DAIKIN

Si39-306

Service Manual

VRV® II

R410A Heat Recovery 50Hz

VRV II R410A Heat Recovery 50Hz

1. Introduction

1.1 Safety Cautions

Cautions and Warnings

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

△ This symbol indicates 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 inside or near the symbol.

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

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

1.1.1 Caution in Repair

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

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

1.1.2 Cautions Regarding Products after Repair

⚠ Warning	
Be sure to use parts listed in the service parts list of the applicable model and appropriate tools to conduct repair work. Never attempt to modify the equipment. The use of inappropriate parts or tools can cause an electrical shock, excessive heat generation or fire.	
When relocating the equipment, make sure that the new installation site has sufficient strength to withstand the weight of the equipment. If the installation site does not have sufficient strength and if the installation work is not conducted securely, the equipment can fall and cause injury.	
Be sure to install the product correctly by using the provided standard installation frame. Incorrect use of the installation frame and improper installation can cause the equipment to fall, resulting in injury.	For integral units only
Be sure to install the product securely in the installation frame mounted on a window frame. If the unit is not securely mounted, it can fall and cause injury.	For integral units only
Be sure to use an exclusive power circuit for the equipment, and follow the 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 can cause an electrical shock or fire.	

⚠ Warning	
Be sure to use the specified cable to connect 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 can cause excessive heat generation or fire.	
When connecting the cable 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 can cause an electrical shock, excessive heat generation or fire.	
Do not damage or modify the power cable. Damaged or modified power cable can cause an electrical shock or fire. Placing heavy items on the power cable, and heating or pulling the power cable can damage the cable.	
Do not mix air or gas other than the specified refrigerant (R410A) in the refrigerant system. If air enters the refrigerating system, an excessively high pressure results, causing equipment damage and injury.	
If the refrigerant gas leaks, be sure to locate the leak and repair it before charging the refrigerant. After charging refrigerant, make sure that there is no refrigerant leak. If the leak cannot be located and the repair work must be stopped, be sure to perform pump-down and close the service valve, to prevent the refrigerant gas from leaking into the room. The refrigerant gas itself is harmless, but it can generate toxic gases when it contacts flames, such as fan and other heaters, stoves and ranges.	
When replacing the coin battery in the remote controller, be sure to disposed 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 a combustible gas leaks and remains around the unit, it can cause a fire.	
Be sure to install the packing and seal on the installation frame properly. If the packing and seal are not installed properly, water can enter the room and wet the furniture and floor.	For integral units only

1.1.3 Inspection after Repair

⚠ Warning	
Check to make sure that the power cable plug is not dirty or loose, then insert the plug into a power outlet all the way. If the plug has dust or loose connection, it can cause an electrical shock or fire.	
If the power cable and lead wires have scratches or deteriorated, be sure to replace them. Damaged cable and wires can 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 can cause an electrical shock, excessive heat generation or fire.	

⚠ Caution	
Check to see if the parts and wires are mounted and connected properly, and if the connections at the soldered or crimped terminals are secure. Improper installation and connections can cause excessive heat generation, fire or an electrical shock.	
If the installation platform or frame has corroded, replace it. Corroded installation platform or frame can cause the unit to fall, resulting in injury.	
Check the grounding, and repair it if the equipment is not properly grounded. Improper grounding can cause an electrical shock.	
Be sure to measure the insulation resistance after the repair, and make sure that the resistance is 1 Mohm or higher. Faulty insulation can cause an electrical shock.	
Be sure to check the drainage of the indoor unit after the repair. Faulty drainage can cause the water to enter the room and wet the furniture and floor.	

1.1.4 Using Icons

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

1.1.5 Using Icons List

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

1.2 PREFACE

Thank you for your continued patronage of Daikin products.

This is the new service manual for Daikin's Year 2003 VRVII series Heat Recovery System. Daikin offers a wide range of models to respond to building and office air conditioning needs. We are confident that customers will be able to find the models that best suit their needs.

This service manual contains information regarding the servicing of VRVII series Heat Recovery System.

Dec., 2003

After Sales Service Division

Part 1
General Information

1. Model Names of Indoor/Outdoor Units

Indoor Units

Type		Model Name										Power Supply
Ceiling mounted cassette type (Double flow)	FXCQ	20M	25M	32M	40M	50M	63M	80M	—	125M	—	—	VE
Ceiling mounted cassette type (Multi flow) 600×600	FXZQ	20M	25M	32M	40M	50M	—	—	—	—	—	—	
Ceiling mounted cassette type (Multi flow)	FXFQ	—	25M	32M	40M	50M	63M	80M	100M	125M	—	—	
Ceiling mounted cassette corner type	FXKQ	—	25M	32M	40M	—	63M	—	—	—	—	—	
Ceiling mounted built-in type	FXSQ	20M	25M	32M	40M	50M	63M	80M	100M	125M	—	—	
Ceiling mounted duct type	FXMQ	—	—	—	40M	50M	63M	80M	100M	125M	200M	250M	
Ceiling suspended type	FXHQ	—	—	32M	—	—	63M	—	100M	—	—	—	
Wall mounted type	FXAQ	20M	25M	32M	40M	50M	63M	—	—	—	—	—	
Floor standing type	FXLQ	20M	25M	32M	40M	50M	63M	—	—	—	—	—	
Concealed Floor standing type	FXNQ	20M	25M	32M	40M	50M	63M	—	—	—	—	—	

BS Units

Type		Model Name			Power Supply
Heat Recovery Series	BSVQ	100M	160M	250M	V1

Outdoor Units

Series		Model Name										Power Supply
Heat Recovery	REYQ	—	8M	10M	12M	14M	16M	18M	20M	22M	24M	26M	Y1B

Series		Model Name										Power Supply
Heat Recovery	REYQ	28M	30M	32M	34M	36M	38M	40M	42M	44M	46M	48M	Y1B

VE: 1ϕ, 220~240V, 50Hz, 1ϕ, 220V, 60Hz
V1: 1ϕ, 220~240V, 50Hz
Y1B: 3ϕ, 380~415V, 50Hz

2. External Appearance

2.1 Indoor Units

Ceiling mounted cassette type (Double flow)

FXCQ20M
FXCQ25M
FXCQ32M
FXCQ40M
FXCQ50M
FXCQ63M
FXCQ80M
FXCQ125M

Ceiling suspended type

FXHQ32M
FXHQ63M
FXHQ100M

Ceiling mounted cassette type (Multi flow) 600×600

FXZQ20M
FXZQ25M
FXZQ32M
FXZQ40M
FXZQ50M

Wall mounted type

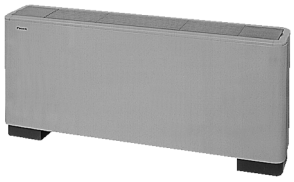
FXAQ20M
FXAQ25M
FXAQ32M
FXAQ40M
FXAQ50M
FXAQ63M

Ceiling mounted cassette type (Multi flow)

FXFQ25M
FXFQ32M
FXFQ40M
FXFQ50M
FXFQ63M
FXFQ80M
FXFQ100M
FXFQ125M

Floor standing type

FXLQ20M
FXLQ25M
FXLQ32M
FXLQ40M
FXLQ50M
FXLQ63M

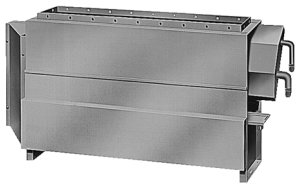


Ceiling mounted cassette corner type

FXKQ25M
FXKQ32M
FXKQ40M
FXKQ63M

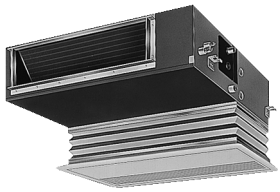
Concealed floor standing type

FXNQ20M
FXNQ25M
FXNQ32M
FXNQ40M
FXNQ50M
FXNQ63M



Ceiling mounted built-in type

FXSQ20M
FXSQ25M
FXSQ32M
FXSQ40M
FXSQ50M
FXSQ63M
FXSQ80M
FXSQ100M
FXSQ125M



BS Units

BSVQ100M
BSVQ160M
BSVQ250M

Ceiling mounted duct type

FXMQ40M
FXMQ50M
FXMQ63M
FXMQ80M
FXMQ100M
FXMQ125M
FXMQ200M
FXMQ250M

FXMQ40~125M

FXMQ200 · 250M

2.2 Outdoor Units

H/R	REYQ8M,10M	H/R	REYQ12M,14M,16M
			
	8,10HP		12,14,16HP
H/R	REYQ18M,20M	H/R	REYQ22M, 24M, 26M
			
	18, 20HP		22, 24, 26HP
H/R	REYQ28M, 30M, 32M	H/R	REYQ34M, 36M
			
	28, 30, 32HP		34, 36HP
H/R	REYQ38M, 40M, 42M	H/R	REYQ44M, 46M, 48M
			
	38, 40, 42HP		44, 46, 48HP

3. Combination of Outdoor Units

System Capacity	Number of units	Module				
		8	10	12	14	16
8HP	1	●				
10HP	1		●			
12HP	1			●		
14HP	1				●	
16HP	1					●
18HP	2	●	●			
20HP	2		●●			
22HP	2		●	●		
24HP	2		●		●	
26HP	2		●			●
28HP	2			●		●
30HP	2				●	●
32HP	2					●●
34HP	3		●●		●	
36HP	3		●●			●
38HP	3		●	●		●
40HP	3		●		●	●
42HP	3		●			●●
44HP	3			●		●●
46HP	3				●	●●
48HP	3					●●●

★Up to a maximum 48HP are realized by combining 8, 10, 12, 14 and 16HP.

4. Model Selection

VRV II Heat Recovery Series

Connectable indoor units number and capacity

HP	8HP	10HP	12HP	14HP	16HP	18HP
System name	REYQ8M	REYQ10M	REYQ12M	REYQ14M	REYQ16M	REYQ18M
Outdoor unit 1	REYQ8M	REYQ10M	REYQ12M	REYQ14M	REYQ16M	REYQ8M
Outdoor unit 2	–	–	–	–	–	REYQ10M
Outdoor unit 3	–	–	–	–	–	–
Total number of connectable indoor units	13	16	19	20	20	20
Total capacity of connectable indoor units (kW)	11.2~29.1	14.0~36.4	16.8~43.6	20.0~52.0	22.5~58.5	25.2~65.5

HP	20HP	22HP	24HP	26HP	28HP	30HP
System name	REYQ20M	REYQ22M	REYQ24M	REYQ26M	REYQ28M	REYQ30M
Outdoor unit 1	REYQ10M	REYQ10M	REYQ10M	REYQ10M	REYQ12M	REYQ14M
Outdoor unit 2	REYQ10M	REYQ12M	REYQ14M	REYQ16M	REYQ16M	REYQ16M
Outdoor unit 3	–	–	–	–	–	–
Total number of connectable indoor units	20	22	32	32	32	32
Total capacity of connectable indoor units (kW)	28.0~72.8	30.8~80.0	34.0~88.4	36.5~94.9	39.3~102.1	42.5~110.5

HP	32HP	34HP	36HP	38HP	40HP	42HP
System name	REYQ32M	REYQ34M	REYQ36M	REYQ38M	REYQ40M	REYQ42M
Outdoor unit 1	REYQ16M	REYQ10M	REYQ10M	REYQ10M	REYQ10M	REYQ10M
Outdoor unit 2	REYQ16M	REYQ10M	REYQ10M	REYQ12M	REYQ14M	REYQ16M
Outdoor unit 3	–	REYQ14M	REYQ16M	REYQ16M	REYQ16M	REYQ16M
Total number of connectable indoor units	32	34	36	38	40	40
Total capacity of connectable indoor units (kW)	45.0~117.0	48.0~124.8	50.5~131.3	53.3~138.5	56.5~146.9	59.0~153.4

HP	44HP	46HP	48HP
System name	REYQ44M	REYQ46M	REYQ48M
Outdoor unit 1	REYQ12M	REYQ14M	REYQ16M
Outdoor unit 2	REYQ16M	REYQ16M	REYQ16M
Outdoor unit 3	REYQ16M	REYQ16M	REYQ16M
Total number of connectable indoor units	40	40	40
Total capacity of connectable indoor units (kW)	61.8~160.6	65.0~169.0	67.5~175.5

Connectable indoor unit

Type		Model Name										Power Supply
Ceiling mounted cassette type (Double flow)	FXCQ	20M	25M	32M	40M	50M	63M	80M	—	125M	—	—	VE
Ceiling mounted cassette type (Multi flow) 600×600	FXZQ	20M	25M	32M	40M	50M	—	—	—	—	—	—	
Ceiling mounted cassette type (Multi flow)	FXFQ	—	25M	32M	40M	50M	63M	80M	100M	125M	—	—	
Ceiling mounted cassette corner	FXKQ	—	25M	32M	40M	—	63M	—	—	—	—	—	
Ceiling mounted built-in type	FXSQ	20M	25M	32M	40M	50M	63M	80M	100M	125M	—	—	
Ceiling mounted duct type	FXMQ	—	—	—	40M	50M	63M	80M	100M	125M	200M	250M	
Ceiling suspended type	FXHQ	—	—	32M	—	—	63M	—	100M	—	—	—	
Wall mounted type	FXAQ	20M	25M	32M	40M	50M	63M	—	—	—	—	—	
Floor standing type	FXLQ	20M	25M	32M	40M	50M	63M	—	—	—	—	—	
Concealed Floor standing type	FXNQ	20M	25M	32M	40M	50M	63M	—	—	—	—	—	

Indoor unit capacity

New refrigerant model code	P20 type	P25 type	P32 type	P40 type	P50 type	P63 type	P80 type	P100 type	P125 type	P200 type	P250 type
Selecting model capacity	2.2 kW	2.8 kW	3.5 kW	4.5 kW	5.6 kW	7.0 kW	9.0 kW	11.2 kW	14.0 kW	22.4 kW	28.0 kW
Equivalent output	0.8HP	1HP	1.25HP	1.6HP	2.0HP	2.5HP	3.2HP	4HP	5HP	8HP	10HP

Use the above tables to determine the capacities of indoor units to be connected. Make sure the total capacity of indoor units connected to each outdoor unit is within the specified value (kW).

- The total capacity of connected indoor units must be within a range of 50 to 130% of the rated capacity of the outdoor unit.
- In some models, it is not possible to connect the maximum number of connectable indoor units. Select models so the total capacity of connected indoor units conforms to the specification.

Unit number and capacity of indoor unit connectable to BS unit

Capacity of BS unit	BSVQ100MV1	BSVQ160MV1	BSVQ250MV1
Unit number of connectable indoor unit	Five units or less	Eight units or less	Eight units or less
Total capacity of connectable indoor unit	Less than 11.2 kW	11.2 kW or more, less than 18 kW	18 kW or more, 28 kW or less
Connectable indoor unit	Types 20M to 80M	Types 20M to 125M	Types 50M to 250M (Types 20M to 40M can not be connected.)

Part 2
Specifications

1. Specifications

1.1 Outdoor Units

Model Name			REYQ8MY1B	REYQ10MY1B
★1 Cooling Capacity (19.5°CWB)		kcal / h	20,000	25,000
		Btu / h	78,900	98,700
		kW	23.1	28.9
★2 Cooling Capacity (19.0°CWB)		kW	22.4	28.0
★3 Heating Capacity		kcal / h	21,500	27,000
		Btu / h	85,400	108,000
		kW	25.0	31.5
Casing Color			Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)
Dimensions: (H×W×D)		mm	1600×930×765	1600×930×765
Heat Exchanger			Cross Fin Coil	Cross Fin Coil
Comp.	Type		Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type
	Piston Displacement	m³/h	13.72+10.47	13.72+10.47
	Number of Revolutions	r.p.m	6480, 2900	6480, 2900
	Motor Output×Number of Units	kW	(1.2+4.5)×1	(2.7+4.5)×1
	Starting Method		Soft start	Soft start
Fan	Type		Propeller Fan	Propeller Fan
	Motor Output	kW	0.75×1	0.75×1
	Air Flow Rate	m³/min	175	180
	Drive		Direct Drive	Direct Drive
Connecting Pipes	Liquid Pipe	mm	ϕ9.5 (Flare Connection)	ϕ9.5 (Flare Connection)
	Suction Gas Pipe	mm	ϕ19.1 (Brazing Connection)	ϕ22.2 (Brazing Connection)
	Discharge Gas Pipe	mm	ϕ15.9 (Flare Connection)	ϕ19.1 (Brazing Connection)
	Oil Equalizing Pipe	mm	—	—
Machine Weight		kg	245	245
Safety Devices			High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs	High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs
Defrost Method			Deicer	Deicer
Capacity Control		%	14~100	14~100
Refrigerant	Refrigerant Name		R410A	R410A
	Charge	kg	13.5	15.8
	Control		Electronic Expansion Valve	Electronic Expansion Valve
Refrigerator Oil			Synthetic (ether) oil	Synthetic (ether) oil
	Charge Volume	L	1.9+1.6	1.9+1.6
Standard Accessories			Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps
Drawing No.			4D039031A	4D039032A

Notes:
- ★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.
- ★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.
- ★3 Indoor temp. : 20°CDB / outdoor temp. : 7°CDB, 6°CWB / Equivalent piping length : 7.5m, level difference : 0m.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

Model Name			REYQ12MY1B	REYQ14MY1B
★1 Cooling Capacity (19.5°CWB)		kcal / h	30,000	35,500
		Btu / h	118,000	141,000
		kW	34.6	41.3
★2 Cooling Capacity (19.0°CWB)		kW	33.5	40.0
★3 Heating Capacity		kcal / h	32,300	38,700
		Btu / h	128,000	154,000
		kW	37.5	45.0
Casing Color			Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)
Dimensions: (H×W×D)		mm	1600×1240×765	1600×1240×765
Heat Exchanger			Cross Fin Coil	Cross Fin Coil
Comp.	Type		Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type
	Piston Displacement	m^3/h	13.72+10.47	13.72+10.47+10.47
	Number of Revolutions	r.p.m	6480, 2900	6480, 2900×2
	Motor Output×Number of Units	kW	(4.2+4.5)×1	(2.0+4.5+4.5)×1
	Starting Method		Soft start	Soft start
Fan	Type		Propeller Fan	Propeller Fan
	Motor Output	kW	0.75×1	0.75×1
	Air Flow Rate	m^3/min	210	210
	Drive		Direct Drive	Direct Drive
Connecting Pipes	Liquid Pipe	mm	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)
	Suction Gas Pipe	mm	ϕ28.6 (Brazing Connection)	ϕ28.6 (Brazing Connection)
	Discharge Gas Pipe	mm	ϕ19.1mm (Brazing Connection)	ϕ22.2 (Brazing Connection)
	Oil Equalizing Pipe	mm	—	—
Machine Weight		kg	295	340
Safety Devices			High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs	High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs
Defrost Method			Deicer	Deicer
Capacity Control		%	14~100	10~100
Refrigerant	Refrigerant Name		R410A	R410A
	Charge	kg	17.3	18.8
	Control		Electronic Expansion Valve	Electronic Expansion Valve
Refrigerator Oil			Synthetic (ether) oil	Synthetic (ether) oil
	Charge Volume	L	1.9+1.6	1.9+1.6+1.6
Standard Accessories			Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps
Drawing No.			4D039033A	4D039034A

Notes:
- ★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.
- ★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.
- ★3 Indoor temp. : 20°CDB / outdoor temp. : 7°CDB, 6°CWB / Equivalent piping length : 7.5m, level difference : 0m.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

Model Name			REYQ16MY1B	REYQ18MY1B REYQ8MY1B+REYQ10MY1B
★1 Cooling Capacity (19.5°CWB)		kcal / h	40,000	45,000
		Btu / h	157,000	178,000
		kW	45.9	52.0
★2 Cooling Capacity (19.0°CWB)		kW	44.5	50.4
★3 Heating Capacity		kcal / h	43,000	48,500
		Btu / h	171,000	193,000
		kW	50.0	56.5
Casing Color			Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)
Dimensions: (H×W×D)		mm	1600×1240×765	(1600×930×765)+(1600×930×765)
Heat Exchanger			Cross Fin Coil	Cross Fin Coil
Comp.	Type		Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type
	Piston Displacement	m^3/h	13.72+10.47+10.47	(13.72+10.47)×2
	Number of Revolutions	r.p.m	6480, 2900×2	(6480, 2900)×2
	Motor Output×Number of Units	kW	(3.0+4.5+4.5)×1	(1.2+4.5)+(2.7+4.5)
	Starting Method		Soft start	Soft start
Fan	Type		Propeller Fan	Propeller Fan
	Motor Output	kW	0.75×1	0.75×2
	Air Flow Rate	m^3/min	210	175+180
	Drive		Direct Drive	Direct Drive
Connecting Pipes	Liquid Pipe	mm	ϕ12.7 (Flare Connection)	ϕ15.9 (Brazing Connection)
	Suction Gas Pipe	mm	ϕ28.6 (Brazing Connection)	ϕ28.6 (Brazing Connection)
	Discharge Gas Pipe	mm	ϕ22.2 (Brazing Connection)	ϕ22.2 (Brazing Connection)
	Oil Equalizing Pipe	mm	—	ϕ6.4 (Flare Connection)
Machine Weight		kg	340	245+245
Safety Devices			High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs	High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs
Defrost Method			Deicer	Deicer
Capacity Control		%	10~100	7~100
Refrigerant	Refrigerant Name		R410A	R410A
	Charge	kg	20.1	13.5+15.8
	Control		Electronic Expansion Valve	Electronic Expansion Valve
Refrigerator Oil			Synthetic (ether) oil	Synthetic (ether) oil
	Charge Volume	L	1.9+1.6+1.6	(1.9+1.6)+(1.9+1.6)
Standard Accessories			Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps
Drawing No.			4D039035A	4D039031A, 4D039032A

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.

★3 Indoor temp. : 20°CDB / outdoor temp. : 7°CDB, 6°CWB / Equivalent piping length : 7.5m, level difference : 0m.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

Model Name (Combination Unit)			REYQ20MY1B	REYQ22MY1B
Model Name (Independent Unit)			REYQ10MY1B+REYQ10MY1B	REYQ10MY1B+REYQ12MY1B
★1 Cooling Capacity (19.5°CWB)		kcal / h	50,000	55,000
		Btu / h	197,000	217,000
		kW	57.8	63.5
★2 Cooling Capacity (19.0°CWB)		kW	56.0	61.5
★3 Heating Capacity		kcal / h	54,000	59,300
		Btu / h	216,000	236,000
		kW	63.0	69.0
Casing Color			Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)
Dimensions: (H×W×D)		mm	(1600×930×765)+(1600×930×765)	(1600×930×765)+(1600×1240×765)
Heat Exchanger			Cross Fin Coil	Cross Fin Coil
Comp.	Type		Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type
	Piston Displacement	m^3/h	(13.72+10.47)×2	(13.72+10.47)×2
	Number of Revolutions	r.p.m	(6480, 2900)×2	(6480, 2900)×2
	Motor Output×Number of Units	kW	(2.7+4.5)×2	(2.7+4.5)+(4.2+4.5)
	Starting Method		Soft start	Soft start
Fan	Type		Propeller Fan	Propeller Fan
	Motor Output	kW	0.75×2	0.75×2
	Air Flow Rate	m^3/min	180+180	180+210
	Drive		Direct Drive	Direct Drive
Connecting Pipes	Liquid Pipe	mm	ϕ15.9 (Brazing Connection)	ϕ15.9 (Brazing Connection)
	Suction Gas Pipe	mm	ϕ28.6 (Brazing Connection)	ϕ28.6 (Brazing Connection)
	Discharge Gas Pipe	mm	ϕ28.6 (Brazing Connection)	ϕ28.6 (Brazing Connection)
	Oil Equalizing Pipe	mm	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)
Machine Weight		kg	245+245	245+295
Safety Devices			High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs	High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs
Defrost Method			Deicer	Deicer
Capacity Control		%	7~100	7~100
Refrigerant	Refrigerant Name		R410A	R410A
	Charge	kg	15.8+15.8	15.8+17.3
	Control		Electronic Expansion Valve	Electronic Expansion Valve
Refrigerator Oil			Synthetic (ether) oil	Synthetic (ether) oil
	Charge Volume	L	(1.9+1.6)+(1.9+1.6)	(1.9+1.6)+(1.9+1.6)
Standard Accessories			Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps
Drawing No.			4D039032A	4D039032A, 4D039033A

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.

★3 Indoor temp. : 20°CDB / outdoor temp. : 7°CDB, 6°CWB / Equivalent piping length : 7.5m, level difference : 0m.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

Model Name (Combination Unit)			**REYQ24MY1B**	**REYQ26MY1B**
Model Name (Independent Unit)			**REYQ10MY1B+REYQ14MY1B**	**REYQ10MY1B+REYQ16MY1B**
★1 Cooling Capacity (19.5°CWB)		kcal / h	60,500	65,000
		Btu / h	240,000	256,000
		kW	70.2	74.9
★2 Cooling Capacity (19.0°CWB)		kW	68.0	72.5
★3 Heating Capacity		kcal / h	65,700	70,000
		Btu / h	262,000	279,000
		kW	76.5	81.5
Casing Color			Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)
Dimensions: (H×W×D)		mm	(1600×930×765)+(1600×1240×765)	(1600×930×765)+(1600×1240×765)
Heat Exchanger			Cross Fin Coil	Cross Fin Coil
Comp.	Type		Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type
	Piston Displacement	m³/h	(13.72+10.47)+(13.72+10.47+10.47)	(13.72+10.47)+(13.72+10.47+10.47)
	Number of Revolutions	r.p.m	(6480, 2900)+(6480, 2900×2)	(6480, 2900)+(6480, 2900×2)
	Motor Output×Number of Units	kW	(2.7+4.5)+(2.0+4.5+4.5)	(2.7+4.5)+(3.0+4.5+4.5)
	Starting Method		Soft start	Soft start
Fan	Type		Propeller Fan	Propeller Fan
	Motor Output	kW	0.75×2	0.75×2
	Air Flow Rate	m³/min	180+210	180+210
	Drive		Direct Drive	Direct Drive
Connecting Pipes	Liquid Pipe	mm	ϕ15.9 (Brazing Connection)	ϕ19.1 (Brazing Connection)
	Suction Gas Pipe	mm	ϕ34.9 (Brazing Connection)	ϕ34.9 (Brazing Connection)
	Discharge Gas Pipe	mm	ϕ28.6 (Brazing Connection)	ϕ28.6 (Brazing Connection)
	Oil Equalizing Pipe	mm	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)
Machine Weight		kg	245+340	245+340
Safety Devices			High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs	High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs
Defrost Method			Deicer	Deicer
Capacity Control		%	6~100	6~100
Refrigerant	Refrigerant Name		R410A	R410A
	Charge	kg	15.8+18.8	15.8+20.1
	Control		Electronic Expansion Valve	Electronic Expansion Valve
Refrigerator Oil			Synthetic (ether) oil	Synthetic (ether) oil
	Charge Volume	L	(1.9+1.6)+(1.9+1.6+1.6)	(1.9+1.6)+(1.9+1.6+1.6)
Standard Accessories			Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps
Drawing No.			4D039032A, 4D039034A	4D039032A, 4D039035A

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.

3 Indoor temp. : 20°CDB / outdoor temp. : 7°CDB, 6°CWB / Equivalent piping length : 7.5m, level difference : 0m.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

Model Name (Combination Unit)			REYQ28MY1B	REYQ30MY1B
Model Name (Independent Unit)			REYQ12MY1B+REYQ16MY1B	REYQ14MY1B+REYQ16MY1B
★1 Cooling Capacity (19.5°CWB)		kcal / h	70,000	75,500
		Btu / h	275,000	298,000
		kW	80.5	87.2
★2 Cooling Capacity (19.0°CWB)		kW	78.0	84.5
★3 Heating Capacity		kcal / h	75,300	81,700
		Btu / h	299,000	325,000
		kW	87.5	95.0
Casing Color			Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)
Dimensions: (H×W×D)		mm	(1600×1240×765)+(1600×1240×765)	(1600×1240×765)+(1600×1240×765)
Heat Exchanger			Cross Fin Coil	Cross Fin Coil
Comp.	Type		Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type
	Piston Displacement	m^3/h	(13.72+10.47)+(13.72+10.47+10.47)	(13.72+10.47+10.47)×2
	Number of Revolutions	r.p.m	(6480, 2900)+(6480, 2900×2)	(6480, 2900×2)×2
	Motor Output×Number of Units	kW	(4.2+4.5)+(3.0+4.5+4.5)	(2.0+4.5+4.5)+(3.0+4.5+4.5)
	Starting Method		Soft start	Soft start
Fan	Type		Propeller Fan	Propeller Fan
	Motor Output	kW	0.75×2	0.75×2
	Air Flow Rate	m^3/min	210+210	210×2
	Drive		Direct Drive	Direct Drive
Connecting Pipes	Liquid Pipe	mm	ϕ19.1 (Brazing Connection)	ϕ19.1 (Brazing Connection)
	Suction Gas Pipe	mm	ϕ34.9 (Brazing Connection)	ϕ34.9 (Brazing Connection)
	Discharge Gas Pipe	mm	ϕ28.6 (Brazing Connection)	ϕ28.6 (Brazing Connection)
	Oil Equalizing Pipe	mm	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)
Machine Weight		kg	295+340	340+340
Safety Devices			High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs	High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs
Defrost Method			Deicer	Deicer
Capacity Control		%	6~100	5~100
Refrigerant	Refrigerant Name		R410A	R410A
	Charge	kg	17.3+20.1	18.8+20.1
	Control		Electronic Expansion Valve	Electronic Expansion Valve
Refrigerator Oil			Synthetic (ether) oil	Synthetic (ether) oil
	Charge Volume	L	(1.9+1.6)+(1.9+1.6+1.6)	(1.9+1.6+1.6)+(1.9+1.6+1.6)
Standard Accessories			Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps
Drawing No.			4D039033A, 4D039035A	4D039034A, 4D039035A

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.

★3 Indoor temp. : 20°CDB / outdoor temp. : 7°CDB, 6°CWB / Equivalent piping length : 7.5m, level difference : 0m.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

Model Name (Combination Unit)			**REYQ32MY1B**	**REYQ34MY1B**
Model Name (Independent Unit)			**REYQ16MY1B+REYQ16MY1B**	**REYQ10MY1B+REYQ10MY1B+REYQ14MY1B**
★1 Cooling Capacity (19.5°CWB)		kcal / h	80,000	85,500
		Btu / h	314,000	338,000
		kW	91.9	99.1
★2 Cooling Capacity (19.0°CWB)		kW	89.0	96.0
★3 Heating Capacity		kcal / h	86,000	92,700
		Btu / h	342,000	370,000
		kW	100	108
Casing Color			Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)
Dimensions: (H×W×D)		mm	(1600×1240×765)+(1600×1240×765)	(1600×930×765)+(1600×930×765)+(1600×1240×765)
Heat Exchanger			Cross Fin Coil	Cross Fin Coil
Comp.	Type		Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type
	Piston Displacement	m^3/h	(13.72+10.47+10.47)×2	(13.72+10.47)×2+(13.72+10.47+10.47)
	Number of Revolutions	r.p.m	(6480, 2900×2)×2	(6480, 2900)×2+(6480, 2900×2)
	Motor Output×Number of Units	kW	(3.0+4.5+4.5)+(3.0+4.5+4.5)	(2.7+4.5)+(2.7+4.5)+(2.0+4.5+4.5)
	Starting Method		Soft start	Soft start
Fan	Type		Propeller Fan	Propeller Fan
	Motor Output	kW	0.75×2	0.75×3
	Air Flow Rate	m^3/min	210×2	180+180+210
	Drive		Direct Drive	Direct Drive
Connecting Pipes	Liquid Pipe	mm	ϕ19.1 (Brazing Connection)	ϕ19.1 (Brazing Connection)
	Suction Gas Pipe	mm	ϕ34.9 (Brazing Connection)	ϕ34.9 (Brazing Connection)
	Discharge Gas Pipe	mm	ϕ28.6 (Brazing Connection)	ϕ28.6 (Brazing Connection)
	Oil Equalizing Pipe	mm	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)
Machine Weight		kg	340+340	245+245+340
Safety Devices			High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs	High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs
Defrost Method			Deicer	Deicer
Capacity Control		%	5~100	4~100
Refrigerant	Refrigerant Name		R410A	R410A
	Charge	kg	20.1+20.1	15.8+15.8+18.8
	Control		Electronic Expansion Valve	Electronic Expansion Valve
Refrigerator Oil			Synthetic (ether) oil	Synthetic (ether) oil
	Charge Volume	L	(1.9+1.6+1.6)+(1.9+1.6+1.6)	(1.9+1.6)+(1.9+1.6)+(1.9+1.6+1.6)
Standard Accessories			Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps
Drawing No.			4D039035A	4D039032A, 4D039034A

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.

★3 Indoor temp. : 20°CDB / outdoor temp. : 7°CDB, 6°CWB / Equivalent piping length : 7.5m, level difference : 0m.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

Model Name (Combination Unit)			REYQ36MY1B	REYQ38MY1B
Model Name (Independent Unit)			REYQ10MY1B+REYQ10MY1B+REYQ16MY1B	REYQ10MY1B+REYQ12MY1B+REYQ16MY1B
★1 Cooling Capacity (19.5°CWB)		kcal / h	90,000	95,000
		Btu / h	354,000	374,000
		kW	104	109
★2 Cooling Capacity (19.0°CWB)		kW	101	106
★3 Heating Capacity		kcal / h	97,000	102,000
		Btu / h	387,000	407,000
		kW	113	119
Casing Color			Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)
Dimensions: (H×W×D)		mm	(1600×930×765)+(1600×930×765)+(1600×1240×765)	(1600×930×765)+(1600×1240×765)+(1600×1240×765)
Heat Exchanger			Cross Fin Coil	Cross Fin Coil
Comp.	Type		Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type
	Piston Displacement	m^3/h	(13.72+10.47)×2+(13.72+10.47+10.47)	(13.72+10.47)×2+(13.72+10.47+10.47)
	Number of Revolutions	r.p.m	(6480, 2900)×2+(6480, 2900×2)	(6480, 2900)×2+(6480, 2900×2)
	Motor Output×Number of Units	kW	(2.7+4.5)+(2.7+4.5)+(3.0+4.5+4.5)	(2.7+4.5)+(4.2+4.5)+(3.0+4.5+4.5)
	Starting Method		Soft start	Soft start
Fan	Type		Propeller Fan	Propeller Fan
	Motor Output	kW	0.75×3	0.75×3
	Air Flow Rate	m^3/min	180+180+210	180+210+210
	Drive		Direct Drive	Direct Drive
Connecting Pipes	Liquid Pipe	mm	ϕ19.1 (Brazing Connection)	ϕ19.1 (Brazing Connection)
	Suction Gas Pipe	mm	ϕ41.3 (Brazing Connection)	ϕ41.3 (Brazing Connection)
	Discharge Gas Pipe	mm	ϕ28.6 (Brazing Connection)	ϕ34.9 (Brazing Connection)
	Oil Equalizing Pipe	mm	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)
Machine Weight		kg	245+245+340	245+295+340
Safety Devices			High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs	High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs
Defrost Method			Deicer	Deicer
Capacity Control		%	4~100	4~100
Refrigerant	Refrigerant Name		R410A	R410A
	Charge	kg	15.8+15.8+20.1	15.8+17.3+20.1
	Control		Electronic Expansion Valve	Electronic Expansion Valve
Refrigerator Oil			Synthetic (ether) oil	Synthetic (ether) oil
	Charge Volume	L	(1.9+1.6)+(1.9+1.6)+(1.9+1.6+1.6)	(1.9+1.6)+(1.9+1.6)+(1.9+1.6+1.6)
Standard Accessories			Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps
Drawing No.			4D039032A, 4D039035A	4D039032A, 4D039033A, 4D039035A

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.

★3 Indoor temp. : 20°CDB / outdoor temp. : 7°CDB, 6°CWB / Equivalent piping length : 7.5m, level difference : 0m.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

Model Name (Combination Unit)			**REYQ40MY1B**	**REYQ42MY1B**
Model Name (Independent Unit)			**REYQ10MY1B+REYQ14MY1B+REYQ16MY1B**	**REYQ10MY1B+REYQ16MY1B+REYQ16MY1B**
★1 Cooling Capacity (19.5°CWB)		kcal / h	101,000	105,000
		Btu / h	397,000	413,000
		kW	117	121
★2 Cooling Capacity (19.0°CWB)		kW	113	117
★3 Heating Capacity		kcal / h	109,000	113,000
		Btu / h	433,000	450,000
		kW	127	132
Casing Color			Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)
Dimensions: (H×W×D)		mm	(1600×930×765)+(1600×1240×765)+(1600×1240×765)	(1600×930×765)+(1600×1240×765)+(1600×1240×765)
Heat Exchanger			Cross Fin Coil	Cross Fin Coil
Comp.	Type		Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type
	Piston Displacement	m^3/h	(13.72+10.47)+(13.72+10.47+10.47)×2	(13.72+10.47)+(13.72+10.47+10.47)×2
	Number of Revolutions	r.p.m	(6480, 2900), (6480, 2900×2)×2	(6480, 2900), (6480, 2900×2)×2
	Motor Output×Number of Units	kW	(2.7+4.5)+(2.0+4.5+4.5)+(3.0+4.5+4.5)	(2.7+4.5)+(3.0+4.5+4.5)×2
	Starting Method		Soft start	Soft start
Fan	Type		Propeller Fan	Propeller Fan
	Motor Output	kW	0.75×3	0.75×3
	Air Flow Rate	m^3/min	180+210+210	180+210+210
	Drive		Direct Drive	Direct Drive
Connecting Pipes	Liquid Pipe	mm	ϕ19.1 (Brazing Connection)	ϕ19.1 (Brazing Connection)
	Suction Gas Pipe	mm	ϕ41.3 (Brazing Connection)	ϕ41.3 (Brazing Connection)
	Discharge Gas Pipe	mm	ϕ34.9 (Brazing Connection)	ϕ34.9 (Brazing Connection)
	Oil Equalizing Pipe	mm	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)
Machine Weight		kg	245+340+340	245+340+340
Safety Devices			High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs	High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs
Defrost Method			Deicer	Deicer
Capacity Control		%	4~100	4~100
Refrigerant	Refrigerant Name		R410A	R410A
	Charge	kg	15.8+18.8+20.1	15.8+20.1+20.1
	Control		Electronic Expansion Valve	Electronic Expansion Valve
Refrigerator Oil			Synthetic (ether) oil	Synthetic (ether) oil
	Charge Volume	L	(1.9+1.6)+(1.9+1.6+1.6)+(1.9+1.6+1.6)	(1.9+1.6)+(1.9+1.6+1.6)+(1.9+1.6+1.6)
Standard Accessories			Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps
Drawing No.			4D039032A, 4D039034A, 4D039035A	4D039032A, 4D039035A

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.

★3 Indoor temp. : 20°CDB / outdoor temp. : 7°CDB, 6°CWB / Equivalent piping length : 7.5m, level difference : 0m.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

Model Name (Combination Unit)			REYQ44MY1B	REYQ46MY1B
Model Name (Independent Unit)			REYQ12MY1B+REYQ16MY1B+REYQ16MY1B	REYQ14MY1B+REYQ16MY1B+REYQ16MY1B
★1 Cooling Capacity (19.5°CWB)		kcal / h	110,000	116,000
		Btu / h	432,000	455,000
		kW	127	133
★2 Cooling Capacity (19.0°CWB)		kW	123	129
★3 Heating Capacity		kcal / h	118,000	125,000
		Btu / h	470,000	496,000
		kW	138	145
Casing Color			Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)
Dimensions: (H×W×D)		mm	(1600×1240×765)+(1600×1240×765)+(1600×1240×765)	(1600×1240×765)+(1600×1240×765)+(1600×1240×765)
Heat Exchanger			Cross Fin Coil	Cross Fin Coil
Comp.	Type		Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type
	Piston Displacement	m^3/h	(13.72+10.47)+(13.72+10.47+10.47)×2	(13.72+10.47+10.47)×3
	Number of Revolutions	r.p.m	(6480, 2900), (6480, 2900×2)×2	(6480, 2900×2)×3
	Motor Output×Number of Units	kW	(4.2+4.5)+(3.0+4.5+4.5)×2	(2.0+4.5+4.5)+(3.0+4.5+4.5)×2
	Starting Method		Soft start	Soft start
Fan	Type		Propeller Fan	Propeller Fan
	Motor Output	kW	0.75×3	0.75×3
	Air Flow Rate	m^3/min	210+210+210	210+210+210
	Drive		Direct Drive	Direct Drive
Connecting Pipes	Liquid Pipe	mm	ϕ19.1 (Brazing Connection)	ϕ19.1 (Brazing Connection)
	Suction Gas Pipe	mm	ϕ41.3 (Brazing Connection)	ϕ41.3 (Brazing Connection)
	Discharge Gas Pipe	mm	ϕ34.9 (Brazing Connection)	ϕ34.9 (Brazing Connection)
	Oil Equalizing Pipe	mm	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)
Machine Weight		kg	295+340+340	340+340+340
Safety Devices			High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs	High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs
Defrost Method			Deicer	Deicer
Capacity Control		%	4~100	3~100
Refrigerant	Refrigerant Name		R410A	R410A
	Charge	kg	17.3+20.1+20.1	18.8+20.1+20.1
	Control		Electronic Expansion Valve	Electronic Expansion Valve
Refrigerator Oil			Synthetic (ether) oil	Synthetic (ether) oil
	Charge Volume	L	(1.9+1.6)+(1.9+1.6+1.6)+(1.9+1.6+1.6)	(1.9+1.6+1.6)+(1.9+1.6+1.6)+(1.9+1.6+1.6)
Standard Accessories			Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps
Drawing No.			4D039033A, 4D039035A	4D039034A, 4D039035A

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.

★3 Indoor temp. : 20°CDB / outdoor temp. : 7°CDB, 6°CWB / Equivalent piping length : 7.5m, level difference : 0m.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

Model Name (Combination Unit)			**REYQ48MY1B**
Model Name (Independent Unit)			**REYQ16MY1B+REYQ16MY1B+REYQ16MY1B**
★1 Cooling Capacity (19.5°CWB)		kcal / h	120,000
		Btu / h	471,000
		kW	138
★2 Cooling Capacity (19.0°CWB)		kW	134
★3 Heating Capacity		kcal / h	129,000
		Btu / h	513,000
		kW	150
Casing Color			Ivory White (5Y7.5/1)
Dimensions: (H×W×D)		mm	(1600×1240×765)+(1600×1240×765)+(1600×1240×765)
Heat Exchanger			Cross Fin Coil
Comp.	Type		Hermetically Sealed Scroll Type
	Piston Displacement	m³/h	(13.72+10.47+10.47)×3
	Number of Revolutions	r.p.m	(6480, 2900×2)×3
	Motor Output×Number of Units	kW	(3.0+4.5+4.5)×3
	Starting Method		Soft start
Fan	Type		Propeller Fan
	Motor Output	kW	0.75×3
	Air Flow Rate	m³/min	210+210+210
	Drive		Direct Drive
Connecting Pipes	Liquid Pipe	mm	ϕ19.1 (Brazing Connection)
	Suction Gas Pipe	mm	ϕ41.3 (Brazing Connection)
	Discharge Gas Pipe	mm	ϕ34.9 (Brazing Connection)
	Oil Equalizing Pipe	mm	ϕ6.4 (Flare Connection)
Machine Weight		kg	340+340+340
Safety Devices			High Pressure Switch, Fan Driver Overload Protector, Over Current Relay, Inverter Overload Protector, Fusible Plugs
Defrost Method			Deicer
Capacity Control		%	3~100
Refrigerant	Refrigerant Name		R410A
	Charge	kg	20.1+20.1+20.1
	Control		Electronic Expansion Valve
Refrigerator Oil			Synthetic (ether) oil
	Charge Volume	L	(1.9+1.6+1.6)+(1.9+1.6+1.6)+(1.9+1.6+1.6)
Standard Accessories			Installation Manual, Operation Manual, Connection Pipes, Clamps
Drawing No.			4D039035A

Notes:
- ★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.
- ★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5m, level difference : 0m.
- ★3 Indoor temp. : 20°CDB / outdoor temp. : 7°CDB, 6°CWB / Equivalent piping length : 7.5m, level difference : 0m.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

1.2 Indoor Units

Ceiling Mounted Cassette Type (Double Flow)

Model			FXCQ20MVE	FXCQ25MVE	FXCQ32MVE	FXCQ40MVE
★1 Cooling Capacity (19.5°CWB)		kcal/h	2,000	2,500	3,150	4,000
		Btu/h	7,900	9,900	12,500	15,900
		kW	2.3	2.9	3.7	4.7
★2 Cooling Capacity (19.0°CWB)		kW	2.2	2.8	3.6	4.5
★3 Heating Capacity		kcal/h	2,200	2,800	3,400	4,300
		Btu/h	8,500	10,900	13,600	17,000
		kW	2.5	3.2	4.0	5.0
Casing			Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (H×W×D)		mm	305×775×600	305×775×600	305×775×600	305×990×600
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	2×10×1.5	2×10×1.5	2×10×1.5	2×10×1.5
	Face Area	m²	2×0.100	2×0.100	2×0.100	2×0.145
Fan	Model		D17K2AA1	D17K2AB1	D17K2AB1	2D17K1AA1
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output × Number of Units	W	10×1	15×1	15×1	20×1
	Air Flow Rate (H/L)	m³/min	7/5	9/6.5	9/6.5	12/9
		cfm	247/177	318/230	318/230	424/318
	Drive		Direct Drive	Direct Drive	Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Glass Wool/Urethane Foam	Glass Wool/Urethane Foam	Glass Wool/Urethane Foam	Glass Wool/Urethane Foam
Piping Connections	Liquid Pipes	mm	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)
	Gas Pipes	mm	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)
	Drain Pipe	mm	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)
Machine Weight		kg	26	26	26	31
★5 Sound Level (H/L) (220V)		dBA	32/27	34/28	34/28	34/29
Safety Devices			Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Connectable outdoor unit			R410A M Series	R410A M Series	R410A M Series	R410A M Series
Decoration Panels (Option)	Model		BYBC32G-W1	BYBC32G-W1	BYBC32G-W1	BYBC50G-W1
	Panel Color		White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
	Dimensions: (H×W×D)	mm	53×1,030×680	53×1,030×680	53×1,030×680	53×1,245×680
	Air Filter		Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
	Weight	kg	8	8	8	8.5
Standard Accessories			Operation Manual, Installation Manual, Paper Pattern for Installation, Washer for Hanging Brackets, Clamp Metal, Drain Hose, Insulation for Fitting, Washer Fixing Plates, Sealing Pads, Clamps, Screws, Washers.	Operation Manual, Installation Manual, Paper Pattern for Installation, Washer for Hanging Brackets, Clamp Metal, Drain Hose, Insulation for Fitting, Washer Fixing Plates, Sealing Pads, Clamps, Screws, Washers.	Operation Manual, Installation Manual, Paper Pattern for Installation, Washer for Hanging Brackets, Clamp Metal, Drain Hose, Insulation for Fitting, Washer Fixing Plates, Sealing Pads, Clamps, Screws, Washers.	Operation Manual, Installation Manual, Paper Pattern for Installation, Washer for Hanging Brackets, Clamp Metal, Drain Hose, Insulation for Fitting, Washer Fixing Plates, Sealing Pads, Clamps, Screws, Washers.
Drawing No.			3D039413			

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.
★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.
★3 Indoor temp. : 20°CDB / outdoor temp.: 7°CDB, 6°CWB / Equivalent piping length; 7.5m, level difference; 0m. (Heat pump only)
4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
★5 Anechoic chamber conversion value, measured under JISB8616 conditions. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

Ceiling Mounted Cassette Type (Double Flow)

Model			FXCQ50MVE	FXCQ63MVE	FXCQ80MVE	FXCQ125MVE
★1 Cooling Capacity (19.5°CWB)		kcal/h	5,000	6,300	8,000	12,500
		Btu/h	19,900	25,000	31,800	49,600
		kW	5.8	7.3	9.3	14.5
★2 Cooling Capacity (19.0°CWB)		kW	5.6	7.1	9.0	14.0
★3 Heating Capacity		kcal/h	5,400	6,900	8,600	13,800
		Btu/h	21,500	27,300	34,100	54,600
		kW	6.3	8.0	10.0	16.0
Casing			Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (H×W×D)		mm	305×990×600	305×1,175×600	305×1,665×600	305×1,665×600
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	2×10×1.5	2×10×1.5	2×10×1.5	2×10×1.5
	Face Area	m²	2×0.145	2×0.184	2×0.287	2×0.287
Fan	Model		2D17K1AA1	2D17K2AA1VE	3D17K2AA1	3D17K2AB1
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output × Number of Units	W	20×1	30×1	50×1	85×1
	Air Flow Rate (H/L)	m³/min	12/9	16.5/13	26/21	33/25
		cfm	424/318	582/459	918/741	1,165/883
	Drive		Direct Drive	Direct Drive	Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Glass Wool/Urethane Foam	Glass Wool/Urethane Foam	Glass Wool/Urethane Foam	Glass Wool/Urethane Foam
Piping Connections	Liquid Pipes	mm	φ6.4 (Flare Connection)	φ9.5 (Flare Connection)	φ9.5 (Flare Connection)	φ9.5 (Flare Connection)
	Gas Pipes	mm	φ12.7 (Flare Connection)	φ15.9 (Flare Connection)	φ15.9 (Flare Connection)	φ15.9 (Flare Connection)
	Drain Pipe	mm	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)
Machine Weight		kg	32	35	47	48
★5 Sound Level (H/L)		dBA	34/29	37/32	39/34	44/38
Safety Devices			Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Connectable outdoor unit			R410A M Series	R410A M Series	R410A M Series	R410A M Series
Decoration Panels (Option)	Model		BYBC50G-W1	BYBC63G-W1	BYBC125G-W1	BYBC125G-W1
	Panel Color		White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
	Dimensions: (H×W×D)	mm	53×1,245×680	53×1,430×680	53×1,920×680	53×1,920×680
	Air Filter		Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
	Weight	kg	8.5	9.5	12	12
Standard Accessories			Operation Manual, Installation Manual, Paper Pattern for Installation, Washer for Hanging Brackets, Clamp Metal, Drain Hose, Insulation for Fitting, Washer Fixing Plates, Sealing Pads, Clamps, Screws, Washers.	Operation Manual, Installation Manual, Paper Pattern for Installation, Washer for Hanging Brackets, Clamp Metal, Drain Hose, Insulation for Fitting, Washer Fixing Plates, Sealing Pads, Clamps, Screws, Washers.	Operation Manual, Installation Manual, Paper Pattern for Installation, Washer for Hanging Brackets, Clamp Metal, Drain Hose, Insulation for Fitting, Washer Fixing Plates, Sealing Pads, Clamps, Screws, Washers.	Operation Manual, Installation Manual, Paper Pattern for Installation, Washer for Hanging Brackets, Clamp Metal, Drain Hose, Insulation for Fitting, Washer Fixing Plates, Sealing Pads, Clamps, Screws, Washers.
Drawing No.			3D039413			

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★3 Indoor temp. : 20°CDB / outdoor temp.: 7°CDB, 6°CWB / Equivalent piping length; 7.5m, level difference; 0m. (Heat pump only)

4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

★5 Anechoic chamber conversion value, measured under JISB8616 conditions. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

Ceiling Mounted Cassette Type (Multi Flow)600×600

Model			FXZQ20MVE	FXZQ25MVE	FXZQ32MVE
★1 Cooling Capacity (19.5°CWB)		kcal/h	2,000	2,500	3,150
		Btu/h	7,900	9,900	12,500
		kW	2.3	2.9	3.7
★2 Cooling Capacity (19.0°CWB)		kW	2.2	2.8	3.6
★3 Heating Capacity		kcal/h	2,200	2,800	3,400
		Btu/h	8,500	10,900	13,600
		kW	2.5	3.2	4.0
Casing			Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (H×W×D)		mm	260×575×575	260×575×575	260×575×575
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	2×10×1.5	2×10×1.5	2×10×1.5
	Face Area	m²	0.269	0.269	0.269
Fan	Model		QTS32C15M	QTS32C15M	QTS32C15M
	Type		Turbo Fan	Turbo Fan	Turbo Fan
	Motor Output × Number of Units	W	55×1	55×1	55×1
	Air Flow Rate (H/L)	m³/min	9/7	9/7	9.5/7.5
		cfm	318/247	318/247	335/265
	Drive		Direct Drive	Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Foamed Polystyrene/ Foamed Polyethylene	Foamed Polystyrene/ Foamed Polyethylene	Foamed Polystyrene/ Foamed Polyethylene
Piping Connections	Liquid Pipes	mm	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)
	Gas Pipes	mm	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)
	Drain Pipe	mm	VP20 (External Dia. 26 Internal Dia. 20)	VP20 (External Dia. 26 Internal Dia. 20)	VP20 (External Dia. 26 Internal Dia. 20)
Machine Weight		kg	18	18	18
★5 Sound Level (H/L) (230V)		dBA	30/25	30/25	32/26
Safety Devices			Fuse	Fuse	Fuse
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Connectable outdoor unit			R410A M Series	R410A M Series	R410A M Series
Decoration Panels (Option)	Model		BYFQ60BW1	BYFQ60BW1	BYFQ60BW1
	Panel Color		White (Ral 9010)	White (Ral 9010)	White (Ral 9010)
	Dimensions: (H×W×D)	mm	55×700×700	55×700×700	55×700×700
	Air Filter		Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
	Weight	kg	2.7	2.7	2.7
Standard Accessories			Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Washer Fixing Plate, Sealing Pads, Clamps, Screws, Washer for Hanging Bracket, Insulation for Fitting.	Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Washer Fixing Plate, Sealing Pads, Clamps, Screws, Washer for Hanging Bracket, Insulation for Fitting.	Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Washer Fixing Plate, Sealing Pads, Clamps, Screws, Washer for Hanging Bracket, Insulation for Fitting.
Drawing No.			3D038929A		

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★3 Indoor temp. : 20°CDB / outdoor temp.: 7°CDB, 6°CWB / Equivalent piping length; 7.5m, level difference; 0m. (Heat pump only)

4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

★5 Anechoic chamber conversion value, measured under JISB8616 conditions. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

Ceiling Mounted Cassette Type (Multi Flow)600×600

Model			FXZQ40MVE	FXZQ50MVE
★1 Cooling Capacity (19.5°CWB)		kcal/h	4,000	5,000
		Btu/h	15,900	19,900
		kW	4.7	5.8
★2 Cooling Capacity (19.0°CWB)		kW	4.5	5.6
★3 Heating Capacity		kcal/h	4,300	5,400
		Btu/h	17,000	21,500
		kW	5.0	6.3
Casing			Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (H×W×D)		mm	260×575×575	260×575×575
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	2×10×1.5	2×10×1.5
	Face Area	m²	0.269	0.269
Fan	Model		QTS32C15M	QTS32C15M
	Type		Turbo Fan	Turbo Fan
	Motor Output × Number of Units	W	55×1	55×1
	Air Flow Rate (H/L)	m³/min	11/8	14/10
		cfm	388/282	494/353
	Drive		Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Foamed Polystyrene/Foamed Polyethylene	Foamed Polystyrene/Foamed Polyethylene
Piping Connections	Liquid Pipes	mm	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)
	Gas Pipes	mm	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)
	Drain Pipe	mm	VP20 (External Dia. 26 / Internal Dia. 20)	VP20 (External Dia. 26 / Internal Dia. 20)
Machine Weight		kg	18	18
★5 Sound Level (H/L) (230V)		dBA	36/28	41/33
Safety Devices			Fuse	Fuse,
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve
Connectable outdoor unit			R410A M Series	R410A M Series
Decoration Panels (Option)	Model		BYFQ60BW1	BYFQ60BW1
	Panel Color		White (Ral 9010)	White (Ral 9010)
	Dimensions: (H×W×D)	mm	55×700×700	55×700×700
	Air Filter		Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
	Weight	kg	2.7	2.7
Standard Accessories			Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Washer Fixing Plate, Sealing Pads, Clamps, Screws, Washer for Hanging Bracket, Insulation for Fitting.	Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Washer Fixing Plate, Sealing Pads, Clamps, Screws, Washer for Hanging Bracket, Insulation for Fitting.
Drawing No.			3D038929A	

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★3 Indoor temp. : 20°CDB / outdoor temp.: 7°CDB, 6°CWB / Equivalent piping length; 7.5m, level difference; 0m. (Heat pump only)

4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

★5 Anechoic chamber conversion value, measured under JISB8616 conditions. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

Ceiling Mounted Cassette Type (Multi-flow)

Model			FXFQ25MVE	FXFQ32MVE	FXFQ40MVE	FXFQ50MVE
★1 Cooling Capacity (19.5°CWB)		kcal/h	2,500	3,150	4,000	5,000
		Btu/h	9,900	12,500	15,900	19,900
		kW	2.9	3.7	4.7	5.8
★2 Cooling Capacity (19.0°CWB)		kW	2.8	3.6	4.5	5.6
★3 Heating Capacity		kcal/h	2,800	3,400	4,300	5,400
		Btu/h	10,900	13,600	17,000	21,500
		kW	3.2	4.0	5.0	6.3
Casing			Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (H×W×D)		mm	246×840×840	246×840×840	246×840×840	246×840×840
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	2×8×1.2	2×8×1.2	2×8×1.2	2×8×1.2
	Face Area	m²	0.363	0.363	0.363	0.363
Fan	Model		QTS46D14M	QTS46D14M	QTS46D14M	QTS46D14M
	Type		Turbo Fan	Turbo Fan	Turbo Fan	Turbo Fan
	Motor Output × Number of Units	W	30×1	30×1	30×1	30×1
	Air Flow Rate (H/L)	m³/min	13/10	13/10	15/11	16/11
		cfm	459/353	459/353	530/388	565/388
	Drive		Direct Drive	Direct Drive	Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Polyurethane Form	Polyurethane Form	Polyurethane Form	Polyurethane Form
Piping Connections	Liquid Pipes	mm	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)
	Gas Pipes	mm	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)
	Drain Pipe	mm	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)
Machine Weight		kg	24	24	24	24
★5 Sound Level (H/L) (220V)		dBA	30/27	30/27	31/27	32/27
Safety Devices			Fuse	Fuse	Fuse	Fuse
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Connectable outdoor unit			R410A M Series	R410A M Series	R410A M Series	R410A M Series
Decoration Panels (Option)	Model		BYCP125D-W1	BYCP125D-W1	BYCP125D-W1	BYCP125D-W1
	Panel Color		White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
	Dimensions: (H×W×D)	mm	45×950×950	45×950×950	45×950×950	45×950×950
	Air Filter		Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
	Weight	kg	5.5	5.5	5.5	5.5
Standard Accessories			Operation manual, Installation manual, Paper pattern for installation, Drain hose, Clamp metal, Washer fixing plate, Sealing pads, Clamps, Screws, Washer for hanging bracket, Insulation for fitting.	Operation manual, Installation manual, Paper pattern for installation, Drain hose, Clamp metal, Washer fixing plate, Sealing pads, Clamps, Screws, Washer for hanging bracket, Insulation for fitting.	Operation manual, Installation manual, Paper pattern for installation, Drain hose, Clamp metal, Washer fixing plate, Sealing pads, Clamps, Screws, Washer for hanging bracket, Insulation for fitting.	Operation manual, Installation manual, Paper pattern for installation, Drain hose, Clamp metal, Washer fixing plate, Sealing pads, Clamps, Screws, Washer for hanging bracket, Insulation for fitting.
Drawing No.			3D038812			

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.
★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.
★3 Indoor temp. : 20°CDB / outdoor temp.: 7°CDB, 6°CWB / Equivalent piping length; 7.5m, level difference; 0m. (Heat pump only)
4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
★5 Anechoic chamber conversion value, measured under JISB8616 conditions. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

Ceiling Mounted Cassette Type (Multi-flow)

Model			FXFQ63MVE	FXFQ80MVE	FXFQ100MVE	FXFQ125MVE
★1 Cooling Capacity (19.5°CWB)		kcal/h	6,300	8,000	10,000	12,500
		Btu/h	25,000	31,800	39,700	49,600
		kW	7.3	9.3	11.6	14.5
★2 Cooling Capacity (19.0°CWB)		kW	7.1	9.0	11.2	14.0
★3 Heating Capacity		kcal/h	6,900	8,600	10,800	13,800
		Btu/h	27,300	34,100	42,700	54,600
		kW	8.0	10.0	12.5	16.0
Casing			Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (H×W×D)		mm	246×840×840	246×840×840	288×840×840	288×840×840
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	2×10×1.2	2×10×1.2	2×12×1.2	2×12×1.2
	Face Area	m²	0.454	0.454	0.544	0.544
Fan	Model		QTS46D14M	QTS46D14M	QTS46C17M	QTS46C17M
	Type		Turbo Fan	Turbo Fan	Turbo Fan	Turbo Fan
	Motor Output × Number of Units	W	30×1	30×1	120×1	120×1
	Air Flow Rate (H/L)	m³/min	18.5/14	20/15	26/21	30/24
		cfm	653/494	706/530	918/741	1,059/847
	Drive		Direct Drive	Direct Drive	Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Polyurethane Form	Polyurethane Form	Polyurethane Form	Polyurethane Form
Piping Connections	Liquid Pipes	mm	φ9.5 (Flare Connection)	φ9.5 (Flare Connection)	φ9.5 (Flare Connection)	φ9.5 (Flare Connection)
	Gas Pipes	mm	φ15.9 (Flare Connection)	φ15.9 (Flare Connection)	φ15.9 (Flare Connection)	φ15.9 (Flare Connection)
	Drain Pipe	mm	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)
Machine Weight		kg	25	25	29	29
★5 Sound Level (H/L)		dBA	33/28	36/31	39/33	42/36
Safety Devices			Fuse	Fuse	Fuse	Fuse
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Connectable outdoor unit			R410A M Series	R410A M Series	R410A M Series	R410A M Series
Decoration Panels (Option)	Model		BYCP125D-W1	BYCP125D-W1	BYCP125D-W1	BYCP125D-W1
	Panel Color		White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
	Dimensions: (H×W×D)	mm	45×950×950	45×950×950	45×950×950	45×950×950
	Air Filter		Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
	Weight	kg	5.5	5.5	5.5	5.5
Standard Accessories			Operation manual, Installation manual, Paper pattern for installation, Drain hose, Clamp metal, Washer fixing plate, Sealing pads, Clamps, Screws, Washer for hanging bracket, Insulation for fitting.	Operation manual, Installation manual, Paper pattern for installation, Drain hose, Clamp metal, Washer fixing plate, Sealing pads, Clamps, Screws, Washer for hanging bracket, Insulation for fitting.	Operation manual, Installation manual, Paper pattern for installation, Drain hose, Clamp metal, Washer fixing plate, Sealing pads, Clamps, Screws, Washer for hanging bracket, Insulation for fitting.	Operation manual, Installation manual, Paper pattern for installation, Drain hose, Clamp metal, Washer fixing plate, Sealing pads, Clamps, Screws, Washer for hanging bracket, Insulation for fitting.
Drawing No.			3D038812			

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★3 Indoor temp. : 20°CDB / outdoor temp.: 7°CDB, 6°CWB / Equivalent piping length; 7.5m, level difference; 0m. (Heat pump only)

4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

★5 Anechoic chamber conversion value, measured under JISB8616 conditions. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

Ceiling Mounted Cassette Corner Type

Model			FXKQ25MVE	FXKQ32MVE	FXKQ40MVE	FXKQ63MVE
★1 Cooling Capacity (19.5°CWB)		kcal/h	2,500	3,150	4,000	6,300
		Btu/h	9,900	12,500	15,900	25,000
		kW	2.9	3.7	4.7	7.3
★2 Cooling Capacity (19.0°CWB)		kW	2.8	3.6	4.5	7.1
★3 Heating Capacity		kcal/h	2,800	3,400	4,300	6,900
		Btu/h	10,900	13,600	17,000	27,300
		kW	3.2	4.0	5.0	8.0
Casing			Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (H×W×D)		mm	215×1,110×710	215×1,110×710	215×1,110×710	215×1,310×710
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	2×11×1.75	2×11×1.75	2×11×1.75	3×11×1.75
	Face Area	m²	0.180	0.180	0.180	0.226
Fan	Model		3D12H1AN1V1	3D12H1AN1V1	3D12H1AP1V1	4D12H1AJ1V1
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output × Number of Units	W	15×1	15×1	20×1	45×1
	Air Flow Rate (H/L)	m³/min	11/9	11/9	13/10	18/15
		cfm	388/318	388/318	459/353	635/530
	Drive		Direct Drive	Direct Drive	Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Polyethylene Foam	Polyethylene Foam	Polyethylene Foam	Polyethylene Foam
Piping Connections	Liquid Pipes	mm	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	φ9.5 (Flare Connection)
	Gas Pipes	mm	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	φ15.9 (Flare Connection)
	Drain Pipe	mm	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)
Machine Weight		kg	31	31	31	34
★5 Sound Level (H/L) (220V)		dBA	38/33	38/33	40/34	42/37
Safety Devices			Fuse, Thermal Fuse for Fan Motor	Fuse, Thermal Fuse for Fan Motor	Fuse, Thermal Fuse for Fan Motor	Fuse, Thermal Fuse for Fan Motor
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Connectable Outdoor Units			R410A M Series	R410A M Series	R410A M Series	R410A M Series
Decoration Panels (Option)	Model		BYK45FJW1	BYK45FJW1	BYK45FJW1	BYK71FJW1
	Panel Color		White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
	Dimensions: (H×W×D)	mm	70×1,240×800	70×1,240×800	70×1,240×800	70×1,440×800
	Air Filter		Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
	Weight	kg	8.5	8.5	8.5	9.5
Standard Accessories			Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws, Washers, Positioning Jig for Installation, Insulation for Hanger Bracket, Air Outlet Blocking Pad.	Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws, Washers, Positioning Jig for Installation, Insulation for Hanger Bracket, Air Outlet Blocking Pad.	Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws, Washers, Positioning Jig for Installation, Insulation for Hanger Bracket, Air Outlet Blocking Pad.	Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws, Washers, Positioning Jig for Installation, Insulation for Hanger Bracket, Air Outlet Blocking Pad.
Drawing No.			3D038813			

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.
★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.
★3 Indoor temp. : 20°CDB / outdoor temp.: 7°CDB, 6°CWB / Equivalent piping length; 7.5m, level difference; 0m. (Heat pump only)
4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
★5 Anechoic chamber conversion value, measured at a point 1m in front of the unit and 1m downward. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

Ceiling Mounted Built-in Type

Model			FXSQ20MVE	FXSQ25MVE	FXSQ32MVE
★1 Cooling Capacity (19.5°CWB)		kcal/h	2,000	2,500	3,150
		Btu/h	7,900	9,900	12,500
		kW	2.3	2.9	3.7
★2 Cooling Capacity (19.0°CWB)		kW	2.2	2.8	3.6
★3 Heating Capacity		kcal/h	2,200	2,800	3,400
		Btu/h	8,500	10,900	13,600
		kW	2.5	3.2	4.0
Casing			Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (H×W×D)		mm	300×550×800	300×550×800	300×550×800
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	3×14×1.75	3×14×1.75	3×14×1.75
	Face Area	m²	0.088	0.088	0.088
Fan	Model		D18H3A	D18H3A	D18H3A
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output × Number of Units	W	50×1	50×1	50×1
	Air Flow Rate (H/L)	m³/min	9/6.5	9/6.5	9.5/7
	★4 Static external pressure	Pa	88-39-20	88-39-20	64-39-15
	Drive		Direct Drive	Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Glass Fiber	Glass Fiber	Glass Fiber
Air Filter			Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
Piping Connections	Liquid Pipes	mm	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)
	Gas Pipes	mm	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)
	Drain Pipe	mm	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)
Machine Weight		kg	30	30	30
★6 Sound Level (H/L) (220V)		dBA	37/32	37/32	38/32
Safety Devices			Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Connectable outdoor unit			R410A M Series	R410A M Series	R410A M Series
Decoration Panel (Option)	Model		BYBS32DJW1	BYBS32DJW1	BYBS32DJW1
	Panel Color		White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
	Dimensions: (H×W×D)	mm	55×650×500	55×650×500	55×650×500
	Weight	kg	3	3	3
Standard Accessories			Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws, Washers.	Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws, Washers.	Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws, Washers.
Drawing No.			3D039431		

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★3 Indoor temp. : 20°CDB / outdoor temp.: 7°CDB, 6°CWB / Equivalent piping length; 7.5m, level difference; 0m. (Heat pump only)

★4 Static external pressure is changeable to change over the connectors inside electrical box, this pressure means “High static pressure-Standard -Low static pressure”.

★5 Static external pressure is changeable to change over the connectors inside electrical box, this pressure means “High static pressure-Standard”.

6 Capacities are net, including a deduction for cooling (an additional for heating) for indoor fan motor heat.

★7 Anechoic chamber conversion value, measured at a point 1.5m downward from the unit center. These values are normally somewhat higher during actual operation as a result of ambient conditions.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

Ceiling Mounted Built-in Type

Model			FXSQ40MVE	FXSQ50MVE	FXSQ63MVE
★1 Cooling Capacity (19.5°CWB)		kcal/h	4,000	5,000	6,300
		Btu/h	15,900	19,900	25,000
		kW	4.7	5.8	7.3
★2 Cooling Capacity (19.0°CWB)		kW	4.5	5.6	7.1
★3 Heating Capacity		kcal/h	4,300	5,400	6,900
		Btu/h	17,000	21,500	27,300
		kW	5.0	6.3	8.0
Casing			Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (H×W×D)		mm	300×700×800	300×700×800	300×1,000×800
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	3×14×1.75	3×14×1.75	3×14×1.75
	Face Area	m²	0.132	0.132	0.221
Fan	Model		D18H2A	D18H2A	2D18H2A
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output × Number of Units	W	65×1	85×1	125×1
	Air Flow Rate (H/L)	m³/min	11.5/9	15/11	21/15.5
	★4 Static external pressure	Pa	88-49-20	88-59-29	88-49-20
	Drive		Direct Drive	Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Glass Fiber	Glass Fiber	Glass Fiber
Air Filter			Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
Piping Connections	Liquid Pipes	mm	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)	ϕ9.5 (Flare Connection)
	Gas Pipes	mm	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)	ϕ15.9 (Flare Connection)
	Drain Pipe	mm	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)
Machine Weight		kg	30	31	41
★6 Sound Level (H/L)		dBA	38/32	41/36	42/35
Safety Devices			Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Connectable outdoor unit			R410A M Series	R410A M Series	R410A M Series
Decoration Panel (Option)	Model		BYBS45DJW1	BYBS45DJW1	BYBS71DJW1
	Panel Color		White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
	Dimensions: (H×W×D)	mm	55×800×500	55×800×500	55×1,100×500
	Weight	kg	3.5	3.5	4.5
Standard Accessories			Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws, Washers.	Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws, Washers.	Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws, Washers.
Drawing No.			3D039431		

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★3 Indoor temp. : 20°CDB / outdoor temp.: 7°CDB, 6°CWB / Equivalent piping length; 7.5m, level difference; 0m. (Heat pump only)

★4 Static external pressure is changeable to change over the connectors inside electrical box, this pressure means “High static pressure-Standard -Low static pressure”.

★5 Static external pressure is changeable to change over the connectors inside electrical box, this pressure means “High static pressure-Standard”.

6 Capacities are net, including a deduction for cooling (an additional for heating) for indoor fan motor heat.

★7 Anechoic chamber conversion value, measured at a point 1.5m downward from the unit center. These values are normally somewhat higher during actual operation as a result of ambient conditions.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

Ceiling Mounted Built-in Type

Model			FXSQ80MVE	FXSQ100MVE	FXSQ125MVE
★1 Cooling Capacity (19.5°CWB)		kcal/h	8,000	10,000	12,500
		Btu/h	31,800	39,700	49,600
		kW	9.3	11.6	14.5
★2 Cooling Capacity (19.0°CWB)		kW	9.0	11.2	14.0
★3 Heating Capacity		kcal/h	8,600	10,800	13,800
		Btu/h	34,100	42,700	54,600
		kW	10.0	12.5	16.0
Casing			Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (H×W×D)		mm	300×1,400×800	300×1,400×800	300×1,400×800
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	3×14×1.75	3×14×1.75	3×14×1.75
	Face Area	m^2	0.338	0.338	0.338
Fan	Model		3D18H2A	3D18H2A	3D18H2A
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output × Number of Units	W	225×1	225×1	225×1
	Air Flow Rate (H/L)	m^3/min	27/21.5	28/22	38/28
	★5 Static external pressure	Pa	113-82	107-75	78-39
	Drive		Direct Drive	Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Glass Fiber	Glass Fiber	Glass Fiber
Air Filter			Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
Piping Connections	Liquid Pipes	mm	ϕ9.5 (Flare Connection)	ϕ9.5 (Flare Connection)	ϕ9.5 (Flare Connection)
	Gas Pipes	mm	ϕ15.9 (Flare Connection)	ϕ15.9 (Flare Connection)	ϕ15.9 (Flare Connection)
	Drain Pipe	mm	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)
Machine Weight		kg	51	51	52
★6 Sound Level (H/L)		dBA	43/37	43/37	46/41
Safety Devices			Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Connectable outdoor unit			R410A M Series	R410A M Series	R410A M Series
Decoration Panel (Option)	Model		BYBS125DJW1	BYBS125DJW1	BYBS125DJW1
	Panel Color		White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
	Dimensions: (H×W×D)	mm	55×1,500×500	55×1,500×500	55×1,500×500
	Weight	kg	6.5	6.5	6.5
Standard Accessories			Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws, Washers.	Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws, Washers.	Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws, Washers.
Drawing No.			3D039431		

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★3 Indoor temp. : 20°CDB / outdoor temp.: 7°CDB, 6°CWB / Equivalent piping length; 7.5m, level difference; 0m. (Heat pump only)

★4 Static external pressure is changeable to change over the connectors inside electrical box, this pressure means “High static pressure-Standard -Low static pressure”.

★5 Static external pressure is changeable to change over the connectors inside electrical box, this pressure means “High static pressure-Standard”.

6 Capacities are net, including a deduction for cooling (an additional for heating) for indoor fan motor heat.

★7 Anechoic chamber conversion value, measured at a point 1.5m downward from the unit center. These values are normally somewhat higher during actual operation as a result of ambient conditions.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

Ceiling Mounted Duct Type

Model			FXMQ40MVE	FXMQ50MVE	FXMQ63MVE	FXMQ80MVE
★1 Cooling Capacity (19.5°CWB)		kcal/h	4,000	5,000	6,300	8,000
		Btu/h	15,900	19,900	25,000	31,800
		kW	4.7	5.8	7.3	9.3
★2 Cooling Capacity (19.0°CWB)		kW	4.5	5.6	7.1	9.0
★3 Heating Capacity		kcal/h	4,300	5,400	6,900	8,600
		Btu/h	17,000	21,500	27,300	34,100
		kW	5.0	6.3	8.0	10.0
Casing			Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (H×W×D)		mm	390×720×690	390×720×690	390×720×690	390×720×690
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	3×16×2.0	3×16×2.0	3×16×2.0	3×16×2.0
	Face Area	m²	0.181	0.181	0.181	0.181
Fan	Model		D11/2D3AB1VE	D11/2D3AB1VE	D11/2D3AB1VE	D11/2D3AA1VE
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output × Number of Units	W	100×1	100×1	100×1	160×1
	Air Flow Rate (H/L)	m³/min	14/11.5	14/11.5	14/11.5	19.5/16
		cfm	494/406	494/406	494/406	688/565
	External Static Pressure	Pa	157/157-118/108 ★4	157/157-118/108 ★4	157/157-118/108 ★4	157/160-108/98 ★4
	Drive		Direct Drive	Direct Drive	Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Glass Fiber	Glass Fiber	Glass Fiber	Glass Fiber
Air Filter			★5	★5	★5	★5
Piping Connections	Liquid Pipes	mm	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)	ϕ9.5 (Flare Connection)	ϕ9.5 (Flare Connection)
	Gas Pipes	mm	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)	ϕ15.9 (Flare Connection)	ϕ15.9 (Flare Connection)
	Drain Pipe	mm	VP25 (External Dia. 32 / Internal Dia. 25)	VP25 (External Dia. 32 / Internal Dia. 25)	VP25 (External Dia. 32 / Internal Dia. 25)	VP25 (External Dia. 32 / Internal Dia. 25)
Machine Weight		kg	44	44	44	45
★7 Sound Level (H/L)		dBA	39/35	39/35	39/35	42/38
Safety Devices			Fuse, Thermal Fuse for Fan Motor	Fuse, Thermal Fuse for Fan Motor	Fuse, Thermal Fuse for Fan Motor	Fuse, Thermal Fuse for Fan Motor
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Connectable outdoor unit			R410A M Series	R410A M Series	R410A M Series	R410A M Series
Standard Accessories			Operation Manual, Installation Manual, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws.	Operation Manual, Installation Manual, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws.	Operation Manual, Installation Manual, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws.	Operation Manual, Installation Manual, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws.
Drawing No.			3D038814			

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.
★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.
★3 Indoor temp. : 20°CDB / outdoor temp.: 7°CDB, 6°CWB / Equivalent piping length; 7.5m, level difference; 0m. (Heat pump only)
★4 Static external pressure is changeable to change over the connectors inside electrical box, this pressure means "High static pressure-Standard".
★5 Air filter is not standard accessory, but please mount it in the duct system of the suction side. Select its colorimetric method (gravity method) 50% or more.
6 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
★7 Anechoic chamber conversion value, measured at a point 1.5m downward from the unit center. These values are normally somewhat higher during actual operation as a result of ambient conditions.

Conversion Formulae
kcal/h=kW×860
Btu/h=kW×3414
cfm=m³/min×35.3

Ceiling Mounted Duct Type

Model			FXMQ100MVE	FXMQ125MVE	FXMQ200MVE	FXMQ250MVE
★1 Cooling Capacity (19.5°CWB)		kcal/h	10,000	12,500	20,000	25,000
		Btu/h	39,700	49,600	79,000	99,000
		kW	11.6	14.5	23.0	28.8
★2 Cooling Capacity (19.0°CWB)		kW	11.2	14.0	22.4	28.0
★3 Heating Capacity		kcal/h	10,800	13,800	21,500	27,000
		Btu/h	42,700	54,600	85,300	107,500
		kW	12.5	16.0	25.0	31.5
Casing			Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (H×W×D)		mm	390×1,110×690	390×1,110×690	470×1,380×1,100	470×1,380×1,100
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	3×16×2.0	3×16×2.0	3×26×2.0	3×26×2.0
	Face Area	m²	0.319	0.319	0.68	0.68
Fan	Model		2D11/2D3AG1VE	2D11/2D3AF1VE	D13/4G2DA1×2	D13/4G2DA1×2
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output × Number of Units	W	270×1	430×1	380×2	380×2
	Air Flow Rate (H/L)	m³/min	29/23	36/29	58/50	72/62
		cfm	1,024/812	1,271/1,024	2,047/1,765	2,542/2,189
	External Static Pressure	Pa	157/172-98/98 ★4	191/245-152/172 ★4	221/270-132 ★4	270/191-147 ★4
	Drive		Direct Drive	Direct Drive	Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Glass Fiber	Glass Fiber	Glass Fiber	Glass Fiber
Air Filter			★5	★5	★5	★5
Piping Connections	Liquid Pipes	mm	ϕ9.5 (Flare Connection)	ϕ9.5 (Flare Connection)	ϕ9.5 (Flare Connection)	ϕ9.5 (Flare Connection)
	Gas Pipes	mm	ϕ15.9 (Flare Connection)	ϕ15.9 (Flare Connection)	ϕ19.1(Brazing Connection)	ϕ22.2 (Brazing Connection)
	Drain Pipe	mm	VP25 (External Dia. 32 / Internal Dia. 25)	VP25 (External Dia. 32 / Internal Dia. 25)	PS1B	PS1B
Machine Weight		kg	63	65	137	137
★8 Sound Level (H/L)		dBA	43/39	45/42	48/45	48/45
Safety Devices			Fuse, Thermal Fuse for Fan Motor	Fuse, Thermal Fuse for Fan Motor	Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Connectable outdoor unit			R410A M Series	R410A M Series	R410A M Series	R410A M Series
Standard Accessories			Operation Manual, Installation Manual, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws.	Operation Manual, Installation Manual, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws.	Operation Manual, Installation Manual, Sealing Pads, Connection Pipes, Screws, Clamps.	Operation Manual, Installation Manual, Sealing Pads, Connection Pipes, Screws, Clamps.
Drawing No.			3D038814			

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.
★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.
★3 Indoor temp. : 20°CDB / outdoor temp.: 7°CDB, 6°CWB / Equivalent piping length; 7.5m, level difference; 0m. (Heat pump only)
★4 Static external pressure is changeable to change over the connectors inside electrical box, this pressure means "High static pressure-Standard".
★5 Air filter is not standard accessory, but please mount it in the duct system of the suction side. Select its colorimetric method (gravity method) 50% or more.
6 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
★7 Anechoic chamber conversion value, measured at a point 1.5m downward from the unit center. These values are normally somewhat higher during actual operation as a result of ambient conditions.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

Ceiling Suspended Type

Model			FXHQ32MVE	FXHQ63MVE	FXHQ100MVE
★1 Cooling Capacity (19.5°CWB)		kcal/h	3,150	6,300	10,000
		Btu/h	12,500	25,000	39,700
		kW	3.7	7.3	11.6
★2 Cooling Capacity (19.0°CWB)		kW	3.6	7.1	11.2
★3 Heating Capacity		kcal/h	3,400	6,900	10,800
		Btu/h	13,600	27,300	42,700
		kW	4.0	8.0	12.5
Casing Color			White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
Dimensions: (H×W×D)		mm	195×960×680	195×1,160×680	195×1,400×680
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	2×12×1.75	3×12×1.75	3×12×1.75
	Face Area	m^2	0.182	0.233	0.293
Fan	Model		3D12K1AA1	4D12K1AA1	3D12K2AA1
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output × Number of Units	W	62×1	62×1	130×1
	Air Flow Rate (H/L)	m^3/min	12/10	17.5/14	25/19.5
		cfm	424/353	618/494	883/688
	Drive		Direct Drive	Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Glass Wool	Glass Wool	Glass Wool
Air Filter			Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
Piping Connections	Liquid Pipes	mm	ϕ6.4 (Flare Connection)	ϕ9.5 (Flare Connection)	ϕ9.5 (Flare Connection)
	Gas Pipes	mm	ϕ12.7 (Flare Connection)	ϕ15.9 (Flare Connection)	ϕ15.9 (Flare Connection)
	Drain Pipe	mm	VP20 (External Dia. 26 Internal Dia. 20)	VP20 (External Dia. 26 Internal Dia. 20)	VP20 (External Dia. 26 Internal Dia. 20)
Machine Weight		kg	24	28	33
★5 Sound Level (H/L)		dBA	36/31	39/34	45/37
Safety Devices			Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Connectable outdoor unit			R410A M Series	R410A M Series	R410A M Series
Standard Accessories			Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Insulation for Fitting, Clamps, Washers.	Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Insulation for Fitting, Clamps, Washers.	Operation Manual, Installation Manual, Paper Pattern for Installation, Drain Hose, Clamp Metal, Insulation for Fitting, Clamps, Washers.
Drawing No.			3D038815		

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★3 Indoor temp. : 20°CDB / outdoor temp.: 7°CDB, 6°CWB / Equivalent piping length; 7.5m, level difference; 0m. (Heat pump only)

4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

★5 Anechoic chamber conversion value, measured under JISB8616 conditions. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

Wall Mounted Type

Model			FXAQ20MVE	FXAQ25MVE	FXAQ32MVE
★1 Cooling Capacity (19.5°CWB)		kcal/h	2,000	2,500	3,150
		Btu/h	7,900	9,900	12,500
		kW	2.3	2.9	3.7
★2 Cooling Capacity (19.0°CWB)		kW	2.2	2.8	3.6
★3 Heating Capacity		kcal/h	2,200	2,800	3,400
		Btu/h	8,500	10,900	13,600
		kW	2.5	3.2	4.0
Casing Color			White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
Dimensions: (H×W×D)		mm	290×795×230	290×795×230	290×795×230
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	2×14×1.4	2×14×1.4	2×14×1.4
	Face Area	m^2	0.161	0.161	0.161
Fan	Model		QCL9661M	QCL9661M	QCL9661M
	Type		Cross Flow Fan	Cross Flow Fan	Cross Flow Fan
	Motor Output × Number of Units	W	40×1	40×1	40×1
	Air Flow Rate (H/L)	m^3/min	7.5/4.5	8/5	9/5.5
		cfm	265/159	282/177	318/194
	Drive		Direct Drive	Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Foamed Polystyrene / Foamed Polyethylene	Foamed Polystyrene / Foamed Polyethylene	Foamed Polystyrene / Foamed Polyethylene
Air Filter			Resin Net (Washable)	Resin Net (Washable)	Resin Net (Washable)
Piping Connections	Liquid Pipes	mm	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)
	Gas Pipes	mm	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)
	Drain Pipe	mm	VP13 (External Dia. 18 Internal Dia. 13)	VP13 (External Dia. 18 Internal Dia. 13)	VP13 (External Dia. 18 Internal Dia. 13)
Machine Weight		kg	11	11	11
★5 Sound Level (H/L)		dBA	35/29	36/29	37/29
Safety Devices			Fuse	Fuse	Fuse
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Connectable outdoor unit			R410A M Series	R410A M Series	R410A M Series
Standard Accessories			Operation Manual, Installation Manual, Installation Panel, Paper Pattern for Installation, Insulation Tape, Clamps, screws.	Operation Manual, Installation Manual, Installation Panel, Paper Pattern for Installation, Insulation Tape, Clamps, screws.	Operation Manual, Installation Manual, Installation Panel, Paper Pattern for Installation, Insulation Tape, Clamps, screws.
Drawing No.			3D039370		

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length:7.5m, level difference: 0m.

★3 Indoor temp. : 20°CDB / outdoor temp.: 7°CDB, 6°CWB / Equivalent piping length; 7.5m, level difference; 0m. (Heat pump only)

4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

★5 Anechoic chamber conversion value, measured under JISB8616 conditions. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

Wall Mounted Type

Model			FXAQ40MVE	FXAQ50MVE	FXAQ63MVE
★1 Cooling Capacity (19.5°CWB)		kcal/h	4,000	5,000	6,300
		Btu/h	15,900	19,900	25,000
		kW	4.7	5.8	7.3
★2 Cooling Capacity (19.0°CWB)		kW	4.5	5.6	7.1
★3 Heating Capacity		kcal/h	4,300	5,400	6,900
		Btu/h	17,000	21,500	27,300
		kW	5.0	6.3	8.0
Casing Color			White (B-272)	White (B-272)	White (B-272)
Dimensions: (H×W×D)		mm	290×1,050×230	290×1,050×230	290×1,050×230
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	2×14×1.4	2×14×1.4	2×14×1.4
	Face Area	m²	0.213	0.213	0.213
Fan	Model		QCL9686M	QCL9686M	QCL9686M
	Type		Cross Flow Fan	Cross Flow Fan	Cross Flow Fan
	Motor Output × Number of Units	W	43×1	43×1	43×1
	Air Flow Rate (H/L)	m³/min	12/9	15/12	19/14
		cfm	424/318	530/424	671/494
	Drive		Direct Drive	Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Foamed Polystyrene / Foamed Polyethylene	Foamed Polystyrene / Foamed Polyethylene	Foamed Polystyrene / Foamed Polyethylene
Air Filter			Resin Net (Washable)	Resin Net (Washable)	Resin Net (Washable)
Piping Connections	Liquid Pipes	mm	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)	ϕ9.5 (Flare Connection)
	Gas Pipes	mm	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)	ϕ15.9 (Flare Connection)
	Drain Pipe	mm	VP13 (External Dia. 18 Internal Dia. 13)	VP13 (External Dia. 18 Internal Dia. 13)	VP13 (External Dia. 18 Internal Dia. 13)
Machine Weight		kg	14	14	14
★5 Sound Level (H/L)		dBA	39/34	42/36	46/39
Safety Devices			Fuse	Fuse	Fuse
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Connectable outdoor unit			R410A M Series	R410A M Series	R410A M Series
Standard Accessories			Operation Manual, Installation Manual, Installation Panel, Paper Pattern for Installation, Insulation Tape, Clamps, screws.	Operation Manual, Installation Manual, Installation Panel, Paper Pattern for Installation, Insulation Tape, Clamps, screws.	Operation Manual, Installation Manual, Installation Panel, Paper Pattern for Installation, Insulation Tape, Clamps, screws.
Drawing No.			3D039370		

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp; 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp; 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★3 Indoor temp. : 20°CDB / outdoor temp.: 7°CDB, 6°CWB / Equivalent piping length; 7.5m, level difference; 0m. (Heat pump only)

4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

★5 Anechoic chamber conversion value, measured under JISB8616 conditions. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

Floor Standing Type

Model			FXLQ20MVE	FXLQ25MVE	FXLQ32MVE
★1 Cooling Capacity (19.5°CWB)		kcal/h	2,000	2,500	3,150
		Btu/h	7,900	9,900	12,500
		kW	2.3	2.9	3.7
★2 Cooling Capacity (19.0°CWB)		kW	2.2	2.8	3.6
★3 Heating Capacity		kcal/h	2,200	2,800	3,400
		Btu/h	8,500	10,900	13,600
		kW	2.5	3.2	4.0
Casing Color			Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)
Dimensions: (H×W×D)		mm	600×1,000×222	600×1,000×222	600×1,140×222
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	3×14×1.5	3×14×1.5	3×14×1.5
	Face Area	m²	0.159	0.159	0.200
Fan	Model		D14B20	D14B20	2D14B13
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output × Number of Units	W	15×1	15×1	25×1
	Air Flow Rate (H/L)	m³/min	7/6	7/6	8/6
		cfm	247/212	247/212	282/212
	Drive		Direct Drive	Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Glass Fiber/ Urethane Foam	Glass Fiber/ Urethane Foam	Glass Fiber/ Urethane Foam
Air Filter			Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
Piping Connections	Liquid Pipes	mm	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)
	Gas Pipes	mm	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)
	Drain Pipe	mm	ϕ21 O.D (Vinyl Chloride)	ϕ21 O.D (Vinyl Chloride)	ϕ21 O.D (Vinyl Chloride)
Machine Weight		kg	25	25	30
★5 Sound Level (H/L)		dBA	35/32	35/32	35/32
Safety Devices			Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Connectable Outdoor Unit			R410A M Series	R410A M Series	R410A M Series
Standard Accessories			Operation Manual, Installation Manual, Insulation for Fitting, Drain Hose, Clamps, Screws, Washers, Level Adjustment Screw.	Operation Manual, Installation Manual, Insulation for Fitting, Drain Hose, Clamps, Screws, Washers, Level Adjustment Screw.	Operation Manual, Installation Manual, Insulation for Fitting, Drain Hose, Clamps, Screws, Washers, Level Adjustment Screw.
Drawing No.			3D038816		

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★3 Indoor temp. : 20°CDB / outdoor temp.: 7°CDB, 6°CWB / Equivalent piping length; 7.5m, level difference; 0m. (Heat pump only)

4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

★5 Anechoic chamber conversion value, measured at a point 1.5 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×3414 cfm=m³/min×35.3

Floor Standing Type

Model			FXLQ40MVE	FXLQ50MVE	FXLQ63MVE
★1 Cooling Capacity (19.5°CWB)		kcal/h	4,000	5,000	6,300
		Btu/h	15,900	19,900	25,000
		kW	4.7	5.8	7.3
★2 Cooling Capacity (19.0°CWB)		kW	4.5	5.6	7.1
★3 Heating Capacity		kcal/h	4,300	5,400	6,900
		Btu/h	17,000	21,500	27,300
		kW	5.0	6.3	8.0
Casing Color			Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)
Dimensions: (H×W×D)		mm	600×1,140×222	600×1,420×222	600×1,420×222
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	3×14×1.5	3×14×1.5	3×14×1.5
	Face Area	m^2	0.200	0.282	0.282
Fan	Model		2D14B13	2D14B20	2D14B20
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output × Number of Units	W	25×1	35×1	35×1
	Air Flow Rate (H/L)	m^3/min	11/8.5	14/11	16/12
		cfm	388/300	494/388	565/424
	Drive		Direct Drive	Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Glass Fiber/ Urethane Foam	Glass Fiber/ Urethane Foam	Glass Fiber/ Urethane Foam
Air Filter			Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
Piping Connections	Liquid Pipes	mm	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)	ϕ9.5 (Flare Connection)
	Gas Pipes	mm	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)	ϕ15.9 (Flare Connection)
	Drain Pipe	mm	ϕ21 O.D (Vinyl Chloride)	ϕ21 O.D (Vinyl Chloride)	ϕ21 O.D (Vinyl Chloride)
Machine Weight		kg	30	36	36
★5 Sound Level (H/L)		dBA	38/33	39/34	40/35
Safety Devices			Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Connectable Outdoor Unit			R410A M Series	R410A M Series	R410A M Series
Standard Accessories			Operation Manual, Installation Manual, Insulation for Fitting, Drain Hose, Clamps, Screws, Washers, Level Adjustment Screw.	Operation Manual, Installation Manual, Insulation for Fitting, Drain Hose, Clamps, Screws, Washers, Level Adjustment Screw.	Operation Manual, Installation Manual, Insulation for Fitting, Drain Hose, Clamps, Screws, Washers, Level Adjustment Screw.
Drawing No.			3D038816		

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★3 Indoor temp. : 20°CDB / outdoor temp.: 7°CDB, 6°CWB / Equivalent piping length; 7.5m, level difference; 0m. (Heat pump only)

4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

★5 Anechoic chamber conversion value, measured at a point 1.5 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×3414 cfm=m^3/min×35.3

Concealed Floor Standing Type

Model			FXNQ20MVE	FXNQ25MVE	FXNQ32MVE
★1 Cooling Capacity (19.5°CWB)		kcal/h	2,000	2,500	3,150
		Btu/h	7,900	9,900	12,500
		kW	2.3	2.9	3.7
★2 Cooling Capacity (19.0°CWB)		kW	2.2	2.8	3.6
★3 Heating Capacity		kcal/h	2,200	2,800	3,400
		Btu/h	8,500	10,900	13,600
		kW	2.5	3.2	4.0
Casing Color			Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (H×W×D)		mm	610×930×220	610×930×220	610×1,070×220
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	3×14×1.5	3×14×1.5	3×14×1.5
	Face Area	m²	0.159	0.159	0.200
Fan	Model		D14B20	D14B20	2D14B13
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output × Number of Units	W	15×1	15×1	25×1
	Air Flow Rate (H/L)	m³/min	7/6	7/6	8/6
		cfm	247/212	247/212	282/212
	Drive		Direct Drive	Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Glass Fiber/ Urethane Foam	Glass Fiber/ Urethane Foam	Glass Fiber/ Urethane Foam
Air Filter			Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
Piping Connections	Liquid Pipes	mm	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)
	Gas Pipes	mm	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)
	Drain Pipe	mm	ϕ21 O.D (Vinyl Chloride)	ϕ21 O.D (Vinyl Chloride)	ϕ21 O.D (Vinyl Chloride)
Machine Weight		kg	19	19	23
★5 Sound Level (H/L)		dBA	35/32	35/32	35/32
Safety Devices			Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Connectable Outdoor Unit			R410A M Series	R410A M Series	R410A M Series
Standard Accessories			Operation Manual, Installation Manual, Insulation for Fitting, Drain Hose, Clamps, Screws, Washers, Level Adjustment Screw.	Operation Manual, Installation Manual, Insulation for Fitting, Drain Hose, Clamps, Screws, Washers, Level Adjustment Screw.	Operation Manual, Installation Manual, Insulation for Fitting, Drain Hose, Clamps, Screws, Washers, Level Adjustment Screw.
Drawing No.			3D038817		

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★3 Indoor temp. : 20°CDB / outdoor temp.: 7°CDB, 6°CWB / Equivalent piping length; 7.5m, level difference; 0m. (Heat pump only)

4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

★5 Anechoic chamber conversion value, measured at a point 1.5 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×3414 cfm=m³/min×35.3

Concealed Floor Standing Type

Model			FXNQ40MVE	FXNQ50MVE	FXNQ63MVE
★1 Cooling Capacity (19.5°CWB)		kcal/h	4,000	5,000	6,300
		Btu/h	15,900	19,900	25,000
		kW	4.7	5.8	7.3
★2 Cooling Capacity (19.0°CWB)		kW	4.5	5.6	7.1
★3 Heating Capacity		kcal/h	4,300	5,400	6,900
		Btu/h	17,000	21,500	27,300
		kW	5.0	6.3	8.0
Casing Color			Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (H×W×D)		mm	610×1,070×220	610×1,350×220	610×1,350×220
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	3×14×1.5	3×14×1.5	3×14×1.5
	Face Area	m^2	0.200	0.282	0.282
Fan	Model		2D14B13	2D14B20	2D14B20
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output × Number of Units	W	25×1	35×1	35×1
	Air Flow Rate (H/L)	m^3/min	11/8.5	14/11	16/12
		cfm	388/300	494/388	565/424
	Drive		Direct Drive	Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Glass Fiber / Urethane Foam	Glass Fiber / Urethane Foam	Glass Fiber / Urethane Foam
Air Filter			Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
Piping Connections	Liquid Pipes	mm	ϕ6.4 (Flare Connection)	ϕ6.4 (Flare Connection)	ϕ9.5 (Flare Connection)
	Gas Pipes	mm	ϕ12.7 (Flare Connection)	ϕ12.7 (Flare Connection)	ϕ15.9 (Flare Connection)
	Drain Pipe	mm	ϕ21 O.D (Vinyl Chloride)	ϕ21 O.D (Vinyl Chloride)	ϕ21 O.D (Vinyl Chloride)
Machine Weight		kg	23	27	27
★5 Sound Level (H/L)		dBA	38/33	39/34	40/35
Safety Devices			Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor	Fuse, Thermal Protector for Fan Motor
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Connectable Outdoor Unit			R410A M Series	R410A M Series	R410A M Series
Standard Accessories			Operation Manual, Installation Manual, Insulation for Fitting, Drain Hose, Clamps, Screws, Washers, Level Adjustment Screw.	Operation Manual, Installation Manual, Insulation for Fitting, Drain Hose, Clamps, Screws, Washers, Level Adjustment Screw.	Operation Manual, Installation Manual, Insulation for Fitting, Drain Hose, Clamps, Screws, Washers, Level Adjustment Screw.
Drawing No.			3D038817		

Notes:

★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.

★3 Indoor temp. : 20°CDB / outdoor temp.: 7°CDB, 6°CWB / Equivalent piping length; 7.5m, level difference; 0m. (Heat pump only)

4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

★5 Anechoic chamber conversion value, measured at a point 1.5 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×3414 cfm=m^3/min×35.3

1.3 BS Units

Model				BSVQ100MV1	BSVQ160MV1	BSVQ250MV1
Power Supply				1 Phase 50Hz 220~240V	1 Phase 50Hz 220~240V	1 Phase 50Hz 220~240V
Total Capacity Index of Indoor Unit				Less than 100	100 or more but less than 160	160 or more but 250 or less
No. of Connectable Indoor Units				Max. 5	Max. 8	Max. 8
Casing				Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (H×W×D)			mm	185×310×280	185×310×280	185×310×280
Sound Absorbing Thermal Insulation Material				Flame and Heat Resistant Foamed Polyethylene	Flame and Heat Resistant Foamed Polyethylene	Flame and Heat Resistant Foamed Polyethylene
Piping Connection	Indoor Unit	Liquid Pipes		ϕ 9.5mm (Flare Connection) ★1	ϕ 9.5mm (Flare Connection)	ϕ 9.5mm (Flare Connection)
		Gas Pipes		ϕ 15.9mm (Flare Connection) ★1	ϕ 15.9mm (Flare Connection)	ϕ 22.2mm (Flange Connection) ★2
	Outdoor Unit	Liquid Pipes		ϕ 9.5mm (Flare Connection) ★1	ϕ 9.5mm (Flare Connection)	ϕ 9.5mm (Flare Connection)
		Suction Gas Pipes		ϕ 15.9mm (Flare Connection) ★1	ϕ 15.9mm (Flare Connection)	ϕ 22.2mm (Flange Connection) ★2
		Discharge Gas Pipes		ϕ 12.7mm (Flare Connection) ★1	ϕ 12.7mm (Flare Connection)	19.1mm (Flare Connection)
Weight			kg	9	9	10
Standard Accessories				Installation Manual, Attached Pipe, Insulation pipe cover, Clamps	Installation Manual, Insulation pipe cover, Clamps	Installation Manual, Attached Pipe, Insulation pipe cover Clamps.
Drawing No.				4D042118	4D042119	4D042120

Note: ★1 If the total capacity of all indoor units connected to the system is less than 7.1 kW, connect the attached pipe to the field pipe. (Braze the connection between the attached pipe and field pipe.)

★2 Use the field flanged pipe.
Also, with a 200 class indoor unit, connect the attached reducer to the field pipe. (Braze the connection between the attached pipe and field pipe.)

3 The indoor unit size of 20.25.32.40 can not be connected to BSVQ250MV1.

Connection Range for BS Unit

Components	Outdoor unit/BS unit model name	Total capacity of connectable indoor units	Number of connectable indoor units	
Indoor unit total capacity	REYQ8M	100 to 260	13	Same number of BS units
	REYQ10M	125 to 325	16	
	REYQ12M	150 to 390	20	
	REYQ14M	178 to 461		
	REYQ16M	200 to 520		
	REYQ18M	225 to 585		
	REYQ20M	250 to 650		
	REYQ22M	275 to 715	22	
	REYQ24M	303 to 786	32	
	REYQ26M	325 to 845		
	REYQ28M	350 to 910		
	REYQ30M	378 to 981		
	REYQ32M	400 to 1,040		
	REYQ34M	428 to 1,111	34	
	REYQ36M	450 to 1,170	36	
	REYQ38M	475 to 1,235	38	
	REYQ40M	505 to 1,313	40	
	REYQ42M	525 to 1,365		
	REYQ44M	550 to 1,430		
	REYQ46M	580 to 1,508		
	REYQ48M	600 to 1,560		

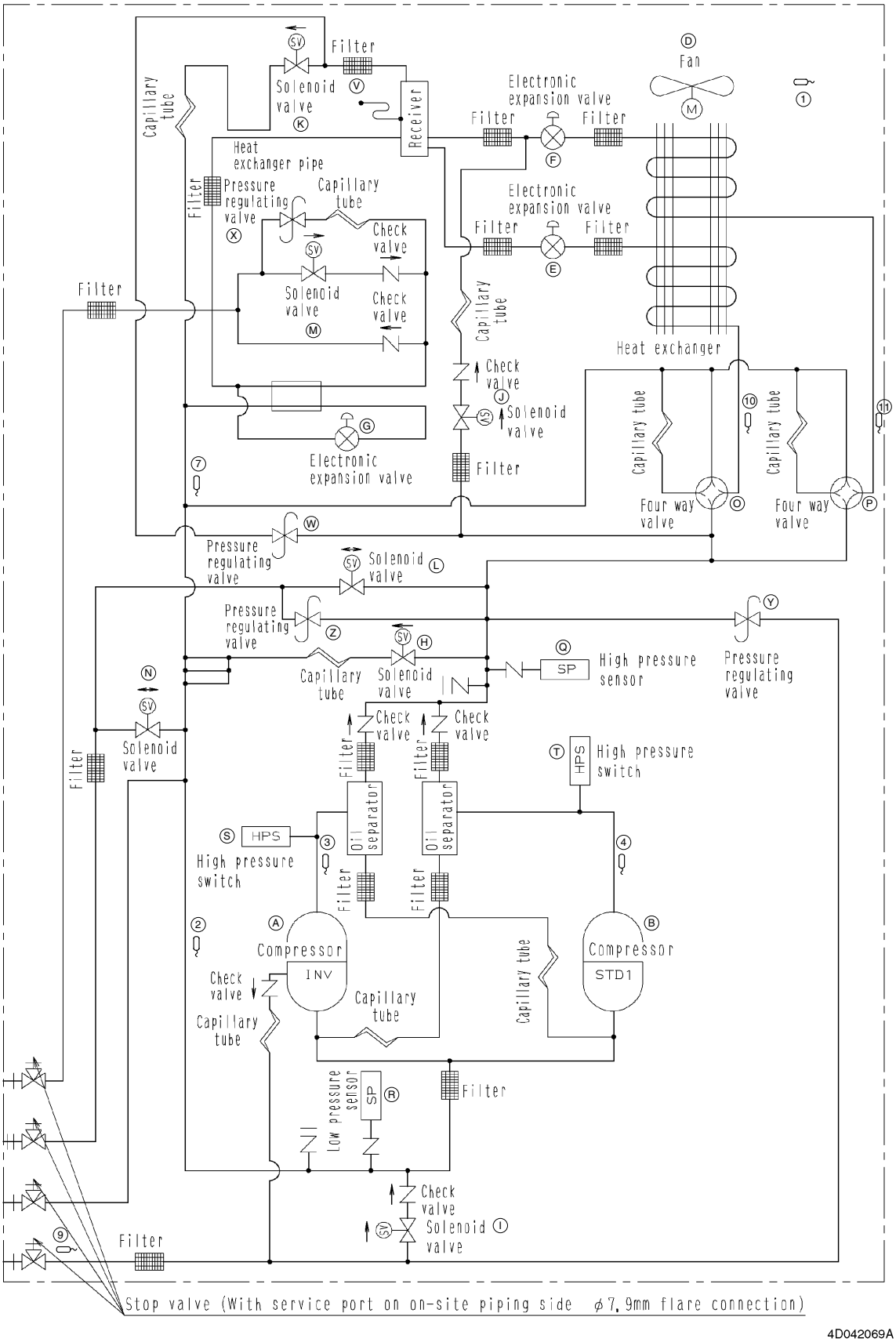
Part 3
Refrigerant Circuit

1. Refrigerant Circuit

1.1 REYQ8, 10, 12M

No. in refrigerant system diagram	Symbol	Name	Major Function
A	M1C	Inverter compressor (INV)	Inverter compressor is operated on frequencies between 52 Hz and 210 Hz by using the inverter, while Standard compressor is operated with commercial power supply only. The number of operating steps is as follows when Inverter compressor is operated in combination with Standard compressor. REYQ8, 10, 12M : 29 steps
B	M2C	Standard compressor 1(STD1)	
D	M1F	Inverter fan	Since the system is of air heat exchanging type, the fan is operated at 8-step rotation speed by using the inverter.
E	Y1E	Electronic expansion valve (Main: EV1)	Conducts PI control to make the outlet superheat degree constant when the air heat exchanger is used at the evaporating side during heating operation and cooling/heating simultaneous operation.
F	Y2E	Electronic expansion valve (Sub: EV2)	
G	Y3E	Electronic expansion valve (Subcool: EV3)	PI control is applied to keep the outlet superheated degree of sub-cooling heat exchanger constant.
H	Y1S	Solenoid valve (Hot gas: SVP)	Used to prevent the low pressure from transient falling.
I	Y2S	Solenoid valve (Oil equalization: SVO)	Used for oil equalizing among outdoor units in multiple-outdoor-unit system.
J	Y3S	Solenoid valve (Receiver gas charging: SVL)	Used to maintain high pressure while in cooling operation at low outdoor temperature. And also used to prevent the accumulation of refrigerant in non-operating outdoor units in the case of multiple-outdoor-unit system.
K	Y4S	Solenoid valve (Receiver gas discharging: SVG)	Used to collect refrigerant to receiver.
L	Y5S	Solenoid valve (Discharge gas pipe closing: SVR)	Used to make the discharge gas pipe pressure high during heating operation and cooling/heating simultaneous operation.
M	Y6S	Solenoid valve (Non-operating unit liquid pipe closing: SVSL)	Used to prevent the accumulation of refrigerant in non-operating outdoor units in the case of multiple-outdoor-unit system.
N	Y7S	Solenoid valve (High pressure gas pipe pressure reduction: SVC)	Used to make the discharge gas pipe pressure low during cooling operation.
O	Y8S	4-way selector valve (Main: 20S1)	Changes the main air heat exchanger into condenser or evaporator.
P	Y9S	4-way selector valve (Sub: 20S2)	Changes the sub air heat exchanger into condenser or evaporator.
Q	S1NPH	High pressure sensor	Used to detect high pressure.
R	S2NPL	Low pressure sensor	Used to detect low pressure.
S	S1PH	HP pressure switch (For INV compressor)	In order to prevent the increase of high pressure when a malfunction occurs, this switch is activated at high pressure of 3.8 MPa or more to stop the compressor operation.
T	S2PH	HP pressure switch (For STD compressor 1)	
V	–	Fusible plug	In order to prevent the increase of pressure when abnormal heating is caused by fire or others, the fusible part of the plug is molten at a temperature of 70 to 75°C to release the pressure into the atmosphere.
W	–	Pressure regulating valve 1 (Receiver to discharge pipe)	This valve opens at a pressure of 2 to 2.7 MPa or more for prevention of pressure increase, thus resulting in no damage of functional parts due to the increase of pressure in transportation or storage.
X	–	Pressure regulating valve 2 (Liquid pipe to receiver)	
Y	–	Pressure regulating valve 3 (Oil equalizing pipe to discharge pipe)	
Z	–	Pressure regulating valve 4 (Discharge to discharge pipe)	
1	R1T	Thermistor (Outdoor air: Ta)	Used to detect outdoor temperature, correct discharge pipe temperature, and others.
2	R2T	Thermistor (Suction pipe: Ts)	Used to detect suction pipe temperature, keep the suction superheated degree constant in heating operation, and others.
3	R31T	Thermistor (INV discharge pipe: Tdi)	Used to detect discharge pipe temperature, make the temperature protection control of compressor, and others.
4	R32T	Thermistor (STD1 discharge pipe: Tds1)	
6	R4T	Thermistor (Heat exchanger deicer: Tb)	Used to detect liquid pipe temperature of air heat exchanger, determine defrosting operation, and others.
7	R5T	Thermistor (Sub-cooling heat exchanger gas pipe: Tsh)	Used to detect gas pipe temperature on the evaporation side of sub-cooling heat exchanger, keep the superheated degree at the outlet of sub-cooling heat exchanger constant, and others.
8	R6T	Thermistor (Receiver outlet liquid pipe: Tl)	Used to detect receiver outlet liquid pipe temperature, prevent the drift between outdoor units while in heating operation in the case of multiple-outdoor-unit system, and others.
9	R7T	Thermistor (Oil equalizing pipe: To)	Used to detect oil equalizing pipe temperature, opening/closing of the oil equalizing pipe stop valve, and others.
10	R81T	Thermistor (Main heat exchanger gas pipe: Tg1)	Detects the gas pipe temperature of the main air heat exchanger. Used for the control making the outlet superheat degree of main air heat exchanger constant, etc.
11	R82T	Thermistor (Sub heat exchanger gas pipe: Tg2)	Detects the gas pipe temperature of the sub air heat exchanger. Used for the control making the outlet superheat degree of sub air heat exchanger constant, etc.

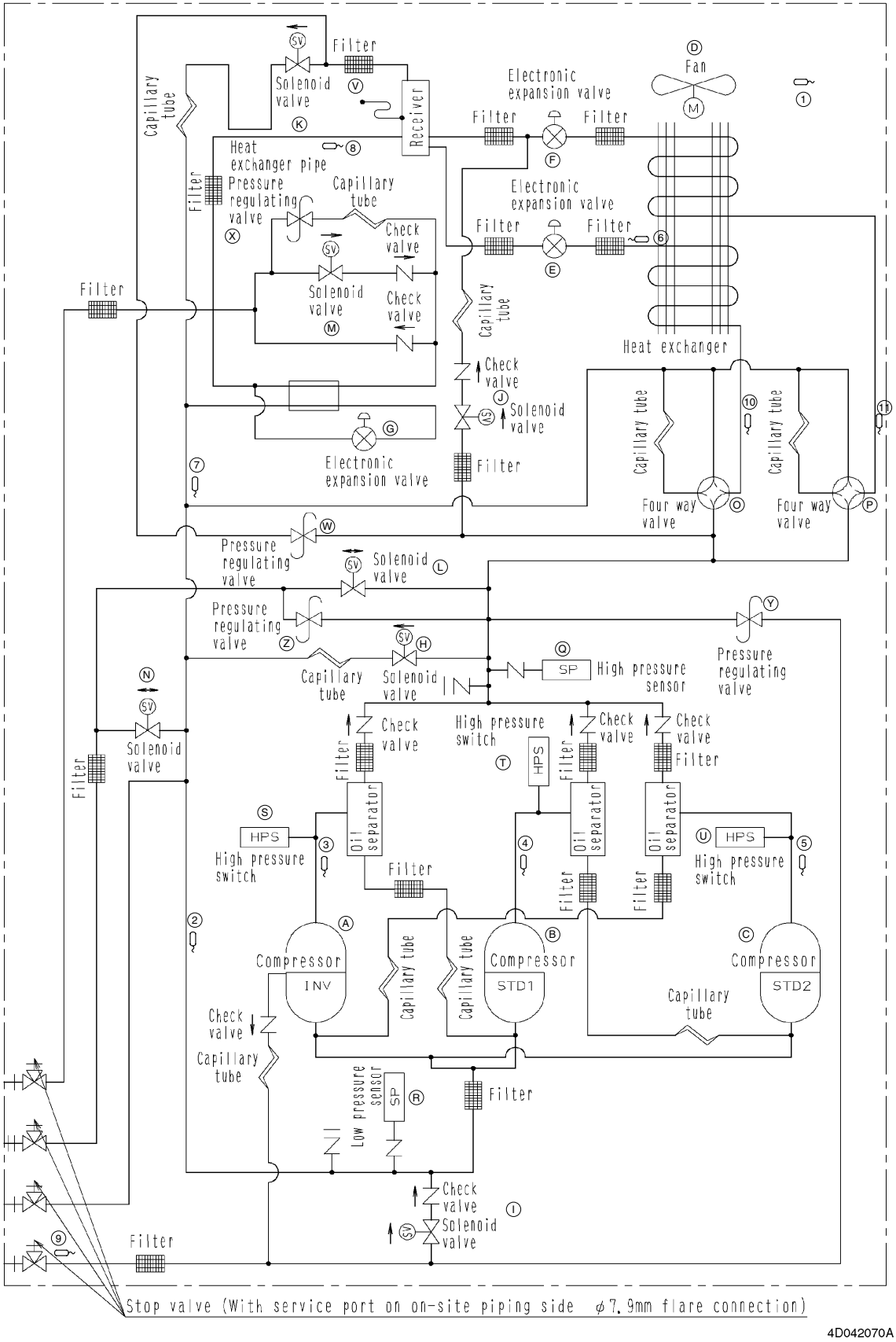
REYQ8, 10, 12M


Filter
Solenoid valve
Capillary tube
Receiver
Electronic expansion valve
Fan
Heat exchanger pipe
Pressure regulating valve
Check valve
Heat exchanger
Four way valve
High pressure sensor
High pressure switch
Oil separator
Compressor
INV
STD1
Low pressure sensor
Stop valve (With service port on on-site piping side φ7.9mm flare connection)
4D042069A

1.2 REYQ14, 16M

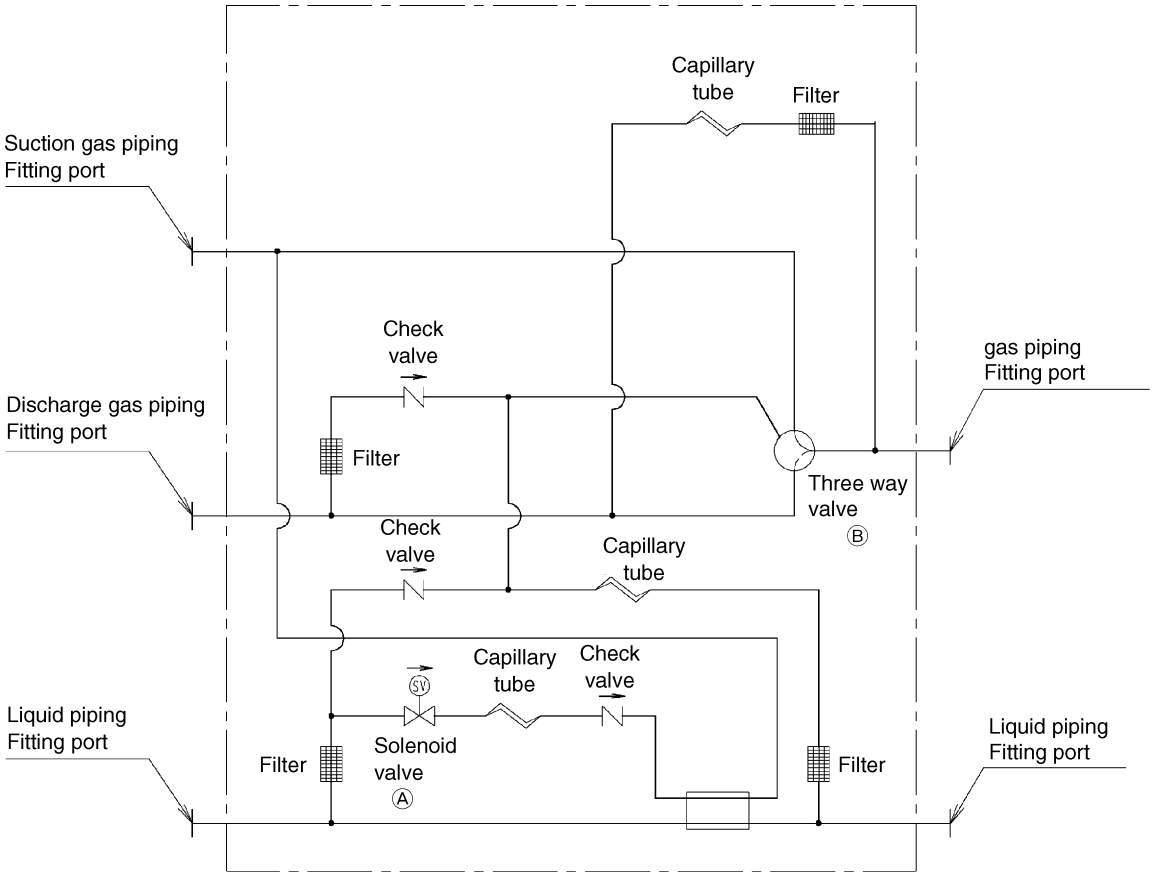
No. in refrigerant system diagram	Symbol	Name	Major Function
A	M1C	Inverter compressor (INV)	Inverter compressor is operated on frequencies between 52 Hz and 210 Hz by using the inverter, while Standard compressor is operated with commercial power supply only. The number of operating steps is as follows when Inverter compressor is operated in combination with Standard compressor. REYQ14, 16M : 35 steps
B	M2C	Standard compressor 1 (STD1)	
C	M3C	Standard compressor 2 (STD2)	
D	M1F	Inverter fan	Since the system is of air heat exchanging type, the fan is operated at 8-step rotation speed by using the inverter.
E	Y1E	Electronic expansion valve (Main: EV1)	Conducts PI control to make the outlet superheat degree constant when the air heat exchanger is used at the evaporating side during heating operation and cooling/heating simultaneous operation.
F	Y2E	Electronic expansion valve (Sub: EV2)	
G	Y3E	Electronic expansion valve (Subcool: EV3)	PI control is applied to keep the outlet superheated degree of sub-cooling heat exchanger constant.
H	Y1S	Solenoid valve (Hot gas: SVP)	Used to prevent the low pressure from transient falling.
I	Y2S	Solenoid valve (Oil equalization: SVO)	Used for oil equalizing among outdoor units in multiple-outdoor-unit system.
J	Y3S	Solenoid valve (Receiver gas charging: SVL)	Used to maintain high pressure while in cooling operation at low outdoor temperature. And also used to prevent the accumulation of refrigerant in non-operating outdoor units in the case of multiple-outdoor-unit system.
K	Y4S	Solenoid valve (Receiver gas discharging: SVG)	Used to collect refrigerant to receiver.
L	Y5S	Solenoid valve (Discharge gas pipe closing: SVR)	Used to make the discharge gas pipe pressure high during heating operation and cooling/heating simultaneous operation.
M	Y6S	Solenoid valve (Non-operating unit liquid pipe closing: SVSL)	Used to prevent the accumulation of refrigerant in non-operating outdoor units in the case of multiple-outdoor-unit system.
N	Y7S	Solenoid valve (High pressure gas pipe pressure reduction: SVC)	Used to make the discharge gas pipe pressure low during cooling operation.
O	Y8S	4-way selector valve (Main: 20S1)	Changes the main air heat exchanger into condenser or evaporator.
P	Y9S	4-way selector valve (Sub: 20S2)	Changes the sub air heat exchanger into condenser or evaporator.
Q	S1NPH	High pressure sensor	Used to detect high pressure.
R	S2NPL	Low pressure sensor	Used to detect low pressure.
S	S1PH	HP pressure switch (For INV compressor)	In order to prevent the increase of high pressure when a malfunction occurs, this switch is activated at high pressure of 3.8 MPa or more to stop the compressor operation.
T	S2PH	HP pressure switch (For STD compressor 1)	
U	S3PH	HP pressure switch (For STD compressor 2)	
V	–	Fusible plug	In order to prevent the increase of pressure when abnormal heating is caused by fire or others, the fusible part of the plug is molten at a temperature of 70 to 75°C to release the pressure into the atmosphere.
W	–	Pressure regulating valve 1(Receiver to discharge pipe)	This valve opens at a pressure of 2 to 2.7 MPa or more for prevention of pressure increase, thus resulting in no damage of functional parts due to the increase of pressure in transportation or storage.
X	–	Pressure regulating valve 2(Liquid pipe to receiver)	
Y	–	Pressure regulating valve 3 (Oil equalizing pipe to discharge pipe)	
Z	–	Pressure regulating valve 4 (Discharge to discharge pipe)	
1	R1T	Thermistor (Outdoor air: Ta)	Used to detect outdoor temperature, correct discharge pipe temperature, and others.
2	R2T	Thermistor (Suction pipe: Ts)	Used to detect suction pipe temperature, keep the suction superheated degree constant in heating operation, and others.
3	R31T	Thermistor (INV discharge pipe: Tdi)	Used to detect discharge pipe temperature, make the temperature protection control of compressor, and others.
4	R32T	Thermistor (STD1 discharge pipe: Tds1)	
5	R33T	Thermistor (STD2 discharge pipe: Tds2)	
6	R4T	Thermistor (Heat exchanger deicer: Tb)	Used to detect liquid pipe temperature of air heat exchanger, determine defrosting operation, and others.
7	R5T	Thermistor (Sub-cooling heat exchanger gas pipe: Tsh)	Used to detect gas pipe temperature on the evaporation side of sub-cooling heat exchanger, keep the superheated degree at the outlet of sub-cooling heat exchanger constant, and others.
8	R6T	Thermistor (Receiver outlet liquid pipe: Tl)	Used to detect receiver outlet liquid pipe temperature, prevent the drift between outdoor units while in heating operation in the case of multiple-outdoor-unit system, and others.
9	R7T	Thermistor (Oil equalizing pipe: To)	Used to detect oil equalizing pipe temperature, opening/closing of the oil equalizing pipe stop valve, and others.
10	R81T	Thermistor (Main heat exchanger gas pipe: Tg1)	Detects the gas pipe temperature of the main air heat exchanger. Used for the control making the outlet superheat degree of main air heat exchanger constant, etc.
11	R82T	Thermistor (Sub heat exchanger gas pipe: Tg2)	Detects the gas pipe temperature of the sub air heat exchanger. Used for the control making the outlet superheat degree of sub air heat exchanger constant, etc.

REYQ14, 16M


Filter
Solenoid valve
Capillary tube
Receiver
Electronic expansion valve
Fan
Heat exchanger pipe
Pressure regulating valve
Check valve
Heat exchanger
Four way valve
High pressure sensor
High pressure switch
HPS
Oil separator
Compressor
INV
STD1
STD2
Low pressure sensor
SP
Stop valve (With service port on on-site piping side φ7.9mm flare connection)
4D042070A

1.3 BSVQ100, 160, 250M

No.	Symbol	Name	Major function
A	Y1S	Solenoid valve (20RT)	Used to sub-cool the liquid refrigerant
B	Y3S	Solenoid valve (20RH)	Used to changeover the cooling and heating operation of indoor units



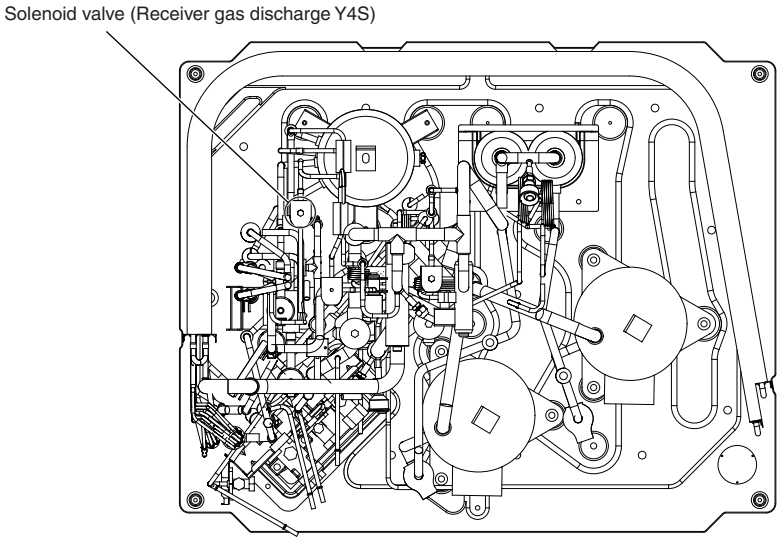
4D042043

2. Functional Parts Layout

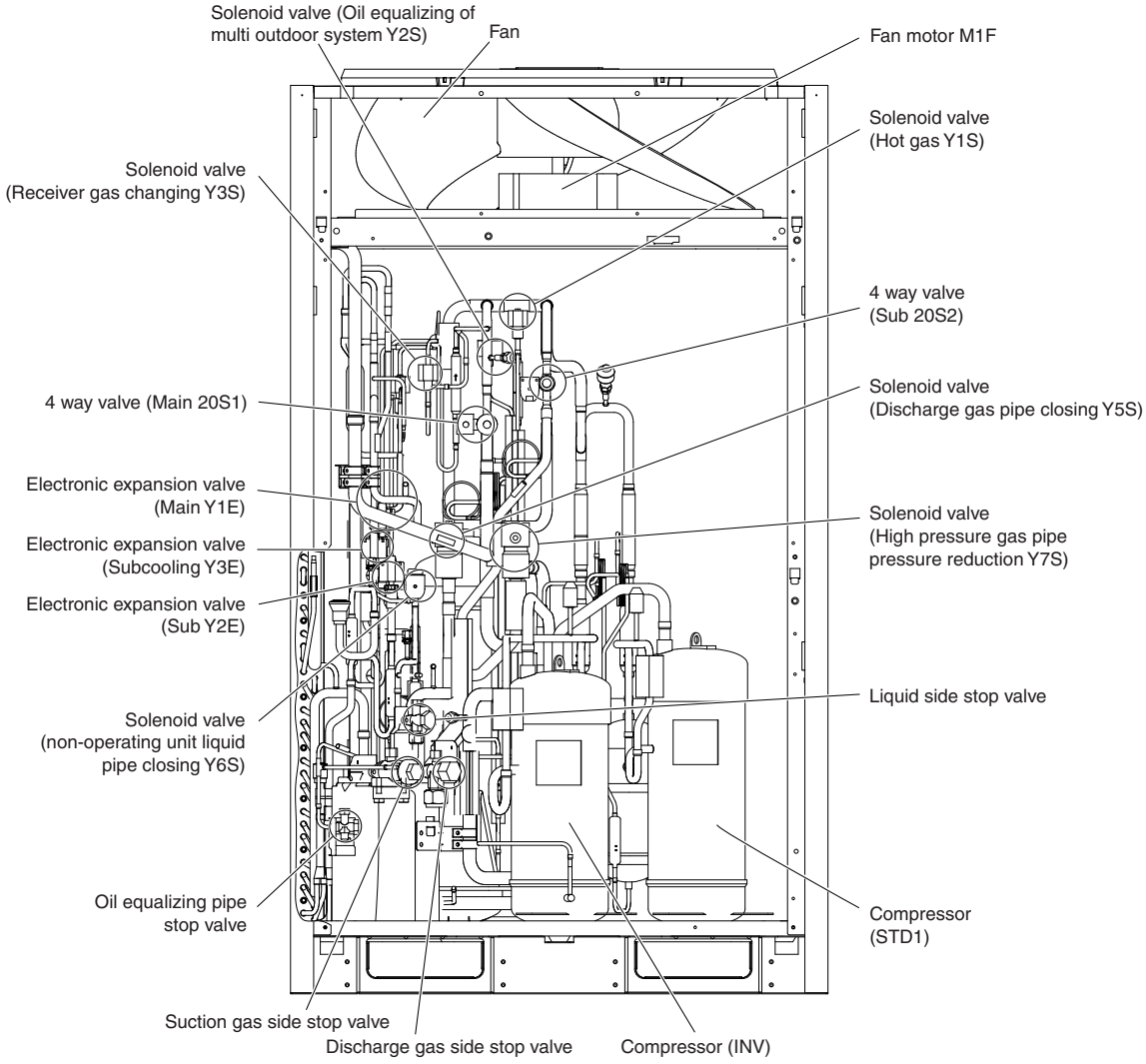
2.1 REYQ8, 10, 12M

2.1.1 Functional Parts Layout (Solenoid Valve etc.)

Plan

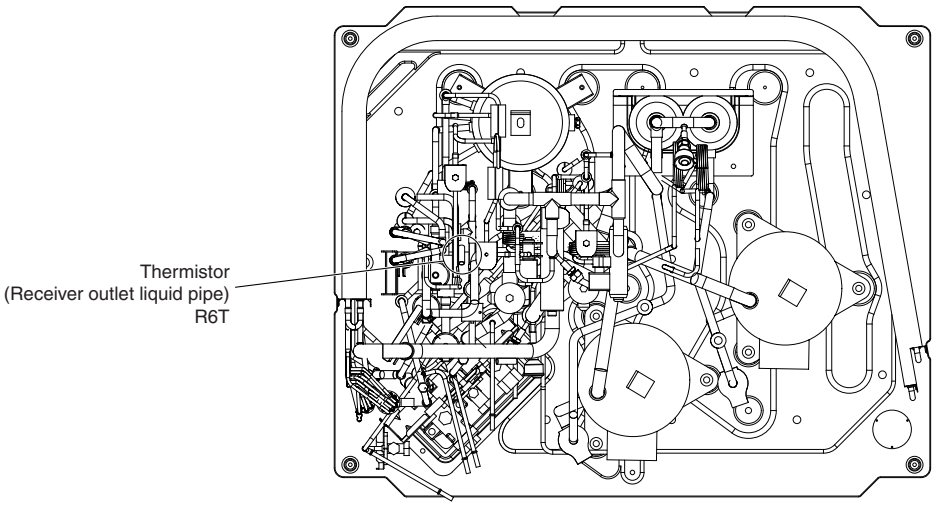


Front view

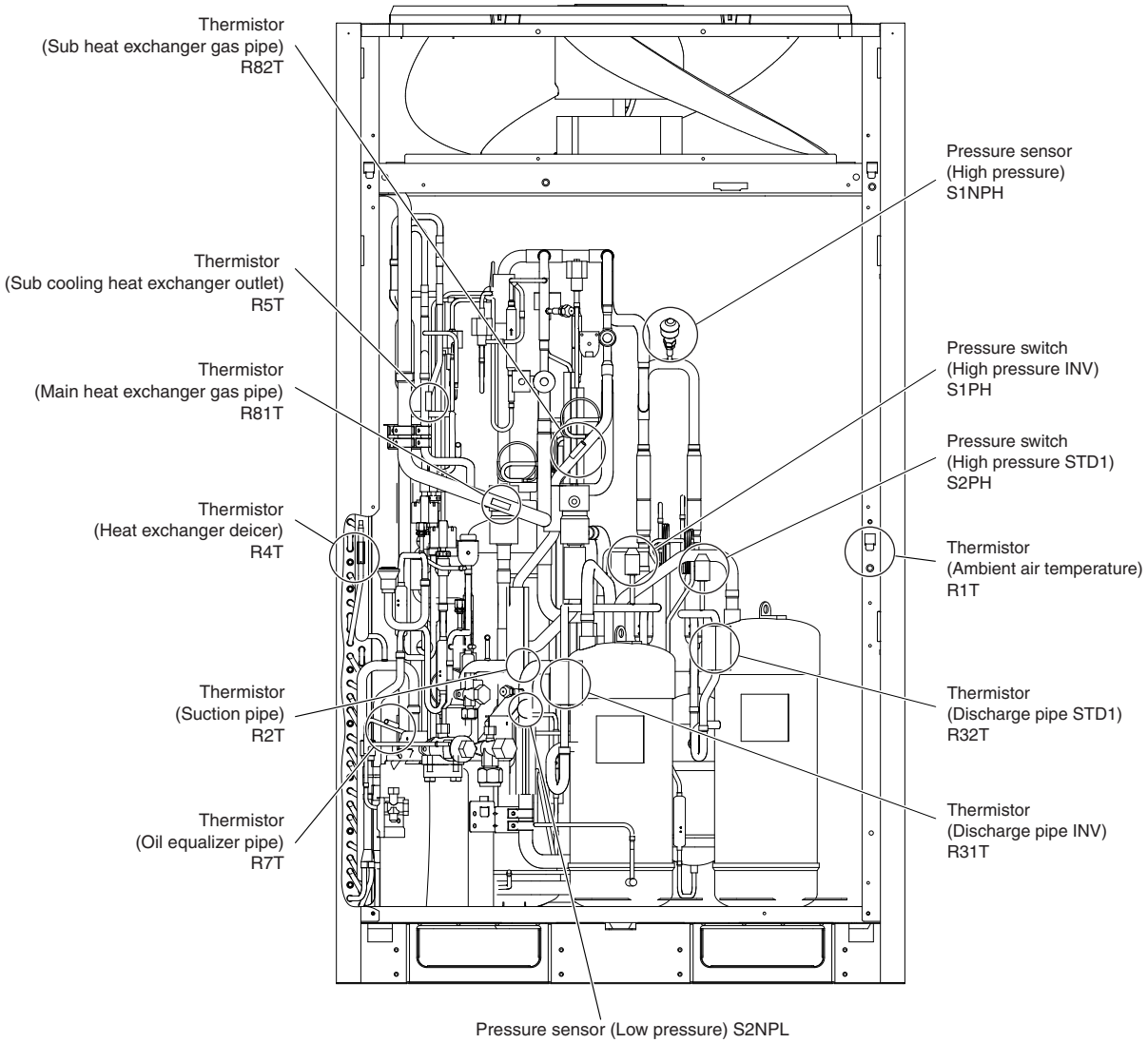


2.1.2 Sensor, Pressure Switch Relating

Plan



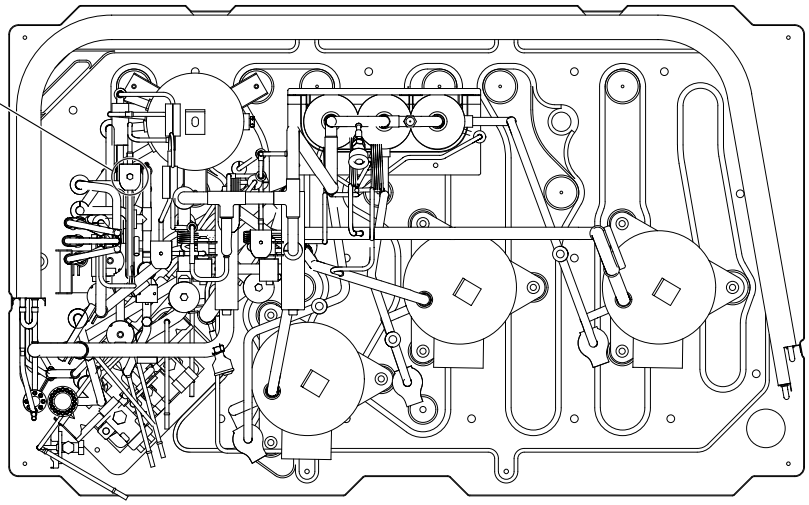
Front View



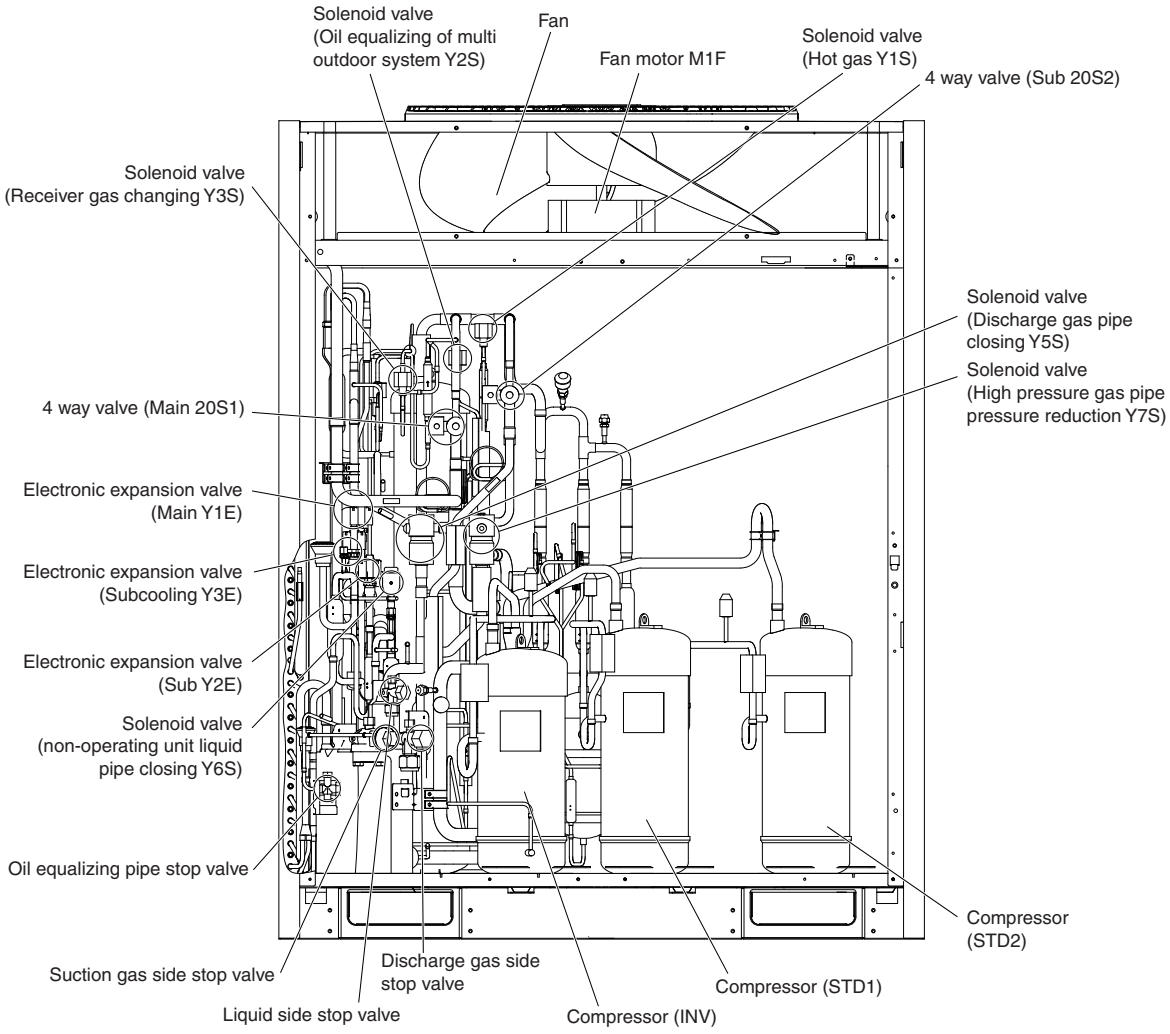
2.2 REYQ14, 16M

2.2.1 Functional Parts Layout (Solenoid Valve etc.)

Plan

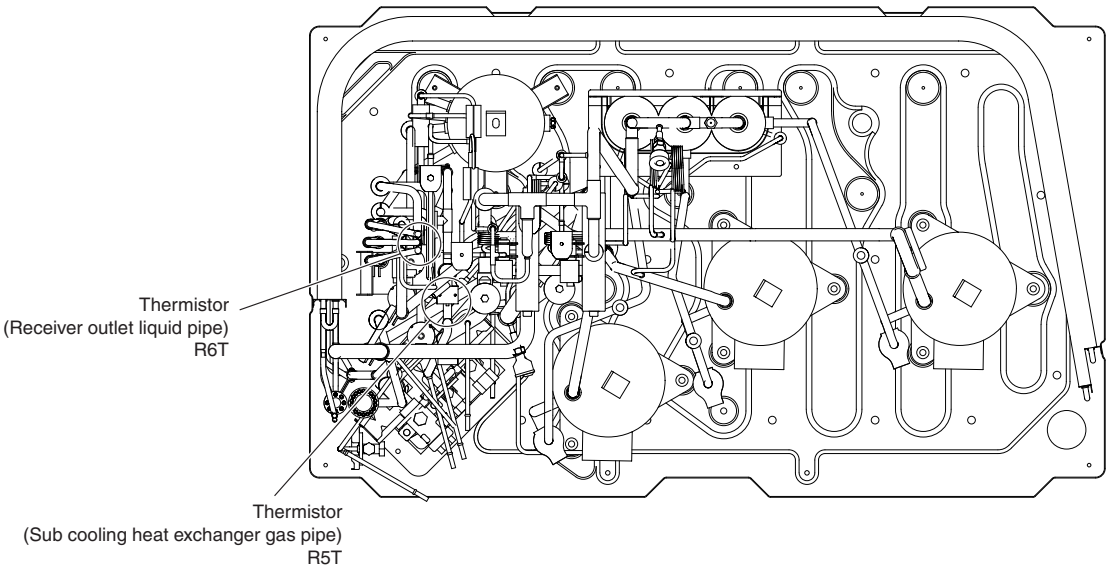


Front View

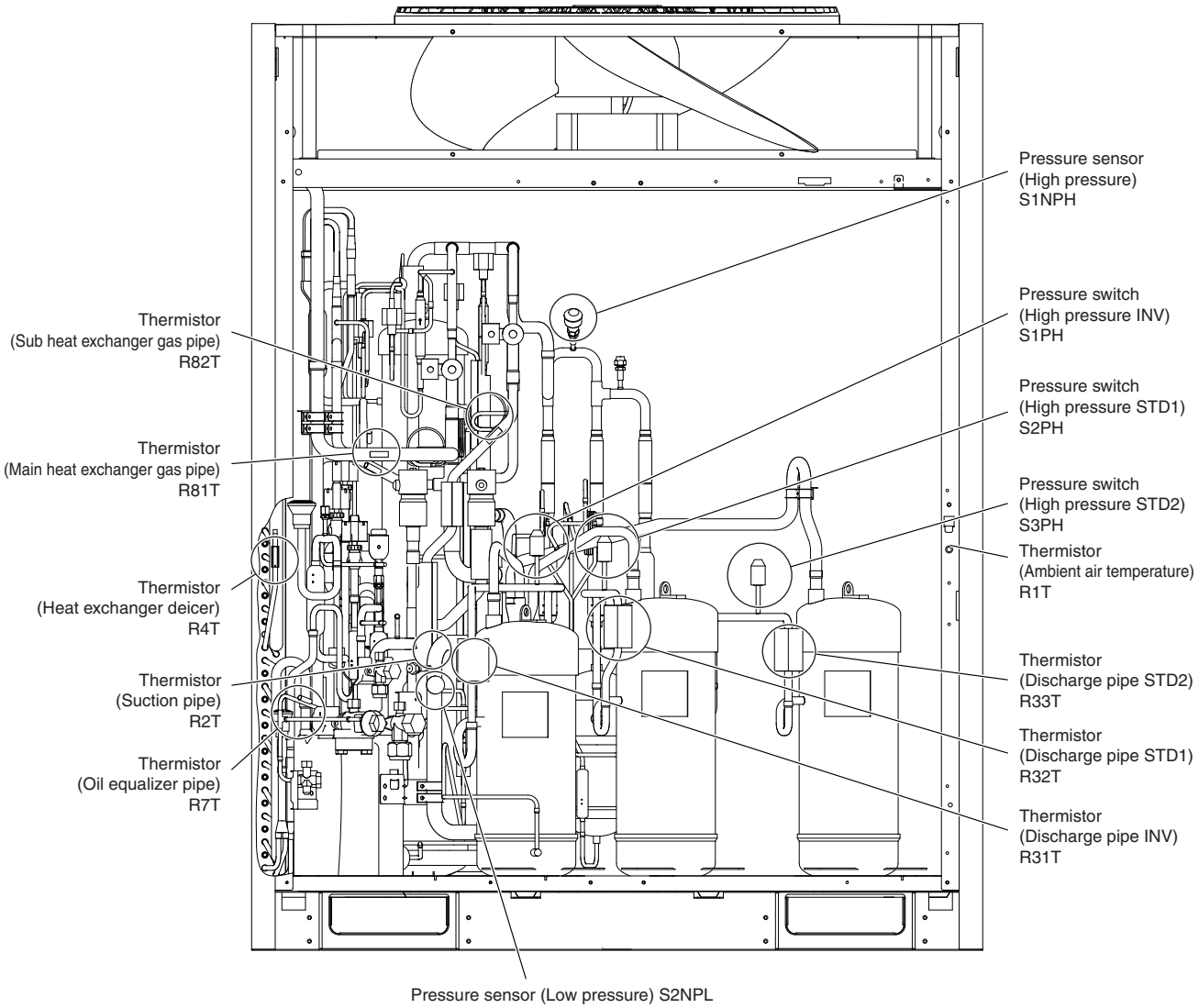


2.2.2 Sensor, Pressure Switch Relating

Plan

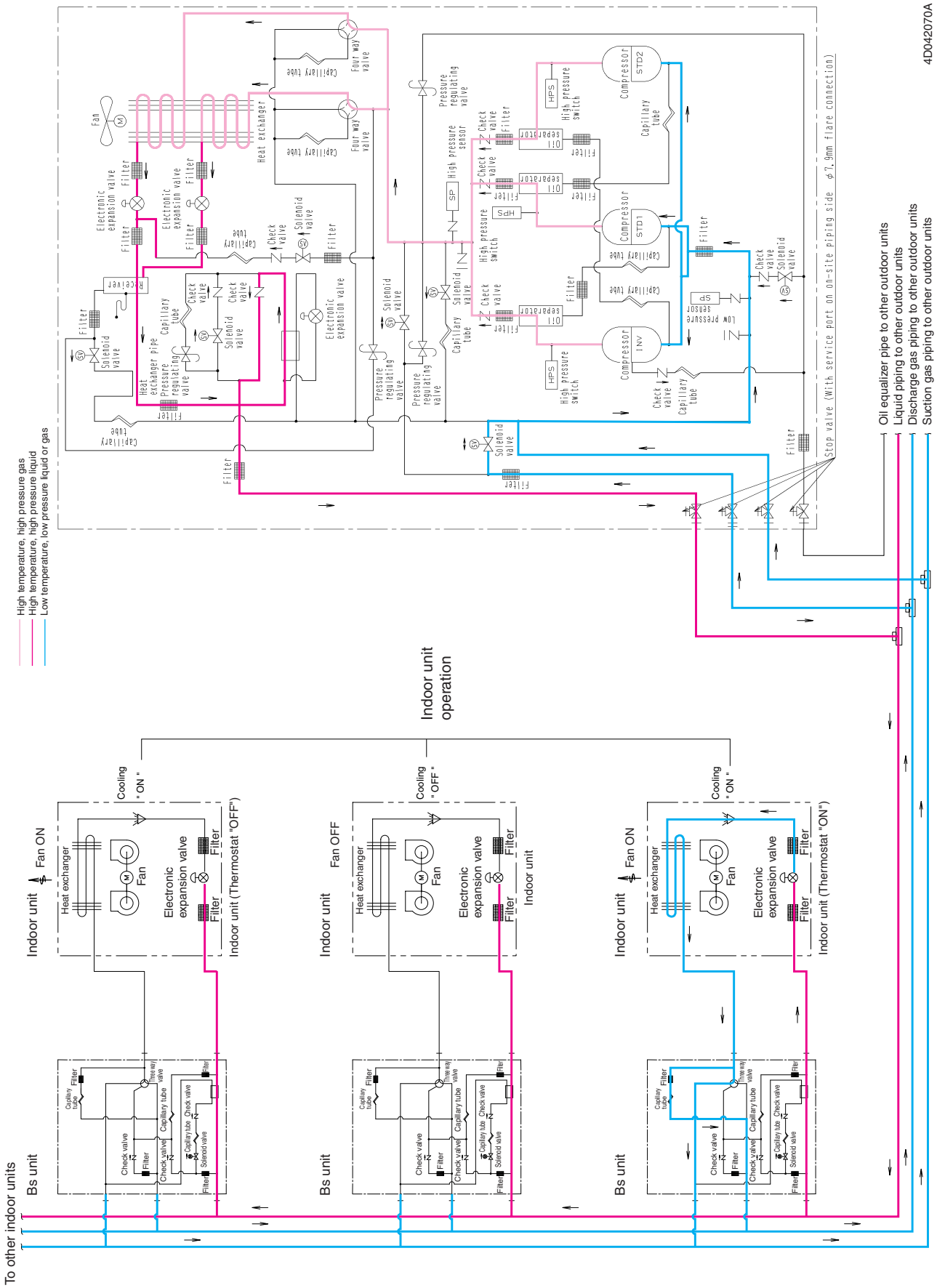


Front View

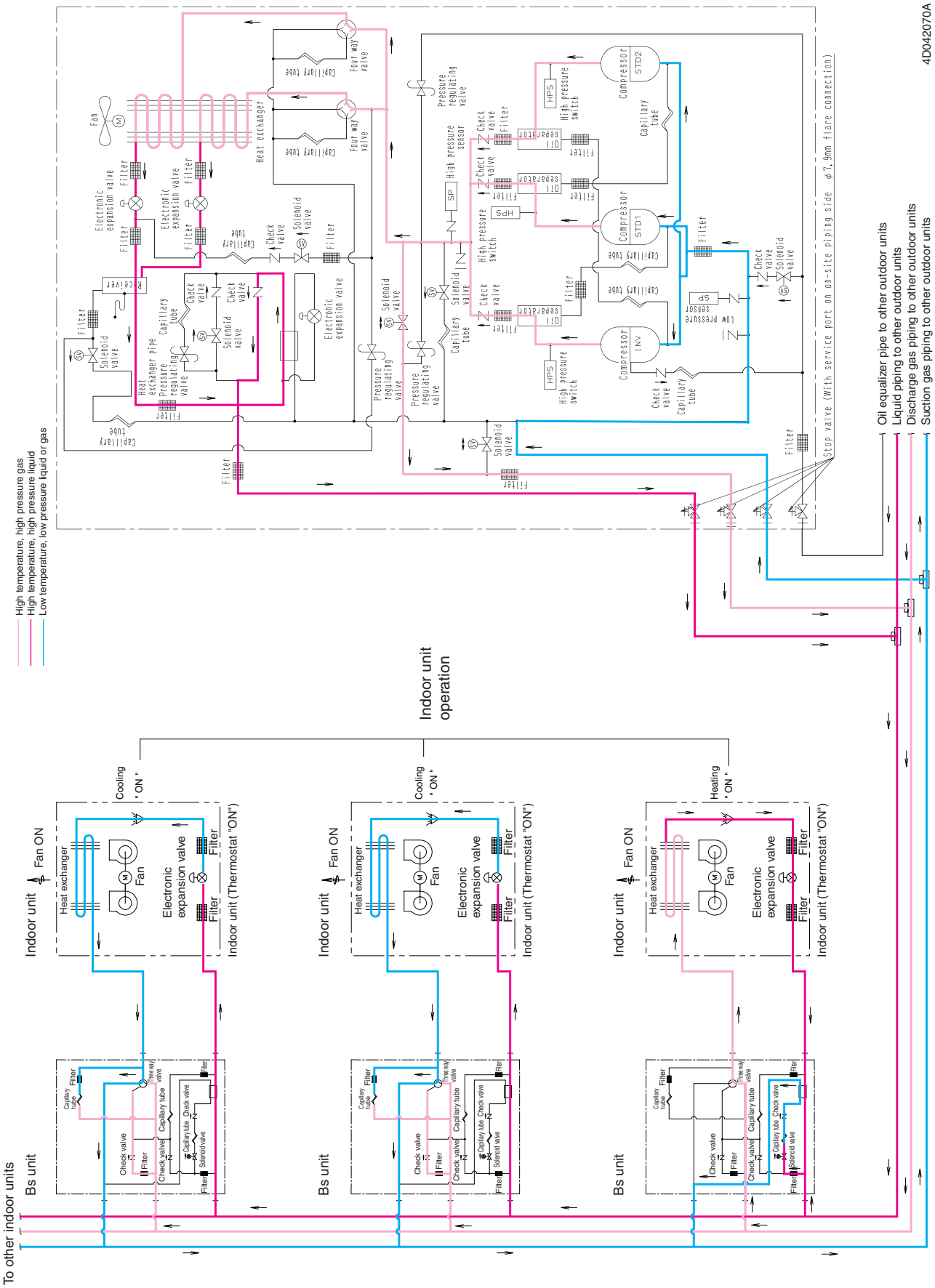


3. Refrigerant Flow for Each Operation Mode

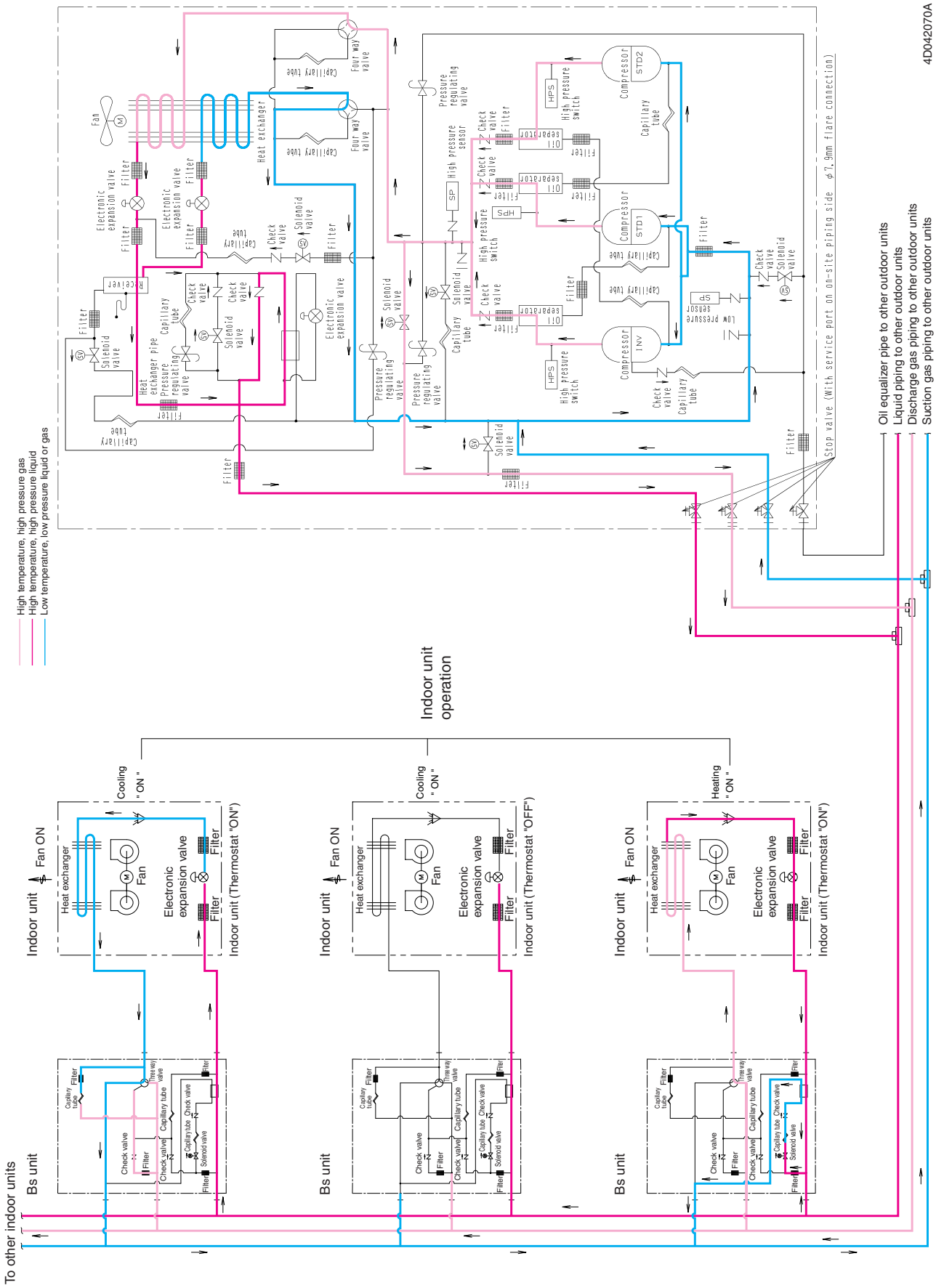
Cooling Operation



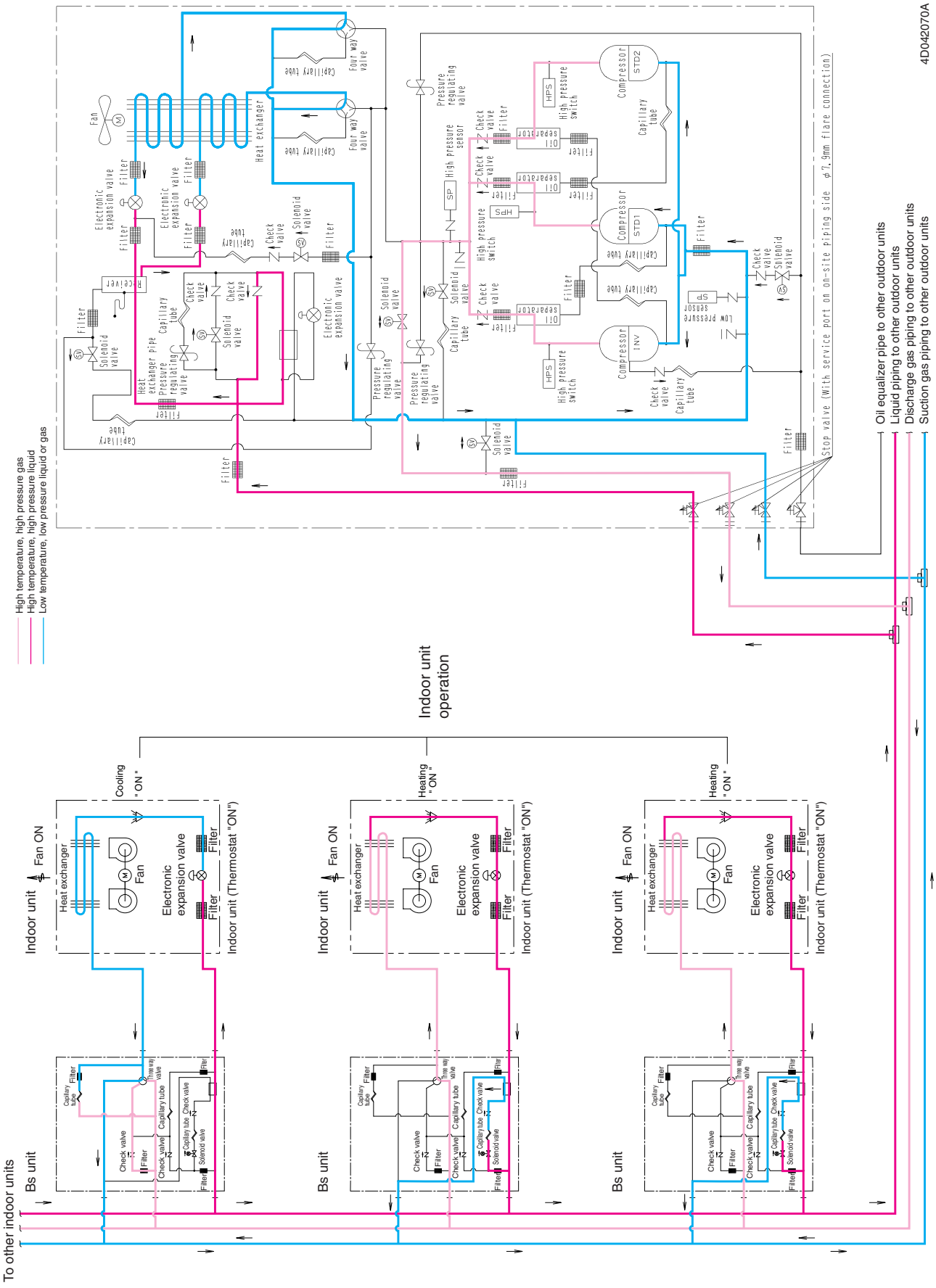
Simultaneous Cooling/Heating Operation-MODE A



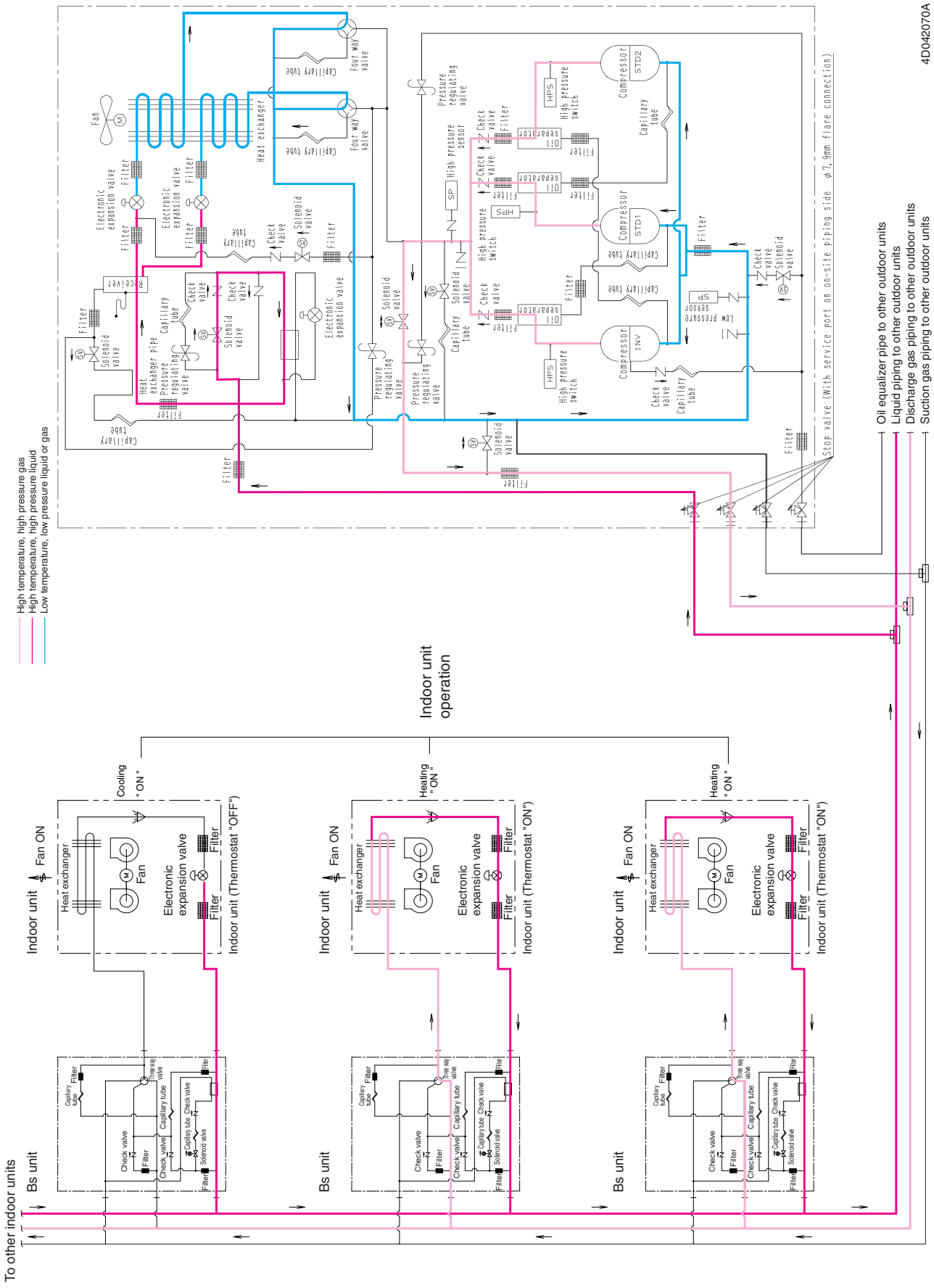
Simultaneous Cooling/Heating Operation-MODE B



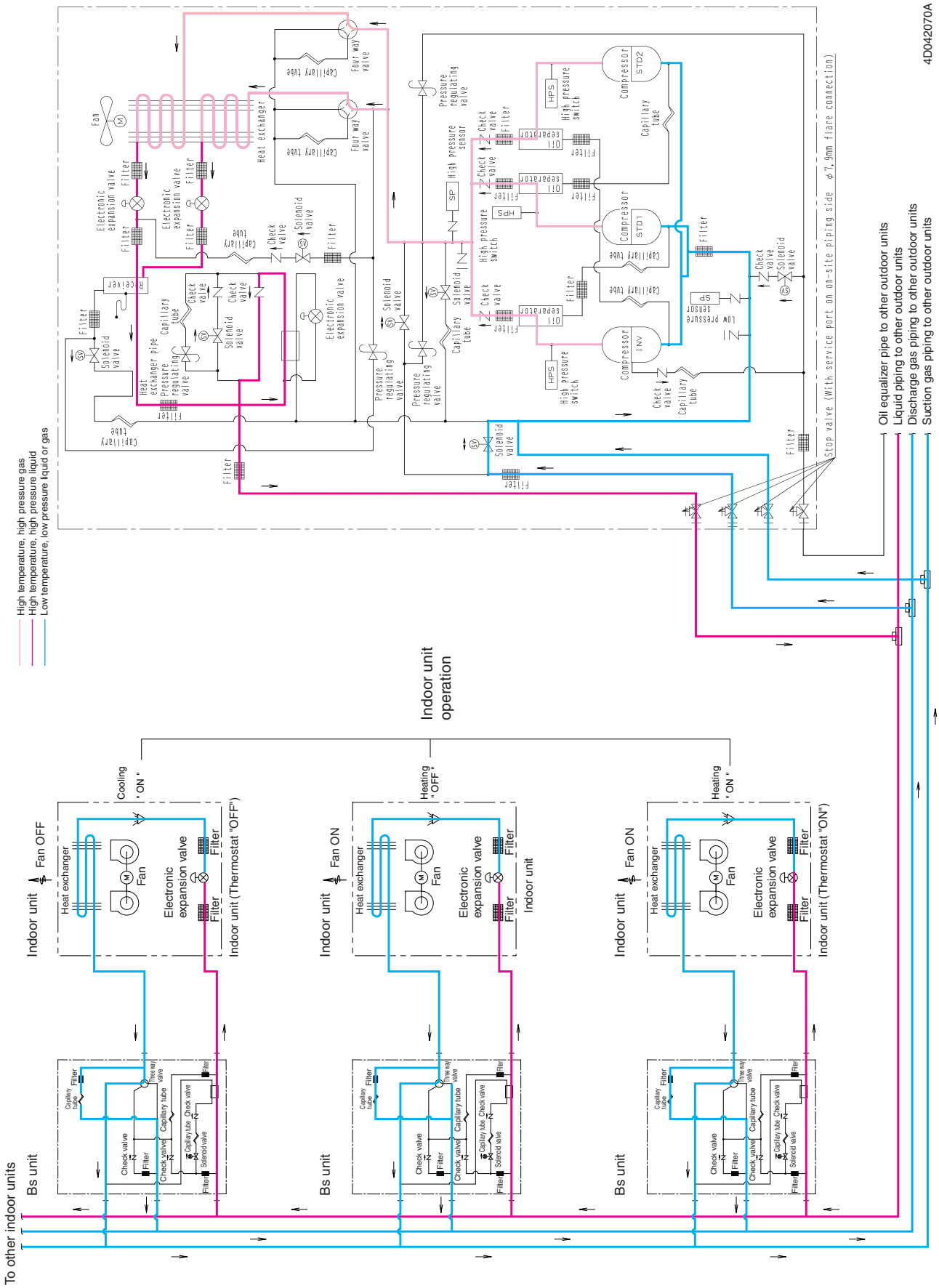
Heating or Simultaneous Cooling/Heating Operation-MODE C (In case there are indoor units operating with cooling thermostat “ON”.)



Heating or Simultaneous Cooling/Heating Operation-MODE C (In case there are indoor units operating all heating or not operation by cooling thermostat “OFF”.)

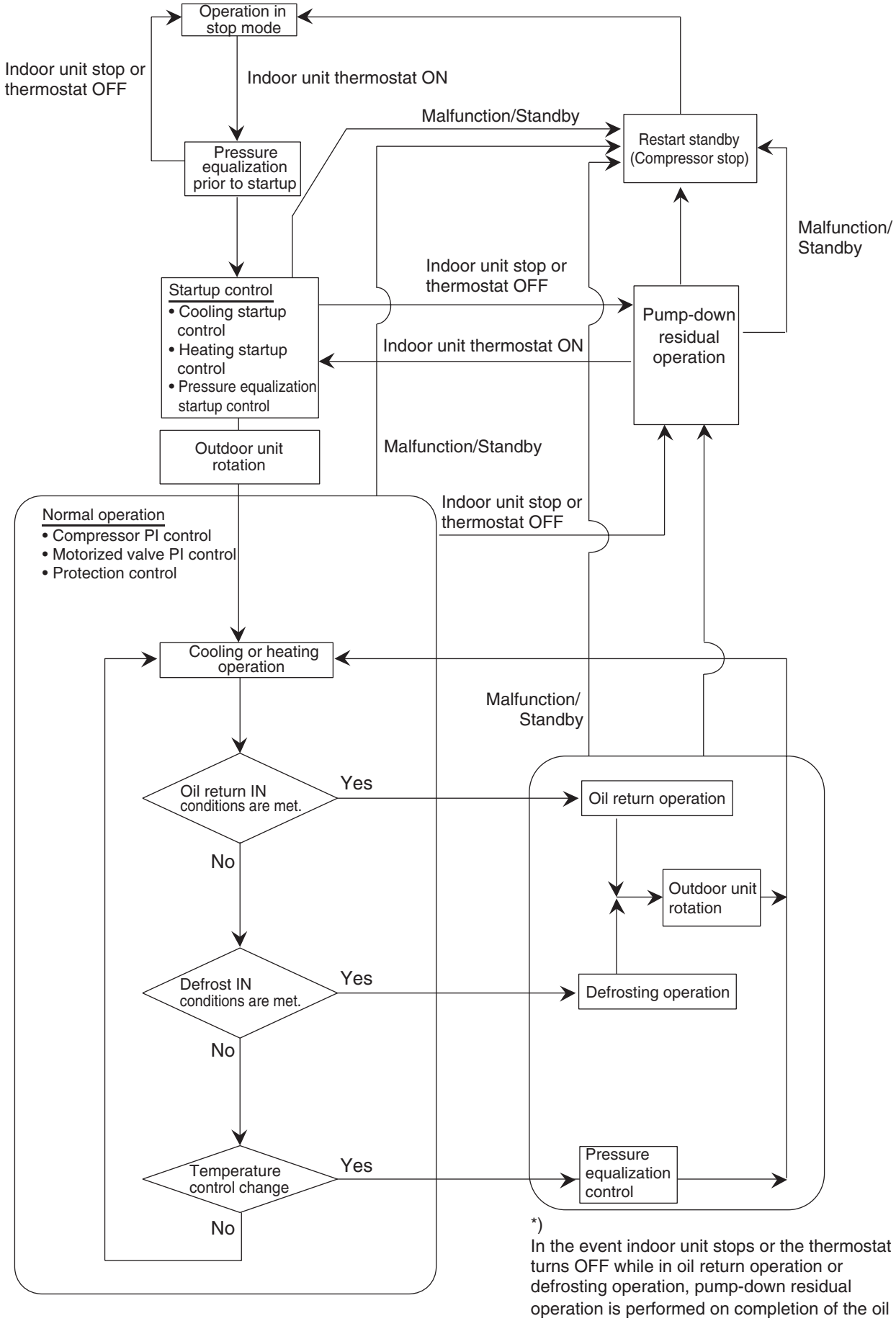


Oil Return or Defrost Operation



Part 4
Function

1. Operation Mode



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

2. Basic Control

2.1 Normal Operation

■ Cooling Operation

Actuator	Operation	Remarks
Compressor	Compressor PI control	Used for high pressure control, low pressure protection control,discharge pipe temperature protection control, and compressor operating frequency upper limit control with inverter protection control.
Outdoor unit fan	Cooling fan control	—
Four way valve 1	OFF	—
Four way valve 2	OFF	—
Main motorized valve (EV1)	1400 pls	—
Sub motorized valve (EV2)	1400 pls	—
Sub-cooling motorized valve (EV3)	PI control	—
Hot gas bypass valve (SVP)	OFF	This valve turns on with low pressure protection control.
Oil equalization valve (SVO)	ON	In the case of multi-outdoor-unit system, this valve repeats ON/OFF operation at regular intervals of time.
Receiver gas charging valve (SVL)	OFF	This valve turns on when outdoor temperature is low.
Receiver gas discharge valve (SVG)	OFF	—
Discharge pipe stop valve (SVR)	OFF	—
Non-operating unit liquid pipe stop valve (SVSL)	OFF	—
High pressure gas pipe pressure reduction valve (SVC)	ON	—

■ In heating operation, or heating / cooling operation

Actuator	Operation	Remarks
Compressor	Compressor PI control	Used for high pressure control, low pressure protection control,discharge pipe temperature protection control, and compressor operating frequency upper limit control with inverter protection control.
Outdoor unit fan	Cooling fan control	—
Four way valve 1	OFF	—
Four way valve 2	OFF	—
Main motorized valve (EV1)	1400 pls	—
Sub motorized valve (EV2)	1400 pls	—
Sub-cooling motorized valve (EV3)	PI control	—
Hot gas bypass valve (SVP)	OFF	This valve turns on with low pressure protection control.
Oil equalization valve (SVO)	ON	In the case of multi-outdoor-unit system, this valve repeats ON/OFF operation at regular intervals of time.
Receiver gas charging valve (SVL)	OFF	This valve turns on when outdoor temperature is low.
Receiver gas discharge valve (SVG)	OFF	—
Discharge pipe stop valve (SVR)	OFF	—
Non-operating unit liquid pipe stop valve (SVSL)	OFF	—
High pressure gas pipe pressure reduction valve (SVC)	ON	—

★Heating operation is not functional at an outdoor air temperature of 25°C or more.

2.2 Compressor PI Control

Compressor PI Control

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

[Cooling operation]

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

Te : Low pressure equivalent saturation temperature (°C)

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

Te setting

L	M (Normal) (factory setting)	H
3	6	9

[Heating operation]

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

Tc : High pressure equivalent saturation temperature (°C)

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

Tc setting

L	M (Normal) (factory setting)	H
43	46	49

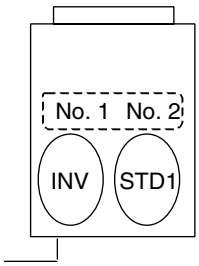
■ Compressor Operating Priority

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.

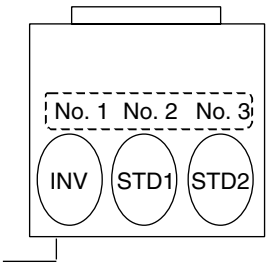
INV: Inverter compressor
STD1: Standard compressor 1
STD2: Standard compressor 2

Pattern 1 Pattern 2 Pattern 3

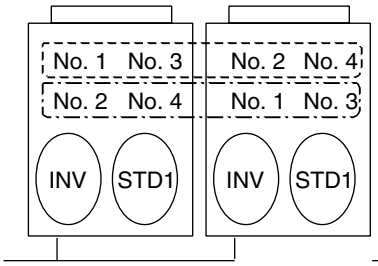
REYQ8,10,12M



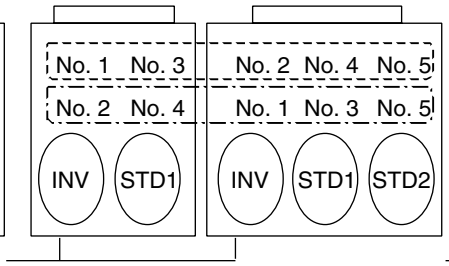
REYQ14,16M



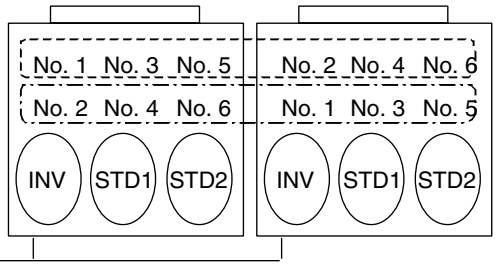
REYQ18,20,22M



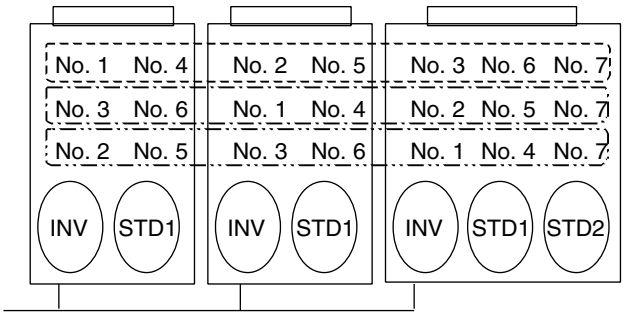
REYQ24,26,28M



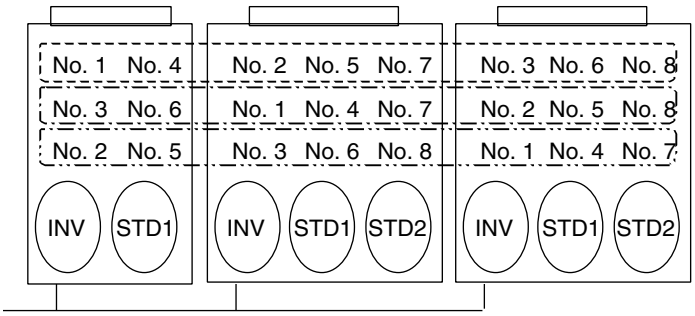
REYQ30,32M



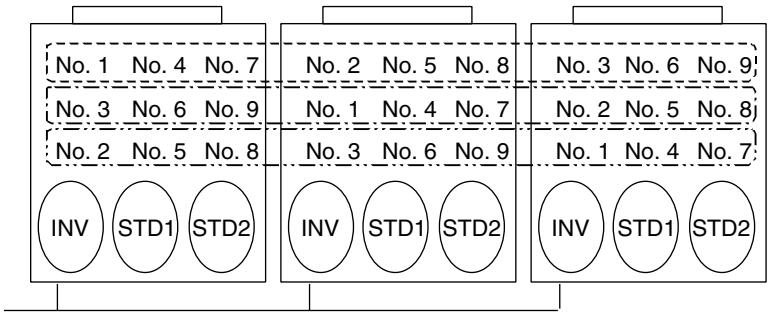
REYQ34,36,38M



REYQ40,42,44M



REYQ46,48M



*

- 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.
- Compressors may operate in any pattern other than those mentioned above according to the operating status.

REYQ8,10,12M

STEP	INV	STD1
1	52Hz	OFF
2	57Hz	OFF
3	62Hz	OFF
4	68Hz	OFF
5	74Hz	OFF
6	81Hz	OFF
7	88Hz	OFF
8	96Hz	OFF
9	104Hz	OFF
10	110Hz	OFF
11	116Hz	OFF
12	124Hz	OFF
13	133Hz	OFF
14	143Hz	OFF
15	158Hz	OFF
16	165Hz	OFF
17	177Hz	OFF
18	189Hz	OFF
19	202Hz	OFF
20	210Hz	OFF
21	52Hz	ON
22	74Hz	ON
23	96Hz	ON
24	116Hz	ON
25	133Hz	ON
26	158Hz	ON
27	177Hz	ON
28	202Hz	ON
29	210Hz	ON

REYQ14,16M

STEP	INV	STD1	STD2
1	52Hz	OFF	OFF
2	57Hz	OFF	OFF
3	62Hz	OFF	OFF
4	68Hz	OFF	OFF
5	74Hz	OFF	OFF
6	81Hz	OFF	OFF
7	88Hz	OFF	OFF
8	96Hz	OFF	OFF
9	104Hz	OFF	OFF
10	110Hz	OFF	OFF
11	116Hz	OFF	OFF
12	124Hz	OFF	OFF
13	133Hz	OFF	OFF
14	143Hz	OFF	OFF
15	158Hz	OFF	OFF
16	165Hz	OFF	OFF
17	177Hz	OFF	OFF
18	189Hz	OFF	OFF
19	202Hz	OFF	OFF
20	210Hz	OFF	OFF
21	52Hz	ON	OFF
22	74Hz	ON	OFF
23	96Hz	ON	OFF
24	116Hz	ON	OFF
25	133Hz	ON	OFF
26	158Hz	ON	OFF
27	177Hz	ON	OFF
28	202Hz	ON	OFF
29	210Hz	ON	OFF
30	52Hz	ON	ON
31	88Hz	ON	ON
32	124Hz	ON	ON
33	158Hz	ON	ON
34	189Hz	ON	ON
35*	210Hz	ON	ON

*)Available only on 50Hz

REYQ18,20,22M

STEP	Master unit INV	Slave unit INV	STD unit No.1	STD unit No.2
1	52Hz	OFF	OFF	OFF
2	57Hz	OFF	OFF	OFF
3	62Hz	OFF	OFF	OFF
4	68Hz	OFF	OFF	OFF
5	74Hz	OFF	OFF	OFF
6	81Hz	OFF	OFF	OFF
7	88Hz	OFF	OFF	OFF
8	96Hz	OFF	OFF	OFF
9	104Hz	OFF	OFF	OFF
10	110Hz	OFF	OFF	OFF
11	116Hz	OFF	OFF	OFF
12	124Hz	OFF	OFF	OFF
13	133Hz	OFF	OFF	OFF
14	143Hz	OFF	OFF	OFF
15	158Hz	OFF	OFF	OFF
16	165Hz	OFF	OFF	OFF
17	177Hz	OFF	OFF	OFF
18	189Hz	OFF	OFF	OFF
19	202Hz	OFF	OFF	OFF
20	210Hz	OFF	OFF	OFF
21	52Hz	189Hz	OFF	OFF
22	74Hz	189Hz	OFF	OFF
23	96Hz	189Hz	OFF	OFF
24	116Hz	189Hz	OFF	OFF
25	133Hz	189Hz	OFF	OFF
26	158Hz	189Hz	OFF	OFF
27	177Hz	189Hz	OFF	OFF
28	202Hz	189Hz	OFF	OFF
29	210Hz	189Hz	OFF	OFF
30	52Hz	189Hz	ON	OFF
31	88Hz	189Hz	ON	OFF
32	124Hz	189Hz	ON	OFF
33	158Hz	189Hz	ON	OFF
34	189Hz	189Hz	ON	OFF
35	210Hz	189Hz	ON	OFF
36	52Hz	189Hz	ON	ON
37	88Hz	189Hz	ON	ON
38	124Hz	189Hz	ON	ON
39	158Hz	189Hz	ON	ON
40	189Hz	189Hz	ON	ON
41	210Hz	189Hz	ON	ON
42	210Hz	210Hz	ON	ON

REYQ24,26,28M

STEP	Master unit INV	Slave unit INV	STD unit No.1	STD unit No.2	STD unit No.3
1	52Hz	OFF	OFF	OFF	OFF
2	57Hz	OFF	OFF	OFF	OFF
3	62Hz	OFF	OFF	OFF	OFF
4	68Hz	OFF	OFF	OFF	OFF
5	74Hz	OFF	OFF	OFF	OFF
6	81Hz	OFF	OFF	OFF	OFF
7	88Hz	OFF	OFF	OFF	OFF
8	96Hz	OFF	OFF	OFF	OFF
9	104Hz	OFF	OFF	OFF	OFF
10	110Hz	OFF	OFF	OFF	OFF
11	116Hz	OFF	OFF	OFF	OFF
12	124Hz	OFF	OFF	OFF	OFF
13	133Hz	OFF	OFF	OFF	OFF
14	143Hz	OFF	OFF	OFF	OFF
15	158Hz	OFF	OFF	OFF	OFF
16	165Hz	OFF	OFF	OFF	OFF
17	177Hz	OFF	OFF	OFF	OFF
18	189Hz	OFF	OFF	OFF	OFF
19	202Hz	OFF	OFF	OFF	OFF
20	210Hz	OFF	OFF	OFF	OFF
21	52Hz	189Hz	OFF	OFF	OFF
22	74Hz	189Hz	OFF	OFF	OFF
23	96Hz	189Hz	OFF	OFF	OFF
24	116Hz	189Hz	OFF	OFF	OFF
25	133Hz	189Hz	OFF	OFF	OFF
26	158Hz	189Hz	OFF	OFF	OFF
27	177Hz	189Hz	OFF	OFF	OFF
28	202Hz	189Hz	OFF	OFF	OFF
29	210Hz	189Hz	OFF	OFF	OFF
30	52Hz	189Hz	ON	OFF	OFF
31	88Hz	189Hz	ON	OFF	OFF
32	124Hz	189Hz	ON	OFF	OFF
33	158Hz	189Hz	ON	OFF	OFF
34	189Hz	189Hz	ON	OFF	OFF
35	210Hz	189Hz	ON	OFF	OFF
36	52Hz	189Hz	ON	ON	OFF
37	88Hz	189Hz	ON	ON	OFF
38	124Hz	189Hz	ON	ON	OFF
39	158Hz	189Hz	ON	ON	OFF
40	189Hz	189Hz	ON	ON	OFF
41	210Hz	189Hz	ON	ON	OFF
42	52Hz	189Hz	ON	ON	ON
43	104Hz	189Hz	ON	ON	ON
44	143Hz	189Hz	ON	ON	ON
45	189Hz	189Hz	ON	ON	ON
46	210Hz	189Hz	ON	ON	ON
47	210Hz	210Hz	ON	ON	ON

*

- Compressors are operated in the order of descending priorities.
- Compressors may operate in a pattern other than those listed in above tables subject to the operating conditions.
- “Master unit”, and “slave unit” in this section are the names for control, and they will be transferred according to the priority of rotation system.

REYQ30,32M

STEP	Master unit INV	Slave unit INV	STD unit No.1	STD unit No.2	STD unit No.3	STD unit No.4
1	52Hz	OFF	OFF	OFF	OFF	OFF
2	57Hz	OFF	OFF	OFF	OFF	OFF
3	62Hz	OFF	OFF	OFF	OFF	OFF
4	68Hz	OFF	OFF	OFF	OFF	OFF
5	74Hz	OFF	OFF	OFF	OFF	OFF
6	81Hz	OFF	OFF	OFF	OFF	OFF
7	88Hz	OFF	OFF	OFF	OFF	OFF
8	96Hz	OFF	OFF	OFF	OFF	OFF
9	104Hz	OFF	OFF	OFF	OFF	OFF
10	110Hz	OFF	OFF	OFF	OFF	OFF
11	116Hz	OFF	OFF	OFF	OFF	OFF
12	124Hz	OFF	OFF	OFF	OFF	OFF
13	133Hz	OFF	OFF	OFF	OFF	OFF
14	143Hz	OFF	OFF	OFF	OFF	OFF
15	158Hz	OFF	OFF	OFF	OFF	OFF
16	165Hz	OFF	OFF	OFF	OFF	OFF
17	177Hz	OFF	OFF	OFF	OFF	OFF
18	189Hz	OFF	OFF	OFF	OFF	OFF
19	202Hz	OFF	OFF	OFF	OFF	OFF
20	210Hz	OFF	OFF	OFF	OFF	OFF
21	52Hz	189Hz	OFF	OFF	OFF	OFF
22	74Hz	189Hz	OFF	OFF	OFF	OFF
23	96Hz	189Hz	OFF	OFF	OFF	OFF
24	116Hz	189Hz	OFF	OFF	OFF	OFF
25	133Hz	189Hz	OFF	OFF	OFF	OFF
26	158Hz	189Hz	OFF	OFF	OFF	OFF
27	177Hz	189Hz	OFF	OFF	OFF	OFF
28	202Hz	189Hz	OFF	OFF	OFF	OFF
29	210Hz	189Hz	OFF	OFF	OFF	OFF
30	52Hz	189Hz	ON	OFF	OFF	OFF
31	88Hz	189Hz	ON	OFF	OFF	OFF
32	124Hz	189Hz	ON	OFF	OFF	OFF
33	158Hz	189Hz	ON	OFF	OFF	OFF
34	189Hz	189Hz	ON	OFF	OFF	OFF
35	210Hz	189Hz	ON	OFF	OFF	OFF
36	52Hz	189Hz	ON	ON	OFF	OFF
37	88Hz	189Hz	ON	ON	OFF	OFF
38	124Hz	189Hz	ON	ON	OFF	OFF
39	158Hz	189Hz	ON	ON	OFF	OFF
40	189Hz	189Hz	ON	ON	OFF	OFF
41	210Hz	189Hz	ON	ON	OFF	OFF
42	52Hz	189Hz	ON	ON	ON	OFF
43	104Hz	189Hz	ON	ON	ON	OFF
44	143Hz	189Hz	ON	ON	ON	OFF
45	189Hz	189Hz	ON	ON	ON	OFF
46	210Hz	189Hz	ON	ON	ON	OFF
47	52Hz	189Hz	ON	ON	ON	ON
48	104Hz	189Hz	ON	ON	ON	ON
49	143Hz	189Hz	ON	ON	ON	ON
50	189Hz	189Hz	ON	ON	ON	ON
51	210Hz	189Hz	ON	ON	ON	ON
52	210Hz	210Hz	ON	ON	ON	ON

REYQ34,36,38M

STEP	Master unit INV	Slave unit1 INV	Slave unit2 INV	STD unit No.1	STD unit No.2	STD unit No.3	STD unit No.4
1	52Hz	OFF	OFF	OFF	OFF	OFF	OFF
2	57Hz	OFF	OFF	OFF	OFF	OFF	OFF
3	62Hz	OFF	OFF	OFF	OFF	OFF	OFF
4	68Hz	OFF	OFF	OFF	OFF	OFF	OFF
5	74Hz	OFF	OFF	OFF	OFF	OFF	OFF
6	81Hz	OFF	OFF	OFF	OFF	OFF	OFF
7	88Hz	OFF	OFF	OFF	OFF	OFF	OFF
8	96Hz	OFF	OFF	OFF	OFF	OFF	OFF
9	104Hz	OFF	OFF	OFF	OFF	OFF	OFF
10	110Hz	OFF	OFF	OFF	OFF	OFF	OFF
11	116Hz	OFF	OFF	OFF	OFF	OFF	OFF
12	124Hz	OFF	OFF	OFF	OFF	OFF	OFF
13	133Hz	OFF	OFF	OFF	OFF	OFF	OFF
14	143Hz	OFF	OFF	OFF	OFF	OFF	OFF
15	158Hz	OFF	OFF	OFF	OFF	OFF	OFF
16	165Hz	OFF	OFF	OFF	OFF	OFF	OFF
17	177Hz	OFF	OFF	OFF	OFF	OFF	OFF
18	189Hz	OFF	OFF	OFF	OFF	OFF	OFF
19	202Hz	OFF	OFF	OFF	OFF	OFF	OFF
20	210Hz	OFF	OFF	OFF	OFF	OFF	OFF
21	52Hz	189Hz	OFF	OFF	OFF	OFF	OFF
22	74Hz	189Hz	OFF	OFF	OFF	OFF	OFF
23	96Hz	189Hz	OFF	OFF	OFF	OFF	OFF
24	116Hz	189Hz	OFF	OFF	OFF	OFF	OFF
25	133Hz	189Hz	OFF	OFF	OFF	OFF	OFF
26	158Hz	189Hz	OFF	OFF	OFF	OFF	OFF
27	177Hz	189Hz	OFF	OFF	OFF	OFF	OFF
28	202Hz	189Hz	OFF	OFF	OFF	OFF	OFF
29	210Hz	189Hz	OFF	OFF	OFF	OFF	OFF
30	52Hz	189Hz	189Hz	OFF	OFF	OFF	OFF
31	88Hz	189Hz	189Hz	OFF	OFF	OFF	OFF
32	124Hz	189Hz	189Hz	OFF	OFF	OFF	OFF
33	158Hz	189Hz	189Hz	OFF	OFF	OFF	OFF
34	189Hz	189Hz	189Hz	OFF	OFF	OFF	OFF
35	210Hz	189Hz	189Hz	OFF	OFF	OFF	OFF
36	52Hz	189Hz	189Hz	ON	OFF	OFF	OFF
37	88Hz	189Hz	189Hz	ON	OFF	OFF	OFF
38	124Hz	189Hz	189Hz	ON	OFF	OFF	OFF
39	158Hz	189Hz	189Hz	ON	OFF	OFF	OFF
40	189Hz	189Hz	189Hz	ON	OFF	OFF	OFF
41	210Hz	189Hz	189Hz	ON	OFF	OFF	OFF
42	52Hz	189Hz	189Hz	ON	ON	OFF	OFF
43	104Hz	189Hz	189Hz	ON	ON	OFF	OFF
44	143Hz	189Hz	189Hz	ON	ON	OFF	OFF
45	189Hz	189Hz	189Hz	ON	ON	OFF	OFF
46	210Hz	189Hz	189Hz	ON	ON	OFF	OFF
47	52Hz	189Hz	189Hz	ON	ON	ON	OFF
48	104Hz	189Hz	189Hz	ON	ON	ON	OFF
49	143Hz	189Hz	189Hz	ON	ON	ON	OFF
50	189Hz	189Hz	189Hz	ON	ON	ON	OFF
51	210Hz	189Hz	189Hz	ON	ON	ON	OFF
52	52Hz	189Hz	189Hz	ON	ON	ON	ON
53	104Hz	189Hz	189Hz	ON	ON	ON	ON
54	143Hz	189Hz	189Hz	ON	ON	ON	ON
55	189Hz	189Hz	189Hz	ON	ON	ON	ON
56	210Hz	189Hz	189Hz	ON	ON	ON	ON
57	210Hz	210Hz	210Hz	ON	ON	ON	ON

*

- Compressors are operated in the order of descending priorities.
- Compressors may operate in a pattern other than those listed in above tables subject to the operating conditions.
- “Master unit”, and “slave unit” in this section are the names for control, and they will be transferred according to the priority of rotation system.

REYQ40,42,44M

STEP	Master unit INV	Slave unit1 INV	Slave unit2 INV	STD unit No.1	STD unit No.2	STD unit No.3	STD unit No.4	STD unit No.5
1	52Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	57Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
3	62Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
4	68Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
5	74Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
6	81Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
7	88Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
8	96Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
9	104Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
10	110Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
11	116Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
12	124Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
13	133Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
14	143Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
15	158Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
16	165Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
17	177Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
18	189Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
19	202Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
20	210Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
21	52Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF
22	74Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF
23	96Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF
24	116Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF
25	133Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF
26	158Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF
27	177Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF
28	202Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF
29	210Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF
30	52Hz	189Hz	189Hz	OFF	OFF	OFF	OFF	OFF
31	88Hz	189Hz	189Hz	OFF	OFF	OFF	OFF	OFF
32	124Hz	189Hz	189Hz	OFF	OFF	OFF	OFF	OFF
33	158Hz	189Hz	189Hz	OFF	OFF	OFF	OFF	OFF
34	189Hz	189Hz	189Hz	OFF	OFF	OFF	OFF	OFF
35	210Hz	189Hz	189Hz	OFF	OFF	OFF	OFF	OFF
36	52Hz	189Hz	189Hz	ON	OFF	OFF	OFF	OFF
37	88Hz	189Hz	189Hz	ON	OFF	OFF	OFF	OFF
38	124Hz	189Hz	189Hz	ON	OFF	OFF	OFF	OFF
39	158Hz	189Hz	189Hz	ON	OFF	OFF	OFF	OFF
40	189Hz	189Hz	189Hz	ON	OFF	OFF	OFF	OFF
41	210Hz	189Hz	189Hz	ON	OFF	OFF	OFF	OFF
42	52Hz	189Hz	189Hz	ON	ON	OFF	OFF	OFF
43	104Hz	189Hz	189Hz	ON	ON	OFF	OFF	OFF
44	143Hz	189Hz	189Hz	ON	ON	OFF	OFF	OFF
45	189Hz	189Hz	189Hz	ON	ON	OFF	OFF	OFF
46	210Hz	189Hz	189Hz	ON	ON	OFF	OFF	OFF
47	52Hz	189Hz	189Hz	ON	ON	ON	OFF	OFF
48	104Hz	189Hz	189Hz	ON	ON	ON	OFF	OFF
49	143Hz	189Hz	189Hz	ON	ON	ON	OFF	OFF
50	189Hz	189Hz	189Hz	ON	ON	ON	OFF	OFF
51	210Hz	189Hz	189Hz	ON	ON	ON	OFF	OFF
52	52Hz	189Hz	189Hz	ON	ON	ON	ON	OFF
53	104Hz	189Hz	189Hz	ON	ON	ON	ON	OFF
54	143Hz	189Hz	189Hz	ON	ON	ON	ON	OFF
55	189Hz	189Hz	189Hz	ON	ON	ON	ON	OFF
56	210Hz	189Hz	189Hz	ON	ON	ON	ON	OFF
57	52Hz	189Hz	189Hz	ON	ON	ON	ON	ON
58	104Hz	189Hz	189Hz	ON	ON	ON	ON	ON
59	143Hz	189Hz	189Hz	ON	ON	ON	ON	ON
60	189Hz	189Hz	189Hz	ON	ON	ON	ON	ON
61	210Hz	189Hz	189Hz	ON	ON	ON	ON	ON
62	210Hz	210Hz	210Hz	ON	ON	ON	ON	ON

*

- Compressors are operated in the order of descending priorities.
- Compressors may operate in a pattern other than those listed in above tables subject to on the operating conditions.
- “Master unit”, “slave unit 1” and “slave unit 2” in this section are the names for control, and they will be transferred according to the priority of rotation system.

REYQ46,48M

STEP	Master unit INV	Slave unit1 INV	Slave unit2 INV	STD unit No.1	STD unit No.2	STD unit No.3	STD unit No.4	STD unit No.5	STD unit No.6
1	52Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	57Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
3	62Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
4	68Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
5	74Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
6	81Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
7	88Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
8	96Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
9	104Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
10	110Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
11	116Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
12	124Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
13	133Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
14	143Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
15	158Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
16	165Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
17	177Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
18	189Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
19	202Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
20	210Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
21	52Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
22	74Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
23	96Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
24	116Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
25	133Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
26	158Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
27	177Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
28	202Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
29	210Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF	OFF
30	52Hz	189Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF
31	88Hz	189Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF
32	124Hz	189Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF
33	158Hz	189Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF
34	189Hz	189Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF
35	210Hz	189Hz	189Hz	OFF	OFF	OFF	OFF	OFF	OFF
36	52Hz	189Hz	189Hz	ON	OFF	OFF	OFF	OFF	OFF
37	88Hz	189Hz	189Hz	ON	OFF	OFF	OFF	OFF	OFF
38	124Hz	189Hz	189Hz	ON	OFF	OFF	OFF	OFF	OFF
39	158Hz	189Hz	189Hz	ON	OFF	OFF	OFF	OFF	OFF
40	189Hz	189Hz	189Hz	ON	OFF	OFF	OFF	OFF	OFF
41	210Hz	189Hz	189Hz	ON	OFF	OFF	OFF	OFF	OFF
42	52Hz	189Hz	189Hz	ON	ON	OFF	OFF	OFF	OFF
43	104Hz	189Hz	189Hz	ON	ON	OFF	OFF	OFF	OFF
44	143Hz	189Hz	189Hz	ON	ON	OFF	OFF	OFF	OFF
45	189Hz	189Hz	189Hz	ON	ON	OFF	OFF	OFF	OFF
46	210Hz	189Hz	189Hz	ON	ON	OFF	OFF	OFF	OFF
47	52Hz	189Hz	189Hz	ON	ON	ON	OFF	OFF	OFF
48	104Hz	189Hz	189Hz	ON	ON	ON	OFF	OFF	OFF
49	143Hz	189Hz	189Hz	ON	ON	ON	OFF	OFF	OFF
50	189Hz	189Hz	189Hz	ON	ON	ON	OFF	OFF	OFF
51	210Hz	189Hz	189Hz	ON	ON	ON	OFF	OFF	OFF
52	52Hz	189Hz	189Hz	ON	ON	ON	ON	OFF	OFF
53	104Hz	189Hz	189Hz	ON	ON	ON	ON	OFF	OFF
54	143Hz	189Hz	189Hz	ON	ON	ON	ON	OFF	OFF
55	189Hz	189Hz	189Hz	ON	ON	ON	ON	OFF	OFF
56	210Hz	189Hz	189Hz	ON	ON	ON	ON	OFF	OFF
57	52Hz	189Hz	189Hz	ON	ON	ON	ON	ON	OFF
58	104Hz	189Hz	189Hz	ON	ON	ON	ON	ON	OFF
59	143Hz	189Hz	189Hz	ON	ON	ON	ON	ON	OFF
60	189Hz	189Hz	189Hz	ON	ON	ON	ON	ON	OFF
61	210Hz	189Hz	189Hz	ON	ON	ON	ON	ON	OFF
62	52Hz	189Hz	189Hz	ON	ON	ON	ON	ON	ON
63	104Hz	189Hz	189Hz	ON	ON	ON	ON	ON	ON
64	143Hz	189Hz	189Hz	ON	ON	ON	ON	ON	ON
65	189Hz	189Hz	189Hz	ON	ON	ON	ON	ON	ON
66	210Hz	189Hz	189Hz	ON	ON	ON	ON	ON	ON
67*	210Hz	210Hz	210Hz	ON	ON	ON	ON	ON	ON

*) Only for 50Hz

*

- Compressors are operated in the order of descending priorities.
- Compressors may operate in a pattern other than those listed in above tables subject to on the operating conditions.
- “Master unit”, “slave unit 1” and “slave unit 2” in this section are the names for control, and they will be transferred according to the priority of rotation system.

2.3 Electronic Expansion Valve PI Control

Main Motorized Valve EV1 Control, Sub Motorized Valve EV2 Control

Carries out the motorized valve (Y1E) PI control to maintain the evaporator outlet superheated degree (SH) at constant during heating operation to make maximum use of the outdoor unit heat exchanger (evaporator).

SH = Ts - Te

SH : Evaporator outlet superheated degree (°C)

Ts : Suction pipe temperature detected by thermistor R2T (°C)

Te : Low pressure equivalent saturation temperature (°C)

The optimum initial value of the evaporator outlet superheated degree is 5°C, but varies depending on the discharge pipe superheated degree of inverter compressor.

Sub-cooling Motorized Valve EV3 Control

Makes PI control of the motorized valve (Y2E) to keep the superheated degree of the outlet gas pipe on the evaporator side for the full use of the sub-cooling heat exchanger.

SH = Tsh -Te

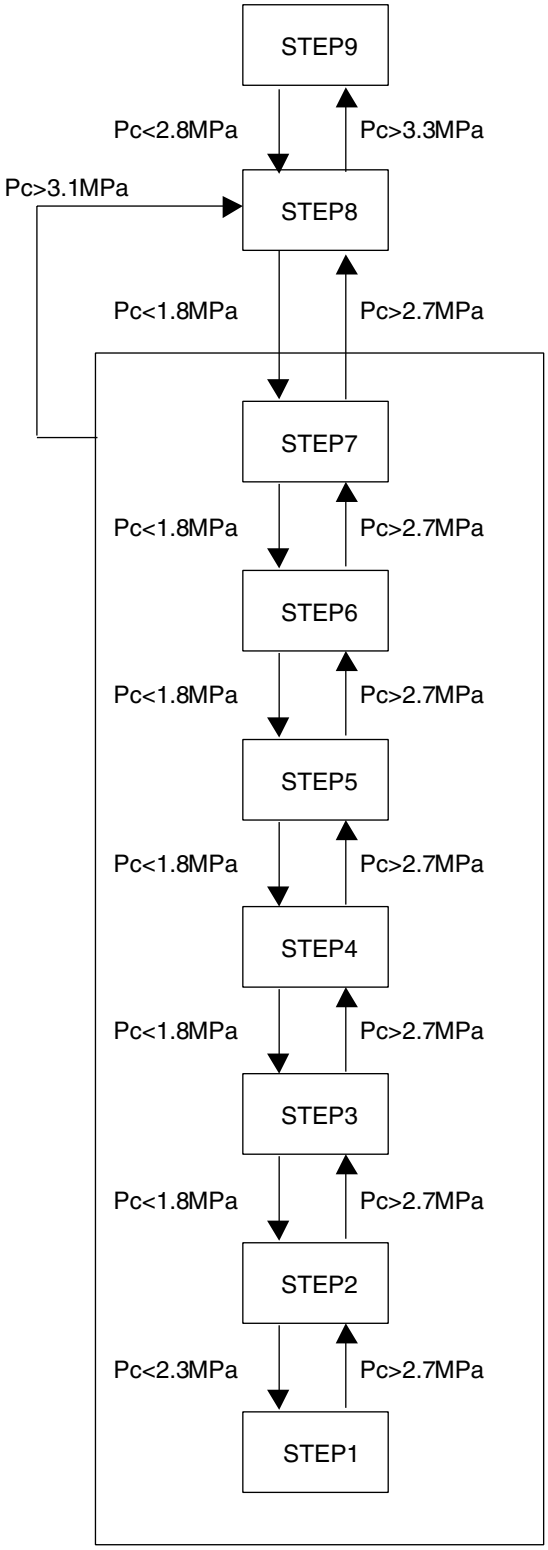
SH : Outlet superheated degree of evaporator (°C)

Tsh : Suction pipe temperature detected with the thermistor R5T (°C)

Te : Low pressure equivalent saturation temperature (°C)

2.4 Cooling Operation Fan Control

In cooling operation with low outdoor air temperature, this control is used to provide the adequate amount of circulation air with liquid pressure secured by high pressure control using outdoor unit fan.



Pc: HP pressure sensor detection value

Fan Steps

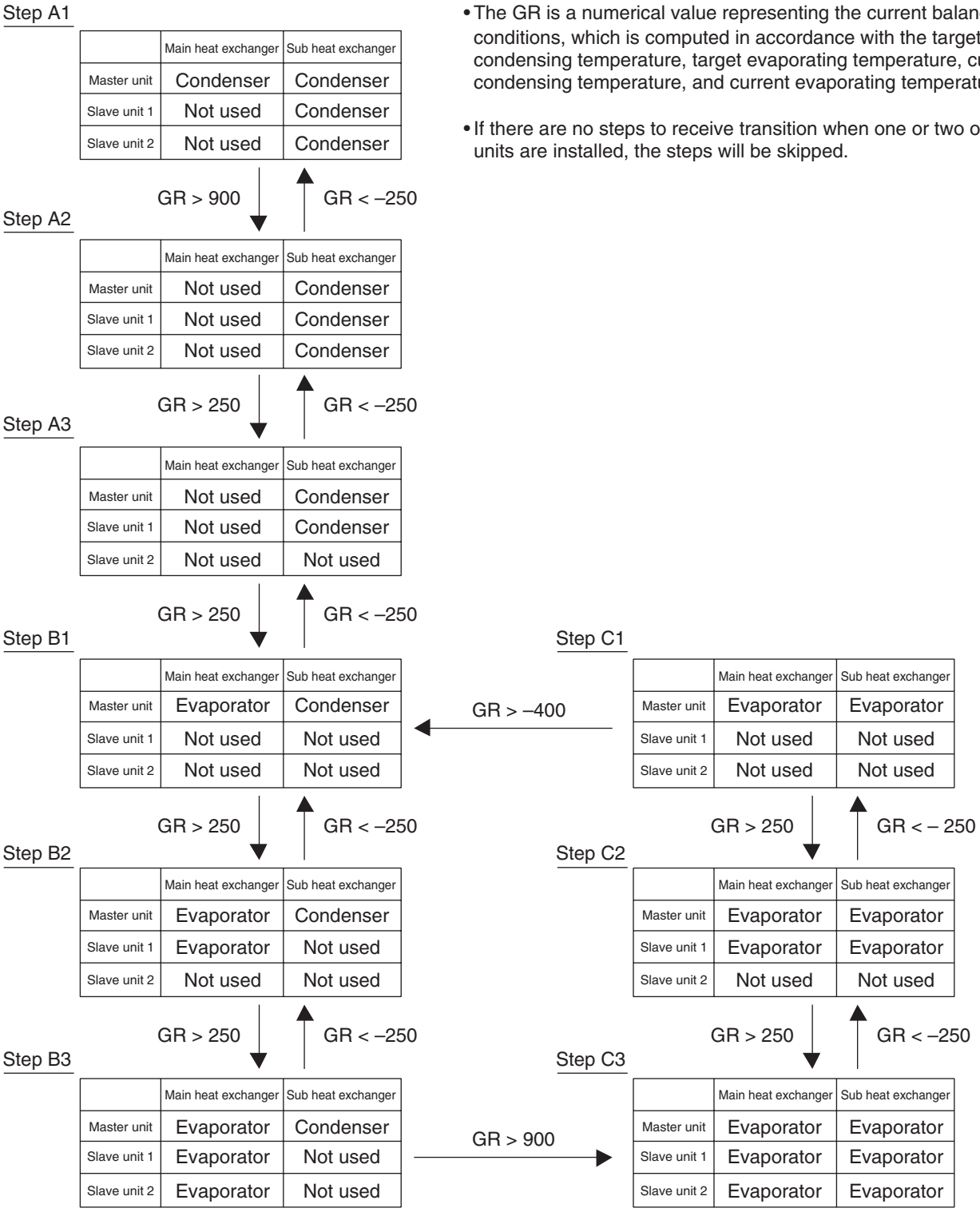
	REYQ 8 and 10M	REYQ 12 to 16M
STEP1	0rpm	0rpm
STEP2	300rpm	300rpm
STEP3	320rpm	325rpm
STEP4	345rpm	355rpm
STEP5	385rpm	400rpm
STEP6	465rpm	500rpm
STEP7	575rpm	630rpm
STEP8	785rpm	880rpm
STEP9	825rpm	920rpm

2.5 Heat Exchange Mode in Heating Operation or Simultaneous Cooling / Heating Operation

In heating or simultaneous cooling / heating operation, a target condensing and evaporating temperature can be secured by switching the air heat exchanger of the outdoor unit (main, sub) into evaporator or condenser with load.

*

- The GR is a numerical value representing the current balancing conditions, which is computed in accordance with the target condensing temperature, target evaporating temperature, current condensing temperature, and current evaporating temperature.
- If there are no steps to receive transition when one or two outdoor units are installed, the steps will be skipped.



3. Special Control

3.1 Startup Control

This startup control is used to provide the following control to reduce the compressor load resulting from liquid return or else during compressor startup, and also determine the position of four way valves.

3.1.1 Startup Control in Cooling Operation

Actuator	Operation	Remarks
Compressor	Differential pressure control	Compressor operating frequency increases by 1 step until Pc - Pe > 0.4 MPa.
Outdoor unit fan	High pressure control	Initial compressor operating frequency is set to STEP1. 1-step increases with Pc > 2.2 MPa. 1-step decreases with Pc < 1.8 MPa.
Four way valve 1	OFF	—
Four way valve 2	OFF	—
Main motorized valve (EV1)	1400 pls	—
Sub motorized valve (EV2)	1400 pls	—
Sub-cooling motorized valve (EV3)	0 pls	—
Hot gas bypass valve (SVP)	ON	—
Oil equalization valve (SVO)	ON	In the case of multi-outdoor-unit system, this valve repeats ON/OFF operation at regular intervals of time.
Receiver charging valve (SVL)	OFF	—
Receiver discharge valve (SVG)	OFF	—
Discharge pipe stop valve (SVR)	OFF	—
Non-operating unit liquid pipe stop valve (SVSL)	OFF	—
High pressure gas pipe pressure reduction valve (SVC)	ON	—
Ending conditions	or • 200 sec. • Pc - Pe>0.4 MPa	

* In the case of multi-outdoor-unit system, both master and slave units perform the operations listed in the table above.
* Actuators are based on REYQ16M.

3.1.2 Startup Control in Heating Operation

Actuator	Operation	Remarks
Compressor	Differential pressure control	Compressor operating frequency increases by 1 step until Pc - Pe > 0.4 MPa.
Outdoor unit fan	STEP9	—
Four way valve 1	ON	—
Four way valve 2	OFF	—
Main motorized valve (EV1)	180 pls	—
Sub motorized valve (EV2)	1400 pls	—
Sub-cooling motorized valve (EV3)	0 pls	—
Hot gas bypass valve (SVP)	ON	—
Oil equalization valve (SVO)	ON	In the case of multi-outdoor-unit system, this valve repeats ON/OFF operation at regular intervals of time.
Receiver gas charging valve (SVL)	OFF	—
Receiver gas discharge valve (SVG)	OFF	—
Discharge pipe stop valve (SVR)	ON	—
Non-operating unit liquid pipe stop valve (SVSL)	ON	—
High pressure gas pipe pressure reduction valve (SVC)	OFF	—
Ending conditions	or • 200 sec. • Pc - Pe>0.4 MPa	

* In the case of multi-outdoor-unit system, both master and slave units perform the operations listed in the table above.
* Actuators are based on REYQ16M.

3.1.3 Pressure Equalizing Startup Control

Actuator	Operation
Compressor	74 Hz+ OFF + OFF
Outdoor unit fan	STEP 8
Four way valve 1	ON
Four way valve 2	OFF
Main motorized valve (EV1)	180 pls
Sub motorized valve (EV2)	1400 pls
Sub-cooling motorized valve (EV3)	0 pls
Hot gas bypass valve (SVP)	OFF
Oil equalization valve (SVO)	ON
Receiver gas charging valve (SVL)	OFF
Receiver gas discharge valve (SVG)	OFF
Discharge pipe stop valve (SVR)	OFF
Non-operating unit liquid pipe stop valve (SVSL)	ON
High pressure gas pipe pressure reduction valve (SVC)	OFF
Ending conditions	or • 200 sec. • Pc - Pe>0.4 MPa

* In the case of multi-outdoor-unit system, both master and slave units perform the operations listed in the table above.

3.2 Oil Return Operation

In order to prevent the running-out of refrigerating machine oil in the compressor, the oil flowing out from the compressor to the system side is collected through the oil return operation.

3.2.1 Oil Return Operation in Cooling Operation

[Starting conditions]

Start oil return operation in cooling operation referring to the following conditions.

* Cumulative oil return amount
* Timer

Cumulative compressor operating time after power supply turns on exceeds 2 hours and the time after the completion of previous oil return operation exceeds 8 hours.

Furthermore, the cumulative oil return is calculated according to To, Te, and compressor load.

Actuator	Oil return preparation operation	Oil return operation	Post-oil-return operation
Compressor	Upper limit control	124 Hz + ON + OFF	52 Hz + OFF + OFF
Outdoor unit fan	Fan control	Fan control	Fan control
Four way valve 1	OFF	OFF	OFF
Four way valve 2	OFF	OFF	OFF
Main motorized valve (EV1)	1400 pls	1400 pls	1400 pls
Sub motorized valve (EV2)	1400 pls	1400 pls	1400 pls
Sub-cooling motorized valve (EV3)	SH control	0 pls	0 pls
Hot gas bypass valve (SVP)	OFF	ON	ON
Oil equalization valve (SVO)	ON	ON	ON
Receiver gas charging valve (SVL)	OFF	OFF	OFF
Receiver gas discharge valve (SVG)	OFF	OFF	OFF
Discharge pipe stop valve (SVR)	OFF	OFF	OFF
Non-operating unit liquid pipe stop valve (SVSL)	OFF	OFF	OFF
High pressure gas pipe pressure reduction valve (SVC)	ON	ON	ON
Ending conditions	1 min.	or • 6 min. • Ts - Te<5	30 sec.

* In the case of multi-outdoor-unit system,
  Master unit: Performs the operations listed in the table above.
  Slave units: Operating units perform the operations listed in the table above.
  Non-operating units performs the operations listed in the table above from the oil return operation.
* Actuators are based on REYQ16M.

Indoor unit actuator		Cooling oil return operation
Fan	Thermostat ON unit	Set Air Volume
	Stopping unit	OFF
	Thermostat OFF unit	OFF
Electronic expansion valve	Thermostat ON unit	Normal opening
	Stopping unit	200 pls
	Thermostat OFF unit	200 pls

3.2.2 Oil Return Operation in Heating Operation

[Starting conditions]

Start oil return operation in heating operation referring to the following conditions.
Cumulative compressor operating time after power supply turns on exceeds 2 hours and the time after the completion of previous oil return operation exceeds 8 hours. And cumulative oil return is calculated based on To, Te compressor load.

Actuator	Oil return preparation operation	Oil return operation	Post-oil-return operation
Compressor	Upper limit control	124 Hz + ON + OFF	1-step increase from (74Hz + OFF + OFF) to (Pc - Pe > 0.4 MPa) time.
Outdoor unit fan	STEP8 or STEP9	OFF	STEP9
Four way valve 1	Heat exchange mode	OFF	ON
Four way valve 2	Heat exchange mode	OFF	OFF
Main motorized valve (EV1)	Four way valve 1 OFF:1400 pls ON:SH control	0 pls	180 pls
Sub motorized valve (EV2)	Four way valve 2 OFF:1400 pls ON:SH control	0 pls	1400 pls
Sub-cooling motorized valve (EV3)	0 pls	0 pls	0 pls
Hot gas bypass (SVP)	OFF	ON	ON
Oil equalization valve (SVO)	ON	ON	ON
Receiver gas charging valve (SVL)	OFF	OFF	OFF
Receiver gas discharge valve (SVG)	OFF	OFF	OFF
Discharge gas stop valve (SVR)	ON	OFF	OFF
Non-operating unit liquid pipe stop valve (SVSL)	ON	OFF	OFF
High pressure gas pipe pressure reduction valve (SVC)	OFF	ON	ON
Ending conditions	2 min.	or • 6 min. • Ts - Te<5	or • 160 sec. • Pc - Pe>0.4MPa

* In the case of multi-outdoor-unit system,
  Master unit: Performs the operations listed in the table above.
  Slave units: Operating units perform the operations listed in the table above.
  Non-operating units performs the operations listed in the table above from the “oil return operation”.
* Actuators are based on REYQ16M.

Indoor unit actuator		Heating oil return operation
Fan	Cooling Thermostat ON unit	Set Fan Speed
	Heating Thermostat ON unit	OFF
	Stopping unit	OFF
	Thermostat OFF unit	OFF
Electronic expansion valve	Thermostat ON unit	512 pls
	Stopping unit	512 pls
	Thermostat OFF unit	512 pls

<In condition of oil return operation>
Compressor cumulative operation time > 8 hours
(However, 2 hours after turning power on first time.)

3.3 Defrosting Operation

In order to melt the frost accumulated on the heat exchanger during heating operation, Defrost operation is performed to restore the heating capacity.

[Starting conditions]

Start defrosting operation referring to the following conditions.

* Heat conductivity of outdoor heat exchangers
* Heat exchange temperature (Tb)
* Timer (Min. 2 hours)

The heat conductivity of outdoor heat exchangers is calculated based on To, Te, and compressor load.

Actuator	Defrost preparation operation	Defrost operation	Post-defrost operation
Compressor	Upper limit control	143 Hz + ON + ON	1-step increase from (74Hz + OFF + OFF) to (Pc - Pe > 0.4 MPa)
Outdoor unit fan	STEP8 or STEP9	OFF	STEP9
Four way valve 1	Heat exchange mode	OFF	ON
Four way valve 2	Heat exchange mode	OFF	OFF
Main motorized valve (EV1)	Four way valve 1 OFF:1400 pls ON:SH control	1400 pls	180 pls
Sub motorized valve (EV2)	Four way valve 2 OFF:1400 pls ON:SH control	1400 pls	1400 pls
Sub-cooling motorized valve (EV3)	0 pls	0 pls	0 pls
Hot gas bypass valve (SVP)	OFF	ON	ON
Oil equalization valve (SVO)	ON	ON	ON
Receiver gas charging valve (SVL)	OFF	OFF	OFF
Receiver gas discharge valve (SVG)	OFF	OFF	OFF
Discharging pipe stop valve (SVR)	ON	OFF	OFF
Non-operating unit liquid pipe stop valve (SVSL)	ON	OFF	OFF
High pressure gas pipe pressure reduction valve (SVC)	OFF	ON	ON
Ending conditions	2 min.	or • 12 min. • Tb >11°C	or • 160 sec. • Pc - Pe>0.4MPa

* In the case of multi-outdoor-unit system,
  Master unit: Performs the operations listed in the table above.
  Slave units: Operating units perform the operations listed in the table above.
  Non-operating units perform the operations listed in the table above from the defrost operation.
  (Non- operating units stops during “Defrost preparation operation”)
* Actuators are based on REYQ16M.

Indoor unit actuator		During defrost
Fan	Cooling Thermostat ON unit	Set Fan Speed
	Heating Thermostat ON unit	OFF
	Stopping unit	OFF
	Cooling Thermostat OFF unit	Set Fan Speed
	Heating Thermostat OFF unit	OFF
Electronic expansion valve	Thermostat ON unit	512 pls
	Stopping unit	512 pls
	Thermostat OFF unit	512 pls

<Defrost starting condition>

Defrost operation is started when the outdoor heat exchanger temperature becomes lower than deicer temperature.
Defrost operation is conducted once in max. 2 hours.

3.4 Pressure Equalizing Control

This pressure equalization control is used to equalize the pressure of discharge piping and suction piping in order to reduce refrigerant passing noise when changing over the BS units.

[Starting conditions]

The temperature control of indoor units with thermostat ON does not match up with the state of the BS unit changeover valve to which the indoor units are connected.

Actuator	Pressure equalizing preparation operation	Equalization operation
Compressor	PI control	74 Hz + OFF + OFF
Outdoor unit fan	Heat exchange mode	STEP8
Four way valve 1	Heat exchange mode	ON
Four way valve 2	Heat exchange mode	OFF
Main motorized valve (EV1)	Four way valve 1 OFF:1400 pls ON:SH control	180 pls
Sub motorized valve (EV2)	Four way valve 2 OFF:1400 pls ON:SH control	1400 pls
Sub-cooling motorized valve (EV3)	0 pls	0 pls
Hot gas bypass valve (SVP)	OFF	OFF
Oil equalization valve (SVO)	ON	ON
Receiver gas charging valve (SVL)	OFF	OFF
Receiver gas discharge valve (SVG)	OFF	OFF
Discharging gas pipe stop valve (SVR)	ON	OFF
Non-operating unit liquid pipe stop valve (SVSL)	ON	ON
High pressure gas pipe pressure reduction valve (SVC)	OFF	ON
Ending conditions	2 min.	or • 200 sec. • Pc - Pe>0.4MPa

* In the case of multi-outdoor-unit system, both master and slave units perform the above operations.
* Actuators are based on REYQ16M.

3.5 Pump-down Residual Operation

If any liquid refrigerant remains in the heat exchanger during compressor startup, the liquid refrigerant will enter the compressor, resulting in the dilution of the refrigerating machine oil in the compressor and the degradation of lubricating capacity.
Therefore, before the compressor stops, pump-down operation is performed to collect the refrigerant in the heat exchanger.

3.5.1 Pump-down Residual Operation in Cooling Operation

Actuator	Master unit operation	Slave unit operation
Compressor	210 Hz + OFF + OFF	OFF
Outdoor unit fan	Fan control	OFF
Four way valve 1	OFF	OFF
Four way valve 2	OFF	OFF
Main motorized valve (EV1)	1400 pls	0 pls
Sub motorized valve (EV2)	1400 pls	0 pls
Sub-cooling motorized valve (EV3)	0 pls	0 pls
Hot gas bypass valve (SVP)	ON	OFF
Oil equalization valve (SVO)	ON	OFF
Receiver gas charging valve (SVL)	OFF	OFF
Receiver gas discharge valve (SVG)	OFF	OFF
Discharge pipe stop valve (SVR)	OFF	OFF
Non-operating unit liquid pipe stop valve (SVSL)	OFF	ON
High pressure gas pipe pressure reduction valve (SVC)	OFF	OFF
Ending conditions	or • 5 min. • Pe<0.5 MPa • Td>110°C	

* Actuators are based on REYQ16M.

Indoor unit EV opening	0 pls

3.5.2 Pump-down Residual Operation in Heating Operation

Actuator	Master unit operation	Slave unit operation
Compressor	124 Hz + OFF + OFF	OFF
Outdoor unit fan	STEP8	STEP5
Four way valve 1	Holds ON	Holds ON
Four way valve 2	Holds ON	Holds ON
Main motorized valve (EV1)	Four way valve 1 OFF:1400 pls ON:0 pls	Four way valve 1 OFF:1400 pls ON: 0 pls
Sub motorized valve (EV2)	Four way valve 2 OFF:1400 pls ON:0 pls	Four way valve 2 OFF:1400 pls ON: 0 pls
Sub-cooling motorized valve (EV3)	0 pls	0 pls
Hot gas bypass valve (SVP)	ON	OFF
Oil equalization valve (SVO)	ON	OFF
Receiver gas charging valve (SVL)	OFF	OFF
Receiver gas discharge valve (SVG)	OFF	OFF
Discharge pipe stop valve (SVR)	ON	ON
Non-operating unit liquid pipe stop valve (SVSL)	ON	ON
High pressure gas pipe pressure reduction valve (SVC)	OFF	OFF
Ending conditions	or • 30 sec. • Pe<0.25 MPa • Td>110°C	

* Actuators are based on REYQ16M.

Indoor unit EV opening	Fully open

3.6 Restart Standby

Forced standby is performed to prevent frequent repetition of ON/OFF of the compressor, and to equalize pressure in the refrigerant system.

Actuator	Operation	Remarks
Compressor	OFF	—
Outdoor unit fan	Ta>30°C: STEP5 Ta≤30°C: OFF	—
Four way valve 1	Holds ON	—
Four way valve 2	Holds ON	—
Main motorized valve (EV1)	0 pls	—
Sub motorized valve (EV2)	0 pls	—
Sub-cooling motorized valve (EV2)	0 pls	—
Hot gas bypass valve (SVP)	OFF	—
Oil equalization valve (SVO)	ON	In the case of slave units, this valve turns OFF.
Receiver gas charging valve (SVL)	OFF	—
Receiver gas discharge valve (SVG)	OFF	—
Discharge pipe stop valve (SVR)	Holds ON	—
Non-operating unit liquid pipe stop valve (SVSL)	ON	—
High pressure gas pipe pressure reduction valve (SVC)	Holds ON	—
Ending conditions	4 min.	—

* Actuators are based on REYQ16M.

3.7 Stopping Operation

This operation is used to define the operation of the actuator while the system stops.

3.7.1 When System is in Stop Mode

Actuator	Operation
Compressor	OFF
Outdoor unit fan	OFF
Four way valve 1	Holds ON
Four way valve 2	Holds ON
Main motorized valve (EV1)	0 pls
Sub motorized valve (EV2)	0 pls
Sub-cooling motorized valve (EV3)	0 pls
Hot gas bypass valve (SVP)	OFF
Oil equalization valve (SVO)	OFF
Receiver gas charging valve (SVL)	OFF
Receiver gas discharge valve (SVG)	OFF
Discharge pipe stop valve (SVR)	Holds ON
Non-operating unit liquid pipe stop valve (SVSL)	ON
High pressure gas pipe pressure reduction valve (SVC)	Holds ON
Ending conditions	Indoor unit thermostat turned ON.

* Actuators are based on REYQ16M.

3.7.2 Stopping Operation of Slave Units During Master Unit is in Operation with Multi-Outdoor-Unit System

This operation is used to make adjustments of required refrigerant amount with non-operating slave units while the master unit is in operation.

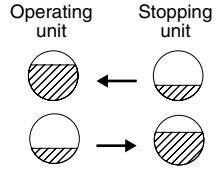
In cooling operation : The system operates in mode A or mode B listed in the table below.

Actuator	Mode-A operation	Mode-B operation
Compressor	OFF	OFF
Outdoor unit fan	STEP4	OFF
Four way valve 1	OFF	OFF
Four way valve 2	OFF	OFF
Main motorized valve (EV1)	150 pls to 300 pls	0 pls
Sub motorized valve (EV2)	0 pls	0 pls
Sub-cooling motorized valve (EV3)	Built-in compressor discharge pipe temperature control	Built-in compressor discharge pipe temperature control
Hot gas bypass valve (SVP)	ON	ON
Oil equalization valve (SVO)	OFF	OFF
Receiver gas charging valve (SVL)	OFF	OFF
Receiver gas discharge valve (SVG)	OFF	OFF
Discharge pipe stop valve (SVR)	OFF	OFF
Non-operating unit liquid pipe stop valve (SVSL)	OFF	ON
High pressure gas pipe pressure reduction valve (SVC)	ON	ON
Mode transition conditions	To Mode B when Tc−Tl >0.27×(Tc − Ta) +6	To Mode A when gas shortage signal is sent from indoor unit
Ending conditions	Slave units are required to operate.	

In heating operation or simultaneously in cooling / heating operation :
The system operates in mode A or mode B listed in the table below.

Actuator	Mode-A operation	Mode-B operation
Compressor	OFF	OFF
Outdoor unit fan	Incorporated INVFIN temperature control	Incorporated INVFIN temperature control
Four way valve 1	ON	ON
Four way valve 2	ON	ON
Main motorized valve (EV1)	0 pls	0 pls
Sub motorized valve (EV2)	0 pls	0 pls
Sub-cooling motorized valve (EV3)	Built-in compressor discharge pipe temperature control	Built-in compressor discharge pipe temperature control
Hot gas bypass valve (SVP)	High/Low pressure protection control	High/Low pressure protection control
Oil equalization valve (SVO)	OFF	OFF
Receiver gas charging valve (SVL)	ON	OFF
Receiver gas discharge valve (SVG)	OFF	OFF
Discharge pipe stop valve (SVR)	ON	ON
Non-operating unit liquid pipe stop valve (SVSL)	In case of EV3 ≠ 0, this valve turns ON.	In case of EV3 ≠ 0, this valve turns ON.
High pressure gas pipe pressure reduction valve (SVC)	OFF	OFF
Mode transition conditions	To mode B when Tc - mean temperature of indoor unit liquid pipes > 10	Motorized valve of outdoor unit in heat exchange mode fully opens.
Ending conditions	Slave units are required to operate.	

∗ Mode A or B operation



Mode A : Operating unit collects refrigerant.
Mode B : Stopping unit storage refrigerant.

The changeover operation for mode A and B is performed for the reason that the required refrigerant amount varies depending on the indoor unit operation capacity.

∗ Actuators are based on REYQ16M.

3.8 Pressure Equalization Prior to Startup

This operation is used to reduce the compressor startup load by equalizing the pressure before and after the compressor prior to the startup of the compressor.
This operation is also used to turn the inverter on and charge the capacitor.

Actuator	Operation
Compressor	OFF
Outdoor unit fan	Cooling:OFF Heating:STEP 4
Four way valve 1	Holds ON
Four way valve 2	Holds ON
Main motorized valve (EV1)	0 pls
Sub motorized valve (EV2)	0 pls
Sub-cooling motorized valve (EV3)	0 pls
Hot gas bypass valve (SVP)	OFF
Oil equalization valve (SVO)	OFF
Receiver gas charging valve (SVL)	OFF
Receiver gas discharge valve (SVG)	OFF
Discharge pipe stop valve (SVR)	Holds ON
Non-operating unit liquid pipe stop valve (SVSL)	ON
High pressure gas pipe pressure reduction valve (SVC)	Holds ON
Ending conditions	1 min.

*Actuators are based on REYQ16M.

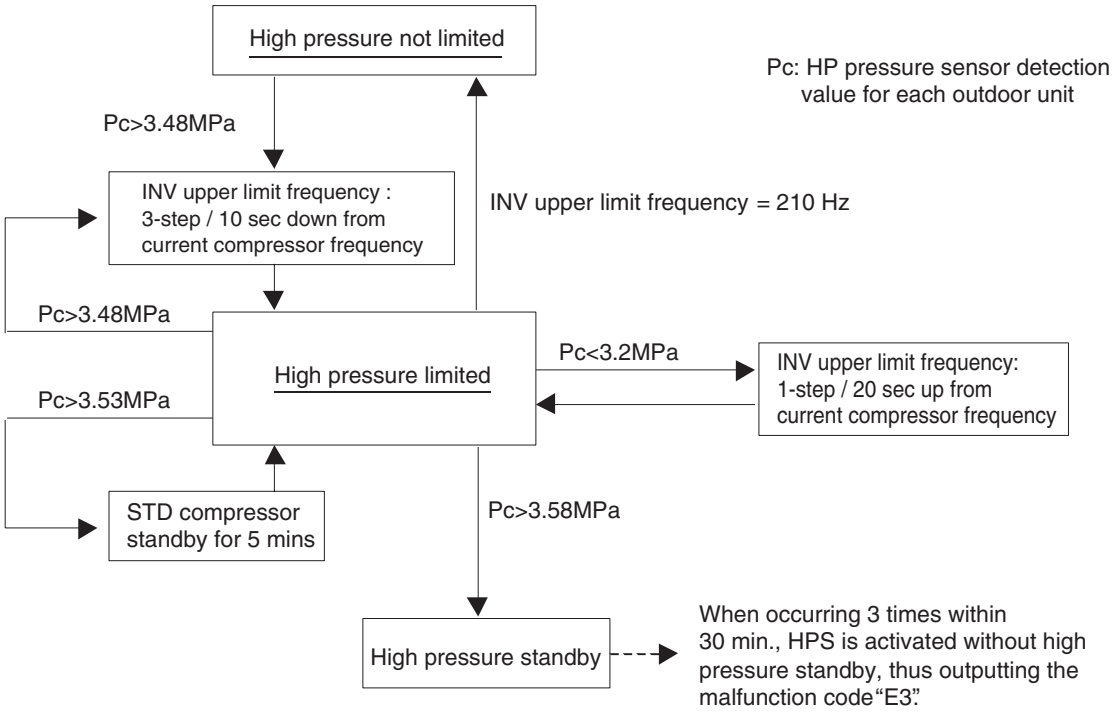
4. Protection Control

4.1 High Pressure Protection Control

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

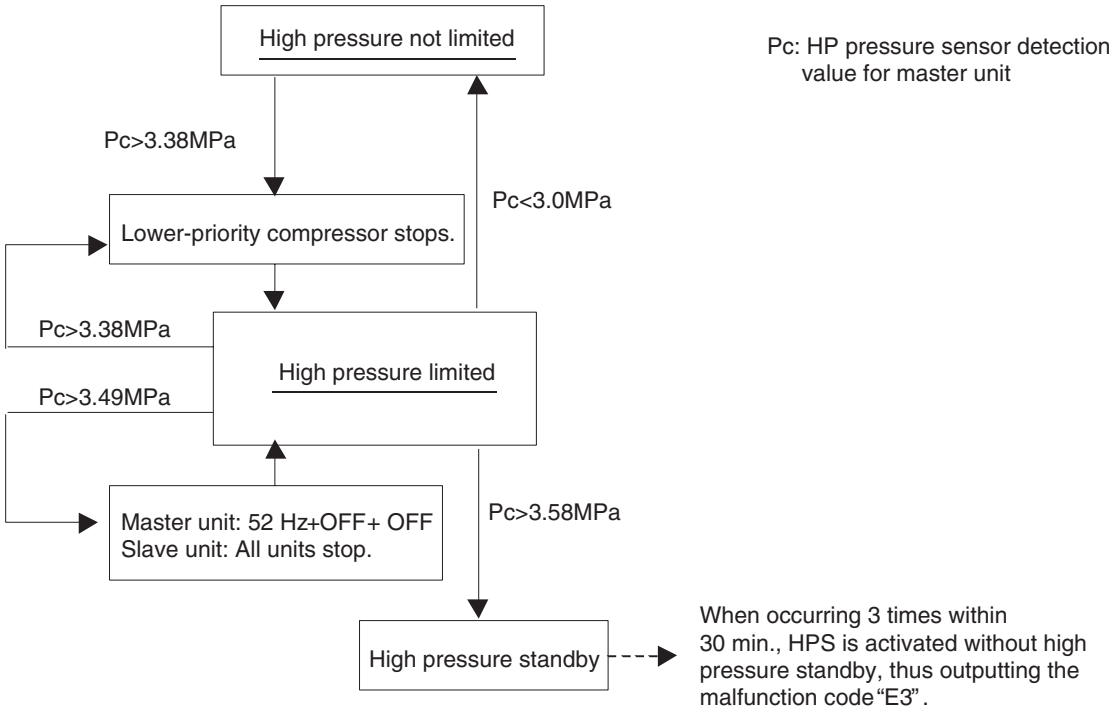
[In cooling operation]

★ In the case of multi-outdoor-unit system, each outdoor unit performs this control individually in the following sequence.



[In heating operation or simultaneous cooling/heating operation]

★ In the case of multi-outdoor-unit system, the entire system performs this control in the following sequence.

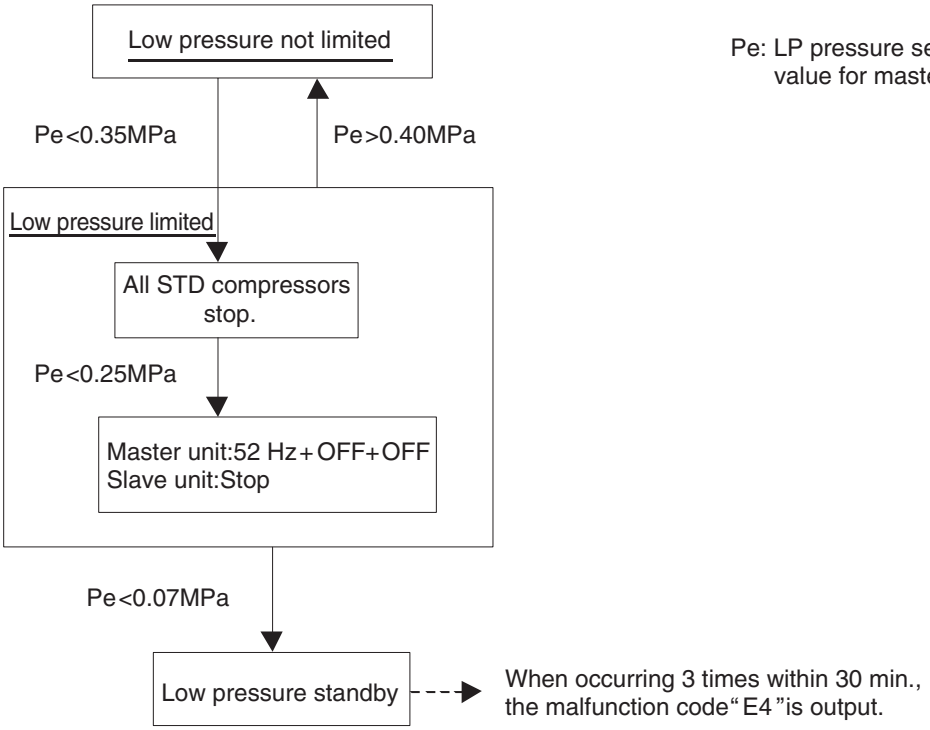


4.2 Low Pressure Protection Control

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

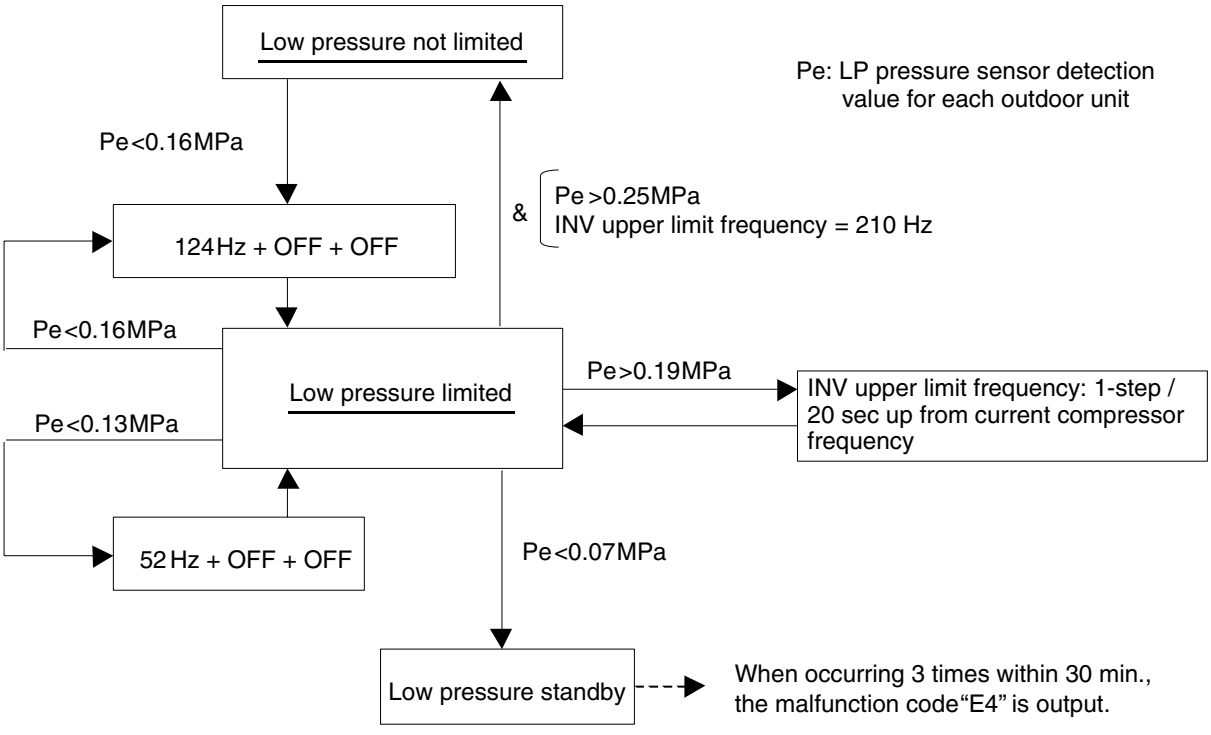
[In cooling operation]

★ In the case of multi-outdoor-unit system, the entire system performs this control in the following sequence.



[In heating operation or simultaneous cooling/heating operation]

★ In the case of multi-outdoor-unit system, each outdoor unit performs this control individually in the following sequence.

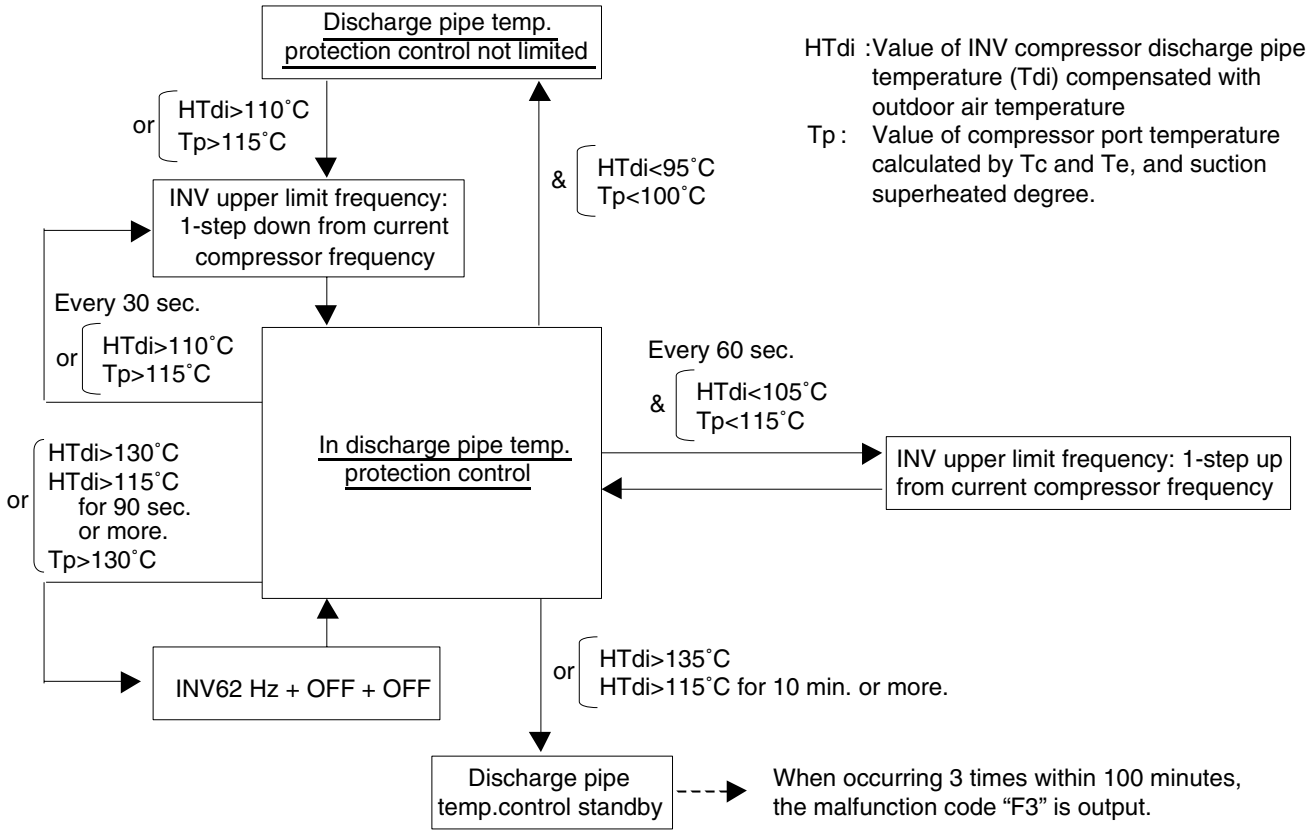


4.3 Discharge Pipe Protection Control

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

★ Each compressor performs the discharge pipe temperature protection control individually in the following sequence.

[INV compressor]



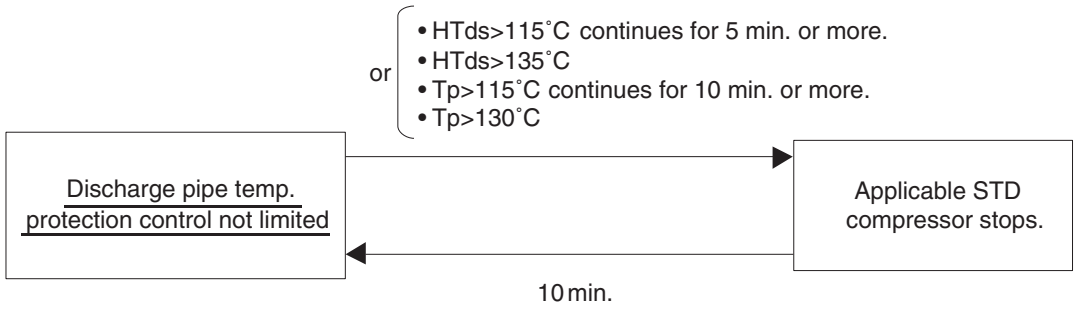
HTdi : Value of INV compressor discharge pipe temperature (Tdi) compensated with outdoor air temperature

Tp : Value of compressor port temperature calculated by Tc and Te, and suction superheated degree.

[STD compressor]

HTds : Value of STD compressor discharge pipe temperature (Tds) compensated with outdoor air temperature

Tp: Value of compressor port temperature calculated by Tc and Te, and suction superheated degree.

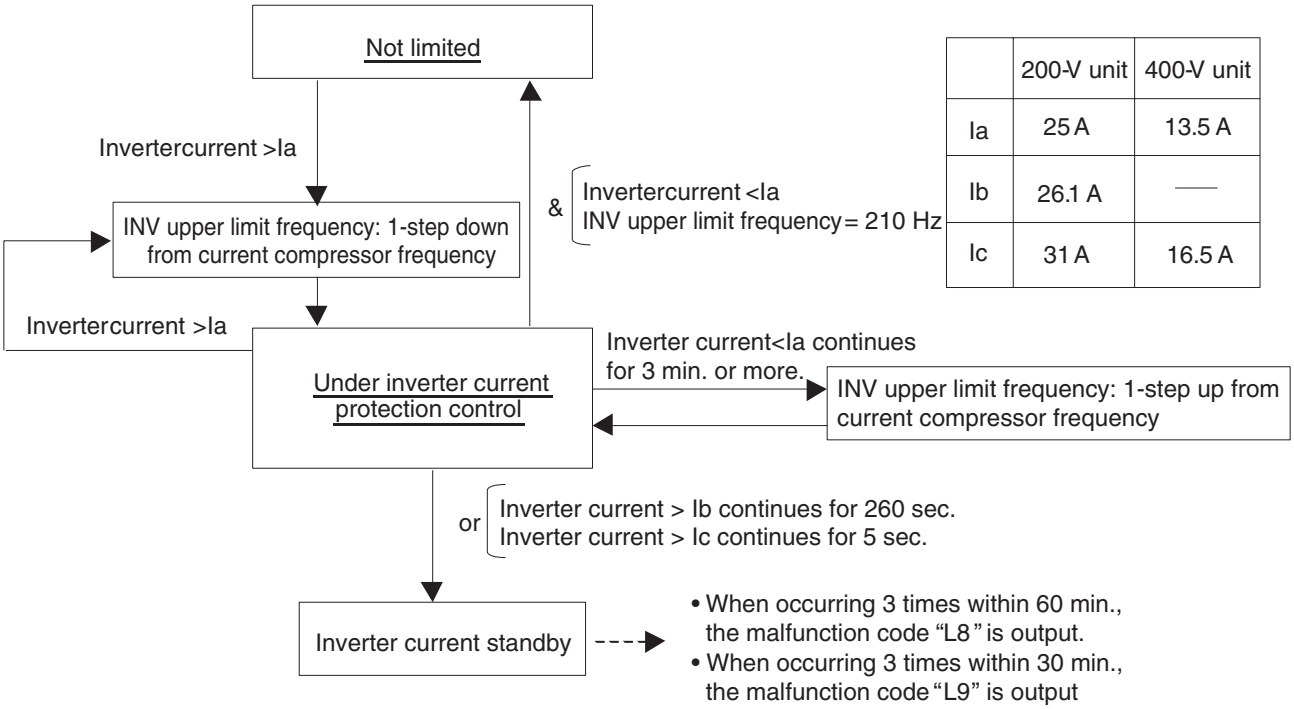


4.4 Inverter Protection Control

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

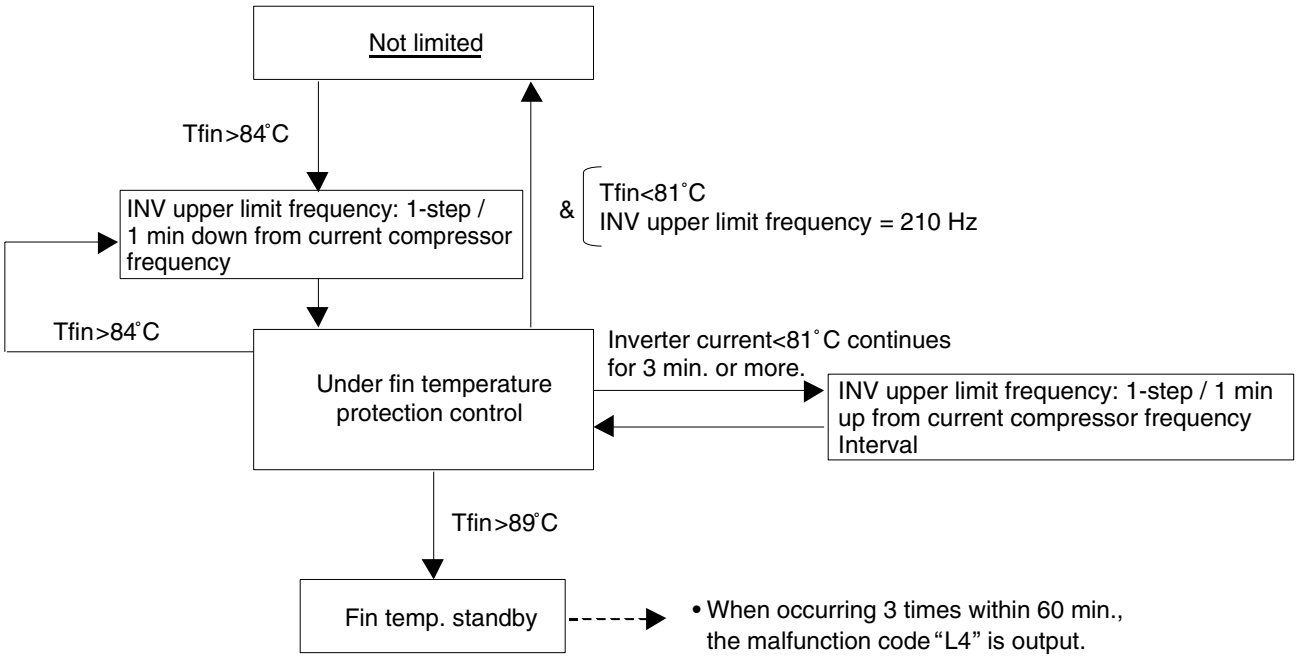
★ In the case of multi-outdoor-unit system, each INV compressor performs these controls in the following sequence.

[Inverter overcurrent protection control]



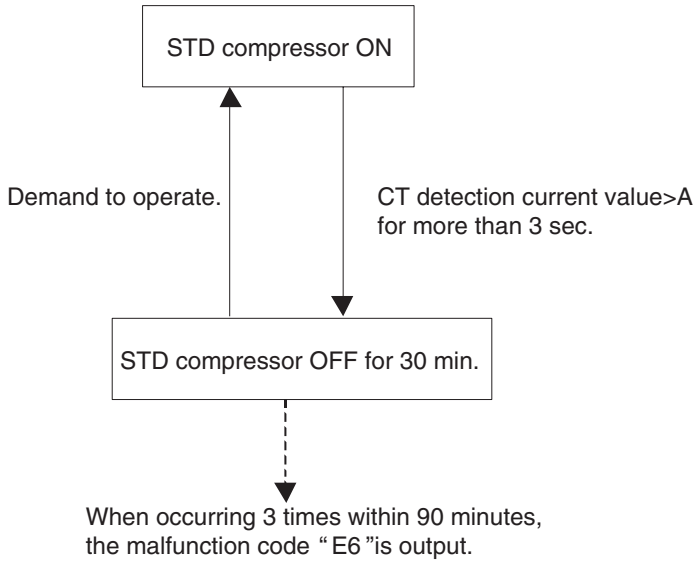
	200-V unit	400-V unit
Ia	25 A	13.5 A
Ib	26.1 A	——
Ic	31 A	16.5 A

[Inverter fin temperature control]



4.5 STD Compressor Overload Protection

This control is used to prevent abnormal heating due to overcurrent to the compressor resulting from failures of STD compressor such as locking.



	200-V unit	400-V unit
A	28.8A	15.0A

5. Other Control

5.1 Outdoor Unit Rotation

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

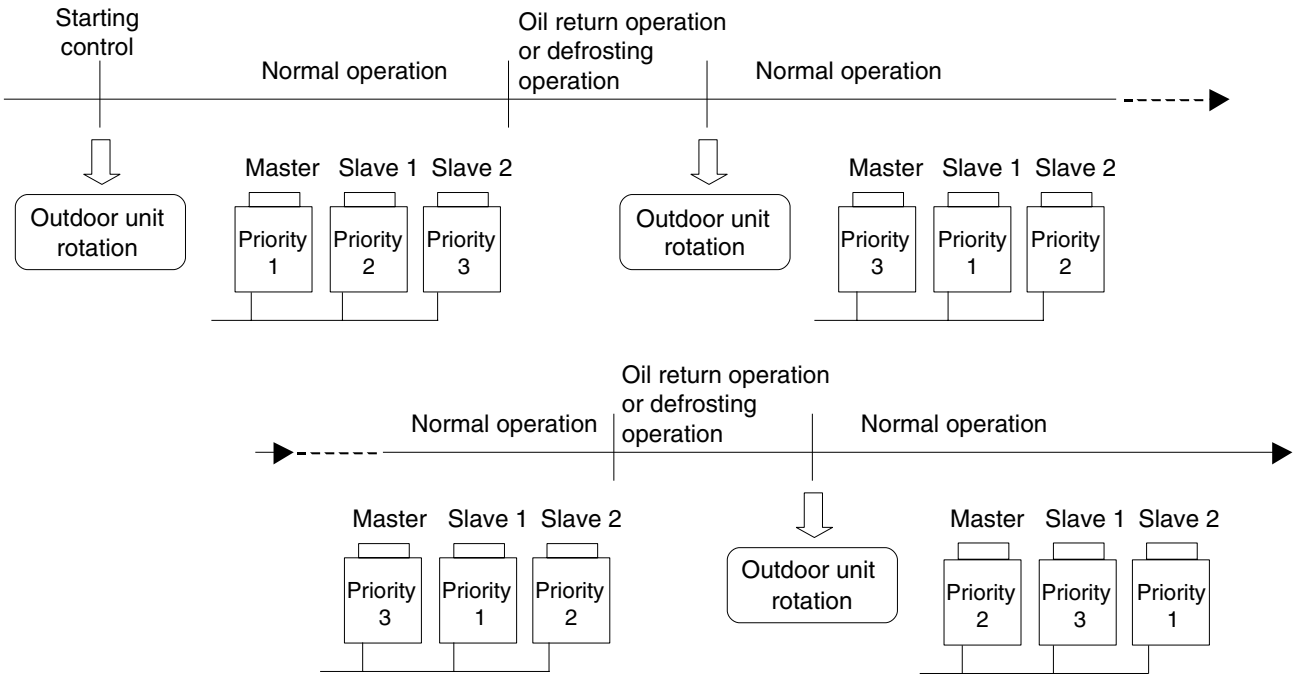
[Details of outdoor unit rotation]

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

[Timing of outdoor unit rotation]

or
- After oil return operation
- After defrosting operation
- At the beginning of the starting control

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



* "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. (Refer to the page 87.)

5.2 Emergency Operation

If the compressor cannot operate, this control inhibits any applicable compressor or outdoor unit from operating to perform emergency operation only with the operative compressor or outdoor unit.

Caution

"For making a compressor unable to operate due to malfunction, etc., be sure to conduct the work with emergency operation setting.
Never execute work such as disconnection of the power cable from magnet contactor. (Otherwise, other normal compressors may malfunction.)
∗ Because the units will be operated in the combination with which oil pressure equalization between compressors cannot be performed.

5.2.1 Restrictions for Emergency Operation

- In the case of system with 1 outdoor unit installed and when the inverter compressor is set to operation prohibit, only when thermostats of indoor units having a capacity of 50% or more of the outdoor unit capacity turn ON, the emergency operation is functional. (If the total capacity of indoor units with thermostat ON is small, the outdoor unit cannot operate.)
- If the emergency operation is set while the outdoor unit is in operation, the outdoor unit stops once after pump-down residual operation (a maximum of 5 minutes elapsed).

5.2.2 In the Case of 1-Outdoor-Unit System (REYQ8 to 16M)

- Emergency operation with settings in service mode

∗ "Inhibition of operation" is set with each compressor.

- To inhibit INV compressor from operating → Set setting mode 2 from No. 0 to No. 2.

LED display (○:ON ●:OFF ◑:Blink)
H1P — — — H7P

(Procedure)

(1) Press and hold the MODE button (BS1) for 5 sec. or more.	○●●●●●	
(2) Press the RETURN button (BS3) once.	○●●●●◑	(Factory set)
(3) Press the SET button (BS2) one.	○●●●◑●	
(4) Press the RETURN button (BS3) twice.	○●●●●●	
(5) Press the MODE button (BS1) once.	●●○●●●	

- To inhibit STD1 and STD2 compressors from operating → Set setting mode 2 from No. 19 to No. 2. (REYQ8M to REYQ16M)

LED display (○:ON ●:OFF ◑:Blink)
H1P — — — H7P

(Procedure)

(1) Press and hold the MODE button (BS1) for 5 sec. or more.	○●●●●●	
(2) Press the SET button (BS2) 19 times.	○●○●●○	
(3) Press the RETURN button (BS3) once.	○●●●●◑	(Factory set)
(4) Press the SET button (BS2) once.	○●●●◑●	
(5) Press the RETURN button (BS3) twice.	○●●●●●	
(6) Press the MODE button (BS1) once.	●●○●●●	

- To inhibit STD2 compressor from operating → Set setting mode 2 from No. 19 to No.3.(REYQ14M)

LED display (○:ON ●:OFF ◑:Blink)
H1P — — — H7P

(Procedure)

(1) Press and hold the MODE button (BS1) for 5 sec. or more.	○●●●●●	
(2) Press the SET button (BS2) 19 times.	○●○●●○	
(3) Press the RETURN button (BS3) once.	○●●●●◑	(Factory set)
(4) Press the SET button (BS2) twice.	○●●●◑◑	
(5) Press the RETURN button (BS3) twice.	○●●●●●	
(6) Press the MODE button (BS1) once.	●●○●●●	

- With REYQ14M and 16M, if INV compressor is inhibited from operating, only 1 STD compressor can operate for reasons of oil equalization.
- With REYQ14M and 16M, STD1 compressor cannot be inhibited from operating for reasons of oil equalization.
- When 1 outdoor unit is installed (with REYQ8M to 16M), automatic backup operation cannot be performed.

5.2.3 In the Case of Multi-Outdoor-Unit System (REYQ18 to 48M)

Automatic backup operation
With multi-outdoor-unit system, if a certain outdoor unit system malfunctions (i.e., the system stops and indoor unit remote controller displays the malfunction), by resetting the system with the indoor unit remote controller, the applicable outdoor unit is inhibited from operating for 8 hours, thus making it possible to perform emergency operation automatically.
However, in the event any of the following malfunctions occurs, automatic backup operation can be performed.

Malfunctions under which automatic backup operation can be performed:

- E3, E4, E5, E7
- F3
- H7, H9
- J2, J3, J5, J6, J7, J9, JA, JC
- L3, L4, L5, L8, L9, LC
- U2, UJ

Emergency operation with settings in service mode

* "Inhibition of operation" is set with each outdoor unit.

Make the following settings with the master unit. (Setting with the slave unit becomes disabled.)

* Discriminate the operating status of the master unit/slave units through the following LED display.

LED display (○:ON ●:OFF ◑:Blink)
H1P — — — H7P H8P

Master:	●●○●●●●	○
Slave 1:	●●●●●●●	◑
Slave 2:	●●●●●●●	●

(Factory set)

- To inhibit the master unit from operating → Set setting mode 2 from No. 38 to No. 2.

LED display (○:ON ●:OFF ◑:Blink)
H1P — — — H7P

(Procedure)

(1) Press and hold the MODE button (BS1) for 5 sec. or more.	○●●●●●●	
(2) Press the SET button (BS2) 38 times.	○○●●○○●	
(3) Press the RETURN button (BS3) once.	○●●●●●◑	(Factory set)
(4) Press the SET button (BS2) once.	○●●●●◑●	
(5) Press the RETURN button (BS3) twice.	○●●●●●●	
(6) Press the MODE button (BS1) once.	●●○●●●●	

- To inhibit the slave unit 1 from operating → Set setting mode 2 from No. 39 to No. 2.

LED display (○:ON ●:OFF ◑:Blink)
H1P — — — H7P

(Procedure)

(1) Press and hold the MODE button (BS1) for 5 sec. or more.	○●●●●●●	
(2) Press the SET button (BS2) 39 times.	○○●●○○○	
(3) Press the RETURN button (BS3) once.	○●●●●●◑	(Factory set)
(4) Press the SET button (BS2) once.	○●●●●◑●	
(5) Press the RETURN button (BS3) twice.	○●●●●●●	
(6) Press the MODE button (BS1) once.	●●○●●●●	

• To inhibit the slave unit 2 from operating → Set setting mode 2 from No. 40 to No. 2.

LED display (○:ON ●:OFF ◑:Blink)
H1P — — — H7P

(Procedure)

(1) Press and hold the MODE button (BS1) for 5 sec. or more.	○●●●●●	
(2) Press the SET button (BS2) 40 times.	○○●○●●	
(3) Press the RETURN button (BS3) once.	○●●●●◑	(Factory set)
(4) Press the SET button (BS2) once.	○●●●◑●	
(5) Press the RETURN button (BS3) twice.	○●●●●●	
(6) Press the MODE button (BS1) once.	●●○●●●	

*

• In the case of multi-outdoor-unit system, “Inhibition of operation” is not set with each compressor individually.
• In the case of multi-outdoor-unit system, when the above “Inhibition of operation” is set, outdoor unit rotation is not functional.

Notes : Reset the power supply during the outdoor unit is stopping to cancel the automatic backup operation forcibly.

5.3 Demand Operation

In order to save the power consumption, the capacity of outdoor unit is saved with control forcibly by using “Demand 1 Setting” or “Demand 2 Setting”.
To operate the unit with this mode, additional setting of “Continuous Demand Setting” or external input by external control adapter is required.

[Demand 1 setting]

Setting	Standard for upper limit of power consumption
Demand 1 setting 1	Approx. 60%
Demand 1 setting 2 (factory setting)	Approx. 70%
Demand 1 setting 3	Approx. 80%

[Demand 2 setting]

Setting	Standard for upper limit of power consumption
Demand 2 setting 2 (factory setting)	Approx. 40%

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

5.4 Heating Operation Prohibition

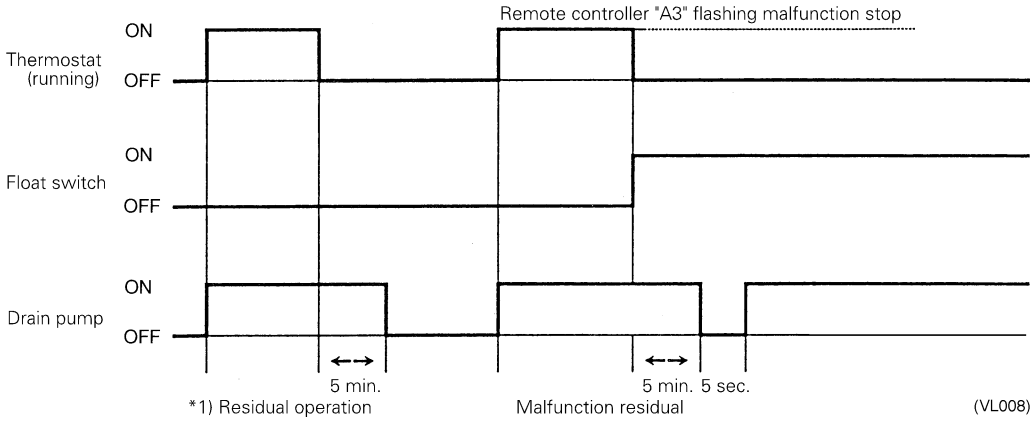
Heating operation is prohibited above 24°C ambient temperature.

6. Outline of Control (Indoor Unit)

6.1 Drain Pump Control

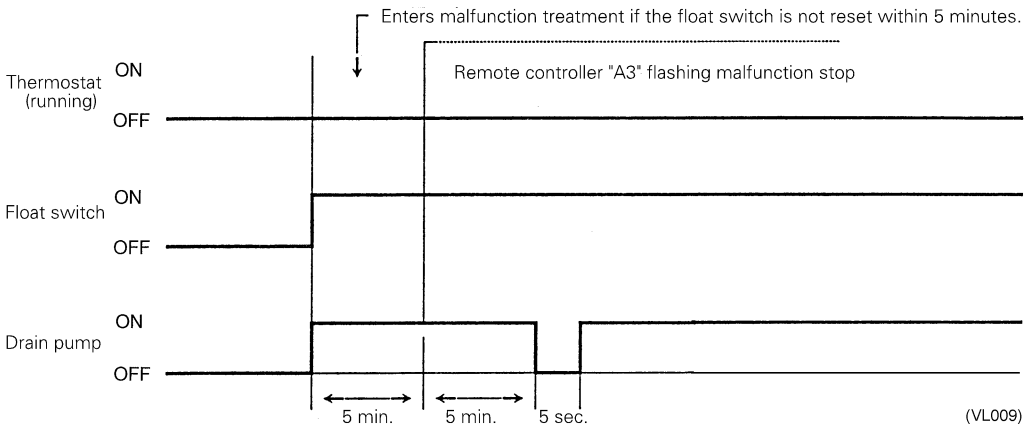
1. The drain pump is controlled by the ON/OFF buttons (4 button (1) - (4) given in the figure below).

6.1.1 When the Float Switch is Tripped While the Cooling Thermostat is ON:

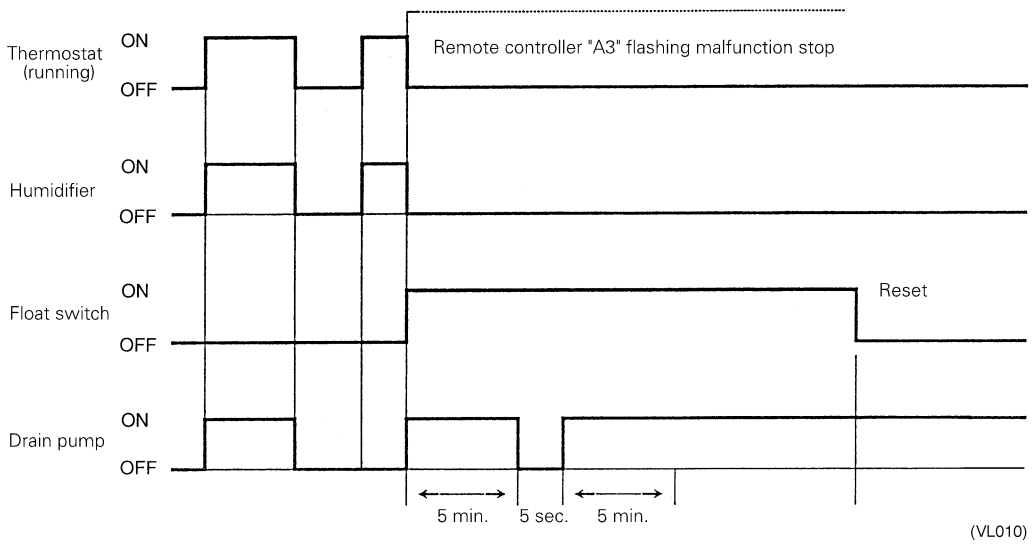


∗ 1. The objective of residual operation is to completely drain any moisture adhering to the fin of the indoor unit heat exchanger when the thermostat goes off during cooling operation.

6.1.2 When the Float Switch is Tripped During Cooling OFF by Thermostat:

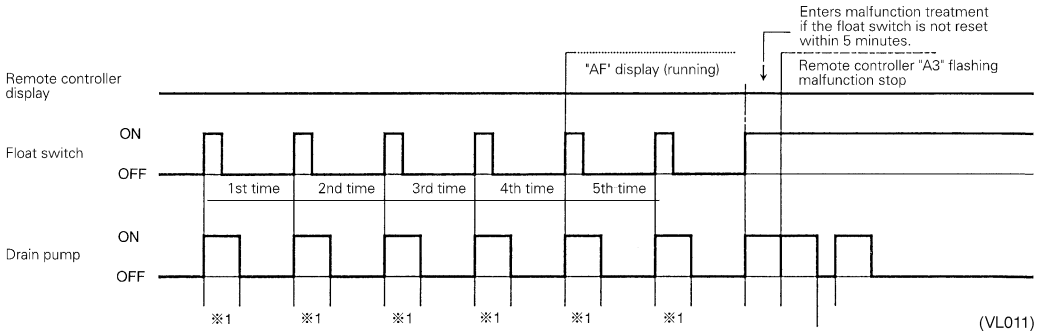


6.1.3 When the Float Switch is Tripped During Heating Operation:



During heating operation, if the float switch is not reset even after the 5 minutes operation, 5 seconds stop, 5 minutes operation cycle ends, operation continues until the switch is reset.

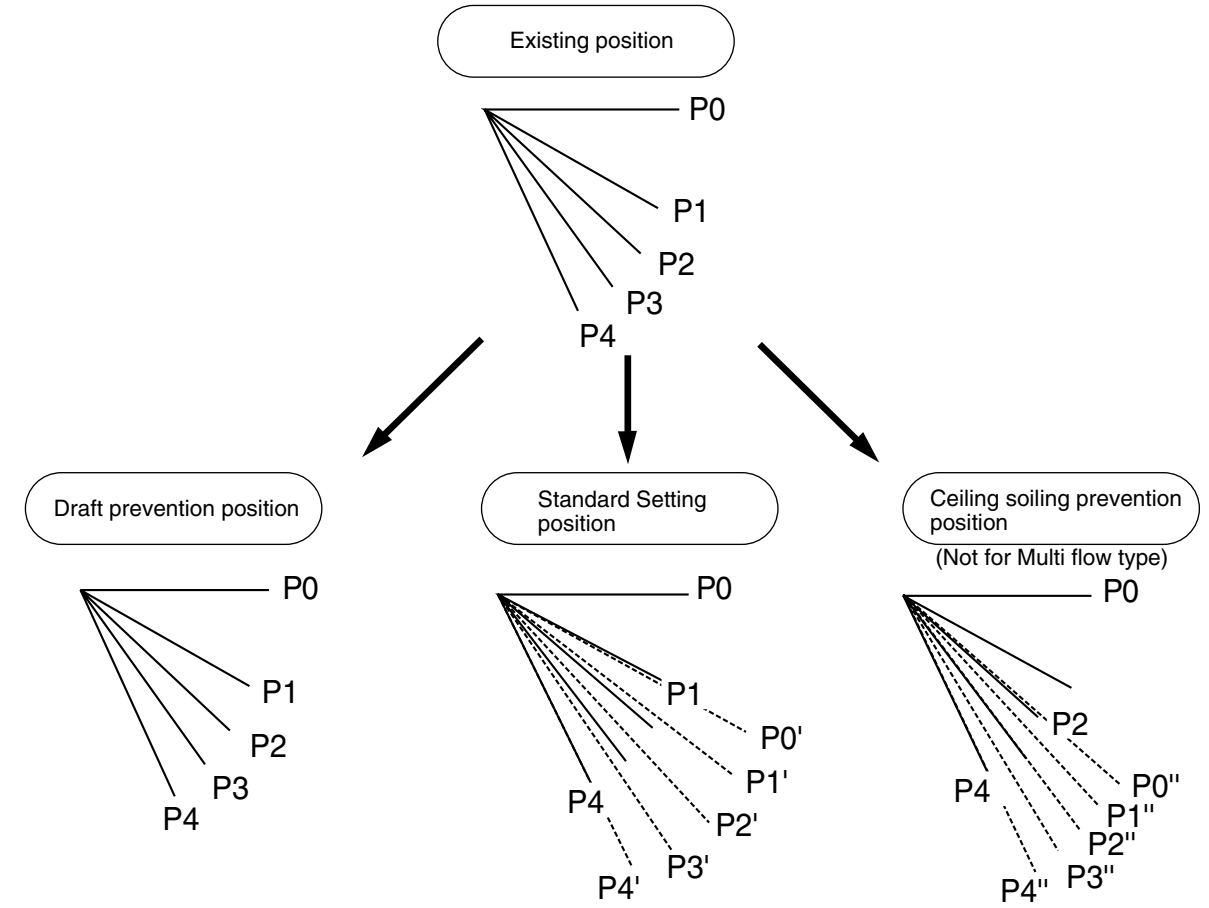
6.1.4 When the Float Switch is Tripped and "AF" is Displayed on the Remote Controller:



Notes: If the float switch is tripped five times in succession, a drain malfunction is determined to have occurred. "AF" is then displayed as operation continues.

6.2 Louver Control for Preventing Ceiling Dirt

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



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

The factory set position is standard position.

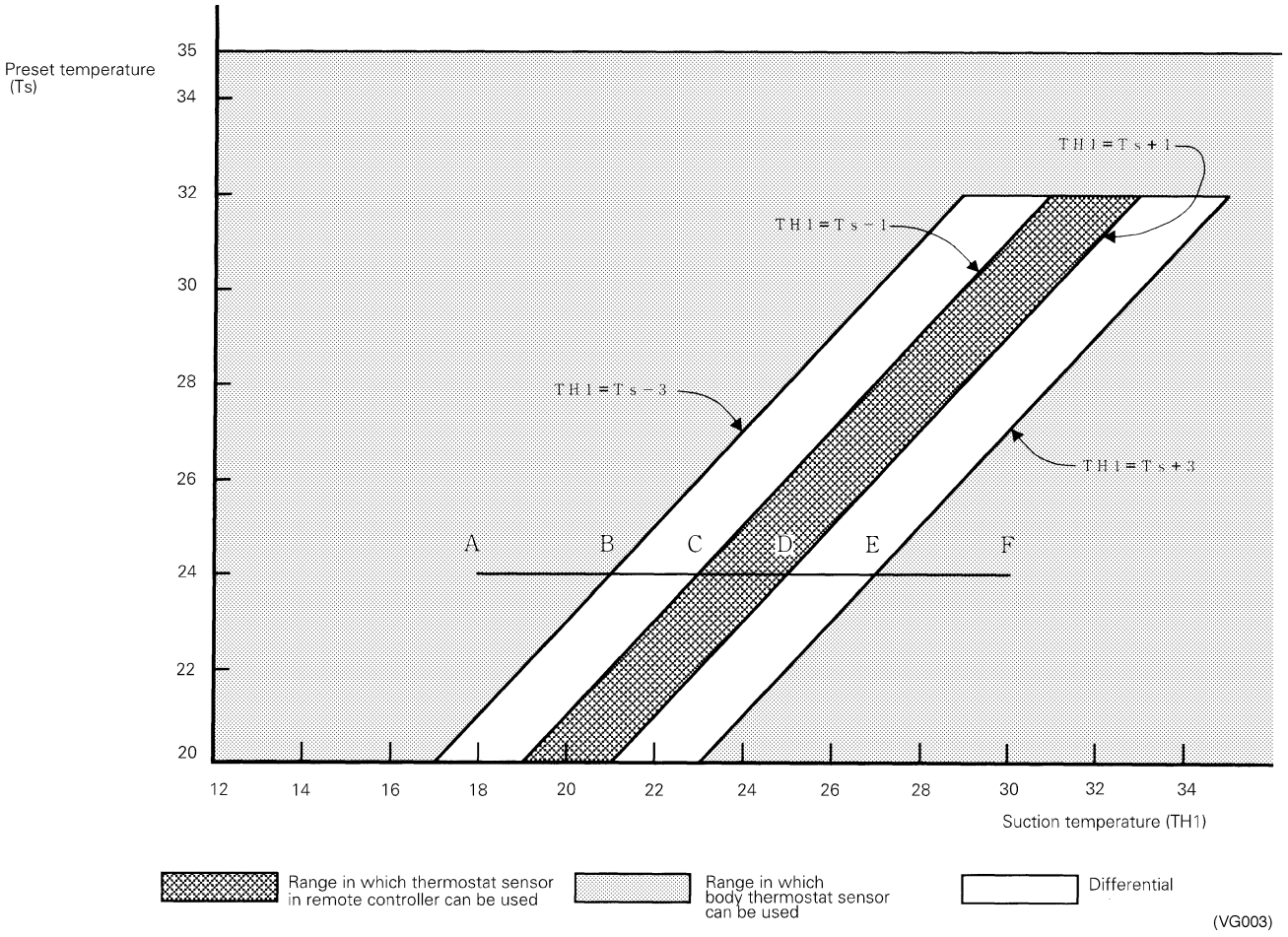
(VL012)

6.3 Thermostat Sensor in Remote Controller

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

Cooling

If there is a significant difference in the preset temperature and the suction temperature, fine adjustment control is carried out using a body thermostat sensor, or using the sensor in the remote controller near the position of the user when the suction temperature is near the preset temperature.



■ **Ex: When cooling**

Assuming the preset temperature in the figure above is 24°C, and the suction temperature has changed from 18°C to 30°C (A → F):

(This example also assumes there are several other air conditioners, the VRV system is off, and that temperature changes even when the thermostat sensor is off.)

Body thermostat sensor is used for temperatures from 18°C to 23°C (A → C).

Remote controller thermostat sensor is used for temperatures from 23°C to 27°C (C → E).

Body thermostat sensor is used for temperatures from 27°C to 30°C (E → F).

And, assuming suction temperature has changed from 30°C to 18°C (F → A):

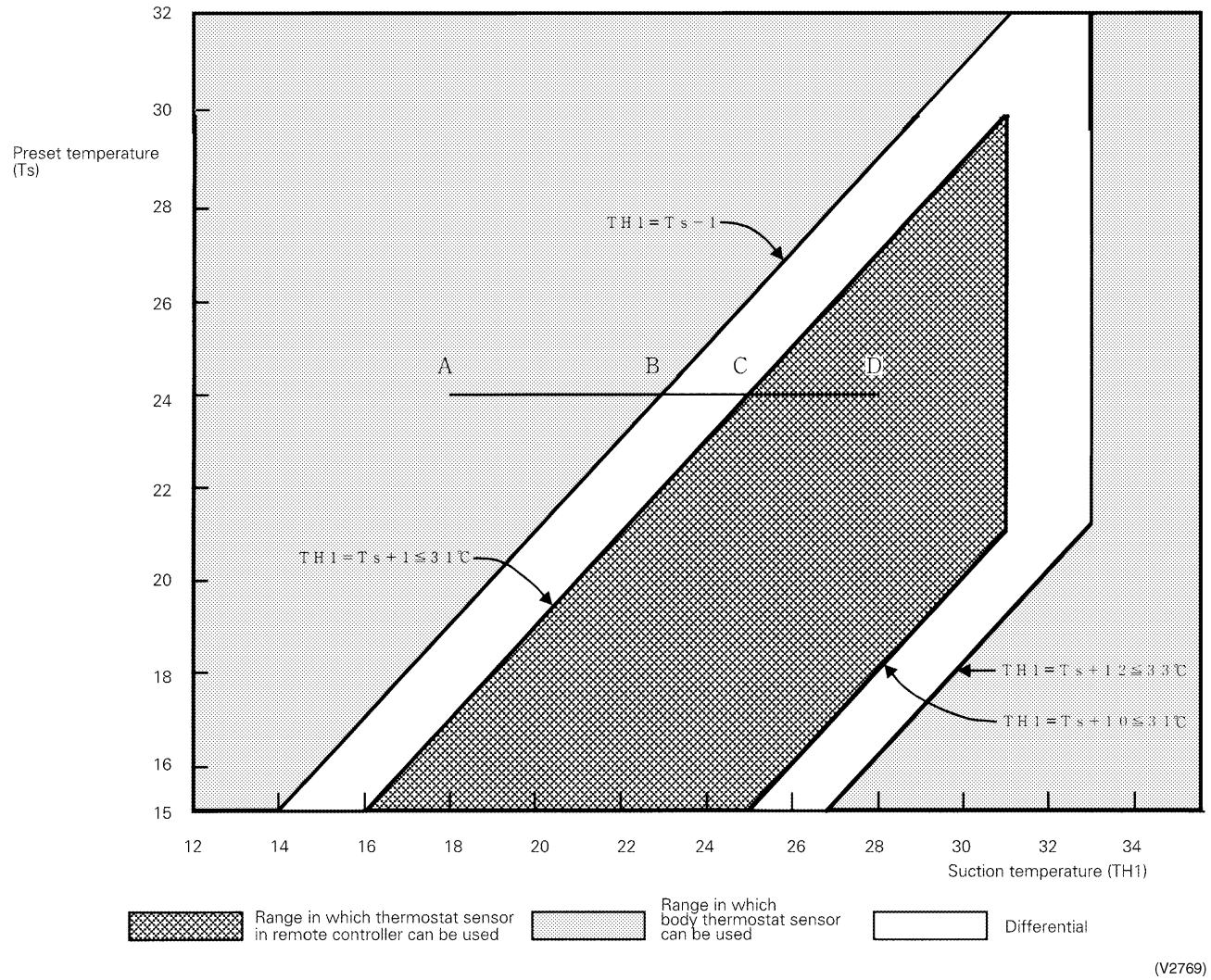
Body thermostat sensor is used for temperatures from 30°C to 25°C (F → D).

Remote controller thermostat sensor is used for temperatures from 25°C to 21°C (D → B).

Body thermostat sensor is used for temperatures from 21°C to 18°C (B → A).

Heating

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



■ **Ex: When heating**

Assuming the preset temperature in the figure above is 24°C, and the suction temperature has changed from 18°C to 28°C (A → D):

(This example also assumes there are several other air conditioners, the VRV system is off, and that temperature changes even when the thermostat sensor is off.)

Body thermostat sensor is used for temperatures from 18°C to 25°C (A → C).

Remote controller thermostat sensor is used for temperatures from 25°C to 28°C (C → D).

And, assuming suction temperature has changed from 28°C to 18°C (D → A):

Remote controller thermostat sensor is used for temperatures from 28°C to 23°C (D → B).

Body thermostat sensor is used for temperatures from 23°C to 18°C (B → A).

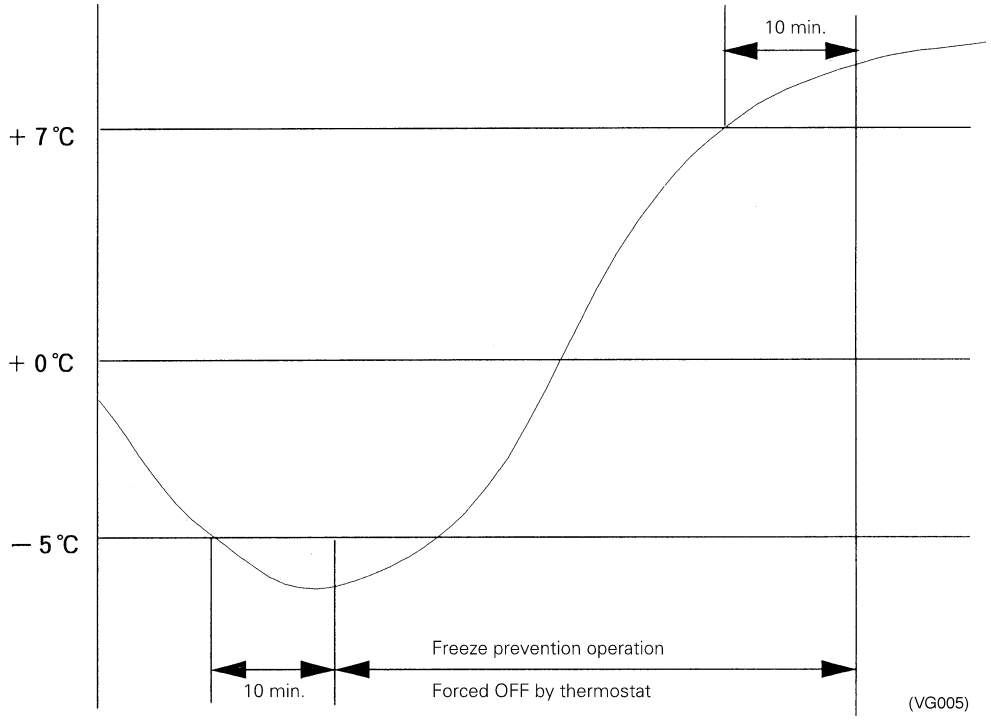
6.4 Freeze Prevention

Freeze Prevention by Off Cycle (Indoor Unit)

When the temperature detected by liquid pipe temperature thermistor (R2T) of the indoor unit heat exchanger drops too low, the unit enters freeze prevention operation in accordance with the following conditions, and is also set in accordance with the conditions given below.

Conditions for starting freeze prevention: Temperature is –1°C or less for total of 40 min., or temperature is –5°C or less for total of 10 min.
Conditions for stopping freeze prevention: Temperature is +7°C or more for 10 min. continuously

Ex: Case where temperature is –5°C or less for total of 10 min.



Part 5
Test Operation

1. Test Operation

1.1 Procedure and Outline

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

1.1.1 Check Work Prior to Turn Power Supply On

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

⇩

Check on refrigerant piping

⇩

Check on amount of refrigerant charge

○ Is the wiring performed as specified?
○ Are the designated wires used?
○ Is the grounding work completed?
Use a 500V megger tester to measure the insulation.
- Do not use a megger tester for other circuits than 200V (or 240v) circuit.

○ Are the setscrews of wiring not loose?

○ Is pipe size proper? (The design pressure of this product is 3.8MPa.)
○ Are pipe insulation materials installed securely?
Liquid and gas pipes need to be insulated. (Otherwise causes water leak.)
○ Are respective stop valves on liquid, gas and oil equalizing lines securely open?

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

(V3055)

1.1.2 Turn Power On

Turn outdoor unit power on.

⇩

Carry out field setting on outdoor PC board

⇩

Turn indoor unit power on.

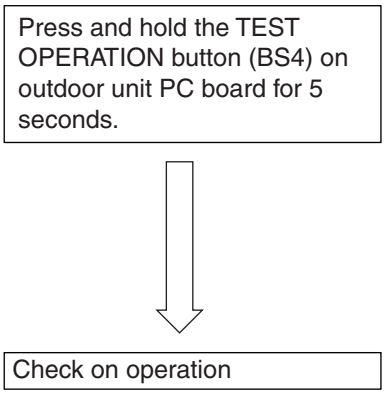
○ Be sure to turn the power on 6 hours before starting operation to protect compressors. (to power on clankcase heater)

○ For field settings, refer to “Field Settings” on and after P95.
After the completion of field settings, set to “Setting mode 1”.

(V3056)

1.1.3 Check Operation

* During check operation, mount front panel to avoid the misjudging.
* Check operation is mandatory for normal unit operation.
  (When the check operation is not executed, alarm code "U3" will be displayed.)



○ The test operation is started automatically.
The following judgements are conducted within 15 minutes.
- "Check for wrong wiring"
- "Check refrigerant for over charge"
- "Check stop valve for not open"
- Pipe length automatic judgement"

The following indications are conducted while in test operation.
- LED lamp on outdoor unit PC board — H2P flickers (test operation)
- Remote controller — Indicates "On Centralized Control" on upper right.
  Indicates "Test Operation" on lower left

(V3057)

Refer the detail of check operation function to page 131.

On completion of test operation, LED on outdoor unit PC board displays the following.
H3P ON: Normal completion
H2P and H3P ON: Abnormal completion →Check the indoor unit remote controller for abnormal display and correct it.

In the case of multi-outdoor-unit system, make setting on the master unit PC board. (Setting with the slave unit is disabled.)
[LED display in the case of multi-outdoor-unit system] (Same as that in emergency operation)

* Discriminate the operating status of the master unit/slave units through the following LED display.

LED display (○:ON ●:OFF ◑:Blink)

	H1P	—	—	—	H7P	H8P
Master:	●	●	○	●	●	● ● ○
Slave 1:	●	●	●	●	●	● ● ◑
Slave 2:	●	●	●	●	●	● ● ●

(Factory set)

Malfunction code
In case of an alarm code displayed on remote controller:

Cause of trouble due to faulty installation work	Alarm code	Countermeasure
Closed stop valve of outdoor unit	E3 E4 F3 UF	In case of REYQ8 to 16M (Single outdoor installation) Liquid side stop valve : Open Gas side stop valve : Open Oil equalizing pipe stop valve : Close In case of REYQ18 to 48M (Multi outdoor installation) Liquid side stop valve : Open Gas side stop valve : Open Oil equalizing pipe stop valve : Open
Reversed phase in power cable connection for outdoor unit	U1	Change connection of two wires among three for correct phasing.
Electric power for outdoor or indoor unit is not supplied. (Including open phase)	U4	Check that the power cable for outdoor unit is connected properly.
Incorrect wiring between units	UF	Check that the wiring between units corresponds correctly to refrigerant piping system.
Refrigerant overcharge	E3 F6 UF	Compute again optimum amount of refrigerant to be added based on the piping length, then, collect the excessive amount by using refrigerant collector to make the refrigerant amount proper.
Insufficient refrigerant	E4 F3	- Check that additional charging has been carried out. - Compute again the refrigerant amount to be added based on the piping length, and charge proper amount of refrigerant additionally.

1.1.4 Confirmation on Normal Operation

- Conduct normal unit operation after the check operation has been completed.
  (When outdoor air temperature is 24ºC or higher, the unit can not be operated with heating mode. See the instruction manual attached.)
  Confirm that the indoor/outdoor units can be operated normally.
  (When an abnormal noise due to liquid compression by the compressor can be heard, stop the unit immediately, and turn on the crankcase heater to heat up it sufficiently, then start operation again.)
- Operate indoor unit one by one to check that the corresponding outdoor unit operates.
- Confirm that the indoor unit discharges cold air (or warm air).
- Operate the air direction control button and flow rate control button to check the function of the devices.

1.2 Operation When Power is Turned On

1.2.1 When Turning On Power First Time

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

Status

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

1.2.2 When Turning On Power the Second Time and Subsequent

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

Status

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

1.2.3 When an Indoor Unit or Outdoor Unit Has Been Added, or Indoor or Outdoor Unit PC Board Has Been Changed

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

Status

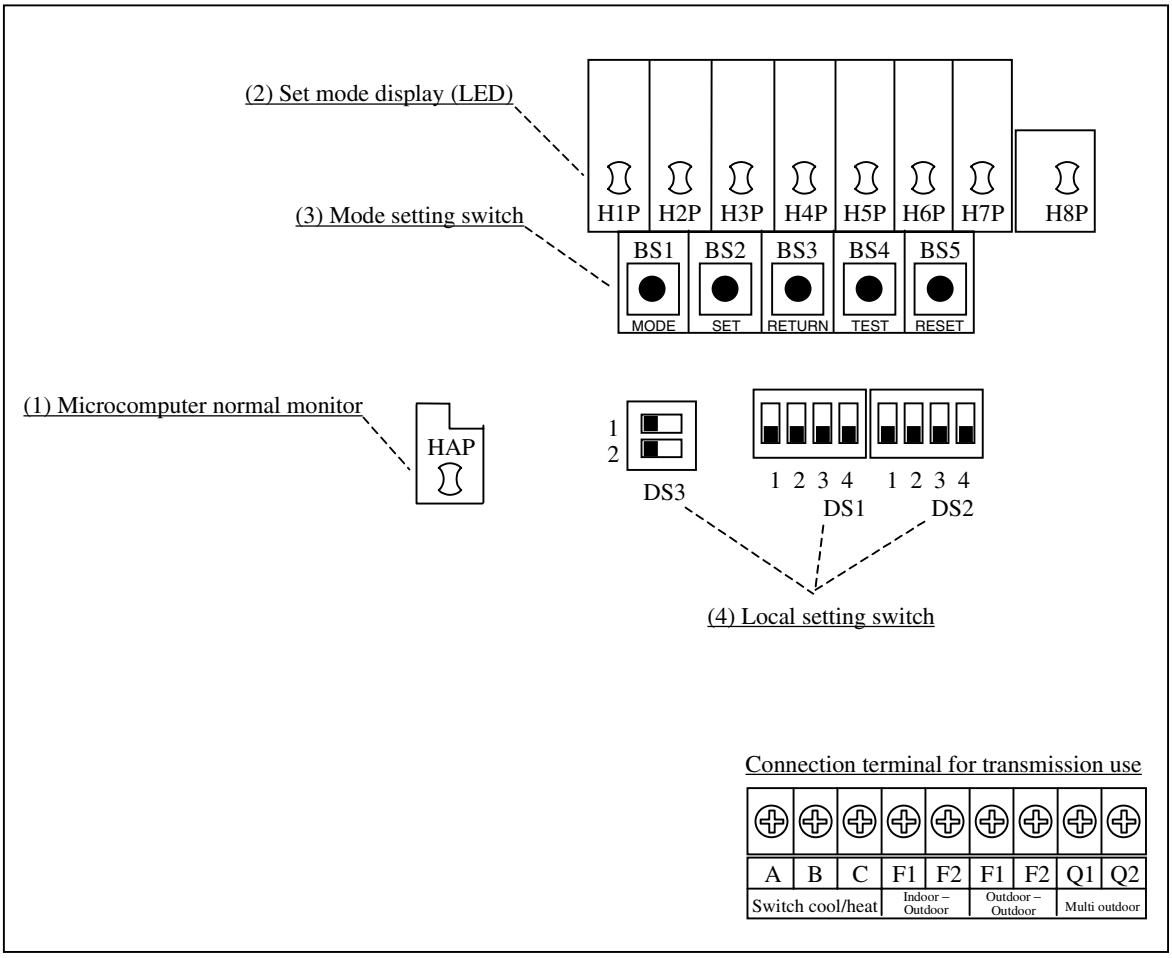
Outdoor unit	Test lamp H2P .... ON Can also be set during operation described above.
Indoor unit	If ON button is pushed during operation described above, the “UH” or “U4” malfunction indicator blinks. (Returns to normal when automatic setting is complete.)

⚠ **Caution When the 400 volt power supply is applyed to "N" phase by mistake, replace Inverter P.C.B (A2P) and control transformer (T1R, T2R) in switch box together.**

(V0847)

2. Outdoor Unit PC Board Layout

Outdoor unit PC board



(V3054)

(1) Microcomputer normal monitor
This monitor blinks while in normal operation, and turns on or off when a malfunction occurs.

(2) Set mode display (LED)
LEDs display mode according to the setting.

(3) Mode setting switch
Used to change mode.

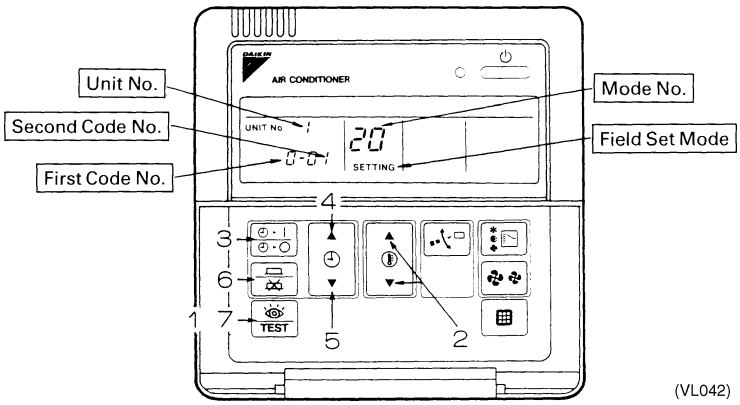
(4) Local setting switch
Used to make local settings.

3. Field Setting

3.1 Field Setting from Remote Controller

Individual function of indoor unit can be changed from the remote controller. At the time of installation or after service inspection / repair, make the local setting in accordance with the following description.
Wrong setting may cause malfunction.
(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.)

3.1.1 Wired Remote Controller <BRC1A61, 62>



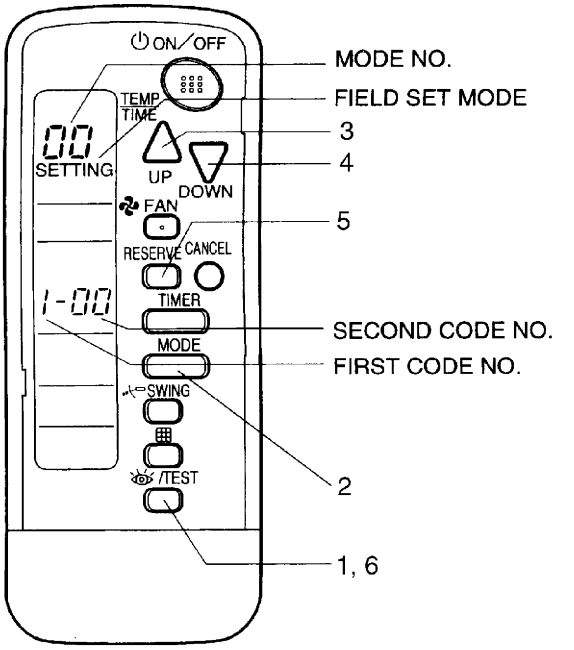
(VL042)

1. When in the normal mode, push the TEST button for 4 seconds or more, and operation then enters the “field set mode.”
2. Select the desired “mode No.” with the button.
3. During group control and you want to set by each individual indoor unit (when mode No. 20, 21, 22, 23, 25 has been selected), push the time mode button and select the “indoor unit No.” to be set.
   Note: This operation is not required when setting as a group.
4. Push the button and select the first code No.
5. Push the button and select the second code No.
6. Push the timer button one time and “define” the currently set contents.
7. Push the TEST button to return to the normal mode.

(Example)
When setting the filter sign time to “Filter Dirtiness-High” in all group unit setting, set the Mode No. to “10”, Mode setting No. to “0” and setting position No. to “02”.

3.1.2 Wireless Remote Controller - Indoor Unit

BRC7C type



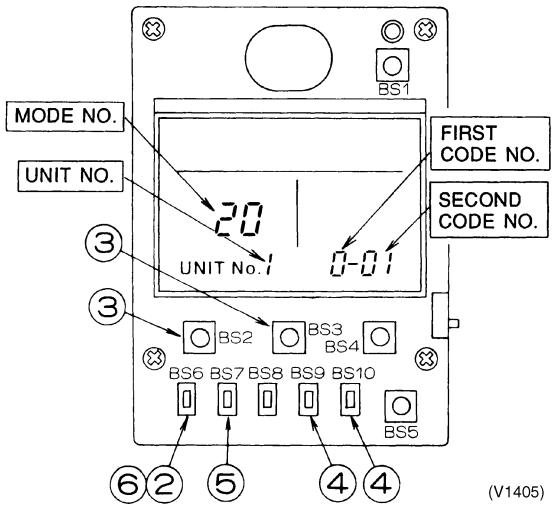
(V2770)

1. When in the normal mode, push the /TEST button for 4 seconds or more, and operation then enters the “field set mode.”
2. Select the desired “mode No.” with the MODE button.
3. Pushing the UP button, select the first code No.
4. Pushing the DOWN button, select the second code No.
5. Push the timer RESERVE button and check the settings.
6. Push the /TEST button to return to the normal mode.

(Example)
When setting the filter sign time to “Filter Dirtiness-High” in all group unit setting, set the Mode No. to “10”, Mode setting No. to “0” and setting position No. to “02”.

3.1.3 Simplified Remote Controller

BRC2A51



■ Group No. setting by simplified remote controller.

1. Remove the cover of remote controller.
2. While in normal mode, press the [BS6] BUTTON (field set) to enter the FIELD SET MODE.
3. Select the mode No. [00] with [BS2] BUTTON (temperature setting ▲) and [BS3] BUTTON (temperature setting ▼).
4. Select the group No. with [BS9] BUTTON (set A) and [BS10] BUTTON (set B). (Group Nos. increase in the order of 1-00, 1-01.....1-15, 2-00,.....4-15. However, the unified ON/OFF controller displays only group No. set within the range of control.)
5. Press [BS7] BUTTON (set/cancel) to set group No.
6. Press [BS6] BUTTON (field set) to return to the NORMAL MODE.

3.1.4 Setting Contents and Code No. – VRV Unit

VRV system indoor unit settings	Mode No. Note 2	Setting Switch No.	Setting Contents		Second Code No.(Note 3)							
					01		02		03		04	
	10(20)	0	Filter contamination heavy/ light (Setting for display time to clean air filter) (Sets display time to clean air filter to half when there is heavy filter contamination.)	Super long life filter	Light	Approx. 10,000 hrs.	Heavy	Approx. 5,000 hrs.	—		—	
				Long life filter		Approx. 2,500 hrs.		Approx. 1,250 hrs.				
				Standard filter		Approx. 200 hrs.		Approx. 100 hrs.				
		1	Long life filter type		Long life filter		Super long life filter		—		—	
		2	Thermostat sensor in remote controller		Use		No use		—			
		3	Display time to clean air filter calculation (Set when filter sign is not to be displayed.)		Display		No display		—			
	12(22)	0	Optional accessories output selection (field selection of output for adaptor for wiring)		Indoor unit turned ON by thermostat				Operation output		Malfunction output	
		1	ON/OFF input from outside (Set when ON/OFF is to be controlled from outside.)		Forced OFF		ON/OFF control		—		—	
		2	Thermostat differential changeover (Set when remote sensor is to be used.)		1°C		0.5°C		—		—	
		3	OFF by thermostat fan speed		LL		Set fan speed		—		—	
		4	Automatic mode differential (automatic temperature differential setting for VRV system heat recovery series cool/heat)		01:0	02:1	03:2	04:3	05:4	06:5	07:6	08:7
		5	Power failure automatic reset		Not equipped		Equipped		—		—	
	13(23)	0	High air outlet velocity (Set when installed in place with ceiling higher than 2.7 m.)		N		H		S		—	
		1	Selection of air flow direction (Set when a blocking pad kit has been installed.)		F (4 directions)		T (3 directions)		W (2 directions)		—	
		3	Air flow direction adjustment (Set at installation of decoration panel.)		Equipped		Not equipped				—	
		4	Field set air flow position setting		Draft prevention		Standard		Ceiling Soiling prevention		—	
		5	Field set fan speed selection (fan speed control by air discharge outlet for phase control)		Standard		Optional accessory 1		Optional accessory 2		—	
	15(25)	1	Thermostat OFF excess humidity		Not equipped		Equipped		—		—	
		2	Direct duct connection (when the indoor unit and heat reclaim ventilation unit are connected by duct directly.) ∗Note 6		Not equipped		Equipped		—		—	
		3	Drain pump humidifier interlock selection		Not equipped		Equipped		—		—	
		5	Field set selection for individual ventilation setting by remote controller		Not equipped		Equipped		—		—	
		6	Field set selection for individual ventilation setting by remote controller		Not equipped		Equipped		—		—	

Notes:

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. Marked ▭ are factory set.
4. Do not make settings other than those described above. Nothing is displayed for functions the indoor unit is not equipped with.
5. “88” may be displayed to indicate the remote controller is resetting when returning to the normal mode.
6. If the setting mode to “Equipped”, heat reclaim ventilation fan conducts the fan residual operation by linking to indoor unit.

3.1.5 Applicable Range of Field Setting

	Ceiling mounted cassette type			Ceiling mounted built-in type	Ceiling mounted duct type	Ceiling suspended type	Wall mounted type	Floor standing type	Concealed Floor standing type
	Multi flow	Double flow	Corner type						
	FXFQ	FXCQ	FXKQ	FXSQ	FXMQ	FXHQ	FXAQ	FXLQ	FXNQ
Filter sign	○	○	○	○	○	○	○	○	○
Ultra long life filter sign	○	○	—	—	—	—	—	—	—
Remote controller thermostat sensor	○	○	○	○	○	○	○	○	○
Set fan speed when thermostat OFF	○	○	○	○	○	○	○	○	○
Air flow adjustment Ceiling height	○	—	—	—	—	○	—	—	—
Air flow direction	○	—	—	—	—	—	—	—	—
Air flow direction adjustment (Down flow operation)	—	—	○	—	—	—	—	—	—
Air flow direction adjustment range	○	○	○	—	—	—	—	—	—
Field set fan speed selection	○	—	—	—	—	○	—	—	—

3.1.6 Detailed Explanation of Setting Modes

Filter Sign Setting

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

Set Time

Filter Specs. / Setting	Standard	Long Life	Ultra Long Life Filter
Contamination Light	200 hrs.	2,500 hrs.	10,000 hrs.
Contamination Heavy	100 hrs.	1,250 hrs.	5,000 hrs.

Ultra-Long-Life Filter Sign Setting

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

Setting Table

Mode No.	Setting Switch No.	Setting Position No.	Setting
10 (20)	1	01	Long-Life Filter
		02	Ultra-Long-Life Filter (1)
		03	—

Fan Speed Changeover When Thermostat is OFF

By setting to “Set Fan Speed,” you can switch the fan speed to the set fan speed when the heating thermostat is OFF.

∗ Since there is concern about draft if using “fan speed up when thermostat is OFF,” you should take the setup location into consideration.

Setting Table

Mode No.	First Code No.	Second Code No.	Setting
12(22)	3	01	LL Fan Speed
		02	Set Fan Speed

Auto restart after power failure reset

For the air conditioners with no setting for the function (same as factory setting), 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, the units may start automatically after power failure reset or the main power supply turned on again (return to the same operation condition as that of before power failure).

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

⚠ **Caution**

1. The air conditioner starts operation suddenly after power failure reset or the main power supply turned on again. Consequently, the user might be surprised (with question for the reason why).

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

Air Flow Adjustment - Ceiling height

Make the following setting according to the ceiling height. The setting position No. is set to “01” at the factory.

■ **In the Case of FXAQ, FXHQ**

Mode No.	Setting Switch No.	Setting Position No.	Setting
13(23)	0	01	Wall-mounted type: Standard
		02	Wall-mounted type: Slight increase
		03	Wall-mounted type: Normal increase

■ **In the Case of FXFQ25~80**

Mode No.	First code No.	Second code No.	Setting	Ceiling height		
				4-way Outlets	3-way Outlets	2-way Outlets
13 (23)	0	01	Standard (N)	Lower than 2.7 m	Lower than 3.0 m	Lower than 3.5 m
		02	High Ceiling (H)	Lower than 3.0 m	Lower than 3.3 m	Lower than 3.8 m
		03	Higher Ceiling (S)	Lower than 3.5 m	Lower than 3.5 m	—

■ **In the Case of FXFQ100~125**

Mode No.	First code No.	Second code No.	Setting	Ceiling height		
				4-way Outlets	3-way Outlets	2-way Outlets
13 (23)	0	01	Standard (N)	Lower than 3.2 m	Lower than 3.6 m	Lower than 4.2 m
		02	High Ceiling (H)	Lower than 3.6 m	Lower than 4.0 m	Lower than 4.2 m
		03	Higher Ceiling (S)	Lower than 4.2 m	Lower than 4.2 m	—

Air Flow Direction Setting

Set the air flow direction of indoor units as given in the table below. (Set when optional air outlet blocking pad has been installed.) The second code No. is factory set to “01.”

Setting Table

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

Setting of Air Flow Direction Adjustment

Only the model FXKQ has the function.

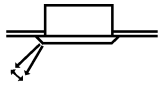
When only the front-flow is used, sets yes/no of the swing flap operation of down-flow.

Setting Table

Setting	Mode No.	First Code No.	Second Code No.
Down-flow operation: Yes	13 (23)	3	01
Down-flow operation: No			02

Setting of Air Flow Direction Adjustment Range

Make the following air flow direction setting according to the respective purpose.



(S2537)

Setting Table

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

Air flow rate switching at discharge grille for field air flow rate switching

When the optional parts (high performance filter, etc.) is installed, sets to change fan speed for securing air flow rate.

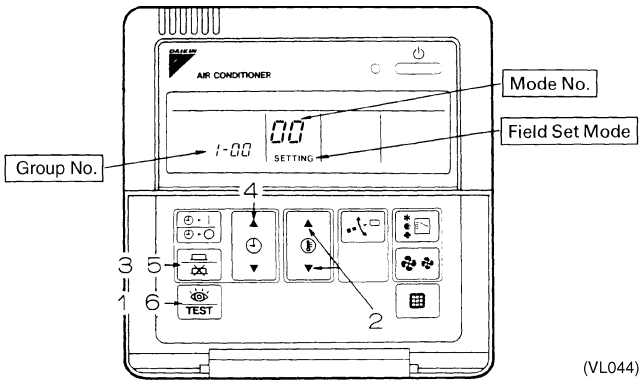
Follow the instruction manual for the optional parts to enter the setting numbers.

3.1.7 Centralized Control Group No. Setting

BRC1A Type

- If carrying out centralized control by central remote controller or unified ON/OFF controller, group No. must be set for each group individually by remote controller.
- Group No. setting by remote controller for centralized control

1. When in the normal mode, push the TEST button for 4 seconds or more, and operation then enters the "field setting mode."
2. Set mode No. "00" with the button. *
3. Push the button to inspect the group No. display.
4. Set the group No. for each group with the button (The group No. increases in the manner of 1-00, 1-01, ...,1-15, 2-00,...4-15. However, the unified ON/OFF controller displays only the group No. within the range selected by the switch for setting each address.)
5. Push the timer button to define the selected group No.
6. Push the TEST button to return to the normal mode.



(VL044)

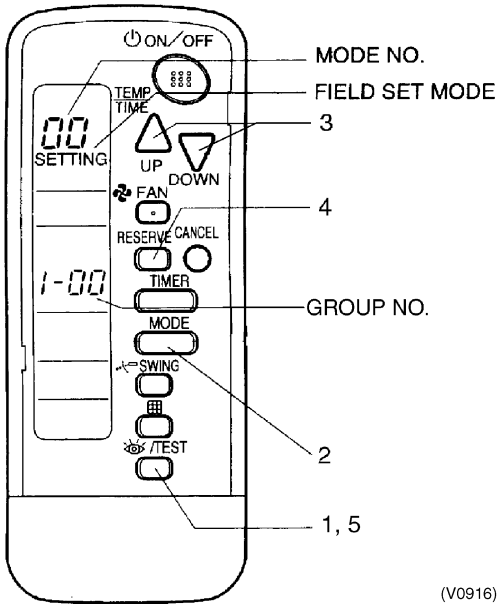
- Even if not using a remote controller, connect the remote controller when setting the group No., set the group No. for centralized control, and disconnect after making the setting.
- Set the group No. after turning on the power supply for the central remote controller, unified ON/OFF controller, and indoor unit.

BRC7C Type

- Group No. setting by wireless remote controller for centralized control

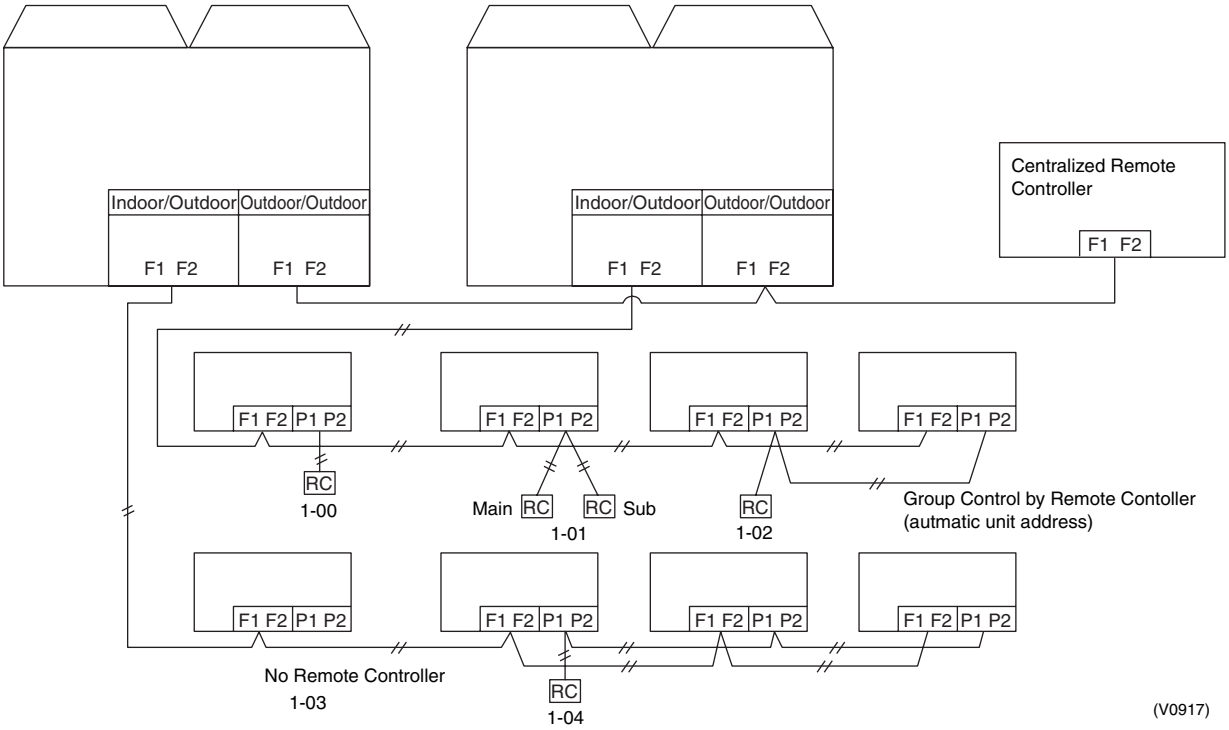
1. When in the normal mode, push /TEST button for 4 seconds or more, and operation then enters the "field set mode."
2. Set mode No. "00" with MODE button.
3. Set the group No. for each group with UP DOWN button (advance/backward).
4. Enter the selected group numbers by pushing RESERVE button.
5. Push /TEST button and return to the normal mode.

BRC7C Type



(V0916)

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.

3.1.8 Setting of Operation Control Mode from Remote Controller (Local Setting)

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

3.1.9 Contents of Control Modes

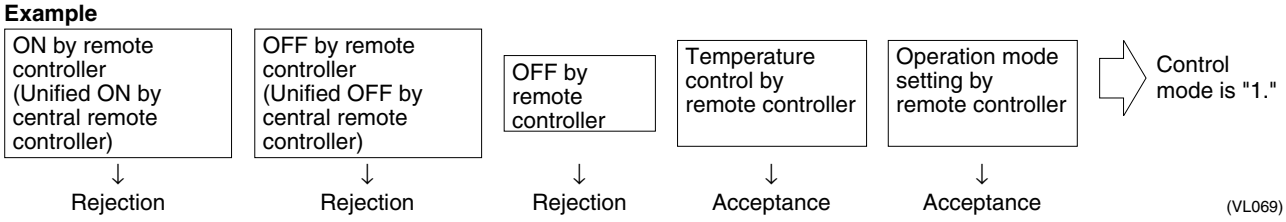
Twenty modes consisting of combinations of the following five operation modes with temperature and operation mode setting by remote controller can be set and displayed by operation modes 0 through 19.

- ON/OFF control impossible by remote controller
  Used when you want to turn on/off by 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.

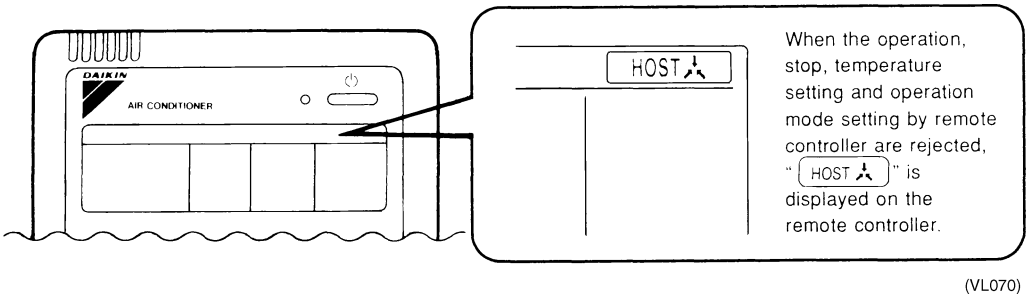
Example



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 ∗1
					Rejection	17
Timer operation possible by remote controller	Acceptance (During timer at ON position only)	Acceptance (During timer at ON position only)		Rejection	Acceptance	8
					Rejection	18
				Acceptance	Acceptance	9
					Rejection	19

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

∗1. Factory setting



(VL070)

3.2 Field Setting from Outdoor Unit

3.2.1 Field Setting from Outdoor Unit

■ **Setting by dip switches**

The following field settings are made by dip switches on PC board.

Dipswitch		Setting item	Description
No.	Setting		
DS1-1	ON	Not used	Do not change the factory settings.
	OFF (Factory set)		
DS1-2 ~DS1-4	ON	Not used	Do not change the factory settings.
	OFF (Factory set)		
DS2-1 ~4	ON	Not used	Do not change the factory settings.
	OFF (Factory set)		
DS3-1, 2	ON	Not used	Do not change the factory settings.
	OFF (Factory set)		

Caution

DIP switch Setting after changing the main P.C.Board(A1P) to spare parts P.C.B.

When you change the main P.C.Board(A1P) to spare parts P.C.B., please carry out the following setting.

DIP Switch Detail

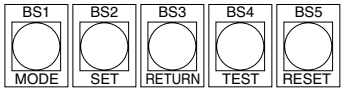
DS No.	Item	Contents	
DS1-1	—	—	
DS1-2	Domestic/Overseas setting	ON	Domestic Japan
		OFF	Overseas
DS1-3	—	—	
DS1-4	Refrigerant classification (Do not set)	R410A	
DS2-1		DS1-4: OFF DS2-1: ON	
DS2-2	HP setting (Horse power)	8 HP: DS2-2 OFF, DS2-3 ON, DS2-4 OFF	
DS2-3		10 HP: DS2-2 ON, DS2-3 ON, DS2-4 OFF	
DS2-4		12 HP: DS2-2 OFF, DS2-3 OFF, DS2-4 ON 14 HP: DS2-2 ON, DS2-3 OFF, DS2-4 ON 16 HP: DS2-2 OFF, DS2-3 ON, DS2-4 ON	

■ **Setting by pushbutton switches**

The following settings are made by pushbutton switches on PC board.
In case of multi-outdoor unit system, various items should be set with the master unit.
(Setting with the slave unit is disabled.)
The master unit and slave unit can be discriminated with the LED indication as shown below.

	H1P	H2P	H3P	H4P	H5P	H6P	H7P	H8P
Master unit	●	●	○	●	●	●	●	○
Slave unit 1	●	●	●	●	●	●	●	◑
Slave unit 2	●	●	●	●	●	●	●	●

(Factory setting)



(V2760)

There are the following three setting modes.

① **Setting mode 1 (H1P off)**

Initial status (when normal) : Indicates during “abnormal”, “low noise control” and “demand control”.

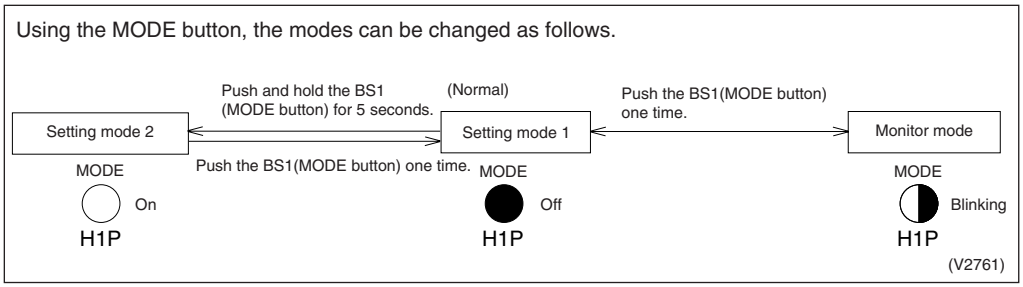
② **Setting mode 2 (H1P on)**

Used to modify the operating status and to set program addresses, etc. Usually used in servicing the system.

③ **Monitor mode (H1P blinks)**

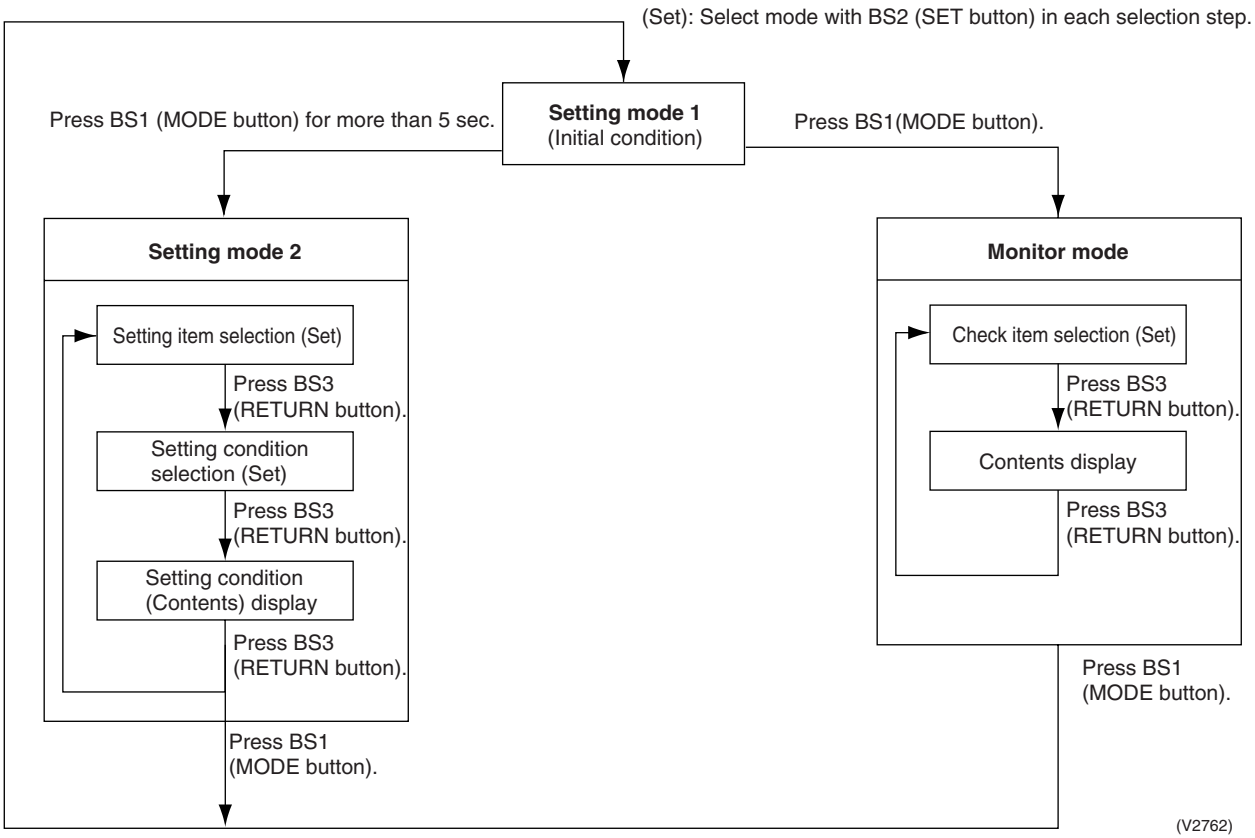
Used to check the program made in Setting mode 2.

■ Mode changing procedure



(V2761)

■ Mode changing procedure



(V2762)

a. “Setting mode 1”

“Normally, “Setting mode 1” is set. In case of other status, push MODE button (BS1) one time and set to “Setting mode 1”.

<Selection of setting items>

Push the SET button (BS2) and set LED display to a setting item you want.

- Regarding setting item No. 1,5,6, only the present status is displayed. For the respective description, refer to the table shown on lower right.

When the RETURN button (BS3) is pushed, the status becomes the initial status of “Setting mode 1”.

(V2763)

No.	Setting (displaying) item	LED display example						
		H1P	H2P	H3P	H4P	H5P	H6P	H7P
1	Display for malfunction / preparing / test run *	●	●	○	●	●	●	●
2	C/H selector (individual)	●	●	○	●	●	●	●
3	—							
4	—							
5	Low noise operation *	●	●	○	●	●	●	●
6	Demand operation *	●	●	○	●	●	●	●

* Setting No. 1, 5, 6 are the present status display only.

Display for malfunction/preparing/test-run

Normal	●	●	○	●	●	●	●
Malfunction	●	○	○	●	●	●	●
Preparing/Test-run	●	◑	○	●	●	●	●

Display during low noise operation

Normal	●	●	○	●	●	●	●
During low noise operation	●	●	○	●	●	○	●

Display during demand operation

Normal	●	●	○	●	●	●	●
During demand operation	●	●	○	●	●	●	○

○ : ON
● : OFF
◑ : Blinking

b. “Setting mode 2”

Push and hold the MODE button (BS1) for 5 seconds and set to “Setting mode 2”.

<Selection of setting items>

Push the SET button (BS2) and set the LED display to a setting item shown in the table on the right.
↓
Push the RETURN button (BS3) and decide the item. (The present setting condition is blinked.)

<Selection of setting conditions>

Push the SET button (BS2) and set to the setting condition you want.
↓
Push the RETURN button (BS3) and decide the condition.

Push the RETURN button (BS3) and set to the initial status of “Setting mode 2”.

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

(V2764)

No.	Setting item	Description
0	EMG (Emergency operation 1)	Operates by Standard compressor only when inverter compressor malfunctions. Temporary operation until the compressor is replaced. Since the comfortableness is extremely deteriorated, immediately replace the compressor.
1	—	—
2	Low noise/demand address	Address for low noise/demand operation
5	Indoor unit forced fan H	Allows forced operation of indoor unit fan while unit is stopped. (H tap)
6	Indoor unit forced operation	Allows forced operation of indoor unit.
8	Te setting	Target evaporation temperature for cooling
9	Tc setting	Target condensation temperature for heating
10	Defrost changeover setting	Changes the temperature condition for defrost and sets to quick defrost or slow defrost.
11	Sequential operation setting	Sets sequential operation
12	External low noise setting / Demand setting	Reception of external low noise or demand signal
13	AIRNET address	Set address for AIRNET.
18	High static pressure setting	Make this setting in the case of operating in high static pressure mode with diffuser duct mounted.
19	Emergency operation (STD compressor operation prohibited)	Used to operate system only with inverter compressor when STD compressor malfunctions. This is a temporary operation extremely impairing comfortable environment. Therefore, prompt replacement of the compressor is required.
20	Additional refrigerant charge operation setting	Carries out additional refrigerant charge operation.
21	Refrigerant collection mode setting	Sets to refrigerant collection mode.
22	Night-time low noise setting	Sets automatic nighttime low noise operation in a simple way. The operating time is based on “Starting set” and “Ending set”.
25	Low noise setting	Sets low noise level when the low noise signal is input from outside.
26	Night-time low noise control starting setting	Sets starting time of nighttime low noise operation. (Nighttime low noise setting is also required.)
27	Night-time low noise control ending setting	Sets ending time of nighttime low noise operation. (Nighttime low noise setting is also required.)
28	Power transistor check mode ∗Check after disconnection of compressor wires	Used for trouble diagnosis of DC compressor. Since the waveform of inverter is output without wiring to the compressor, it is convenient to probe whether the trouble comes from the compressor or PC board.
29	Capacity precedence setting	If the capacity control is required, the low noise control is automatically released by this setting during carrying out low noise operation and nighttime low noise operation.
30	Demand setting 1	Changes target value of power consumption when demand control 1 is input.
32	Normal demand setting	Normally enables demand control 1 without external input. (Effective to prevent a problem that circuit breaker of small capacity is shut down due to large load.

No.	Setting item	Description
38	Emergency operation (Setting for the master unit operation prohibition in multi-outdoor-unit system)	Used to temporarily prohibit the applicable outdoor unit from operating should there be any faulty part in multi-outdoor-unit system. Since the comfortable environment is extremely impaired, prompt replacement of the part is required.
39	Emergency operation (Setting for the slave unit 1 operation prohibition in multi-outdoor-unit system)	
40	Emergency operation (Setting for the slave unit 2 operation prohibition in multi-outdoor-unit system)	

No.	Setting item display								Setting condition display								
	Setting item	MODE H1P	TEST H2P	C/H selection IND H3P	C/H selection Master H4P	C/H selection Slave H5P	Low noise H6P	Demand H7P									✻ Factory set
0	EMG (emergency operation) INV compressor operation inhibited.	○	●	●	●	●	●	●	Normal operation		○	●	●	●	●	●	○ ✻
									Emergency operation		○	●	●	●	●	○	●
1	—																
2	Low noise/demand address	○	●	●	●	●	○	●	Address (6 digits)	0	○	●	●	●	●	●	● ✻
									Binary number	1	○	●	●	●	●	●	○
										~							
										31	○	●	○	○	○	○	○
5	Indoor forced fan H	○	●	●	●	○	●	○	Normal operation		○	●	●	●	●	●	○ ✻
									Indoor forced fan H		○	●	●	●	●	○	●
6	Indoor forced operation	○	●	●	●	○	○	●	Normal operation		○	●	●	●	●	●	○ ✻
									Indoor forced operation		○	●	●	●	●	○	●
8	Te setting	○	●	●	○	●	●	●	High		○	●	●	●	○	●	●
									Normal (factory setting)		○	●	●	●	●	○	● ✻
									Low		○	●	●	●	●	●	○
9	Tc setting	○	●	●	○	●	●	○	High		○	●	●	●	○	●	●
									Normal (factory setting)		○	●	●	●	●	○	● ✻
									Low		○	●	●	●	●	●	○
10	Defrost setting	○	●	●	○	●	○	●	Quick defrost		○	●	●	●	○	●	●
									Normal (factory setting)		○	●	●	●	●	○	● ✻
									Slow defrost		○	●	●	●	●	●	○
11	Sequential operation setting	○	●	●	○	●	○	○	OFF		○	●	●	●	●	●	○
									ON		○	●	●	●	●	○	● ✻
12	External low noise/ demand setting	○	●	●	○	○	●	●	External low noise/demand: NO		○	●	●	●	●	●	○ ✻
									External low noise/demand: YES		○	●	●	●	●	○	●
13	Airnet address	○	●	●	○	○	●	○	Address (6 digits)	0	○	●	●	●	●	●	● ✻
									Binary number	1	○	●	●	●	●	●	○
										~							
										63	○	●	○	○	○	○	○
18	High static pressure setting	○	●	○	●	●	○	●	High static pressure setting: OFF		○	●	●	●	●	○	○ ✻
									High static pressure setting: ON		○	●	●	●	●	○	●
19	Emergency operation (STD compressor is inhibited to operate.)	○	●	○	●	●	○	○	OFF		○	●	●	●	●	●	● ✻
									STD 1, 2 operation: Inhibited		○	●	●	●	●	●	○
									STD 2 operation: Inhibited		○	●	●	●	●	○	●
20	Additional refrigerant operation setting	○	●	○	●	○	●	●	Refrigerant charging: OFF		○	●	●	●	●	●	○ ✻
									Refrigerant charging: ON		○	●	●	●	●	○	●
21	Refrigerant recovery mode setting	○	●	○	●	○	●	○	Refrigerant recovery: OFF		○	●	●	●	●	●	○ ✻
									Refrigerant recovery: ON		○	●	●	●	●	○	●
22	Night-time low noise setting	○	●	○	●	○	○	●	OFF		○	●	●	●	●	●	● ✻
									Level 1 (outdoor fan with 8 step or lower)		○	●	●	●	●	●	○
									Level 2 (outdoor fan with 7 step or lower)		○	●	●	●	●	○	●
									Level 3 (outdoor fan with 6 step or lower)		○	●	●	●	●	○	○
25	Low noise setting	○	●	○	○	●	●	○	Level 1 (outdoor fan with 8 step or lower)		○	●	●	●	●	●	○
									Level 2 (outdoor fan with 7 step or lower)		○	●	●	●	●	○	● ✻
									Level 3 (outdoor fan with 6 step or lower) ✻		○	●	●	●	○	●	●

No.	Setting item	Setting item display: MODE H1P	TEST H2P	C/H selection: IND H3P	C/H selection: Master H4P	C/H selection: Slave H5P	Low noise H6P	Demand H7P	Setting condition display (✻ Factory set)	
26	Night-time low noise operation start setting	○	●	○	○	●	○	●	About 20:00	○ ● ● ● ● ● ○
									About 22:00 (factory	○ ● ● ● ● ○ ● ✻
									About 24:00	○ ● ● ● ○ ● ●
27	Night-time low noise operation end setting	○	●	○	○	●	○	○	About 6:00	○ ● ● ● ● ● ○
									About 7:00	○ ● ● ● ● ○ ●
									About 8:00 (factory setting)	○ ● ● ● ○ ● ● ✻
28	Power transistor check mode	○	●	○	○	○	●	●	OFF	○ ● ● ● ● ● ○ ✻
									ON	○ ● ● ● ● ○ ●
29	Capacity precedence setting	○	●	○	○	○	●	○	OFF	○ ● ● ● ● ● ○ ✻
									ON	○ ● ● ● ● ○ ●
30	Demand setting 1	○	●	○	○	○	○	●	60 % demand	○ ● ● ● ● ● ○
									70 % demand	○ ● ● ● ● ○ ● ✻
									80 % demand	○ ● ● ● ○ ● ●
32	Continuous demand setting	○	○	●	●	●	●	●	OFF	○ ● ● ● ● ● ○ ✻
									ON	○ ● ● ● ● ○ ●
38	Emergency operation (Master unit with multi-outdoor-unit system is inhibited to operate.)	○	○	●	●	○	○	●	OFF	○ ● ● ● ● ● ○ ✻
									Master unit operation: Inhibited	○ ● ● ● ● ○ ●
39	Emergency operation (Slave unit 1 with multi-outdoor-unit system is inhibited to operate.)	○	○	●	●	○	○	○	OFF	○ ● ● ● ● ● ○ ✻
									Slave unit 1 operation: Inhibited	○ ● ● ● ● ○ ●
40	Emergency operation (Slave unit 2 with multi-outdoor-unit system is inhibited to operate.)	○	○	●	○	●	●	●	OFF	○ ● ● ● ● ● ○ ✻
									Slave unit 2 operation: Inhibited	○ ● ● ● ● ○ ●

c. Monitor mode

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

<Selection of setting item>

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

<Confirmation on setting contents>

Push the RETURN button (BS3) to display different data of set items.

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

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

(V2765)

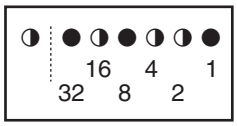
No.	Setting item	LED display							Data display
		H1P	H2P	H3P	H4P	H5P	H6P	H7P	
0	Number of units for sequential starting, and others	◑	●	●	●	●	●	●	See below
1	—								Lower 6 digits
2	Low noise/demand address	◑	●	●	●	●	○	●	
3	Not used	◑	●	●	●	●	○	○	
4	Airnet address	◑	●	●	●	○	●	●	
5	Number of connected indoor units	◑	●	●	●	○	●	○	
6	Number of connected BS units	◑	●	●	●	○	○	●	
7	Number of connected zone units (excluding outdoor and BS unit)	◑	●	●	●	○	○	○	
8	Number of outdoor units	◑	●	●	○	●	●	●	
9	Number of connected BS units	◑	●	●	○	●	●	○	Lower 4 digits: upper
10	Number of connected BS units	◑	●	●	○	●	○	●	Lower 4 digits: lower
11	Number of zone units (excluding outdoor and BS unit)	◑	●	●	○	●	○	○	Lower 6 digits
12	Number of terminal blocks	◑	●	●	○	○	●	●	Lower 4 digits: upper
13	Number of terminal blocks	◑	●	●	○	○	●	○	Lower 4 digits: lower
14	Contents of malfunction (the latest)	○	●	●	○	○	○	●	Malfunction code table
15	Contents of malfunction (1 cycle before)	○	●	●	○	○	○	○	Refer page 150, 151.
16	Contents of malfunction (2 cycle before)	○	●	○	●	●	●	●	
20	Contents of retry (the latest)	○	●	○	●	○	●	●	
21	Contents of retry (1 cycle before)	○	●	○	●	○	●	○	
22	Contents of retry (2 cycle before)	○	●	○	●	○	○	●	

Setting item 0 Display contents of "Number of units for sequential start, and others"

Number of units for sequential start	1 unit	◑	●	●	●	●	●	●
	2 units	◑	●	◑	●	●	●	●
	3 units	◑	●	○	●	●	●	●
EMG operation /backup operation setting	ON	◑	●	●	○	●	●	●
	OFF	◑	●	●	●	●	●	●
Defrost select setting	Short	◑	●	●	●	○	●	●
	Medium	◑	●	●	●	◑	●	●
	Long	◑	●	●	●	●	●	●
Te setting	H	◑	●	●	●	●	○	●
	M	◑	●	●	●	●	◑	●
	L	◑	●	●	●	●	●	●
Tc setting	H	◑	●	●	●	●	●	○
	M	◑	●	●	●	●	●	◑
	L	◑	●	●	●	●	●	●

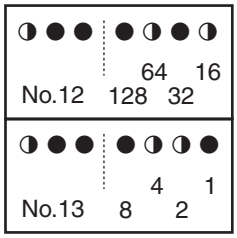
Push the SET button and match with the LEDs No. 1 - 15, push the RETURN button, and enter the data for each setting.

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



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

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



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

★ See the preceding page for a list of data, etc. for No. 0 - 22.

3.2.2 Cool / Heat Mode Switching

Set Cool/Heat Separately for Each BS Unit by Cool/Heat Selector.

Set remote controller change over switch (SS1, SS2) as following:

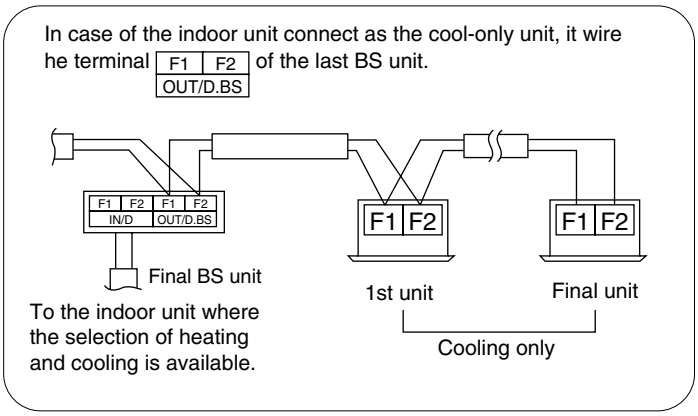
- When using COOL/HEAT selector, turn this switch to the BS side.

NOTE: This setting must be completed before turning power supply ON.

When using cool/heat selector, connect to the terminal A, B and C on the EC of the electric parts box.

EXAMPLE OF TRANSMISSION LINE CONNECTION

- Example of connecting transmission wiring.
  Connect the transmission wirings as shown in the Fig. 1.



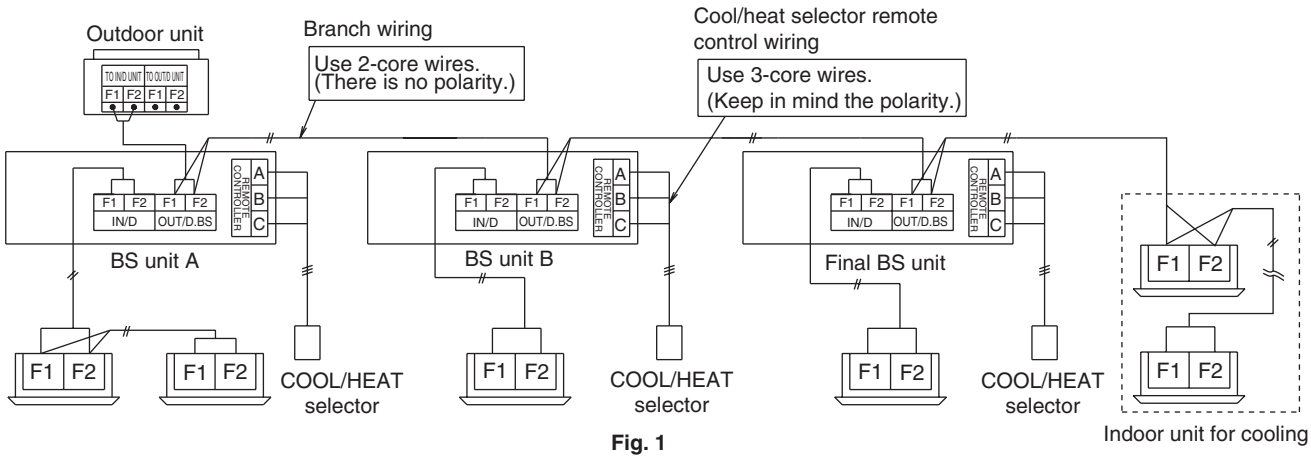


Fig. 1

3.2.3 Setting of Low Noise Operation and Demand Operation

Setting of Low Noise Operation

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

A. When the low noise operation is carried out by external instructions (with the use of the outdoor unit external control adapter)

1. Set “External low noise / Demand YES/NO setting” to “External low noise / Demand YES”. (Set by Setting Mode 2)
2. Set “External low noise level setting” on the outdoor unit PC board, as the need arises. (Lower noise operation can be carried out by “Mode 2” than by “Mode 1”, and by “Mode 3” than by “Mode 2”.)
3. Set “Capacity precedence setting” on the outdoor unit PC board, as the need arises. (If set to “ON”, when air conditioning load gets higher, the low noise instructions are neglected to switch to normal operation.) (Set by Setting Mode 2)

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

1. Set “Night-time low noise setting” on the outdoor unit PC board. (Set by Setting Mode 2) (Lower noise operation can be carried out by “Mode 2” than by “Mode 1”, and by “Mode 3” than by “Mode 2”.)
2. Set “Night-time low noise start setting” on the outdoor unit PC board, as the need arises. (Set by Setting Mode 2)
   (Since the time is presumed in accordance with the outdoor temperature, the starting time is a target only.)
3. Set “Night-time low noise end setting” on the outdoor unit PC board, as the need arises. (Set by Setting Mode 2)
   (Since the time is presumed in accordance with the outdoor temperature, the ending time is a target only.)
4. Set “Capacity precedence setting” on the outdoor unit PC board, as the need arises. (Set by Setting Mode 2)
   (If set to “ON”, when air conditioning load gets higher, the status is switched to normal operation even at night.)

Image of operation in the case of A

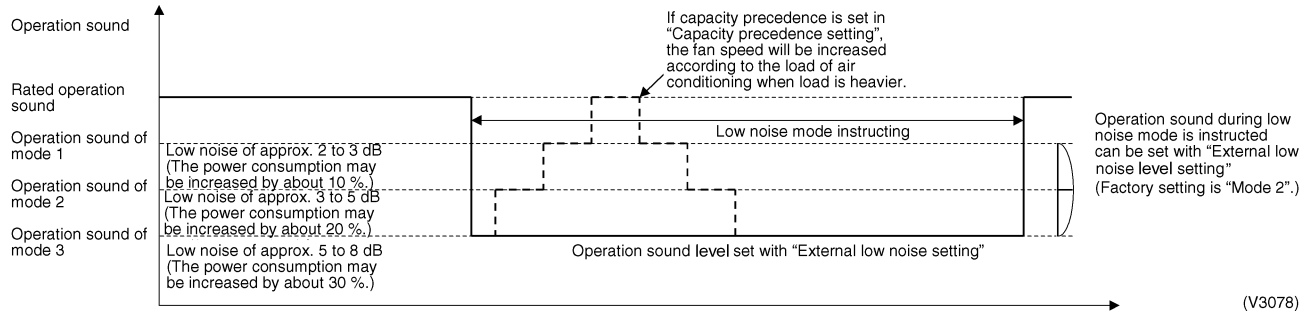


Image of operation in the case of B

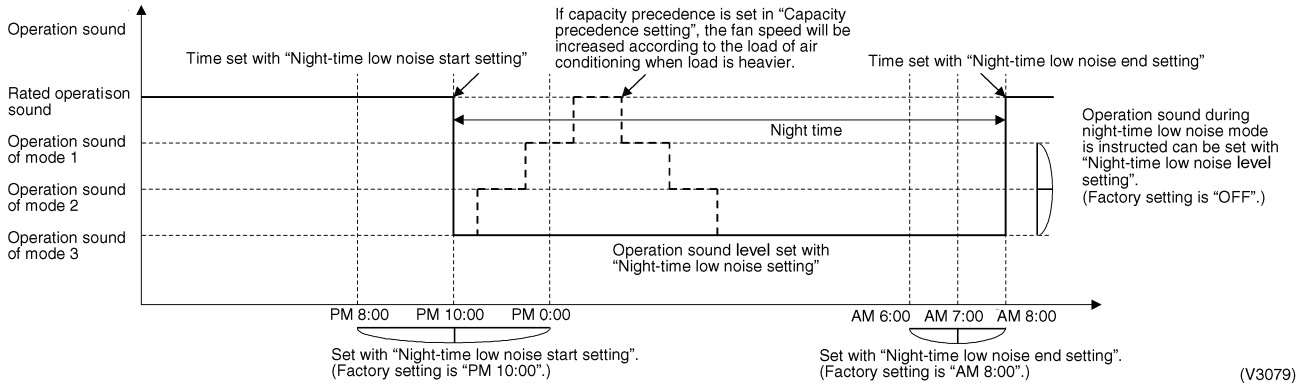
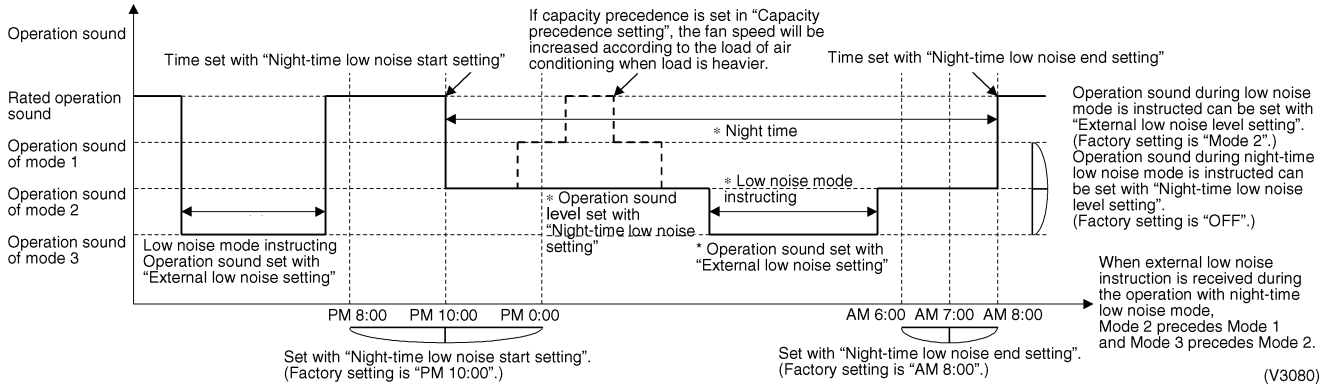


Image of operation in the case of A, B



Setting of Demand Operation

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

A. When the demand operation is carried out by external instructions (with the use of the outdoor unit external control adapter).

- Set the "External low noise/Demand YES/NO setting" switch on the outdoor unit PCB to the "External low noise/Demand YES".
  (Set by Setting Mode 2)
- Set the "Demand 1 level setting " on the outdoor unit PCB, as the need arises.
  (During the demand level 1 instruction, the power consumption can be saved to 80 %, 70 % or 60 % of the rated value respectively.)

B. When the continuous demand operation is carried out. (Use of the outdoor unit external control adapter is not required.)

- Set the "Continuous demand setting" on the outdoor unit PCB.
- If the "Continuous demand setting" is set to the "Continuous demand 1 fixing", set the "Demand 1 setting " on the outdoor unit PCB, as the need arises.
  (During the continuous demand level 1 operation, the power consumption can be saved to 80 %, 70 % or 60 % of the rated value respectively.)

Image of operation in the case of A

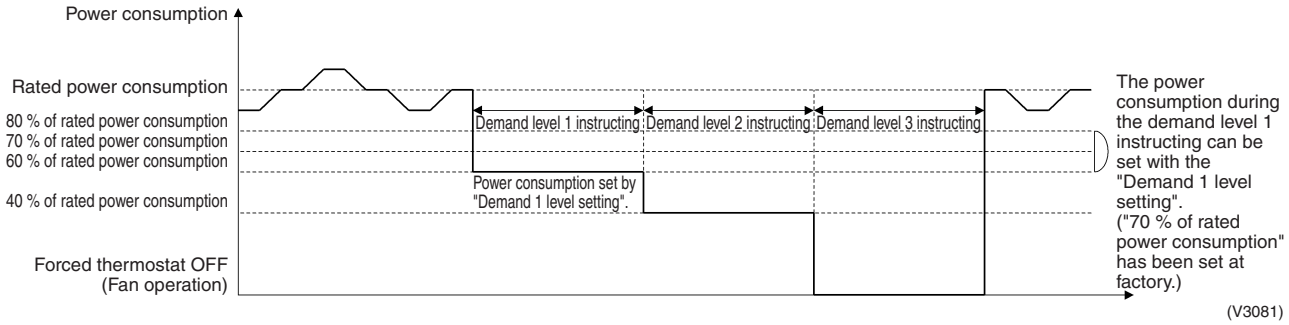


Image of operation in the case of B

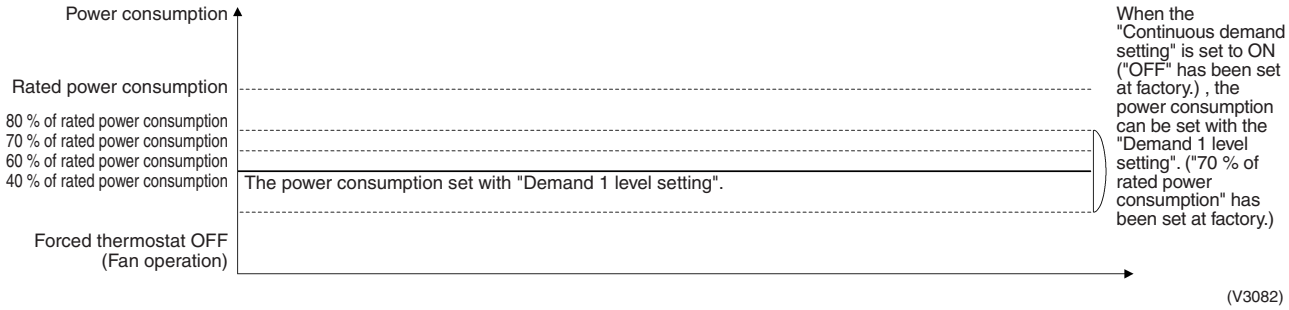
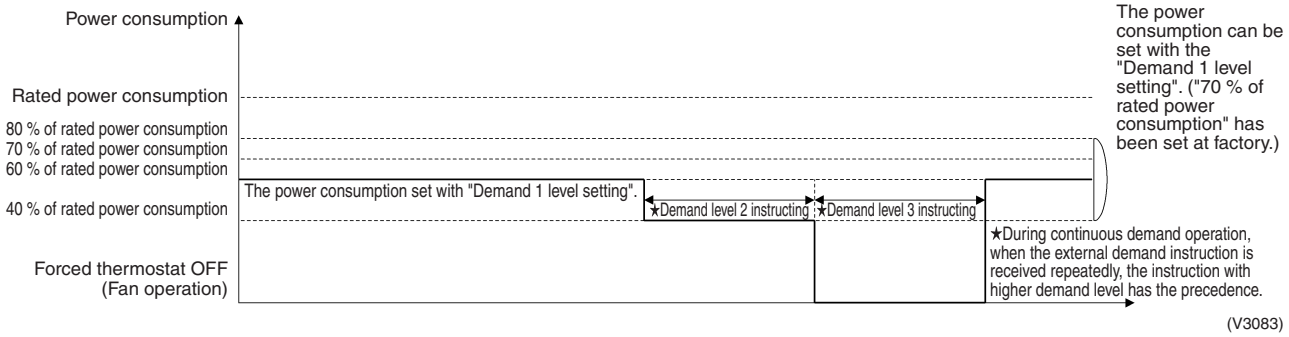


Image of operation in the case of A and B



Detailed Setting Procedure of Low Noise Operation and Demand Control

1. Setting mode 1 (H1P off)

① In setting mode 2, push the BS1 (MODE button) one time. → Setting mode 2 is entered and H1P lights.
During the setting mode 1 is displayed, “In low noise operation” and “In demand control” are displayed.

2. Setting mode 2 (H1P on)

① In setting 1, push and hold the BS1 (MODE button) for more than 5 seconds. → Setting mode 2 is entered and H1P lights.
② Push the BS2 (SET button) several times and match the LED display with the Setting No. you want.
③ Push the BS3 (RETURN button) one time, and the present setting content is displayed.
→ Push the BS2 (SET button) several times and match the LED display with the setting content (as shown below) you want.
④ Push the BS3 (RETURN button) two times. → Returns to ①.
⑤ Push the BS1 (MODE button) one time. → Returns to the setting mode 1 and turns H1P off.

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

Setting mode indication section

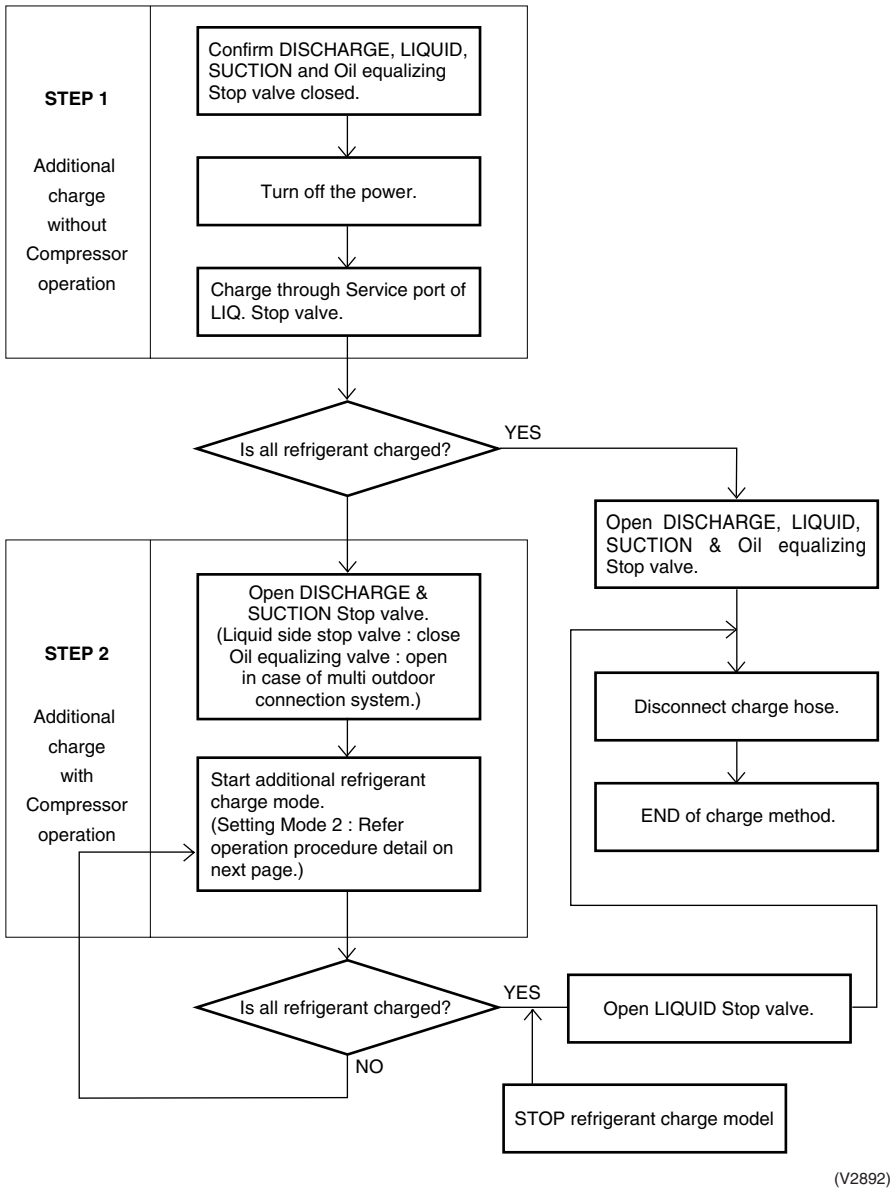
Setting No. indication section

Set contents indication section

3.2.4 Setting of Refrigerant Additional Charging Operation

When additional refrigerant is not charged all with outdoor unit in stop mode, operate the outdoor unit and charge the liquid refrigerant from the service port of liquid stop value. The additional charging operation is activated by pushbutton switch on the outdoor unit PC board.

[Additional refrigerant charge total flow]



[Operation procedure detail]

① After turning the respective remote switch of indoor and outdoor units off and charging the refrigerant, turn on the power of indoor and outdoor units.
Do not fail to turn the power off and charge the refrigerant with outdoor unit in stop mode before adding the refrigerant following this procedure, otherwise resulting in trouble.

② Fully open the stop valve on the gas side and oil equalizing valve for multi outdoor connection, and do not fail to fully close the stop valve on the liquid side. (If the stop valve on the liquid side is open, the refrigerant cannot be charged.)

③ In **Setting mode 2** (H1P : ON) with outdoor unit in stop mode, Set "A Additional refrigerant charging operation" switch to ON to start the operation. (H2P turns to display TEST OPERATION (blinks), and "TEST OPERATION" and "IN CENTRALIZED CONTROL" are displayed on the remote controller.)

④ When the refrigerant is charged up to the specified amount, press the RETURN button (BS3) to stop charging.
The charging operation is automatically stopped after operating for a maximum of about 30 minutes.
If the charging is not complete within 30 minutes, set the A Additional refrigerant charging operation again to start charging. When the charging immediately stops even by restarting, the refrigerant is charged excessively. The refrigerant cannot be charged any more.

⑤ **Do not fail to fully open the stop valve on the liquid side** as soon as disconnecting the refrigerant charging hose.
(The piping may be burst due to the liquid sealing.)

[Operation state]

- Compressor frequency : 210Hz
- Y4S, Y7S, Solenoid valve : Open Y1E, Y2E electronic expansion valve : 1400 pulse
- Outdoor unit fan : High pressure control
- Indoor unit expansion valve (All unit) : 1024 pulse
- Indoor unit fan : H tap

3.2.5 Setting of Refrigerant Recovery Mode

When carrying out the refrigerant collection on site, fully open the respective expansion valve of indoor and outdoor units

[Operation procedure]

① In **setting mode 2** with units in stop mode, set "B Refrigerant Recovery / Vacuuming mode" to ON. The respective expansion valve of indoor and outdoor units are fully opened. (H2P turns to display "TEST OPERATION" (blinks), "TEST OPERATION" and "IN CENTRALIZED CONTROL" are displayed on the remote controller, and the operation is prohibited.

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

③ Press Mode button "BS1" once and reset "Setting Mode 2".

3.2.6 Setting of Vacuuming Mode

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

[Operating procedure]

① With **Setting Mode 2** while the unit stops, set (B) Refrigerant recovery / Vacuuming mode to ON. The expansion valves of indoor and outdoor units fully open and some of solenoid valves open.
(H2P blinks to indicate the test operation, and the remote controller displays "Test Operation" and "In Centralized control", thus prohibiting operation.)
After setting, do not cancel “Setting Mode 2” until completion of Vacuuming operation.

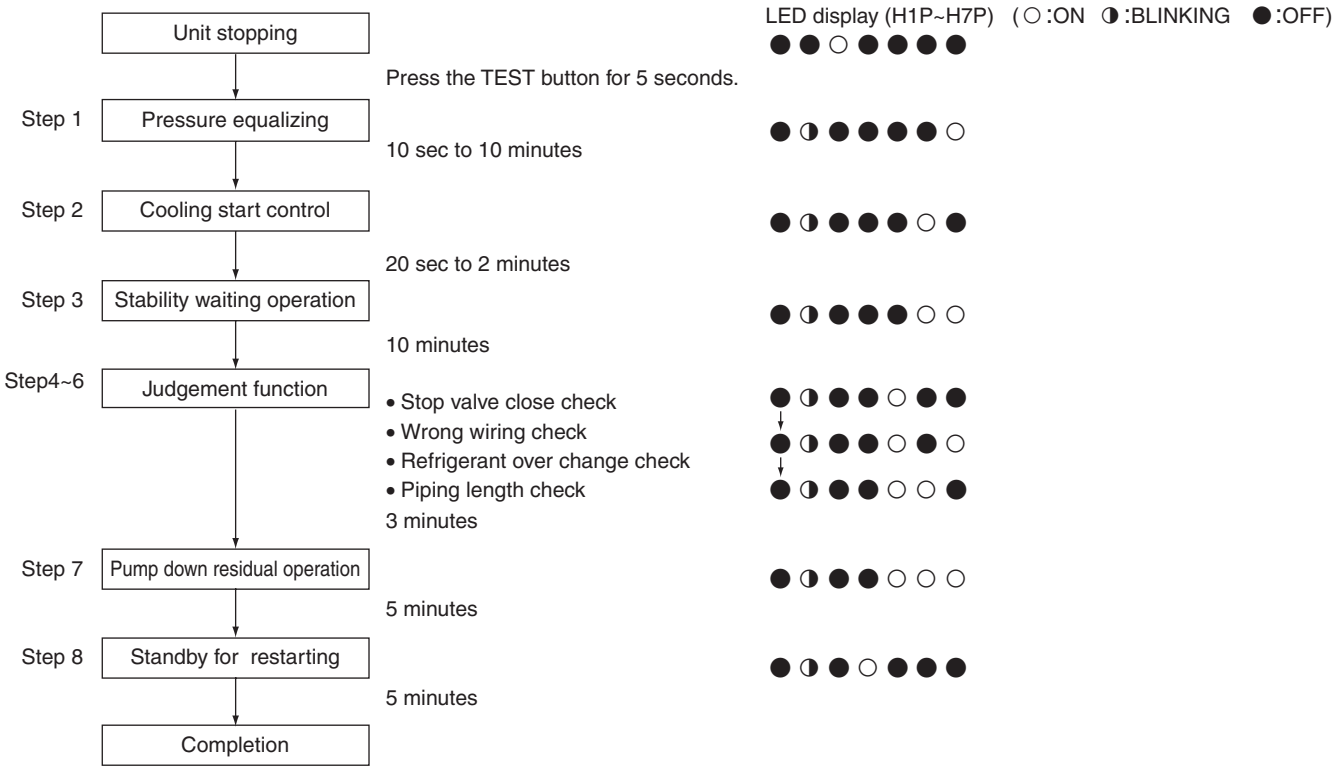
② Use the vacuum pump to perform vacuuming operation.

③ Press Mode button “BS1” once and reset “Setting Mode 2”.

3.2.7 Check Operation

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

CHECK OPERATION FUNCTION



3.2.8 Power Transistor Check Operation

When the inverter system malfunctions (malfunction of inverter, INV compressor), to locate where the malfunction occurs, switching to the power transistor check mode of inverter in the service mode setting enables not to judge the position detection signal malfunction but to output waveform only during inverter operation. (The waveform can be checked by disconnecting the wiring of compressor.)
After the completion of checks, return the system to the previous mode and wait for 30 seconds or more until the discharge of capacitor is completed. Then, conduct a subsequent work.

Notes: Be sure to disconnect the compressor wiring when conducting the check operation mentioned above.
When the output voltage is approx. 100~200 V (10 Hz) and the voltage balance between phases U-V, V-W, W-U is within ±5%, the inverter PCB is normal.

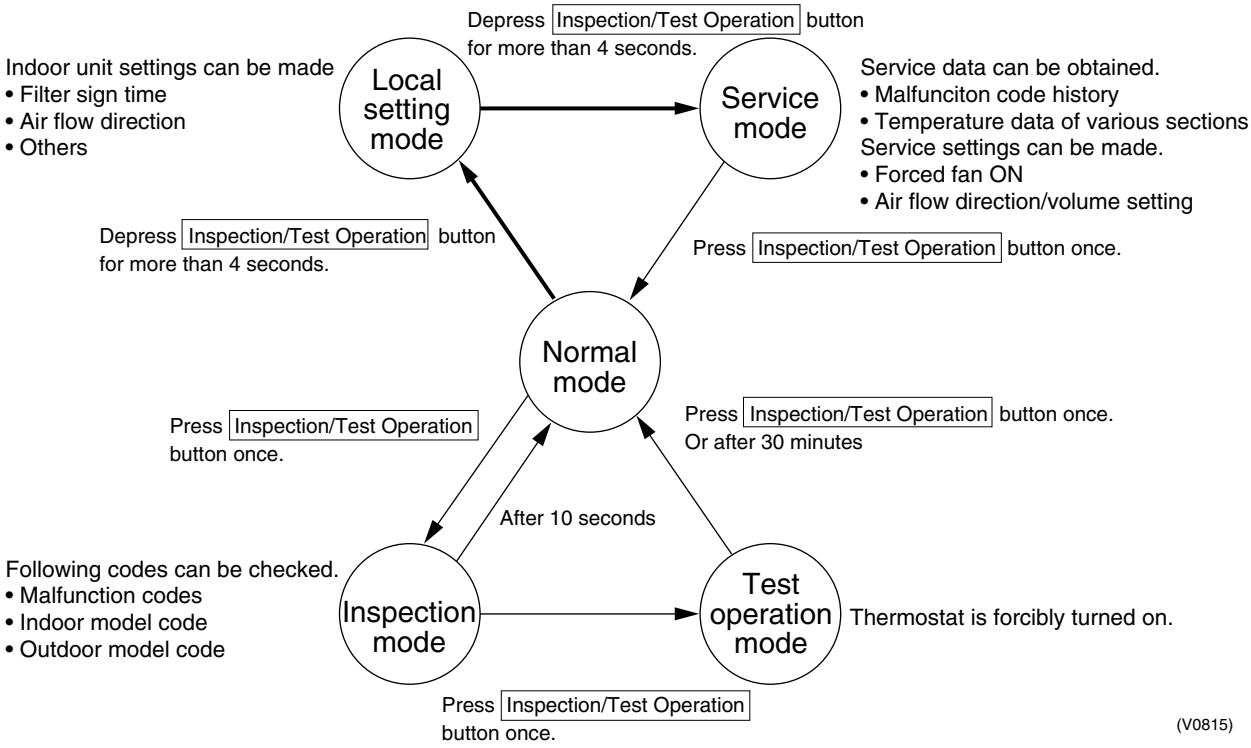
Refer the detail power transistor check to page 234.

Part 6
Troubleshooting

1. Troubleshooting by Remote Controller

1.1 The INSPECTION / TEST Button

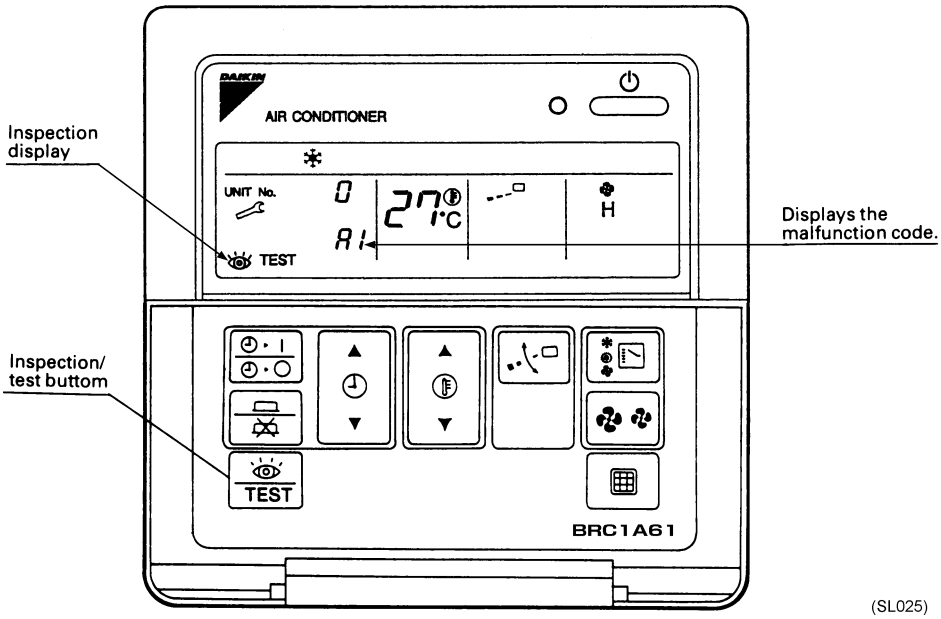
The following modes can be selected by using the [Inspection/Test Operation] button on the remote control.



1.2 Self-diagnosis by Wired Remote Controller

Explanation

If operation stops due to malfunction, the remote controller's operation LED blinks, and malfunction code is displayed. (Even if stop operation is carried out, malfunction contents are displayed when the inspection mode is entered.) The malfunction code enables you to tell what kind of malfunction caused operation to stop. See page 143 for malfunction code and malfunction contents.



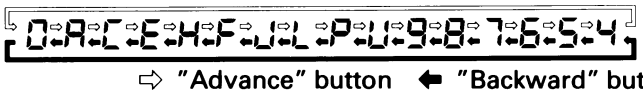
1.3 Self-diagnosis by Wireless Remote Controller

In the Case of BRC7C ~ Type

If equipment stops due to a malfunction, the operation indicating LED on the light reception section flashes.
The malfunction code can be determined by following the procedure described below. (The malfunction code is displayed when an operation error has occurred. In normal condition, the malfunction code of the last problem is displayed.)

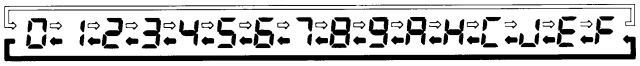
1. Press the INSPECTION/TEST button to select “Inspection.”
   The equipment enters the inspection mode. The “Unit” indication lights and the Unit No. display shows flashing “0” indication.
2. Set the Unit No.
   Press the UP or DOWN button and change the Unit No. display until the buzzer (*1) is generated from the indoor unit.
   *1 Number of beeps
   3 short beeps : Conduct all of the following operations.
   1 short beep : Conduct steps 3 and 4.
   Continue the operation in step 4 until a buzzer remains ON. The continuous buzzer indicates that the malfunction code is confirmed.
   Continuous beep : No abnormality.
3. Press the MODE selector button.
   The left “0” (upper digit) indication of the malfunction code flashes.
4. Malfunction code upper digit diagnosis
   Press the UP or DOWN button and change the malfunction code upper digit until the malfunction code matching buzzer (*2) is generated.

■ The upper digit of the code changes as shown below when the UP and DOWN buttons are pressed.

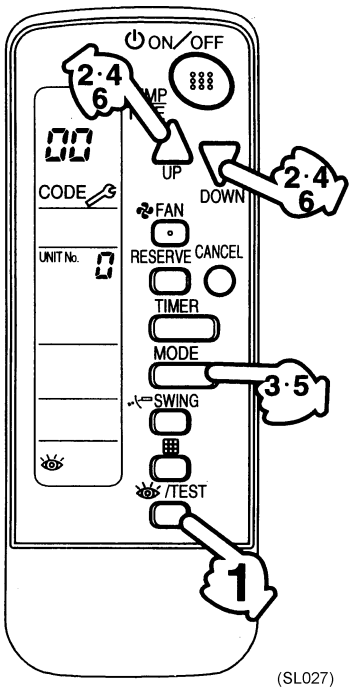


   *2 Number of beeps
   Continuous beep : Both upper and lower digits matched. (Malfunction code confirmed)
   2 short beeps : Upper digit matched.
   1 short beep : Lower digit matched.
5. Press the MODE selector button.
   The right “0” (lower digit) indication of the malfunction code flashes.
6. Malfunction code lower digit diagnosis
   Press the UP or DOWN button and change the malfunction code lower digit until the continuous malfunction code matching buzzer (*2) is generated.

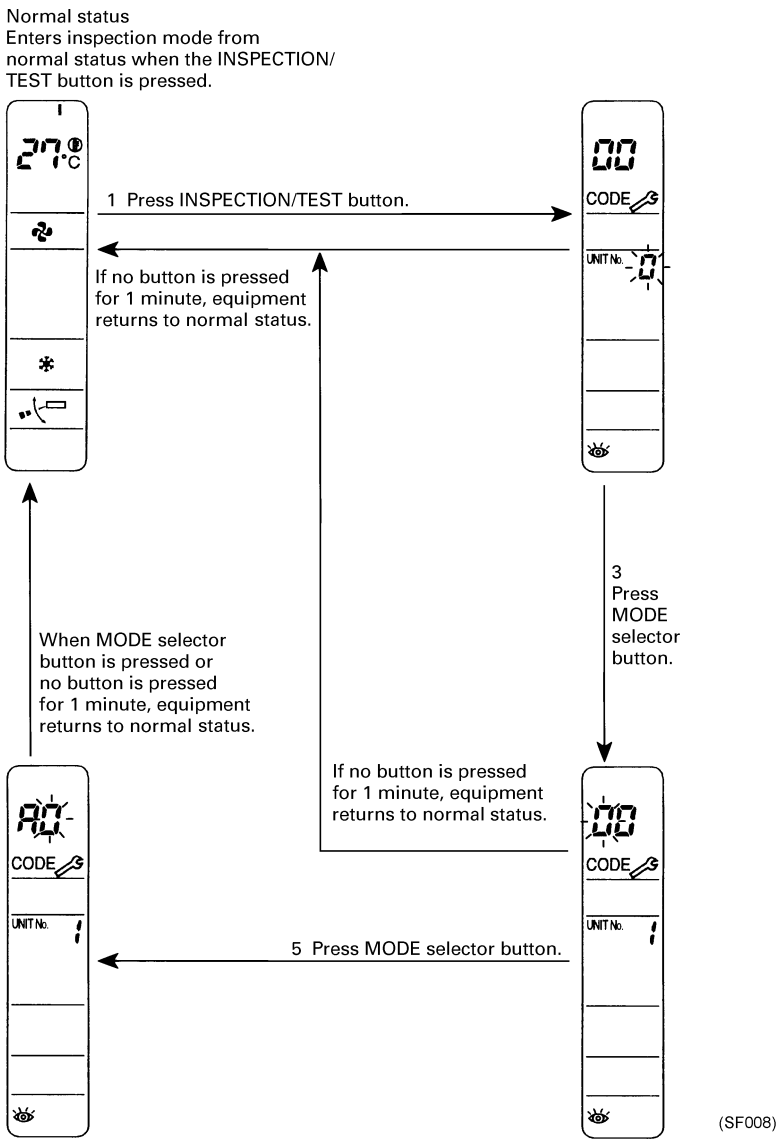
■ The lower digit of the code changes as shown below when the UP and DOWN buttons are pressed.



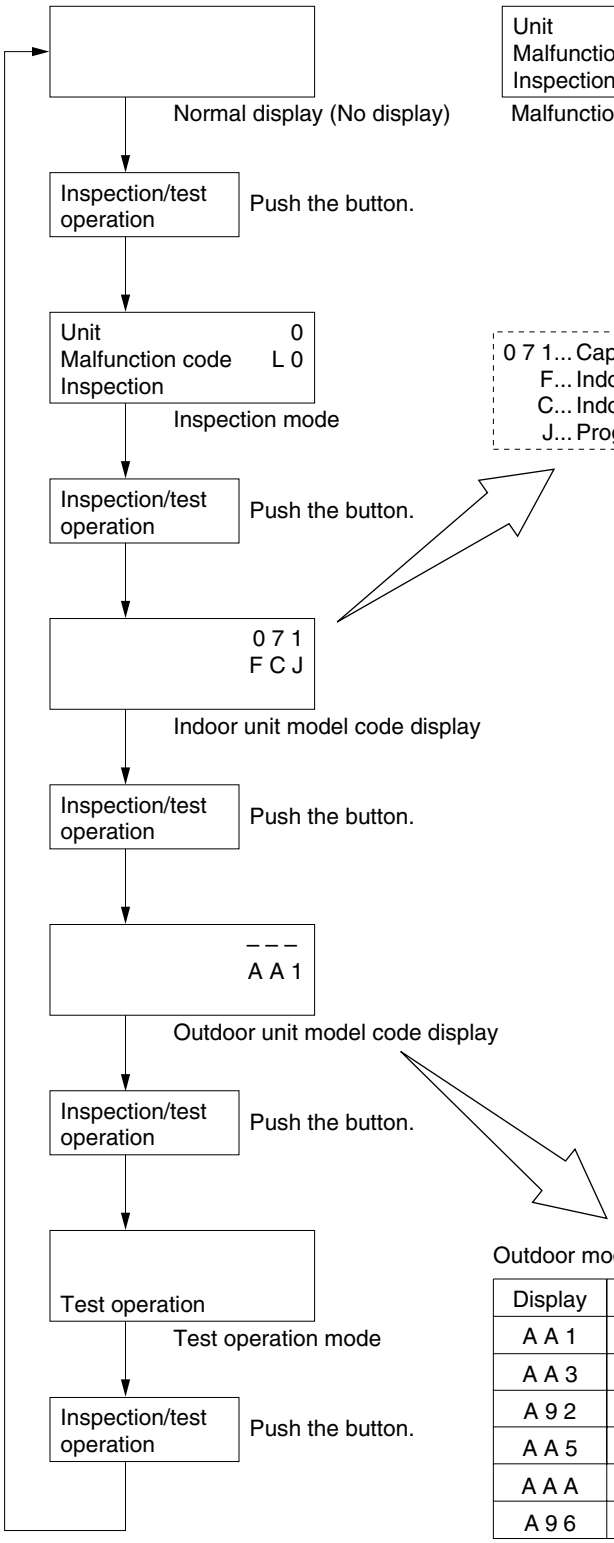
(SE007)



(SL027)


Normal status
Enters inspection mode from
normal status when the INSPECTION/
TEST button is pressed.
27
°C
00
CODE
UNIT No.
0
1 Press INSPECTION/TEST button.
If no button is pressed
for 1 minute, equipment
returns to normal status.
3
Press
MODE
selector
button.
When MODE selector
button is pressed or
no button is pressed
for 1 minute, equipment
returns to normal status.
If no button is pressed
for 1 minute, equipment
returns to normal status.
A0
CODE
UNIT No.
1
00
CODE
UNIT No.
1
5 Press MODE selector button.
(SF008)

1.4 Operation of the Remote Controller's Inspection / Test Operation Button



Unit 0
Malfunction code L 0
Inspection

Malfunction code blinks when a malfunction occurs.

0 7 1... Capacity code
F... Indoor unit system code
C... Indoor unit type code
J... Progression code

Example of capacity code display

Example model	Display
FXCQ25	028
FXFQ63	071

Indoor unit system code

Display	Product classification	System classification
1	VRV system	(VAV indoor unit)
2	VRV system	Outdoor air intake
F	VRV system	Standard indoor unit

Indoor unit type code

Display	Type	Model
A	Wall mounted	FXAQ
C	Double flow	FXCQ
E	Corner	FXKQ
F	Multi flow	FXFQ
H	Ceiling suspended	FXHQ
J	Built-in	FXSQ
L	Floor standing	FXLQ
P	Concealed ceiling duct	FXMQ
L	Concealed floor standing type	FXNQ
6	Multi flow 600×600	FXZQ

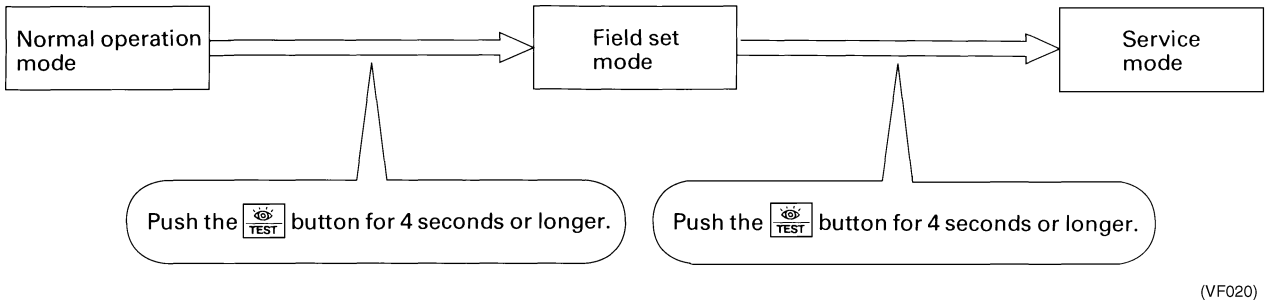
Outdoor model code

Display	Type	Model
A A 1	VRV System Inverter K Series	RSXYP
A A 3	R407C VRV PLUS Series	RXYP
A 9 2	VRV Heat Recovery Series	RSEYP
A A 5	High COP type R407C L Series	RSXYP-L
A A A	VRV II	RXYQ-M
A 9 6	VRV II Heat Recovery	REYQ-M

(V2775)

1.5 Remote Controller Service Mode

How to Enter the Service Mode



(VF020)

Service Mode Operation Method

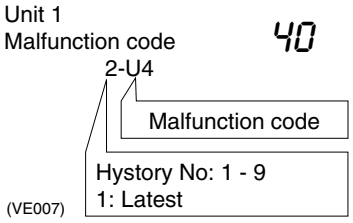
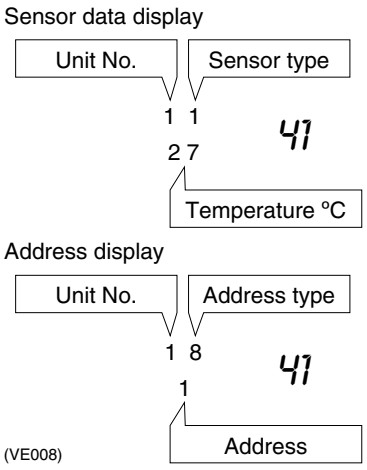
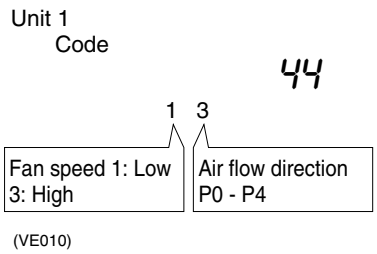
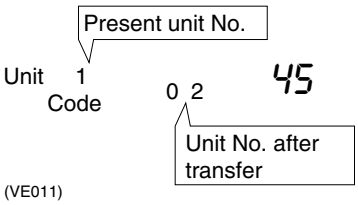
1. Select the mode No.
Set the desired mode No. with the button.
(For wireless remote controller, Mode 43 only can be set.)

2. Select the unit No. (For group control only)
Select the indoor unit No. to be set with the time mode . (For wireless remote controller, button.)

3. Make the settings required for each mode. (Modes 41, 44, 45)
In case of Mode 44, 45, push button to be able to change setting before setting work. (LCD "code" blinks.)
For details, refer to the table in next page.

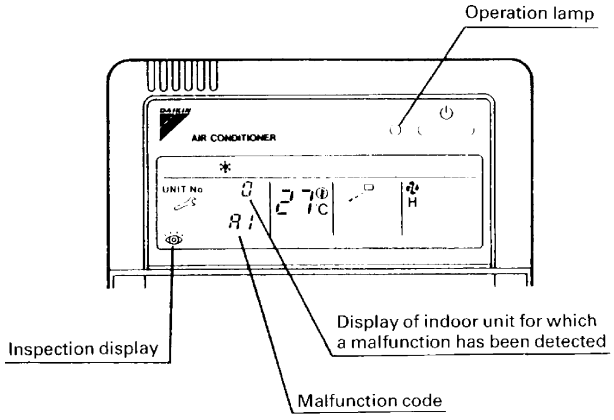
4. Define the setting contents. (Modes 44, 45)
Define by pushing the timer button.
After defining, LCD "code" changes blinking to ON.

5. Return to the normal operation mode.
Push the button one time.

Mode No	Function	Contents and operation method	Remote controller display example
40	Malfunction hysteresis display	Display malfunction hysteresis. The history No. can be changed with the button.	
41	Display of sensor and address data	Display various types of data. Select the data to be displayed with the button. Sensor data 0: Thermostat sensor in remote controller. 1: Suction 2: Liquid pipe 3: Gas pipe Address data 4: Indoor unit address 5: Outdoor unit address 6: BS unit address 7: Zone control address 8: Cool/heat group address 9: Demand / low noise address	
43	Forced fan ON	Manually turn the fan ON by each unit. (When you want to search for the unit No.) By selecting the unit No. with the button, you can turn the fan of each indoor unit on (forced ON) individually.	
44	Individual setting	Set the fan speed and air flow direction by each unit Select the unit No. with the time mode button. Set the fan speed with the button. Set the air flow direction with the button.	
45	Unit No. transfer	Transfer unit No. Select the unit No. with the button. Set the unit No. after transfer with the button.	
46 47	This function is not used by VRV II R410A Heat Pump 50Hz.		

1.6 Remote Controller Self-Diagnosis Function

The remote controller switches are equipped with a self diagnosis function so that more appropriate maintenance can be carried out. If a malfunction occurs during operation, the operation lamp, malfunction code and display of malfunctioning unit No. let you know the contents and location of the malfunction.
When there is a stop due to malfunction, the contents of the malfunction given below can be diagnosed by a combination of operation lamp, INSPECTION display of the liquid crystal display and display of malfunction code. It also lets you know the unit No. during group control.



(VL050)

○ : ON ◑ : Blink ● : OFF

	Malfunction code	Operation lamp	Inspection display	Unit No.	Malfunction contents	Page Referred
Indoor Unit	A0	◑	◑	◑	Error of external protection device	148
	A1	◑	◑	◑	PC board defect, E^2 PROM defect	149
	A3	◑	◑	◑	Malfunction of drain level control system (S1L)	150
	A6	◑	◑	◑	Fan motor (MF) lock, overload	152
	A7	○	●	◑	Malfunction of swing flap motor (MA)	153
	A9	◑	◑	◑	Malfunction of moving part of electronic expansion valve (20E)	155
	AF	○	●	◑	Drain level above limit	157
	AH	○	●	◑	Malfunction of air filter maintenance	—
	AJ	◑	◑	◑	Malfunction of capacity setting	158
	C4	◑	◑	◑	Malfunction of thermistor (R2T) for heat exchange (loose connection, disconnection, short circuit, failure)	159
	C5	◑	◑	◑	Malfunction of thermistor (R3T) for gas pipes (loose connection, disconnection, short circuit, failure)	160
	C9	◑	◑	◑	Malfunction of thermistor (R1T) for air inlet (loose connection, disconnection, short circuit, failure)	161
	CJ	○	○	○	Malfunction of thermostat sensor in remote controller	162
Outdoor Unit	E1	◑	◑	◑	PC board defect	163
	E3	◑	◑	◑	Actuation of high pressure switch	164
	E4	◑	◑	◑	Actuation of low pressure sensor	165
	E5	◑	◑	◑	Compressor motor lock (INV compressor)	166
	E6	◑	◑	◑	Standard compressor lock or over current	167
	E7	◑	◑	◑	Malfunction of outdoor unit fan motor	168
	E9	◑	◑	◑	Malfunction of moving part of electronic expansion valve (Y1E~3E)	170
	F3	◑	◑	◑	Abnormal discharge pipe temperature	172
	F6	◑	◑	◑	Refrigerant overcharged	173
	H3	○	●	◑	Malfunction of High pressure switch	—
	H4	◑	◑	◑	Actuation of Low pressure switch	—
	H7	◑	◑	◑	Abnormal outdoor fan motor signal	174
	H9	◑	◑	◑	Malfunction of thermistor (R1T) for outdoor air (loose connection, disconnection, short circuit, failure)	175
	J2	◑	◑	◑	Current sensor malfunction	176
	J3	◑	◑	◑	Malfunction of discharge pipe thermistor (R31~33T) (loose connection, disconnection, short circuit, failure)	177
	J4	◑	◑	◑	Malfunction of heat exchanger gas pipe thermistor (R81, 82T)	178
	J5	◑	◑	◑	Malfunction of thermistor (R2T) for suction pipe (loose connection, disconnection, short circuit, failure)	179
	J6	◑	◑	◑	Malfunction of thermistor (R4T) for heat exchanger (loose connection, disconnection, short circuit, failure)	180
	J7	◑	◑	◑	Malfunction of receiver outlet liquid pipe thermistor (R6T)	181
	J8	◑	◑	◑	Malfunction of thermistor (R7T) for oil equalizing pipe. (loose connection, disconnection, short circuit, failure)	182
	J9	◑	◑	◑	Malfunction of receiver gas pipe thermistor (R5T)	183
	JA	◑	◑	◑	Malfunction of discharge pipe pressure sensor	184
	JC	◑	◑	◑	Malfunction of suction pipe pressure sensor	185
	L0	◑	◑	◑	Inverter system error	—
	L4	◑	◑	◑	Malfunction of inverter radiating fin temperature rise	186
	L5	◑	◑	◑	Inverter compressor motor grounding, short circuit	187
	L6	◑	◑	◑	Compressor motor coil grounding on short circuit	—
	L8	◑	◑	◑	Inverter current abnormal	188
	L9	◑	◑	◑	Inverter start up error	189

	Malfunction code	Operation lamp	Inspection display	Unit No.	Malfunction contents	Page Referred
Outdoor Unit	LA	◑	◑	◑	Malfunction of power unit	—
	LC	◑	◑	◑	Malfunction of transmission between inverter and control PC board	190
	P1	◑	◑	◑	Inverter over-ripple protection	192
	P4	◑	◑	◑	Malfunction of inverter radiating fin temperature rise sensor	193
	PJ	◑	◑	◑	Mismatching of Inverter·Fan driver	194
System	U0	○	●	◑	Low pressure drop due to refrigerant shortage or electronic expansion valve failure	195
	U1	◑	◑	◑	Reverse phase / open phase	196
	U2	◑	◑	◑	Power supply insufficient or instantaneous failure	197
	U3	◑	◑	◑	Check operation is not conducted.	199
	U4	◑	◑	◑	Malfunction of transmission between indoor and outdoor units	200
	U5	◑	◑	◑	Malfunction of transmission between remote controller and indoor unit	202
	U5	●	○	●	Failure of remote controller PC board or setting during control by remote controller	202
	U7	◑	◑	◑	Malfunction of transmission between outdoor units	203
	U8	◑	◑	●	Malfunction of transmission between master and slave remote controllers (malfunction of slave remote controller)	205
	U9	◑	◑	◑	Malfunction of transmission between indoor unit and outdoor unit in the same system	206
	UA	◑	◑	◑	Excessive number of indoor units etc.	208
	UC	○	○	○	Address duplication of central remote controller	209
	UE	◑	◑	◑	Malfunction of transmission between central remote controller and indoor unit	210 214 220
	UF	◑	◑	◑	Refrigerant system not set, incompatible wiring / piping	212
	UH	◑	◑	◑	Malfunction of system, refrigerant system address undefined	213
Centralized Control and Schedule Timer	M1	○ or ●	◑	◑	PC board defect	215 222
	M8	○ or ●	◑	◑	Malfunction of transmission between optional controllers for centralized control	216 223
	MA	○ or ●	◑	◑	Improper combination of optional controllers for centralized control	217 224
	MC	○ or ●	◑	◑	Address duplication, improper setting	219 226
Heat Reclaim Ventilation	64	○	●	◑	Indoor unit's air thermistor error	—
	65	○	●	◑	Outside air thermistor error	—
	68	○	●	◑		—
	6A	○	●	◑	Damper system alarm	—
	6A	◑	◑	◑	Damper system + thermistor error	—
	6F	○	●	◑	Malfunction of simple remote controller	—
	6H	○	●	◑	Malfunction of door switch or connector	—
	94	◑	◑	◑	Internal transmission error	—

The system operates for malfunction codes indicated in black squares, however, be sure to check and repair.

Malfunction code indication by outdoor unit PCB

To enter the monitor mode, push the MODE button (BS1) when in “Setting mode 1”.

<Selection of setting item>

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

<Confirmation of malfunction 1>

Push the RETURN button (BS3) once to display "First digit" of malfunction code.

<Confirmation of malfunction 2>

Push the SET button (BS2) once to display "Second digit" of malfunction code.

<Confirmation of malfunction 3>

Push the SET button (BS2) once to display "master or slave1 or slave2" and "malfunction location".

Detail description on next page.

Push the RETURN button (BS3) and switches to the initial status of “Monitor mode”.

* Push the MODE button (BS1) and returns to “Setting mode 1”.

Contents of malfunction		Malfunction code
Abnormal discharge pressure	HPS activated	E3
Abnormal suction pressure	Abnormal Pe	E4
Compressor lock	Detection of INV compressor lock	E5
Activation of OC	Detection of STD1 compressor lock	E6
	Detection of STD2 compressor lock	
Over load, over current,	Instantaneous over current of DC fan motor	E7
abnormal lock of outdoor unit fan motor	Detection of DC fan motor lock	
Malfunction of electronic expansion valve	EV1	E9
	EV2	
	EV3	
Abnormal position signal of outdoor unit fan motor	Abnormal position signal of DC fan motor	H7
Faulty sensor of outdoor air temperature	Faulty Ta sensor	H9
Faulty sensor of heat storage unit		HC
Abnormality in water system of heat storage unit		HJ
Transmission error between heat storage unit and controller		HF
Abnormal discharge pipe temperature	Abnormal Td	F3
Abnormal heat exchanger temperature	Refrigerant over charge	F6
Faulty current sensor	Faulty CT1 sensor	J2
	Faulty CT2 sensor	
Faulty sensor of discharge pipe temperature	Faulty Tdi sensor	J3
	Faulty Tds1 sensor	
	Faulty Tds2 sensor	
Faulty sensor of heat exchanger gas pipe temperature	Faulty Tg1, Tg2 sensor	J4
	Faulty Tg2 sensor	
Faulty sensor of suction pipe temperature	Faulty Ts sensor	J5
Faulty sensor of heat exchanger temperature	Faulty Tb sensor	J6
Faulty sensor of receiver temperature	Faulty Tl sensor	J7
Faulty sensor of oil pressure equalizing pipe temperature	Faulty To sensor	J8
Faulty sensor of subcool heat exchanger temperature	Faulty Tsh sensor	J9
Faulty sensor of discharge pressure	Faulty Pc sensor	JA
Faulty sensor of suction pressure	Faulty Pe sensor	JC
Inverter radiation fin temperature rising	Over heating of inverter radiation fin temperature	L4
DC output over current	Inverter instantaneous over current	L5
Electronic thermal switch	Electronic thermal switch 1	L8
	Electronic thermal switch 2	
	Out-of-step	
	Speed down after startup	
	Lightening detection	L9
Stall prevention (Limit time)	Stall prevention (Current increasing)	
	Stall prevention (Faulty startup)	
	Abnormal wave form in startup	
	Out-of-step	
Transmission error between inverter and outdoor unit	Inverter transmission error	LC
Open phase/Power supply imbalance	Imbalance of inverter power supply voltage	P1
Faulty temperature sensor inside switch box	Faulty thermistor of inverter box	P3
Faulty temperature sensor of inverter radiation fin	Faulty thermistor of inverter fin	P4
Incorrect combination of inverter and fan driver	Incorrect combination of inverter and fan driver	PJ
Gas shortage	Gas shortage alarm	U0
Reverse phase	Reverse phase error	U1
Abnormal power supply voltage	Insufficient inverter voltage	U2
	Inverter open phase (phase T)	
	Charging error of capacitor in inverter main circuit	
No implementation of test-run		U3
Transmission error between indoor and outdoor unit	I/O transmission error	U4
Transmission error between outdoor units, transmission error between thermal storage units, duplication of IC address	O/O transmission error	U7
Transmission error of other system	Indoor unit system malfunction in other system or other unit of own system	U9
Erroneous on-site setting	Abnormal connection with excessive number of indoor units	UA
	Conflict of refrigerant type in indoor units	
Faulty system function	Incorrect wiring (Auto address error)	UH
Transmission error in accessory devices, conflict in wiring and piping, no setting for system	Malfunction of multi level converter, abnormality in conflict check	UJ UF

Malfunction code	Confirmation of malfunction 1							Confirmation of malfunction 2							Confirmation of malfunction 3						
	LED1	LED2	LED3	LED4	LED5	LED6	LED7	LED1	LED2	LED3	LED4	LED5	LED6	LED7	LED1	LED2	LED3	LED4	LED5	LED6	LED7
E3	◎			●	●	◎	◎	◎			●	●	◎	◎	◎					●	●
E4								◎			●	◎	●	●	◎					●	●
E5								◎			●	◎	●	◎	◎					●	●
E6								◎			●	◎	◎	●	◎					●	◎
								◎			●	◎	◎	●	◎					◎	●
E7								◎			●	◎	◎	◎	◎					●	◎
E9								◎			◎	●	●	◎	◎					●	◎
															◎					◎	●
															◎					◎	◎
H7	◎			●	◎	●	●	◎			●	◎	◎	◎	◎					●	◎
H9								◎			◎	●	●	◎	◎					●	●
HC								◎			◎	◎	●	●	◎					●	●
HJ								◎			◎	◎	●	◎	◎					●	●
HF								◎			◎	◎	◎	◎	◎					●	●
F3	◎			●	◎	●	◎	◎			●	●	◎	◎	◎					●	●
F6								◎			●	◎	◎	●	◎					●	●
J2	◎			●	◎	◎	●	◎			●	●	◎	●	◎					●	◎
															◎					◎	●
J3								◎			●	●	◎	◎	◎					●	◎
															◎					◎	●
															◎					◎	◎
J4								◎			●	◎	●	●	◎					●	◎
																				◎	●
J5								◎			●	◎	●	◎	◎					●	●
J6								◎			●	◎	◎	●	◎					●	●
J7								◎			●	◎	◎	◎	◎					●	●
J8								◎			◎	●	●	●	◎					●	●
J9								◎			◎	●	●	◎	◎					●	●
JA								◎			◎	●	◎	●	◎					●	●
JC								◎			◎	◎	●	●	◎					●	●
L4	◎			●	◎	◎	◎	◎			●	◎	●	●	◎					●	●
L5								◎			●	◎	●	◎	◎					●	●
L8								◎			◎	●	●	●	◎					●	●
L9								◎			◎	●	●	◎	◎					●	●
LC								◎			◎	◎	●	●	◎					●	●
P1	◎			◎	●	●	●	◎			●	●	●	◎	◎					●	●
P3								◎			●	●	◎	◎	◎					●	●
P4								◎			●	◎	●	●	◎					●	●
PJ								◎			◎	◎	●	◎	◎					●	●
U0	◎			◎	●	●	◎	◎			●	●	●	●	◎					●	●
U1								◎			●	●	●	◎	◎					●	●
U2								◎			●	●	◎	●	◎					●	●
U3								◎			●	●	◎	◎	◎					●	●
U4								◎			●	◎	●	●	◎					●	●
U7								◎			●	◎	◎	◎	◎					●	●
U9								◎			◎	●	●	◎	◎					●	●
UA								◎			◎	●	◎	●	◎					●	●
UH								◎			◎	●	◎	◎	◎					●	●
UJ								◎			◎	◎	●	◎	◎					●	●
								◎			◎	◎	◎	◎	◎					●	●

○ : ON
◎ : Blink
● : OFF

Malfunction code 1st digit display section

○ : ON
◎ : Blink
● : OFF

Malfunction code 2nd digit display section

Master	●	●
Slave 1	●	◎
Slave 2	◎	●

Malfunction location

2. Troubleshooting by Indication on the Remote Controller

2.1 "A0" Indoor Unit: Error of External Protection Device

Remote Controller Display

A0

Applicable Models

All indoor unit models

Method of Malfunction Detection

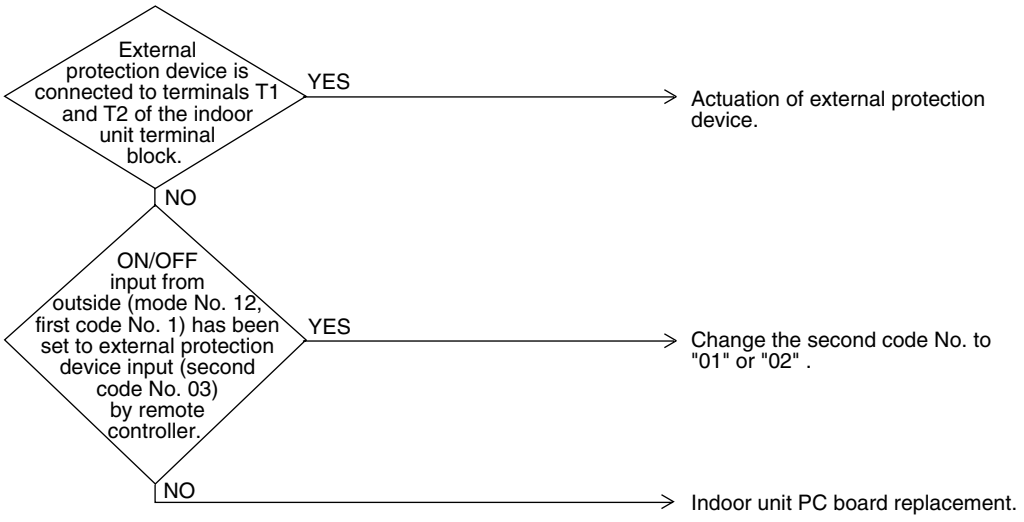
Malfunction Decision Conditions

Supposed Causes

- Actuation of external protection device
- Improper field set
- Defect of indoor unit PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



2.2 "A1" Indoor Unit: PC Board Defect

Remote Controller Display

A1

Applicable Models

All indoor unit models

Method of Malfunction Detection

Check data from E²PROM.

Malfunction Decision Conditions

When data could not be correctly received from the E²PROM
E²PROM : Type of nonvolatile memory. Maintains memory contents even when the power supply is turned off.

Supposed Causes

- Defect of indoor unit PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

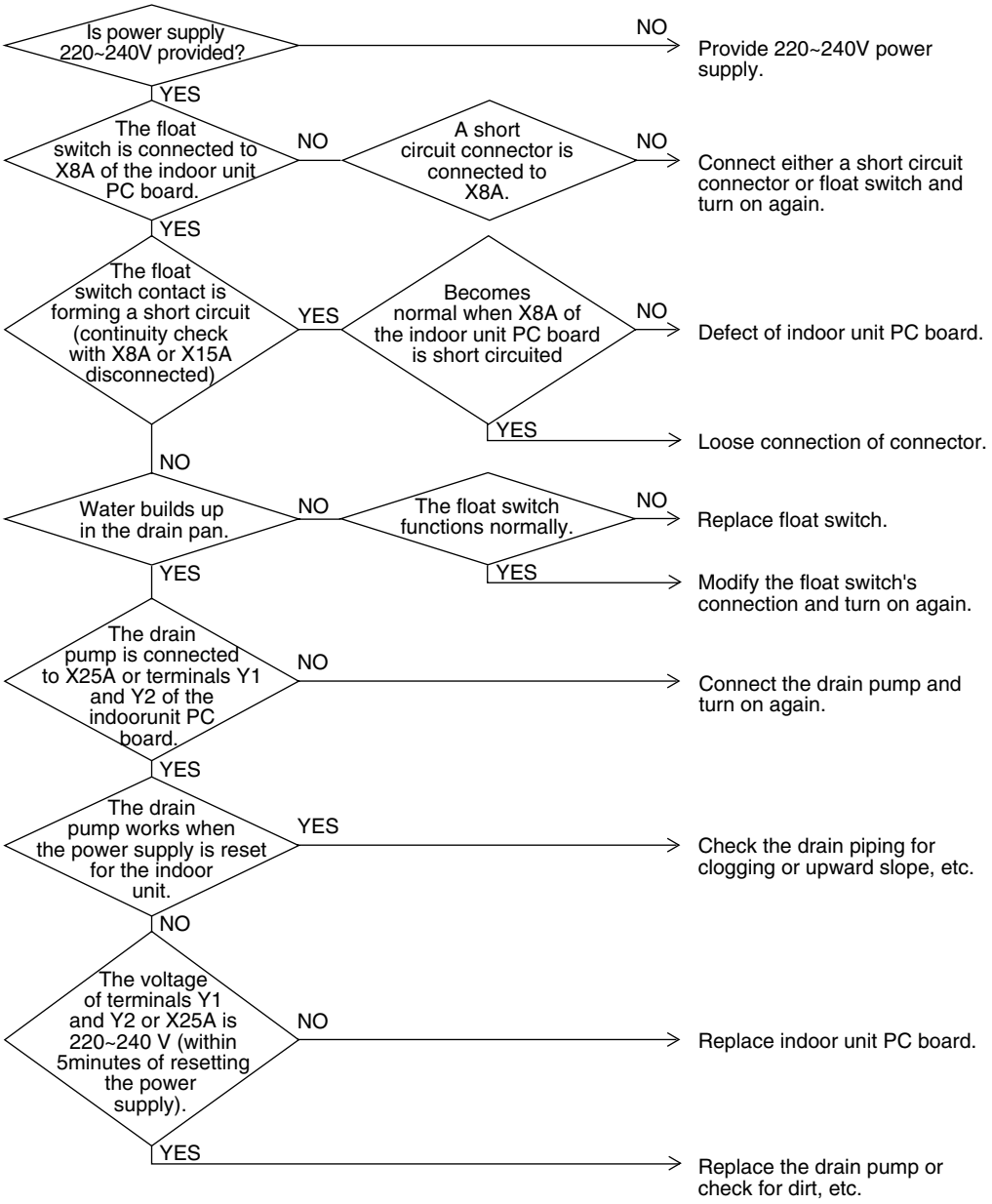
(V2777)

2.3 "A3" Indoor Unit: Malfunction of Drain Level Control System (S1L)

Remote Controller Display	A3
Applicable Models	FXCQ, FXFQ, FXSQ, FXAQ, FXKQ, FXHQ (Option) , FXMQ (Option)
Method of Malfunction Detection	By float switch OFF detection
Malfunction Decision Conditions	When rise of water level is not a condition and the float switch goes OFF.
Supposed Causes	■ 220~240V power supply is not provided ■ Defect of float switch or short circuit connector ■ Defect of drain pump ■ Drain clogging, upward slope, etc. ■ Defect of indoor unit PC board ■ Loose connection of connector

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2778)

2.4 "A6" Indoor Unit: Fan Motor (M1F) Lock, Overload

Remote Controller Display

A6

Applicable Models

All indoor units

Method of Malfunction Detection

Detection by failure of signal for detecting number of turns to come from the fan motor

Malfunction Decision Conditions

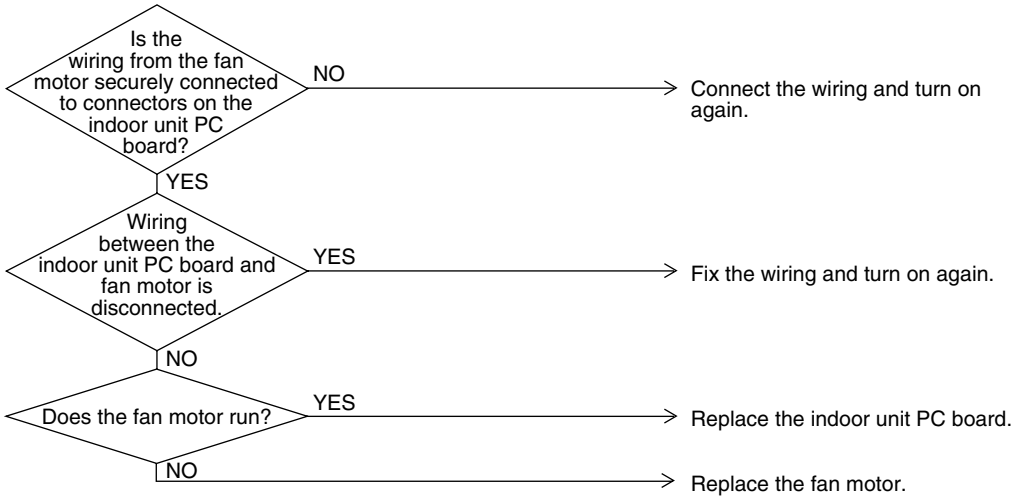
When number of turns can't be detected even when output voltage to the fan is maximum

Supposed Causes

- Fan motor lock
- Disconnected or faulty wiring between fan motor and PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



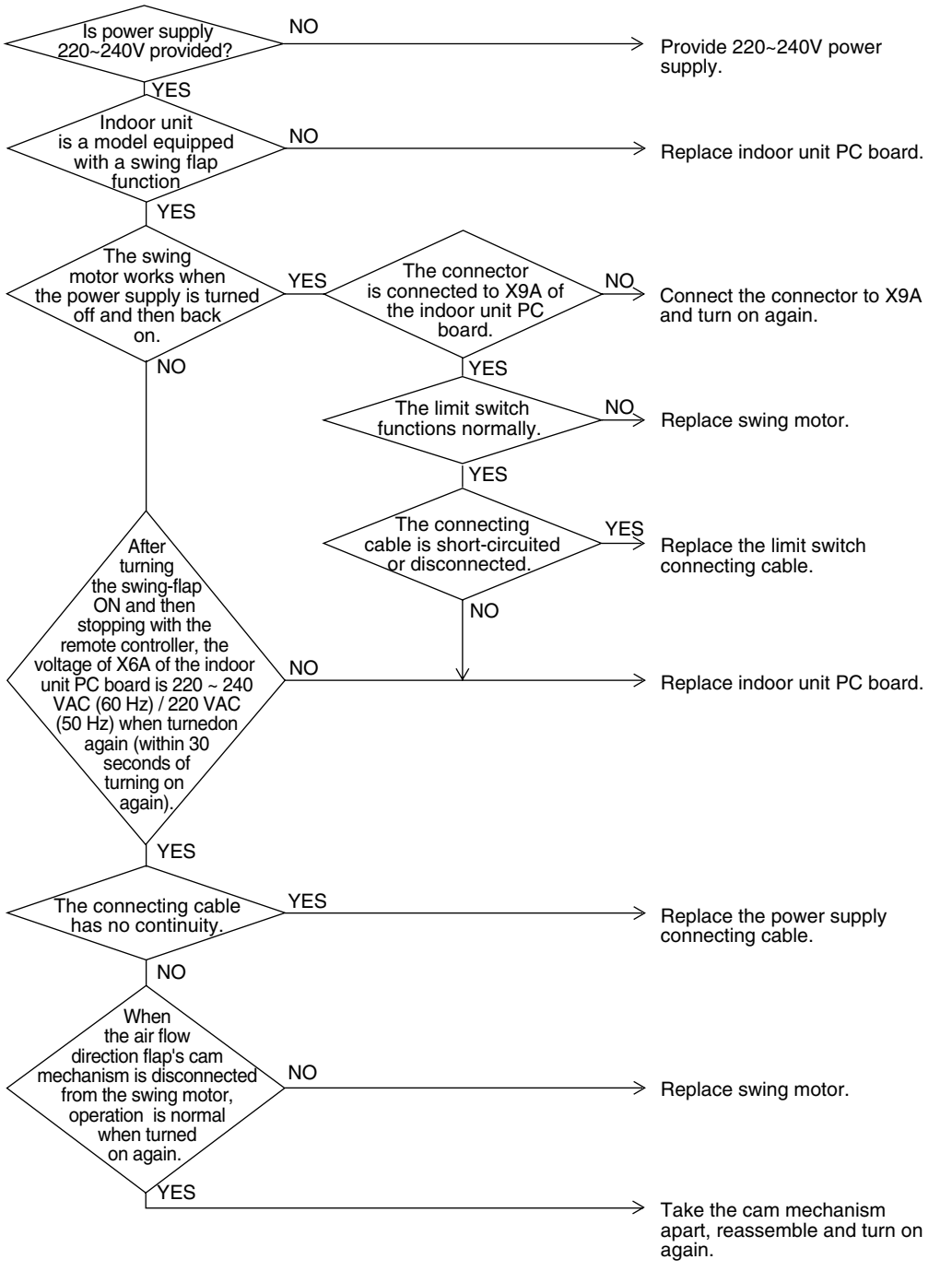
(V2779)

2.5 "A7" Indoor Unit: Malfunction of Swing Flap Motor (MA)

Remote Controller Display	A7
Applicable Models	FXCQ, FXAQ, FXFQ, FXHQ, FXKQ
Method of Malfunction Detection	Utilizes ON/OFF of the limit switch when the motor turns.
Malfunction Decision Conditions	When ON/OFF of the micro-switch for positioning cannot be reversed even though the swing flap motor is energized for a specified amount of time (about 30 seconds).
Supposed Causes	■ Defect of swing motor ■ Defect of connection cable (power supply and limit switch) ■ Defect of air flow direction adjusting flap-cam ■ Defect of indoor unit PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2780)

2.6 "A9" Indoor Unit: Malfunction of Moving Part of Electronic Expansion Valve (20E)

Remote Controller Display

A9

Applicable Models

All indoor unit models

Method of Malfunction Detection

Detection by failure of signal for detecting number of turns to come from the fan motor

Malfunction Decision Conditions

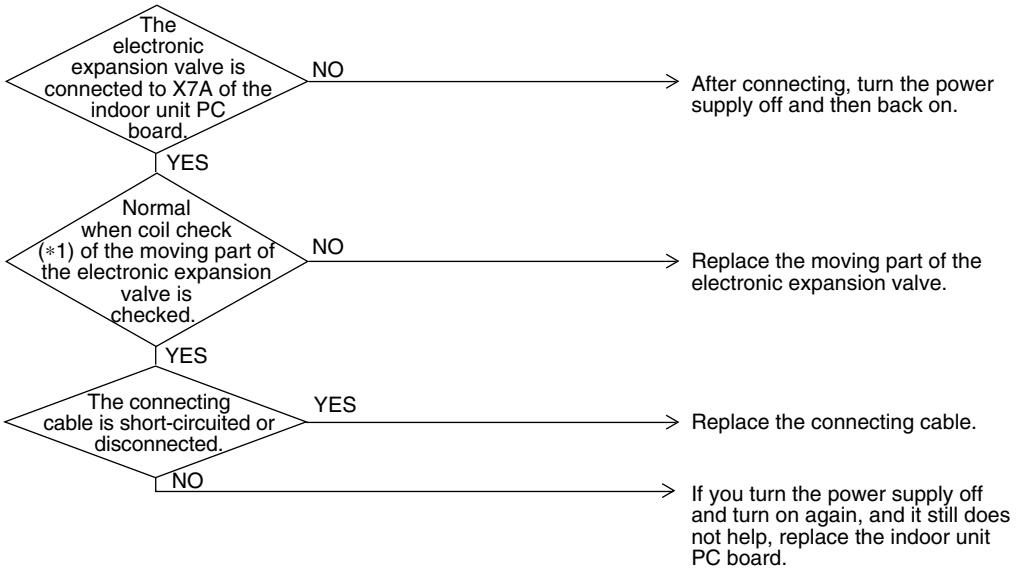
When number of turns can't be detected even when output voltage to the fan is maximum

Supposed Causes

- Malfunction of moving part of electronic expansion valve
- Defect of indoor unit PC board
- Defect of connecting cable

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2781)

∗1: Coil check method for the moving part of the electronic expansion valve
Discount the electronic expansion valve from the PC board and check the continuity between the connector pins.

(Normal)

Pin No.	1. White	2. Yellow	3. Orange	4. Blue	5. Red	6. Brown
1. White		×	○ Approx. 300Ω	×	○ Approx. 150Ω	×
2. Yellow			×	○ Approx. 300Ω	×	○ Approx. 150Ω
3. Orange				×	○ Approx. 150Ω	×
4. Blue					×	○ Approx. 150Ω
5. Red						×
6. Brown						

○: Continuity
×: No continuity

2.7 "AF" Indoor Unit: Drain Level above Limit

Remote Controller Display

AF

Applicable Models

FXCQ, FXFQ, FXSQ, FXKQ, FXMQ

Method of Malfunction Detection

Water leakage is detected based on float switch ON/OFF operation while the compressor is in non-operation.

Malfunction Decision Conditions

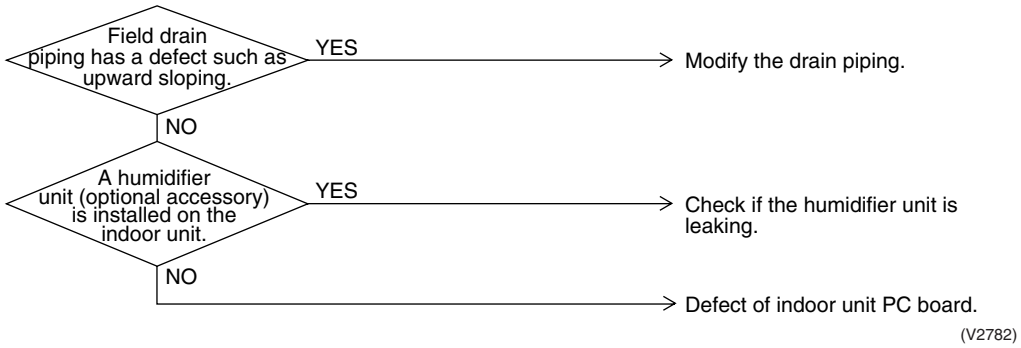
When the float switch changes from ON to OFF while the compressor is in non-operation.

Supposed Causes

- Humidifier unit (optional accessory) leaking
- Defect of drain pipe (upward slope, etc.)
- Defect of indoor unit PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



2.8 "AJ" Indoor Unit: Malfunction of Capacity Determination Device

Remote controller display

AJ

Applicable Models

All indoor unit models

Method of Malfunction Detection

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

Malfunction Decision Conditions

Operation and:

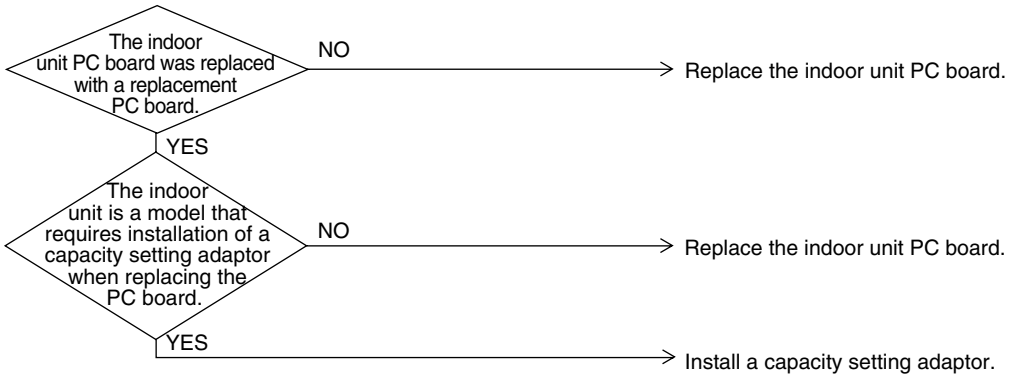
1. When the capacity code is not contained in the PC board's memory, and the capacity setting adaptor is not connected.
2. When a capacity that doesn't exist for that unit is set.

Supposed Causes

- You have forgotten to install the capacity setting adaptor.
- Defect of indoor unit PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2783)

2.9 "C4" Indoor Unit: Malfunction of Thermistor (R2T) for Heat Exchanger

Remote Controller Display

C4

Applicable Models

All indoor unit models

Method of Malfunction Detection

Malfunction detection is carried out by temperature detected by heat exchanger thermistor.

Malfunction Decision Conditions

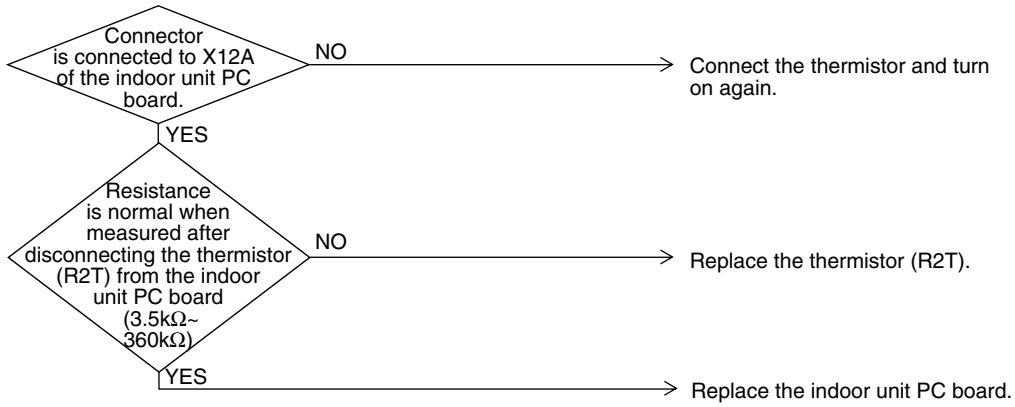
When the heat exchanger thermistor becomes disconnected or shorted while the unit is running.

Supposed Causes

- Defect of thermistor (R2T) for liquid pipe
- Defect of indoor unit PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



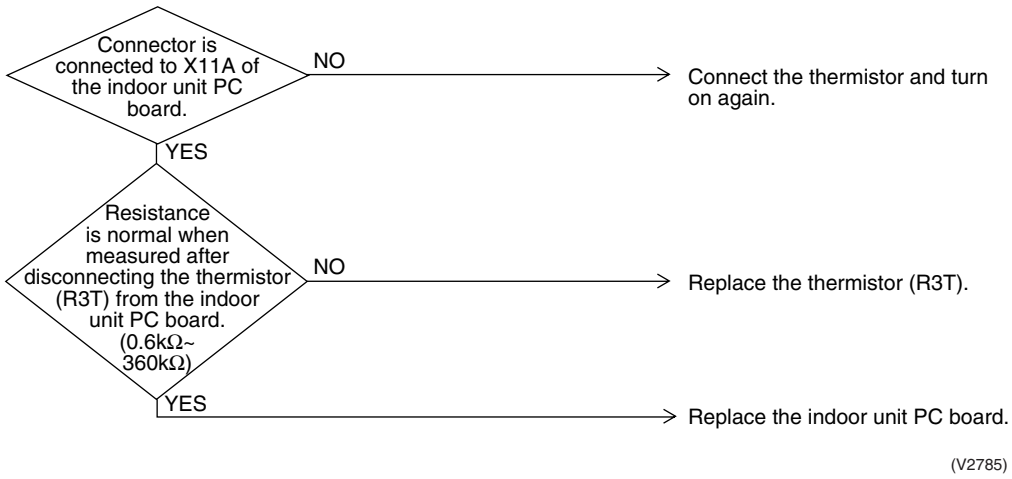
∗2: Refer to thermistor resistance / temperature characteristics table on P.275.

2.10 "C5" Indoor Unit: Malfunction of Thermistor (R3T) for Gas Pipes

Remote Controller Display	C5
Applicable Models	All indoor unit models
Method of Malfunction Detection	Malfunction detection is carried out by temperature detected by gas pipe thermistor.
Malfunction Decision Conditions	When the gas pipe thermistor becomes disconnected or shorted while the unit is running.
Supposed Causes	■ Defect of indoor unit thermistor (R3T) for gas pipe ■ Defect of indoor unit PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



∗2: Refer to thermistor resistance / temperature characteristics table on P.275.

2.11 "C9" Indoor Unit: Malfunction of Thermistor (R1T) for Suction Air

Remote Controller Display

C9

Applicable Models

All indoor unit models

Method of Malfunction Detection

Malfunction detection is carried out by temperature detected by suction air temperature thermistor.

Malfunction Decision Conditions

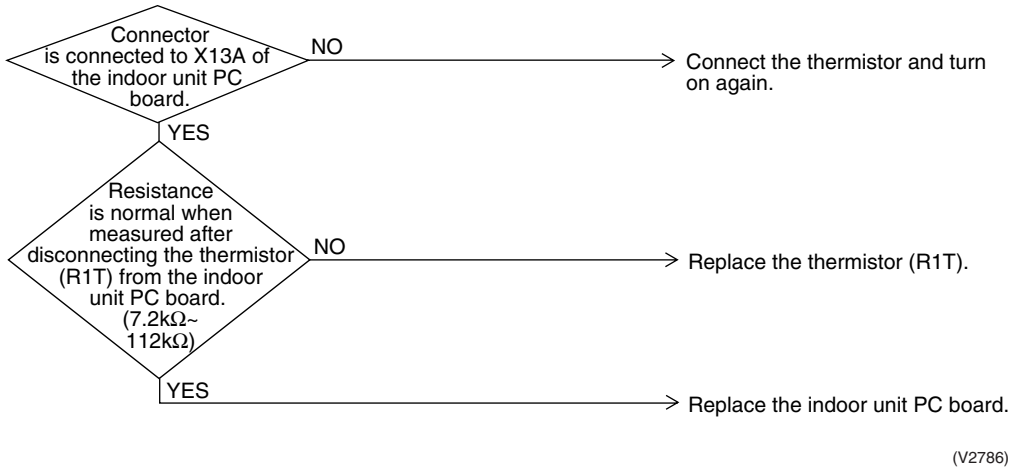
When the suction air temperature thermistor becomes disconnected or shorted while the unit is running.

Supposed Causes

- Defect of indoor unit thermistor (R1T) for air inlet
- Defect of indoor unit PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



∗2: Refer to thermistor resistance / temperature characteristics table on P.275.

2.12 "CJ" Indoor Unit: Malfunction of Thermostat Sensor in Remote Controller

Remote Controller Display

CJ

Applicable Models

All indoor unit models

Method of Malfunction Detection

Malfunction detection is carried out by temperature detected by remote controller air temperature thermistor. (Note1)

Malfunction Decision Conditions

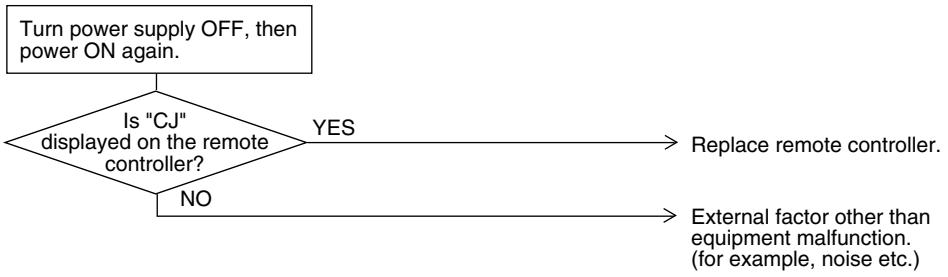
When the remote controller air temperature thermistor becomes disconnected or shorted while the unit is running.

Supposed Causes

- Defect of remote controller thermistor
- Defect of remote controller PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2787)

Notes: In case of remote controller thermistor malfunction, unit is still operable by suction air thermistor on indoor unit.

∗2: Refer to thermistor resistance / temperature characteristics table on P.275.

2.13 "E1" Outdoor Unit: PC Board Defect

Remote Controller Display

E1

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Check data from E²PROM

Malfunction Decision Conditions

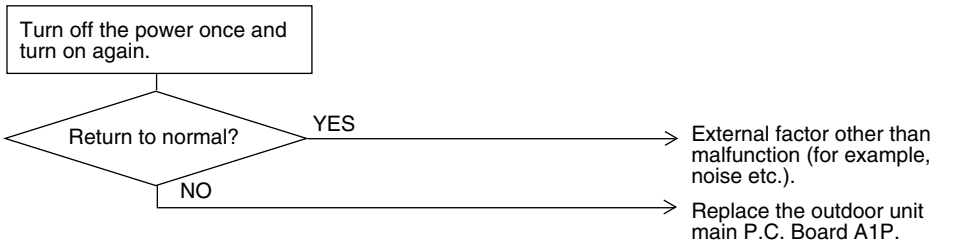
When data could not be correctly received from the E²PROM
E²PROM : Type of nonvolatile memory. Maintains memory contents even when the power supply is turned off.

Supposed Causes

- Defect of outdoor unit PC board (A1P)

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V3064)

2.14 "E3" Outdoor Unit: Actuation of High Pressure Switch

Remote Controller Display

E3

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Abnormality is detected when the contact of the high pressure protection switch opens.

Malfunction Decision Conditions

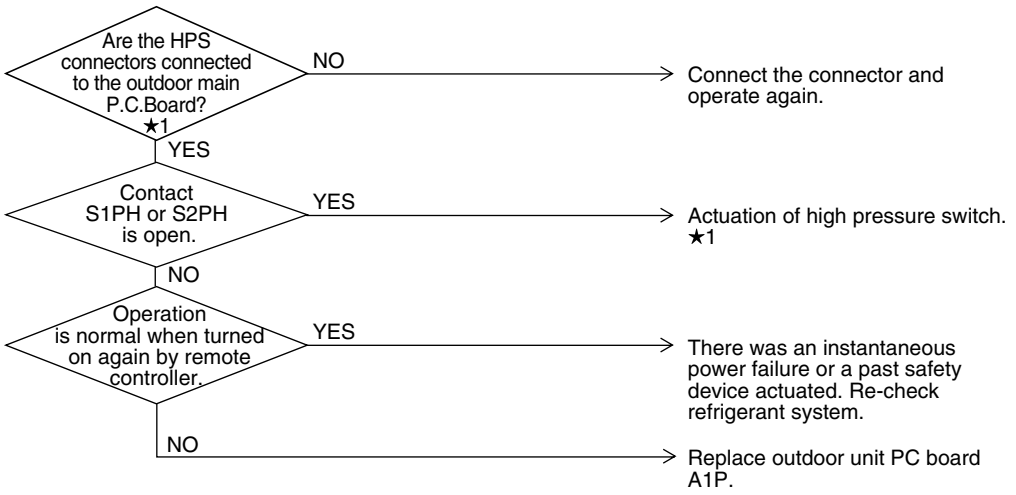
Error is generated when the HPS activation count reaches the number specific to the operation mode.

Supposed Causes

- Actuation of outdoor unit high pressure switch
- Defect of High pressure switch
- Defect of outdoor unit PC board
- Instantaneous power failure
- Faulty high pressure sensor

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V3065)

★1: Actuation of high pressure switch (HPS)

- The outdoor unit PC board's connector is disconnected.
- Is the outdoor unit heat exchanger dirty?
- Defect of outdoor fan
- Is the refrigerant over-charged?
- Faulty high pressure sensor

2.15 "E4" Outdoor Unit: Actuation of Low Pressure Sensor

Remote Controller Display

E4

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Malfunction Decision Conditions

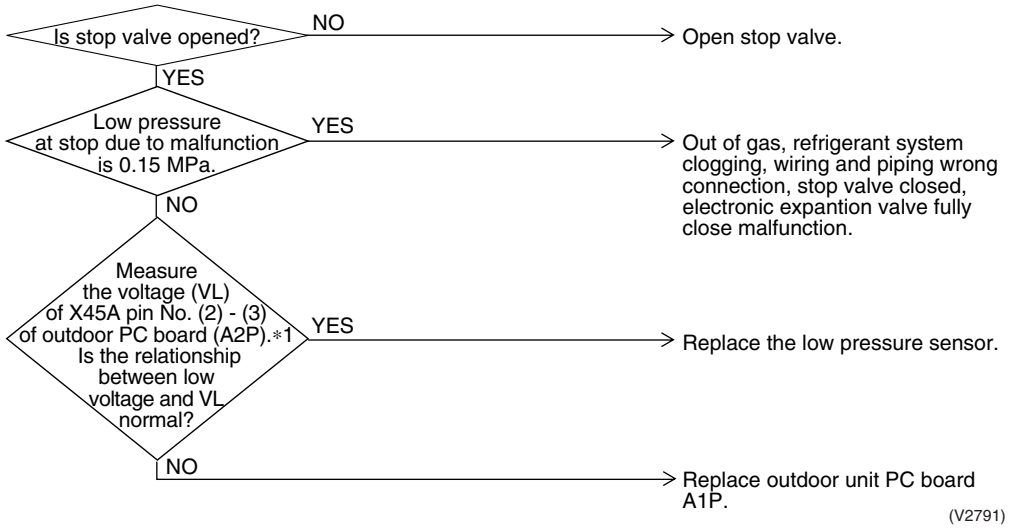
Error is generated when the low pressure is dropped under specific pressure.

Supposed Causes

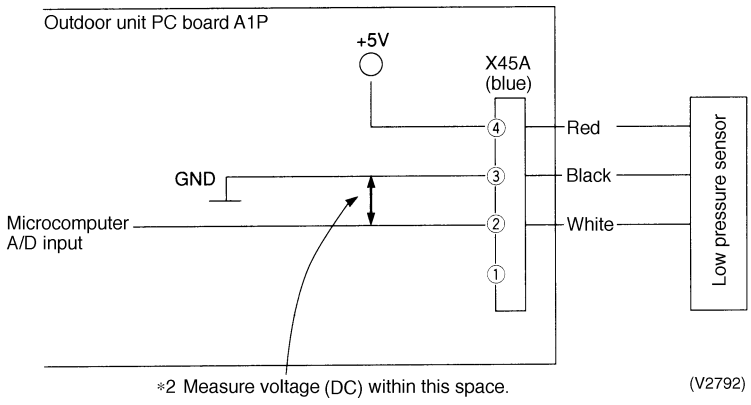
- Abnormal drop of low pressure (Lower than 0.15MPa)
- Defect of low pressure sensor
- Defect of outdoor unit PC board
- Stop valve is not opened.

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



*1: Voltage measurement point



*2: Refer to pressure sensor, pressure / voltage characteristics table on P.277.

2.16 "E5" Compressor Motor Lock (INV Compressor)

Remote Controller Display

E5

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Inverter PC board takes the position signal from UVWN line connected between the inverter and compressor, and detects the position signal pattern.

Malfunction Decision Conditions

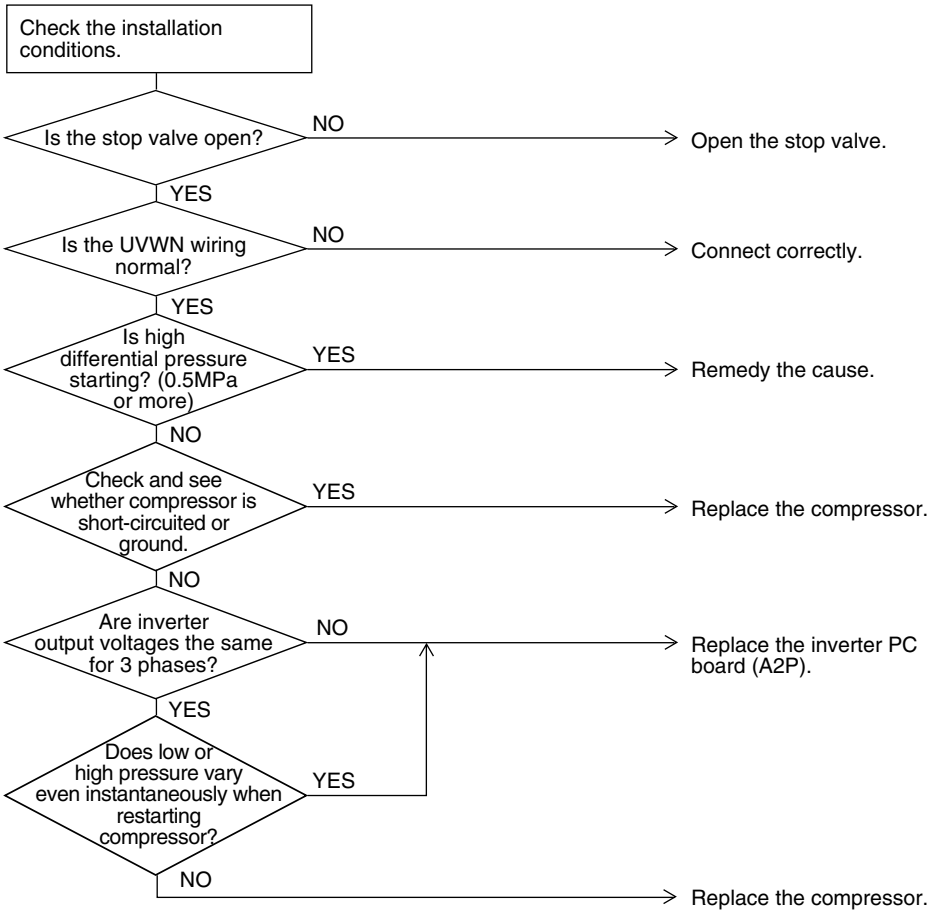
The position signal with 3 times cycle as imposed frequency is detected when compressor motor operates normally, but 2 times cycle when compressor motor locks. When the position signal in 2 times cycle is detected.

Supposed Causes

- Compressor lock
- High differential pressure (0.5MPa or more)
- Incorrect UVWN wiring
- Faulty inverter PC board
- Stop valve is left in closed.

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2793)

2.17 "E6" Compressor Motor Overcurrent/Lock (STD Compressor)

Remote Controller Display

E6

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Detects the overcurrent with current sensor (CT).

Malfunction Decision Conditions

Malfunction is decided when the detected current value exceeds the below mentioned value for 2 seconds.

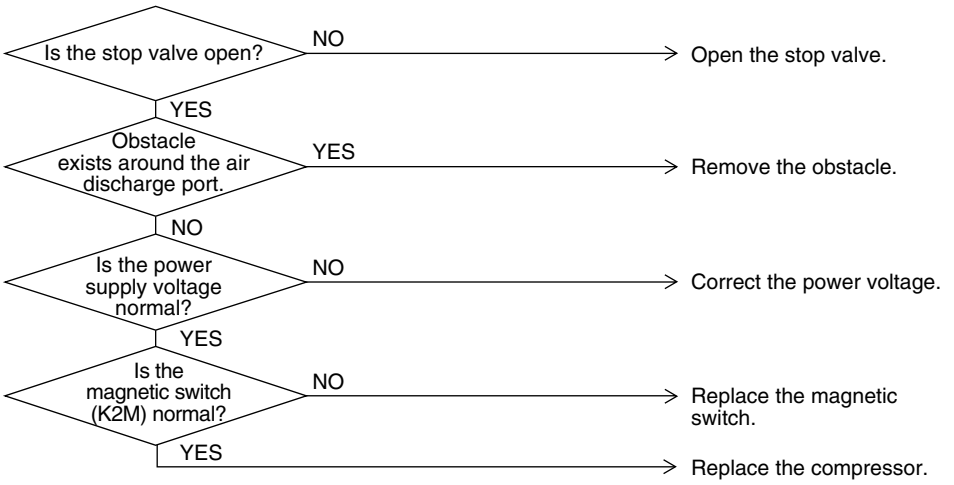
- 400 V unit : 15.0 A

Supposed Causes

- Closed stop value
- Obstacles at the discharge port
- Improper power voltage
- Faulty magnetic switch
- Faulty compressor

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V3051)

2.18 "E7" Malfunction of Outdoor Unit Fan Motor

Remote Controller Display

E7

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Malfunction of fan motor system is detected according to the fan speed detected by hall IC when the fan motor runs.

Malfunction Decision Conditions

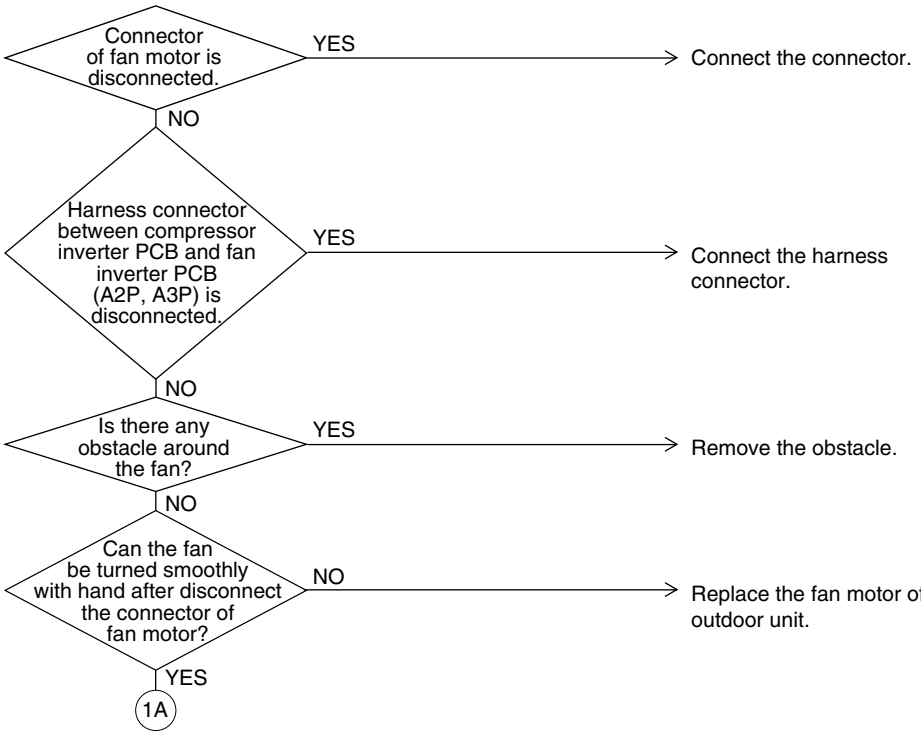
- When the fan runs with speed less than a specified one for 15 seconds or more when the fan motor running conditions are met
- When connector detecting fan speed is disconnected
- When malfunction is generated 4 times, the system shuts down.

Supposed Causes

- Malfunction of fan motor
- The harness connector between fan motor and PC board is left in disconnected, or faulty connector
- Fan does not run due to foreign matters tangled
- Clearing condition: Operate for 5 minutes (normal)

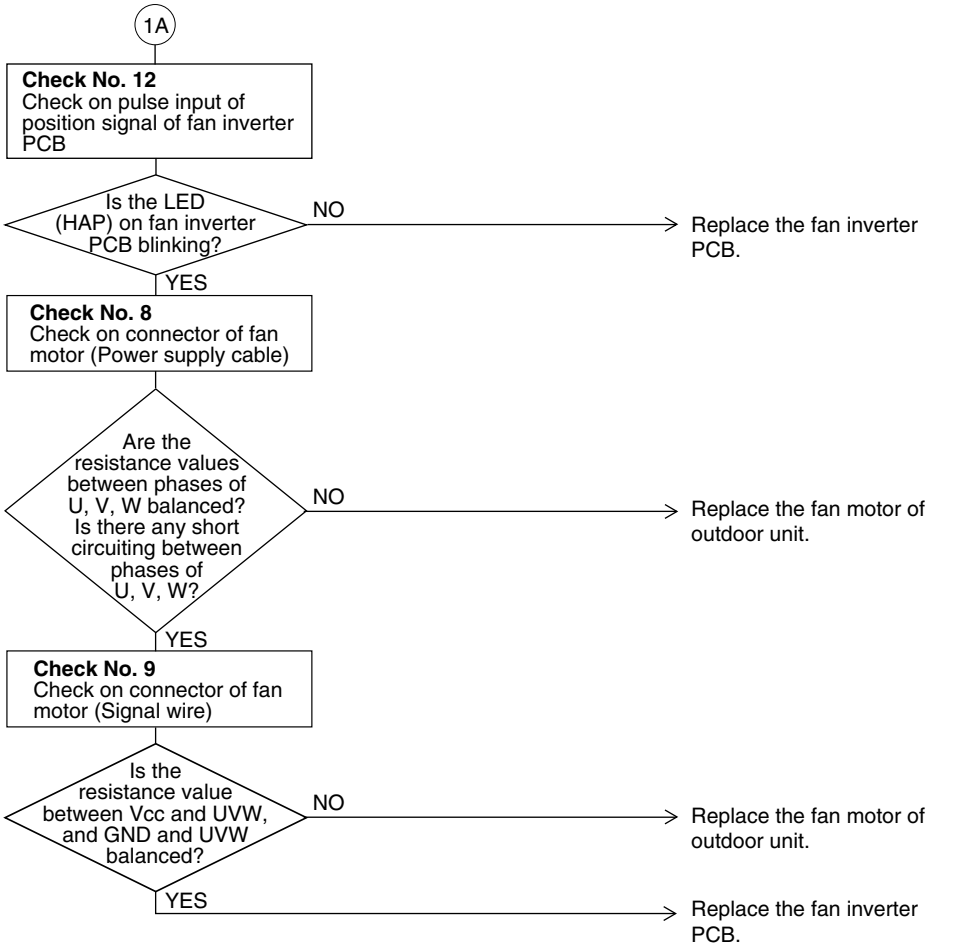
Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V3076)

Troubleshooting



Refer check 8, 9 and 12 to P.233~234.

2.19 "E9" Outdoor Unit: Malfunction of Moving Part of Electronic Expansion Valve (Y1E, Y2E, Y3E)

Remote Controller Display

E9

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Check disconnection of connector
Check continuity of expansion valve coil

Malfunction Decision Conditions

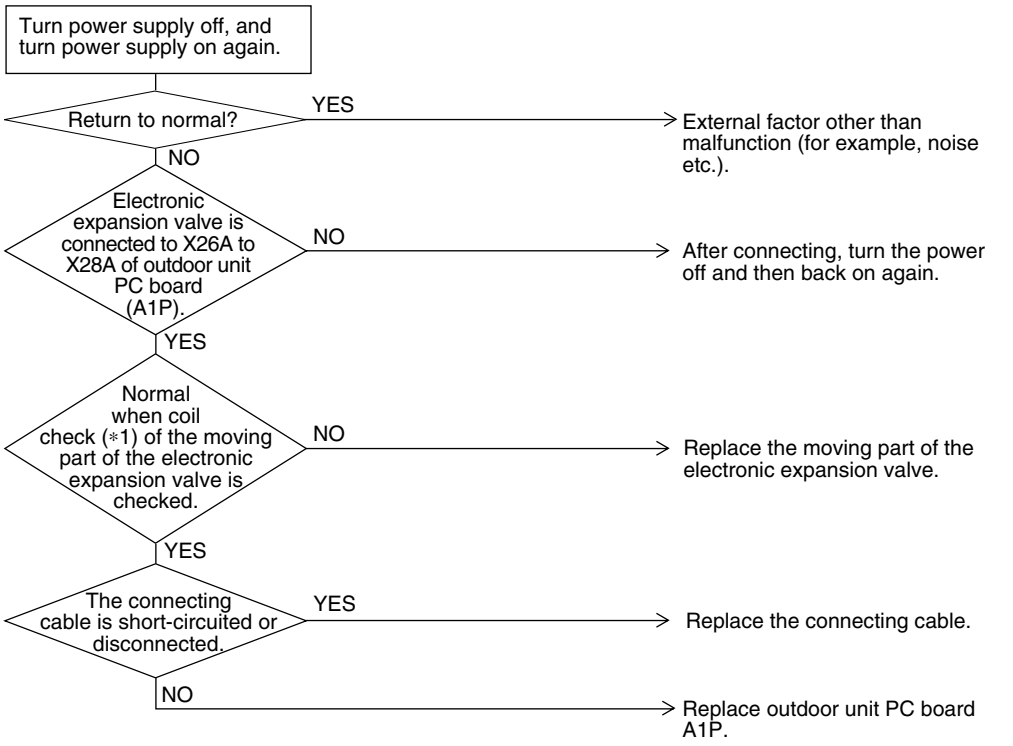
Error is generated under no common power supply when the power is on.

Supposed Causes

- Defect of moving part of electronic expansion valve
- Defect of outdoor unit PC board (A1P)
- Defect of connecting cable

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V3067)

∗1 Coil check method for the moving part of the electronic expansion valve
Disconnect the electronic expansion valve from the PC board and check the continuity between the connector pins.

(Normal)

Pin No.	1. White	2. Yellow	3. Orange	4. Blue	5. Red	6. Brown
1. White		×	◎	×	○	×
2. Yellow			×	◎	×	○
3. Orange				×	○	×
4. Blue					×	○
5. Red						×
6. Brown						

◎ : Continuity Approx. 300Ω
○ : Continuity Approx. 150Ω
× : No continuity

2.20 "F3" Outdoor Unit: Abnormal Discharge Pipe Temperature

Remote Controller Display

F3

Applicable Models

REYQ8~48M

Method of Malfunction Detection

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

Malfunction Decision Conditions

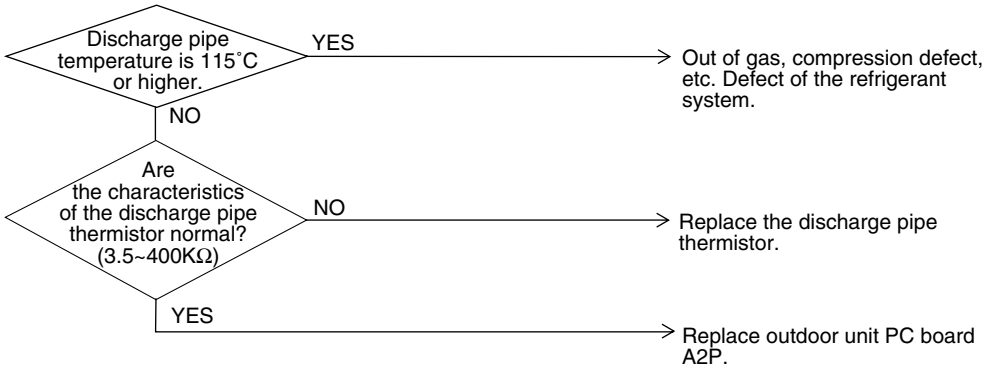
- When the discharge pipe temperature rises to an abnormally high level
- When the discharge pipe temperature rises suddenly

Supposed Causes

- Faulty discharge pipe temperature sensor
- Faulty connection of discharge pipe temperature sensor
- Faulty outdoor unit PCB

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V3068)

∗2: Refer to thermistor resistance / temperature characteristics table on P.275.

2.21 "F6" Refrigerant Overcharged

Remote Controller Display

F6

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Refrigerant overcharge is detected from the receiver gas pipe temperature during test operation.

Malfunction Decision Conditions

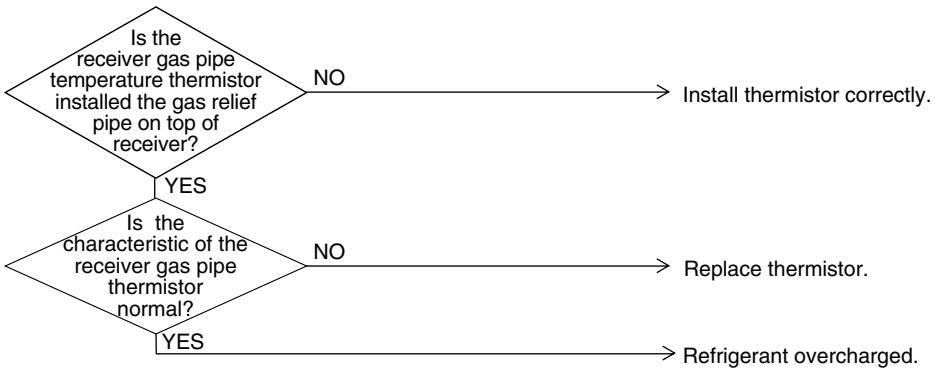
When the receiver gas pipe temperature is lower than evaporating temperature during test operation.

Supposed Causes

- Refrigerant overcharge
- Disconnection of the receiver gas pipe thermistor

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2797)

2.22 "H7" Abnormal Outdoor Fan Motor Signal

Remote Controller Display

H7

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Detection of abnormal signal from fan motor.

Malfunction Decision Conditions

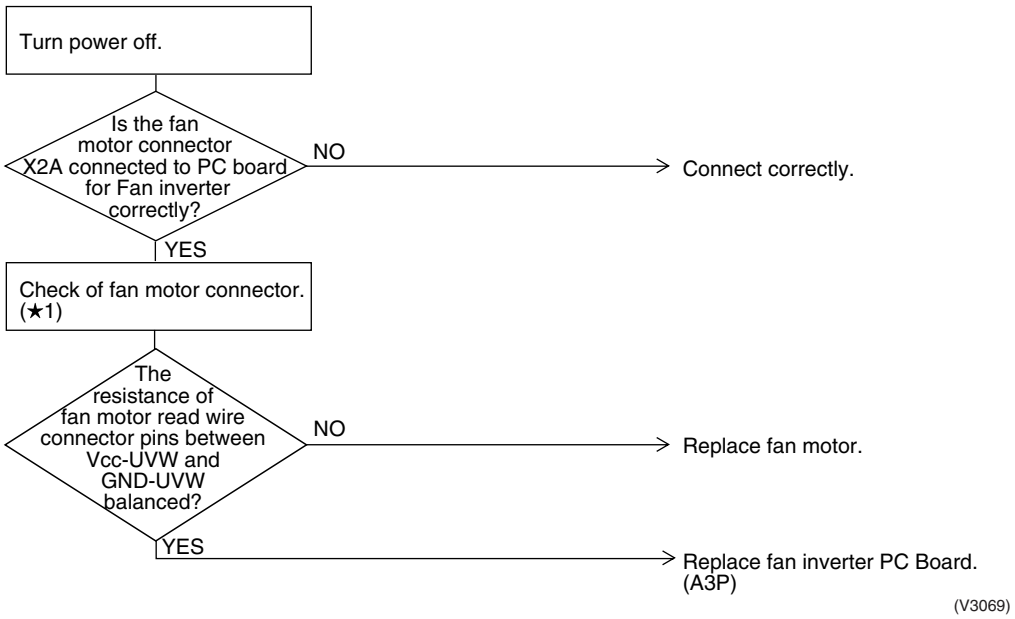
In case of detection of abnormal signal at starting fan motor.

Supposed Causes

- Abnormal fan motor signal (circuit malfunction)
- Broken, short or disconnection connector of fan motor connection cable
- Fan Inverter PC board malfunction

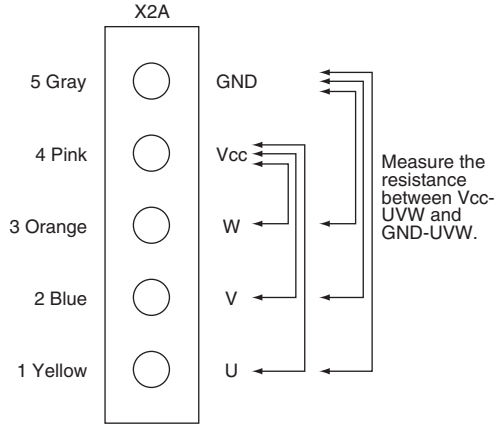
Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V3069)

★1: Disconnect connector (X2A) and measure the following resistance.



(V2799)

2.23 "H9" Outdoor Unit: Malfunction of Thermistor for Outdoor Air (R1T)

Remote Controller Display

H9

Applicable Models

REYQ8~48M

Method of Malfunction Detection

The abnormal detection is based on current detected by current sensor.

Malfunction Decision Conditions

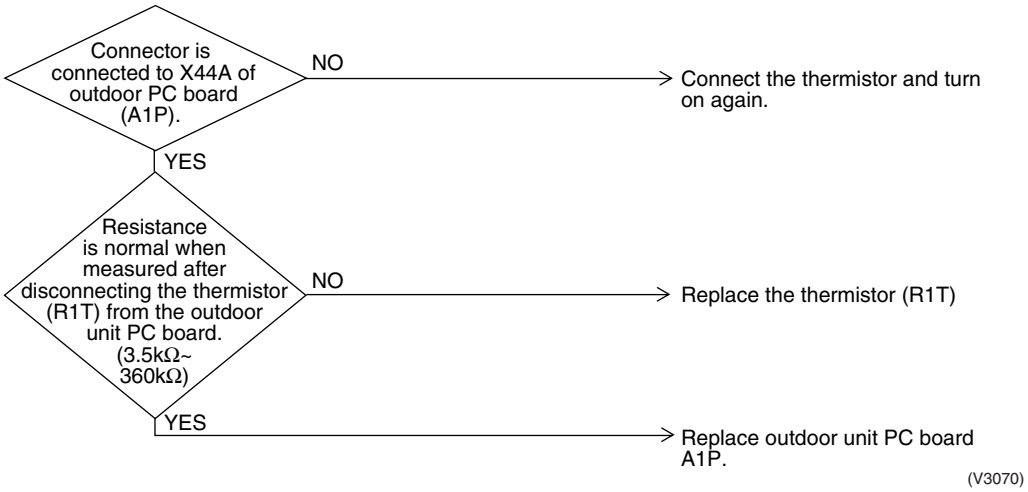
When the outside air temperature sensor has short circuit or open circuit.

Supposed Causes

- Defect of thermistor (R1T) for outdoor air
- Defect of outdoor unit PC board (A1P)

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



The alarm indicator is displayed when the fan only is being used also.

∗2: Refer to thermistor resistance / temperature characteristics table on P.275.

2.24 "J2" Current Sensor Malfunction

Remote Controller Display

J2

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Malfunction is detected according to the current value detected by current sensor.

Malfunction Decision Conditions

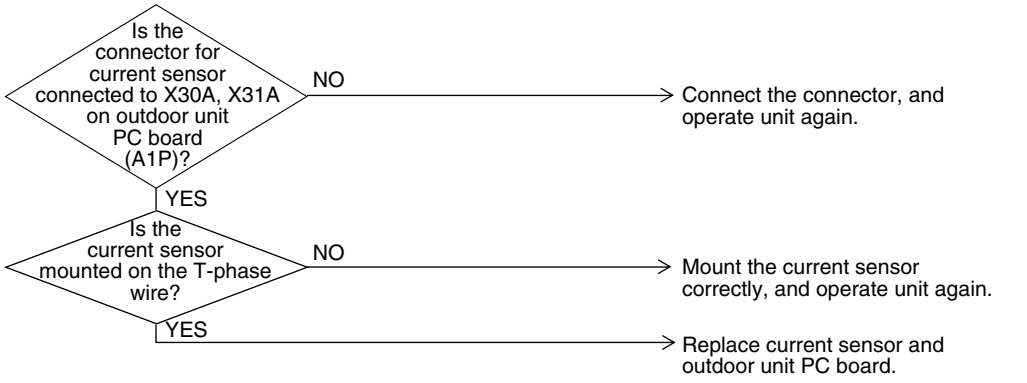
When the current value detected by current sensor becomes 5A or lower, or 40A or more during standard compressor operation.

Supposed Causes

- Faulty current sensor
- Faulty outdoor unit PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V3071)

2.25 "J3" Outdoor Unit: Malfunction of Discharge Pipe Thermistor (R31~33T)

Remote Controller Display

J3

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Malfunction is detected from the temperature detected by discharge pipe temperature thermistor.

Malfunction Decision Conditions

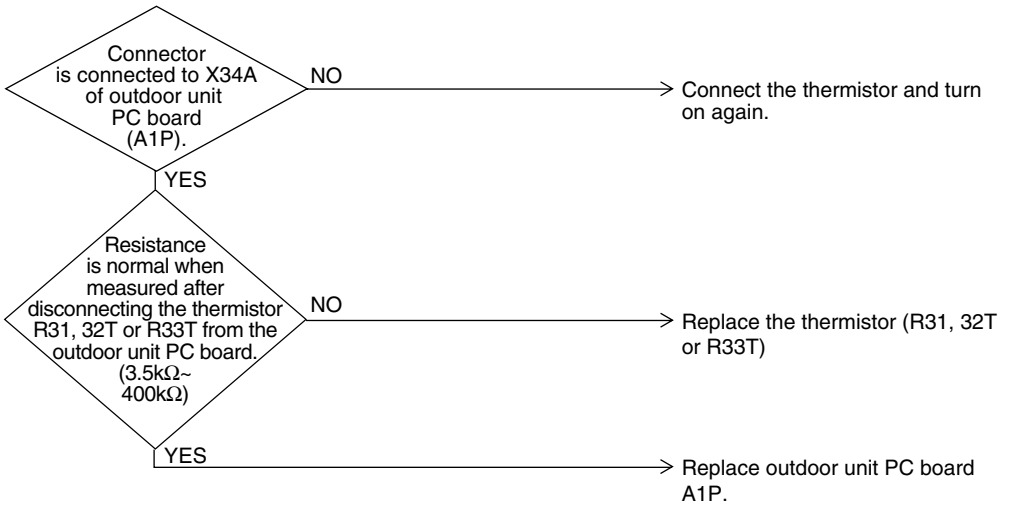
When a short circuit or an open circuit in the discharge pipe temperature thermistor is detected.

Supposed Causes

- Defect of thermistor (R31T, R32T or R33T) for outdoor unit discharge pipe
- Defect of outdoor unit PC board (A1P)

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



The alarm indicator is displayed when the fan is being used also.

Notes: 8~12 HP class ··· R31T, R32T
14, 16Hp class ··· R31T, R32T and R33T

2.26 "J4" Malfunction of Heat Exchanger Gas Pipe Thermistor (R81, 82T)

Remote Controller Display

J4

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Malfunction is detected according to the temperature detected by heat exchanger gas pipe thermistor.

Malfunction Decision Conditions

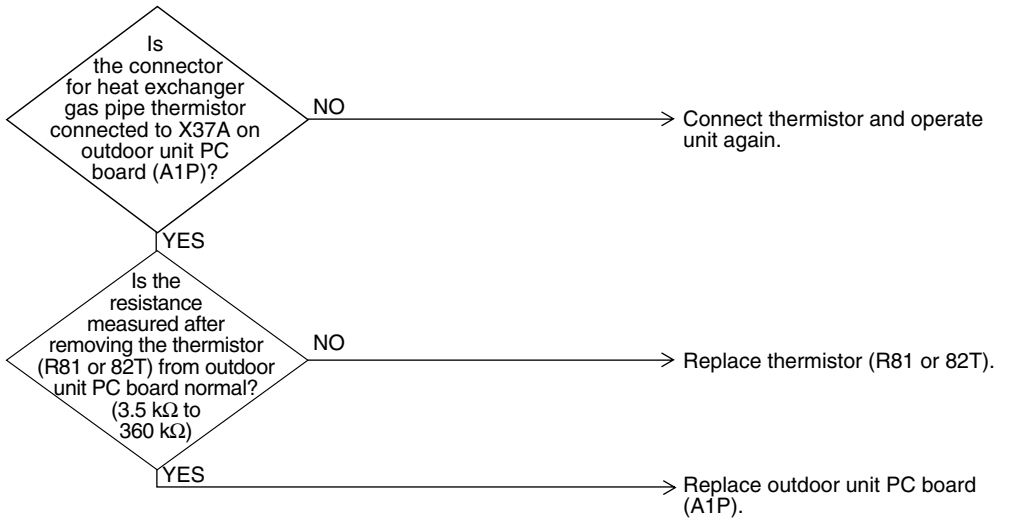
When the heat exchanger gas pipe thermistor is short circuited or open.

Supposed Causes

- Faulty heat exchanger gas pipe thermistor (R81, 82T)
- Faulty outdoor unit PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V3075)

∗2: Refer to thermistor resistance / temperature characteristics table on P.275.

2.27 "J5" Outdoor Unit: Malfunction of Thermistor (R2T) for Suction Pipe

Remote Controller Display

J5

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Malfunction is detected from the temperature detected by the suction pipe temperature thermistor.

Malfunction Decision Conditions

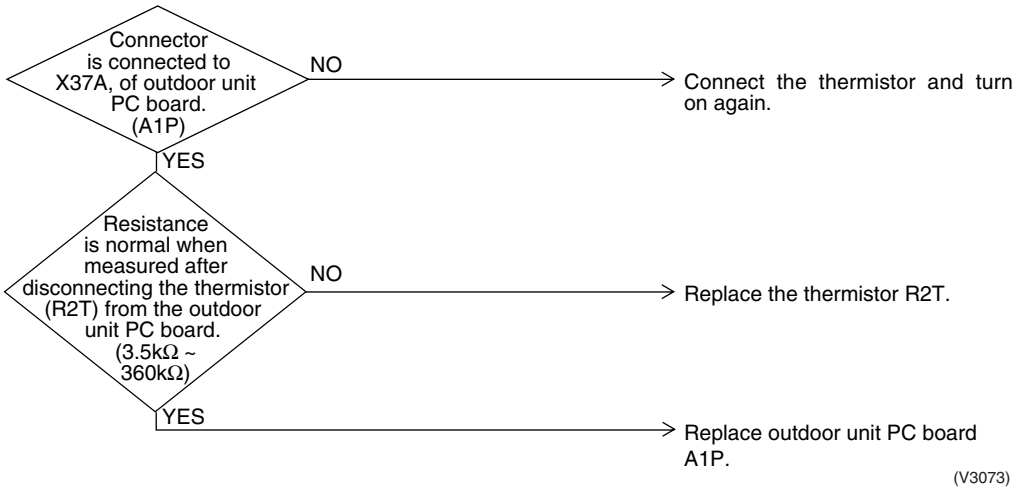
When a short circuit or an open circuit in the suction pipe temperature thermistor is detected.

Supposed Causes

- Defect of thermistor (R2T) for outdoor unit suction pipe
- Defect of outdoor unit PC board (A1P)

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



∗2: Refer to thermistor resistance / temperature characteristics table on P.275.

2.28 "J6" Outdoor Unit: Malfunction of Thermistor (R4T) for Outdoor Unit Heat Exchanger

Remote Controller Display

J6

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Malfunction is detected from the temperature detected by the heat exchanger thermistor.

Malfunction Decision Conditions

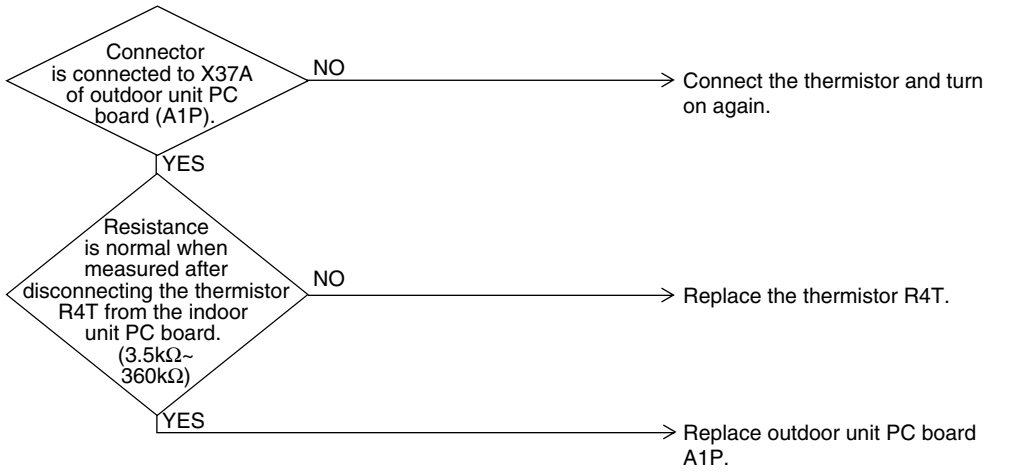
When a short circuit or an open circuit in the heat exchange thermistor is detected.

Supposed Causes

- Defect of thermistor (R4T) for outdoor unit coil
- Defect of outdoor unit PC board (A1P)

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V3074)

∗2: Refer to thermistor resistance / temperature characteristics table on P.275.

2.29 "J7" Malfunction of Receiver Outlet Liquid Pipe Thermistor (R6T)

Remote Controller Display

J7

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Malfunction is detected according to the temperature detected by receiver outlet liquid pipe thermistor.

Malfunction Decision Conditions

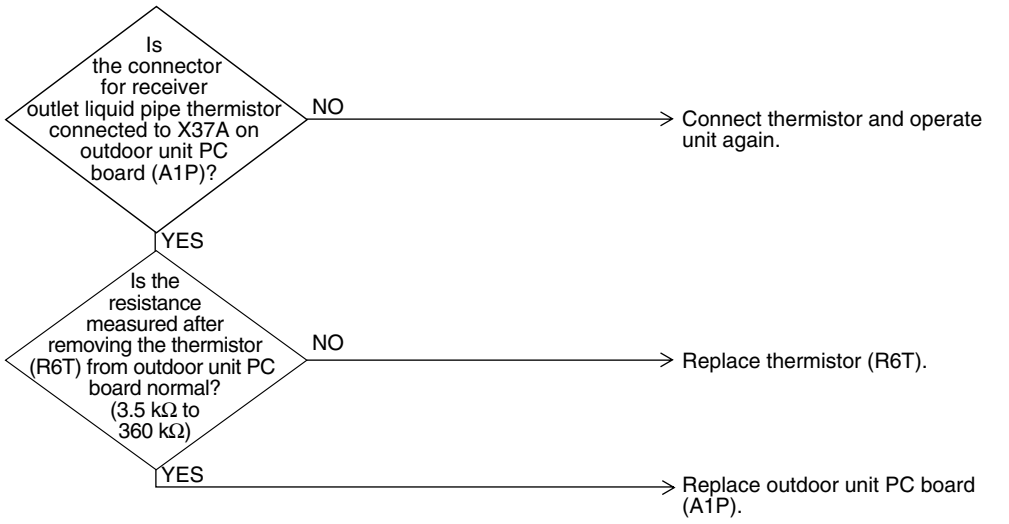
When the receiver outlet liquid pipe thermistor is short circuited or open.

Supposed Causes

- Faulty receiver outlet liquid pipe thermistor (R6T)
- Faulty outdoor unit PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V3075)

∗2: Refer to thermistor resistance / temperature characteristics table on P.275.

2.30 "J8" Malfunction of Oil Equalizing Pipe Thermistor (R7T)

Remote Controller Display

J8

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Malfunction is detected according to the temperature detected by oil equalizing pipe thermistor.

Malfunction Decision Conditions

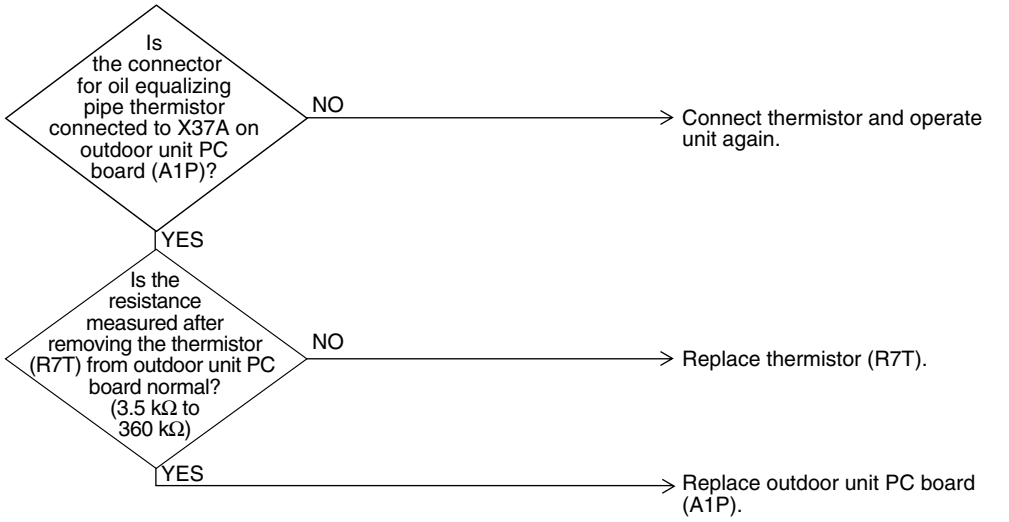
When the oil equalizing pipe thermistor is short circuited or open.

Supposed Causes

- Faulty oil equalizing pipe thermistor (R7T)
- Faulty outdoor unit PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V3075)

∗2: Refer to thermistor resistance / temperature characteristics table on P.275.

2.31 "J9" Malfunction of Receiver Gas Pipe Thermistor (R5T)

Remote Controller Display

J9

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Malfunction is detected according to the temperature detected by receiver gas pipe thermistor.

Malfunction Decision Conditions

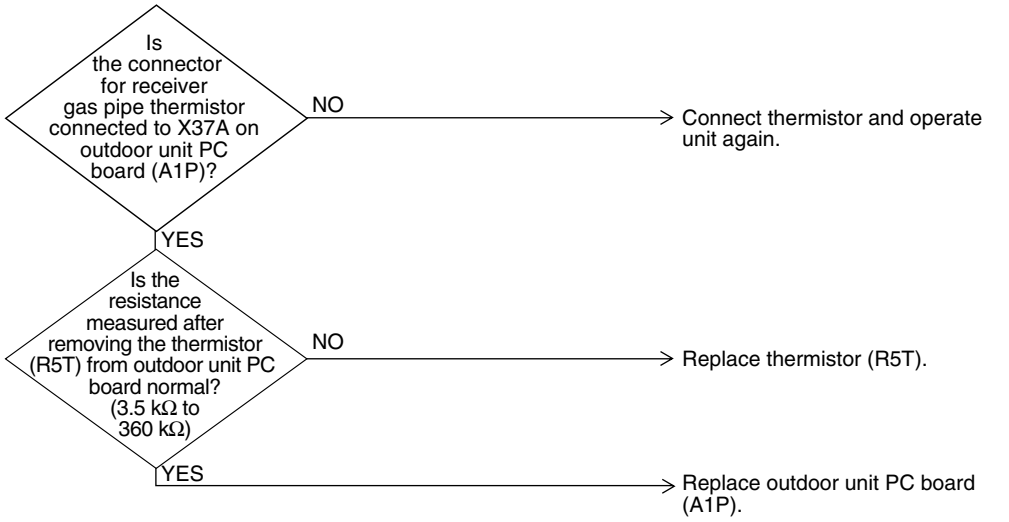
When the receiver gas pipe thermistor is short circuited or open.

Supposed Causes

- Faulty receiver gas pipe thermistor (R5T)
- Faulty outdoor unit PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V3075)

∗2: Refer to thermistor resistance / temperature characteristics table on P.275.

2.32 "JA" Outdoor Unit: Malfunction of Discharge Pipe Pressure Sensor

Remote Controller Display

JA

Applicable Models

REYQ8~48M

Method of Malfunction Detection

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

Malfunction Decision Conditions

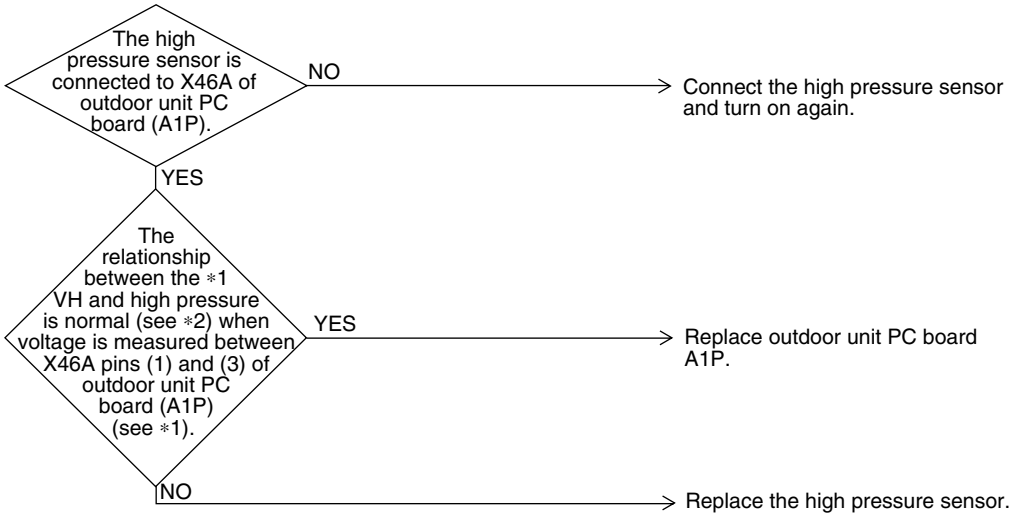
When the discharge pipe pressure sensor is short circuit or open circuit.

Supposed Causes

- Defect of high pressure sensor system
- Connection of low pressure sensor with wrong connection.
- Defect of outdoor unit PC board.

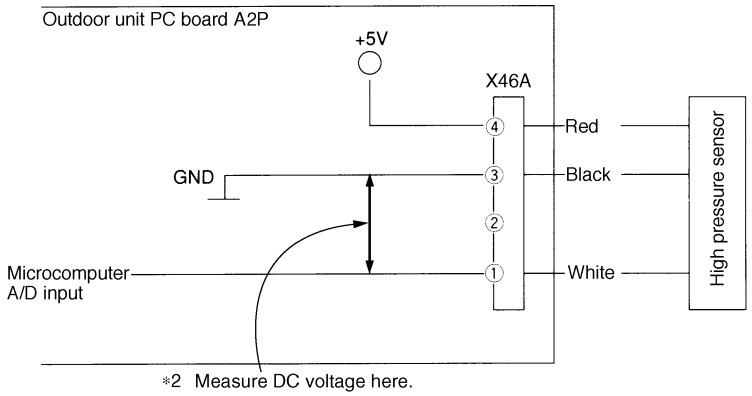
Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2806)

∗1: Voltage measurement point



(V2807)

∗2: Refer to pressure sensor, pressure / voltage characteristics table on P.277.

2.33 "JC" Outdoor Unit: Malfunction of Suction Pipe Pressure Sensor

Remote Controller Display

JC

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Malfunction is detected from pressure detected by low pressure sensor.

Malfunction Decision Conditions

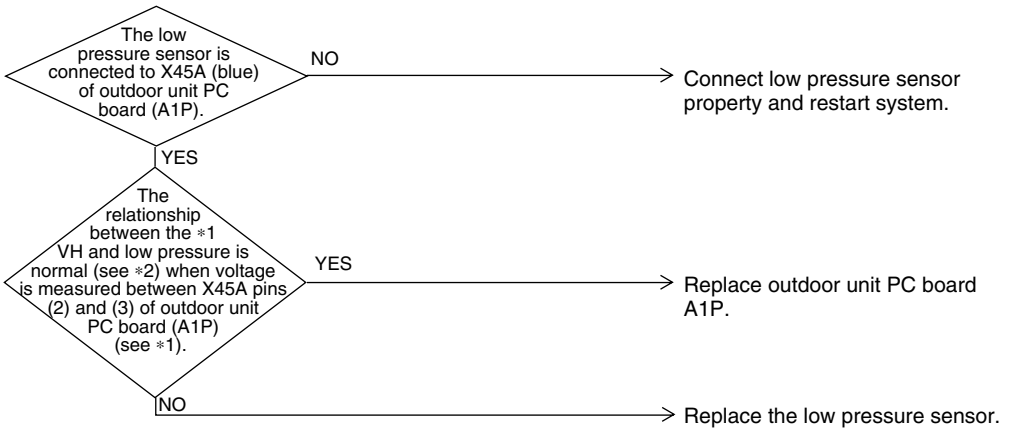
When the suction pipe pressure sensor is short circuit or open circuit.

Supposed Causes

- Defect of low pressure sensor system
- Connection of high pressure sensor with wrong connection.
- Defect of outdoor unit PC board.

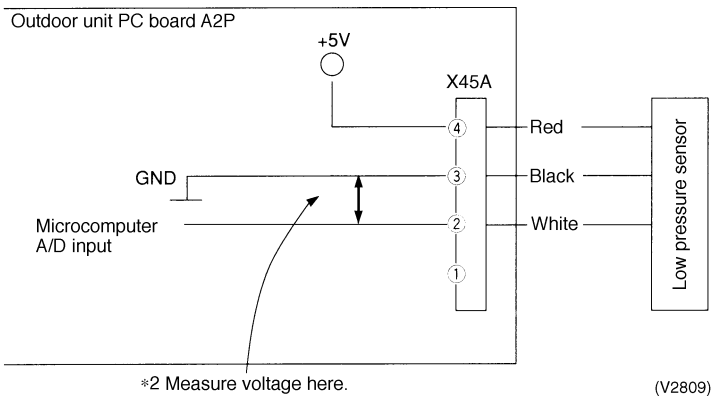
Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2808)

∗1: Voltage measurement point



(V2809)

∗2: Refer to pressure sensor, pressure/voltage characteristics table on P.277.

2.34 "L4" Outdoor Unit: Malfunction of Inverter Radiating Fin Temperature Rise

Remote Controller Display

L4

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Fin temperature is detected by the thermistor of the radiation fin.

Malfunction Decision Conditions

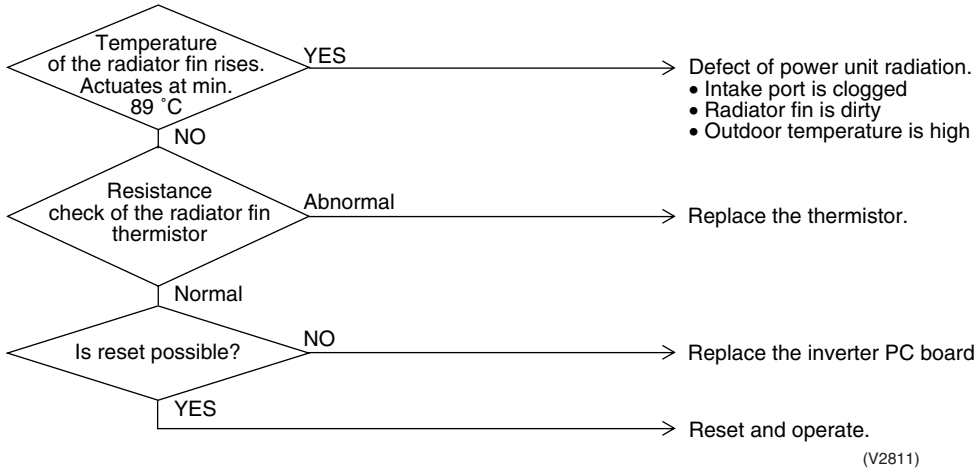
When the temperature of the inverter radiation fin increases above 89°C.

Supposed Causes

- Actuation of fin thermal (Actuates above 89°C)
- Defect of inverter PC board
- Defect of fin thermistor

Troubleshooting

⚠ **Caution** Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



∗2: Refer to thermistor resistance / temperature characteristics table on P.275.

2.35 "L5" Outdoor Unit: Inverter Compressor Abnormal

Remote Controller Display

L5

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Malfunction is detected from current flowing in the power transistor.

Malfunction Decision Conditions

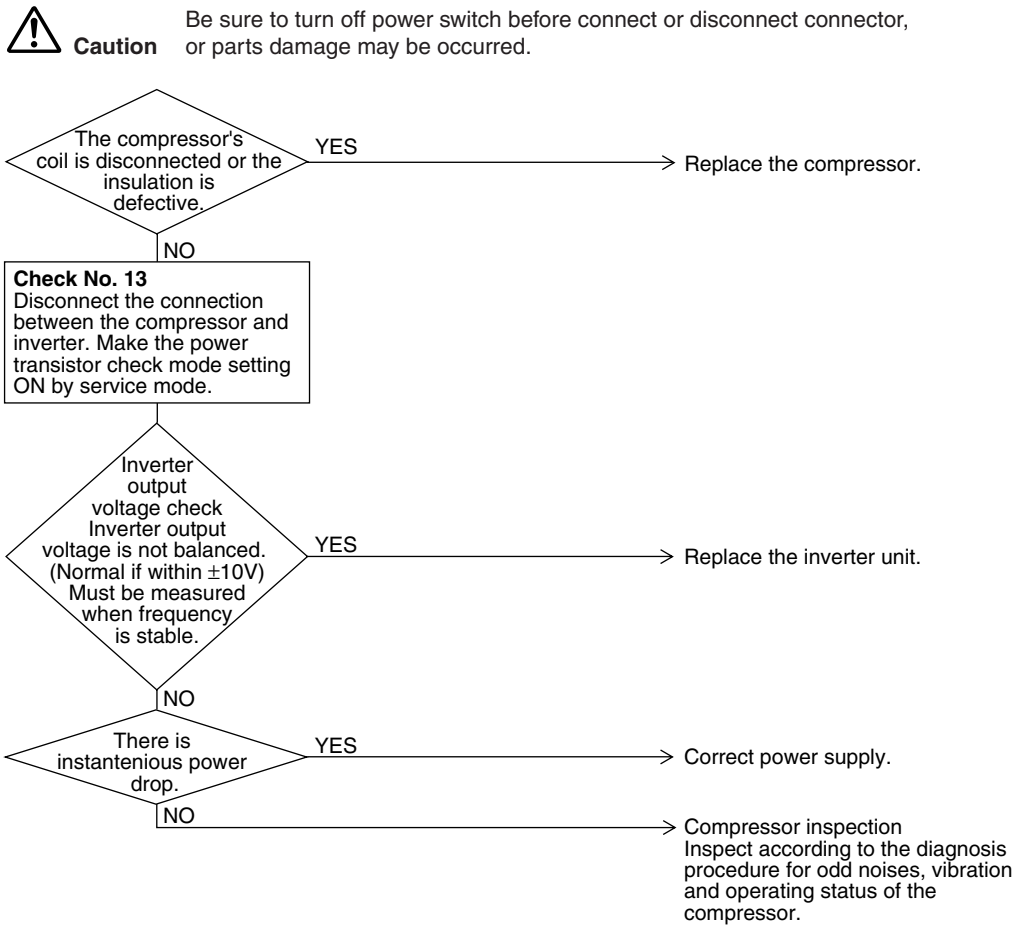
When an excessive current flows in the power transistor.
(Instantaneous overcurrent also causes activation.)

Supposed Causes

- Defect of compressor coil (disconnected, defective insulation)
- Compressor start-up malfunction (mechanical lock)
- Defect of inverter PC board

Troubleshooting

Compressor inspection



Higher voltage than actual is displayed when the inverter output voltage is checked by tester.

Refer check 13 to P.234.

2.36 "L8" Outdoor Unit: Inverter Current Abnormal

Remote Controller Display

L8

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Malfunction is detected by current flowing in the power transistor.

Malfunction Decision Conditions

When overload in the compressor is detected.

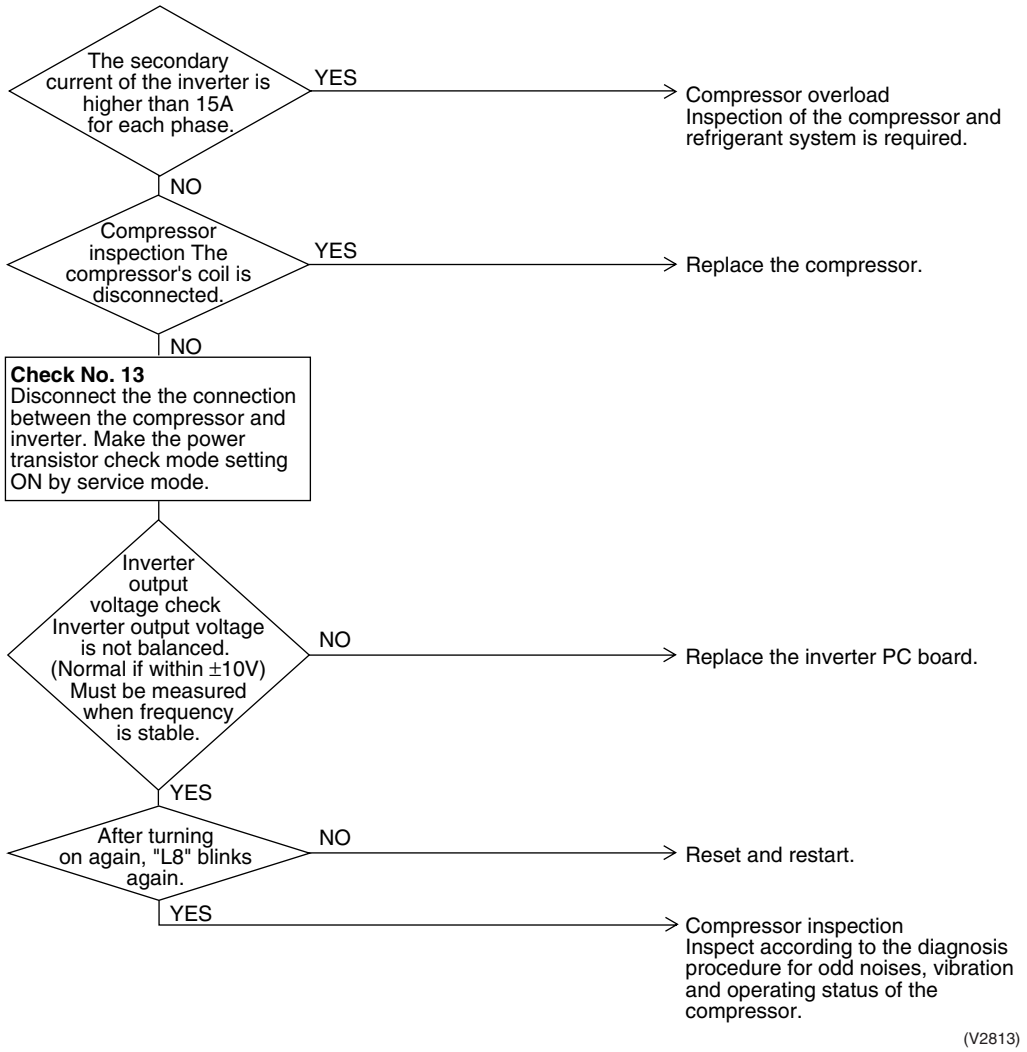
Supposed Causes

- Compressor overload
- Compressor coil disconnected
- Defect of inverter PC board

Troubleshooting

Output current check

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2813)

Refer check 13 to P.234.

2.37 "L9" Outdoor Unit: Inverter Start up Error

Remote Controller Display

L9

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Malfunction is detected from current flowing in the power transistor.

Malfunction Decision Conditions

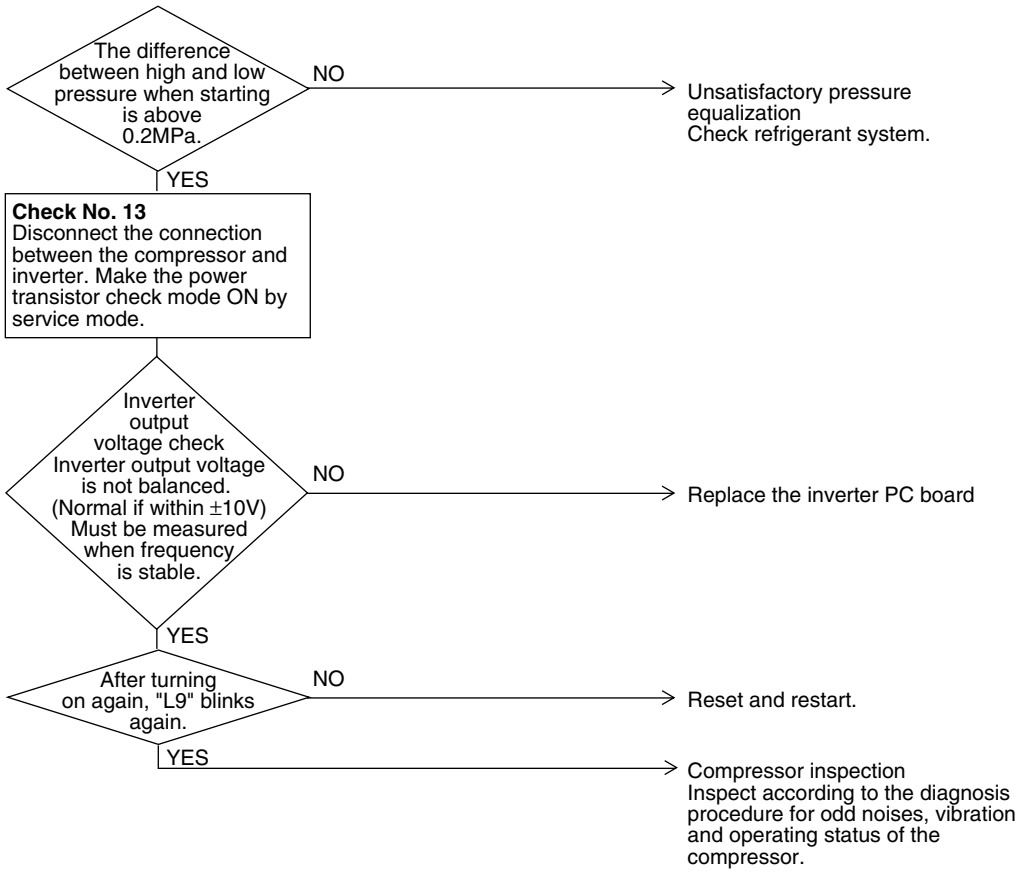
When overload in the compressor is detected during startup

Supposed Causes

- Defect of compressor
- Pressure differential start
- Defect of inverter PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



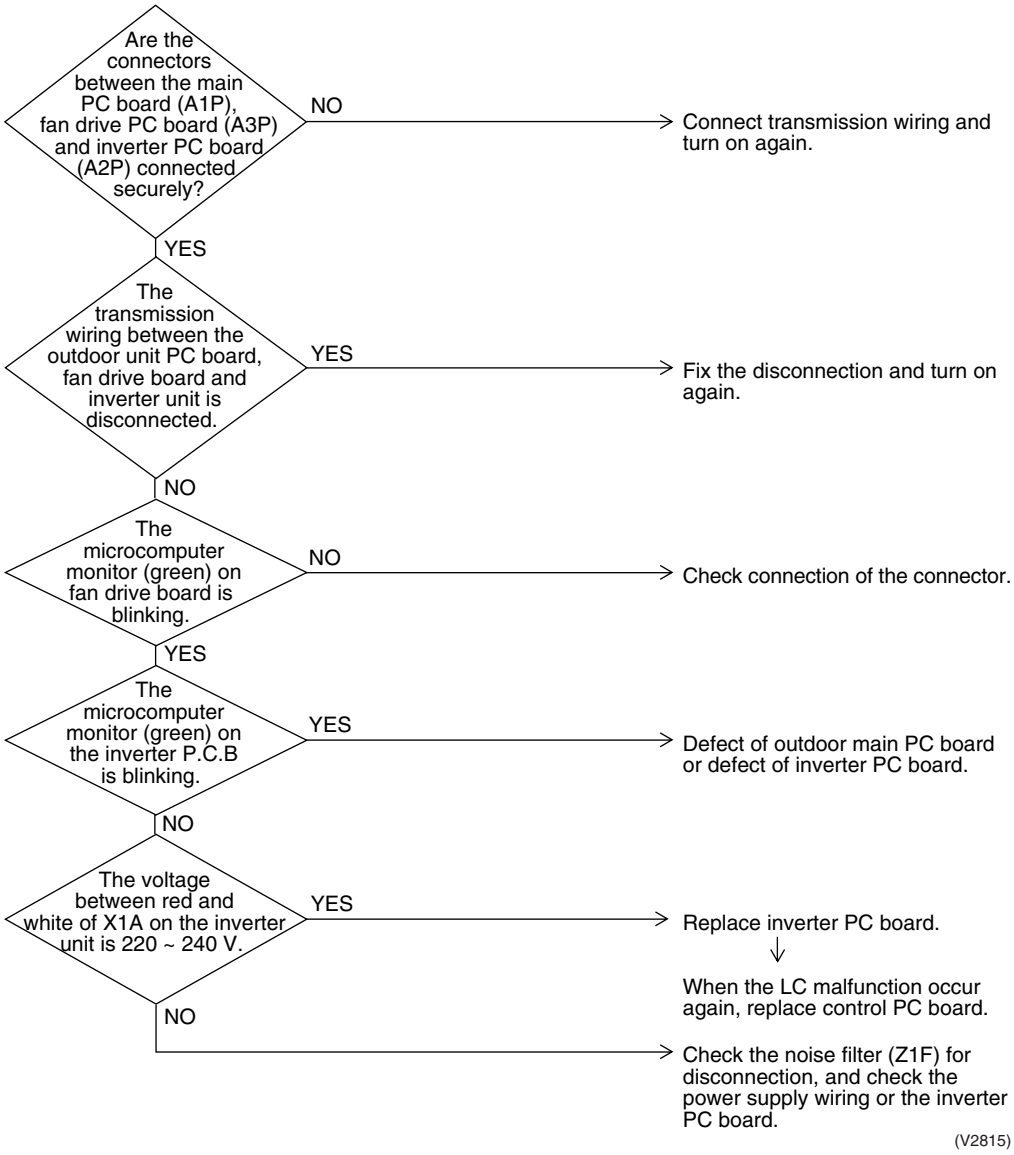
Refer check 13 to P.234.

2.38 "LC" Outdoor Unit: Malfunction of Transmission between Inverter and Control PC Board

Remote Controller Display	LC
Applicable Models	REYQ8~48M
Method of Malfunction Detection	Check the communication state between inverter PC board and control PC board by micro-computer.
Malfunction Decision Conditions	When the correct communication is not conducted in certain period.
Supposed Causes	■ Malfunction of connection between the inverter PC board and outdoor control PC board ■ Defect of outdoor control PC board (transmission section) ■ Defect of inverter PC board ■ Defect of noise filter ■ External factor (Noise etc.)

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



2.39 "P1" Outdoor Unit: Inverter Over-Ripple Protection

Remote Controller Display

P1

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Imbalance in supply voltage is detected in PC board.

Malfunction Decision Conditions

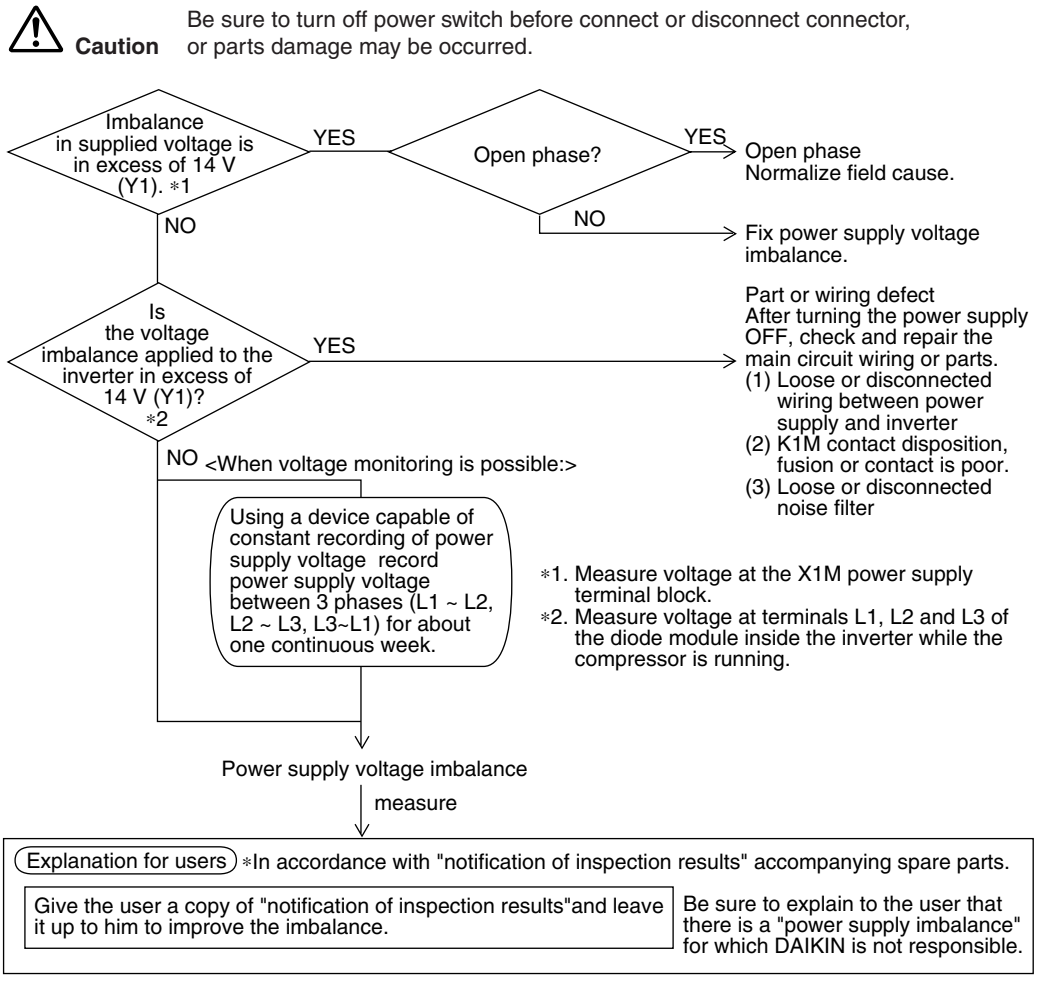
When the resistance value of thermistor becomes a value equivalent to open or short circuited status.

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

Supposed Causes

- Open phase
- Voltage imbalance between phases
- Defect of main circuit capacitor
- Defect of inverter PC board
- Defect of K1M
- Improper main circuit wiring

Troubleshooting



(V2816)

2.40 "P4" Outdoor Unit: Malfunction of Inverter Radiating Fin Temperature Rise Sensor

Remote Controller Display

P4

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Resistance of radiation fin thermistor is detected when the compressor is not operating.

Malfunction Decision Conditions

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

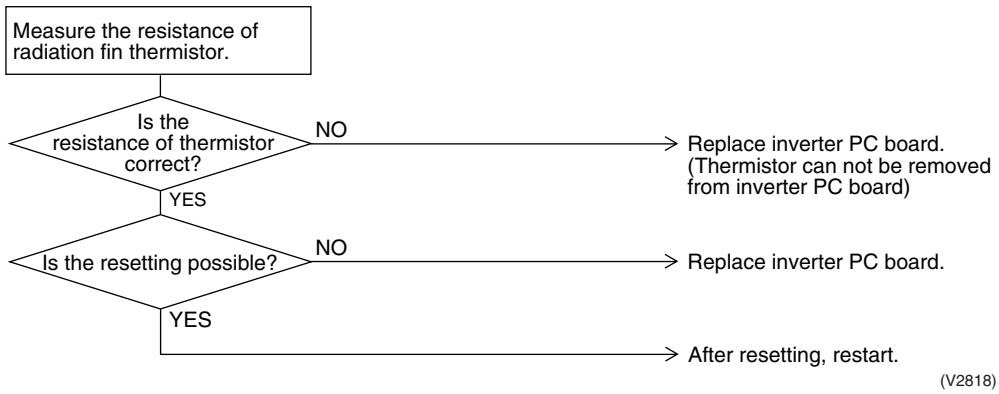
- Malfunction is not decided while the unit operation is continued.
  "P4" will be displayed by pressing the inspection button.

Supposed Causes

- Defect of radiator fin temperature sensor
- Defect of inverter PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



∗2: Refer to thermistor resistance / temperature characteristics table on P.275.

2.41 "PJ" Outdoor Unit: Mismatching of Inverter · Fan Driver P.C. Board

Remote Controller Display

PJ

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Detect by communication to INVERTER.

Malfunction Decision Conditions

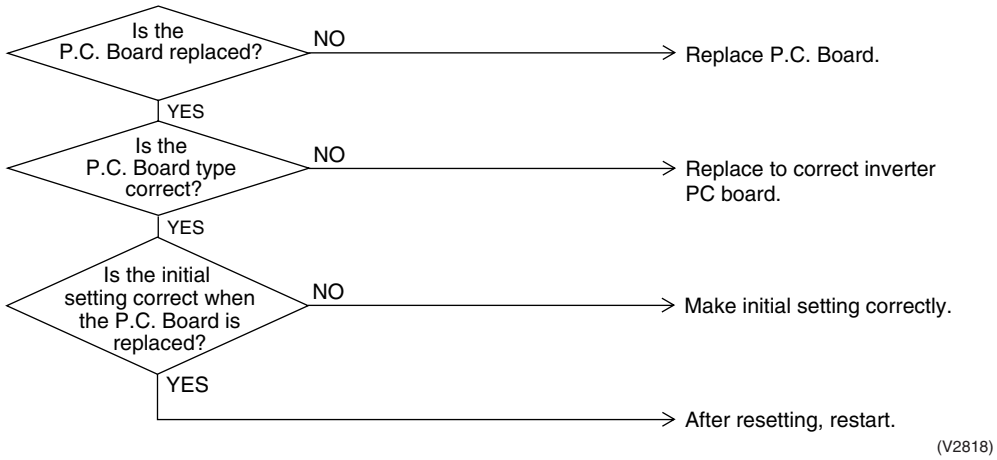
Decide that the INVERTER P.C.Board is correct type or not by using communication data.

Supposed Causes

- Mismatching of Inverter · Fan driver P.C. Board type
- Defect of initial setting

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2818)

2.42 "U0" Low Pressure Drop due to Refrigerant Shortage or Electronic Expansion Valve Failure

Remote Controller Display

U0

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Short of gas malfunction is detected by discharge pipe temperature thermistor.

Malfunction Decision Conditions

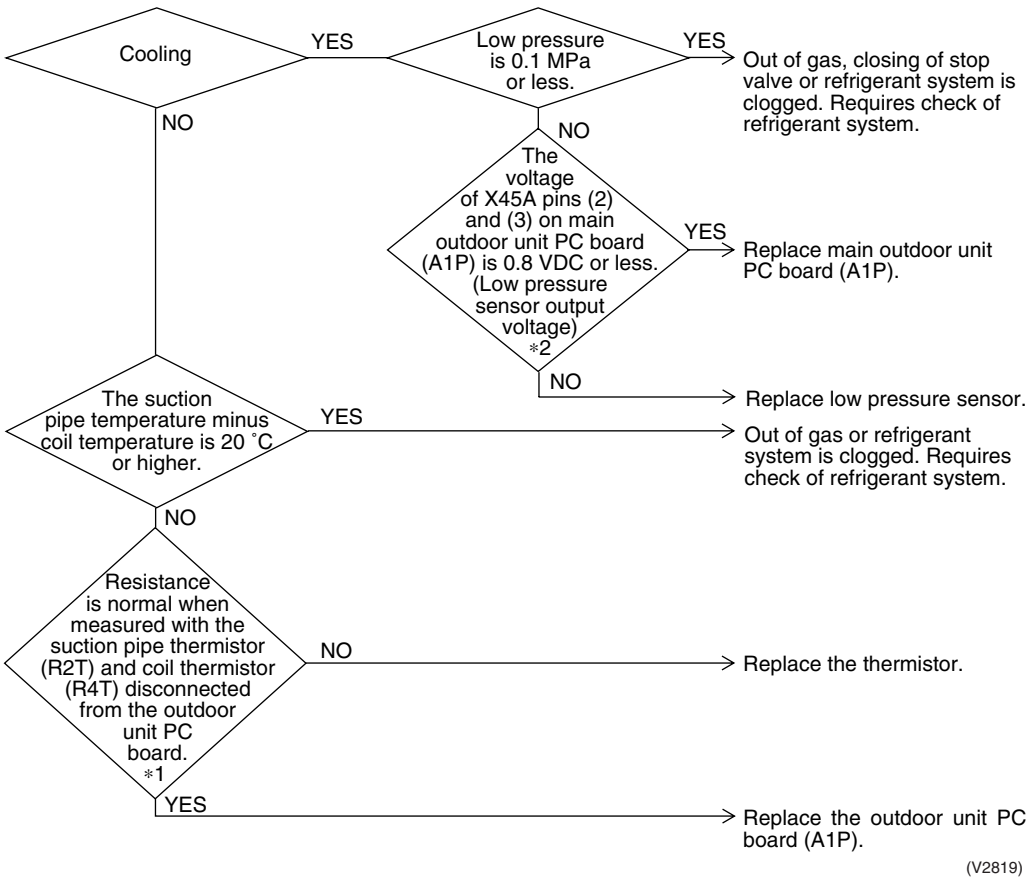
Microcomputer judge and detect if the system is short of refrigerant.
★Malfunction is not decided while the unit operation is continued.

Supposed Causes

- Out of gas or refrigerant system clogging (incorrect piping)
- Defect of pressure sensor
- Defect of outdoor unit PC board (A1P)
- Defect of thermistor R2T or R4T

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



∗1: Refer to thermistor resistance / temperature characteristics table on P.275.
∗2: Refer to pressure sensor, pressure / voltage characteristics table on P.277.

2.43 "U1" Reverse Phase, Open Phase

Remote Controller Display

U1

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Detection is based on the voltage in main circuit capacitor for inverter and supply voltage. The phase of each phase are detected by reverse phase detection circuit and right phase or reverse phase are judged.

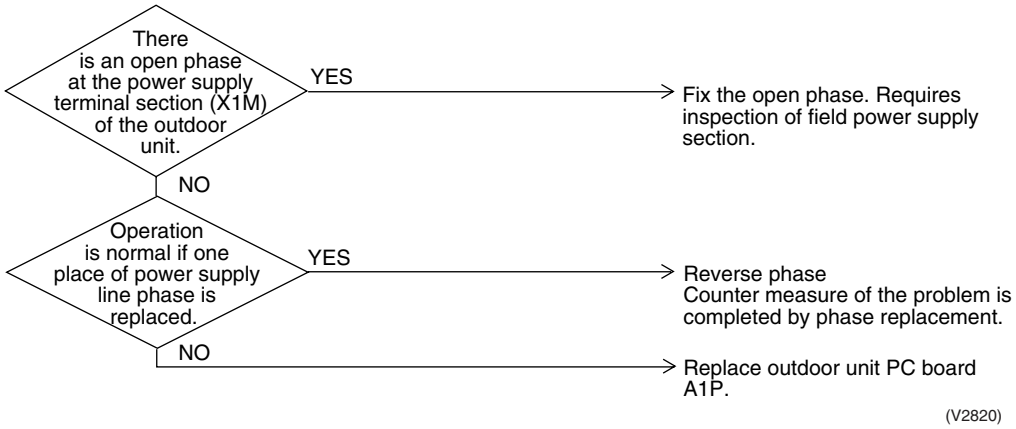
Malfunction Decision Conditions

Supposed Causes

- Power supply reverse phase
- Power supply open phase
- Defect of outdoor PC board A1P

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



2.44 "U2" Power Supply Insufficient or Instantaneous Failure

Remote Controller Display

U2

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Detection of voltage of main circuit capacitor built in the inverter and power supply voltage.

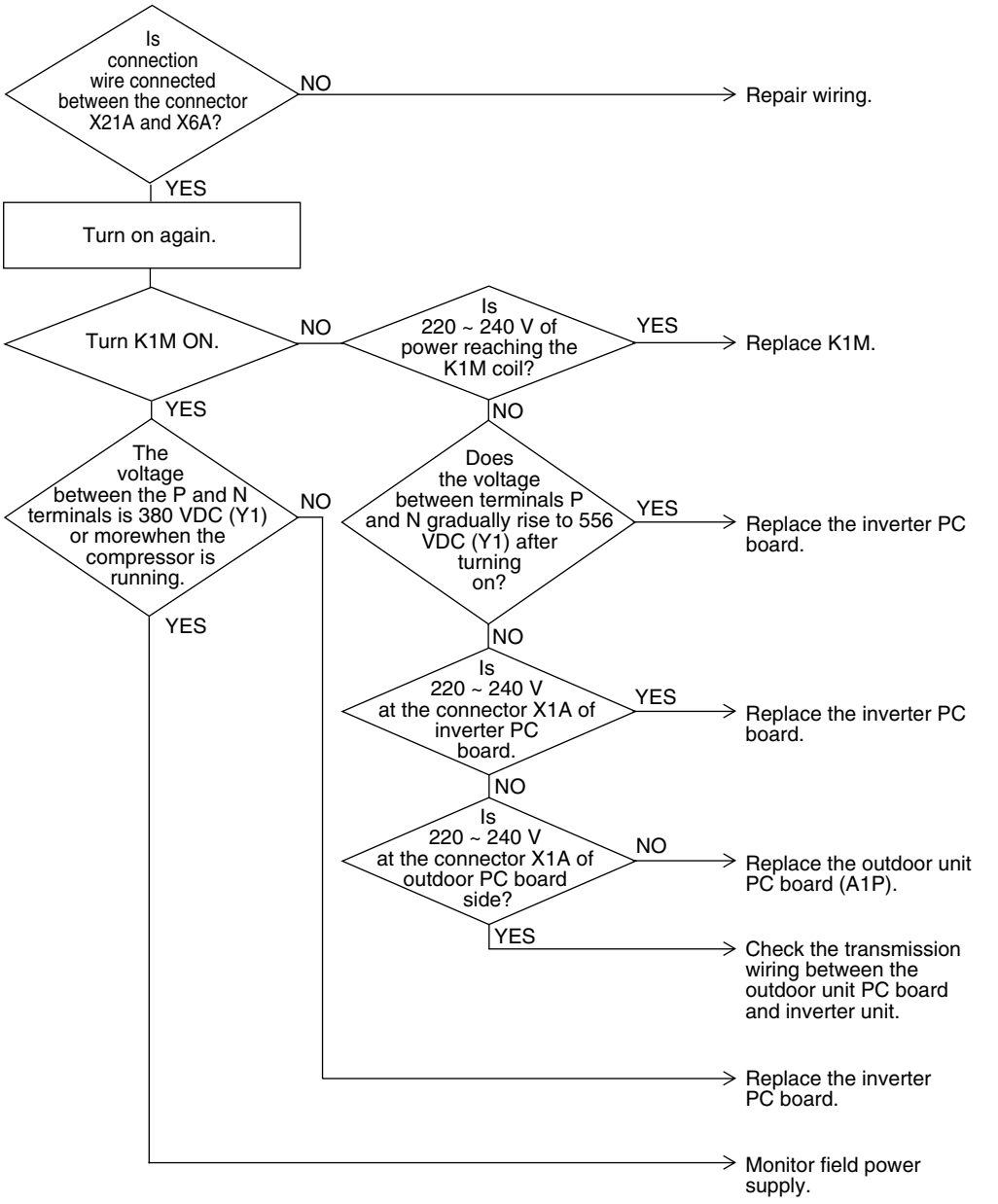
Malfunction Decision Conditions

Supposed Causes

- Power supply insufficient
- Instantaneous failure
- Open phase
- Defect of inverter PC board
- Defect of outdoor control PC board
- Defect of K1M.
- Main circuit wiring defect

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2821)

2.45 "U3" Check Operation not Executed

Remote Controller Display

U3

Applicable Models

REYQ8~48M

Method of Malfunction Detection

Check operation is executed or not

Malfunction Decision Conditions

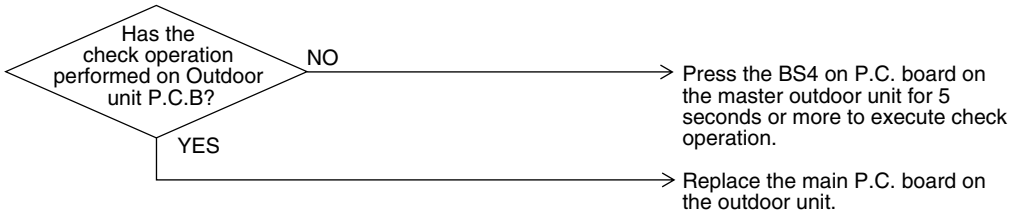
Malfunction is decided when the unit starts operation without check operation.

Supposed Causes

- Check operation is not executed.

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



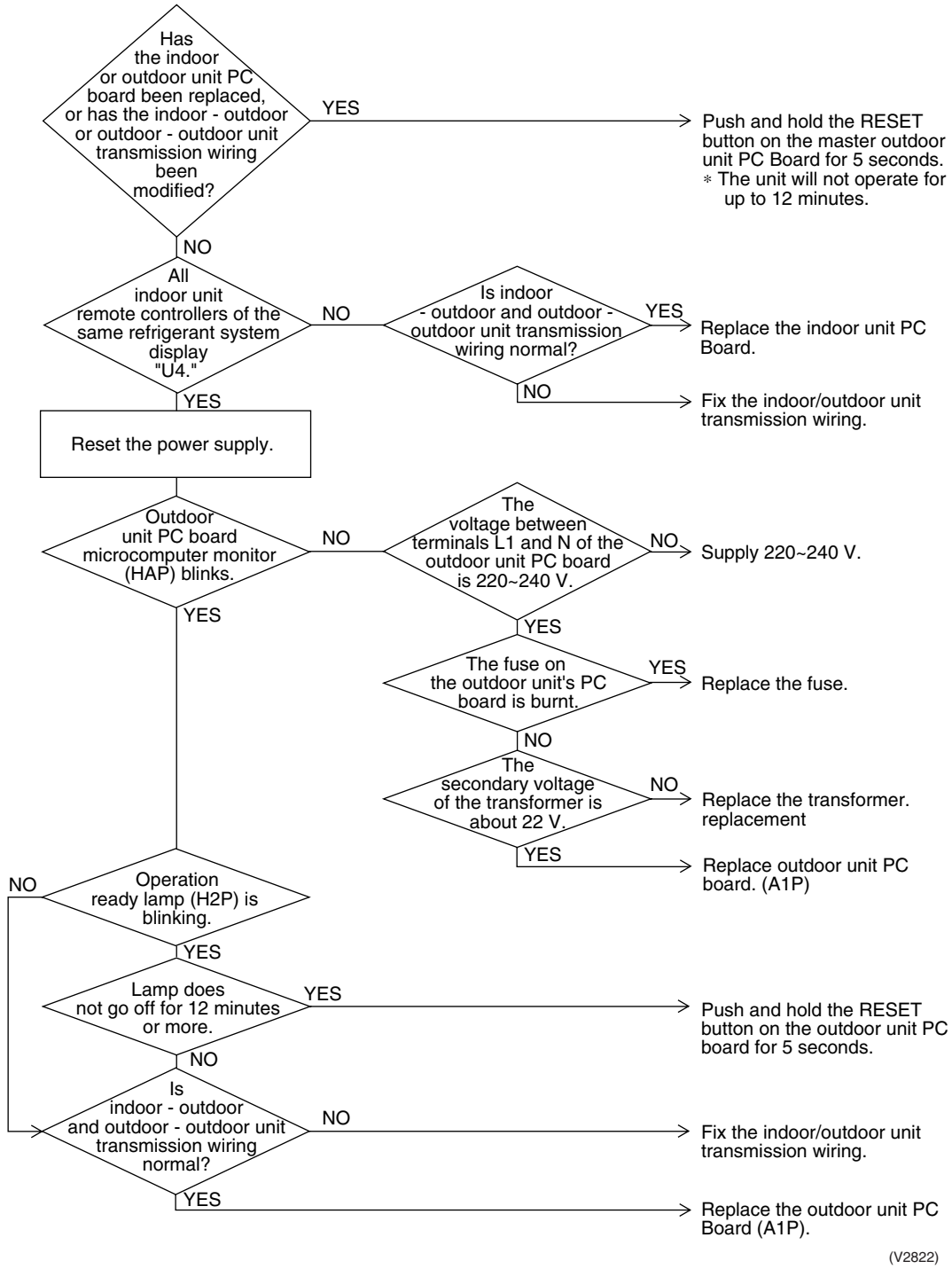
(V3052)

2.46 "U4" Malfunction of Transmission between Indoor Units

Remote Controller Display	U4
Applicable Models	All model of indoor unit REYQ8~48M
Method of Malfunction Detection	Microcomputer checks if transmission between indoor and outdoor units is normal.
Malfunction Decision Conditions	When transmission is not carried out normally for a certain amount of time
Supposed Causes	■ Indoor to outdoor,outdoor to outdoor transmission wiring F1, F2 disconnection, short circuit or wrong wiring ■ Outdoor unit power supply is OFF ■ System address doesn't match ■ Defect of indoor unit PC board ■ Defect of outdoor unit PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



2.47 "U5" Malfunction of Transmission between Remote Controller and Indoor Unit

Remote Controller Display

U5

Applicable Models

All models of indoor units

Method of Malfunction Detection

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

Malfunction Decision Conditions

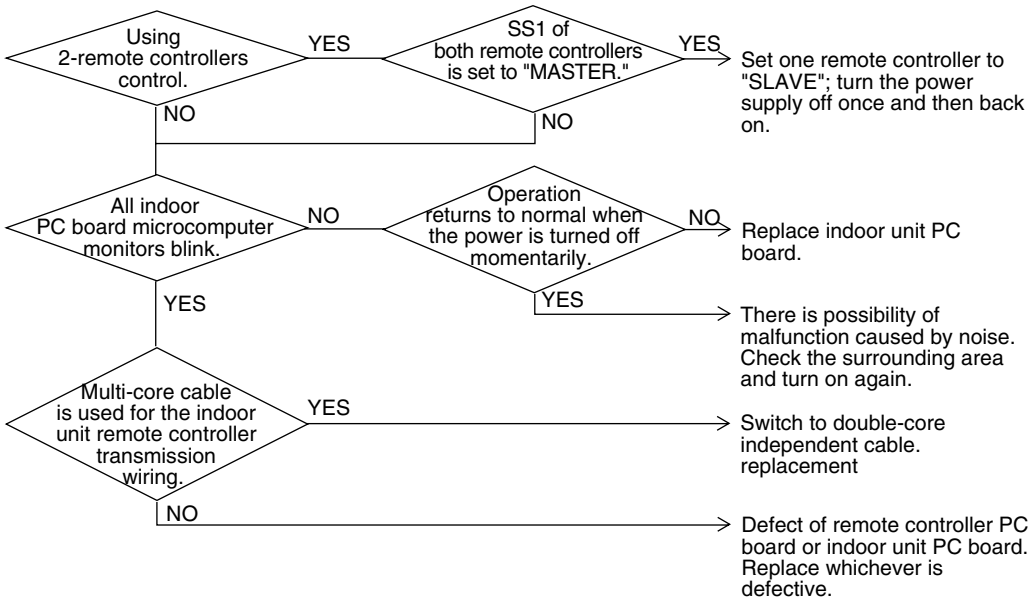
Normal transmission does not continue for specified period.

Supposed Causes

- Malfunction of indoor unit remote controller transmission
- Connection of two main remote controllers (when using 2 remote controllers)
- Defect of indoor unit PC board
- Defect of remote controller PC board
- Malfunction of transmission caused by noise

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2823)

2.48 "U7" Malfunction of Transmission between Outdoor Units

Remote Controller Display

U7

Applicable Models

All models of indoor units

Method of Malfunction Detection

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

Malfunction Decision Conditions

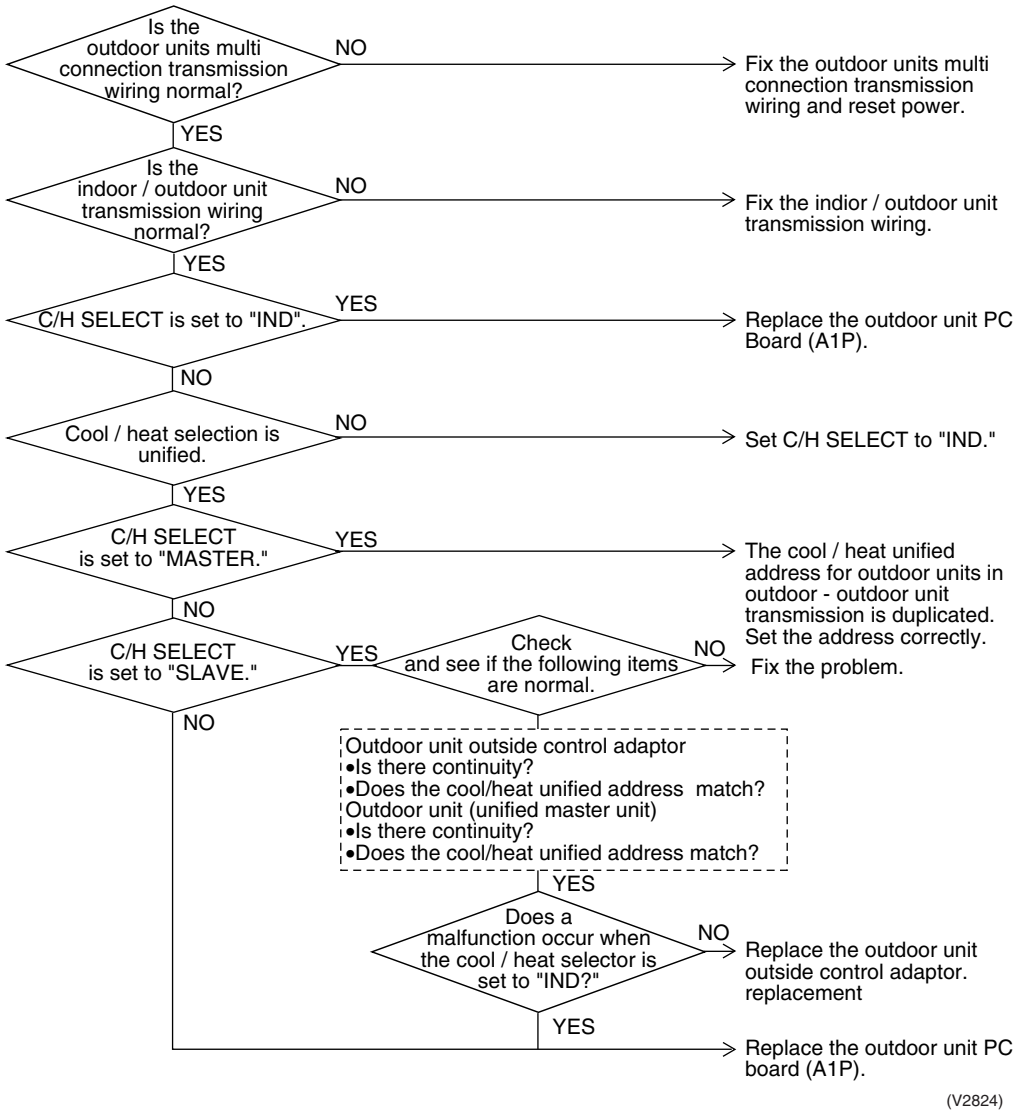
When transmission is not carried out normally for a certain amount of time

Supposed Causes

- Improper connection of transmission wiring between outdoor unit and outdoor unit outside control adaptor
- Improper cool/heat selection
- Improper cool/heat unified address (outdoor unit, external control adaptor for outdoor unit)
- Defect of outdoor unit PC board (A1P)
- Defect of outdoor unit outside control adaptor
- Improper connection of transmission wiring between outdoor units of multi outdoor unit connection.

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2824)

2.49 "U8" Malfunction of Transmission between Master and Slave Remote Controllers

Remote Controller Display

U8

Applicable Models

All models of indoor units

Method of Malfunction Detection

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

Malfunction Decision Conditions

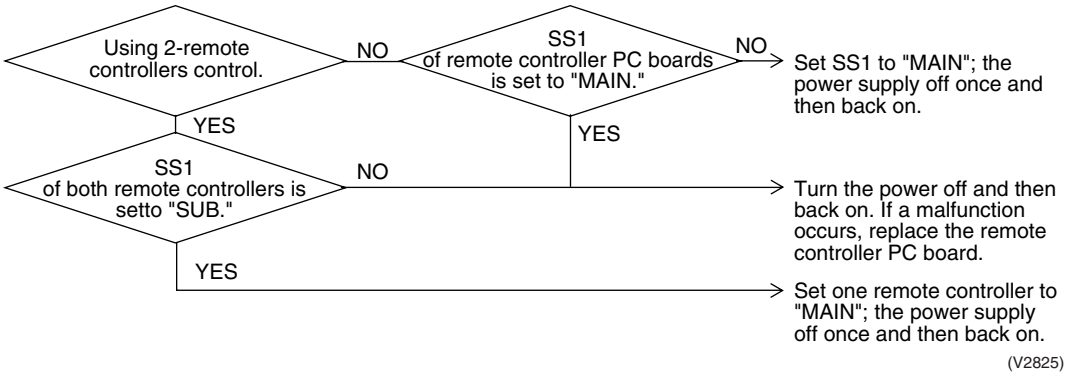
Normal transmission does not continue for specified period.

Supposed Causes

- Malfunction of transmission between main and sub remote controller
- Connection between sub remote controllers
- Defect of remote controller PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2825)

2.50 "U9" Malfunction of Transmission between Indoor and Outdoor Units in the Same System

Remote Controller Display

U9

Applicable Models

All models of indoor units

Method of Malfunction Detection

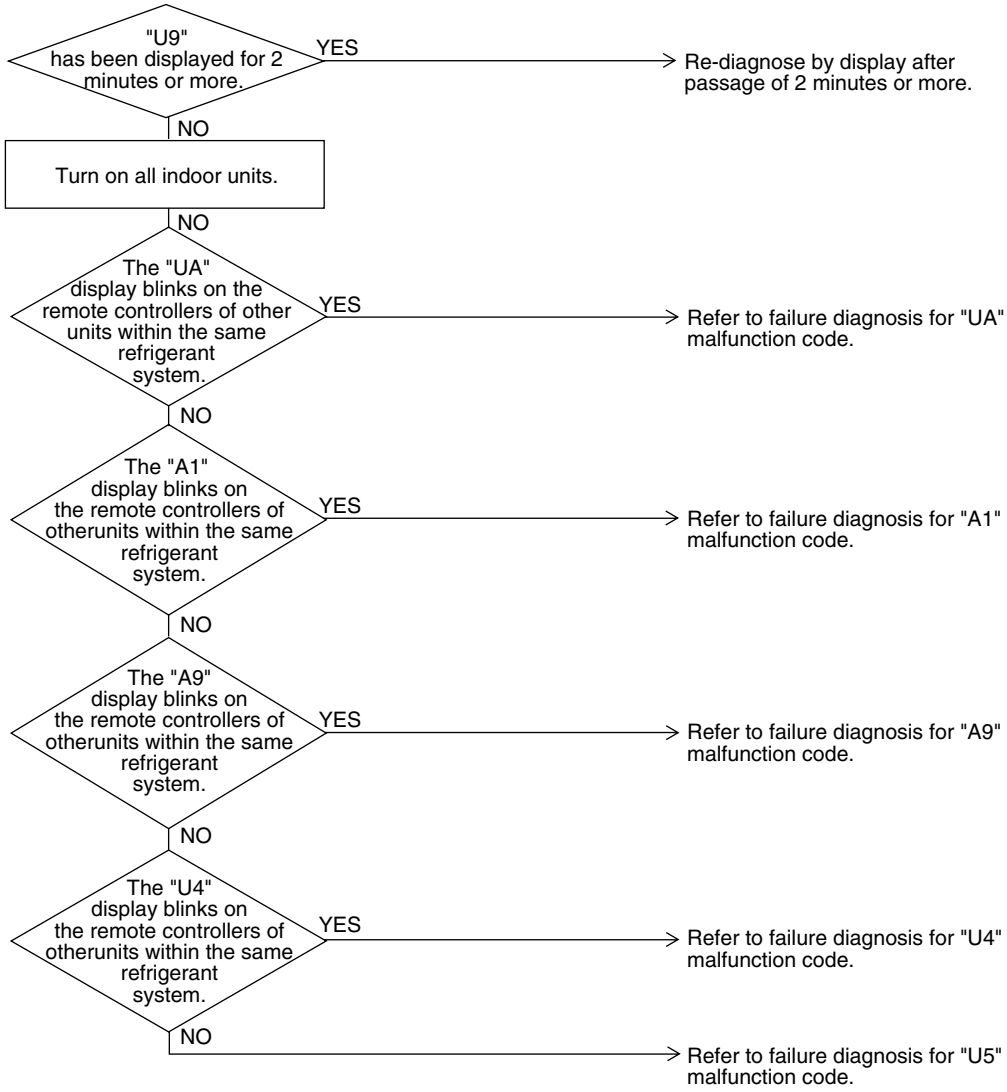
Malfunction Decision Conditions

Supposed Causes

- Malfunction of transmission within or outside of other system
- Malfunction of electronic expansion valve in indoor unit of other system
- Defect of PC board of indoor unit in other system
- Improper connection of transmission wiring between indoor and outdoor unit

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2826)

2.51 "UA" Excessive Number of Indoor Units

Remote Controller Display

UA

Applicable Models

All models of indoor unit
REYQ8~48M

Method of Malfunction Detection

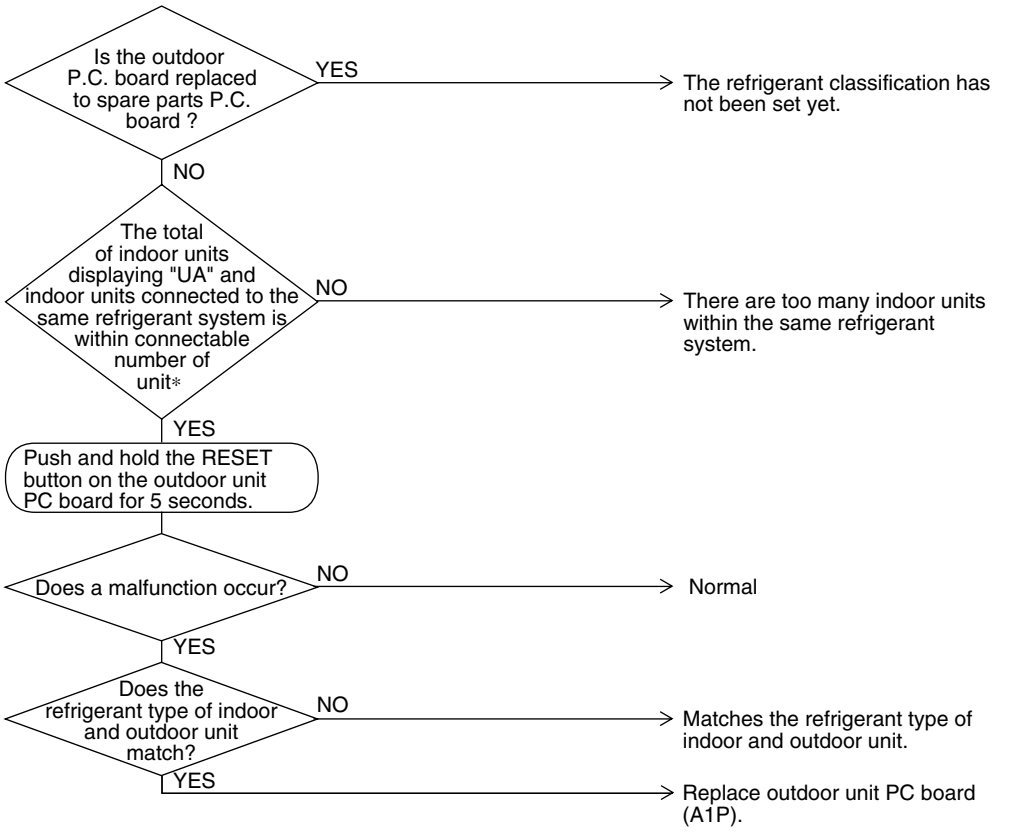
Malfunction Decision Conditions

Supposed Causes

- Excess of connected indoor units
- Defect of outdoor unit PC board (A1P)
- Mismatching of the refrigerant type of indoor and outdoor unit.
- Setting of outdoor P.C. board was not conducted after replacing to spare parts P.C. board.

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2827)

* The number of indoor units that can be connected to a single outdoor unit system depends on the type of outdoor unit.

2.52 "UC" Address Duplication of Centralized Remote Controller

Remote Controller Display

UC

Applicable Models

All models of indoor unit
Centralized controller

Method of Malfunction Detection

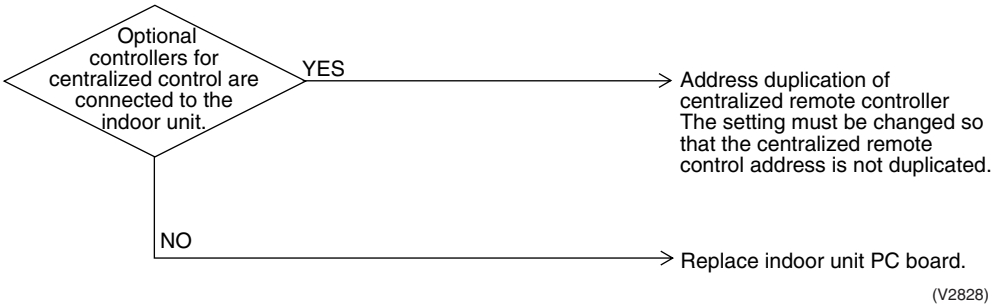
Malfunction Decision Conditions

Supposed Causes

- Address duplication of centralized remote controller
- Defect of indoor unit PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

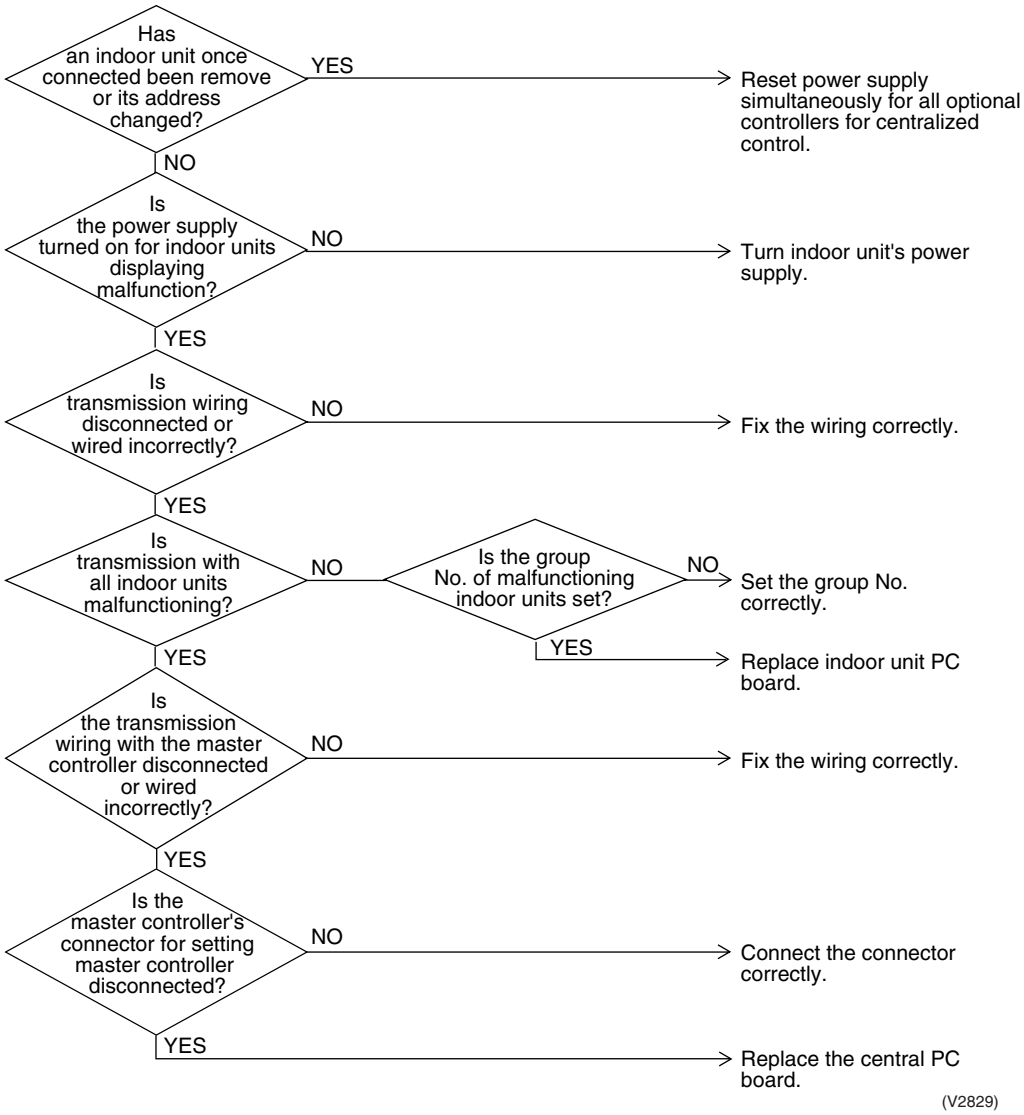


2.53 "UE" Malfunction of Transmission between Centralized Remote Controller and Indoor Unit

Remote Controller Display	UE
Applicable Models	All models of indoor units Centralized controller
Method of Malfunction Detection	Microcomputer checks if transmission between indoor unit and centralized remote controller is normal.
Malfunction Decision Conditions	When transmission is not carried out normally for a certain amount of time
Supposed Causes	■ Malfunction of transmission between optional controllers for centralized control and indoor unit ■ Connector for setting master controller is disconnected. ■ Failure of PC board for centralized remote controller ■ Defect of indoor unit PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2829)

2.54 "UF" Refrigerant System not Set, Incompatible Wiring/ Piping

Remote Controller Display

UF

Applicable Models

All models of indoor units
REYQ8~48M

Method of Malfunction Detection

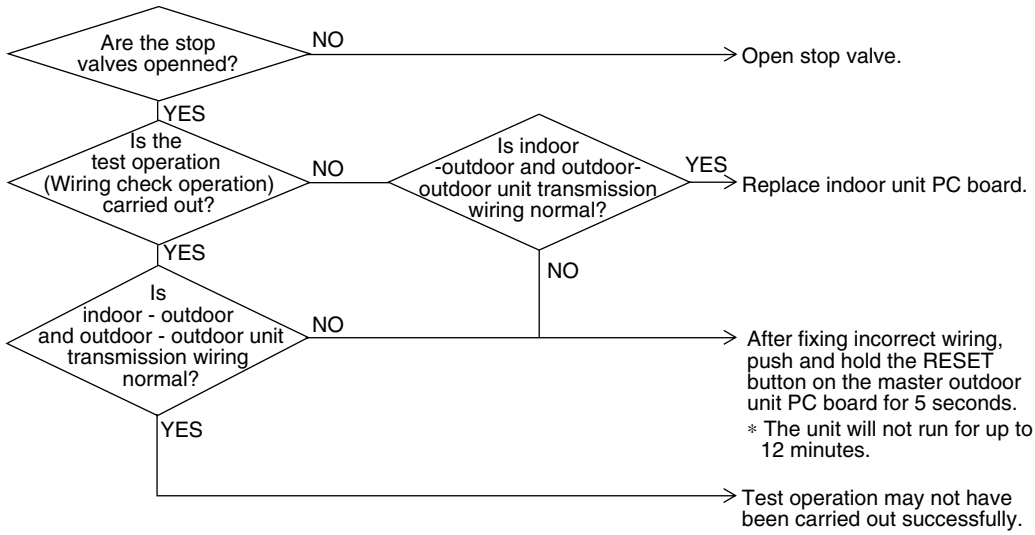
Malfunction Decision Conditions

Supposed Causes

- Improper connection of transmission wiring between outdoor unit and outdoor unit outside control adaptor
- Failure to execute wiring check operation
- Defect of indoor unit PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2830)

Notes: Test operation may not be successful if carried out after the outdoor unit has been off for more than 12 hours, or if it is not carried out after running all connected indoor units in the fan mode for at least an hour.

2.55 "UH" Malfunction of System, Refrigerant System Address Undefined

Remote Controller Display

UH

Applicable Models

All models of indoor units
REYQ8~48M

Method of Malfunction Detection

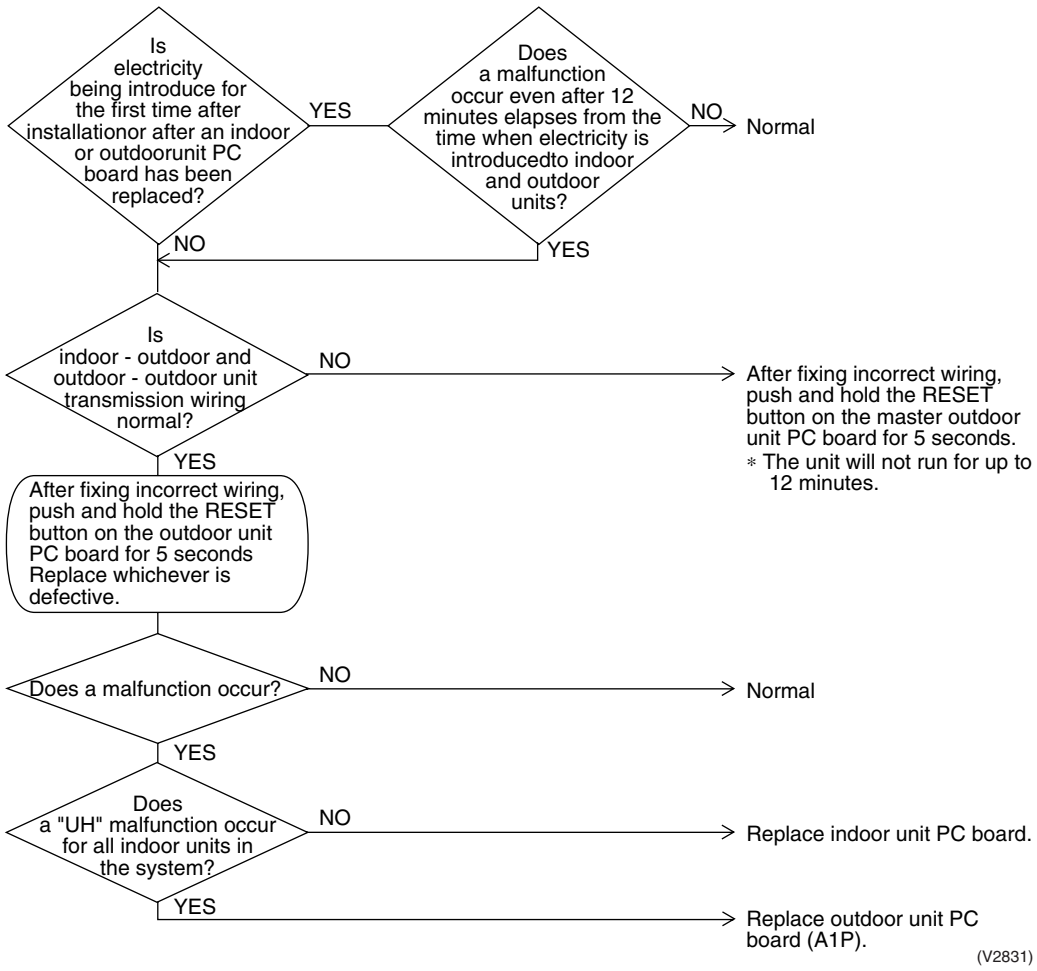
Malfunction Decision Conditions

Supposed Causes

- Improper connection of transmission wiring between outdoor unit and outdoor unit outside control adaptor
- Defect of indoor unit PC board
- Defect of outdoor unit PC board (A1P)

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2831)

3. Troubleshooting (OP: Centralized Remote Controller)

3.1 "UE" Malfunction of Transmission between Centralized Remote Controller and Indoor Unit

Remote Controller Display

UE

Applicable Models

All models of indoor units
REYQ8~48M

Method of Malfunction Detection

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

Malfunction Decision Conditions

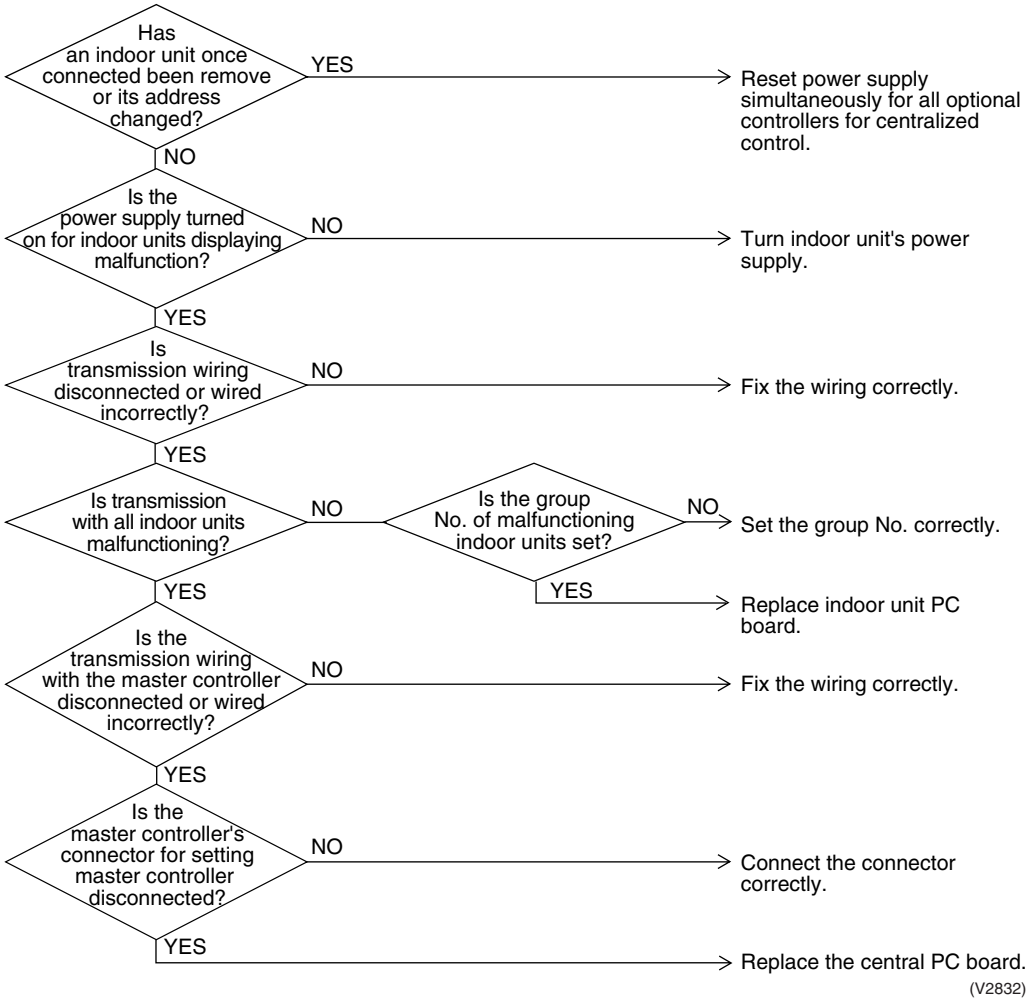
When transmission is not carried out normally for a certain amount of time

Supposed Causes

- Malfunction of transmission between optional controllers for centralized control and indoor unit
- Connector for setting master controller is disconnected.
- Failure of PC board for centralized remote controller
- Defect of indoor unit PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2832)

3.2 "M1" PC Board Defect

Remote Controller Display	M1
Applicable Models	Centralized remote controller
Method of Malfunction Detection	
Malfunction Decision Conditions	
Supposed Causes	■ Defect of centralized remote controller PC board
Troubleshooting	Replace the centralized remote controller PC board.

3.3 "M8" Malfunction of Transmission between Optional Controllers for Centralized Control

Remote Controller Display

M8

Applicable Models

Centralized remote controller

Method of Malfunction Detection

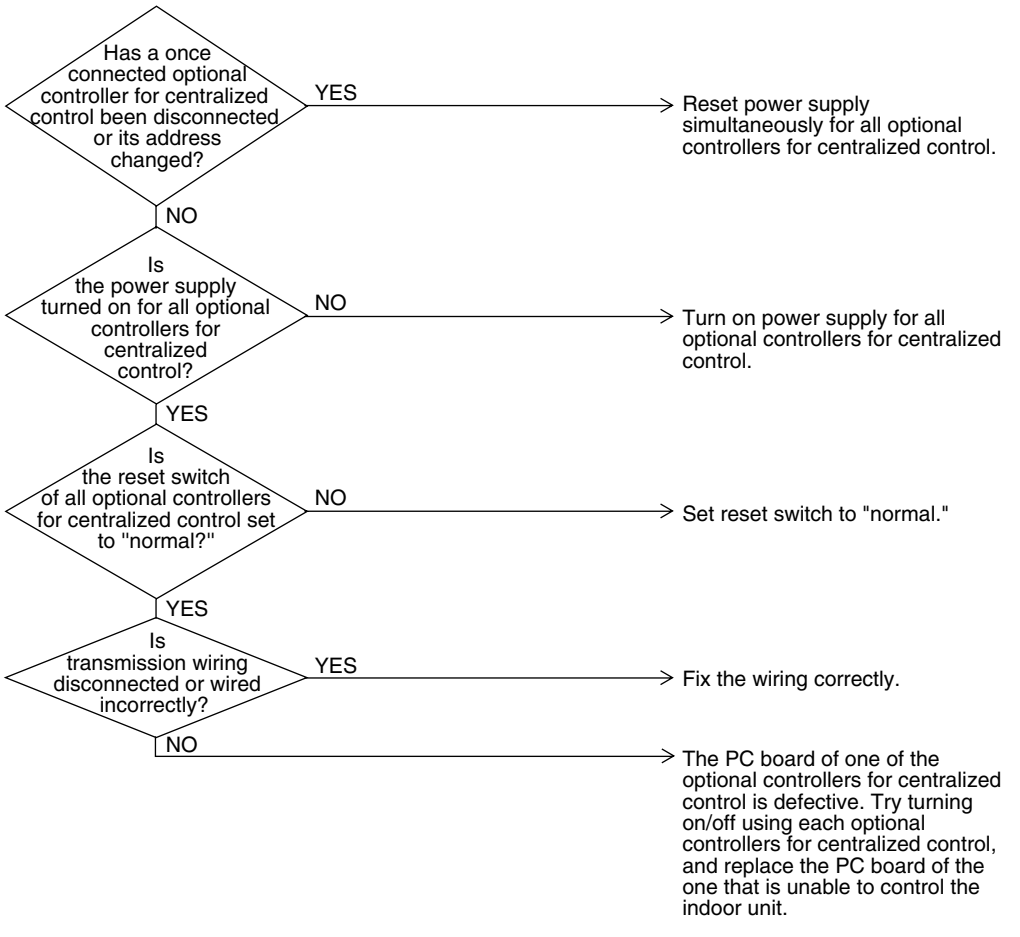
Malfunction Decision Conditions

Supposed Causes

- Malfunction of transmission between optional controllers for centralized control
- Defect of PC board of optional controllers for centralized control

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



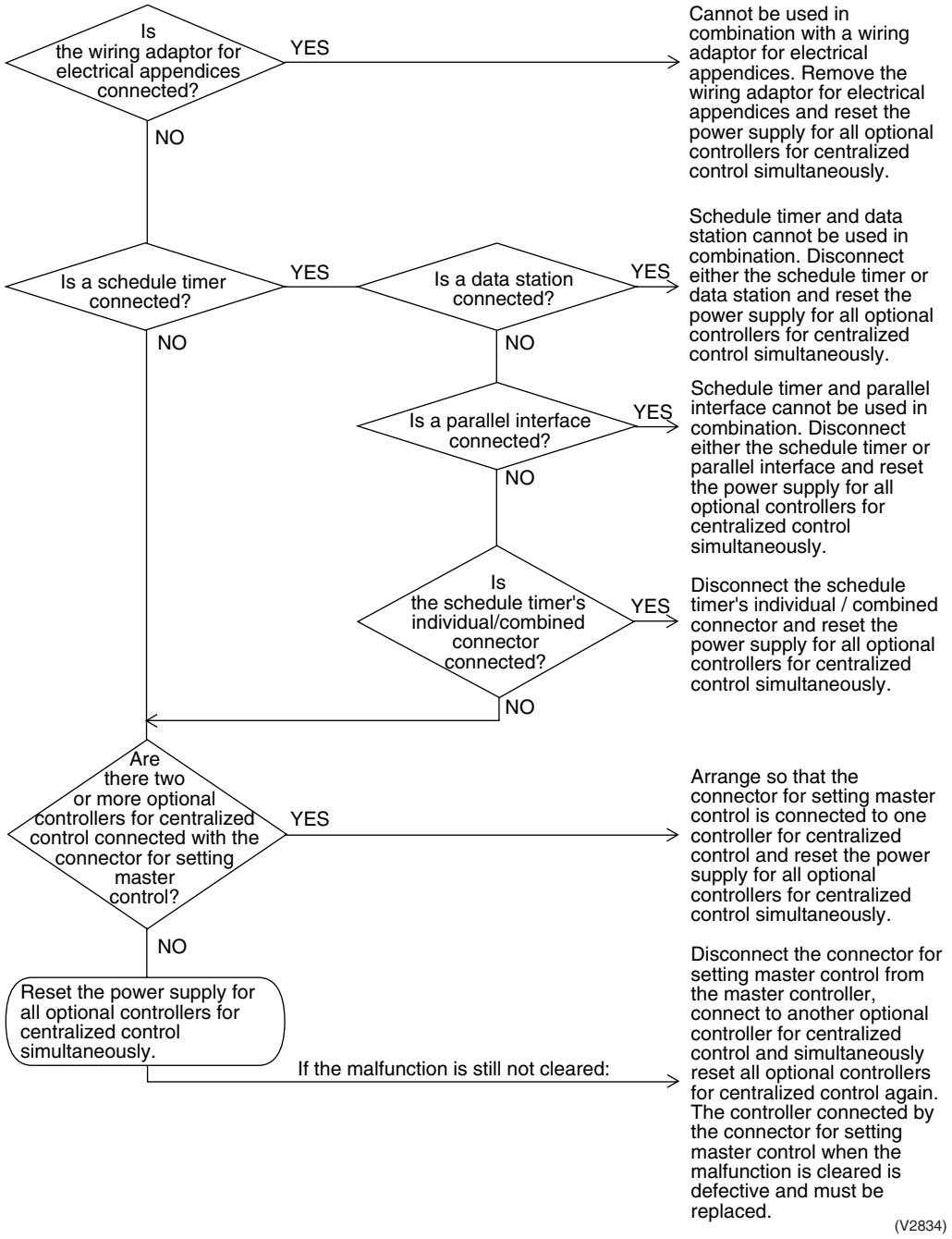
(V2833)

3.4 "MA" Improper Combination of Optional Controllers for Centralized Control

Remote Controller Display	MA
Applicable Models	Centralized remote controller
Method of Malfunction Detection	
Malfunction Decision Conditions	
Supposed Causes	■ Improper combination of optional controllers for centralized control ■ More than one master controller is connected ■ Defect of PC board of optional controller for centralized control

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



3.5 "MC" Address Duplication, Improper Setting

Remote Controller Display

MC

Applicable Models

Centralized remote controller

Method of Malfunction Detection

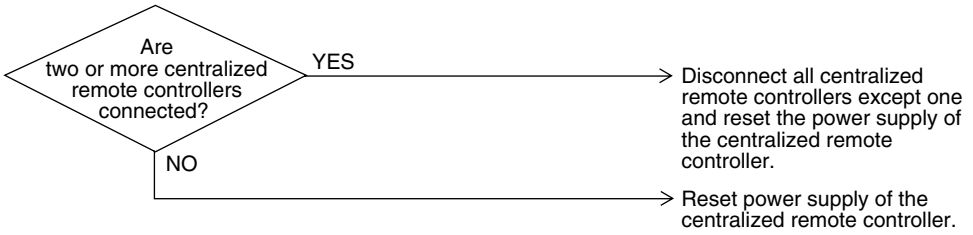
Malfunction Decision Conditions

Supposed Causes

- Address duplication of centralized remote controller

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2835)

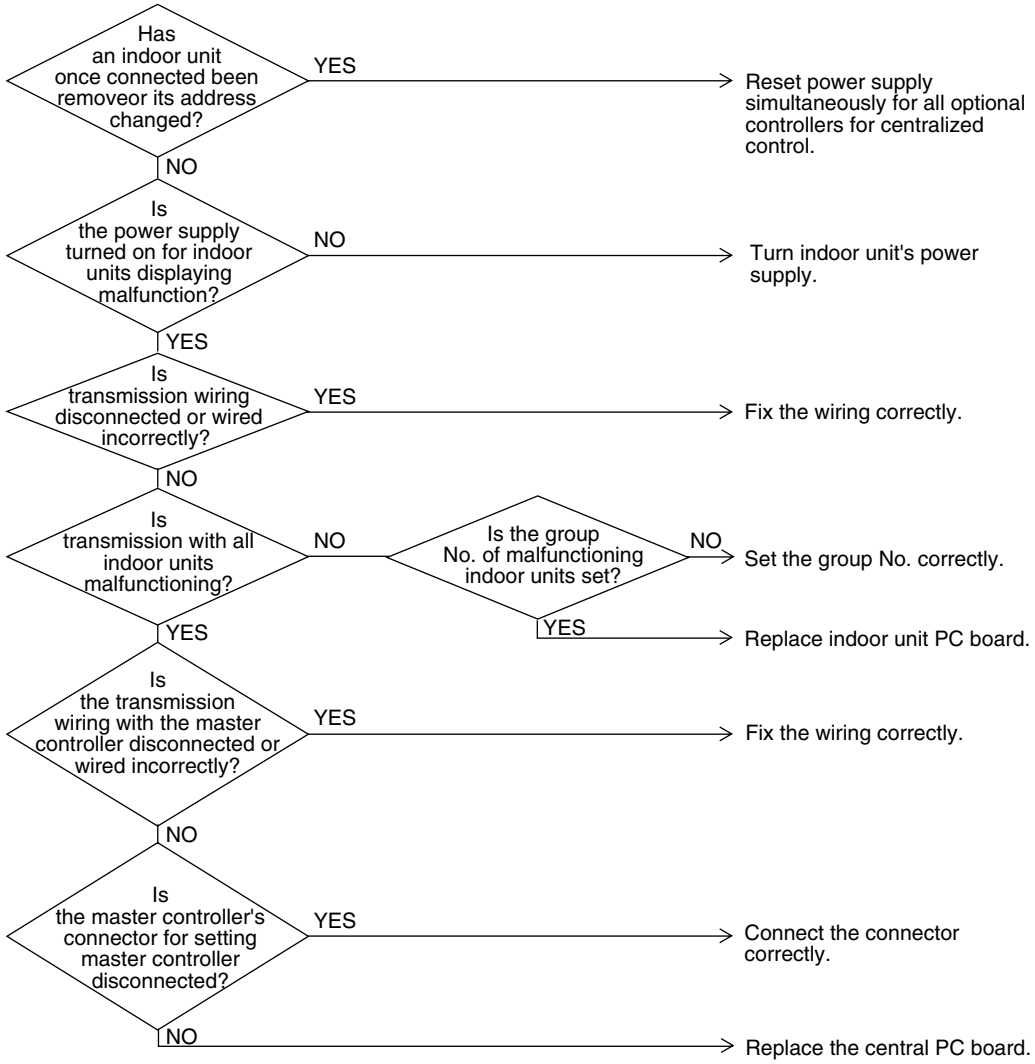
4. Troubleshooting (OP: Schedule Timer)

4.1 "UE" Malfunction of Transmission between Centralized Remote Controller and Indoor Unit

Remote Controller Display	UE
Applicable Models	Schedule timer
Method of Malfunction Detection	Microcomputer checks if transmission between indoor unit and centralized remote controller is normal.
Malfunction Decision Conditions	When transmission is not carried out normally for a certain amount of time
Supposed Causes	■ Malfunction of transmission between centralized remote controller and indoor unit ■ Disconnection of connector for setting master controller (or individual/combined switching connector) ■ Defect of schedule timer PC board ■ Defect of indoor unit PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2836)

4.2 "M1" PC Board Defect

Remote Controller Display

M1

Applicable Models

Schedule timer

Method of Malfunction Detection

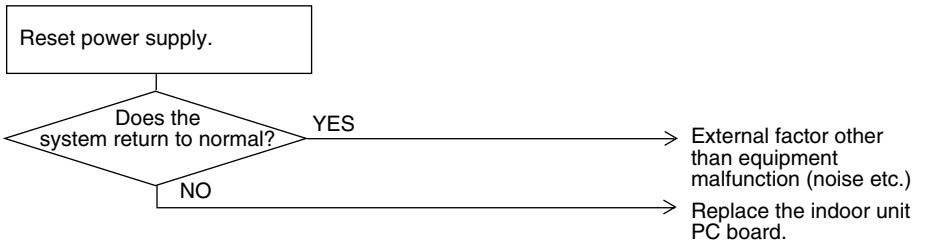
Malfunction Decision Conditions

Supposed Causes

- Defect of schedule timer PC board

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(V2837)

4.3 "M8" Malfunction of Transmission between Optional Controllers for Centralized Control

Remote Controller Display

M8

Applicable Models

All models of indoor units, schedule timer

Method of Malfunction Detection

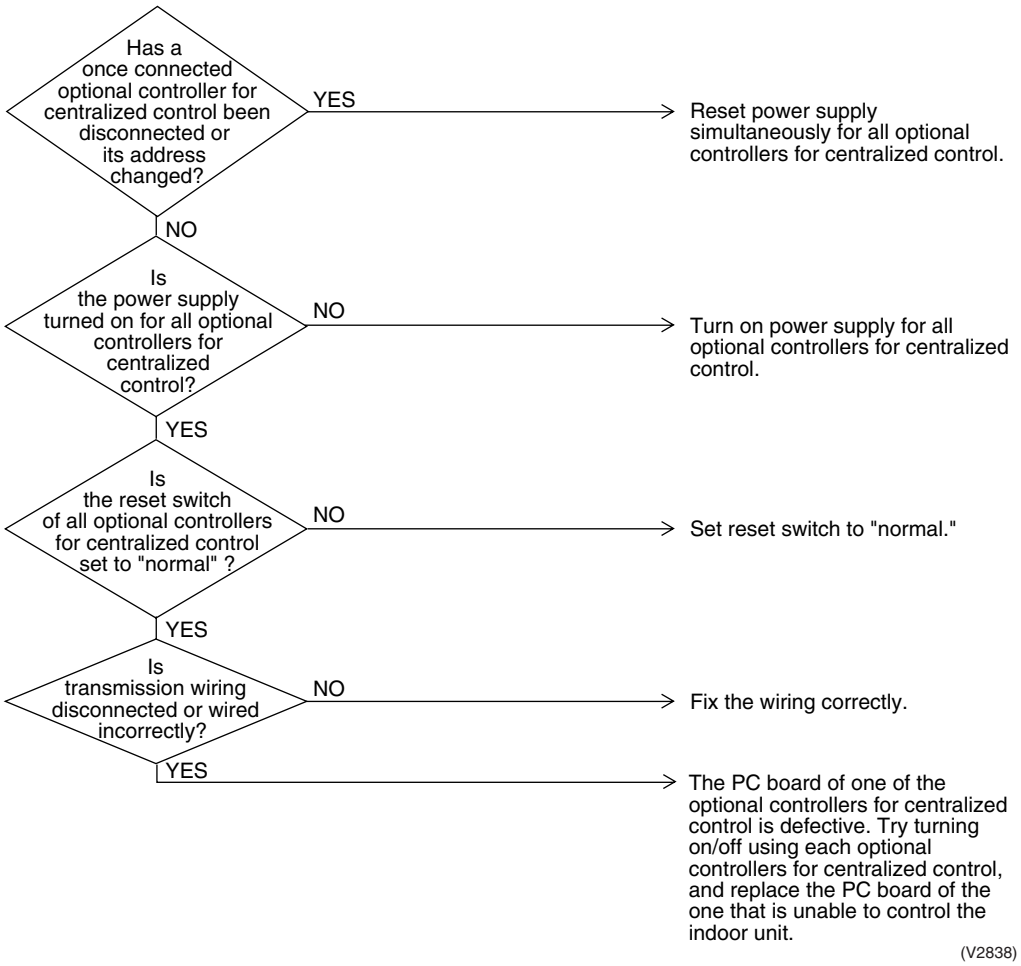
Malfunction Decision Conditions

Supposed Causes

- Malfunction of transmission between optional controllers for centralized control
- Defect of PC board of optional controllers for centralized control

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

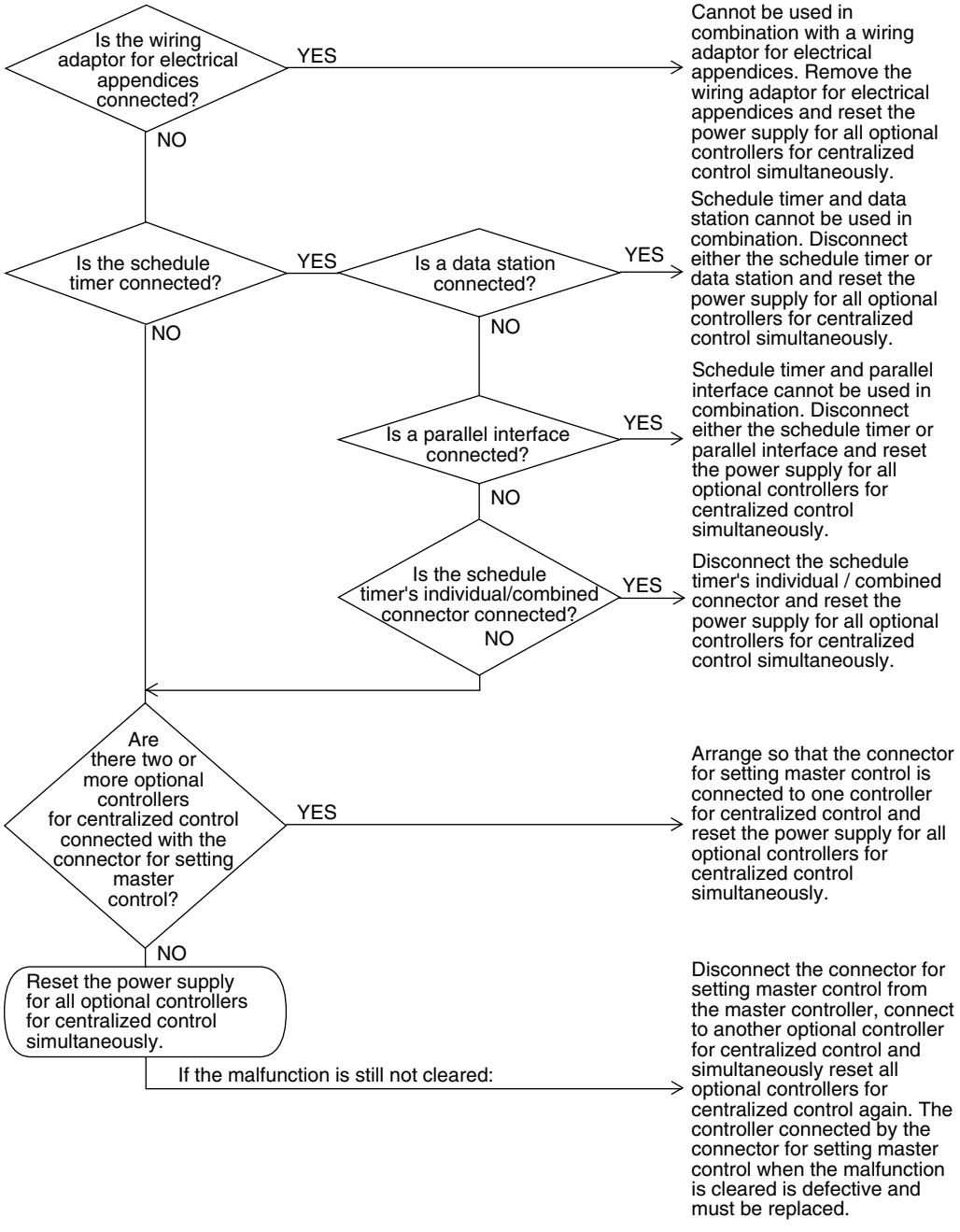


4.4 "MA" Improper Combination of Optional Controllers for Centralized Control

Remote Controller Display	MA
Applicable Models	All models of indoor units, schedule timer
Method of Malfunction Detection	
Malfunction Decision Conditions	
Supposed Causes	■ Improper combination of optional controllers for centralized control ■ More than one master controller is connected. ■ Defect of PC board of optional controller for centralized control

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



4.5 "MC" Address Duplication, Improper Setting

Remote Controller Display

MC

Applicable Models

All models of indoor units,
schedule timer

Method of Malfunction Detection

Malfunction Decision Conditions

Supposed Causes

- Address duplication of optional controller for centralized control

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

(V2840)

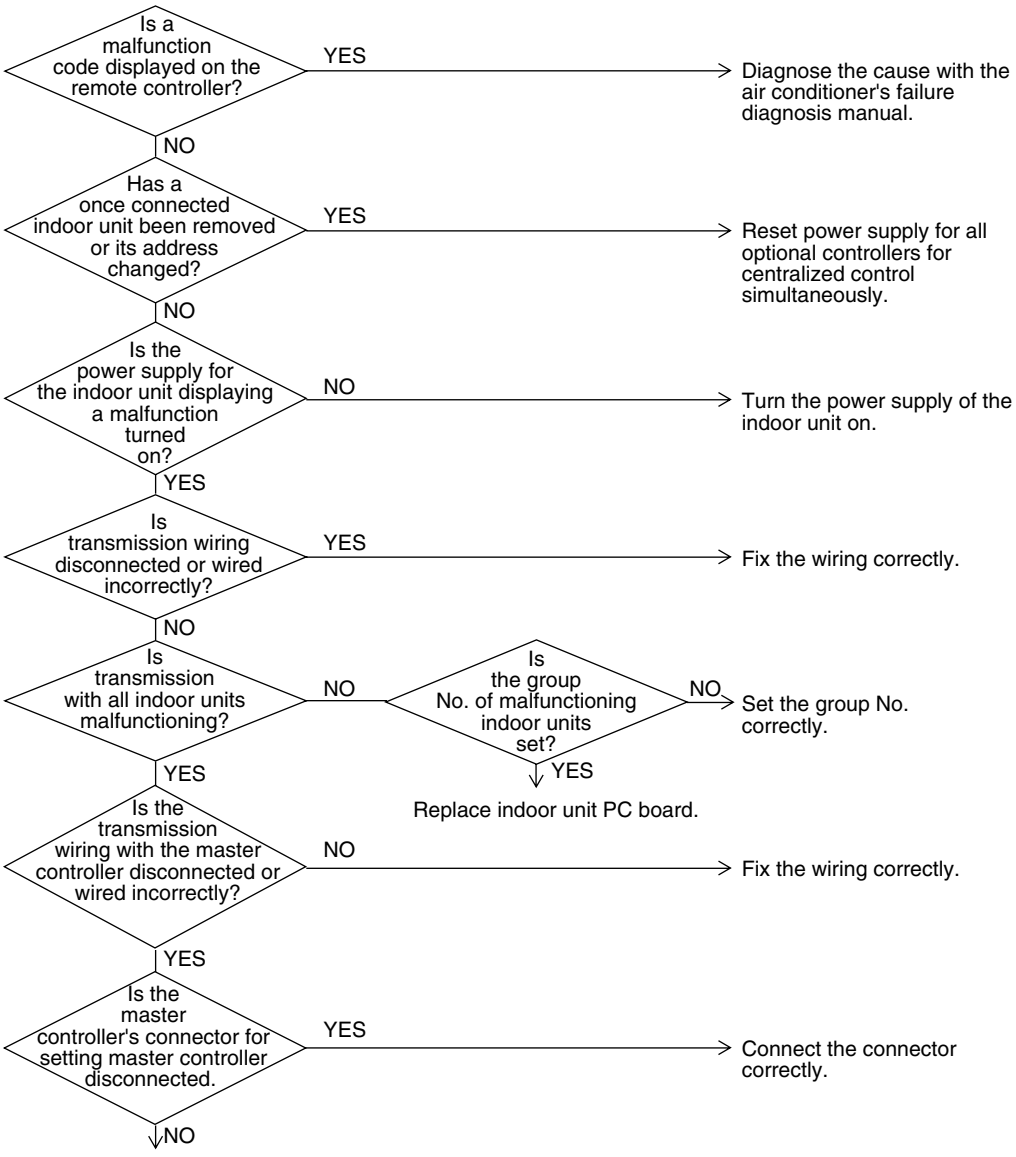
5. Troubleshooting (OP: Unified ON/OFF Controller)

5.1 Operation Lamp Blinks

Remote Controller Display	Operation lamp blinks
Applicable Models	All models of indoor units Unified ON/OFF controller
Method of Malfunction Detection	
Malfunction Decision Conditions	
Supposed Causes	■ Malfunction of transmission between optional controller and indoor unit ■ Connector for setting master controller is disconnected ■ Defect of unified ON/OFF controller ■ Defect of indoor unit PC board ■ Malfunction of air conditioner

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



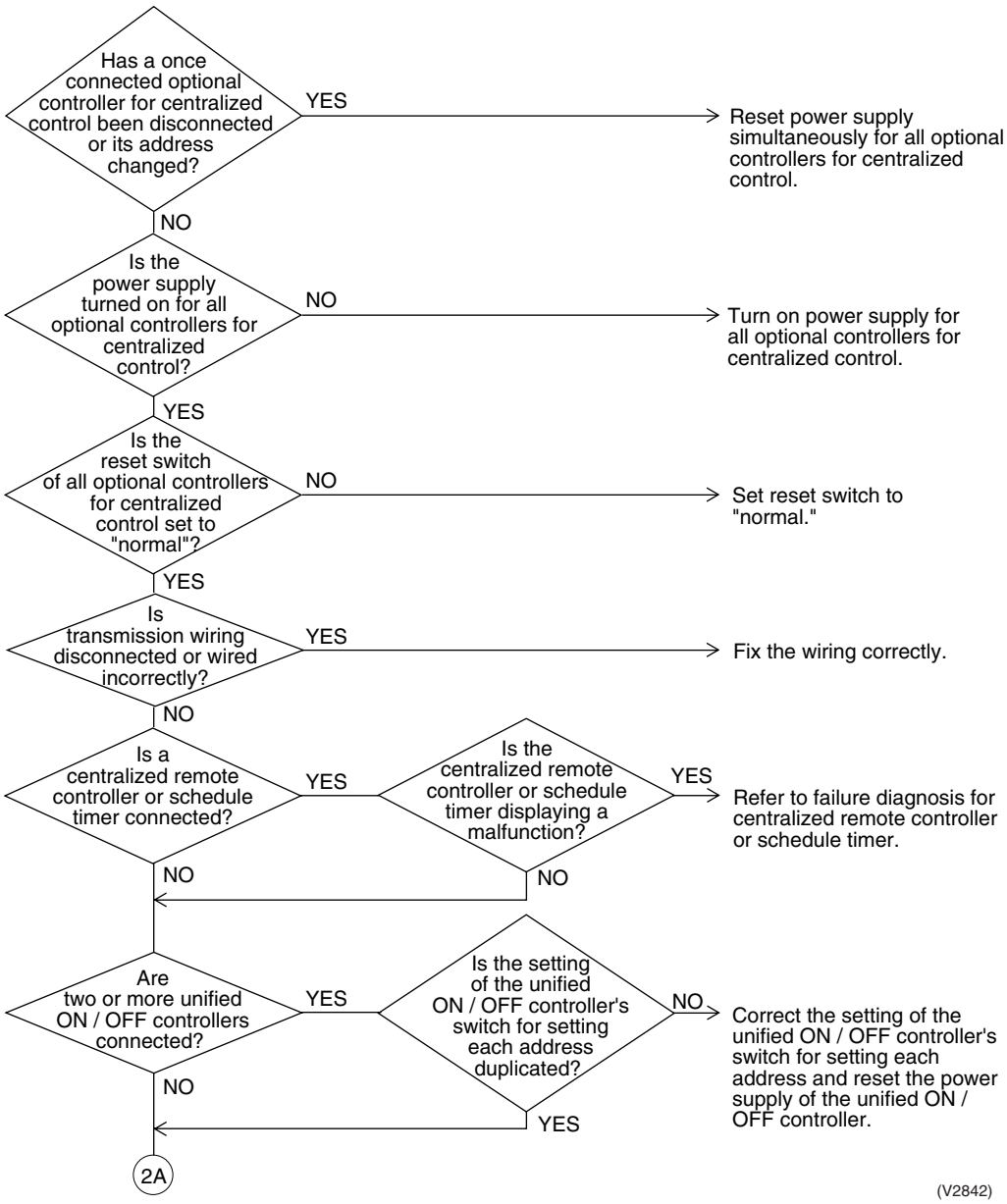
(V2841)

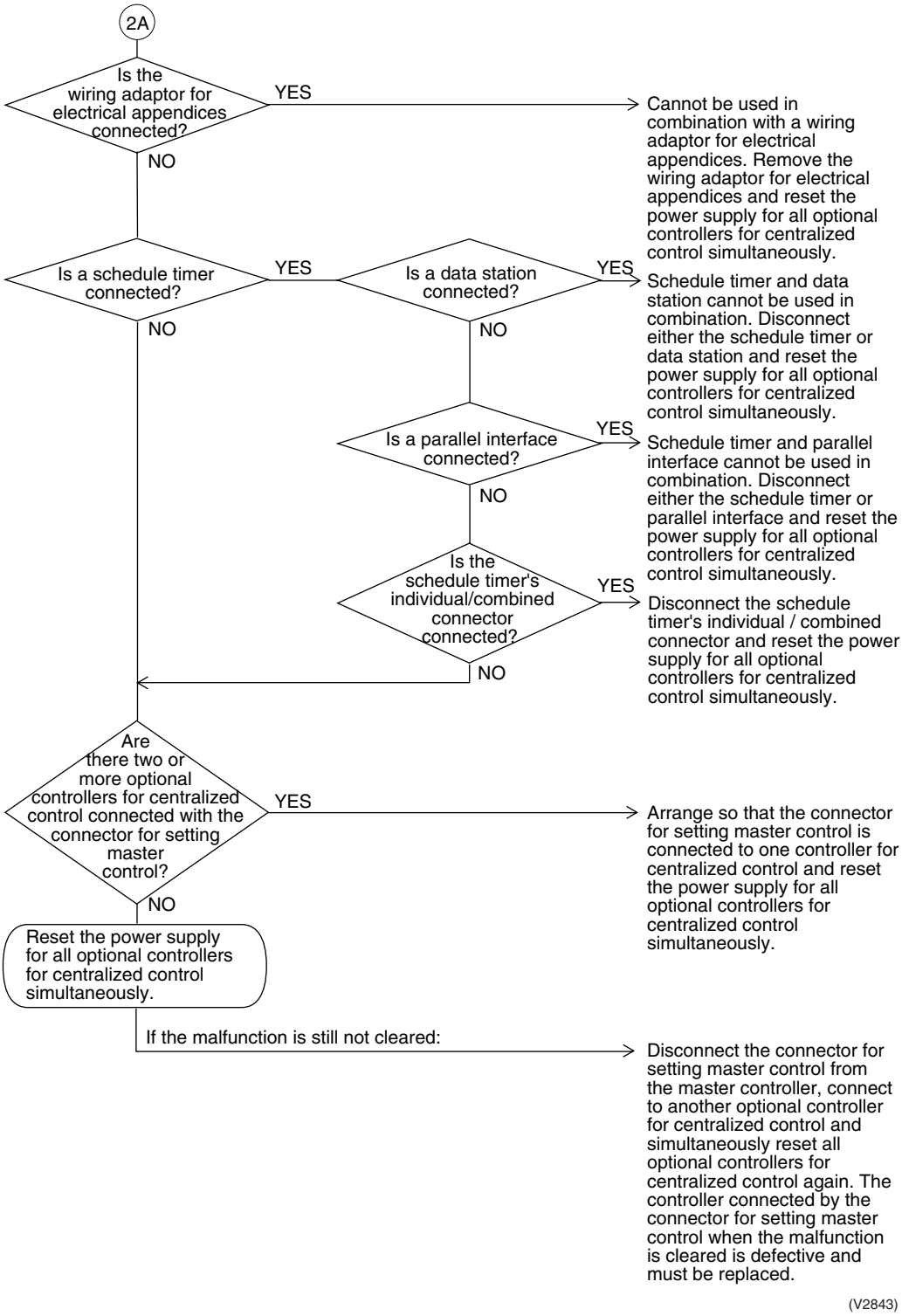
5.2 Display “Under Host Computer Integrate Control” Blinks (Repeats Single Blink)

Remote Controller Display	“under host computer integrated control” (Repeats single blink)
Applicable Models	Unified ON/OFF controller Centralized controller, Schedule timer
Method of Malfunction Detection	
Malfunction Decision Conditions	
Supposed Causes	■ Address duplication of centralized remote controller ■ Improper combination of optional controllers for centralized control ■ Connection of more than one master controller ■ Malfunction of transmission between optional controllers for centralized control ■ Defect of PC board of optional controllers for centralized control

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.




2A
Is the wiring adaptor for electrical appendices connected?
YES
Cannot be used in combination with a wiring adaptor for electrical appendices. Remove the wiring adaptor for electrical appendices and reset the power supply for all optional controllers for centralized control simultaneously.
NO
Is a schedule timer connected?
YES
Is a data station connected?
YES
Schedule timer and data station cannot be used in combination. Disconnect either the schedule timer or data station and reset the power supply for all optional controllers for centralized control simultaneously.
NO
NO
Is a parallel interface connected?
YES
Schedule timer and parallel interface cannot be used in combination. Disconnect either the schedule timer or parallel interface and reset the power supply for all optional controllers for centralized control simultaneously.
NO
Is the schedule timer's individual/combined connector connected?
YES
Disconnect the schedule timer's individual / combined connector and reset the power supply for all optional controllers for centralized control simultaneously.
NO
Are there two or more optional controllers for centralized control connected with the connector for setting master control?
YES
Arrange so that the connector for setting master control is connected to one controller for centralized control and reset the power supply for all optional controllers for centralized control simultaneously.
NO
Reset the power supply for all optional controllers for centralized control simultaneously.
If the malfunction is still not cleared:
Disconnect the connector for setting master control from the master controller, connect to another optional controller for centralized control and simultaneously reset all optional controllers for centralized control again. The controller connected by the connector for setting master control when the malfunction is cleared is defective and must be replaced.
(V2843)

5.3 Display “Under Host Computer Integrate Control” Blinks (Repeats Double Blink)

Remote Controller Display

“under host computer integrated control” (Repeats double blink)

Applicable Models

Unified ON/OFF controller

Method of Malfunction Detection

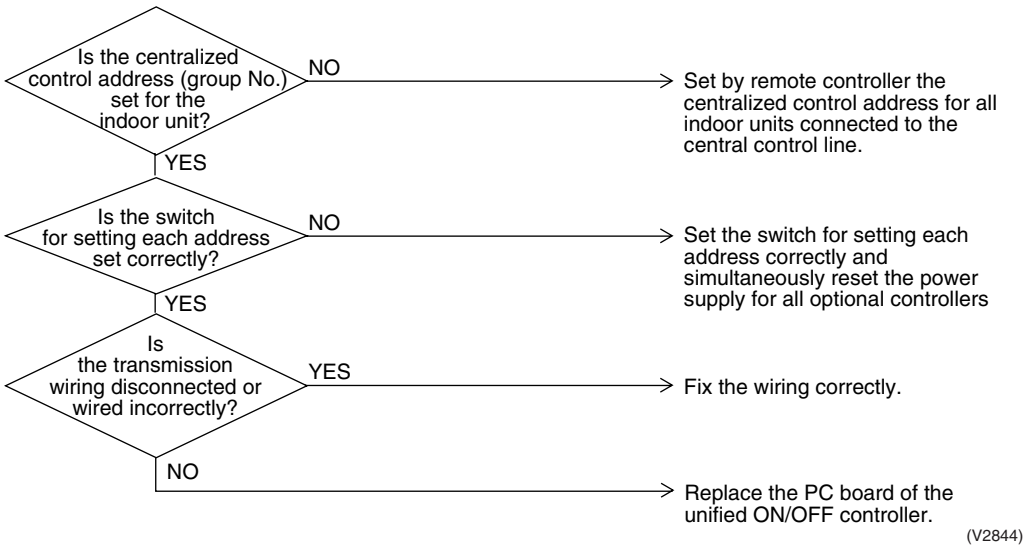
Malfunction Decision Conditions

Supposed Causes

- Centralized control address (group No.) is not set for indoor unit.
- Improper address setting
- Improper wiring of transmission wiring

Troubleshooting

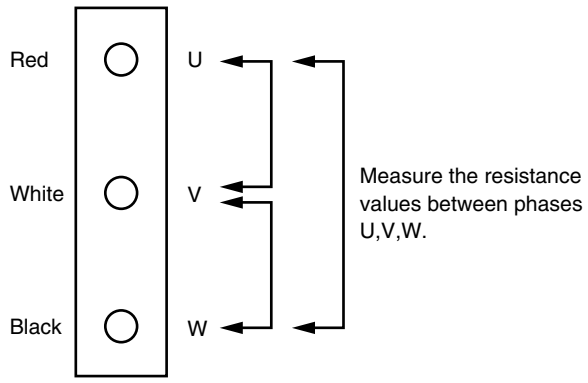
Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



Check No. 8

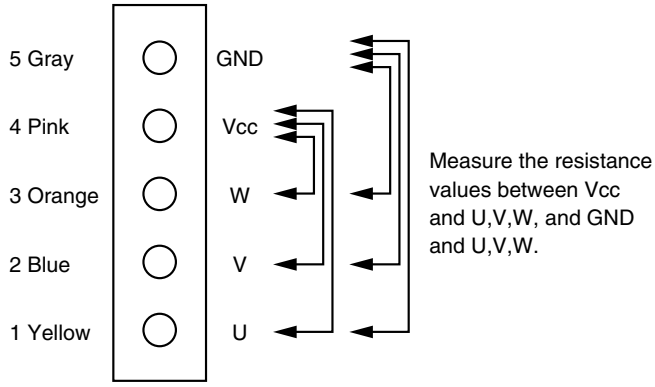
Check on connector of fan motor (Power supply cable)

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



Check No. 9

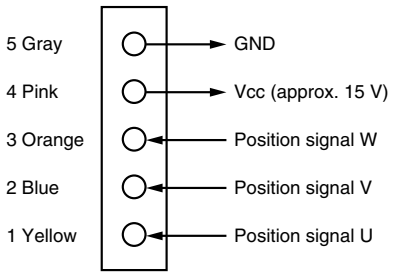
(1) Turn off the power supply.
(2) Measure the resistance between Vcc and each phase of U,V,W , and GND and each phase at the motor side connectors (five-core wire) to check that the values are balanced within the range of ± 20 %, while connector or relay connector is disconnected.



Check No. 12 **Check on pulse input of position signal of fan inverter PCB**

(1) Disconnect the connector X2A while power supply OFF and operation OFF.
(2) Is the voltage between pins No. 4 and 5 on X2A approx. 15 V after power supply is turned on?
(3) Connect the connector X2A while power supply OFF and operation OFF.
(4) Check below conditions when the fan motor is rotated one turn manually under the condition of operation OFF after power supply is turned ON.
Are the pulse (approx. 0 V and 5 V) generated 4 times between No. 1 and 5 on X2A?
Are the pulse (approx. 0 V and 5 V) generated 4 times between No. 2 and 5 on X2A?
Are the pulse (approx. 0 V and 5 V) generated 4 times between No. 3 and 5 on X2A?

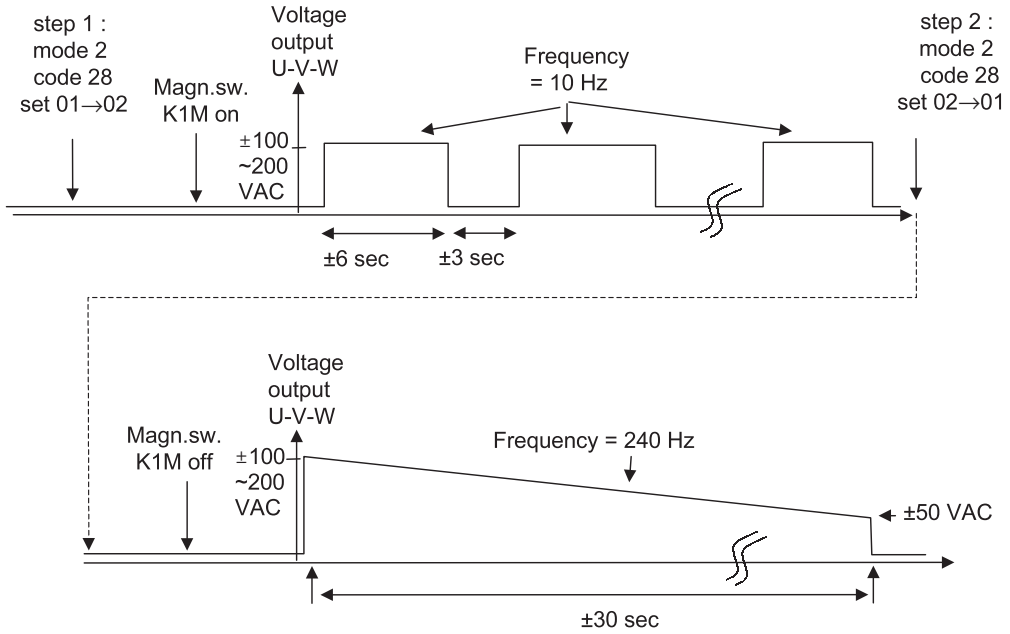
The condition (2) dose not appear → Faulty PCB → Replacing the PCB
The conditions (4) do not appear → Faulty hall IC → Replacing fan motor of outdoor unit



Check No. 13 **Power transistor check mode**

When the inverter system malfunctions (malfunction of inverter, INV compressor), to locate where the malfunction occurs, switching to the power transistor check mode of inverter in the service mode setting enables not to judge the position detection signal malfunction but to output waveform only during inverter operation. (The waveform can be checked by disconnecting the wiring of compressor.)
After the completion of checks, return the system to the previous mode and wait for 30 seconds or more until the discharge of capacitor is completed. Then, conduct a subsequent work.

Notes: Be sure to disconnect the compressor wiring when conducting the check operation mentioned above.
When the output voltage is approx. 100~200 V (10 Hz) and the voltage balance between phases U-V, V-W, W-U is within ±5%, the inverter PCB is normal.



* Voltage output will be different depend on measuring device.

Part 7
Replacement Procedure for INV Compressor, VRV II (REYQ8M to 48M)

1. Replacement Procedure for INV Compressor, VRV II (REYQ8M-48M)

1.1 Replacement Procedure

(1) Collect the refrigerant by using refrigerant recovery unit.
(Since the setting on outdoor unit PCB is required for refrigerant recovery, refer to the warning plate "Precautions in service work" attached on the switch box cover.)
(2) Remove the sound insulator mat covering the faulty compressor, and disconnect the power cable from terminal board of the compressor.
(3) Disconnect the brazing sections of suction pipe and discharge pipe by using brazing torch after the refrigerant has been collected completely.
(4) Pinch the oil pressure equalizing pipe of the faulty compressor at the lower part of the brazed joint as shown in figure 1, and cut it between the pinched section and brazed joint in order to prevent residual oil from discharging.
(5) Remove three bolts at cushion rubber section to take out the faulty compressor outside the unit.
(6) Check that no oil remains in the oil pressure equalizing pipe as shown in figure 2, then remove the cut pipe from the brazed joint with brazing torch.
(7) Install the new compressor in the unit.
(Be sure to insert the cushion rubbers before tightening the fixing bolts of compressor.)
(8) Remove the rubber caps put on the suction and discharge pipe of the new compressor to release the sealing nitrogen gas.
(Take note that oil may spout due to the pipe inside pressure if the plug put on the equalizing seat is removed before removing of rubber cap.)
(9) Remove the plug put on the equalizing seat of the new compressor.
(10) Install the outlet pipe on the equalizing seat of the new compressor.
(11) Braze the equalizing seat outlet pipe to the oil pressure equalizing pipe with brazing torch.
* Since an O-ring is put in the equalizing seat, be sure to maintain the parts around O-ring in cool.
(12) Braze the suction and discharge pipe with brazing torch to the compressor.
(13) Conduct air tight test to check the piping system is free from leakage.
(14) Connect power cable to the terminal board of compressor and cover the compressor with sound insulator mat.
(15) Conduct vacuum drying.
(Since the setting on outdoor unit PCB is required for vacuum drying, refer to the warning plate “Precautions in service work” attached on the switch box cover.)
(16) Charge refrigerant after the completion of vacuum drying, and check the function of compressor with cooling or heating operation.

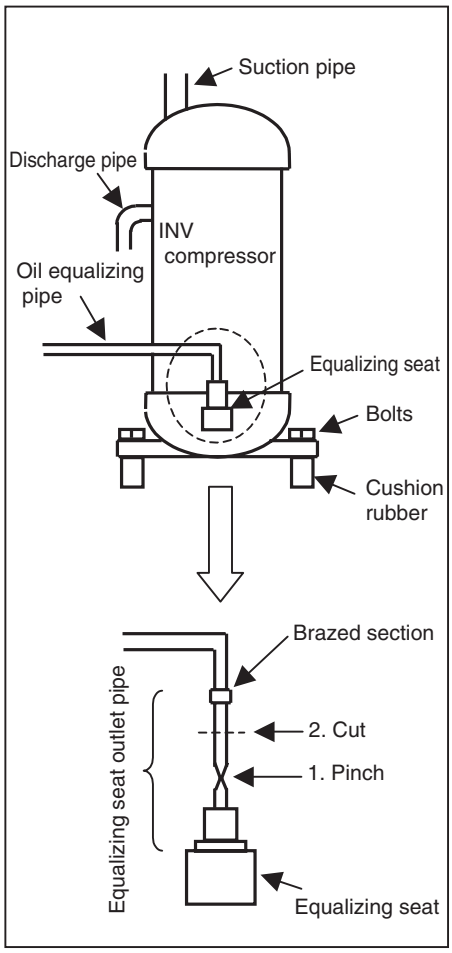


Fig. 1

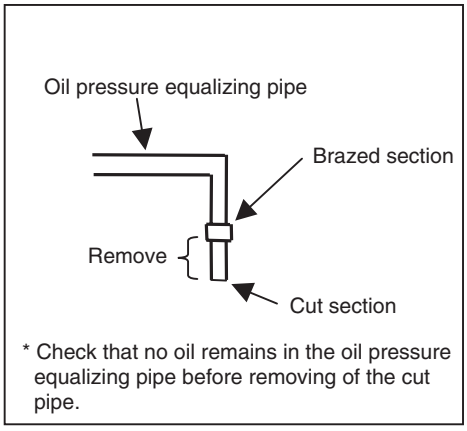


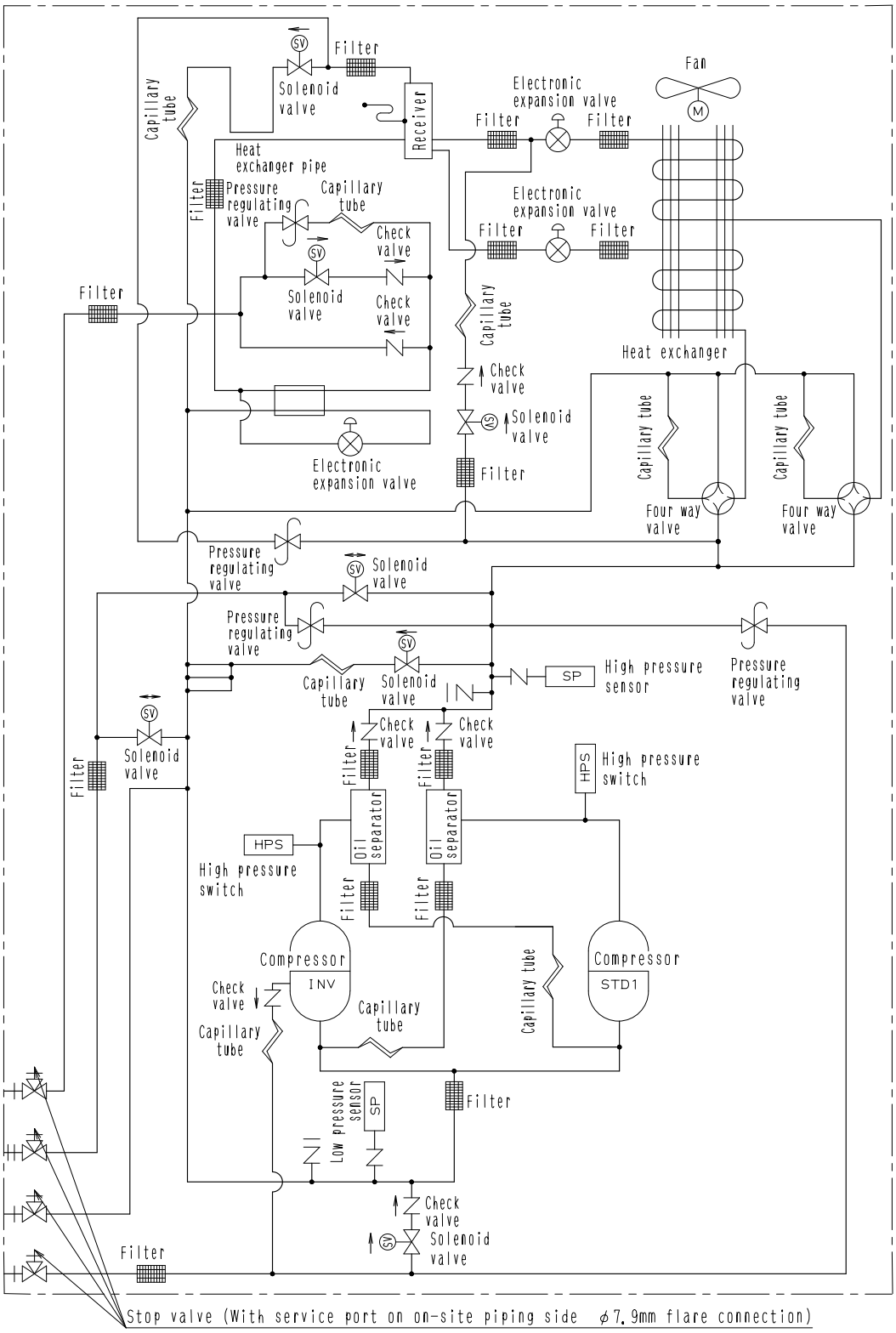
Fig. 2

Part 8
Appendix

1. Piping Diagrams

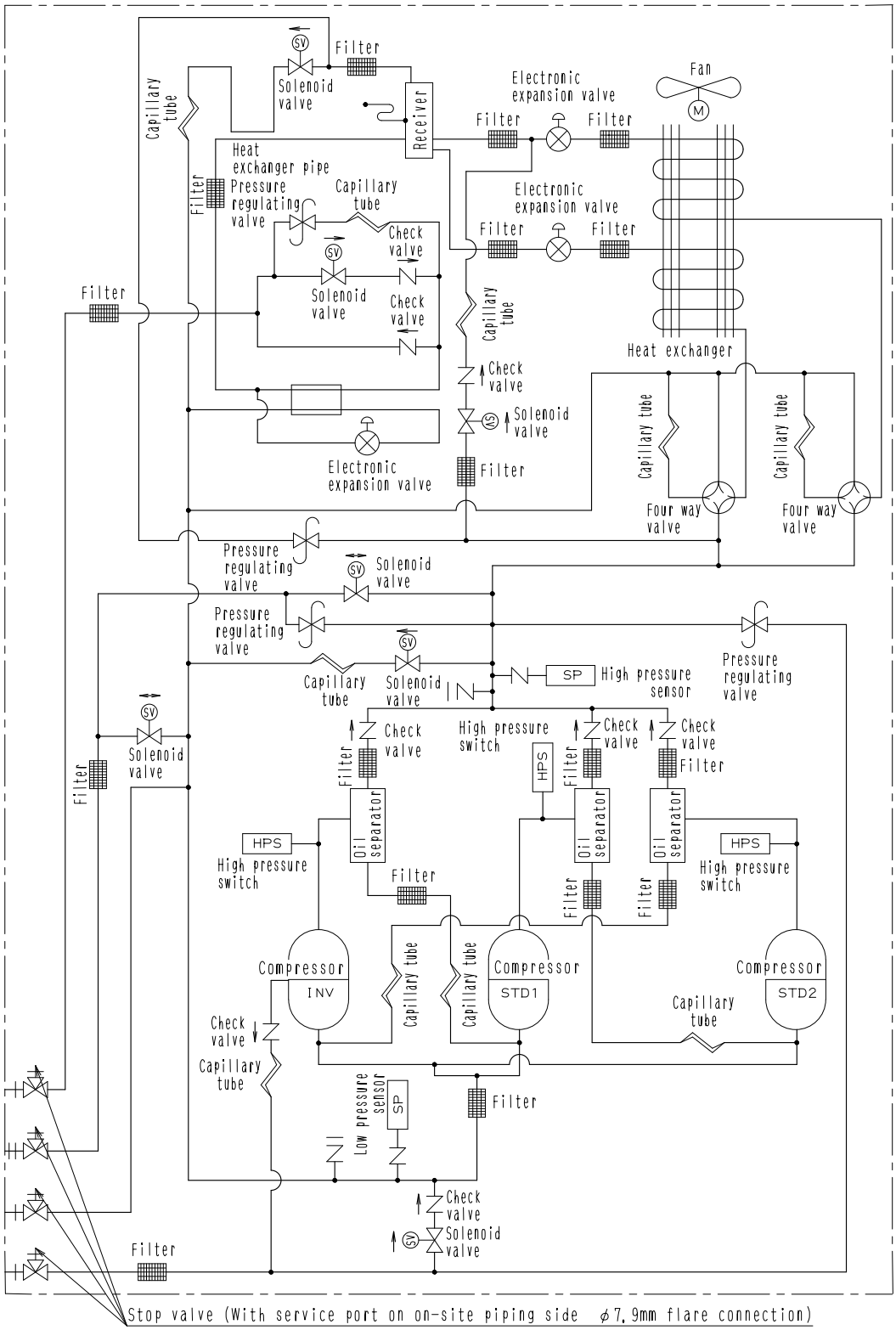
1.1 Outdoor Unit

REYQ8MY1B
REYQ10MY1B
REYQ12MY1B



4D042069A

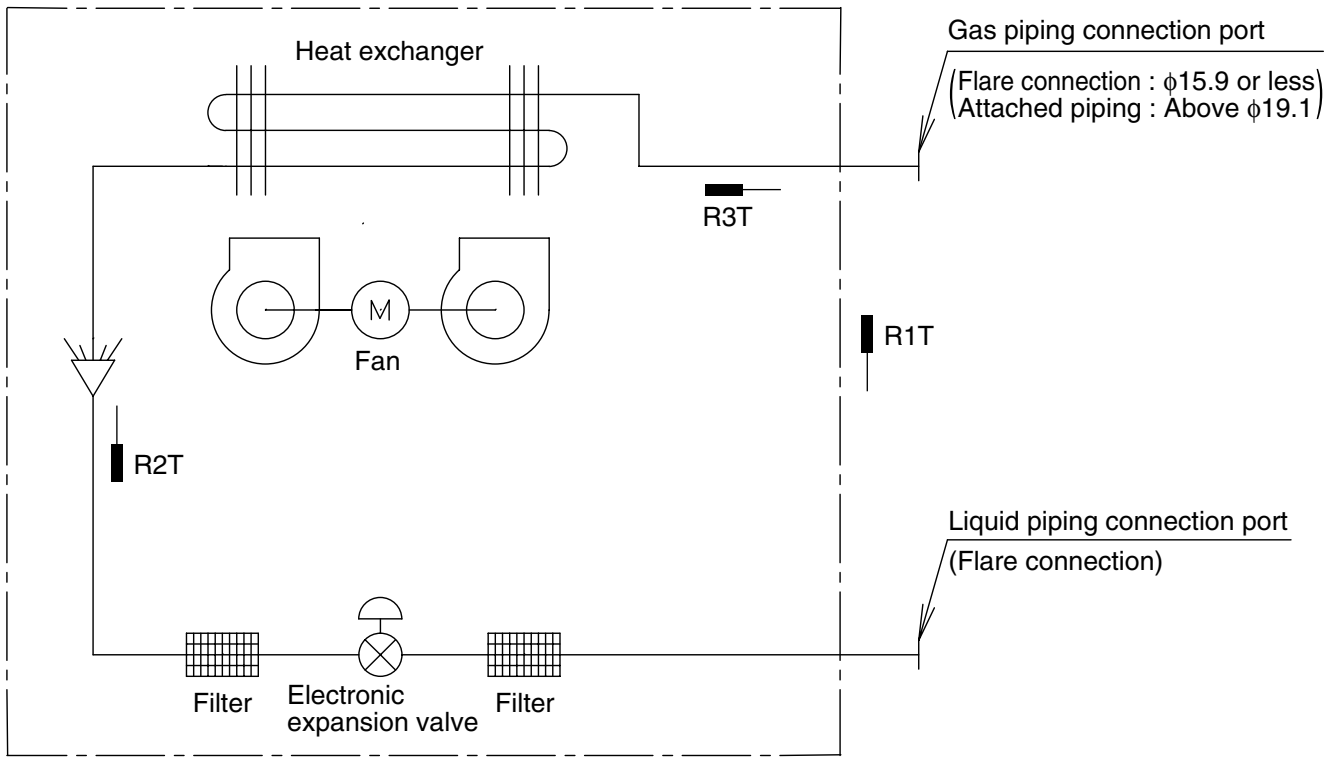
REYQ14MY1B
REYQ16MY1B



4D042070A

1.2 Indoor Unit

FXCQ, FXZQ, FXFQ, FXKQ, FXSQ, FXMQ, FXHQ, FXAQ, FXLQ, FXNQ



DU220-602D

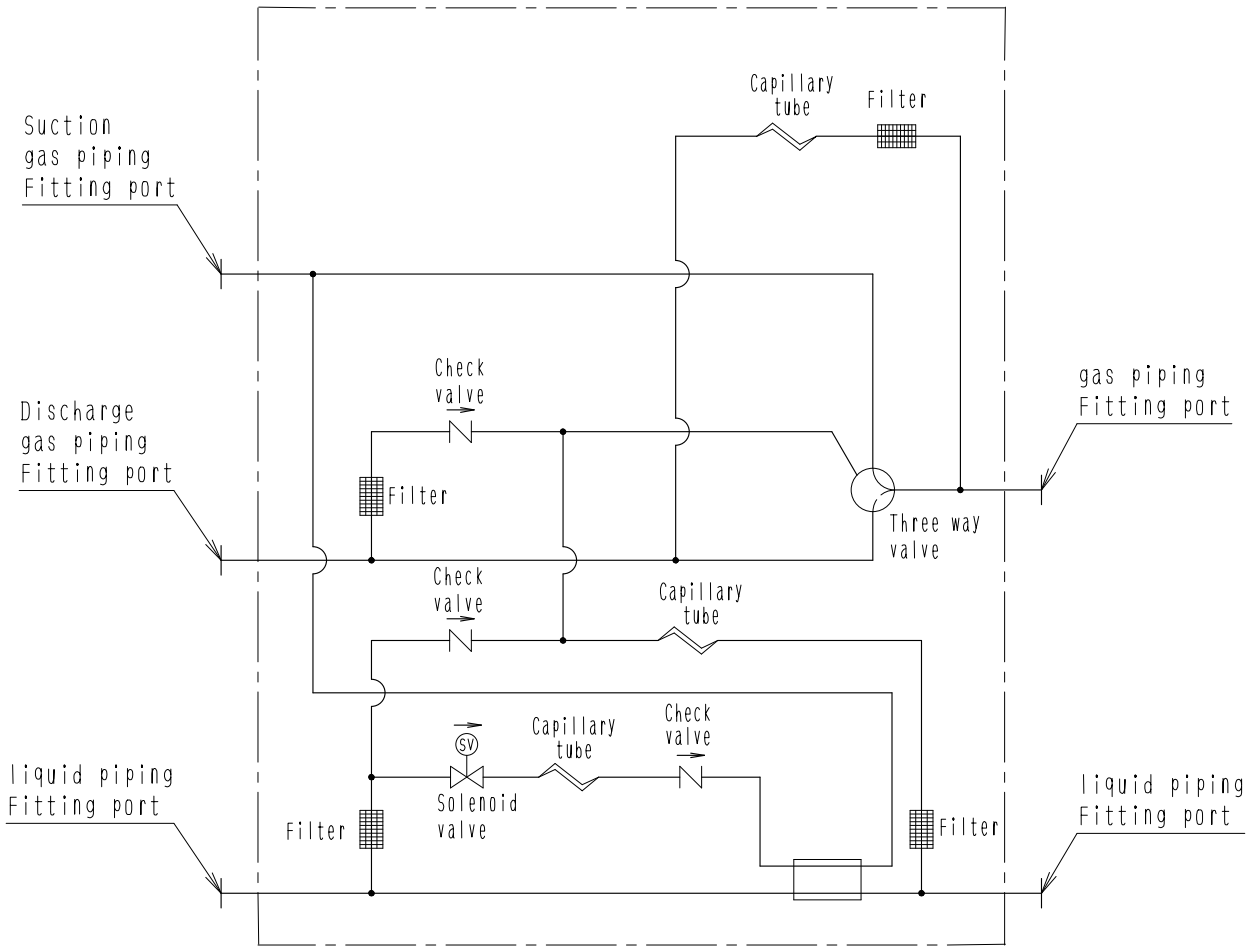
R1T : Thermistor for suction air temperature
R2T : Thermistor for liquid line temperature
R3T : Thermistor for gas line temperature

(mm)

Capacity	GAS	Liquid
20 / 25 / 32 / 40 / 50M	ϕ12.7	ϕ6.4
63 / 80 / 100 / 125M	ϕ15.9	ϕ9.5
200M	ϕ19.1	ϕ9.5
250M	ϕ22.2	ϕ9.5

1.3 BS Unit

BSVQ100MV1
BSVQ160MV1
BSVQ250MV1



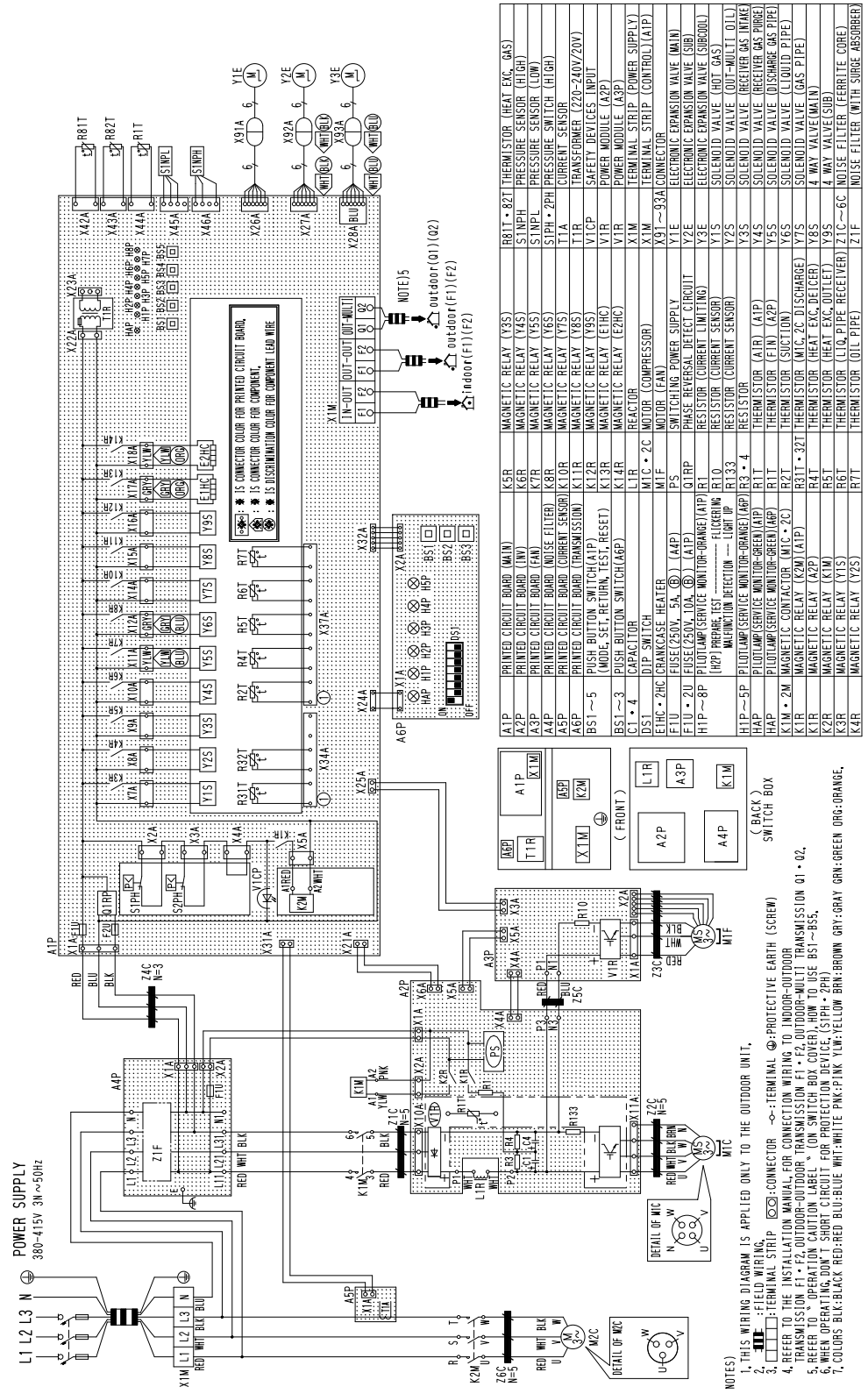
4D042115

2. Wiring Diagrams for Reference

2.1 Outdoor Unit

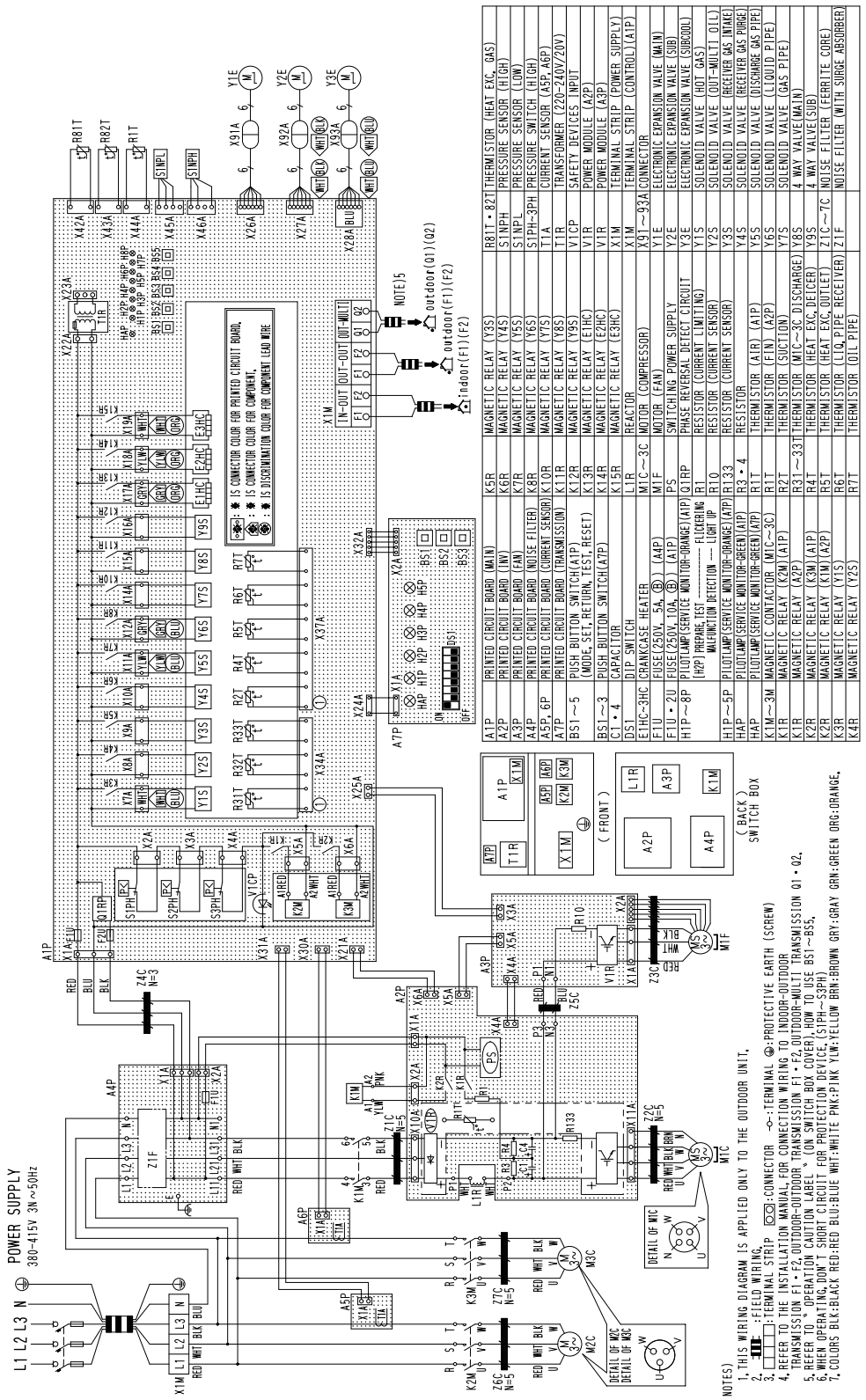
REYQ8MY1B
REYQ10MY1B
REYQ12MY1B

3D038581



REYQ14MY1B
REYQ16MY1B

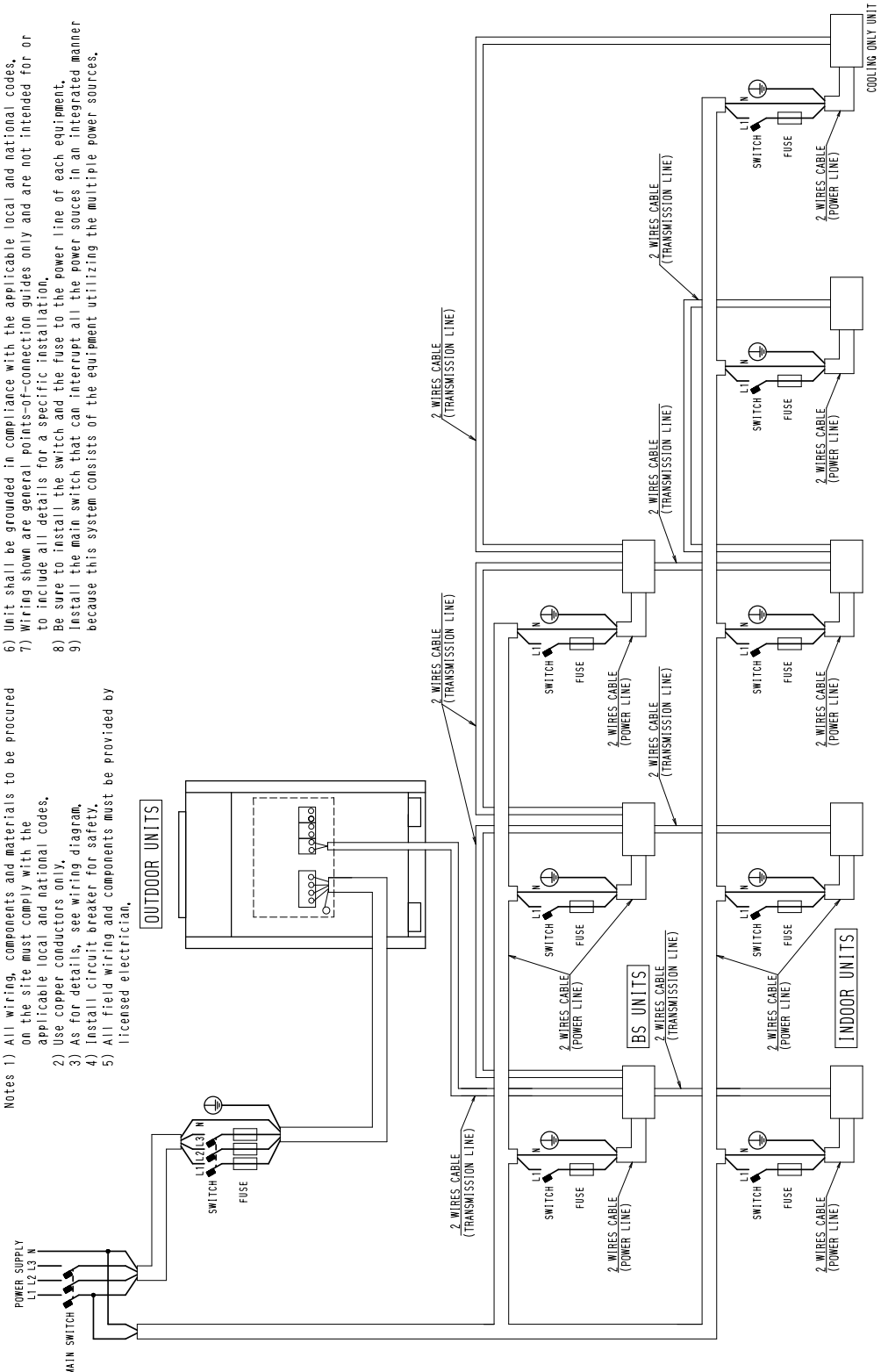
3D038572



2.2 Field Wiring

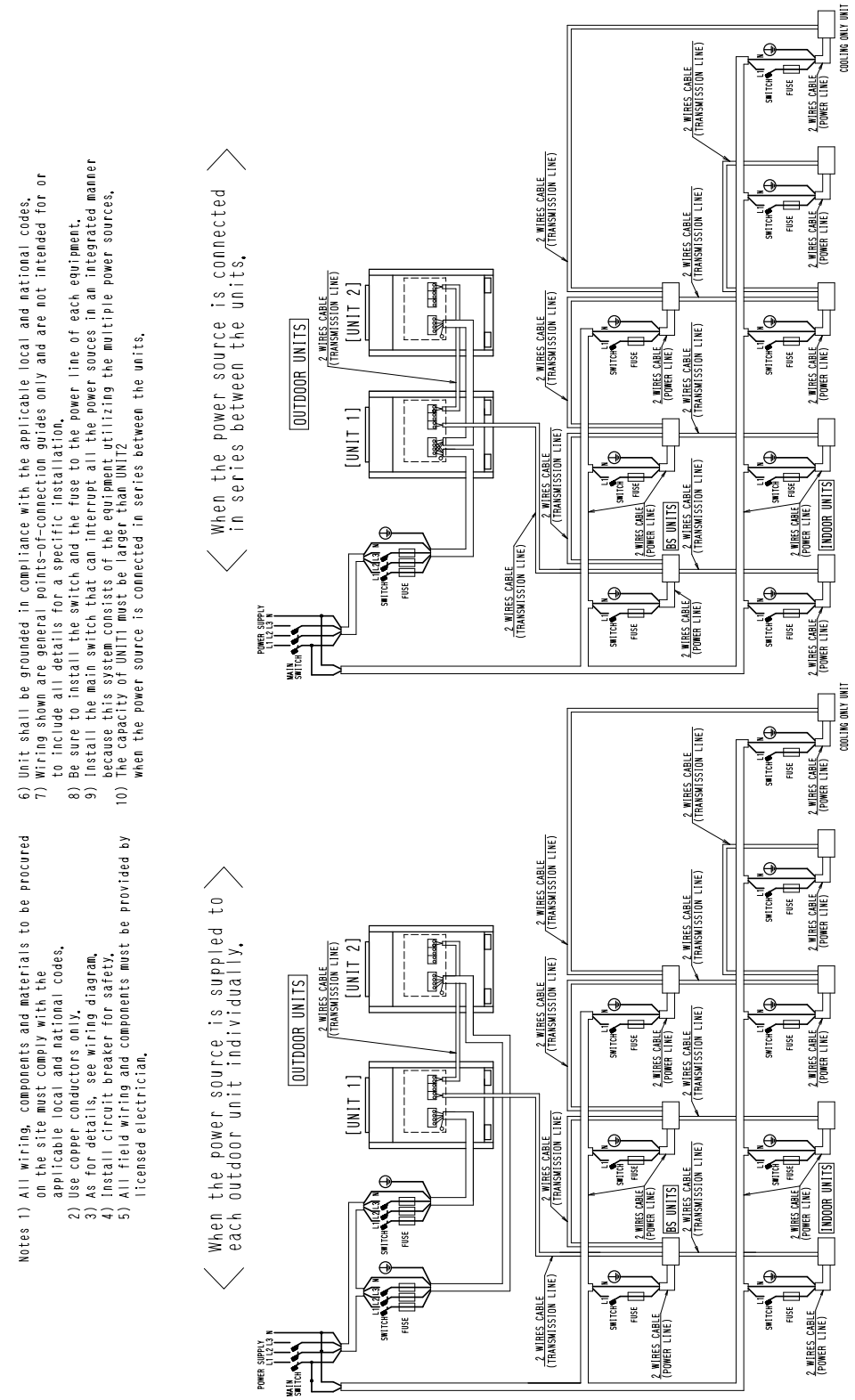
REYQ8, 10, 12, 14, 16MY1B

3D043435



REYQ18, 20, 22, 24, 26, 28, 30, 32MY1B

3D043436



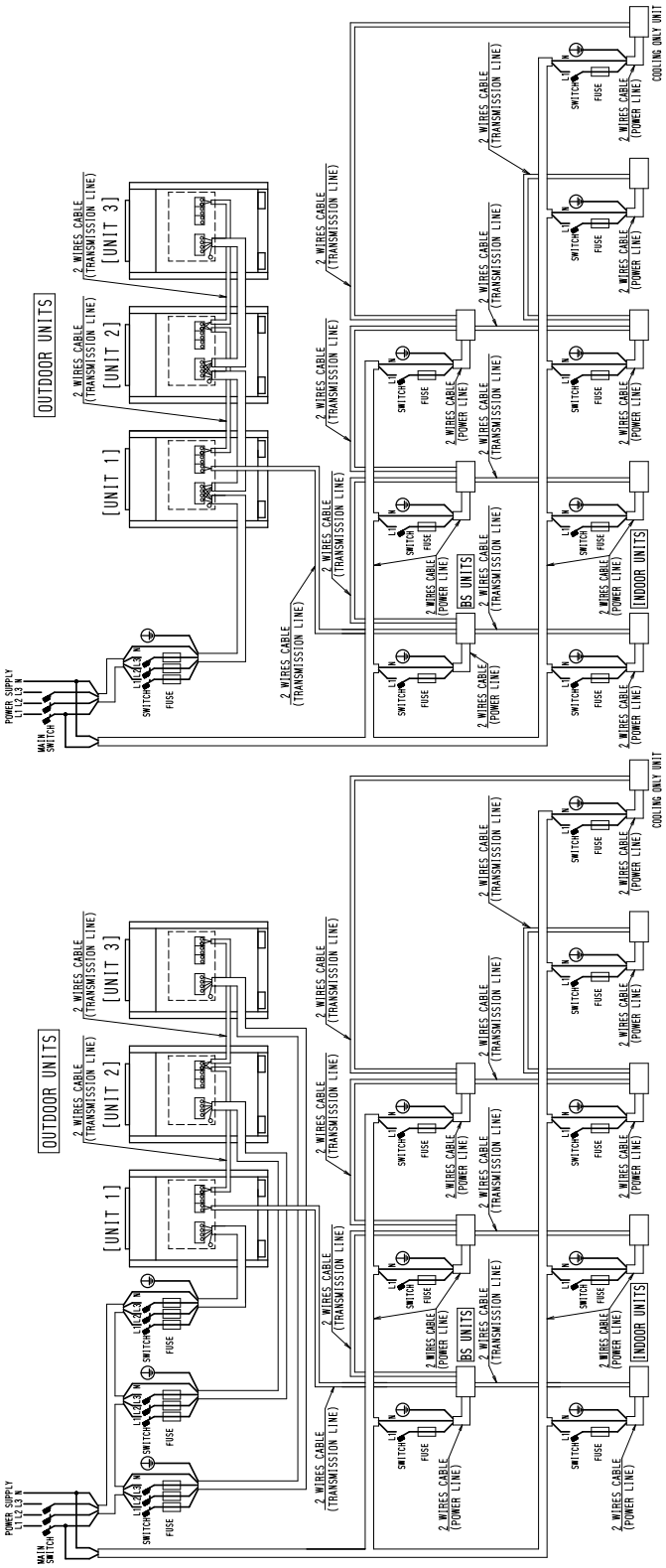
Notes 1) All wiring, components and materials to be procured on the site must comply with the applicable local and national codes.
2) Use copper conductors only.
3) As for details, see wiring diagram.
4) Install circuit breaker for safety.
5) All field wiring and components must be provided by licensed electrician.
6) Unit shall be grounded in compliance with the applicable local and national codes.
7) Wiring shown are general points-of-connection guides only and are not intended for or to include all details for a specific installation.
8) Be sure to install the switch and the fuse to the power line of each equipment.
9) Install the main switch that can interrupt all the power souces in an integrated manner because this system consists of the equipment utilizing the multiple power sources.
10) The capacity of UNIT1 must be larger than UNIT2 when the power source is connected in series between the units.

REYQ34, 36, 38, 40, 42, 44, 46, 48MY1B

3D043437

Notes 1) All wiring, components and materials to be procured on the site must comply with the applicable local and national codes.
2) Use copper conductors only.
3) As for details, see wiring diagram.
4) Install circuit breaker for safety.
5) All field wiring and components must be provided by licensed electrician.
6) Unit shall be grounded in compliance with the applicable local and national codes.
7) Wiring shown are general points-of-connection guides only and are not intended for or to include all details for a specific installation.
8) Be sure to install the switch and the fuse to the power line of each equipment.
9) Install the main switch that can interrupt all the power souces in an integrated manner because this system consists of the equipment utilizing the multiple power sources.
10) When the power source is connected in series between the units, comply with the following conditions:
The capacity of UNIT1 must be larger than UNIT2.
The capacity of UNIT2 must be larger than UNIT3.

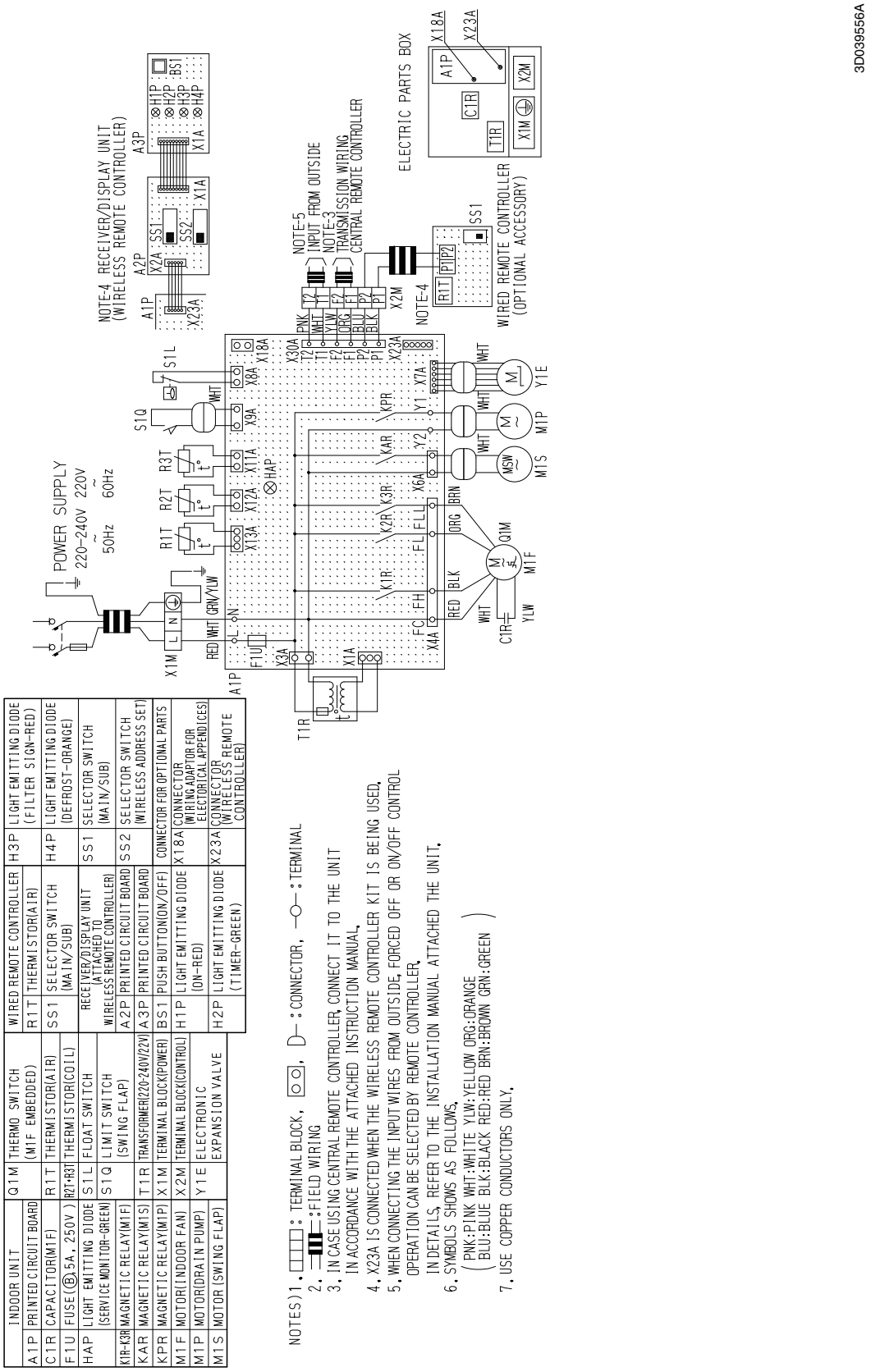
When the power source is supplied to each outdoor unit individually.



When the power source is connected in series between the units.

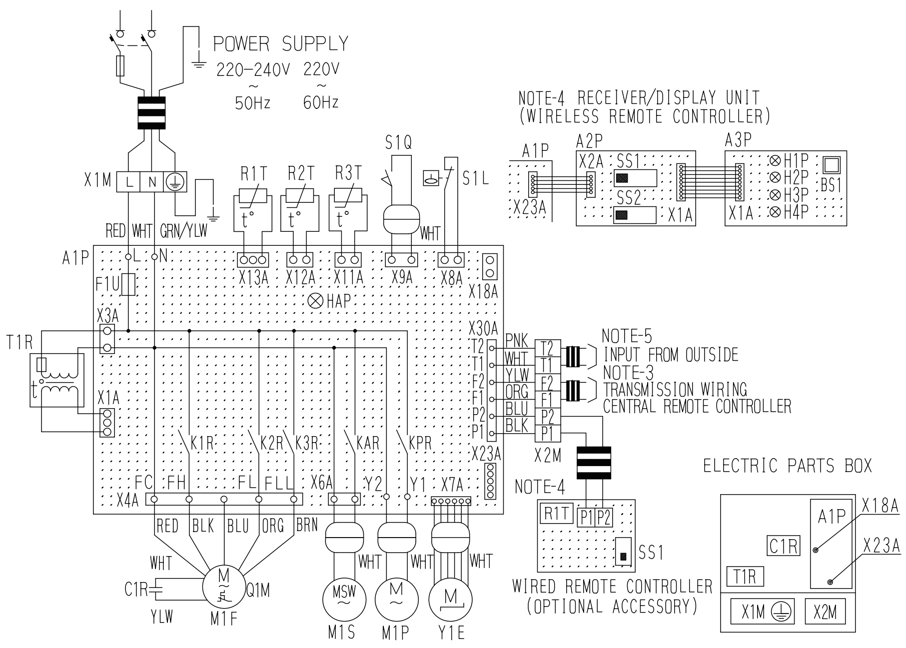
2.3 Indoor Unit

FXCQ20M / 25M / 32M / 63MVE



FXCQ40M / 50M / 80M/ 125MVE

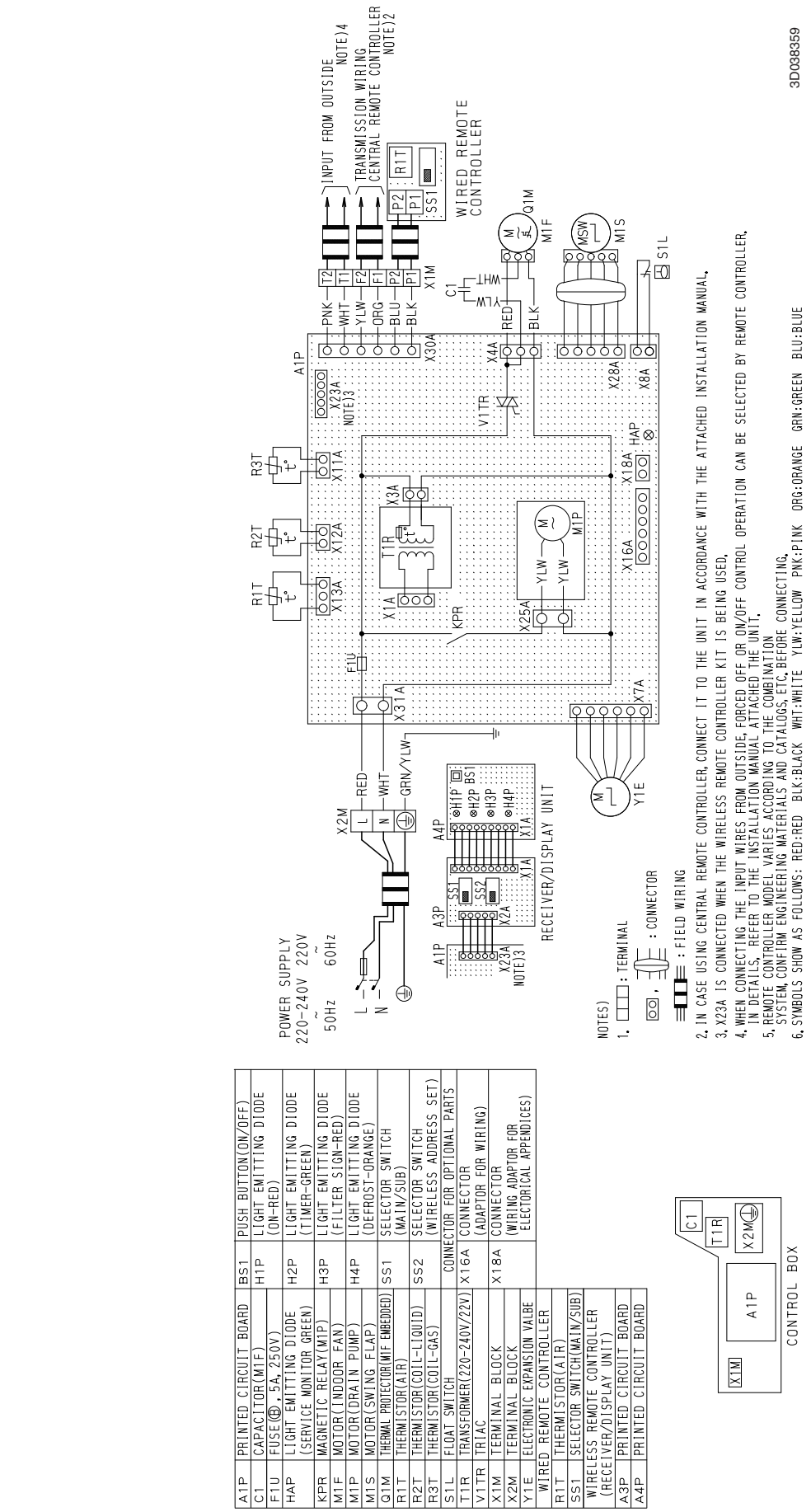
3D039557A



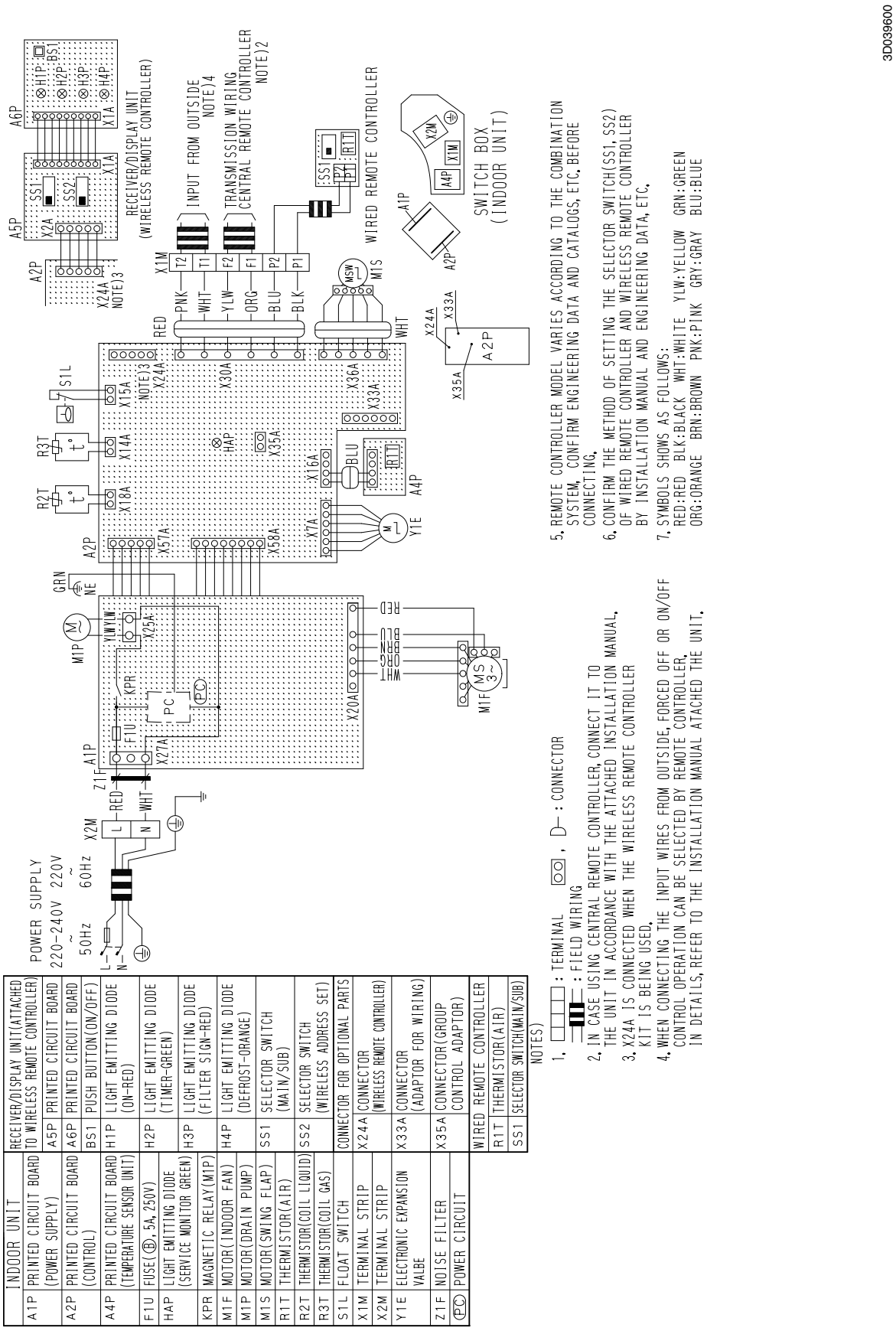
INDOOR UNIT					
A1P	PRINTED CIRCUIT BOARD	S1L	FLOAT SWITCH	H1P	LIGHT EMITTING DIODE (ON-RED)
C1R	CAPACITOR(M1F)	S1Q	LIMIT SWITCH (SWING FLAP)	H2P	LIGHT EMITTING DIODE (TIMER-GREEN)
F1U	FUSE(Ⓑ,5A, 250V)	T1R	TRANSFORMER(220-240V/22V)		
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR-GREEN)	X1M	TERMINAL BLOCK(POWER)	H3P	LIGHT EMITTING DIODE (FILTER SIGN-RED)
		X2M	TERMINAL BLOCK(CONTROL)		
K1R-K3R	MAGNETIC RELAY(M1F)	Y1E	ELECTRONIC EXPANSION VALVE	H4P	LIGHT EMITTING DIODE (DEFROST-ORANGE)
KAR	MAGNETIC RELAY(M1S)				
KPR	MAGNETIC RELAY(M1P)	WIRED REMOTE CONTROLLER		SS1	SELECTOR SWITCH (MAIN/SUB)
M1F	MOTOR(INDOOR FAN)	R1T	THERMISTOR(AIR)		
M1P	MOTOR(DRAIN PUMP)	SS1	SELECTOR SWITCH (MAIN/SUB)	SS2	SELECTOR SWITCH (WIRELESS ADDRESS SET)
M1S	MOTOR (SWING FLAP)				
Q1M	THERMO SWITCH (M1F EMBEDDED)	RECEIVER/DISPLAY UNIT (ATTACHED TO WIRELESS REMOTE CONTROLLER)		CONNECTOR FOR OPTIONAL PARTS	
				X18A	CONNECTOR (WIRING ADAPTOR FOR ELECTORICAL APPENDICES)
R1T	THERMISTOR(AIR)	A2P	PRINTED CIRCUIT BOARD		
R2T·R3T	THERMISTOR(COIL)	A3P	PRINTED CIRCUIT BOARD	X23A	CONNECTOR (WIRELESS REMOTE CONTROLLER)
		BS1	PUSH BUTTON(ON/OFF)		

NOTES)
1. ▭▭▭ : TERMINAL BLOCK, ⦾⦾ , D— : CONNECTOR, —O— : TERMINAL
2. —▮▮▮— : FIELD WIRING
3. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTRUCTION MANUAL.
4. X23A IS CONNECTED WHEN THE WIRELESS REMOTE CONTROLLER KIT IS BEING USED.
5. WHEN CONNECTING THE INPUT WIRES FROM OUTSIDE, FORCED OFF OR ON/OFF CONTROL OPERATION CAN BE SELECTED BY REMOTE CONTROLLER.
   IN DETAILS, REFER TO THE INSTALLATION MANUAL ATTACHED THE UNIT.
6. SYMBOLS SHOWS AS FOLLOWS.
   (PNK:PINK WHT:WHITE YLW:YELLOW ORG:ORANGE
   BLU:BLUE BLK:BLACK RED:RED BRN:BROWN GRN:GREEN)
7. USE COPPER CONDUCTORS ONLY.

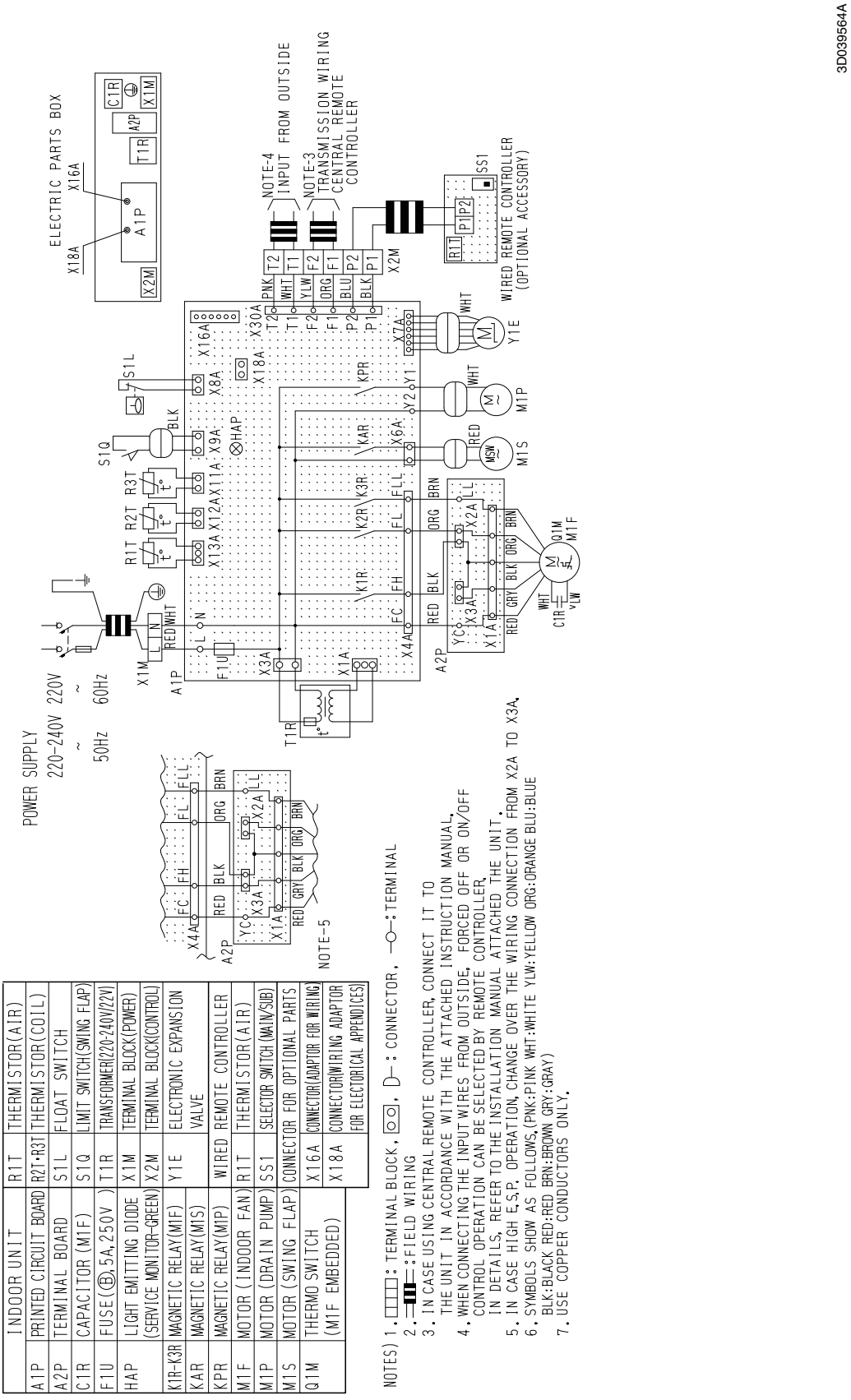
FXZQ20M / 25M / 32M / 40M / 50MVE



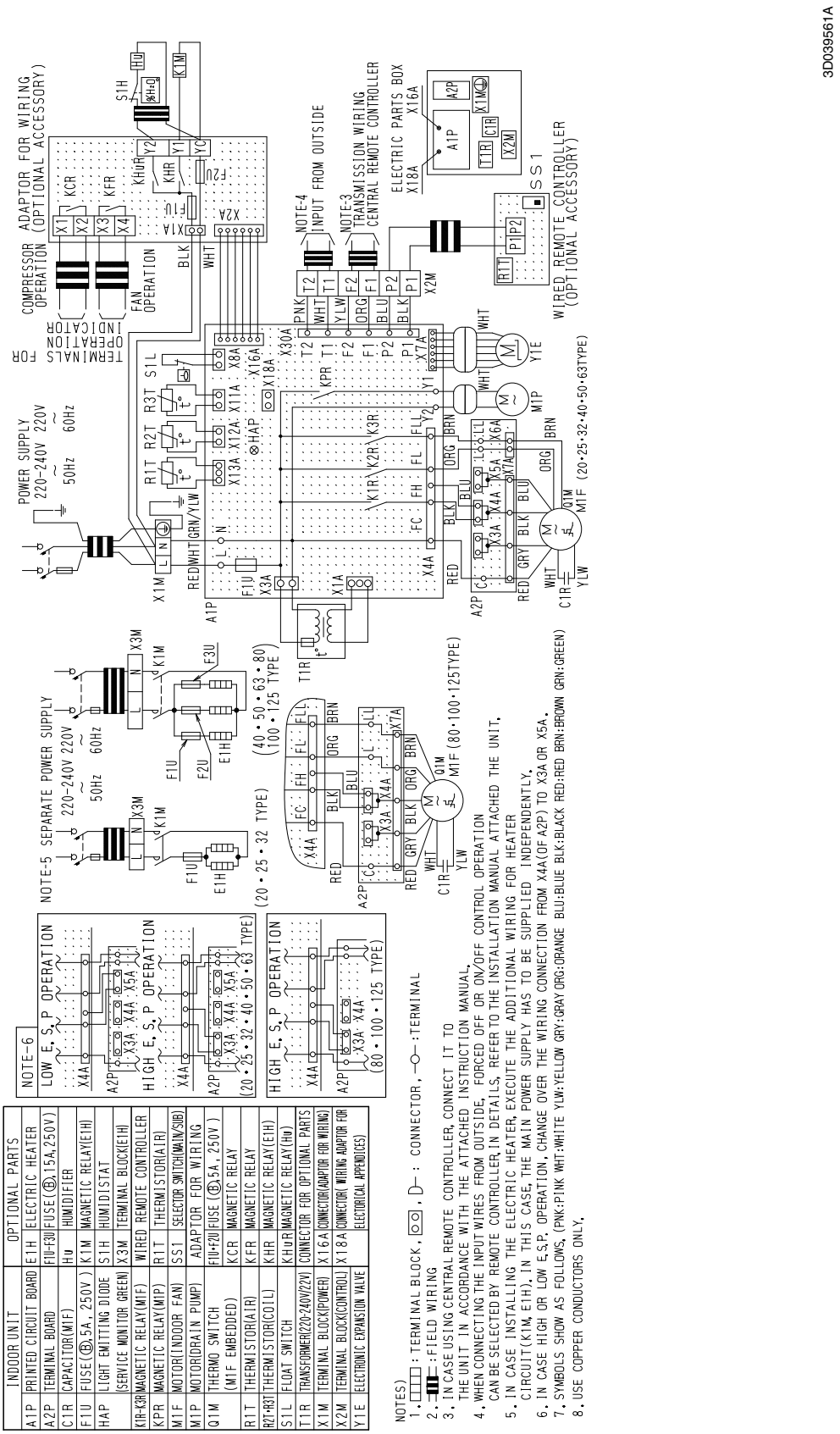
FXFQ25M / 32M / 40M / 50M / 63M / 80M / 100M / 125MVE



FXKQ25M / 32M / 40M / 63MVE

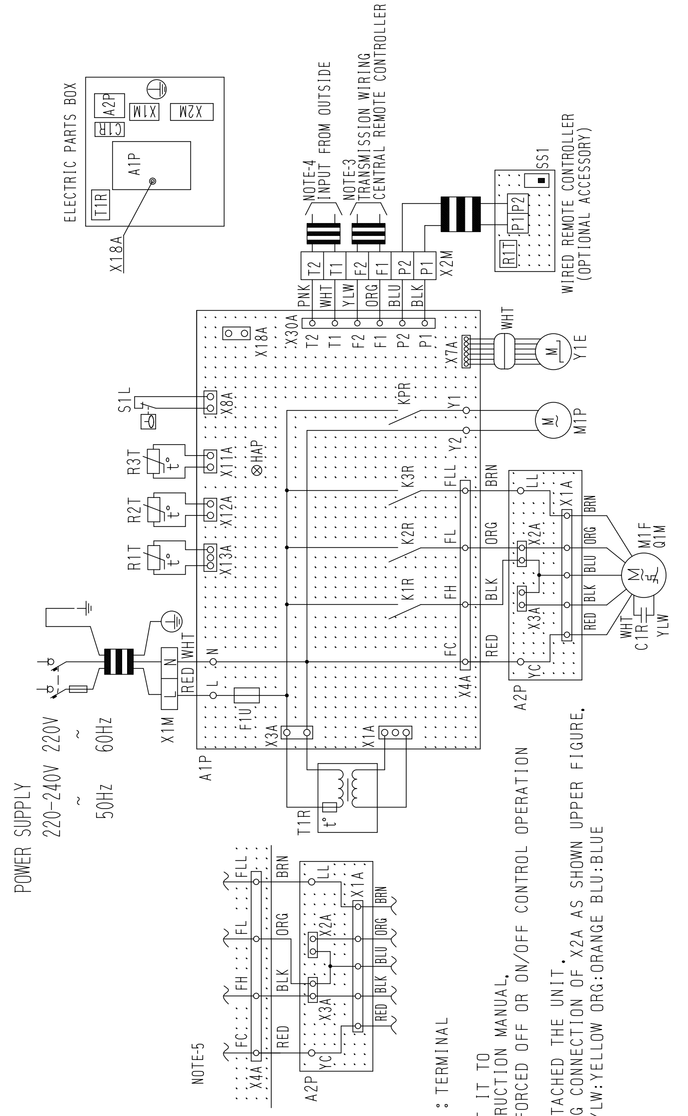


FXSQ20M / 25M / 32M / 40M / 50M / 63M / 80M / 100M / 125MVE



FXMQ40M / 50M / 63M / 80M / 100M / 125MVE

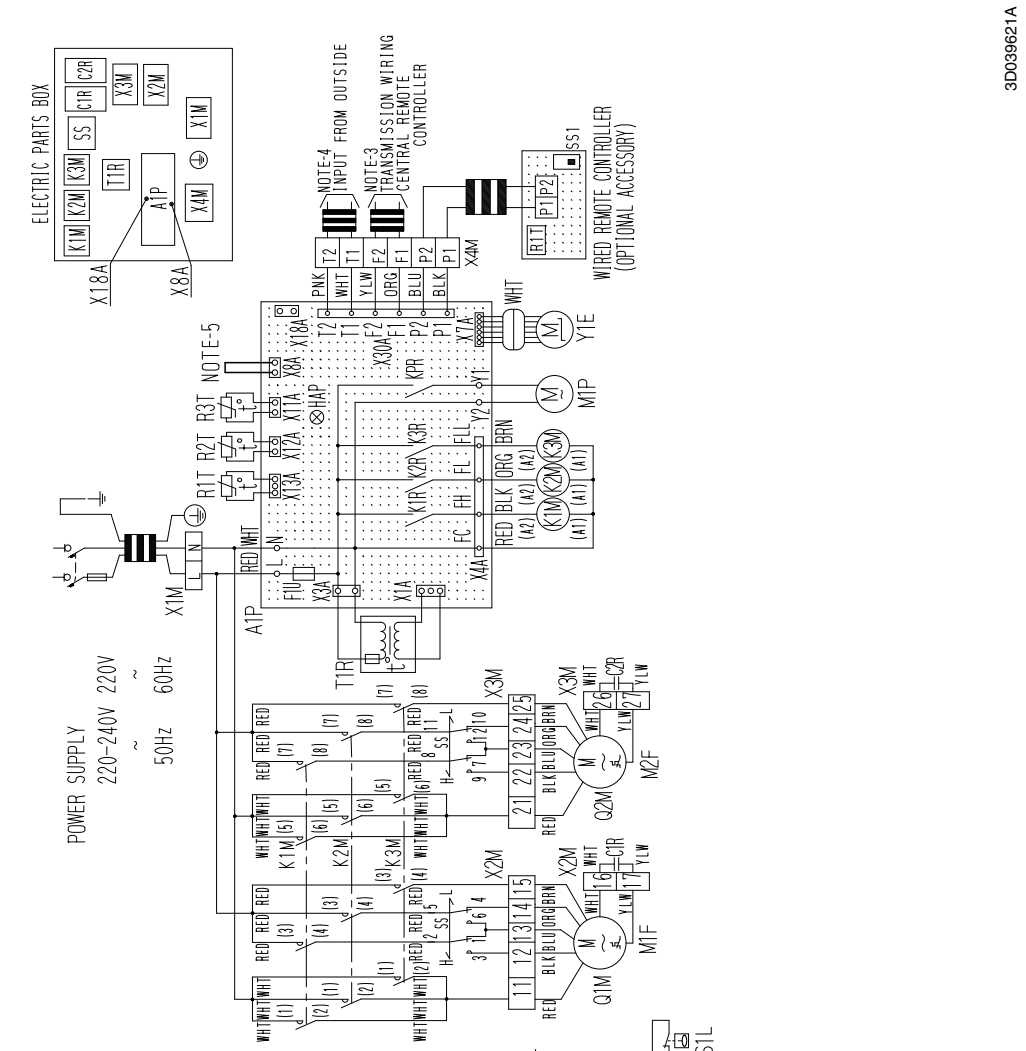
3D039620A



	INDOOR UNIT		
A1P	PRINTED CIRCUIT BOARD	R1T	THERMISTOR(AIR)
A2P	TERMINAL BOARD	R2T・R3T	THERMISTOR(COIL)
C1R	CAPACITOR(M1F)	S1L	FLOAT SWITCH
F1U	FUSE(Ⓑ,5A,250V) 40・50・63・80TYPE	T1R	TRANSFORMER(220-240V/22V)
F1U	FUSE(Ⓑ,10A,250V) 100・125TYPE	X1M	TERMINAL BLOCK(POWER)
		X2M	TERMINAL BLOCK(CONTROL)
		Y1E	ELECTRONIC EXPANSION VALVE
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR-GREEN)		OPTIONAL PARTS
K1R–K3R	MAGNETIC RELAY(M1F)	M1P	MOTOR (DRAIN PUMP)
KPR	MAGNETIC RELAY(M1P)		WIRED REMOTE CONTROLLER
M1F	MOTOR(INDOOR FAN)	SS1	SELECTOR SWITCH (MAIN/SUB)
Q1M	THERMO SWITCH (M1F EMBEDDED)	R1T	THERMISTOR(AIR)
			CONNECTOR FOR OPTIONAL PARTS
		X18A	CONNECTOR(WIRING ADAPTOR FOR ELECTORICAL APPENDICES)

NOTES)
1. ▭▭▭ :TERMINAL BLOCK, ▭ , ⊳ :CONNECTOR, –○– : TERMINAL
2. ═▮▮═ :FIELD WIRING
3. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTRUCTION MANUAL.
4. WHEN CONNECTING THE INPUT WIRES FROM OUTSIDE, FORCED OFF OR ON/OFF CONTROL OPERATION CAN BE SELECTED BY REMOTE CONTROLLER. IN DETAILS, REFER TO THE INSTALLATION MANUAL ATTACHED THE UNIT.
5. IN CASE HIGH E.S.P. OPERATION, CHANGE THE WIRING CONNECTION OF X2A AS SHOWN UPPER FIGURE.
6. SYMBOLS SHOW AS FOLLOWS. (PNK:PINK WHT:WHITE YLW:YELLOW ORG:ORANGE BLU:BLUE BLK:BLACK RED:RED BRN:BROWN)
7. USE COPPER CONDUCTORS ONLY.

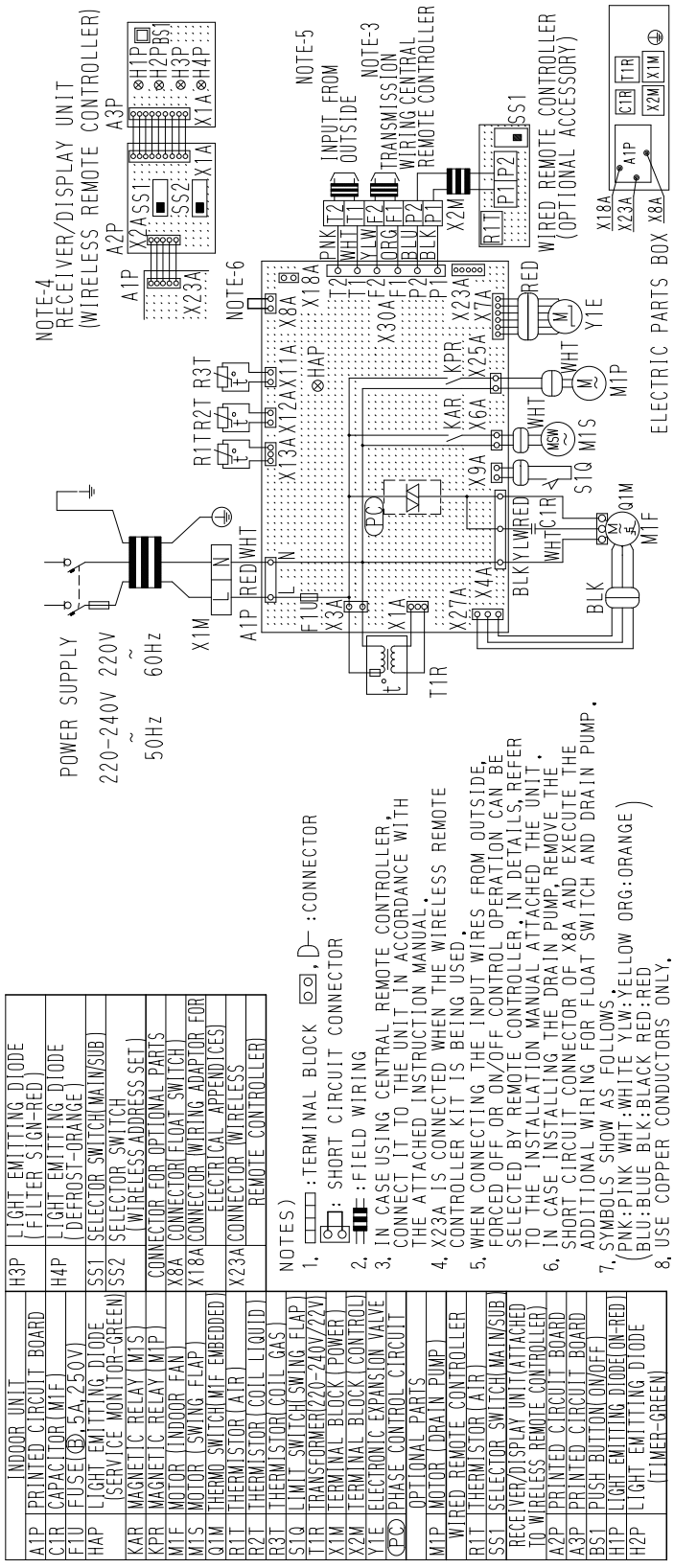
FXMQ200M / 250MVE



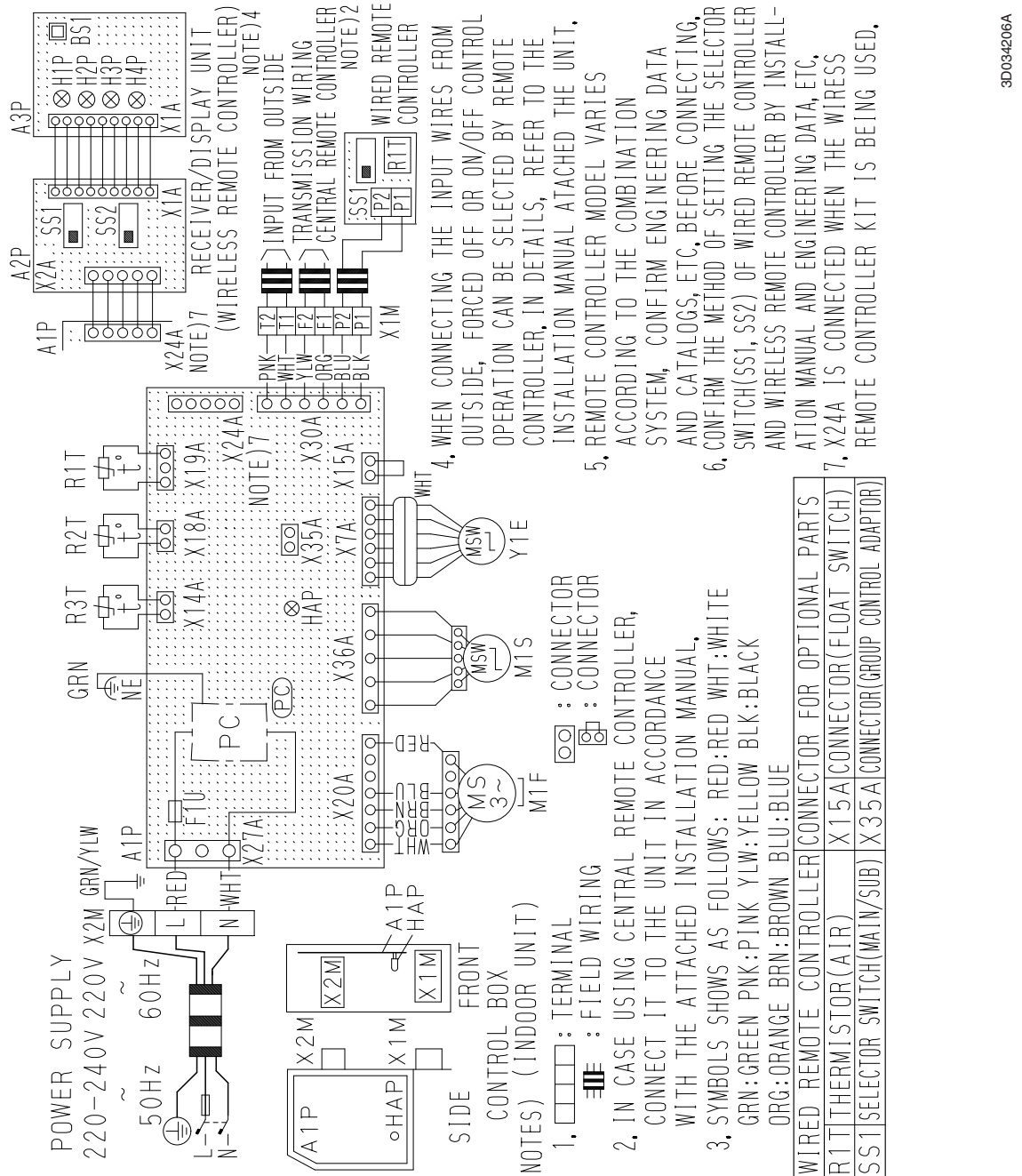
INDOOR UNIT		R1T	THERMISTOR(AIR)
A1P	PRINTED CIRCUIT BOARD	R2T・R3T	THERMISTOR(COIL)
C1R・C2R	CAPACITOR(M1F・2F)	SS	SELECTOR SWITCH (STATIC PRESSURE)
F1U	FUSE(Ⓐ,5A, 250V)	T1R	TRANSFORMER(220-240V/22V)
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR-GREEN)	X1M	TERMINAL BLOCK(POWER)
K1M	MAGNETIC CONTACTOR(M1F・2F)	X2M-X3M	TERMINAL BLOCK
K2M	MAGNETIC CONTACTOR(M1F・2F)	X4M	TERMINAL BLOCK(CONTROL)
K3M	MAGNETIC CONTACTOR(M1F・2F)	Y1E	ELECTRONIC EXPANSION VALVE
K1R-K3R	MAGNETIC RELAY(M1F・2F)		OPTIONAL PARTS
KPR	MAGNETIC RELAY(M1P)	M1P	MOTOR(DRAIN PUMP)
M1F・M2F	MOTOR (INDOOR FAN)		WIRED REMOTE CONTROLLER
Q1M・Q2M	THERMO SWITCH (M1F・2F EMBEDDED)	R1T	THERMISTOR(AIR)
		SS1	SELECTOR SWITCH(MAIN/SUB)
			CONNECTOR FOR OPTIONAL PARTS
		X8A	CONNECTOR(FLOAT SWITCH)
		X18A	CONNECTOR(WIRING ADAPTOR FOR ELECTORICAL APPENDICES)

NOTES)
1. □□□ : TERMINAL BLOCK
   ⊙⊙, D- : CONNECTOR
   ⊡- : SHORT CIRCUIT CONNECTOR
   ○— : TERMINAL
2. ═══ : FIELD WIRING
3. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTRUCTION MANUAL.
4. WHEN CONNECTING THE INPUT WIRES FROM OUTSIDE, FORCED OFF OR ON/OFF CONTROL OPERATION CAN BE SELECTED BY REMOTE CONTROLLER. IN DETAILS, REFER TO THE INSTALLATION MANUAL ATTACHED THE UNIT.
5. IN CASE INSTALLING THE DRAIN PUMP, REMOVE THE SHORT CIRCUIT CONNECTOR OF X8A AND EXECUTE THE ADDITIONAL WIRING FOR FLOAT SWITCH AND DRAIN PUMP.
6. SYMBOLS SHOW AS FOLLOWS, (PNK:PINK WHT:WHITE YLW:YELLOW ORG:ORANGE BLU:BLUE BLK:BLACK RED:RED BRN:BROWN)
7. USE COPPER CONDUCTORS ONLY.
8. IN CASE HIGH E.S.P. OPERATION , CHANGE THE SWITCH(SS) FOR "H".

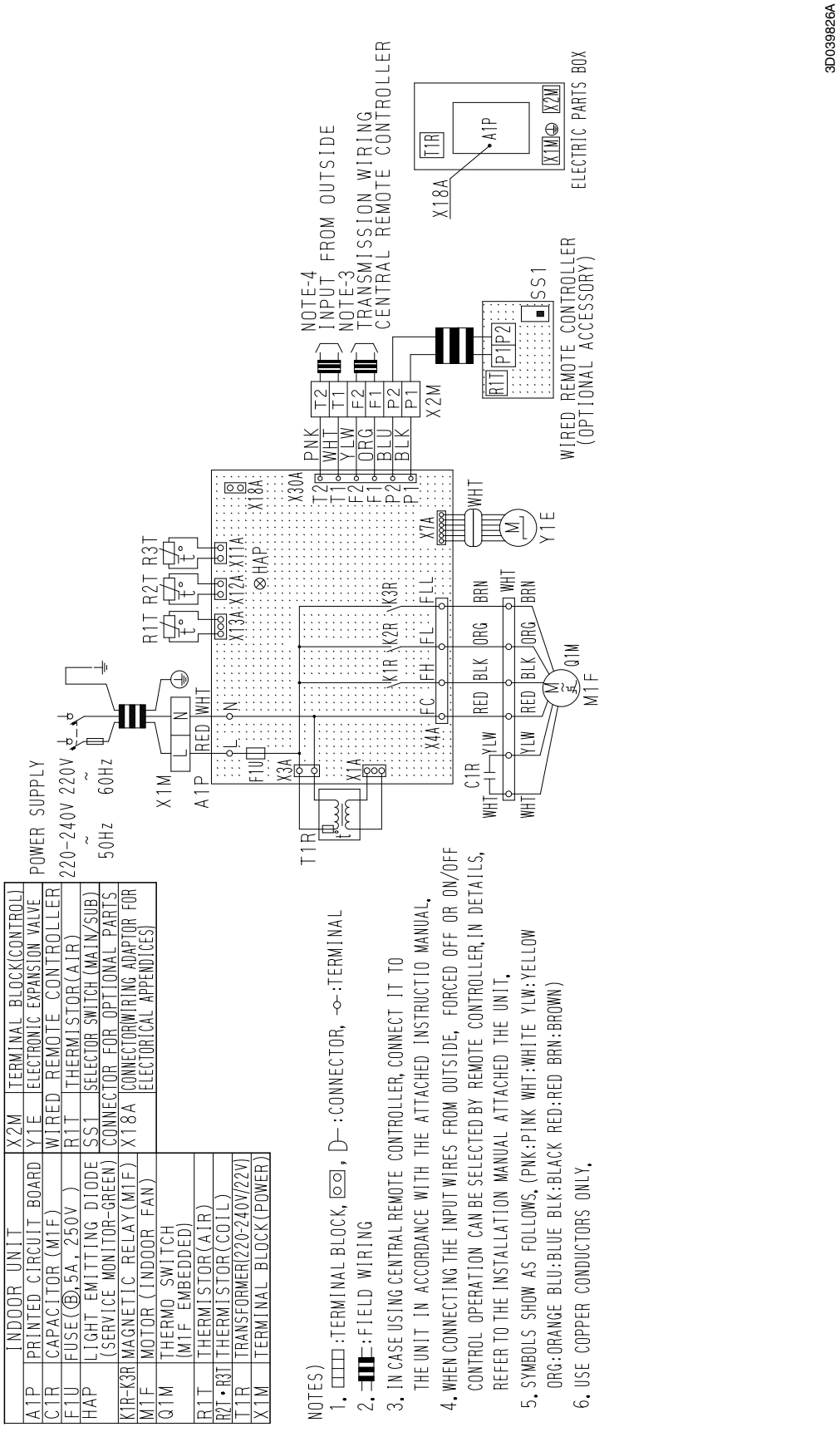
FXHQ32M / 63M / 100MVE



FXAQ20M / 25M / 32MVE / 40M / 50M / 63MVE

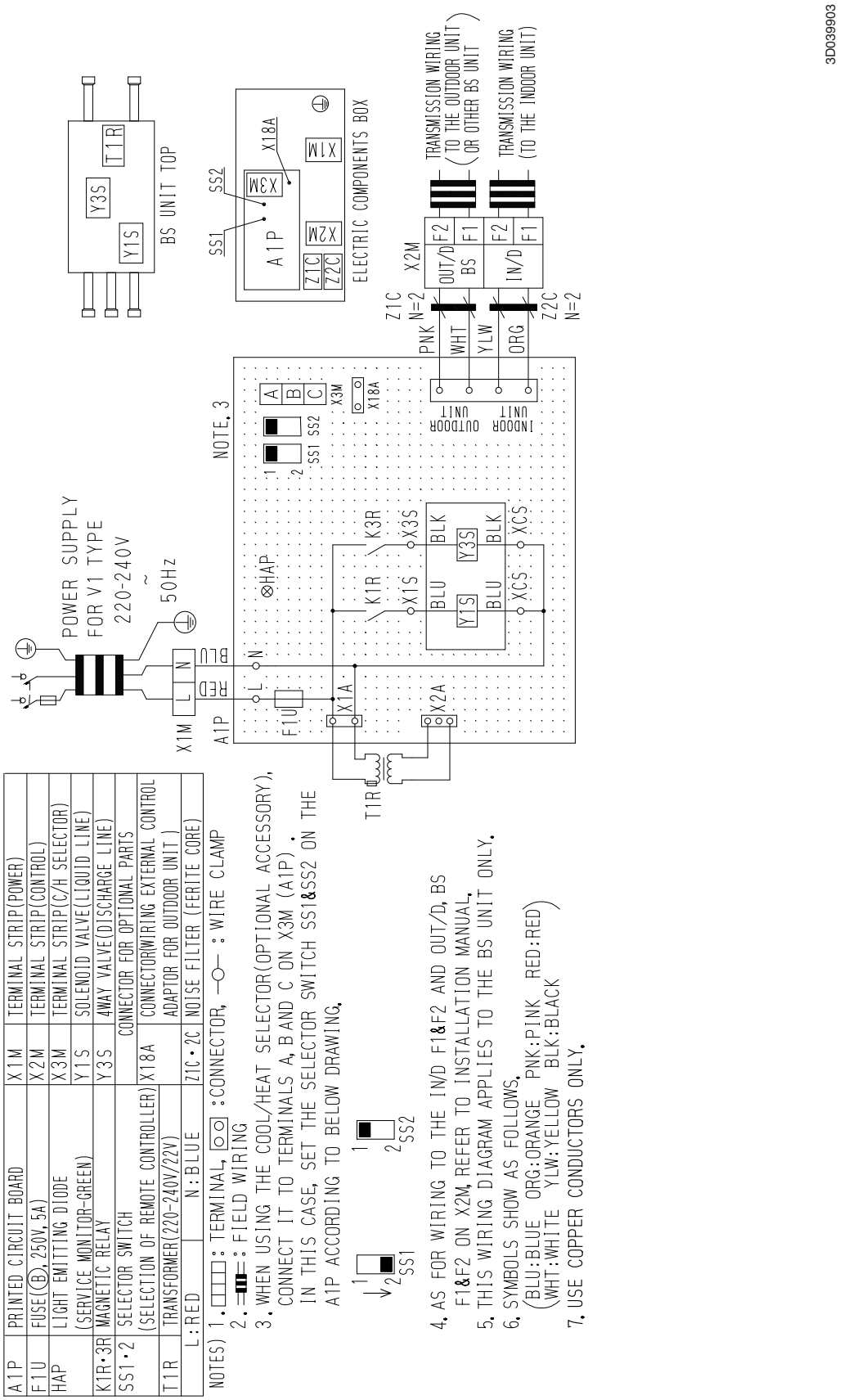


FXLQ20M / 25M / 32M / 40M / 50M / 63MVE
FXNQ20M / 25M / 32M / 40M / 50M / 63MVE



2.4 BS Unit

BSVQ100MV1
BSVQ160MV1
BSVQ250MV1



A1P	PRINTED CIRCUIT BOARD	X1M	TERMINAL STRIP(POWER)
F1U	FUSE(Ⓑ, 250V, 5A)	X2M	TERMINAL STRIP(CONTROL)
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR-GREEN)	X3M	TERMINAL STRIP(C/H SELECTOR)
		Y1S	SOLENOID VALVE(LIQUID LINE)
K1R・3R	MAGNETIC RELAY	Y3S	4WAY VALVE(DISCHARGE LINE)
SS1・2	SELECTOR SWITCH (SELECTION OF REMOTE CONTROLLER)		CONNECTOR FOR OPTIONAL PARTS
		X18A	CONNECTOR(WIRING EXTERNAL CONTROL ADAPTOR FOR OUTDOOR UNIT)
T1R	TRANSFORMER(220-240V/22V)		
	L:RED N:BLUE	Z1C・2C	NOISE FILTER (FERITE CORE)

NOTES) 1. □□□ : TERMINAL, ⊙⊙ : CONNECTOR, —○— : WIRE CLAMP
2. ═══ : FIELD WIRING
3. WHEN USING THE COOL/HEAT SELECTOR(OPTIONAL ACCESSORY), CONNECT IT TO TERMINALS A, B AND C ON X3M (A1P). IN THIS CASE, SET THE SELECTOR SWITCH SS1&SS2 ON THE A1P ACCORDING TO BELOW DRAWING.

4. AS FOR WIRING TO THE I/D F1&F2 AND OUT/D, BS F1&F2 ON X2M, REFER TO INSTALLATION MANUAL.
5. THIS WIRING DIAGRAM APPLIES TO THE BS UNIT ONLY.
6. SYMBOLS SHOW AS FOLLOWS.
(BLU:BLUE ORG:ORANGE PNK:PINK RED:RED)
(WHT:WHITE YLW:YELLOW BLK:BLACK)
7. USE COPPER CONDUCTORS ONLY.

3. List of Electrical and Functional Parts

3.1 Outdoor Unit

3.1.1 REYQ8~16MY1B

Item	Name		Symbol	Model				
				REYQ8MY1B	REYQ10MY1B	REYQ12MY1B	REYQ14MY1B	REYQ16MY1B
Compressor	Inverter	Type	M1C	JT100FCVDKTR	JT100FCVDKTR	JT100FCVDKTR	JT100FCVDKTR	JT100FCVDKTR
		Output		1.2kW	2.7kW	4.2kW	2.0kW	3.0kW
	STD.1	Type	M2C	JT170FCKYE	JT170FCKYE	JT170FCKYE	JT170FCKYE	JT170FCKYE
		Output		4.5kW	4.5kW	4.5kW	4.5kW	4.5kW
	STD.2	Type	M3C	—	—	—	JT170FCKYE	JT170FCKYE
		Output		—	—	—	4.5kW	4.5kW
	Crankcase heater (INV)		E1HC	33W			33W	
	Crankcase heater (STD.1)		E2HC	33W			33W	
	Crankcase heater (STD.2)		E3HC	—			33W	
	Over current protection device for STD compressor		—	15A				
Fan motor	Motor		M1F	0.75kW				
	Over current protection device		—	3.2A				
Functional parts	Electronic expansion valve (Main: EV1)		Y1E	Cooling:1400pls Heating:PI control				
	Electronic expansion valve (Sub: EV2)		Y2E	Cooling:1400pls Heating:PI control				
	Electronic expansion valve (Sub-cool: EV3)		Y3E	Cooling:PI control Heating:0pls				
	Solenoid valve (Hot gas: SVP)		Y1S	TEV1620DQ2				
	Solenoid valve (External multi oil: SVO)		Y2S	TEV1620DQ2				
	Solenoid valve (Receiver gas charge: SVL)		Y3S	TEV1620DQ2				
	Solenoid valve (Receiver gas discharge: SVG)		Y4S	TEV1620DQ2				
	Solenoid valve (Discharge gas pipe closing: SVR)		Y5S	BPV1706				
	Solenoid valve (Non-operating unit liquid pipe closing: SVSL)		Y6S	VPV-803DXF				
	Solenoid valve (High pressure gas pipe pressure reduction: SVC)		Y7S	BPV1706				
	4-way selector valve (20S1 Main)		Y8S	VT40110				
	4-way selector valve (20S2 Sub)		Y9S	VHV0301			VT40110	
Pressure-related parts	Pressure switch (INV)		S1PH	PS80 ON : 3.8+0/-0.1MPa OFF : 2.85±0.15MPa				
	Pressure switch (STD1)		S2PH					
	Pressure switch (STD2)		S3PH	—				
	Fusible plug		—	FPGD-3D 70 to 75°C				
	Pressure sensor (HP)		S1NPH	PS8051A 0 to 4.15MPa				
	Pressure sensor (LP)		S1NPL	PS8051A -0.1 to 1.7MPa				
Thermistor	INV PCB	For fin (Tfin)	R1T	3.5 to 360kΩ				
	Main PCB	For outdoor air (Ta)	R1T	3.5 to 360kΩ				
		For suction pipe (Ts)	R2T	3.5 to 360kΩ				
		For discharge pipe (INV Tdi)	R31T	3.5 to 400kΩ				
		For discharge pipe (STD1 Tds1)	R32T	3.5 to 400kΩ				
		For discharge pipe (STD2 Tds2)	R33T	—			3.5 to 400kΩ	
		For heat exchanger (Tb)	R4T	3.5 to 360kΩ				
		For sub-cooling heat exchanger (Tsh)	R5T	3.5 to 360kΩ				
		For receiver liquid pipe (Tl)	R6T	3.5 to 360kΩ				
		For oil equalizing pipe (To)	R7T	3.5 to 360kΩ				
		Heat exchanger gas pipe 1 (Tg1)	R81T	3.5 to 360kΩ				
		Heat exchanger gas pipe 2 (Tg2)	R82T	3.5 to 360kΩ				
Others	Fuse (A1P)		F1, 2U	250VAC 10A Class B				

3.2 Indoor Side

3.2.1 Indoor Unit

Parts Name		Symbol	Model								Remark
			FXFQ25 MVE	FXFQ32 MVE	FXFQ40 MVE	FXFQ50 MVE	FXFQ63 MVE	FXFQ80 MVE	FXFQ100 MVE	FXFQ125 MVE	
Remote Controller	Wired Remote Controller		BRC1A61								Option
	Wireless Remote Controller		BRC7E61W								Option
Motors	Fan Motor	M1F	DC380V 30W 8P						DC 380V 120W 8P		
	Drain Pump	M1P	AC220-240V (50Hz) AC220V (60Hz) PLD-12230DM Thermal Fuse 145°C								
	Swing Motor	M1S	MP35HCA[3P007482-1] Stepping Motor DC16V								
Thermistors	Thermistor (Suction Air)	R1T	In PCB A4P or wired remote controller								
	Thermistor (for Heat Exchanger High Temp.)	R3T	ST8605-5 ϕ8 L1000 20kΩ (25°C)								
	Thermistor (Heat Exchanger)	R2T	ST8602A-5 ϕ6 L1000 20kΩ (25°C)								
Others	Float Switch	S1L	FS-0211B								
	Fuse	F1U	250V 5A ϕ5.2								
	Thermal Fuse	TFu	—								
	Transformer	T1R	—								

Parts Name		Symbol	Model								Remark
			FXCQ 20MVE	FXCQ 25MVE	FXCQ 32MVE	FXCQ 40MVE	FXCQ 50MVE	FXCQ 63MVE	FXCQ 80MVE	FXCQ 125MVE	
Remote Controller	Wired Remote Controller		BRC1A61								Option
	Wireless Remote Controller		BRC7C62								Option
Motors	Fan Motor	M1F	AC 220~240V 50Hz								
			1ϕ10W	1ϕ15W		1ϕ20W		1ϕ30W	1ϕ50W	1ϕ85W	
			Thermal Fuse 152°C				—	Thermal protector 135°C : OFF 87°C : ON			
	Drain Pump	M1P	AC220-240V (50Hz) AC220V (60Hz) PLD-12230DM Thermal Fuse 145°C								
	Swing Motor	M1S	MT8-L[3PA07509-1] AC200~240V								
Thermistors	Thermistor (Suction Air)	R1T	ST8601-6 ϕ4 L1250 20kΩ (25°C)								
	Thermistor (for Heat Exchanger High Temp.)	R3T	ST8605-6 ϕ8 L1250 20kΩ (25°C)								
	Thermistor (Heat Exchanger)	R2T	ST8602A-5 ϕ6 L1000 20kΩ (25°C)								
Others	Float Switch	S1L	FS-0211B								
	Fuse	F1U	250V 5A ϕ5.2								
	Transformer	T1R	TR22H21R8								

Parts Name		Symbol	Model					Remark
			FXZQ 20MVE	FXZQ 25MVE	FXZQ 32MVE	FXZQ 40MVE	FXZQ 50MVE	
Remote Controller	Wired Remote Controller		BRC1A61					Option
	Wireless Remote Controller		BRC7E530W					
Motors	Fan Motor	M1F	AC 220~240V 50Hz					
			1φ55W 4P					
			Thermal Fuse 135°C					
	Capacitor, fan motor	C1	4.0μ F 400VAC					
	Drain Pump	M1P	AC220-240V (50Hz) PLD-12230DM Thermal Fuse 145°C					
	Swing Motor	M1S	MP35HCA [3P080801-1] AC200~240V					
Thermistors	Thermistor (Suction Air)	R1T	ST8601A-1 φ4 L250 20kΩ (25°C)					
	Thermistor (for Heat Exchanger High Temp.)	R3T	ST8605-3 φ8 L630 20kΩ (25°C)					
	Thermistor (Heat Exchanger)	R2T	ST8602A-3 φ6 L630 20kΩ (25°C)					
Others	Float Switch	S1L	FS-0211					
	Fuse	F1U	250V 5A φ5.2					
	Transformer	T1R	TR22H21R8					

Parts Name		Symbol	Model				Remark
			FXKQ 25MVE	FXKQ 32MVE	FXKQ 40MVE	FXKQ 63MVE	
Remote Controller	Wired Remote Controller		BRC1A61				Option
	Wireless Remote Controller		BRC4C61				
Motors	Fan Motor	M1F	AC 220~240V 50Hz				
			1φ15W 4P		1φ20W 4P	1φ45W 4P	
			Thermal Fuse 146°C		Thermal protector 120°C : OFF 105°C : ON		
	Drain Pump	M1P	AC 220-240V (50Hz) PLD-12200DM Thermal Fuse 145°C				
	Swing Motor	M1S	MP35HCA [3P080801-1] AC200~240V				
Thermistors	Thermistor (Suction Air)	R1T	ST8601-13 φ4 L630 20kΩ (25°C)				
	Thermistor (for Heat Exchanger High Temp.)	R3T	ST8605-7 φ8 L1600 20kΩ (25°C)				
	Thermistor (Heat Exchanger)	R2T	ST8602A-7 φ6 L1600 20kΩ (25°C)				
Others	Float Switch	S1L	FS-0211B				
	Fuse	F1U	250V 5A φ5.2				
	Transformer	T1R	TR22H21R8				

Parts Name		Symbol	Model									Remark
			FXSQ 20MVE	FXSQ 25MVE	FXSQ 32MVE	FXSQ 40MVE	FXSQ 50MVE	FXSQ 63MVE	FXSQ 80MVE	FXSQ 100MVE	FXSQ 125MVE	
Remote Controller	Wired Remote Controller		BRC1A62									Option
	Wireless Remote Controller		BRC4C62									
Motors	Fan Motor	M1F	AC 220~240V 50Hz									
			1φ50W			1φ65W	1φ85W	1φ125W	1φ225W			
			Thermal Fuse 152°C						Thermal protector 135°C : OFF 87°C : ON			
	Drain Pump	M1P	AC220-240V (50Hz) PLD-12230DM Thermal Fuse 145°C									
Thermistors	Thermistor (Suction Air)	R1T	ST8601-4 φ4 L800 20kΩ (25°C)									
	Thermistor (for Heat Exchanger High Temp.)	R3T	ST8605-7 φ8 L1600 20kΩ (25°C)									
	Thermistor (Heat Exchanger)	R2T	ST8602A-6 φ6 L1250 20kΩ (25°C)									
Others	Float Switch	S1L	FS-0211B									
	Fuse	F1U	250V 5A φ5.2									
	Transformer	T1R	TR22H21R8									

Parts Name		Symbol	Model								Remark
			FXMQ 40MVE	FXMQ 50MVE	FXMQ 63MVE	FXMQ 80MVE	FXMQ 100MVE	FXMQ 125MVE	FXMQ 200MVE	FXMQ 250MVE	
Remote Controller	Wired Remote Controller		BRC1A62								Option
	Wireless Remote Controller		BRC4C62								
Motors	Fan Motor	M1F	AC 220~240V 50Hz								
			1φ100W			1φ160W	1φ270W	1φ430W	1φ380W×2		
			Thermal protector 135°C : OFF 87°C : ON								
	Capacitor for Fan Motor	C1R	5μ F-400V			7μ F 400V	10μ F 400V	8μ F 400V	10μ F 400V	12μ F 400V	
Thermistors	Thermistor (Suction Air)	R1T	ST8601A-5 φ4 L1000 20kΩ (25°C)						ST8601A-13 φ4 L630		
	Thermistor (for Heat Exchanger High Temp.)	R3T	ST8605A-4 φ8 L800 20kΩ (25°C)						ST8605A-5 φ8 L1000		
	Thermistor (Heat Exchanger)	R2T	ST8602A-4 φ6 L800 20kΩ (25°C)						ST8602A-6 φ6 L1250		
Others	Float switch	S1L	FS-0211								
	Fuse	F1U	250V 5A φ5.2			250V 10A φ5.2			250V 10A		
	Transformer	T1R	TR22H21R8								

Parts Name		Symbol	Model			Remark
			FXHQ 32MVE	FXHQ 63MVE	FXHQ 100MVE	
Remote Controller	Wired Remote Controller		BRC1A61			Option
	Wireless Controller		BRC7E63W			
Motors	Fan Motor	M1F	AC 220~240V/220V 50Hz/60Hz			
			1φ63W		1φ130W	
			Thermal protector 130°C : OFF 80°C : ON			
	Capacitor for Fan Motor	C1R	3.0μF-400V		9.0μF-400V	
	Swing Motor	M1S	MT8-L[3P058751-1] AC200~240V			
Thermistors	Thermistor (Suction Air)	R1T	ST8601A-1 φ4 L250 20kΩ (25°C)			
	Thermistor (for Heat Exchanger High Temp.)	R3T	ST8605-6 φ8 L = 1250 20kΩ (25°C)		ST8605-6 φ8 L = 1250 20kΩ (25°C)	
	Thermistor (Heat Exchanger)	R2T	ST8602A-6 φ6 L = 1250 20kΩ (25°C)		ST8602A-6 φ6 L = 1250 20kΩ (25°C)	
Others	Fuse	F1U	250V 5A φ5.2			
	Transformer	T1R	TR22H21R8			

Parts Name		Symbol	Model						Remark
			FXAQ 20MVE	FXAQ 25MVE	FXAQ 32MVE	FXAQ 40MVE	FXAQ 50MVE	FXAQ 63MVE	
Remote Controller	Wired Remote Controller		BRC1A61						Option
	Wireless Remote Controller		BRC7E618						Option
Motors	Fan Motor	M1F	AC 220~240V 50Hz						
			1φ40W			1φ43W			
			Thermal protector 130°C : OFF 80°C : ON						
	Swing Motor	M1S	MP24[3SB40333-1] AC200~240V			MSFBC20C21 [3SB40550-1] AC200~240V			
Thermistors	Thermistor (Suction Air)	R1T	ST8601-2 φ4 L400 20kΩ (25°C)						
	Thermistor (for Heat Exchanger High Temp.)	R3T	ST8605-2 φ8 L400 20kΩ (25°C)						
	Thermistor (for Heat Exchanger)	R2T	ST8602-2 φ6 L400 20kΩ (25°C)						
Others	Float Switch	S1L	OPTION						
	Fuse	F1U	250V 5A φ5.2						

Parts Name		Symbol	Model						Remark
			FXLQ 20MVE	FXLQ 25MVE	FXLQ 32MVE	FXLQ 40MVE	FXLQ 50MVE	FXLQ 63MVE	
Remote Controller	Wired Remote Controller		BRC1A62						Option
	Wireless Remote Controller		BRC4C62						
Motors	Fan Motor	M1F	AC 220~240V 50Hz						
			1φ15W		1φ25W		1φ35W		
			Thermal protector 135°C : OFF 120°C : ON						
	Capacitor for Fan Motor	C1R	1.0μF-400V		0.5μF-400V	1.0μF-400V	1.5μF-400V	2.0μF-400V	
Thermistors	Thermistor (Suction Air)	R1T	ST8601-6 φ4 L1250 20kΩ (25°C)						
	Thermistor (for Heat Exchanger High Temp.)	R3T	ST8605-9 φ8 L2500 20kΩ (25°C)						
	Thermistor (for Heat Exchanger)	R2T	ST8602A-9 φ6 L2500 20kΩ (25°C)						
Others	Fuse	F1U	AC250V 5A						
	Transformer	T1R	TR22H21R8						

Parts Name		Symbol	Model						Remark
			FXNQ 20MVE	FXNQ 25MVE	FXNQ 32MVE	FXNQ 40MVE	FXNQ 50MVE	FXNQ 63MVE	
Remote Controller	Wired Remote Controller		BRC1A62						Option
	Wireless Remote Controller		BRC4C62						
Motors	Fan Motor	M1F	AC 220~240V 50Hz						
			1φ15W		1φ25W		1φ35W		
			Thermal protector 135°C : OFF 120°C : ON						
	Capacitor for Fan Motor	C1R	1.0μF-400V		0.5μF-400V	1.0μF-400V	1.5μF-400V	2.0μF-400V	
Thermistors	Thermistor (Suction Air)	R1T	ST8601-6 φ4 L1250 20kΩ (25°C)						
	Thermistor (for Heat Exchanger High Temp.)	R3T	ST8605-9 φ8 L2500 20kΩ (25°C)						
	Thermistor (for Heat Exchanger)	R2T	ST8602A-9 φ6 L2500 20kΩ (25°C)						
Others	Fuse	F1U	AC250V 5A						
	Transformer	T1R	TR22H21R8						

4. Option List

4.1 Option List of Controllers

Operation Control System Optional Accessories

No.	Item	Type	FXCQ-M	FXZQ-M	FXFQ-M	FXKQ-M	FXSQ-M	FXMQ-M	FXHQ-M	FXAQ-M	FXLQ-M FXNQ-M
1	Remote controller	Wireless	BRC7C62	BRC7E530W	BRC7E61W	BRC4C61	BRC4C62		BRC7E63W	BRC7E618	BRC4C62
		Wired	BRC1A61				BRC1A62		BRC1A61		BRC1A62
2	Set back time clock		BRC15A61								
3	Simplified remote controller		—				BRC2A51		—		BRC2A51
4	Remote controller for hotel use		—				BRC3A61		—		BRC3A61
5	Adaptor for wiring		★KRP1B61	★KRP1B57	★KRP1B59	KRP1B61			KRP1B3	—	KRP1B61
6-1	Wiring adaptor for electrical appendices (1)		★KRP2A61	★KRP2A62	★KRP2A62	KRP2A61			★KRP2A62	★KRP2A61	KRP2A61
6-2	Wiring adaptor for electrical appendices (2)		★KRP4A51	★KRP4A53	★KRP4A53	KRP4A51			★KRP4A52	★KRP4A51	KRP4A51
7	Remote sensor		KRCS01-1		—	KRCS01-1					
8	Installation box for adaptor PCB		Note 2, 3 KRP1B96	Note 2, 4 KRP1B101	Note 2, 3 KRP1D98	—	Note 4 KRP4A91	—	Note 3 KRP1C93	Note 2, 3 KRP4A93	—
9	Central remote controller		DCS302B61								
9-1	Electrical box with earth terminal (3 blocks)		KJB311A								
10	Unified on/off controller		DCS301B61								
10-1	Electrical box with earth terminal (2 blocks)		KJB212A								
10-2	Noise filter (for electromagnetic interface use only)		KEK26-1								
11	Schedule timer		DST301B61								
12	External control adaptor for outdoor unit (Must be installed on indoor units)		★ DTA104A61	★DTA104A62		DTA104A61			★ DTA104A62	★ DTA104A61	DTA104A61

Note

1. Installation box (No.8) is necessary for each adaptor marked ★.
2. Up to 2 adaptors can be fixed for each installation box.
3. Only one installation box can be installed for each indoor unit.
4. Installation box (No. 8) is necessary for second adaptor.

Various PC Boards

No.	Part name	Model No.	Function
1	Adaptor for wiring	KRP1B61 KRP1B57 KRP1B59 KRP1B3	■ PC board when equipped with auxiliary electric heater in the indoor unit.
2	DIII-NET Expander Adaptor	DTA109A51	■ Up to 1024 units can be centrally controlled in 64 different groups. ■ Wiring restrictions (max. length: 1000m, total wiring length: 2000m, max. number of branches: 16) apply to each adaptor.

System Configuration

No.	Part name	Model No.	Function
1	Central remote controller	DCS302B61	■ Up to 64 groups of indoor units (128 units)can be connected, and ON/OFF, temperature setting and monitoring can be accomplished individually or simultaneously. Connectable up to “2” controllers in one system.
2	Unified ON/OFF controller	DCS301B61	■ Up to 16 groups of indoor units (128 units) can be turned, ON/OFF individually or simultaneously, and operation and malfunction can be displayed. Can be used in combination with up to 8 controllers.
3	Schedule timer	DST301B61	■ Programmed time weekly schedule can be controlled by unified control for up to 64 groups of indoor units (128 units). Can turn units ON/OFF twice per day.
4	Unification adaptor for computerized control	★DCS302A52	■ Interface between the central monitoring board and central control units
5	Interface adaptor for SkyAir-series	★DTA102A52	■ Adaptors required to connect products other than those of the VRV System to the high-speed DIII-NET communication system adopted for the VRV System. ■ To use any of the above optional controllers, an appropriate adaptor must be installed on the product unit to be controlled.
6	Central control adaptor kit	★DTA107A55	
7	Wiring adaptor for other air-conditioner	★DTA103A51	
8	DIII-NET Expander adaptor	DTA109A51	■ Up to 1,024 units can be centrally controlled in 64 different groups. ■ Wiring restrictions (max. length : 1,000m, total wiring length : 2,000m, max. number of branches : 16) apply to each adaptor.
9	Mounting plate	KRP4A92	■ Fixing plate for DTA109A51

Note:

Installation box for ★ adaptor must be procured on site.

Building management system

No.	Part name			Model No.	Function
1	intelligent Touch Controller		Without PPD	DCS601B51	Air-Conditioning management system that can be controlled by a compact all-in-one unit. PPD: Power Proportional Distribution function New Functions: • Auto cool/heat change-over •Temperature limitation • Multilingual (English, French, German, Spanish, Italian, or Chinese)
			With PPD	DCS601B51 DCS002B51	
1-1	Electrical box with earth terminal (4blocks)			KJB411A	■ Wall embedded switch box.
2	intelligent Manager ECO 21	Number of units to be connected	128 units	DAM602A52	Air conditioner management system (featuring minimized engineering) that can be controlled by personal computers.
			192 units	DAM602A53	
			256 units	DAM602A51	
			512 units	DAM602A51x2	
			768 units	DAM602A51x3	
			1024 units	DAM602A51x4	
2-1	Optional DIII Ai unit			DAM101A51	Analog input for "sliding temperature" function (to reduce cold shock) for intelligent Manager ECO21.
3	Communication Line	BACnet Gateway		DMS502A51	Interface unit to allow communications between VRV and BMS. Operation and monitoring of air-conditioning systems through BACnet® communications.
3-1		Optional DIII board		DAM411A1	Expansion kit, installed on the BACnet Gateway (DMS502A51), to provide 3 more DIII-NET communication ports. Not usable independently.
3-2		Optional Di board		DAM412A1	Expansion kit, installed on the BACnet Gateway (DMS502A51), to provide 16 more wattmeter pulse input points. Not usable independently.
4		DMS-IF (for use in LON WORKS® networks)		DMS504B51	Interface unit to allow communications between VRV and BMS. Operation and monitoring of air-conditioning systems through LON WORKS® communication.
5	Contact/analog signal	Parallel interface	Basic unit	DPF201A51	■ Enables ON/OFF command, operation and display of malfunction; can be used in combination with up to 4 units.
6			Temperature measurement units	DPF201A52	■ Enables temperature measurement output for 4 groups; 0-5VDC.
7			Temperature setting units	DPF201A53	■ Enables temperature setting input for 16 groups; 0-5VDC.
8		Unification adaptor for computerized control		DCS302A52	■ Interface between the central monitoring board and central control units
9-1		Wiring adaptor for electrical appendices (1)		KRP2A61, 62	■ Simultaneously controls air-conditioning control computer and up to 64 groups of indoor units.
9-2		Wiring adaptor for electrical appendices (2)		KRP4A51-53	■ To control the group of indoor units collectively, which are connected by the transmission wiring of remote controller.
10		External control adaptor for outdoor unit (Must be installed on indoor units.)		DTA104A61, 62	■ Cooling/Heating mode change over. Demand control and Low noise control are available between the plural outdoor units.

LON WORKS® is a registered trade mark of Echelon Corporation.

4.2 Option Lists (Outdoor Unit)

REYQ8 ~ 16MY1B

Optional accessories		REYQ8MY1B REYQ10MY1B	REYQ12MY1B REYQ14MY1B REYQ16MY1B
Distributive Piping	Refnet header	KHRP25M33H (Max. 8 branch)	KHRP25M33H, KHRP25M72H (Max. 8 branch) (Max. 8 branch)
	Refnet joint	KHRP25M22T, KHRP25M33T	KHRP25M22T, KHRP25M33T, KHRP25M72T
Kit of air discharge duct		KPF26B280	KPF26B450
Central drain pan kit		KWC26B280	KWC26B450
Refrigerant leak detector kit		Field Supply	

3D040502A

REYQ18 ~ 32MY1B

Optional accessories		REYQ18MY1B REYQ20MY1B	REYQ22MY1B REYQ24MY1B REYQ26MY1B	REYQ28MY1B	REYQ30MY1B REYQ32MY1B
Distributive Piping	Refnet header	KHRP25M33H, KHRP25M72H, KHRP25M73H (Max. 8 branch) (Max. 8 branch) (Max. 8 branch)			
	Refnet joint	KHRP25M22T, KHRP25M33T, KHRP25M72T, KHRP25M73T			
Outdoor unit multi connection piping kit		BHFP26M90			
Pipe size reducer		KHRP25M72TP, KHRP25M72HP, KHRP25M73TP, KHRP26M73HP, BHFP22M90P			
Kit of air discharge duct		KPF26B280 × 2	KPF26B280 KPF26B450	KPF26B450 × 2	KPF26B450 × 2
Central drain pan kit		KWC26B280 × 2	KWC26B280 KWC26B450	KWC26B450 × 2	KWC26B450 × 2
Refrigerant leak detector kit		Field Supply			

3D040503B

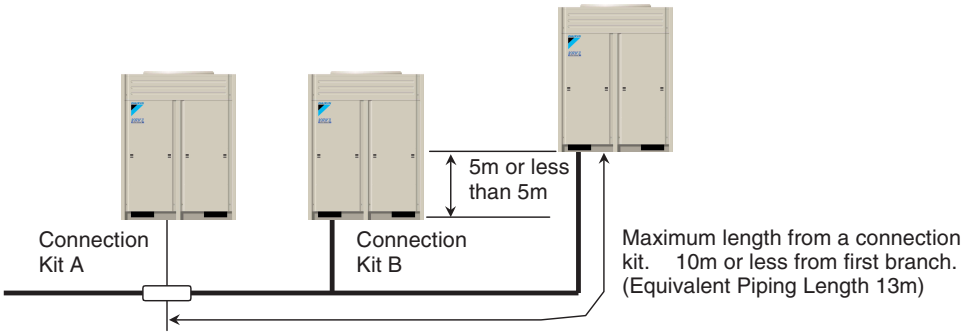
REYQ34 ~ 48MY1B

Optional accessories		REYQ34MY1B REYQ36MY1B	REYQ38MY1B	REYQ40MY1B REYQ42MY1B	REYQ44MY1B REYQ46MY1B REYQ48MY1B
Distributive Piping	Refnet header	KHRP25M33H, KHRP25M72H, KHRP25M73H (Max. 8 branch) (Max. 8 branch) (Max. 8 branch)			
	Refnet joint	KHRP25M22T, KHRP25M33T, KHRP25M72T, KHRP25M73T			
Outdoor unit multi connection piping kit		BHFP26M135			
Pipe size reducer		KHRP25M72TP, KHRP25M72HP, KHRP25M73TP, KHRP25M73HP, BHFP22M135P			
Kit of air discharge duct		KPF26B280 × 2 KPF26B450	KPF26B280 KPF26B450 × 2	KPF26B280 KPF26B450 × 2	KPF26B450 × 3
Central drain pan kit		KWC26B280 × 2 KWC26B450	KWC26B280 KWC26B450 × 2	KWC26B280 KWC26B450 × 2	KWC26B450 × 3
Refrigerant leak detector kit		Field Supply			

3D040504B

5. Piping Installation Point

5.1 Piping Installation Point



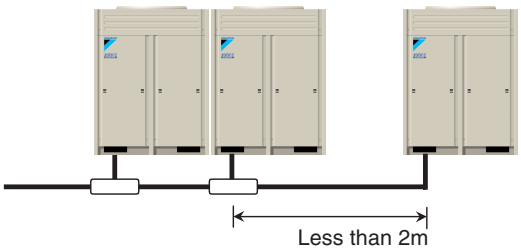
Since there is a possibility that oil may be collected on a stop machine side, install piping between outdoor units to go to level or go up to an outdoor unit, and to make a slope.

(V3036)

The projection part between multi connection piping kits

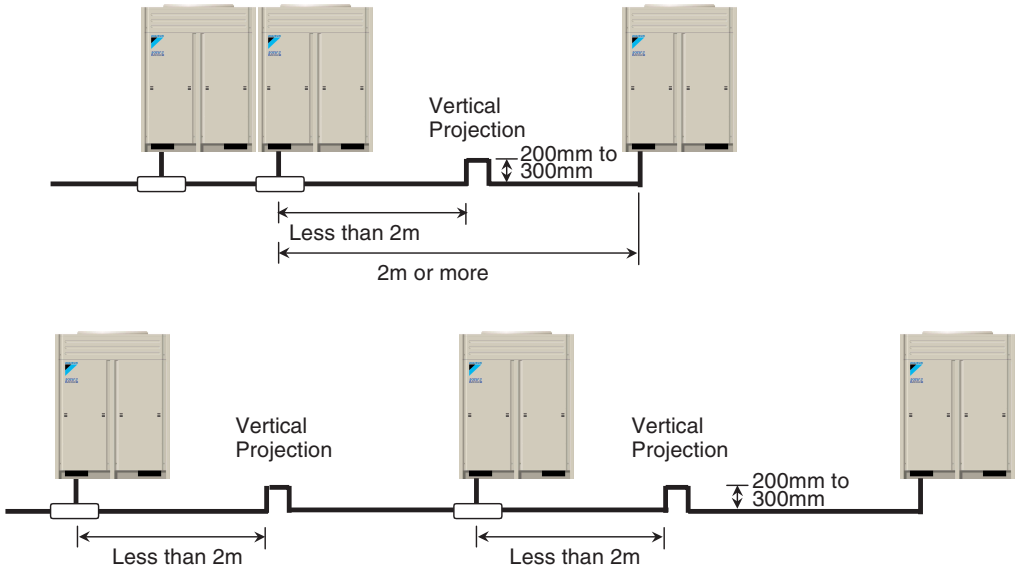
When the piping length between the multi connection kits or between multi connection kit and outdoor unit is 2m or more, prepare a vertical projection part (200mm or more as shown below) only on the gas pipe line location less than 2m from multi connection kit.

In the case of 2m or less



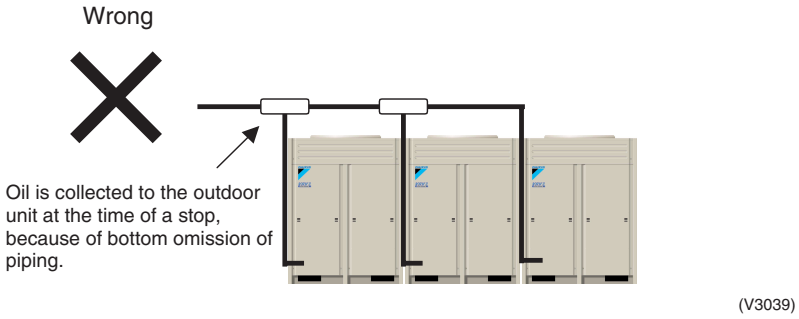
(V3037)

In the case of 2m or more

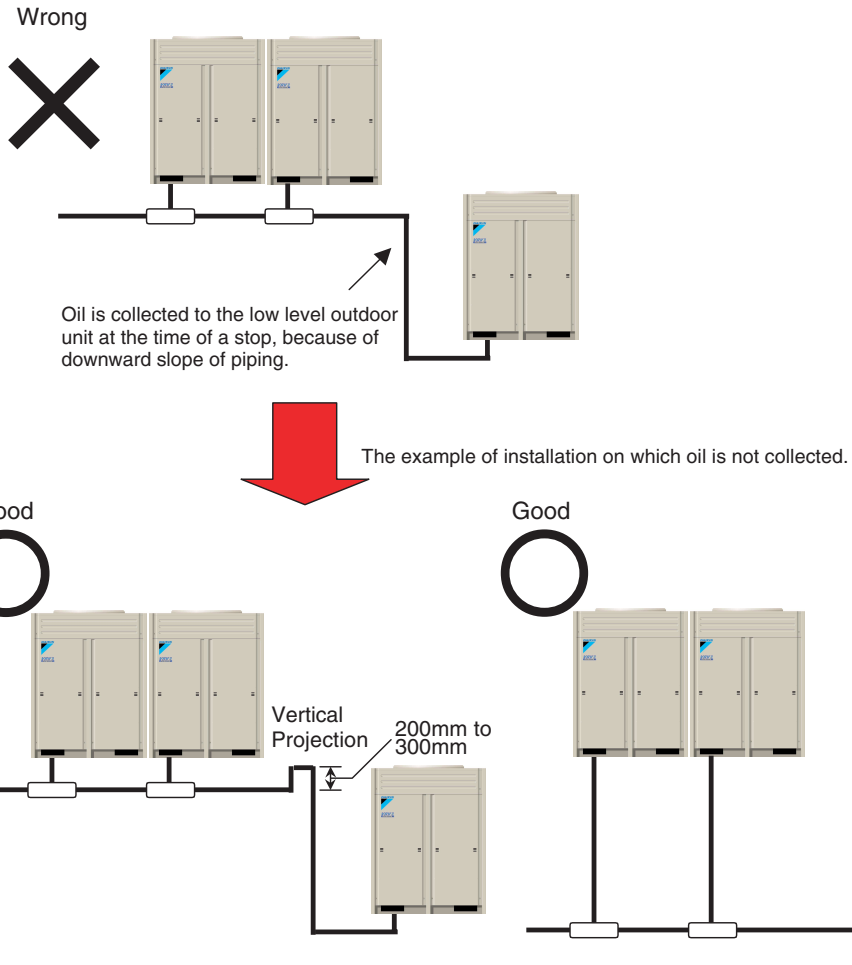


(V3038)

5.2 The Example of a Wrong Pattern



(V3039)



(V3040)

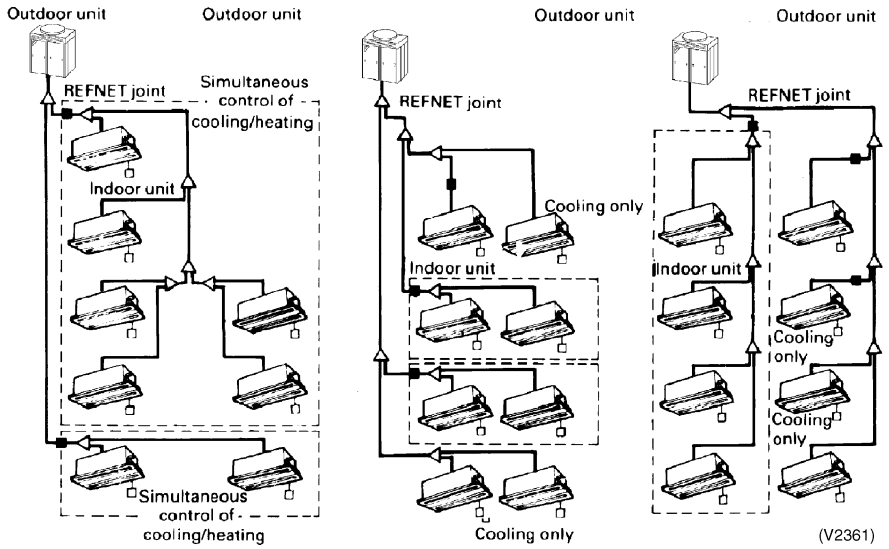
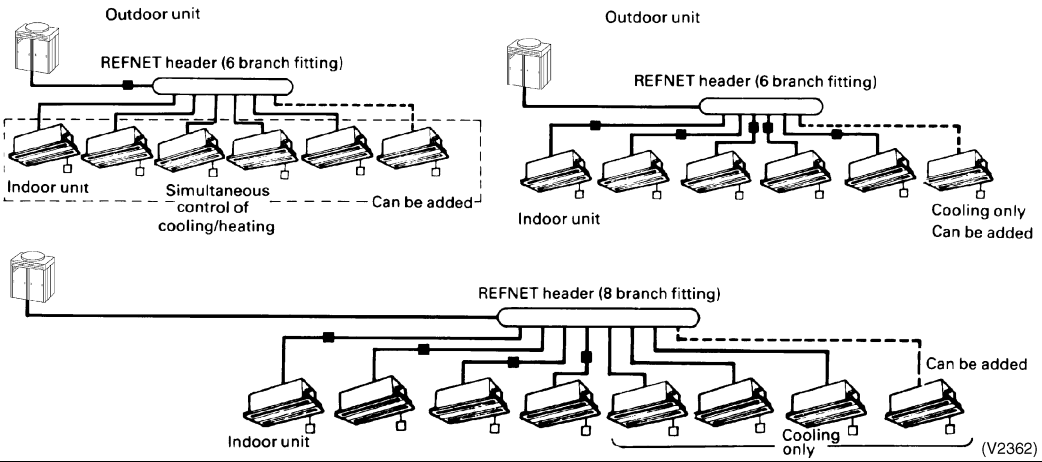
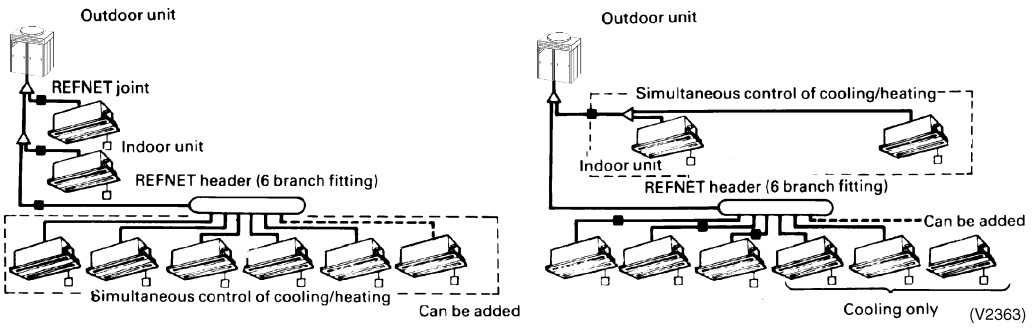
Max.allowable Piping Length	Outdoor Unit - Multi Connection Piping Kit	Actual piping length 10m or less, equivalent length 13m or less
	Multi Connection Piping Kit - Indoor Unit	Actual piping length 150m or less, equivalent length 175m or less, the total extension 300m or less
	REFNET Joint - Indoor Unit	Actual piping length 40m or less
Allowable Level Difference	Outdoor Unit - Outdoor Unit	5m or less
	Outdoor Unit - Indoor Unit	50m or less (when an outdoor unit is lower than indoor units : 40m or less)
	Indoor Unit - Indoor Unit	15m or less

6. REFNET Pipe System

6.1 Layout Example

Heat Recovery System

Use of the particular branch fitting appropriate to each individual unit type not only permits the pipes to be laid with ease but also increases the reliability of the system as a whole.

Type of fitting	Sample systems
Distribution by REFNET joints	
Distribution by REFNET header	
Combination of REFNET joints and headers	

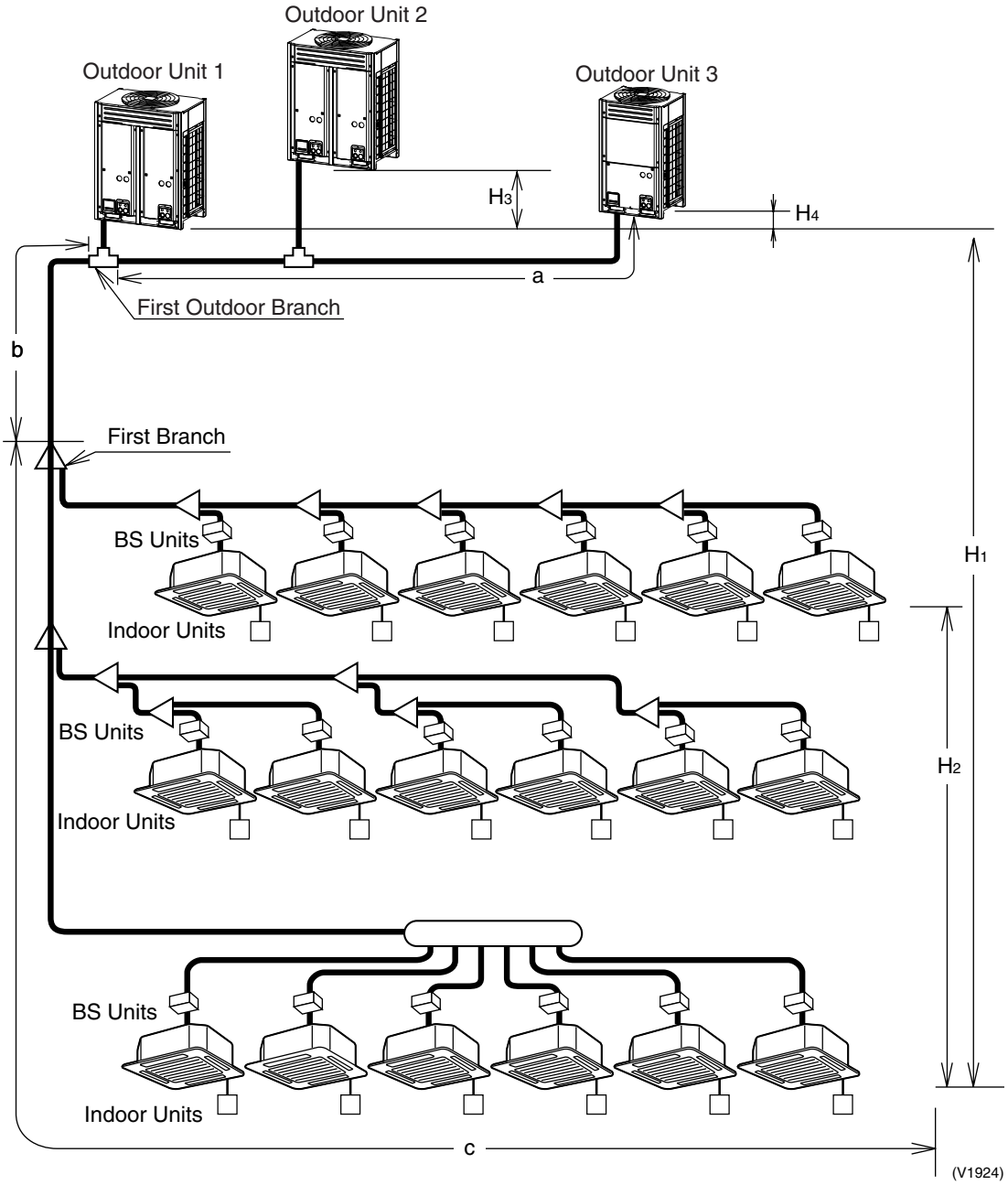
Units can be added by connecting them directly to the REFNET header or REFNET joint. Further branches cannot be included in the system below the REFNET header branch.

Notes

When the capacity ratio of the indoor system to the outdoor unit is more than 100% and when all the indoor units are in operation at the same time then the rated capacity of each unit will be somewhat reduced.

Special purpose REFNET pipe components must be used for all the pipe work. For further details concerning choice of components, types of components, etc.

6.2 Max. Refrigerant Piping Length



■ **Max. Refrigerant Piping Length (Actual Piping Length)**

	First outdoor Branch ~ Outdoor units [a]	First Branch ~ Indoor Units [c]	Outdoor Units ~ Indoor Units [b+c]
Max. Refrigerant Piping Length (m)	10m or less than 10m	40m or less than 40m	150m or less than 150m

■ **Total Extension length**
Total Piping length from outdoor unit to all indoor units ≤300m

■ **Max. Level Difference**

	Outdoor Units ~ Indoor Units [H_1]	Between the Indoor Units [H_2]	Between the Indoor Units [H_3 , H_4]
Max. Level Difference (m)	50m or less than 50m Note 3	15m or less than 15m	5m or less than 5m

Notes:

1. Be sure to use a REFNET Piping Kit for the branch of piping.
2. A Branch Part can not be installed to the down flow of the REFNET Header.
3. If the outdoor unit is located under the indoor unit, the level difference is a maximum of 40m.

6.3 Example of Connection (R410A Type)

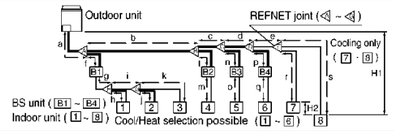
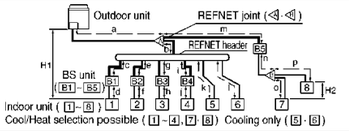
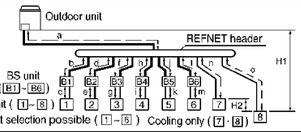
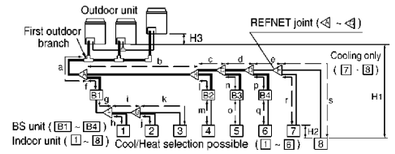
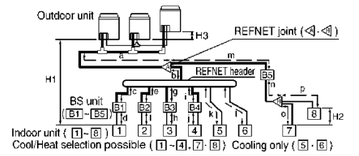
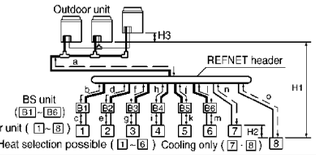
REYQ8-48M (Heat Recovery)

1 indoor unit
A refnet joint
refnet header

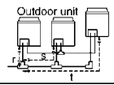
(3 pipes) (2 pipes)
Outdoor unit side — Discharge gas pipe, Suction gas pipe, Liquid pipe — BS unit — Gas pipe, Liquid pipe — Indoor unit side

Piping from BS unit to Indoor Unit and Piping from Refrigerant branch kit to indoor unit used as cooling only must be composed by 2 pipes(Suction Gas pipe and Ligud pipe)

*If the system capacity is REYQ 18 or more,re-read to the first outdoor brarch as seen from the indoor unit.

			Branch with refnet joint	Branch with refnet joint and refnet header	Branch with refnet header
		One outdoor unit installed (REYQ8~16)			
		When multiple outdoor units installed (REYQ18~)			

Maximum allowable length	Between outdoor and indoor units	Actual pipe length	Pipe length between outdoor and indoor units ≤ 150m	
			Example unit 8: a + b + c + d + e + s ≤ 150m	Example unit 6: a + b + l ≤ 150m, unit 8: a + m+n+p ≤ 150m / Example unit 8: a + o ≤ 150m
		Equivalent length	Equivalent pipe length between outdoor and indoor units ≤ 175m (assume equivalent pipe length of refnet joint to be 0.5m, that of refnet header to be 1m, that of BSVQ100,160 to be 4m, that of BSVQ250 to be 6m calculation purposes)	
		Total extension length	Total piping length from outdoor unit* to all indoor units ≤ 300m	
	Between outdoor branch and Outdoor unit (Only for REYQ18 or more)	Actual pipe length	Piping length from outdoor branch to outdoor unit ≤ 10m Equivalent length: max 13m	
Allowable height length	Between outdoor and indoor units	Difference in height	Difference in height between outdoor and indoor units (H1) ≤ 50m (Max 40m if the outdoor unit is below)	
	Between indoor and indoor units	Difference in height	Difference in height between adjacent indoor unit (H2) ≤ 15m	
	Between outdoor and outdoor units	Difference in height	Difference in height between outdoor unit (main) and outdoor unit (sub) (H3) ≤ 5m	
Allowable length after the branch		Actual pipe length	Pipe length from first refrigerant branch kit (either refnet joint or refnet header) to indoor unit ≤ 40m	
			Example unit 8: a + b + c + d + e + s ≤ 40m / Example unit 6: b + l ≤ 40m, unit 8: m+n+p ≤ 40m / Example unit 8: o ≤ 40m	



r ≤ 10m (Equivalent length: max 13m)
s ≤ 10m (Equivalent length: max 13m)
l ≤ 10m (Equivalent length: max 13m)

Refrigerant branch kit selection

Refrigerant branch kits can only be used with R410A.

How to select the refnet joint
- When using refnet joints at the first branch counted from the outdoor unit side. Choose from the following table in accordance with the capacity of the outdoor unit.

Outdoor unit capacity type	Refrigerant branch kit name
REYQ8, 10 type	KHRP25M33T
REYQ12~22 type	KHRP25M72T + KHRP25M72TP
REYQ24 type ~	KHRP25M73T + KHRP25M73TP

- For refnet joints other than the first branch, select the proper branch kit model based on the total capacity index.

indoor capacity index	Refrigerant branch kit name	
	In case of 3 pipes	In case of 2 pipes
< 200	KHRP25M22T	KHRP26M22T
200 ≤ x< 290	KHRP25M33T	KHRP26M33T
290 ≤ x< 640	KHRP25M72T + KHRP25M72TP	KHRP26M72T
640 <	KHRP25M73T + KHRP25M73TP	KHRP26M73T + KHRP26M73TP

How to select the refnet header
- Choose from the following table in accordance with the total capacity of all the indoor units connected below the REFNET header.
- Note: 250 type cannot be connected below the REFNET header.

indoor capacity index	Refrigerant branch kit name	
	In case of 3 pipes	In case of 2 pipes
< 200	KHRP25M33H	KHRP26M22H or KHRP26M33H
200 ≤ x< 290		KHRP26M33H
290 ≤ x< 640	KHRP25M72H + KHRP25M72HP	KHRP26M72H
640 <	KHRP25M73H + KHRP25M73HP	KHRP26M73H + KHRP26M73HP

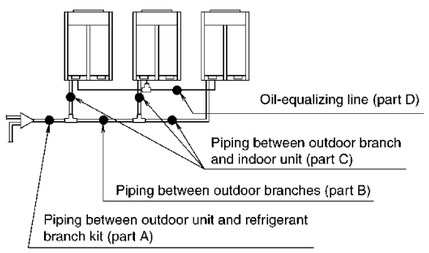
How to choose an outdoor branch kit (needed if the outdoor unit capacity type is REYQ18 or more.)
Choose from the following table in accordance with the number of outdoor units.

Number of outdoor units	Branch kit name
2 unit	BHFP26M90 + BHFP22M90P
3 unit	BHFP26M135 + BHFP22M135P

Example of downstream indoor units	example in case of refnet joint C; indoor units 5 + 6 + 7 + 8	example in case of refnet joint B indoor units 7 + 8, example in case of refnet header; indoor units 1 + 2 + 3 + 4 + 5 + 6	example in the case of refnet header; indoor units 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8

Pipe size selection

For an outdoor unit multi installation (REYQ18~48MY1B), make the settings in accordance with the following figure.



Piping between outdoor unit and refrigerant branch kit (part A)
- Match to the size of the connection piping on the outdoor unit.

(Unit:mm)

Outdoor unit capacity type	Piping size (outer diameter x minimum thickness)		
	Liquid pipe	Gas pipe	
		Suction	Discharge
REYQ8 type	ϕ9.5 × 0.80	ϕ19.1 × 0.80	ϕ15.9 × 0.99
REYQ10 type		ϕ22.2 × 0.80	ϕ19.1 × 0.80
REYQ12 type	ϕ12.7 × 0.80	ϕ28.6 × 0.99	
REYQ14, 16 type			ϕ22.2 × 0.80
REYQ18 type	ϕ15.9 × 0.99		
REYQ20, 22 type			ϕ28.6 × 0.99
REYQ24 type		ϕ34.9 × 1.21	
REYQ26~34 type	ϕ19.1 × 0.80		
REYQ36 type		ϕ41.3 × 1.43	
REYQ38~48 type			ϕ34.9 × 1.21

Pipe size, when overall equivalent pipe length is 90m or more.
- When overall equivalent pipe length is 90m or more, the size of the main liquid pipe (outdoor unit-branch sections) must be increased. (Only main liquid pipe!)

Main liquid pipe size (Unit:mm)

Outdoor unit capacity type	Piping size (outer diameter x minimum thickness)	
	Nomal size	Size up
REYQ8, 10 type	ϕ9.5 × 0.80	ϕ12.7 × 0.80
REYQ12, 14, 16 type	ϕ12.7 × 0.80	ϕ15.9 × 0.99
REYQ18~24 type	ϕ15.9 × 0.99	ϕ19.1 × 0.80
REYQ26~48 type	ϕ19.1 × 0.80	ϕ22.2 × 0.80

Piping between outdoor branches (part B)
- Choose from the following table in accordance with the total capacity of all the outdoor units connected above this.

(Unit:mm)

outdoor capacity index	Piping size (outer diameter x minimum thickness)		
	Liquid pipe	Gas pipe	
		Suction	Discharge
REYQ18 type	ϕ15.9 × 0.99	ϕ28.6 × 0.99	ϕ22.2 × 0.80
REYQ20, 22 type			ϕ28.6 × 0.99
REYQ24 type		ϕ34.9 × 1.21	
REYQ26 type ~	ϕ19.1 × 0.80		

Between two immediately adjacent refrigerant branch kits and BS unit
- Choose from the following table in accordance with the total capacity of all the indoor units connected below this.
- Do not let the connection piping exceed the refrigerant piping size chosen by general system model name.

(Unit:mm)

indoor capacity index	Piping size (outer diameter x minimum thickness)		
	Liquid pipe	Gas pipe	
		Suction	Discharge
* < 62.5	ϕ6.4 × 0.80	ϕ12.7 × 0.80	ϕ9.5 × 0.80
62.5 ≤ x< 200	ϕ9.5 × 0.80	ϕ15.9 × 0.99	ϕ12.7 × 0.80
200 ≤ x< 290		ϕ22.2 × 0.80	ϕ19.1 × 0.80
290 ≤ x< 420	ϕ12.7 × 0.80	ϕ28.6 × 0.99	
420 ≤ x< 640	ϕ15.9 × 1.00		ϕ28.6 × 0.99
640 ≤ x< 920	ϕ19.1 × 0.80	ϕ34.9 × 1.21	
920 ≤		ϕ41.3 × 1.43	

- When two lines are connected between two adjacent refrigerant branch kits,select the proper gas line size based on data mentioned under 'Suction gas line' column in the table above.

Piping between outdoor branch and outdoor unit (part C) (Unit:mm)

outdoor capacity type	Piping size (outer diameter x minimum thickness)		
	Liquid pipe	Gas pipe	
		Suction	Discharge
REYQ8 type	ϕ9.5 × 0.80	ϕ19.1 × 0.80	ϕ15.9 × 0.99
REYQ10 type		ϕ22.2 × 0.80	ϕ19.1 × 0.80
REYQ12 type	ϕ12.7 × 0.80	ϕ28.6 × 0.99	
REYQ14, 16 type			ϕ22.2 × 0.80

Oil-equalizing line (Only for REYQ18 or more) (part D) (Unit:mm)

Piping size (outer diameter x minimum thickness)	ϕ6.4 × 0.80

Between BS unit (refrigerant branch kit) and indoor unit
- Pipe size for direct connection to indoor unit must be the same as the connection size of indoor unit.

(Unit:mm)

indoor capacity index	Piping size (outer diameter x minimum thickness)	
	Gas pipe	Liquid pipe
* 20, 25, 32, 40, 50 type	ϕ12.7 × 0.80	ϕ6.4 × 0.80
63, 80, 100, 125 type	ϕ15.9 × 0.99	ϕ9.5 × 0.80
200 type	ϕ19.1 × 0.80	
250 type	ϕ22.2 × 0.80	

* mark indicates the BS unit (BSVQ100MV1) port and connection pipe are different sizes.
Use the reducing joints included with the BS unit.

How to calculate the additional refrigerant to be charged

Additional refrigerant to be charged R (Kg)
R should be rounded off in units of 0.1Kg.

NOTE:
If a negative result is gotten for R from the formula at right, no refrigerant needs to be added.

$$R=\left\{\left(\begin{array}{c}\text{Total length (m)}\\ \text{of liquid piping}\\ \text{size at } \phi 22.2\end{array}\right)\times 0.35+\left(\begin{array}{c}\text{Total length (m)}\\ \text{of liquid piping}\\ \text{size at } \phi 19.1\end{array}\right)\times 0.25+\left(\begin{array}{c}\text{Total length (m)}\\ \text{of liquid piping}\\ \text{size at } \phi 15.9\end{array}\right)\times 0.17+\left(\begin{array}{c}\text{Total length (m)}\\ \text{of liquid piping}\\ \text{size at } \phi 12.7\end{array}\right)\times 0.11+\left(\begin{array}{c}\text{Total length (m)}\\ \text{of liquid piping}\\ \text{size at } \phi 9.5\end{array}\right)\times 0.054+\left(\begin{array}{c}\text{Total length (m)}\\ \text{of liquid piping}\\ \text{size at } \phi 6.4\end{array}\right)\times 0.022\right\}\times 1.15-$$

Model name	Amount of refrigerant
REYQ5~16MY1B	0 kg
REYQ18~32MY1B	3 kg
REYQ34~48MY1B	6 kg

Example for refrigerant branch using refnet joint and refnet header for REYQ34MY1B

If the outdoor unit is REYQ34MY1B and the piping lengths are as at right

a: ϕ19.1 × 30m	d: ϕ9.5 × 10m	g: ϕ 6.4 × 10m
b: ϕ15.9 × 10m	e: ϕ9.5 × 10m	h: ϕ 6.4 × 20m
c: ϕ 9.5 × 10m	f : ϕ9.5 × 10m	i : ϕ12.7 × 10m

j : ϕ 6.4 × 10m
k: ϕ 6.4 × 9m

$$R=\{30\times 0.25+10\times 0.17+10\times 0.11+40\times 0.054+49\times 0.022\}\times 1.15-6=9.569$$

a b i c+d+e+f g+h+j+k → 9.6

7. Thermistor Resistance / Temperature Characteristics

Indoor unit	For air suction	R1T
	For liquid pipe	R2T
	For gas pipe	R3T
Outdoor unit	For outdoor air	R1T
	For suction pipe	R2T
	For coil	R4T
	For sub cooling heat exchanger	R5T
	For receiver outlet	R6T
	For oil equalizing	R7T
	For main heat exchanger gas pipe	R81T
	For sub heat exchanger gas pipe	R82T

Outdoor unit For fin R1T

(kΩ)

T°C	0.0
-10	—
-8	—
-6	88.0
-4	79.1
-2	71.1
0	64.1
2	57.8
4	52.3
6	47.3
8	42.9
10	38.9
12	35.3
14	32.1
16	29.2
18	26.6
20	24.3
22	22.2
24	20.3
26	18.5
28	17.0
30	15.6
32	14.2
34	13.1
36	12.0
38	11.1
40	10.3
42	9.5
44	8.8
46	8.2
48	7.6
50	7.0
52	6.7
54	6.0
56	5.5
58	5.2

(kΩ)

T°C	0.0	0.5
-20	197.81	192.08
-19	186.53	181.16
-18	175.97	170.94
-17	166.07	161.36
-16	156.80	152.38
-15	148.10	143.96
-14	139.94	136.05
-13	132.28	128.63
-12	125.09	121.66
-11	118.34	115.12
-10	111.99	108.96
-9	106.03	103.18
-8	100.41	97.73
-7	95.14	92.61
-6	90.17	87.79
-5	85.49	83.25
-4	81.08	78.97
-3	76.93	74.94
-2	73.01	71.14
-1	69.32	67.56
0	65.84	64.17
1	62.54	60.96
2	59.43	57.94
3	56.49	55.08
4	53.71	52.38
5	51.09	49.83
6	48.61	47.42
7	46.26	45.14
8	44.05	42.98
9	41.95	40.94
10	39.96	39.01
11	38.08	37.18
12	36.30	35.45
13	34.62	33.81
14	33.02	32.25
15	31.50	30.77
16	30.06	29.37
17	28.70	28.05
18	27.41	26.78
19	26.18	25.59
20	25.01	24.45
21	23.91	23.37
22	22.85	22.35
23	21.85	21.37
24	20.90	20.45
25	20.00	19.56
26	19.14	18.73
27	18.32	17.93
28	17.54	17.17
29	16.80	16.45
30	16.10	15.76

(kΩ)

T°C	0.0	0.5
30	16.10	15.76
31	15.43	15.10
32	14.79	14.48
33	14.18	13.88
34	13.59	13.31
35	13.04	12.77
36	12.51	12.25
37	12.01	11.76
38	11.52	11.29
39	11.06	10.84
40	10.63	10.41
41	10.21	10.00
42	9.81	9.61
43	9.42	9.24
44	9.06	8.88
45	8.71	8.54
46	8.37	8.21
47	8.05	7.90
48	7.75	7.60
49	7.46	7.31
50	7.18	7.04
51	6.91	6.78
52	6.65	6.53
53	6.41	6.53
54	6.65	6.53
55	6.41	6.53
56	6.18	6.06
57	5.95	5.84
58	5.74	5.43
59	5.14	5.05
60	4.96	4.87
61	4.79	4.70
62	4.62	4.54
63	4.46	4.38
64	4.30	4.23
65	4.16	4.08
66	4.01	3.94
67	3.88	3.81
68	3.75	3.68
69	3.62	3.56
70	3.50	3.44
71	3.38	3.32
72	3.27	3.21
73	3.16	3.11
74	3.06	3.01
75	2.96	2.91
76	2.86	2.82
77	2.77	2.72
78	2.68	2.64
79	2.60	2.55
80	2.51	2.47

Outdoor Unit Thermistors for Discharge Pipe (R31, 32, 33T)

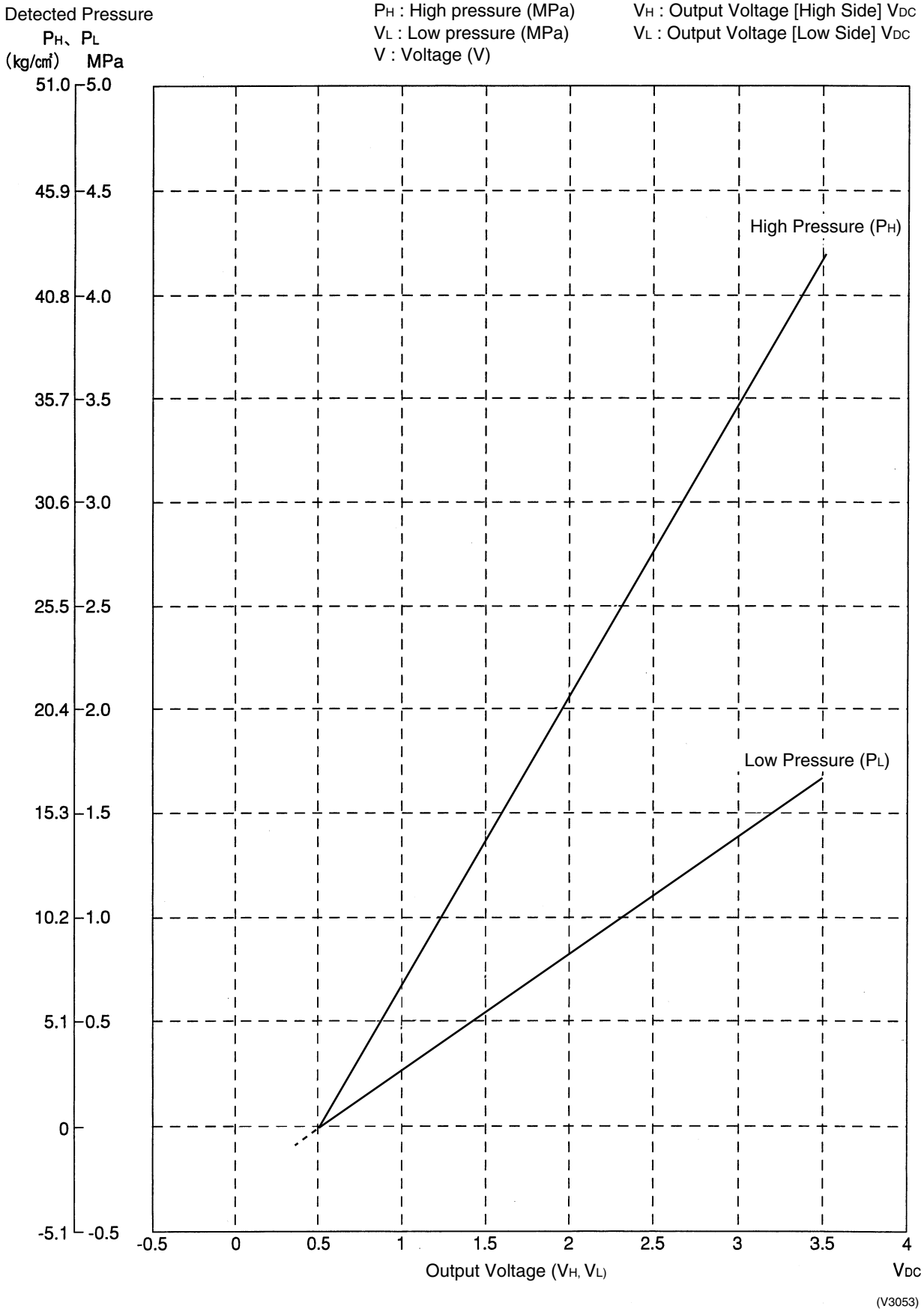
(kΩ))

T°C	0.0	0.5	T°C	0.0	0.5	T°C	0.0	0.5
0	640.44	624.65	50	72.32	70.96	100	13.35	13.15
1	609.31	594.43	51	69.64	68.34	101	12.95	12.76
2	579.96	565.78	52	67.06	65.82	102	12.57	12.38
3	552.00	538.63	53	64.60	63.41	103	12.20	12.01
4	525.63	512.97	54	62.24	61.09	104	11.84	11.66
5	500.66	488.67	55	59.97	58.87	105	11.49	11.32
6	477.01	465.65	56	57.80	56.75	106	11.15	10.99
7	454.60	443.84	57	55.72	54.70	107	10.83	10.67
8	433.37	423.17	58	53.72	52.84	108	10.52	10.36
9	413.24	403.57	59	51.98	50.96	109	10.21	10.06
10	394.16	384.98	60	49.96	49.06	110	9.92	9.78
11	376.05	367.35	61	48.19	47.33	111	9.64	9.50
12	358.88	350.62	62	46.49	45.67	112	9.36	9.23
13	342.58	334.74	63	44.86	44.07	113	9.10	8.97
14	327.10	319.66	64	43.30	42.54	114	8.84	8.71
15	312.41	305.33	65	41.79	41.06	115	8.59	8.47
16	298.45	291.73	66	40.35	39.65	116	8.35	8.23
17	285.18	278.80	67	38.96	38.29	117	8.12	8.01
18	272.58	266.51	68	37.63	36.98	118	7.89	7.78
19	260.60	254.72	69	36.34	35.72	119	7.68	7.57
20	249.00	243.61	70	35.11	34.51	120	7.47	7.36
21	238.36	233.14	71	33.92	33.35	121	7.26	7.16
22	228.05	223.08	72	32.78	32.23	122	7.06	6.97
23	218.24	213.51	73	31.69	31.15	123	6.87	6.78
24	208.90	204.39	74	30.63	30.12	124	6.69	6.59
25	200.00	195.71	75	29.61	29.12	125	6.51	6.42
26	191.53	187.44	76	28.64	28.16	126	6.33	6.25
27	183.46	179.57	77	27.69	27.24	127	6.16	6.08
28	175.77	172.06	78	26.79	26.35	128	6.00	5.92
29	168.44	164.90	79	25.91	25.49	129	5.84	5.76
30	161.45	158.08	80	25.07	24.66	130	5.69	5.61
31	154.79	151.57	81	24.26	23.87	131	5.54	5.46
32	148.43	145.37	82	23.48	23.10	132	5.39	5.32
33	142.37	139.44	83	22.73	22.36	133	5.25	5.18
34	136.59	133.79	84	22.01	21.65	134	5.12	5.05
35	131.06	128.39	85	21.31	20.97	135	4.98	4.92
36	125.79	123.24	86	20.63	20.31	136	4.86	4.79
37	120.76	118.32	87	19.98	19.67	137	4.73	4.67
38	115.95	113.62	88	19.36	19.05	138	4.61	4.55
39	111.35	109.13	89	18.75	18.46	139	4.49	4.44
40	106.96	104.84	90	18.17	17.89	140	4.38	4.32
41	102.76	100.73	91	17.61	17.34	141	4.27	4.22
42	98.75	96.81	92	17.07	16.80	142	4.16	4.11
43	94.92	93.06	93	16.54	16.29	143	4.06	4.01
44	91.25	89.47	94	16.04	15.79	144	3.96	3.91
45	87.74	86.04	95	15.55	15.31	145	3.86	3.81
46	84.38	82.75	96	15.08	14.85	146	3.76	3.72
47	81.16	79.61	97	14.62	14.40	147	3.67	3.62
48	78.09	76.60	98	14.18	13.97	148	3.58	3.54
49	75.14	73.71	99	13.76	13.55	149	3.49	3.45
50	72.32	70.96	100	13.35	13.15	150	3.41	3.37

8. Pressure Sensor

$P_H = 1.38V-0.69$
$P_L = 0.57V-0.28$
P_H : High pressure (MPa)
V_L : Low pressure (MPa)
V : Voltage (V)

P_H : Detected Pressure [High Side] MPa
P_L : Detected Pressure [Low Side] MPa
V_H : Output Voltage [High Side] V_{DC}
V_L : Output Voltage [Low Side] V_{DC}

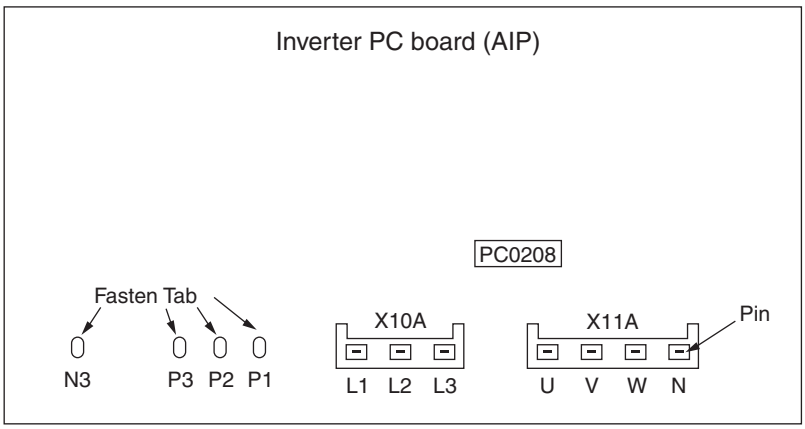


(V3053)

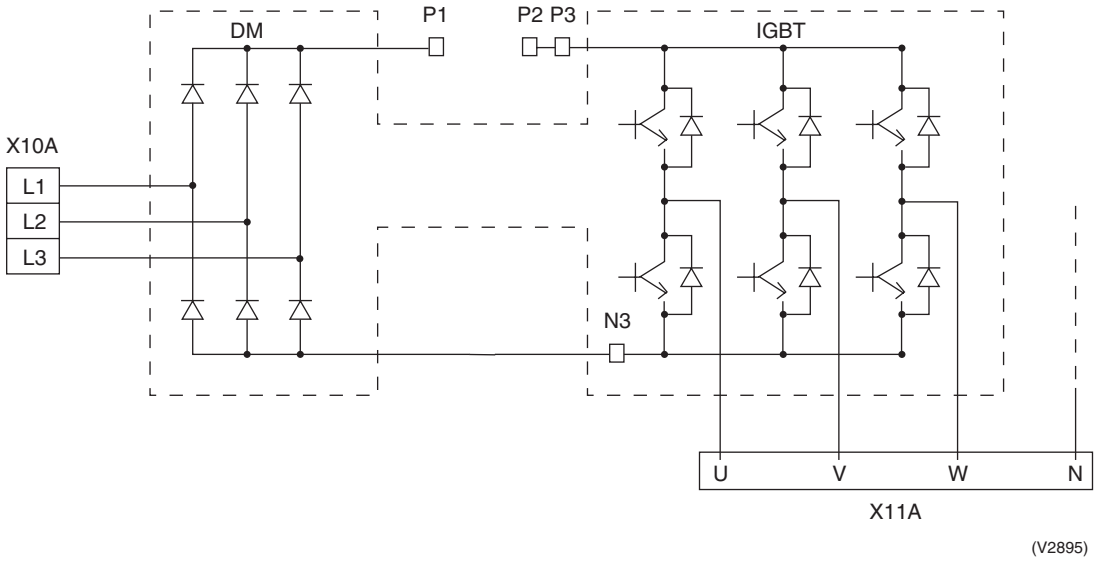
9. Method of Replacing The Inverter's Power Transistors and Diode Modules

9.1 Method of Replacing the Inverter's Power Transistors and Diode Modules

Inverter P.C.Board



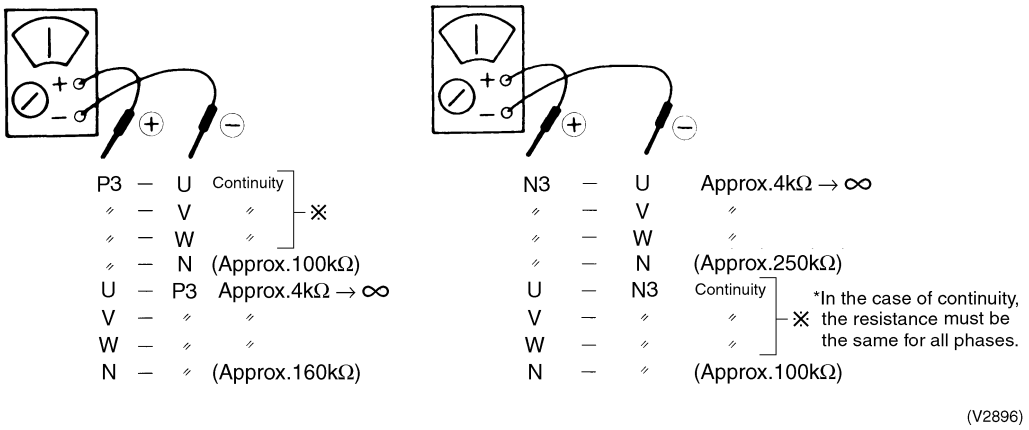
Electronic circuit



[Decision according to continuity check by analog tester]

■ Before checking, disconnect the electric wiring connected to the power transistor and diode module.

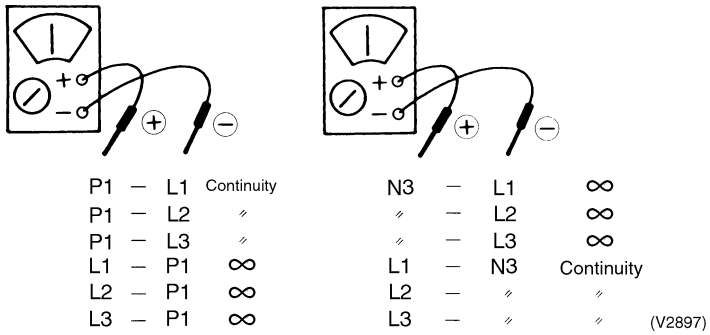
Power Transistor IGBT (On Inverter PC Board)



(Decision)
If other than given above, the power unit is defective and must be replaced.

Notes: If using a digital tester, ∞ and continuity may be reversed.

Diode Module



(Decision)
If other than given above, the diode module is defective and must be replaced.

Notes: If using a digital tester, ∞ and continuity may be reversed.

Part 9
Precautions for New Refrigerant (R410)

1. Precautions for New Refrigerant (R410)

1.1 Outline

1.1.1 About Refrigerant R410A

■ Characteristics of new refrigerant, R410A

1. Performance
   Almost the same performance as R22 and R407C
2. Pressure
   Working pressure is approx. 1.4 times more than R22 and R407C.
3. Refrigerant composition
   Few problems in composition control, since it is a Quasi-azeotropic mixture refrigerant.

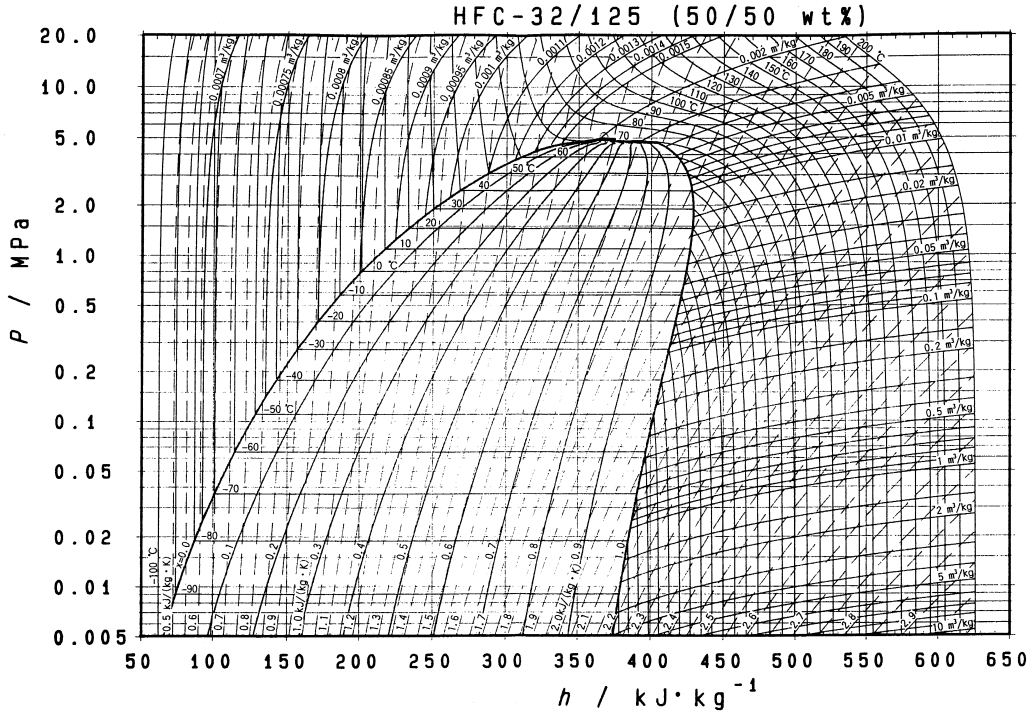
	HFC units (Units using new refrigerants)		HCFC units
Refrigerant name	R407C	R410A	R22
Composing substances	Non-azeotropic mixture of HFC32, HFC125 and HFC134a (*1)	Quasi-azeotropic mixture of HFC32 and JFC125 (*1)	Single-component refrigerant
Design pressure	3.2 MPa (gauge pressure) = 32.6 kgf/cm^2	3.80 MPa (gauge pressure) = 38.7 kgf/cm^2	2.75MPa (gauge pressure) = 28.0 kgf/cm^2
Refrigerant oil	Synthetic oil (Ether)		Mineral oil (Suniso)
Ozone destruction factor (ODP)	0	0	0.05
Combustibility	None	None	None
Toxicity	None	None	None

★1. Non-azeotropic mixture refrigerant: mixture of two or more refrigerants having different boiling points.

★2. Quasi-azeotropic mixture refrigerant: mixture of two or more refrigerants having similar boiling points.

★3. The design pressure is different at each product. Please refer to the installation manual for each product.

(Reference) 1 MPa ≒ 10.19716 kgf / cm^2



Pressure-Enthalpy curves of HFC-32/125 (50/50wt%)

■ Thermodynamic characteristic of R410A

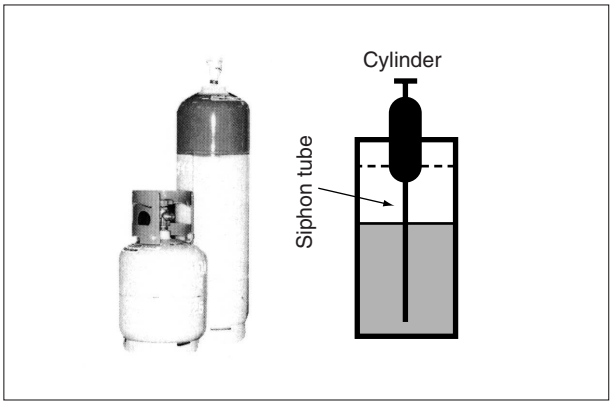
DAIREP ver2.0

Temperature (℃)	Steam pressure (kPa)		Density (kg/m³)		Specific heat at constant pressure (kJ/kgK)		Specific enthalpy (kJ/kg)		Specific entropy (kJ/KgK)	
	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor	Liquid	Vapor
-70	36.13	36.11	1410.7	1.582	1.372	0.695	100.8	390.6	0.649	2.074
-68	40.83	40.80	1404.7	1.774	1.374	0.700	103.6	391.8	0.663	2.066
-66	46.02	45.98	1398.6	1.984	1.375	0.705	106.3	393.0	0.676	2.058
-64	51.73	51.68	1392.5	2.213	1.377	0.710	109.1	394.1	0.689	2.051
-62	58.00	57.94	1386.4	2.463	1.378	0.715	111.9	395.3	0.702	2.044
-60	64.87	64.80	1380.2	2.734	1.379	0.720	114.6	396.4	0.715	2.037
-58	72.38	72.29	1374.0	3.030	1.380	0.726	117.4	397.6	0.728	2.030
-56	80.57	80.46	1367.8	3.350	1.382	0.732	120.1	398.7	0.741	2.023
-54	89.49	89.36	1361.6	3.696	1.384	0.737	122.9	399.8	0.754	2.017
-52	99.18	99.03	1355.3	4.071	1.386	0.744	125.7	400.9	0.766	2.010
-51.58	101.32	101.17	1354.0	4.153	1.386	0.745	126.3	401.1	0.769	2.009
-50	109.69	109.51	1349.0	4.474	1.388	0.750	128.5	402.0	0.779	2.004
-48	121.07	120.85	1342.7	4.909	1.391	0.756	131.2	403.1	0.791	1.998
-46	133.36	133.11	1336.3	5.377	1.394	0.763	134.0	404.1	0.803	1.992
-44	146.61	146.32	1330.0	5.880	1.397	0.770	136.8	405.2	0.816	1.987
-42	160.89	160.55	1323.5	6.419	1.401	0.777	139.6	406.2	0.828	1.981
-40	176.24	175.85	1317.0	6.996	1.405	0.785	142.4	407.3	0.840	1.976
-38	192.71	192.27	1310.5	7.614	1.409	0.792	145.3	408.3	0.852	1.970
-36	210.37	209.86	1304.0	8.275	1.414	0.800	148.1	409.3	0.864	1.965
-34	229.26	228.69	1297.3	8.980	1.419	0.809	150.9	410.2	0.875	1.960
-32	249.46	248.81	1290.6	9.732	1.424	0.817	153.8	411.2	0.887	1.955
-30	271.01	270.28	1283.9	10.53	1.430	0.826	156.6	412.1	0.899	1.950
-28	293.99	293.16	1277.1	11.39	1.436	0.835	159.5	413.1	0.911	1.946
-26	318.44	317.52	1270.2	12.29	1.442	0.844	162.4	414.0	0.922	1.941
-24	344.44	343.41	1263.3	13.26	1.448	0.854	165.3	414.9	0.934	1.936
-22	372.05	370.90	1256.3	14.28	1.455	0.864	168.2	415.7	0.945	1.932
-20	401.34	400.06	1249.2	15.37	1.461	0.875	171.1	416.6	0.957	1.927
-18	432.36	430.95	1242.0	16.52	1.468	0.886	174.1	417.4	0.968	1.923
-16	465.20	463.64	1234.8	17.74	1.476	0.897	177.0	418.2	0.980	1.919
-14	499.91	498.20	1227.5	19.04	1.483	0.909	180.0	419.0	0.991	1.914
-12	536.58	534.69	1220.0	20.41	1.491	0.921	182.9	419.8	1.003	1.910
-10	575.26	573.20	1212.5	21.86	1.499	0.933	185.9	420.5	1.014	1.906
-8	616.03	613.78	1204.9	23.39	1.507	0.947	189.0	421.2	1.025	1.902
-6	658.97	656.52	1197.2	25.01	1.516	0.960	192.0	421.9	1.036	1.898
-4	704.15	701.49	1189.4	26.72	1.524	0.975	195.0	422.6	1.048	1.894
-2	751.64	748.76	1181.4	28.53	1.533	0.990	198.1	423.2	1.059	1.890
0	801.52	798.41	1173.4	30.44	1.543	1.005	201.2	423.8	1.070	1.886
2	853.87	850.52	1165.3	32.46	1.552	1.022	204.3	424.4	1.081	1.882
4	908.77	905.16	1157.0	34.59	1.563	1.039	207.4	424.9	1.092	1.878
6	966.29	962.42	1148.6	36.83	1.573	1.057	210.5	425.5	1.103	1.874
8	1026.5	1022.4	1140.0	39.21	1.584	1.076	213.7	425.9	1.114	1.870
10	1089.5	1085.1	1131.3	41.71	1.596	1.096	216.8	426.4	1.125	1.866
12	1155.4	1150.7	1122.5	44.35	1.608	1.117	220.0	426.8	1.136	1.862
14	1224.3	1219.2	1113.5	47.14	1.621	1.139	223.2	427.2	1.147	1.859
16	1296.2	1290.8	1104.4	50.09	1.635	1.163	226.5	427.5	1.158	1.855
18	1371.2	1365.5	1095.1	53.20	1.650	1.188	229.7	427.8	1.169	1.851
20	1449.4	1443.4	1085.6	56.48	1.666	1.215	233.0	428.1	1.180	1.847
22	1530.9	1524.6	1075.9	59.96	1.683	1.243	236.4	428.3	1.191	1.843
24	1615.8	1609.2	1066.0	63.63	1.701	1.273	239.7	428.4	1.202	1.839
26	1704.2	1697.2	1055.9	67.51	1.721	1.306	243.1	428.6	1.214	1.834
28	1796.2	1788.9	1045.5	71.62	1.743	1.341	246.5	428.6	1.225	1.830
30	1891.9	1884.2	1034.9	75.97	1.767	1.379	249.9	428.6	1.236	1.826
32	1991.3	1983.2	1024.1	80.58	1.793	1.420	253.4	428.6	1.247	1.822
34	2094.5	2086.2	1012.9	85.48	1.822	1.465	256.9	428.4	1.258	1.817
36	2201.7	2193.1	1001.4	90.68	1.855	1.514	260.5	428.3	1.269	1.813
38	2313.0	2304.0	989.5	96.22	1.891	1.569	264.1	428.0	1.281	1.808
40	2428.4	2419.2	977.3	102.1	1.932	1.629	267.8	427.7	1.292	1.803
42	2548.1	2538.6	964.6	108.4	1.979	1.696	271.5	427.2	1.303	1.798
44	2672.2	2662.4	951.4	115.2	2.033	1.771	275.3	426.7	1.315	1.793
46	2800.7	2790.7	937.7	122.4	2.095	1.857	279.2	426.1	1.327	1.788
48	2933.7	2923.6	923.3	130.2	2.168	1.955	283.2	425.4	1.339	1.782
50	3071.5	3061.2	908.2	138.6	2.256	2.069	287.3	424.5	1.351	1.776
52	3214.0	3203.6	892.2	147.7	2.362	2.203	291.5	423.5	1.363	1.770
54	3361.4	3351.0	875.1	157.6	2.493	2.363	295.8	422.4	1.376	1.764
56	3513.8	3503.5	856.8	168.4	2.661	2.557	300.3	421.0	1.389	1.757
58	3671.3	3661.2	836.9	180.4	2.883	2.799	305.0	419.4	1.403	1.749
60	3834.1	3824.2	814.9	193.7	3.191	3.106	310.0	417.6	1.417	1.741
62	4002.1	3992.7	790.1	208.6	3.650	3.511	315.3	415.5	1.433	1.732
64	4175.7	4166.8	761.0	225.6	4.415	4.064	321.2	413.0	1.450	1.722

1.2 Refrigerant Cylinders

■ Cylinder specifications

- The cylinder is painted refrigerant color (pink).
- The cylinder valve is equipped with a siphon tube.



Refrigerant can be charged in liquid state with cylinder in upright position.

Caution: Do not lay cylinder on its side during charging, since it cause refrigerant in gas state to enter the system.

■ Handling of cylinders

(1) Laws and regulations

R410A is liquefied gas, and the High-Pressure Gas Safety Law must be observed in handling them. Before using, refer to the High-Pressure Gas Safety Law.
The Law stipulates standards and regulations that must be followed to prevent accidents with high-pressure gases. Be sure to follow the regulations.

(2) Handing of vessels

Since R410A is high-pressure gas, it is contained in high-pressure vessels.
Although those vessels are durable and strong, careless handling can cause damage that can lead to unexpected accidents. Do not drop vessels, let them fall, apply impact or roll them on the ground.

(3) Storage

Although R410A is not flammable, it must be stored in a well-ventilated, cool, and dark place in the same way as any other high-pressure gases.
It should also be noted that high-pressure vessels are equipped with safety devices that releases gas when the ambient temperature reaches more than a certain level (fusible plug melts) and when the pressure exceeds a certain level (spring-type safety valve operates).

1.3 Service Tools

R410A is used under higher working pressure, compared to previous refrigerants (R22,R407C). Furthermore, the refrigerating machine oil has been changed from Suniso oil to Ether oil, and if oil mixing is occurred, sludge results in the refrigerants and causes other problems. Therefore, gauge manifolds and charge hoses that are used with a previous refrigerant (R22,R407C) can not be used for products that use new refrigerants.
Be sure to use dedicated tools and devices.

■ Tool compatibility

Tool	Compatibility			Reasons for change
	HFC		HCFC	
	R410A	R407C	R22	
Gauge manifold Charge hose	×			• Do not use the same tools for R22 and R410A. • Thread specification differs for R410A and R407C.
Charging cylinder	×		○	• Weighting instrument used for HFCs.
Gas detector	○		×	• The same tool can be used for HFCs.
Vacuum pump (pump with reverse flow preventive function)	○			• To use existing pump for HFCs, vacuum pump adaptor must be installed.
Weighting instrument	○			
Charge mouthpiece	×			• Seal material is different between R22 and HFCs. • Thread specification is different between R410A and others.
Flaring tool (Clutch type)	○			• For R410A, flare gauge is necessary.
Torque wrench	○			• Torque-up for 1/2 and 5/8
Pipe cutter	○			
Pipe expander	○			
Pipe bender	○			
Pipe assembling oil	×			• Due to refrigerating machine oil change. (No Suniso oil can be used.)
Refrigerant recovery device	Check your recovery device.			
Refrigerant piping	See the chart below.			• Only ϕ19.1 is changed to 1/2H material while the previous material is "O".

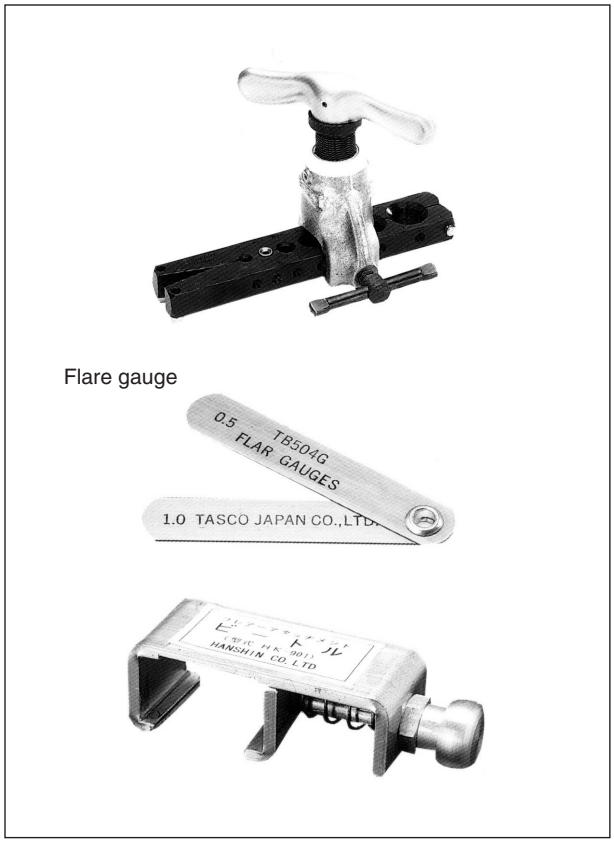
As for the charge mouthpiece and packing, 1/2UNF20 is necessary for mouthpiece size of charge hose.

■ Copper tube material

Pipe size	Ve-up	Ve-upII
	R407C	R410A
	Material	Material
ϕ6.4	O	O
ϕ9.5	O	O
ϕ12.7	O	O
ϕ15.9	O	O
ϕ19.1	O	1/2H
ϕ22.2	1/2H	1/2H
ϕ25.4	1/2H	1/2H
ϕ28.6	1/2H	1/2H
ϕ31.8	1/2H	1/2H
ϕ38.1	1/2H	1/2H
ϕ44.5	1/2H	1/2H

* O: Soft (Annealed)
H: Hard (Drawn)

1. Flaring tool



■ Specifications

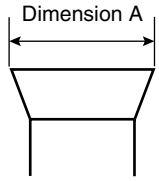
• Dimension A

Unit:mm

Nominal size	Tube O.D.	$A^{+0}_{-0.4}$	
	Do	Class-2 (R410A)	Class-1 (Conventional)
1/4	6.35	9.1	9.0
3/8	9.52	13.2	13.0
1/2	12.70	16.6	16.2
5/8	15.88	19.7	19.4
3/4	19.05	24.0	23.3

■ Differences

• Change of dimension A



For class-1: R407C
For class-2: R410A

Conventional flaring tools can be used when the work process is changed.
(change of work process)
Previously, a pipe extension margin of 0 to 0.5mm was provided for flaring. For R410A air conditioners, perform pipe flaring with a pipe extension margin of 1.0 to 1.5mm.
(For clutch type only)
Conventional tool with pipe extension margin adjustment can be used.

2. Torque wrench

■ Specifications

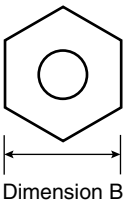
• Dimension B Unit:mm

Nominal size	Class-1	Class-2	Previous
1/2	24	26	24
5/8	27	29	27

No change in tightening torque
No change in pipes of other sizes

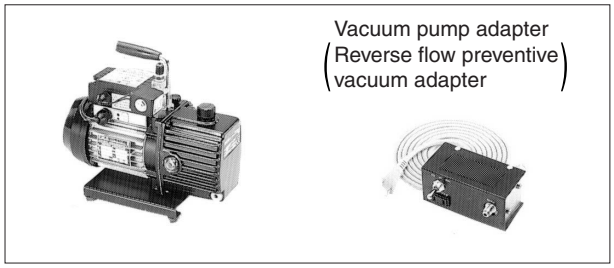
■ Differences

• Change of dimension B
Only 1/2", 5/8" are extended



For class-1: R407C
For class-2: R410A

3. Vacuum pump with check valve



■ Specifications

• Discharge speed
50 l/min (50Hz)
60 l/min (60Hz)

● Maximum degree of vacuum
–100.7 kPa (5 torr – 755 mmHg)

• Suction port UNF7/16-20(1/4 Flare)
UNF1/2-20(5/16 Flare) with adapter

■ Differences

• Equipped with function to prevent reverse oil flow
• Previous vacuum pump can be used by installing adapter.

4. Leak tester

■ Specifications
- Hydrogen detecting type, etc.
- Applicable refrigerants
  R410A, R407C, R404A, R507A, R134a, etc.

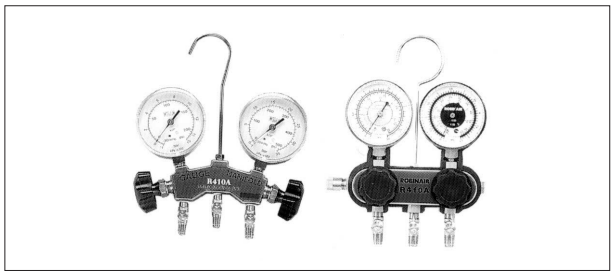
■ Differences
- Previous testers detected chlorine. Since HFCs do not contain chlorine, new tester detects hydrogen.

5. Refrigerant oil (Air compal)

■ Specifications
- Contains synthetic oil, therefore it can be used for piping work of every refrigerant cycle.
- Offers high rust resistance and stability over long period of time.

■ Differences
- Can be used for R410A and R22 units.

6. Gauge manifold for R410A

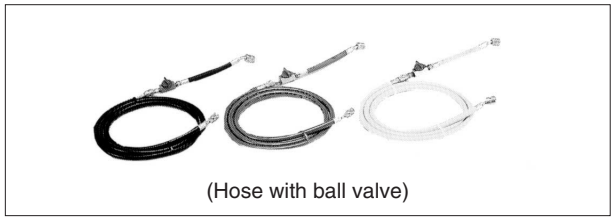


■ Specifications
- High pressure gauge
  - 0.1 to 5.3 MPa (-76 cmHg to 53 kg/cm^2)
- Low pressure gauge
  - 0.1 to 3.8 MPa (-76 cmHg to 38 kg/cm^2)
- 1/4" → 5/16" (2min → 2.5min)
- No oil is used in pressure test of gauges.
  → For prevention of contamination

- Temperature scale indicates the relationship between pressure and temperature in gas saturated state.

■ Differences
- Change in pressure
- Change in service port diameter

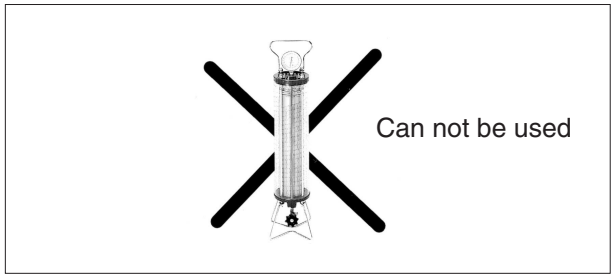
7. Charge hose for R410A


(Hose with ball valve)

■ Specifications
- Working pressure 5.08 MPa (51.8 kg/cm^2)
- Rupture pressure 25.4 MPa (259 kg/cm^2)
- Available with and without hand-operate valve that prevents refrigerant from outflow.

■ Differences
- Pressure proof hose
- Change in service port diameter
- Use of nylon coated material for HFC resistance

8. Charging cylinder



■ Specifications
- Use weigher for refrigerant charge listed below to charge directly from refrigerant cylinder.

■ Differences
- The cylinder can not be used for mixed refrigerant since mixing ratio is changed during charging.

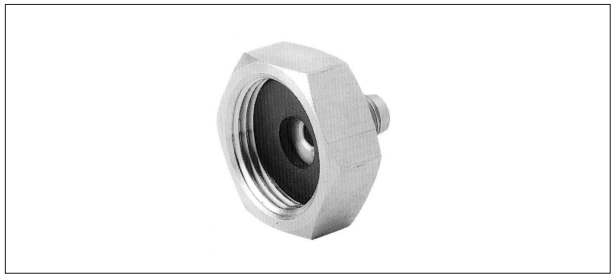
  When R410A is charged in liquid state using charging cylinder, foaming phenomenon is generated inside charging cylinder.

9. Weigher for refrigerant charge

■ Specifications
- High accuracy
  TA101A (for 10-kg cylinder) = ± 2g
  TA101B (for 20-kg cylinder) = ± 5g
- Equipped with pressure-resistant sight glass to check liquid refrigerant charging.
- A manifold with separate ports for HFCs and previous refrigerants is equipped as standard accessories.

■ Differences
- Measurement is based on weight to prevent change of mixing ratio during charging.

10. Charge mouthpiece



■ Specifications
- For R410A, 1/4"→ 5/16" (2min → 2.5min)
- Material is changed from CR to H-NBR.

■ Differences
- Change of thread specification on hose connection side (For the R410A use)
- Change of sealer material for the HFCs use.

Index

Symbols

A

B

C

D

E

R

S

T

U

Drawings & Flow Charts

Symbols

A

C

D

E

F

G

H

I

L

M

O

P

R

S

T

U

V

W

DAIKIN INDUSTRIES, LTD.

Head office:
Umeda Center Bldg., 4-12, Nakazaki-Nishi 2-chome,
Kita-ku, Osaka, 530-8323 Japan

Tokyo office:
Shinjuku Sumitomo Bldg., 6-1 Nishi-Shinjuku
2-chome, Shinjuku-ku, Tokyo, 163-0235 Japan

DAIKIN EUROPE NV

Zandvoordestraat 300, B-8400 Oostende, Belgium

Printed in Singapore 12/2003 COS