
∗The data is for reference purpose only.

Thermistor temperature		Resistance (kΩ)		
(°C)	(°F)	Type G	Type J	Type K
–30	–22	4759	352.1	350.6
–25	–13	3454	261.2	257.4
–20	–4	2534	195.4	191.0
–15	5	1877	147.3	143.2
–10	14	1404	111.8	108.4
–5	23	1059	85.49	82.83
0	32	806.5	65.80	63.80
5	41	618.9	51.15	49.53
10	50	478.8	40.08	38.75
15	59	373.1	31.64	30.56
20	68	292.9	25.16	24.26
25	77	231.4	20.14	19.40
30	86	184.1	16.23	15.62
35	95	147.4	13.16	12.65
40	104	118.7	10.73	10.31
45	113	96.13	8.800	8.447
50	122	78.29	7.255	6.962
55	131	64.10	6.012	5.769
60	140	52.76	5.010	4.805
65	149	43.63	4.196	4.021
70	158	36.26	3.532	3.381
75	167	30.27	2.987	2.856
80	176	25.38	2.538	2.422
85	185	21.37	2.166	2.063
90	194	18.06	1.857	1.764
95	203	15.33	1.598	1.515
100	212	13.06	1.380	1.305
105	221	11.17	1.196	1.128
110	230	9.585	1.041	0.9781
115	239	8.254	0.908	0.8506
120	248	7.131	0.795	0.7420
125	257	6.181	0.698	0.6495
130	266	5.374	0.615	0.5700
135	275	4.686	0.543	—
140	284	4.098	0.481	—
145	293	3.594	0.428	—
150	302	3.161	0.381	—
Drawing No.		3SA48009 (AD970175)	3SA48005 (AD190114)	3P204139 (AD070077)

∗The data is for reference purpose only.

6.11 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

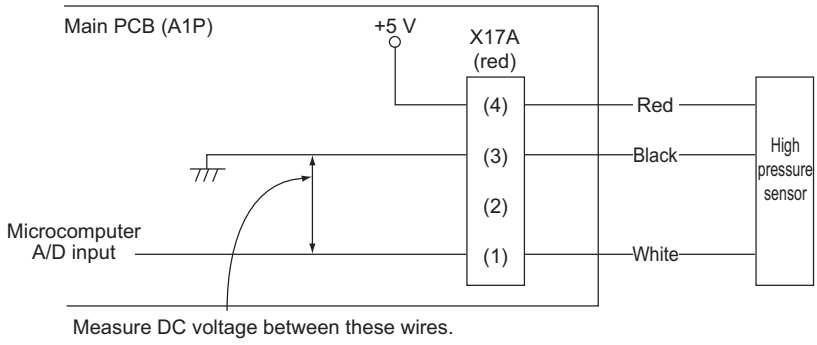
P_H : High pressure (MPa)

P_L : Low pressure (MPa)

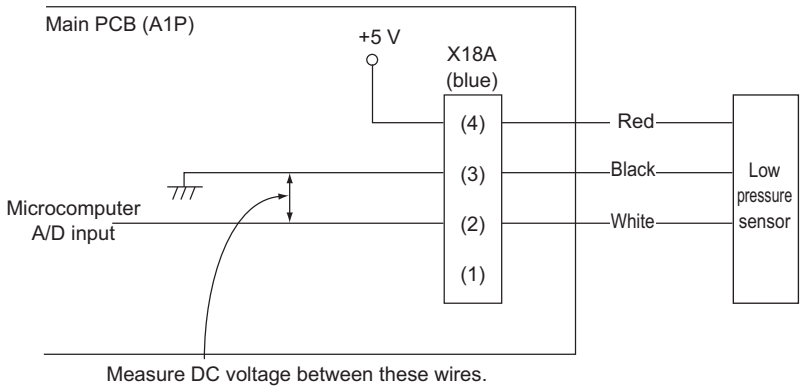
V_H : Output Voltage (High Side) (VDC)

V_L : Output Voltage (Low Side) (VDC)

Voltage Measurement Point of the High Pressure Sensor



Voltage Measurement Point of the Low Pressure Sensor



6.12 Master Unit Centralized Connector Setting Table

CHECK 13

The master unit centralized setting connector (CN1/X1A) is mounted at the factory.

- To independently use a single unit of the intelligent Touch Controller or a single unit of the central remote controller, do not dismount the master unit centralized setting connector (i.e., use the connector with the factory setting unchanged).
- To independently use the schedule timer, insert an independent-use setting connector. No independent-use setting connector has been mounted at the factory. Insert the connector, which is attached to the casing of the master unit, in the PCB (CN1/X1A). (Independent-use connector: Master unit centralized setting connector)
- To use two or more centralized controller in combination, make settings according to the table shown below.

<table>
<tr><th rowspan="2">Pattern</th><th colspan="4">Central controller connection pattern</th><th colspan="4">Setting of master unit centralized setting connector (∗2)</th></tr>
<tr><th>intelligent Touch Controller</th><th>Central remote controller</th><th>Unified ON/OFF controller</th><th>Schedule timer</th><th>intelligent Touch Controller</th><th>Central remote controller</th><th>Unified ON/OFF controller</th><th>Schedule timer</th></tr>
<tr><td>(1)</td><td>1 to 2 units</td><td>—</td><td>—</td><td>× (∗1)</td><td>Only a single unit: Provided, Others: Not provided</td><td>—</td><td>—</td><td>—</td></tr>
<tr><td>(2)</td><td rowspan="2">1 unit</td><td rowspan="2">1 unit</td><td>—</td><td>× (∗1)</td><td rowspan="2">Provided</td><td rowspan="2">Not provided</td><td>—</td><td>—</td></tr>
<tr><td>(3)</td><td rowspan="2">1 to 8 units</td><td>× (∗1)</td><td rowspan="2">All not provided</td><td>—</td></tr>
<tr><td>(4)</td><td>1 to 2 units</td><td>—</td><td>× (∗1)</td><td>Only a single unit: Provided, Others: Not provided</td><td>—</td><td>—</td></tr>
<tr><td>(5)</td><td>—</td><td rowspan="4">1 to 4 units</td><td>—</td><td>—</td><td>—</td><td rowspan="4">Only a single unit: Provided, Others: Not provided</td><td>—</td><td>—</td></tr>
<tr><td>(6)</td><td>—</td><td rowspan="2">1 to 16 units</td><td>1 unit</td><td>—</td><td rowspan="2">All not provided</td><td>Not provided</td></tr>
<tr><td>(7)</td><td>—</td><td>—</td><td>—</td><td>—</td></tr>
<tr><td>(8)</td><td>—</td><td>—</td><td>1 unit</td><td>—</td><td>—</td><td>Not provided</td></tr>
<tr><td>(9)</td><td>—</td><td>—</td><td rowspan="2">1 to 16 units</td><td>—</td><td>—</td><td>—</td><td rowspan="2">Only a single unit: Provided, Others: Not provided</td><td>—</td></tr>
<tr><td>(10)</td><td>—</td><td>—</td><td>1 unit</td><td>—</td><td>—</td><td>Not provided</td></tr>
<tr><td>(11)</td><td>—</td><td>—</td><td>—</td><td>1 unit</td><td>—</td><td>—</td><td>—</td><td>Provided</td></tr>
</table>

Note(s)

∗1 The intelligent Touch Controller and the schedule timer are not available for combined use.
∗2 The intelligent Touch Controller, central remote controller, and the unified ON/OFF controller have been set to **Provided with the master unit centralized setting connector** at the factory. The schedule timer has been set to **Not provided with the master unit centralized setting connector** at the factory, which is attached to the casing of the master unit.

6.13 Master-Slave Unit Setting Table

CHECK 14 Combination of intelligent Touch Controller and Central Remote Controller

∗ Pattern	#1		#2		#3		#4	
	1-00~4-15	Master/ Slave	5-00~8-15	Master/ Slave	1-00~4-15	Master/ Slave	5-00~8-15	Master/ Slave
(1)	CRC	Master	CRC	Master	CRC	Slave	CRC	Slave
(2)	CRC	Master	—	—	CRC	Slave	—	—
(3)	intelligent Touch Controller	Master	—	—	intelligent Touch Controller	Slave	—	—
(4)	CRC	Master	—	—	intelligent Touch Controller	Slave	—	—
(5)	intelligent Touch Controller	Master	—	—	CRC	Slave	—	—
(6)	CRC	Master	—	—	—	—	—	—
(7)	intelligent Touch Controller	Master	—	—	—	—	—	—

Note(s)

CRC (Central remote controller): DCS302CA61
intelligent Touch Controller: DCS601C51
∗ The patterns marked with ∗ have nothing to do with those described in the list of setting of master unit centralized setting connector.

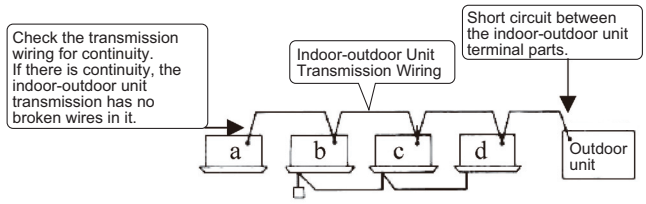
6.14 Broken Wire Check of the Relay Wires

CHECK 15 Procedure for checking indoor-outdoor unit transmission wiring for broken wires (for checking the indoor-outdoor unit transmission wiring of the outdoor unit 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, and then conduct continuity checks between the transmission wirings F1 and F2 of the indoor unit **a** that is farthest from the outdoor unit 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 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.



6.15 Fan Motor Connector Check (Power Supply Cable)

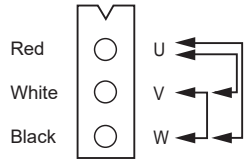
CHECK 16 Check the fan motor connector according to the following procedure.

Indoor Unit

FXFQ-AA

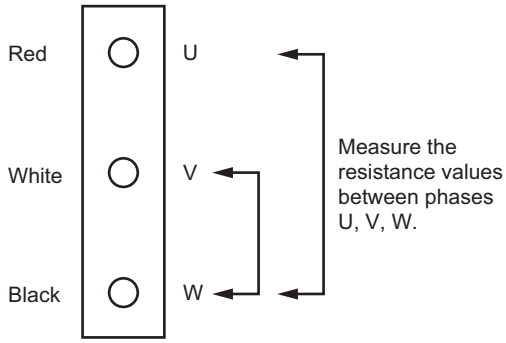
1. Turn the power supply OFF.
2. Disconnect the fan motor connector from the PCB and measure the resistances between U-V, V-W and W-U.

Judgment: Resistances must be balanced within 20%.



FXDQ-M, FXHQ-M

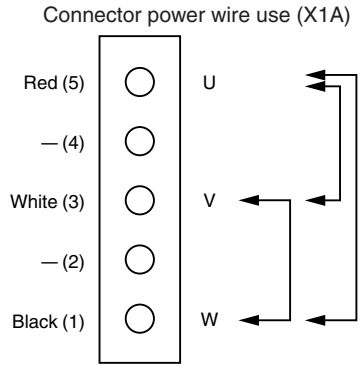
1. Turn OFF the power supply.
2. Measure the resistance between phases of U, V, W at the motor side connectors (3-core wire) to check that the values are balanced and there is no short circuiting, while connector or relay connector is disconnected.



Model	Judgment	
	Black-Red	Black-White
FXDQ07-12M	71.0 Ω ± 10%	73.5 Ω ± 10%
FXDQ18/24M	39.2 Ω ± 10%	41.3 Ω ± 10%
FXHQ12M	71.0 Ω ± 10%	73.5 Ω ± 10%
FXHQ24/36M	53.5 Ω ± 10%	31.6 Ω ± 10%

FXSQ54TA, FXSQ54TB, FXMQ15-54PB, FXMQ30-54TB

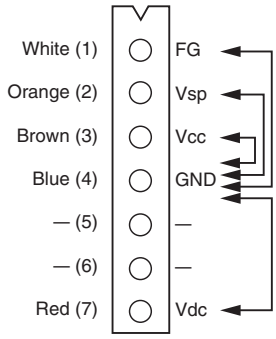
Remove the X1A connector from the fan PCB (A2P) and measure the resistance between the U and V, V and W, and W and U phases of the motor connector (with five conductors) and check that each phase are balanced (within a permissible dispersion range of ±20%).



6.16 Fan Motor Connector Check (Signal Cable)

CHECK 17 Resistance measuring points and judgment criteria.

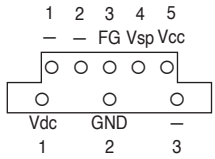
FXFQ-T, FXFQ09-30P, FXZQ-TA, FXZQ-TB, FXUQ-P, FXSQ05-48TA, FXSQ05-48TB, FXMQ07-12PB, FXMQ15-24TB, FXAQ-P, Outdoor unit



Judgment criteria

Measuring points	Criteria
1 - 4	1 Ω or more
2 - 4	1 Ω or more
3 - 4	1 Ω or more
7 - 4	1 Ω or more

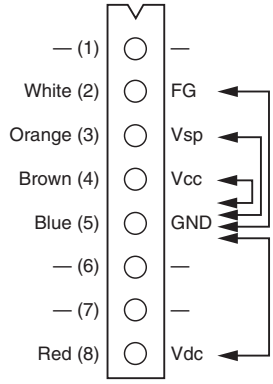
FXFQ36/48P



Judgment criteria

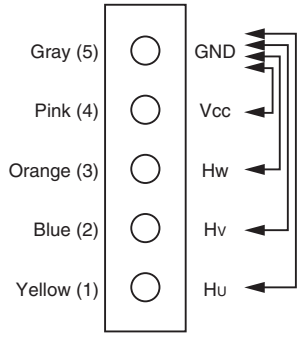
Measuring points	Criteria
3 - 2	1 Ω or more
4 - 2	1 Ω or more
5 - 2	1 Ω or more
1 - 2	1 Ω or more

FXEQ-P, FXUQ-PA



Measuring points	Judgment criteria
2 - 5	1 Ω or more
3 - 5	1 Ω or more
4 - 5	1 Ω or more
8 - 5	1 Ω or more

FXSQ54TA, FXSQ54TB, FXMQ15-54PB, FXMQ30-54TB



Measuring points	Judgment criteria
5 - 4	1 Ω or more
5 - 3	1 Ω or more
5 - 2	1 Ω or more
5 - 1	1 Ω or more

6.17 Electronic Expansion Valve Coil Check

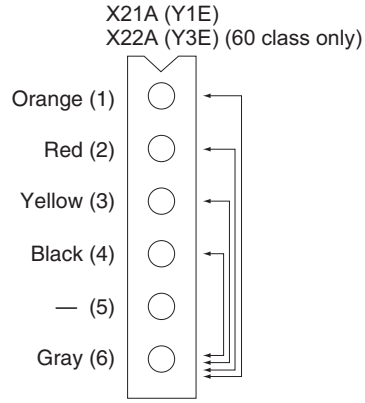
CHECK 18 Measure the connector pin-to-pin resistance and make sure that the resistance value is within the range listed in the table below.

Outdoor Unit

36 class

Measuring points	Judgment criteria
1 - 6	35-55 Ω
2 - 6	
3 - 6	
4 - 6	

48/60 class



Measuring points	Judgment criteria
1 - 6	35-55 Ω
2 - 6	
3 - 6	
4 - 6	

Indoor Unit

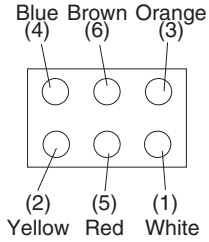
FXFQ-AA, FXFQ-T, FXFQ-P, FXZQ-TA, FXZQ-TB, FXUQ-P, FXUQ-PA, FXEQ-P, FXSQ-TA, FXSQ-TB, FXMQ-TB, FXTQ-TA, FXTQ-TB

Measuring points	Judgment criteria
1 - 6	35-55 Ω
2 - 6	
3 - 6	
4 - 6	

FXZQ-M, FXMQ-PB, FXAQ-P

Measuring points	Judgment criteria
1 - 3	300 Ω
1 - 5	150 Ω
2 - 4	300 Ω
2 - 6	150 Ω

FXDQ-M, FXHQ-M, FXLQ-M, FXNQ-M, FXMQ-MF



Measuring points	Judgment criteria
1 - 3	300 Ω
1 - 5	150 Ω
2 - 4	300 Ω
2 - 6	150 Ω

6.18 Fan Motor Connector Check for FXTQ-TA, FXTQ-TB

CHECK 19

CHECKING EMERSON ULTRATECH™ ECM MOTORS

The FXTQ-TA and FXTQ-TB models utilize an Emerson, 4-wire variable speed ECM blower motor. The ECM blower motor provides constant CFM.

The motor is a serially communicating variable speed motor. Only four wires are required to control the motor: +Vdc, Common, Receive, and Transmit.

The +Vdc and Common wires provide power to the motor's low voltage control circuits.

General Checks / Considerations

1. Check power supply to the air handler or modular blower. Ensure power supply is within the range specified on rating plate.
2. Check motor power harness. Ensure wires are continuous and make good contact when seated in the connectors. Repair or replace as needed.
3. Check motor control harness. Ensure wires are continuous and make good contact when seated in the connectors. Repair or replace as needed.
4. Check blower wheel. Confirm wheel is properly seated on motor shaft. Set screw must be on shaft flat and torqued to 165 in-lbs minimum. Confirm wheel has no broken or loose blades. Repair or replace as needed.
5. Ensure motor and wheel turn freely. Check for interference between wheel and housing or wheel and motor. Repair or replace as needed.
6. Check housing for cracks and/or corrosion. Repair or replace as needed.
7. Check motor mounting bracket. Ensure mounting bracket is tightly secured to the housing. Ensure bracket is not cracked or broken.

Emerson UltraCheck-EZ™ Diagnostic Tool

The Emerson UltraCheck-EZ™ diagnostic tool may be used to diagnose the ECM motor.

Warning

HIGH VOLTAGE!

Disconnect ALL power before servicing or installing. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.

To use the diagnostic tool, perform the following steps:

1. Disconnect power to the air handler.
2. Disconnect the 4-circuit control harness from the motor.
3. Plug the 4-circuit connector from the diagnostic tool into the motor control connector.
4. Connect one alligator clip from the diagnostic tool to a ground source.
5. Connect the other alligator clip to a 24VAC source.
   NOTE: The alligator clips are NOT polarized.
   NOTE: The Ultra Check-EZ™ diagnostic tool is equipped with a non-replaceable fuse. Connecting the tool to a source other than 24VAC could damage the tool and cause the fuse to open. Doing so will render the diagnostic tool inoperable.
6. Turn on power to air handler or modular blower.

Warning

Line Voltage now present.

7. Depress the orange power button on the diagnostic tool to send a run signal to the motor. Allow up to 5 seconds for the motor to start.
   NOTE: If the orange power button does not illuminate when depressed, the tool either has an open fuse or is not properly connected to a 24VAC source.

8. The green LED on the diagnostic tool will blink indicating communications between the tool and motor. See table below for indications of tool indicators and motor actions. Replace or repair as needed.

Power Button	Green LED	Motor Action	Indication(s)
OFF	OFF	Not Rotating	Confirm 24VAC to UltraCheck-EZ™ tool. If 24VAC is confirmed, diagnostic tool is inoperable.
ON	Blinking	Rotating	Motor and control/end bell are functioning properly.
ON	OFF	Rotating	Replace motor control/end bell.
ON	Blinking	Not Rotating	Check motor (refer to Motor Checks on page 343).
ON	OFF	Not Rotating	Replace motor control/end bell; verify motor (refer to Motor Checks on page 343).

9. Depress the orange power button to turn off motor.
10. Disconnect power. Disconnect diagnostic tool.
11. Reconnect the 4-wire harness from control board to motor.

Electrical Checks - High Voltage Power Circuits

Warning

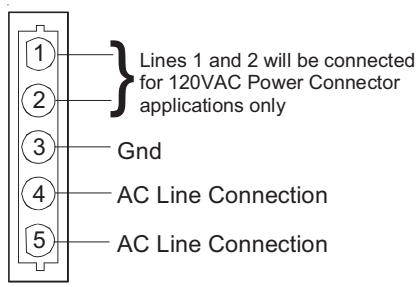
HIGH VOLTAGE!
Disconnect ALL power before servicing or installing. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.

1. Disconnect power to air handler or modular blower.
2. Disconnect the 5-circuit power connector to the ECM motor.
3. Turn on power to air handler or modular.

Warning

Line Voltage now present.

4. Measure voltage between pins 4 and 5 on the 5-circuit connector. Measured voltage should be the same as the supply voltage to the air handler or modular.



5. Measure voltage between pins 4 and 3. Voltage should be approximately half of the voltage measured in step 4.
6. Measure voltage between pins 5 and 3. Voltage should be approximately half of the voltage measured in step 4.
7. If no voltage is present, check supply voltage to air handler or modular blower.
8. Disconnect power to air handler or modular blower. Reconnect the 5-circuit power harness disconnected in step 2.

Electrical Checks - Low Voltage Control Circuits

1. Turn on power to air handler or modular.

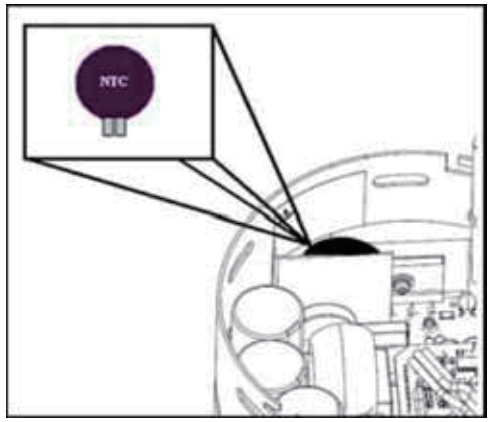
Warning Line Voltage now present.

2. Check voltage between pins on the 4-wire motor control harness between the motor and control board.
3. Voltage on pins should read:
   Pins 1 to 4 = 3.3vdc
   Pins 1 to 2 = 3.3vdc
   Pins 3 to 4 = 15vdc

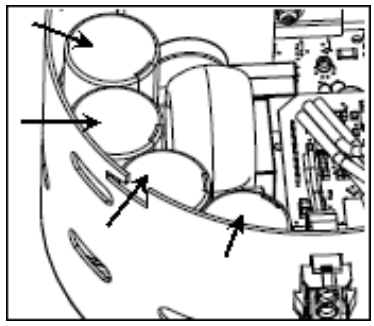
Motor Control/End Bell Checks

Warning HIGH VOLTAGE!
Disconnect ALL power before servicing or installing. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.

1. Disconnect power to air handler or modular blower.
   NOTE: Motor contains capacitors that can hold a charge for several minutes after disconnecting power. Wait 5 minutes after removing power to allow capacitors to discharge.
2. Disconnect the motor control harness and motor power harness.
3. Remove the blower assembly from the air handler or modular blower.
4. Remove the (3) screws securing the control/end bell to the motor. Separate the control/end bell. Disconnect the 3-circuit harness from the control/end bell to remove the control/end bell from the motor.
5. Inspect the NTC thermistor inside the control/end bell. Replace control/end bell if thermistor is cracked or broken.



6. Inspect the large capacitors inside the control/end bell. Replace the control/end bell if any of the capacitors are bulging or swollen.



7. Locate the 3-circuit connector in the control/end bell. Using an ohmmeter, check the resistance between each terminal in the connector. If the resistance is 1 MΩ or greater, the control/end bell is functioning properly. Replace the control/end bell if the resistance is lower than 1 MΩ.
8. Reassemble motor and control/end bell in reverse of disassembly. Replace blower assembly into air handler or modular blower.

Motor Checks

Warning

HIGH VOLTAGE!
Disconnect ALL power before servicing or installing. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.

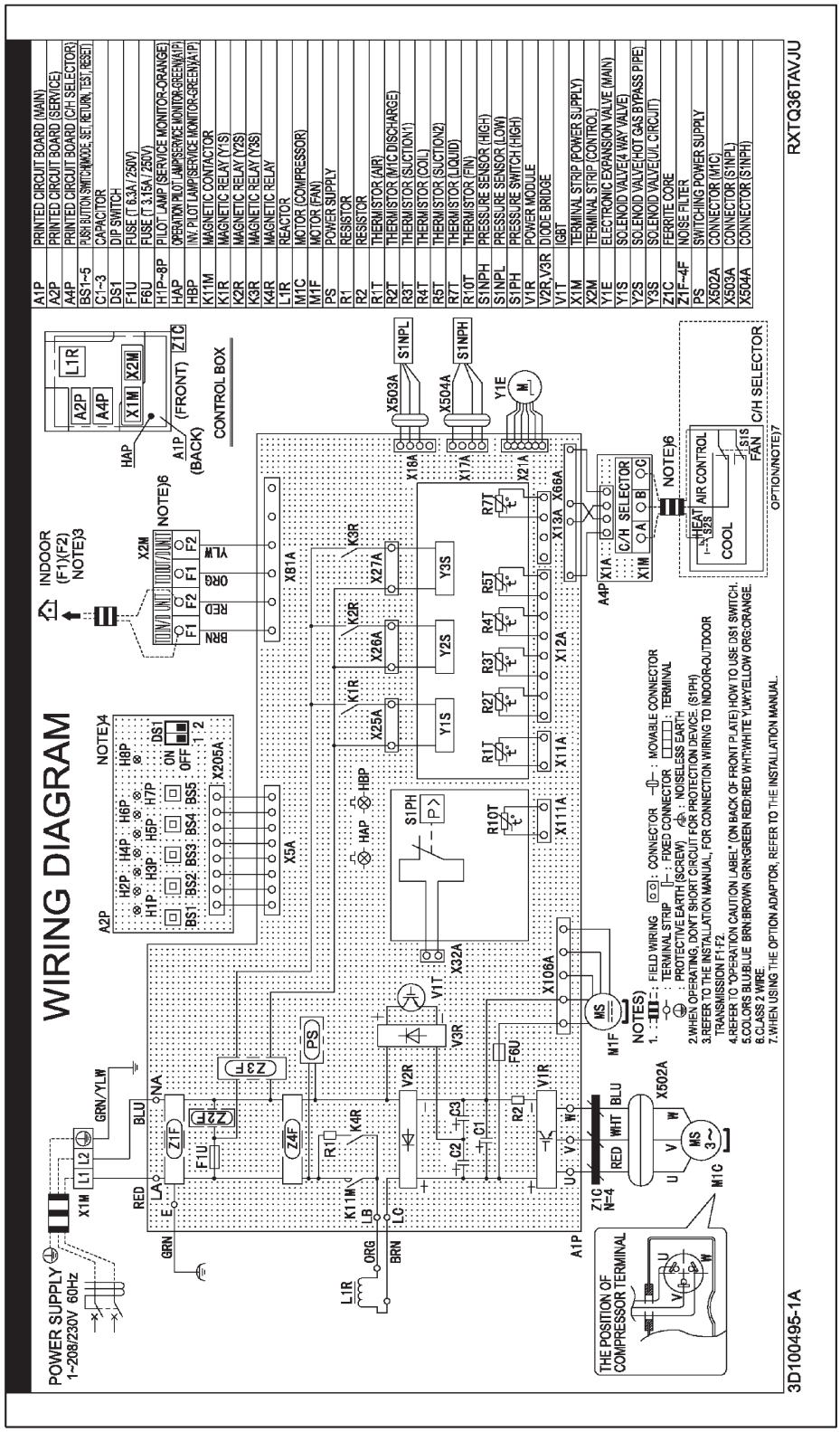
1. Disconnect power to air handler or modular blower.
   NOTE: Motor contains capacitors that can hold a charge for several minutes after disconnecting power. Wait 5 minutes after removing power to allow capacitors to discharge.
2. Disassemble motor as described in steps 2 through 4 above.
3. Locate the 3-circuit harness from the motor. Using an ohmmeter, measure the resistance between each motor phase winding. The resistance levels should be equal. Replace the motor if the resistance levels are unequal, open circuited or short circuited.
4. Measure the resistance between each motor phase winding and the motor shell. Replace the motor if any phase winding is short circuited to the motor shell.
5. Reassemble motor and control/end bell in reverse of disassembly. Replace blower assembly into air handler or modular blower.

Part 7
Appendix

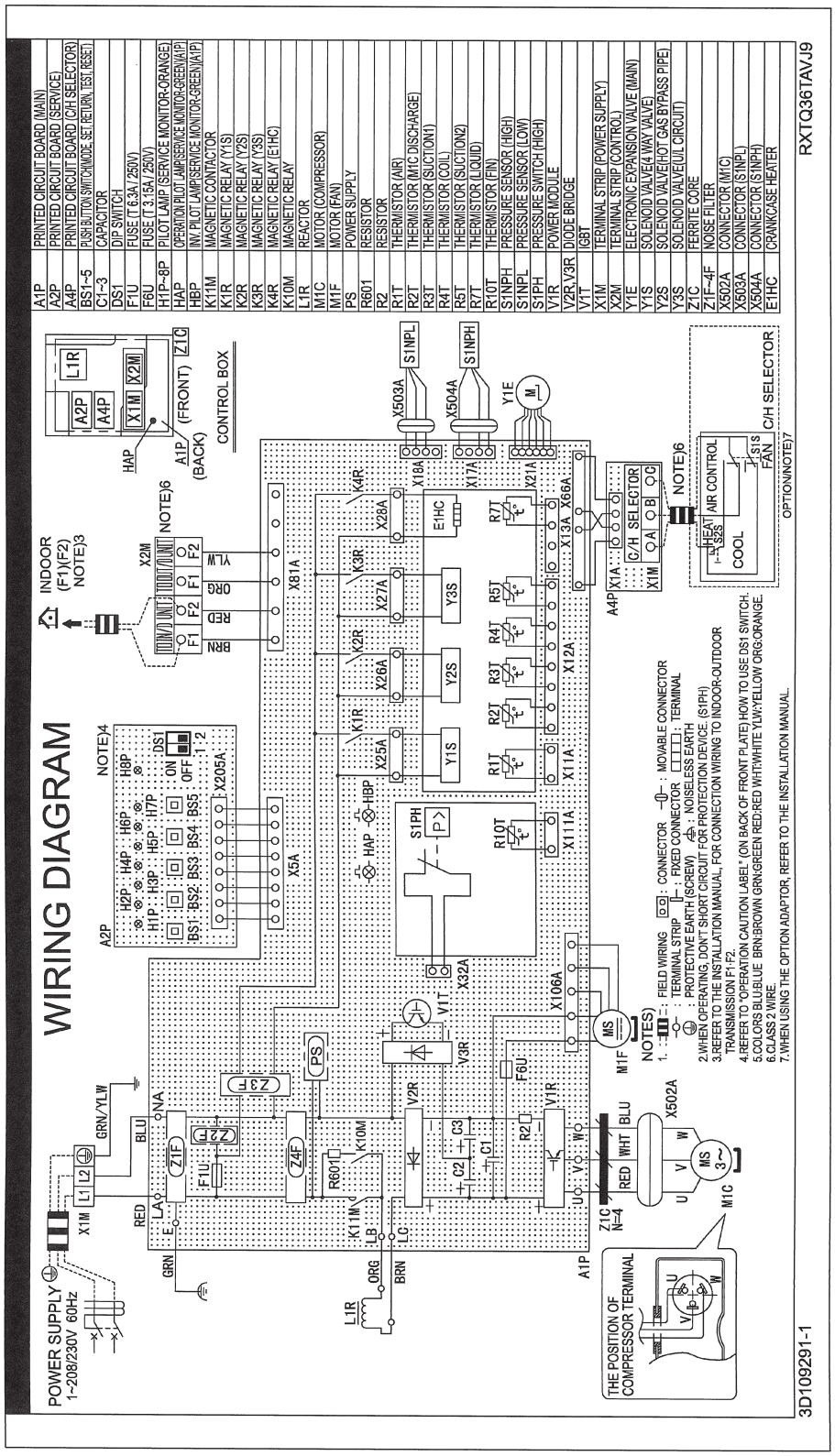
1. Wiring Diagrams

1.1 Outdoor Unit

RXTQ36TAVJU

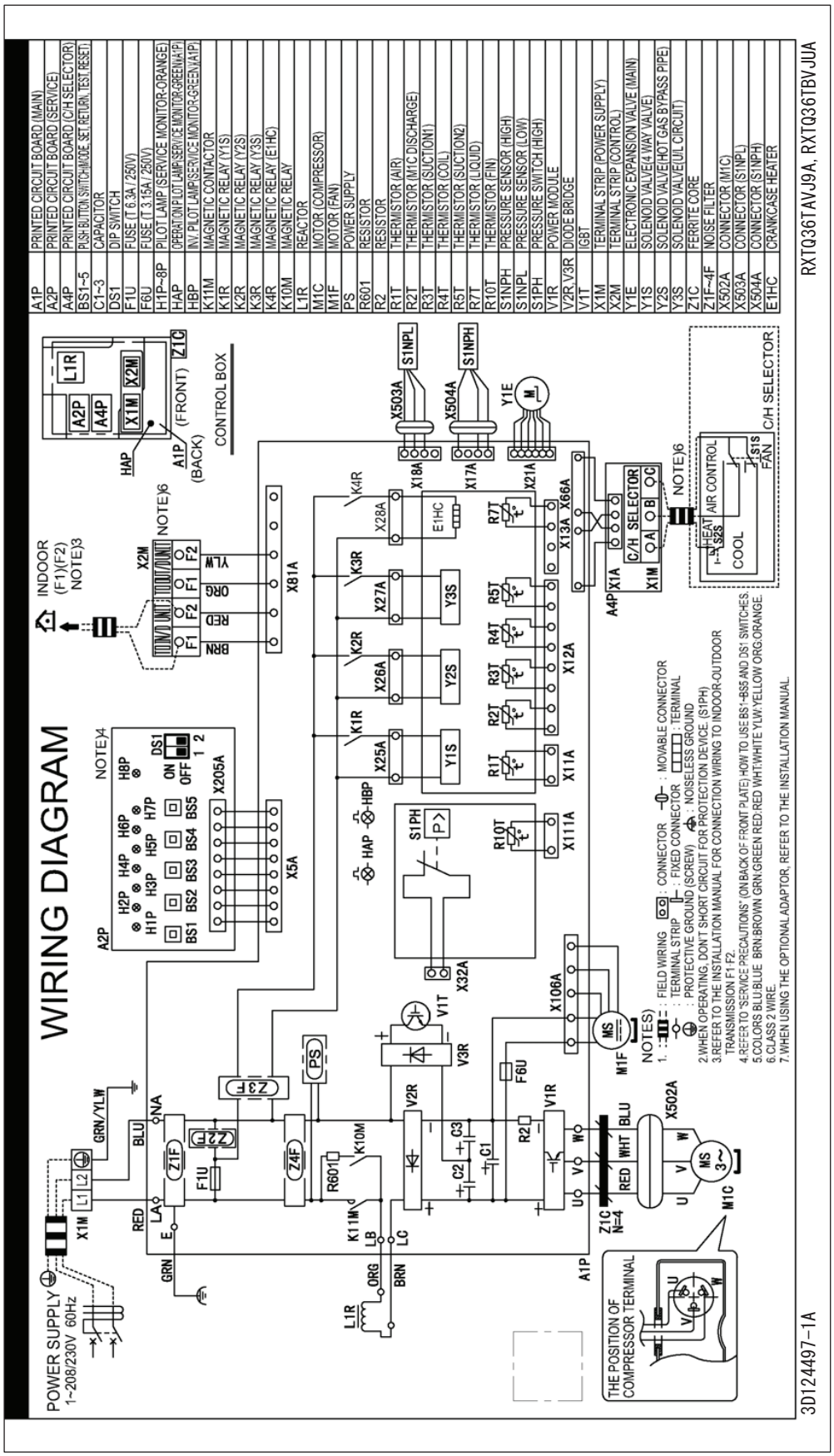


RXTQ36TAVJ9

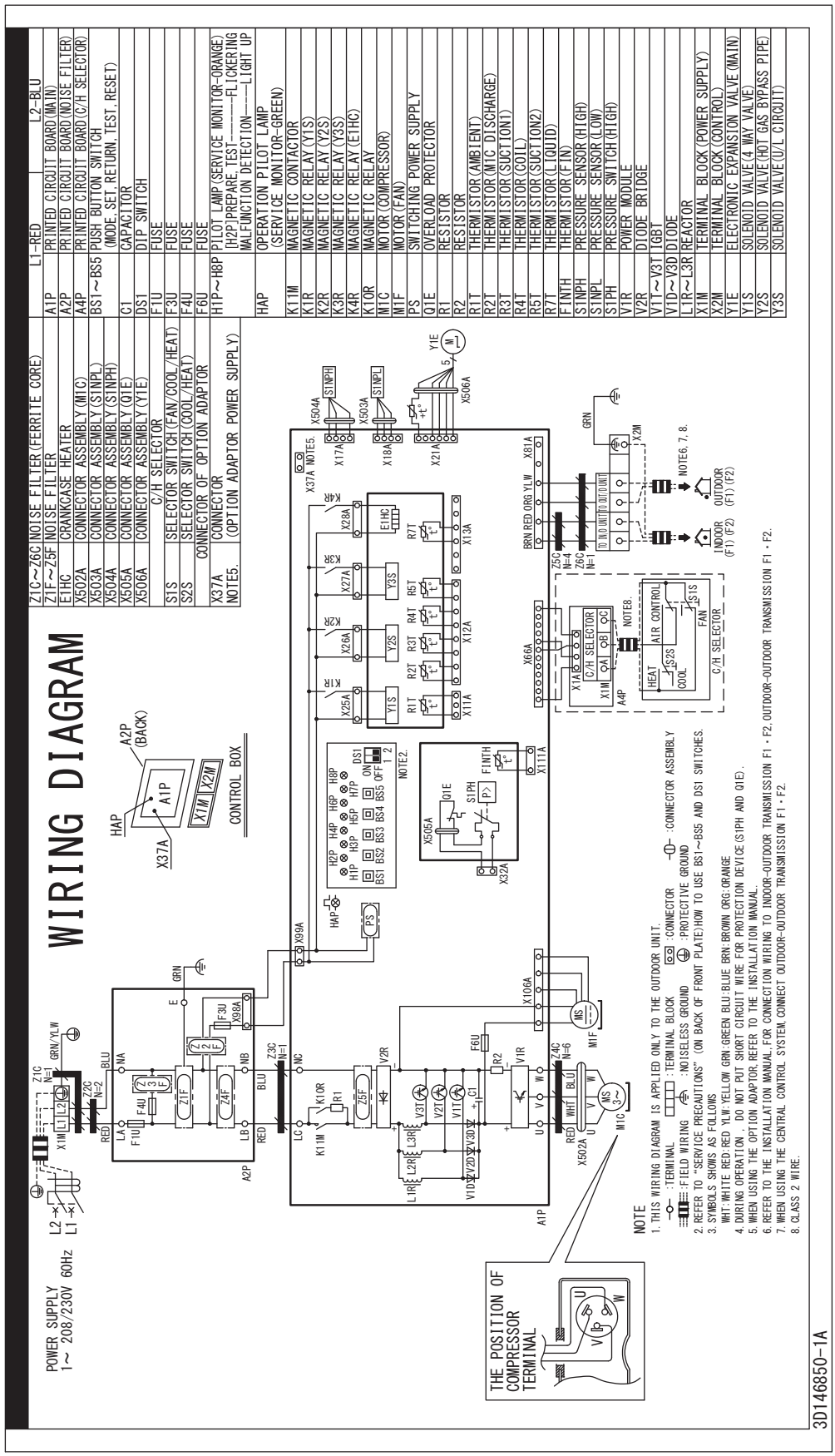


3D109291

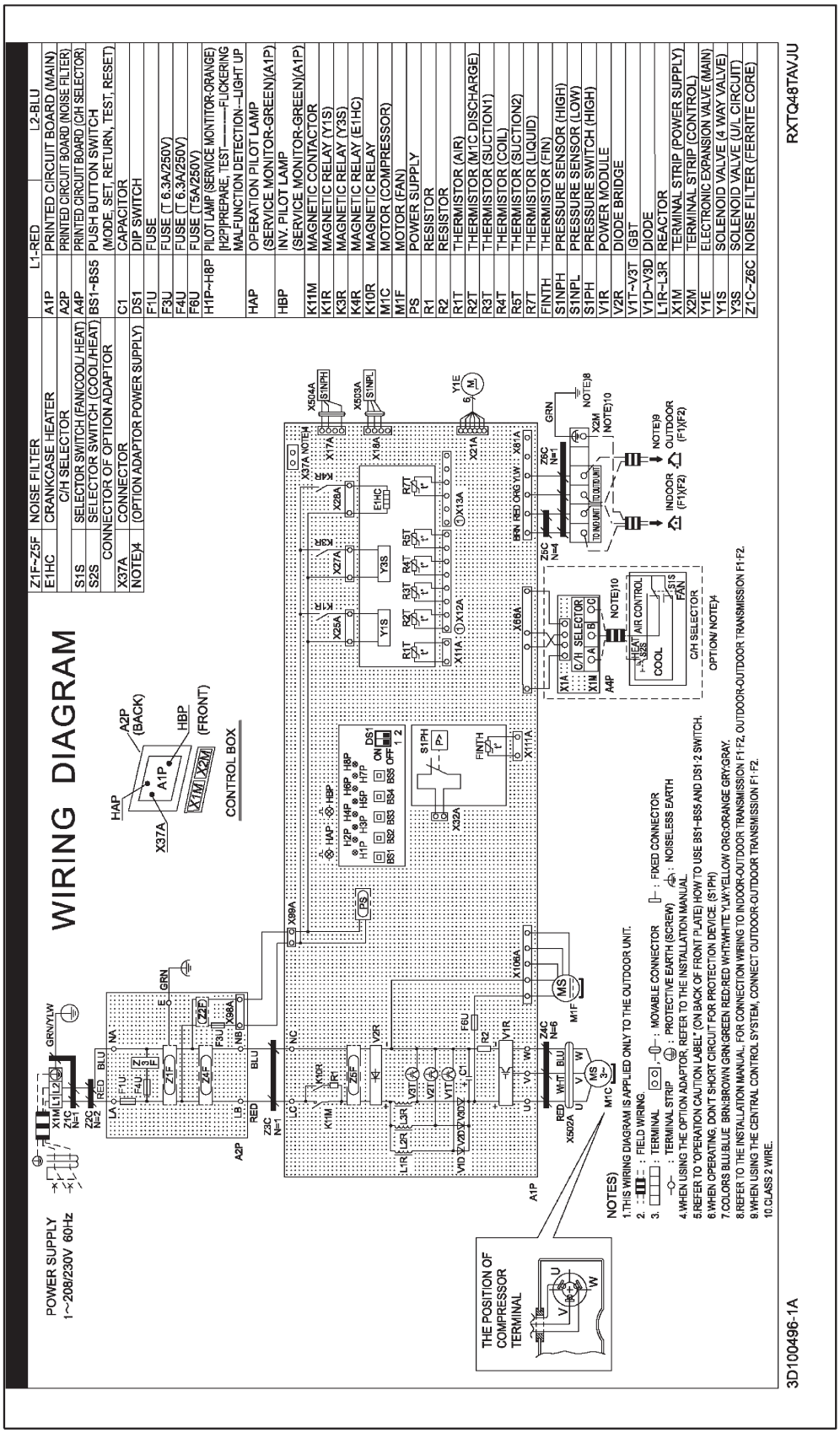
RXTQ36TAVJ9A, RXTQ36TBVJUA



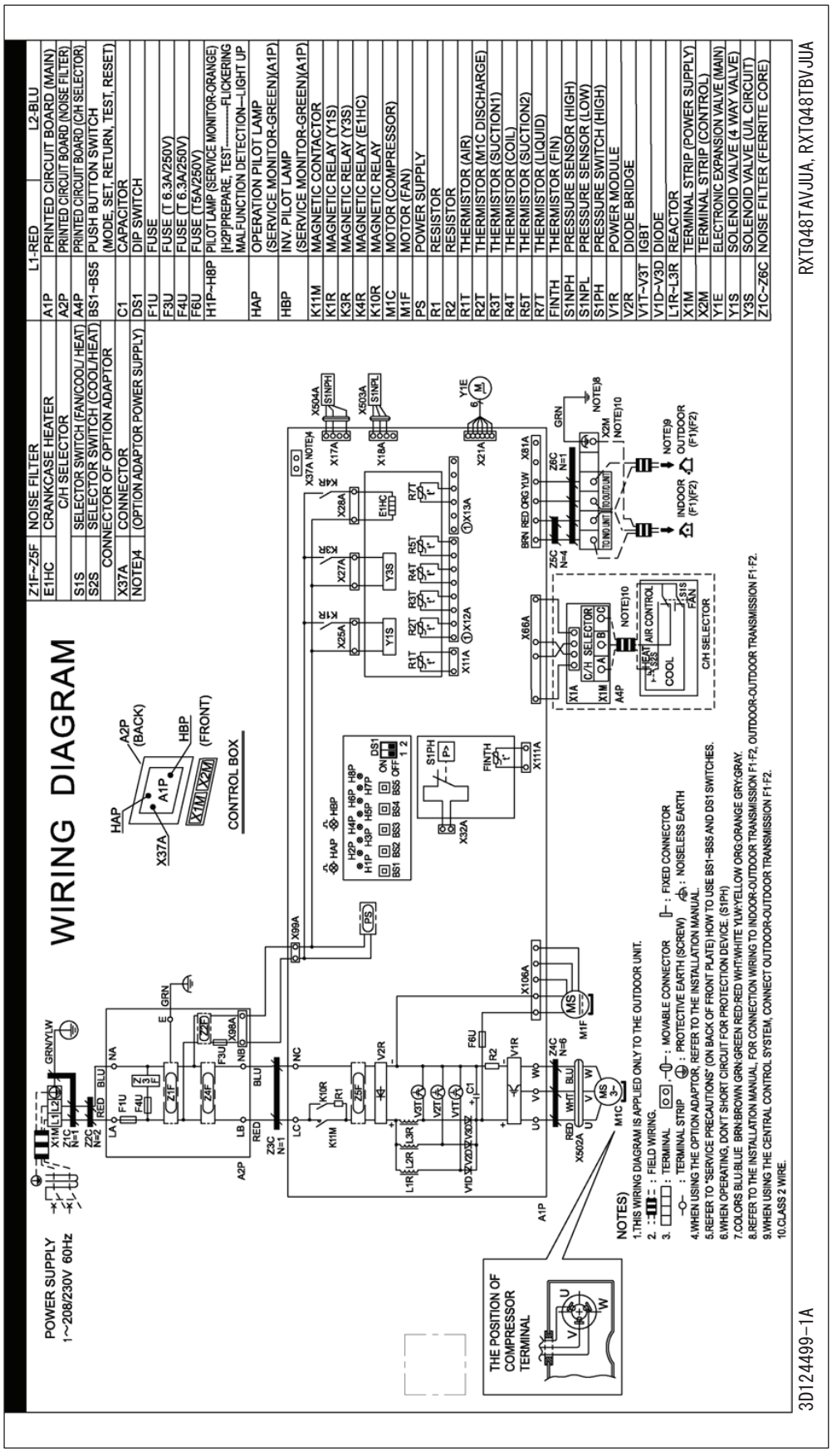
RXTQ36TBVJUB



RXTQ48TAVJU



RXTQ48TAVJUA, RXTQ48TBVJUA



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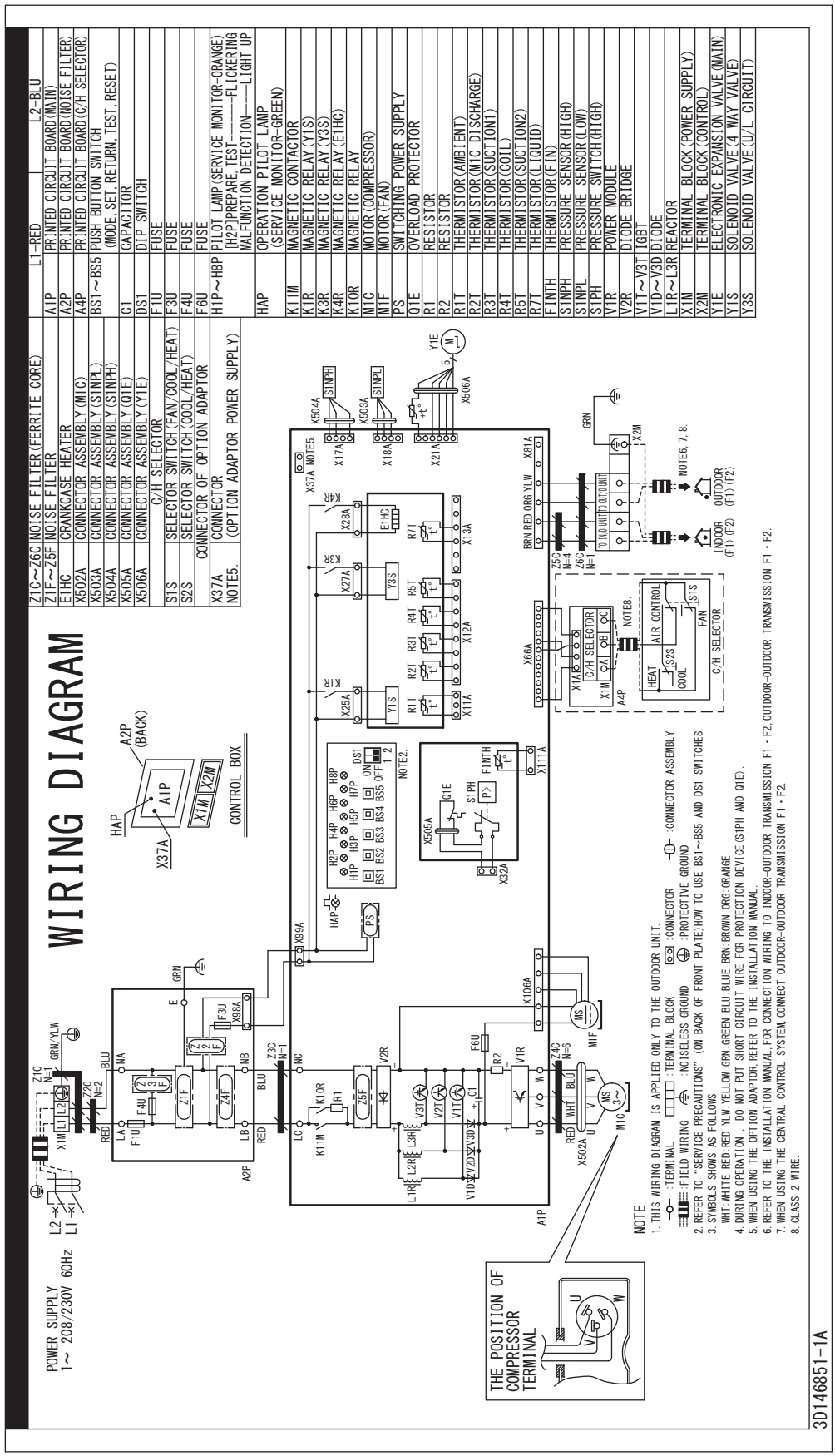
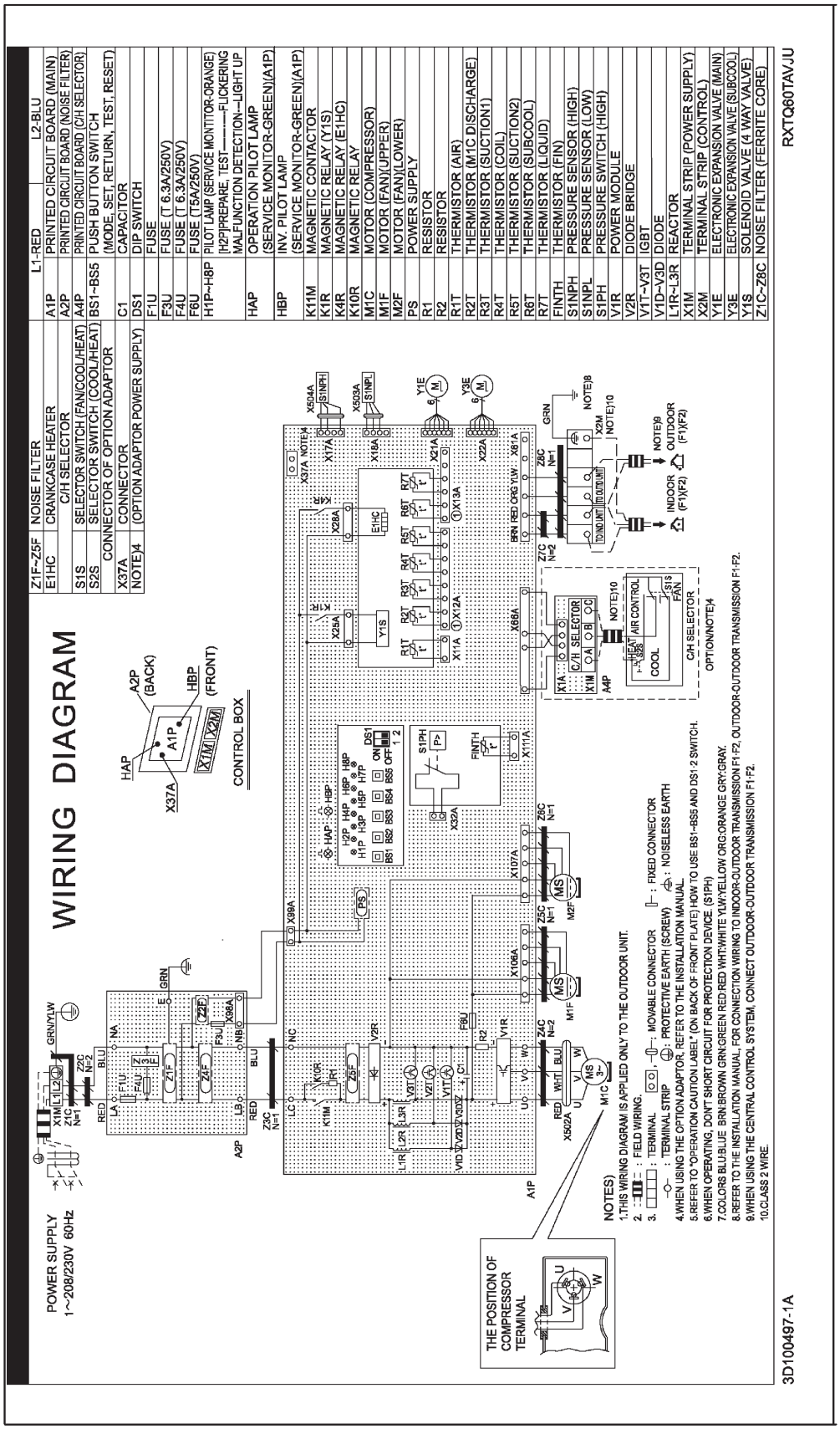
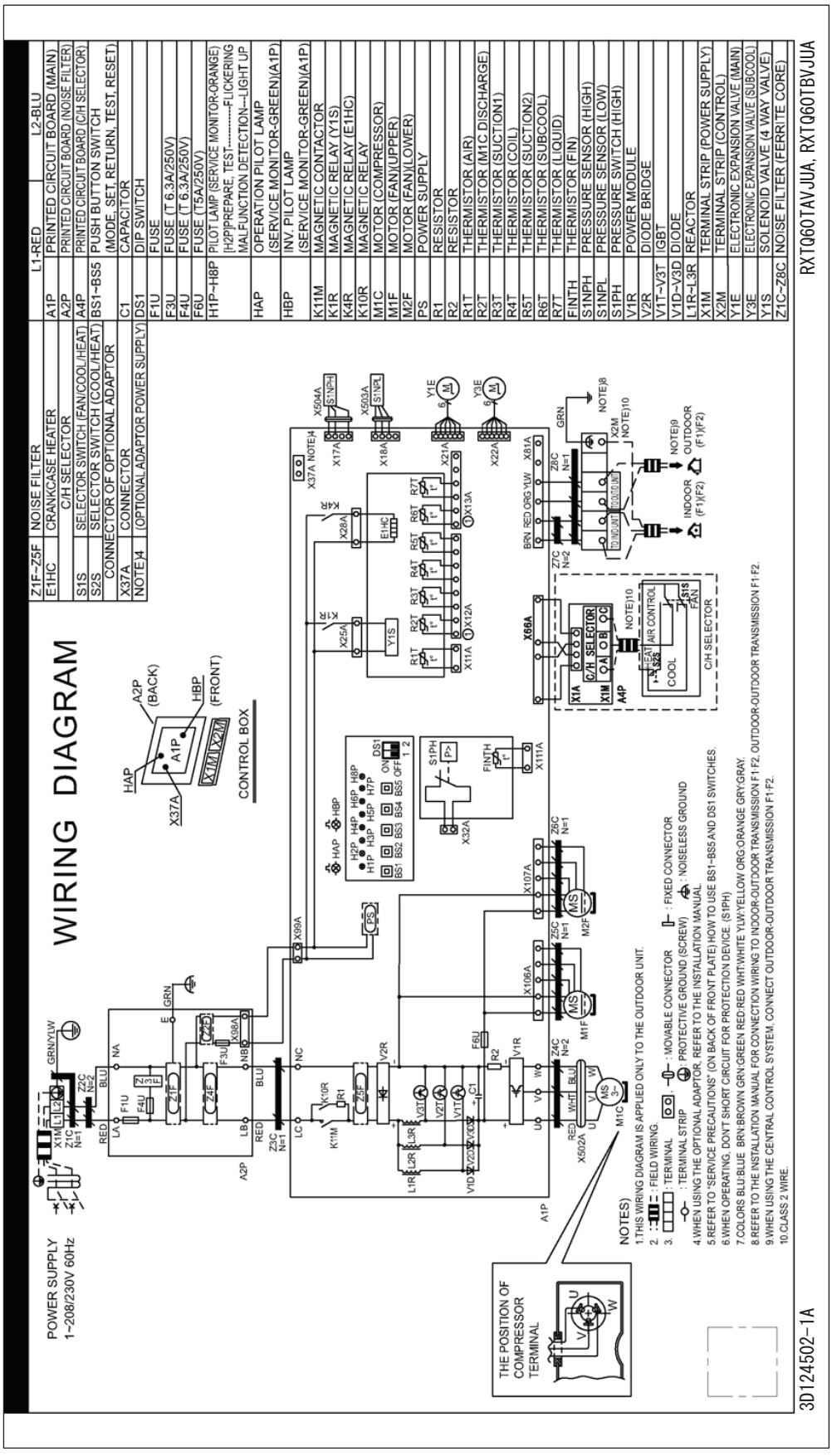


3D146851D

RXTQ60TAVJU



RXTQ60TAVJUA, RXTQ60TBVJUA



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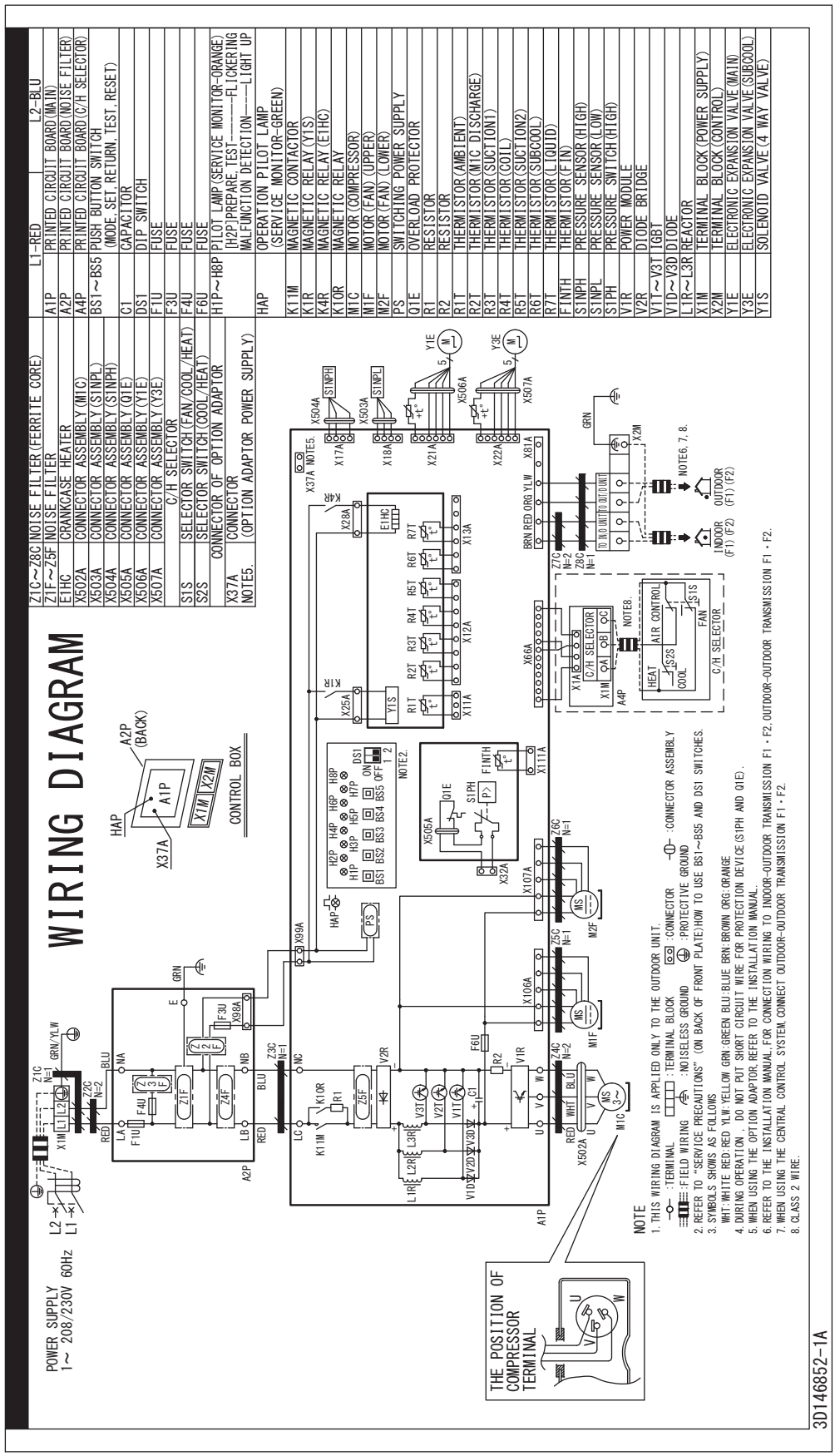
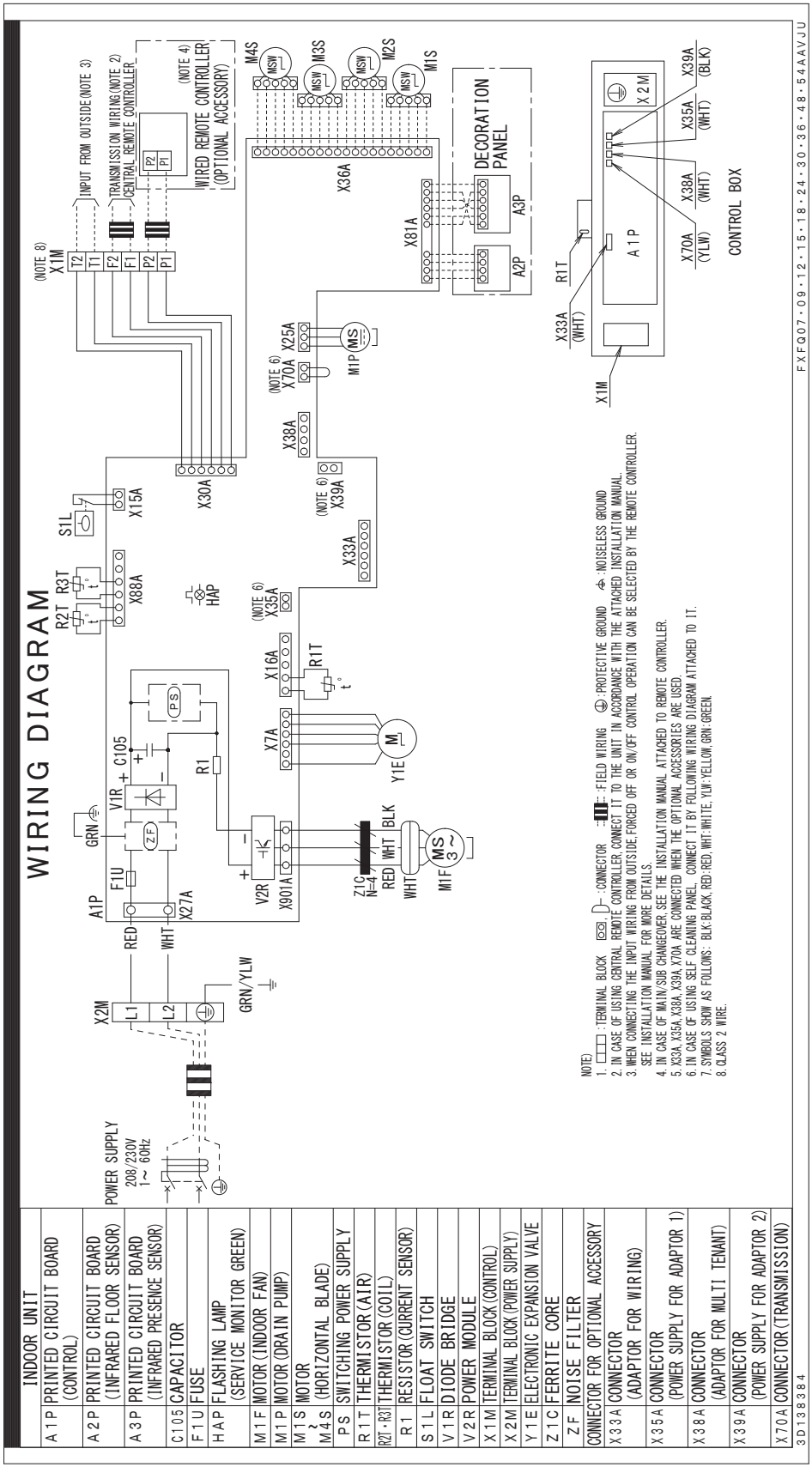


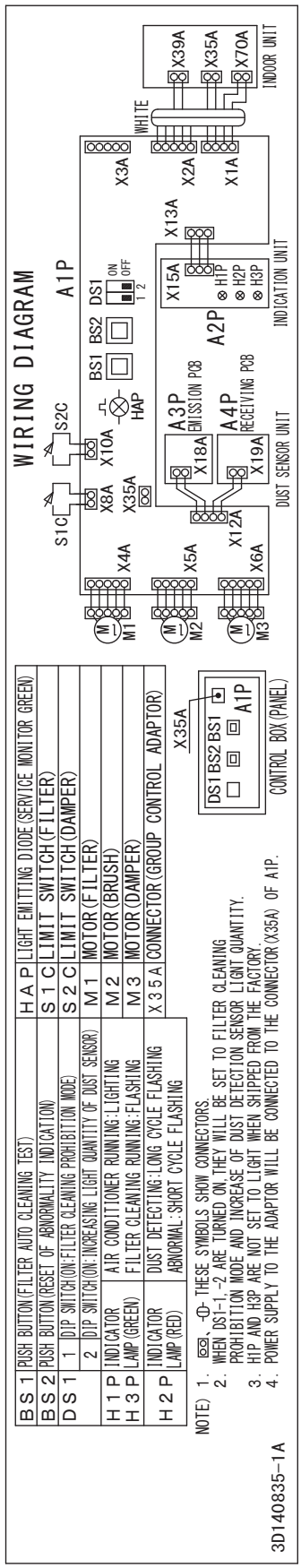
1.2 Indoor Unit

FXFQ07/09/12/15/18/24/30/36/48/54AAVJU



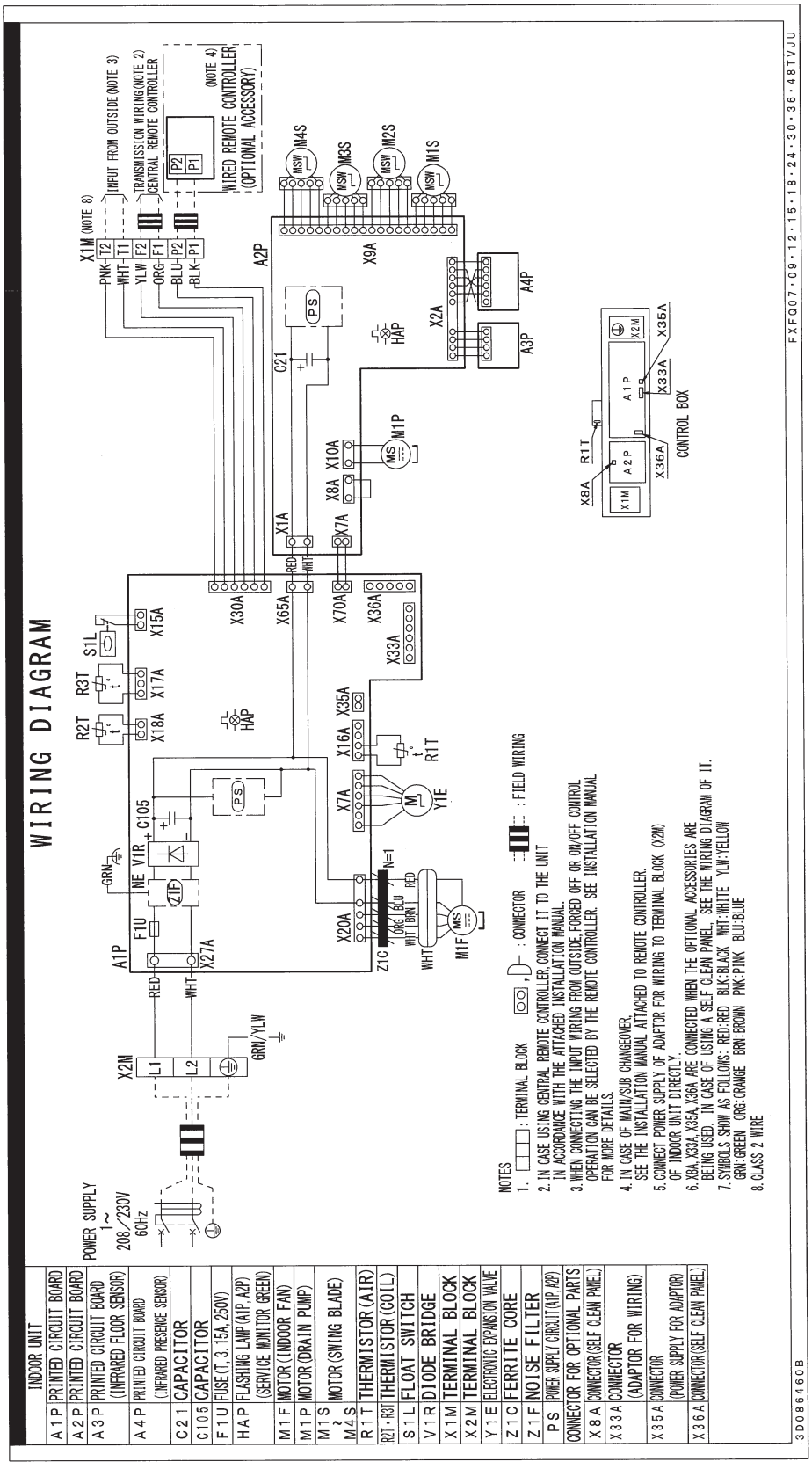
3D138384

BYCQ54EEGFU (Self-Cleaning Decoration Panel for FXFQ-AA)

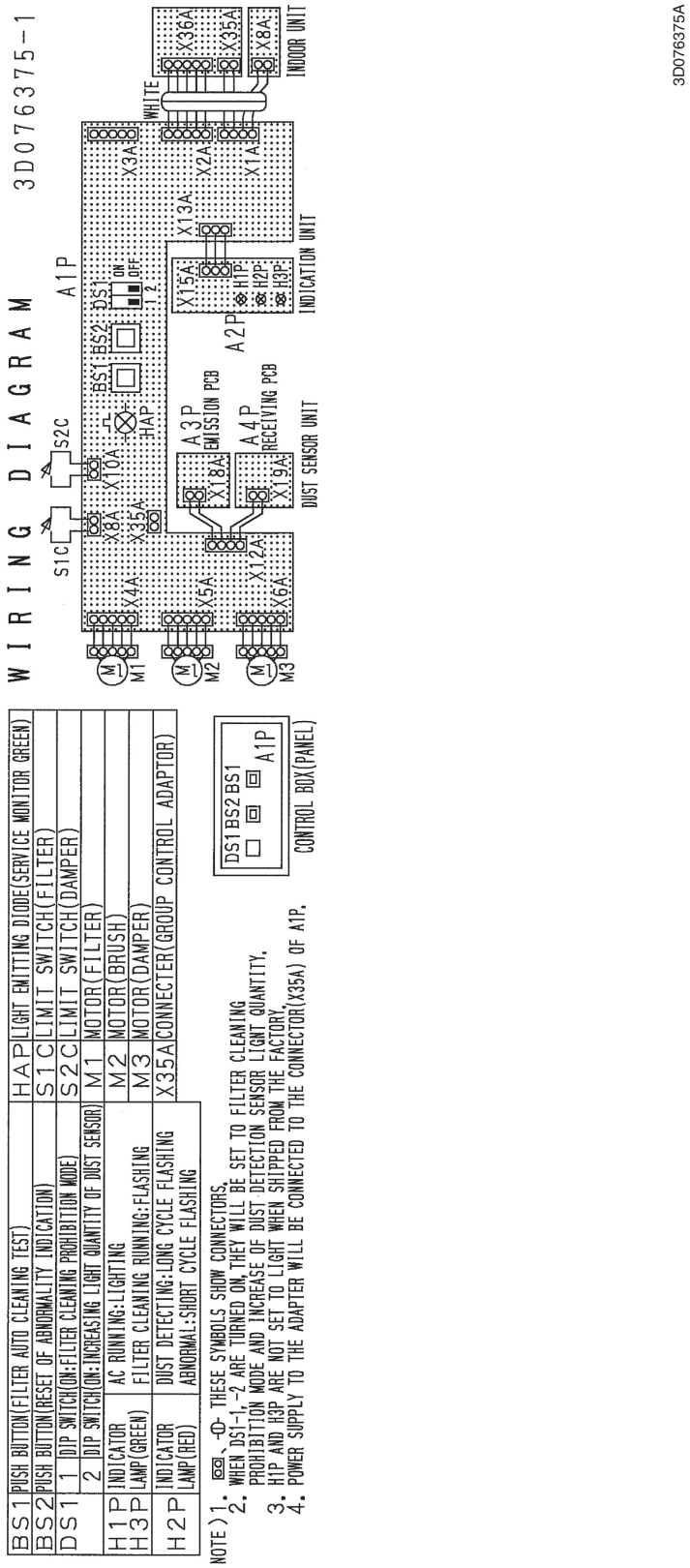


3D140835A

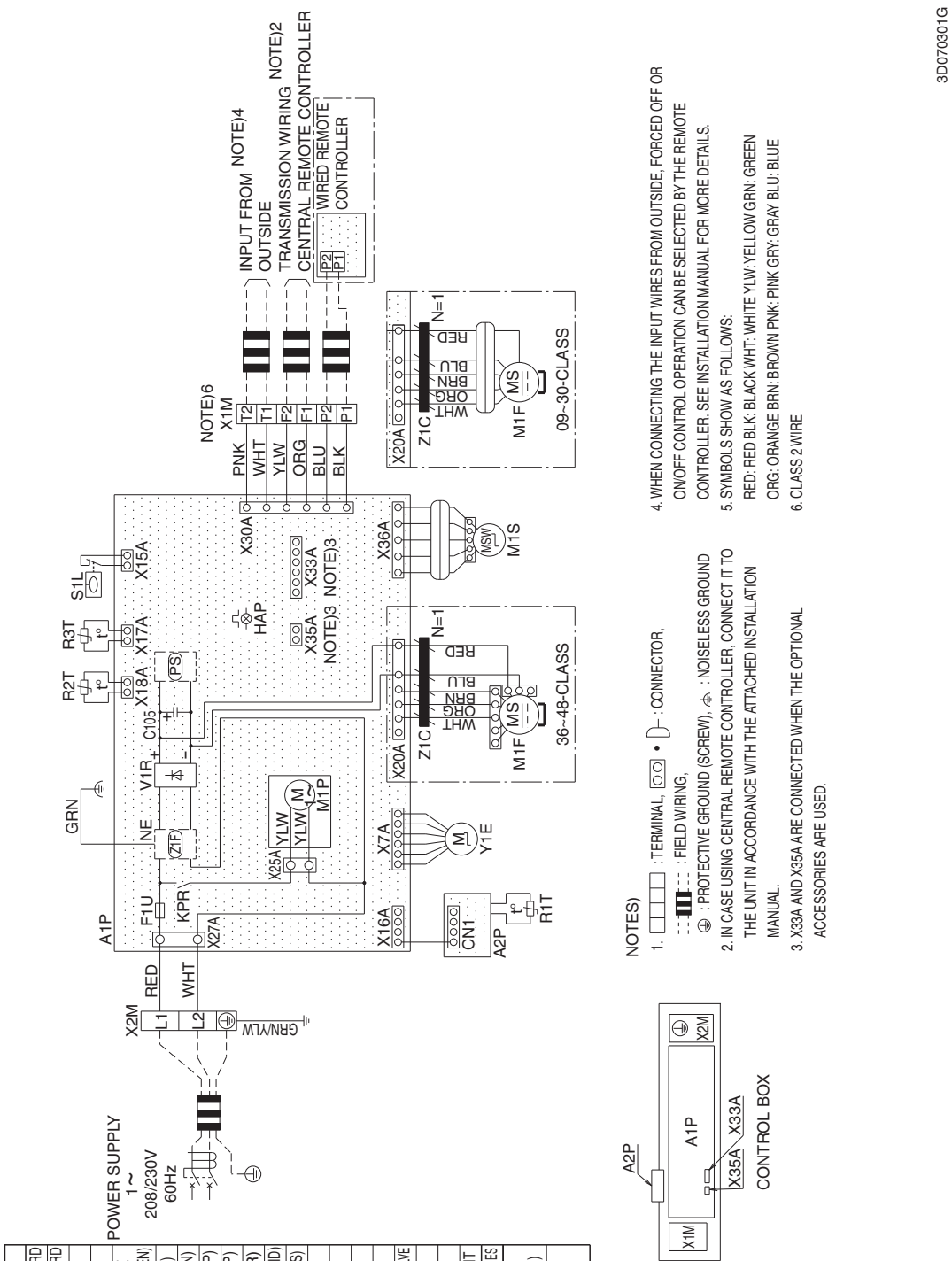
FXFQ07/09/12/15/18/24/30/36/48TVJU



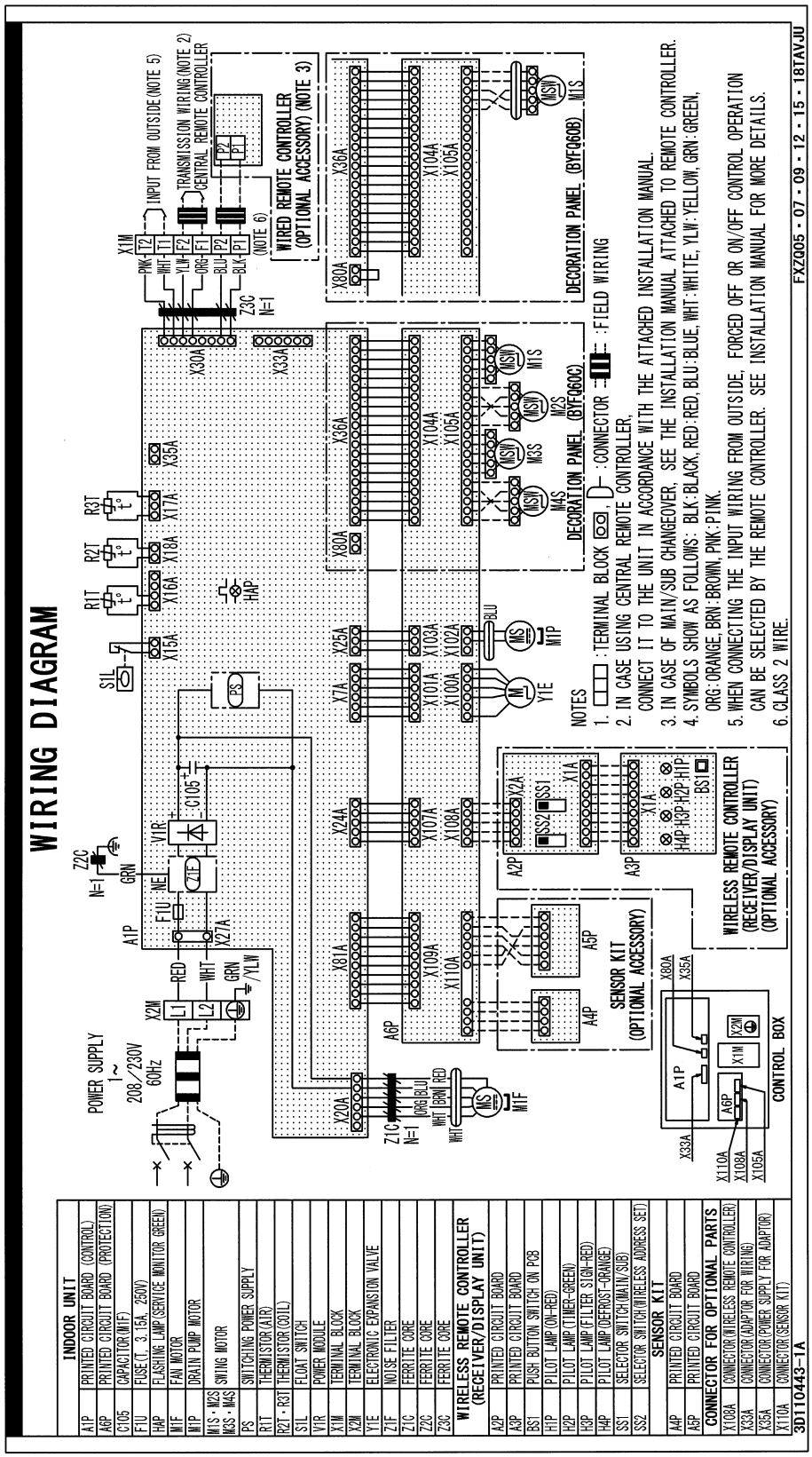
BYCQ125BGW1 (Self-Cleaning Decoration Panel for FXFQ-T)



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



FXZQ05/07/09/12/15/18TAVJU



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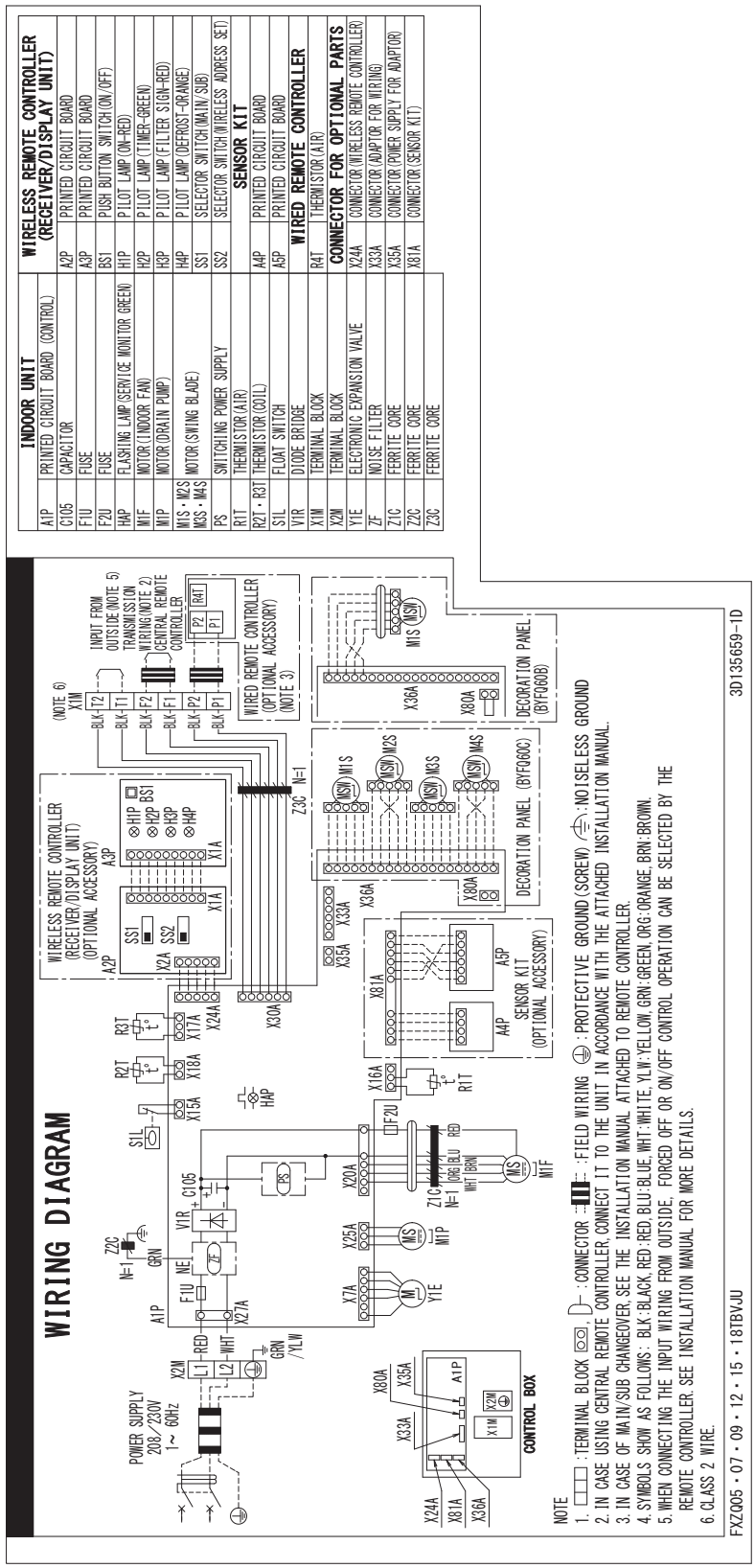
FXZQ05/07/09/12/15/18TBVJU



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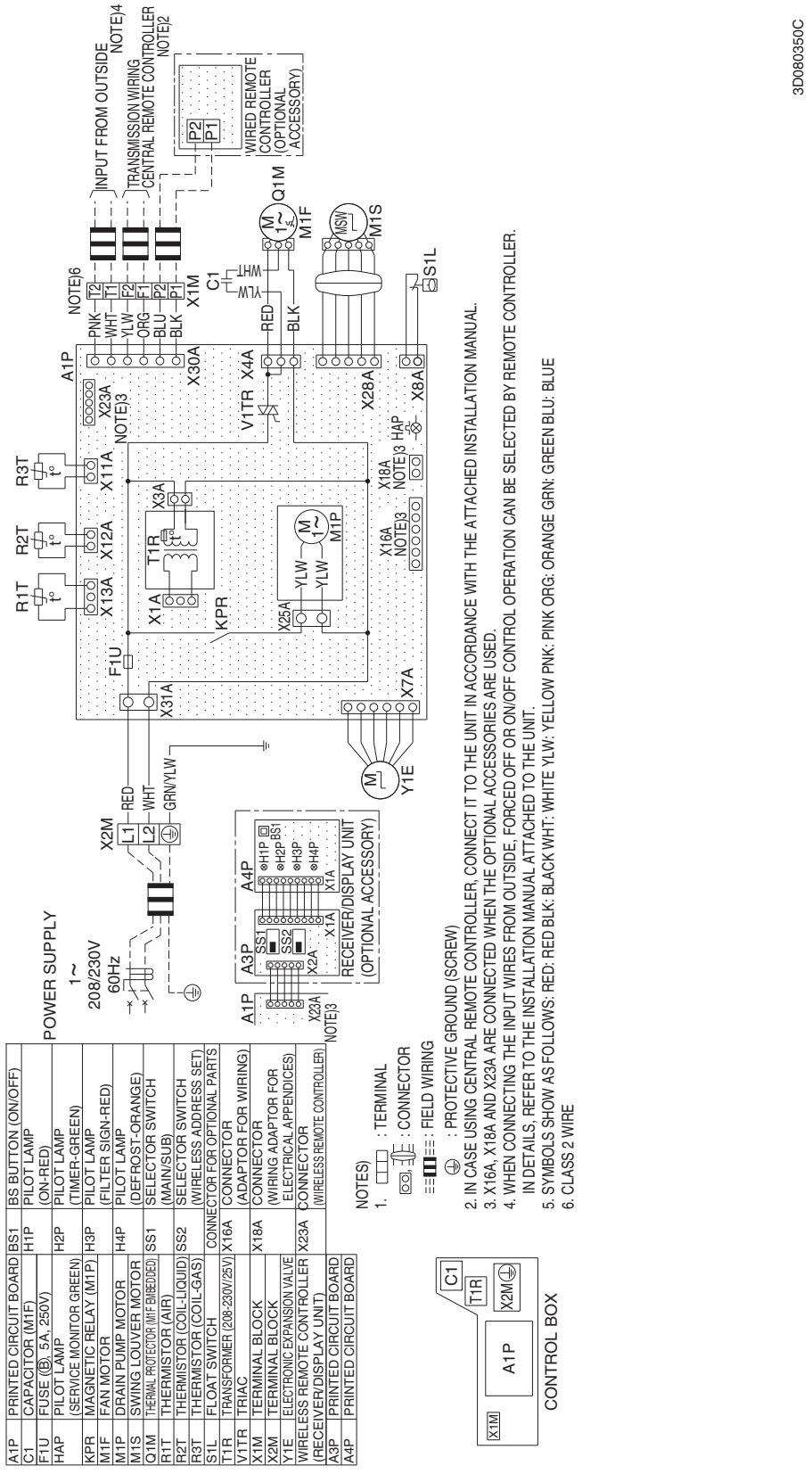
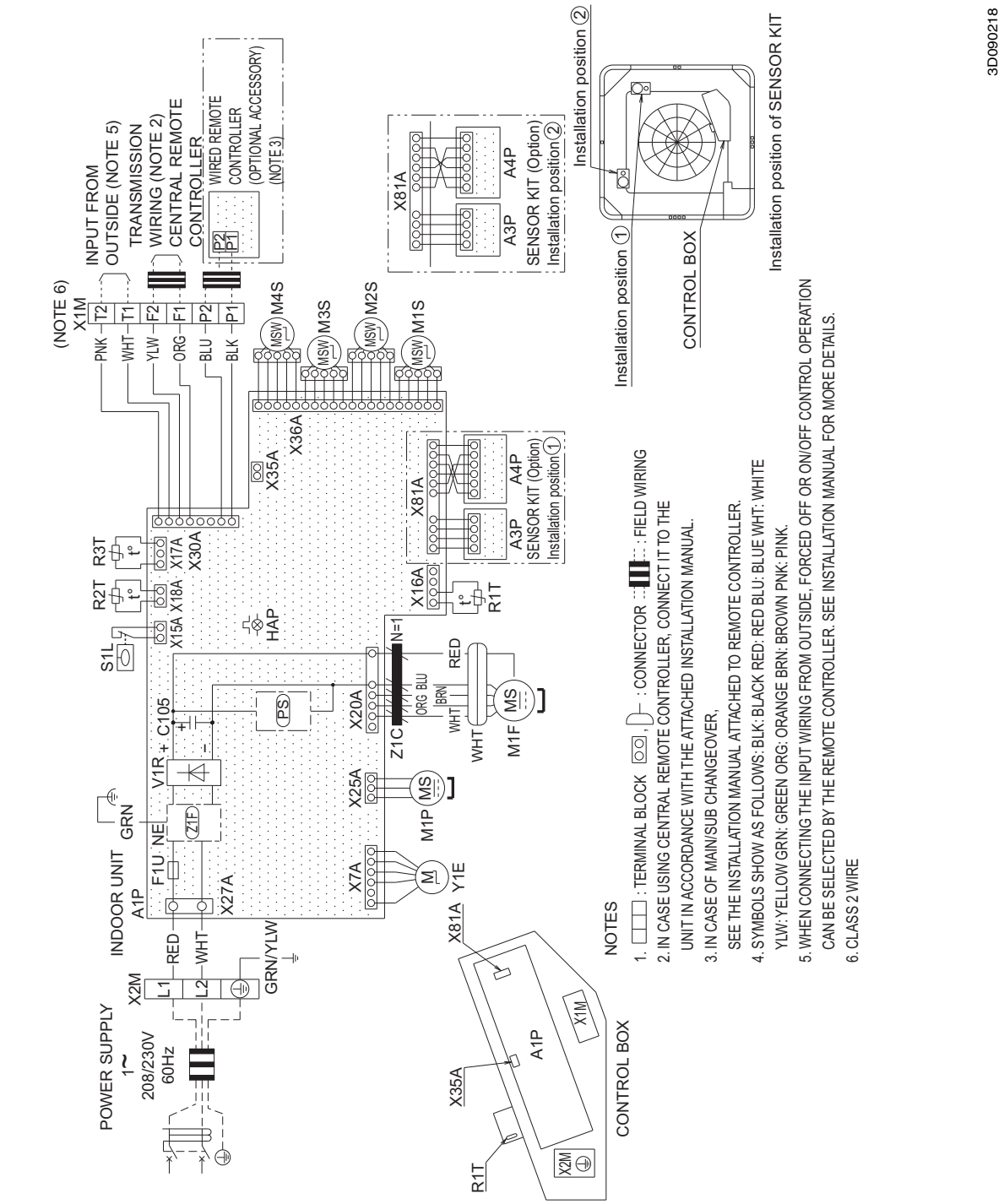
FXZQ07/09/12/15/18MVJU9

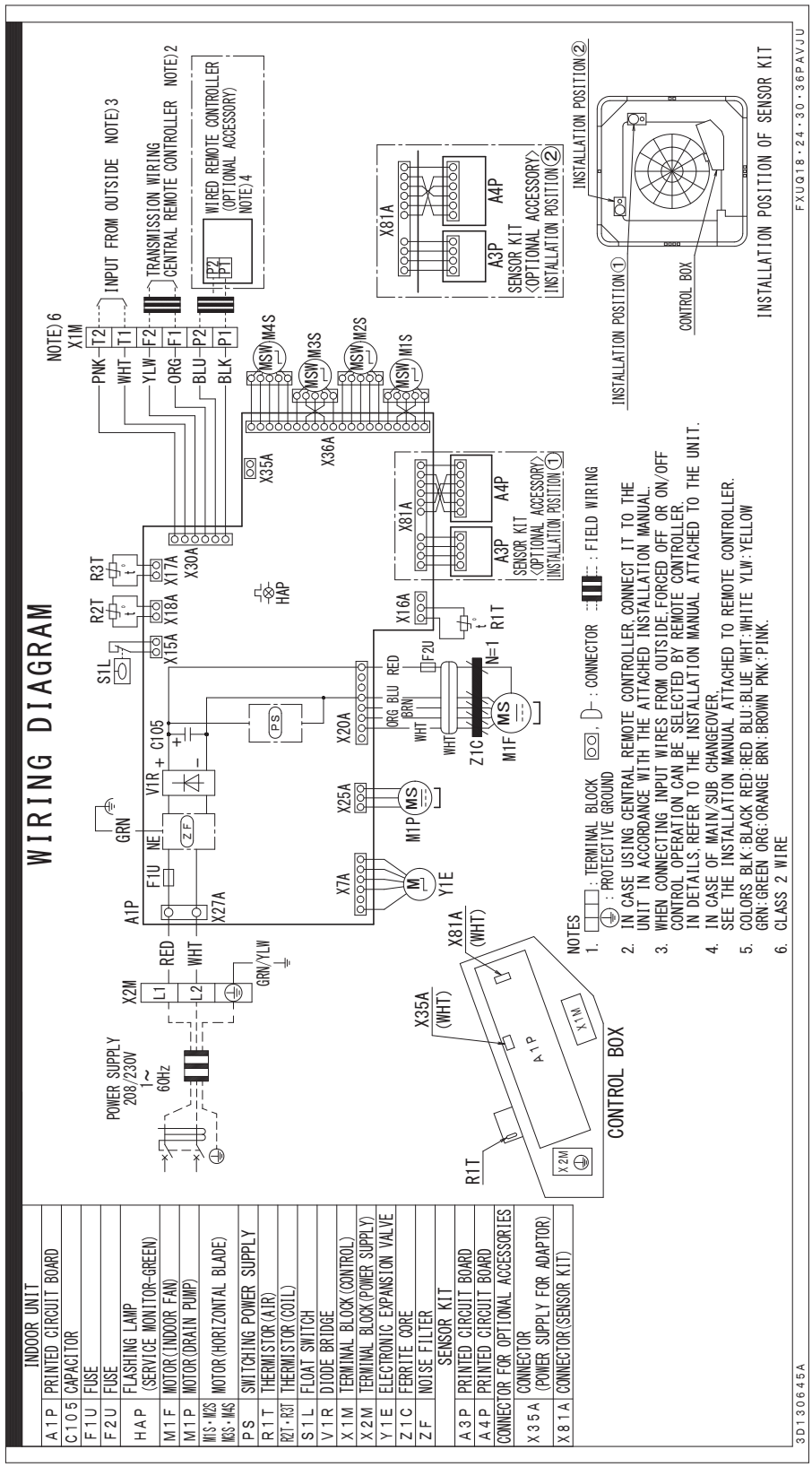


FXUQ18/24/30/36PVJU



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)

FXUQ18/24/30/36PAVJU



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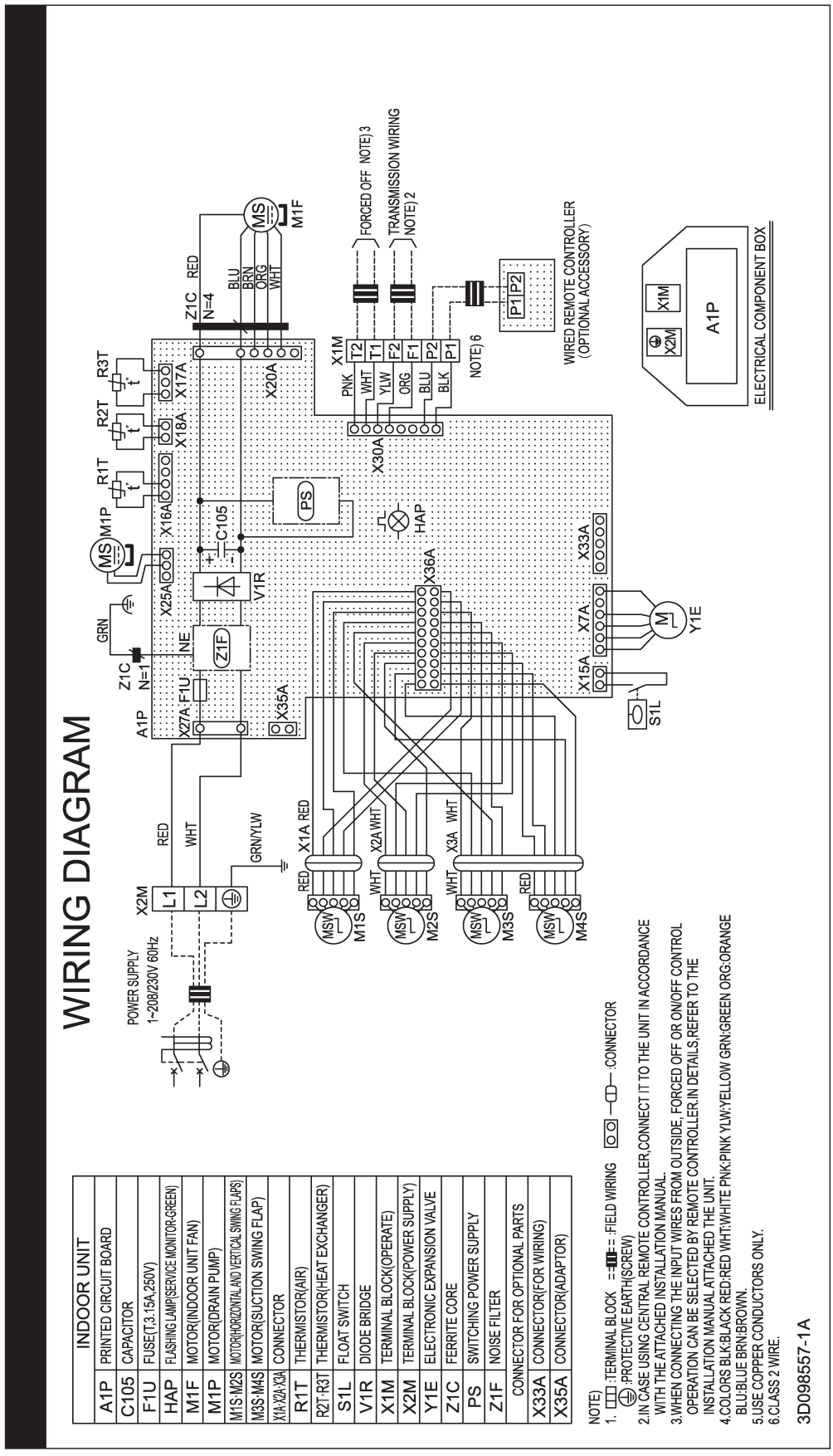
FXEQ07/09/12/15/18/24PVJU



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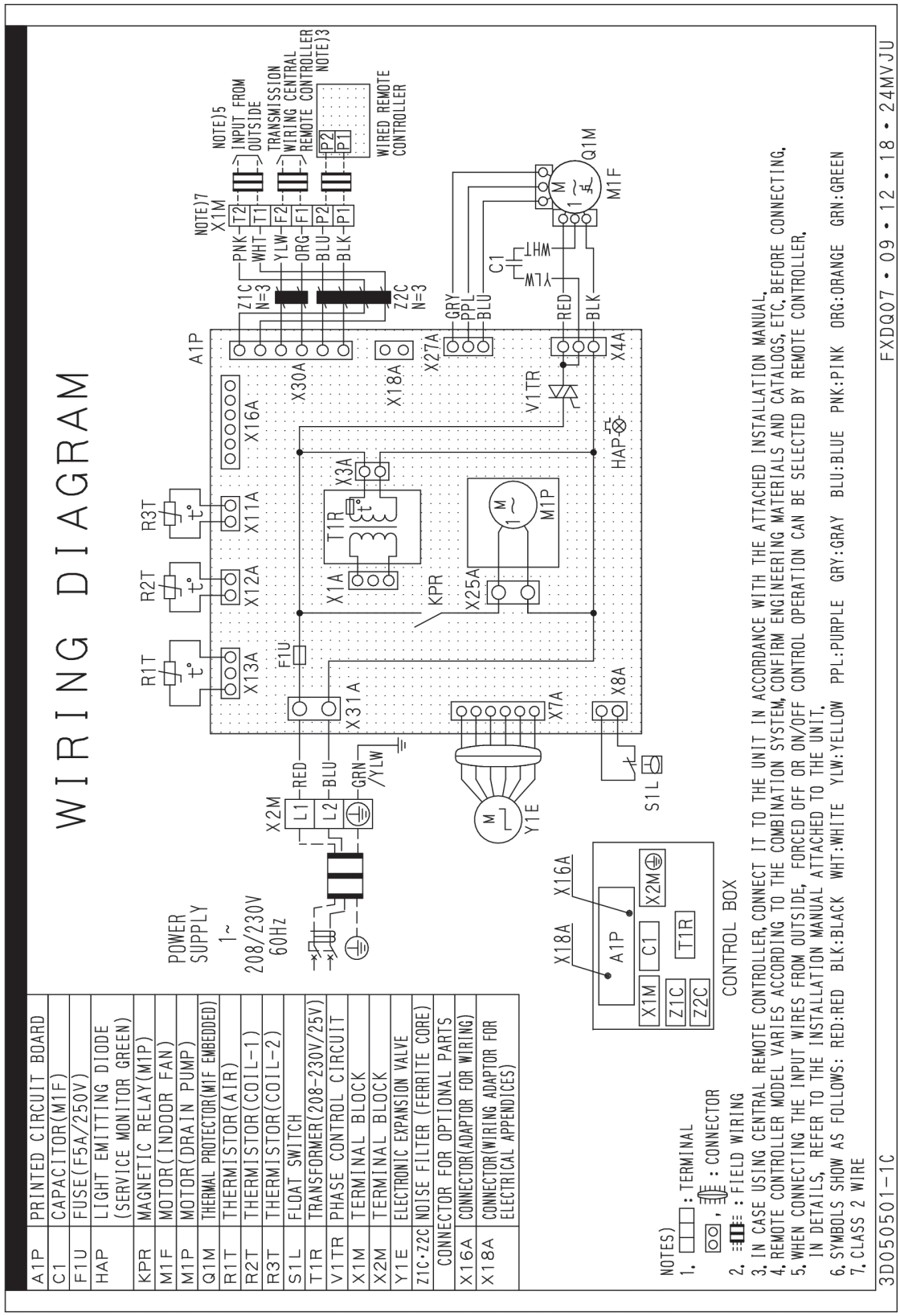

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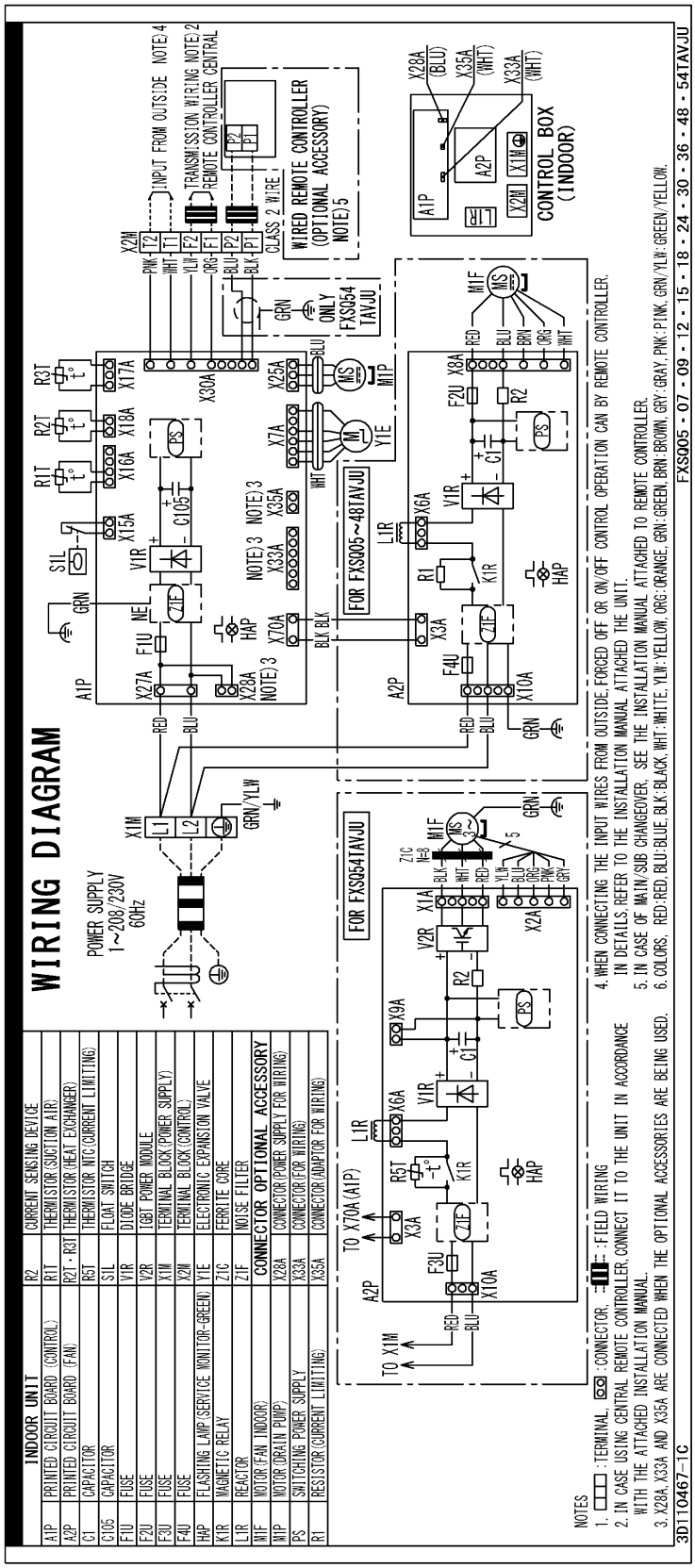

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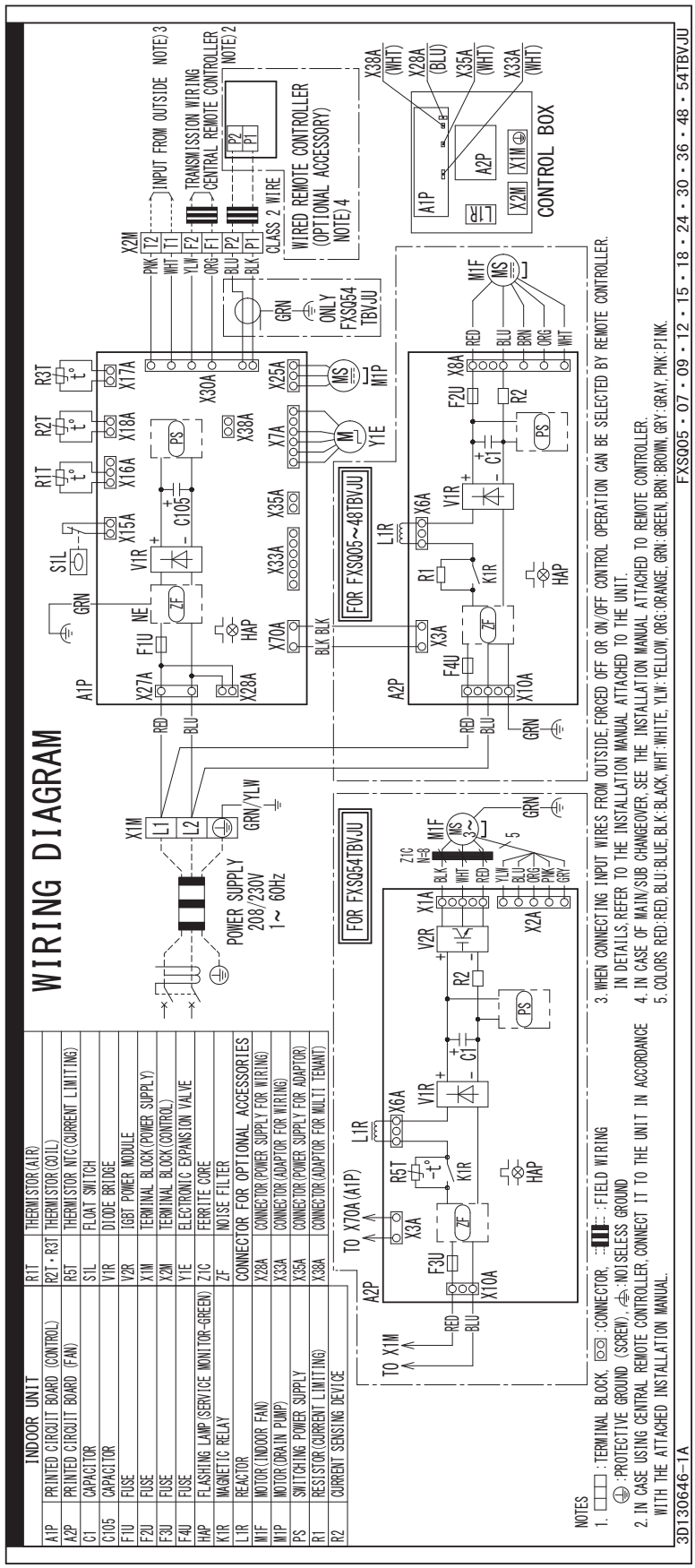

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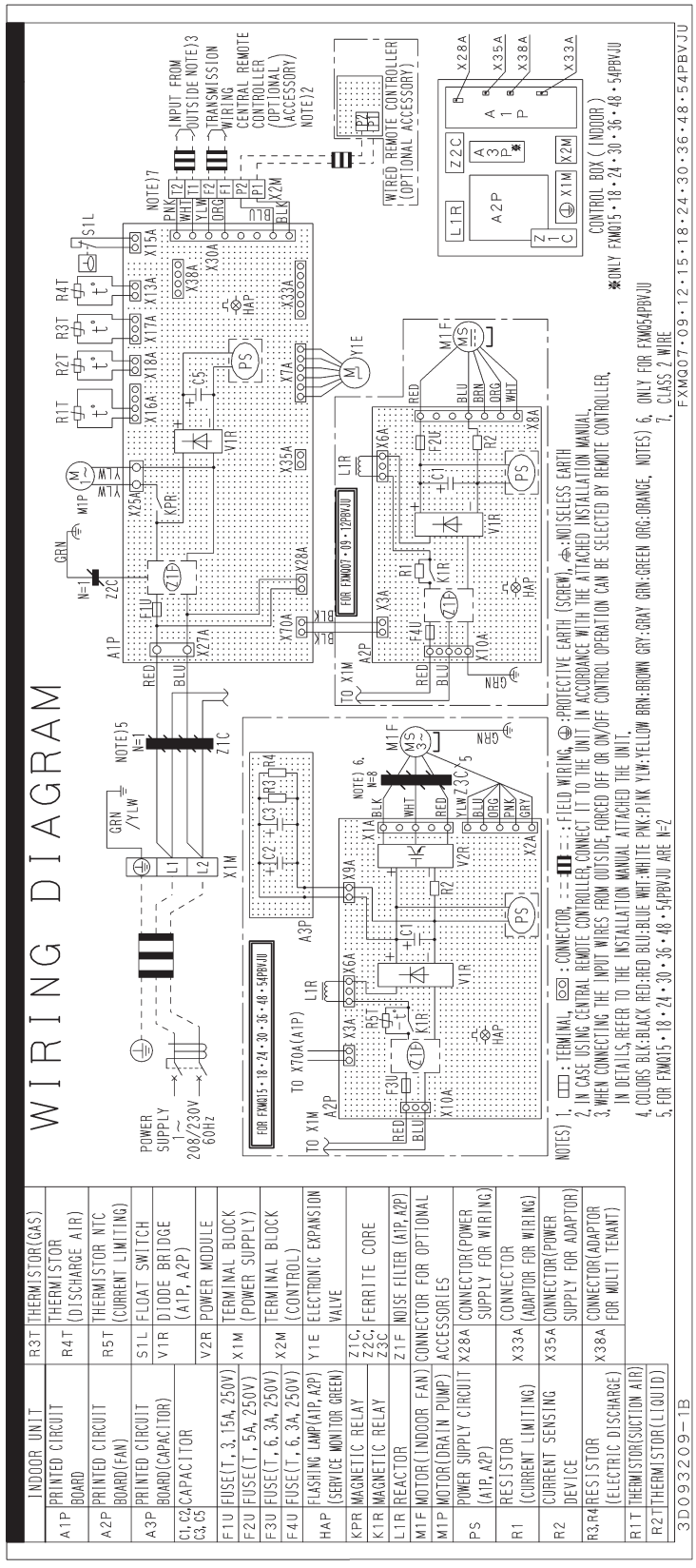

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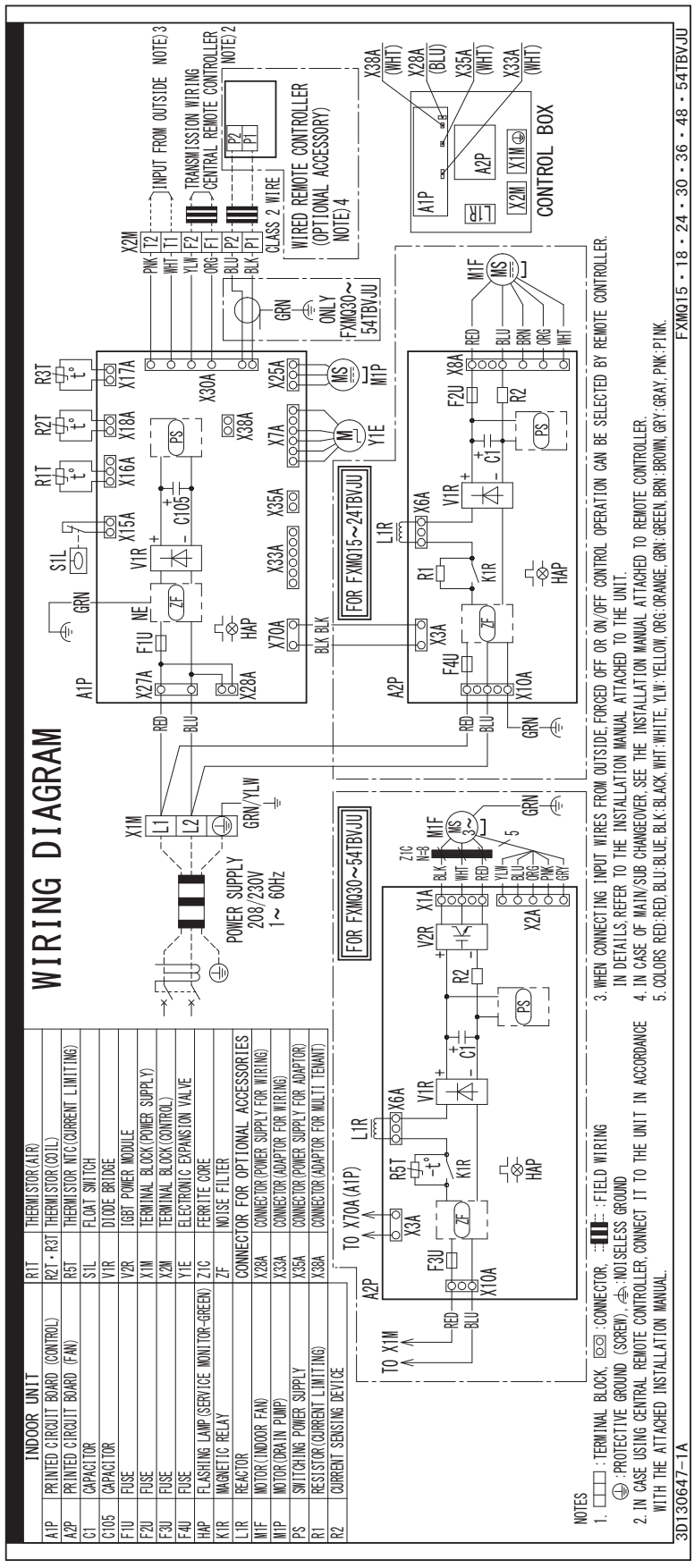

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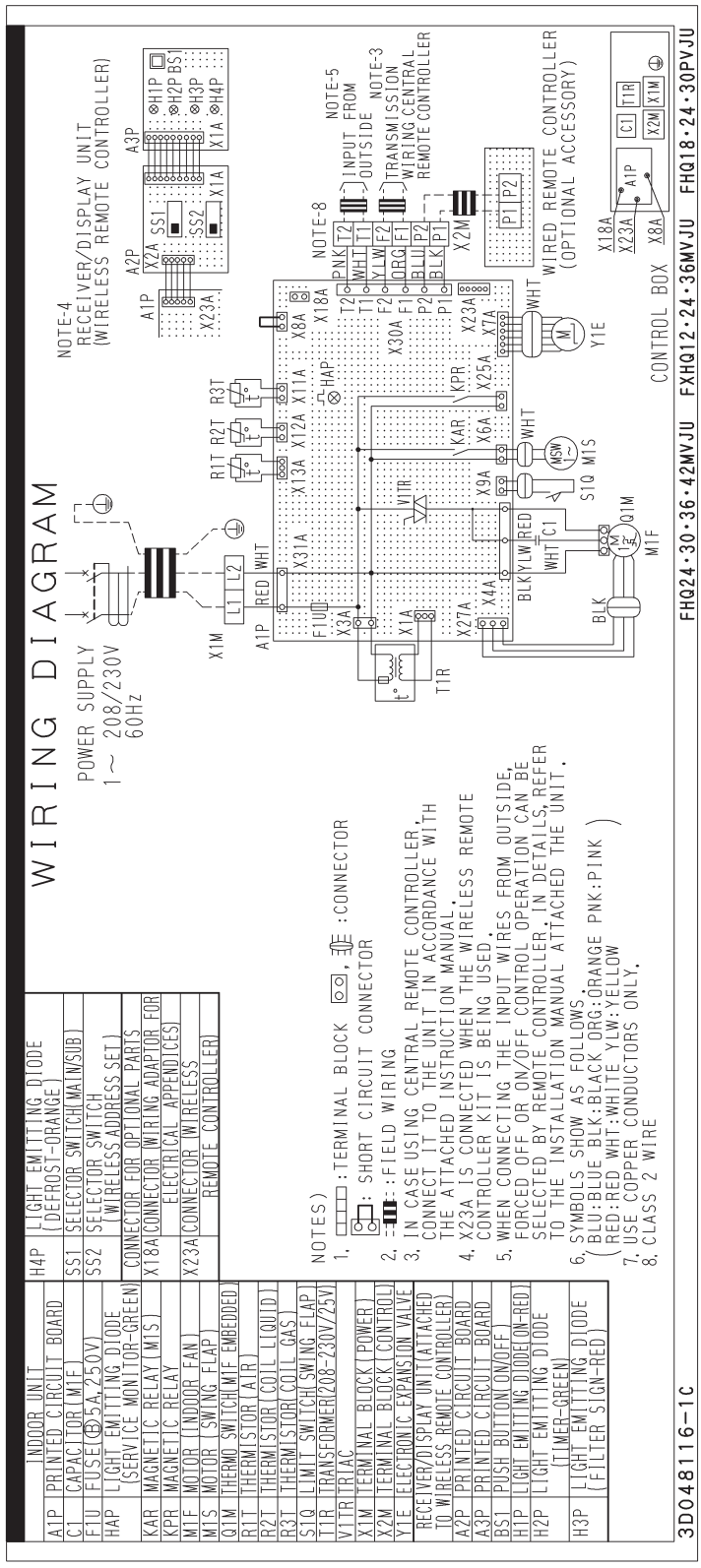

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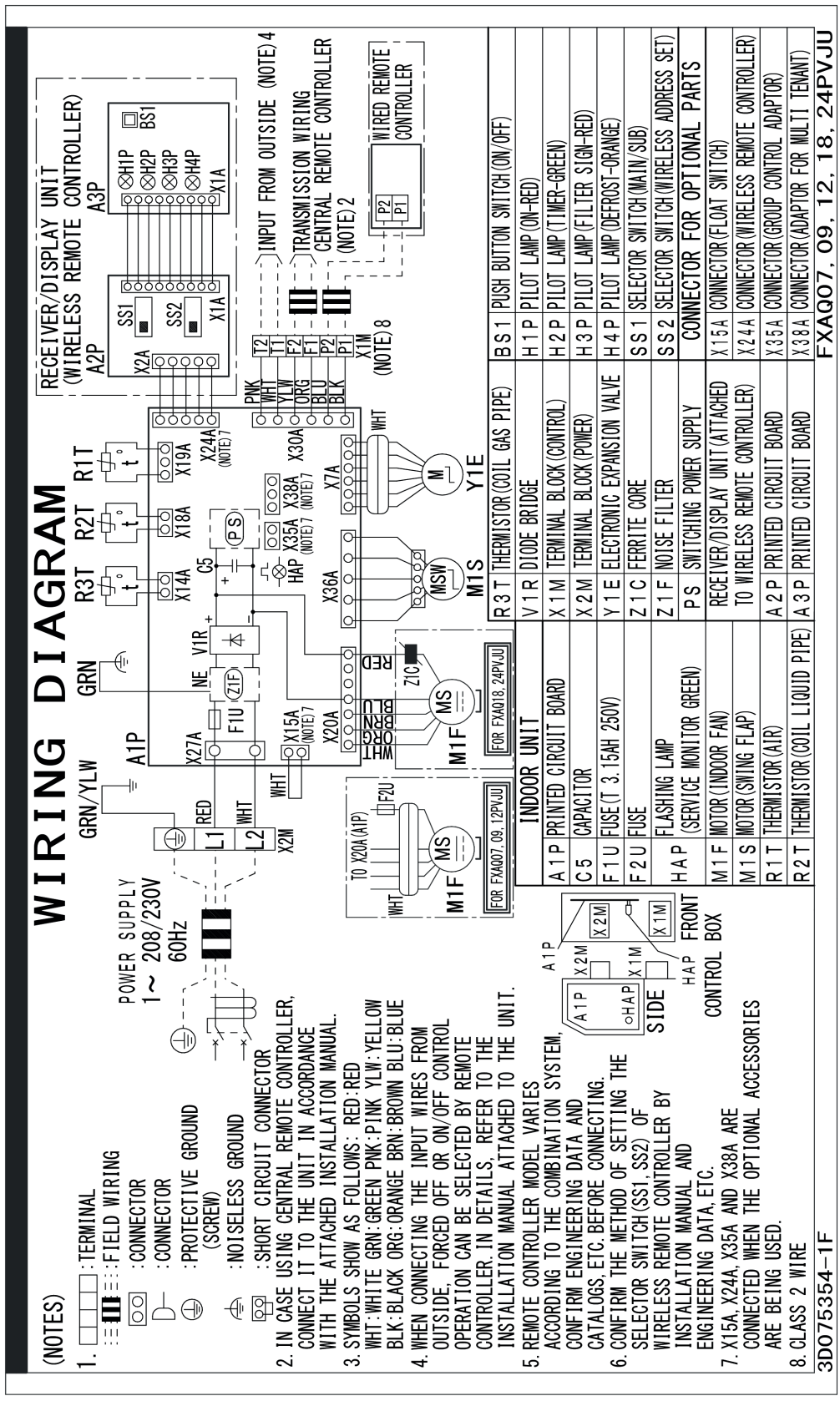

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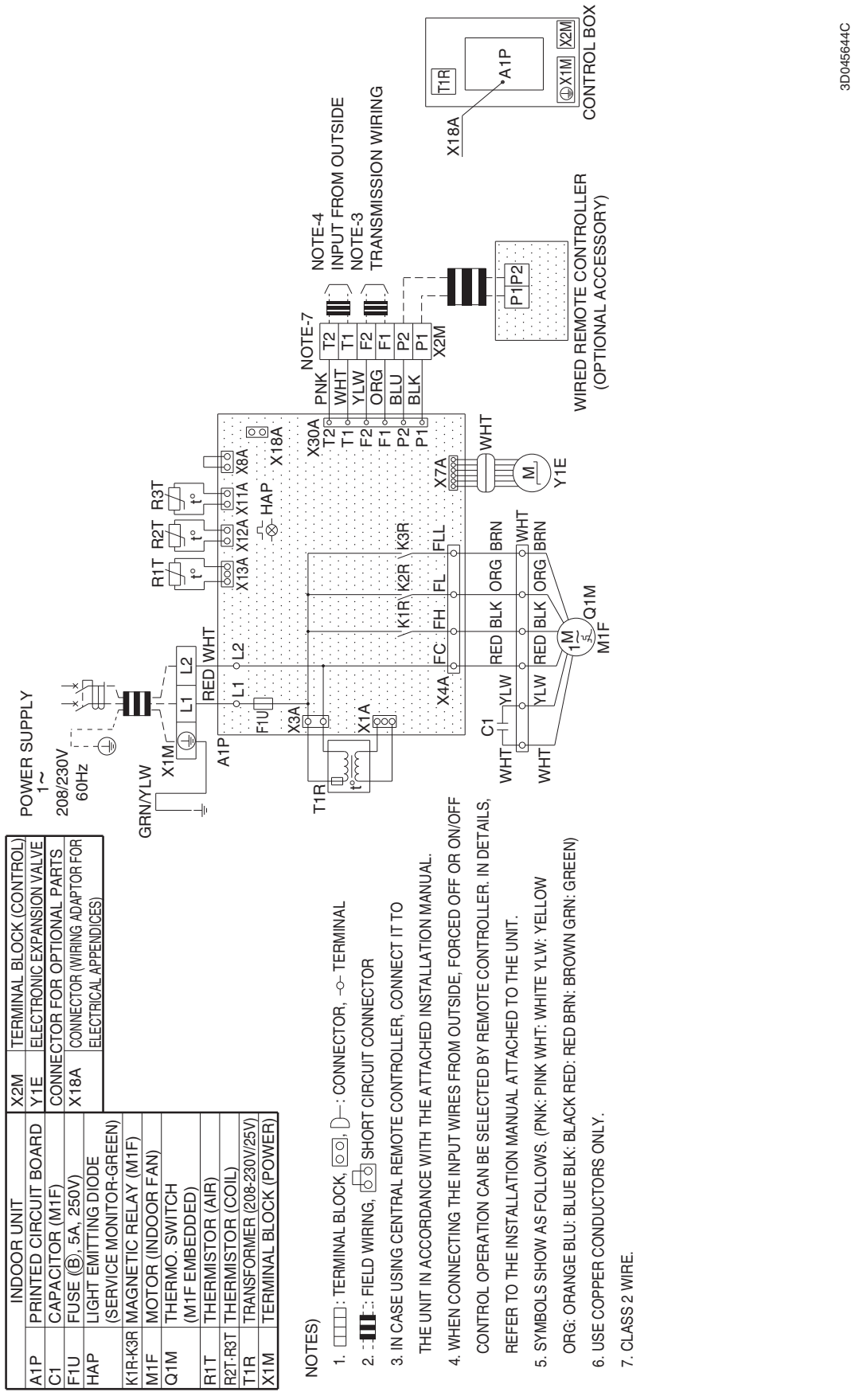
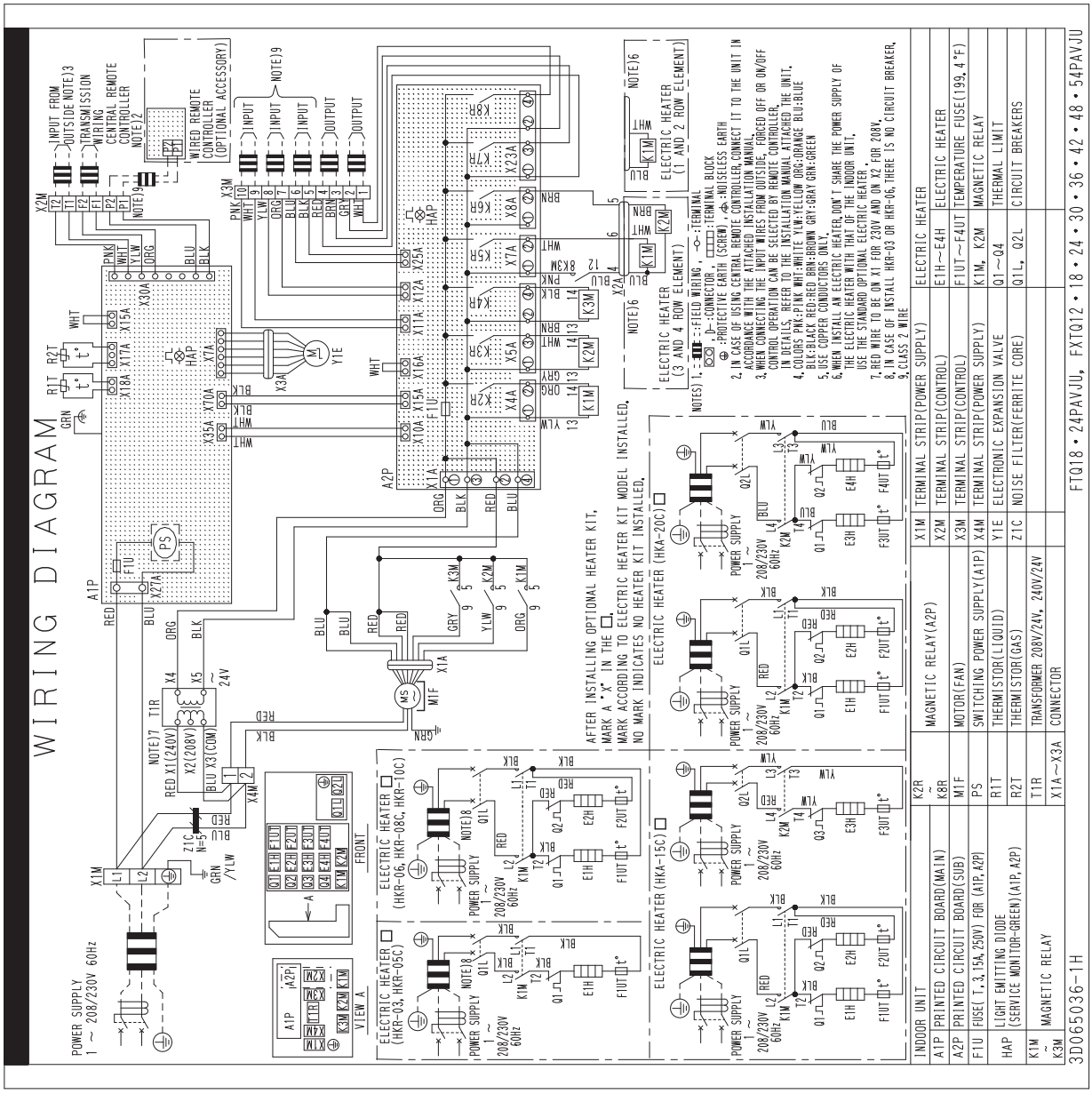


	INDOOR UNIT	X2M	TERMINAL BLOCK (CONTROL)
A1P	PRINTED CIRCUIT BOARD	Y1E	ELECTRONIC EXPANSION VALVE
C1	CAPACITOR (M1F)	CONNECTOR FOR OPTIONAL PARTS	
F1U	FUSE (Ⓑ, 5A, 250V)	X18A	CONNECTOR (WIRING ADAPTOR FOR ELECTRICAL APPENDICES)
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR-GREEN)		
K1R-K3R	MAGNETIC RELAY (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)		

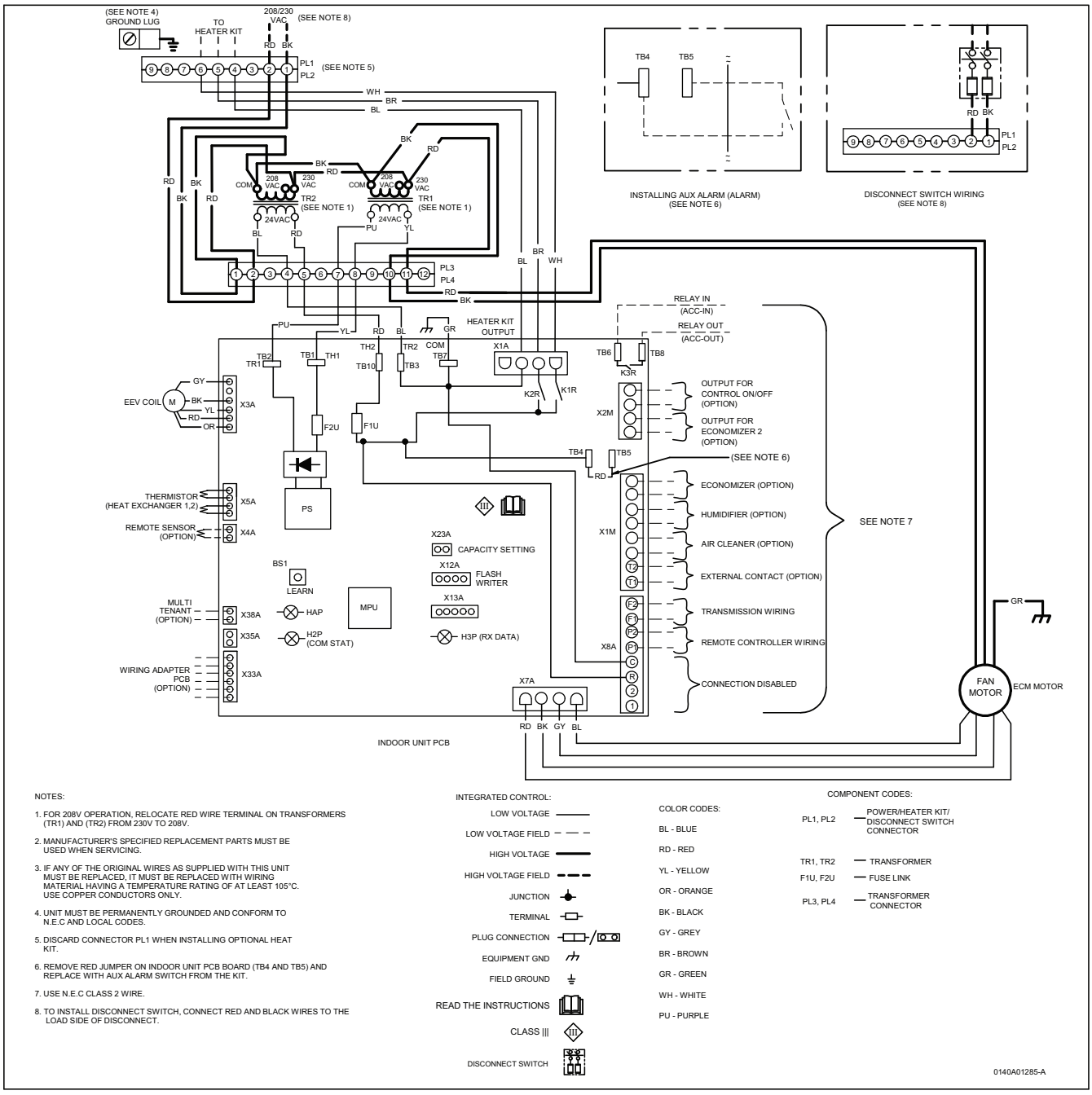
NOTES)

1. □□□: TERMINAL BLOCK, ⊐⊏, ⊐–: CONNECTOR, –○– 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.

FXTQ12/18/24/30/36/42/48/54PAVJU



FXTQ09/12/18/24/30/36/42/48/54/60TAVJUA, FXTQ09/12/18/24/30/36/42/48/54/60TAVJUD



NOTES:

1. FOR 208V OPERATION, RELOCATE RED WIRE TERMINAL ON TRANSFORMERS (TR1) AND (TR2) FROM 230V TO 208V.
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 CONFORM TO N.E.C AND LOCAL CODES.
5. DISCARD CONNECTOR PL1 WHEN INSTALLING OPTIONAL HEAT KIT.
6. REMOVE RED JUMPER ON INDOOR UNIT PCB BOARD (TB4 AND TB5) AND REPLACE WITH AUX ALARM SWITCH FROM THE KIT.
7. USE N.E.C CLASS 2 WIRE.
8. TO INSTALL DISCONNECT SWITCH, CONNECT RED AND BLACK WIRES TO THE LOAD SIDE OF DISCONNECT.

INTEGRATED CONTROL:

- LOW VOLTAGE
- LOW VOLTAGE FIELD
- HIGH VOLTAGE
- HIGH VOLTAGE FIELD
- JUNCTION
- TERMINAL
- PLUG CONNECTION
- EQUIPMENT GND
- FIELD GROUND
- READ THE INSTRUCTIONS
- CLASS |||
- DISCONNECT SWITCH

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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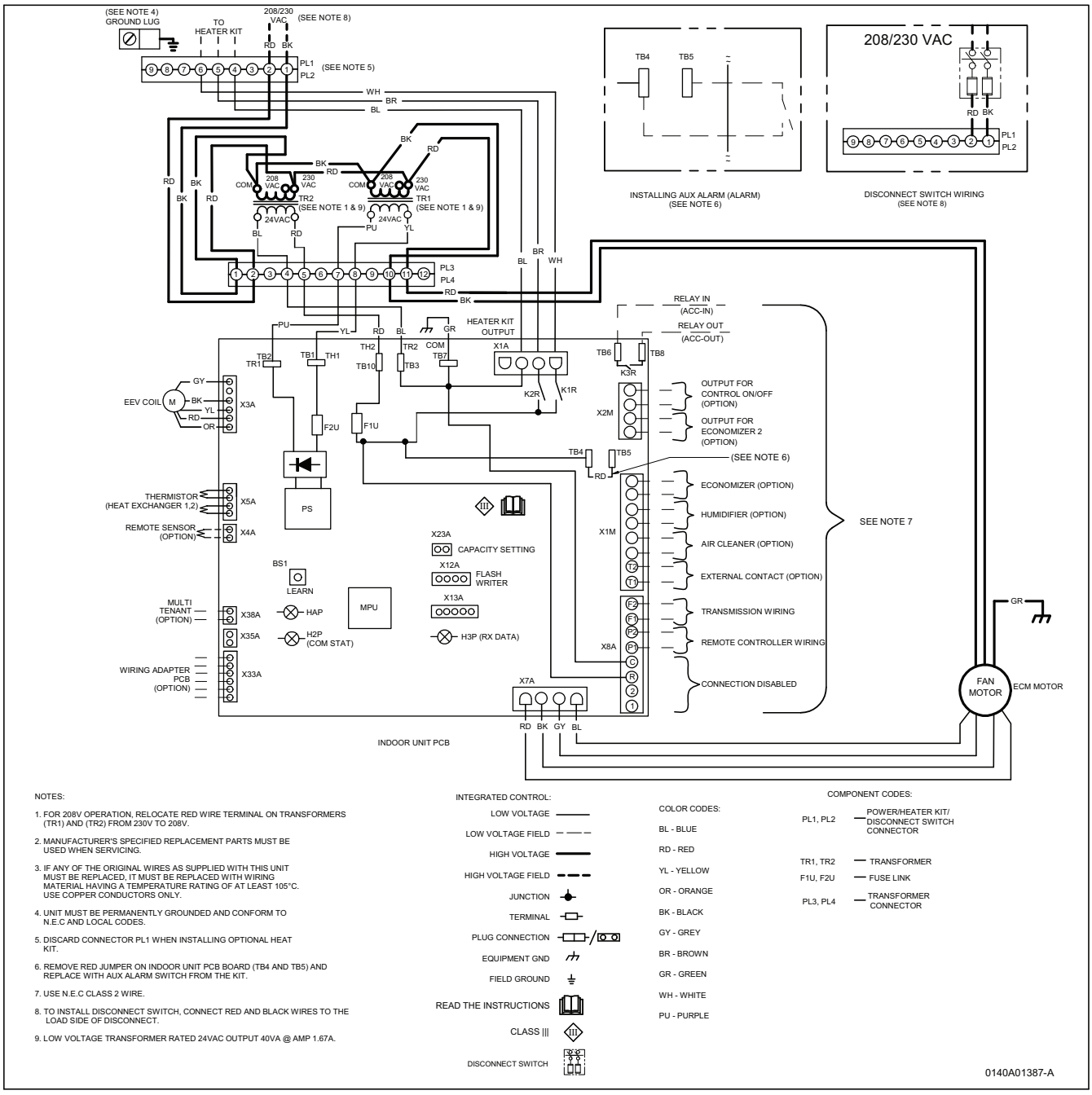
C: 0140A01285A

FXTQ09/12/18/24/30/36/42/48/54/60TBVJUA, FXTQ09/12/18/24/30/36/42/48/54/60TBVJUD



NOTES:

1. FOR 208V OPERATION, RELOCATE RED WIRE TERMINAL ON TRANSFORMERS (TR1) AND (TR2) FROM 230V TO 208V.
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 CONFORM TO N.E.C AND LOCAL CODES.
5. DISCARD CONNECTOR PL1 WHEN INSTALLING OPTIONAL HEAT KIT.
6. REMOVE RED JUMPER ON INDOOR UNIT PCB BOARD (TB4 AND TB5) AND REPLACE WITH AUX ALARM SWITCH FROM THE KIT.
7. USE N.E.C CLASS 2 WIRE.
8. TO INSTALL DISCONNECT SWITCH, CONNECT RED AND BLACK WIRES TO THE LOAD SIDE OF DISCONNECT.
9. LOW VOLTAGE TRANSFORMER RATED 24VAC OUTPUT 40VA @ AMP 1.67A.

INTEGRATED CONTROL:

LOW VOLTAGE
LOW VOLTAGE FIELD
HIGH VOLTAGE
HIGH VOLTAGE FIELD
JUNCTION
TERMINAL
PLUG CONNECTION
EQUIPMENT GND
FIELD GROUND
READ THE INSTRUCTIONS
CLASS |||
DISCONNECT SWITCH

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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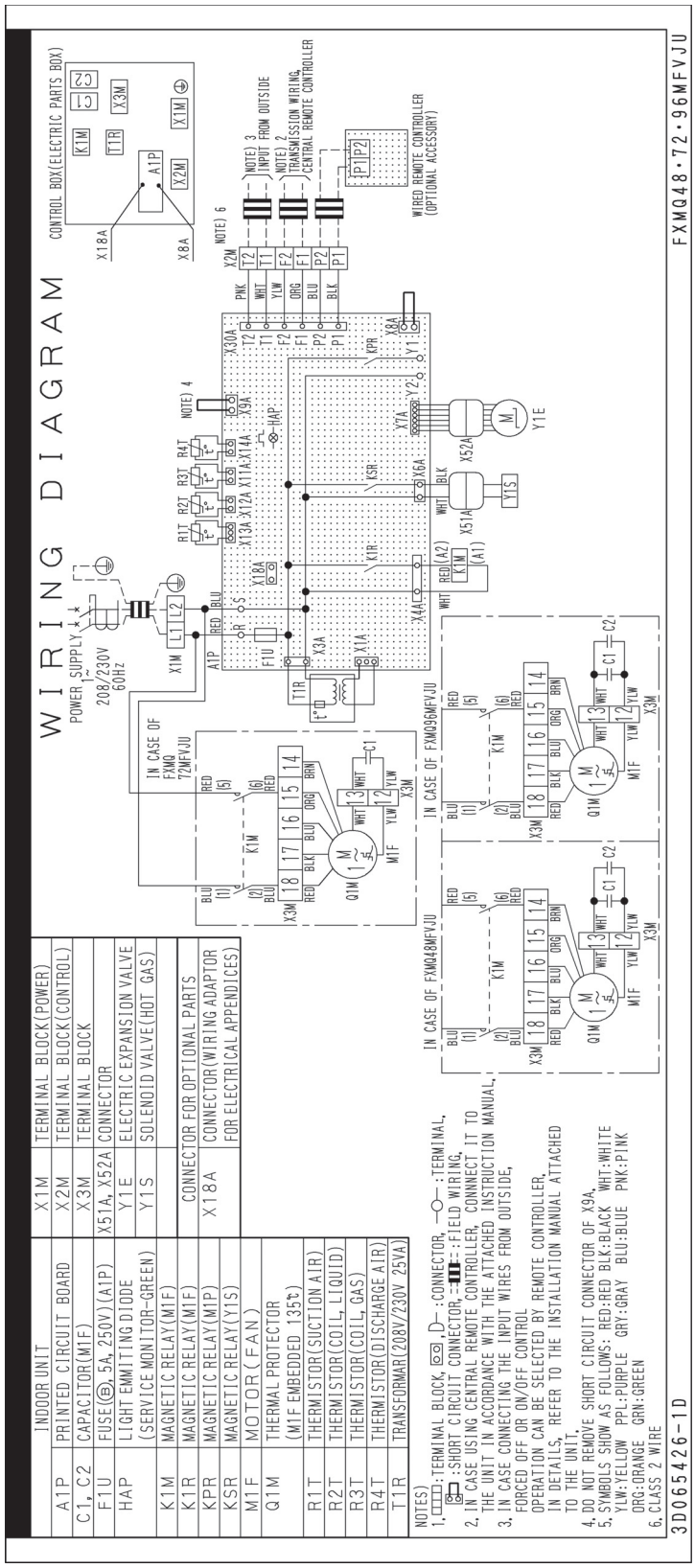
1.3 Air Treatment Equipment

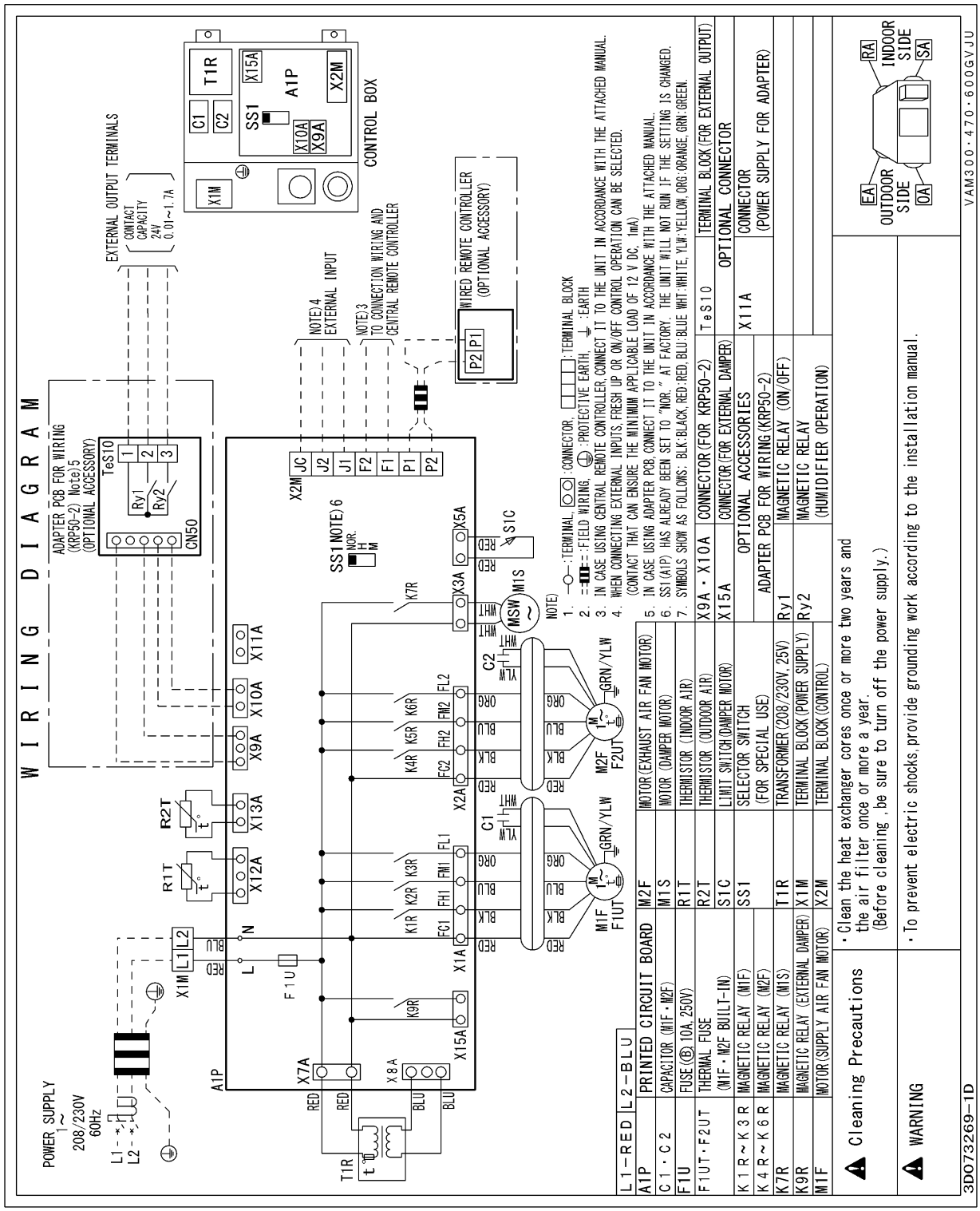
1.3.1 Outdoor-Air Processing Unit

FXMQ48/72MFVJU

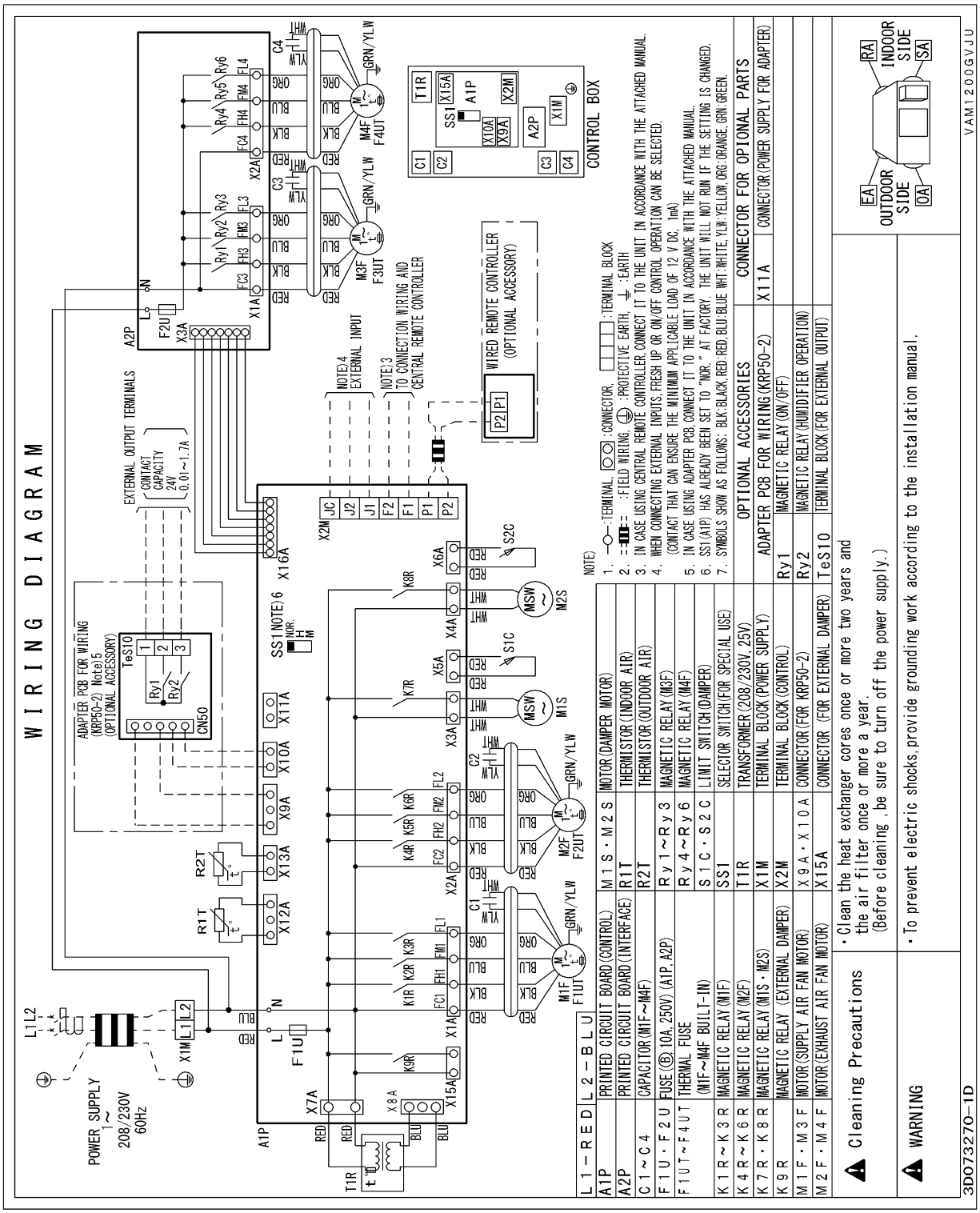


1.3.2 Energy Recovery Ventilator (VAM Series)

VAM300/470/600GVJU



VAM1200GVJU



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.

●Specifications, designs and other content appearing in this brochure are current as of October 2023 but subject to change without notice.

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