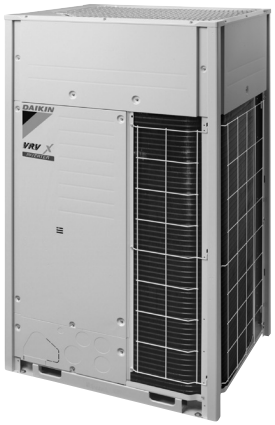
DAIKIN

SiAF341904E

R-410A

Service Manual

VRV X



High-COP Type RXQ12-44AHRY1 Series
Standard Type RXQ6-60A(N)RY1 Series

Cooling Only 50/60 Hz

Part 4 Functions and Control 78

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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.	
Be sure to discharge the capacitor completely before conducting repair work. The step-up capacitor supplies high-voltage electricity to the electrical components of the outdoor unit. A charged capacitor may cause an electrical shock.	

Warning	
Do not turn the air conditioner on or off by plugging in or unplugging the power cable. Plugging 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). Insufficient safety measures may cause a fall.	
In case of R-32 / R-410A refrigerant models, be sure to use pipes, flare nuts and tools intended for the exclusive use with the R-32 / R-410A refrigerant. The use of materials for R-22 refrigerant models may cause a serious accident, such as a damage of refrigerant cycle or equipment failure.	
Do not mix air or gas other than the specified refrigerant (R-32 / R-410A / R-22) in the refrigerant system. If air enters the 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.	
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.	
Do not mix air or gas other than the specified refrigerant (R-32 / R-410A / R-22) in the refrigerant system. If air enters the 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.	

Warning	
Check to make sure that the power cable plug is not dirty or loose, then insert the plug into a power outlet securely. If the plug 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.	
Be sure to measure insulation resistance after the repair, and make sure that the resistance is 1 MΩ or higher. Faulty insulation may cause an electrical shock.	
Be sure to check the drainage of the indoor unit after the repair. Faulty drainage may cause water to enter the room and wet the furniture and floor.	
Do not tilt the unit when removing it. The water inside the unit may spill and wet the furniture and floor.	

2. Icons Used

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

Icon	Type of Information	Description
 Warning	Warning	**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
04 / 2019	SiAF341904E	First edition

Part 1
General Information

1. Model Names

1.1 Indoor Unit

VRV Indoor Unit

Capacity range	kW	2.2	2.8	3.6	4.5	5.6	7.1	9.0	11.2	14.0	16.0	Power supply, Standard
	HP	0.8	1	1.25	1.6	2	2.5	3.2	4	5	6	
Capacity index		20	25	31.25	40	50	62.5	80	100	125	140	
Ceiling mounted cassette (Round flow with sensing) type	FXFSQ	—	25AR	32AR	40AR	50AR	63AR	80AR	100AR	125AR	140AR	V1
Ceiling mounted duct type	FXMQ	—	—	—	40PB	50PB	63PB	80PB	100PB	125PB	140PB	
		—	—	—	40AR	50AR	63AR	80AR	100AR	—	—	
Wall mounted type	FXAQ	20P	25P	32P	—	—	—	—	—	—	—	VE
		—	—	—	40P	50P	63P	—	—	—	—	VER1

Power supply and standard symbols

V1: 1 phase, 230 V, 50/60 Hz (for Africa)

VE, VER1: 1 phase, 220-240/220 V, 50/60 Hz

1.2 Outdoor Unit

VRV X Series High-COP Type

Series		Model name									Power supply
Outdoor units	RXQ	12AHR	14AHR	16AHR	18AHR	20AHR	22AHR	24AHR	26AHR	28AHR	Y1
		30AHR	32AHR	34AHR	36AHR	38AHR	40AHR	42AHR	44AHR	—	

Y1: 3 phase, 380-415 V, 50/60 Hz (for Africa)

VRV X Series Standard Type

Series		Model name									Power supply
Outdoor units	RXQ	6AR	8AR	10AR	12AR	14AR	16AR	18AR	20AR	22ANR	24ANR	Y1
		26ANR	28ANR	30ANR	32ANR	34ANR	36ANR	38ANR	40ANR	42ANR	44ANR	
		46ANR	48ANR	50ANR	52ANR	54ANR	56ANR	58ANR	60ANR	—	—	

Y1: 3 phase, 380-415 V, 50/60 Hz (for Africa)

2. External Appearance

2.1 Indoor Unit

VRV Indoor Unit

Ceiling mounted cassette (Round flow with sensing) type FXFSQ-AR 	Wall mounted type FXAQ-P 
Ceiling mounted duct type FXMQ-PB FXMQ-AR 	—

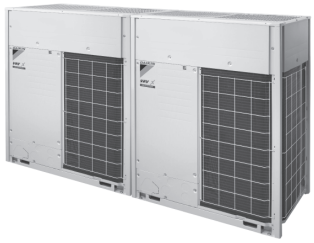
2.2 Outdoor Unit

***VRV* X Series High-COP Type**

12, 14, 16, 18, 20 HP	22, 24, 26, 28, 30, 32, 34 HP
 RXQ12AHRY1 RXQ14AHRY1 RXQ16AHRY1 RXQ18AHRY1 RXQ20AHRY1	 RXQ22AHRY1 RXQ24AHRY1 RXQ26AHRY1 RXQ28AHRY1 RXQ30AHRY1 RXQ32AHRY1 RXQ34AHRY1
36, 38 HP	**40 HP**
 RXQ36AHRY1 RXQ38AHRY1	 RXQ40AHRY1
42, 44 HP	
 RXQ42AHRY1 RXQ44AHRY1	

VRV X Series Standard Type

6, 8, 10, 12 HP	14, 16, 18, 20 HP
	
RXQ6ARY1 RXQ8ARY1 RXQ10ARY1 RXQ12ARY1	RXQ14ARY1 RXQ16ARY1 RXQ18ARY1 RXQ20ARY1

22, 24 HP	26, 28, 30 HP	32, 34, 36, 38, 40 HP
		
RXQ22ANRY1 RXQ24ANRY1	RXQ26ANRY1 RXQ28ANRY1 RXQ30ANRY1	RXQ32ANRY1 RXQ34ANRY1 RXQ36ANRY1 RXQ38ANRY1 RXQ40ANRY1

42, 44 HP	46, 48, 50, 52, 54, 56, 58, 60 HP
	
RXQ42ANRY1 RXQ44ANRY1	RXQ46ANRY1 RXQ48ANRY1 RXQ50ANRY1 RXQ52ANRY1 RXQ54ANRY1 RXQ56ANRY1 RXQ58ANRY1 RXQ60ANRY1

3. Combination of Outdoor Units

VRV X Series High-COP Type

Capacity range	12 HP	14 HP	16 HP	18 HP	20 HP	22 HP	24 HP	26 HP
Model name	**RXQ12AHR**	**RXQ14AHR**	**RXQ16AHR**	**RXQ18AHR**	**RXQ20AHR**	**RXQ22AHR**	**RXQ24AHR**	**RXQ26AHR**
Outdoor unit 1	RXQ6AR	RXQ6AR	RXQ8AR	RXQ8AR	RXQ10AR	RXQ6AR	RXQ8AR	RXQ8AR
Outdoor unit 2	RXQ6AR	RXQ8AR	RXQ8AR	RXQ10AR	RXQ10AR	RXQ8AR	RXQ8AR	RXQ8AR
Outdoor unit 3	—	—	—	—	—	RXQ8AR	RXQ8AR	RXQ10AR

Capacity range	28 HP	30 HP	32 HP	34 HP	36 HP	38 HP	40 HP	42 HP
Model name	**RXQ28AHR**	**RXQ30AHR**	**RXQ32AHR**	**RXQ34AHR**	**RXQ36AHR**	**RXQ38AHR**	**RXQ40AHR**	**RXQ42AHR**
Outdoor unit 1	RXQ8AR	RXQ8AR	RXQ8AR	RXQ10AR	RXQ10AR	RXQ12AR	RXQ12AR	RXQ14AR
Outdoor unit 2	RXQ8AR	RXQ10AR	RXQ12AR	RXQ12AR	RXQ12AR	RXQ12AR	RXQ14AR	RXQ14AR
Outdoor unit 3	RXQ12AR	RXQ12AR	RXQ12AR	RXQ12AR	RXQ14AR	RXQ14AR	RXQ14AR	RXQ14AR

Capacity range	44 HP
Model name	**RXQ44AHR**
Outdoor unit 1	RXQ14AR
Outdoor unit 2	RXQ14AR
Outdoor unit 3	RXQ16AR

System capacity		Number of units	Module						Outdoor unit multi connection piping kit ★1
kW	HP		6	8	10	12	14	16	
32.0	12	2	●●						BHFP22P1006
38.4	14	2	●	●					
44.8	16	2		●●					
50.4	18	2		●	●				
56.0	20	2			●●				
60.8	22	3	●	●●					BHFP22P1516
67.2	24	3		●●●					
72.8	26	3		●●	●				
78.3	28	3		●●		●			
83.9	30	3		●	●	●			
89.4	32	3		●		●●			
95.0	34	3			●	●●			
101.5	36	3			●	●	●		
107	38	3				●●	●		
113.5	40	3				●	●●		
120	42	3					●●●		
125	44	3					●●	●	

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

VRV X Series Standard Type

Capacity range	6 HP	8 HP	10 HP	12 HP	14 HP	16 HP	18 HP	20 HP
Model name	**RXQ6AR**	**RXQ8AR**	**RXQ10AR**	**RXQ12AR**	**RXQ14AR**	**RXQ16AR**	**RXQ18AR**	**RXQ20AR**

Capacity range	22 HP	24 HP	26 HP	28 HP	30 HP	32 HP	34 HP	36 HP
Model name	**RXQ22ANR**	**RXQ24ANR**	**RXQ26ANR**	**RXQ28ANR**	**RXQ30ANR**	**RXQ32ANR**	**RXQ34ANR**	**RXQ36ANR**
Outdoor unit 1	RXQ10AR	RXQ12AR	RXQ12AR	RXQ12AR	RXQ12AR	RXQ14AR	RXQ16AR	RXQ18AR
Outdoor unit 2	RXQ12AR	RXQ12AR	RXQ14AR	RXQ16AR	RXQ18AR	RXQ18AR	RXQ18AR	RXQ18AR
Outdoor unit 3	–	–	–	–	–	–	–	–

Capacity range	38 HP	40 HP	42 HP	44 HP	46 HP	48 HP	50 HP	52 HP
Model name	**RXQ38ANR**	**RXQ40ANR**	**RXQ42ANR**	**RXQ44ANR**	**RXQ46ANR**	**RXQ48ANR**	**RXQ50ANR**	**RXQ52ANR**
Outdoor unit 1	RXQ18AR	RXQ20AR	RXQ12AR	RXQ12AR	RXQ14AR	RXQ14AR	RXQ14AR	RXQ16AR
Outdoor unit 2	RXQ20AR	RXQ20AR	RXQ12AR	RXQ12AR	RXQ14AR	RXQ16AR	RXQ18AR	RXQ18AR
Outdoor unit 3	–	–	RXQ18AR	RXQ20AR	RXQ18AR	RXQ18AR	RXQ18AR	RXQ18AR

Capacity range	54 HP	56 HP	58 HP	60 HP
Model name	**RXQ54ANR**	**RXQ56ANR**	**RXQ58ANR**	**RXQ60ANR**
Outdoor unit 1	RXQ18AR	RXQ18AR	RXQ18AR	RXQ20AR
Outdoor unit 2	RXQ18AR	RXQ18AR	RXQ20AR	RXQ20AR
Outdoor unit 3	RXQ18AR	RXQ20AR	RXQ20AR	RXQ20AR

System capacity		Number of units	Module								Outdoor unit multi connection piping kit ★1
kW	HP		6	8	10	12	14	16	18	20	
16.0	6	1	●								—
22.4	8	1		●							
28.0	10	1			●						
33.5	12	1				●					
40.0	14	1					●				
45.0	16	1						●			
50.0	18	1							●		
56.0	20	1								●	
61.5	22	2			●	●					BHFP22P1006
67.0	24	2				●●					
73.5	26	2				●	●				
78.5	28	2				●		●			
83.5	30	2				●			●		
90.0	32	2					●		●		
95.0	34	2						●	●		
100	36	2							●●		
106	38	2							●	●	
112	40	2								●●	
117	42	3				●●			●		BHFP22P1516
123	44	3				●●				●	
130	46	3					●●		●		
135	48	3					●	●	●		
140	50	3					●		●●		
145	52	3						●	●●		
150	54	3							●●●		
156	56	3							●●	●	
162	58	3							●	●●	
168	60	3								●●●	

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

4. Capacity Range

4.1 Capacity Range for *VRV* Indoor Units Only

4.1.1 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		
		FXMQ-PB FXAQ-P	Including FXFSQ25AR at least one unit	Other indoor unit models
Single outdoor unit	50%	200%	130%	200%
Double outdoor units				160%
Triple outdoor units				130%

4.1.2 Outdoor Unit Combinations

VRV X Series High-COP Type

kW	HP	Capacity index	Model name	Combination	Total capacity index of connectable indoor units ∗1	Maximum number of connectable indoor units ∗1
32.0	**12**	300	RXQ12AHR	RXQ6AR × 2	150 to 390 (480)	19 (24)
38.4	**14**	350	RXQ14AHR	RXQ6AR + RXQ8AR	175 to 455 (560)	22 (28)
44.8	**16**	400	RXQ16AHR	RXQ8AR × 2	200 to 520 (640)	26 (32)
50.4	**18**	450	RXQ18AHR	RXQ8AR + RXQ10AR	225 to 585 (720)	29 (36)
56.0	**20**	500	RXQ20AHR	RXQ10AR × 2	250 to 650 (800)	32 (40)
60.8	**22**	550	RXQ22AHR	RXQ6AR + RXQ8AR × 2	275 to 715 (715)	35 (35)
67.2	**24**	600	RXQ24AHR	RXQ8AR × 3	300 to 780 (780)	39 (39)
72.8	**26**	650	RXQ26AHR	RXQ8AR × 2 + RXQ10AR	325 to 845 (845)	42 (42)
78.3	**28**	700	RXQ28AHR	RXQ8AR × 2 + RXQ12AR	350 to 910 (910)	45 (45)
83.9	**30**	750	RXQ30AHR	RXQ8AR + RXQ10AR + RXQ12AR	375 to 975 (975)	48 (48)
89.4	**32**	800	RXQ32AHR	RXQ8AR + RXQ12AR × 2	400 to 1,040 (1,040)	52 (52)
95.0	**34**	850	RXQ34AHR	RXQ10AR + RXQ12AR × 2	425 to 1,105 (1,105)	55 (55)
101.5	**36**	900	RXQ36AHR	RXQ10AR + RXQ12AR + RXQ14AR	450 to 1,170 (1,170)	58 (58)
107	**38**	950	RXQ38AHR	RXQ12AR × 2 + RXQ14AR	475 to 1,235 (1,235)	61 (61)
113.5	**40**	1,000	RXQ40AHR	RXQ12AR + RXQ14AR × 2	500 to 1,300 (1,300)	64 (64)
120	**42**	1,050	RXQ42AHR	RXQ14AR × 3	525 to 1,365 (1,365)	
125	**44**	1,100	RXQ44AHR	RXQ14AR × 2 + RXQ16AR	550 to 1,430 (1,430)	

Notes:

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

VRV X Series Standard Type

kW	HP	Capacity index	Model name	Combination	Total capacity index of connectable indoor units ∗1	Maximum number of connectable indoor units ∗1
16.0	**6**	150	RXQ6AR	RXQ6AR	75 to 195 (300)	9 (15)
22.4	**8**	200	RXQ8AR	RXQ8AR	100 to 260 (400)	13 (20)
28.0	**10**	250	RXQ10AR	RXQ10AR	125 to 325 (500)	16 (25)
33.5	**12**	300	RXQ12AR	RXQ12AR	150 to 390 (600)	19 (30)
40.0	**14**	350	RXQ14AR	RXQ14AR	175 to 455 (700)	22 (35)
45.0	**16**	400	RXQ16AR	RXQ16AR	200 to 520 (800)	26 (40)
50.0	**18**	450	RXQ18AR	RXQ18AR	225 to 585 (900)	29 (45)
56.0	**20**	500	RXQ20AR	RXQ20AR	250 to 650 (1,000)	32 (50)
61.5	**22**	550	RXQ22ANR	RXQ10AR + RXQ12AR	275 to 715 (880)	35 (44)
67.0	**24**	600	RXQ24ANR	RXQ12AR × 2	300 to 780 (960)	39 (48)
73.5	**26**	650	RXQ26ANR	RXQ12AR + RXQ14AR	325 to 845 (1,040)	42 (52)
78.5	**28**	700	RXQ28ANR	RXQ12AR + RXQ16AR	350 to 910 (1,120)	45 (56)
83.5	**30**	750	RXQ30ANR	RXQ12AR + RXQ18AR	375 to 975 (1,200)	48 (60)
90.0	**32**	800	RXQ32ANR	RXQ14AR + RXQ18AR	400 to 1,040 (1,280)	52 (64)
95.0	**34**	850	RXQ34ANR	RXQ16AR + RXQ18AR	425 to 1,105 (1,360)	55 (64)
100	**36**	900	RXQ36ANR	RXQ18AR × 2	450 to 1,170 (1,440)	58 (64)
106	**38**	950	RXQ38ANR	RXQ18AR + RXQ20AR	475 to 1,235 (1,520)	61 (64)
112	**40**	1,000	RXQ40ANR	RXQ20AR × 2	500 to 1,300 (1,600)	64 (64)
117	**42**	1,050	RXQ42ANR	RXQ12AR × 2 + RXQ18AR	525 to 1,365 (1,365)	
123	**44**	1,100	RXQ44ANR	RXQ12AR × 2 + RXQ20AR	550 to 1,430 (1,430)	
130	**46**	1,150	RXQ46ANR	RXQ14AR × 2 + RXQ18AR	575 to 1,495 (1,495)	
135	**48**	1,200	RXQ48ANR	RXQ14AR + RXQ16AR + RXQ18AR	600 to 1,560 (1,560)	
140	**50**	1,250	RXQ50ANR	RXQ14AR + RXQ18AR × 2	625 to 1,625 (1,625)	
145	**52**	1,300	RXQ52ANR	RXQ16AR + RXQ18AR × 2	650 to 1,690 (1,690)	
150	**54**	1,350	RXQ54ANR	RXQ18AR × 3	675 to 1,755 (1,755)	
156	**56**	1,400	RXQ56ANR	RXQ18AR × 2 + RXQ20AR	700 to 1,820 (1,820)	
162	**58**	1,450	RXQ58ANR	RXQ18AR + RXQ20AR × 2	725 to 1,885 (1,885)	
168	**60**	1,500	RXQ60ANR	RXQ20AR × 3	750 to 1,950 (1,950)	

Notes:

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

5. Specifications

VRV X Series High-COP Type

Model Name (Combination Unit)			RXQ12AHRY1	RXQ14AHRY1
Model Name (Independent Unit)			RXQ6ARY1+RXQ6ARY1	RXQ6ARY1+RXQ8ARY1
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	27,500	33,000
		Btu/h	109,000	131,000
		kW	32	38.4
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	(1,657×930×765)+(1,657×930×765)	(1,657×930×765)+(1,657×930×765)
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	(2.3×1)+(2.3×1)	(2.3×1)+(3.4×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	(0.55×1)+(0.55×1)	(0.55×1)+(0.55×1)
	Airflow rate	m³/min	119+119	119+178
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ12.7 C1220T (Brazing connection)	ϕ12.7 C1220T (Brazing connection)
	Gas pipe	mm	ϕ28.6 C1220T (Brazing connection)	ϕ28.6 C1220T (Brazing connection)
Mass		kg	165+165	165+165
★2 Sound pressure level		dB(A)	59	59
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	25-100	20-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	5.9+5.9	5.9+5.9
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		—	—
	Sound level		—	—

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name (Combination Unit)			RXQ16AHRY1	RXQ18AHRY1
Model Name (Independent Unit)			RXQ8ARY1+RXQ8ARY1	RXQ8ARY1+RXQ10ARY1
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	38,500	43,300
		Btu/h	153,000	172,000
		kW	44.8	50.4
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	(1,657×930×765)+(1,657×930×765)	(1,657×930×765)+(1,657×930×765)
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	(3.4×1)+(3.4×1)	(3.4×1)+(4.5×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	(0.55×1)+(0.55×1)	(0.55×1)+(0.55×1)
	Airflow rate	m³/min	178+178	178+178
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ12.7 C1220T (Brazing connection)	ϕ15.9 C1220T (Brazing connection)
	Gas pipe	mm	ϕ28.6 C1220T (Brazing connection)	ϕ28.6 C1220T (Brazing connection)
Mass		kg	165+165	165+175
★2 Sound pressure level		dB(A)	59	60
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	20-100	13-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	5.9+5.9	5.9+6.7
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		—	—
	Sound level		—	—

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name (Combination Unit)			**RXQ20AHRY1**	**RXQ22AHRY1**
Model Name (Independent Unit)			**RXQ10ARY1+RXQ10ARY1**	**RXQ6ARY1+RXQ8ARY1+RXQ8ARY1**
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	48,200	52,300
		Btu/h	191,000	207,000
		kW	56	60.8
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	(1,657×930×765)+(1,657×930×765)	(1,657×930×765)+(1,657×930×765) +(1,657×930×765)
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	(4.5×1)+(4.5×1)	(2.3×1)+(3.4×1)+(3.4×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	(0.55×1)+(0.55×1)	(0.55×1)+(0.55×1)+(0.55×1)
	Airflow rate	m³/min	178+178	119+178+178
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ15.9 C1220T (Brazing connection)	ϕ15.9 C1220T (Brazing connection)
	Gas pipe	mm	ϕ28.6 C1220T (Brazing connection)	ϕ28.6 C1220T (Brazing connection)
Mass		kg	175+175	165+165+165
★2 Sound pressure level		dB(A)	60	61
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	13-100	20-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	6.7+6.7	5.9+5.9+5.9
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		—	—
	Sound level		—	—

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name (Combination Unit)			RXQ24AHRY1	RXQ26AHRY1
Model Name (Independent Unit)			RXQ8ARY1+RXQ8ARY1+RXQ8ARY1	RXQ8ARY1+RXQ8ARY1+RXQ10ARY1
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	57,800	62,600
		Btu/h	229,000	248,000
		kW	67.2	72.8
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	(1,657×930×765)+(1,657×930×765) +(1,657×930×765)	(1,657×930×765)+(1,657×930×765) +(1,657×930×765)
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	(3.4×1)+(3.4×1)+(3.4×1)	(3.4×1)+(3.4×1)+(4.5×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	(0.55×1)+(0.55×1)+(0.55×1)	(0.55×1)+(0.55×1)+(0.55×1)
	Airflow rate	m^3/min	178+178+178	178+178+178
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ15.9 C1220T (Brazing connection)	ϕ19.1 C1220T (Brazing connection)
	Gas pipe	mm	ϕ34.9 C1220T (Brazing connection)	ϕ34.9 C1220T (Brazing connection)
Mass		kg	165+165+165	165+165+175
★2 Sound pressure level		dB(A)	61	61
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	20-100	13-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	5.9+5.9+5.9	5.9+5.9+6.7
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		—	—
	Sound level		—	—

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name (Combination Unit)			RXQ28AHRY1	RXQ30AHRY1
Model Name (Independent Unit)			RXQ8ARY1+RXQ8ARY1+RXQ12ARY1	RXQ8ARY1+RXQ10ARY1+RXQ12ARY1
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	67,300	72,200
		Btu/h	267,000	286,000
		kW	78.3	83.9
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	(1,657×930×765)+(1,657×930×765) +(1,657×930×765)	(1,657×930×765)+(1,657×930×765) +(1,657×930×765)
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	(3.4×1)+(3.4×1)+(5.6×1)	(3.4×1)+(4.5×1)+(5.6×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	(0.55×1)+(0.55×1)+(0.55×1)	(0.55×1)+(0.55×1)+(0.55×1)
	Airflow rate	m³/min	178+178+191	178+178+191
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ19.1 C1220T (Brazing connection)	ϕ19.1 C1220T (Brazing connection)
	Gas pipe	mm	ϕ34.9 C1220T (Brazing connection)	ϕ34.9 C1220T (Brazing connection)
Mass		kg	165+165+175	165+175+175
★2 Sound pressure level		dB(A)	61	62
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	12-100	12-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	5.9+5.9+6.8	5.9+6.7+6.8
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		—	—
	Sound level		—	—

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name (Combination Unit)			RXQ32AHRY1	RXQ34AHRY1
Model Name (Independent Unit)			RXQ8ARY1+RXQ12ARY1+RXQ12ARY1	RXQ10ARY1+RXQ12ARY1+RXQ12ARY1
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	76,900	81,700
		Btu/h	305,000	324,000
		kW	89.4	95
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	(1,657×930×765)+(1,657×930×765) +(1,657×930×765)	(1,657×930×765)+(1,657×930×765) +(1,657×930×765)
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	(3.4×1)+(5.6×1)+(5.6×1)	(4.5×1)+(5.6×1)+(5.6×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	(0.55×1)+(0.55×1)+(0.55×1)	(0.55×1)+(0.55×1)+(0.55×1)
	Airflow rate	m³/min	178+191+191	178+191+191
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ19.1 C1220T (Brazing connection)	ϕ19.1 C1220T (Brazing connection)
	Gas pipe	mm	ϕ34.9 C1220T (Brazing connection)	ϕ34.9 C1220T (Brazing connection)
Mass		kg	165+175+175	175+175+175
★2 Sound pressure level		dB(A)	63	63
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	12-100	12-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	5.9+6.8+6.8	6.7+6.8+6.8
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		—	—
	Sound level		—	—

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name (Combination Unit)			**RXQ36AHRY1**	**RXQ38AHRY1**
Model Name (Independent Unit)			**RXQ10ARY1+RXQ12ARY1+RXQ14ARY1**	**RXQ12ARY1+RXQ12ARY1+RXQ14ARY1**
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	87,300	92,000
		Btu/h	346,000	365,000
		kW	101.5	107
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	(1,657×930×765)+(1,657×930×765) +(1,657×1,240×765)	(1,657×930×765)+(1,657×930×765) +(1,657×1,240×765)
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	(4.5×1)+(5.6×1)+(6.4×1)	(5.6×1)+(5.6×1)+(6.4×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	(0.55×1)+(0.55×1)+(0.75×2)	(0.55×1)+(0.55×1)+(0.75×2)
	Airflow rate	m^3/min	178+191+257	191+191+257
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ19.1 C1220T (Brazing connection)	ϕ19.1 C1220T (Brazing connection)
	Gas pipe	mm	ϕ41.3 C1220T (Brazing connection)	ϕ41.3 C1220T (Brazing connection)
Mass		kg	175+175+220	175+175+220
★2 Sound pressure level		dB(A)	64	64
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	11-100	11-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	6.7+6.8+7.4	6.8+6.8+7.4
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		—	—
	Sound level		—	—

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name (Combination Unit)			RXQ40AHRY1	RXQ42AHRY1
Model Name (Independent Unit)			RXQ12ARY1+RXQ14ARY1+RXQ14ARY1	RXQ14ARY1+RXQ14ARY1+RXQ14ARY1
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	97,600	103,000
		Btu/h	387,000	409,000
		kW	113.5	120
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	(1,657×930×765)+(1,657×1,240×765) +(1,657×1,240×765)	(1,657×1,240×765)+(1,657×1,240×765) +(1,657×1,240×765)
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	(5.6×1)+(6.4×1)+(6.4×1)	(6.4×1)+(6.4×1)+(6.4×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	(0.55×1)+(0.75×2)+(0.75×2)	(0.75×2)+(0.75×2)+(0.75×2)
	Airflow rate	m^3/min	191+257+257	257+257+257
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ19.1 C1220T (Brazing connection)	ϕ19.1 C1220T (Brazing connection)
	Gas pipe	mm	ϕ41.3 C1220T (Brazing connection)	ϕ41.3 C1220T (Brazing connection)
Mass		kg	175+220+220	220+220+220
★2 Sound pressure level		dB(A)	64	65
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	11-100	11-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	6.8+7.4+7.4	7.4+7.4+7.4
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		—	—
	Sound level		—	—

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name (Combination Unit)			**RXQ44AHRY1**
Model Name (Independent Unit)			**RXQ14ARY1+RXQ14ARY1+RXQ16ARY1**
Power supply			3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	108,000
		Btu/h	427,000
		kW	125
Casing color			Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	(1,657×1,240×765)+(1,657×1,240×765)+(1,657×1,240×765)
Heat exchanger			Cross fin coil
Compressor	Type		Hermetically sealed scroll type
	Motor output × Number of units	kW	(6.4×1)+(6.4×1)+(3.5×1)+(3.5×1)
	Starting method		Soft start
Fan	Type		Propeller fan
	Motor output	kW	(0.75×2)+(0.75×2)+(0.75×2)
	Airflow rate	m³/min	257+257+257
	Drive		Direct drive
Connecting pipes	Liquid pipe	mm	ϕ19.1 C1220T (Brazing connection)
	Gas pipe	mm	ϕ41.3 C1220T (Brazing connection)
Mass		kg	220+220+260
★2 Sound pressure level		dB(A)	65
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	10-100
Refrigerant	Refrigerant name		R-410A
	Charge	kg	7.4+7.4+8.2
	Control		Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		—
	Sound level		—

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

VRV X Series Standard Type

Model Name			RXQ6ARY1	RXQ8ARY1
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	13,800	19,300
		Btu/h	54,600	76,400
		kW	16.0	22.4
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	1,657×930×765	1,657×930×765
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	2.3×1	3.4×1
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	0.55×1	0.55×1
	Airflow rate	m³/min	119	178
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ9.5 C1220T (Brazing connection)	ϕ9.5 C1220T (Brazing connection)
	Gas pipe	mm	ϕ19.1 C1220T (Brazing connection)	ϕ19.1 C1220T (Brazing connection)
Mass		kg	165	165
★2 Sound pressure level		dB(A)	56	56
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	25-100	20-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	5.9	5.9
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		3D120745	3D120745
	Sound level		4D112438A	4D112439A

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name			RXQ10ARY1	RXQ12ARY1
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	24,100	28,800
		Btu/h	95,500	114,000
		kW	28.0	33.5
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	1,657×930×765	1,657×930×765
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	4.5×1	5.6×1
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	0.55×1	0.55×1
	Airflow rate	m³/min	178	191
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ9.5 C1220T (Brazing connection)	ϕ12.7 C1220T (Brazing connection)
	Gas pipe	mm	ϕ22.2 C1220T (Brazing connection)	ϕ28.6 C1220T (Brazing connection)
Mass		kg	175	175
★2 Sound pressure level		dB(A)	57	59
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	13-100	12-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	6.7	6.8
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		3D120745	3D120745
	Sound level		4D112440A	4D112441A

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name			RXQ14ARY1	RXQ16ARY1
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	34,400	38,700
		Btu/h	136,000	154,000
		kW	40.0	45.0
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	1,657×1,240×765	1,657×1,240×765
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	6.4×1	(3.5×1)+(3.5×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	0.75×2	0.75×2
	Airflow rate	m³/min	257	257
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ12.7 C1220T (Brazing connection)	ϕ12.7 C1220T (Brazing connection)
	Gas pipe	mm	ϕ28.6 C1220T (Brazing connection)	ϕ28.6 C1220T (Brazing connection)
Mass		kg	220	260
★2 Sound pressure level		dB(A)	60	60
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	11-100	10-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	7.4	8.2
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		3D120745	3D120745
	Sound level		4D112442A	4D112443A

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name			RXQ18ARY1	RXQ20ARY1
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	43,000	48,200
		Btu/h	171,000	191,000
		kW	50.0	56.0
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	1,657×1,240×765	1,657×1,240×765
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	(4.0×1)+(4.0×1)	(3.8×1)+(6.3×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	0.75×2	0.75×2
	Airflow rate	m³/min	257	297
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ15.9 C1220T (Brazing connection)	ϕ15.9 C1220T (Brazing connection)
	Gas pipe	mm	ϕ28.6 C1220T (Brazing connection)	ϕ28.6 C1220T (Brazing connection)
Mass		kg	260	285
★2 Sound pressure level		dB(A)	61	65
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	10-100	7-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	8.4	11.8
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		3D120745	3D120745
	Sound level		4D112444A	4D112445A

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name (Combination Unit)			RXQ22ANRY1	RXQ24ANRY1
Model Name (Independent Unit)			RXQ10ARY1+RXQ12ARY1	RXQ12ARY1+RXQ12ARY1
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	52,900	57,600
		Btu/h	210,000	229,000
		kW	61.5	67.0
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	(1,657×930×765)+(1,657×930×765)	(1,657×930×765)+(1,657×930×765)
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	(4.5×1)+(5.6×1)	(5.6×1)+(5.6×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	(0.55×1)+(0.55×1)	(0.55×1)+(0.55×1)
	Airflow rate	m^3/min	178+191	191+191
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ15.9 C1220T (Brazing connection)	ϕ15.9 C1220T (Brazing connection)
	Gas pipe	mm	ϕ28.6 C1220T (Brazing connection)	ϕ34.9 C1220T (Brazing connection)
Mass		kg	175+175	175+175
★2 Sound pressure level		dB(A)	61	62
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	12-100	12-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	6.7+6.8	6.8+6.8
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		—	—
	Sound level		—	—

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name (Combination Unit)			**RXQ26ANRY1**	**RXQ28ANRY1**
Model Name (Independent Unit)			**RXQ12ARY1+RXQ14ARY1**	**RXQ12ARY1+RXQ16ARY1**
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	63,200	67,500
		Btu/h	251,000	268,000
		kW	73.5	78.5
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	(1,657×930×765)+(1,657×1,240×765)	(1,657×930×765)+(1,657×1,240×765)
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	(5.6×1)+(6.4×1)	(5.6×1)+(3.5×1)+(3.5×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	(0.55×1)+(0.75×2)	(0.55×1)+(0.75×2)
	Airflow rate	m^3/min	191+257	191+257
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ19.1 C1220T (Brazing connection)	ϕ19.1 C1220T (Brazing connection)
	Gas pipe	mm	ϕ34.9 C1220T (Brazing connection)	ϕ34.9 C1220T (Brazing connection)
Mass		kg	175+220	175+260
★2 Sound pressure level		dB(A)	63	63
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	11-100	10-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	6.8+7.4	6.8+8.2
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		—	—
	Sound level		—	—

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name (Combination Unit)			RXQ30ANRY1	RXQ32ANRY1
Model Name (Independent Unit)			RXQ12ARY1+RXQ18ARY1	RXQ14ARY1+RXQ18ARY1
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	71,800	77,400
		Btu/h	285,000	307,000
		kW	83.5	90.0
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	(1,657×930×765)+(1,657×1,240×765)	(1,657×1,240×765)+(1,657×1,240×765)
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	(5.6×1)+(4.0×1)+(4.0×1)	(6.4×1)+(4.0×1)+(4.0×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	(0.55×1)+(0.75×2)	(0.75×2)+(0.75×2)
	Airflow rate	m^3/min	191+257	257+257
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ19.1 C1220T (Brazing connection)	ϕ19.1 C1220T (Brazing connection)
	Gas pipe	mm	ϕ34.9 C1220T (Brazing connection)	ϕ34.9 C1220T (Brazing connection)
Mass		kg	175+260	220+260
★2 Sound pressure level		dB(A)	63	64
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	10-100	10-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	6.8+8.4	7.4+8.4
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		—	—
	Sound level		—	—

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name (Combination Unit)			**RXQ34ANRY1**	**RXQ36ANRY1**
Model Name (Independent Unit)			**RXQ16ARY1+RXQ18ARY1**	**RXQ18ARY1+RXQ18ARY1**
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	81,700	86,000
		Btu/h	324,000	341,000
		kW	95.0	100
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	(1,657×1,240×765)+(1,657×1,240×765)	(1,657×1,240×765)+(1,657×1,240×765)
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	(3.5×1)+(3.5×1)+(4.0×1)+(4.0×1)	(4.0×1)+(4.0×1)+(4.0×1)+(4.0×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	(0.75×2)+(0.75×2)	(0.75×2)+(0.75×2)
	Airflow rate	m^3/min	257+257	257+257
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ19.1 C1220T (Brazing connection)	ϕ19.1 C1220T (Brazing connection)
	Gas pipe	mm	ϕ34.9 C1220T (Brazing connection)	ϕ41.3 C1220T (Brazing connection)
Mass		kg	260+260	260+260
★2 Sound pressure level		dB(A)	64	64
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	10-100	10-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	8.2+8.4	8.4+8.4
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		—	—
	Sound level		—	—

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name (Combination Unit)			RXQ38ANRY1	RXQ40ANRY1
Model Name (Independent Unit)			RXQ18ARY1+RXQ20ARY1	RXQ20ARY1+RXQ20ARY1
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	91,200	96,300
		Btu/h	362,000	382,000
		kW	106	112
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	(1,657×1,240×765)+(1,657×1,240×765)	(1,657×1,240×765)+(1,657×1,240×765)
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	(4.0×1)+(4.0×1)+(3.8×1)+(6.3×1)	(3.8×1)+(6.3×1)+(3.8×1)+(6.3×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	(0.75×2)+(0.75×2)	(0.75×2)+(0.75×2)
	Airflow rate	m^3/min	257+297	297+297
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ19.1 C1220T (Brazing connection)	ϕ19.1 C1220T (Brazing connection)
	Gas pipe	mm	ϕ41.3 C1220T (Brazing connection)	ϕ41.3 C1220T (Brazing connection)
Mass		kg	260+285	285+285
★2 Sound pressure level		dB(A)	66	68
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	7-100	7-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	8.4+11.8	11.8+11.8
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		—	—
	Sound level		—	—

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name (Combination Unit)			**RXQ42ANRY1**	**RXQ44ANRY1**
Model Name (Independent Unit)			**RXQ12ARY1+RXQ12ARY1+RXQ18ARY1**	**RXQ12ARY1+RXQ12ARY1+RXQ20ARY1**
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	101,000	106,000
		Btu/h	399,000	420,000
		kW	117	123
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	(1,657×930×765)+(1,657×930×765)+ (1,657×1,240×765)	(1,657×930×765)+(1,657×930×765)+ (1,657×1,240×765)
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	(5.6×1)+(5.6×1)+(4.0×1)+(4.0×1)	(5.6×1)+(5.6×1)+(3.8×1)+(6.3×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	(0.55×1)+(0.55×1)+(0.75×2)	(0.55×1)+(0.55×1)+(0.75×2)
	Airflow rate	m^3/min	191+191+257	191+191+297
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ19.1 C1220T (Brazing connection)	ϕ19.1 C1220T (Brazing connection)
	Gas pipe	mm	ϕ41.3 C1220T (Brazing connection)	ϕ41.3 C1220T (Brazing connection)
Mass		kg	175+175+260	175+175+285
★2 Sound pressure level		dB(A)	65	67
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	10-100	7-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	6.8+6.8+8.4	6.8+6.8+11.8
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		—	—
	Sound level		—	—

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name (Combination Unit)			RXQ46ANRY1	RXQ48ANRY1
Model Name (Independent Unit)			RXQ14ARY1+RXQ14ARY1+RXQ18ARY1	RXQ14ARY1+RXQ16ARY1+RXQ18ARY1
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	112,000	116,000
		Btu/h	444,000	461,000
		kW	130	135
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	(1,657×1,240×765)+(1,657×1,240×765)+(1,657×1,240×765)	(1,657×1,240×765)+(1,657×1,240×765)+(1,657×1,240×765)
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	(6.4×1)+(6.4×1)+(4.0×1)+(4.0×1)	(6.4×1)+(3.5×1)+(3.5×1)+(4.0×1)+(4.0×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	(0.75×2)+(0.75×2)+(0.75×2)	(0.75×2)+(0.75×2)+(0.75×2)
	Airflow rate	m³/min	257+257+257	257+257+257
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ19.1 C1220T (Brazing connection)	ϕ19.1 C1220T (Brazing connection)
	Gas pipe	mm	ϕ41.3 C1220T (Brazing connection)	ϕ41.3 C1220T (Brazing connection)
Mass		kg	220+220+260	220+260+260
★2 Sound pressure level		dB(A)	65	65
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	10-100	10-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	7.4+7.4+8.4	7.4+8.2+8.4
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		—	—
	Sound level		—	—

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name (Combination Unit)			**RXQ50ANRY1**	**RXQ52ANRY1**
Model Name (Independent Unit)			**RXQ14ARY1+RXQ18ARY1+RXQ18ARY1**	**RXQ16ARY1+RXQ18ARY1+RXQ18ARY1**
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	120,000	125,000
		Btu/h	478,000	495,000
		kW	140	145
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	(1,657×1,240×765)+(1,657×1,240×765)+ (1,657×1,240×765)	(1,657×1,240×765)+(1,657×1,240×765)+ (1,657×1,240×765)
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	(6.4×1)+(4.0×1)+(4.0×1)+(4.0×1)+(4.0×1)	(3.5×1)+(3.5×1)+(4.0×1)+(4.0×1)+ (4.0×1)+(4.0×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	(0.75×2)+(0.75×2)+(0.75×2)	(0.75×2)+(0.75×2)+(0.75×2)
	Airflow rate	m³/min	257+257+257	257+257+257
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ19.1 C1220T (Brazing connection)	ϕ19.1 C1220T (Brazing connection)
	Gas pipe	mm	ϕ41.3 C1220T (Brazing connection)	ϕ41.3 C1220T (Brazing connection)
Mass		kg	220+260+260	260+260+260
★2 Sound pressure level		dB(A)	65	65
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	10-100	10-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	7.4+8.4+8.4	8.2+8.4+8.4
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		—	—
	Sound level		—	—

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name (Combination Unit)			RXQ54ANRY1	RXQ56ANRY1
Model Name (Independent Unit)			RXQ18ARY1+RXQ18ARY1+RXQ18ARY1	RXQ18ARY1+RXQ18ARY1+RXQ20ARY1
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	129,000	134,000
		Btu/h	512,000	532,000
		kW	150	156
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	(1,657×1,240×765)+(1,657×1,240×765)+ (1,657×1,240×765)	(1,657×1,240×765)+(1,657×1,240×765)+ (1,657×1,240×765)
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	(4.0×1)+(4.0×1)+(4.0×1)+(4.0×1)+ (4.0×1)+(4.0×1)	(4.0×1)+(4.0×1)+(4.0×1)+(4.0×1)+ (3.8×1)+(6.3×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	(0.75×2)+(0.75×2)+(0.75×2)	(0.75×2)+(0.75×2)+(0.75×2)
	Airflow rate	m³/min	257+257+257	257+257+297
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ19.1 C1220T (Brazing connection)	ϕ19.1 C1220T (Brazing connection)
	Gas pipe	mm	ϕ41.3 C1220T (Brazing connection)	ϕ41.3 C1220T (Brazing connection)
Mass		kg	260+260+260	260+260+285
★2 Sound pressure level		dB(A)	66	68
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	10-100	7-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	8.4+8.4+8.4	8.4+8.4+11.8
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		—	—
	Sound level		—	—

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

Model Name (Combination Unit)			**RXQ58ANRY1**	**RXQ60ANRY1**
Model Name (Independent Unit)			**RXQ18ARY1+RXQ20ARY1+RXQ20ARY1**	**RXQ20ARY1+RXQ20ARY1+RXQ20ARY1**
Power supply			3 phase, 380-415 V, 50/60 Hz	3 phase, 380-415 V, 50/60 Hz
★1 Cooling capacity		kcal/h	139,000	144,000
		Btu/h	553,000	573,000
		kW	162	168
Casing color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions (H × W × D)		mm	(1,657×1,240×765)+(1,657×1,240×765)+ (1,657×1,240×765)	(1,657×1,240×765)+(1,657×1,240×765)+ (1,657×1,240×765)
Heat exchanger			Cross fin coil	Cross fin coil
Compressor	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output × Number of units	kW	(4.0×1)+(4.0×1)+(3.8×1)+(6.3×1)+ (3.8×1)+(6.3×1)	(3.8×1)+(6.3×1)+(3.8×1)+(6.3×1)+ (3.8×1)+(6.3×1)
	Starting method		Soft start	Soft start
Fan	Type		Propeller fan	Propeller fan
	Motor output	kW	(0.75×2)+(0.75×2)+(0.75×2)	(0.75×2)+(0.75×2)+(0.75×2)
	Airflow rate	m³/min	257+297+297	297+297+297
	Drive		Direct drive	Direct drive
Connecting pipes	Liquid pipe	mm	ϕ19.1 C1220T (Brazing connection)	ϕ19.1 C1220T (Brazing connection)
	Gas pipe	mm	ϕ41.3 C1220T (Brazing connection)	ϕ41.3 C1220T (Brazing connection)
Mass		kg	260+285+285	285+285+285
★2 Sound pressure level		dB(A)	69	70
Safety devices			High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board	High pressure switch, Fan driver overload protector, Over current relay, Inverter overload protector, Over/under voltage protection printed circuit board
Capacity control		%	7-100	7-100
Refrigerant	Refrigerant name		R-410A	R-410A
	Charge	kg	8.4+11.8+11.8	11.8+11.8+11.8
	Control		Electronic expansion valve	Electronic expansion valve
Refrigerator oil			Refer to the nameplate of compressor	Refer to the nameplate of compressor
Standard accessories			Installation manual, Operation manual, Connection pipes, Clamps	Installation manual, Operation manual, Connection pipes, Clamps
Drawing No.	Specifications		—	—
	Sound level		—	—

Notes:

★1. Indoor temp.: 27°CDB, 19°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5 m, level difference: 0 m.

★2. Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.

During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion formulae
kcal/h = kW × 860 Btu/h = kW × 3412

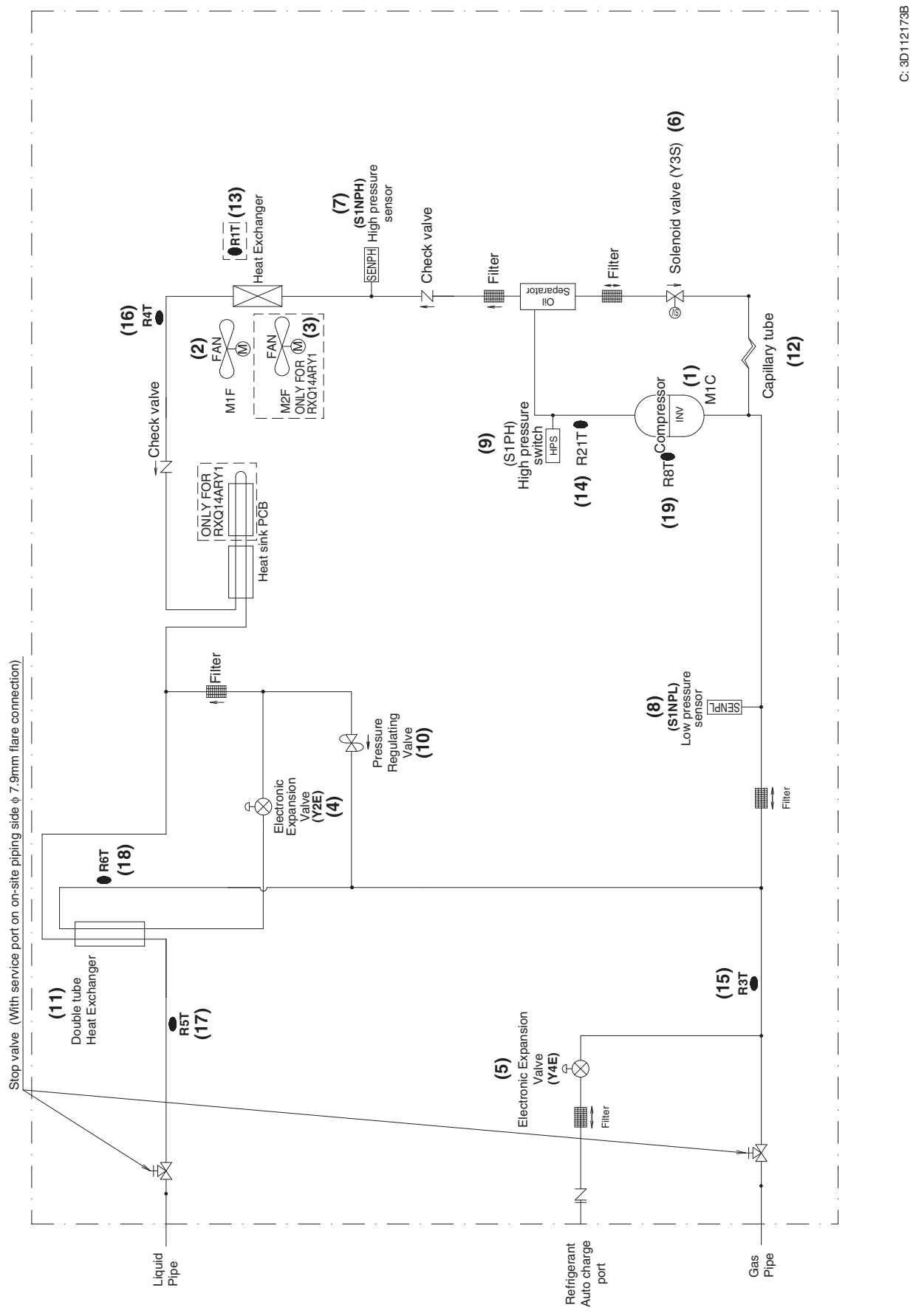
Part 2
Refrigerant Circuit

1. Refrigerant Circuit (Piping Diagrams)

1.1 Outdoor Unit

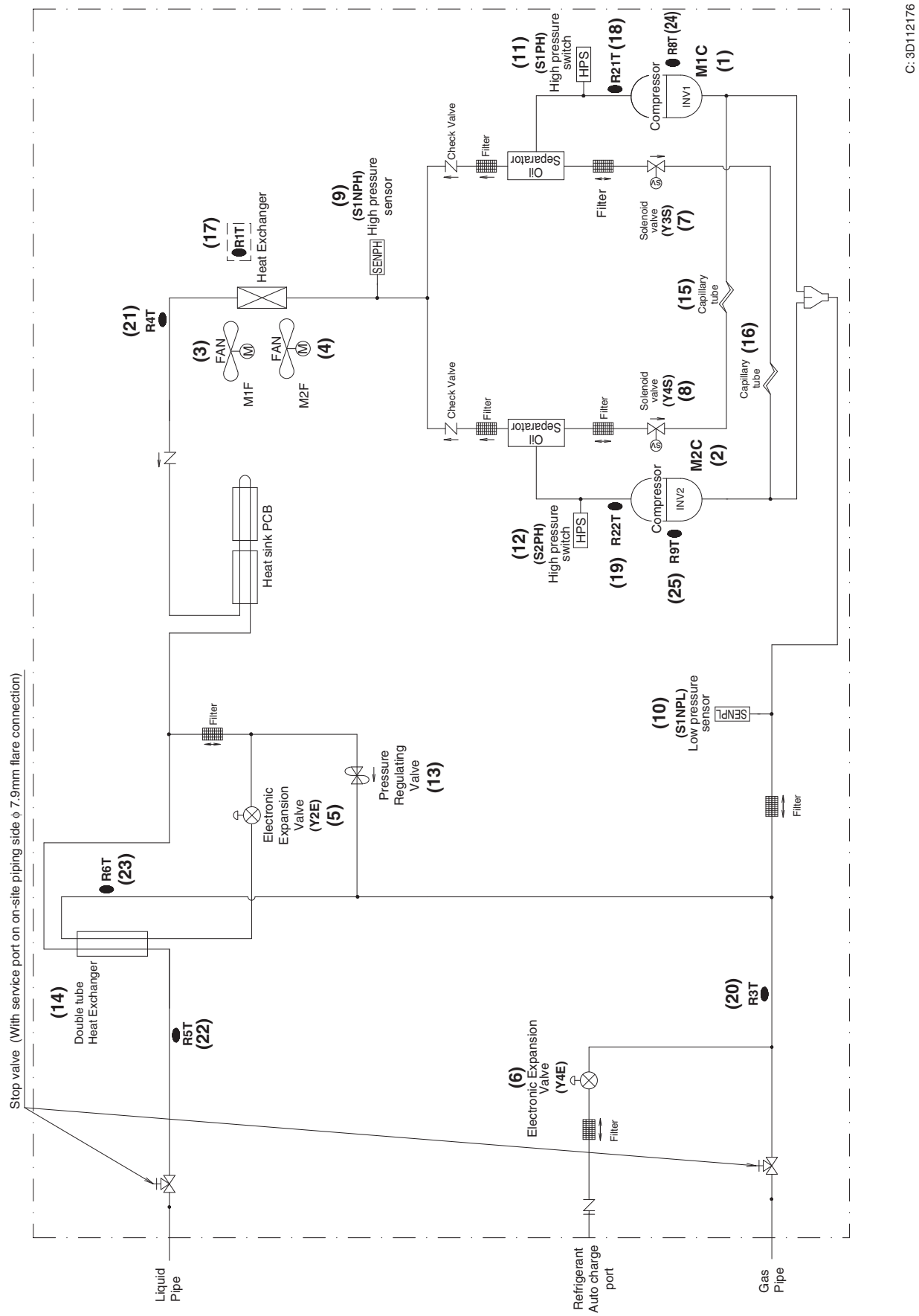
1.1.1 RXQ6/8/10/12/14A

No. in piping diagram	Electric symbol	Name	Function
(1)	M1C	Inverter compressor	Inverter compressor is operated in multi-steps according to Te.
(2)	M1F	Inverter fan	The fan rotation speed is varied by using inverter.
(3)	M2F	Inverter fan (RXQ14A only)	
(4)	Y2E	Electronic expansion valve (Injection)	PI control is applied to keep the outlet superheated degree of subcooling heat exchanger constant.
(5)	Y4E	Electronic expansion valve (Refrigerant auto charge)	Used to control refrigerant charging speed during refrigerant auto charge operation and to stop refrigerant charge automatically.
(6)	Y3S	Solenoid valve (Oil return 1)	Used to control the amount of oil from the oil separator to the compressor.
(7)	S1NPH	High pressure sensor	Used to detect high pressure.
(8)	S1NPL	Low pressure sensor	Used to detect low pressure.
(9)	S1PH	High pressure switch (For M1C compressor)	In order to prevent the increase of high pressure when an error occurs, this switch is activated at high pressure of 4.0 MPa or more to stop the compressor operation.
(10)	—	Pressure regulating valve	This valve opens at a pressure of 4.0 MPa for prevention of pressure increase, thus resulting in no damage of functional parts due to the increase of pressure in transportation or storage.
(11)	—	Double tube heat exchanger (Subcooling heat exchanger)	Used to subcool liquid refrigerant.
(12)	—	Capillary tube	Used to return the refrigerating oil separated through the oil separator to the compressor.
(13)	R1T	Thermistor (Outdoor air: Ta)	Used to detect outdoor air temperature, correct discharge pipe temperature, and others.
(14)	R21T	Thermistor (Discharge pipe: Tdi1)	Used to detect discharge pipe temperature, make the temperature protection control of compressor, and others.
(15)	R3T	Thermistor (Suction pipe: Ts)	Used to detect suction pipe temperature, and for other purposes.
(16)	R4T	Thermistor (Heat exchanger liquid pipe: Tf)	This detects temperature of liquid pipe between the air heat exchanger and check valve. Used to make judgments on the recover or discharge refrigerants to the refrigerant regulator.
(17)	R5T	Thermistor (Subcooling heat exchanger liquid pipe: Tsc)	This detects temperature of liquid pipe between the double tube heat exchanger.
(18)	R6T	Thermistor (Subcooling heat exchanger gas pipe: Tsh)	This detects temperature of gas pipe on the evaporation side of subcooling heat exchanger. Used to exercise the constant control of superheated degree at the outlet of subcooling heat exchanger.
(19)	R8T	Thermistor (Compressor body: Ti1)	Detects compressor surface temperature, this switch is activated at surface temperature of 120°C or more to stop the compressor operation.


C: 3D112173B
Stop valve (With service port on on-site piping side ϕ 7.9mm flare connection)
(16) R4T
Check valve
(2) FAN M1F
(3) FAN M2F ONLY FOR RXQ14ARY1
(13) R1T Heat Exchanger
(7) (S1NPH) High pressure sensor SENPH
Check valve
Filter
Oil Separator
Filter
(6) Solenoid valve (Y3S)
Capillary tube (12)
(1) M1C Compressor INV
R8T (19)
(9) (S1PH) High pressure switch HPS
R21T (14)
ONLY FOR RXQ14ARY1
Heat sink PCB
Check valve
Filter
Pressure Regulating Valve (10)
Electronic Expansion Valve (Y2E) (4)
(8) (S1NPL) Low pressure sensor SENPL
Filter
R6T (18)
(11) Double tube Heat Exchanger
R5T (17)
(15) R3T
(5) Electronic Expansion Valve (Y4E)
Filter
Liquid Pipe
Refrigerant Auto charge port
Gas Pipe

1.1.2 RXQ16/18/20A

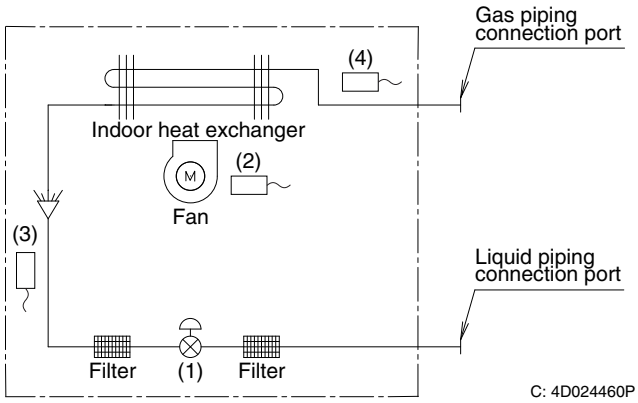
No. in piping diagram	Electric symbol	Name	Function
(1)	M1C	Inverter compressor	Inverter compressor is operated in multi-steps according to Te.
(2)	M2C		
(3)	M1F	Inverter fan	The fan rotation speed is varied by using inverter.
(4)	M2F		
(5)	Y2E	Electronic expansion valve (Injection)	PI control is applied to keep the outlet superheated degree of subcooling heat exchanger constant.
(6)	Y4E	Electronic expansion valve (Refrigerant auto charge)	Used to control refrigerant charging speed during refrigerant auto charge operation and to stop refrigerant charge automatically.
(7)	Y3S	Solenoid valve (Oil return 1)	Used to control the amount of oil from the oil separator to the compressor.
(8)	Y4S	Solenoid valve (Oil return 2)	
(9)	S1NPH	High pressure sensor	Used to detect high pressure.
(10)	S1NPL	Low pressure sensor	Used to detect low pressure.
(11)	S1PH	High pressure switch (For M1C compressor)	In order to prevent the increase of high pressure when an error occurs, this switch is activated at high pressure of 4.0 MPa or more to stop the compressor operation.
(12)	S2PH	High pressure switch (For M2C compressor)	
(13)	—	Pressure regulating valve	This valve opens at a pressure of 4.0 MPa for prevention of pressure increase, thus resulting in no damage of functional parts due to the increase of pressure in transportation or storage.
(14)	—	Double tube heat exchanger (Subcooling heat exchanger)	Used to subcool liquid refrigerant.
(15)	—	Capillary tube	Used to return the refrigerating oil separated through the oil separator to the compressor.
(16)	—		
(17)	R1T	Thermistor (Outdoor air: Ta)	Used to detect outdoor air temperature, correct discharge pipe temperature, and others.
(18)	R21T	Thermistor (M1C discharge pipe: Tdi1)	Used to detect discharge pipe temperature, make the temperature protection control of compressor, and others.
(19)	R22T	Thermistor (M2C discharge pipe: Tdi2)	
(20)	R3T	Thermistor (Suction pipe: Ts)	Used to detect suction pipe temperature, and for other purposes.
(21)	R4T	Thermistor (Heat exchanger liquid pipe: Tf)	This detects temperature of liquid pipe between the air heat exchanger and check valve. Used to make judgements on the recover or discharge refrigerants to the refrigerant regulator.
(22)	R5T	Thermistor (Subcooling heat exchanger liquid pipe: Tsc)	This detects temperature of liquid pipe between the double tube heat exchanger.
(23)	R6T	Thermistor (Subcooling heat exchanger gas pipe: Tsh)	This detects temperature of gas pipe on the evaporation side of subcooling heat exchanger. Used to exercise the constant control of superheated degree at the outlet of subcooling heat exchanger.
(24)	R8T	Thermistor (M1C Compressor body: Ti1)	Detects compressor surface temperature, this switch is activated at surface temperature of 120°C or more to stop the compressor operation.
(25)	R9T	Thermistor (M2C Compressor body: Ti2)	


C: 3D112176
Stop valve (With service port on on-site piping side ϕ 7.9mm flare connection)
Liquid Pipe
Refrigerant Auto charge port
Gas Pipe
(14) Double tube Heat Exchanger
R5T (22)
R6T (23)
R4T (21)
(17) R1T Heat Exchanger
(3) FAN M1F
(4) FAN M2F
Heat sink PCB
Filter
Electronic Expansion Valve (Y2E) (5)
Pressure Regulating Valve (13)
(6) Electronic Expansion Valve (Y4E)
Filter
(20) R3T
(10) (S1NPL) Low pressure sensor SENPL
Filter
(9) (S1NPH) High pressure sensor SENPH
Check Valve
Filter
Oil Separator
Filter
Solenoid valve (Y3S) (7)
(11) (S1PH) High pressure switch HPS
R21T (18)
Compressor INV1
M1C (1)
R8T (24)
(15) Capillary tube
(16) Capillary tube
Check Valve
Filter
Oil Separator
Filter
Solenoid valve (Y4S) (8)
M2C (2)
Compressor INV2
(12) (S2PH) High pressure switch HPS
R22T (19)
R9T (25)

1.2 *VRV* Indoor Unit

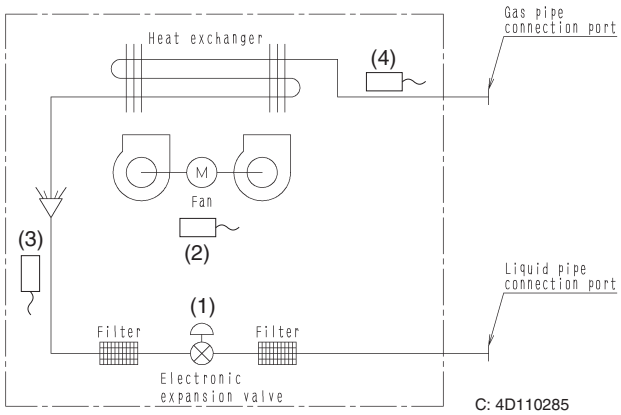
No. in piping diagram	Name	Electric symbol	Applicable model	Function
(1)	Electronic expansion valve	Y1E	All indoor units	Used for gas superheated degree control while in cooling.
(2)	Suction air thermistor	R1T	All indoor units	Used for thermostat control.
(3)	Indoor liquid pipe thermistor	R2T	All indoor units	Used for gas superheated degree control while in cooling.
(4)	Indoor gas pipe thermistor	R3T	All indoor units	Used for gas superheated degree control while in cooling.

■ **FXFSQ-AR**



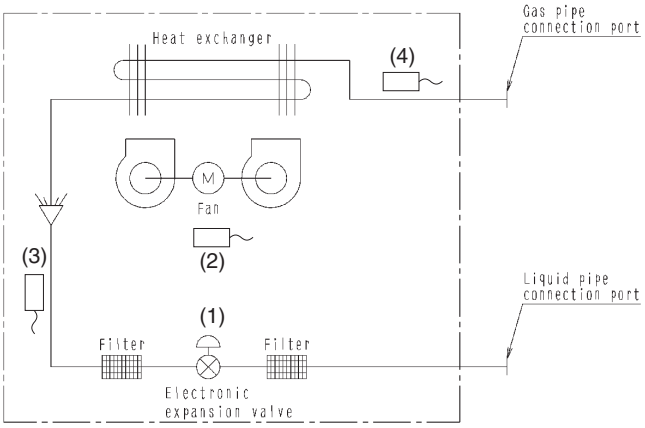
C: 4D024460P

■ **FXMQ-PB**



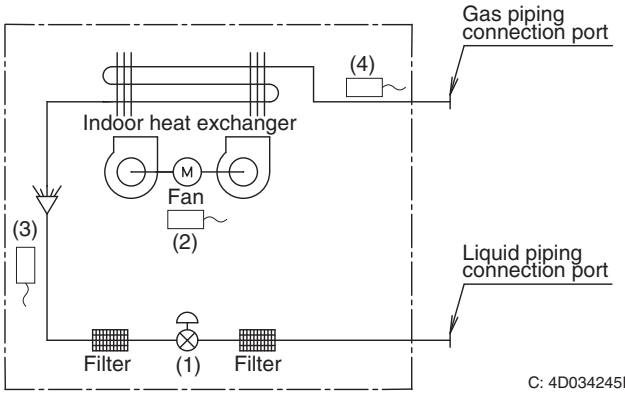
C: 4D110285

■ **FXMQ-AR**



C: 4D097585B

■ **FXAQ-P**

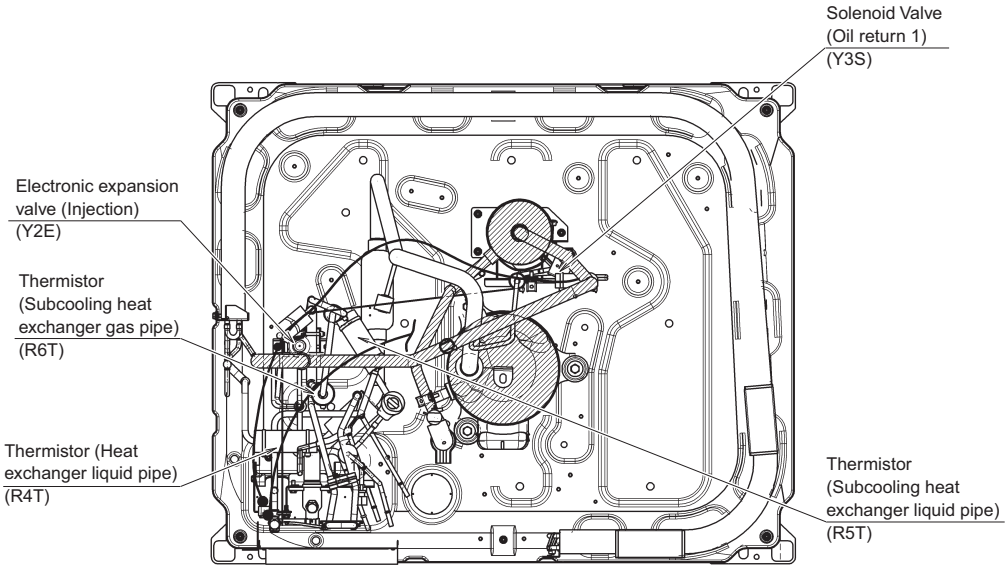


C: 4D034245R

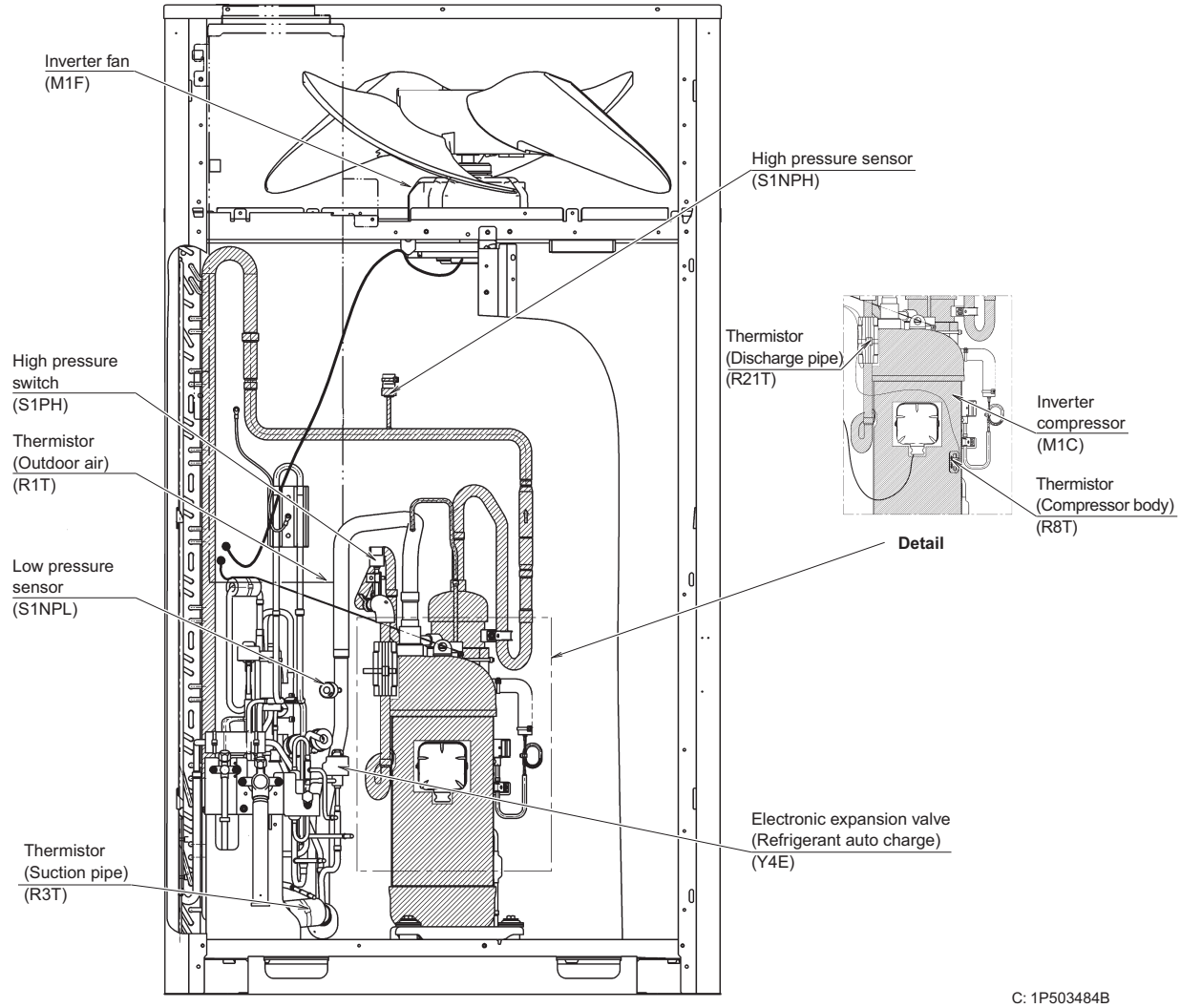
2. Functional Parts Layout

2.1 RXQ6/8/10/12A

Top View

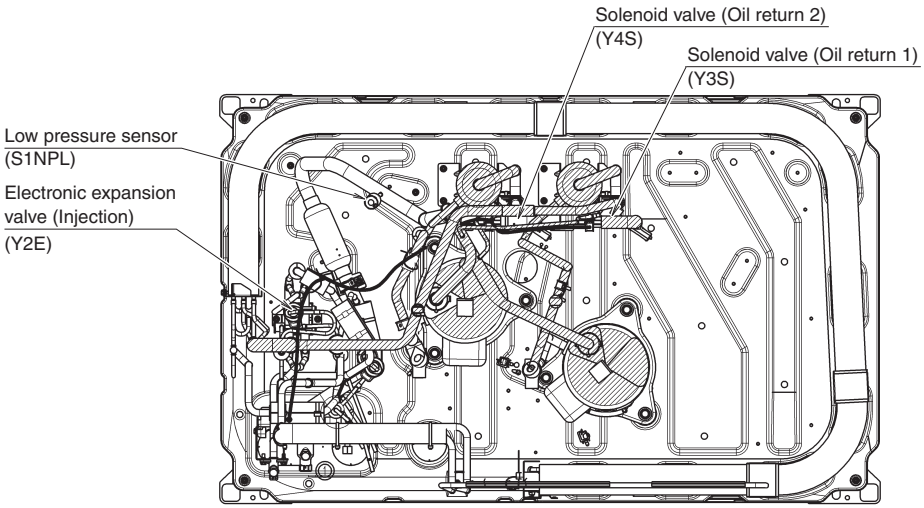


Front View

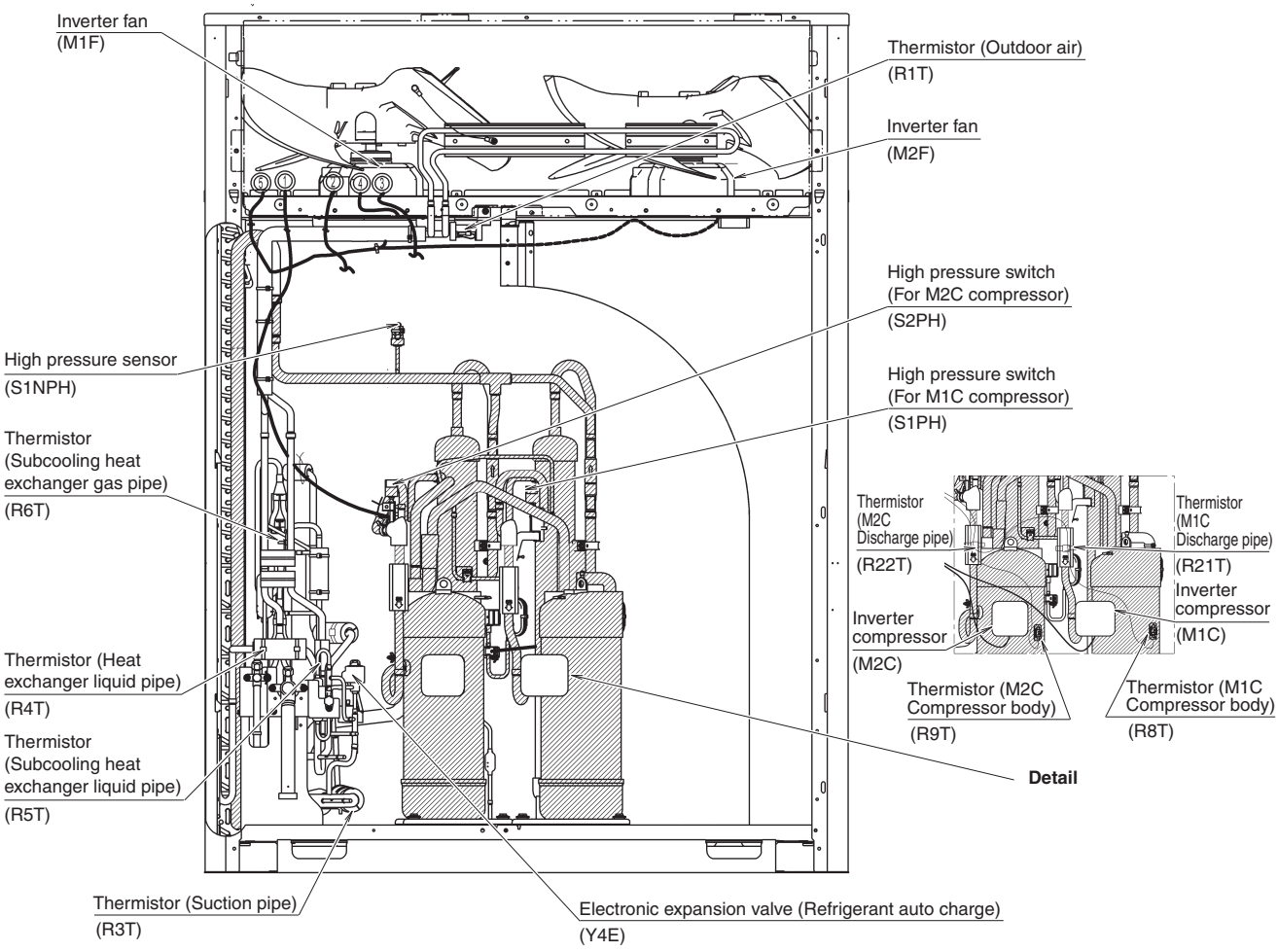


2.2 RXQ14/16/18/20A

Top View



Front View



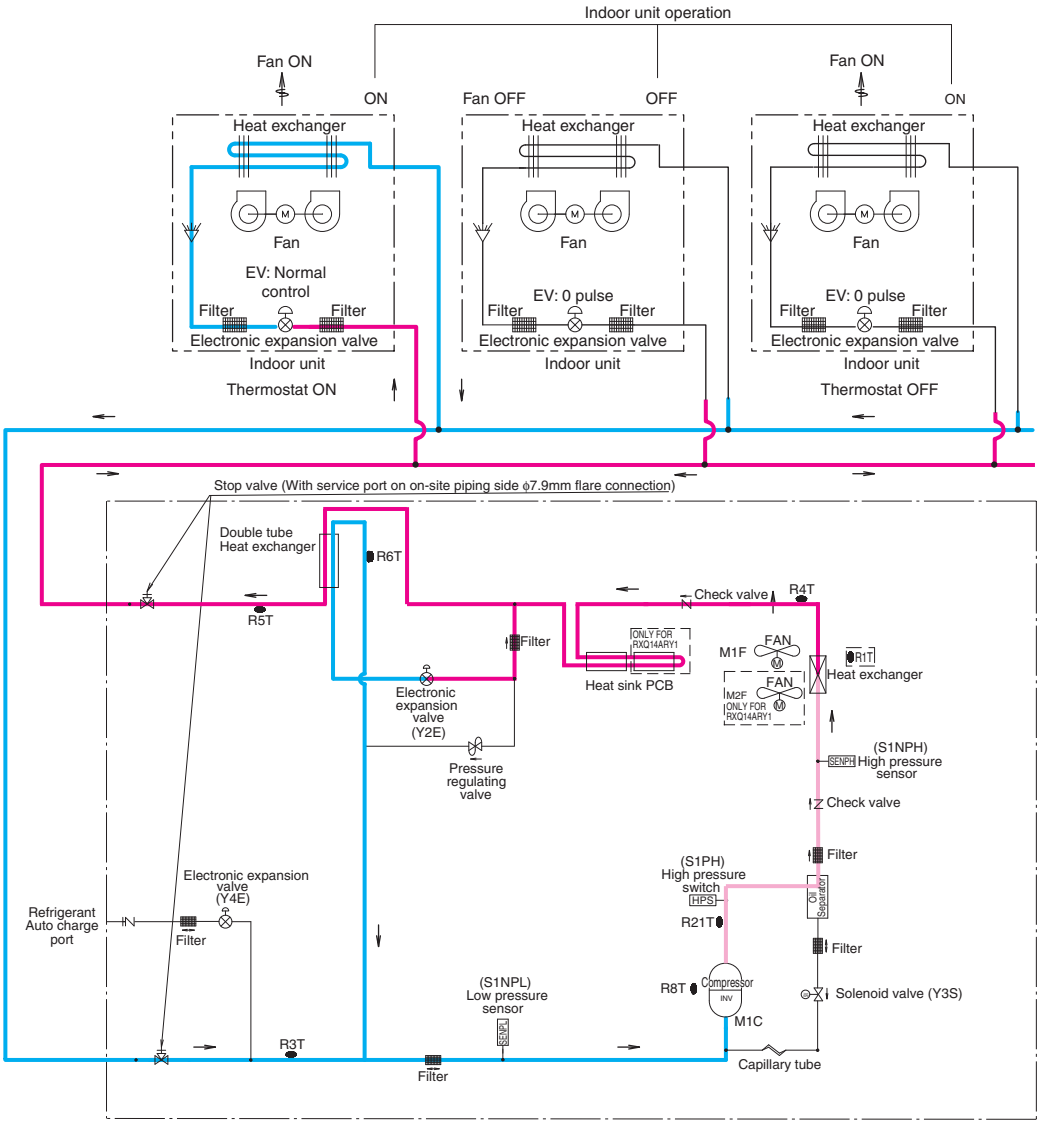
C: 1P504188C

3. Refrigerant Flow for Each Operation Mode

3.1 RXQ6/8/10/12/14A

Cooling Operation

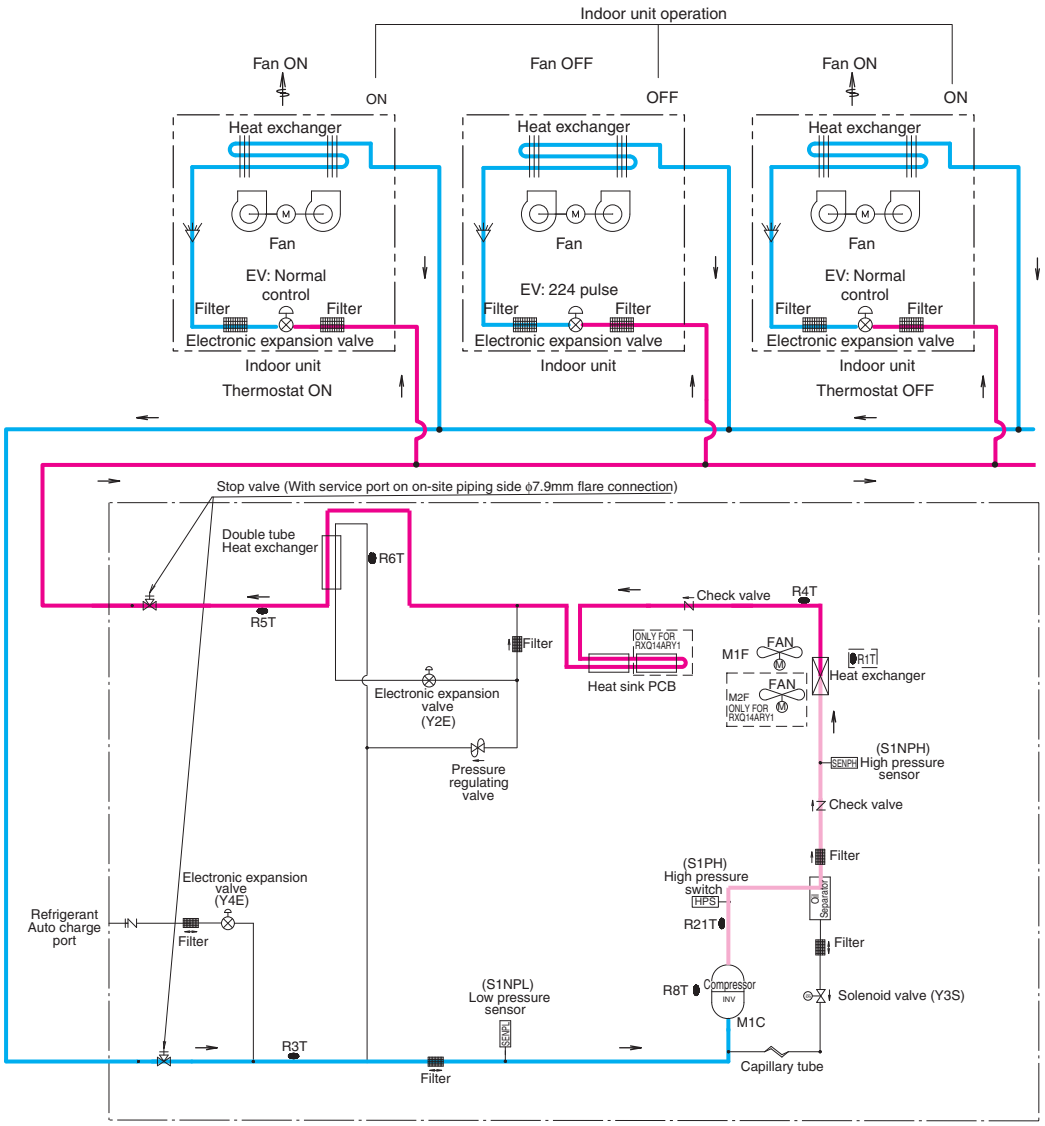
- High temperature, high pressure, gas
- High temperature, high pressure, liquid
- Low temperature, low pressure



C: 3D112173B

Cooling Oil Return Operation

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

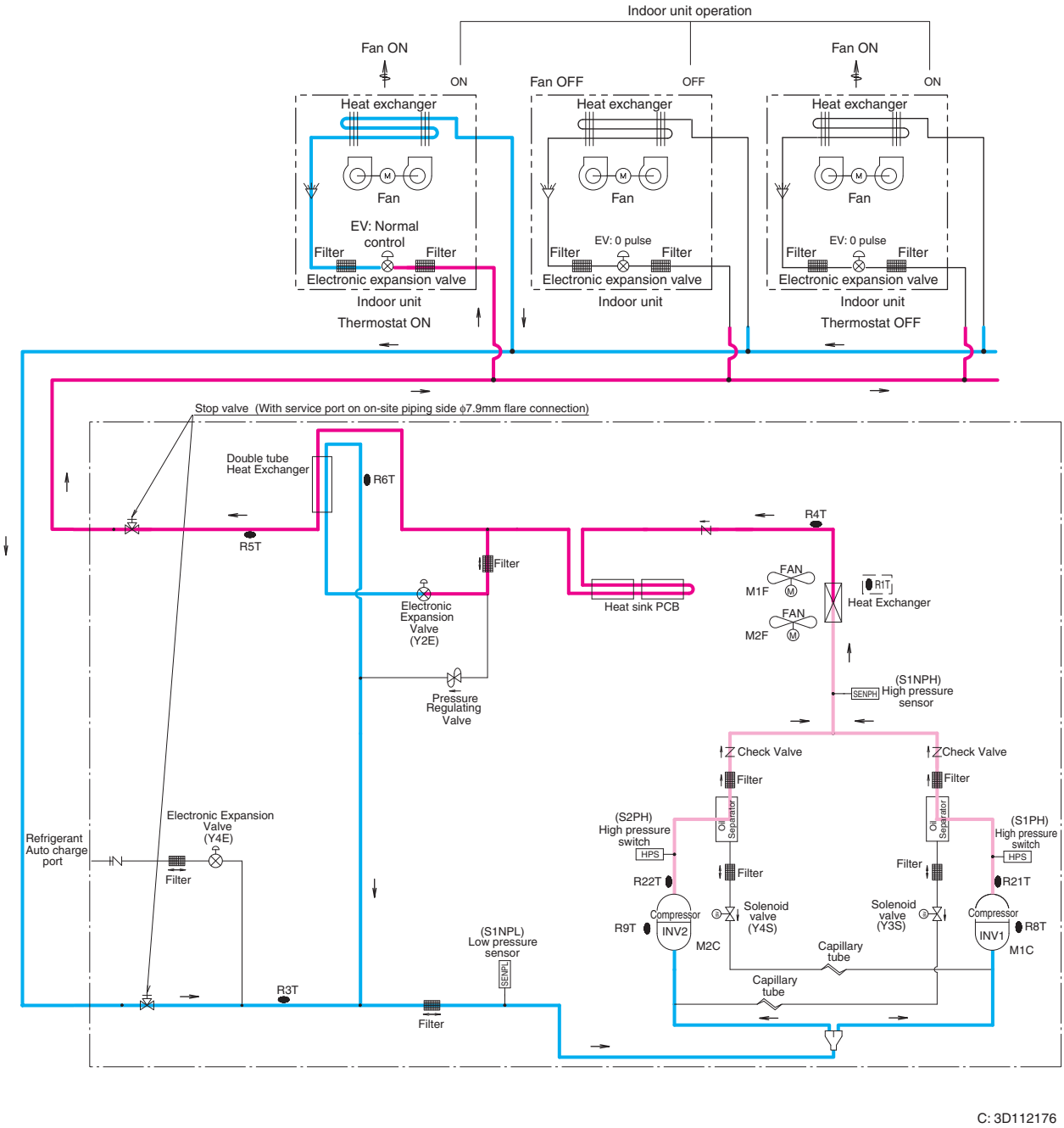


C: 3D112173B

3.2 RXQ16/18/20A

Cooling Operation

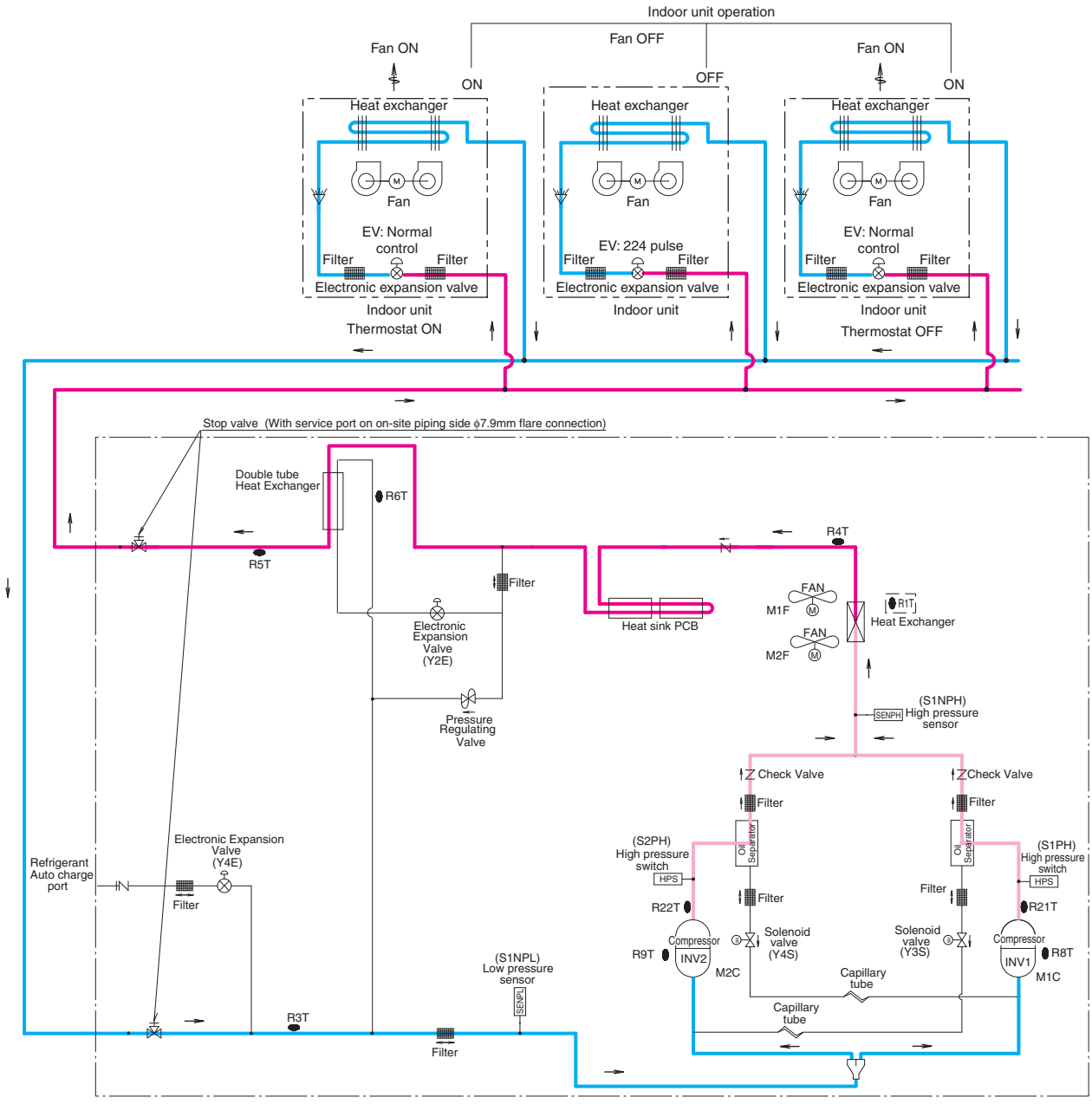
High temperature, high pressure, gas
High temperature, high pressure, liquid
Low temperature, low pressure



C: 3D112176

Cooling Oil Return Operation

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



C: 3D112176

Part 3
Remote Controller

1. Applicable Models

Series	Wired remote controller	Wireless remote controller (Old type)	Wireless remote controller (New type: 5-step airflow rate)	
	Navigation		Remote controller	Receiver
FXFSQ-AR (∗1)	BRC1E63	—	BRC4M151W16	BRC7M632F-6
FXMQ-PB	BRC1E63 BRC1E62	BRC4C66		BRC4M61-6
FXMQ-AR		—		
FXAQ-P		BRC7EA619		BRC7M618-6

Note(s)

∗1. Some functions are not available depending on the remote controller. Refer to page 55 for details.

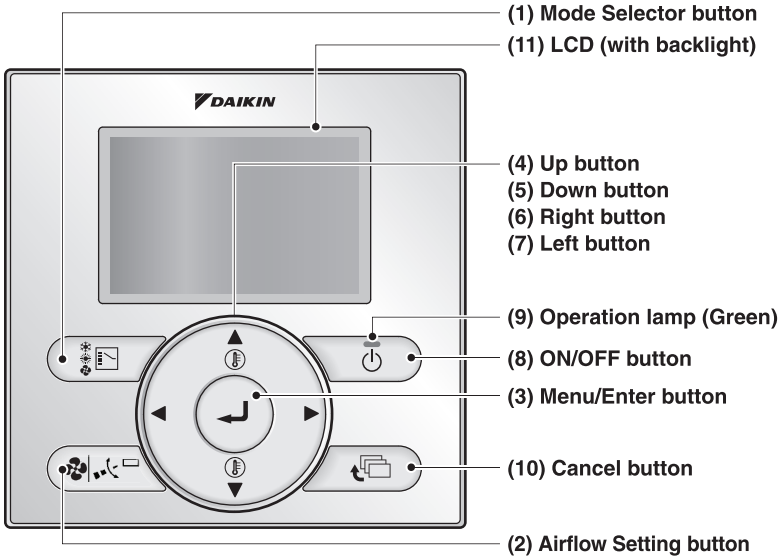
Function list

Category	Function	FXFSQ-AR	
		BRC1E63	BRC4M151
Basic performance	ON/OFF operation	●	●
	Setting temperature	●	●
	Swing pattern selection	●	●
	Switchable fan speed (Ventilation amount)	●	●
	Display switching function	●	—
	Backlight function	●	●
	Display automatic OFF	●	—
	Multilingual correspond	●	●
	Timer function (Time schedule display)	●	—
	Key lock function	●	—
	Contrast adjustment	●	—
Energy saving function	Automatic eco airflow rate	●	●
	Eco infrared floor temperature sensor	●	—
	Sensing sensor stop control	●	—
	Sensing sensor low mode	●	—
	Setpoint range set	●	—
	Setback	●	—
	OFF timer (programmed)	●	—
	Weekly schedule timer	●	—
	ON/OFF timer	—	●
	Setting temperature automatic recovery	●	—
	VRTsmart control	●	—
	VRT control	●	—
Comfortable function	Active circulation airflow	●	—
	Forced cooling ON operation	●	—
	Independent up-and-down airflow	●	—
	Automatic direct air (when human sensing)	●	—
	Two selectable temperature sensors	●	—
	Application for high ceiling	●	—
	Service contact display	●	—
	Model name display (indoor/outdoor)	●	—
	Filter sign/reset	●	●
	Operation time accumulation time display	●	—
	Operation data display	●	—

●: Available
—: Not available

2. Names and Functions

2.1 BRC1E62



(1) Mode Selector button
Used to select the operation mode.

(2) Airflow Setting button
Used to indicate the Airflow Rate (Air Volume / Fan Speed) / Airflow Direction screen.

(3) Menu/Enter button
- Used to indicate the Main menu. (For details of Main menu, refer to the operation manual.)
- Used to enter the selected item.

(4) Up button ▲
- Used to increase the set temperature.
- Used to highlight the item above the current selection. (The highlighted items will be scrolled through when the button is pressed continuously.)
- Used to change the selected item.

(5) Down button ▼
- Used to decrease the set temperature.
- Used to highlight the item below the current selection. (The highlighted items will be scrolled through when the button is pressed continuously.)
- Used to change the selected item.

(6) Right button ▶
- Used to highlight the next items on the right-hand side.
- Display contents are changed to next screen per page.

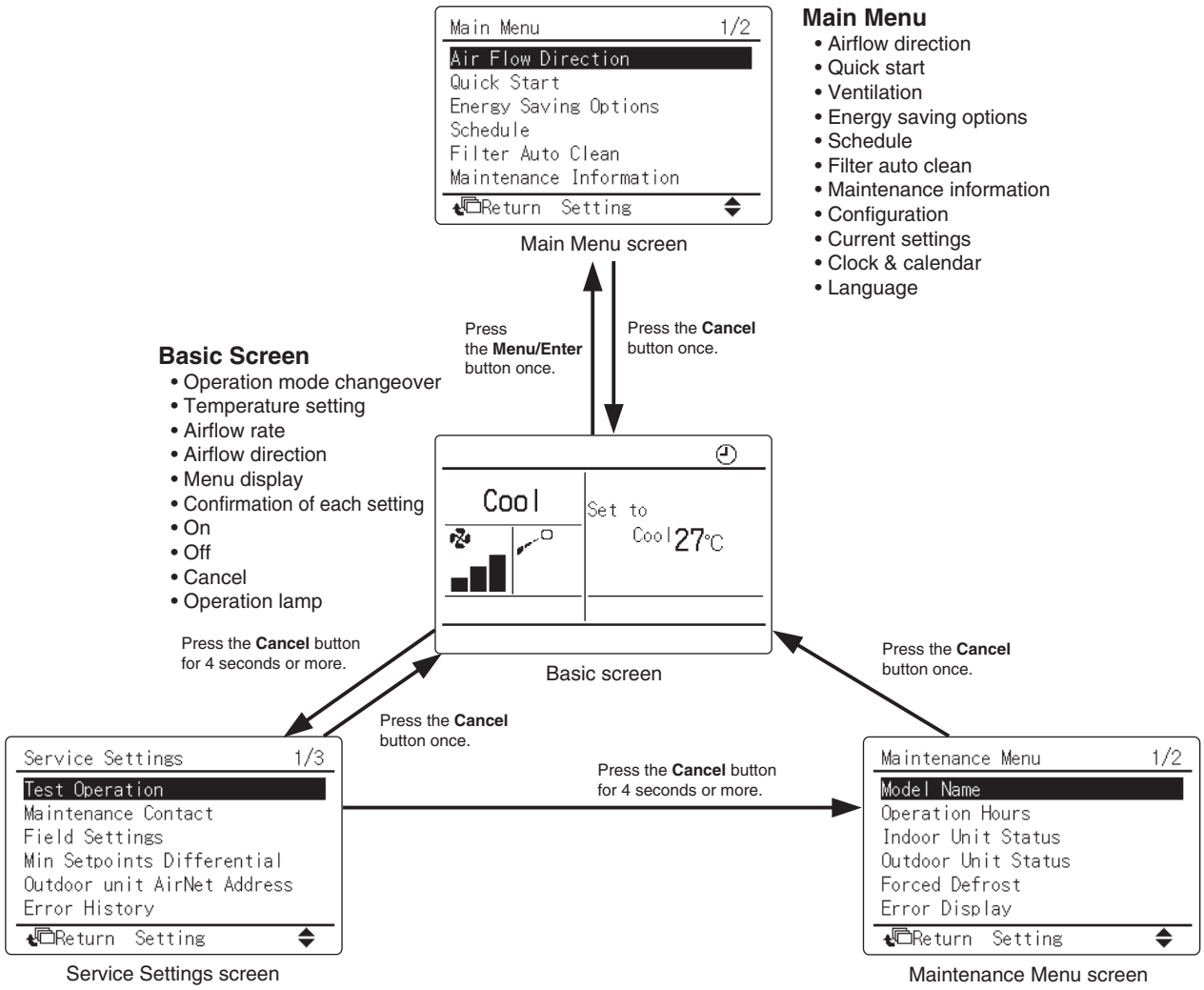
(7) Left button ◀
- Used to highlight the next items on the left-hand side.
- Display contents are changed to previous screen per page.

(8) ON/OFF button
- Press to start the system.
- Press this button again to stop the system.

(9) Operation lamp (Green)
This lamp lights up during operation. The lamp blinks if an error occurs.

(10) Cancel button
- Used to return to the previous screen.
- Press and hold this button for 4 seconds or longer to display Service Settings menu.

(11) LCD (with backlight)
The backlight will be lit for about 30 seconds by pressing any button.



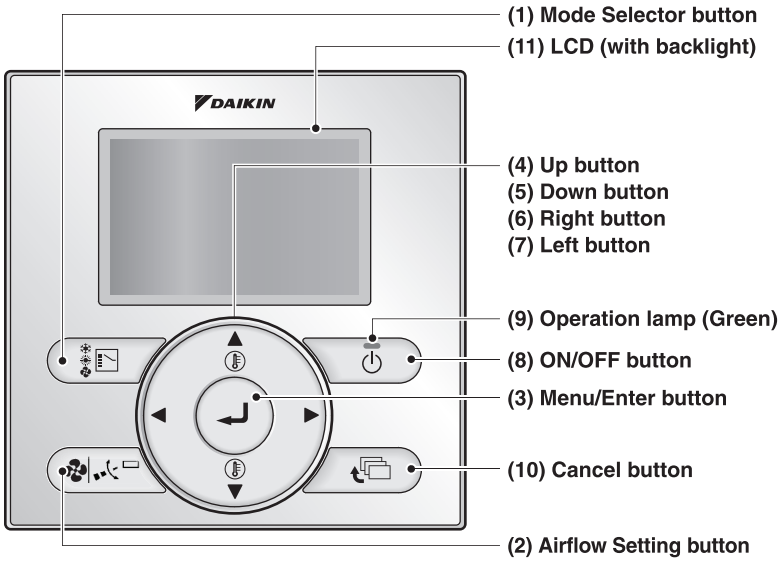
Main Menu
- Airflow direction
- Quick start
- Ventilation
- Energy saving options
- Schedule
- Filter auto clean
- Maintenance information
- Configuration
- Current settings
- Clock & calendar
- Language

Basic Screen
- Operation mode changeover
- Temperature setting
- Airflow rate
- Airflow direction
- Menu display
- Confirmation of each setting
- On
- Off
- Cancel
- Operation lamp

Service Settings Menu
- Test operation
- Maintenance Contract
- Field settings
- Min setpoints differential
- Group address
- Indoor unit AirNet address
- Outdoor unit AirNet address
- Error history
- Indoor unit status
- Outdoor unit status
- Forced fan ON
- Switch main sub controller
- Filter indicator

Maintenance Menu
- Model name
- Operation hours
- Indoor unit status
- Outdoor unit status
- Forced defrost
- Error display
- Swap unit No.
- Addressed sensor value

2.2 BRC1E63



(1) Mode Selector button
Used to select the operation mode.

(2) Airflow Setting button
Used to indicate the Airflow Rate (Air Volume / Fan Speed) / Airflow Direction screen.

(3) Menu/Enter button
- Used to indicate the Main menu. (For details of Main menu, refer to the operation manual.)
- Used to enter the selected item.

(4) Up button ▲
- Used to increase the set temperature.
- Used to highlight the item above the current selection. (The highlighted items will be scrolled through when the button is pressed continuously.)
- Used to change the selected item.

(5) Down button ▼
- Used to decrease the set temperature.
- Used to highlight the item below the current selection. (The highlighted items will be scrolled through when the button is pressed continuously.)
- Used to change the selected item.

(6) Right button ►
- Used to highlight the next items on the right-hand side.
- Display contents are changed to next screen per page.

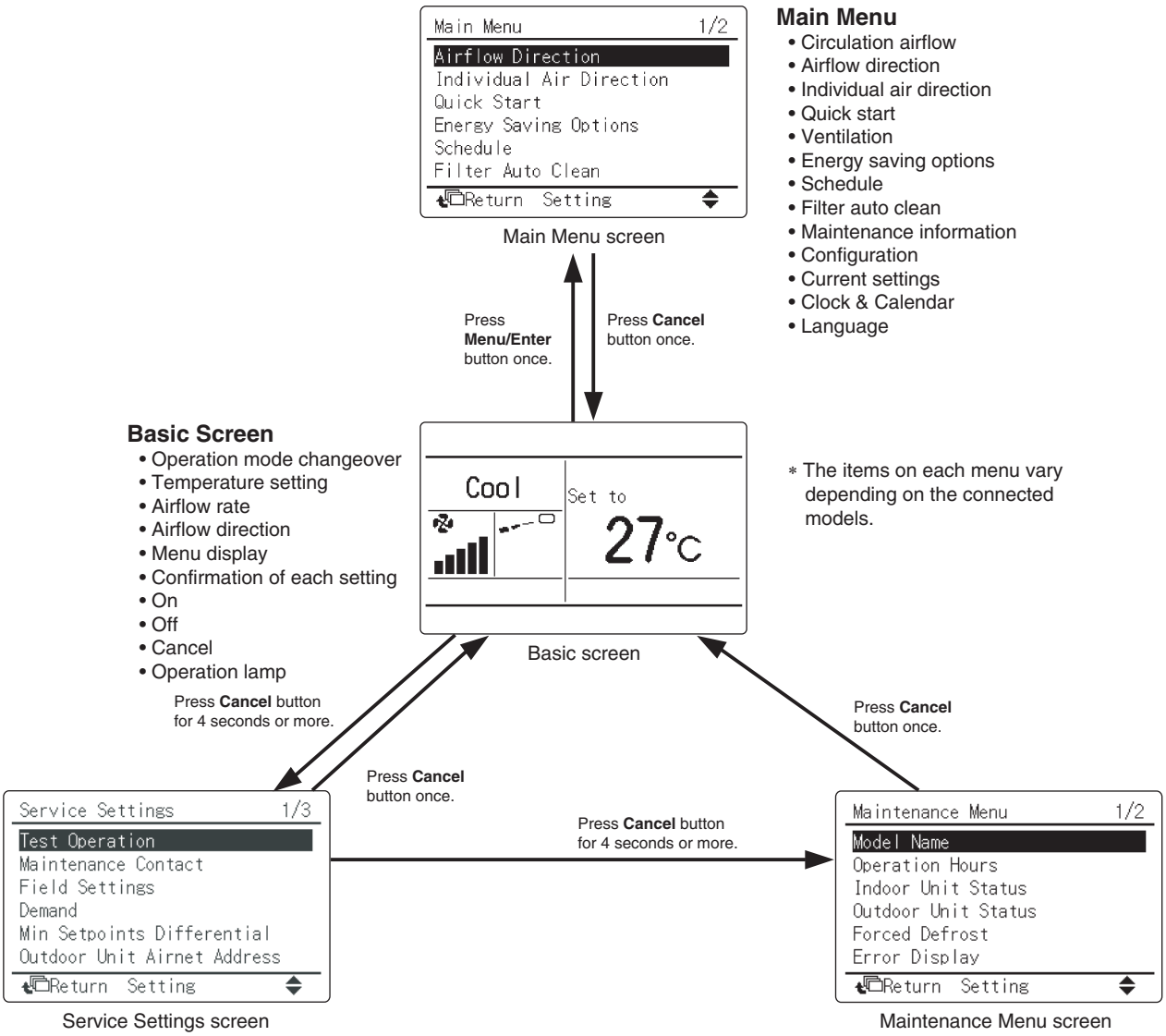
(7) Left button ◄
- Used to highlight the next items on the left-hand side.
- Display contents are changed to previous screen per page.

(8) ON/OFF button
- Press to start the system.
- Press this button again to stop the system.

(9) Operation lamp (Green)
This lamp lights up during operation. The lamp blinks if an error occurs.

(10) Cancel button
- Used to return to the previous screen.
- Press and hold this button for 4 seconds or longer to display Service Settings menu.

(11) LCD (with backlight)
The backlight will be lit for about 30 seconds by pressing any button.



Main Menu
- Circulation airflow
- Airflow direction
- Individual air direction
- Quick start
- Ventilation
- Energy saving options
- Schedule
- Filter auto clean
- Maintenance information
- Configuration
- Current settings
- Clock & Calendar
- Language

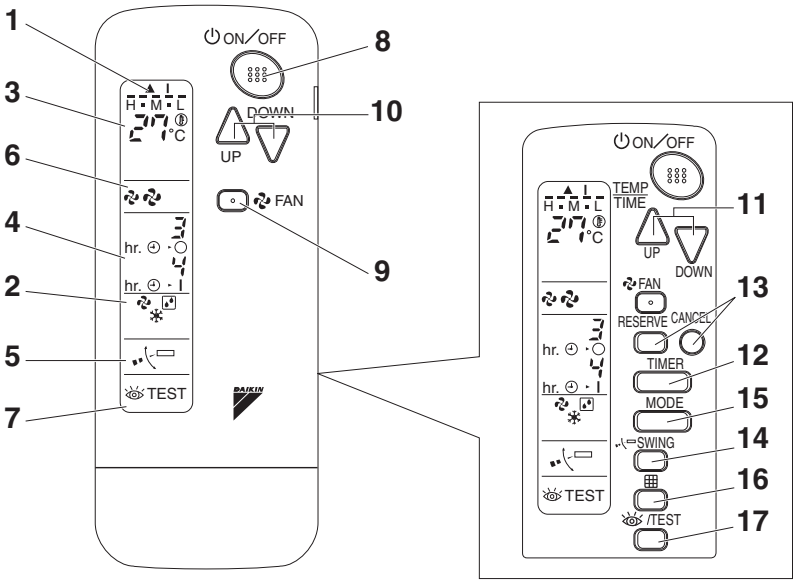
Basic Screen
- Operation mode changeover
- Temperature setting
- Airflow rate
- Airflow direction
- Menu display
- Confirmation of each setting
- On
- Off
- Cancel
- Operation lamp

* The items on each menu vary depending on the connected models.

Service Settings Menu
- Test Operation
- Maintenance contact
- Field settings
- Demand
- Min setpoints differential
- External input interlock
- Group address
- Indoor unit AirNet address
- Outdoor unit AirNet address
- Error history
- Indoor unit status
- Outdoor unit status
- Forced fan ON
- Switch main sub controller
- Filter indicator
- Test filter auto clean
- Brush/Filter ind
- Disable filter auto clean

Maintenance Menu
- Model name
- Operation hours
- Indoor unit status
- Outdoor unit status
- Forced defrost
- Error display
- Swap unit No.
- Addressed sensor value

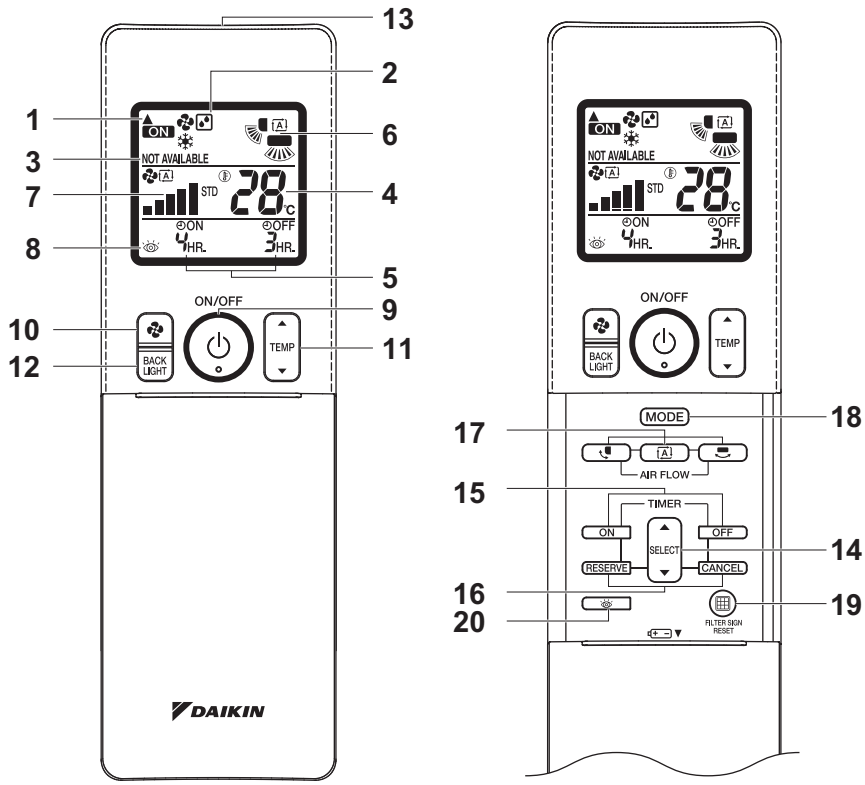
2.3 BRC4C, BRC7E Series



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	**AIR FLOW DIRECTION ADJUST BUTTON**
15	**OPERATION MODE SELECTOR BUTTON**
	Press this button to select operation mode.
16	**FILTER SIGN RESET BUTTON**
17	**INSPECTION/TEST BUTTON**
	This button is used only by qualified service persons for maintenance purposes.

2.4 BRC4M151W16



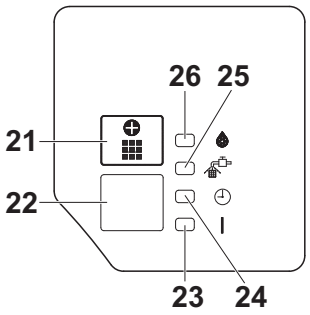
1	**DISPLAY ▲(SIGNAL TRANSMISSION)**
	This blinks when a signal is being transmitted.
2	**DISPLAY (OPERATION MODE)**
	This display shows the current OPERATION MODE. Operation modes supported depend on the model that is connected.
3	**DISPLAY NOT AVAILABLE (displayed when operation is not supported)**
	When a button for a function that is not supported on the connected model is pressed, this displays for 2 seconds.
4	**DISPLAY (SET TEMPERATURE)**
	This display shows the set temperature.
5	**DISPLAY (PROGRAMMED TIME)**
	This display shows PROGRAMMED TIME of the air conditioner start or stop.
6	**DISPLAY (AIRFLOW BLADE)**
7	**DISPLAY (FAN SPEED)**
	The display shows the set fan speed.
8	**DISPLAY (INSPECTION)**
	When the INSPECTION BUTTON is pressed, the display shows the system mode is in. Do not operate this button during normal use.
9	**ON/OFF BUTTON**
	Press the button and the air conditioner will start. Press the button again and the air conditioner will stop.
10	**FAN SPEED CONTROL BUTTON**
	Press this button to select the fan speed.

11	**TEMPERATURE SETTING BUTTON**
	Use this button for SETTING TEMPERATURE.
12	**BACKLIGHT BUTTON**
	Press this button to turn the backlight on or off.
13	**SIGNAL TRANSMITTER**
	This sends the signals to the indoor unit.
14	**PROGRAMMING TIMER BUTTON**
	Use this button for programming “START and/ or STOP” time.
15	**TIMER MODE ON/OFF BUTTON**
16	**TIMER RESERVE/CANCEL BUTTON**
17	**AIRFLOW DIRECTION ADJUST BUTTON**
18	**OPERATION MODE SELECTOR BUTTON**
	Press this button to select OPERATION MODE. (COOLING), (FAN), (PROGRAM DRY).
19	**FILTER SIGN RESET BUTTON**
	Refer to the section of MAINTENANCE in the operation manual attached to the indoor unit.
20	**INSPECTION BUTTON**
	This button is used only by qualified service persons for maintenance purposes. Do not operate this button during normal use.

2.4.1 Signal Receiver Unit

BRC7M632F-6, BRC7M618-6

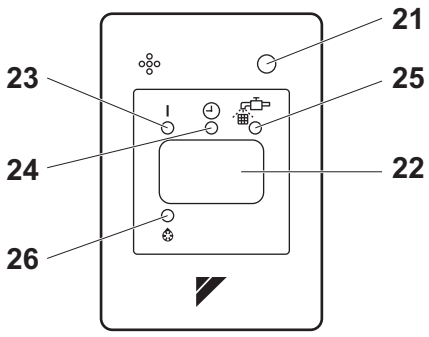
Signal receiver unit installed type
(Example)



∗ Layout of the display area varies by model.

BRC4M61-6

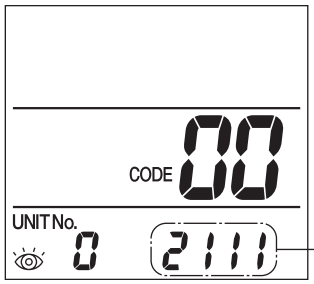
Signal receiver unit separate type



21	**EMERGENCY OPERATION SWITCH**
	This switch is readily used if the remote controller does not work.
22	**RECEIVER**
	This receives the signals from the remote controller.
23	**OPERATING INDICATOR LAMP (Red)**
	This lamp stays lit while the air conditioner runs. It flashes when the air conditioner is in trouble.
24	**TIMER INDICATOR LAMP (Green)**
	This lamp stays lit while the timer is set.
25	**AIR FILTER CLEANING TIME INDICATOR LAMP (Red)**
	Lights up when it is time to clean the air filter.
26	**DEFROST OPERATION LAMP (Orange)**
	Lights up when the defrosting operation has started.

2.4.2 How to Check Initial Set Value

Press the **INSPECTION** button to check the initial set value.
Press the **INSPECTION** button twice to return to the normal mode.



Indoor unit model type		Initial set value
Ceiling mounted cassette (Round flow with sensing) type	FXFSQ-AR	2111
Ceiling mounted duct type	FXMQ-PB FXMQ-AR	2000
Wall mounted type	FXAQ-P	1010

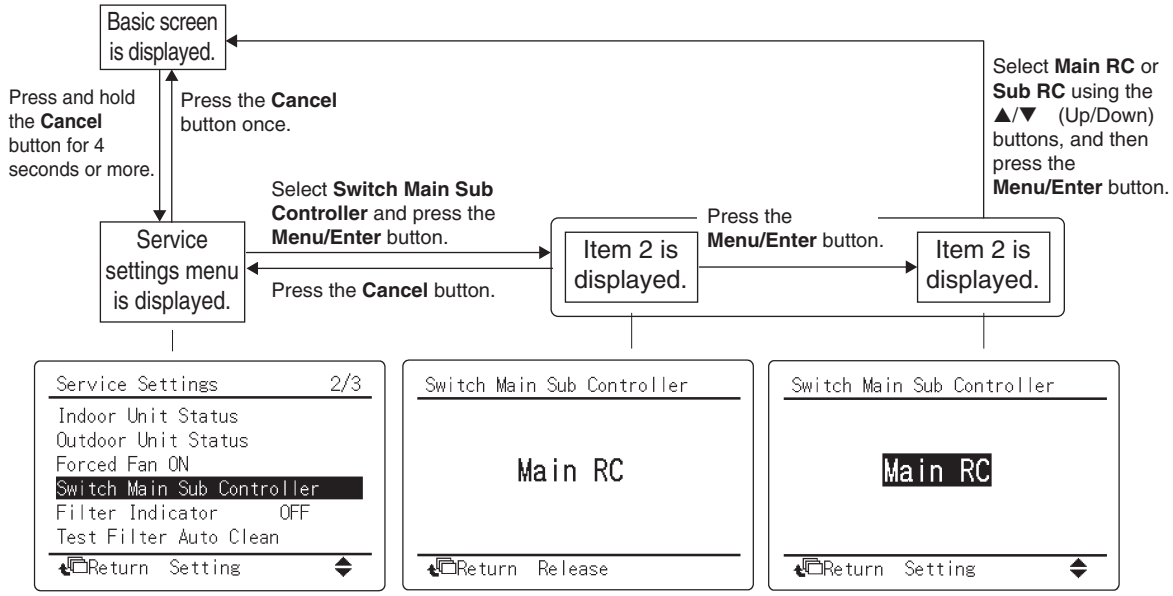
3. Main/Sub Setting

Main/Sub setting is necessary when 1 indoor unit is controlled by 2 remote controllers. The remote controllers are set at factory to Main, so you have to change one remote controller from Main to Sub. To change a remote controller from Main to Sub, proceed as follows:

3.1 Wired Remote Controller (BRC1E62, BRC1E63)

3.1.1 Field Settings

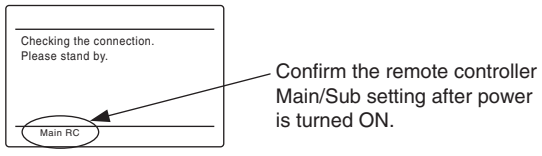
The designation of the main and sub remote controllers can be swapped. Note that this change requires turning the power OFF and then ON again.



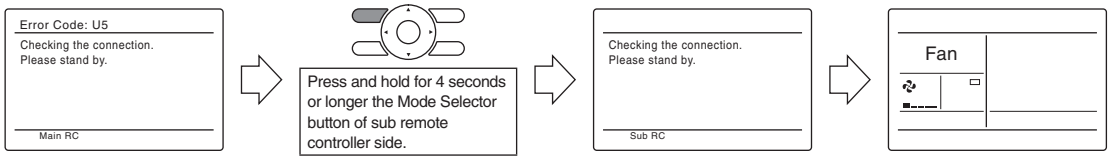
3.1.2 When an error occurred

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 controller 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)

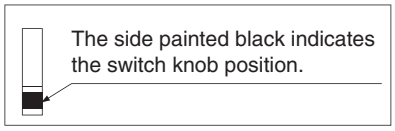
1. It is not possible to change the Main/Sub setting from Main to Sub when only one remote controller is connected.

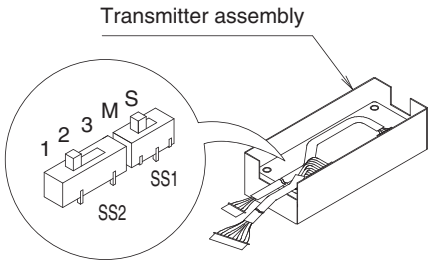
2. When 2 remote controllers are being used, it is not possible to change the setting from Main to Sub if one of the remote controllers is already set as Main.

3.2 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)		





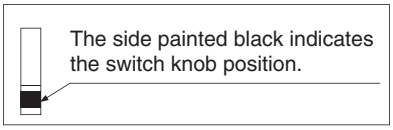
4. Address Setting for Wireless Remote Controller

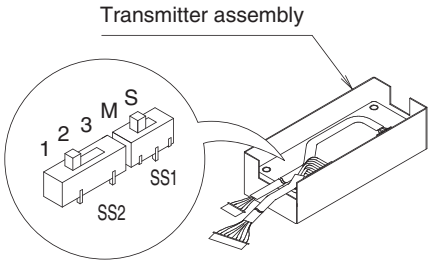
If setting multiple wireless remote controllers to operate in one room, perform address setting for the receiver and the wireless remote controller.
(This includes an individual remote controller control using the group operation.)
(For the wiring for the group operation, please refer to the installation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

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)			

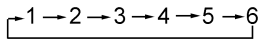




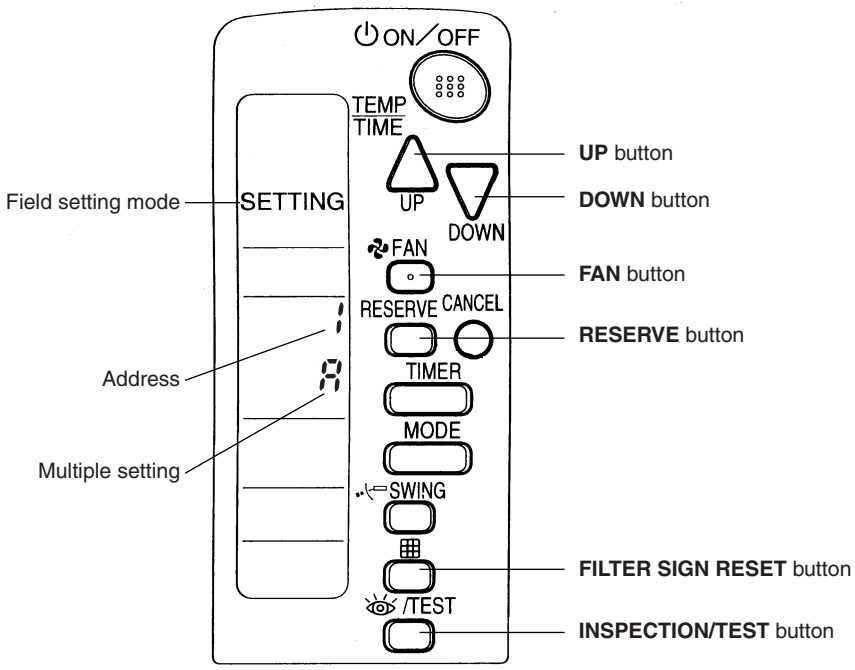
Setting for wireless remote controller (BRC4C, BRC7E series)

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.



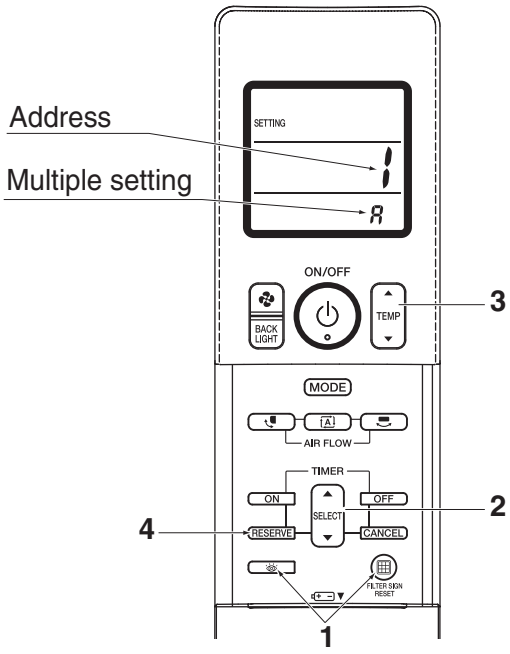
Setting for wireless remote controller (BRC4M151W16)

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

1. Hold down the **FILTER SIGN RESET** button and the **INSPECTION** button for at least 4 seconds to get the Field Setting mode.
   (Indicated in the display area in the figure.)
2. Press the **SELECT** button and select a multiple setting (**A/b**). Each time the button is pressed the display switches between **A** and **b**.
3. Press the **TEMP** buttons to set the address.

   1 → 2 → 3 → 4 → 5 → 6

   Address can be set from 1 to 6, but set it to 1-3 and to same address as the receiver. (The receiver does not work with address 4-6.)
4. When the **RESERVE** button is pressed, the setting is confirmed and the usual display returns.



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.

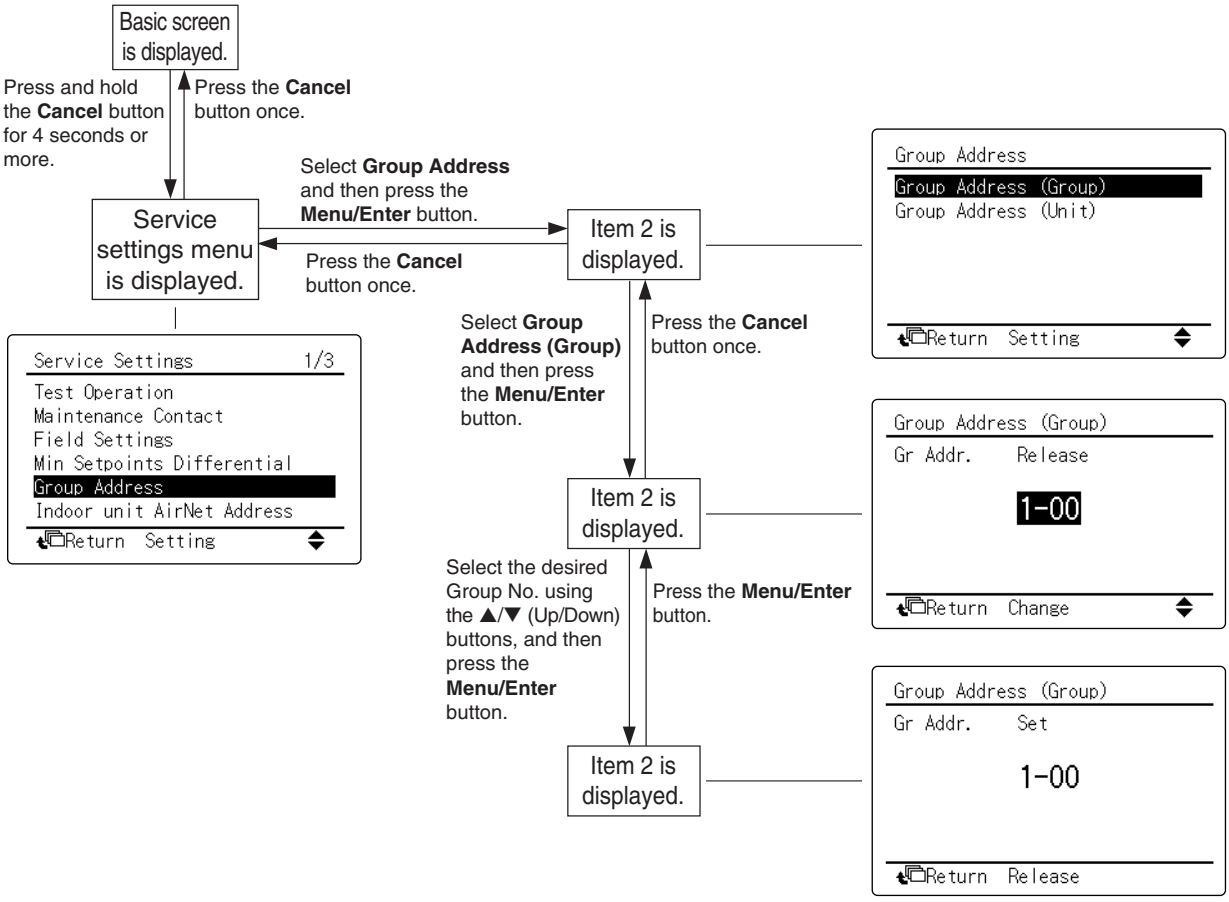
<table>
<tr><td colspan="2">Remote Controller</td><td colspan="2">Indoor Unit</td></tr>
<tr><td>Multiple setting</td><td>Display on remote controller</td><td>Behavior to the remote controller operation when the functions are restricted as by an external control.</td><td>Other than the left</td></tr>
<tr><td>A: Standard (factory set)</td><td>All items displayed.</td><td>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.</td><td rowspan="2">Accepts all items transmitted (Sounds two short beeps)
The remote controller display agrees with the indoor unit status.</td></tr>
<tr><td>b: Multi System</td><td>Display only items transmitted for a while.</td><td><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.</td></tr>
</table>

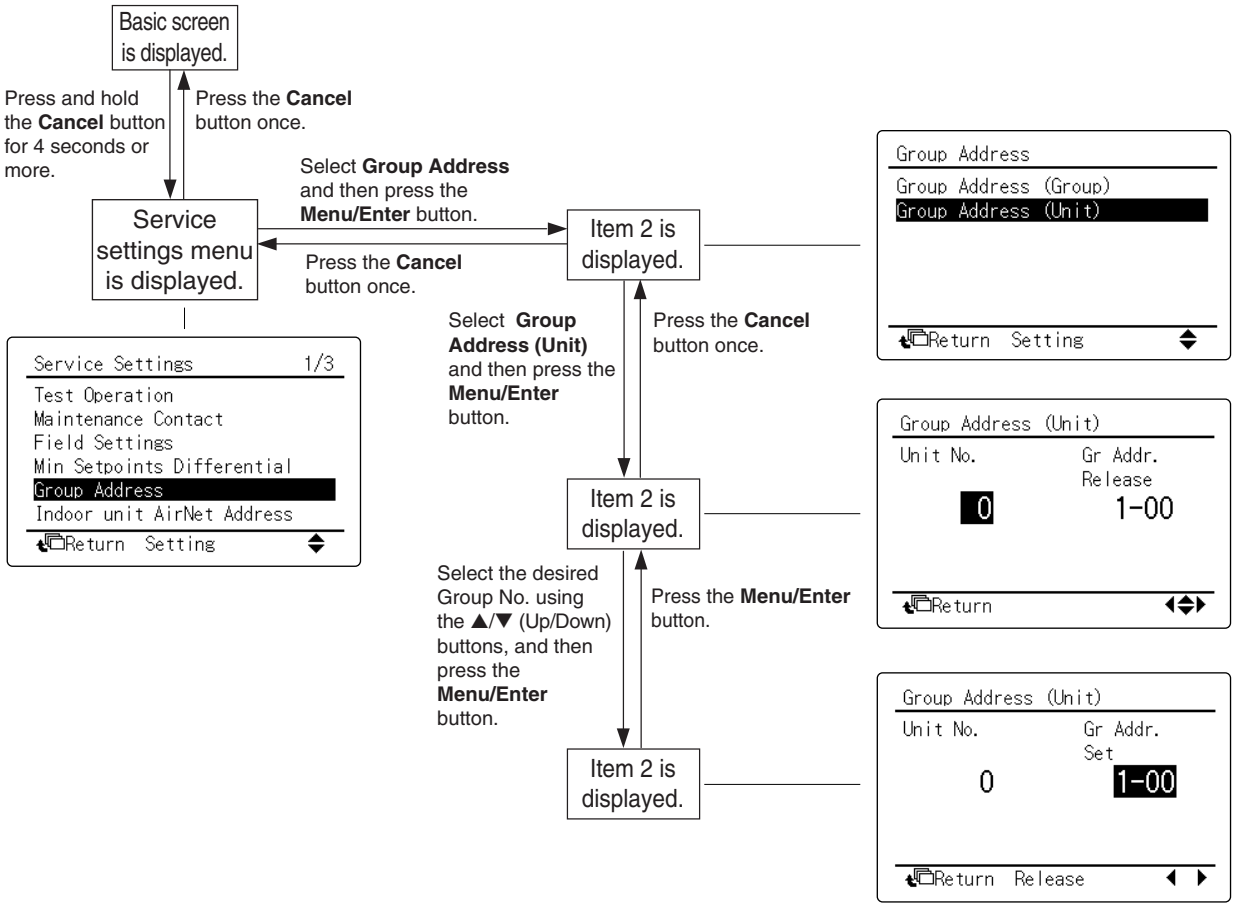
5. Centralized Control Group No. Setting

5.1 BRC1E62, BRC1E63

Group No. Setting (Group)



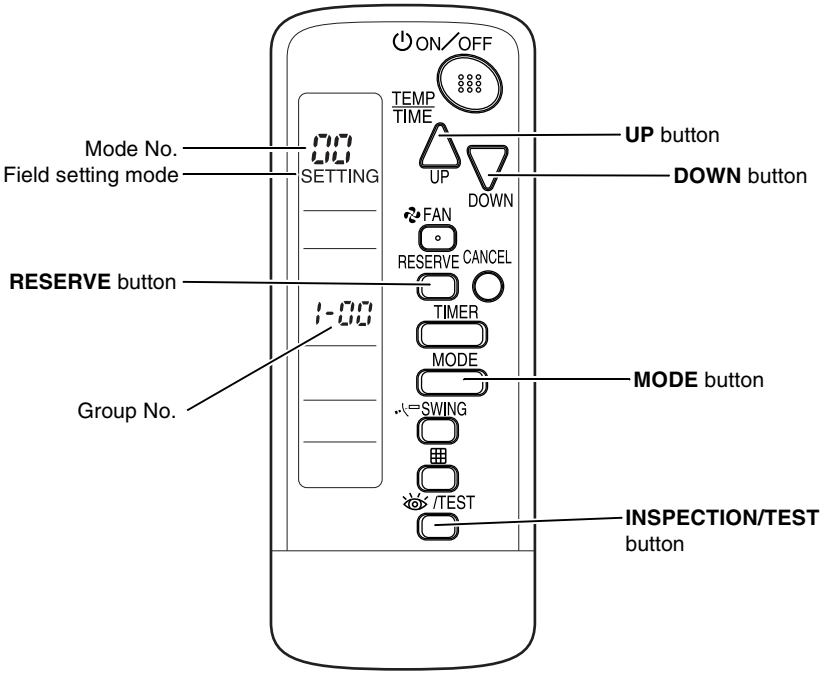
Group No. Setting (Unit)



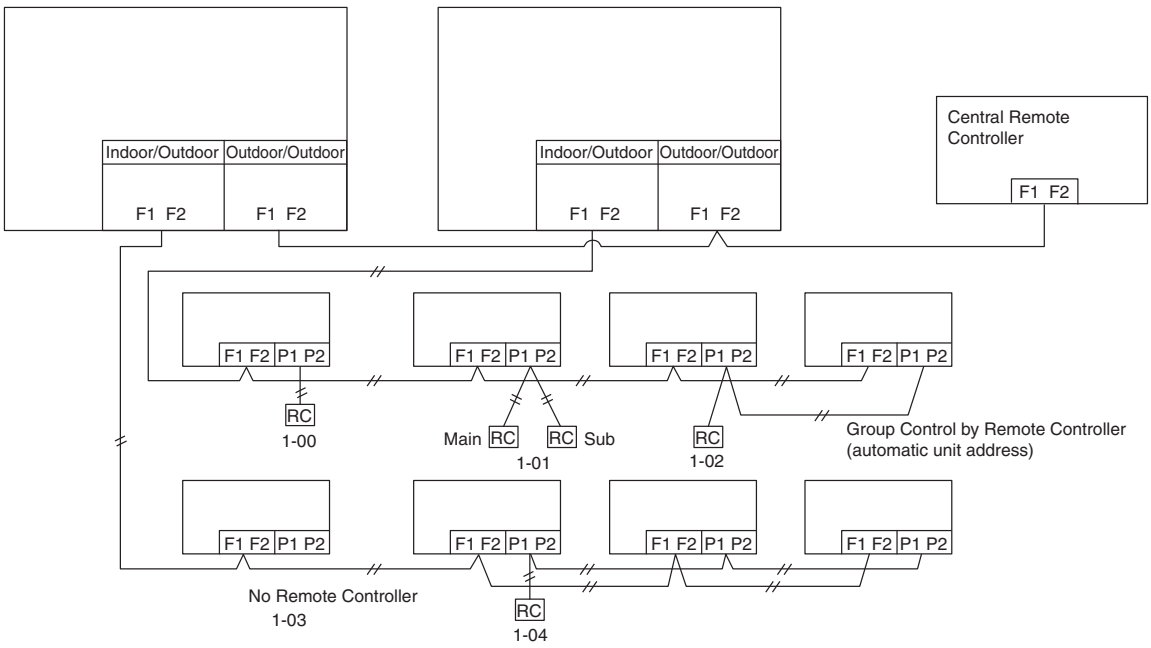
5.2 BRC4C, BRC7E Series

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.



5.3 Group No. Setting Example

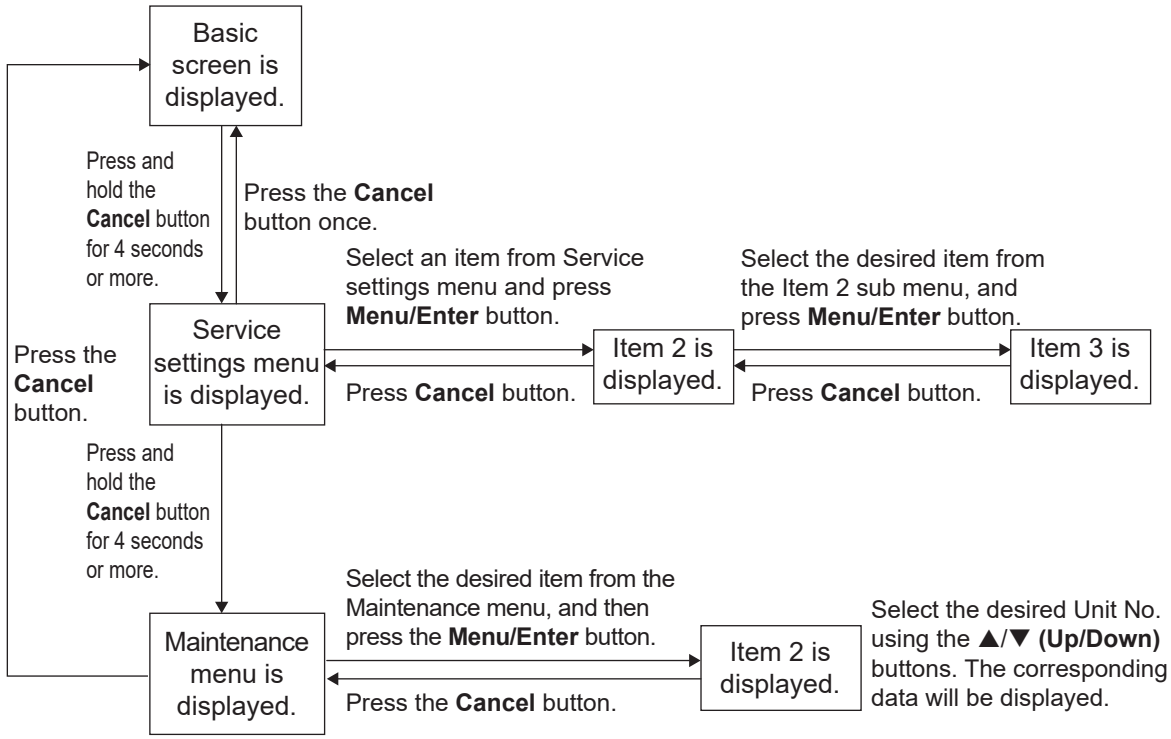


Caution When turning the power supply on, the unit may often not accept any operation while 88 is displaying after all indications were displayed once for about 1 minute on the liquid crystal display. This is not an operative fault.

6. Service Settings Menu, Maintenance Menu

6.1 BRC1E62, BRC1E63

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.	—
Demand	Enable/Disable	Enable, Disable
	Settings	40%, 70%
		Start time (by the unit of 30 minutes)
		Ending time (by the unit of 30 minutes)
Min setpoints Differential	None, Single SP, 0 to 8°C	—
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 thermistor
	Th3	—
	Th4	Discharge air thermistor
	Th5	—
	Th6	—
Outdoor Unit Status	Unit No.	—
	Th1	Outdoor air thermistor
	Th2	Heat exchanger thermistor
	Th3	Discharge pipe thermistor
	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	
	R-32 mark display	BRC1E63 only
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
	Speed	Fan speed (rpm)
	FLAP	Airflow direction
	EV	Degree that electronic expansion valve is open (pulse)
	MP	Drain pump ON/OFF
	EH	Electric heater ON/OFF
	Hu	Humidifier ON/OFF
	TBF	Anti-freezing control ON/OFF
	FLOAT	FLOAT SWITCH ON/OFF
	T1/T2	T1/T2 input from outside ON/OFF
	Th1	Suction air thermistor ∗1
	Th2	Indoor liquid pipe thermistor
	Th3	Indoor gas pipe thermistor
	Th4	Discharge air thermistor ∗2
	Th5	Infrared floor sensor ∗3
	Th6	Control temperature ∗4
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
	Pe	Low pressure (MPa), BRC1E63 only
	Pc	High pressure (MPa), BRC1E63 only
	Th1	—
	Th2	—
	Th3	—
	Th4	—
	Th5	—
	Th6	—
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.	

Maintenance Menu	Item 2	Remarks
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: 22: 23: 24: 25: 26:	 Remote controller thermistor (°C) Suction air thermistor (°C) ∗5 Heat exchanger liquid pipe thermistor (°C) Heat exchanger gas pipe thermistor (°C) Indoor unit address No. Outdoor unit address No. BS unit address No. Zone control address No. Cooling/Heating batch address No. Demand/low-noise address No. Displays human presence detection rate (%) (see ∗7) in Area 1 (see ∗6). Display value × 10%. Displays **15** for units with no sensing type mounted. Displays human presence detection rate (%) (see ∗7) in Area 2 (see ∗6). Display value × 10%. Displays **15** for units with no sensing type mounted. Displays human presence detection rate (%) (see ∗7) in Area 3 (see ∗6). Display value × 10%. Displays **15** for units with no sensing type mounted. Displays human presence detection rate (%) (see ∗7) in Area 4 (see ∗6). Display value × 10%. Displays **15** for units with no sensing type mounted. Infrared sensor (°C) (See ∗8). Displays – for units with no sensing type mounted.
	Data	The corresponding data will be displayed, based on the Unit No. and Code selected.

∗1: Displays suction air temperature after correction for all models.

∗2: Displays temperature only for applicable models.

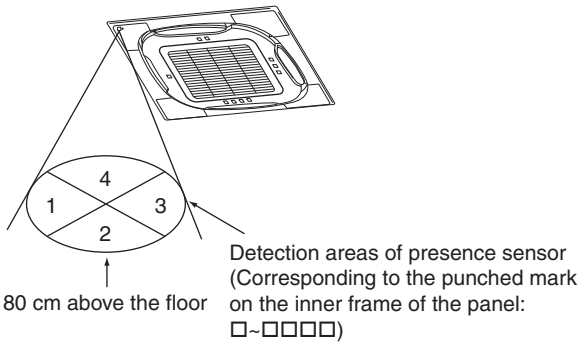
∗3: Displays floor temperature used for control (including correction) when the round flow with sensing is connected.

∗4: Displays control temperature (temperature near the person when the round flow with sensing is connected).

∗5: Displays suction air temperature after correction when the round flow with sensing is connected.

∗6: Areas mean four areas shown on the below.

∗7: For human presence detection rate (%), human motion is recognized by digital output ranging from 0 to 5 V. (5 V is output when no human presence is detected, and 0 V is output when human presence is detected.)



Reference

(1) 0% detection rate: Human presence is not detected at all.

(2) 25% detection rate: Human presence is detected, but the sensor does not recognize human presence.

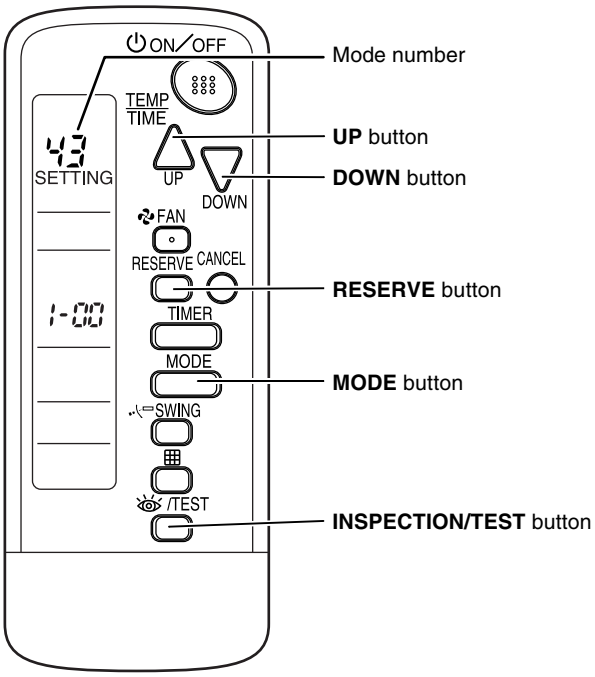
(3) 50% detection rate: The sensor recognizes human presence (small human motion).

(4) 75% detection rate: The sensor recognized human presence (large human motion).

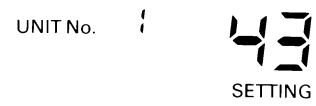
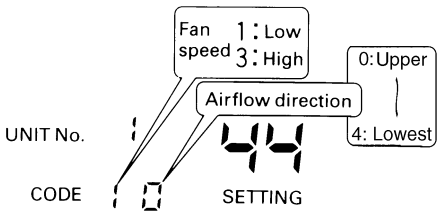
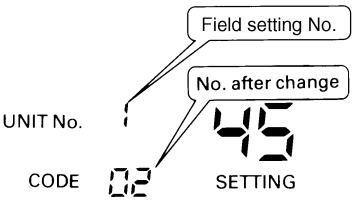
(5) 100% detection rate: The sensor constantly outputs 0 V. Continuing this condition will display an error.

∗8: Directly displays a measured value sent from the adaptor PCB.

6.2 BRC4C, BRC7E Series



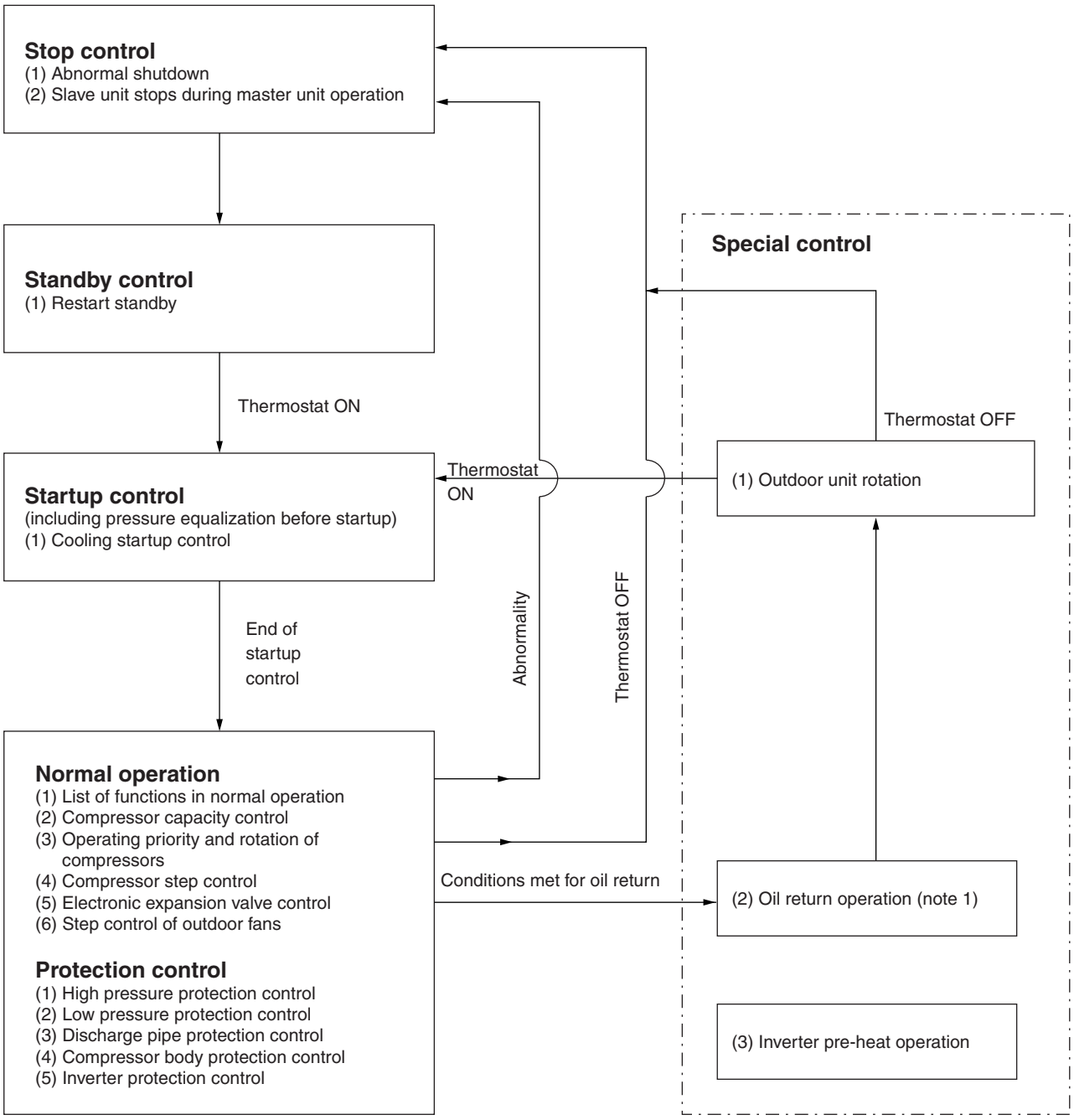
1. Press **INSPECTION/TEST** button for 4 seconds during normal mode to enter field setting mode.
2. Press **INSPECTION/TEST** button for 4 seconds to enter service mode.
3. Press **MODE** buttons to select a desired mode number. (43, 44, 45)
4. Carry out the necessary setting for each mode with **UP** button or **DOWN** button.
5. Press **RESERVE** button to confirm the setting.
6. Press **INSPECTION/TEST** button to return to normal mode.

Mode No.	Function	Content and Operation Method	Example of Remote Controller Display
43	Forced Fan ON	Turns the fan ON for each unit individually.	
44	Individual Setting	Sets fan speed and airflow direction for each unit individually when using group control. Settings are made using the airflow direction adjustment and fan speed adjustment buttons.	
45	Unit No. Change	Changes unit No. Set the unit No. after changing with the programming time up-down button.	

Part 4
Functions and Control

1. Operation Flowchart

For detailed description of each function in the flow, refer to the details on related function on the following pages.



Note(s)

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

2. Stop Control

2.1 Abnormal Shutdown

- If abnormal situation occurs to protect the compressor, initial thermostat OFF stops the outdoor unit.
- Outdoor control will perform a retry start.
- When the retry attempts reach a certain number, system will stop and error code is displayed on the remote control.
- BRC1E series remote controller stores the last 10 error codes for remote controller and the last 5 error codes for indoor unit. You can check the **Error History** in **Service Settings**.
- Consult the troubleshooting chart on the displayed error code to define cause of abnormal stop.

2.2 Slave Unit Stops during Master Unit Operation

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

3. Standby Control

3.1 Restart Standby

Used to forcedly stop the compressor for a period of 5 minutes, in order to prevent the frequent ON/OFF of the compressor and equalize the pressure within the refrigerant system.
In addition, the outdoor fan carry out the residual operation for a while to accelerate pressure equalizing and to suppress melting of the refrigerant to the evaporator.

4. Startup Control

Before starting the compressor:

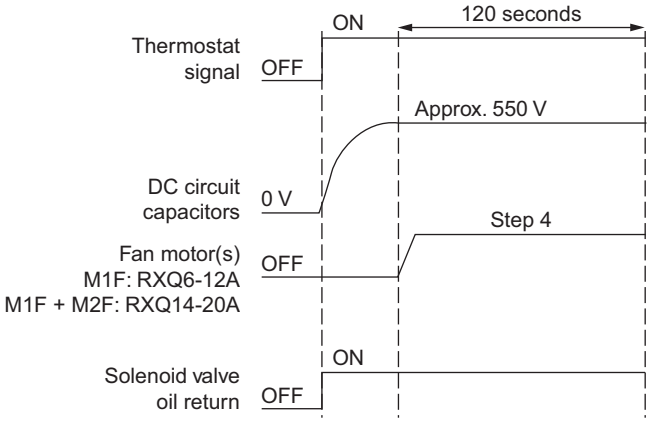
- The capacitor is charged in the DC circuit of the inverter circuit, and
- "Pre-pressure equalization" is performed to reducing the starting current of the compressor.

Pc: High pressure sensor detection value

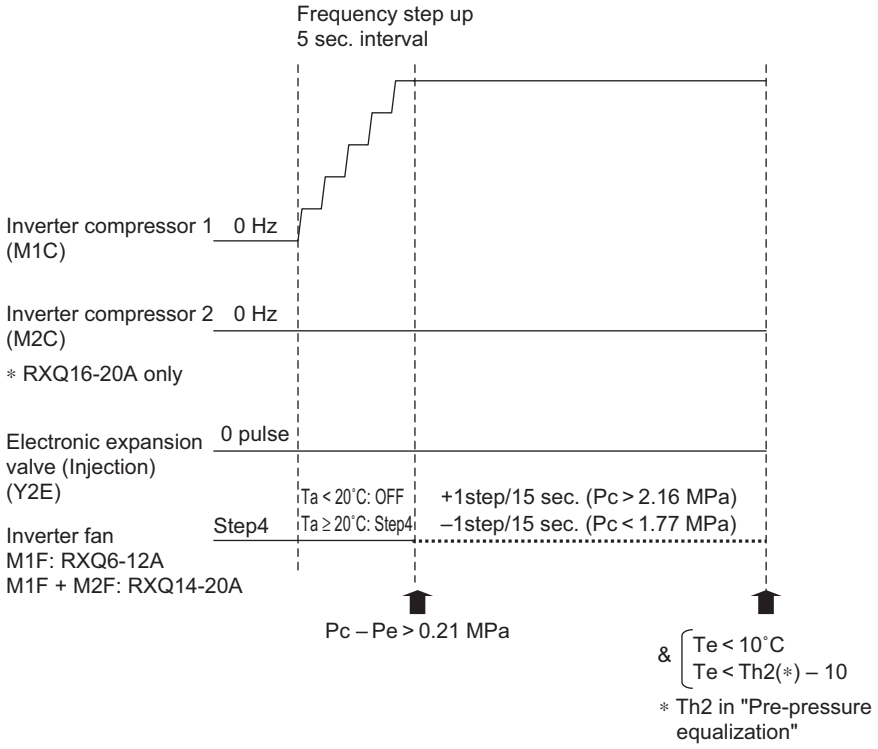
Pe: Low pressure sensor detection value

Ta: Outdoor air temperature

Te: Low pressure equivalent saturation temperature



4.1 Cooling Startup Control



5. Normal Operation

5.1 List of Functions in Normal Operation

Pc : High pressure sensor detection value
Pe : Low pressure sensor detection value

Part Name	Electric Symbol	RXQ6-12A	RXQ14A	RXQ16-20A	Function of Functional Part
Inverter compressor 1	M1C	●	●	●	PI control by Te target.
Inverter compressor 2	M2C	—	—	●	
Inverter fan 1	M1F	●	●	●	Fan speed 10 steps to keep minimum Tc target 34°C.
Inverter fan 2	M2F	—	●	●	
Electronic expansion valve (Injection)	Y2E	●	●	●	0-480 pulse at compressor on
Electronic expansion valve (Refrigerant auto charge)	Y4E	●	●	●	Minimum pulse
Solenoid valve (Oil return 1)	Y3S	●	●	●	Only close if Pc – Pe < 0.3 MPa (when compressor off)
Solenoid valve (Oil return 2)	Y4S	—	—	●	

●: equipped
—: not equipped

5.2 Compressor Control

In order to provide a steady capacity, the compressor capacity is controlled to achieve temperature Te during cooling operation.

During cooling operation

The compressor capacity is controlled so Te approaches TeS (target value of temperature).

1. VRTsmart Control

■ When all the connected indoor units are VRTsmart control applicable models

∗ Applicable models: FXFSQ-AR, FXMQ-PB

The required capacity is calculated based on the operation condition of each individual indoor unit and this data is transmitted to the outdoor unit. The outdoor unit adjusts the refrigerant temperature of the whole system to an adequate value according to the indoor unit that needs the most capacity.

In case of target evaporation temperature adjustment, first the capacity is adjusted by changing the indoor unit airflow to L tap. If the capacity is still too much, the target evaporation temperature is elevated further to adjust.

2. VRT Control

■ When one or more of the connected indoor units are not VRTsmart control applicable models

If the required capacity becomes low in all indoor units (Room temperature Th1 – set temperature), the target evaporation temperature is elevated further to adjust. In the outdoor unit, the difference of temperature (ΔT) in all indoor units is checked and the set temperature is changed. Unlike VRTsmart control, there is no airflow control of the indoor units.

3. Te fix Control

The target evaporation temperature is not changed.

Te value (Set in mode 2-8)

Standard (Factory setting)	High				
6	7	8	9	10	11

Te: Low pressure equivalent saturation temperature (°C)

TeS: Te target value (varies according to Te setting, compressor operation frequency, etc.)

5.3 Compressor Capacity Control

Te: Low pressure equivalent saturation temperature

Capacity steps

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

- Cooling: suction pressure sensor value is converted into evaporation saturated temperature (relation between pressure and evaporating temperature based on characteristics of refrigerant R-410A). For detailed explanation refer to chapter field settings (**Details of Setting Mode (m2)** on page 143 and installation manual outdoor chapter Energy saving and optimum operation).
  - Initial selection is made between Automatic, Fixed or High sensible.
  - During operation, the outdoor target evaporating temperature can be changed based on the selected sub function, taking indoor load into account.
- The initial target saturated temperature can be changed. For details refer to **Details of Setting Mode (m2)** on page 143 for Cooling: Te set based on field setting 2-8.
- During operation, outdoor control will take into account the pressure drop so that at indoor units, the preset target temperature is reached (average). The estimated pressure drop is calculated based on:
  - Pressure drop characteristics found during test-operation outdoor (step 7). At several evaporating temperatures, outdoor control stores difference between outdoor evaporating temperature and average of indoor heat exchanger (indoor evaporating temperature).
  - To have judgment of gas speed in main suction pipe, control takes the capacity step of the outdoor unit into account. In function of pressure drop characteristics at the different compressor capacity steps, control concludes the category of system pipe lay out (long, medium, short).
- Target Te outdoor (cooling) = Te set – estimated pressure drop – **A**.
- Correction factor **A** depends on the absolute value of the difference between indoor air inlet temperature and a set temperature after startup period.

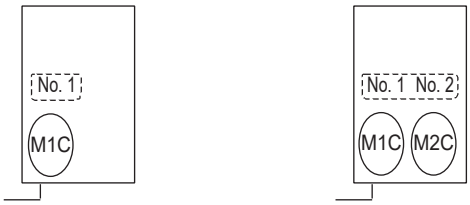
5.4 Operating Priority and Rotation of Compressors

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

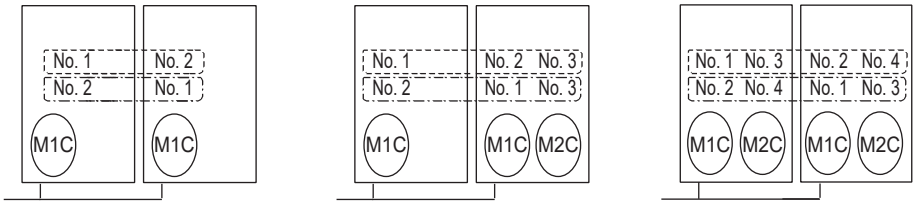
M1C: Inverter compressor 1
M2C: Inverter compressor 2

Pattern 1 Pattern 2 Pattern 3

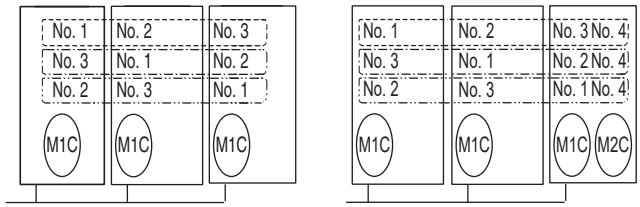
Single Outdoor Unit

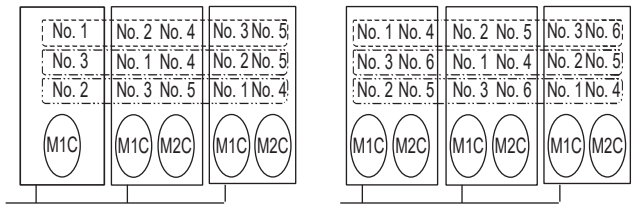


Double Outdoor Units



Triple Outdoor Units





Note(s)

1. In the case of combination of 3 outdoor units, the above diagram shows master unit, slave unit 1, and slave unit 2 from left to right.
2. Compressors may operate in any pattern other than those mentioned above according to the operating status.

5.5 Compressor Step Control

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

Compressor	Actual rotation speed (rps)	Model name			
		RXQ6/8A	RXQ10-14A	RXQ16/18A	RXQ20A
JT1GUVDYR	frequency/2	M1C	–	M1C, M2C	M1C
JT16KCVDYR	frequency/3	–	M1C	–	M2C

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

5.6 Step Control of Outdoor Fans

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

STEP No.	Fan revolutions (rpm)						
	RXQ6A	RXQ8/10A	RXQ12A	RXQ14-18A		RXQ20A	
				M1F	M2F	M1F	M2F
0	0	0	0	0	0	0	0
1	350	350	350	380	0	380	0
2	360	370	370	470	0	470	0
3	370	400	400	570	0	570	0
4	400	460	460	380	380	380	380
5	430	560	560	550	520	550	520
6	490	710	710	865	665	865	665
7Y	520	750	775	940	910	940	910
7X	550	796	870	1,055	1,025	1,136	1,106
8	565	835	890	1,097	1,067	1,360	1,180

Note(s) Figures listed above are for standard mode. Values may differ when the system is set to high static pressure mode or capacity priority mode.

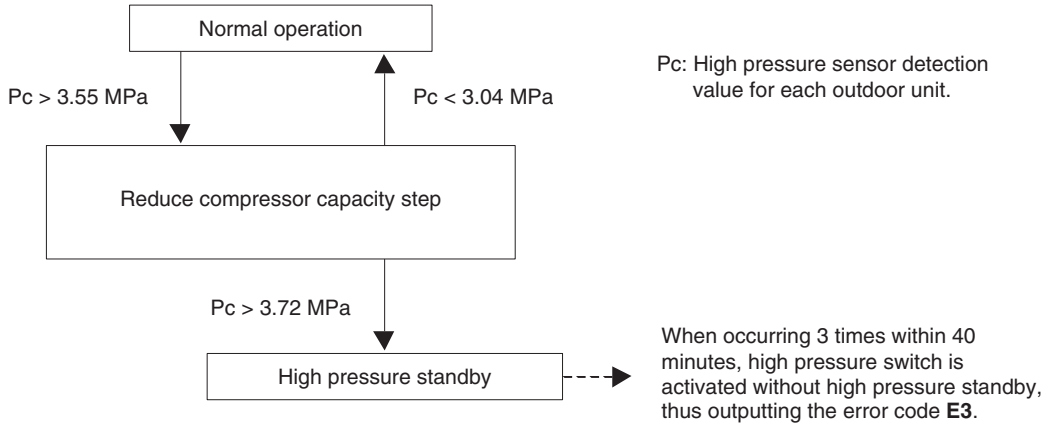
6. Protection Control

6.1 High Pressure Protection Control

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

Cooling

The following control is performed in the entire system.

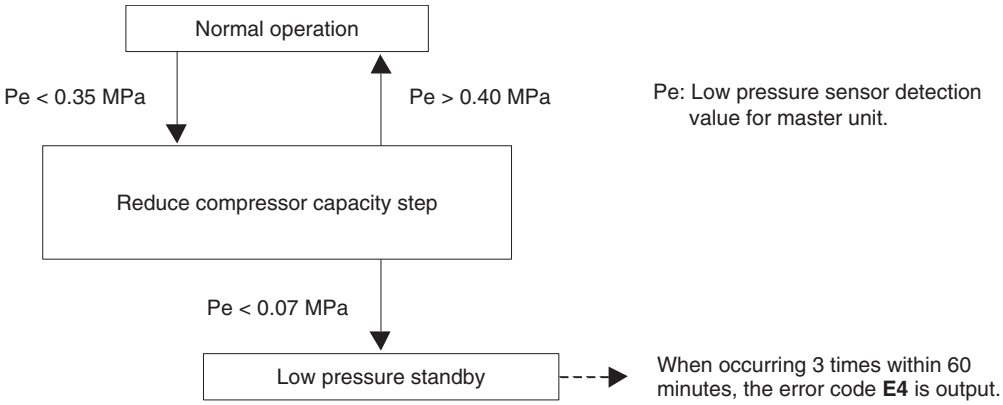


6.2 Low Pressure Protection Control

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

Cooling

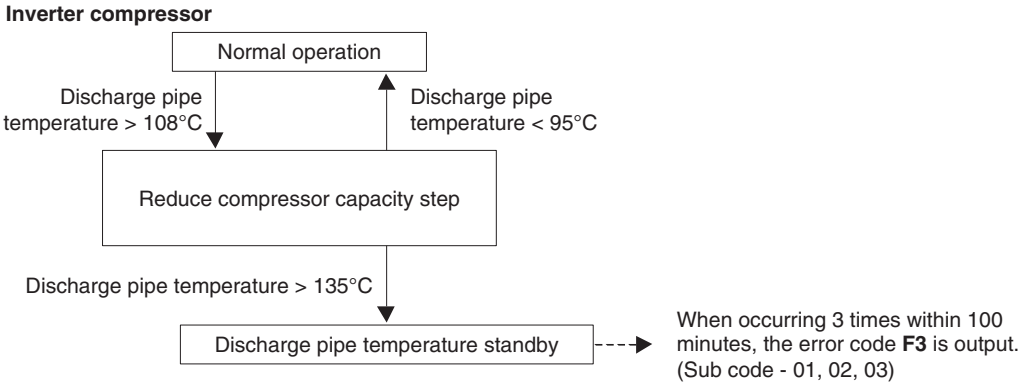
Because of common low pressure, the following control is performed in the system.



6.3 Discharge Pipe Protection Control

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

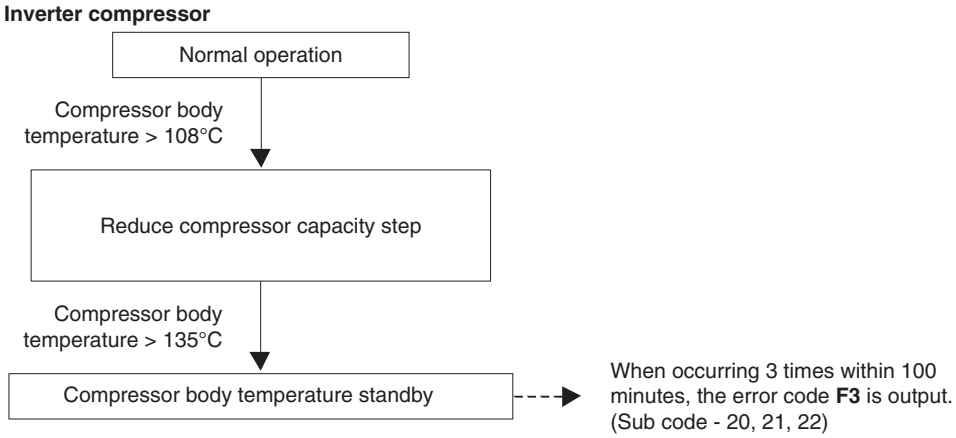
The following control is performed for each compressor of single unit as well as multi units.



6.4 Compressor Body Protection Control

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

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



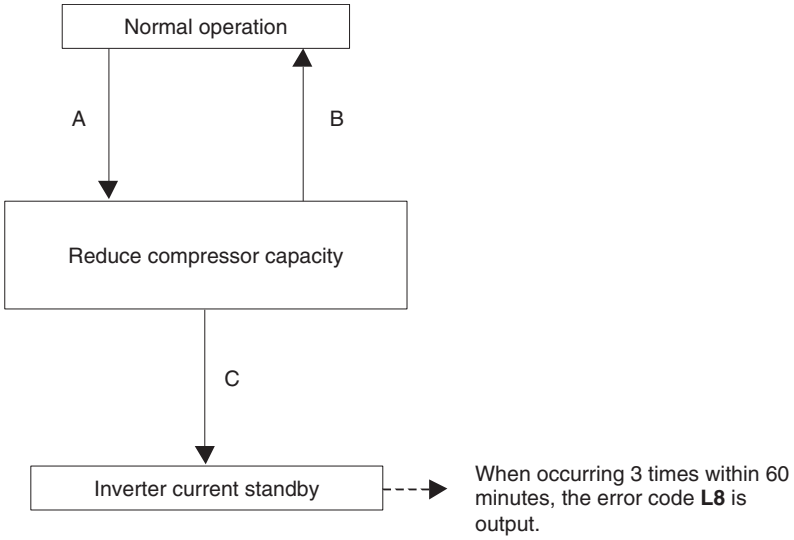
6.5 Inverter Protection Control

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

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

Inverter overcurrent protection control

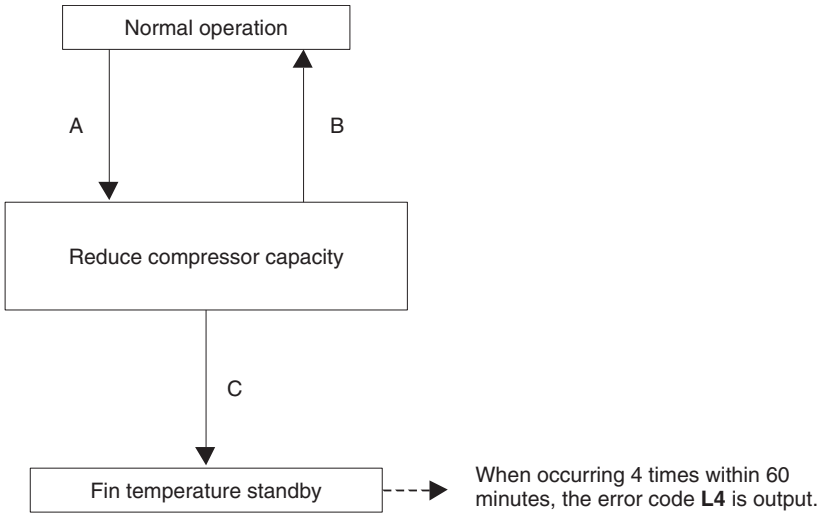
Perform the following control of integrated as well as multi units for each inverter compressor.



Condition	RXQ6/8A	RXQ10-14A	RXQ16/18A	RXQ20A	
	M1C	M1C	M1C, M2C	M1C	M2C
A	more than 17.0 A	more than 27.5 A	more than 17.0 A	more than 17.0 A	more than 27.5 A
B	less than 17.0 A	less than 27.5 A	less than 17.0 A	less than 17.0 A	less than 27.5 A
C	more than 17.6 A	more than 27.5 A	more than 17.6 A	more than 17.6 A	more than 27.5 A

Radiation fin temperature control

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



Condition	All inverter compressors
A	more than 110 °C
B	less than 107 °C
C	more than 114 °C

7. Special Control

7.1 Outdoor Unit Rotation

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

Details of outdoor unit rotation

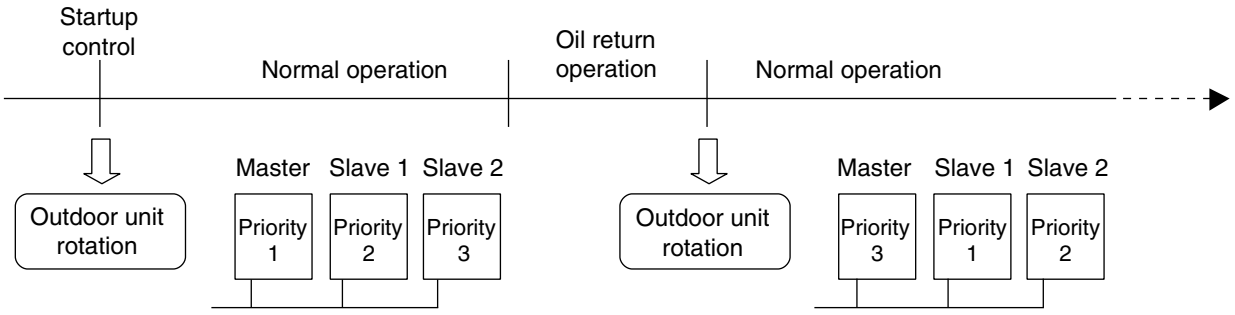
In the case of multi-outdoor-unit system, each outdoor unit is given an operating priority for the control.
Outdoor unit rotation makes it possible to change the operating priority of outdoor units.
Thus, the system becomes free of compressors that stop over an extended period of time at the time of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

Timing of outdoor unit rotation

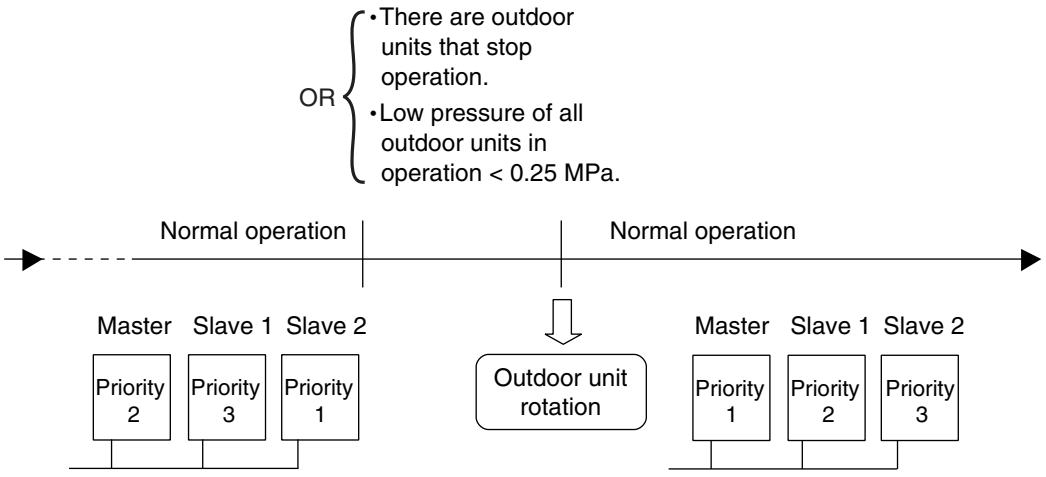
OR

- After oil return operation
- At the beginning of the startup control
- There are outdoor units that stop operation.
- Low pressure of all outdoor units in operation is less than 0.25 MPa.

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



Cooling



Note(s)

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

7.2 Oil Return Operation

In order to prevent the compressor from running out of oil, the oil return operation is conducted to recover oil that has flowed out from the compressor to the system side.
Tc : High pressure equivalent saturation temperature
Te : Low pressure equivalent saturation temperature
Ts: Suction pipe temperature detected by thermistor R3T

Starting conditions

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

- Cumulative oil feed rate
- Timer setting (Make this setting so as to start the oil return operation when the initial cumulative operating time reaches 2 hours after power supply is turned ON and then every 8 hours.)

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

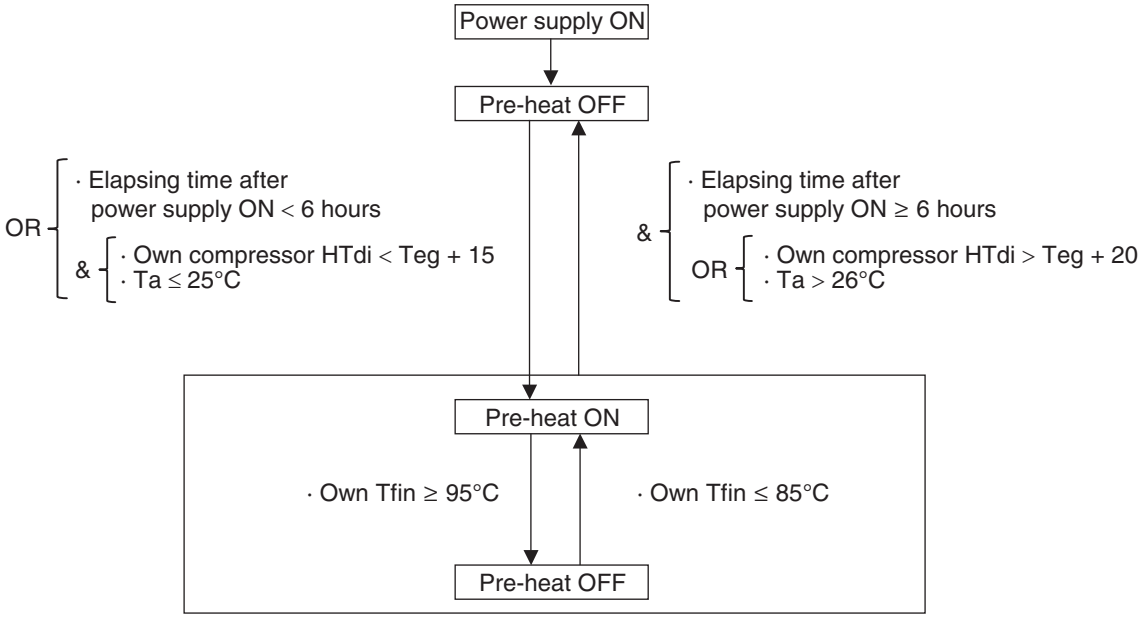
Part Name	Electric Symbol	RXQ6-12A	RXQ14A	RXQ16-20A	Function of Functional Part
Inverter compressor 1	M1C	●	●	●	Capacity step PI control
Inverter compressor 2	M2C	—	—	●	
Inverter fan 1	M1F	●	●	●	TC control
Inverter fan 2	M2F	—	●	●	
Electronic expansion valve (Injection)	Y2E	●	●	●	0 pulse
Electronic expansion valve (Refrigerant auto charge)	Y4E	●	●	●	480 pulse
Solenoid valve (Oil return 1)	Y3S	●	●	●	ON
Solenoid valve (Oil return 2)	Y4S	—	—	●	
Ending conditions					& (· A lapse of 3 minutes. & OR (· Ts1–Te < 3°C · A lapse of 6 minutes while the frequency is more than that of oil return operation.))

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

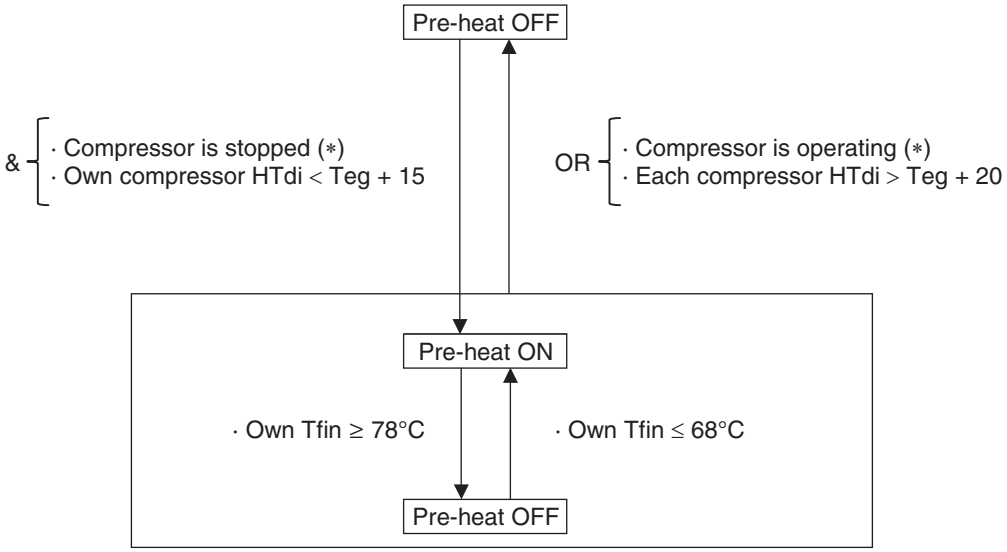
7.3 Inverter Pre-Heat Operation

Inverter pre-heat function is performed by each compressor on its own.
HTdi : Value of inverter compressor discharge pipe temperature (Tdi) compensated with outdoor air temperature
Ta : Outdoor air temperature
Teg : Low pressure equivalent saturation temperature (°C)
Tfin : Fin thermistor temperature

1) System is stopped (all compressors are stopped)



2) System is operating (at least one compressor is operating)

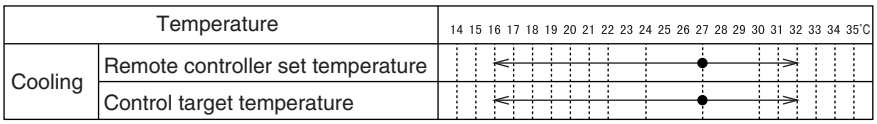


∗ Represents the operating state of each compressor.

8. Outline of Control (Indoor Unit)

8.1 Set Temperature and Control Target Temperature

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



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

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

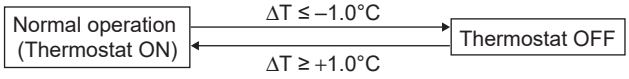
What is the temperature around people?
The temperature around people refers to the temperature of the living space, obtained from the temperature around the ceiling and the temperature underfoot. The temperature is calculated using the detected values of the suction air thermistor and the infrared floor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

8.2 Thermostat Control

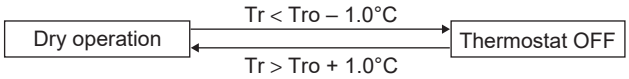
8.2.1 Without Optional Infrared Presence/Floor Sensor

The thermostat ON/OFF condition is determined by the difference between the remote controller set temperature and the actual detected room temperature (∗1).

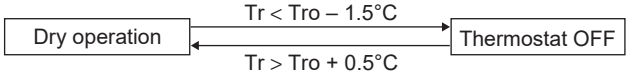
■ Normal operation
◆ Cooling operation



■ Dry operation
◆ When Tro < 24.5°C



◆ When Tro ≥ 24.5°C



ΔT = Detected room temperature – Remote controller set temperature
Tro: Detected room temperature at the start of dry operation
Tr: Determined by the room temperature detected by the thermistor

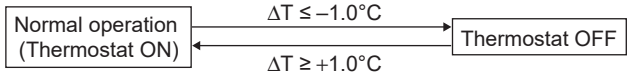
Note(s) ∗1: The thermistor used to detect room temperature is according to the field setting 10 (20)-2.

8.2.2 With Optional Infrared Presence/Floor Sensor

The thermostat ON/OFF condition is determined by the difference between the remote controller set temperature and the detected temperature around people.

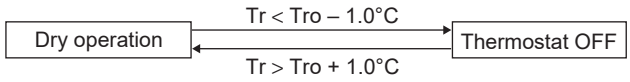
■ Normal operation

◆ Cooling operation

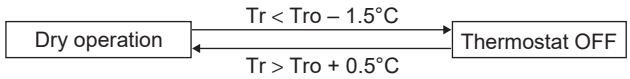


■ Dry operation

◆ When Tro ≤ 24.5°C



◆ When Tro > 24.5°C



ΔT = Detected room temperature – Remote controller set temperature
Tro: Detected room temperature at the start of dry operation
Tr: Determined by the room temperature detected by the thermistor

Control range of temperature around people

When the floor temperature is very low, operation using the temperature around people may cause the suction air temperature to operate outside of use range.
To avoid the above condition, a limit based on the suction air temperature is set for the use range of the temperature around people.

■ Cooling operation

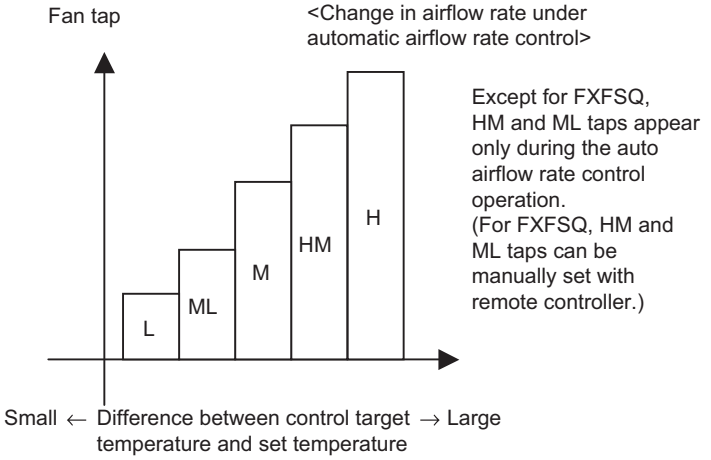
- When the floor temperature is lower than suction air thermistor detection temperature (R1T), R1T will be treated as the control target temperature for operation.
- When the temperature around people is 15°C or lower, R1T will be treated as the control temperature for operation.

8.3 Automatic Airflow Rate Control

The automatic airflow rate control (Five steps from H to L) is based on the difference between control target temperature and set temperature.

Conditions		When airflow rate is set	Automatic airflow rate
Cooling	Thermostat ON	Set	The fan tap is determined by the difference between control target temperature and set temperature.
	Thermostat OFF	Set (∗1)	The fan keeps rotating at the speed as just before the thermostat off (∗1)
Program dry	Thermostat ON	L	L
	Thermostat OFF	OFF	OFF
Fan		Set	M
Stop		OFF	OFF

∗1. LL airflow for FXFSQ



8.4 Airflow Direction Control

8.4.1 Without Optional Infrared Presence/Floor Sensor

Refer to the table below for controlling the horizontal flap (or the vertical flap) for airflow direction adjustment.

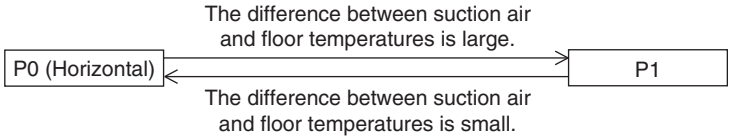
Conditions			FXAQ
Cooling	Direction set	Thermostat ON	Set
		Thermostat OFF	Set
	Swing set	Thermostat ON	Swing
		Thermostat OFF	Swing
Program dry	Direction set	Thermostat ON	Set
		Thermostat OFF	Set
	Swing set	Thermostat ON	Swing
		Thermostat OFF	Swing
Fan	Direction set		Set
	Swing set		Swing

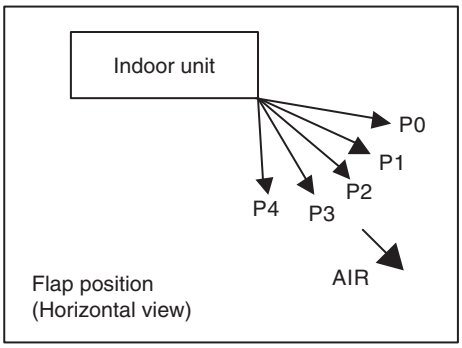
8.4.2 With Optional Infrared Presence/Floor Sensor

The model can control airflow direction automatically by the difference between suction air temperature and floor temperature.

Conditions			FXFSQ	
			When airflow direction is set	Automatic airflow rate and eco full automatic control
Cooling	Direction set	Thermostat ON	Set	Automatic (P0 or P1)
		Thermostat OFF	Set	Automatic (P0 or P1)
	Swing set	Thermostat ON	Swing	—
		Thermostat OFF	Swing	—
Program dry	Direction set	Thermostat ON	Set	Automatic (P0 or P1)
		Thermostat OFF	Set	Automatic (P0 or P1)
	Swing set	Thermostat ON	Swing	—
		Thermostat OFF	Swing	—
Fan	Direction set		Set	Horizontal (P0)
	Swing set		Swing	—

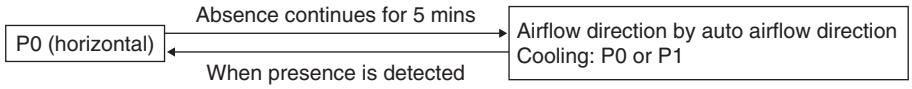
Operation in auto airflow direction control when cooling





8.5 Auto Draft Reducing Control (FXFSQ only)

In the case where both this control is activated and auto airflow direction control (eco full automatic control) is set, when human presence is detected, the airflow direction is automatically set to horizontal (P0) to reduce discomfort by direct airflow.
This control works for each airflow outlet individually.
Note: This function is inoperative for the airflow outlet where an individual airflow direction is set.

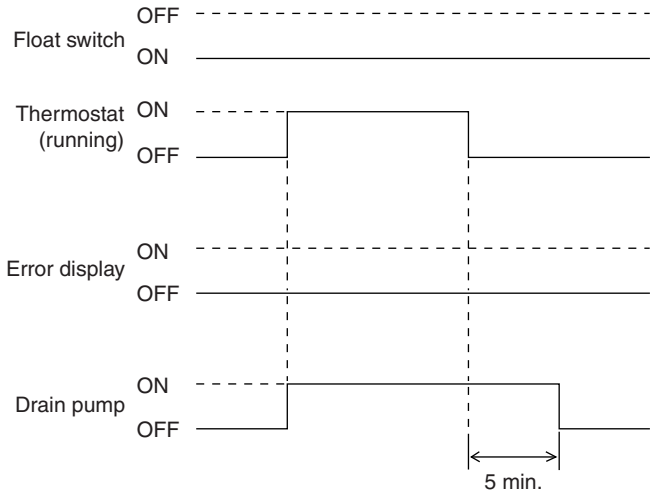


8.6 Eco Full Automatic Control (FXFSQ only)

This is a generic term for the setting where both fan speed and airflow direction are set to "Auto." For detailed control contents, refer to **Automatic Airflow Rate Control** and **Airflow Direction Control**.

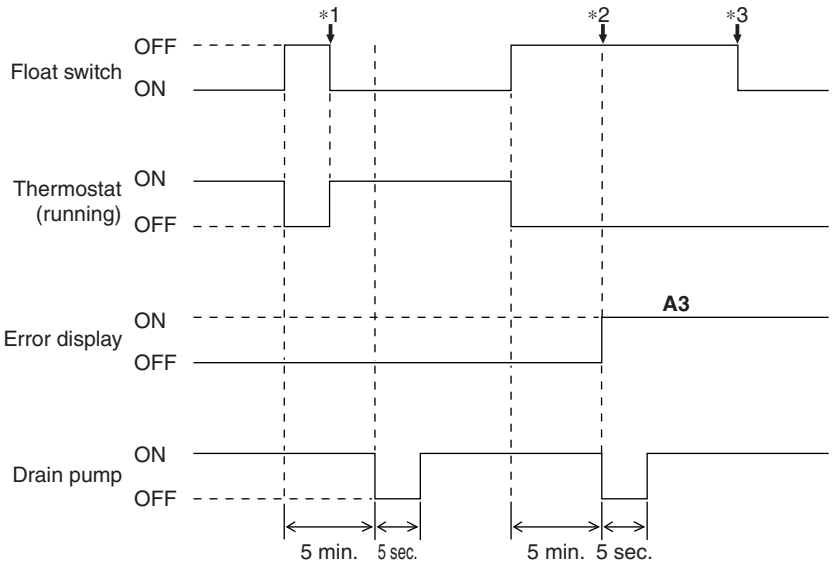
8.7 Drain Pump Control

8.7.1 Normal Operation



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

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



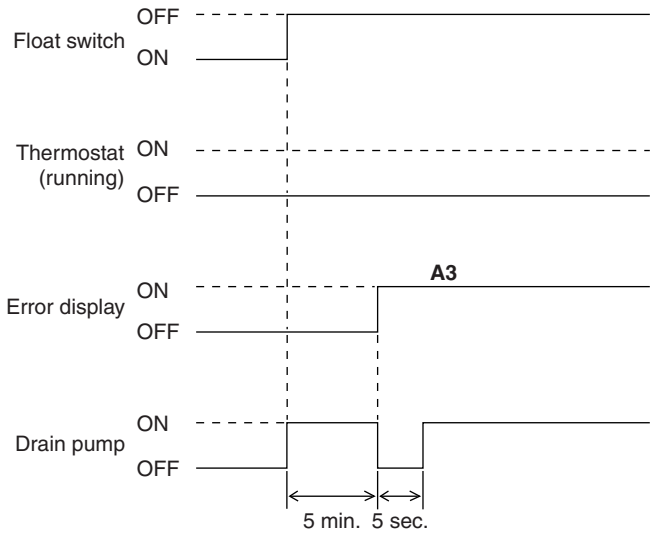
- When the float switch turns OFF, the thermostat turns OFF simultaneously.
- After the thermostat turns OFF, the drain pump continues to operate for another 5 minutes.

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

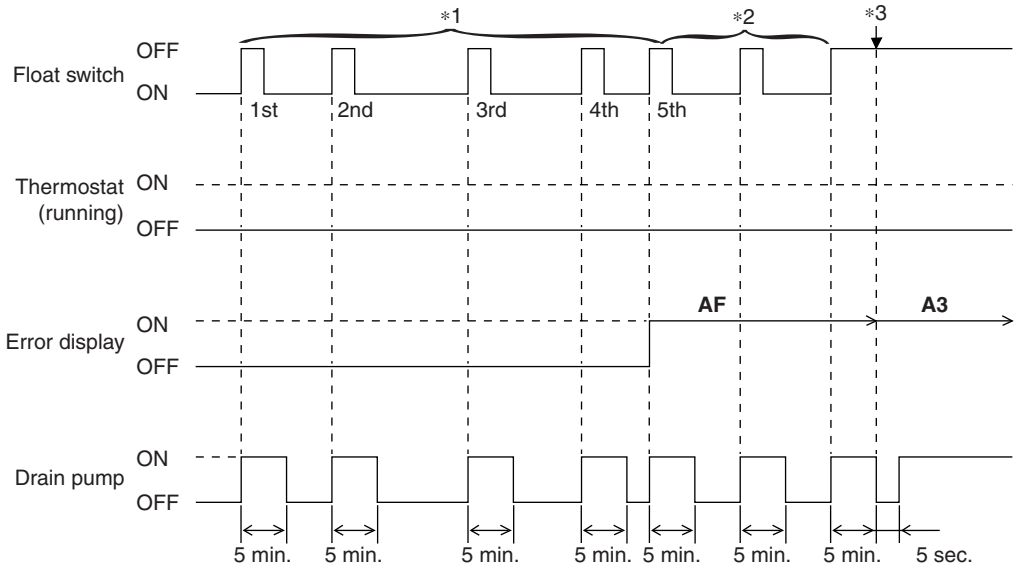
∗3: After **A3** is displayed and the unit comes to an abnormal stop, the thermostat will remain OFF even if the float switch turns ON again.

8.7.3 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 residual operation of the drain pump has ended, the error code **A3** is displayed on the remote controller.
- The drain pump turns OFF once residual operation has ended, then turns ON again after 5 seconds.

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



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

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

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

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

8.8 Freeze-Up Prevention Control

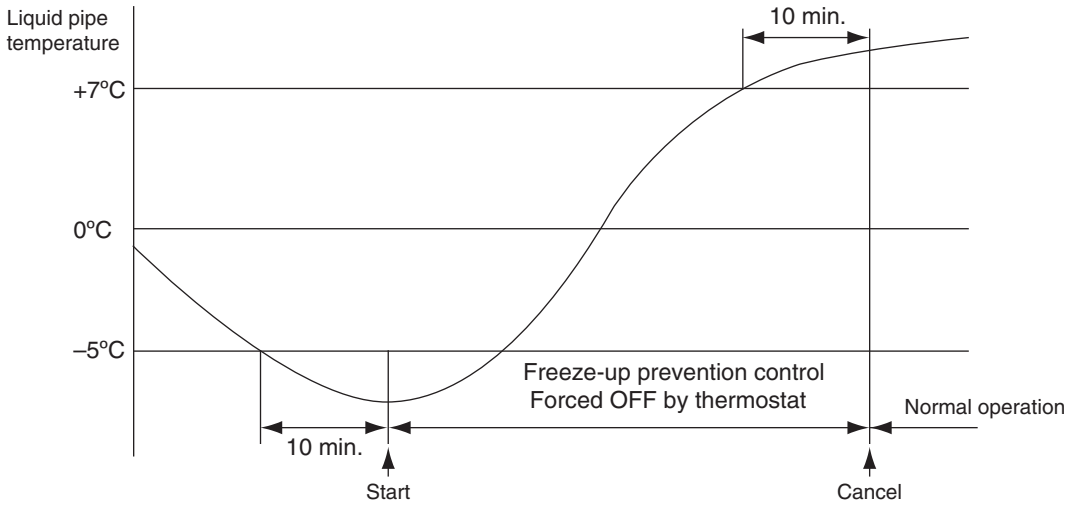
Freeze-Up Prevention by Off Cycle (Indoor Unit Individual Control)

When the temperature detected by 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 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 (for total of 40 minutes)
or
Liquid pipe temperature ≤ – 5°C (for total of 10 minutes)

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



The idea of freeze-up prevention control
Difficult to carry out freeze-up prevention operation
· For comfort, suppression of frequent thermostat ON/OFF is necessary.
· Suppressing the switching frequency of the compressor is required to ensure reliability.
After freeze-up prevention operation is carried out, the compressor can be defrosted properly.
· Water leakage prevention must be effective.

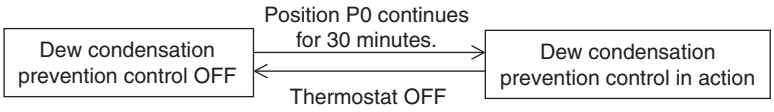
Note(s)

■ When the indoor unit is a round flow type, if the air outlet is set as dual-directional or tridirectional, the starting conditions will be changed as follows.
Liquid pipe temperature ≤ 1°C (for total of 15 minutes)
or
Liquid pipe temperature ≤ 0°C (for 1 minute continuously)
During freeze-up prevention operation, the airflow rate is fixed to LL.
(The cancelling conditions are same as the standard.)

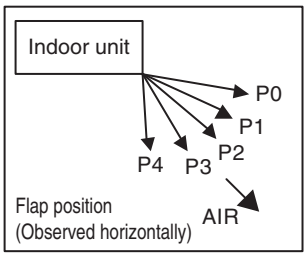
8.9 Dew Condensation Prevention Control

8.9.1 FXFSQ Models

Indoor operation under a certain condition will limit the swing range of the flaps.



Refer to the table below for flap action under this control.



	Dew condensation prevention control	
Flap setting	OFF	In action
P0	P0	P1
P1	P1	P1
P2	P2	P2
P3	P3	P3
P4	P4	P4
Swing	P0 – P4	P1 – P4

8.9.2 FXAQ Models

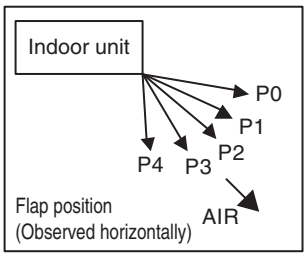
In cooling and dry operation, the following control is carried out in order to prevent dew condensation when the horizontal blade blows air downward.

Starting condition

& (● Horizontal blade is set to downward flow (Position **A**)
● Cooling operation (compressor operation) continues for **B** minutes.

Dew condensation prevention control

Dry operation with horizontal airflow (Position **C**) is carried out for 1 hour.



	FXAQ
Position **A**	P4
B (minutes)	20
Position **C**	P3

Note(s) When there is any change to fan operation, airflow direction and operation ON/OFF state during dew condensation prevention control, this control is canceled.

8.10 Electronic Expansion Valve Control

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

• Superheated degree control in cooling operation

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

SH = Tg – Tl

SH: Evaporator outlet superheated degree (°C)
Tg: Indoor unit gas pipe temperature (R3T)
Tl: Indoor unit liquid pipe temperature (R2T)

SHS (Target superheated degree)
• Normally 5°C.
• As ΔT (Remote controller set temp. – Suction air temp.) becomes larger, SHS becomes lower.
• As ΔT (Remote controller set temp. – Suction air temp.) becomes lower, SHS becomes larger.

8.11 Circulation Airflow (FXFSQ only)

Unevenness of room temperature and the startup time are improved by repeating 2-direction horizontal blow-off and swing alternately.

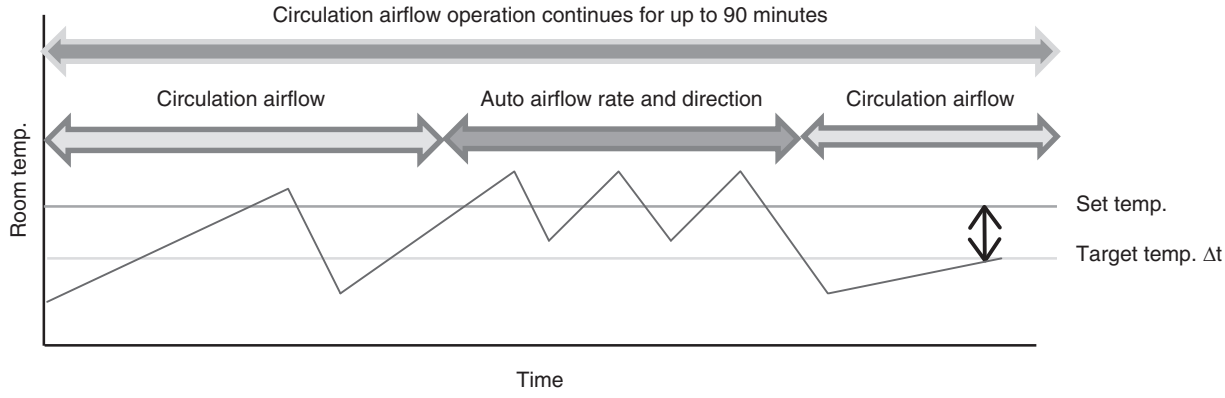
8.11.1 Initiation Conditions of Circulation Operation

When operation starts (in the startup state)

Circulation airflow operation is performed.

During normal operation

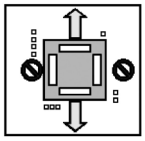
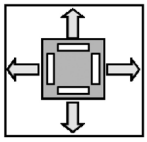
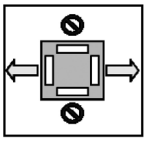
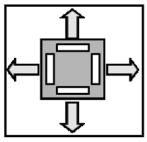
The unit automatically determines operation based on the room temperature condition and time to switch circulation airflow operation and the normal auto airflow rate and direction (eco full automatic control).



8.11.2 Operational Concept (Standard Panel)

Cooling

★: Factory setting

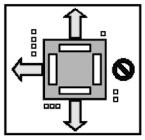
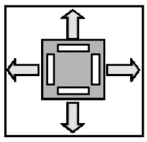
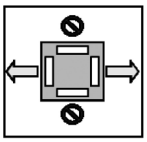
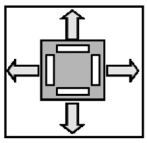
Movement pattern		(a)	(b)	(c)	(d)
					
Appearance Time (sec.) 13 (23)-14	**01: Pattern 1★**	**120★**	**600★**	**120★**	**600★**
	02: Pattern 2	120	600	0	0
	03: Pattern 3	0	0	120	600
	04: Pattern 4	120	600	120	600

Indicates the horizontal flap is in the position of reducing airflow volume (the flap is inverted).

8.11.3 Operational Concept (Designer Panel)

Cooling

★: Factory setting

Movement pattern		(a)	(b)	(c)	(d)
					
Appearance Time (sec.) 13 (23)-14	**01: Pattern 1** ★	**120**★	**600**★	**120**★	**600**★
	02: Pattern 2	120	600	0	0
	03: Pattern 3	0	0	120	600
	04: Pattern 4	120	600	120	600

Indicates the horizontal flap is in the position of reducing airflow volume (the flap is inverted).

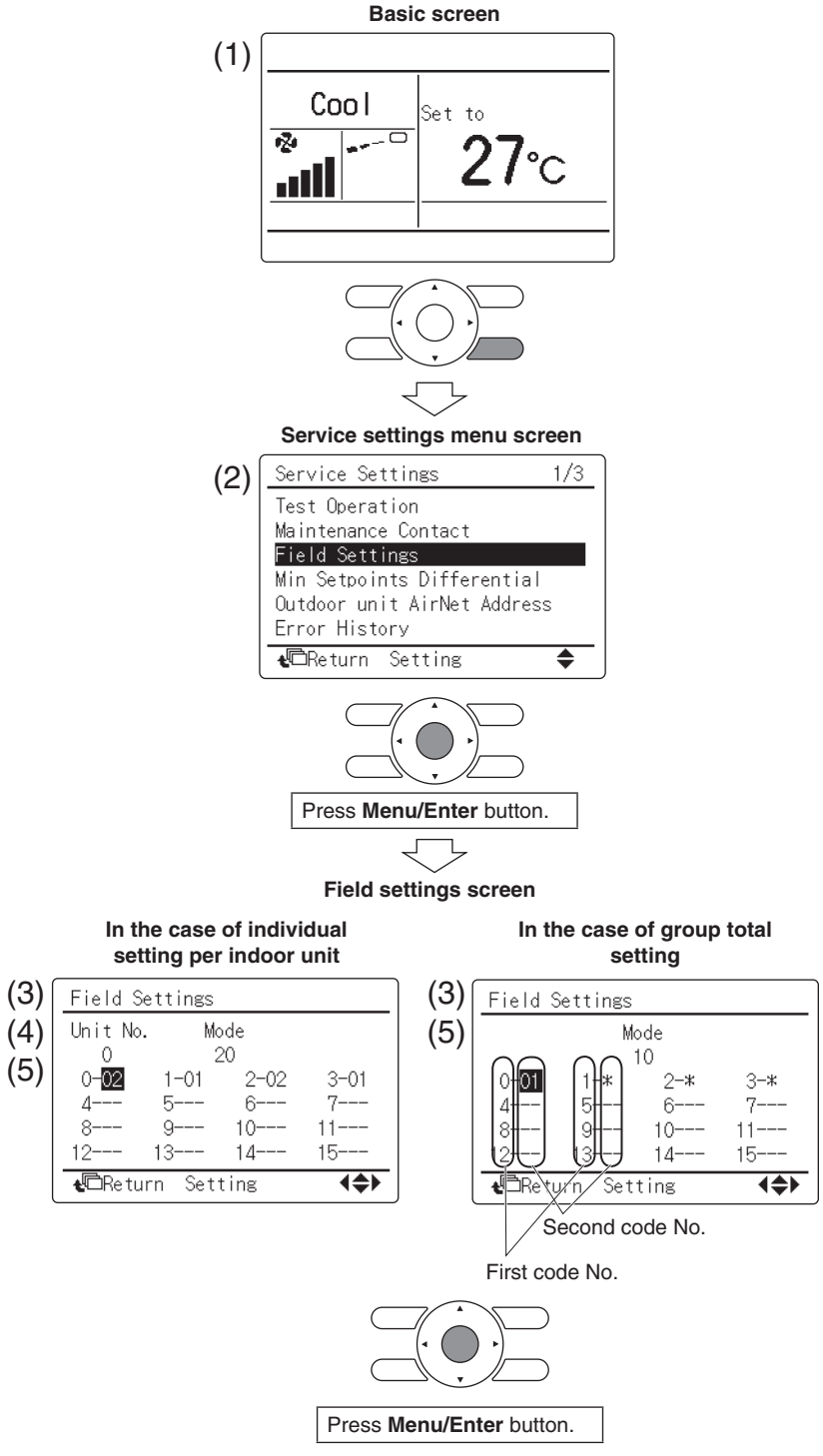
Part 5
Field Settings and Test Operation

1. Field Settings for Indoor Unit

1.1 Field Settings from Remote Controller

Individual function of indoor unit can be changed from the remote controller. At the time of installation or after service inspection / repair, make the field setting in accordance with the following description.
Wrong setting may cause error.
(When optional accessory is mounted on the indoor unit, setting for the indoor unit may be required to change. Refer to information in the option handbook.)

1.1.1 BRC1E62, BRC1E63



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/Enter** button.
Field settings screen is displayed.

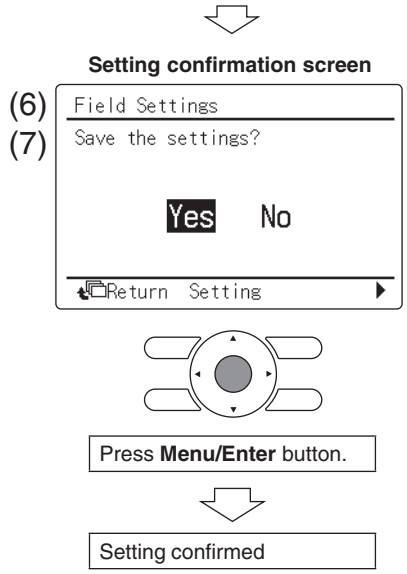
3 Highlight the mode, and select desired mode No. by using ▲▼ (Up/Down) button.

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 the case of group total setting, all of second code No. which may be set are displayed as " ∗ ". " ∗ " is changed to second code No. to be set. And, second code No. " - " means no function.]



6 Press **Menu/Enter** button. Setting confirmation screen is displayed.

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

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

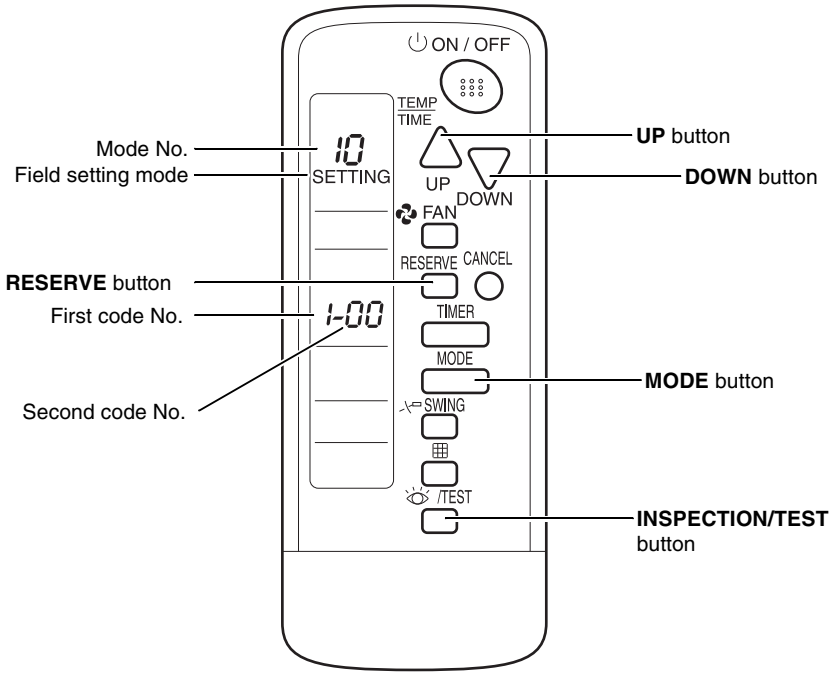
9 After all setting changes are completed, press **Cancel** button twice.

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

⚠CAUTION

- When an optional accessory is installed on the indoor unit, settings of the indoor unit may be changed. See the manual of the optional accessory.
- For field setting details of the outdoor unit, see installation manual attached to the outdoor unit.

1.1.2 BRC4C, BRC7E Series



Setting

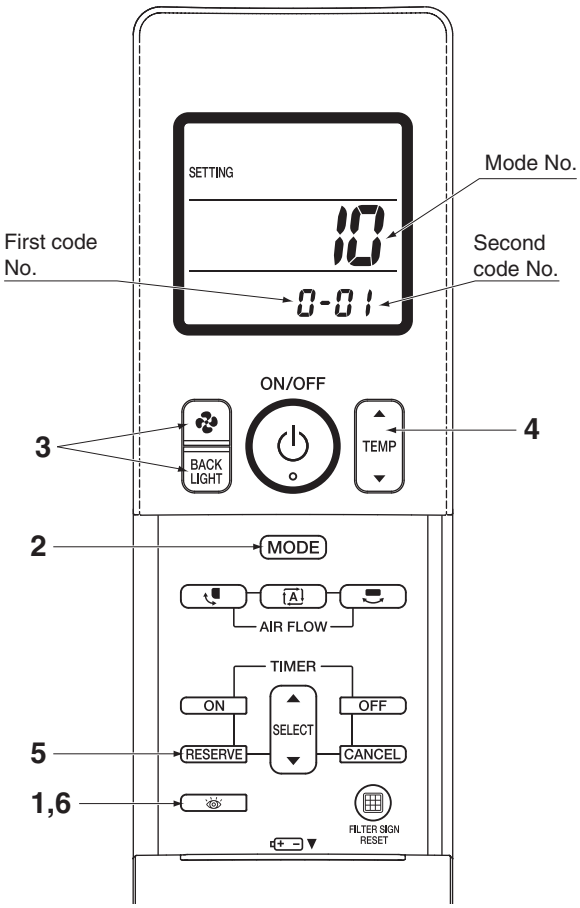
To set the field settings, you have to change:

- 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.

1.1.3 BRC4M151W16



Setting

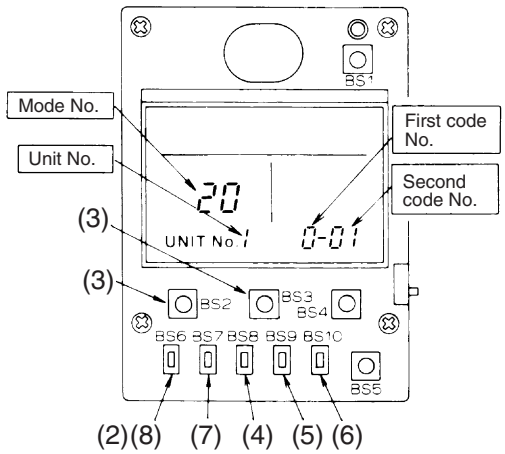
To set the field settings, you have to change:

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

To change the field settings, proceed as follows:

1. Hold down the **INSPECTION** button for at least 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 **FAN** or **BACK LIGHT** button to select the first code No.
4. Press the **TEMP** button to select the second code No.
5. Press the **RESERVE** button to set the present settings.
6. Press the **INSPECTION** button to return to the normal mode.

1.1.4 Simplified Remote Controller



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

1.2 List of Field Settings for Indoor Unit

★: Factory setting

Mode No. (∗2)	First Code No.	Description		Second Code No.					
				01		02		03	04
10 (20)	0	Filter cleaning sign interval	Long life filter	**Light**	**Approx. 10,000 hrs.★**	Heavy	Approx. 5,000 hrs.	—	—
			Ultra long life filter		**Approx. 2,500 hrs.★**		Approx. 1,250 hrs.		
			Standard filter		**Approx. 200 hrs.★**		Approx. 100 hrs.		
	1	Filter type		**Long life filter★**		Ultra long life filter		—	—
	2	Remote controller thermistor		**Remote controller thermistor + Suction air thermistor★**		Only suction air thermistor		Only remote controller thermistor	—
	3	Filter cleaning sign		**Displayed★**		Not displayed		—	—
	6	Remote controller thermistor control during group control		**Not permitted★**		Permitted		—	—
	7 (∗6)	Time for absence area detection		**30 minutes★**		60 minutes		—	—
	10 (∗7)	Dry operation time during Eco mode		**30 minutes★**		60 minutes		90 minutes	Continuous (not returning to cooling)
	11	Low airflow setting when thermostat OFF during Eco mode		Disabled		**Enabled★**		—	—
11 (21)	6 (∗6)	Setting the rate of human detection		High sensitivity		Low sensitivity		**Standard sensitivity★**	Infrared presence sensor disabled
	7	Airflow adjustment		**OFF★**		Completion of airflow adjustment		Start of airflow adjustment	—
	8 (∗6)	Compensating the temperature around people		Suction air temperature only		Priority given on the suction air temperature		**Standard★**	Priority given on the floor temperature
12 (22)	0	Optional accessories output selection (field selection of output for adaptor for wiring)		**Indoor unit turned ON by thermostat★**		—		Operation output	Error output
	1	External ON/OFF input (Set when ON/OFF is to be controlled from outside.)		**Forced OFF ★**		ON/OFF control		External protection device input	—
	2	Thermostat differential changeover (Set when remote sensor is to be used.)		**1°C★**		0.5°C		—	—
	5	Auto restart after power failure reset		Not equipped		**Equipped★**		—	—
	6	Airflow setting when cooling thermostat is OFF		LL tap		**Set fan speed★**		—	—
	11 (∗6)	Compensating the floor temperature		4°C		2°C		**0°C★**	–2°C
13 (23)	0	Ceiling height setting, Setting of normal airflow		Refer to page 120.					
	1	Airflow direction setting (Set when a sealing material kit has been installed)		**F (4 directions)★**		T (3 directions)		W (2 directions)	—
	2 (∗6)	Swing pattern settings		All direction synchronized swing		—		**Facing swing★**	—
	4	Airflow direction adjustment range		Refer to page 122.					
	6	External static pressure settings		Refer to page 122.					
	7	Setting of swing patterns when cooling thermostat is OFF		Refer to page 123.					
	13	Setting of circulation airflow		Disabled		**Enabled★**		—	—
	14	Circulation airflow patterns		**Pattern 1★**		Pattern 2		Pattern 3	Pattern 4
	15	Switching panel type		**Standard panel★**		Designer panel		—	—

Mode No. (∗2)	First Code No.	Description	Second Code No.			
			01	02	03	04
15 (25)	2 (∗5)	Direct duct connection (when the indoor unit and Heat Reclaim Ventilator are connected by duct directly.)	**Not equipped**★	Equipped	—	—
	3	Drain pump and humidifier interlock selection	**Not interlocked**★	Interlocked	—	—
	5	Selection for individual ventilation setting by remote controller	**— (Normal)**★	Individual	—	—
1b	4	Display of error codes on the remote controller	—	Two-digit display	—	**Four-digit display**★
	12	Key-lock pattern settings	**No operation allowed (Cancel procedure is displayed.)**★	No operation allowed (Cancel procedure is not displayed.)	No menu operation is allowed (Cancel procedure is displayed.)	No menu operation is allowed any time.
	14	Setting restricted/permitted of airflow block	Refer to page 125.			
1c	0	Room temperature display	Not displayed	**Displayed**★	—	—

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.
∗5. If the setting mode to “Equipped”, heat reclaim ventilation fan conducts the fan residual operation by linking to indoor unit.
∗6. Available for setting when option with the built-in human detection and floor temperature detection function is mounted.
∗7. Factory setting for round flow type is **04**.

1.3 Applicable Range of Field Settings

Mode No.	First Code No.	Setting Contents	FXFSQ-AR	FXMQ-PB	FXMQ-AR	FXAQ-P
10 (20)	0	Filter cleaning sign interval	●	●	●	●
	1	Filter type	●	●	●	●
	2	Remote controller thermistor	●	●	●	●
	3	Filter cleaning sign	●	●	●	●
	6	Remote controller thermistor control during group control	●	●	●	●
	7	Time for absence area detection	●	—	—	—
	10	Dry operation time during Eco mode	●	●	●	●
	11	Low airflow setting when thermostat OFF during Eco mode	●	●	●	●
11 (21)	6	Setting the rate of human detection	●	—	—	—
	7	Airflow adjustment	—	●	—	—
	8	Compensating the temperature around people	●	—	—	—
12 (22)	0	Optional accessories output selection	●	●	●	●
	1	External ON/OFF input	●	●	●	●
	2	Thermostat differential changeover	●	●	●	●
	5	Auto restart after power failure reset	●	●	●	●
	6	Airflow setting when cooling thermostat is OFF	●	●	●	●
	11	Compensating the floor temperature	●	—	—	—
13 (23)	0	Ceiling height setting, Setting of normal airflow	●	—	—	●
	1	Airflow direction setting	●	—	—	—
	2	Swing pattern settings	●	—	—	—
	4	Airflow direction adjustment range	●	—	—	●
	6	External static pressure settings	—	●	—	—
	7	Setting of swing patterns when cooling thermostat is OFF	●	—	—	●
	13	Setting of circulation airflow	●	—	—	—
	14	Circulation airflow patterns	●	—	—	—
	15	Switching panel type	●	—	—	—
15 (25)	2	Direct duct connection	●	—	—	●
	3	Drain pump and humidifier interlock selection	●	●	●	●
	5	Selection for individual ventilation setting by remote controller	●	●	●	●
1b	4	Display of error codes on the remote controller	●	●	●	●
	12	Key-lock pattern settings	●	●	●	●
	14	Setting restricted/permitted of airflow block	●	●	●	●
1c	0	Room temperature display	●	●	●	●

● : Available

— : Not available

1.4 Details of Field Settings for Indoor Unit

1.4.1 Filter Cleaning Sign Interval, Filter Type

When the setting 10 (20)-3 is set to **01** (Displayed), filter cleaning sign is displayed on the remote controller after a certain period of operation time. This setting is used to change the display interval of filter cleaning sign when the filter contamination is heavy.
The filter cleaning sign interval is determined as follows depending on the combination of Mode No. 10 (20)-0 and 10 (20)-1.
Filter cleaning sign interval

★: 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	FXFSQ-AR	**2,500 hrs.★**	1,250 hrs.	10,000 hrs.	5,000 hrs.
	FXMQ-PB FXMQ-AR				
	FXAQ-P	**200 hrs.★**	100 hrs.	200 hrs.	100 hrs.

1.4.2 Thermistor Selection

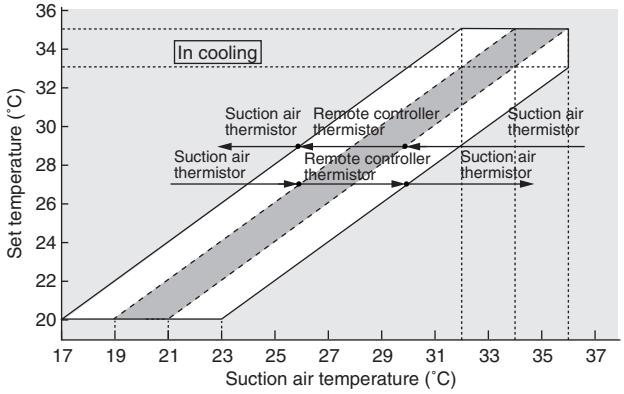
Select a thermistor to control the room temperature.

■ 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 in indoor unit★**
		02	Suction air thermistor in indoor unit
		03	Remote controller thermistor

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



■ When the unit is equipped with an infrared presence/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**.

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

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

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

1.4.3 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" is not displayed when an Auto-clean Panel is connected.

1.4.4 Time for Absence Area Detection

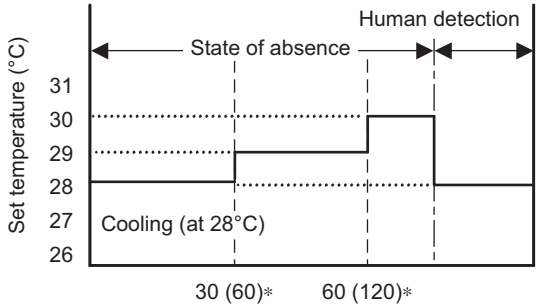
(For units with the infrared presence sensor only)

By selecting the energy-saving operation mode in the absence, the target temperature is shifted to the energy-saving end by 1°C (maximum 2°C) after the state of absence continues for a certain period of time.

Absent time defined for detection can be selected as follows:

★: 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).

1.4.5 Dry Operation Time during Eco Mode

- If you switch the operation mode to "Dry" while the eco mode is enabled, the mode will automatically switch to "Cooling" after a certain period of time is elapsed.

If you want to increase the duration of dry operation, change the Second code No. as indicated in the following table.

Note 1) Increasing duration of dry operation degrades the energy efficiency

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
10 (20)	10	**01**★	**30 minutes**★
		02	60 minutes
		03	90 minutes
		04	Continuous (not returning to cooling)

Note 2) When group control is enabled, all indoor units in the same group have a same set value for duration of dry operation.

1.4.6 Low Airflow Setting when Thermostat OFF during Eco Mode

This setting changes the airflow volume to LL in coordination with the eco mode when cooling thermostat OFF is set. Also, the airflow direction is changed to horizontal.

When disabled:

12 (22)-6 (the airflow volume setting when cooling thermostat OFF is enabled)

13 (23)-7 (the swing setting when cooling thermostat OFF is enabled) is as set

When enabled: LL when Te ≥ 7°C

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
10 (20)	11	01	Disabled
		02★	**Enabled**★

1.4.7 Setting the Rate of Human Detection

(For units with the infrared presence/floor sensor only)

Set the sensitivity of the infrared presence/floor sensor.

■ The infrared presence/floor sensor can be disabled by selecting the Second code No. **04**. When the infrared presence/floor 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/floor sensor disabled

1.4.8 Automatic Airflow Adjustment

■ **FXMQ-PB**

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 the operation mode "fan". 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 the operation mode to "fan", enter the field setting mode while operation is stopped and then select the Mode No. "(21) (11 for batch setting)", 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.

1.4.9 Compensating the Temperature around People

(For units with the infrared floor sensor)

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

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

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

★: 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

1.4.10 Optional Accessories Output Selection

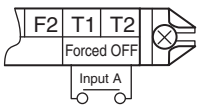
Using this setting, "operation output signal" and "abnormal output signal" can be provided. Output signal is output between terminals X1 and X2 of "adaptor for wiring", an optional accessory.

★: 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.

1.4.11 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 OFF (prohibition of using the remote controller)** **OFF: Permission of using the remote controller**★
		02	OFF → ON: Operation ON → OFF: Stop
		03	ON: Operation OFF: The system stops, then the applicable unit indicates **A0**. The other indoor units indicate **U9.**

1.4.12 Thermostat Differential Changeover

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

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
12 (22)	2	**01**★	**1ºC**★
		02	0.5ºC

1.4.13 Auto Restart after Power Failure Reset

★: Factory setting

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

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

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

Caution **The air conditioner starts operation suddenly after power failure reset or when the main power supply is turned on again. Consequently, the user might be surprised and wonder why this has happened. In service work, for example, turning off the main power switch while the unit is in operation, and turning on the switch again after the work is completed start unit operation (the fan rotates).**

1.4.14 Airflow Setting when Cooling Thermostat is OFF

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

★: Factory setting

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

1.4.15 Compensating the Floor Temperature (Cooling)

(For units with the infrared presence/floor sensor)

Offset the detected value of the infrared presence/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
12 (22)	11	01	4°C
		02	2°C
		03★	**0°C★**
		04	–2°C

Specific usages of this setting

There is no problem with the standard setting in the usual condition. Change the setting in the cases indicated in the following table.

Environment	Operation Mode	Problem	Contents
-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.	Cooling	Insufficient cooling	–2°C
		Excessive cooling	2°C or 4°C

Note(s)

This setting is available only in cooling operation.

1.4.16 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.

■ **FXFSQ25-80**

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents	Ceiling Height			
				All round outlet	4-way Outlets	3-way Outlets	2-way Outlets
13 (23)	0	**01★**	**Standard★**	**Lower than 2.7 m★**	**Lower than 3.1 m★**	**Lower than 3.0 m★**	**Lower than 3.5 m★**
		02	High Ceiling(1)	Lower than 3.0 m	Lower than 3.4 m	Lower than 3.3 m	Lower than 3.8 m
		03	High Ceiling(2)	Lower than 3.5 m	Lower than 4.0 m	Lower than 3.5 m	—

■ **FXFSQ100-140**

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents	Ceiling Height			
				All round outlet	4-way Outlets	3-way Outlets	2-way Outlets
13 (23)	0	**01★**	**Standard★**	**Lower than 3.2 m★**	**Lower than 3.4 m★**	**Lower than 3.6 m★**	**Lower than 4.2 m★**
		02	High Ceiling(1)	Lower than 3.6 m	Lower than 3.9 m	Lower than 4.0 m	Lower than 4.2 m
		03	High Ceiling(2)	Lower than 4.2 m	Lower than 4.5 m	Lower than 4.2 m	—

Note(s)

1. The Second Code No. is factory set to Standard/All-direction airflow. 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.

■ **FXFSQ with Designer panel**

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents	FXFSQ25-80 (All round outlet)	FXFSQ100-140 (All round outlet)
13 (23)	0	**01**★	**Standard**★	**Lower than 2.4 m**★	**Lower than 3.2 m**★
		02	High Ceiling (1)	Lower than 2.7 m	Lower than 3.6 m
		03	High Ceiling (2)	Lower than 3.2 m	Lower than 4.2 m

■ **FXAQ**

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
13 (23)	0	**01**★	**Standard**★
		02	Slightly higher
		03	High

1.4.17 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.	Contents
13 (23)	1	**01**★	**F: 4-direction airflow**★
		02	T: 3-direction airflow
		03	W: 2-direction airflow

1.4.18 Swing Pattern Settings

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.

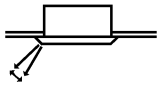
Conventional swing operation (all direction synchronized swing) can be set onsite.

★: Factory setting

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

1.4.19 Airflow Direction Adjustment Range

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



■ **FXFSQ-AR, FXAQ-P**

★: 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)

1. Some indoor unit models are not equipped with draft prevention (upward) function.
2. When the model FXFSQ is attached with a closing member kit, set the Second Code No. to **02** or **03**.

1.4.20 External Static Pressure Settings

■ **FXMQ-PB**

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
13 (23)	6	01	30 Pa (∗2) (∗3)
		02	50 Pa
		03	60 Pa
		04	70 Pa
		05	80 Pa
		06	90 Pa
		07★	**100 Pa**★
		08	110 Pa
		09	120 Pa
		10	130 Pa
		11	140 Pa
		12	150 Pa (∗3)
		13	160 Pa (∗3)
		14	180 Pa (∗1) (∗3)
		15	200 Pa (∗1) (∗3)

∗1 FXMQ40PB cannot be set to 180 or 200 Pa.
∗2 FXMQ50/63/80/100/125PB cannot be set to 30 Pa.
∗3 FXMQ140PB cannot be set to 30 Pa and 150-200 Pa.

1.4.21 Setting of Swing Patterns when Cooling Thermostat is OFF

In cooling operation, when the airflow direction is set to swing, flaps swing even when the thermostat is OFF. This setting allows to change the airflow direction when the thermostat is OFF.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Fixed	Swing
13 (23)	7	01	Set Position	Swing
		02	Set Position	P0
		03★	**P0★**	**P0★**
		04	Set Position	Swing
		05	Set Position	P2
		06	P2	P2
		07	Set Position	Swing

1.4.22 Setting of Circulation Airflow

This is to set whether the circulation airflow function is enabled or disabled.

★: Factory setting

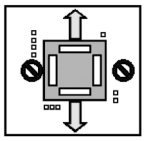
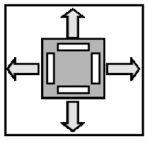
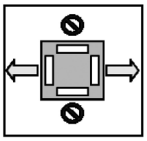
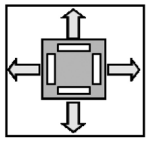
Mode No.	First Code No.	Second Code No.	Contents
13 (23)	13	01	Disabled
		02★	**Enabled★**

1.4.23 Circulation Airflow Patterns

This setting is to change the appearance pattern of the circulation airflow direction depending on the installation environment of the indoor unit.

Cooling

★: Factory setting

Movement pattern		(a)	(b)	(c)	(d)
					
Appearance Time (sec.) 13 (23)-14	**01: Pattern 1★**	**120★**	**600★**	**120★**	**600★**
	02: Pattern 2	120	600	0	0
	03: Pattern 3	0	0	120	600
	04: Pattern 4	120	600	120	600

⊘ Indicates the horizontal flap is in the position of reducing airflow volume (where the flap is reversed).

1.4.24 Switching Panel Type

■ **FXFSQ-AR**

Change this setting depending on the type of the panel connected.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
13 (23)	15	**01★**	**Standard panel★**
		02	Designer panel

1.4.25 Direct Duct Connection

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

★: Factory setting

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

1.4.26 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

1.4.27 Individual Ventilation Setting

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

★: Factory setting

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

1.4.28 Display of Error Codes on the Remote Controller

■ **For BRC1E Series 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**★

1.4.29 Key-Lock Pattern Settings

■ **For BRC1E series only**

Setting of key-lock pattern for the remote controller.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
1b	12	**01**★	**No operation allowed. (Cancel procedure is displayed)**★
		02	No operation allowed. (Cancel procedure is displayed)
		03	No menu operation is allowed.
		04	No menu operation is allowed any time.

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

1.4.30 Setting Restricted/Permitted for Airflow Block

■ **For Sensing flow type only**

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

This setting will prevent the airflow block is advertently set to ON.

Ensure that this setting is "Disable airflow block" when using together with options listed above.

★: Factory setting

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

1.4.31 Room Temperature Display

■ **For BRC1E series only**

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

★: Factory setting

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

1.5 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.

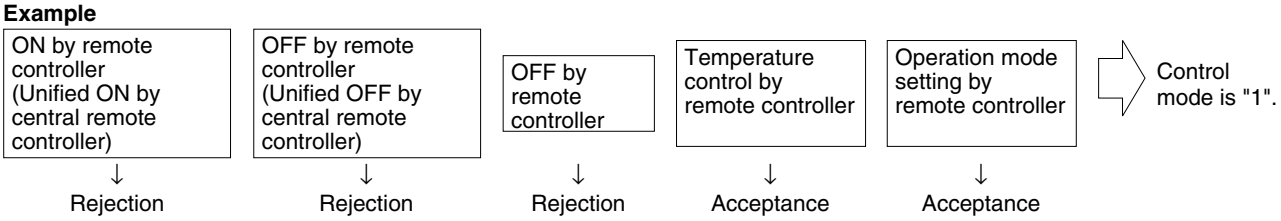
- Timer operation possible by remote controller

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



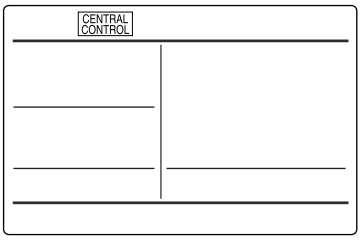
★: Factory setting

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.

BRC1E62, BRC1E63



2. Field Settings for Outdoor Unit

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

2.1 Function Setting

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

Setting item	Contents and objective of setting	Overview of setting procedure
Setting of low noise operation (∗2)	A.To reduce operation noise level through reduction of the upper limit of the fan using external input (use outdoor fan step 8 for normal operation). 1. Level 1: fan step 7Y or less. 2. Level 2: fan step 6 or less. 3. Level 3: fan step 6 or less. 4. Level 4: fan step 5 or less.	■ Use the optional board DTA104A61 (∗1). ■ Set mode 2 No. 12-1. ■ Choose level by mode 2 No. 25. ■ If required, set the Capacity priority setting to ON, by mode 2 No. 29-1.
	B.To perform automatic night-time low noise operation. Start time: selectable from 8:00 PM to 12:00 AM (step by 2 hours). End time: selectable from 6:00 AM to 8:00 AM (step by 1 hour). (Note that the set time is estimated according to outdoor air temperature.)	■ Select required level by mode 2-22. ■ Select start time with mode 2-26. ■ Select end time with mode 2-27. ■ Select capacity priority setting if required by mode 2-29-1.
Setting of demand operation (∗2)	1. Demand 1 Level 1: 60% of rated capacity or less 2. Demand 1 Level 2: 65% of rated capacity or less 3. Demand 1 Level 3: 70% of rated capacity or less 4. Demand 1 Level 4: 75% of rated capacity or less 5. Demand 1 Level 5: 80% of rated capacity or less 6. Demand 1 Level 6: 85% of rated capacity or less 7. Demand 1 Level 7: 90% of rated capacity or less 8. Demand 1 Level 8: 95% of rated capacity or less 9. Demand 2 Level 1: 40% of rated capacity or less 10. Demand 2 Level 2: 50% of rated capacity or less 11. Demand 2 Level 3: 55% of rated capacity or less 12. Demand 3: Forced thermostat off	■ Use the optional board DTA104A61. ■ Wire external signal(s) to the optional adaptor DTA104A61. ■ Activate input optional board DTA104A61 mode 2 No. 12-1. ■ Select level of demand 1 by mode 2-30. ■ Select level of demand 2 by mode 2-31. ■ If fixed demand control is required (without adaptor DTA104A61), set level by mode 232.
Setting of AIRNET address	■ Make AIRNET address when it is connected to AIRNET monitoring, or to view detail in the map on Service Checker type III.	■ Set AIRNET address with mode 2-13.
High level difference outdoor to indoor	■ Required setting when level difference between outdoor and indoor units of same refrigerant exceeds standard level.	■ Set mode 2 No. 49 to 1 if outdoor is more than 50 m above indoor unit.
Setting of high static pressure	■ Set high static pressure in order to operate the system with duct to the outdoor unit (used at concealed installation on floors or balconies).	■ Set mode 2 No. 18 to 1 (ON).
Evaporating temperature setting (cooling performance)	■ Setting to choose the reaction time of outdoor control on change of outdoor and cooling indoor load.	■ Set mode 2 No. 8 to choose cooling capacity control logic between fixed, automatic or high sensible. ■ Set mode 2 No. 81 to choose Te adjustment at start up between Powerful, Quick, Mild or Eco.
Eco mode invalid setting	■ Eco mode may be deemed unavailable. 0: Valid 1: Invalid When this configuration is set, it is not possible to turn this control ON/OFF using the external control adaptor.	■ Set mode 2-23.
Eco level setting for Eco mode by external control adaptor	■ You may set the Eco level of Eco mode to Standard/Low or make it unavailable. Depending on the settings, low noise operation or demand operation may not be performed using the external control adaptor.	■ You need an external control adaptor. Using mode 2-11, define if Eco level will be set by the external control adaptor low noise level or demand level. If you short-circuit the terminal (TeS1), Eco level can be set to Standard/Low. In case of open circuit, the setting will be unavailable.

For detailed description about each setting, refer to **Details of Setting Mode (m2)** on page 143.

Note(s)

∗1. External control adaptor for outdoor unit.

∗2. These functions are available when setting mode 2 No.11 to 0.

2.2 Settings by DIP Switches

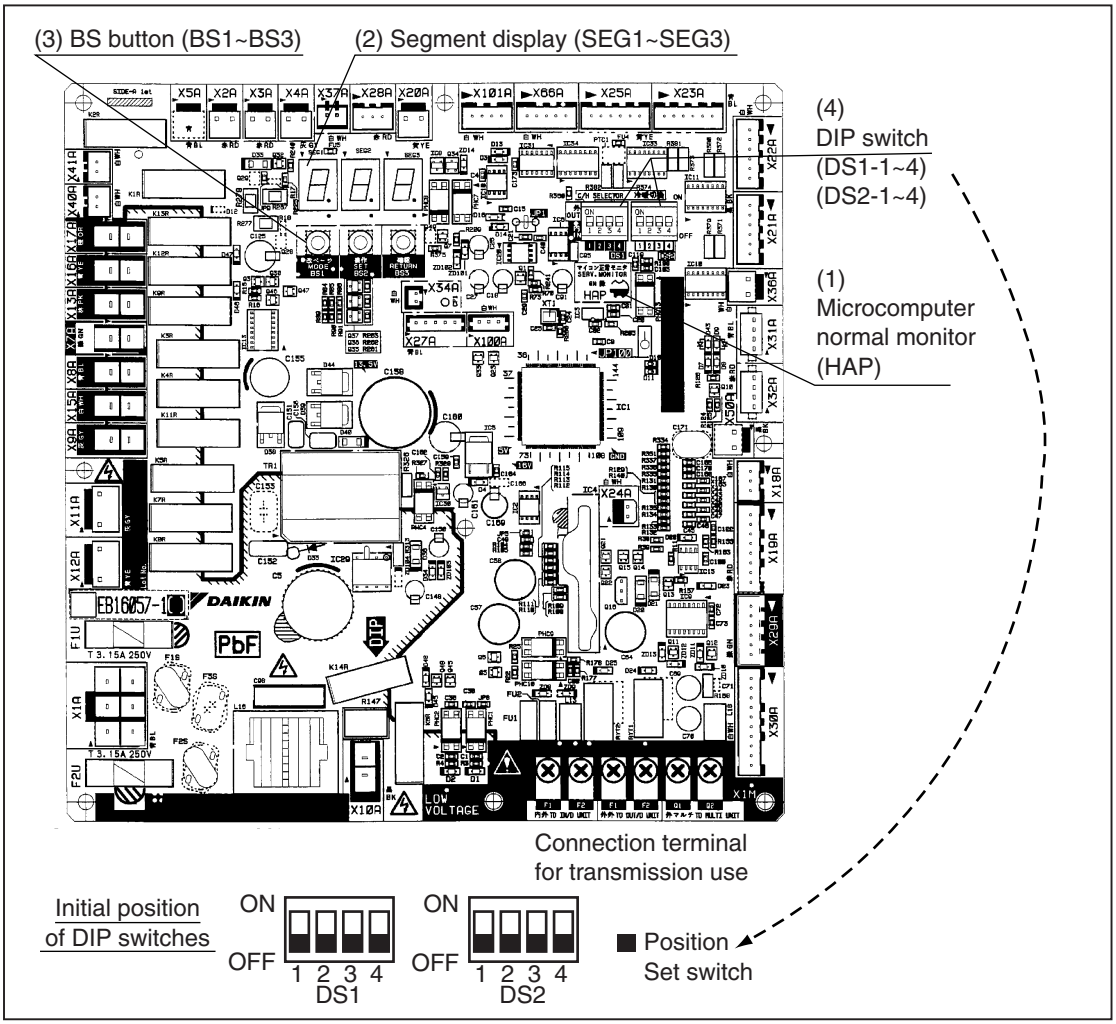
For factory mounted board only.

	DIP switch	Setting item	Description
No.	Setting		
DS1-1 ~DS1-4	ON	Not used	Do not change the factory settings.
	OFF (Factory setting)		

2.2.1 DIP Switch Setting Mounting a Spare PCB

Caution:

- After replacement with spare PCB, be sure to make settings shown in the table below. The procedure for making settings of spare PCB is different from that used for factory settings described above. Be sure to refer to the table on the following page in order to make settings of spare PCB after replacement.
- Enforce a re-initialization of communication: hold press button BS3 “RETURN” for minimum 5 seconds.
- After initialization, a test operation is required from outdoor unit (hold BS2 “SET” until indication “t0 ;” appears).



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

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

(3) BS button
Used to change mode.

(4) DIP switch
Used to make field settings.

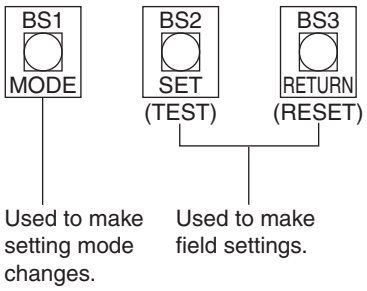
The figure below shows the required position of the DIP switches on spare PCB for RXQ-A. Change DIP switches at time of power disconnected.

Application model	The setting method (■ represents the position of switches)	
RXQ6/8A		Set DS1-2, DS1-3, DS1-4 and DS2-2 to ON.
RXQ10A		Set DS1-2, DS1-3, DS1-4, DS2-1 and DS2-2 to ON.
RXQ12A		Set DS1-2, DS1-3, DS1-4 and DS2-3 to ON.
RXQ14A		Set DS1-2, DS1-3, DS1-4, DS2-1 and DS2-3 to ON.
RXQ16/18A		Set DS1-2, DS1-3, DS1-4, DS2-2 and DS2-3 to ON.
RXQ20A		Set DS1-2, DS1-3, DS1-4 and DS2-4 to ON.

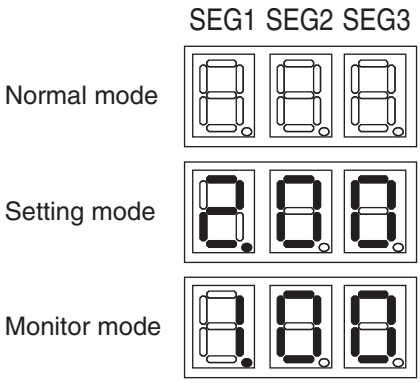
2.3 Settings by BS Buttons

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

BS buttons

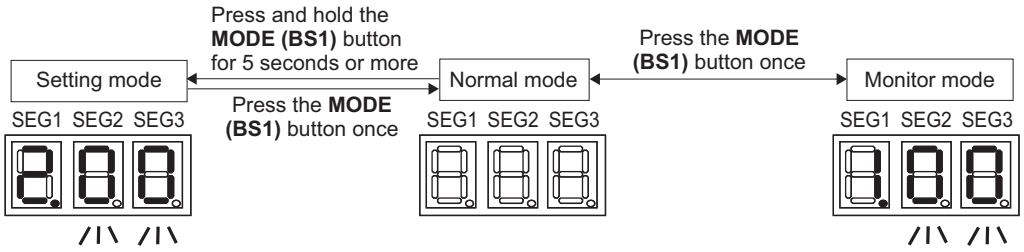


7 segment display (SEG1-3)

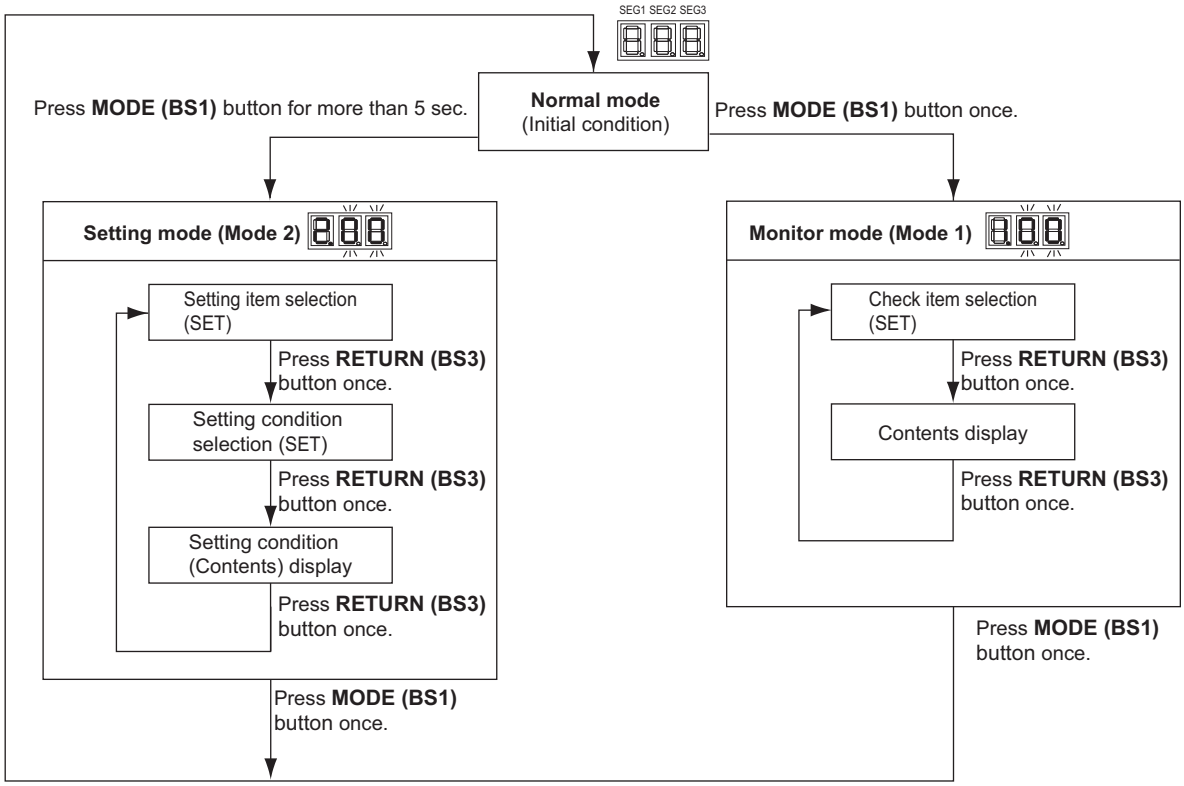


- Normal mode:
  - Blank: If no abnormality is detected and initialization of communication was completed.
  - Flashing combination of letter and number (4 digits): Error code detected by outdoor control or trouble by communication.
- Setting mode: Used to make changes to operating status, performance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

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

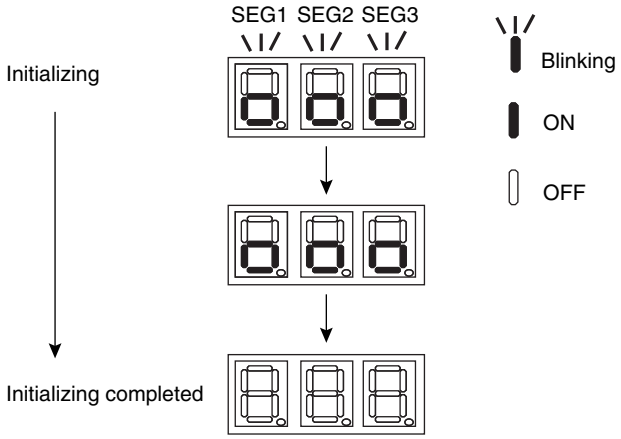


■ Selection between normal mode, monitor mode (Mode 1) and setting mode (Mode 2).

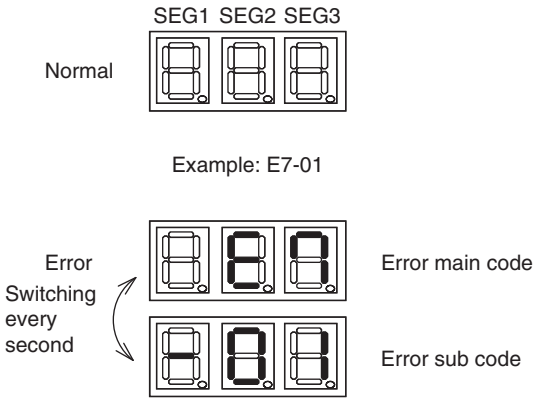


2.4 Normal Mode

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



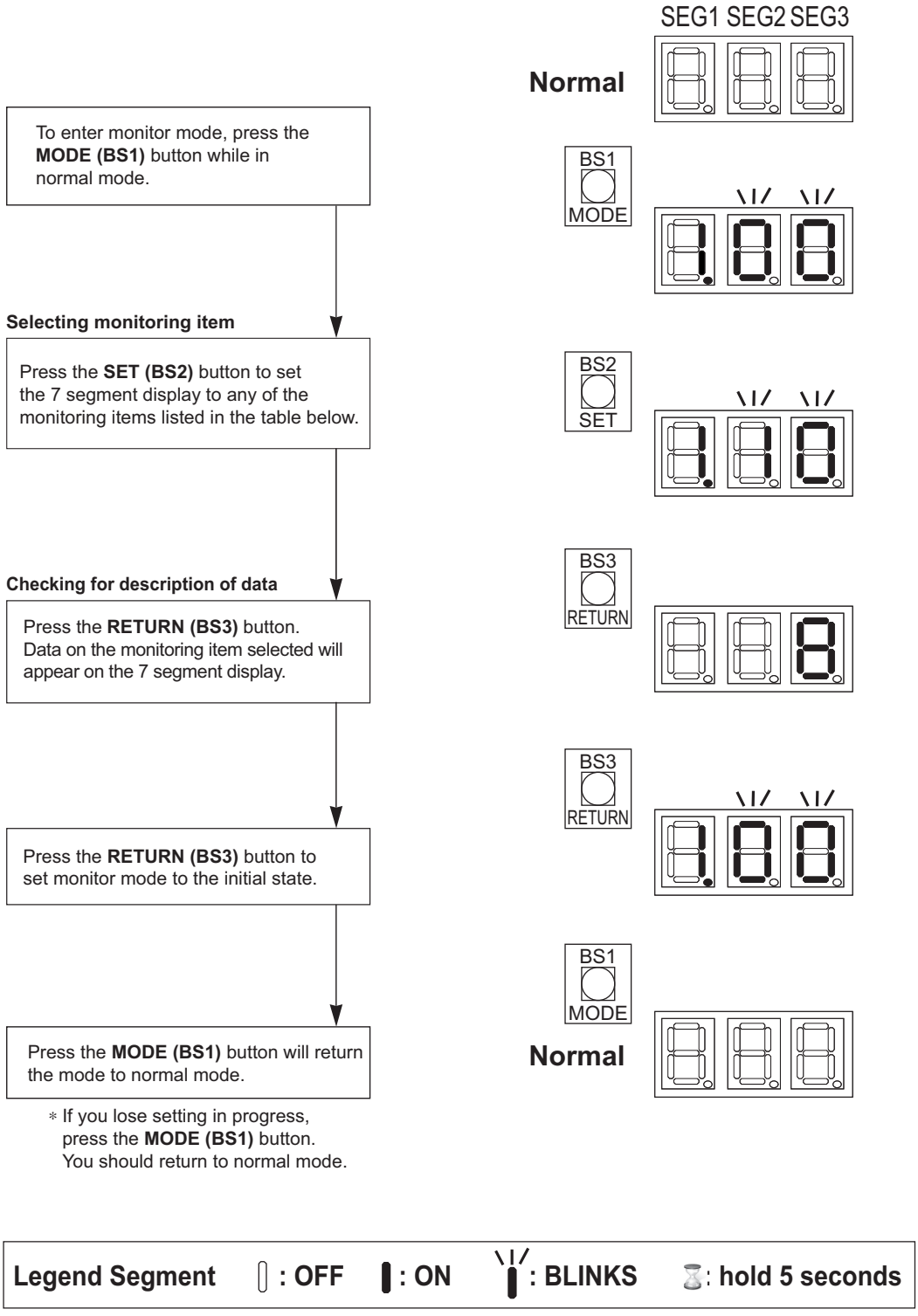
2. Descriptions: Used to display an error content.



2.5 Monitor Mode (Mode 1)

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

2.5.1 Retrieve data by using BS button outdoor unit main PCB



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

2.5.2 Overview of Monitor Mode (Mode 1)

No. ∗1	Item				Contents			
	Description	Display			Description	Display		
		SEG 1	SEG 2	SEG 3		SEG 1	SEG 2	SEG 3
0	Master/slave outdoor unit	1.	0	0	Undefined Master unit Slave 1 unit Slave 2 unit			- 0 1 2
1	Low noise operation state display	1.	0	1	In normal operation In low noise operation			0 1
2	Demand operation state display	1.	0	2	In normal operation In demand operation			0 1
3	Automatic backup operation setting	1.	0	3	OFF ON			0 1
5	Te setting	1.	0	5	Normal 6°C High sensible 7°C High sensible 8°C High sensible 9°C High sensible 10°C High sensible 11°C			2 3 4 5 6 7
8	Low noise/demand address	1.	0	8	Possible 0-31		3	0 1
9	AIRNET address	1.	0	9	Possible 0-63		6	0 3
10	Number of connected indoor units (refer to ∗2)	1.	1	0	Possible 0-63		6	0 3
13	Number of outdoor units (refer to ∗3)	1.	1	3	Possible 0-63		6	0 3
15	Number of units in zone	1.	1	5	Possible 0-63		6	0 3
16	Number of all indoor units of several systems if “F1F2 OUT/D is wired between systems (refer to ∗4)	1.	1	6	Possible 0-128	1	2	0 8
17	Description of error (latest)	1.	1	7	Refer to information in **Check for Descriptions of Errors/Retries** on page 138.			
18	Description of error (1 cycle before)	1.	1	8				
19	Description of error (2 cycles before)	1.	1	9				

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

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

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

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

No. *1	Item				Contents			
	Description	Display			Description	Display		
		SEG 1	SEG 2	SEG 3		SEG 1	SEG 2	SEG 3
23	Description of retry (latest)	1.	2	3	Refer to information in **Check for Descriptions of Errors/Retries** on page 138.			
24	Description of retry (1 cycle before)	1.	2	4				
25	Description of retry (2 cycles before)	1.	2	5				
28	Number of outdoor units connected in a multi system	1.	2	8	Possible 0-63		6	03
32	Outdoor unit PCB status judgment	1.	3	2	0: judgment in process 1: normal 2: abnormal			012
33	Number of abnormal status judgment outdoor unit PCB	1.	3	3	Possible 0-15		1	05
40	Cooling comfort setting (see mode 2-81)	1.	4	0	Possible 0-3			03
42	High pressure (MPa)	1.	4	2	Possible 0.1-9.99	0. 9.	1 9	0 9
43	Low pressure (MPa)	1.	4	3	Possible 0.1-9.99	0. 9.	1 9	0 9
44	Compressor total frequency (Hz)	1.	4	4	0-999	0 9	0 9	0 9
46	Discharge pipe temperature (°C) (Tdi1)	1.	4	6	–99-999	- 9	9 9	9 9
47	Discharge pipe temperature (°C) (Tdi2)	1.	4	7	–99-999	- 9	9 9	9 9
48	Compressor body temperature (°C) (Ti1)	1.	4	8	–99-999	- 9	9 9	9 9
49	Compressor body temperature (°C) (Ti2)	1.	4	9	–99-999	- 9	9 9	9 9
50	Outdoor air temperature (°C) (Ta)	1.	5	0	–99-999	- 9	9 9	9 9
51	Compressor suction temperature (°C) (Ts)	1.	5	1	–99-999	- 9	9 9	9 9
52	Subcooling heat exchanger gas pipe temperature (°C) (Tsh)	1.	5	2	–99-999	- 9	9 9	9 9
54	Compressor operation (hours/100)	1.	5	4	0-999	0 9	0 9	0 9

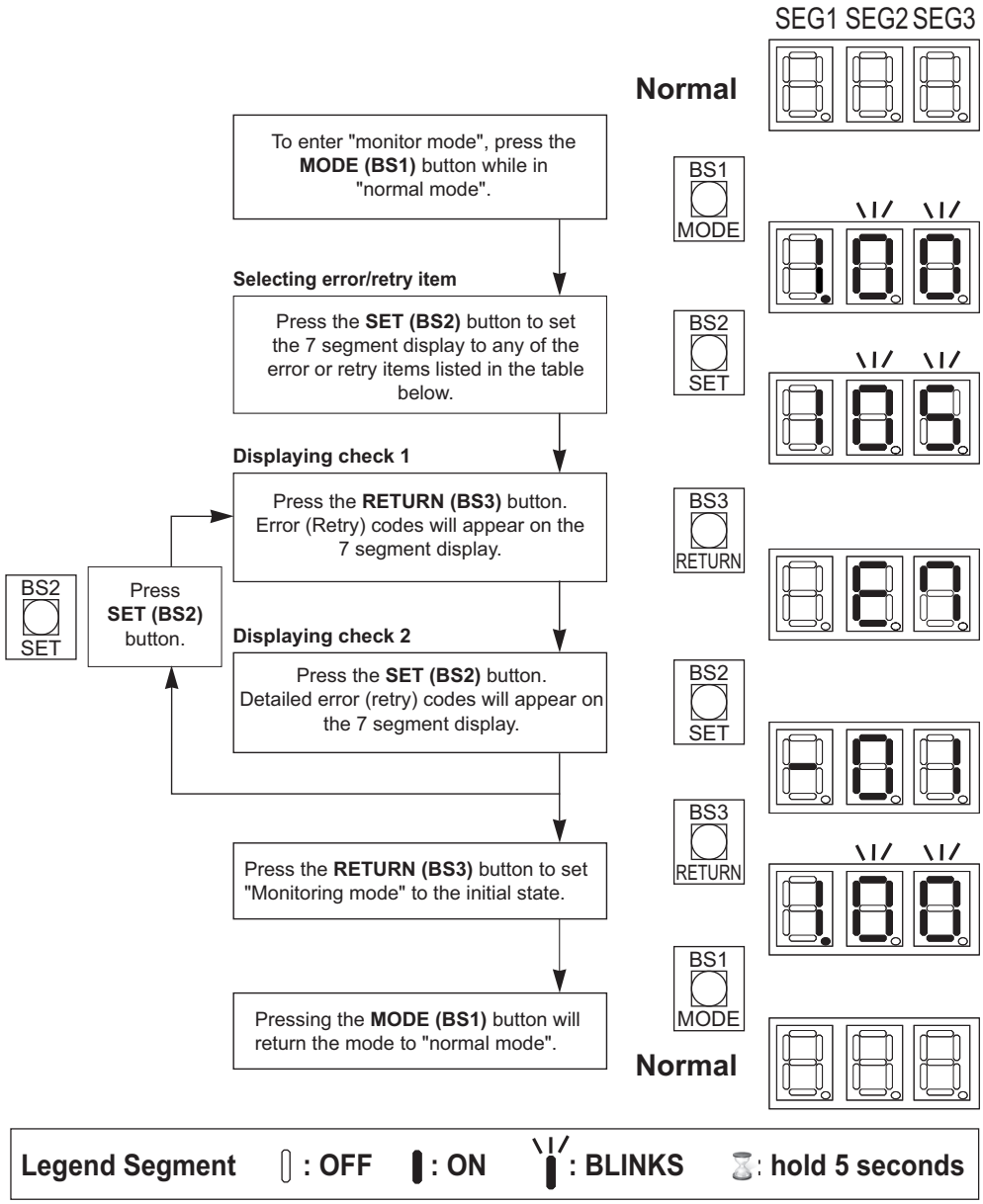
*1: Numbers in the "No." column represent the number of times to press the BS button.

2.5.3 Check for Descriptions of Errors/Retries

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

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

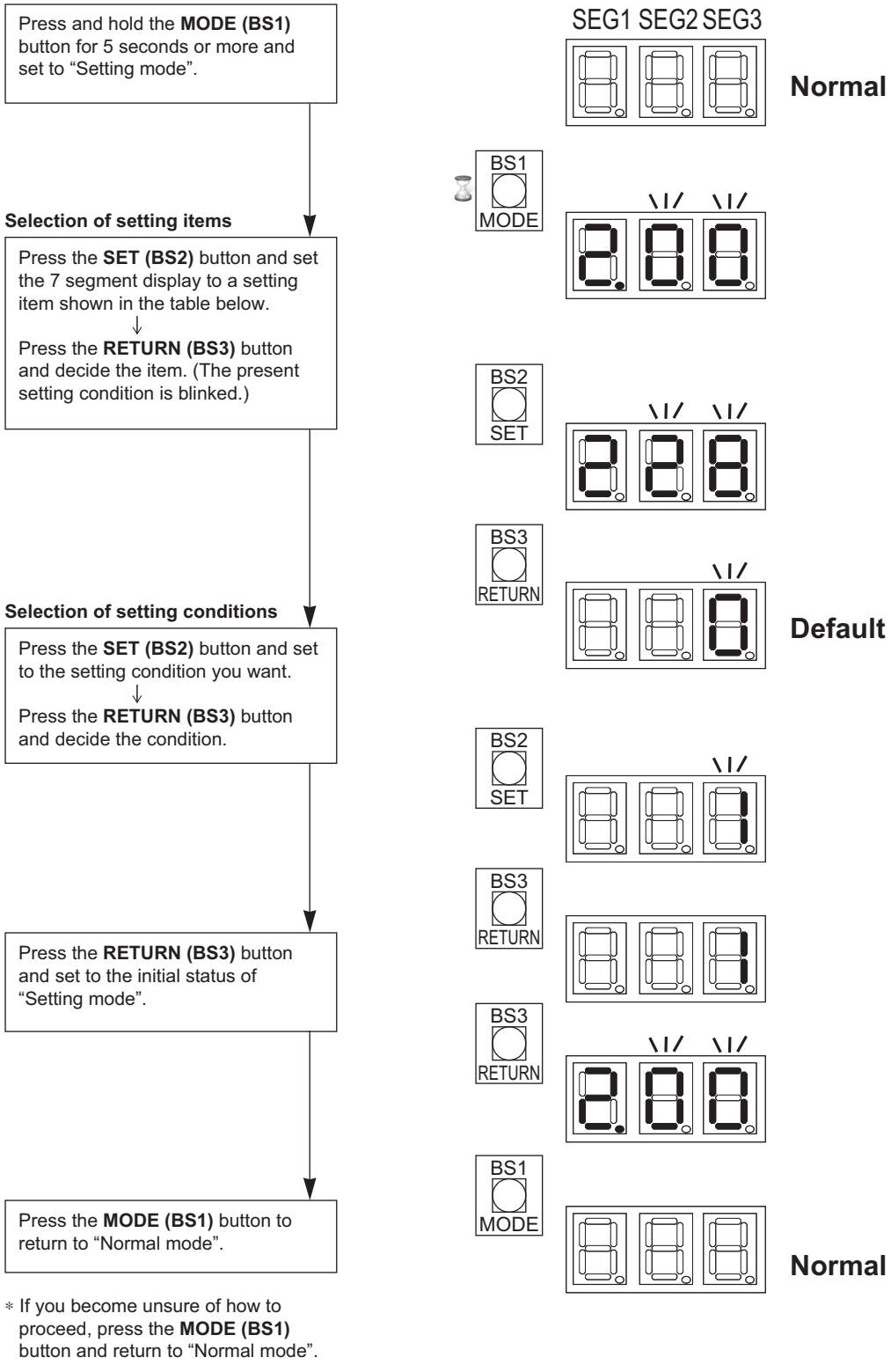
- 17, 18, 19: description of error (outdoor system stopped operation).
- 23, 24, 25: description of retry.



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

Reference Refer to page 171 for **Error Codes and Descriptions**.

2.6 Setting Mode (Mode 2)



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

2.6.1 Overview of Setting Mode (Mode 2)

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

No.	Item		Display			Contents	Display		
	Description		SEG 1	SEG 2	SEG 3	Description	SEG 1	SEG 2	SEG 3
0	Do not change contents.		2.	0	0	—	—	—	—
1	Do not change contents.		2.	0	1	—	—	—	—
2	Low noise/ demand address	Used to make address setting for low noise/demand address.	2.	0	2	Address: **0** ~ 31		3	0 1
3	Do not change contents.		2.	0	3	—	—	—	—
4	Do not change contents.		2.	0	4	—	—	—	—
5	Indoor fan forced H	Used to force the fan of indoor unit to H tap.	2.	0	5	**Normal operation** Indoor fan H			0 1
6	Forced thermostat ON	Used to force all indoor units to operate forced thermostat ON.	2.	0	6	**Normal operation** Forced thermostat ON			0 1
7	Do not change contents.		2.	0	7	—	—	—	—
8	Te setting	Used to make setting of targeted evaporating temperature for cooling operation.	2.	0	8	**Standard: 6°C** High sensible: 7°C High sensible: 8°C High sensible: 9°C High sensible: 10°C High sensible: 11°C			2 3 4 5 6 7
9	Do not change contents.		2.	0	9	—	—	—	—
10	Do not change contents.		2.	1	0	—	—	—	—
11	Eco setting is available from an external input. When this configuration is set, it is not possible to turn the Eco refrigerant control ON/OFF using the remote controller. Also, depending on the settings, low noise operation or demand operation may not be performed using the external control adaptor.		2.	1	1	**Unavailable** Low noise level input Demand input			0 1 2
12	External low noise/demand setting	Used to receive external low noise or demand signal.	2.	1	2	Input LNO/DE **OFF** ON			0 1
13	AIRNET address	Used to set address of AIRNET	2.	1	3	Address: **0** ~ 63		6	0 3
15	Do not change contents.		2.	1	5	—	—	—	—
16	Do not change contents.		2.	1	6	—	—	—	—
17	Do not change contents.		2.	1	7	—	—	—	—
18	High EST for outdoor fan	High external static pressure setting for outdoor fan	2.	1	8	**OFF** ON			0 1
19	Do not change contents.		2.	1	9	—	—	—	—
21	Refrigerant recovery/ vacuuming	Used to set the system to refrigerant recovery mode (without compressor run).	2.	2	1	Refrigerant recovery **OFF** ON			0 1
22	Automatic night-time low noise operation	Automatic night-time low noise operation. Time for the operation is subject to the start and end time settings.	2.	2	2	**OFF** Level 1 Level 2 Level 3 Level 4			0 1 2 3 4
23	Used to set Eco mode invalid. When this configuration is set, it is not possible to turn the Eco mode ON/OFF using the external control adaptor.		2.	2	3	**Valid** Invalid			0 1
24	Do not change contents.		2.	2	4	—	—	—	—

No.	Item					Contents			
	Description		Display			Description	Display		
			SEG 1	SEG 2	SEG 3		SEG 1	SEG 2	SEG 3
25	External night-time low noise operation level	Low noise level when the external low noise signal is input at option DTA104A61.	2.	2	5	Level 1 **Level 2** Level 3 Level 4			1 2 3 4
26	Automatic night-time low noise operation start	Time to start automatic “night-time low noise” operation. (“Night-time low noise” level setting should also be made.)	2.	2	6	About 8:00 PM **About 10:00 PM** About 12:00 AM			1 2 3
27	Automatic night-time low noise operation stop	Time to stop automatic “night-time low noise” operation. (“Night-time low noise” level setting should also be made.)	2.	2	7	About 6:00 AM About 7:00 AM **About 8:00 AM**			1 2 3
28	Power transistor check	Used to troubleshoot DC compressor. Inverter waveforms are output without wire connections to the compressor. It is useful to determine whether the relevant trouble has resulted from the compressor or inverter PCB.	2.	2	8	**OFF** ON (10 Hz)			0 1
29	Capacity priority	Cancel the low noise level control if capacity is required while low noise operation or night-time low noise operation is in progress.	2.	2	9	**OFF** ON			0 1
30	Demand 1 setting	Used to make a change to the targeted power consumption level when the demand 1 control signal is inputted.	2.	3	0	Level 1 (60%) Level 2 (65%) **Level 3 (70%)** Level 4 (75%) Level 5 (80%) Level 6 (85%) Level 7 (90%) Level 8 (95%)			1 2 3 4 5 6 7 8
31	Demand 2 setting	Used to use a targeted power current level when the demand 2 control signal is inputted.	2.	3	1	**Level 1 (40%)** Level 2 (50%) Level 3 (55%)			1 2 3
32	Constant demand setting	Used to set constant demand 1 or 2 control without inputting any external signal.	2.	3	2	**OFF** Demand 1 (2-30) Demand 2 (2-31)			0 1 2
33	Do not change contents.		2.	3	3	—	—	—	—
34	Do not change contents.		2.	3	4	—	—	—	—
35	Do not change contents.		2.	3	5	—	—	—	—
36	Do not change contents.		2.	3	6	—	—	—	—
37	Do not change contents.		2.	3	7	—	—	—	—
38	Emergency operation (master)	To prohibit a compressor or complete in “Master”. Since module is permanent disabled, immediately replace the defective component(s).	2.	3	8	**OFF** Master M1C OFF Master M2C OFF Master unit OFF			0 1 2 3
39	Emergency operation (slave 1)	To prohibit a compressor or complete “Slave 1”. Since module is permanent disabled, immediately replace the defective component(s).	2.	3	9	**OFF** Slave 1 M1C OFF Slave 1 M2C OFF Slave 1 unit OFF			0 1 2 3
40	Emergency operation (slave 2)	To prohibit a compressor or complete “Slave 2”. Since module is permanent disabled, immediately replace the defective component(s).	2.	4	0	**OFF** Slave 2 M1C OFF Slave 2 M2C OFF Slave 2 unit OFF			0 1 2 3

No.	Item		Display			Contents	Display		
	Description		SEG 1	SEG 2	SEG 3	Description	SEG 1	SEG 2	SEG 3
41	Do not change contents.		2.	4	1	—	—	—	—
42	Do not change contents.		2.	4	2	—	—	—	—
43	Do not change contents.		2.	4	3	—	—	—	—
44	Do not change contents.		2.	4	4	—	—	—	—
45	Do not change contents.		2.	4	5	—	—	—	—
46	Do not change contents.		2.	4	6	—	—	—	—
47	Do not change contents.		2.	4	7	—	—	—	—
48	Do not change contents.		2.	4	8	—	—	—	—
49	Outdoor > 50 m above indoor	Height difference setting max. 90 m.	2.	4	9	**OFF (max. 50 m)** ON (max. 90 m)			0 1
50	Do not change contents.		2.	5	0	—	—	—	—
51	Sequence multi outdoor	Sequence addressing between master and slave units.	2.	5	1	**Automatic** Forced master Forded slave 1 Forced slave 2			0 1 2 3
76	VRTsmart control Te upper limit	Used to change upper limit of target evaporation temperature in VRTsmart control.	2.	7	6	Low 1 Low 2 Low 3 Low 4 Low 5 Low 6 **Standard** High			0 1 2 3 4 5 6 7
78	VRT control Te upper limit	Used to change upper limit of target evaporation temperature in VRT control.	2.	7	8	Standard **High**			4 6
81	Cooling comfort setting	Cooling comfort setting	2.	8	1	ECO **Mild** Quick Powerful			0 1 2 3
82	Do not change contents.		2.	8	2	—	—	—	—
83	Master remote control setting when mix combination		2.	8	3	VRV indoor **RA indoor**	—	—	0 1
84	Do not change contents.		2.	8	4	—	—	—	—
85	Do not change contents.		2.	8	5	—	—	—	—
86	Do not change contents.		2.	8	6	—	—	—	—
87	Do not change contents.		2.	8	7	—	—	—	—
89	Do not change contents.		2.	8	9	—	—	—	—
90	Indoor unit without power	Possible for operate system when some indoor units are temporary without power supply.	2.	9	0	**Disabled** Enabled			0 1
95	Eco level setting for VRTsmart		2.	9	5	**Standard** Middle High			0 1 2

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

∗ : Once function is activated "t0 1" appears. To stop current function, press **Return (BS3)** button once.

For detailed description about each setting, refer to **Details of Setting Mode (m2)** on page 143.

Indication **bold** means factory setting.

2.6.2 Details of Setting Mode (m2)

- m2-2: **Low noise/demand address**: address for low noise/demand operation.
  - 1 or more systems (maximum 10 systems wired by “F1F2 OUT/D”) can operate use the LNO (Low Noise Operation) or/and the DE (Demand Control) by instruction of field supplied input to optional board DTA104A61/62.
  - To link the system to the corresponding DTA104A61/62, set the address same as the DIP switches position on the related optional board DTA104A61/62.
  - Ensure that also field setting 2-12-1 is set to enable input from optional board DTA104A61/62.

- m2-5: **Cross wiring check.**
  - Default value: 0. Not active.
  - Set 1: force all connected indoor units (except VKM) to operate the indoor fan on high speed. This setting can be made to check which units are missing in the communication if the number of indoor units do not correspond to the system lay out. Ensure that after cross wiring check was confirmed, to return setting to default 2-5-0. Once setting 2-5-1 is active, it is not automatically returning to default when exit mode 2.

- m2-6: **Forced thermostat ON** command all connected indoor units.
  - Default value: 0. Not active.
  - Set 1: force all connected indoor units to operate under “Test” (forced thermostat ON command to outdoor). Ensure that when the forced thermostat ON needs to be ended, to return setting to default 26-0. Once setting 2-6-1 is active, it is not automatically returning to default when exit mode 2.

- m2-8: **Te target** temperature for cooling operation. Change the setting in function of required operation method during cooling.
  - Default value: 2 (Te target: 6°C). The refrigerant temperature is fixed to average indoor evaporating temperature of 6°C, independent from the situation. It corresponds to the standard operation which is known and can be expected from/under previous *VRV* systems.
  - Set 3-7: **High Sensible.** The refrigerant temperature is set higher/lower in cooling compared to basic operation. The focus under high sensible mode is comfort feeling for the customer. The selection method of indoor units is important and has to be considered as the available capacity is not the same as under basic operation. Activate this setting under cooling operation.

set 2-8	Te target
2	6°C (default)
3	7°C
4	8°C
5	9°C
6	10°C
7	11°C

- m2-12: **Enable input “DTA104A61”**: enable the low noise function and/or power consumption limitation. If the system needs to be running under low noise operation or under power consumption limitation conditions when an external signal is sent to the unit, this setting should be changed. This setting will only be effective when the optional external control adaptor for outdoor unit (DTA104A61/62) is installed and the address set by DIP switches on DTA104A61/62 corresponds to the address set on the outdoor unit(s) – set 2-.
  - Default value: 0.
  - To enable input from DTA104A61/62 change to 2-12-1.

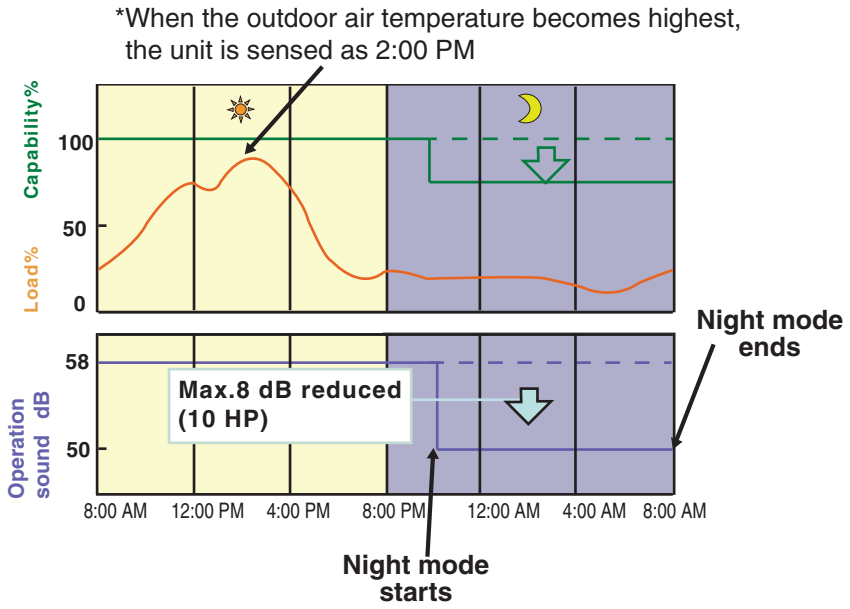
- m2-13: **AIRNET address**.
  - When an AIRNET system will be used, outdoor unit needs an AIRNET address.
  - Also to facilitate the recognition of a system in the map lay out of the service checker type III, set each system a unique address between 1 and 63.
  - When duplicating of AIRNET address, **UC** error code will appear on central control.

- m2-21: **Refrigerant recovery / vacuuming**.
  - Default value: 0. Recovery mode not active.
  - Set 1: outdoor and indoor electronic expansion valves are opened fully (except EV3 for PCM vessel). Compressor(s) do not operate.
    - All controllers show “Test” and LED operation-ON, but indoor and outdoor fan do not operate.
    - Outdoor segment display indicates t01.
    - By opening indoor and outdoor electronic expansion valves there is a free pathway to reclaim remaining refrigerant out by using a refrigerant recovery unit to a refrigerant recovery bottle.
    - Prior to launch the recovery mode, ensure:
      – To vacuum all lines between service hoses – refrigerant recovery unit and recovery bottle.
      – Weight the refrigerant recovery bottle to know recovered amount when refrigerant recovery function is terminated.
  - To end the refrigerant recovery mode, press BS3 button once. The 7 segment display returns to normal (all off).

- m2-22: **Selection automatic night-time low noise operation** level. The outdoor can switch automatically to a pre-set night-time low noise operation level during night time judgement.
  - Default value: 0. Auto night-time low noise operation not active.
  - Set 1: use level 1.
  - Set 2: use level 2.
  - Set 3: use level 3.
  - Set 4: use level 4.
  - Set period: refer to set 2-26 for start time and 2-27 for end time.

- m2-25: Night-time low noise operation level when using external input to optional board DTA104A61/62.
  - If the system needs to be running under low noise operation conditions when an external signal is sent to the unit, this setting defines the level of low noise that will be applied.
  - This setting will only be effective when the optional external control adaptor for outdoor unit DTA104A61/62 is installed and the setting is enabled (mode 2-12-1).
  - When night-time low noise operation is actually performed, conditions if visible in mode 1 – code 1.
  - The night-time low noise operation will not be performed in one of following conditions:
    - Startup of system, or
    - During oil return, or
    - 30 minutes after external input opened, or
    - Capacity priority setting is active (refer to mode 2-29-1) and limit condition is met.
  - Default value: 2 (level 2)
  - Night-time low noise operation level can be selected to 1, 2, 3 or 4 (field setting 2-25-1, 2, 3, 4).

■ m2-26: **Start time automatic night-time low noise** operation. When the auto night-time low noise operation is active (refer to field setting 2-22) outdoor will start when start time is reached time is reached. The time judgement is taken from outdoor air tendency.



- Default value: 2 (10:00 PM)
- Field setting 1: 8:00 PM, 3: 12:00 AM (midnight).

■ m2-27: **Stop time automatic night-time low noise** operation. When the auto night-time low noise operation is active (refer to field setting 2-22), outdoor unit will stop the night-time low noise operation level automatically when stop time is reached.
- Default value: 3 (8:00 AM)
- Field setting 1: 6:00 AM, 2: 7:00 AM

■ m2-28: **Power transistor check** mode. To evaluate the output of the power transistors. Use this function in case error code is displayed related to defective inverter PCB or inverter compressor is locked.
- Default value: 0. Power transistor check mode is not active.
- Field setting 1: Power transistor check mode is active.

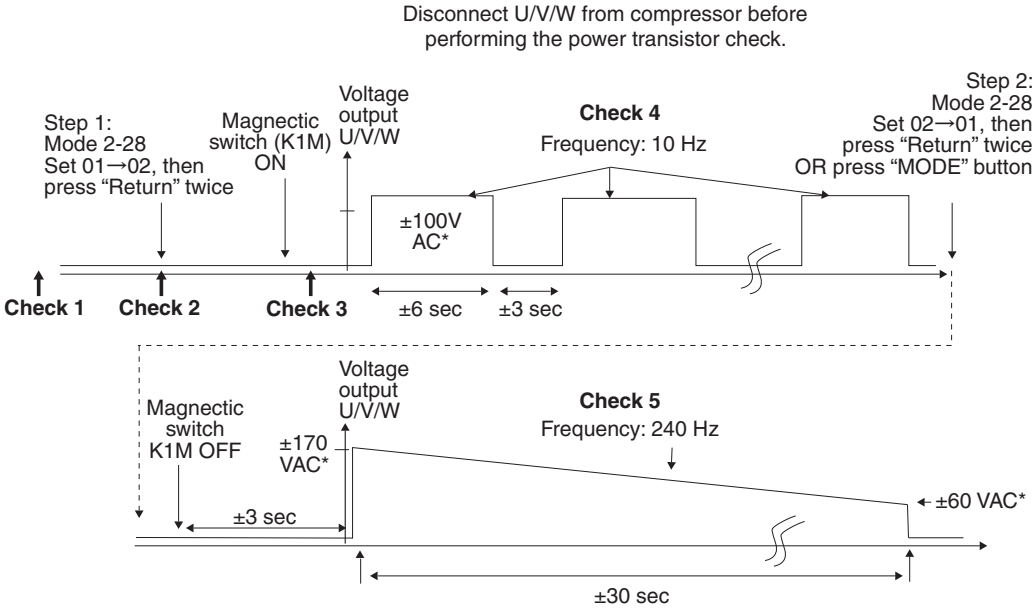
  Function:
  - Inverter PCB gives output of 10 Hz in sequence by all 6 transistors. Remove the U/V/W terminals of the inverter compressor, and connect to the inverter checker module. If all 6 LEDs blink, the transistors switch correctly.
  - When the power transistor check mode is interrupted, after internal power circuit is disconnected on the inverter PCB, 2 LEDs will light up to indicate discharge of the DC voltage.
    Wait until the LEDs are OFF before returning fasten terminals back to the compressor terminals.

  Minimum requirements to refer to the result on the inverter checker module:
  - All 3 phases and neutral are available, and
  - Inverter PCB control is active. Check if the green LED “HAP” on the inverter PCBs are blinking normal (approx. 1/ second). If LEDs are OFF, need to exit the “standby mode” of the inverter:
  - Disconnect and reconnect power supply control PCB, or
  - Forced thermostat ON condition, or
  - Make shortly set 2-6-1 (forced thermostat ON indoor), or
  - 2-20-1 (manual refrigerant charge).
  - Once the LED is blinking on the inverter PCB, change related setting immediately back to set 0 to deactivate related function.
  - Diode module generates the required 500 VDC.

  Cautions:

- In case there is more than 1 compressor in a system (outdoor is 14 HP or larger, or multi outdoor configuration) all compressor inverter PCBs will perform the power transistor check. In such case, disconnect U/V/W fasten terminals on all compressors. Avoid accidental touch of fasten terminals to short-circuit or earth leak to casing.
- To stop the power transistor check mode, change setting to default 2-28-0.
- Output to U/V/W will also stop when outdoor unit main PCB decides standby mode of inverter circuit.

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

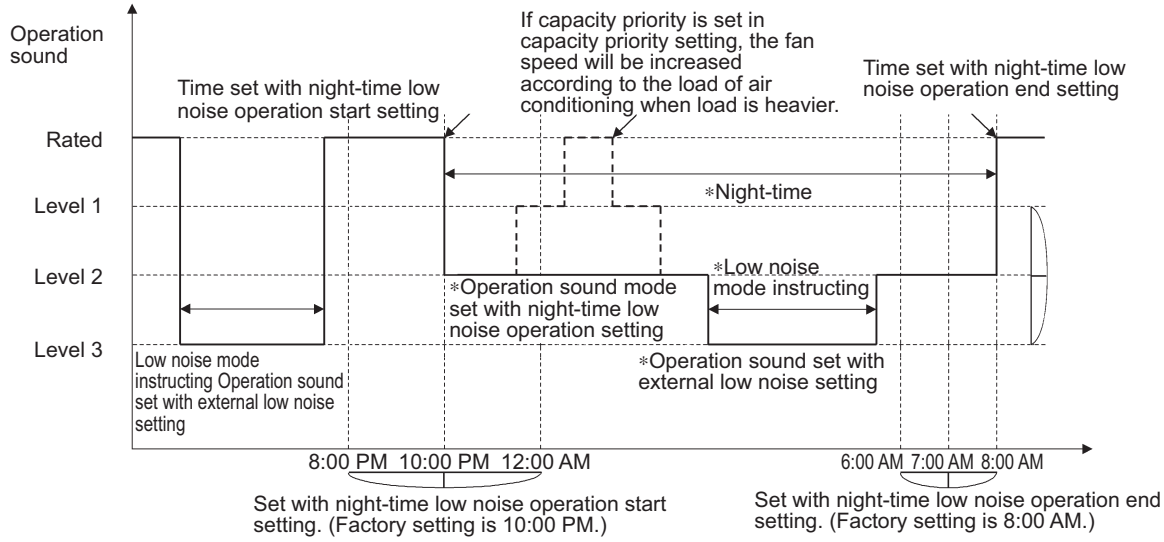


Check 1 : AC power input (connector X10A on A2P: inverter compressor) 380-415 V unbalance max. 2%.
Check 2 : relay "K1M" on inverter PCB switches: check DC voltage on P&N increase to ±500 VDC.
Check 3 : DC = 1.42 x VAC power supply L1-L3: check at connector X3A (8-12 HP), or X5A, X6A (14-20 HP).
Check 4 : AC U/V/W 10 Hz intermediate: check difference within 10 V (at fasten U/V/W)
Check 5 : AC U/V/W 240 Hz continuous output while voltage drop (discharge capacitors DC) check difference between U/V/W within 10 V. 2 LEDs (V phase) brightness reduce until OFF.

*Note: Actual voltage value depends on meter characteristics

- m2-29: **Capacity priority**. When the night-time low noise operation is in use, performance of system might drop because airflow rate of outdoor unit is reduced.
  - Default value: 0. Capacity priority cannot be used.
  - Field setting 1: capacity priority can temporary cancel the night-time low noise operation. Capacity priority can be initiated when certain operation parameters approach the safety setting:
    - Raise in high pressure during cooling.
    - Raise of discharge pipe temperature.
    - Raise of inverter current.
    - Raise of fin temperature inverter PCB.

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



- m2-30: **Power consumption limitation level 1**. If the system needs to be running under power consumption limitation conditions via the external control adaptor for outdoor unit DTA104A61/62. This setting defines the level power consumption limitation that will be applied for level 1. The level is according the table.
  - Default: 3 (70%)
  - Field setting:

set 2-30	current limit set (%)
1	60
2	65
3★	**70 (default)★**
4	75
5	80
6	85
7	90
8	95

- m2-31: **Power consumption limitation level 2**. If the system needs to be running under power consumption limitation conditions via the external control adaptor for outdoor unit DTA104A61/62. This setting defines the level power consumption limitation that will be applied for level 2. The level is according the table.
  - Default: 1 (40%)
  - Field setting:

set 2-31	current limit set (%)
1★	**40 (default)★**
2	50
3	55

- m2-38: **Emergency operation "Master"**. To disable permanent compressor operation: in case of single module or "Master" unit of a multi outdoor system, this setting allows:
  - Default value: 0. Compressor operation enabled.
  - Field setting:
    - Set 1: inverter 1 compressor is disabled.
    - Set 2: inverter 2 compressor is disabled. Only to make in case of 16-20 HP. Note that compressor 2 is left side located.
    - Set 3: all compressors in this master module are disabled permanent.

- m2-39: **Emergency operation "Slave 1"**. To disable permanent compressor operation of "Slave 1" unit of a multi outdoor system:
  - Default value: 0. Compressor operation enabled.
  - Field set:
    - Set 1: Inverter 1 compressor is disabled.
    - Set 2: Inverter 2 compressor is disabled. Only to make in case of 16-20 HP. Note that compressor 2 is left side located.
    - Set 3: All compressors in this master module are disabled permanent.

- m2-40: **Emergency operation "Slave 2"**. To disable permanent compressor operation of "Slave 2" unit of a multi outdoor system:
  - Default value: 0. Compressor operation enabled.
  - Field setting:
    - Set 1: Inverter 1 compressor is disabled.
    - Set 2: Inverter 2 compressor is disabled. Only to make in case of 16-20 HP. Note that compressor 2 is left side located.
    - Set 3: All compressors in this master module are disabled permanent.

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

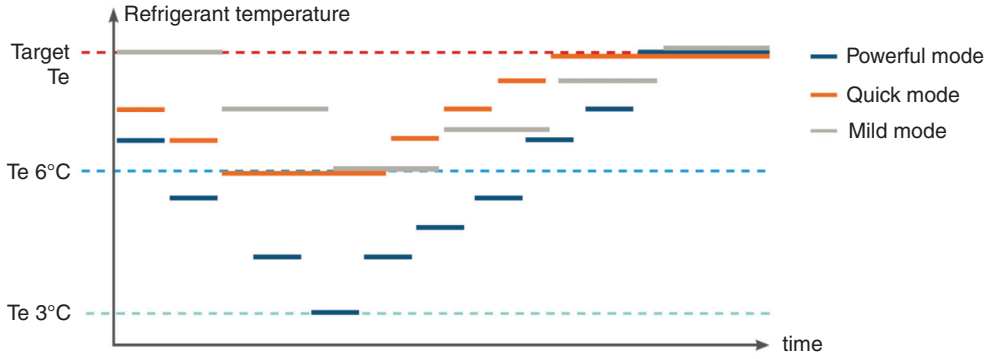
disable	Master/ individual	Slave 1	Slave 2
compressor 1	2-38-1	2-39-1	2-40-1
compressor 2	2-38-2	2-39-2	2-40-2
module	2-38-3	2-39-3	2-40-3

- m2-51: **Master/Slave setting Multi**. When 2 or 3 modules are installed as a multi-outdoor (by common refrigerant piping and wiring by terminals Q1Q2) configuration is automatically detected. In certain cases, the sequence of the slave units need to be set manually (in case of AIRNET monitoring).
  - Default value: 0. Automatic detection.
  - Field setting: ensure that the modules in a multi are set different status. Even some modules in a multi are set manually to same status, U7 error will appear.
    - 1: Forced Master (F1F2/Ind terminals should be connected to indoor units).
    - 2: Forced Slave 1 (only Q1Q2 terminals should be wired to Master module).
    - 3: Forced Slave 2 (only Q1Q2 terminals should be wired to Master module).

- m2-81: **Cooling comfort setting**. The comfort level is related to the timing and the effort (power consumption) which is put in achieving a certain room temperature by changing temporally the refrigerant temperature to different values in order to achieve requested conditions more quickly.
  - Default value: 1 (Mild). Undershoot during cooling operation is allowed compared to the requested refrigerant temperature, in order to achieve the required room temperature very fast. The undershoot is not allowed from the startup moment. The startup occurs under the condition which is defined by the operation mode. In case of cooling operation the evaporating temperature is allowed to go down to 6°C on temporary base depending on the situation. When the request from the indoor units becomes more moderate, the system will eventually go to the steady state condition which is defined by the operation method above. The startup condition is different from the powerful and quick comfort setting.
  - Field setting:
    - 0: Eco. The original refrigerant temperature target, which is defined by the Te setting (field setting 2-8) in cooling mode, is kept without any correction, unless for protection control.

- 2: Quick. Undershoot during cooling operation is allowed compared to the requested refrigerant temperature, in order to achieve the required room temperature very fast. The overshoot is allowed from the start up moment. In case of cooling operation the evaporating temperature is allowed to go down to 6°C on temporary base depending on the situation. When the request from the indoor units becomes more moderate, the system will eventually go to the steady state condition which is defined by the operation method above.
- 3: Powerful. Undershoot during cooling operation is allowed compared to the requested refrigerant temperature, in order to achieve the required room temperature very fast. The overshoot is allowed from the start up moment. In case of cooling operation the evaporating temperature is allowed to go down to 3°C on temporary base depending on the situation. This setting is used in conjunction with setting 2-8.

- The graph below shows the different patterns of target Te according to setting 2-81 “cooling comfort setting”



■ m2-90: **Indoor unit without power** U4 error generation. In case an indoor unit needs maintenance or repair on the electric side, it is possible to keep the rest of the *VRV* DX indoor units operating without power supply to some indoor unit(s).

- Default value: 0. Not active.
- Field setting 1: Possible to operate system when some indoor units are temporary without power supply. The following conditions must be fulfilled:
  - Maximum equivalent piping length of the farthest indoor less than 120 m.
  - Index indoor units power simultaneously less than 30% of the nominal outdoor.
  - Total capacity is less than 30% of the nominal one of the outdoor unit.
  - Operation time is limited to 24 hours period.
  - It is recommended to shut down connected indoor units at the same floor.
  - Not possible to use service mode operation (e.g. recovery mode).
  - Backup operation has priority over this special feature.
  - Not possible to use when the indoor unit electronic expansion valve is defective.
  - Not possible to use with systems that include BP units.
  - It is necessary to wait for 10 min. before shutting down the connected indoor units after indoor units operation is stopped.

2.7 Eco Mode Setting

By connecting an external contact input in the input of mode configuration and external control adaptor (sold separately), you may control Eco mode setting, limiting compressor operation load and power consumption.

When Eco mode is set as unavailable (Outdoor unit external control adaptor is unnecessary)

Eco mode control is unavailable during cooling operation.

When the Eco level of Eco mode control is set as Standard/Low or Eco mode control is set as unavailable by external control adaptor

Setting description			Setting mode	
Item	Condition	Description	External control adaptor	Outdoor unit PCB
Eco level	Standard	Eco level set as **Standard** by low noise level	Short-circuit the low noise level terminal in the terminal TeS1	Set mode 2-11 to **Eco setting by low noise level input**
		Eco level set as **Standard** by demand control	Short-circuit the demand input terminal 3 – C in the terminal TeS1	Set mode 2-11 to **Eco setting by demand input**
	Low	Eco level set as **Low** by demand control	Short-circuit the demand input terminal 2 – C in the terminal TeS1	
Eco control unavailable		Eco control set as unavailable by low noise level	Open the low noise level terminal in the terminal TeS1	Set mode 2-11 to **Eco setting by low noise level input**
		Eco control set as unavailable by demand control	Open the demand input terminal in the terminal TeS1	Set mode 2-11 to **Eco setting by demand input**

1. Connect the external control adaptor and short-circuit the input terminal TeS1 if necessary.
2. Set mode 2-11 (External Eco Setting) to **Eco setting by low noise level input or Eco setting by demand input** according to the short-circuited terminal.

About Eco Level Setting

The upper limit of Te (target evaporation temperature) is changed based on the Eco level.

In case of VRTsmart control

VRTsmart control		Mode 2-76: Te upper limit
Eco level	Standard	22°C
	Low	9°C

The lowest temperature between the above and mode 2-76 VRTsmart control Te upper limit is set.

In case of VRT control

VRT control		Mode 2-78: Te upper limit	
		Standard	High
Eco level	Standard	17°C	21°C
	Low	16°C	20°C

The priority of each setting is as follows:

1. Mode 2-23 (Eco Control Unavailable Setting)
2. Mode 2-11 (External Eco Setting) and external control adaptor input
3. Eco mode setting

2.8 Setting of Night-Time Low Noise Operation and Demand Operation

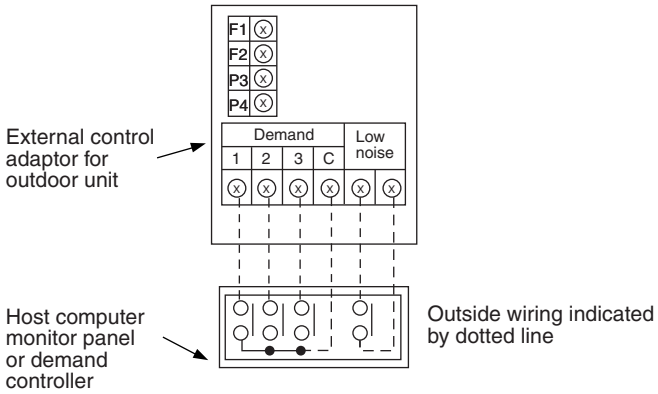
Setting of Night-time Low Noise Operation

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

Setting	Content
Level 1	Set the outdoor fan to Step 7 or lower.
Level 2	Set the outdoor fan to Step 6 or lower.
Level 3	Set the outdoor fan to Step 6 or lower.

A. When night-time low noise operation is carried out by external contact (with the use of the external control adaptor for outdoor unit)

1. Connect external control adaptor for outdoor unit and short circuit terminal of night-time low noise operation (Refer below figure). If carrying out demand or low noise input, connect the adaptor's terminals as shown below. External control adaptor for outdoor unit Host computer Outside wiring indicated monitor panel by dotted line or demand controller



2. While in setting mode 2, set the item 2-12 (External low noise or demand setting) to ON.
3. If necessary, while in setting mode 2, select an external low noise level for the item 2-25.
4. If necessary, while in setting mode 2, set the item 2-29 (Capacity priority setting) to ON. (If the condition is set to ON, when the air conditioning load reaches a high level, the low noise operation command will be ignored to put the system into normal operation mode.)

B. When night-time low noise operation is carried out automatically (External control adaptor for outdoor unit is not required)

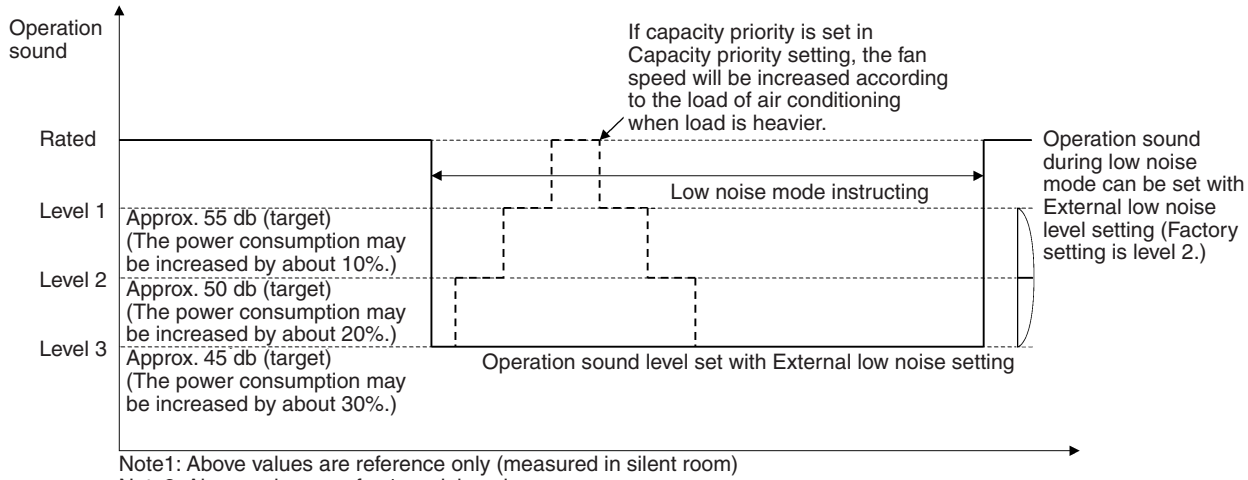
1. While in setting mode 2, select a night-time low noise operation level for the item 2-22.

2. If necessary, while in setting mode 2, select a starting time of night-time low noise operation (i.e., 8:00 PM, 10:00 PM, or 12:00 AM) for the item 2-26. (Use the starting time as a guide since it is estimated according to outdoor temperatures.)

3. If necessary, while in setting mode 2, select an ending time of night-time low noise operation (i.e., 06:00 AM, 07:00 AM, or 08:00 AM) for the item 2-27. (Use the ending time as a guide since it is estimated according to outdoor air temperatures.)

4. If necessary, while in setting mode 2, set the item 2-29 (Capacity priority setting) to ON. (If the condition is set to ON, when the air conditioning load reaches a high level, the system will be put into normal operation mode even during night-time.)

Image of operation in the case of A



Note1: Above values are reference only (measured in silent room)
Note2: Above values are for 1 module only.

Image of operation in the case of B

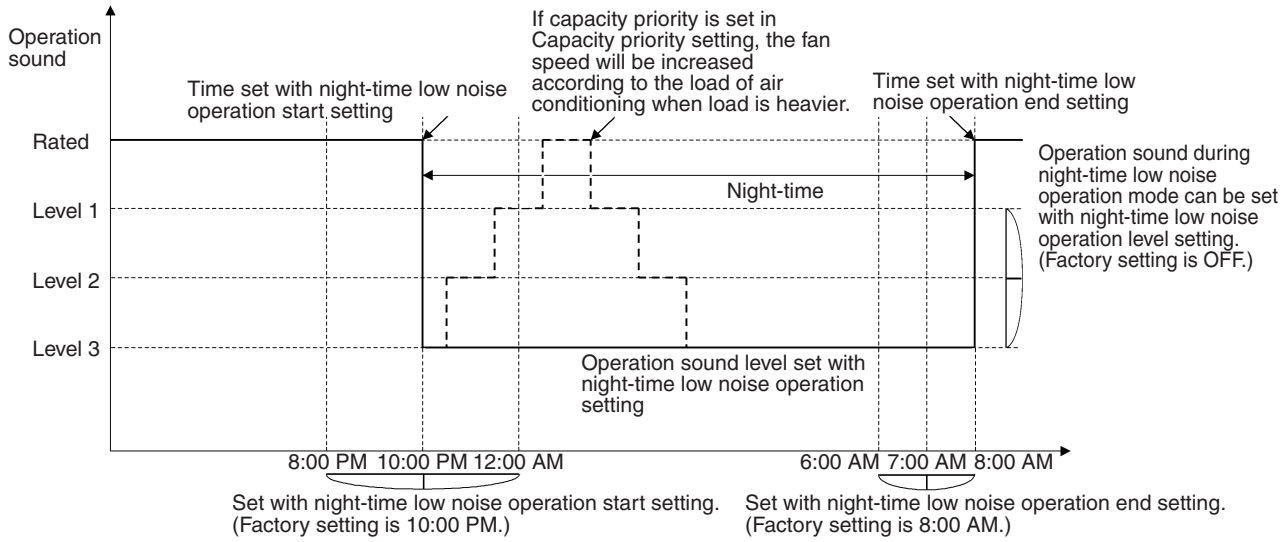
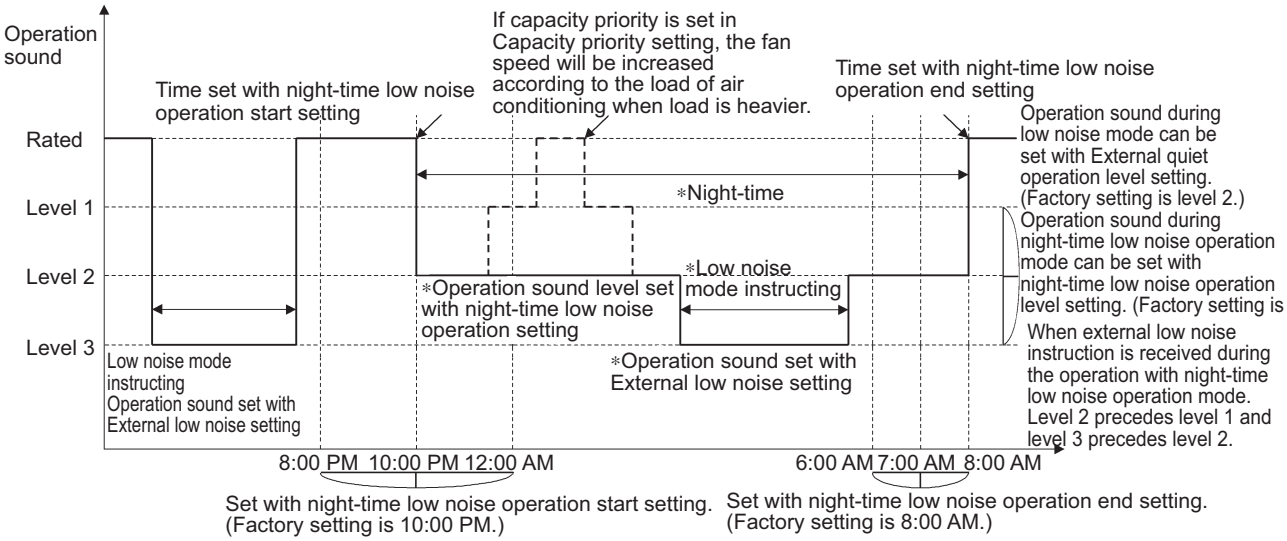


Image of operation in the case of A and B



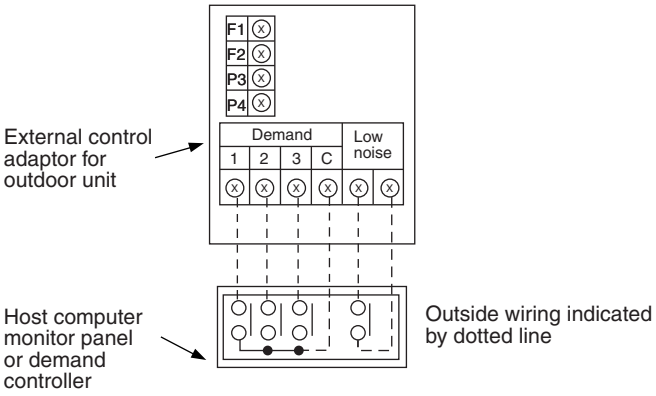
Setting of Demand Operation

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.

Setting content			Setting method	
Set item	Condition	Content	External control adaptor for outdoor unit	Outdoor unit PCB
Demand 1	Level 1	The compressor operates at 60% or less of rating.	Short circuit "1" and "C" on the terminal strip (TeS1).	Set the item 2-32 to Demand 1, and the item 2-30 to Level 1.
	Level 2	The compressor operates at 65% or less of rating.		Set the item 2-32 to Demand 1, and the item 2-30 to Level 2.
	Level 3	The compressor operates at 70% or less of rating.		Set the item 2-32 to Demand 1, and the item 2-30 to Level 3.
	Level 4	The compressor operates at 75% or less of rating.		Set the item 2-32 to Demand 1, and the item 2-30 to Level 4.
	Level 5	The compressor operates at 80% or less of rating.		Set the item 2-32 to Demand 1, and the item 2-30 to Level 5.
	Level 6	The compressor operates at 85% or less of rating.		Set the item 2-32 to Demand 1, and the item 2-30 to Level 6.
	Level 7	The compressor operates at 90% or less of rating.		Set the item 2-32 to Demand 1, and the item 2-30 to Level 7.
	Level 8	The compressor operates at 95% or less of rating.		Set the item 2-32 to Demand 1, and the item 2-30 to Level 8.
Demand 2	Level 1	The compressor operates at 40% or less of rating.	Short circuit "2" and "C".	Set the item 2-32 to Demand 2, and the item 2-31 to Level 1.
	Level 2	The compressor operates at 50% or less of rating.		Set the item 2-32 to Demand 2, and the item 2-31 to Level 2.
	Level 3	The compressor operates at 55% or less of rating.		Set the item 2-32 to Demand 2, and the item 2-31 to Level 3.
Demand 3	—	Forced thermostat OFF	Short circuit "3" and "C".	—

∗: However the demand operation does not occur in the following operation modes.
(1) Startup control
(2) Oil return operation
(3) Pump down residual operation

If carrying out demand or low noise input, connect the adaptor's terminals as shown below.



A. When the demand operation is carried out by external contact (with the use of the external control adaptor for outdoor unit).

1. Connect external control adaptor for outdoor unit and short circuit terminals as required (Refer to the figure above).
2. While in setting mode 2, set the item 2-12 (External low noise or demand setting) to ON.
3. If necessary, while in setting mode 2, select a demand 1 level for the item 2-30.

B. 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, set the item 2-32 (Constant demand setting) to Level 1.
While in setting mode 2, select a demand 1 level for the item 2-30.

Image of operation in the case of A

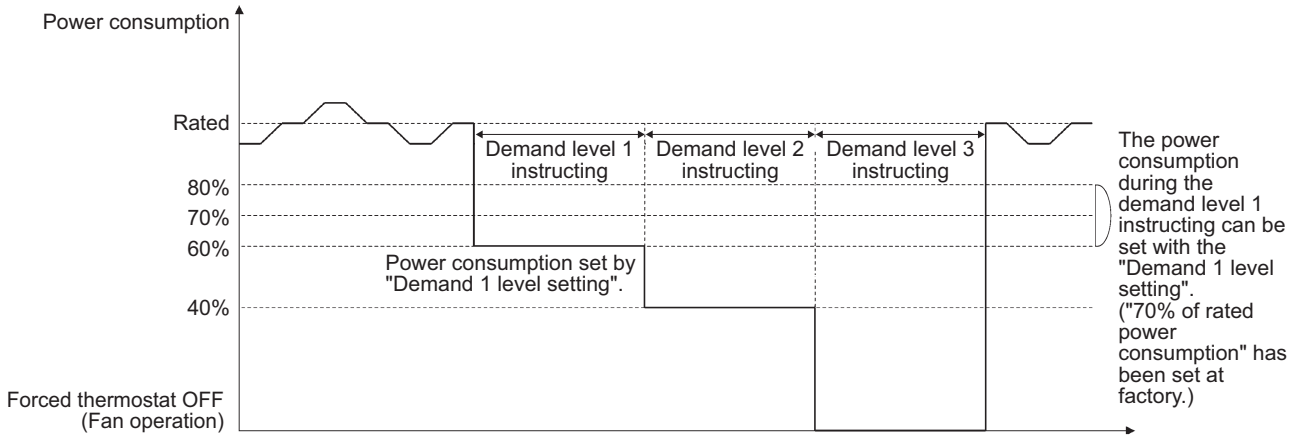


Image of operation in the case of B

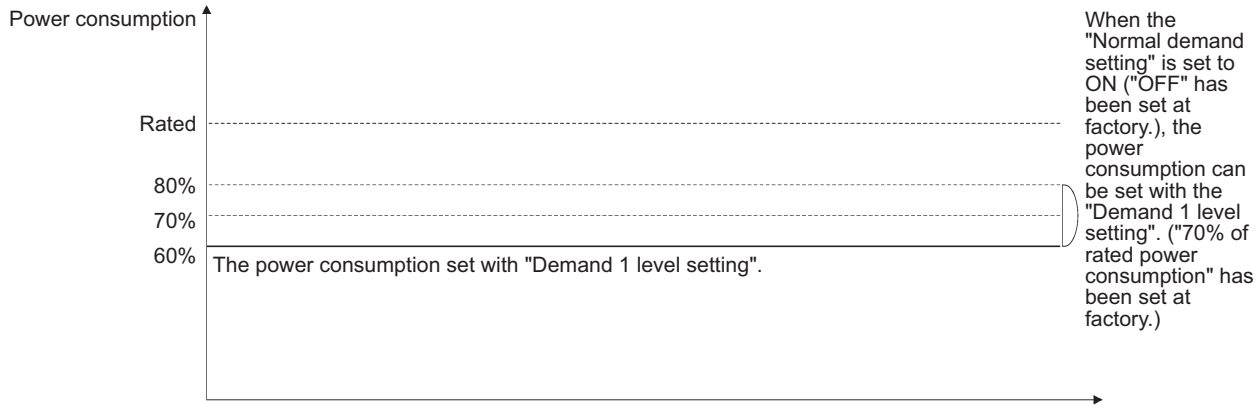
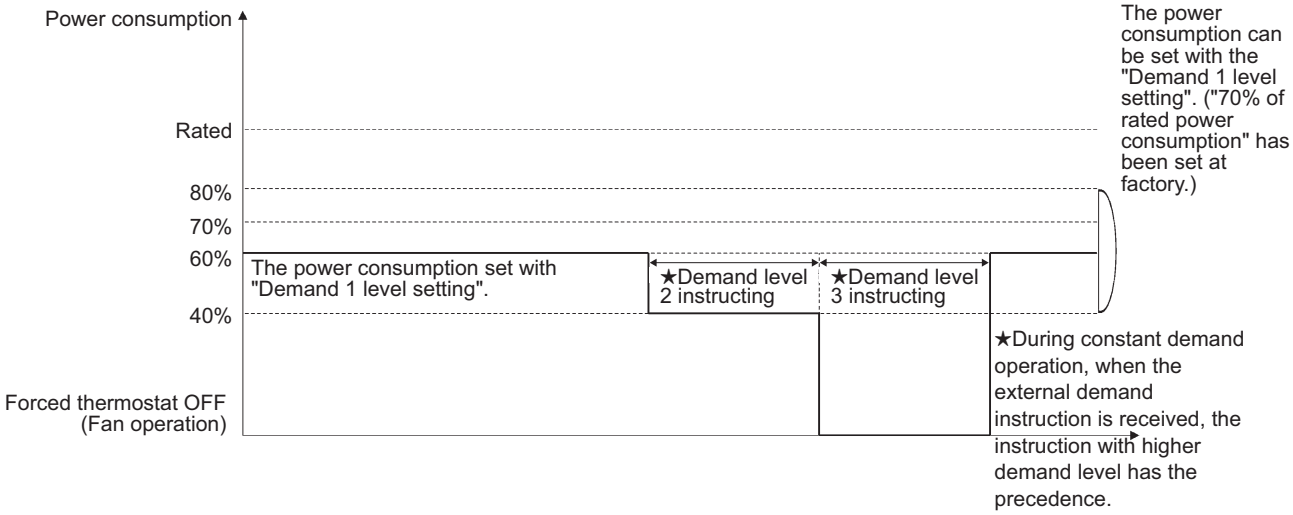


Image of operation in the case of A and B



3. Test Operation

3.1 Checks before Test Operation

Before carrying out a test operation, proceed as follows:

Step	Action
1	Make sure the voltage at the primary side of the safety breaker is: 415 V ± 10% for 3-phase units
2	Fully open the liquid and the gas stop valve.

3.2 Checkpoints

To carry out a test operation, check the following:

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

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

3.3 Test Operation Procedure

The procedure below describes the test operation of the complete system. This operation checks and judges following items:

- Check of wrong wiring (communication check with indoor units).
- Check of the stop valves opening.
- Judgment of piping length.

On top of this system test operation, indoor units operation should also be checked separately.

- Make sure to carry out the system test operation after the first installation. Otherwise, the error code **U3** will be displayed on the user interface and normal operation or individual indoor unit test run cannot be carried out.
- Abnormalities on indoor units cannot be checked for each unit separately. After the test operation is finished, check the indoor units one by one by performing a normal operation using the user interface. Refer to the indoor unit installation manual for more details concerning the individual test run.

INFORMATION

- It may take 10 minutes to achieve a uniform refrigerant state before the compressor starts.
- During the test operation, the refrigerant running sound or the magnetic sound of a solenoid valve may become loud and the display indication may change. These are not malfunctions.

Procedure

1. Close all front panels in order to not let it be the cause of misjudgment (except the electrical component box inspection opening service cover).
2. Make sure all field settings you want are set.
3. Turn ON the power to the outdoor unit and the connected indoor units.

NOTICE

Be sure to turn on the power 6 hours before operation in order to protect the compressor.

4. Make sure the default (idle) situation is existing. Push BS2 for 5 seconds or more. The unit will start test operation.

   - The test operation is automatically carried out, the outdoor unit display will indicate "t01" and the indication "Test operation" and "Under centralized control" will display on the user interface of indoor units.

Steps during the automatic system test run procedure:

– "t01": control before start up (pressure equalization)
– "t02": cooling start up control
– "t03": cooling stable condition
– "t04": communication check
– "t05": stop valve check
– "t06": pipe length check
– "t09": pump down operation
– "t10": unit stop

   - During the test operation, it is not possible to stop the unit operation from a user interface. To abort the operation, press BS3. The unit will stop after ±30 seconds.

5. Check the test operation results on the outdoor unit segment display.

– Normal completion: no indication on the segment display (idle)
– Abnormal completion: indication of error code on the segment display

Take actions for correcting the abnormality. When the test operation is fully completed, normal operation will be possible after 5 minutes.

3.4 Turn Power ON

Turn outdoor unit and indoor unit power ON.

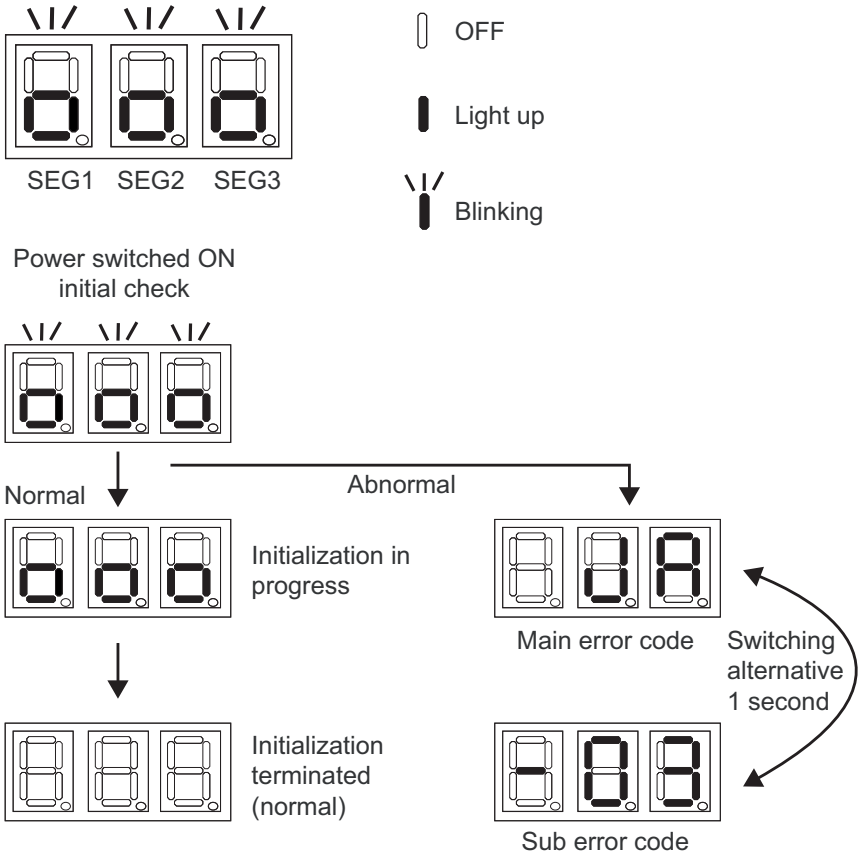
⇩

Check the 7 segment display of the outdoor unit PCB.

⇩

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

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



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

Make field settings with outdoor unit PCB.

⇩

Conduct check operations.

⇩

Check for normal operation.

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

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

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

Part 6
Service Diagnosis

1. 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 monitor mode to check for errors).

↓

4. If there is no display of error codes, refer to **Symptom-based Troubleshooting** on page 162 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 multimeter 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 X1A/X2A 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 PCB 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 outdoor unit multi system
All the settings should be made in the master unit. Settings in the slave units are deemed unavailable.

Differentiation of Master/Slave Units

1. The outdoor unit master unit is the unit which has the connecting wires to the indoor unit. All the other units are slave units.
2. You may also differentiate the master/slave units by the 7-segment display.

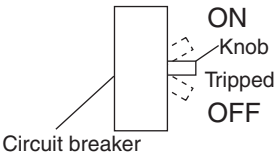
		7-segment display		
In normal mode, press the BS1 button once, and in the confirmation mode, check if the 7-segment display shows the code on the right.		SEG1	SEG2	SEG3
		1.	0	0
Press the confirmation button (BS3) to check for the master/slave units	Master			0
	Slave 1			1
	Slave 2			2

(5) 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)
   - Charge refrigerant in liquid state.

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

2. Symptom-based Troubleshooting

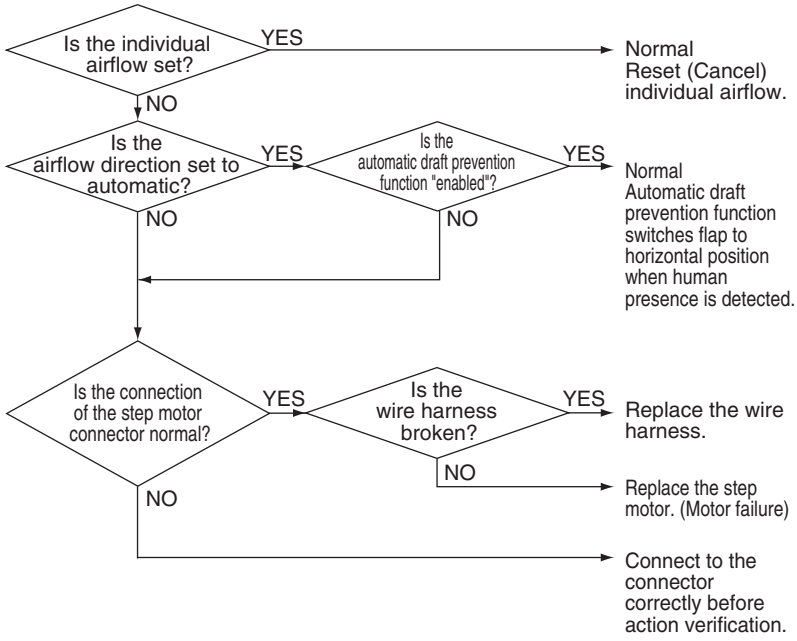
Symptom			Supposed Cause	Countermeasure
1	The system does not start operation at all.		Blowout of fuse(s)	Turn Off the power supply and then replace the fuse(s).
			Cutout of breaker(s)	• If the knob of any breaker is in its OFF position, turn ON the power supply. • If the knob of any circuit breaker 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 people staying in a room	The model must be selected to match the air conditioning load.
			IN COOLING Too many heat sources (e.g. OA equipment) located in a room	
4	The system does not operate.	The system stops and immediately restarts operation.	If the operation lamp on the remote controller turns ON, the system will be normal. These symptoms indicate that the system is controlled so as not to put unreasonable loads on the system.	Normal operation. The system will automatically start operation after a lapse of five minutes.
		Pressing the temperature setting button immediately resets the system.		
		The remote controller displays **UNDER CENTRALIZED CONTROL,** which blinks for a period of several seconds when the **OPERATION** button is depressed.	The system is controlled with centralized controller. Blinking display indicates that the system cannot be operated using the remote controller.	Operate the system using the COOL/HEAT centralized remote controller.
		The system stops immediately after turning ON the power supply.	The system is in preparation mode of 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.
6	The system conducts fan operation but not cooling operation.	This symptom occurs immediately after turning ON the power supply.	The system is in preparation mode of operation.	Wait for a period of approximately 10 minutes.
		The remote controller displays **UNDER CENTRALIZED CONTROL;** no cooling operation is performed. Switch to fan operation.	In thermal storage operation, the unit is set to fan operation in cooling operation, and the remote controller shows **CENTRALIZED CONTROL.**	Normal operation.

Symptom			Supposed Cause	Countermeasure
7	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.
8	A white mist comes out from the system.	**Indoor unit** In cooling operation, the ambient humidity is high. (This indoor unit is installed in a place with much oil or dust.)	Uneven temperature distribution due to heavy stain of the inside of the indoor unit	Clean the inside of the indoor unit.
		Indoor unit Immediately after cooling operation stopping, the ambient temperature and humidity are low.	Hot gas (refrigerant) flown in the indoor unit results to be vapor from the unit.	Normal operation.
9	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 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.	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 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.
10	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.
11	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.
12	Outdoor unit fan does not rotate.	In operation	The reason is that fan revolutions are controlled to put the operation to the optimum state.	Normal operation.
13	LCD display **88** appears on the remote controller.	Immediately after turning ON the power supply	The reason is that the system is checking to be sure the remote controller is normal.	Normal operation. This code is displayed for a period of approximately one minute at maximum.
14	The outdoor unit compressor or the outdoor unit fan does not stop.	After stopping operation	It stops in order to prevent oil or refrigerant from dwelling.	Normal operation. It stops after a lapse of approximately 5 to 10 minutes.
15	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.
16	The system does not cool air well.	The system is in dry operation.	The reason is that the dry operation serves not to reduce the room temperature where possible.	Change the system to cooling operation.

2.1 With Optional Infrared Presence/Floor Sensor

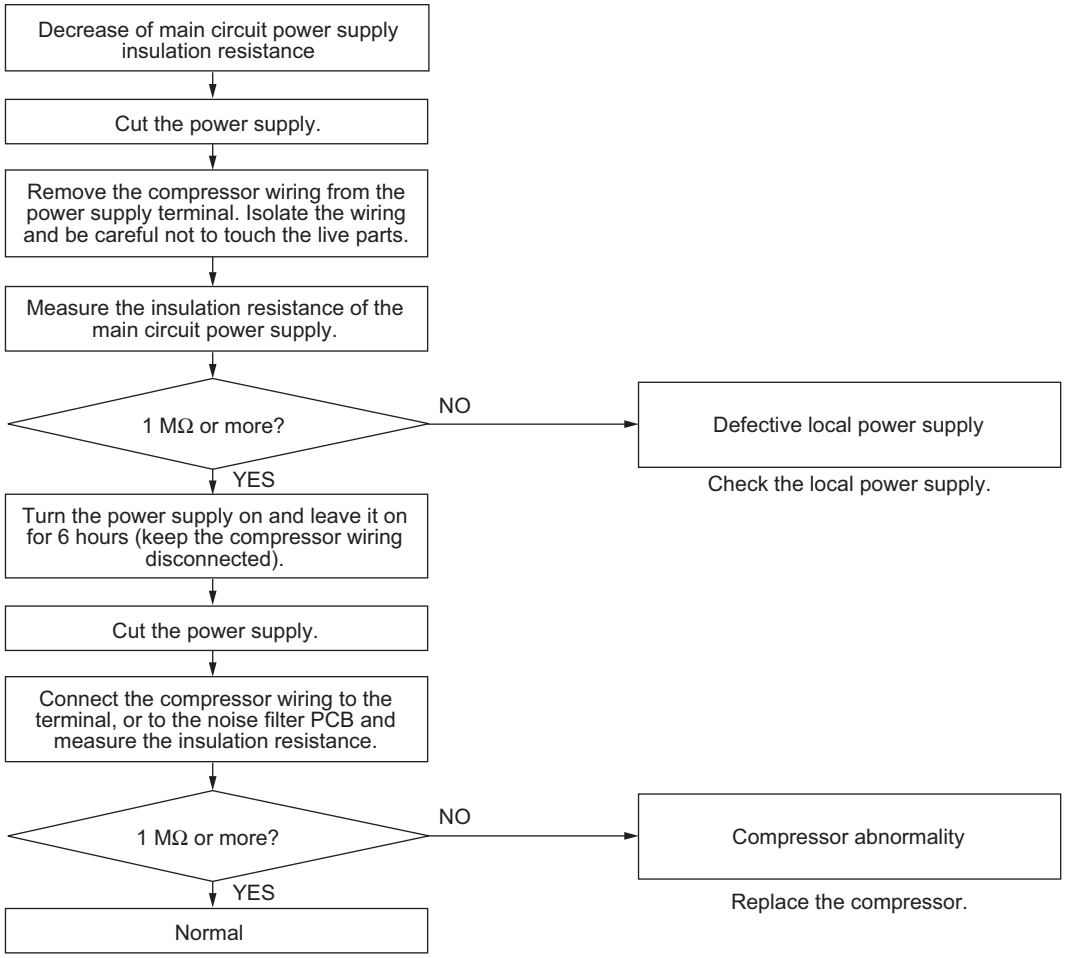
	Problem	Measure
1	Louver operation different from setting	Refer to the flowchart below.
2	Individual airflow direction setting different from the actual airflow direction	· Check the "Louver operation different from setting" error diagnosis.
3	When in stop mode, the louver does not close completely.	Turn off the circuit breaker and then turn it on again.
4	The remote controller menu does not display energy saving operating mode for when people are not present.	Please check **Infrared presence floor sensor error (CE)** in troubleshooting.
	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	Although people are not present, the infrared presence sensor detects human presence.	Check if there are any objects that generate temperature change when moving. For example: · An electric heater with swing function · Doors, curtains, blind switches · Output of paper from a fax machine or a printer · Turning on/off of incandescent lights · Moving objects
8	Although people are present, the infrared presence sensor fails to determine their presence.	Check for the following conditions. · Lack of movement · Facing away from the sensor · Little skin exposed · Slight movement in a place far from the sensor
9	Large difference between floor temperature and actual temperature	Check for the following conditions. · Sensor detection zone affected by solar radiation · High or low temperature objects in the sensor detection zone · Large difference between floor temperature and temperature of the living space · Sensors installed near walls may be affected by wall temperature.

Error diagnosis of "Louver operation different from setting"

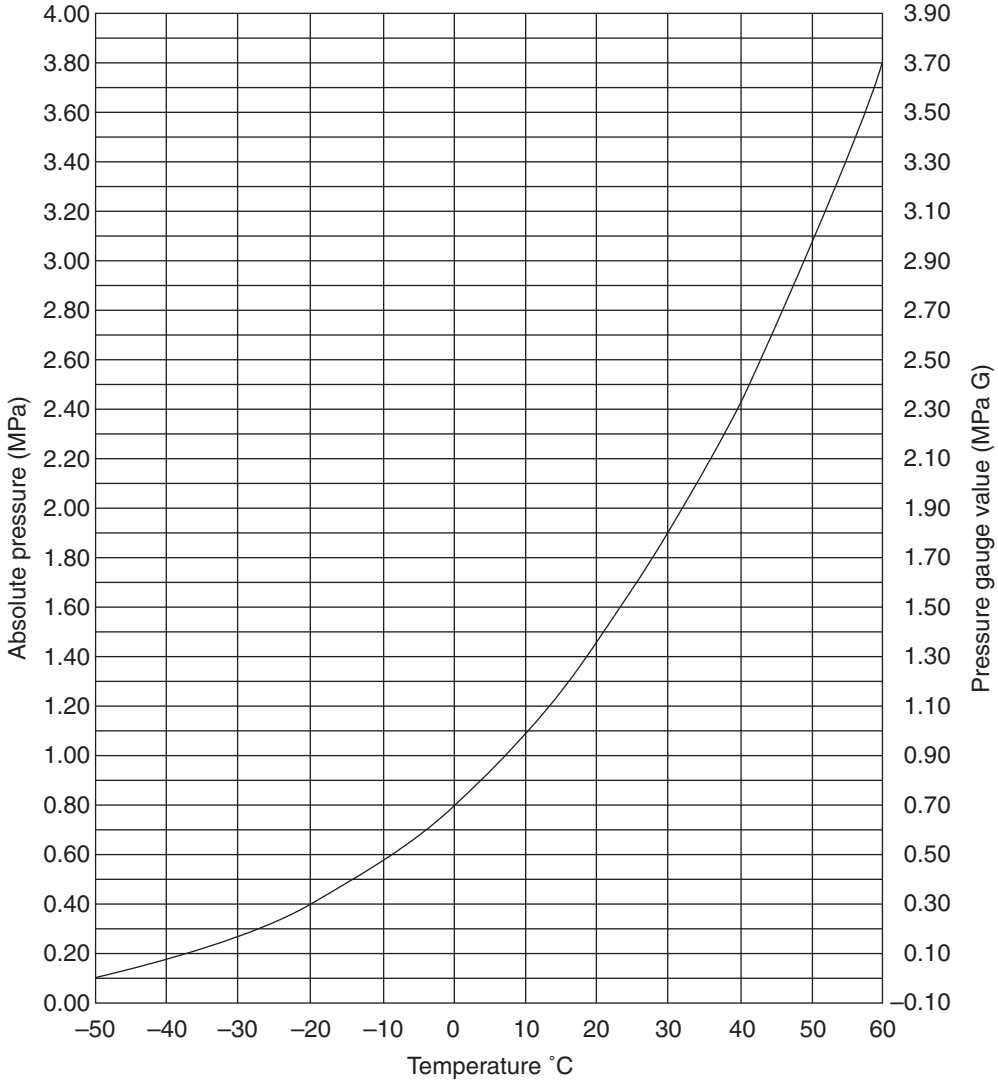


2.2 For All Outdoor Units

Problem	Measure
Decrease of main circuit power supply insulation resistance (Less than 1 MΩ)	Define the measure using the flowchart below.



3. Refrigerant Properties (R-410A)



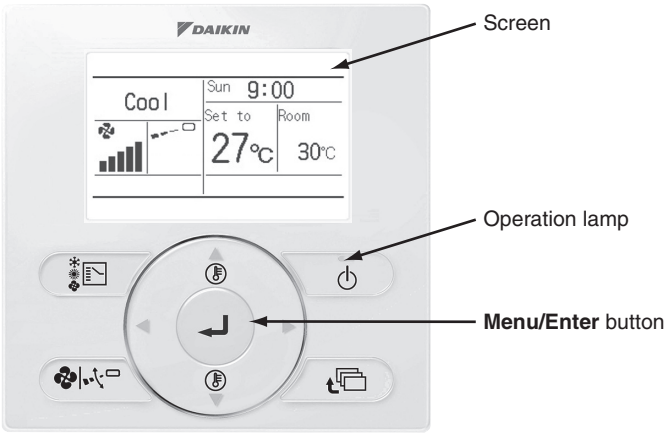
Temperature (°C)	Absolute Pressure (MPa)	Temperature (°C)	Absolute Pressure (MPa)	Temperature (°C)	Absolute Pressure (MPa)	Temperature (°C)	Absolute Pressure (MPa)
–50	0.11	–20	0.40	10	1.09	40	2.42
–48	0.12	–18	0.43	12	1.15	42	2.54
–46	0.13	–16	0.46	14	1.22	44	2.67
–44	0.15	–14	0.50	16	1.29	46	2.80
–42	0.16	–12	0.54	18	1.37	48	2.93
–40	0.18	–10	0.57	20	1.45	50	3.07
–38	0.19	–8	0.61	22	1.53	52	3.21
–36	0.21	–6	0.66	24	1.61	54	3.36
–34	0.23	–4	0.70	26	1.70	56	3.51
–32	0.25	–2	0.75	28	1.79	58	3.64
–30	0.27	0	0.80	30	1.89	60	3.83
–28	0.29	2	0.85	32	1.99	62	4.00
–26	0.32	4	0.91	34	2.09	64	4.17
–24	0.34	6	0.96	36	2.20	—	—
–22	0.37	8	1.02	38	2.31	—	—

4. Troubleshooting with Remote Controller

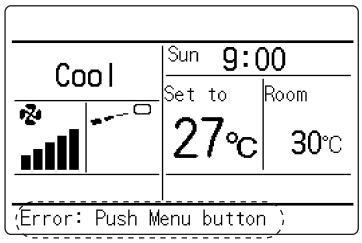
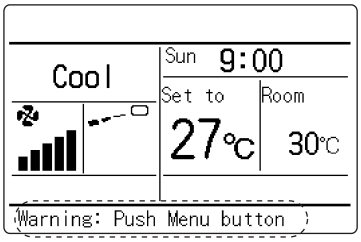
4.1 Wired Remote Controller

4.1.1 BRC1E62, BRC1E63

The illustrations are for BRC1E63 as representative.
The following message is displayed on the screen when an error (or a warning) occurs during operation.
Check the error code and take the corrective action specified for the particular model.



(1) Check if it is error or warning.

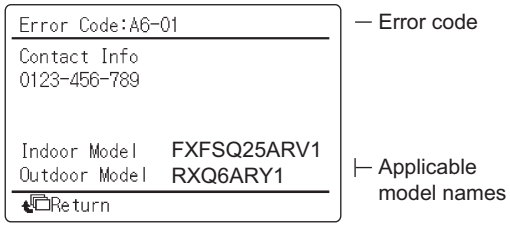
	Operation Status	Display	
Abnormal shutdown	The system stops operating.	The operation lamp (green) starts to blink. The message **Error: Push Menu button** blinks at the bottom of the screen.	
Warning	The system continues its operation.	The operation lamp (green) remains on. The message **Warning: Push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

(2) Take corrective action.

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

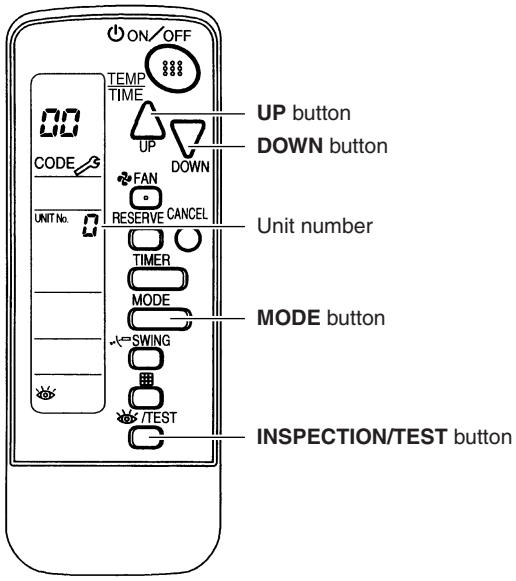
⇩

Take the corrective action specific to the model.



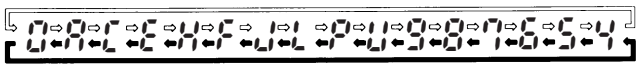
4.2 BRC4C, BRC7E Series

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.

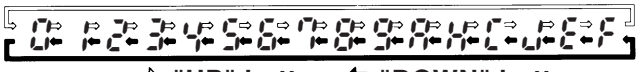
   - The upper digit of the code changes as shown below.



⇨ "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 0 (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.

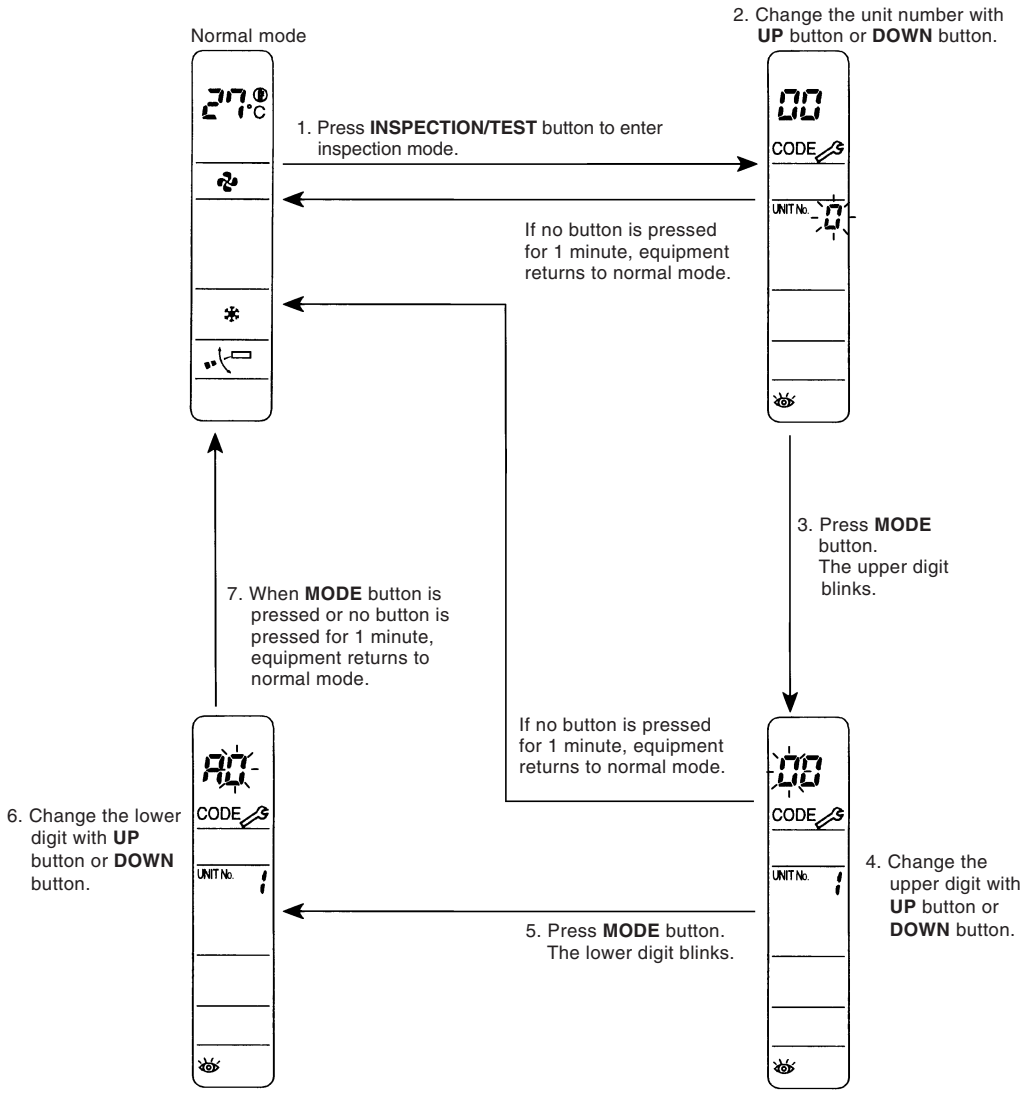
   - The lower digit of the code changes as shown below.



⇨ "UP" button ⬅ "DOWN" button

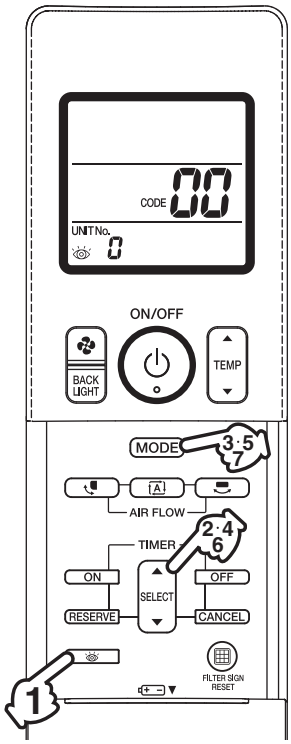
   Continuous beep : Both upper and lower digits match. (Error code is confirmed.)
   2 short beeps : The upper digit matches but the lower digit does not.
   1 short beep : The upper digit does not match.

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.



4.3 BRC4M151W16

When the air conditioner stops in emergency, the operating indicator lamp on the indoor unit starts blinking.
Take the following steps yourself to read the error code that appears on the display. Contact your local dealer with this code. It will help pinpoint the cause of the trouble, speeding up the repair.



1. Press the **INSPECTION** button to select the inspection mode " ".
   "0" appears on display and blinks.
   "UNIT No." appears.
2. Press **PROGRAMMING TIMER** button and change the unit number.
   Press to change the unit number until the indoor unit beeps and perform the following operation according to the number of beeps.
   Number of beeps
   3 short beeps.....Perform all steps from 3 to 6.
   1 short beep .....Perform 3 and 6 steps.
   1 long beep .....Normal state
3. Press **OPERATION MODE SELECTOR** button.
   "0" on the left-hand of the error code blinks.
4. Press **PROGRAMMING TIMER** button and change the error code.
   Press until the indoor unit beeps twice.
5. Press **OPERATION MODE SELECTOR** button.
   "0" on the right-hand of the error code blinks.
6. Press **PROGRAMMING TIMER** button and change the error code.
   Press until the indoor unit makes a long beep.
   The error code is fixed when the indoor unit makes a long beep.
7. Reset of the display
   Press the **OPERATION MODE SELECTOR** button to get the display back to the normal state.

4.4 Error Codes and Descriptions

○: ON ●: OFF ◑: Blink

	Error code	Operation lamp	Error contents	Reference page
Indoor Unit	A0	◑	External protection device abnormality	183
	A1	◑	Indoor unit PCB abnormality	184
	A3	◑	Drain level control system abnormality	185
	A6	◑	Indoor fan motor lock, overload Indoor fan motor abnormality	187 189
	A8	◑	Power supply voltage abnormality	194
	A9	◑	Electronic expansion valve coil abnormality, dust clogging	197
	AF★	○	Humidifier system abnormality	198
	AH	◑	Auto grille unit error	199
	AJ	◑	Capacity determination device abnormality	200
	C1	◑	Transmission abnormality (between indoor unit PCB and fan PCB) Transmission error Transmission error (between indoor unit PCB and auto grille control PCB)	201 203 204
	C4	◑	Indoor heat exchanger liquid pipe thermistor abnormality	206
	C5	◑	Indoor heat exchanger gas pipe thermistor abnormality	206
	C6	◑	Combination abnormality (between indoor unit PCB and fan PCB) Capacity setting abnormality Indoor unit PCB abnormality	207 208 209
	C9	◑	Suction air thermistor (R1T) abnormality	206
	CE★	○	Infrared presence/floor sensor error	210
	CJ★	○	Remote controller thermistor abnormality	215
Outdoor Unit	E1	◑	Outdoor unit main PCB abnormality	216
	E2	◑	Current leakage detection Missing of leakage detection core	217 218
	E3	◑	Activation of high pressure switch	219
	E4	◑	Activation of low pressure sensor	221
	E5	◑	Inverter compressor motor lock	223
	E7	◑	Outdoor fan motor abnormality	225
	E9	◑	Electronic expansion valve coil abnormality	228
	F3	◑	Discharge pipe temperature abnormality	229
	F4	◑	Wet alarm	231
	F6	◑	Refrigerant overcharged	233
	H3	◑	Harness abnormality (between outdoor unit main PCB and inverter PCB)	234
	H7	◑	Outdoor fan PCB abnormality	235
	H9	◑	Outdoor air thermistor (R1T) abnormality	236
	J3	◑	Discharge pipe thermistor (R21T, R22T) abnormality Compressor body thermistor (R8T, R9T) abnormality	236 236
	J5	◑	Suction pipe thermistor (R3T) abnormality	236
	J7	◑	Subcooling heat exchanger liquid pipe thermistor (R5T) abnormality	236
	J8	◑	Heat exchanger liquid pipe thermistor (R4T) abnormality	236
	J9	◑	Subcooling heat exchanger gas pipe thermistor (R6T) abnormality	236
	JA	◑	High pressure sensor abnormality	238
	JC	◑	Low pressure sensor abnormality	239
	L1	◑	Inverter PCB abnormality	240
	L2	◑	Momentary power failure during test operation	242
	L4	◑	Inverter radiation fin temperature rise abnormality	243
	L5	◑	Compressor instantaneous overcurrent	245
	L8	◑	Compressor overcurrent	247
	L9	◑	Compressor startup abnormality	249
	LC	◑	Transmission error between inverter PCB and outdoor unit main PCB	252
	P1	◑	Power supply voltage imbalance	254
	P3	◑	Reactor temperature abnormality	256
	P4★	◑	Inverter radiation fin temperature abnormality	257
	PJ	◑	Field setting after replacing outdoor unit main PCB abnormality or combination of PCB abnormality	259

	Error code	Operation lamp	Error contents	Reference page
System	**U0★**	○	Refrigerant shortage warning	260
	U1	◑	Open phase	262
	U2	◑	Power supply insufficient or instantaneous abnormality	263
	U3	◑	Check operation not executed	265
	U4	◑	Transmission error between indoor units and outdoor units	266
	U5	◑	Transmission error between remote controller and indoor unit	269
	U7	◑	Transmission error between outdoor units	270
	U8	◑	Transmission error between main and sub remote controllers	275
	U9	◑	Other indoor units and outdoor unit abnormality	276
	UA	◑	Improper combination of indoor unit and outdoor unit, indoor unit and remote controller	277
	UC★	○	Address duplication of centralized controller	280
	UE	◑	Transmission error between centralized controller and indoor unit	281
	UF	◑	System not set yet	284
	UH	◑	System abnormality, refrigerant system address undefined	285

★The system operates for error codes indicated, however, be sure to check and repair.

4.5 Error Codes (Sub Codes)

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

4.5.1 Indoor Unit

Error code	Troubleshooting	
	Description of error	Description of diagnosis
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 PCB for the fan. If the connection is normal, replace the fan motor. If this still cannot solve the error, replace the PCB for the fan.
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 PCB for the fan. If the connection is normal, replace the fan motor. If this still cannot solve the error, replace the PCB for the fan.
A8 - 01	Power supply voltage error	Check for the input voltage of the fan motor.
A9 - 01	Electronic expansion valve error	There is an error in the electronic expansion valve coil or a connector disconnected.
A9 - 02	Refrigerant leakage detection error	Refrigerant leaks even if the electronic expansion valve is closed. Replace the electronic expansion valve.
AH - 03	Transmission error (between the self-cleaning decoration panel and the indoor unit) (when the self-cleaning decoration panel is mounted)	Check for the connection of the harness connector between the panel PCB and the indoor unit PCB.
AH - 04	Dust detection sensor error (when the self-cleaning decoration panel is mounted)	Check for the connections of the connector X12A on the panel PCB and the connectors X18A and X19A on the sensor PCB.
AH - 05	Dust collection sign error (when the self-cleaning decoration panel is mounted)	Check for clogging with dust at the dust collection port as well as in the brush unit, S-shaped pipe, and dust box. Furthermore, check for any stains of the light receiving and emitting parts of the infrared unit.
AH - 06	Air filter rotation error (when the self-cleaning decoration panel is mounted)	Check for anything getting in the way of rotating the filter (e.g. the filter comes off or the drive gear is clogged with foreign matter).
AH - 07	Damper rotation error (when the self-cleaning decoration panel is mounted)	The damper does not rotate normally. Check for any foreign matter around the damper and for the operation of the gear and limit switch.
AH - 08	Filter self-cleaning operation error (when the self-cleaning decoration panel is mounted)	The unit has not yet completed the filter self-cleaning operation even after the lapse of specified period of time. Check for any external noise, etc.
AH - 09	Filter self-cleaning operation start disabled error (when the self-cleaning decoration panel is mounted)	The unit has been put into a state in which the filter self-cleaning operation is disabled. Check the unit for the operating conditions.
AH - 12	Auto grille unit error (when the auto grille unit is mounted)	It is detected that the grille does not operate properly. Check whether the grille does not contact with something or the wire does not snaggle.
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 error (between indoor unit PCB and the PCB for the fan)	Check for the conditions of transmission between the indoor unit PCB and the PCB for the fan.
C1 - 06	Transmission error (between indoor unit PCB and auto grille control PCB)	Refer to **C1-06** flowchart.
C6 - 01	Defective combination of indoor unit PCB and the PCB for the fan	A combination of indoor unit PCB and the PCB for the fan is defective. Check whether the capacity setting adaptor is correct and the type of the PCB for the fan is correct.
C6 - 05	Indoor unit PCB abnormality	Refer to **C6-05** flowchart.
CE - 01	Infrared presence sensor error	The output of the infrared presence sensor is not detected. Check if the connector is properly connected, and if the harness is not broken.

Error code	Troubleshooting	
	Description of error	Description of diagnosis
CE - 02	Infrared floor sensor error	A disconnection of the temperature correction circuit (thermistor) of the infrared floor sensor has been detected. Check if the connector is properly connected.
CE - 03	Infrared floor sensor error	A short-circuit of the temperature correction circuit (thermistor) of the infrared floor sensor has been detected. Check if the pins of the connector are touching each other, and if any foreign matter on the PCB is causing a short-circuit.
CE - 04	Infrared floor sensor error	An abnormality other than the ones mentioned above has been detected. Check if the temperature nearby the sensor is too high, and if there is any foreign matter that may cause noise.
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.

As there are various combinations of indoor and outdoor units, the sub codes of A0 - A3 are not shown in this table.

4.5.2 Outdoor Unit, System

Error code	Troubleshooting	
	Description of error	Diagnosis
E1 - 01	Outdoor unit PCB error	Refer to the **E1** flowchart and make a diagnosis based on the Error code shown to the left.
E1 - 02	Defective outdoor unit PCB	
E2 - 01	Earth leakage detection error (Master)	Refer to the **E2** flowchart and make a diagnosis based on the Error code shown to the left.
E2 - 02	Earth leakage detection error (Slave 1)	
E2 - 03	Earth leakage detection error (Slave 2)	
E2 - 06	Missing of earth leakage detection core (Master)	
E2 - 07	Missing of earth leakage detection core (Slave 1)	
E2 - 08	Missing of earth leakage detection core (Slave 2)	
E3 - 01	High pressure switch activated (Master)	Refer to the **E3** flowchart and make a diagnosis based on the Error code shown to the left.
E3 - 02	High pressure switch activated (Master)	
E3 - 03	High pressure switch activated (Slave 1)	
E3 - 04	High pressure switch activated (Slave 1)	
E3 - 05	High pressure switch activated (Slave 2)	
E3 - 06	High pressure switch activated (Slave 2)	
E3 - 07	High pressure switch activated (Batch)	
E3 - 13	Liquid stop valve check error (Master)	
E3 - 14	Liquid stop valve check error (Slave 1)	
E3 - 15	Liquid stop valve check error (Slave 2)	
E3 - 20	High pressure switch activated (Master)	
E3 - 21	High pressure switch activated (Slave 1)	
E3 - 22	High pressure switch activated (Slave 2)	
E4 - 01	Low pressure error (Master)	Refer to the **E4** flowchart and make a diagnosis based on the Error code shown to the left.
E4 - 02	Low pressure error (Slave 1)	
E4 - 03	Low pressure error (Slave 2)	
E5 - 01	Compressor M1C lock (Master)	Refer to the **E5** flowchart and make a diagnosis based on the Error code shown to the left.
E5 - 02	Compressor M1C lock (Slave 1)	
E5 - 03	Compressor M1C lock (Slave 2)	
E5 - 07	Compressor M2C lock (Master)	
E5 - 08	Compressor M2C lock (Slave 1)	
E5 - 09	Compressor M2C lock (Slave 2)	
E7 - 01	Fan motor M1F lock (Master)	Refer to the **E7** flowchart and make a diagnosis of the relevant fan motor based on the Error code shown to the left.
E7 - 02	Fan motor M2F lock (Master)	
E7 - 05	Fan motor M1F instantaneous overcurrent (Master)	
E7 - 06	Fan motor M2F instantaneous overcurrent (Master)	
E7 - 09	Fan motor M1F IPM error (Master)	
E7 - 10	Fan motor M2F IPM error (Master)	
E7 - 13	Fan motor M1F lock (Slave 1)	
E7 - 14	Fan motor M2F lock (Slave 1)	
E7 - 17	Fan motor M1F instantaneous overcurrent (Slave 1)	
E7 - 18	Fan motor M2F instantaneous overcurrent (Slave 1)	
E7 - 21	Fan motor M1F IPM error (Slave 1)	
E7 - 22	Fan motor M2F IPM error (Slave 1)	
E7 - 25	Fan motor M1F lock (Slave 2)	
E7 - 26	Fan motor M2F lock (Slave 2)	
E7 - 29	Fan motor M1F instantaneous overcurrent (Slave 2)	
E7 - 30	Fan motor M2F instantaneous overcurrent (Slave 2)	
E7 - 33	Fan motor M1F IPM error (Slave 2)	
E7 - 34	Fan motor M2F IPM error (Slave 2)	

Error code	Troubleshooting	
	Description of error	Diagnosis
E9 - 03	Electronic expansion valve coil Y2E error (Master)	Refer to the **E9** flowchart and make a diagnosis of the relevant electronic expansion valve based on the Error code shown to the left.
E9 - 06	Electronic expansion valve coil Y2E error (Slave 1)	
E9 - 09	Electronic expansion valve coil Y2E error (Slave 2)	
E9 - 26	Electronic expansion valve coil Y4E error (Master)	
E9 - 27	Electronic expansion valve coil Y4E error (Slave 1)	
E9 - 28	Electronic expansion valve coil Y4E error (Slave 2)	
E9 - 48	Electronic expansion valve overcurrent (Master)	
E9 - 49	Electronic expansion valve overcurrent (Slave 1)	
E9 - 50	Electronic expansion valve overcurrent (Slave 2)	
E9 - 51	Electronic expansion valve fuse thermal cutting (Master)	
E9 - 52	Electronic expansion valve fuse thermal cutting (Slave 1)	
E9 - 53	Electronic expansion valve fuse thermal cutting (Slave 2)	
E9 - 54	Defective circuit (Master)	
E9 - 55	Defective circuit (Slave 1)	
E9 - 56	Defective circuit (Slave 2)	
F3 - 01	Discharge pipe high temperature error (Master)	Refer to the **F3** flowchart and make a diagnosis based on the Error code shown to the left.
F3 - 03	Discharge pipe high temperature error (Slave 1)	
F3 - 05	Discharge pipe high temperature error (Slave 2)	
F3 - 20	Compressor overheat error (Master)	
F3 - 21	Compressor overheat error (Slave 1)	
F3 - 22	Compressor overheat error (Slave 2)	
F4 - 02	Wet alarm for compressor M1C (Master)	Refer to the **F4** flowchart and make a diagnosis based on the Error code shown to the left.
F4 - 03	Wet alarm for compressor M2C (Master)	
F4 - 04	Wet alarm for compressor M1C (Slave 1)	
F4 - 05	Wet alarm for compressor M2C (Slave 1)	
F4 - 06	Wet alarm for compressor M1C (Slave 2)	
F4 - 07	Wet alarm for compressor M2C (Slave 2)	
F4 - 08	Wet error for compressor M1C (Master)	
F4 - 09	Wet error for compressor M2C (Master)	
F4 - 10	Wet error for compressor M1C (Slave 1)	
F4 - 11	Wet error for compressor M2C (Slave 1)	
F4 - 12	Wet error for compressor M1C (Slave 2)	
F4 - 13	Wet error for compressor M2C (Slave 2)	
F4 - 14	Indoor unit failure alarm	
F6 - 02	Excess refrigerant charge error	Excess refrigerant charge was detected during test run.
F6 - 03	Excess refrigerant charge warning	Excess refrigerant charge was detected during operation other than test run.
H3 - 02	Connection error between main PCB and inverter PCB 1 (Master)	Refer to the **H3** flowchart and make a diagnosis based on the Error code shown to the left.
H3 - 03	Connection error between main PCB and inverter PCB 2 (Master)	
H3 - 04	Connection error between main PCB and inverter PCB 1 (Slave 1)	
H3 - 05	Connection error between main PCB and inverter PCB 2 (Slave 1)	
H3 - 06	Connection error between main PCB and inverter PCB 1 (Slave 2)	
H3 - 07	Connection error between main PCB and inverter PCB 2 (Slave 2)	
H7 - 21	Defective fan PCB for M1F (A7P) (Master)	Refer to the **H7** flowchart and make a diagnosis based on the Error code shown to the left.
H7 - 22	Defective fan PCB for M2F (A4P) (Master)	
H7 - 23	Defective fan PCB for M1F (A7P) (Slave 1)	
H7 - 24	Defective fan PCB for M2F (A4P) (Slave 1)	
H7 - 25	Defective fan PCB for M1F (A7P) (Slave 2)	
H7 - 26	Defective fan PCB for M2F (A4P) (Slave 2)	

Error code	Troubleshooting	
	Description of error	Diagnosis
H9 - 01	Defective outdoor air thermistor (Master)	Refer to the **H9** flowchart and make a diagnosis based on the Error code shown to the left.
H9 - 02	Defective outdoor air thermistor (Slave 1)	
H9 - 03	Defective outdoor air thermistor (Slave 2)	
J3 - 16	Defective discharge pipe 1 thermistor: Open (Master)	Refer to the **J3** flowchart and make a diagnosis of the relevant compressor based on the Error code shown to the left.
J3 - 17	Defective discharge pipe 1 thermistor: Short (Master)	
J3 - 18	Defective discharge pipe 2 thermistor: Open (Master)	
J3 - 19	Defective discharge pipe 2 thermistor: Short (Master)	
J3 - 22	Defective discharge pipe 1 thermistor: Open (Slave 1)	
J3 - 23	Defective discharge pipe 1 thermistor: Short (Slave 1)	
J3 - 24	Defective discharge pipe 2 thermistor: Open (Slave 1)	
J3 - 25	Defective discharge pipe 2 thermistor: Short (Slave 1)	
J3 - 28	Defective discharge pipe 1 thermistor: Open (Slave 2)	
J3 - 29	Defective discharge pipe 1 thermistor: Short (Slave 2)	
J3 - 30	Defective discharge pipe 2 thermistor: Open (Slave 2)	
J3 - 31	Defective discharge pipe 2 thermistor: Short (Slave 2)	
J3 - 38	Defective compressor body thermistor for M1C: Open (Master)	
J3 - 39	Defective compressor body thermistor for M1C: Short (Master)	
J3 - 42	Defective compressor body thermistor for M1C: Open (Slave 1)	
J3 - 43	Defective compressor body thermistor for M1C: Short (Slave 1)	
J3 - 44	Defective compressor body thermistor for M1C: Open (Slave 2)	
J3 - 45	Defective compressor body thermistor for M1C: Short (Slave 2)	
J3 - 47	Defective compressor body thermistor for M2C: Open (Master)	
J3 - 48	Defective compressor body thermistor for M2C: Short (Master)	
J3 - 49	Defective compressor body thermistor for M2C: Open (Slave 1)	
J3 - 50	Defective compressor body thermistor for M2C: Short (Slave 1)	
J3 - 51	Defective compressor body thermistor for M2C: Open (Slave 2)	
J3 - 52	Defective compressor body thermistor for M2C: Short (Slave 2)	
J3 - 56	Discharge pipe warning (Master)	
J3 - 57	Discharge pipe warning (Slave 1)	
J3 - 58	Discharge pipe warning (Slave 2)	
J5 - 01	Defective suction pipe thermistor (Master)	Refer to the **J5** flowchart and make a diagnosis of the relevant thermistor based on the Error code shown to the left.
J5 - 03	Defective suction pipe thermistor (Slave 1)	
J5 - 05	Defective suction pipe thermistor (Slave 2)	
J7 - 06	Defective subcooling heat exchanger liquid pipe thermistor (Master)	Refer to the **J7** flowchart and make a diagnosis of the relevant thermistor based on the Error code shown to the left.
J7 - 07	Defective subcooling heat exchanger liquid pipe thermistor (Slave 1)	
J7 - 08	Defective subcooling heat exchanger liquid pipe thermistor (Slave 2)	
J8 - 01	Defective heat exchanger liquid pipe thermistor (Master)	Refer to the **J8** flowchart and make a diagnosis of the relevant thermistor based on the Error code shown to the left.
J8 - 02	Defective heat exchanger liquid pipe thermistor (Slave 1)	
J8 - 03	Defective heat exchanger liquid pipe thermistor (Slave 2)	

Error code	Troubleshooting	
	Description of error	Diagnosis
J9 - 01	Defective subcooling heat exchanger outlet thermistor (Master)	Refer to the **J9** flowchart and make a diagnosis of the relevant thermistor based on the Error code shown to the left.
J9 - 02	Defective subcooling heat exchanger outlet thermistor (Slave 1)	
J9 - 03	Defective subcooling heat exchanger outlet thermistor (Slave 2)	
J9 - 08	Error detection of subcooling heat exchanger outlet pipe thermistor (Master)	
J9 - 09	Error detection of subcooling heat exchanger outlet pipe thermistor (Slave 1)	
J9 - 10	Error detection of subcooling heat exchanger outlet pipe thermistor (Slave 2)	
JA - 06	Defective high pressure sensor: Open (Master)	Refer to the **JA** flowchart and make a diagnosis of the relevant sensor based on the Error code shown to the left.
JA - 07	Defective high pressure sensor: Short (Master)	
JA - 08	Defective high pressure sensor: Open (Slave 1)	
JA - 09	Defective high pressure sensor: Short (Slave 1)	
JA - 10	Defective high pressure sensor: Open (Slave 2)	
JA - 11	Defective high pressure sensor: Short (Slave 2)	
JC - 06	Defective low pressure sensor: Open (Master)	Refer to the **JC** flowchart and make a diagnosis of the relevant sensor based on the Error code shown to the left.
JC - 07	Defective low pressure sensor: Short (Master)	
JC - 08	Defective low pressure sensor: Open (Slave 1)	
JC - 09	Defective low pressure sensor: Short (Slave 1)	
JC - 10	Defective low pressure sensor: Open (Slave 2)	
JC - 11	Defective low pressure sensor: Short (Slave 2)	
L1 - 01	IPM error: Compressor M1C (Master)	The inverter PCB may be defective or a PCB other than the specified is mounted. Refer to the **L1** flowchart and make a diagnosis based on the Error code shown to the left.
L1 - 02	Defective current sensor: Compressor M1C (Master)	
L1 - 03	Current offset: Compressor M1C (Master)	
L1 - 04	IGBT error: Compressor M1C (Master)	
L1 - 05	Jumper settings error: Compressor M1C (Master)	
L1 - 07	IPM error: Compressor M1C (Slave 1)	
L1 - 08	Defective current sensor: Compressor M1C (Slave 1)	
L1 - 09	Current offset: Compressor M1C (Slave 1)	
L1 - 10	IGBT error: Compressor M1C (Slave 1)	
L1 - 11	IPM error: Compressor M1C (Slave 2)	
L1 - 12	Defective current sensor: Compressor M1C (Slave 2)	
L1 - 13	Current offset: Compressor M1C (Slave 2)	
L1 - 14	IGBT error: Compressor M1C (Slave 2)	
L1 - 15	Jumper settings error: Compressor M1C (Slave 1)	
L1 - 16	Jumper settings error: Compressor M1C (Slave 2)	
L1 - 17	IPM error: Compressor M2C (Master)	
L1 - 18	Defective current sensor: Compressor M2C (Master)	
L1 - 19	Current offset: Compressor M2C (Master)	
L1 - 20	IGBT error: Compressor M2C (Master)	
L1 - 21	Jumper settings error: Compressor M2C (Master)	
L1 - 22	IPM error: Compressor M2C (Slave 1)	
L1 - 23	Defective current sensor: Compressor M2C (Slave 1)	
L1 - 24	Current offset: Compressor M2C (Slave 1)	
L1 - 25	IGBT error: Compressor M2C (Slave 1)	
L1 - 26	Jumper settings error: Compressor M2C (Slave 1)	
L1 - 36	EEPROM abnormality: Compressor M1C (Master)	
L1 - 37	EEPROM abnormality: Compressor M2C (Master)	
L1 - 38	EEPROM abnormality: Compressor M1C (Slave 1)	
L1 - 39	EEPROM abnormality: Compressor M2C (Slave 1)	
L1 - 40	EEPROM abnormality: Compressor M1C (Slave 2)	
L1 - 41	EEPROM abnormality: Compressor M2C (Slave 2)	

Error code	Troubleshooting	
	Description of error	Diagnosis
L1 - 42	IPM error: Compressor M2C (Slave 2)	The inverter PCB may be defective or a PCB other than the specified is mounted. Refer to the **L1** flowchart and make a diagnosis based on the Error code shown to the left.
L1 - 43	Defective current sensor: Compressor M2C (Slave 2)	
L1 - 44	Current offset: Compressor M2C (Slave 2)	
L1 - 45	IGBT error: Compressor M2C (Slave 2)	
L1 - 46	Jumper settings error: Compressor M2C (Slave 2)	
L1 - 47	Power supply voltage abnormality: Compressor M1C (Master)	
L1 - 48	Power supply voltage abnormality: Compressor M2C (Master)	
L1 - 49	Power supply voltage abnormality: Compressor M1C (Slave 1)	
L1 - 50	Power supply voltage abnormality: Compressor M2C (Slave 1)	
L1 - 51	Power supply voltage abnormality: Compressor M1C (Slave 2)	
L1 - 52	Power supply voltage abnormality: Compressor M2C (Slave 2)	
L2 - 01	Momentary power failure (Master)	Refer to the **L2** flowchart and make a diagnosis based on the Error code shown to the left.
L2 - 02	Momentary power failure (Slave 1)	
L2 - 03	Momentary power failure (Slave 2)	
L2 - 04	Power ON (Master)	
L2 - 05	Power ON (Slave 1)	
L2 - 06	Power ON (Slave 2)	
L4 - 01	Radiation fin temperature rise: Inverter PCB for M1C (Master)	Refer to the **L4** flowchart and make a diagnosis based on the Error code shown to the left.
L4 - 02	Radiation fin temperature rise: Inverter PCB for M1C (Slave 1)	
L4 - 03	Radiation fin temperature rise: Inverter PCB for M1C (Slave 2)	
L4 - 06	Radiation fin temperature rise: Fan M1F (Master)	
L4 - 07	Radiation fin temperature rise: Fan M2F (Master)	
L4 - 09	Radiation fin temperature rise: Inverter PCB for M2C (Master)	
L4 - 10	Radiation fin temperature rise: Inverter PCB for M2C (Slave 1)	
L4 - 11	Radiation fin temperature rise: Inverter PCB for M2C (Slave 2)	
L4 - 18	Radiation fin temperature rise: Fan M1F (Slave 1)	
L4 - 19	Radiation fin temperature rise: Fan M2F (Slave 1)	
L4 - 20	Radiation fin temperature rise: Fan M1F (Slave 2)	
L4 - 21	Radiation fin temperature rise: Fan M2F (Slave 2)	
L5 - 03	Current offset error (Master)	Refer to the **L5** flowchart and make a diagnosis based on the Error code shown to the left.
L5 - 05	Current offset error (Slave 1)	
L5 - 07	Current offset error (Slave 2)	
L5 - 14	Compressor M2C instantaneous overcurrent (Master)	
L5 - 15	Compressor M2C instantaneous overcurrent (Slave 1)	
L5 - 16	Compressor M2C instantaneous overcurrent (Slave 2)	
L8 - 03	Compressor M1C overcurrent error (Master)	Refer to the **L8** flowchart and make a diagnosis of the relevant compressor based on the Error code shown to the left.
L8 - 06	Compressor M1C overcurrent error (Slave 1)	
L8 - 07	Compressor M1C overcurrent error (Slave 2)	
L8 - 11	Compressor M2C overcurrent error (Master)	
L8 - 12	Compressor M2C overcurrent error (Slave 1)	
L8 - 13	Compressor M2C overcurrent error (Slave 2)	

Error code	Troubleshooting	
	Description of error	Diagnosis
L9 - 01	Compressor M1C startup error (Master)	Refer to the **L9** flowchart and make a diagnosis of the relevant compressor based on the Error code shown to the left.
L9 - 05	Compressor M1C startup error (Slave 1)	
L9 - 06	Compressor M1C startup error (Slave 2)	
L9 - 10	Compressor M2C startup error (Master)	
L9 - 11	Compressor M2C startup error (Slave 1)	
L9 - 12	Compressor M2C startup error (Slave 2)	
L9 - 13	Compressor M1C output open phase (Master)	
L9 - 14	Compressor M1C output open phase (Slave 1)	
L9 - 15	Compressor M1C output open phase (Slave 2)	
L9 - 16	Compressor M2C output open phase (Master)	
L9 - 17	Compressor M2C output open phase (Slave 1)	
L9 - 18	Compressor M2C output open phase (Slave 2)	
LC - 14	Transmission error (Between outdoor units, inverter PCB 1) (Master)	Refer to the **LC** flowchart and make a diagnosis based on the Error code shown to the left.
LC - 15	Transmission error (Between outdoor units, inverter PCB 1) (Slave 1)	
LC - 16	Transmission error (Between outdoor units, inverter PCB 1) (Slave 2)	
LC - 19	Transmission error (Between outdoor units, fan PCB 1) (Master)	
LC - 20	Transmission error (Between outdoor units, fan PCB 1) (Slave 1)	
LC - 21	Transmission error (Between outdoor units, fan PCB 1) (Slave 2)	
LC - 24	Transmission error (Between outdoor units, fan PCB 2) (Master)	
LC - 25	Transmission error (Between outdoor units, fan PCB 2) (Slave 1)	
LC - 26	Transmission error (Between outdoor units, fan PCB 2) (Slave 2)	
LC - 30	Transmission error (Between outdoor units, inverter PCB 2) (Master)	
LC - 31	Transmission error (Between outdoor units, inverter PCB 2) (Slave 1)	
LC - 32	Transmission error (Between outdoor units, inverter PCB 2) (Slave 2)	
P1 - 01	Unbalanced power supply voltage (Master)	Refer to the **P1** flowchart and make a diagnosis based on the Error code shown to the left.
P1 - 02	Unbalanced power supply voltage (Slave 1)	
P1 - 03	Unbalanced power supply voltage (Slave 2)	
P1 - 07	Inverter 2 power supply unbalanced voltage (Master)	
P1 - 08	Inverter 2 power supply unbalanced voltage (Slave 1)	
P1 - 09	Inverter 2 power supply unbalanced voltage (Slave 2)	

Error code	Troubleshooting	
	Description of error	Diagnosis
P3 - 01	Defective reactor thermistor 1 (Master: Inverter PCB 1)	Refer to the **P3** flowchart and make a diagnosis based on the Error code shown to the left.
P3 - 02	Defective reactor thermistor 1 (Slave 1: Inverter PCB 1)	
P3 - 03	Defective reactor thermistor 1 (Slave 2: Inverter PCB 1)	
P3 - 04	Defective reactor thermistor 2 (Master: Inverter PCB 1)	
P3 - 05	Defective reactor thermistor 2 (Slave 1: Inverter PCB 1)	
P3 - 06	Defective reactor thermistor 2 (Slave 2: Inverter PCB 1)	
P3 - 07	Defective reactor thermistor 1 (Master: Inverter PCB 2)	
P3 - 08	Defective reactor thermistor 1 (Slave 1: Inverter PCB 2)	
P3 - 09	Defective reactor thermistor 1 (Slave 2: Inverter PCB 2)	
P3 - 10	Defective reactor thermistor 2 (Master: Inverter PCB 2)	
P3 - 11	Defective reactor thermistor 2 (Slave 1: Inverter PCB 2)	
P3 - 12	Defective reactor thermistor 2 (Slave 2: Inverter PCB 2)	
P4 - 01	Defective radiation fin thermistor (Master: Inverter PCB 1)	Refer to the **P4** flowchart and make a diagnosis based on the Error code shown to the left.
P4 - 02	Defective fan M1F fin sensor (Master)	
P4 - 03	Defective fan M2F fin sensor (Master)	
P4 - 04	Defective radiation fin thermistor (Slave 1: Inverter PCB 1)	
P4 - 05	Defective radiation fin thermistor (Slave 2: Inverter PCB 1)	
P4 - 06	Defective radiation fin thermistor (Master: Inverter PCB 2)	
P4 - 07	Defective radiation fin thermistor (Slave 1: Inverter PCB 2)	
P4 - 08	Defective radiation fin thermistor (Slave 2: Inverter PCB 2)	
P4 - 15	Defective fan M1F fin sensor (Slave 1)	
P4 - 16	Defective fan M2F fin sensor (Slave 1)	
P4 - 17	Defective fan M1F fin sensor (Slave 2)	
P4 - 18	Defective fan M2F fin sensor (Slave 2)	
PJ - 04	Incorrect type of inverter PCB 1 (Master)	Refer to the **PJ** flowchart and make a diagnosis based on the Error code shown to the left.
PJ - 05	Incorrect type of inverter PCB 1 (Slave 1)	
PJ - 06	Incorrect type of inverter PCB 1 (Slave 2)	
PJ - 09	Incorrect type of fan PCB 1 (Master)	
PJ - 10	Incorrect type of fan PCB 2 (Master)	
PJ - 12	Incorrect type of inverter PCB 2 (Master)	
PJ - 13	Incorrect type of inverter PCB 2 (Slave 1)	
PJ - 14	Incorrect type of inverter PCB 2 (Slave 2)	
PJ - 15	Incorrect type of fan PCB 1 (Slave 1)	
PJ - 16	Incorrect type of fan PCB 1 (Slave 2)	
PJ - 17	Incorrect type of fan PCB 2 (Slave 1)	
PJ - 18	Incorrect type of fan PCB 2 (Slave 2)	
U0 - 05	Refrigerant shortage warning (cooling)	Refer to the **U0** flowchart and make a diagnosis based on the Error code shown to the left.
U0 - 08	Refrigerant shortage (Master)	
U0 - 09	Refrigerant shortage (Slave 1)	
U0 - 10	Refrigerant shortage (Slave 2)	

Error code	Troubleshooting	
	Description of error	Diagnosis
U1 - 16	Open phase for power supply (Master)	Refer to the **U1** flowchart and make a diagnosis based on the Error code shown to the left.
U1 - 17	Open phase for power supply (Slave 1)	
U1 - 18	Open phase for power supply (Slave 2)	
U1 - 19	Hz error for power supply (Master)	
U1 - 20	Hz error for power supply (Slave 1)	
U1 - 21	Hz error for power supply (Slave 2)	
U2 - 01	Shortage of inverter power supply voltage (Master)	Refer to the **U2** flowchart and make a diagnosis based on the Error code shown to the left.
U2 - 08	Shortage of inverter power supply voltage (Slave 1)	
U2 - 11	Shortage of inverter power supply voltage (Slave 2)	
U2 - 22	Shortage of inverter 2 power supply voltage (Master)	
U2 - 25	Shortage of inverter 2 power supply voltage (Slave 1)	
U2 - 28	Shortage of inverter 2 power supply voltage (Slave 2)	
U3 - 02	Initial installation alarm / Test operation failed due to indoor unit error	Refer to the **U3** flowchart and make a diagnosis based on the Error code shown to the left.
U3 - 03	Test operation not conducted	
U3 - 04	Abnormal end of test operation	
U3 - 05	Premature end of test operation during initial transmission error – check indoor unit error U4 / U9	
U3 - 06	Premature end of test operation during normal transmission error	
U3 - 07	Premature end of test operation due to transmission error	
U3 - 08	Premature end of test operation due to transmission error of all units	
U3 - 10	System refrigerant auto charge operation not yet executed	
U4 - 01	Transmission error between indoor unit and outdoor unit	Refer to the **U4** flowchart and make a diagnosis based on the Error code shown to the left.
U4 - 03	Transmission error between indoor unit and system: check indoor unit error	
U7 - 01	Error when external control adaptor for outdoor unit is installed	Refer to the **U7** flowchart and make a diagnosis based on the Error code shown to the left.
U7 - 02	Alarm when external control adaptor for outdoor unit is installed	
U7 - 03	Transmission error between master and slave 1 units	
U7 - 04	Transmission error between master and slave 2 units	
U7 - 05	Multi system error	
U7 - 06	Error in address settings of slave 1 and 2	
U7 - 07	Connection of four or more outdoor units in the same system	
U7 - 11	Error in indoor unit connection capacity for test operation	
U9 - 01	Other indoor units and outdoor unit abnormality	Refer to the **U9** flowchart and make a diagnosis based on the Error code shown to the left.
UA - 00	TSS plus unit field settings error, CT address duplication warning	Refer to the **UA** flowchart and make a diagnosis based on the Error code shown to the left.
UA - 03	Connection of excessive indoor units	
UA - 17	Connection of excess indoor units	
UA - 18	Connection of incorrect models of indoor units	
UA - 20	Improper combination of outdoor units	
UA - 21	Wrong connection	
UA - 31	Multi system combination error	
UF - 01	Wrong wiring check error	Refer to the **UF** flowchart and make a diagnosis based on the Error code shown to the left.
UF - 05	Defective stop valve for test operation	
UH - 01	Wiring error	Refer to the **UH** flowchart.

5. Troubleshooting by Error Code

5.1 External Protection Device Abnormality

Applicable Models

All indoor unit models

Error Code

A0

Method of Error Detection

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

Error Decision Conditions

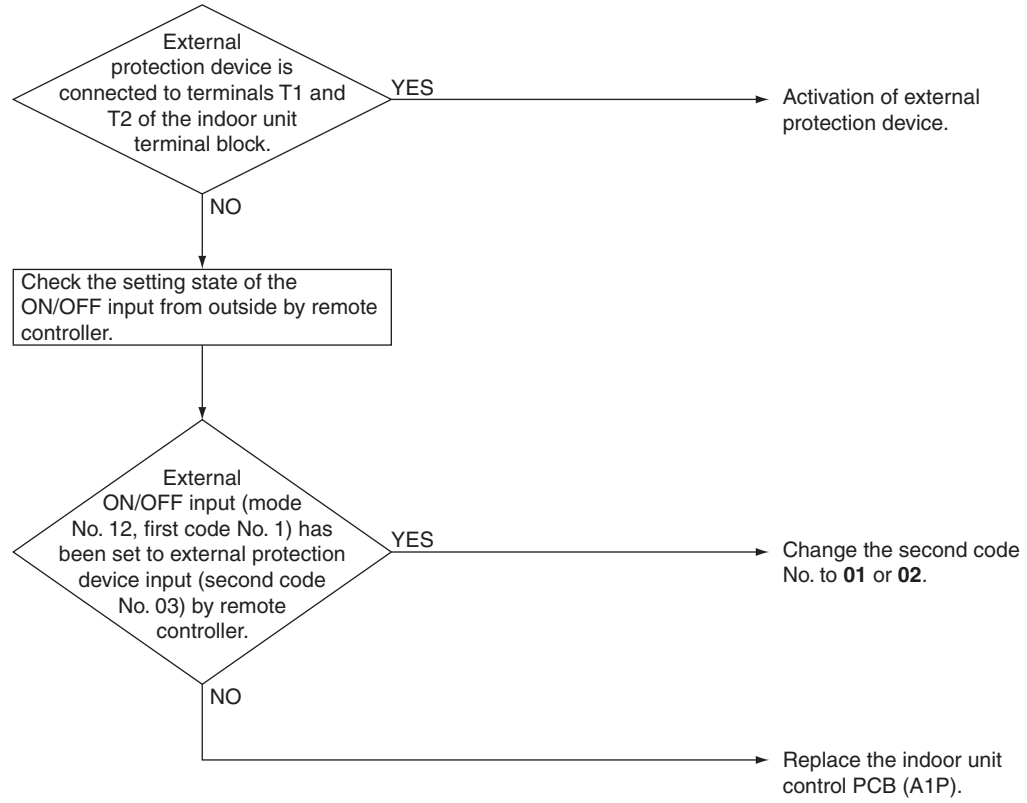
An open circuit occurs between external input terminals with the remote controller set for external ON/OFF input.

Supposed Causes

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

Troubleshooting

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



5.2 Indoor Unit PCB Abnormality

Applicable Models

All indoor unit models

Error Code

A1

Method of Error Detection

Data from EEPROM is checked.

Error Decision Conditions

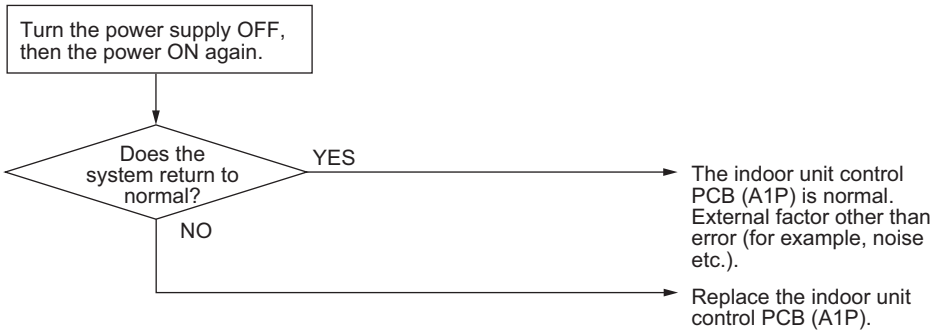
Data cannot be correctly received from the EEPROM
EEPROM: Type of nonvolatile memory. Maintains memory contents even when the power supply is turned OFF.

Supposed Causes

- Defective indoor unit 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.



5.3 Drain Level Control System Abnormality

Applicable Models

FXFSQ-AR, FXMQ-PB

Error Code

A3

Method of Error Detection

By float switch OFF detection

Error Decision Conditions

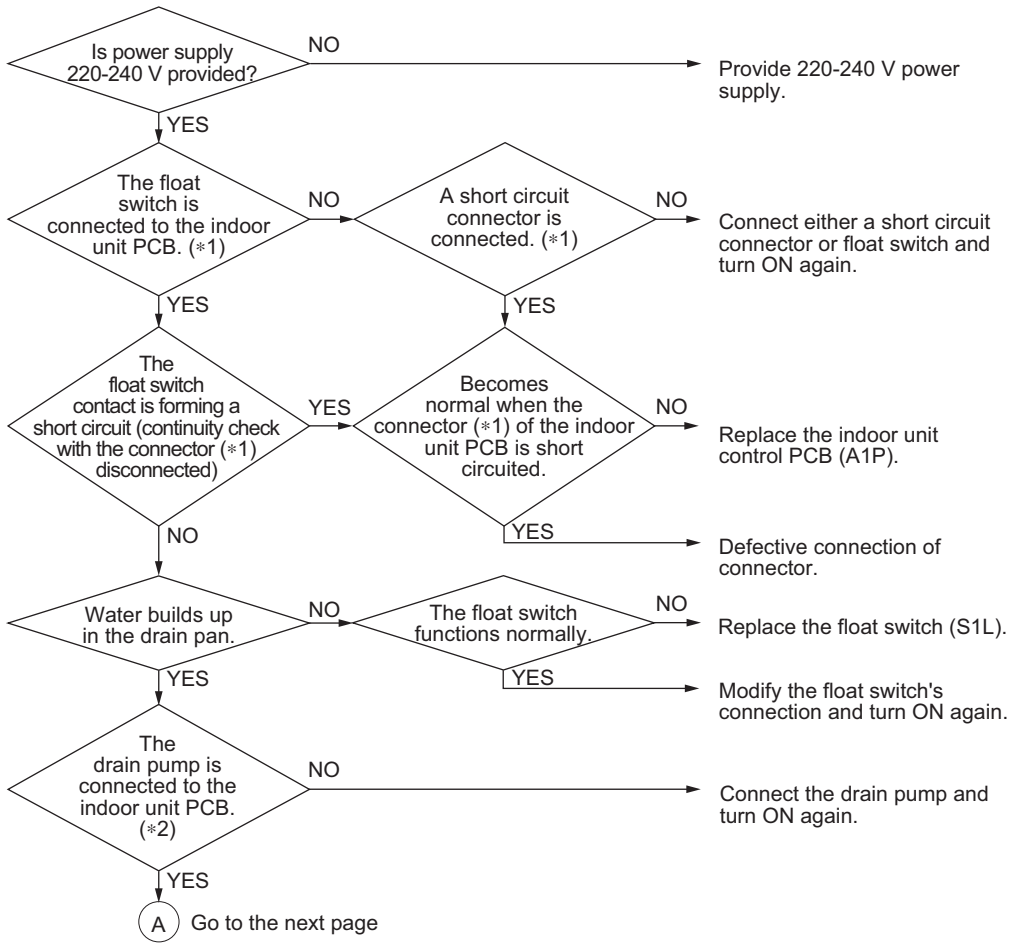
Float switch goes OFF when the conditions for water level rise are not met

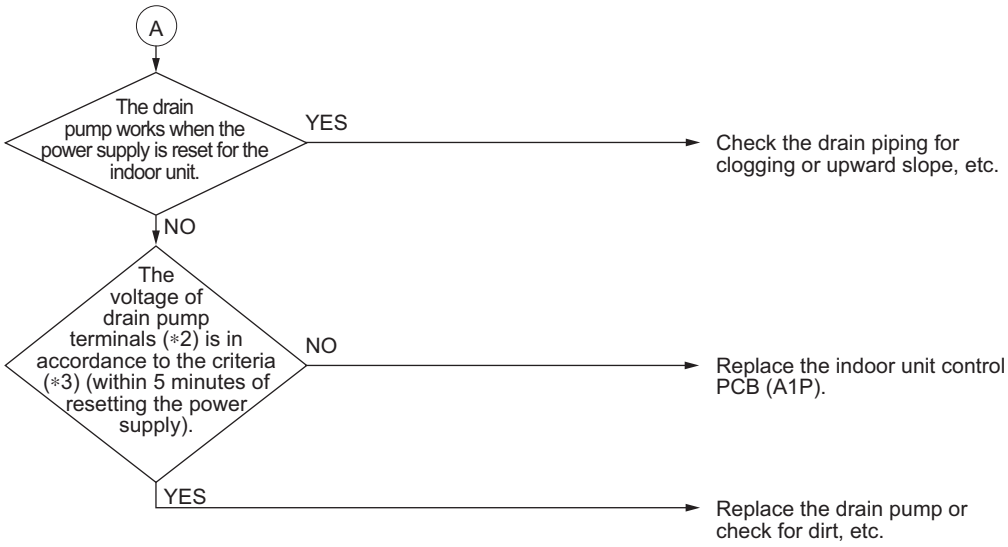
Supposed Causes

- 220-240 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	Note
FXFSQ-AR	X15A	X25A	13 VDC	–
FXMQ-PB	X15A	X25A	13 VDC	–

5.4 Indoor Fan Motor Lock, Overload

Applicable Models

FXMQ40PB, 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

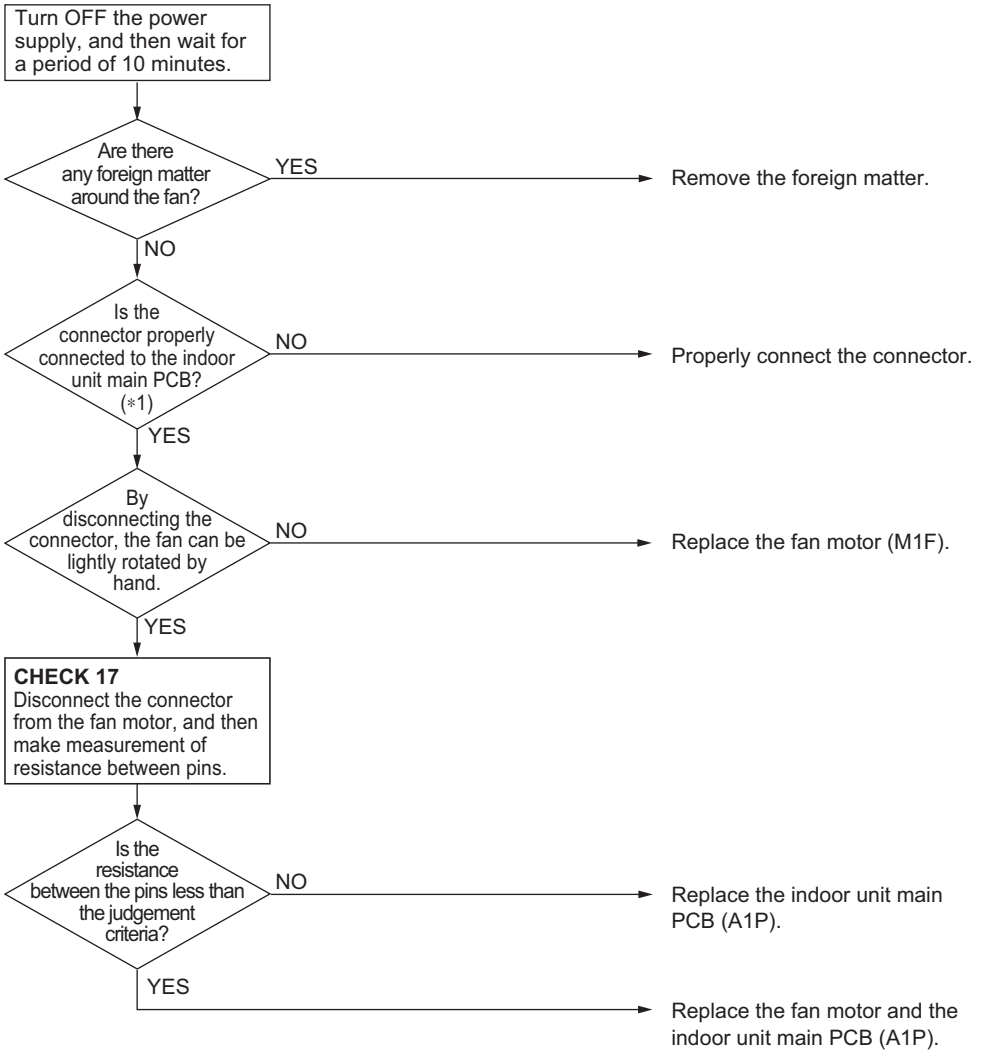
The fan revolutions do not increase.

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 high-power PCB and the low-power PCB: FXMQ40PB

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
FXMQ40PB	X8A
FXAQ-P	X20A

Reference **CHECK 17** Refer to page 302.

5.5 Indoor Fan Motor Abnormality

5.5.1 Indoor Fan Motor Abnormality (FXFSQ-AR)

Applicable Models

FXFSQ-AR

Error Code

A6-10

Method of Error Detection

- Detection from the current flow on the fan PCB (A1P)
- Detection from the rotation speed of the fan motor in operation
- Detection from the position signal of the fan motor
- Detection from the current flow on the fan PCB when the fan motor starting operation

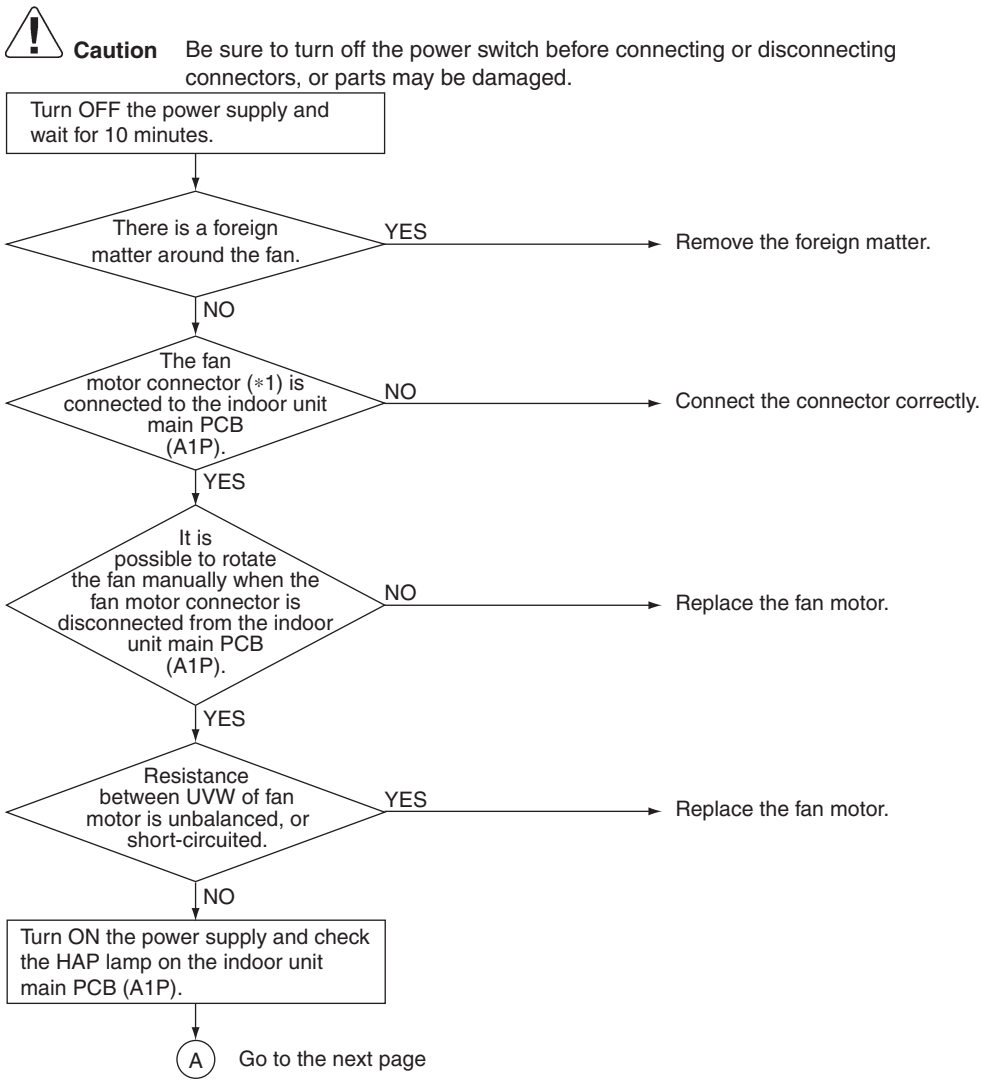
Error Decision Conditions

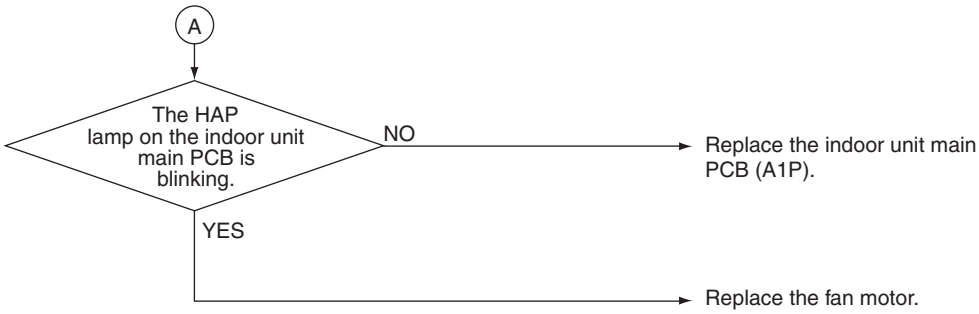
- An overcurrent flows
- The rotation speed is less than a certain level for 6 seconds.
- A position error in the fan rotor continues for 5 seconds or more.

Supposed Causes

- Clogged foreign matter
- Disconnection of fan motor connectors
- Fan motor lock
- Defective fan motor
- Defective indoor unit PCB

Troubleshooting





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

5.5.2 Indoor Fan Motor Abnormality (FXMQ50-140PB)

Applicable Models

FXMQ50-140PB

Error Code

A6

Method of Error Detection

- Error from the current flow on the fan PCB
- Error from the RPM of the fan motor in operation
- Error from the position signal of the fan motor
- Error from the current flow on the fan PCB when the fan motor starting operation

Error Decision Conditions

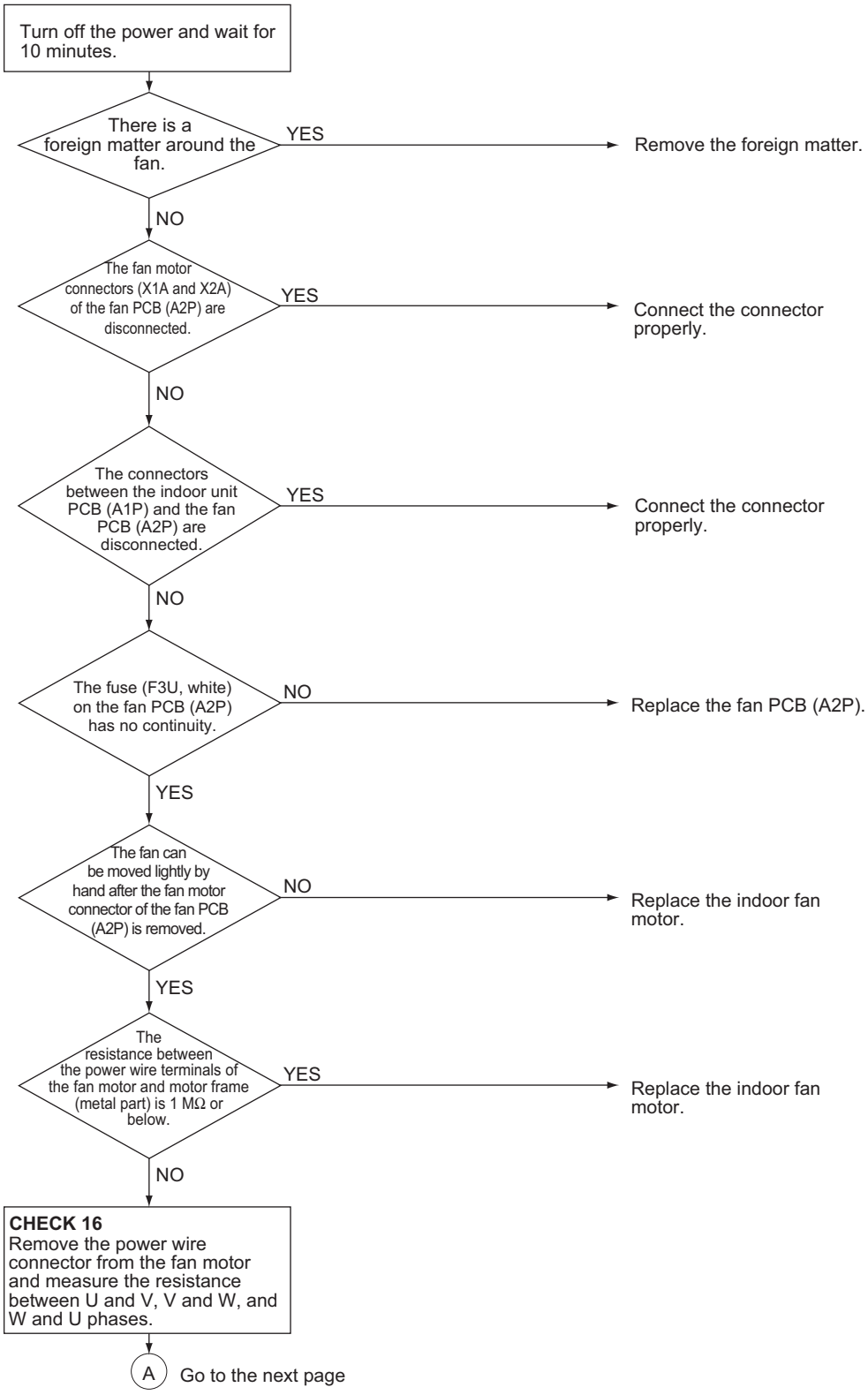
- An overcurrent flows.
- The RPM is less than a certain level for 6 seconds.
- A position error in the fan rotor continues for 5 seconds or

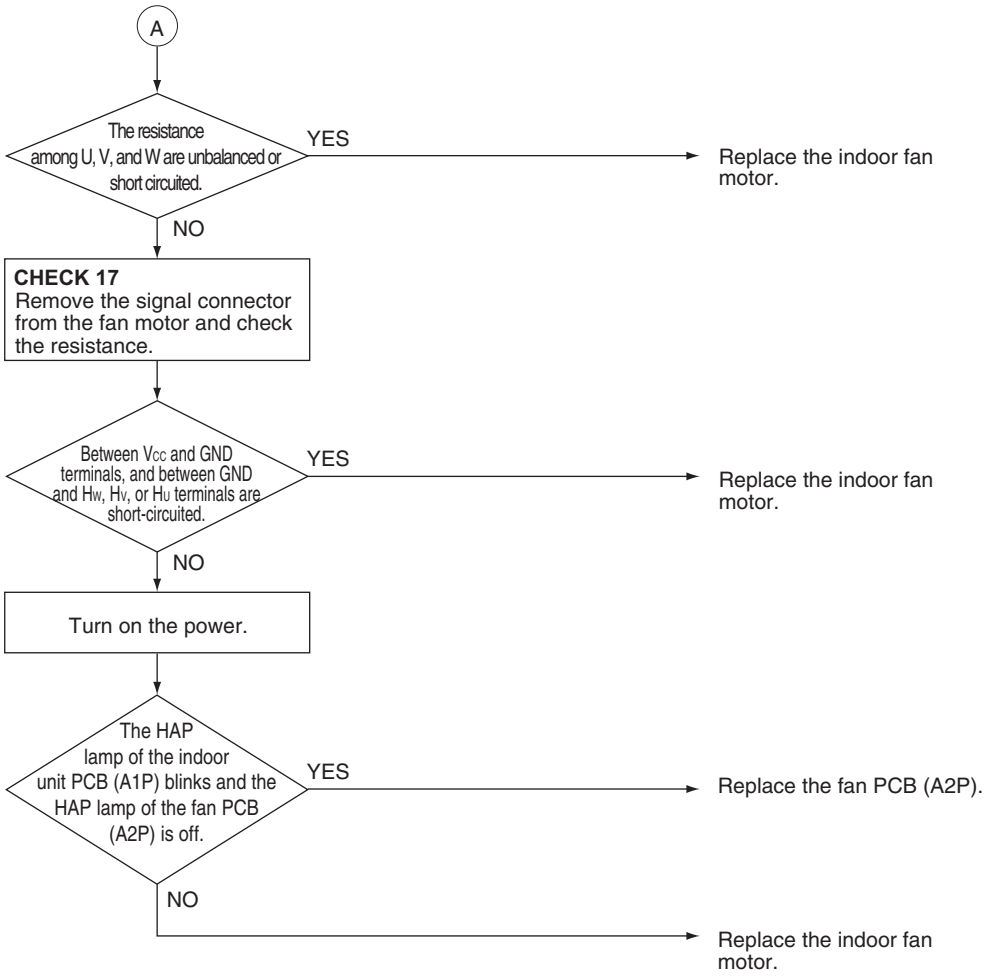
Supposed Causes

- Clogging of a foreign matter
- Disconnection of the fan motor connectors (X1A and X2A)
- Disconnection of the connectors between the indoor unit main PCB (A1P) and fan PCB (A2P)
- Defective fan PCB (A2P)
- Defective fan motor

Troubleshooting

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





Reference **CHECK 16** Refer to page 301.

Reference **CHECK 17** Refer to page 302.

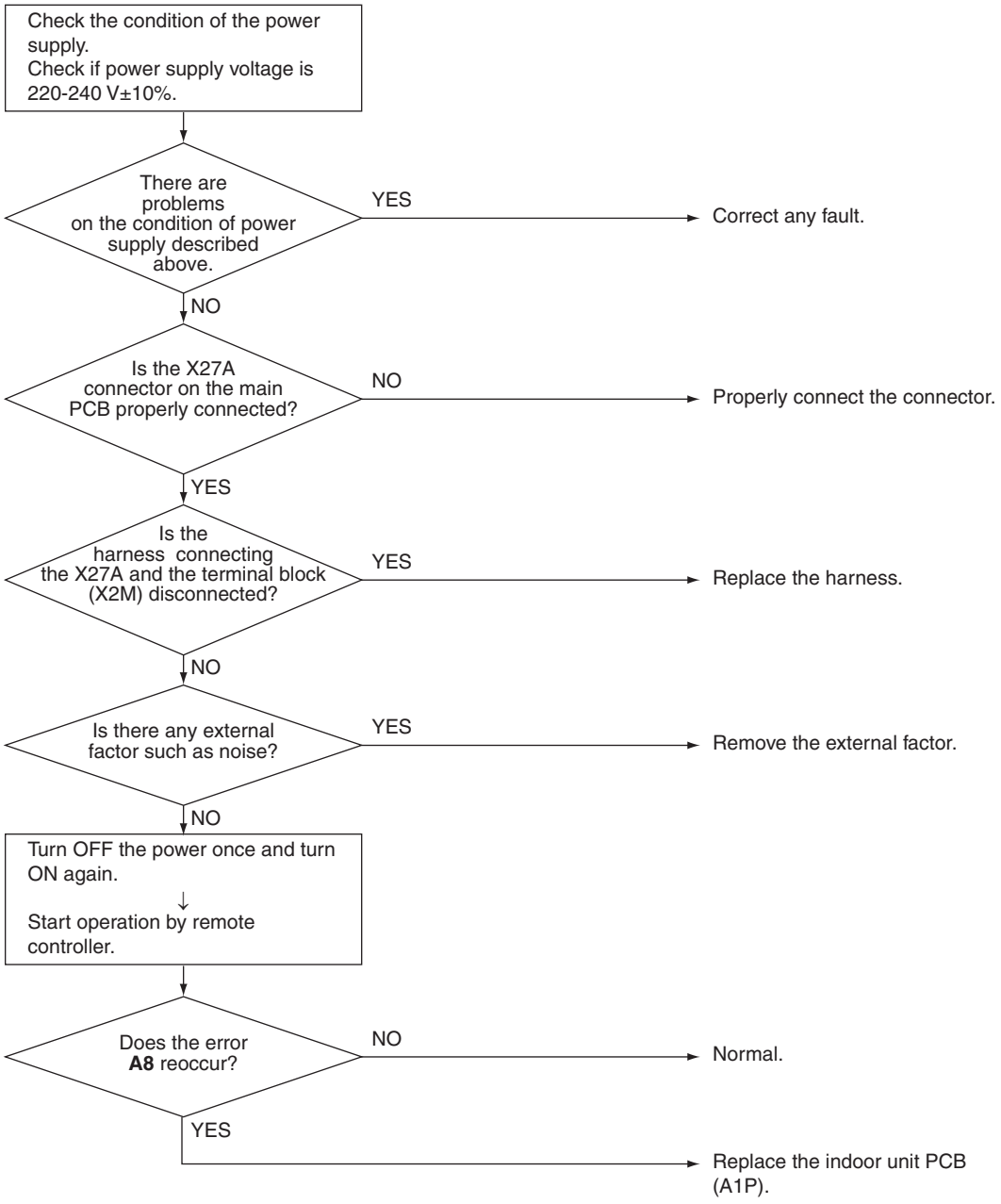
5.6 Power Supply Voltage Abnormality

5.6.1 Power Supply Voltage Abnormality (FXFSQ-AR)

Applicable Models	FXFSQ-AR
Error Code	**A8-01**
Method of Error Detection	This error is detected by checking the voltage status with the microcomputer.
Error Decision Conditions	Overvoltage or voltage drop is detected on the fan driver.
Supposed Causes	■ Defective connection of power supply connector ■ Defective indoor unit PCB (A1P) ■ External factors (e.g. noise)

Troubleshooting

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



5.6.2 Power Supply Voltage Abnormality (FXMQ40-140PB)

Applicable Models

FXMQ40-140PB

Error Code

A8

Method of Error Detection

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

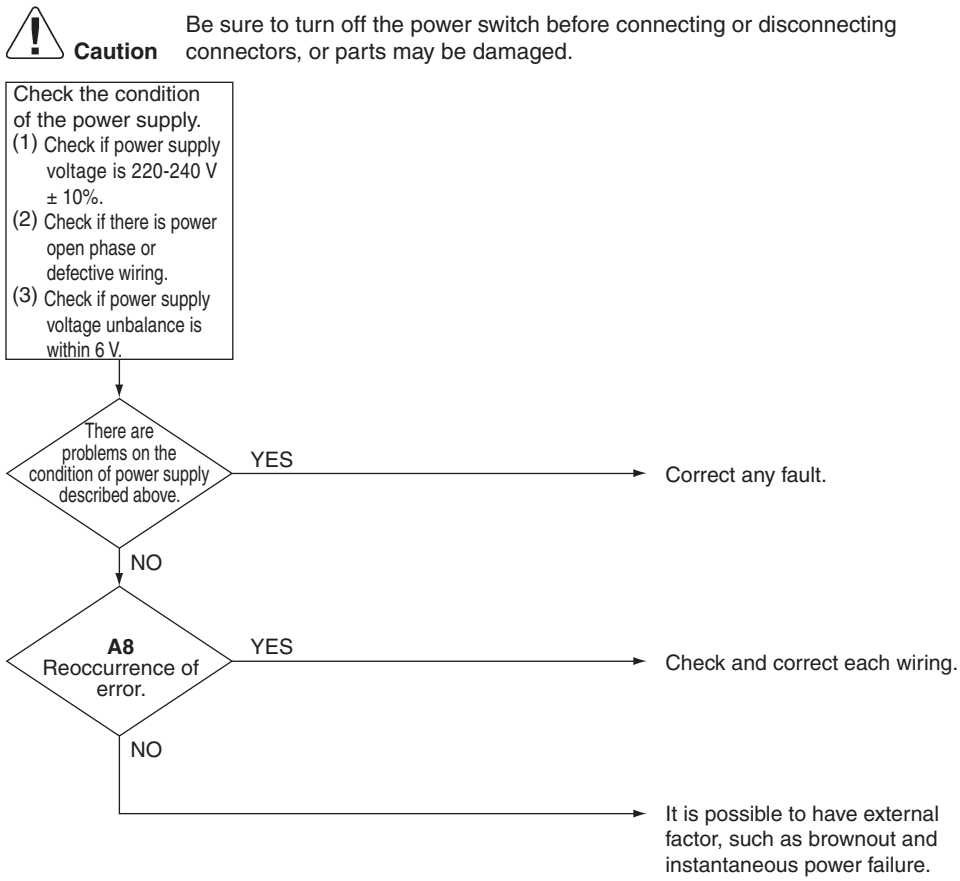
Error Decision Conditions

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



5.7 Electronic Expansion Valve Coil Abnormality, Dust Clogging

Applicable Models

All indoor unit models

Error Code

A9, A9-02

Method of Error Detection

Electronic expansion valve coil conditions are checked via microcomputer.
The electronic expansion valve main body is checked for dust clogging via 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.

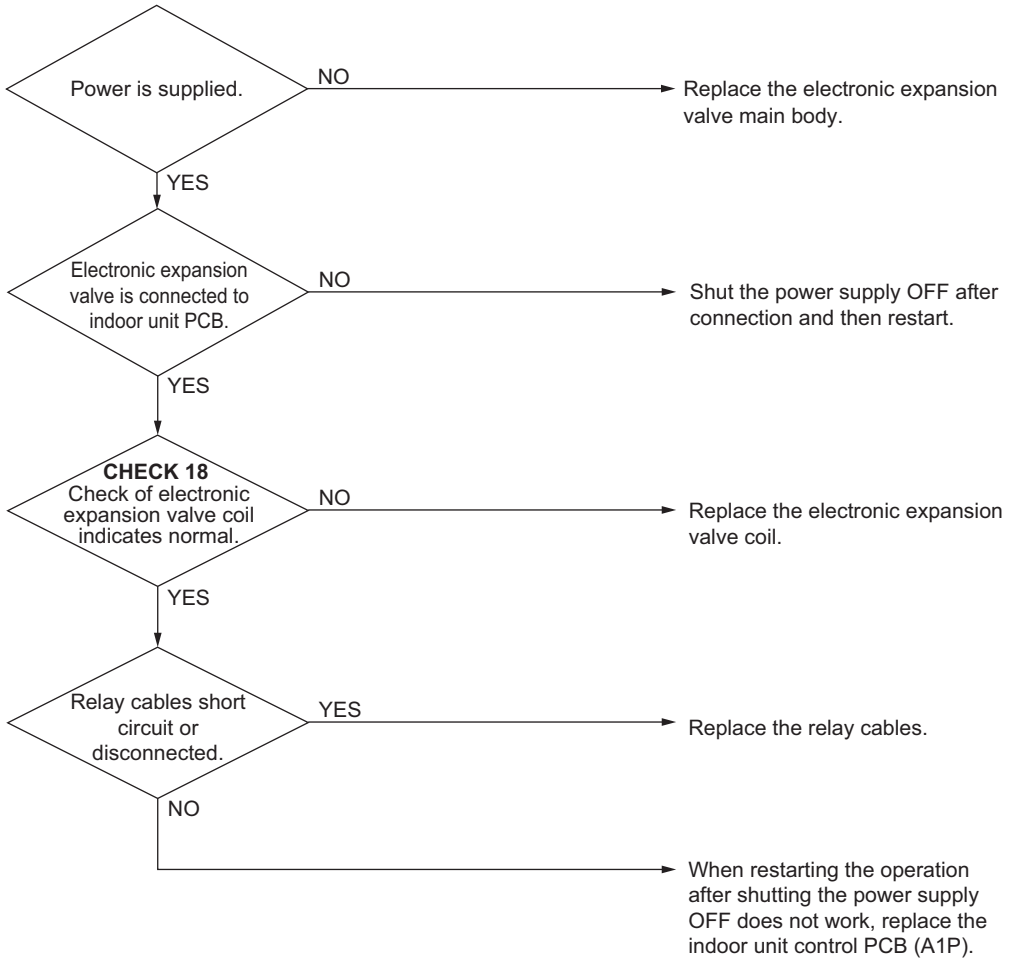
- Temperature of suction air (R1T) – temperature of liquid pipe (R2T) > 8°C.
- Temperature of liquid pipe (R2T) shows fixed degrees or below.

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 303.

5.8 Humidifier System Abnormality

Applicable Models

FXFSQ, FXMQ-PB

Error Code

AF

Method of Error Detection

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

Error Decision Conditions

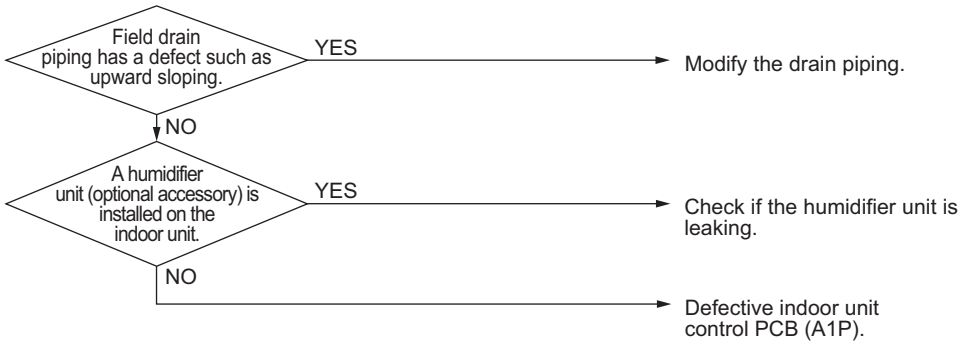
The float switch changes from ON to OFF while the compressor is not in operation.
∗ Error code is displayed but the system operates continuously.

Supposed Causes

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

Troubleshooting

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



5.9 Auto Grille Unit Error

Applicable Models

FXFSQ (when auto grille panel BYCQ125EASF is installed)

Error Code

AH-12

Method of Error Detection

This error is determined when an abnormal signal from the auto grille kit is detected.

Error Decision Conditions

Any of the following conditions is established while the grille is elevating.

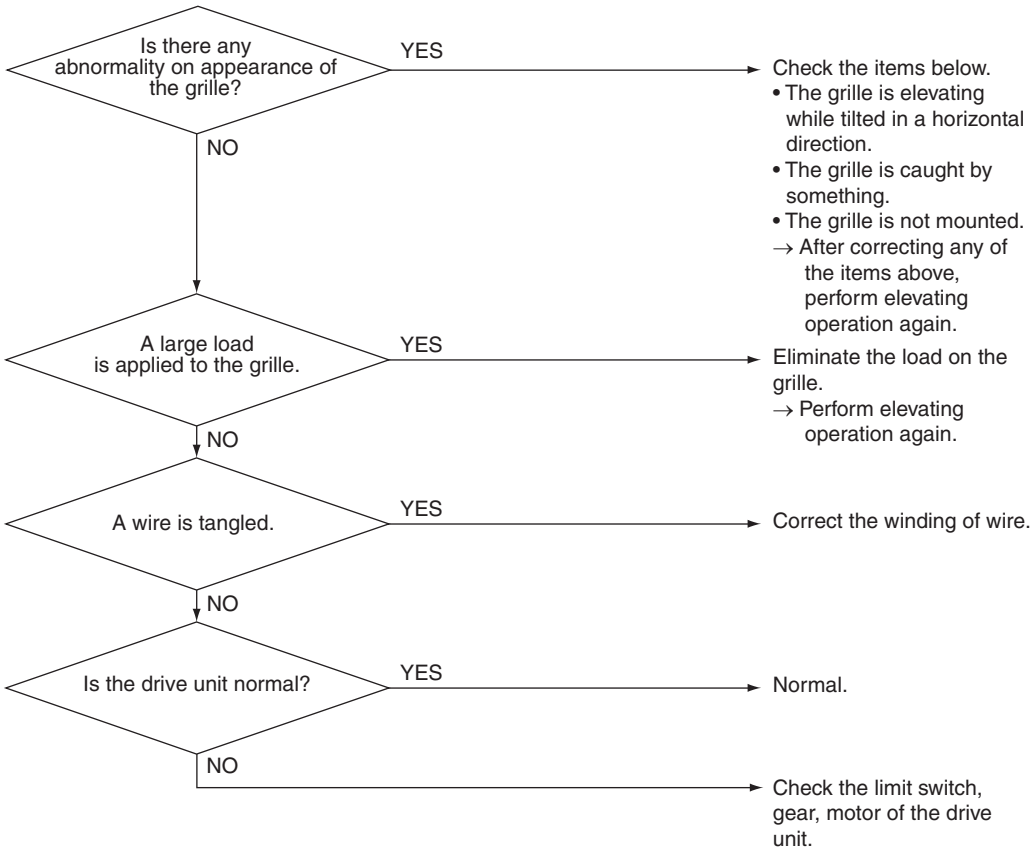
- The storage detection limit switch does not detect anything for a prescribed time while the grille is moving upward.
- The position detection limit switch does not detect anything for a prescribed time while the grille is moving upward.
- The position detection limit switch detects a position for less than one second while the grille is moving downward.

Supposed Causes

- A large load on the grille
- Tangled wire
- Defective motor
- Defective limit switch

Troubleshooting

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



5.10 Capacity Determination Device Abnormality

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

Error Decision Conditions

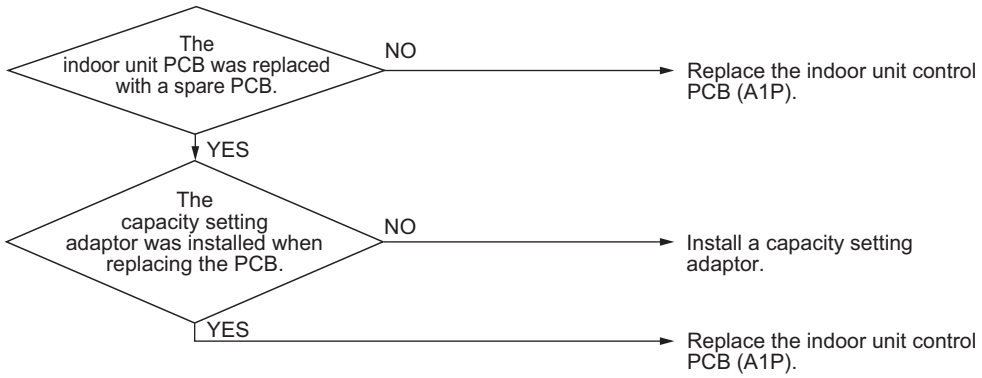
The capacity code is not saved to the PCB, and the capacity setting adaptor is not connected. A capacity that does not exist for that unit is set.

Supposed Causes

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

Troubleshooting

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

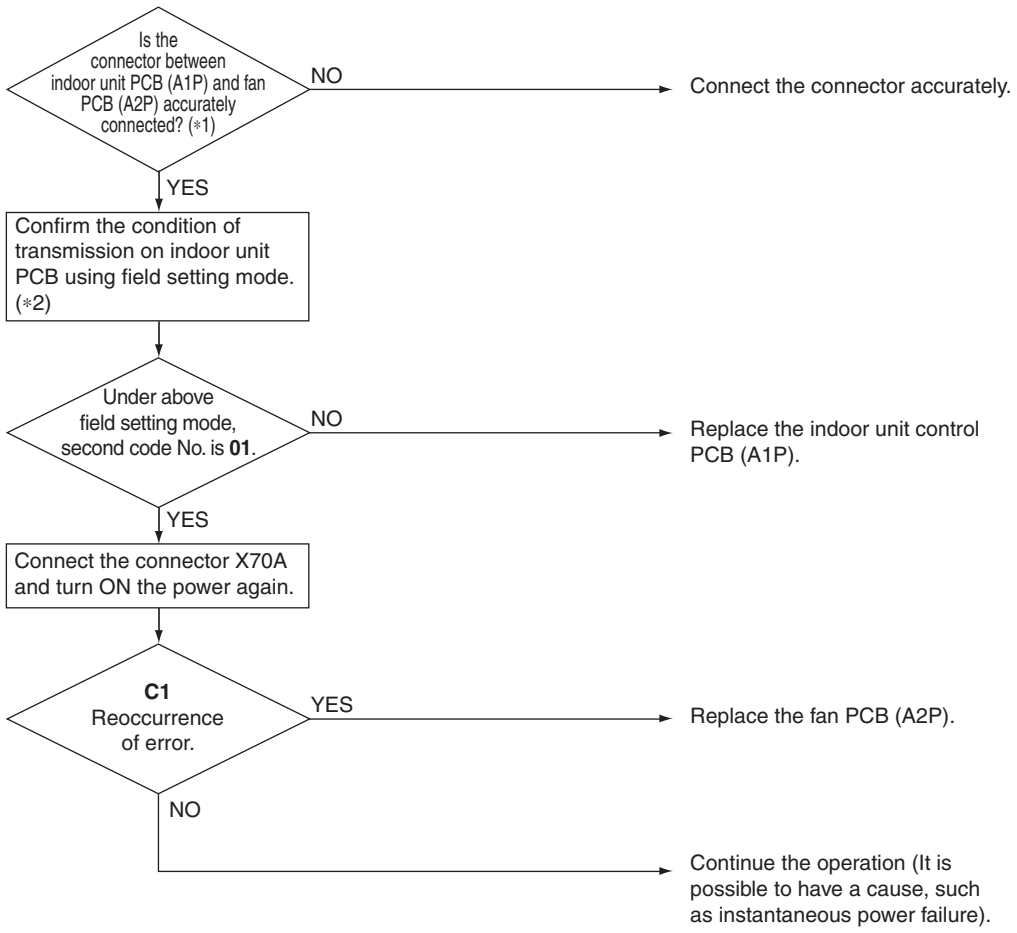


5.11 Transmission Abnormality (between Indoor Unit PCB and Fan PCB)

Applicable Models	FXMQ40-140PB
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	■ Defective connection of 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.

5.12 Transmission Error

Applicable Models

FXFSQ

Error Code

C1-01

Method of Error Detection

Check the condition of transmission using microcomputer.

Error Decision Conditions

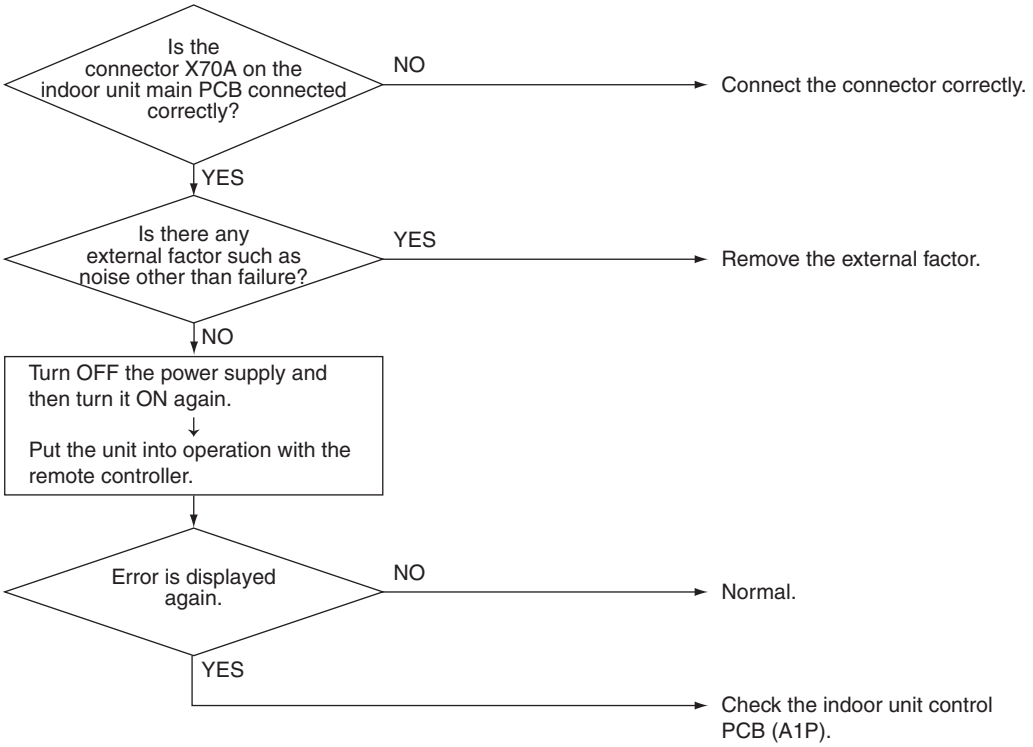
Error is decided when transmission has been lost for 15 seconds and the error code is displayed on the remote controller 60 seconds later.

Supposed Causes

- Defective connection of the transmission connector (X70A)
- Defective indoor unit control PCB
- External factor such as noise

Troubleshooting

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



5.13 Transmission Error (between Indoor Unit PCB and Auto Grille Control PCB)

Applicable Models

FXFSQ (when auto grille panel BYCQ125EASF is installed)

Error Code

C1-06

Method of Error Detection

The status of communication between the indoor unit PCB (X70A) and the auto grille control PCB (X12A) is checked with the microcomputer.

Error Decision Conditions

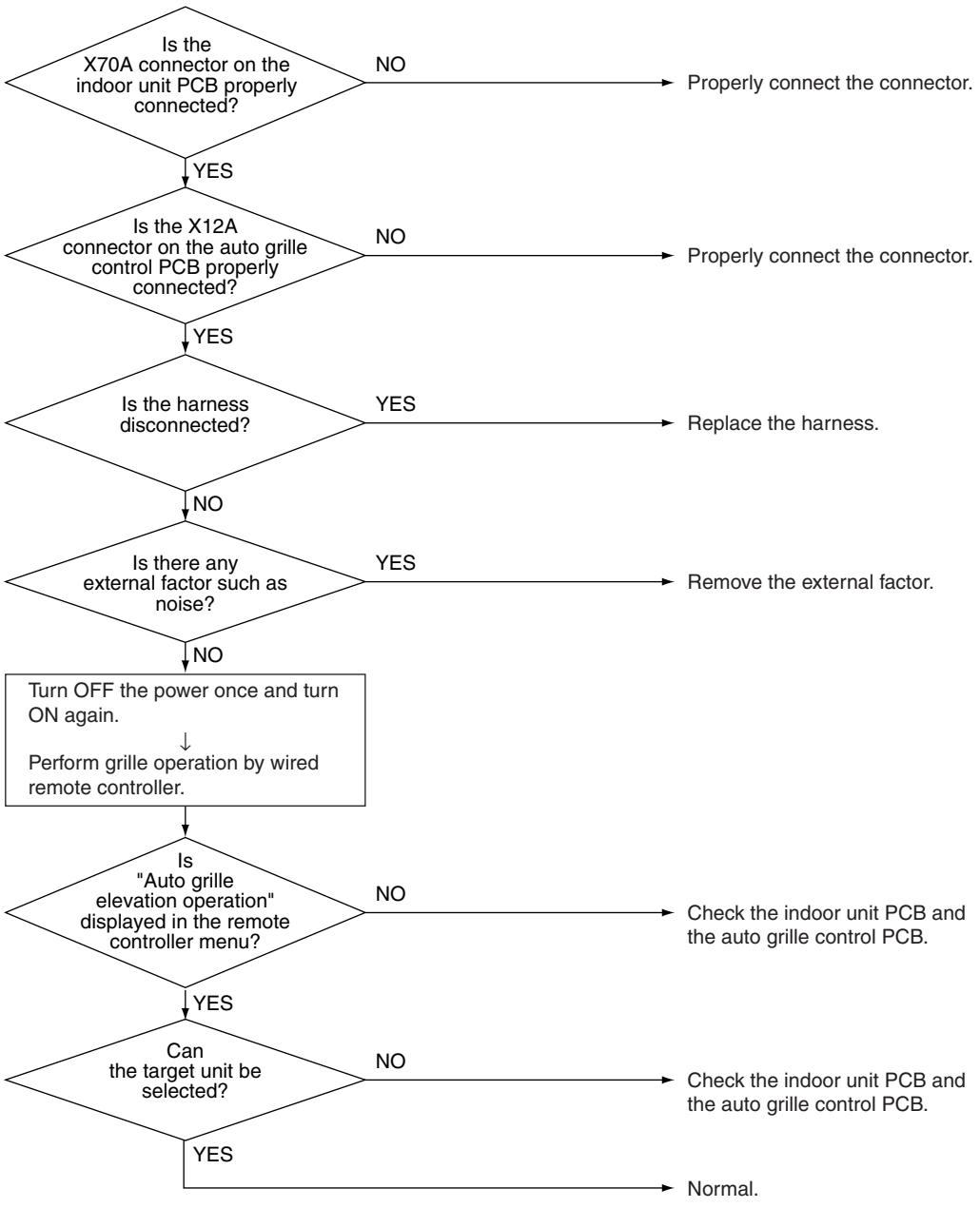
When transmission communication between the indoor unit PCB and the auto grille control PCB is not normally performed for a certain period or time or more.

Supposed Causes

- Defective connection of the transmission communication connector between the indoor unit PCB and the auto grille control PCB
- Defective indoor unit PCB
- Defective auto grille control PCB
- External factors (e.g. noise)

Troubleshooting

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



5.14 Thermistor Abnormality

Applicable Models

All indoor unit models

Error Code

C4, C5, C9

Method of Error Detection

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

Error Decision Conditions

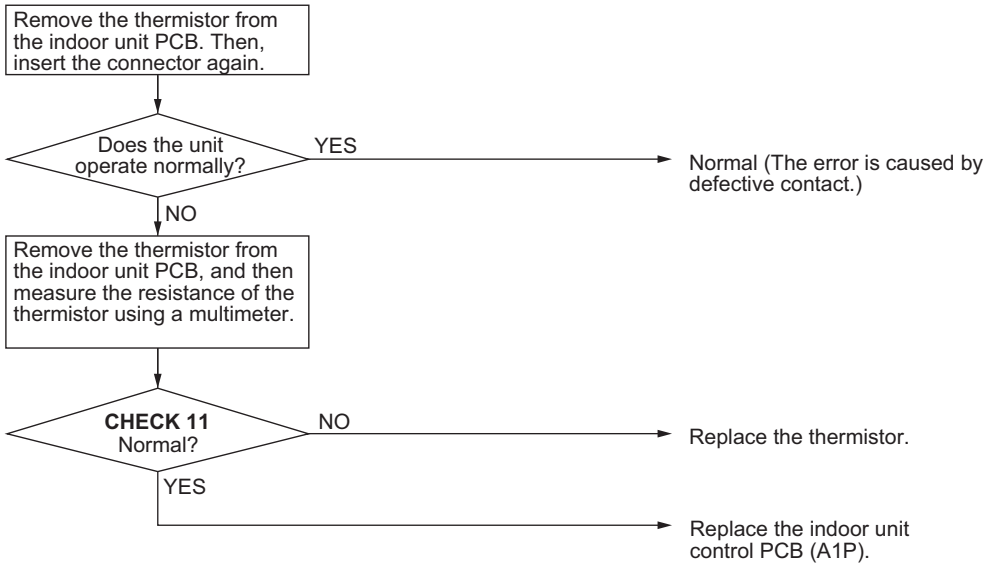
The thermistor becomes disconnected or shorted while the unit is running.

Supposed Causes

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

Troubleshooting

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



Note(s) Error code and thermistor

Error Code	Thermistor	Electric Symbol
C4	Indoor heat exchanger liquid pipe thermistor	R2T
C5	Indoor heat exchanger gas pipe thermistor	R3T
C9	Suction air thermistor	R1T

Reference **CHECK 11** Refer to page 295.

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

Applicable Models

FXMQ40-140PB

Error Code

C6

Method of Error Detection

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

Error Decision Conditions

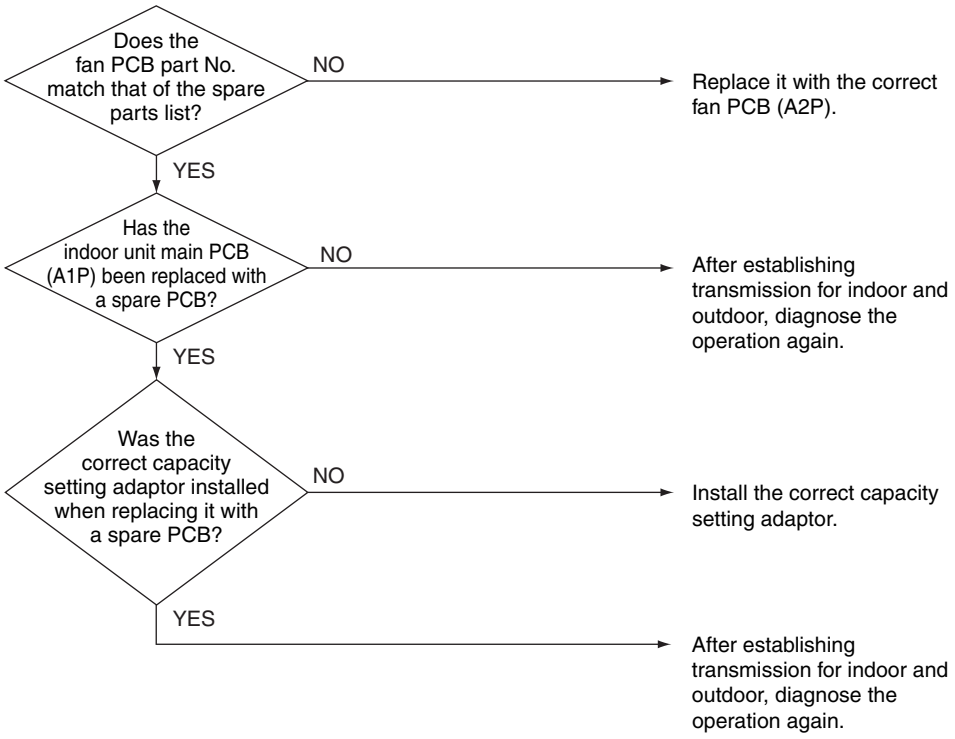
Fan PCB (A2P) communication data is determined to be incorrect.

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.



5.16 Capacity Setting Abnormality

Applicable Models

FXFSQ

Error Code

C6-01

Method of Error Detection

This error is detected by checking communication between the PCB (A1P) and the fan microcomputer.

Error Decision Conditions

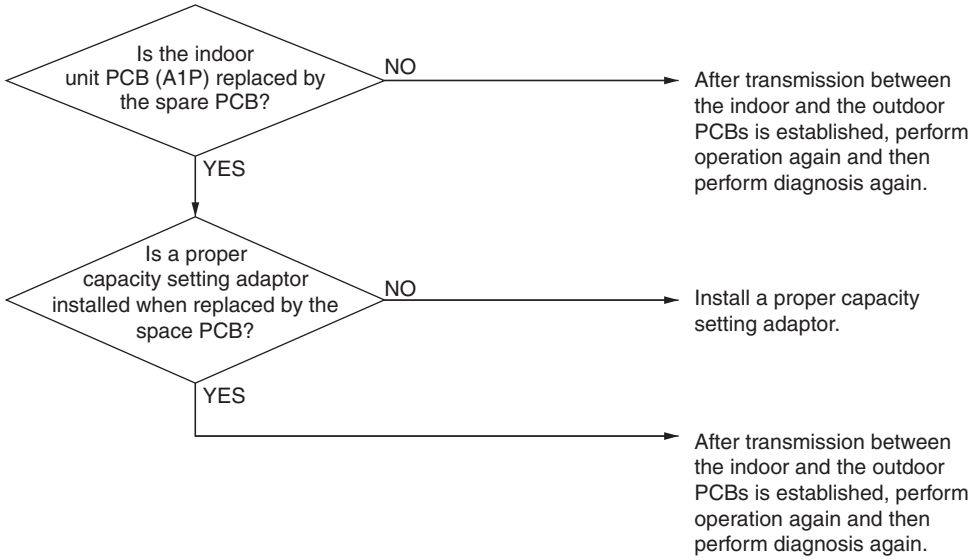
Based on the communication data, decide whether the combination of capacity setting and the type of fan driver is correct.

Supposed Causes

- Defective connection of the capacity setting adaptor
- Wrong field setting

Troubleshooting

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



5.17 Indoor Unit PCB Abnormality

Applicable Models

FXFSQ

Error Code

C6-05

Method of Error Detection

This error is detected by checking the current sensor value.

Error Decision Conditions

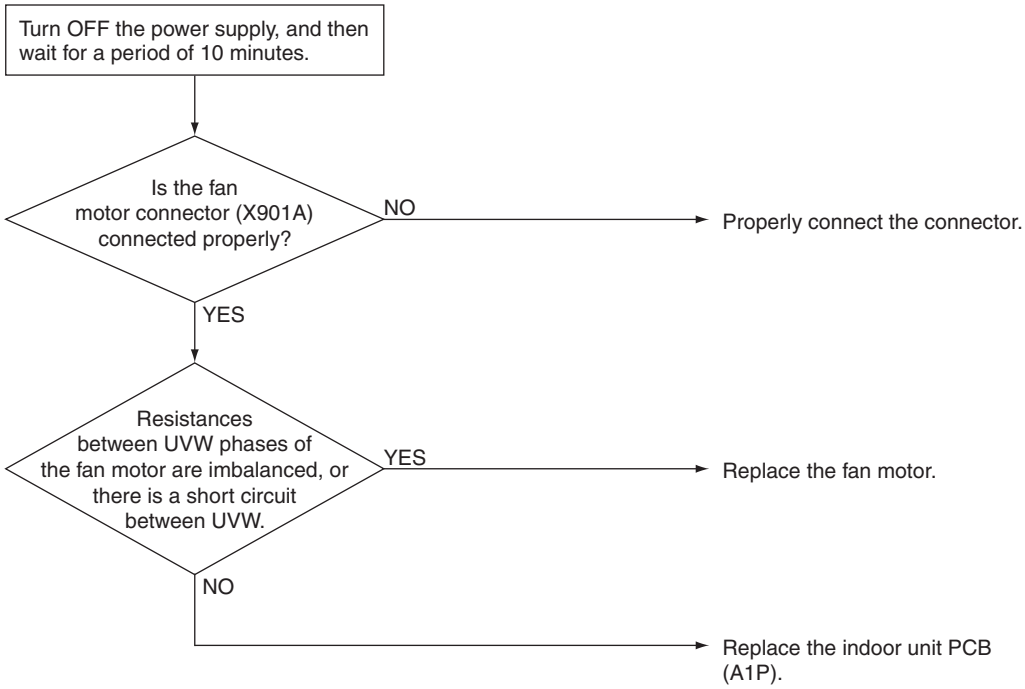
When an abnormal signal is detected at the start of operation of the fan motor.

Supposed Causes

- Disconnection of the connector of the fan motor lead wire
- Defective fan motor (Broken wires or defective insulation)
- Defective PCB (A1P)

Troubleshooting

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



5.18 Infrared Presence/Floor Sensor Error

Applicable Models

FXFSQ

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

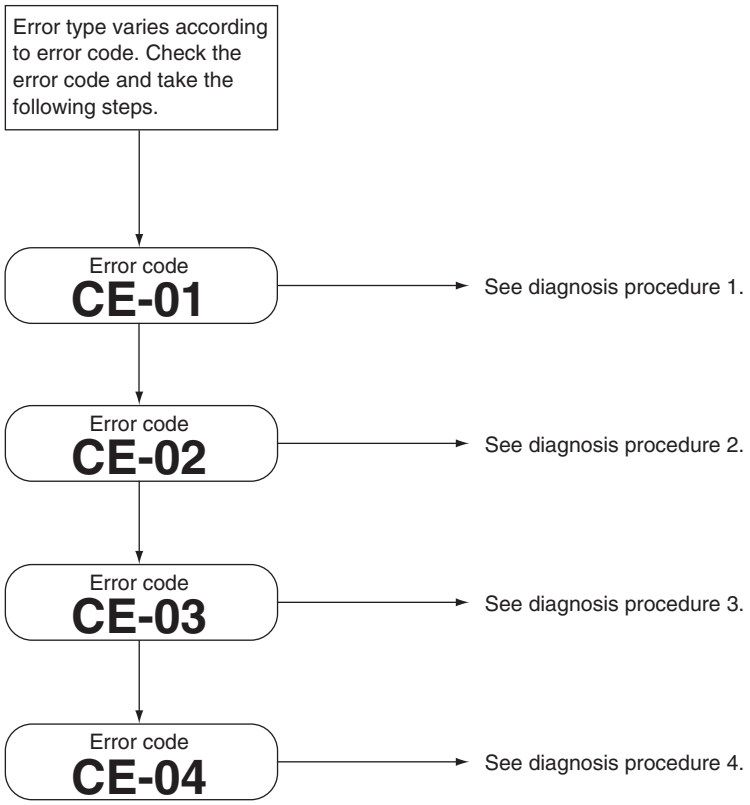
Error is detected based on sensor output signals

Supposed Causes

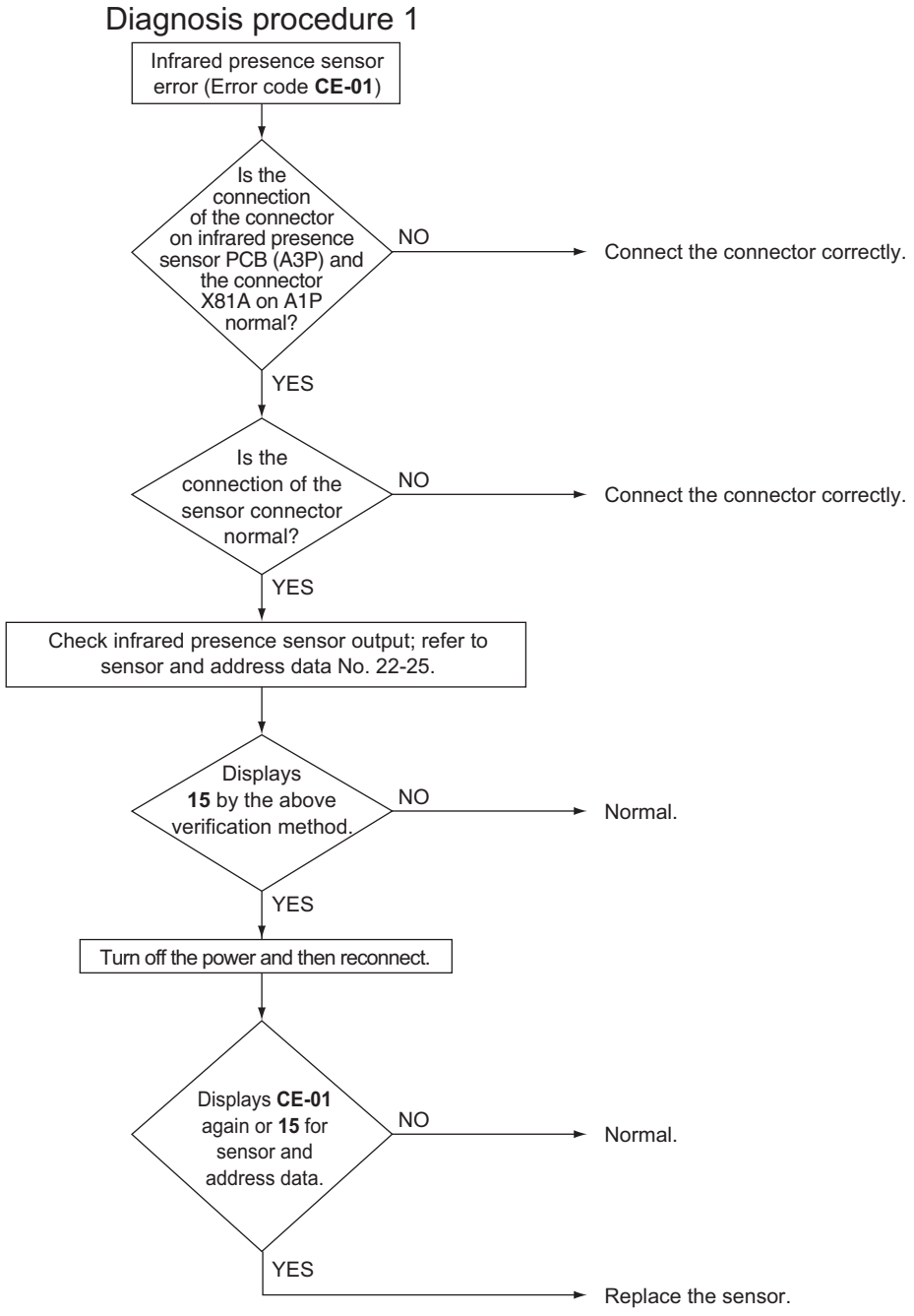
- Defective or disconnected infrared presence sensor connector: **CE-01**
- Defective infrared floor sensor (Temperature compensation circuit disconnection): **CE-02**
- Defective infrared floor sensor (Temperature compensation short circuit): **CE-03**
- Defective infrared floor sensor element: **CE-04**

Troubleshooting

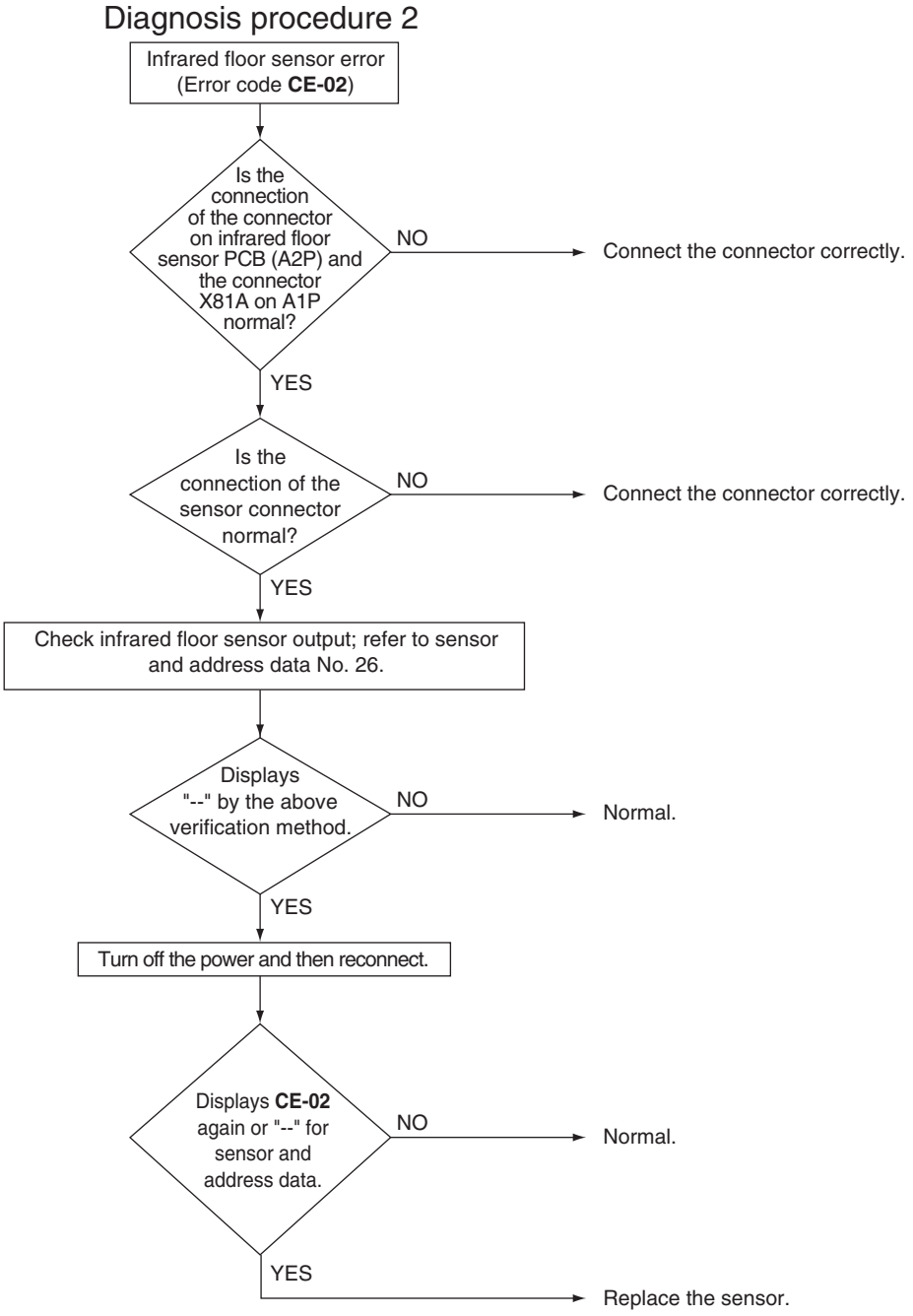
Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



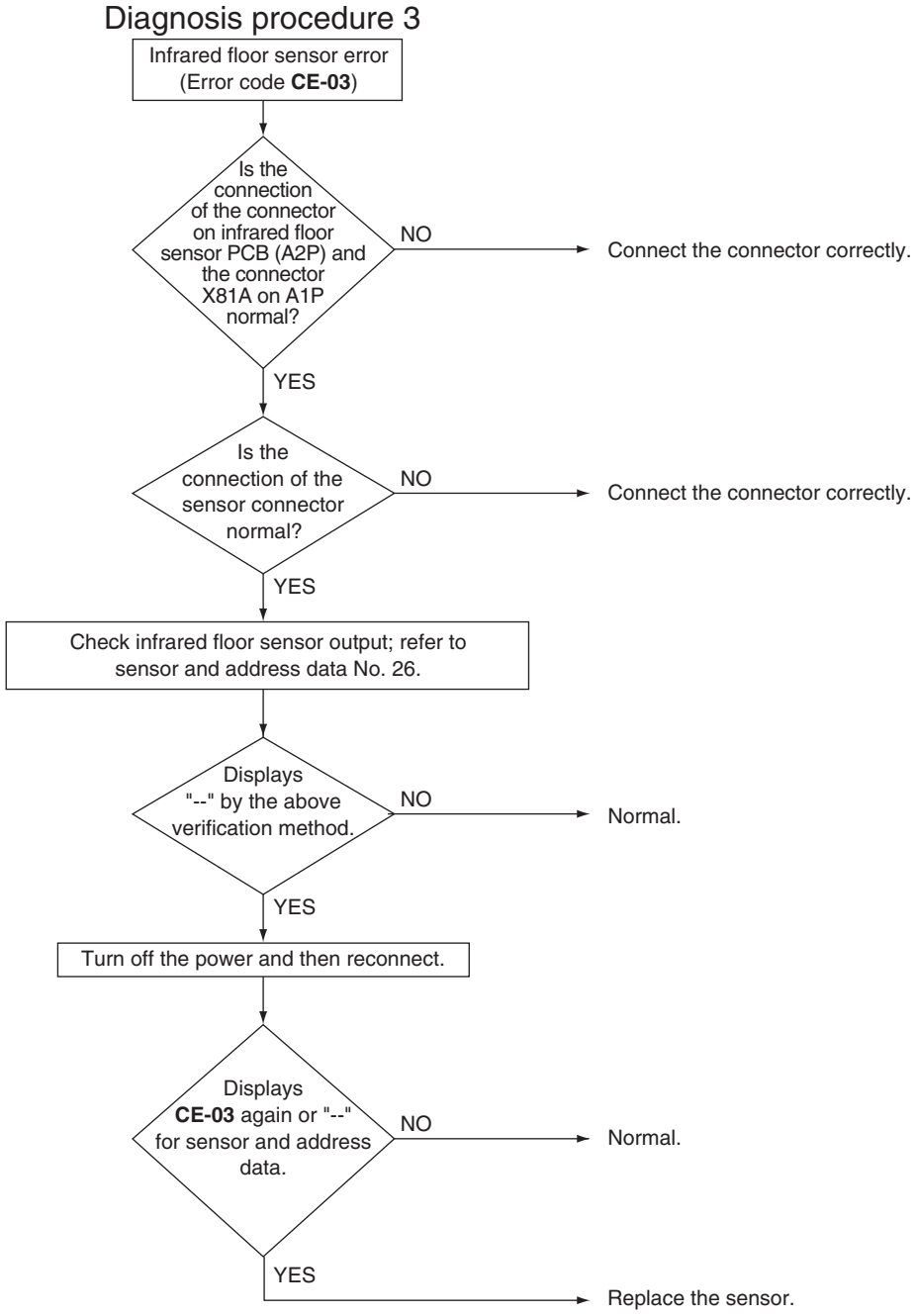
Troubleshooting



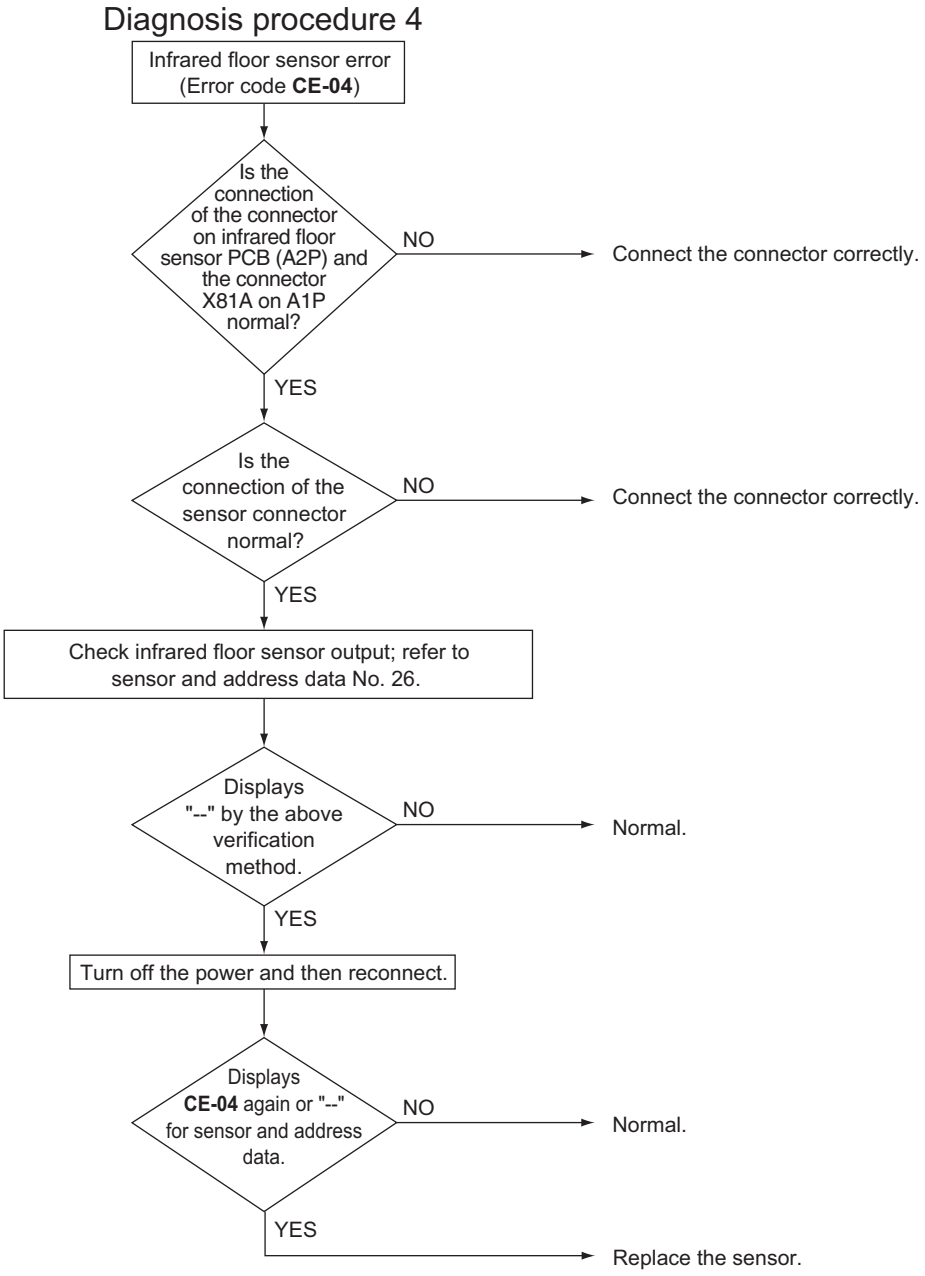
Troubleshooting



Troubleshooting



Troubleshooting



5.19 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

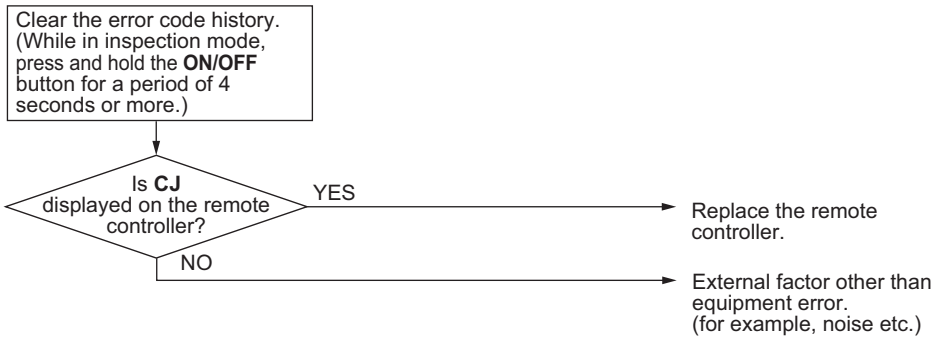
When the remote controller thermistor becomes disconnected or shorted while the unit is running.
∗ Error code is displayed but the system operates continuously.

Supposed Causes

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

5.20 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

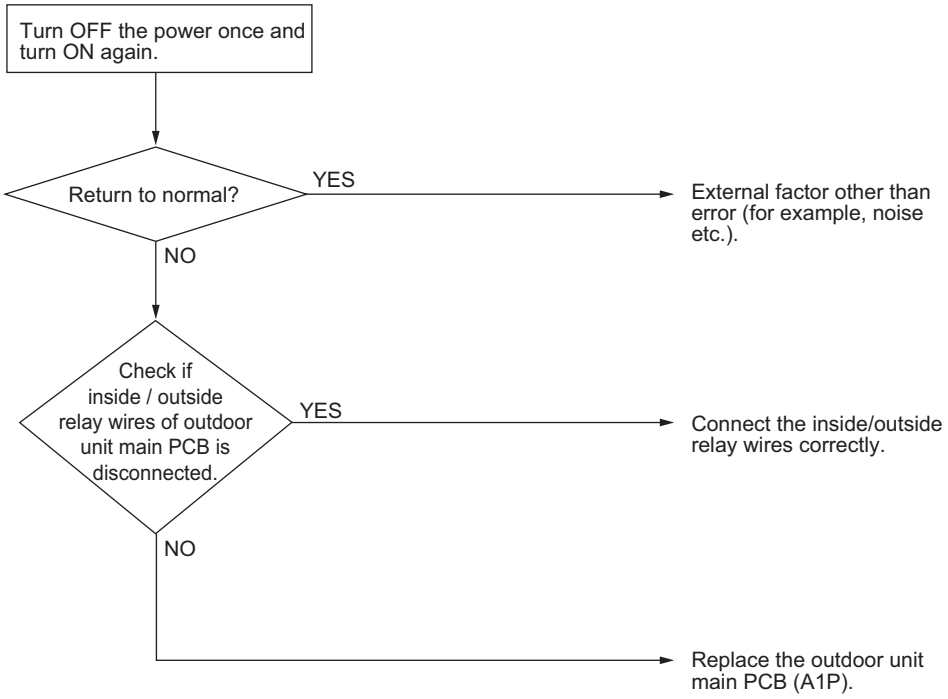
When the communication conditions in the hardware section between the indoor unit and the outdoor unit are not normal.

Supposed Causes

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

Troubleshooting

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



5.21 Current Leakage Detection

Applicable Models

All outdoor unit models

Error Code

E2

Sub code: -01 to -03

Method of Error Detection

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

Error Decision Conditions

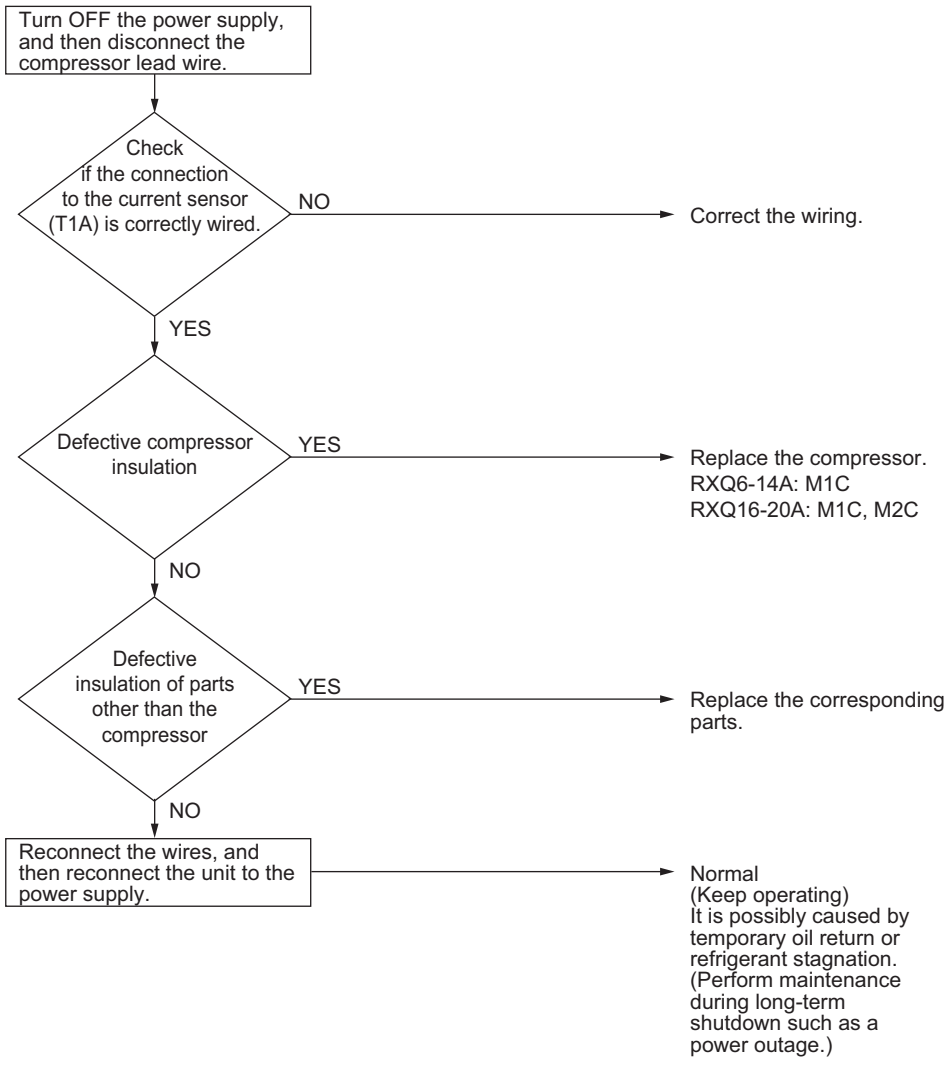
When leakage current is detected.

Supposed Causes

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

Troubleshooting

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



5.22 Missing of Leakage Detection Core

Applicable Models

All outdoor unit models

Error Code

E2

Sub code: -06 to -08

Method of Error Detection

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

Error Decision Conditions

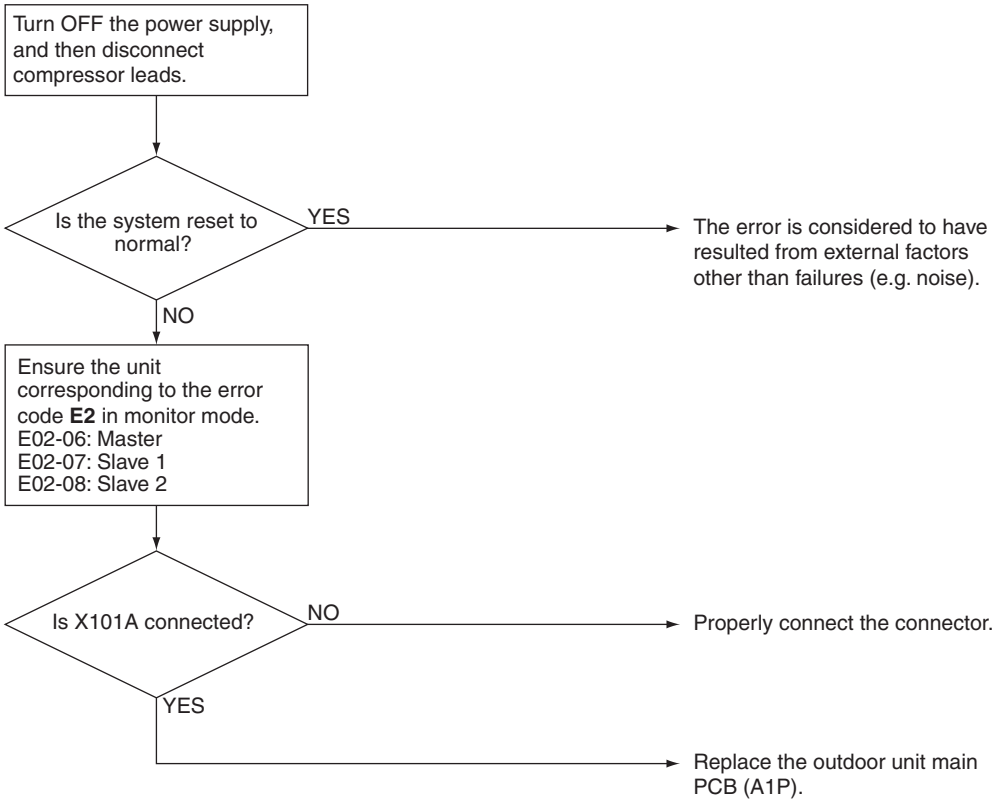
When no current flows at the time of turning ON the power supply.

Supposed Causes

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

Troubleshooting

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



5.23 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:

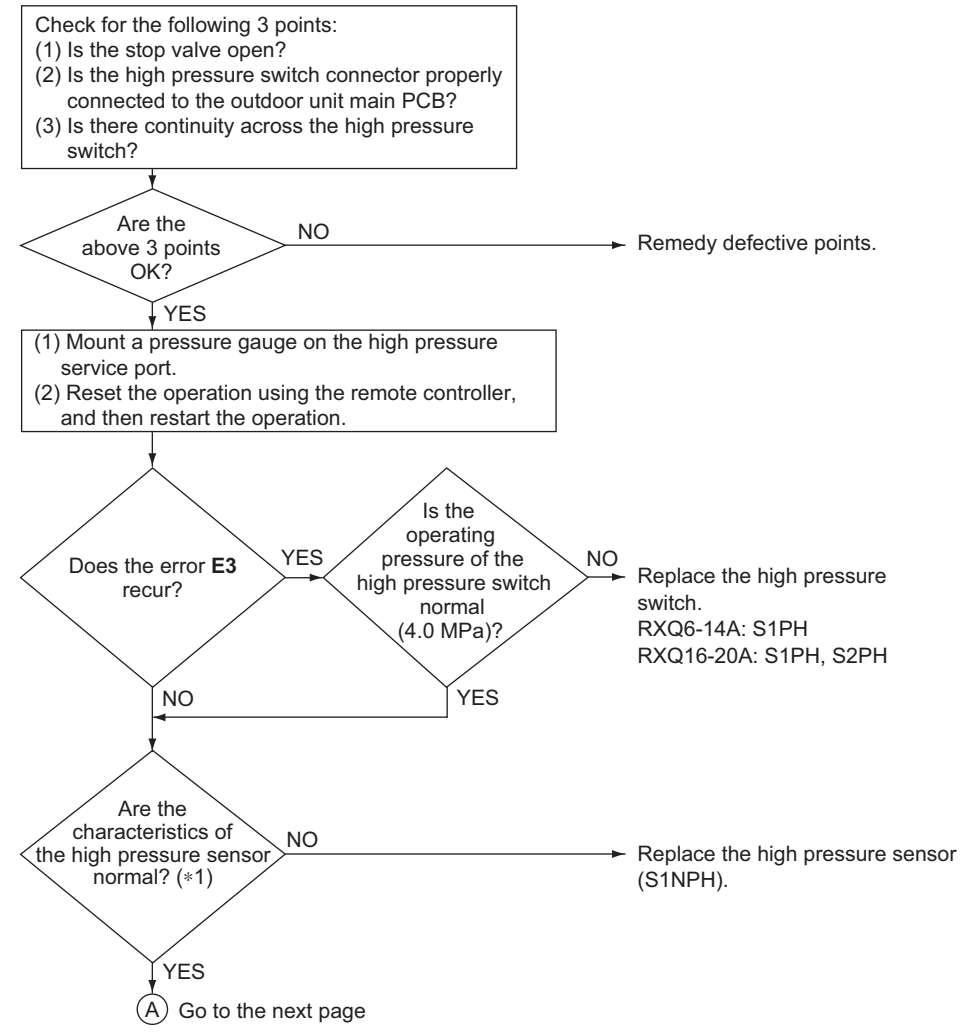
- Operating pressure: 4.0 MPa
- Resetting pressure: 3.0 MPa

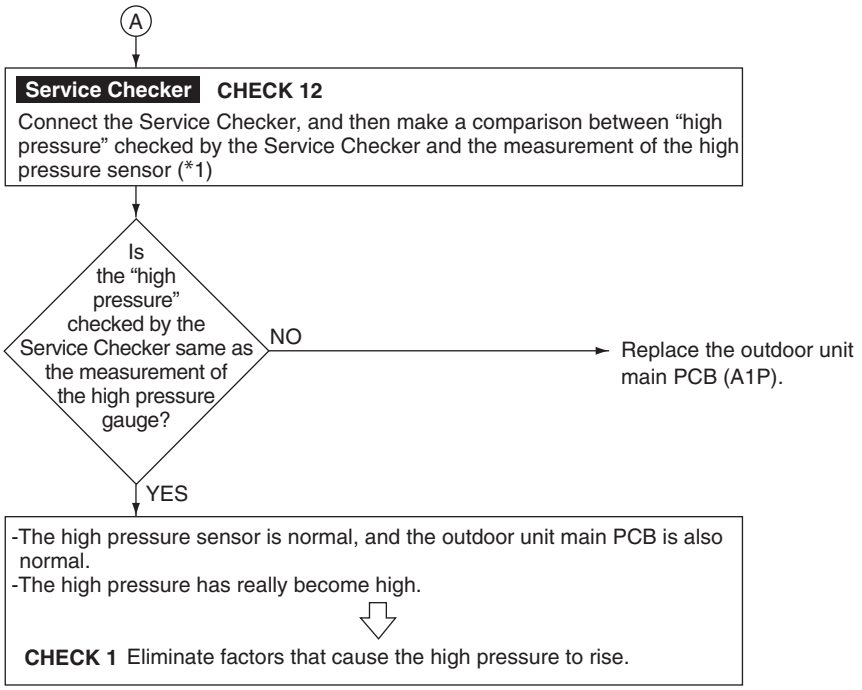
Supposed Causes

- Activation of high pressure switch
- Defective high pressure switch
- Defective outdoor unit main PCB
- Momentary power failure
- Defective high pressure sensor

Troubleshooting

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





Note(s) ∗1. Make a comparison between voltage measured by the pressure sensor and that read by the pressure gauge.
(The pressure sensor makes measurement of voltage at its connector block to convert it to Pressure. **CHECK 12**)

Reference **CHECK 1** Refer to page 287.

Reference **CHECK 12** Refer to page 298.

5.24 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:

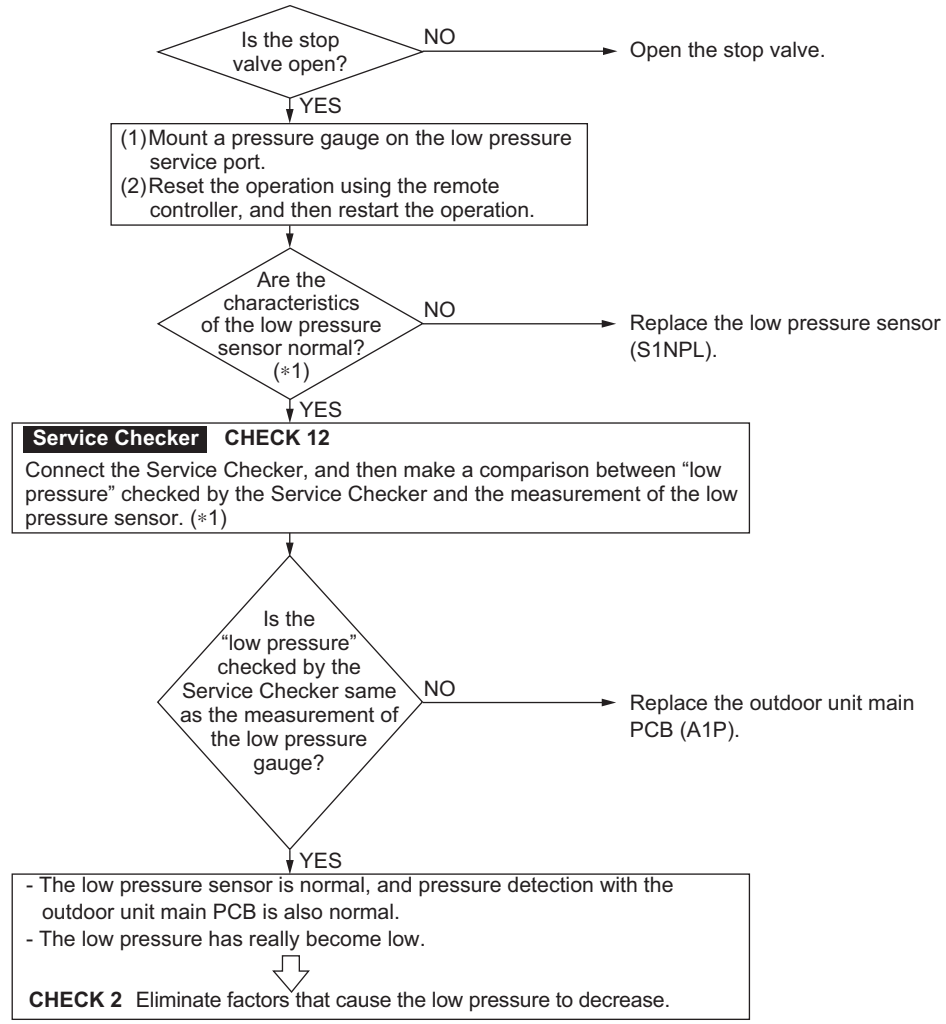
- Operating pressure: 0.07 MPa

Supposed Causes

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

Troubleshooting

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



Note(s)

∗1. Make a comparison between voltage measured by the pressure sensor and that read by the pressure gauge.
(The pressure sensor makes measurement of voltage at its connector block to convert it to pressure. **CHECK 12**)

Reference **CHECK 2** Refer to page 288.

Reference **CHECK 12** Refer to page 298.

5.25 Inverter Compressor Motor Lock

Applicable Models

All outdoor unit models

Error Code

E5

Method of Error Detection

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

Error Decision Conditions

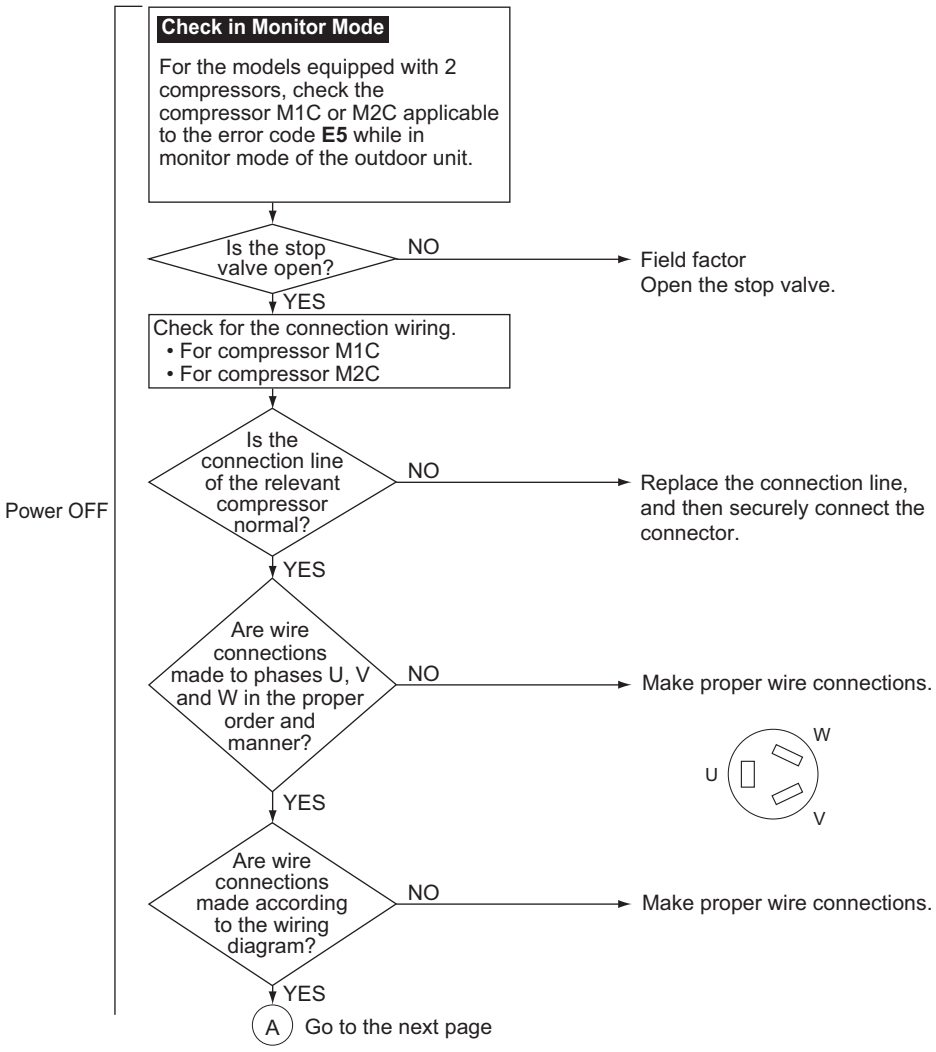
When the inverter compressor motor does not operate even by starting it in forced startup mode.

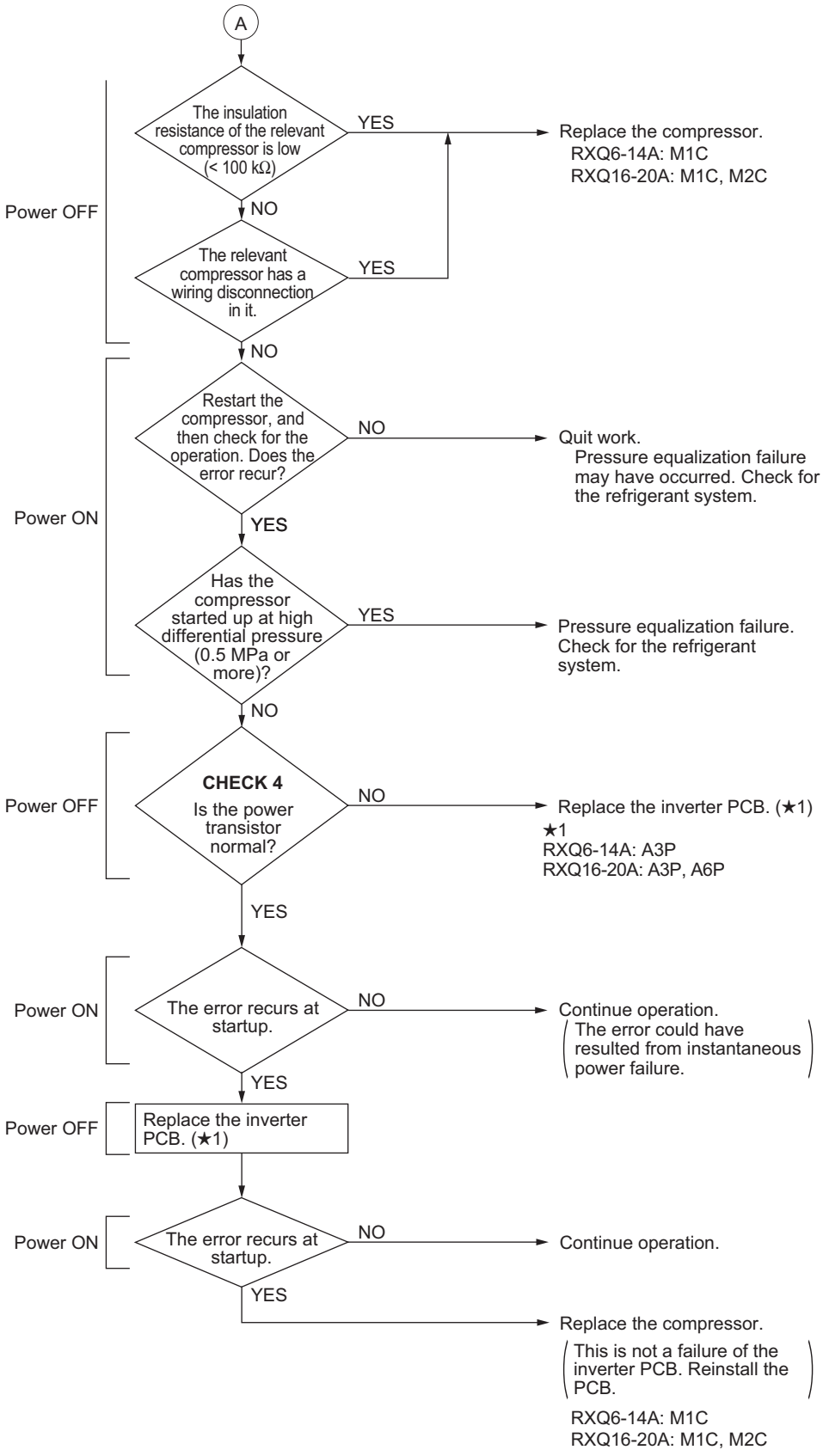
Supposed Causes

- Inverter compressor lock
- High differential pressure (0.5 MPa or more)
- UVW connection error
- Defective inverter PCB
- The stop valve is not opened.

Troubleshooting

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





Reference **CHECK 4** Refer to page 290.

5.26 Outdoor Fan Motor Abnormality

Applicable Models

All outdoor unit models

Error Code

E7

Method of Error Detection

- Detect according to the value of current flowing through the inverter PCB (or fan PCB in case of fan motor 2).
- Detect error of the fan motor system according to the fan revolutions detected by the Hall IC during the fan motor runs.

Error Decision Conditions

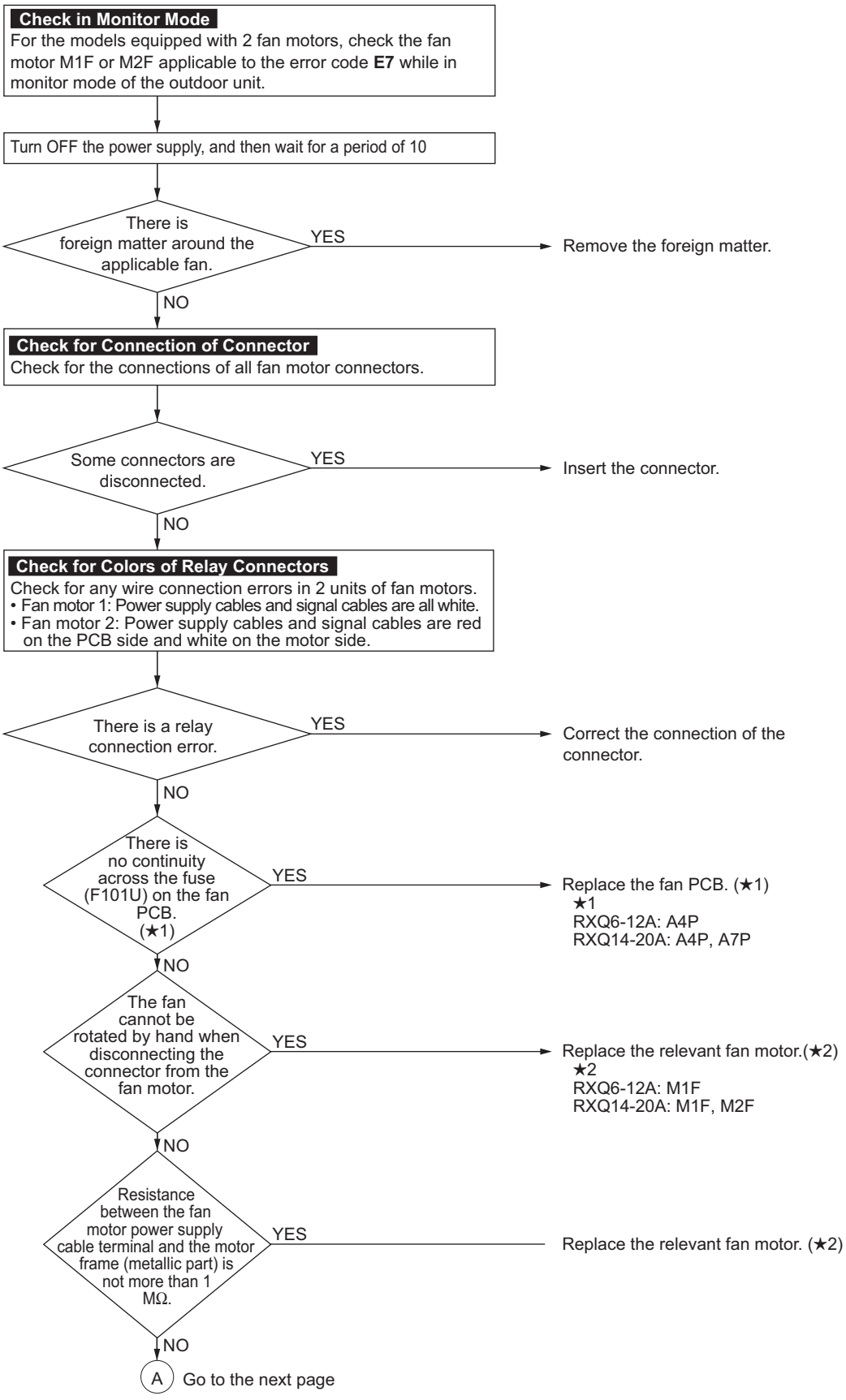
- When overcurrent is detected from the inverter PCB or the fan PCB (Detecting overcurrent 4 times will shut down the system).
- When the fan revolutions fall below a given level for a period of 6 seconds while in fan motor rotation mode (Detecting shortage of revolutions will shut down the system).

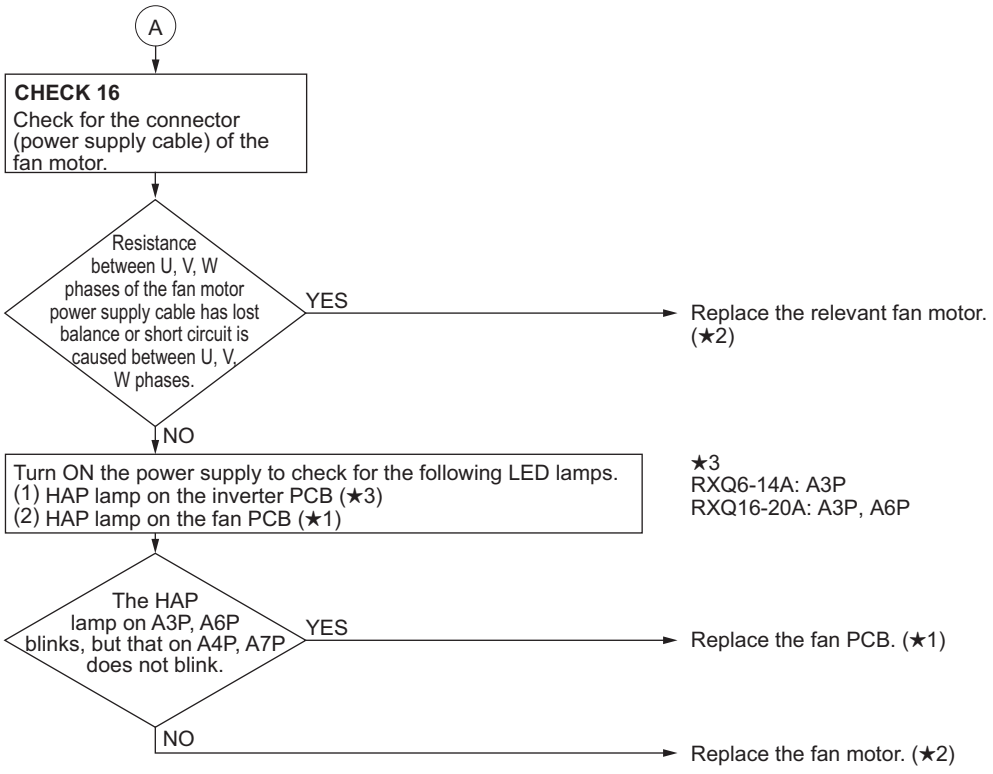
Supposed Causes

- Fan motor failure
- Disconnection of harness/connector between the fan motor and the fan PCB
- Fan does not rotate due to foreign matter caught in it
- Clearing condition: fan motor performs normal operation for a period of 5 minutes

Troubleshooting

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





Reference **CHECK 16** Refer to page 301.

5.27 Electronic Expansion Valve Coil Abnormality

Applicable Models

All outdoor unit models

Error Code

E9

Method of Error Detection

Detect according to whether or not there is continuity across the electronic expansion valve coils (Y2E, Y4E).

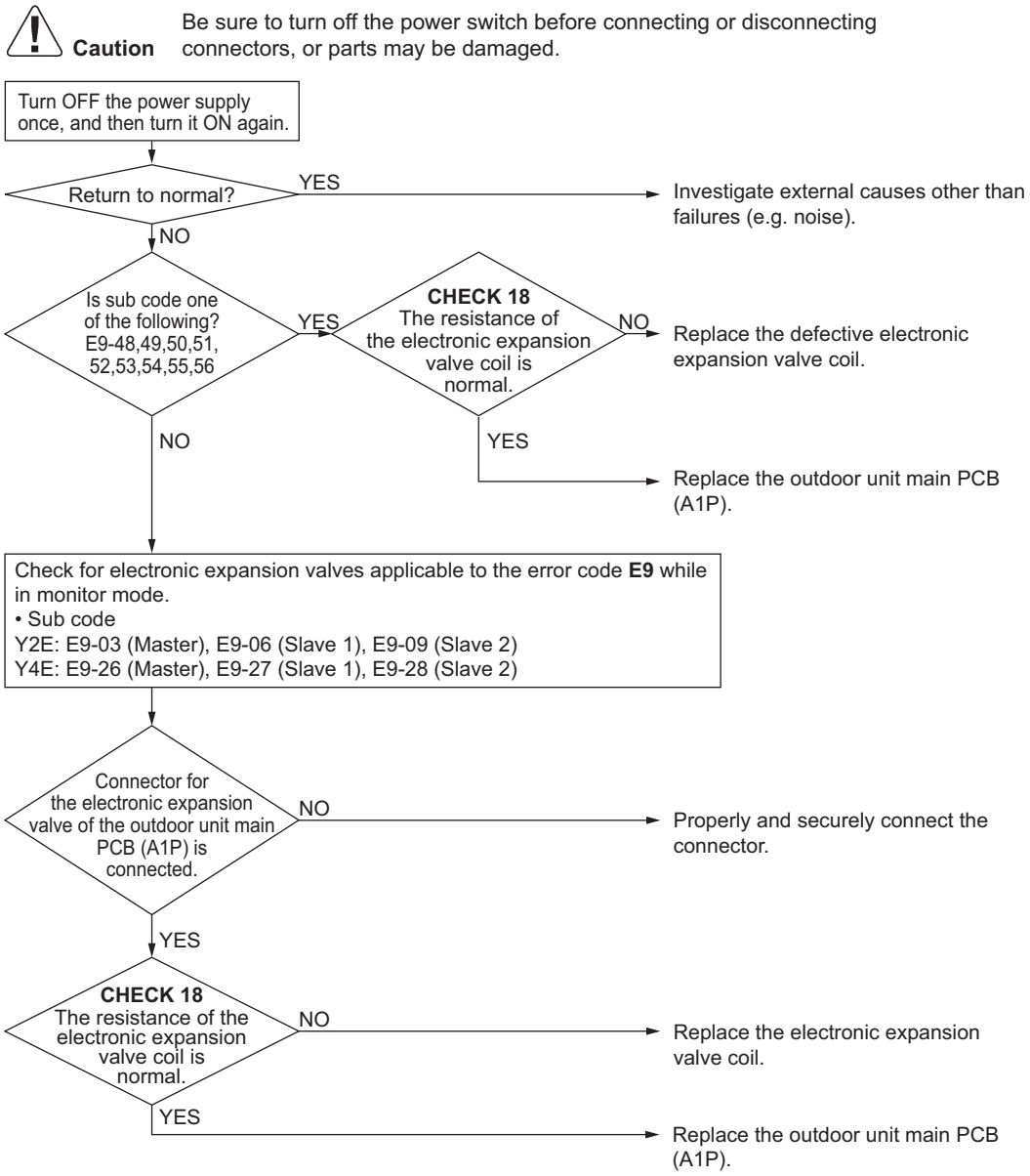
Error Decision Conditions

When no current flows through common (COM+) at the time of turning ON the power supply.

Supposed Causes

- Disconnection of connectors from electronic expansion valves (Y2E, Y4E)
- Defective electronic expansion valve coil
- Defective outdoor unit main PCB

Troubleshooting



Reference **CHECK 18** Refer to page 303.

5.28 Discharge Pipe Temperature Abnormality

Applicable Models

All outdoor unit models

Error Code

F3

Method of Error Detection

Detect according to temperature detected with the discharge pipe or compressor body thermistor.

Error Decision Conditions

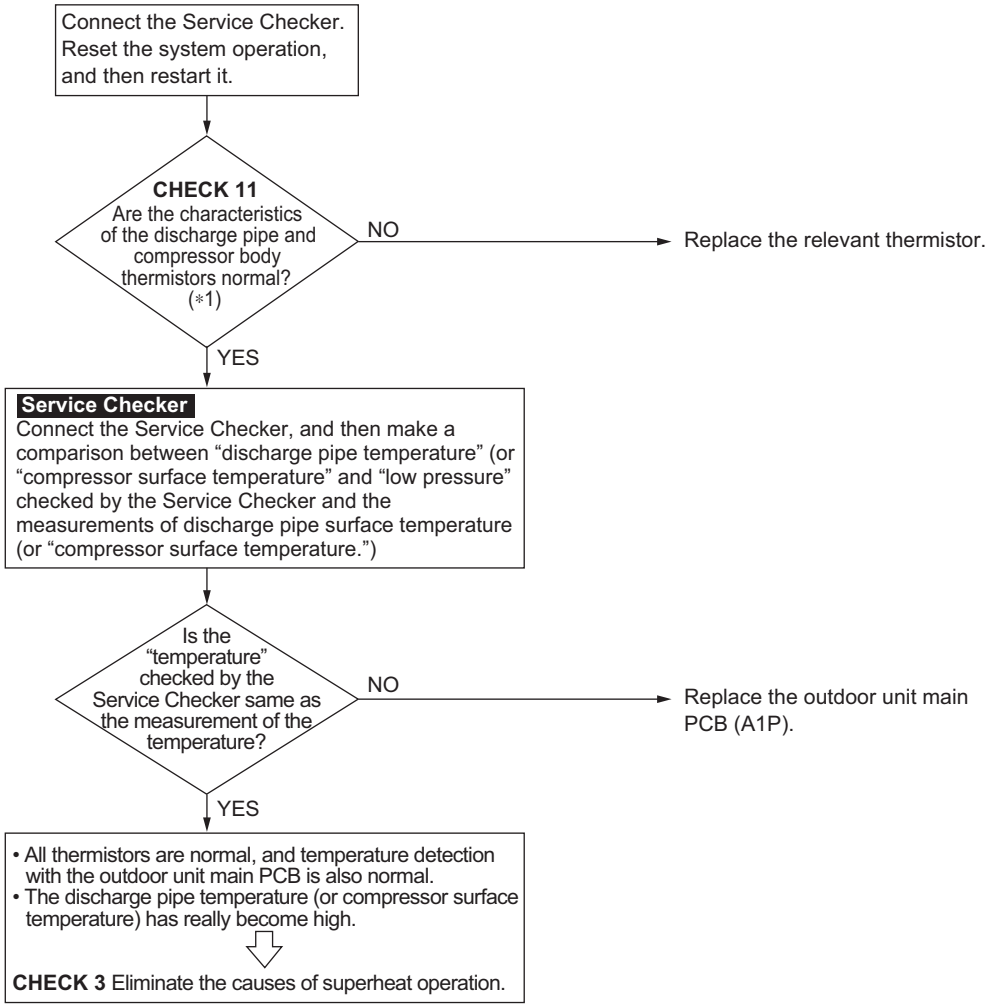
- When discharge pipe temperature becomes abnormally high (i.e., 135°C or more)
- When discharge pipe temperature sharply rises (remains at 120°C or more for a period of consecutive 10 minutes)
- When compressor surface temperature becomes abnormally high (i.e., 120°C or more)
- When compressor surface temperature sharply rises (remains at 110°C or more for a period of consecutive 10 minutes)

Supposed Causes

- Abnormal discharge pipe temperature
- Defective discharge pipe thermistor
- Abnormal compressor surface temperature
- Defective compressor body thermistor
- Defective outdoor unit main PCB

Troubleshooting

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



Note(s) ∗1. Thermistors

Applicable Thermistor	RXQ6-14A		RXQ16-20A	
	Electric symbol	Connector	Electric symbol	Connector
Discharge pipe thermistor (for M1C)	R21T	X19A (Group connector)	R21T	X19A (Group connector)
Discharge pipe thermistor (for M2C)	—		R22T	
Compressor body thermistor (for M1C)	R8T		R8T	
Compressor body thermistor (for M2C)	—		R9T	

Reference **CHECK 3** Refer to page 289.

Reference **CHECK 11** Refer to page 295.

5.29 Wet Alarm

Applicable Models

All outdoor unit models

Error Code

F4

Method of Error Detection

In cooling operation, detect the condition under which liquid refrigerant returns to the compressor, according to the temperature and pressure of each part.

Error Decision Conditions

When the following wet state continues for a period of 180 minutes, an alert is issued.
An error is defined for 240 minutes.

- Wet state in outdoor units

When the following wet state continues for a period of 180 minutes, an alert is issued.

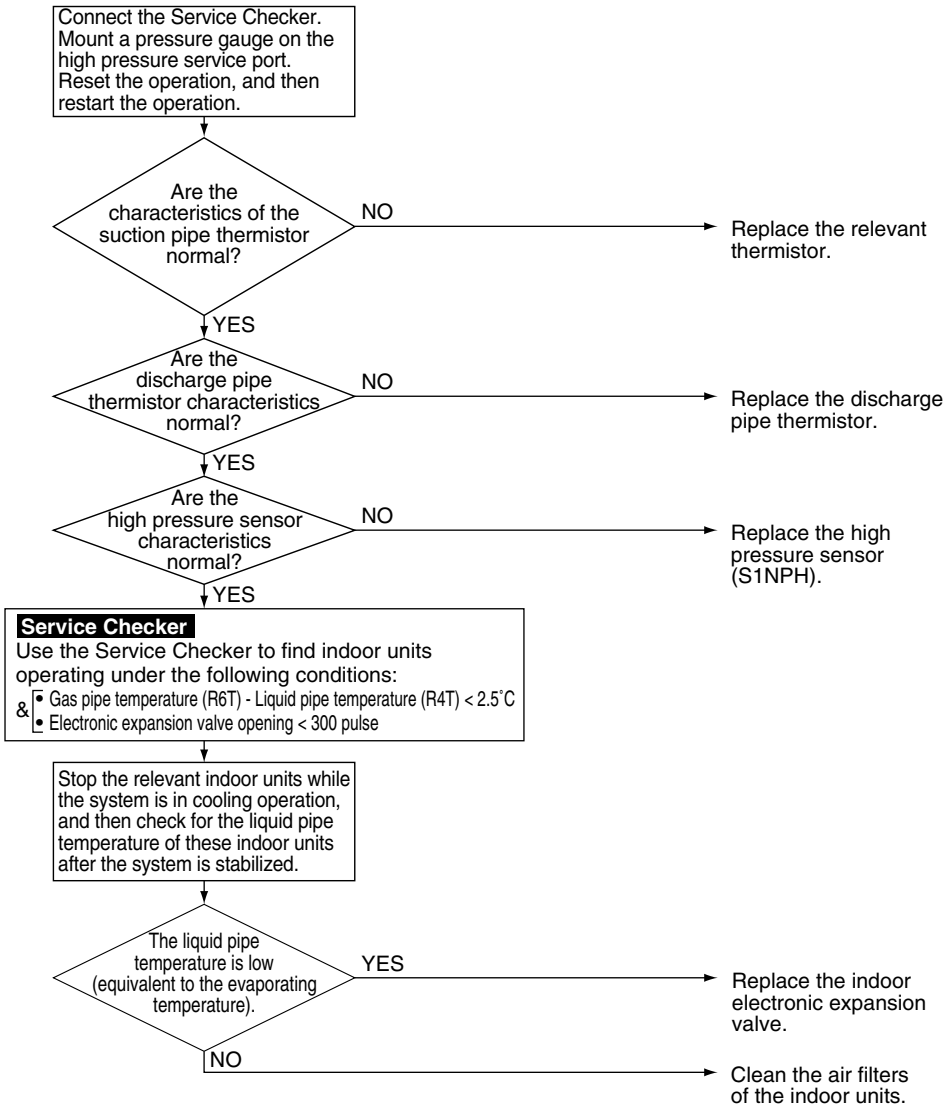
- Wet state in some of indoor units

Supposed Causes

- Defective suction pipe thermistor
- Defective discharge pipe thermistor
- Defective high pressure sensor
- Defective indoor unit electronic expansion valve
- Dirty air filter

Troubleshooting

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



5.30 Refrigerant Overcharged

Applicable Models

All outdoor unit models

Error Code

F6

Method of Error Detection

Detect overcharged refrigerant according to outdoor air temperature, heat exchanger liquid pipe temperature, and subcooling heat exchanger liquid pipe temperature during test operation.

Error Decision Conditions

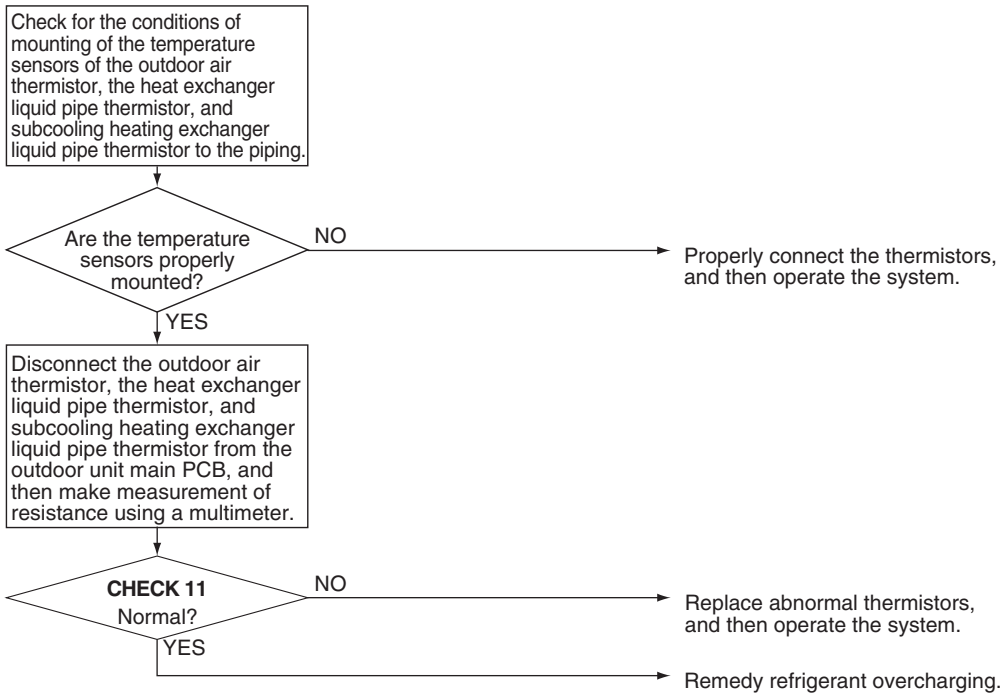
When the amount of refrigerant, which is calculated using outdoor air temperature, heat exchanger liquid pipe temperature, and subcooling heat exchanger liquid pipe temperature during test operation, exceeds the regular charge amount by 30% or more
(If refrigerant is charged slightly over the regular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

Supposed Causes

- Refrigerant overcharged
- Disconnection of outdoor air thermistor
- Disconnection of heat exchanger liquid pipe thermistor
- Disconnection of subcooling heat exchanger 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 295.

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

Applicable Models

All outdoor unit models

Error Code

H3

Method of Error Detection

Check for the transmission conditions of the following harnesses between the PCBs using microcomputer:

- RXQ6-14A: Inverter 1
  Between X28A (A1P) and X6A (A3P)
- RXQ16-20A: Inverter 2
  Between X28A (A1P) and X6A (A3P)
  Between X61A (A3P) and X6A (A6P)

Error Decision Conditions

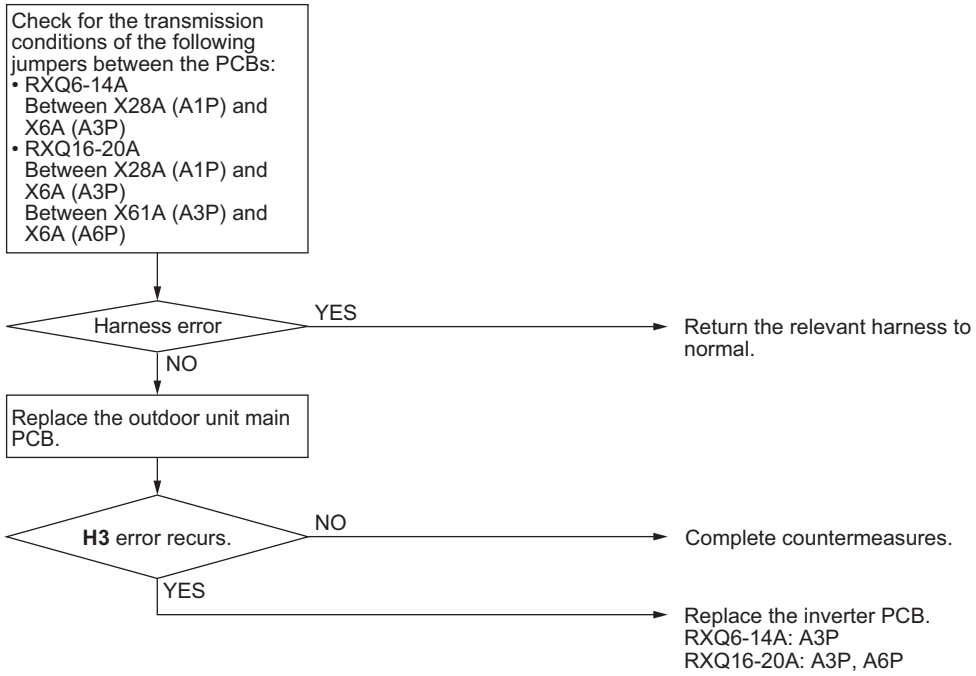
When normal transmission between PCBs is disabled during the compressor stops running.

Supposed Causes

- Defective connection of harnesses between PCBs
- Defective outdoor unit main PCB
- Defective inverter PCB (A3P, A6P)

Troubleshooting

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



5.32 Outdoor Fan PCB Abnormality

Applicable Models

All outdoor unit models

Error Code

H7

Method of Error Detection

Detect according to values detected with current sensor.

Error Decision Conditions

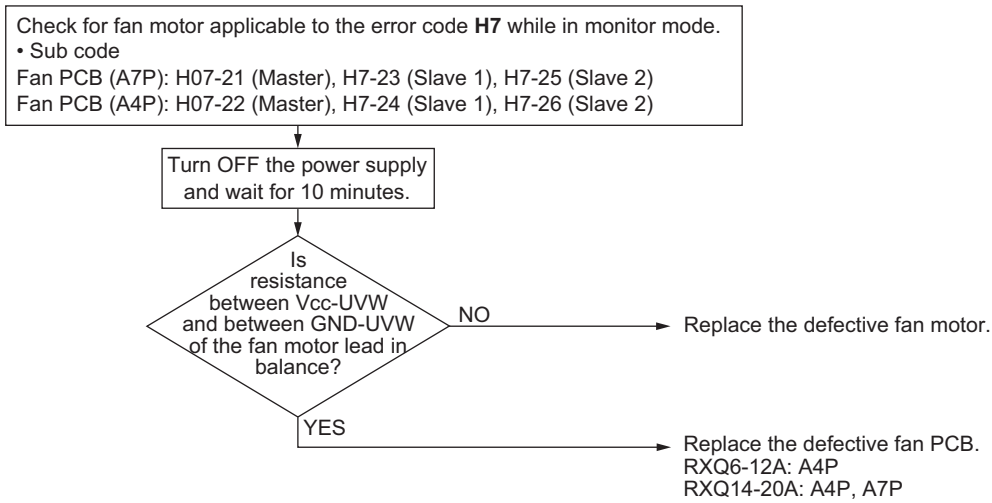
When the current sensor is abnormal.

Supposed Causes

- Disconnection/Short circuit in fan motor leads or disconnection of connector
- Defective fan PCB (A4P, A7P)

Troubleshooting

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



5.33 Thermistor Abnormality

Applicable Models

All outdoor unit models

Error Code

H9, J3, J5, J7, J8, J9

Method of Error Detection

Detect according to temperature detected with individual thermistors.

Error Decision Conditions

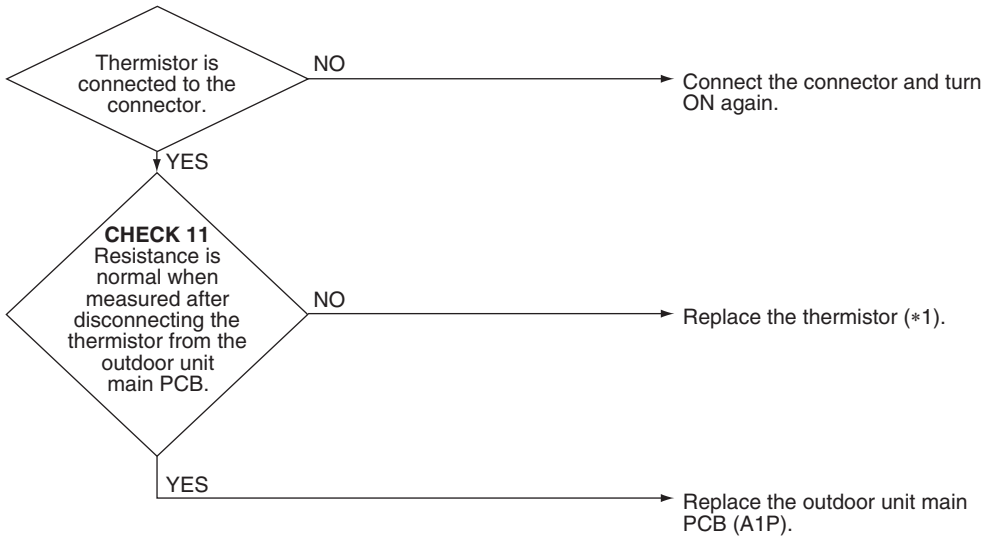
When the system is in operation and the thermistor causes wiring disconnection or short circuit in it.

Supposed Causes

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

Troubleshooting

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



Note(s) ∗1. Error codes and thermistors

Error Code	Applicable Thermistor	RXQ6-14A		RXQ16-20A	
		Electric symbol	Connector	Electric symbol	Connector
H9	Outdoor air	R1T	X18A	R1T	X18A
J3	Discharge pipe thermistor (for M1C)	R21T	X19A (Group connector)	R21T	X19A (Group connector)
	Discharge pipe thermistor (for M2C)	—		R22T	
	Compressor body thermistor (for M1C)	R8T		R8T	
	Compressor body thermistor (for M2C)	—		R9T	
J5	Suction pipe	R3T	X30A (Group connector)	R3T	X30A (Group connector)
J7	Subcooling heat exchanger liquid pipe thermistor	R5T		R5T	
J8	Heat exchanger liquid pipe thermistor	R4T		R4T	
J9	Subcooling heat exchanger gas pipe thermistor	R6T		R6T	

Reference **CHECK 11** Refer to page 295.

5.34 High Pressure Sensor Abnormality

Applicable Models

All outdoor unit models

Error Code

JA

Method of Error Detection

Detect according to temperature detected with the high pressure sensor.

Error Decision Conditions

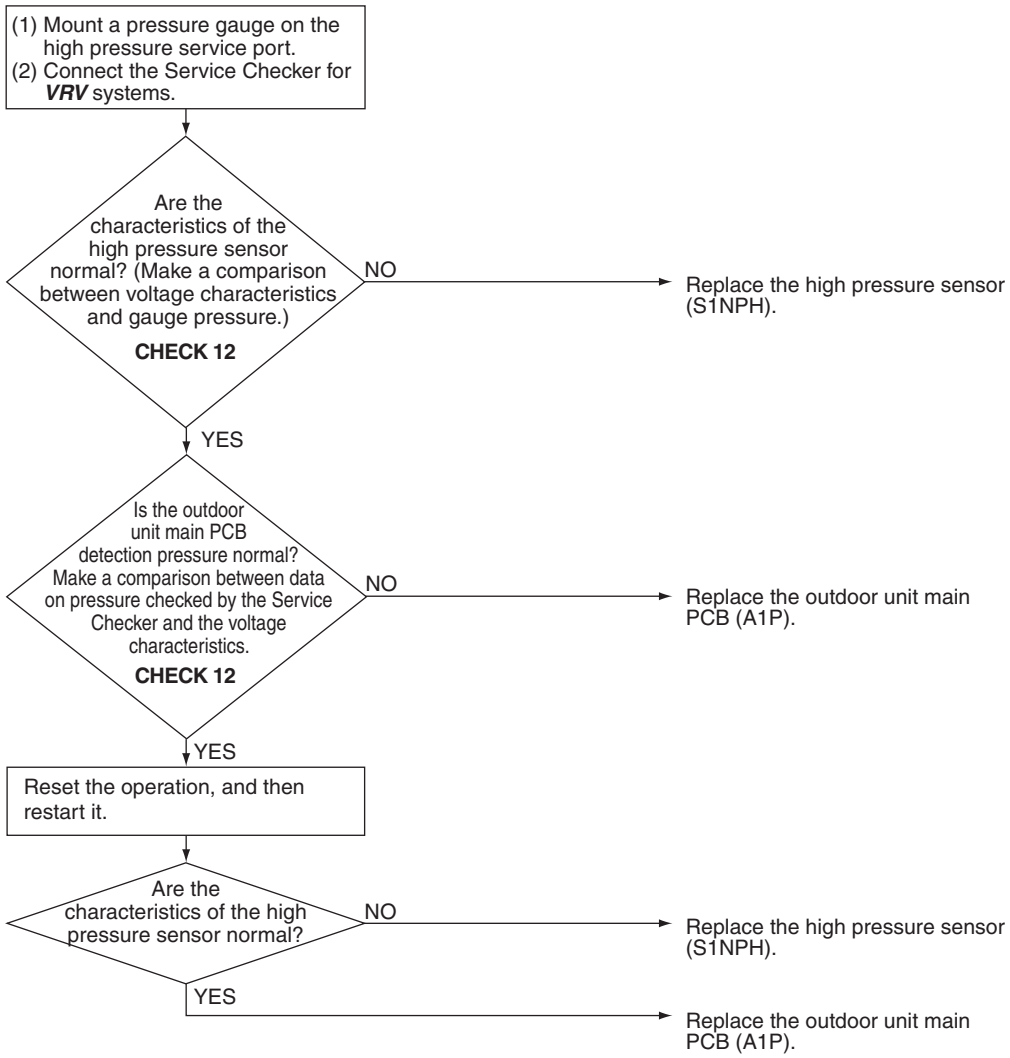
The high pressure sensor is short circuit or open circuit.
(Pressure range: 0-4.3 MPa)

Supposed Causes

- Defective high pressure sensor
- Connection of low pressure sensor in mistake for high pressure sensor
- Defective outdoor unit main PCB
- Defective connection of high pressure sensor

Troubleshooting

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



Reference **CHECK 12** Refer to page 298.

5.35 Low Pressure Sensor Abnormality

Applicable Models

All outdoor unit models

Error Code

JC

Method of Error Detection

Detect according to temperature detected with the low pressure sensor.

Error Decision Conditions

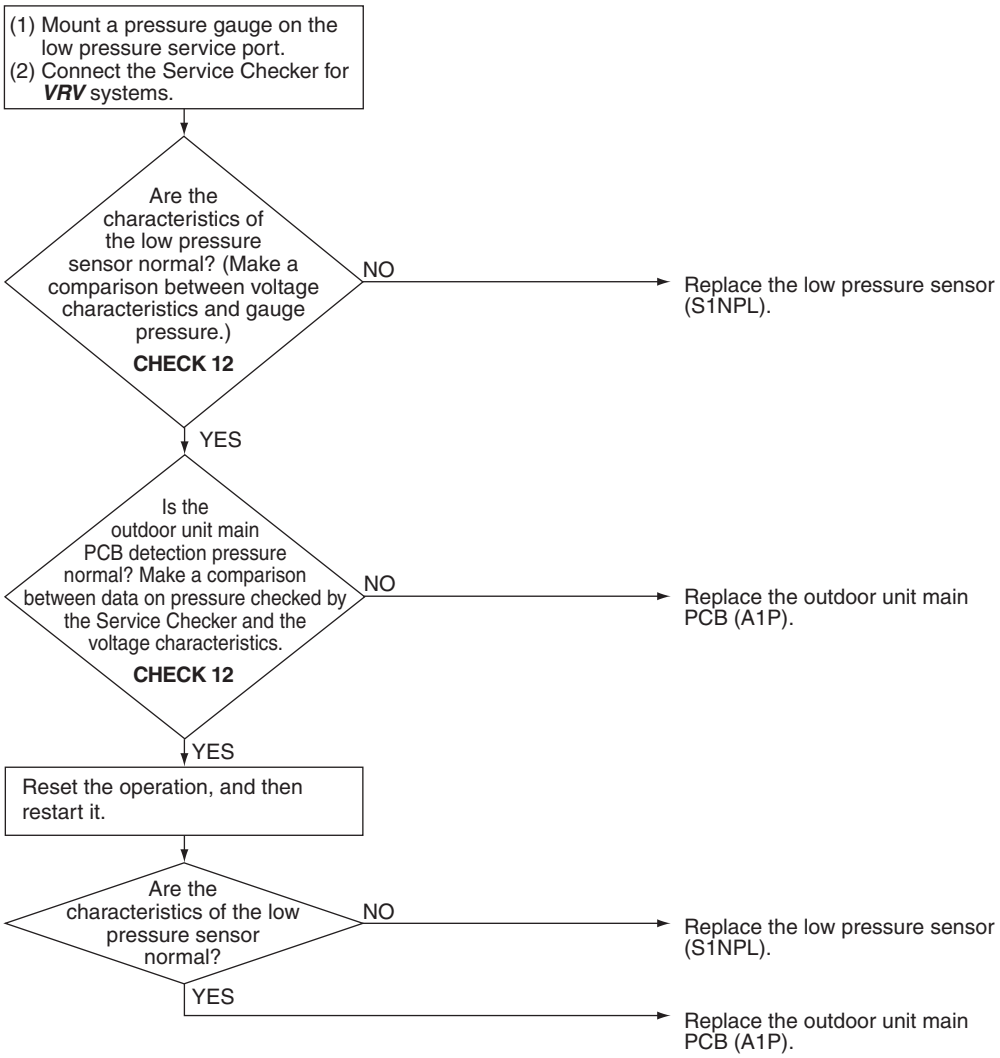
The low pressure sensor is short circuit or open circuit.
(Pressure range: 0-1.7 MPa)

Supposed Causes

- Defective low pressure sensor
- Connection of high pressure sensor in mistake for low pressure sensor
- Defective outdoor unit main PCB
- Defective connection of low pressure sensor

Troubleshooting

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



Reference **CHECK 12** Refer to page 298.

5.36 Inverter PCB Abnormality

Applicable Models

All outdoor unit models

Error Code

L1

Method of Error Detection

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

Error Decision Conditions

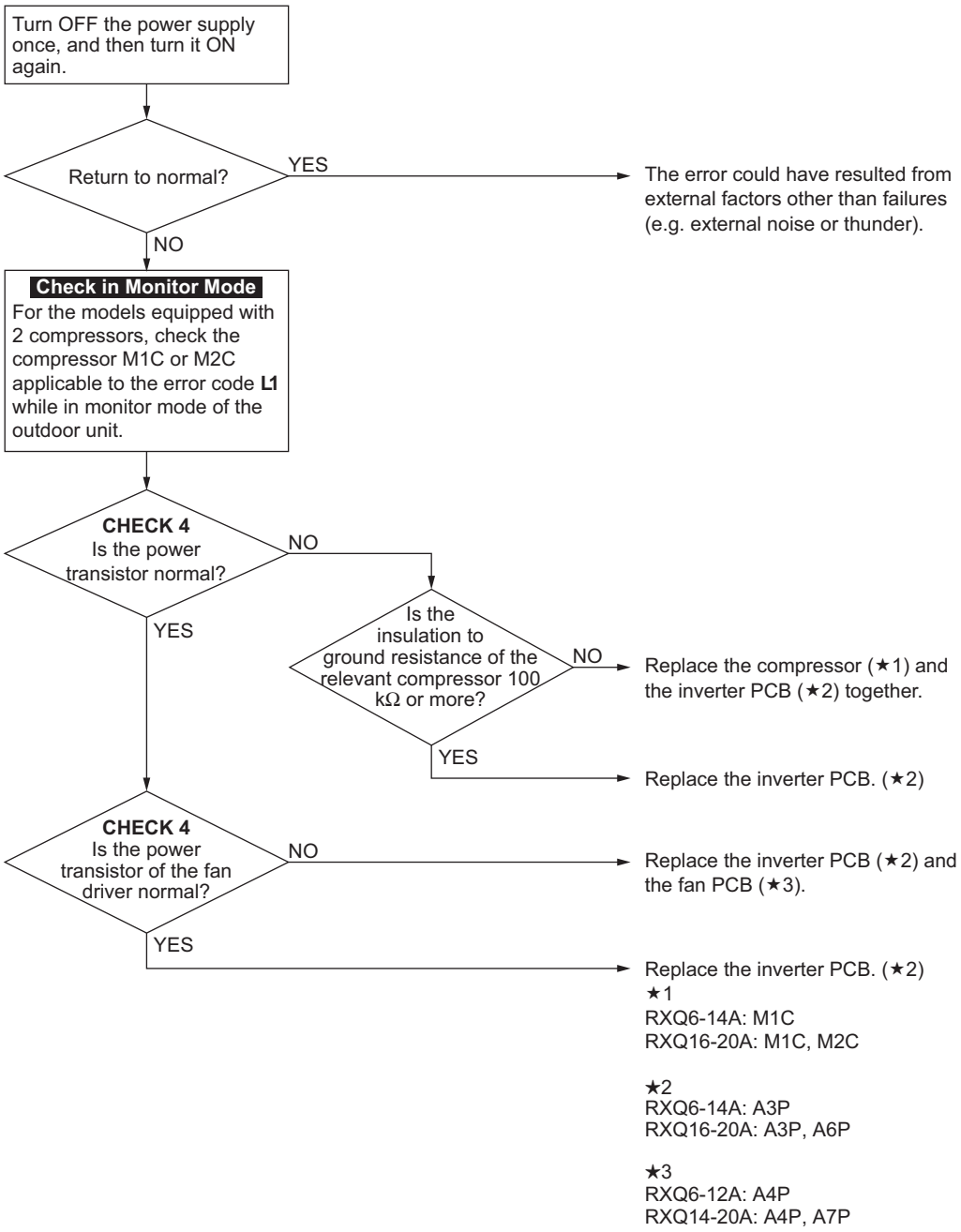
- When overcurrent flows during the output of waveform
- When the current sensor error during synchronous operation
- When IPM error occurs

Supposed Causes

- Inverter PCB
  - IPM failure
  - Current sensor failure
  - Drive circuit failure

Troubleshooting

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



Reference **CHECK 4** Refer to page 290.

5.37 Momentary Power Failure during Test Operation

Applicable Models

All outdoor unit models

Error Code

L2

Method of Error Detection

Momentary power failure is detected by the PCB.

Error Decision Conditions

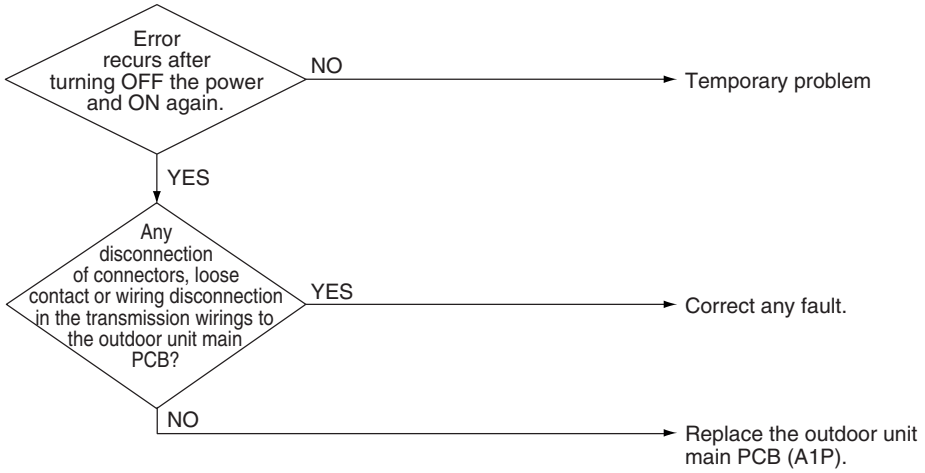
Judgment is made by AC power frequency detection circuit on the outdoor unit main PCB

Supposed Causes

- Defective wiring
- Defective outdoor unit main PCB

Troubleshooting

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



5.38 Inverter Radiation Fin Temperature Rise Abnormality

Applicable Models

All outdoor unit models

Error Code

L4

Method of Error Detection

Detect temperature of power module of the inverter PCB and fan PCB.

Error Decision Conditions

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

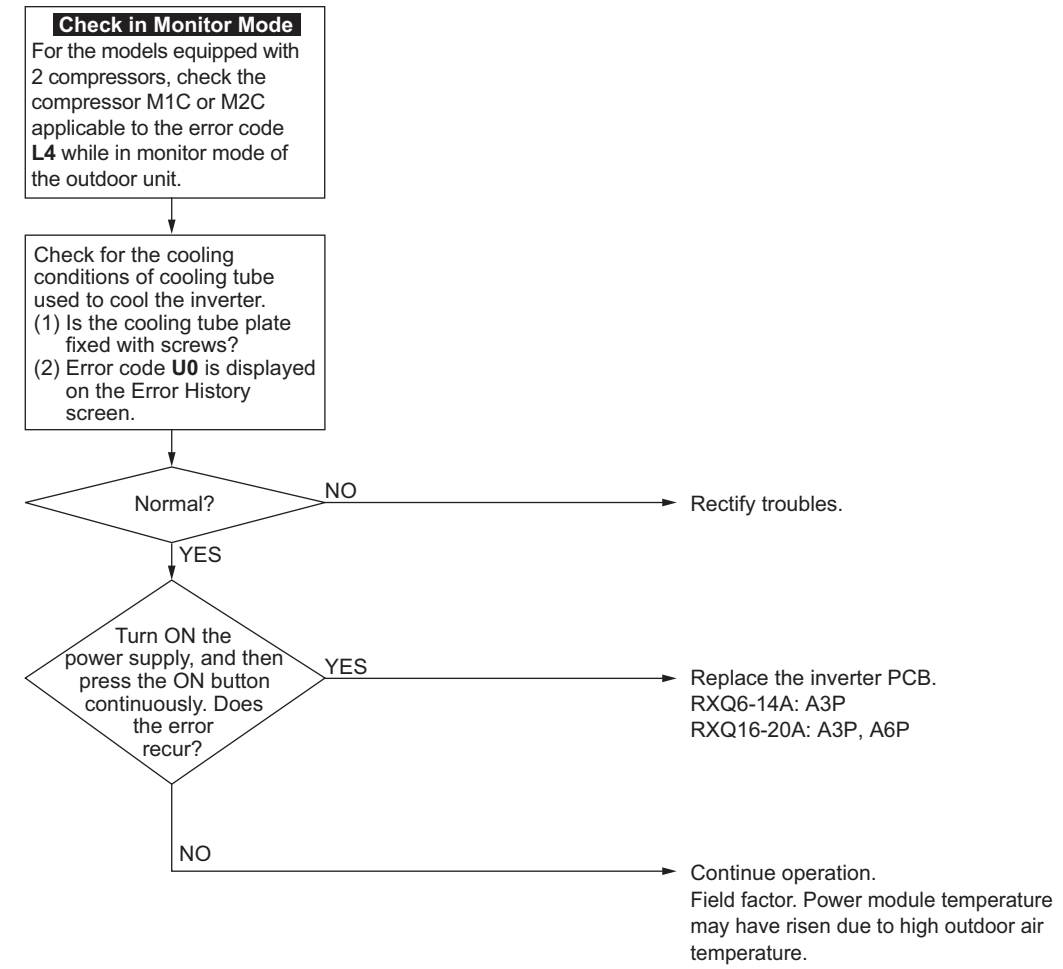
Supposed Causes

- Radiation fin temperature rise of fan PCB.
- Cooling tube plate not fixed with screws.
- **U0** error.
- Defective inverter PCB.
- High outdoor air temperature.

Troubleshooting

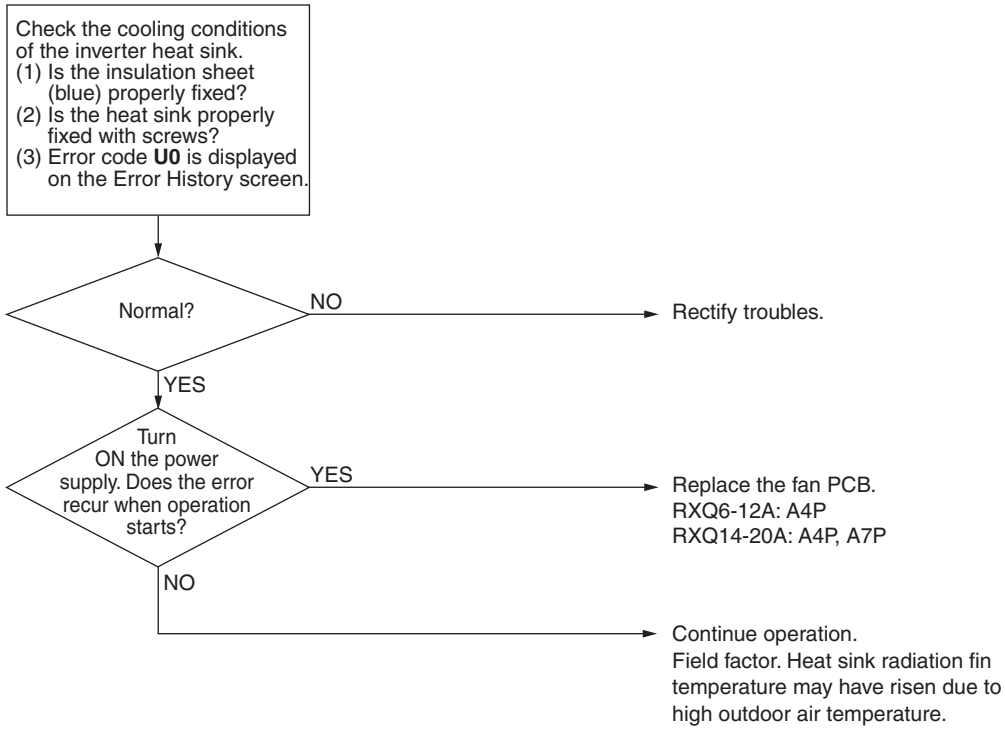
- **Subcode L4-01, 02, 03, 09, 10, 11**

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



■ Subcode L4-06, 07, 18, 19, 20, 21

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



5.39 Compressor Instantaneous Overcurrent

Applicable Models

All outdoor unit models

Error Code

L5

Method of Error Detection

Detect current flowing through the power transistor.

Error Decision Conditions

The current exceeds **A** (A) instantaneously in the power transistor.

Trigger point

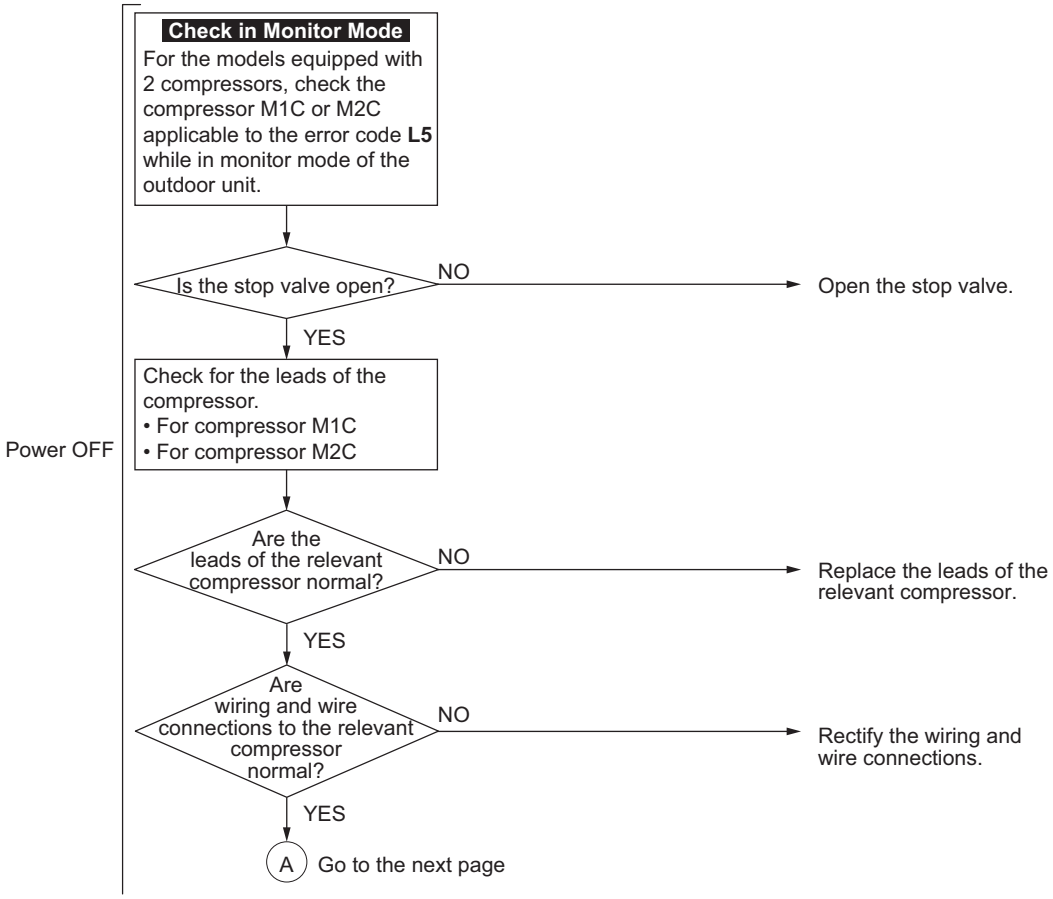
Compressor model	**A** (A)
JT1GUVDYR	41.9
JT16KCVDYR	64.2

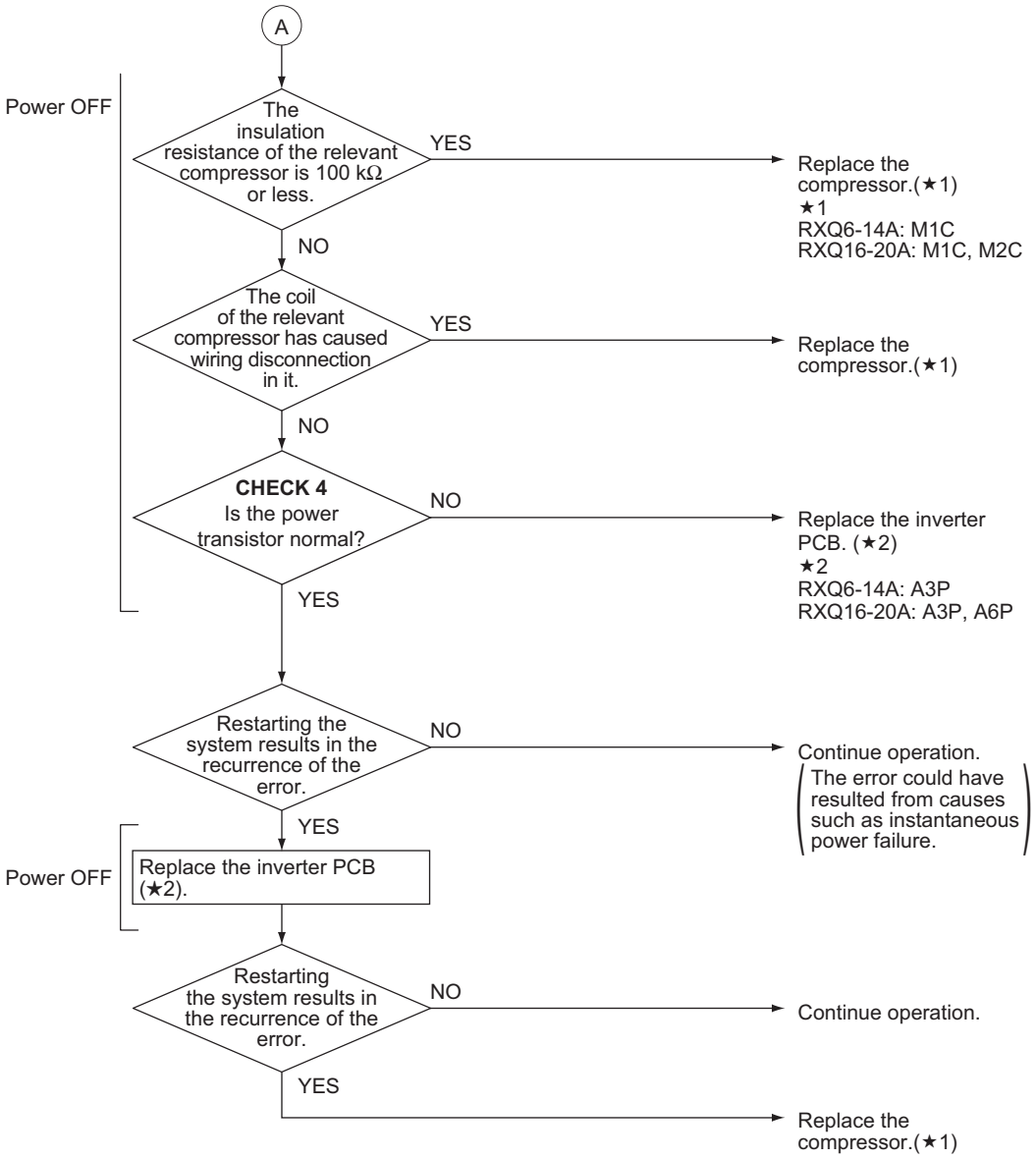
Supposed Causes

- Defective compressor coil (such as wiring disconnection or insulation failure)
- Compressor startup failure (mechanical lock)
- Defective inverter 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 290.

5.40 Compressor Overcurrent

Applicable Models

All outdoor unit models

Error Code

L8

Method of Error Detection

Detect current flowing through the power transistor.

Error Decision Conditions

(1) The secondary-side inverter current exceeds **A** (A) for a period of 5 consecutive seconds.
(2) The secondary-side inverter current exceeds **B** (A) for a period of 260 consecutive seconds.
Trigger point

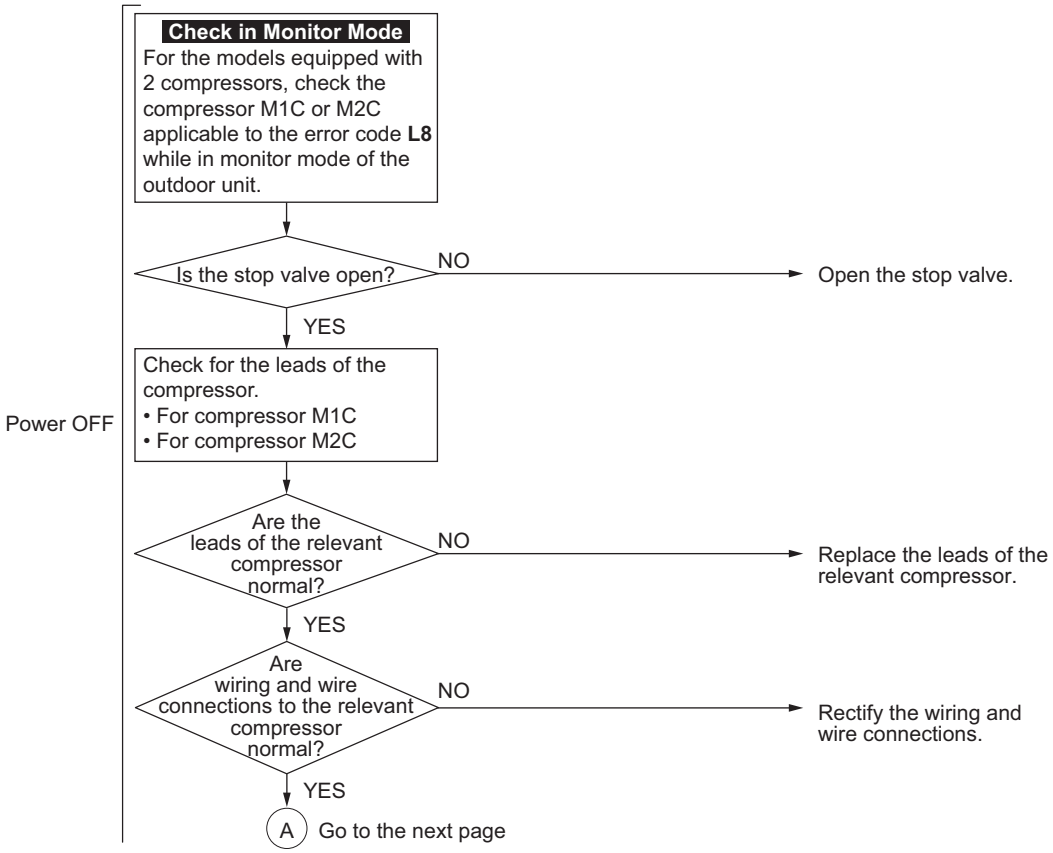
Compressor model	**A** (A)	**B** (A)
JT1GUVDYR	21.0	17.6
JT16KCVDYR	30.0	27.5

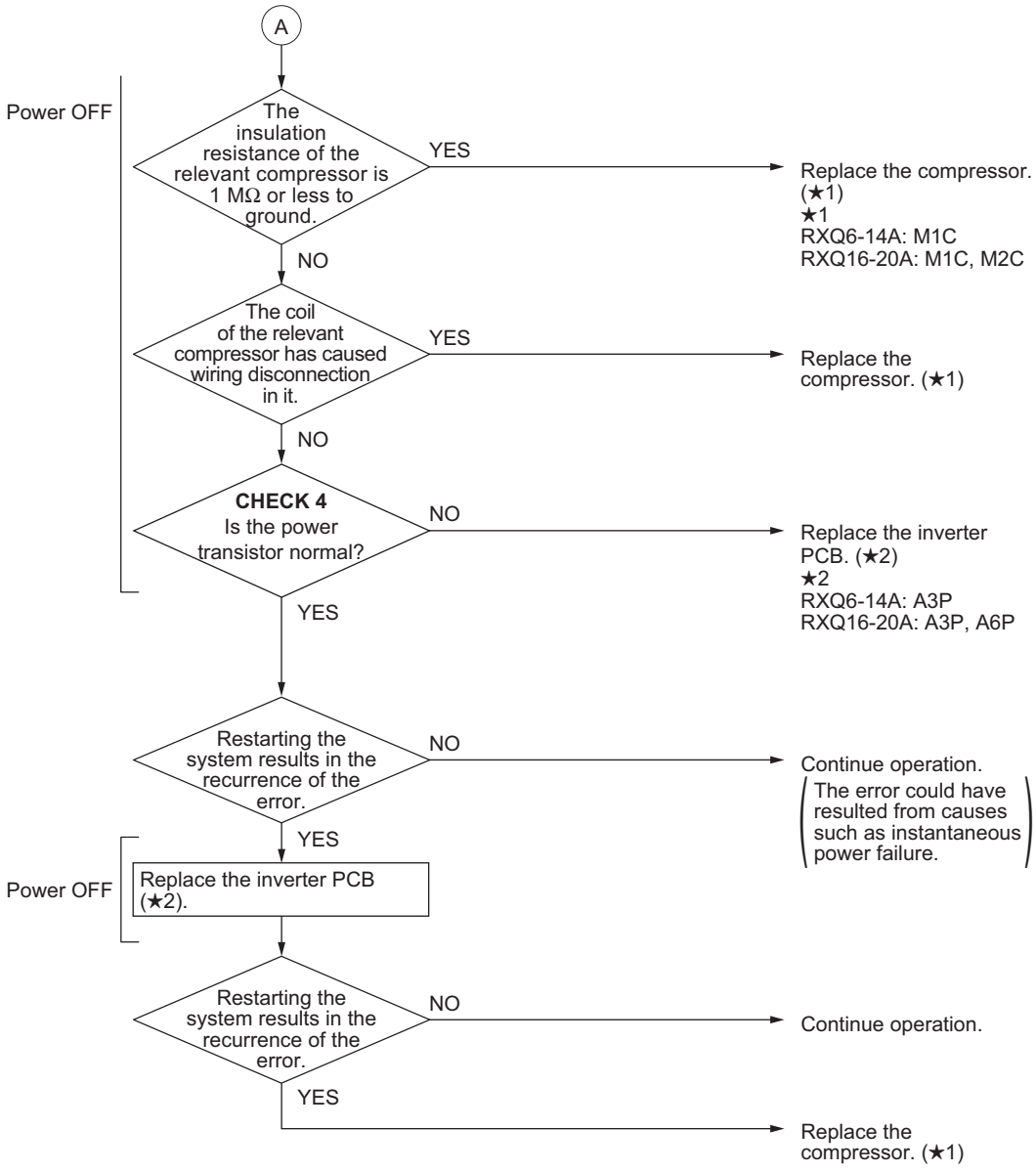
Supposed Causes

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

Troubleshooting

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





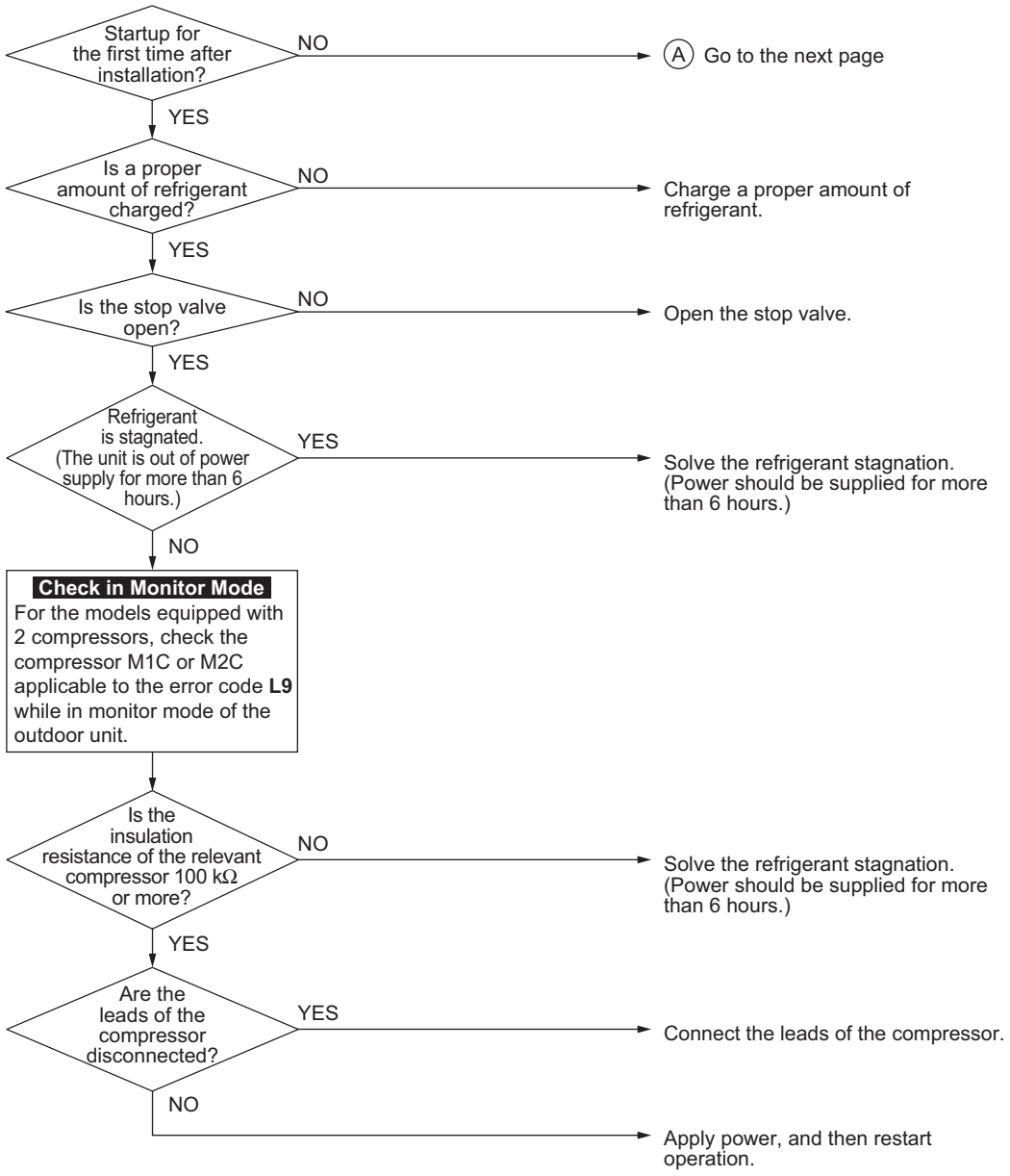
Reference **CHECK 4** Refer to page 290.

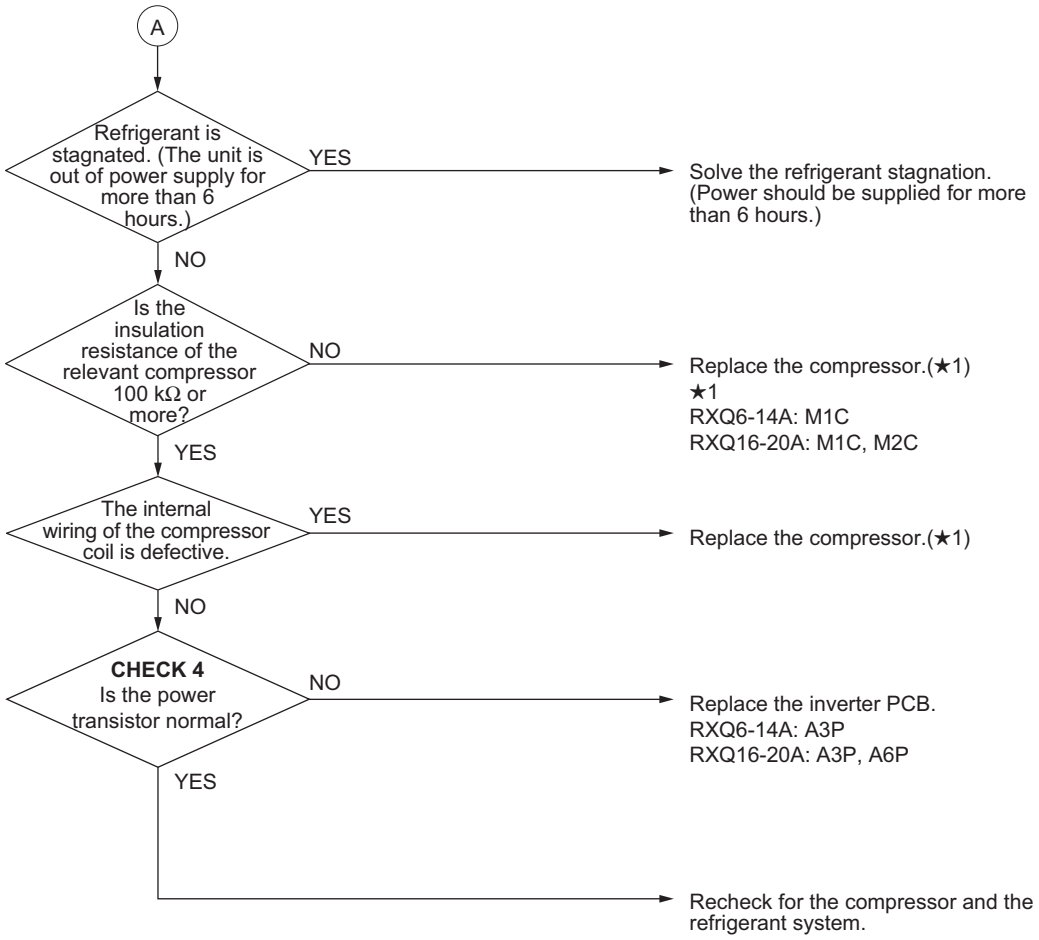
5.41 Compressor Startup Abnormality

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

Troubleshooting

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





Reference **CHECK 4** Refer to page 290.

5.42 Transmission Error between Inverter PCB and Outdoor Unit Main PCB

Applicable Models

All outdoor unit models

Error Code

LC

Method of Error Detection

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

Error Decision Conditions

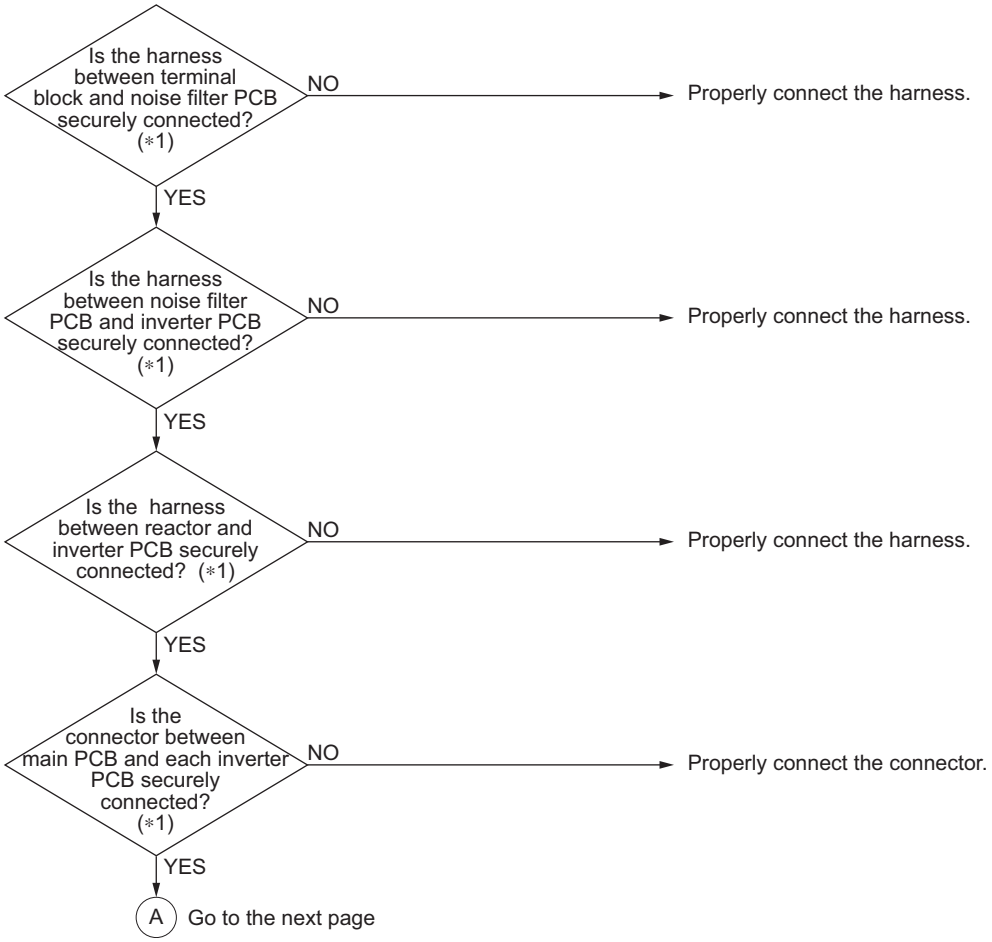
Normal transmission is disabled for a given period of time or more.

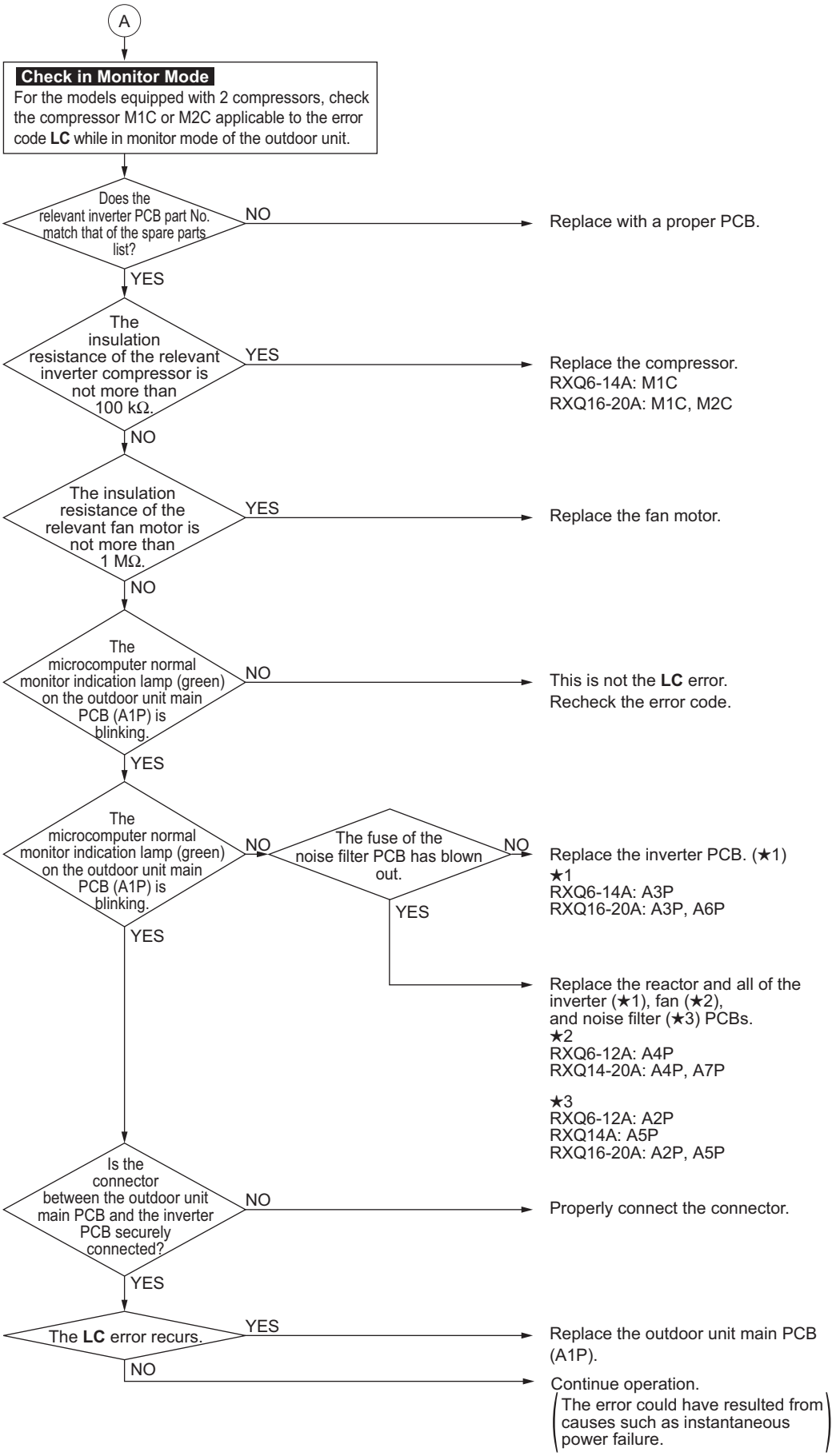
Supposed Causes

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

Troubleshooting

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





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

5.43 Power Supply Voltage Imbalance

Applicable Models

All outdoor unit models

Error Code

P1

Method of Error Detection

Detect voltage imbalance through inverter PCB.

Error Decision Conditions

Power supply voltage imbalance exceeds approximately 12 V.

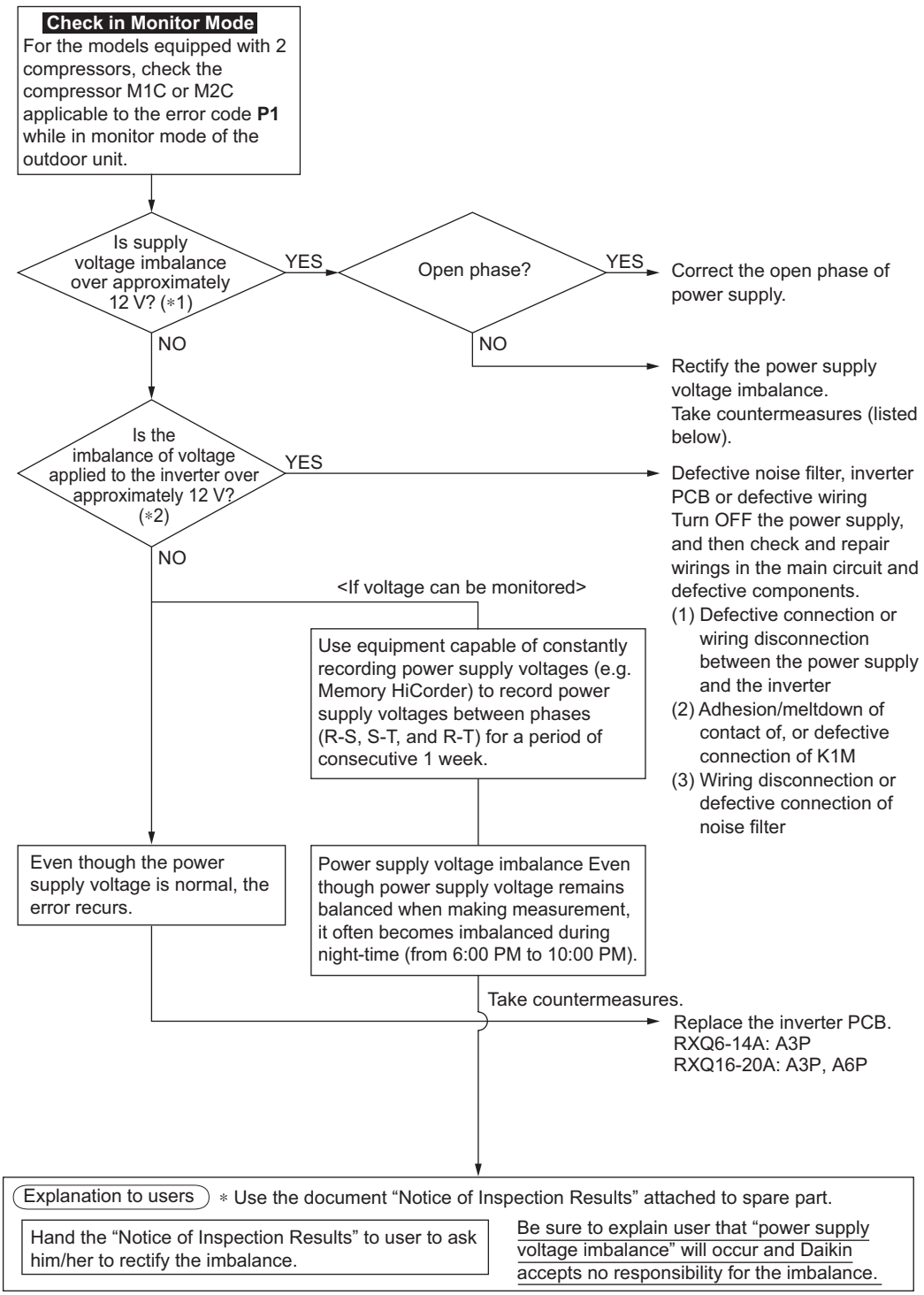
Error is not decided while the unit operation is continued.
P1 will be displayed by pressing the inspection button.

Supposed Causes

- Open phase
- Interphase voltage imbalance
- Defective capacitor in the main circuit
- Defective inverter PCB
- Defective wiring in the main circuit

Troubleshooting

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



Note(s)

∗1. Make measurement of voltage at the power supply terminal block (X1M).

∗2. Make measurement of voltage at the L1, L2 and L3 terminals of diode module located on the inverter PCB during the compressor is in operation.

5.44 Reactor Temperature Abnormality

Applicable Models

All outdoor unit models

Error Code

P3

Method of Error Detection

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

Error Decision Conditions

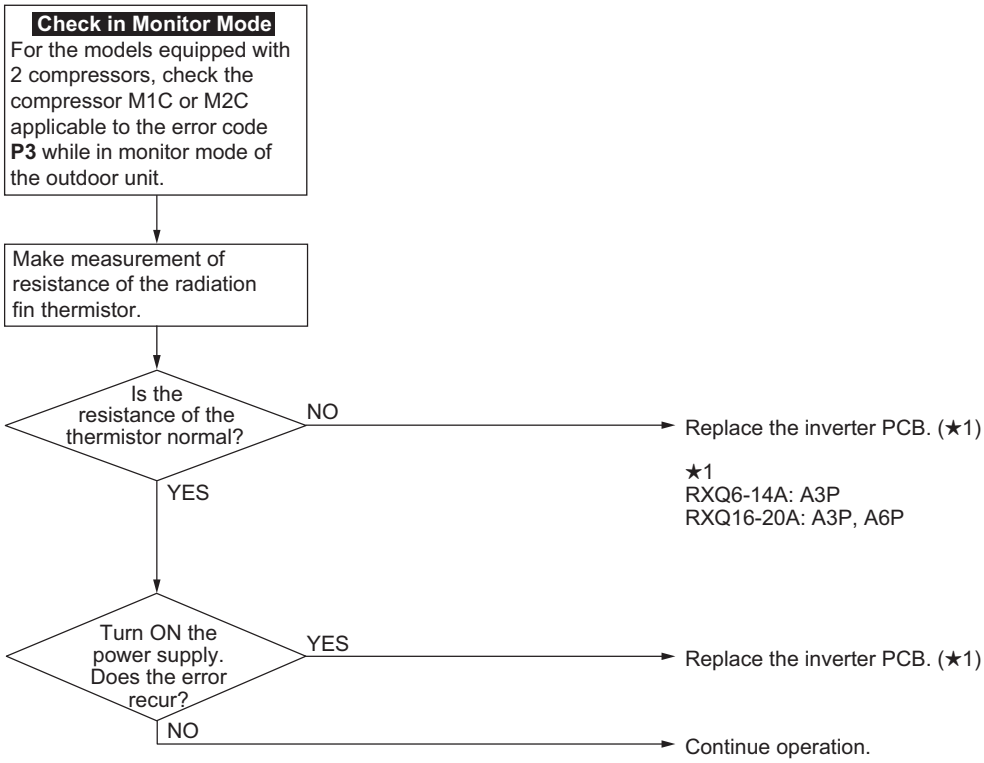
When the system is in operation and the thermistor causes wiring disconnection or short circuit in it.

Supposed Causes

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

Troubleshooting

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



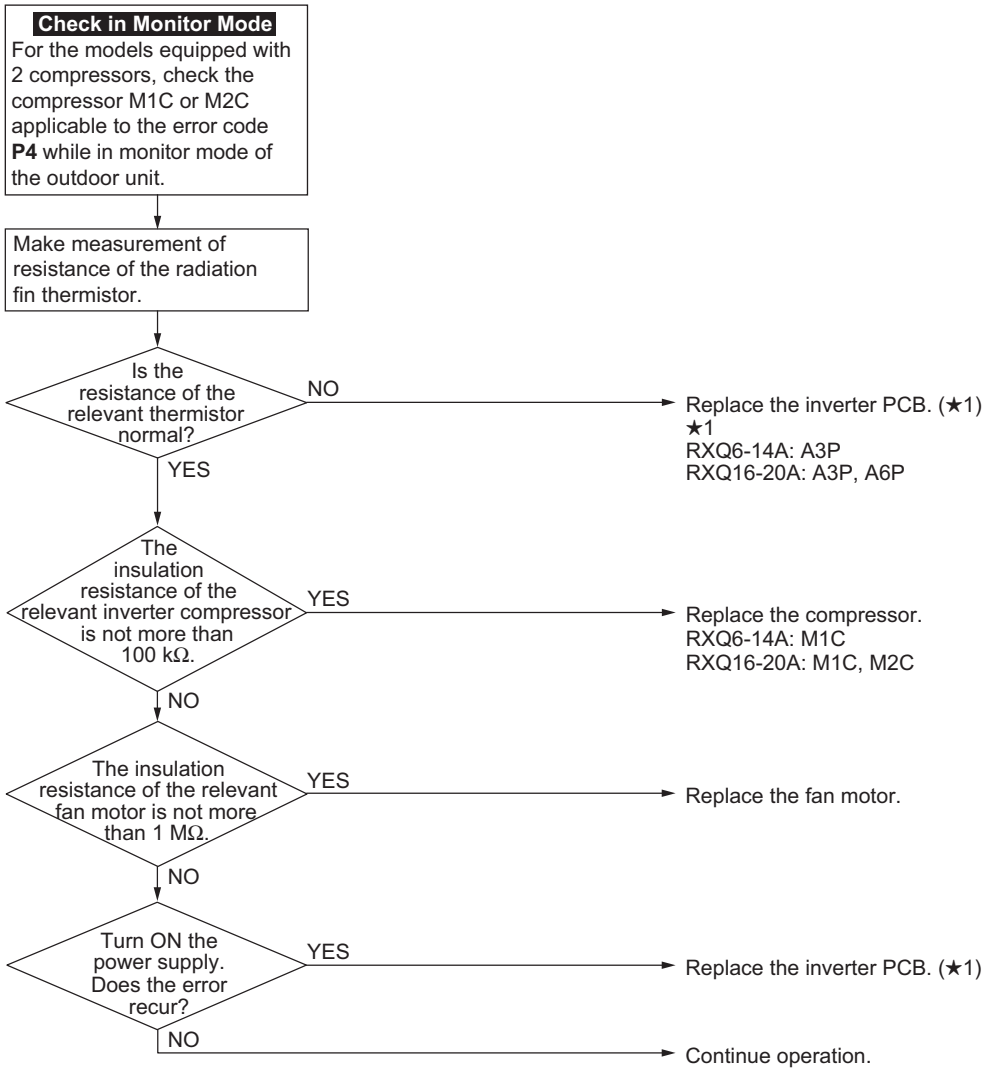
5.45 Inverter Radiation Fin Temperature Abnormality

Applicable Models	All outdoor unit models
Error Code	**P4**
Method of Error Detection	Detect the resistance of the following thermistors during the compressor stops running: (1) Radiation fin thermistor (2) Thermistor located in PCB circuit
Error Decision Conditions	When the resistance of the thermistor comes to a value equivalent to open or short circuit. Error is not decided while the unit operation is continued. **P4** will be displayed by pressing the inspection button.
Supposed Causes	■ Defective radiation fin temperature thermistor ■ Defective inverter PCB ■ Defective fan PCB ■ Defective inverter compressor ■ Defective fan motor

Troubleshooting

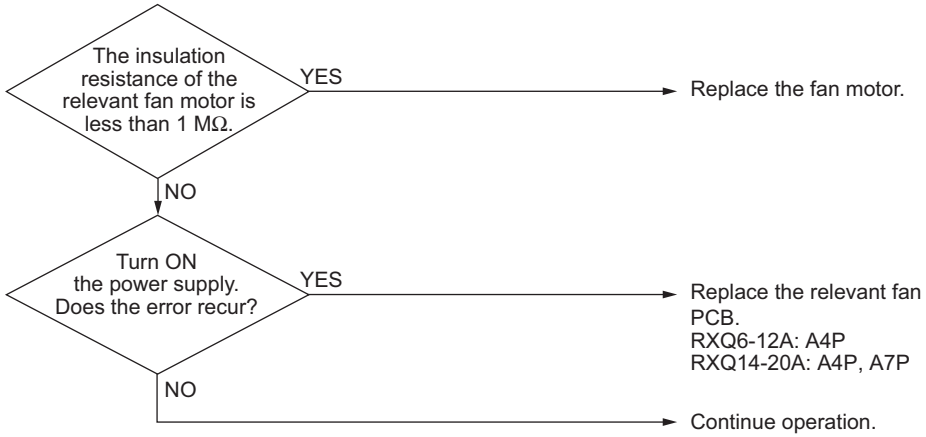
■ Subcode P4-01, 04, 05, 06, 07, 08

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



■ Subcode P4-02, 03, 15, 16, 17, 18

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



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

Applicable Models

All outdoor unit models

Error Code

PJ

Method of Error Detection

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

Error Decision Conditions

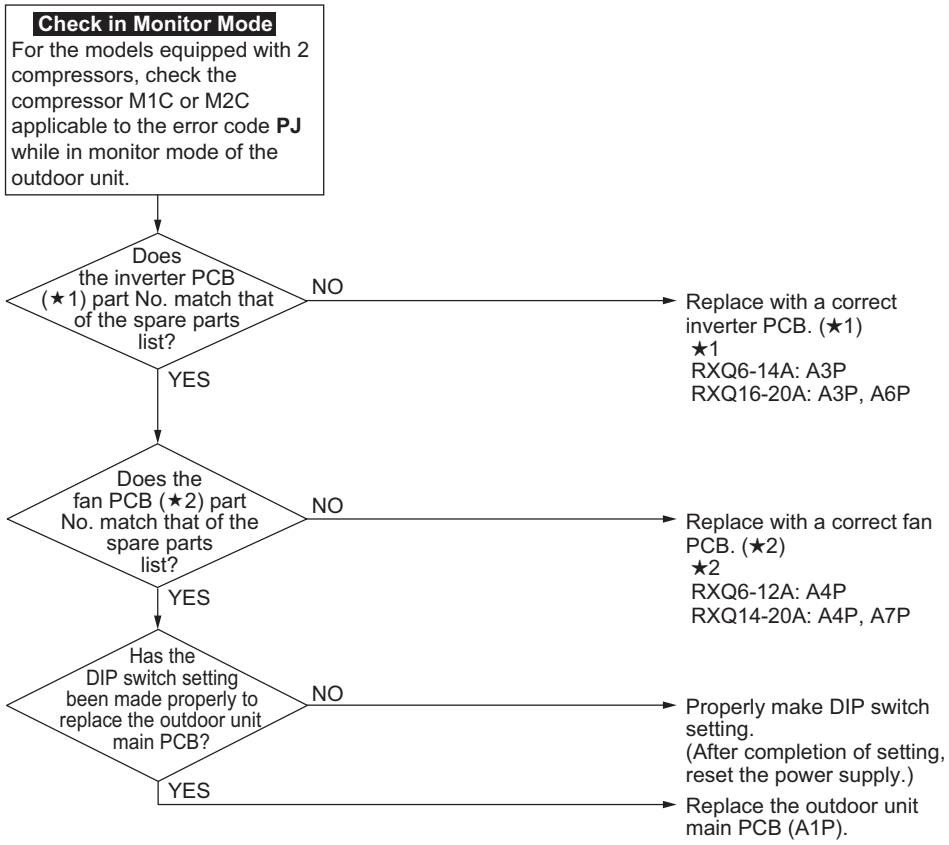
Make judgement according to communication data on whether or not the type of the inverter PCB is correct.

Supposed Causes

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

Troubleshooting

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



5.47 Refrigerant Shortage Warning

Applicable Models

All outdoor unit models

Error Code

U0

Sub code: 05

Method of Error Detection

Detects refrigerant shortage according to the ending conditions of cooling oil return operation.

Error Decision Conditions

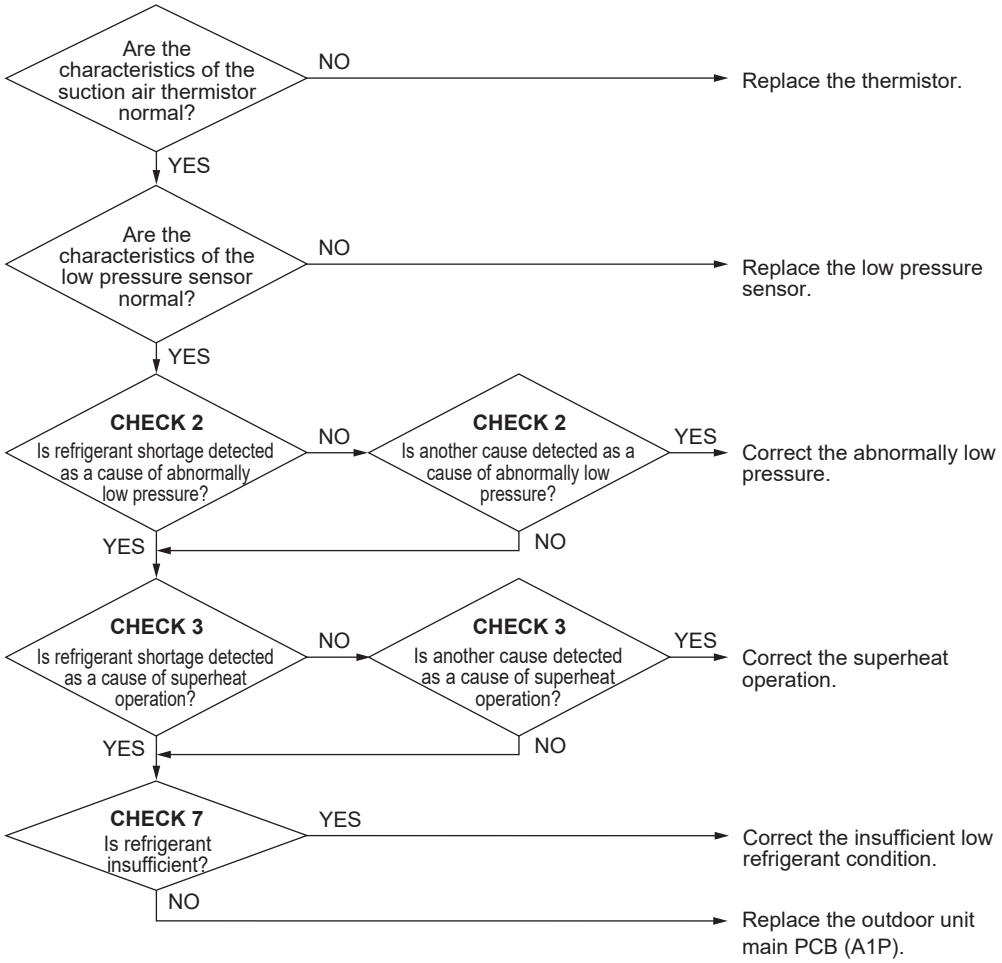
Cooling oil return operation does not finish according to the ending conditions, and the time is up for 3 consecutive times.
∗ No abnormality is determined, and the operation continues.

Supposed Causes

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

Troubleshooting

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



Reference **CHECK 2** Refer to page 288.

Reference **CHECK 3** Refer to page 289.

Reference **CHECK 7** Refer to page 293.

5.48 Open Phase

Applicable Models

All outdoor unit models

Error Code

U1

Method of Error Detection

The phase of each phase is detected by phase detection circuit and open phase is judged.

Error Decision Conditions

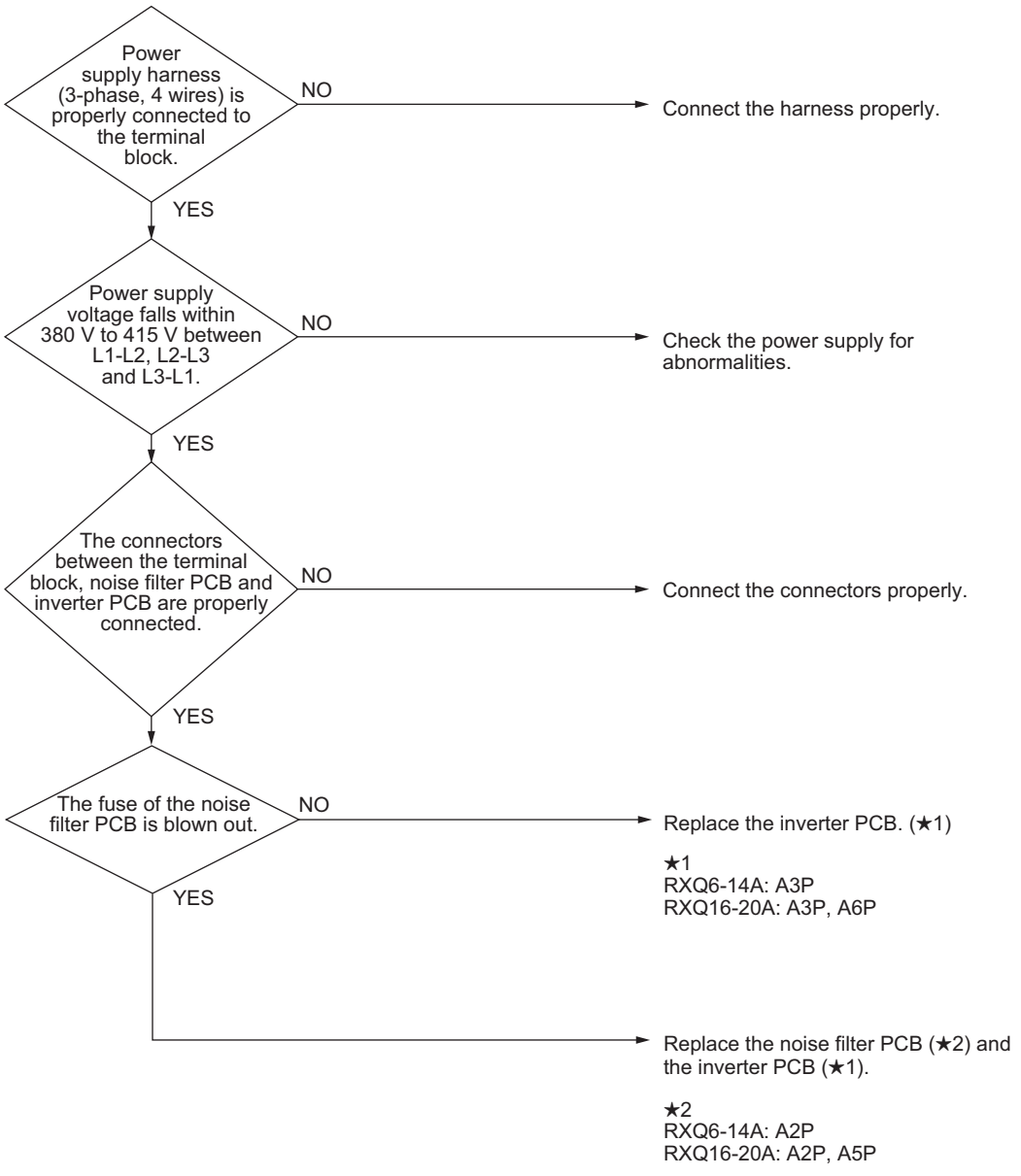
When any phase is open phase.

Supposed Causes

- Abnormal supply voltage
- Open phase
- Defective outdoor unit main PCB

Troubleshooting

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



5.49 Power Supply Insufficient or Instantaneous Abnormality

Applicable Models

All outdoor unit models

Error Code

U2

Method of Error Detection

Detect the voltage of capacitor of the main circuit in the inverter PCB.

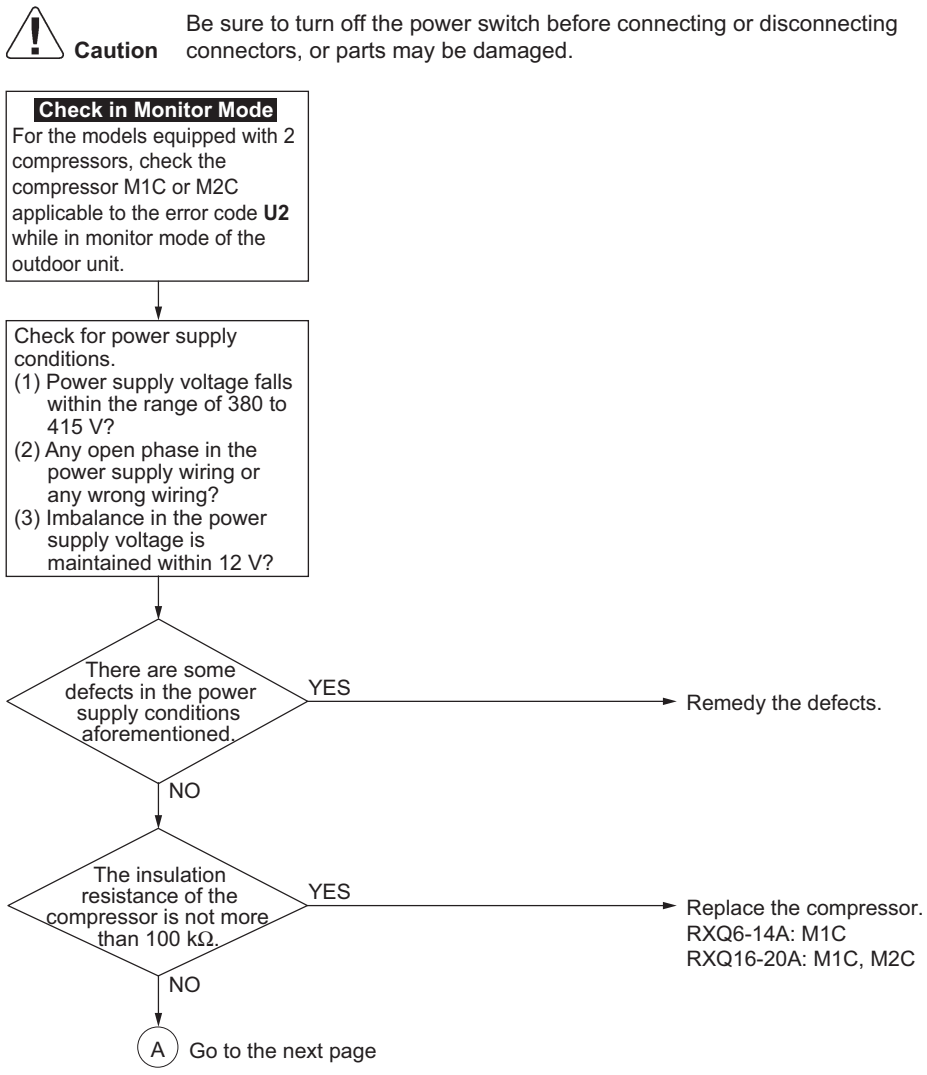
Error Decision Conditions

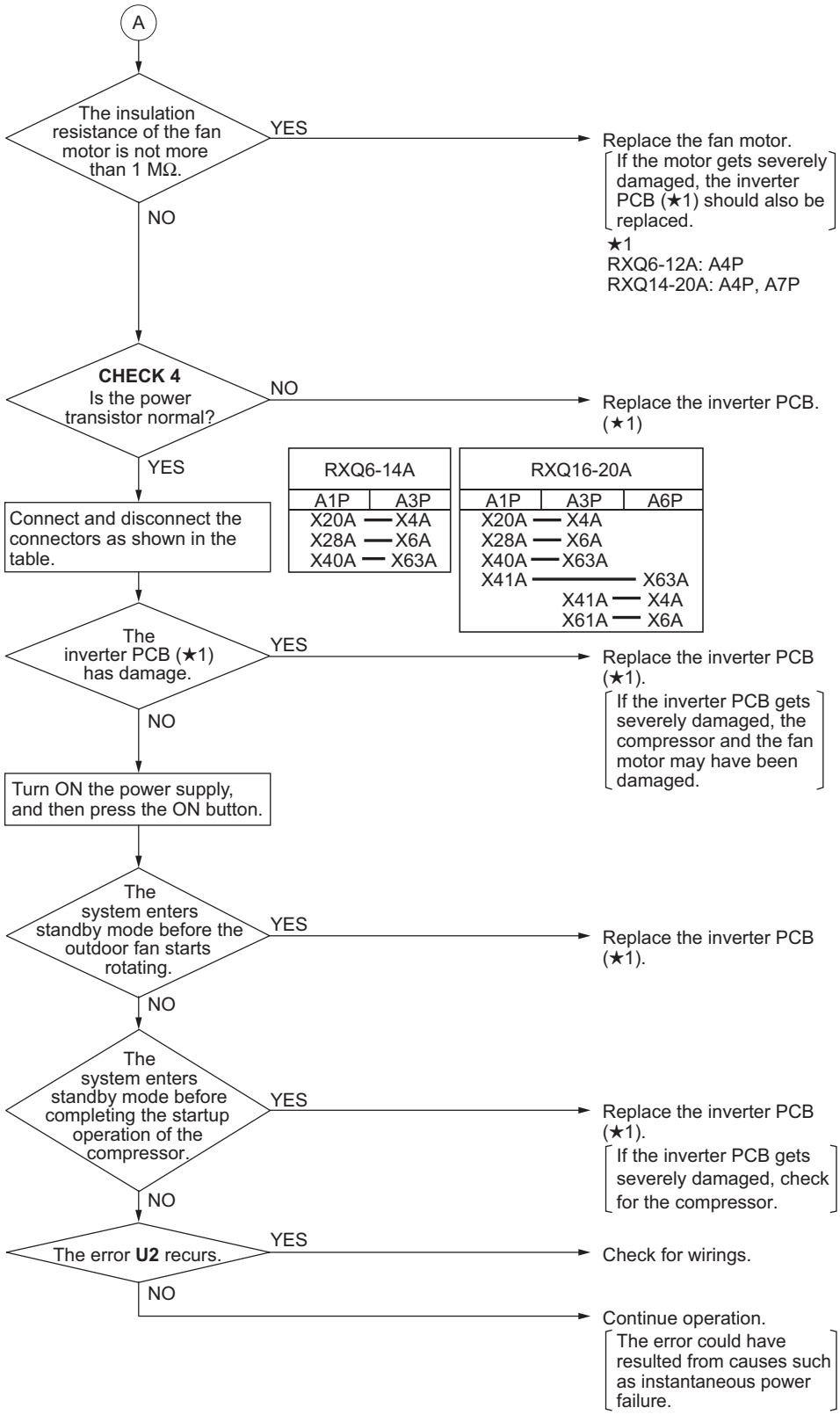
When the voltage in the DC circuit (between diode module and power module) falls below 380 VDC.

Supposed Causes

- Abnormal power supply voltage
- Instantaneous power failure
- Open phase
- Defective inverter PCB
- Defective outdoor unit main PCB
- Defective compressor
- Defective main circuit wiring
- Defective fan motor
- Defective connection of signal cable

Troubleshooting





Reference **CHECK 4** Refer to page 290.

5.50 Check Operation Not Executed

Applicable Models

All outdoor unit models

Error Code

U3

Method of Error Detection

The check operation has not been executed.

Error Decision Conditions

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

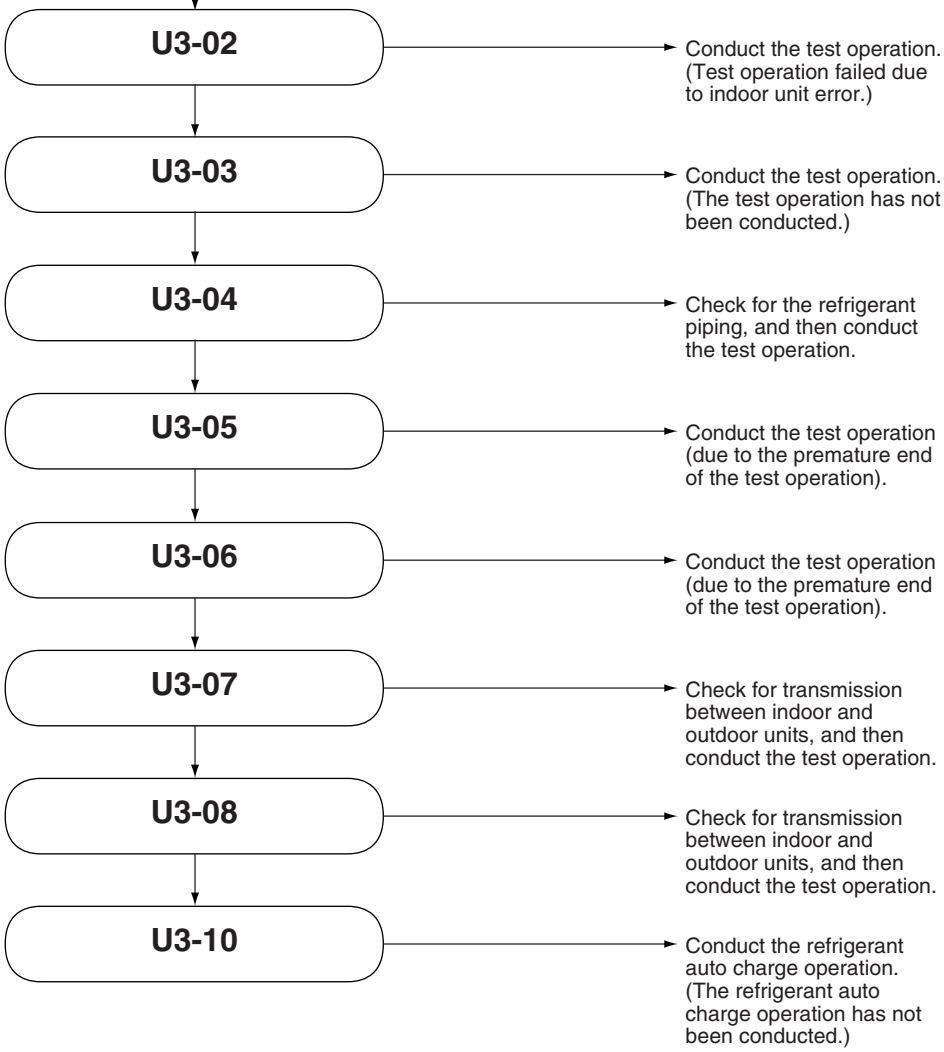
Supposed Causes

- Check operation not executed

Troubleshooting

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

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

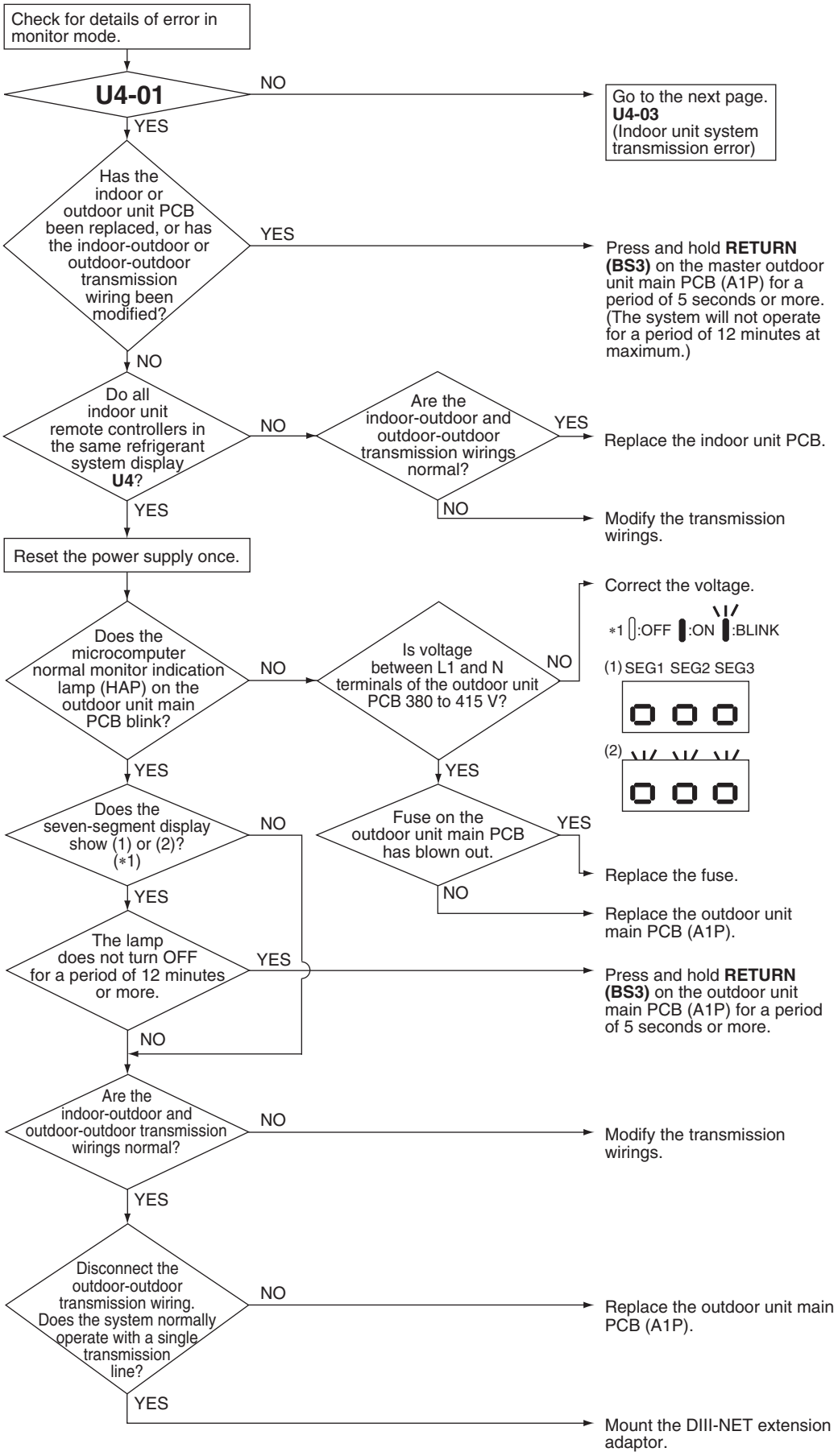


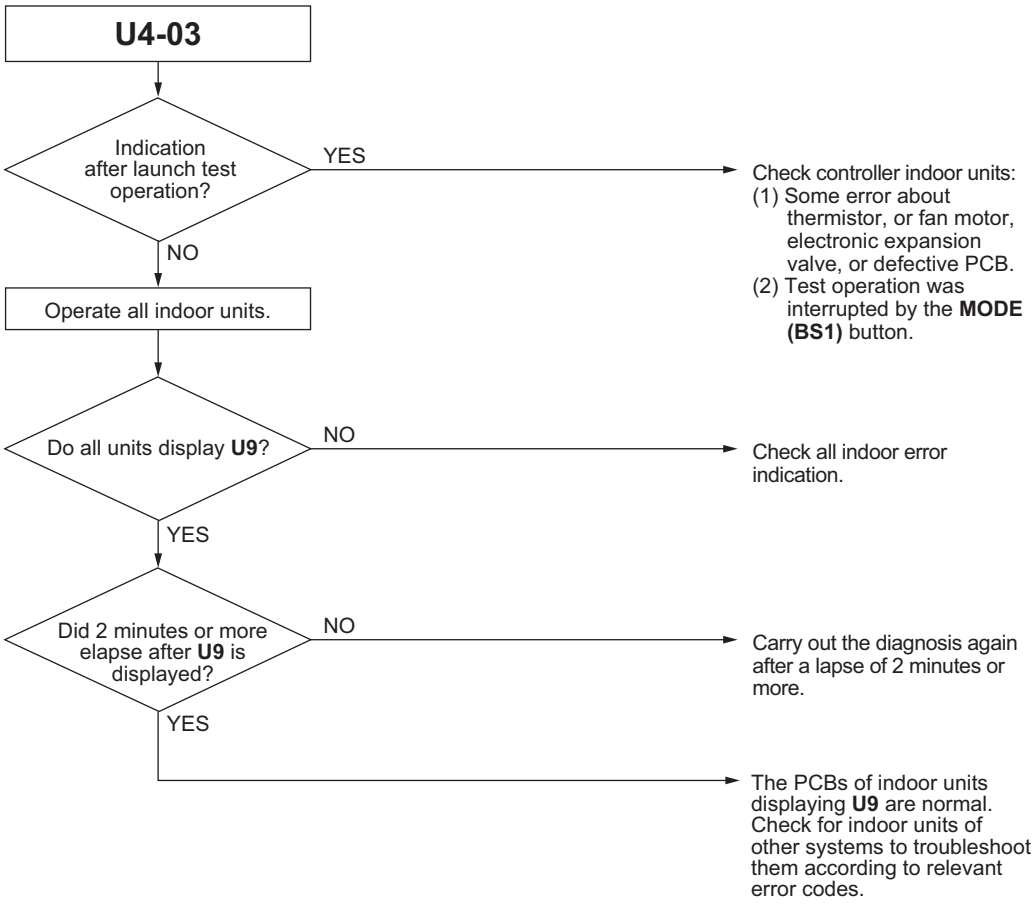
5.51 Transmission Error between Indoor Units and Outdoor Units

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	Transmission is not carried out normally for a certain amount of time.
Supposed Causes	■ Short circuit in indoor-outdoor or outdoor-outdoor transmission wiring (F1/F2), or wrong wiring ■ Outdoor unit power supply is OFF ■ System address does not match ■ Defective indoor unit PCB ■ Defective outdoor unit PCB

Troubleshooting

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




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

5.52 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

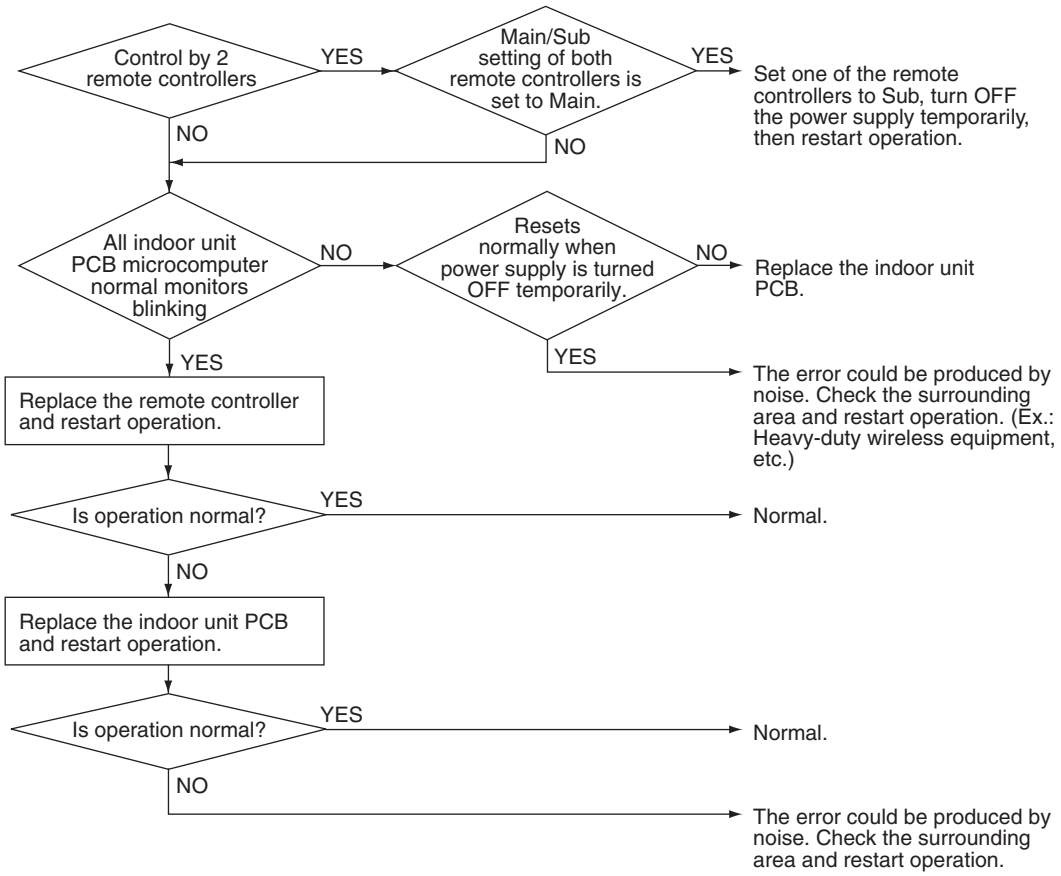
When transmission is not carried out normally for a certain amount of time.

Supposed Causes

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

Troubleshooting

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



Reference Refer to page 64 for Main/Sub setting.

5.53 Transmission Error between Outdoor Units

Applicable Models

All outdoor unit models

Error Code

U7

Method of Error Detection

Microcomputer checks if transmission between outdoor units is normal.

Error Decision Conditions

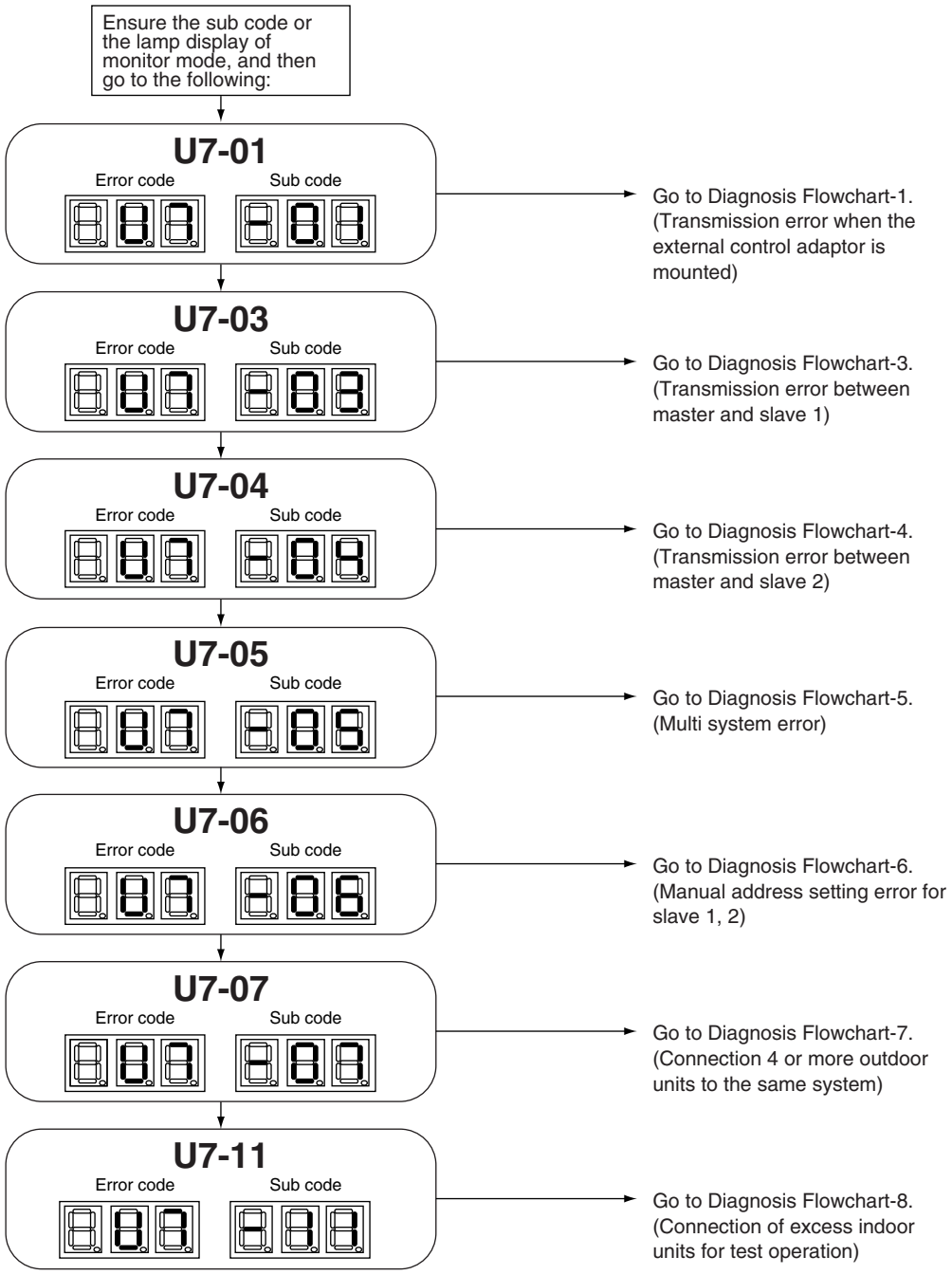
When transmission is not carried out normally for a certain amount of time

Supposed Causes

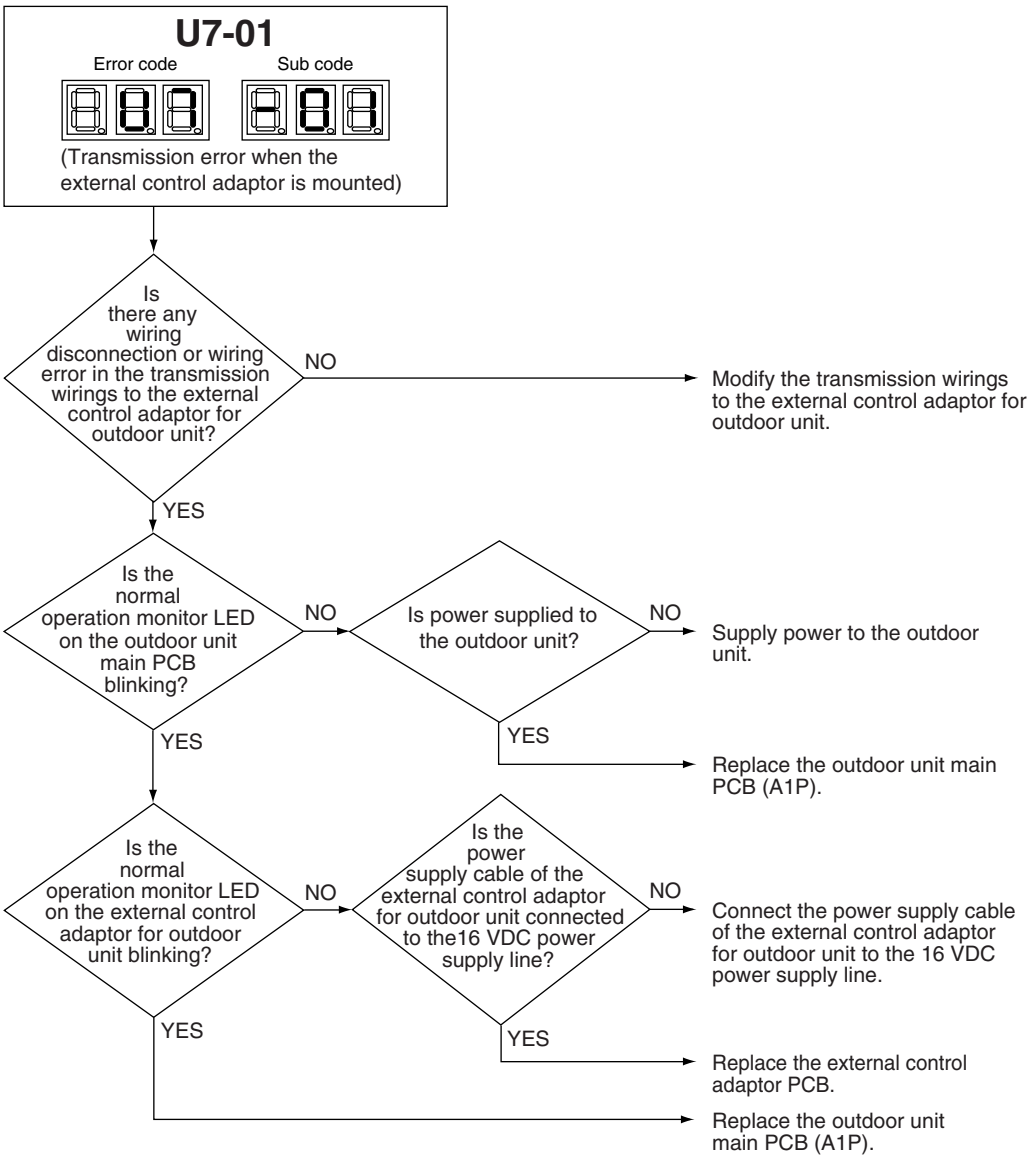
- Connection error of transmission wirings between outdoor unit and external control adaptor for outdoor unit
- Connection error of transmission wirings between outdoor units
- Defective outdoor unit main PCB
- Defective external control adaptor for outdoor unit

Troubleshooting

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



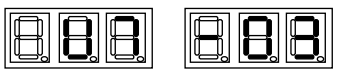
Diagnosis Flowchart-1



Diagnosis Flowchart-3

U7-03

Error code Sub code



(Transmission error between master and slave 1)

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

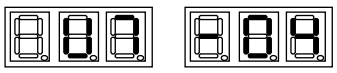
NO → Replace the outdoor unit main PCB (A1P) for multi slave 1.

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

Diagnosis Flowchart-4

U7-04

Error code Sub code



(Transmission error between master and slave 2)

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

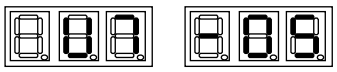
NO → Replace the outdoor unit main PCB (A1P) for multi slave 2.

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

Diagnosis Flowchart-5

U7-05

Error code Sub code



(Multi system error)

Multi outdoor unit system?

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

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

Diagnosis Flowchart-6

U7-06

Error code: 8 1

Sub code: 1 0 8

(Manual address setting error for slave 1, 2)

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

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

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

Diagnosis Flowchart-7

U7-07

Error code: 8 1 0

Sub code: 1 0 0

(Connection of 4 or more outdoor units in the same system)

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

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

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

Diagnosis Flowchart-8

U7-11

Error code: 8 1 0

Sub code: 1 0 0

(Connection of excess indoor units for test operation)

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

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

NO

The capacity to connect indoor units falls within the specified range.

NO → Check the capacity to connect indoor units.

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

5.54 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

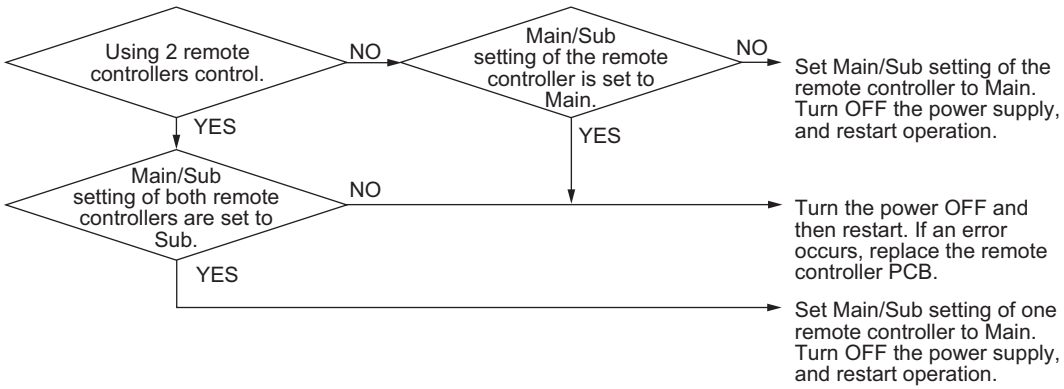
Transmission is not carried out normally for a certain amount of time.

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 64 for Main/Sub setting.

5.55 Other Indoor Units and Outdoor Unit Abnormality

Applicable Models
All indoor unit models
All outdoor unit models

Error Code
U9

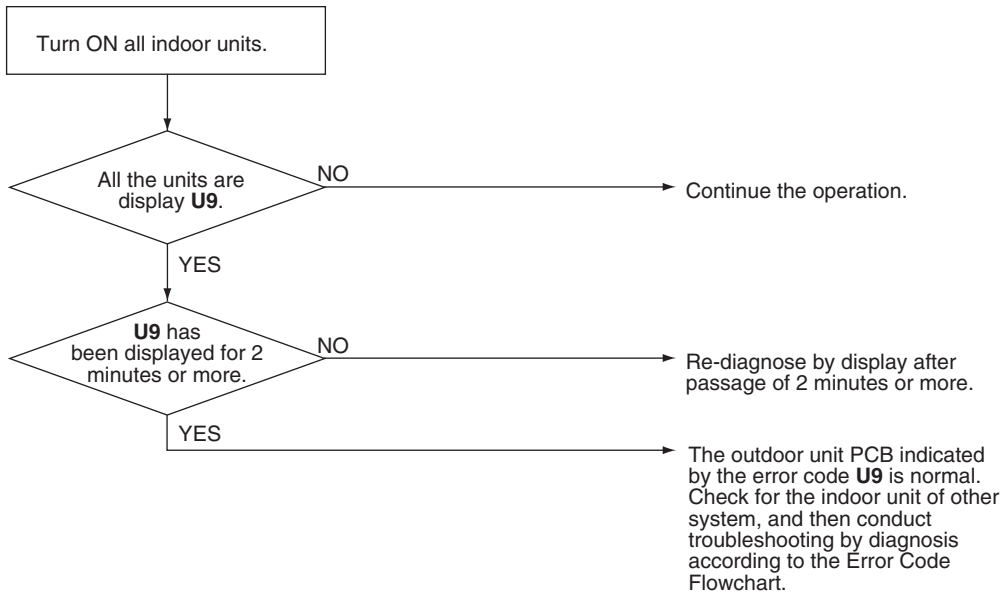
Method of Error Detection
Detect the error signal for the other indoor unit within the circuit by outdoor unit main PCB.

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

Supposed Causes
- Transmission error between other indoors and outdoor units
- Defective electronic expansion valve of other indoor unit
- Defective indoor unit PCB of other indoor unit
- Improper connection of transmission wiring between indoor and outdoor unit

Troubleshooting

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



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

Applicable Models
All indoor unit models
All outdoor unit models

Error Code
UA

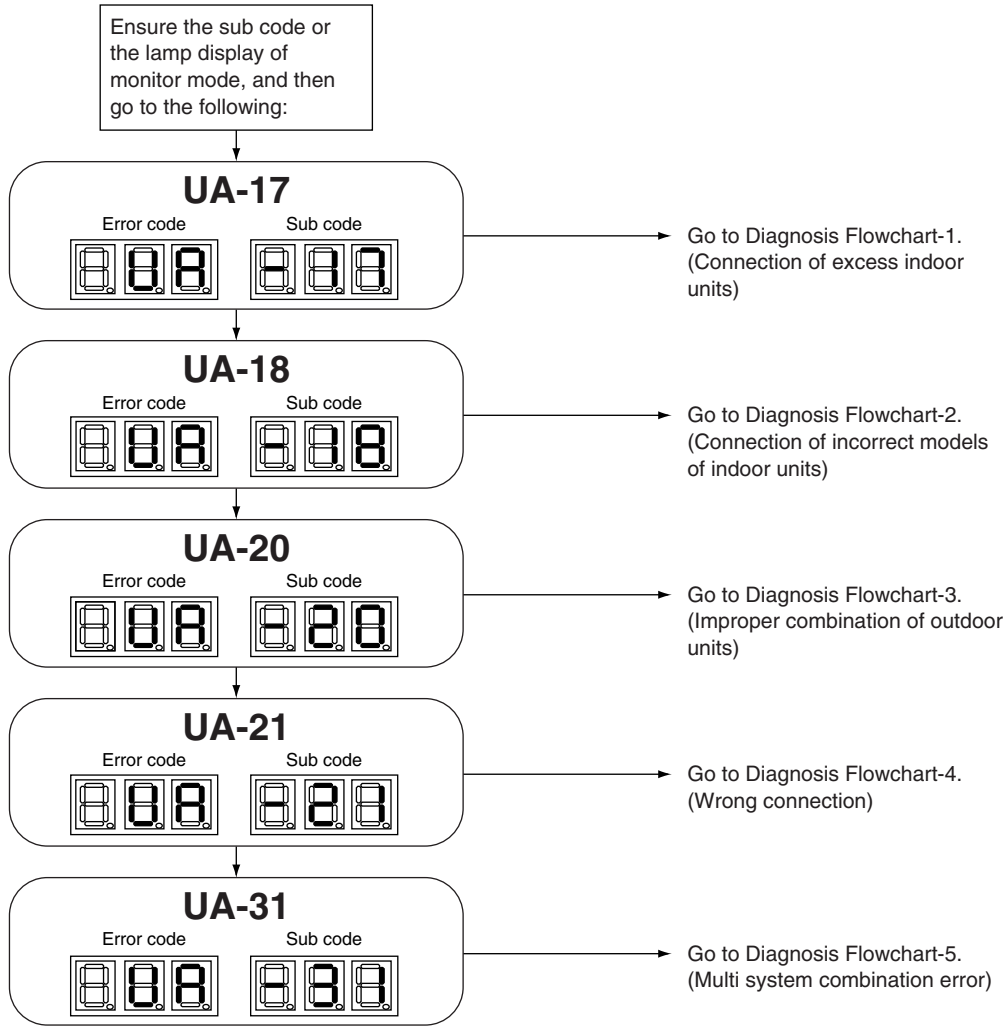
Method of Error Detection
A difference occurs in data by the type of refrigerant between indoor and outdoor units.
The number of indoor units connected is out of the allowable range.

Error Decision Conditions
The error decision is made as soon as either of the abnormalities aforementioned is detected.

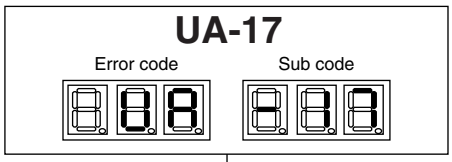
Supposed Causes
- Excess of connected indoor units
- Defective outdoor unit main PCB
- Mismatch of the refrigerant type of indoor and outdoor unit.
- Setting of outdoor unit main PCB was not carried out after replacing to spare PCB.

Troubleshooting

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



Diagnosis Flowchart-1

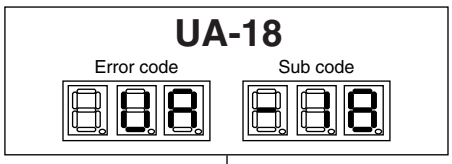


The number of indoor units connected to the same system is not more than 64.

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

NO → Excess indoor units are connected.
Check for the connection to connect the proper number of indoor units.

Diagnosis Flowchart-2

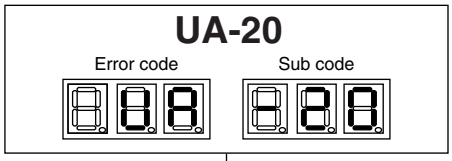


Check if the refrigerant type of the outdoor unit corresponds to that of the indoor unit.

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

NO → Match the refrigerant types of the outdoor unit and the indoor unit.

Diagnosis Flowchart-3



Multi connection?

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

YES

Was the outdoor unit main PCB replaced with a spare PCB?

NO → A different model of outdoor unit is connected.

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

YES → Check for the model of outdoor unit.

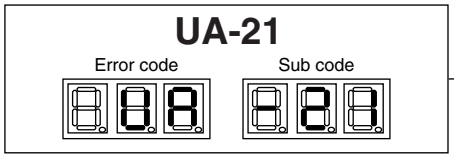
YES

Was proper setting of spare PCB made?

NO → Make setting again, and then reset the power supply.

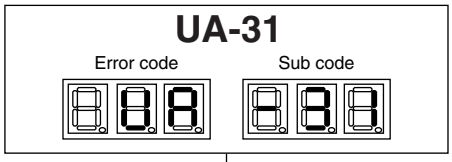
YES → Replace the spare PCB.

Diagnosis Flowchart-4



Replace the outdoor unit main PCB (A1P).

Diagnosis Flowchart-5



Is the multi combination of outdoor units proper?

NO → Correct the multi combination of outdoor units.

YES

Was the outdoor unit main PCB replaced with a spare PCB?

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

YES

Is the procurement of the spare PCB proper?

NO → Procure a proper spare PCB.

YES

Is the setting of the spare PCB proper?

NO → Make setting again, and then reset the power supply.

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

5.57 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.

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

5.58 Transmission Error between Centralized Controller and Indoor Unit

Applicable Models

All indoor unit models
Schedule timer
Central remote controller

Error Code

UE

Method of Error Detection

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

Error Decision Conditions

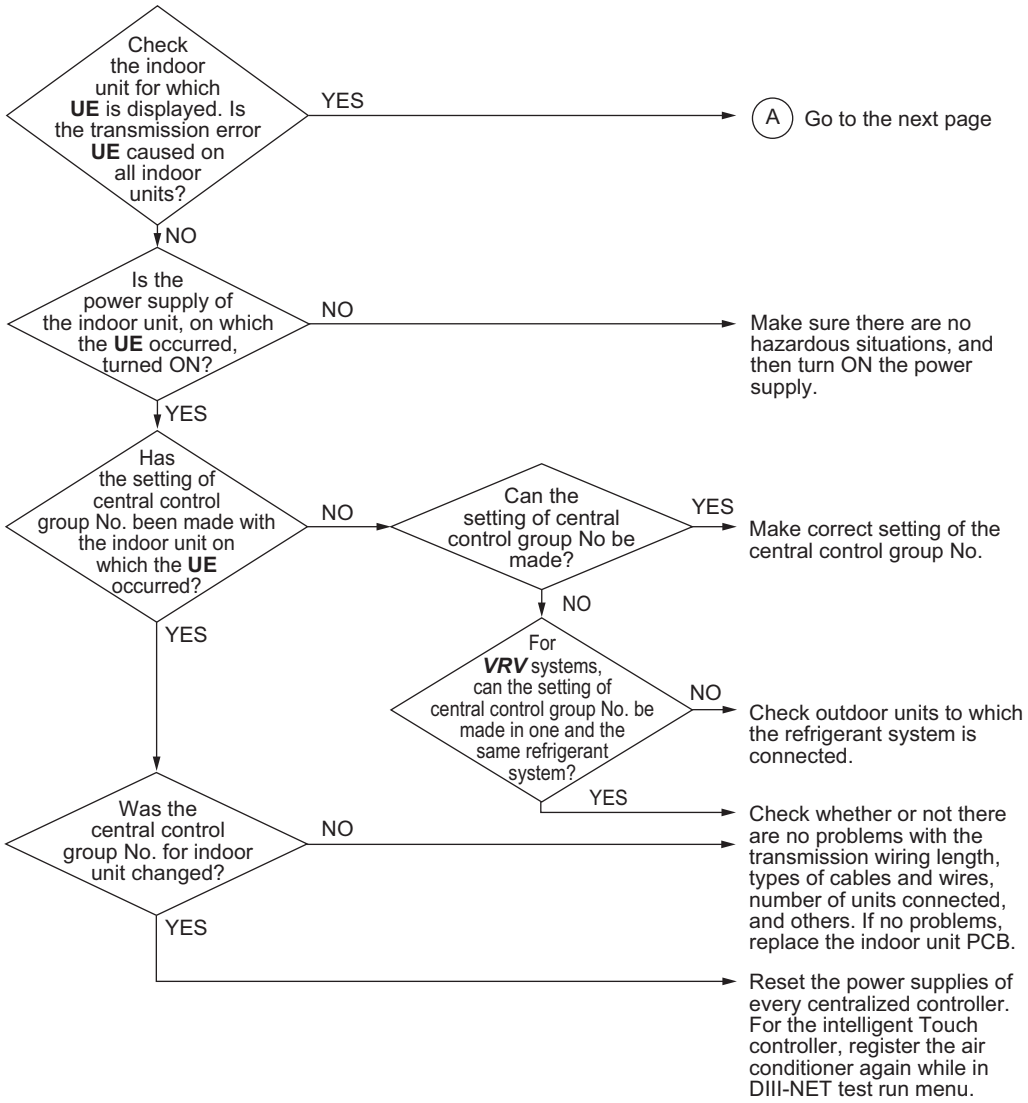
Transmission is not carried out normally for a certain amount of time

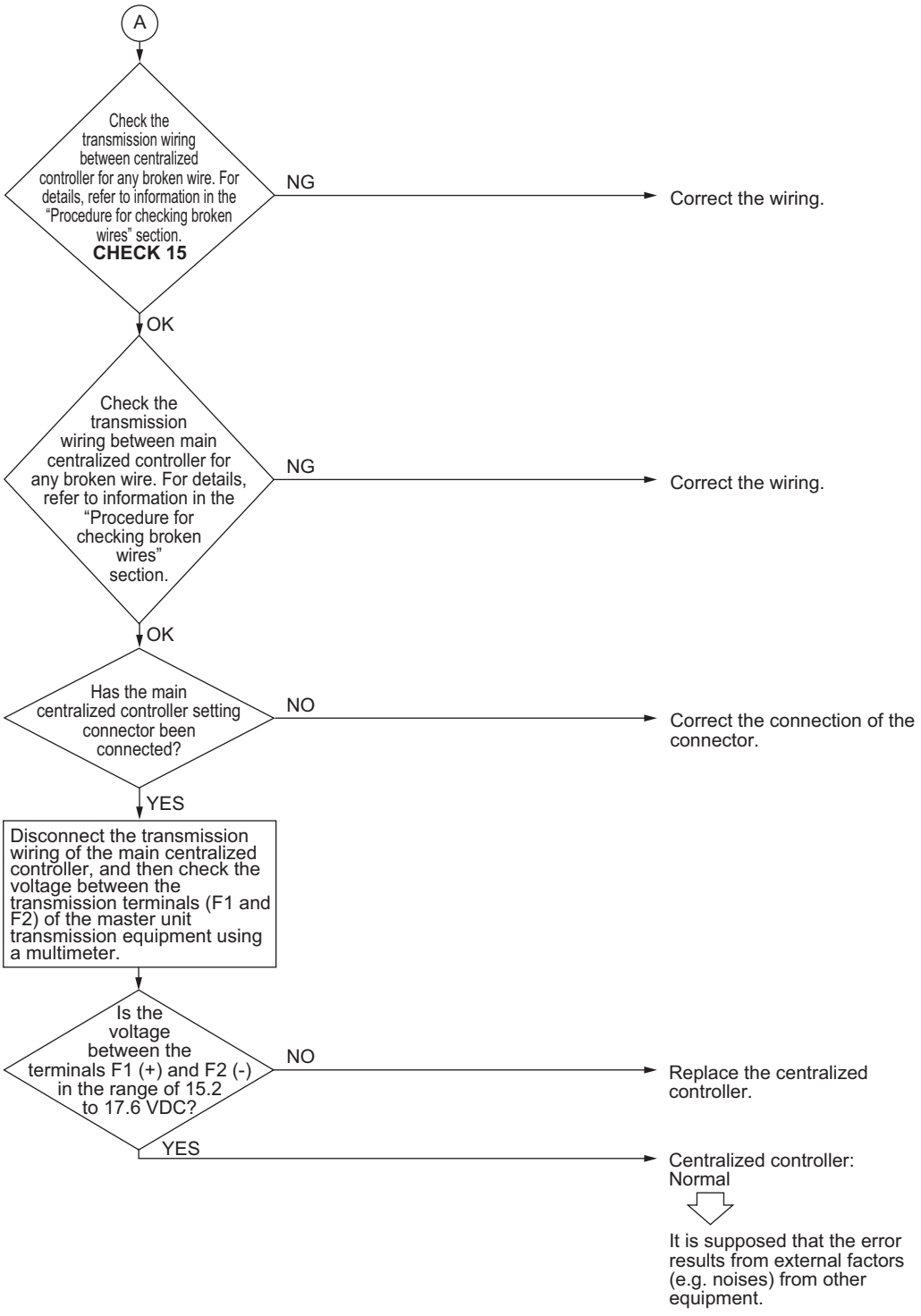
Supposed Causes

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

Troubleshooting

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





Reference **CHECK 15** Refer to page 299.

5.59 System Not Set Yet

Applicable Models
All indoor unit models
All outdoor unit models

Error Code
UF

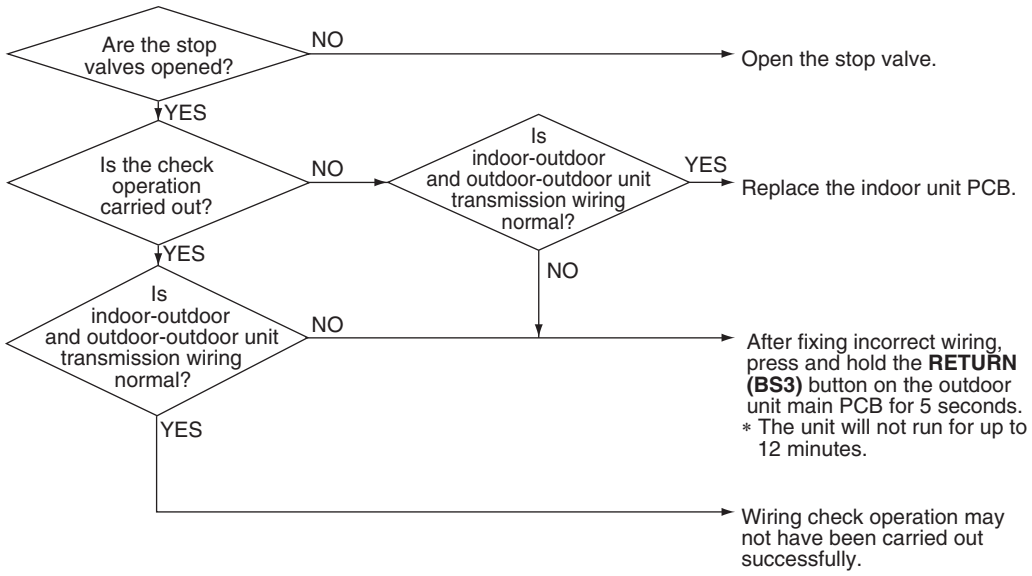
Method of Error Detection
On check operation, the number of indoor units in terms of transmission is not corresponding to that of indoor units that have made changes in temperature.

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 and outdoor-outdoor units
- Failure to execute check operation
- Defective indoor unit PCB
- Stop valve is not opened

Troubleshooting

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

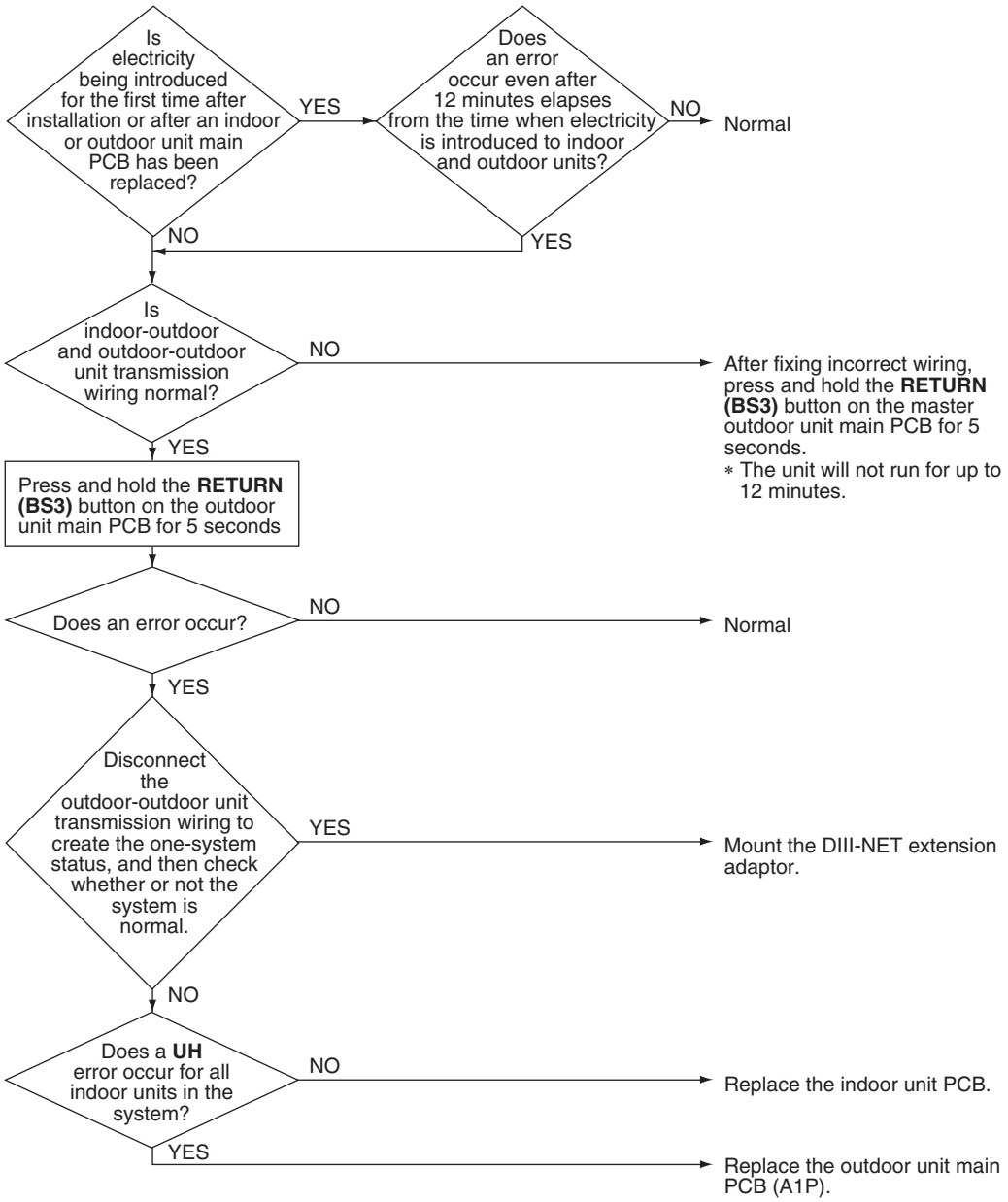


5.60 System Abnormality, Refrigerant System Address Undefined

Applicable Models	All indoor unit models All outdoor unit models
Error Code	**UH**
Method of Error Detection	Detect an indoor unit with no auto address setting.
Error Decision Conditions	The error decision is made as soon as the abnormality aforementioned is detected.
Supposed Causes	■ Improper connection of transmission wiring between indoor-outdoor units and outdoor-outdoor units ■ Defective indoor unit PCB ■ Defective outdoor unit main PCB

Troubleshooting

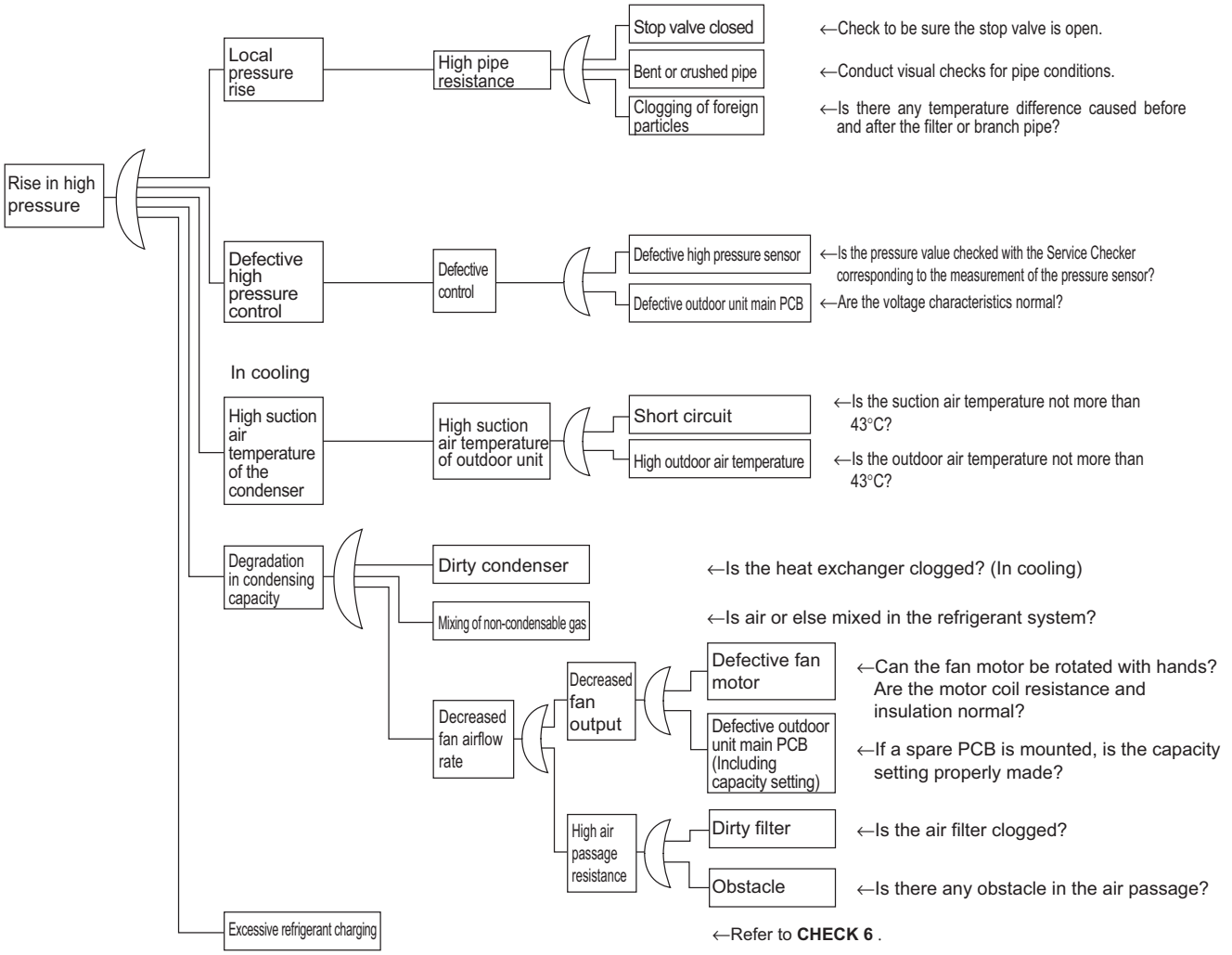
Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



6. Check

6.1 High Pressure Check

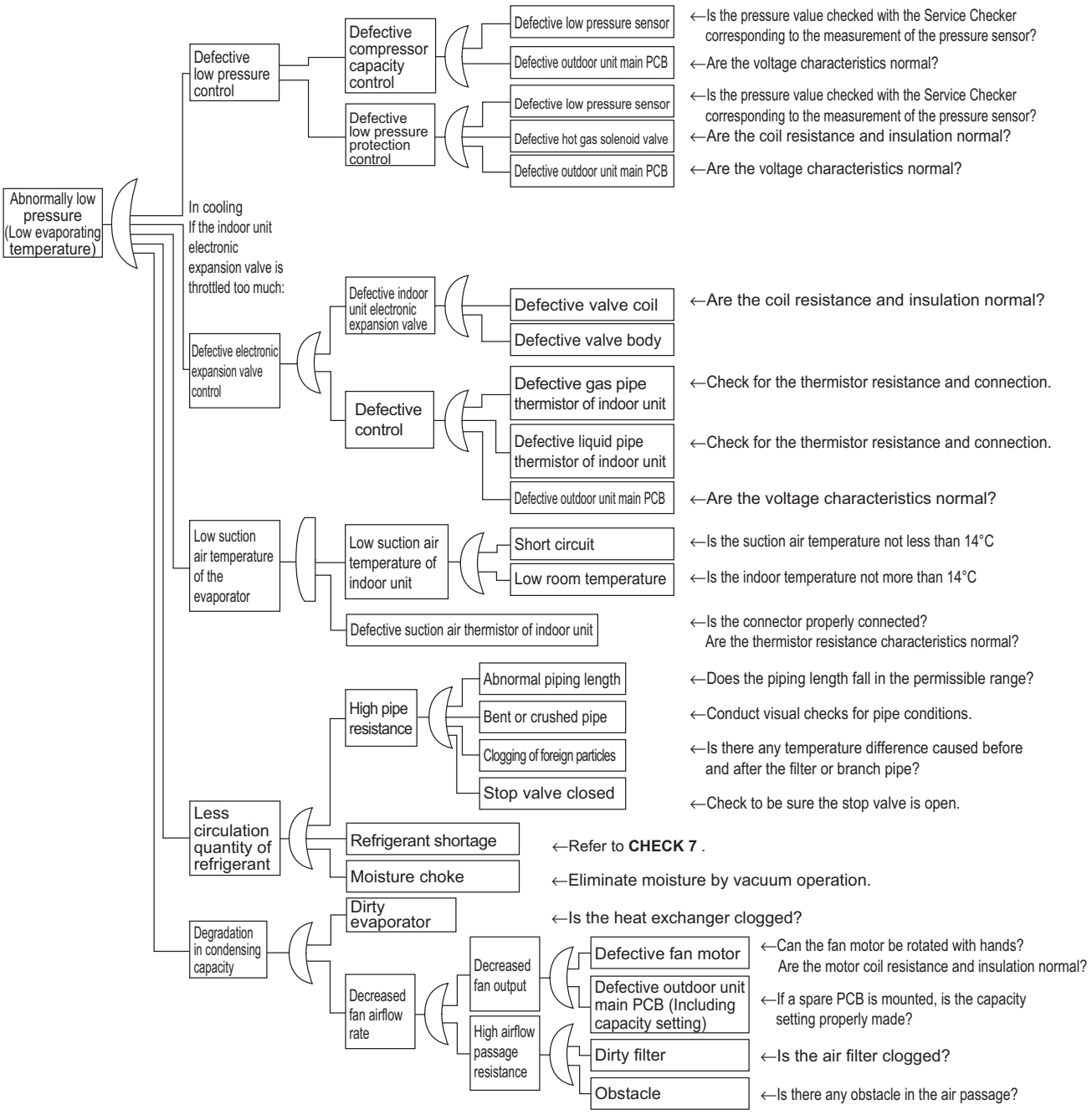
CHECK 1 Referring to the Fault Tree Analysis (FTA) shown below, probe the defective points.



Reference **CHECK 6** Refer to page 292.

6.2 Low Pressure Check

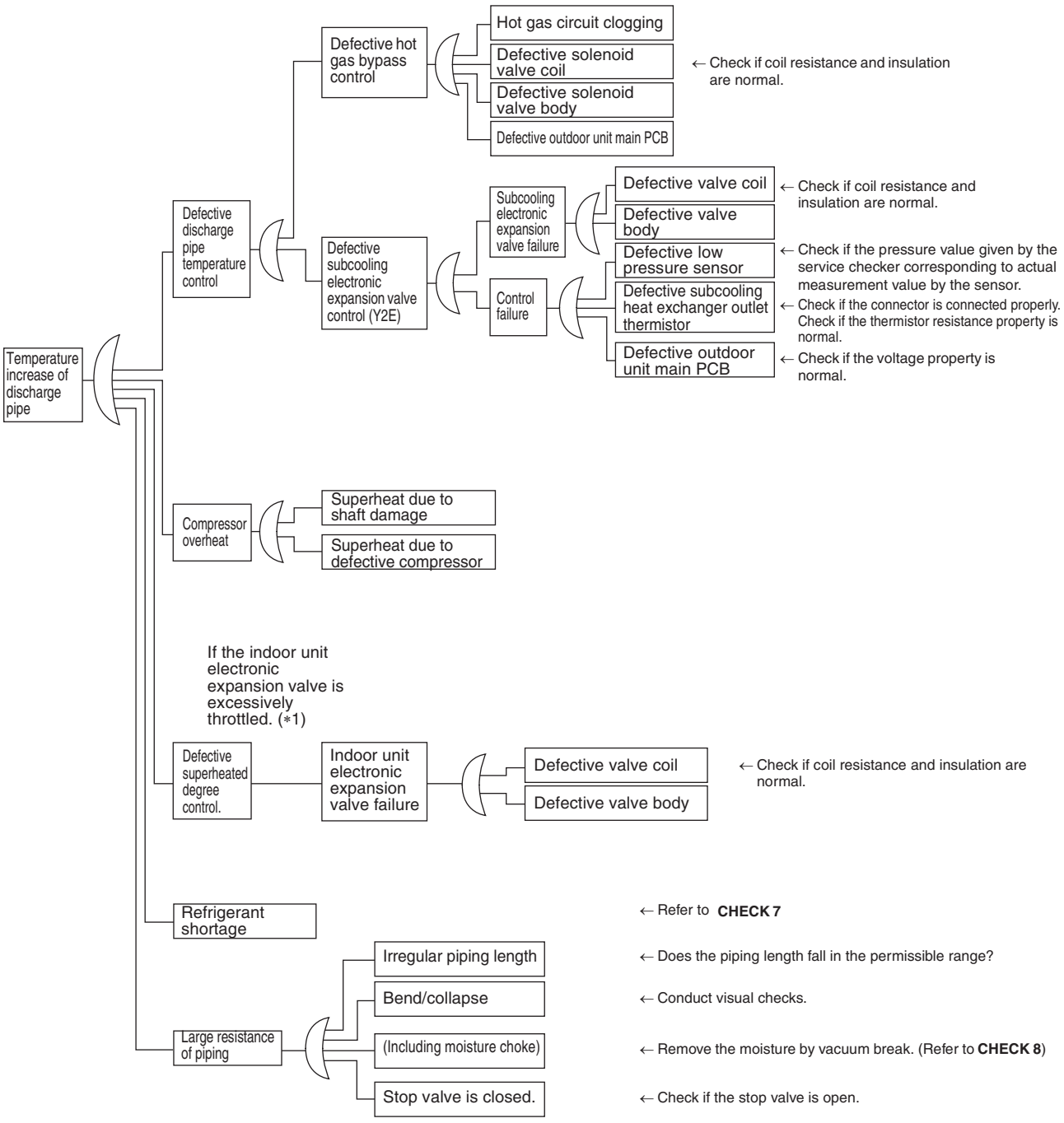
CHECK 2 Referring to the Fault Tree Analysis (FTA) shown below, probe the defective points.



Reference **CHECK 7** Refer to page 293.

6.3 Superheat Operation Check

CHECK 3 Identify the defective points referring to the failure factor analysis (FTA) as follows.



Note(s)

∗1. “Superheating temperature control” in cooling mode is conducted by indoor unit electronic expansion valve.

∗2. Judgment criteria of superheat operation:

(1) Suction gas superheating temperature: 10 degrees and over.

(2) Discharge gas superheating temperature: 45 degrees and over, except for immediately after starting and dropping control, etc.

(Use the above stated values as a guide. Depending on the other conditions, the unit may be normal despite the values within the above scope.)

Reference **CHECK 7** Refer to page 293.

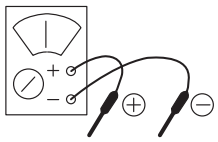
Reference **CHECK 8** Refer to page 294.

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



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

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

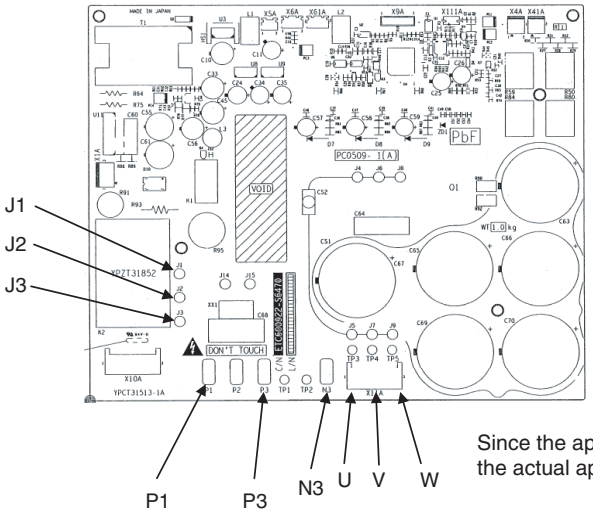
When using the analog type of multimeter,
make measurement in resistance measurement mode in the x1 kΩ range.

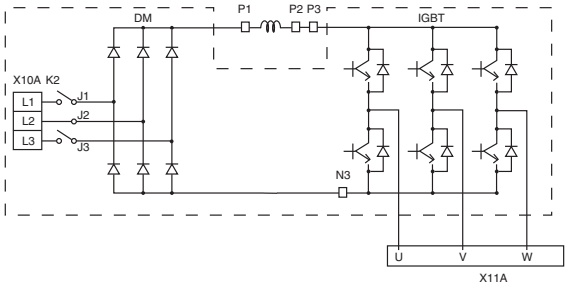
No.	Measuring point		Judgment Criteria	Remarks
	+	–		
1	P2	U	2 ~ 15 kΩ	—
2	P2	V		
3	P2	W		
4	U	P2	15 kΩ and more (including ∞)	Due to condenser charge and so on, resistance measurement may require some time.
5	V	P2		
6	W	P2		
7	N3	U		
8	N3	V		
9	N3	W		
10	U	N3	2 ~ 15 kΩ	—
11	V	N3		
12	W	N3		

When using the digital type of multimeter, make measurement in diode check mode.

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

PCB and Circuit Diagram





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

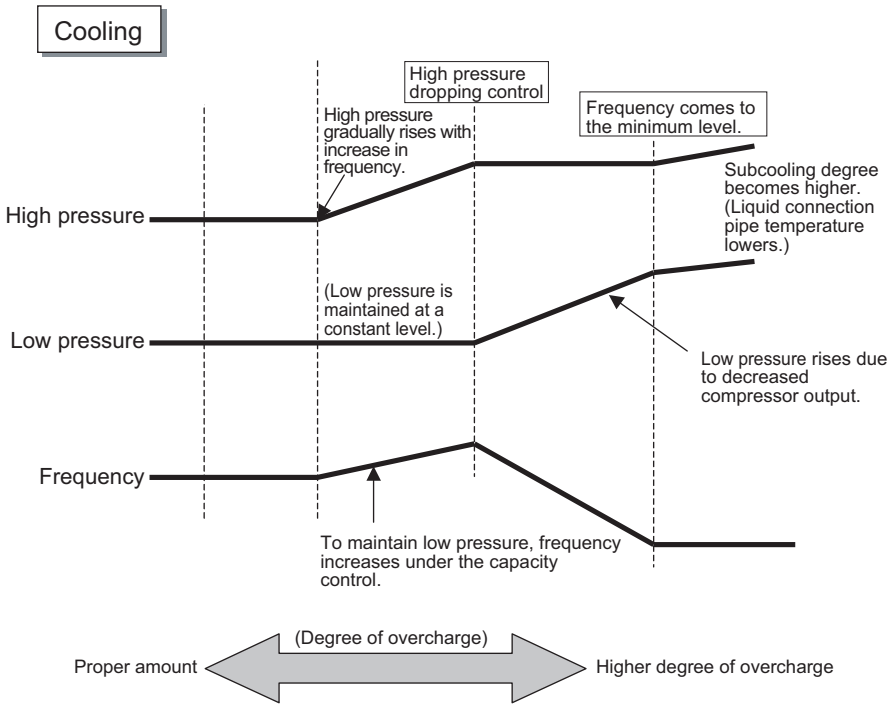
6.5 Refrigerant Overcharge Check

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.



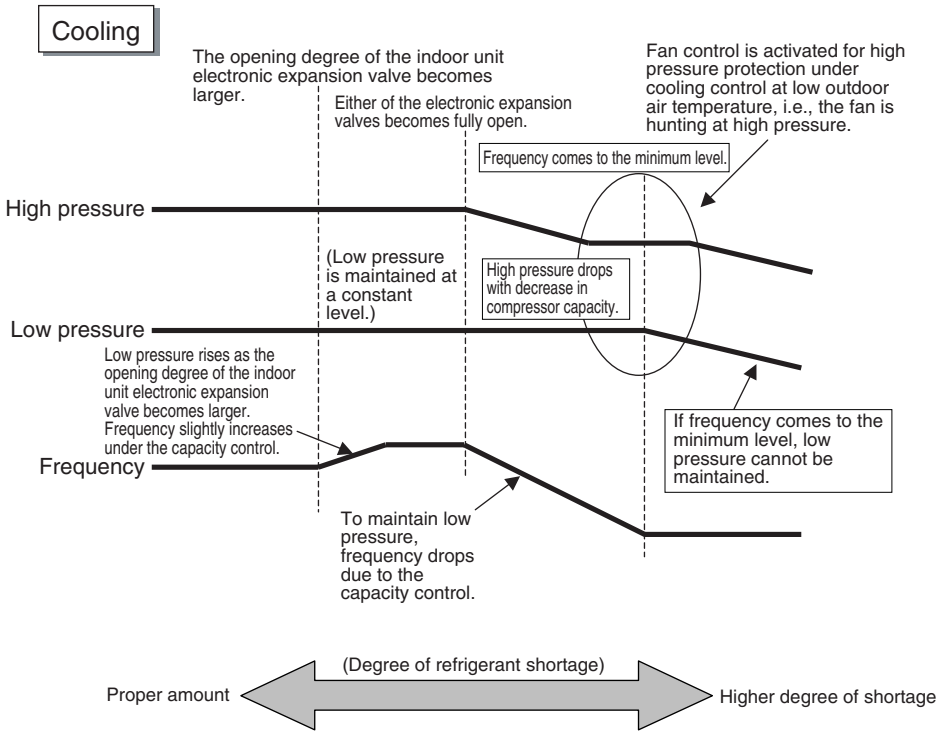
6.6 Refrigerant Shortage Check

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 judgment, refer to the information below.

Diagnosis of refrigerant shortage

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 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 –100.7 kPa (5 torr, –755 mmHg).
   - Connect manifold gauges to the service ports of liquid pipe and gas pipe and run the vacuum pump for a period of two or more hours to conduct evacuation to –100.7 kPa or less.
   - If the degree of vacuum does not reach –100.7 kPa or less even though evacuation is conducted for a period of two hours, moisture will have entered the system or refrigerant leakage will have been caused. In this case, conduct evacuation for a period of another one hour.
   - If the degree of vacuum does not reach –100.7 kPa or less even though evacuation is conducted for a period of three hours, conduct the leak tests.
2. Leaving in vacuum state
   - Leave the compressor at the degree of vacuum of –100.7 kPa or less for a period of one hour or more, and then check to be sure that the vacuum gauge reading does not rise. (If the reading rises, moisture may have remained in the system or refrigerant leakage may have been caused.)
3. Additional refrigerant charge
   - Purge air from the manifold gauge connection hoses, and then charge a necessary amount of refrigerant.

Special vacuuming and dehydration

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 0.05 MPa.
3. Vacuuming and dehydration
   - Conduct vacuuming and dehydration for a period of one hour or more. If the degree of vacuum does not reach –100.7 kPa or less even though evacuation is conducted for a period of two hours or more, repeat vacuum break - vacuuming and dehydration.
4. Leaving in vacuum state
   - Leave the compressor at the degree of vacuum of –100.7 kPa or less for a period of one hour or more, and then check to be sure that the vacuum gauge reading does not rise.
5. Additional refrigerant charge
   - Purge air from the manifold gauge connection hoses, and then charge a necessary amount of refrigerant.

6.8 Thermistor Check

CHECK 11

Thermistor type of indoor units

Model	R1T Suction air thermistor	R2T Indoor heat exchanger (liquid) thermistor	R3T Indoor heat exchanger (gas) thermistor	R4T Discharge air thermistor
FXFSQ-AR	Type C	Type A	Type A	–
FXMQ-PB	Type B		Type J	
FXMQ-AR				
FXAQ-P				

Thermistor type of outdoor units

Thermistor		Type
R1T	Outdoor air thermistor	E
R21T	Discharge pipe thermistor (for M1C)	H
R22T	Discharge pipe thermistor (for M2C)	H
R3T	Suction pipe thermistor	A
R4T	Heat exchanger liquid pipe thermistor	A
R5T	Subcooling heat exchanger liquid pipe thermistor	A
R6T	Subcooling heat exchanger gas pipe thermistor	A
R8T	Compressor body thermistor (for M1C)	H
R9T	Compressor body thermistor (for M2C)	H

Thermistor temperature (°C)	Resistance (kΩ)		
	Type A	Type B	Type C
–30	363.8	361.7719	–
–25	266.8	265.4704	–
–20	197.8	196.9198	–
–15	148.2	147.5687	–
–10	112.0	111.6578	111.8
–5	85.52	85.2610	85.42
0	65.84	65.6705	65.80
5	51.05	50.9947	51.07
10	39.91	39.9149	39.97
15	31.44	31.4796	31.51
20	24.95	25.0060	25.02
25	19.94	20.0000	20.00
30	16.04	16.1008	16.10
35	12.99	13.0426	13.04
40	10.58	10.6281	10.63
45	8.669	8.7097	8.711
50	7.143	7.1764	7.179
55	5.918	5.9407	–
60	4.928	4.9439	–
65	4.123	4.1352	–
70	3.467	3.4757	–
75	–	2.9349	–
80	–	2.4894	–
85	–	2.1205	–
90	–	1.8138	–
95	–	1.5575	–
100	–	1.3425	–
105	–	1.1614	–
Drawing No.	3SA48002 3SA48018 3SA48019 3S480003 (AD94A045)	3SA48001 (AD87A001)	3S480014 (AD150384)

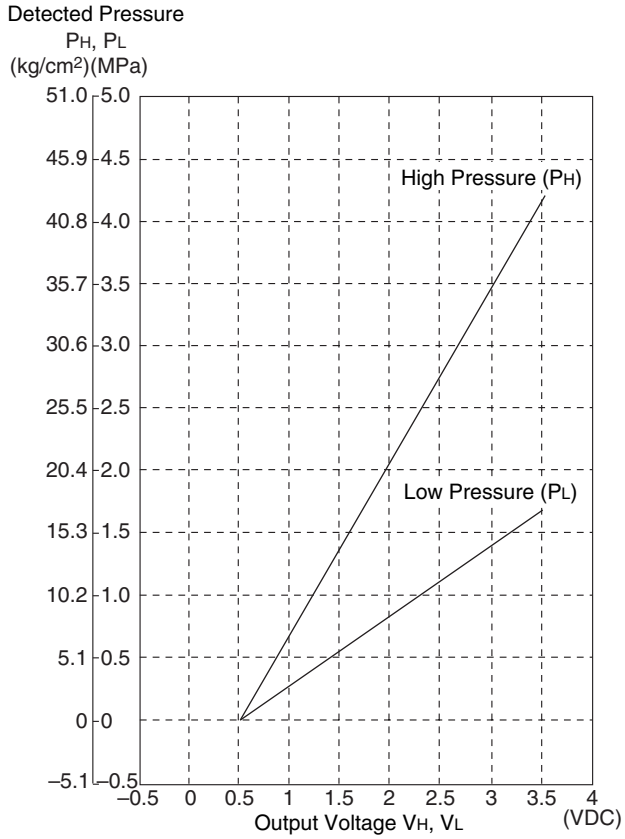
∗This data is for reference purposes only.

Thermistor temperature (°C)	Resistance (kΩ)		
	Type E	Type H	Type J
–30	362.4862	3257.371	359.8518
–25	265.9943	2429.222	265.0699
–20	197.3083	1827.883	197.1476
–15	147.8597	1387.099	147.7348
–10	111.8780	1061.098	111.7984
–5	85.4291	817.9329	85.3927
0	65.8000	635.0831	65.8000
5	51.0954	496.5712	51.1273
10	39.9938	391.0070	40.0423
15	31.5417	309.9511	31.5974
20	25.0554	247.2696	25.1125
25	20.0395	198.4674	20.0949
30	16.1326	160.2244	16.1860
35	13.0683	130.0697	13.1222
40	10.6490	106.1517	10.7042
45	8.7269	87.0725	8.7834
50	7.1905	71.7703	7.2479
55	5.9524	59.4735	6.0131
60	4.9536	49.5180	5.0144
65	4.1434	41.4168	4.2021
70	3.4825	34.7923	3.5381
75	2.9407	29.3499	2.9925
80	2.4943	24.8586	2.5420
85	2.1247	21.1360	2.1671
90	1.8173	18.0377	1.8554
95	1.5605	15.4487	1.5949
100	1.3451	13.2768	1.3764
105	1.1636	11.4395	1.1923
110	–	9.8902	1.0365
115	–	8.5788	0.9042
120	–	7.4650	0.7914
125	–	6.5156	0.6950
130	–	5.7038	0.6121
135	–	5.0073	0.5408
140	–	4.4080	0.4791
145	–	3.8907	0.4257
150	–	3.4429	0.3792
Drawing No.	3SA48003 (AD87A001)	3SA48006 (AD87A001)	3SA48005 (AD87A001)

∗This data is for reference purposes only.

6.9 Pressure Sensor Check

CHECK 12 **Pressure Sensor and Voltage Characteristics**

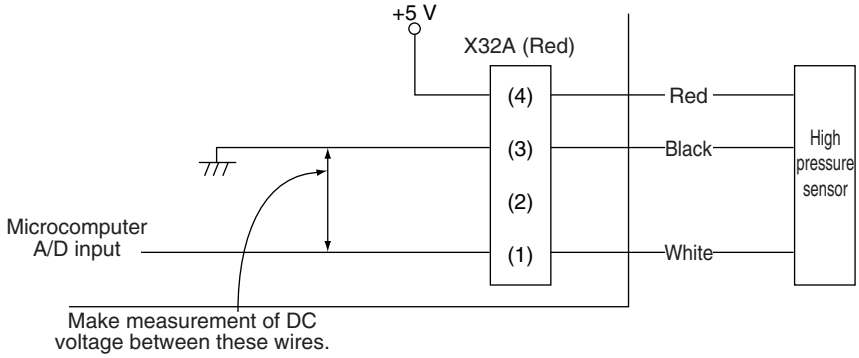


$$P_H\ (MPa) = \frac{4.15}{3.0} \times V_H - \frac{4.15}{3.0} \times 0.5$$

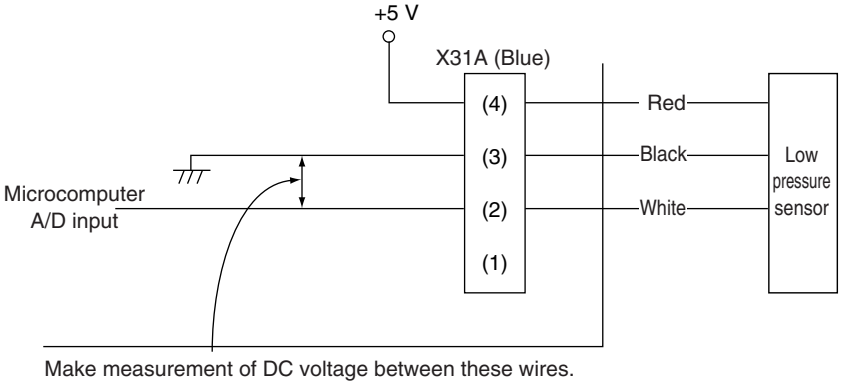
$$P_L\ (MPa) = \frac{1.7}{3.0} \times V_L - \frac{1.7}{3.0} \times 0.5$$

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

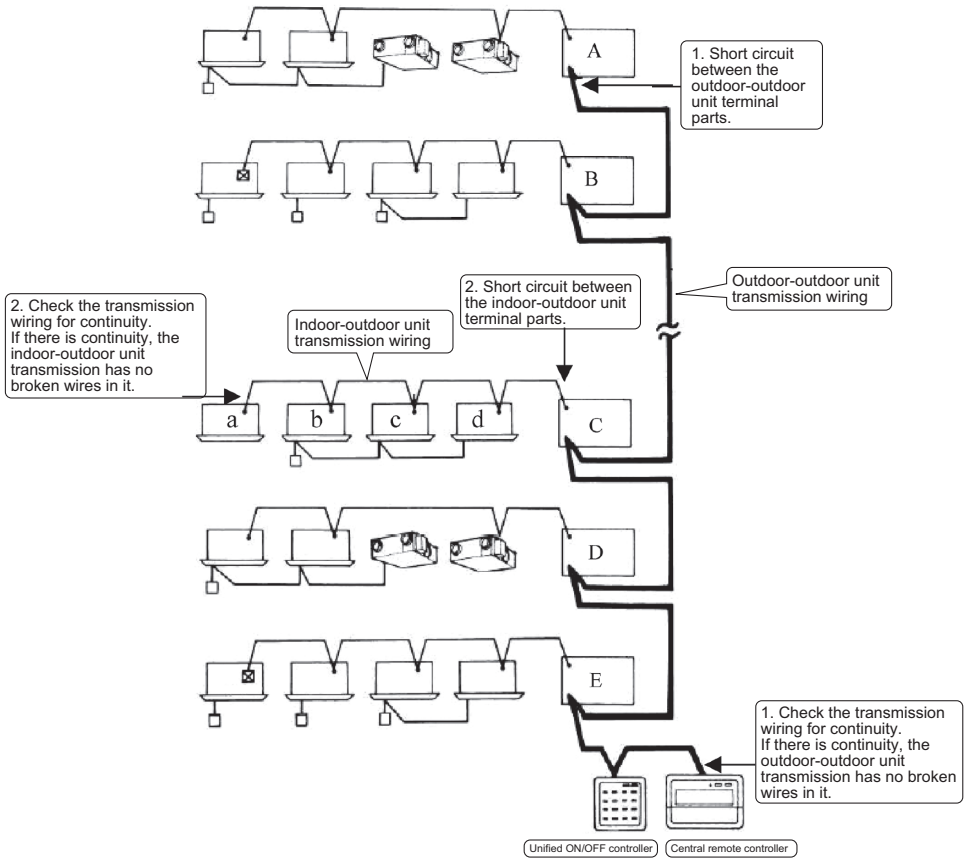


6.10 Broken Wire Check of the Relay Wires

CHECK 15

1. Procedure for checking outdoor-outdoor unit transmission wiring for broken wires
   On the system shown below, turn OFF the power supply to all equipment, short circuit between the outdoor-outdoor unit terminal F1 and F2 in the "Outdoor Unit A" that is farthest from the central remote controller, and then conduct continuity checks between the transmission wiring terminal blocks F1 and F2 of the central remote controller using a multimeter. If there is continuity between the said terminal blocks, the outdoor-outdoor unit transmission wiring has no broken wires in it.
   If there is no continuity, the transmission wiring may have broken wires. With the outdoor-outdoor unit terminal of the "Outdoor Unit A" short circuited, conduct continuity checks between the transmission wiring terminal blocks F1 and F2 of the unified ON/OFF controller. If there is no continuity as well, conduct continuity checks between the outdoor-outdoor unit terminal of the "Outdoor Unit E", between the outdoor-outdoor unit terminal of the "Outdoor Unit D", between the outdoor-outdoor unit terminal of the "Outdoor Unit C", … in the order described, thus identifying the place with continuity.
   If the place with continuity can be identified, there may be broken wires in places before the said place with continuity.

2. Procedure for checking indoor-outdoor unit transmission wiring for broken wires (for checking the indoor-outdoor unit transmission wiring of the "Outdoor Unit C" for broken wires)
   Turn OFF the power supply to all equipment, short circuit between the indoor-outdoor unit terminal F1 and F2 in the "Outdoor Unit C", and then conduct continuity checks between the transmission wirings F1 and F2 of the "Indoor Unit a" that is farthest from the "Outdoor Unit C" using a multimeter. If there is continuity between the said transmission wirings, the indoor-outdoor unit transmission wiring has no broken wires in it.
   If there is no continuity, the transmission wiring may have broken wires. With the indoor-outdoor unit terminal of the "Outdoor Unit C" short circuited, identify the place with continuity in the transmission wiring of the "Indoor Unit b", transmission wiring of the "Indoor Unit c", and transmission wiring of the "Indoor Unit d" in the order described.
   If the place with continuity can be identified, there may be broken wires in places before the said place with continuity.

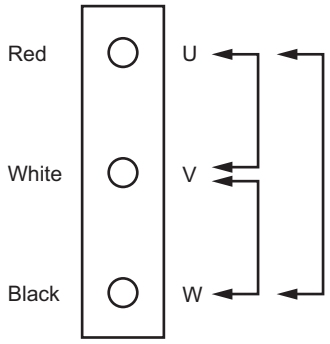


6.11 Fan Motor Connector Check (Power Supply Cable)

CHECK 16 Check the fan motor connector according to the following procedure.

Outdoor unit

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.

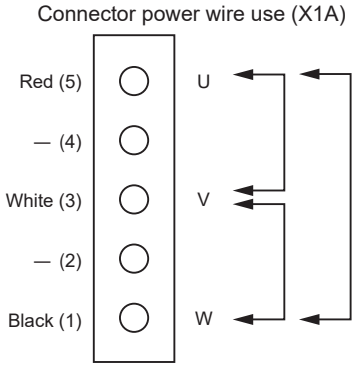


Indoor unit

FXMQ50-140PB

Measurement of power wire connector.

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

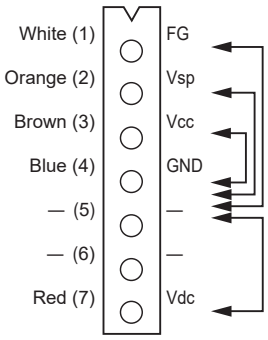


6.12 Fan Motor Connector Check (Signal Cable)

CHECK 17

Resistance measuring points and judgment criteria.

FXMQ40PB, FXAQ-P

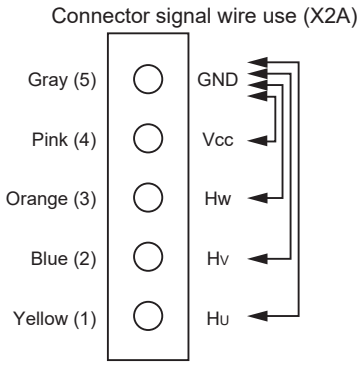


Measuring points	Judgment criteria
1-4	1 Ω or more
2-4	1 Ω or more
3-4	1 Ω or more
7-4	1 Ω or more

FXMQ50-140PB

Measurement of signal wire connector.

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



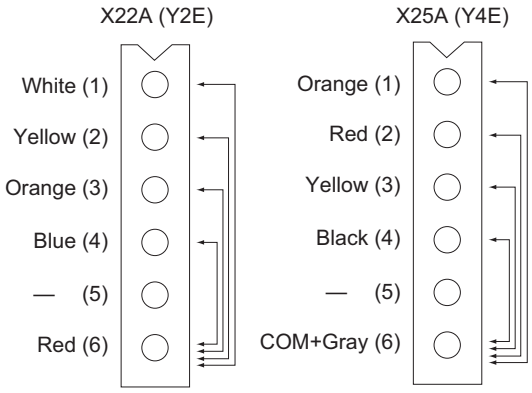
6.13 Electronic Expansion Valve Coil Check

CHECK 18

Remove the connector for electronic expansion valve from PCB. Measure the resistance value between pins and check the continuity to judge the condition.
The normal products will show the following conditions.

Outdoor unit

RXQ6-12A



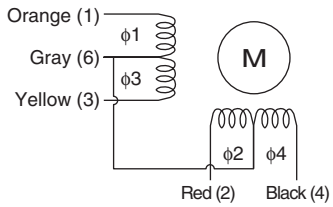
Measuring points	Judgment criteria
1-6	35-55 Ω
2-6	
3-6	
4-6	

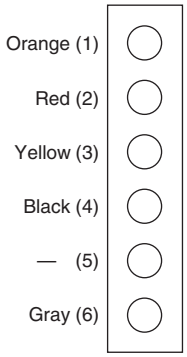
RXQ14-20A

Measuring points	Judgment criteria
1-6	35-55 Ω
2-6	
3-6	
4-6	

Indoor unit

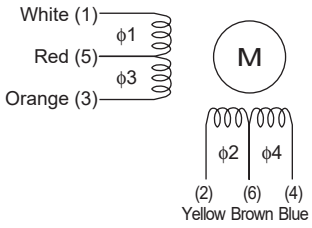
FXFSQ-AR, FXMQ-PB

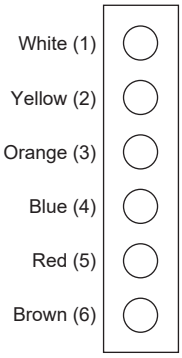




Measuring points	Judgment criteria
1-2	No continuity
1-3	92 Ω
1-6	46 Ω
2-4	92 Ω
2-6	46 Ω

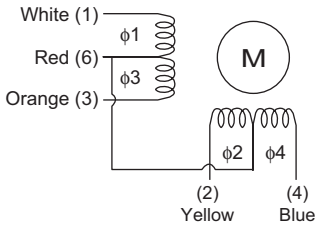
FXAQ-P

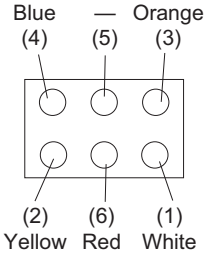




Measuring points	Judgment criteria
1-2	No continuity
1-3	300 Ω
1-5	150 Ω
2-4	300 Ω
2-6	150 Ω

FXMQ-AR





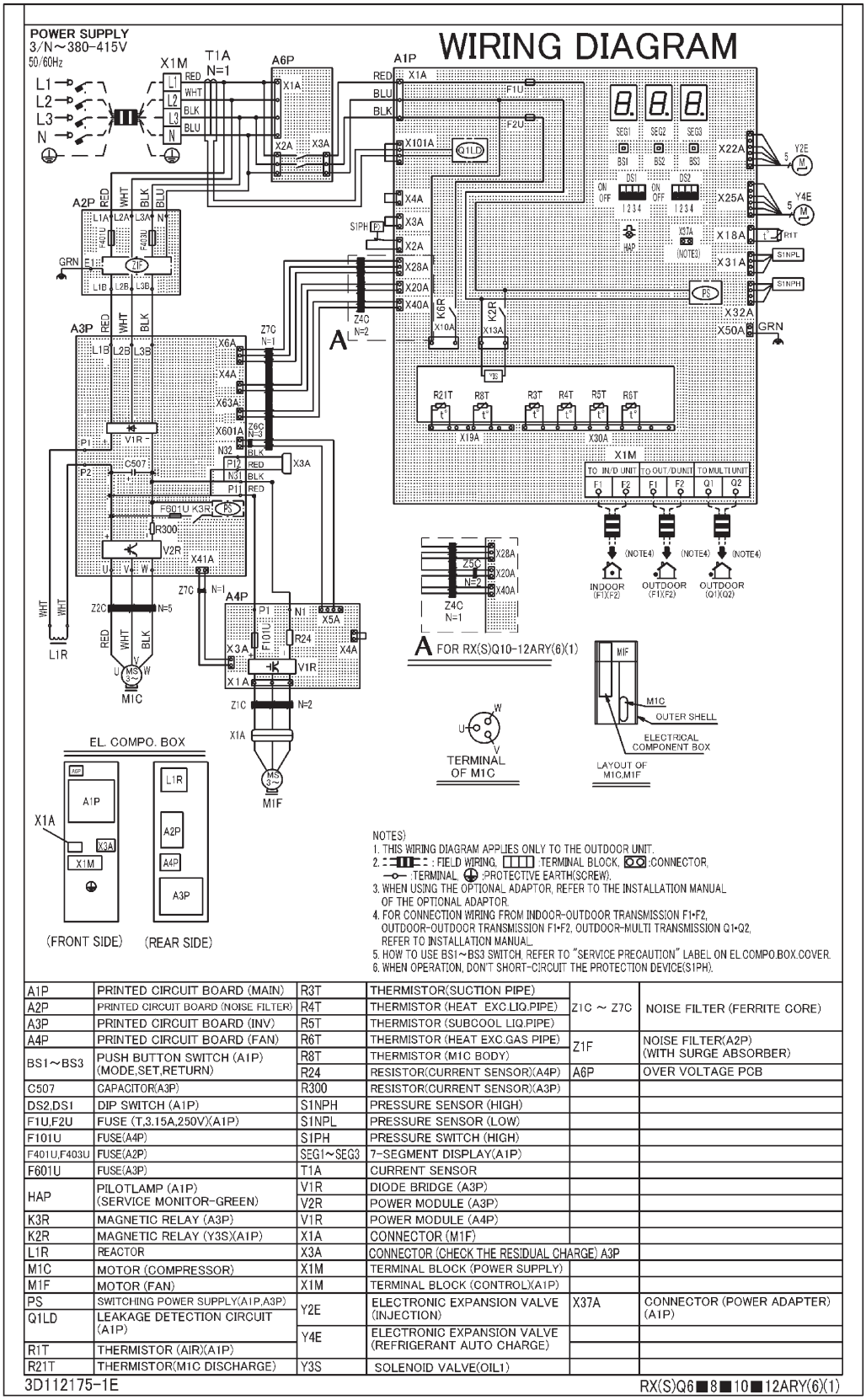
Measuring points	Judgment criteria
1-2	No continuity
1-3	300 Ω
1-6	150 Ω
2-4	300 Ω
2-6	150 Ω

Part 7
Appendix

1. Wiring Diagrams

1.1 Outdoor Unit

RXQ6/8/10/12ARY1



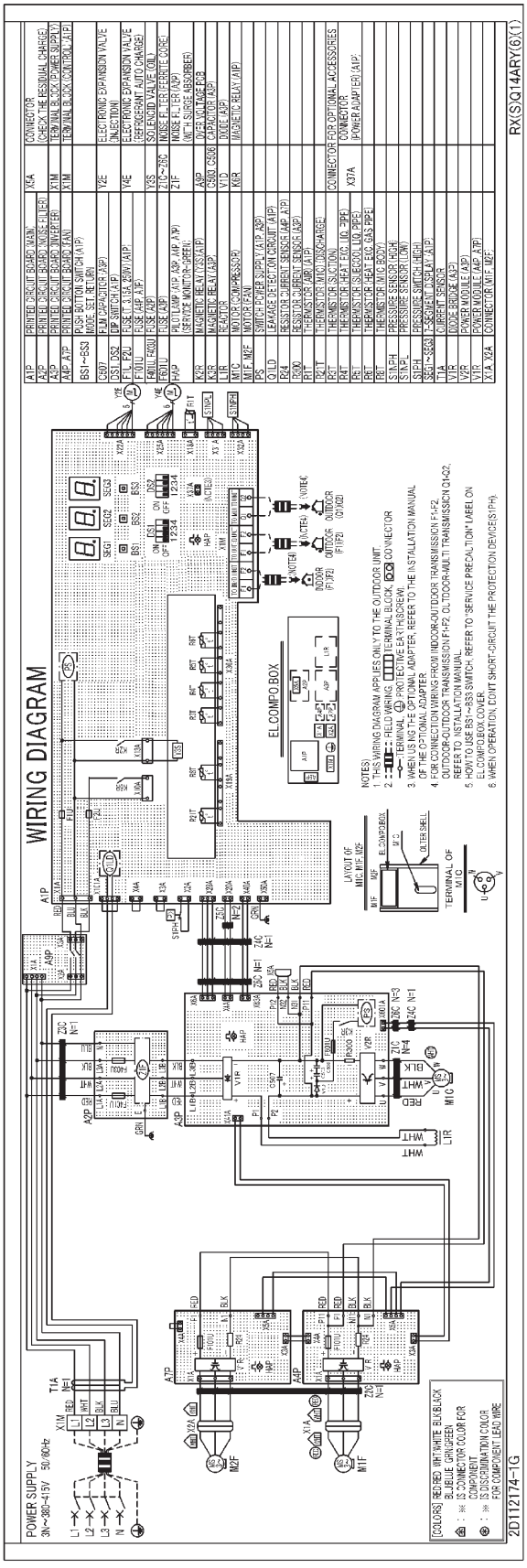
NOTES)
1. THIS WIRING DIAGRAM APPLIES ONLY TO THE OUTDOOR UNIT.
2. : FIELD WIRING, : TERMINAL BLOCK, : CONNECTOR, : TERMINAL, : PROTECTIVE EARTH(SCREW).
3. WHEN USING THE OPTIONAL ADAPTOR, REFER TO THE INSTALLATION MANUAL OF THE OPTIONAL ADAPTOR.
4. FOR CONNECTION WIRING FROM INDOOR-OUTDOOR TRANSMISSION F1•F2, OUTDOOR-OUTDOOR TRANSMISSION F1•F2, OUTDOOR-MULTI TRANSMISSION Q1•Q2, REFER TO INSTALLATION MANUAL.
5. HOW TO USE BS1~BS3 SWITCH, REFER TO "SERVICE PRECAUTION" LABEL ON EL.COMPO.BOX.COVER.
6. WHEN OPERATION, DON'T SHORT-CIRCUIT THE PROTECTION DEVICE(S1PH).

A1P	PRINTED CIRCUIT BOARD (MAIN)	R3T	THERMISTOR(SUCTION PIPE)	Z1C ~ Z7C	NOISE FILTER (FERRITE CORE)
A2P	PRINTED CIRCUIT BOARD (NOISE FILTER)	R4T	THERMISTOR (HEAT EXC.LIQ.PIPE)		
A3P	PRINTED CIRCUIT BOARD (INV)	R5T	THERMISTOR (SUBCOOL LIQ.PIPE)		
A4P	PRINTED CIRCUIT BOARD (FAN)	R6T	THERMISTOR (HEAT EXC.GAS PIPE)	Z1F	NOISE FILTER(A2P) (WITH SURGE ABSORBER)
BS1~BS3	PUSH BUTTON SWITCH (A1P) (MODE,SET,RETURN)	R8T	THERMISTOR (M1C BODY)		
		R24	RESISTOR(CURRENT SENSOR)(A4P)	A6P	OVER VOLTAGE PCB
C507	CAPACITOR(A3P)	R300	RESISTOR(CURRENT SENSOR)(A3P)		
DS2,DS1	DIP SWITCH (A1P)	S1NPH	PRESSURE SENSOR (HIGH)		
F1U,F2U	FUSE (T,3.15A,250V)(A1P)	S1NPL	PRESSURE SENSOR (LOW)		
F101U	FUSE(A4P)	S1PH	PRESSURE SWITCH (HIGH)		
F401U,F403U	FUSE(A2P)	SEG1~SEG3	7-SEGMENT DISPLAY(A1P)		
F601U	FUSE(A3P)	T1A	CURRENT SENSOR		
HAP	PILOTLAMP (A1P) (SERVICE MONITOR-GREEN)	V1R	DIODE BRIDGE (A3P)		
		V2R	POWER MODULE (A3P)		
K3R	MAGNETIC RELAY (A3P)	V1R	POWER MODULE (A4P)		
K2R	MAGNETIC RELAY (Y3S)(A1P)	X1A	CONNECTOR (M1F)		
L1R	REACTOR	X3A	CONNECTOR (CHECK THE RESIDUAL CHARGE) A3P		
M1C	MOTOR (COMPRESSOR)	X1M	TERMINAL BLOCK (POWER SUPPLY)		
M1F	MOTOR (FAN)	X1M	TERMINAL BLOCK (CONTROL)(A1P)		
PS	SWITCHING POWER SUPPLY(A1P,A3P)	Y2E	ELECTRONIC EXPANSION VALVE (INJECTION)	X37A	CONNECTOR (POWER ADAPTER) (A1P)
Q1LD	LEAKAGE DETECTION CIRCUIT (A1P)	Y4E	ELECTRONIC EXPANSION VALVE (REFRIGERANT AUTO CHARGE)		
R1T	THERMISTOR (AIR)(A1P)				
R21T	THERMISTOR(M1C DISCHARGE)	Y3S	SOLENOID VALVE(OIL1)		

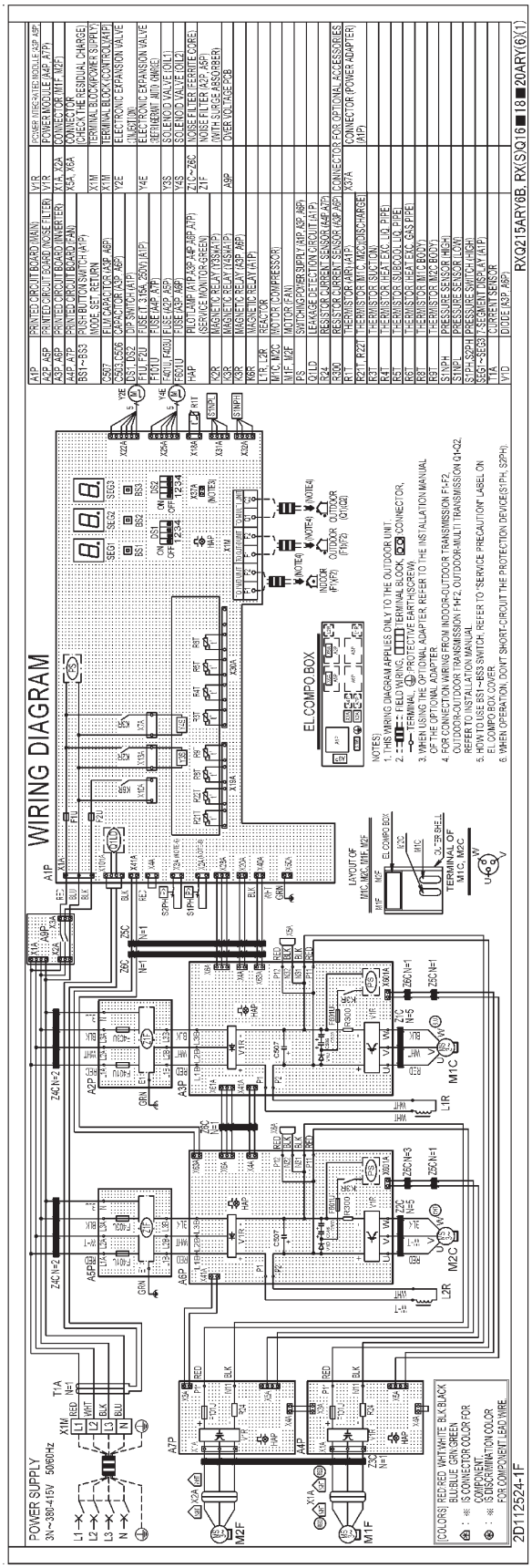
3D112175-1E RX(S)Q6■8■10■12ARY(6)(1)

3D112175E

RXQ14ARY1


WIRING DIAGRAM
POWER SUPPLY
3N~380-415V 50/60Hz
L1
L2
L3
N
EL.COMPO.BOX
NOTES)
1. THIS WIRING DIAGRAM APPLIES ONLY TO THE OUTDOOR UNIT.
2. : FIELD WIRING, : TERMINAL BLOCK, : CONNECTOR
3. : TERMINAL, : PROTECTIVE EARTH(SCREW)
4. WHEN USING THE OPTIONAL ADAPTER, REFER TO THE INSTALLATION MANUAL OF THE OPTIONAL ADAPTER.
5. FOR CONNECTION WIRING FROM INDOOR-OUTDOOR TRANSMISSION F1-F2, OUTDOOR-OUTDOOR TRANSMISSION F1-F2, OUTDOOR-MULTI TRANSMISSION C1-C2, REFER TO INSTALLATION MANUAL.
6. HOW TO USE BS1~BS3,SWITCH, REFER TO "SERVICE PRECAUTION" LABEL ON EL.COMPO.BOX COVER.
7. WHEN OPERATION, EQUIT SHORT-CIRCUIT THE PROTECTION DEVICE(S1PH).
[COLORS] RED:RED, WHT:WHITE, BLU:BLUE, BLK:BLACK
BRN:BROWN
: FOR CONNECTOR
: FOR TERMINAL BLOCK
: FOR COMPONENT
: FOR COMPONENT LEAD WIRE
2D112174-1G
RX(S)Q14ARY(6)(1)
A1P PRINTED CIRCUIT BOARD (MAIN) X1A CONNECTOR
A2P PRINTED CIRCUIT BOARD (NOISE FILTER) (CHECK THE RESIDUAL CHARGE)
A3P PRINTED CIRCUIT BOARD (INVERTER) X1M TERMINAL BLOCK (POWER SUPPLY)
A4P, A7P PRINTED CIRCUIT BOARD (FAN) X1M TERMINAL BLOCK (CONTROL, A1P)
BS1~BS3 PUSH BUTTON SWITCH (A1P)
C307 NOISE FILTER (A1P) Y2E ELECTRONIC EXPANSION VALVE (INJECTION)
DS1, DS2 DIP SWITCH (A1P)
F1U, F2U FUSE 3.15A, 250V (A1P) Y4E ELECTRONIC EXPANSION VALVE (REFRIGERANT AUTO CHARGE)
F101U FUSE (A1P) Y5S SOLENOID VALVE (OIL)
F401U, F402U FUSE (A2P) Z1G~Z6G NOISE FILTER (FERRITE CORE)
FU1U FUSE (A3P) Z1F NOISE FILTER (A2P)
H1P~H7P PILOT LAMP (A1P, A2P, A4P, A7P) (SERVICE MONITOR GREEN) (METAL SURGE ABSORBER)
K2R MAGNETIC RELAY (Y2S) (A1P) A3P INVERTER PCB
K3R MAGNETIC RELAY (A3P) C503, C508 CAPACITOR (A3P)
L1R REACTOR V1D DIODE (A3P)
M1C MOTOR (COMPRESSOR) K6R MAGNETIC RELAY (A1P)
M1F, M2F MOTOR (FAN)
PS SWITCH POWER SUPPLY (A1P, A2P)
Q1LD LEAKAGE DETECTION CIRCUIT (A1P)
R24 RESISTOR (CURRENT SENSOR) (A4P, A7P)
R300 RESISTOR (CURRENT SENSOR) (A2P)
R1T THERMISTOR (AIR) (A1P)
R2T, R3T THERMISTOR (M1C) (DISCHARGE) CONNECTOR FOR OPTIONAL ACCESSORIES
R4T THERMISTOR (HEAT EXC. - IN) (2PIPE) CONNECTOR
R5T THERMISTOR (SUBCOOL LIQ. PIPE) X37A (POWER ADAPTER) (A1P)
R6T THERMISTOR (HEAT EXC. GAS PIPE)
R8T THERMISTOR (M1C BODY)
S1PH PRESSURE SENSOR (HIGH)
S1PL PRESSURE SENSOR (LOW)
S1PH PRESSURE SWITCH (HIGH)
SEG1~SEG3 7-SEGMENT DISPLAY (A1P)
T1A CURRENT SENSOR
V1R DIODE BRIDGE (A2P)
V2R POWER MODULE (A3P)
V1R POWER MODULE (A4P, A7P)
X1A, X2A CONNECTOR (M1F, M2F)
2D112174G

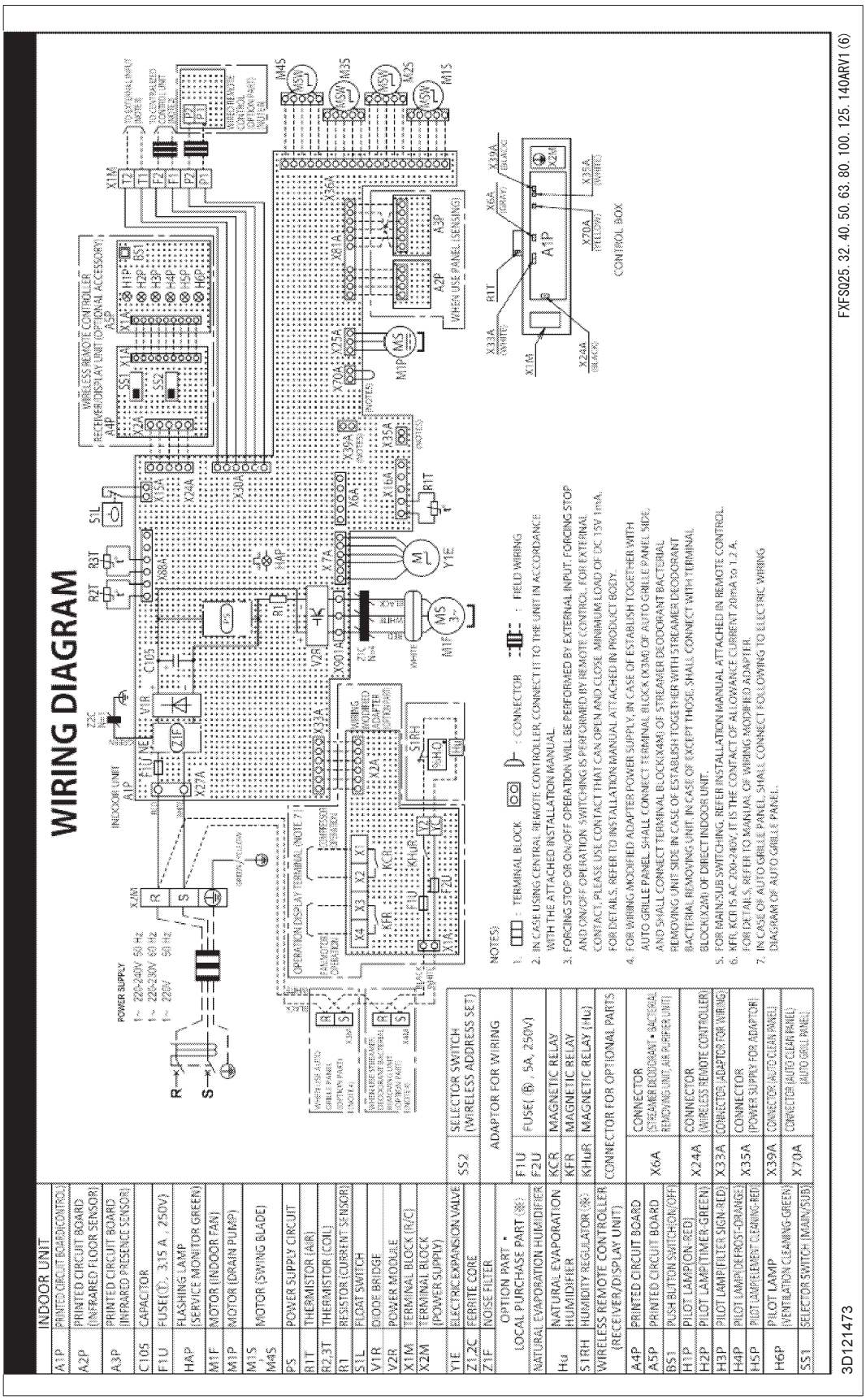
RXQ16/18/20ARY1



1.2 *VRV* Indoor Unit

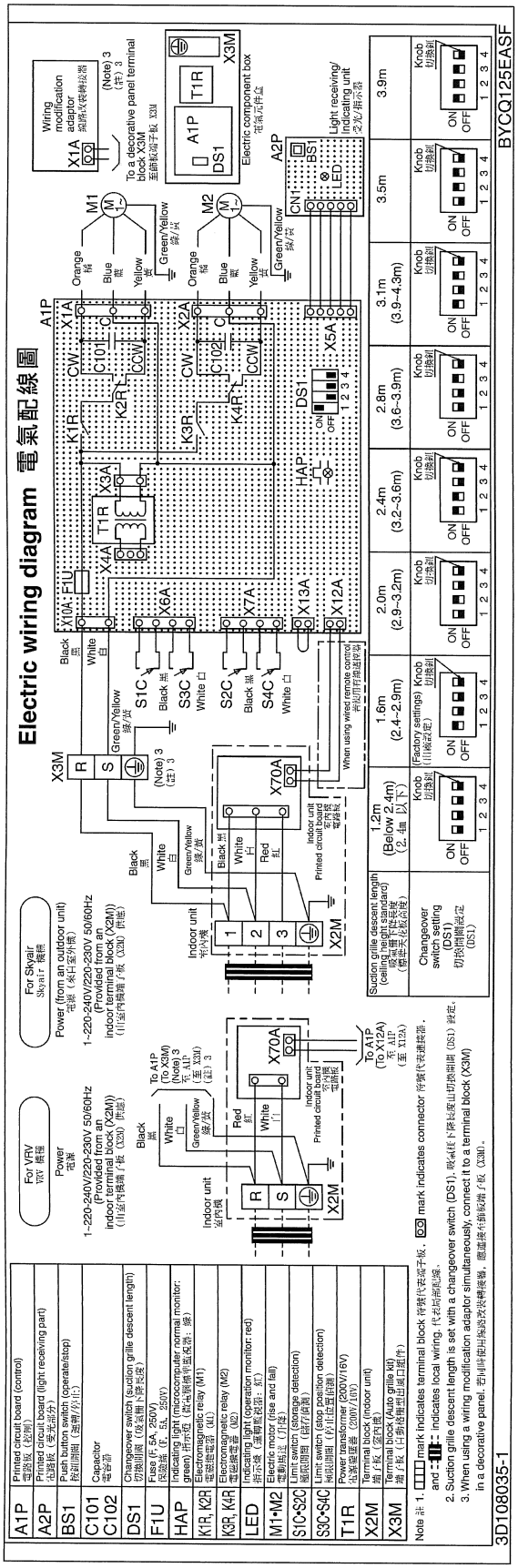
1.2.1 Ceiling Mounted Cassette (Round Flow with Sensing) Type

FXFSQ25/32/40/50/63/80/100/125/140ARV1



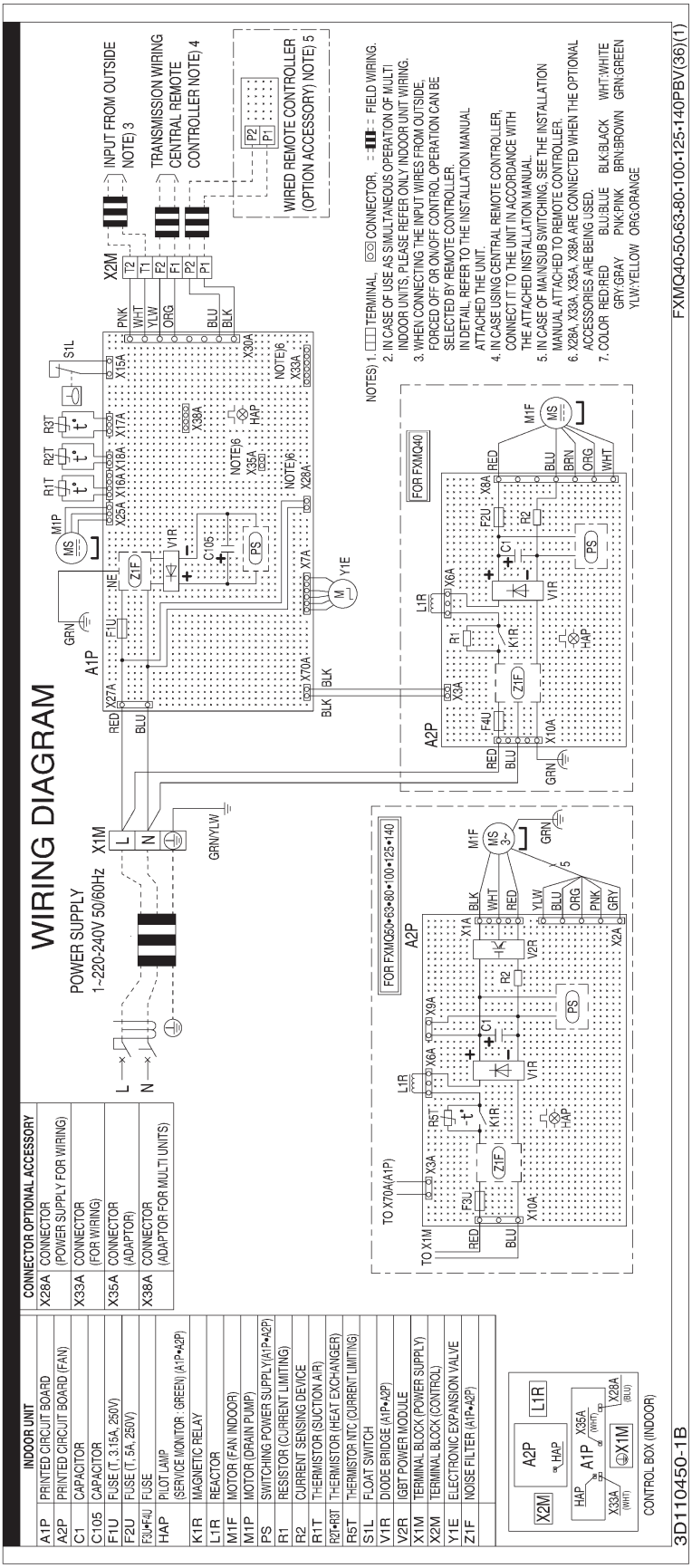
1.2.2 Auto Grille Panel

BYCQ125EASF (for FXFSQ)

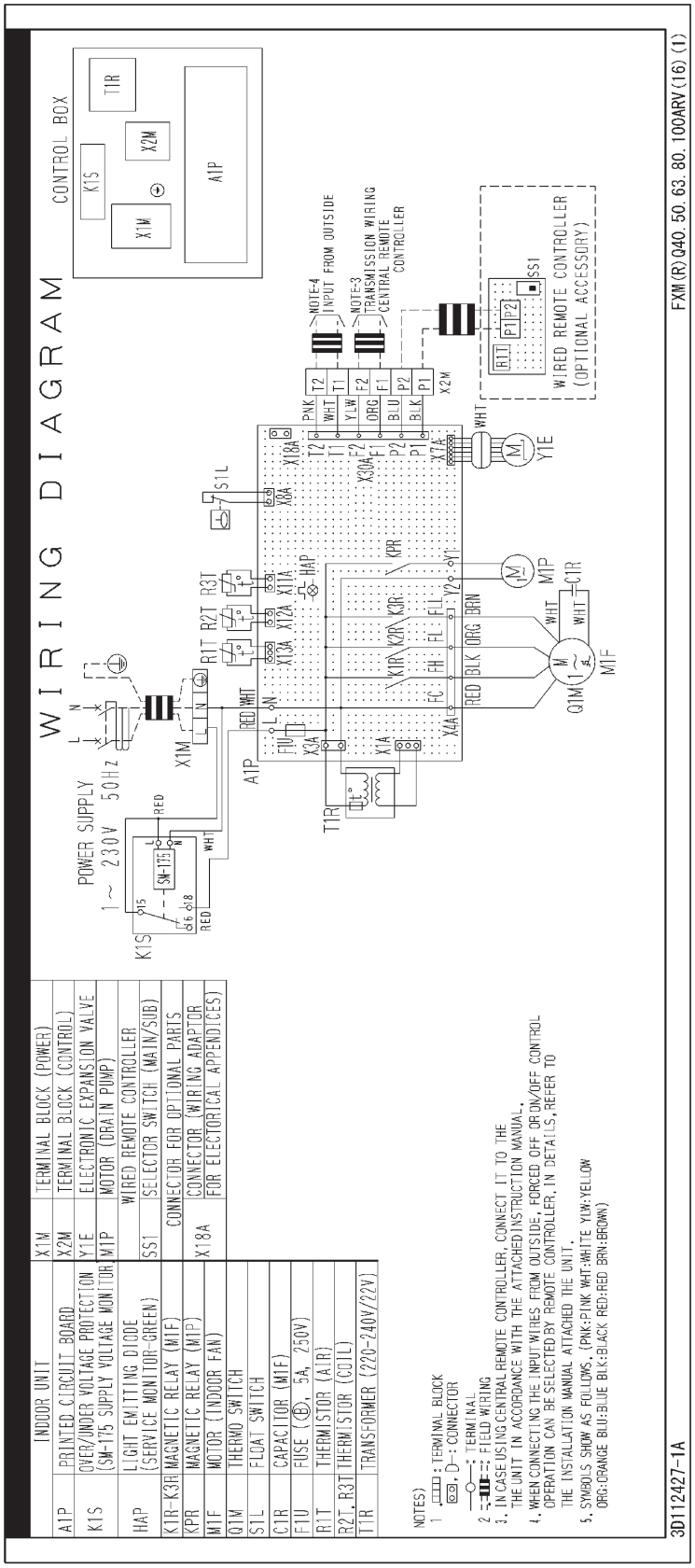


1.2.3 Ceiling Mounted Duct Type

FXMQ40/50/63/80/100/125/140PBV1



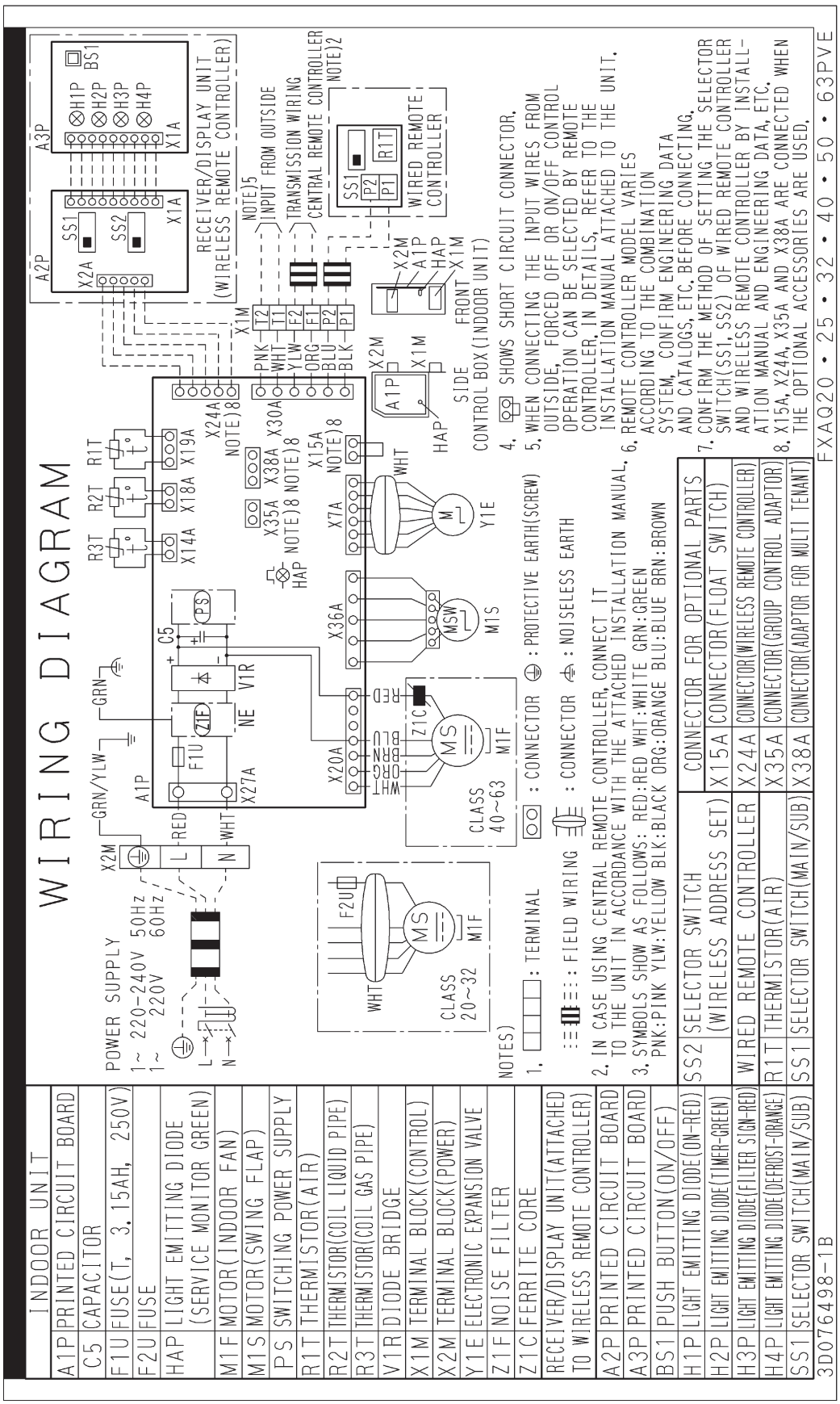
FXMQ40/50/63/80/100ARV1



3D112427A

1.2.4 Wall Mounted Type

FXAQ20/25/32PVE, FXAQ40/50/63PVER1



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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.

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●Specifications, designs and other content appearing in this brochure are current as of April 2019 but subject to change without notice.

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