

# Service Manual

## **SUPER MULTI *PLUS***

### **E-Series**



[Applied Models]

● Super Multi Plus: Heat Pump

# SUPER MULTI PLUS E-Series

## ●Heat Pump

### Indoor Unit

FTXS20D3VMW(L)  
FTXS25D3VMW(L)  
FTXS35D3VMW(L)  
FTXS50D2V1W(L)  
FTXS20CAVMB  
FTXS25CAVMB  
FTXS35CAVMB  
FTXS50EV1B  
FTXS60EV1B  
FTXS71EV1B  
FTXS71BAVMB

FDXS25CAVMB  
FDXS35CAVMB  
FDXS50CVMB  
FDXS60CVMB  
FDXS25EAVMB  
FDXS35EAVMB

FLXS25BAVMB  
FLXS35BAVMB  
FLXS50BAVMB  
FLXS60BAVMB  
FVXS25BAVMB  
FVXS35BAVMB  
FVXS50BAVMB

FFQ25B8V1B  
FFQ35B8V1B  
FFQ50B8V1B  
FFQ60B8V1B  
FHQ35BVV1B  
FHQ50BVV1B  
FHQ60BVV1B

### Outdoor Unit

RMXS112E7V3B  
RMXS140E7V3B  
RMXS160E7V3B

BPMKS967B2B  
BPMKS967B3B

1. Introduction .....	vii
1.1 Safety Cautions .....	vii
<b>Part 1 List of Functions .....</b>	<b>1</b>
1. List of Functions .....	2
<b>Part 2 Specifications .....</b>	<b>9</b>
1. Specifications .....	10
1.1 Outdoor Units .....	10
1.2 BP Unit .....	11
1.3 Indoor Units .....	12
<b>Part 3 Printed Circuit Board Connector Wiring Diagram .....</b>	<b>23</b>
1. Printed Circuit Board Connector Wiring Diagram .....	24
1.1 Outdoor Unit RMXS 112/140/160 E7V3B .....	24
1.2 Branch Provider Unit .....	29
1.3 Wall Mounted Type 20/25/35/50 Class - D Series .....	30
1.4 Wall Mounted Type 20/25/35 Class - C Series .....	33
1.5 Wall Mounted Type 50/60/71 Class - E(B) Series .....	35
1.6 Duct Connected Type .....	37
1.7 Floor / Ceiling Suspended Dual Type .....	39
1.8 Floor Standing Type .....	42
1.9 Ceiling Mounted Cassette 600x600 Type .....	45
1.10 Ceiling Suspended Type .....	47
<b>Part 4 Refrigerant Circuit .....</b>	<b>49</b>
1. Refrigerant Circuit .....	50
1.1 Outdoor Units .....	50
1.2 BP Units .....	52
2. Functional Parts Layout .....	53
2.1 Outdoor Units .....	53
3. Refrigerant Flow for Each Operation Mode .....	54
3.1 Cooling Operation .....	54
3.2 Heating Operation .....	55
3.3 Cooling Oil Return Operation .....	56
3.4 Heating Oil Return Operation & Defrost Operation .....	57
<b>Part 5 Function .....</b>	<b>59</b>
1. Operation Mode .....	60
2. Basic Control .....	61
2.1 Normal Operation .....	61
2.2 Compressor PI Control .....	62
2.3 Electronic Expansion Valve PI Control .....	65
2.4 Cooling Operation Fan Control .....	66
3. Special Control .....	67
3.1 Startup Control .....	67
3.2 Oil Return Operation .....	68
3.3 Defrosting Operation .....	70

3.4	Pump-down Residual Operation .....	71
3.5	Restart Standby.....	71
3.6	Stopping Operation .....	72
4.	Protection Control .....	73
4.1	High Pressure Protection Control.....	73
4.2	Low Pressure Protection Control.....	74
4.3	Discharge Pipe Protection Control .....	75
4.4	Inverter Protection Control .....	76
4.5	Freeze-up Protection Control .....	77
4.6	Dew Condensation Prevention Control .....	78
5.	Other Control.....	79
5.1	Demand Operation .....	79
5.2	Heating Operation Prohibition .....	79
6.	BP Unit Control .....	80
6.1	BP Unit Command Conversion .....	80
6.2	BP Unit Electronic Expansion Valve Control .....	81
6.3	SH Control in Cooling Operation .....	83
6.4	SC Control in Heating Operation.....	84
6.5	Heat Exchanger Isothermal Control in Heating Operation .....	84
7.	Indoor Unit (RA Models).....	85
7.1	Power-Airflow Dual Flaps, Wide Angle Louvers and Auto-Swing .....	85
7.2	Fan Speed Control for Indoor Units.....	86
7.3	Programme Dry Function .....	87
7.4	Automatic Operation.....	88
7.5	Thermostat Control.....	89
7.6	Night Set Mode.....	90
7.7	ECONO Mode .....	91
7.8	INTELLIGENT EYE .....	92
7.9	HOME LEAVE Operation .....	94
7.10	Inverter POWERFUL Operation .....	95
7.11	Other Functions.....	96
8.	Indoor Unit (SkyAir Models) .....	98
8.1	Function Outline .....	98
8.2	Electric Function Parts .....	99
8.3	Function Details.....	100

## **Part 6 Test Operation ..... 111**

1.	Test Operation .....	112
1.1	Procedure and Outline .....	112
2.	Outdoor Unit PCB Layout.....	117
3.	Field Setting .....	118
3.1	Field Setting from Outdoor Unit.....	118
3.2	Detail of Setting Mode .....	127
4.	Field Setting for SkyAir Indoor Unit .....	136
4.1	Explanation.....	136
4.2	Field Setting .....	137
4.3	Initial Setting Contents .....	138
4.4	Local Setting Mode Number .....	139
4.5	Detailed Explanation of Setting Modes .....	140
4.6	Centralized Group No. Setting .....	144
4.7	Maintenance Mode Setting.....	145

5. Test Operation and Field Setting for RA Indoor Unit.....	146
5.1 Test Operation from the Remote Control .....	146
5.2 Jumper Settings .....	147

## **Part 7 System Configuration..... 149**

1. System Configuration.....	150
1.1 Operation Instructions .....	150
2. Instruction.....	151
2.1 RMXS Series.....	151
2.2 Wall Mounted, Duct, Floor/Ceiling, Floor Standing Type .....	152
2.3 Ceiling Mounted Cassette Type .....	227
2.4 Ceiling Suspended Type .....	238

## **Part 8 Troubleshooting ..... 249**

1. Caution for Diagnosis.....	251
1.1 Troubleshooting with the Operation Lamp (RA Indoor Unit) .....	251
1.2 Troubleshooting with the LED on the SkyAir Indoor Unit .....	252
1.3 Troubleshooting with the LED on the Outdoor Unit.....	253
1.4 Troubleshooting with the LED on the BP Unit.....	254
2. Service Check Function .....	255
2.1 RA Indoor Unit Infrared remote control .....	255
2.2 SkyAir Indoor Unit INSPECTION/TEST Button.....	259
2.3 SkyAir Indoor Unit Wired Remote control.....	260
2.4 SkyAir Indoor Unit Infrared remote control.....	261
2.5 Sky Air Indoor Unit Error Codes and LED Indication.....	263
2.6 Malfunction Code Indication by Outdoor Unit PCB .....	264
3. List of Malfunction Code.....	268
4. Troubleshooting for RA Indoor Unit.....	270
4.1 Indoor Unit PCB Abnormality .....	270
4.2 Freeze-up Protection Control or High Pressure Control.....	271
4.3 Fan Motor or Related Abnormality .....	273
4.4 Thermistor or Related Abnormality (Indoor Unit).....	276
4.5 Shutter Drive Motor / Shutter Limit Switch Abnormality .....	277
4.6 Check .....	278
5. Troubleshooting for SkyAir Indoor Unit .....	281
5.1 Indoor Unit PCB Abnormality .....	281
5.2 Malfunction of Drain Water Level System (Float Type).....	282
5.3 Malfunction of Drain System .....	284
5.4 Indoor Unit Fan Motor Lock.....	285
5.5 Malfunction of Indoor Unit Fan Motor .....	286
5.6 Swing Flap Motor Malfunction / Lock .....	288
5.7 Malfunction of Capacity Setting.....	290
5.8 Malfunction of Heat Exchanger Thermistor (R2T).....	291
5.9 Malfunction of Heat Exchanger Thermistor (R3T).....	292
5.10 Malfunction of Suction Air Thermistor .....	293
5.11 Malfunction of Remote control Thermistor .....	294
5.12 Transmission Error (between Indoor Unit and Remote control) .....	295
5.13 Transmission Error (between Main and Sub Remote control) .....	296
5.14 Malfunction of Field Setting Switch .....	297
5.15 Check .....	298

6. Troubleshooting for BP Unit .....	300
6.1 Malfunction of Electronic Expansion Valve .....	300
6.2 Faulty BP Unit PCB .....	301
6.3 Faulty BP Liquid or Gas Pipe Thermistor .....	302
6.4 Transmission Error between Indoor Unit and BP Unit.....	303
6.5 Transmission Error between Outdoor Unit and BP Unit.....	305
6.6 Check .....	306
7. Troubleshooting for Outdoor Unit.....	307
7.1 Faulty Outdoor Unit PCB.....	307
7.2 Actuation of High Pressure Switch .....	308
7.3 Actuation of Low Pressure Sensor .....	310
7.4 Compressor Motor Lock .....	312
7.5 Malfunction of Outdoor Unit Fan Motor .....	313
7.6 Malfunction of Moving Part of Electronic Expansion Valve (Y1E, Y3E) .....	314
7.7 Abnormal Discharge Pipe Temperature .....	316
7.8 Refrigerant Overcharged.....	317
7.9 Malfunction of Thermistor for Outdoor Air (R1T) .....	318
7.10 Malfunction of Discharge Pipe Thermistor (R2T) .....	319
7.11 Malfunction of Thermistor (R3T, R5T) for Suction Pipe1, 2 .....	320
7.12 Malfunction of Thermistor (R4T) for Outdoor Unit Heat Exchanger .....	321
7.13 Malfunction of Thermistor (R7T) for Outdoor Unit Liquid Pipe .....	322
7.14 Malfunction of Subcooling Heat Exchanger Thermistor (R6T) .....	323
7.15 Malfunction of High Pressure Sensor.....	324
7.16 Malfunction of Low Pressure Sensor.....	325
7.17 Malfunction of PCB.....	326
7.18 Malfunction of Inverter Radiating Fin Temperature Rise.....	327
7.19 Inverter Compressor Abnormal .....	328
7.20 Inverter Current Abnormal.....	329
7.21 Inverter Start up Error.....	330
7.22 Malfunction of Transmission between Inverter and Control PCB.....	331
7.23 High Voltage of Capacitor in Main Inverter Circuit .....	332
7.24 Malfunction of Inverter Radiating Fin Temperature Rise Sensor .....	333
7.25 Faulty Combination of Inverter and Fan Driver .....	334
7.26 Low Pressure Drop Due to Refrigerant Shortage or Electronic Expansion Valve Failure.....	335
7.27 Power Supply Insufficient or Instantaneous Failure .....	337
7.28 Check Operation not Executed .....	339
7.29 Malfunction of Transmission between Indoor Units and Outdoor Units .....	340
7.30 Malfunction of Transmission between Remote control and Indoor Unit.....	342
7.31 Malfunction of Transmission between Main and Sub Remote controls .....	343
7.32 Malfunction of Transmission between Indoor and Outdoor Units in the Same System .....	344
7.33 Excessive Number of Indoor Units .....	346
7.34 Address Duplication of Central Remote control .....	347
7.35 Malfunction of Transmission between Central Remote Controller and Indoor Unit .....	348
7.36 System is not Set yet.....	350
7.37 Malfunction of System, Refrigerant System Address Undefined.....	351

8. Check .....352

9. Thermistor Resistance / Temperature Characteristics .....355

10. Pressure Sensor .....357

11. Method of Replacing The Inverter’s Power Transistors Modules .....358

**Part 9 Appendix..... 361**

1. Piping Diagrams .....362

    1.1 Outdoor Units .....362

    1.2 BP Units .....363

    1.3 Indoor Units .....364

2. Wiring Diagrams .....369

    2.1 Outdoor Units .....369

    2.2 BP Units .....370

    2.3 Indoor Units .....371








**Index ..... i**

**Drawings & Flow Charts ..... vii**







# 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



 <b>Warning</b>	
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 shock. If it is necessary to supply power to the equipment to conduct the repair or inspecting the circuits, do not touch any electrically charged sections of the equipment.	
If 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.	

 <b>Caution</b>	
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



 <b>Warning</b>	
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



 <b>Warning</b>	
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.	
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 (R-410A) 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 control, 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.	

 <b>Caution</b>	
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

 <b>Warning</b>	
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.	





 <b>Warning</b>	
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.	

 <b>Caution</b>	
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, lose 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.

# Part 1

# List of Functions

1. List of Functions .....2

# 1. List of Functions

Category	Functions	RMXS112-140-160E7V3B	Category	Functions	RMXS112-140-160E7V3B
Basic Function	Inverter (with Inverter Power Control)	○	Health & Clean	Air Purifying Filter with Bacteriostatic & Virustatic Functions	—
	Operation Limit for Cooling (°CDB)	-5 ~ 46		Photocatalytic Deodorizing Filter	—
	Operation Limit for Heating (°CWB)	-15 ~ 15.5		Air Purifying Filter with Photocatalytic Deodorizing Function	—
	PAM Control	—		Titanium Apatite Photocatalytic Air-Purifying Filter	—
Compressor	Oval Scroll Compressor	○		Longlife Filter (Option)	—
	Swing Compressor	—		Mould Proof Air Filter	—
	Rotary Compressor	—		Wipe-clean Flat Panel	—
	Reluctance DC Motor	○		Washable Grille	—
Comfortable Airflow	Power-Airflow Flap	—		Filter Cleaning Indicator	—
	Power-Airflow Dual Flaps	—		Mold Proof Operation	—
	Power-Airflow Diffuser	—		Heating Dry Operation	—
	Wide-Angle Louvers	—		Good-Sleep Cooling Operation	—
	Vertical Auto-Swing (Up and Down)	—	Timer	24-Hour On/Off Timer	—
	Horizontal Auto-Swing (Right and Left)	—		72-Hour On/Off Timer	—
	3-D Airflow	—		Night Set Mode	—
	Comfort Airflow Mode	—	Worry Free "Reliability & Durability"	Auto-Restart (after Power Failure)	—
Comfort Control	3-Step Airflow (H/P Only)	—		Self-Diagnosis (Digital, LED) Display	○
	Auto Fan Speed	—		Wiring-Error Check	—
	Indoor Unit Silent Operation	—		Automatic Test Operation	○
	Night Quiet Mode (Automatic)	○		Memory Function	○
	Outdoor Unit Silent Operation (Manual)	○	Flexibility	Anticorrosion Treatment of Outdoor Heat Exchanger	○
	Intelligent Eye	—		Multi-Split / Split Type Compatible Indoor Unit	—
	Quick Warming Function	○		Flexible Voltage Correspondence	—
	Hot-Start Function	—		High Ceiling Application	—
Operation	Automatic Defrosting	○		Chargeless	—
	Automatic Operation	—		Either Side Drain (Right or Left)	—
	Programme Dry Function	—		Power-Selection	—
Lifestyle Convenience	Fan Only	—	Remote Control	5-Rooms Centralized Controller (Option)	—
	New Powerful Operation (Non-Inverter)	—		Remote Control Adapter (Normal Open-Pulse Contact) (Option)	—
	Inverter Powerful Operation	—		Remote Control Adapter (Normal Open Contact) (Option)	—
	Priority-Room Setting	—	Remote Control	DIII-NET Compatible (Adapter) (Option)	—
	Cooling / Heating Mode Lock	—		Wireless	—
	Home Leave Operation	—		Wired	—
	ECONO Mode	—			
	Indoor Unit On/Off Switch	—			
	Signal Reception Indicator	—			
	Temperature Display	—			
	Another Room Operation	—			

**Note:** ○ : Holding Functions  
— : No Functions

Category	Functions	FTXS20-35D3VMW(L)	FTXS50D2V1W(L)	FTXS20-35CAVMB	Category	Functions	FTXS20-35D3VMW(L)	FTXS50D2V1W(L)	FTXS20-35CAVMB
Basic Function	Inverter (with Inverter Power Control)	○	○	○	Health & Clean	Air Purifying Filter with Bacteriostatic, Virustatic Functions	—	—	—
	Operation Limit for Cooling (°CDB)	—	—	—		Photocatalytic Deodorizing Filter	—	—	—
	Operation Limit for Heating (°CWB)	—	—	—		Air Purifying Filter with Photocatalytic Deodorizing Function	—	—	○
	PAM Control	—	—	—		Titanium Apatite Photocatalytic Air-Purifying Filter	○	○	—
Compressor	Oval Scroll Compressor	—	—	—		Long life Filter (Option)	—	—	—
	Swing Compressor	—	—	—		Mold Proof Air Filter	○	○	○
	Rotary Compressor	—	—	—		Wipe-clean Flat Panel	○	○	○
	Reluctance DC Motor	—	—	—		Washable Grille	—	—	—
Comfortable Airflow	Power-Airflow Flap	—	—	—		Filter Cleaning Indicator	—	—	—
	Power-Airflow Dual Flaps	○	○	○		Mold Proof Operation	—	—	—
	Power-Airflow Diffuser	—	—	—		Heating Dry Operation	—	—	—
	Wide-Angle Louvers	○	○	○		Good-Sleep Cooling Operation	—	—	—
	Vertical Auto-Swing (Up and Down)	○	○	○	Timer	24-Hour On/Off Timer	○	○	○
	Horizontal Auto-Swing (Right and Left)	—	—	—		72-Hour On/Off Timer	—	—	—
	3-D Airflow	—	—	—		Night Set Mode	○	○	○
	Comfort Airflow Mode	○	○	—		Auto-Restart (after Power Failure)	○	○	○
Comfort Control	3-Step Airflow (H/P Only)	—	—	—	Worry Free "Reliability & Durability"	Self-Diagnosis (Digital, LED) Display	○	○	○
	Auto Fan Speed	○	○	○		Wiring Error Check	—	—	—
	Indoor Unit Silent Operation	○	○	○		Anticorrosion Treatment of Outdoor Heat Exchanger	—	—	—
	Night Quiet Mode (Automatic)	—	—	—		Multi-Split / Split Type Compatible Indoor Unit	○	○	○
	Outdoor Unit Silent Operation (Manual)	—	—	—	Flexibility	Flexible Voltage Correspondence	○	○	○
	Intelligent Eye	○	○	○		High Ceiling Application	—	—	—
	Quick Warming Function	—	—	—		Chargeless	—	—	—
	Hot-Start Function	○	○	○		Either Side Drain (Right or Left)	○	○	○
Operation	Automatic Defrosting	—	—	—	Remote Control	Power Selection	—	—	—
	Automatic Operation	○	○	○		5-Rooms Centralized Controller (Option)	○	○	○
	Programme Dry Function	○	○	○		Remote Control Adapter (Normal Open-Pulse Contact) (Option)	○	○	○
Lifestyle Convenience	Fan Only	○	○	○		Remote Control Adapter (Normal Open Contact) (Option)	○	○	○
	New Powerful Operation (Non-Inverter)	—	—	—		DIII-NET Compatible (Adapter) (Option)	○	○	○
	Inverter Powerful Operation	○	○	○		Wireless	○	○	○
	Priority-Room Setting	—	—	—		Wired	—	—	—
	Cooling / Heating Mode Lock	—	—	—					
	Home Leave Operation	—	—	○					
	ECONO Mode	○	○	—					
	Indoor Unit On/Off Switch	○	○	○					
	Signal Reception Indicator	○	○	○					
	Temperature Display	—	—	—					
	Another Room Operation	—	—	—					

**Note:** ○ : Holding Functions

— : No Functions

Category	Functions	FTXS50/60/71EV1B	FTXS71BAVMB	Category	Functions	FTXS50/60/71EV1B	FTXS71BAVMB
Basic Function	Inverter (with Inverter Power Control)	○	○	Health & Clean	Air Purifying Filter with Bacteriostatic & Virustatic Functions	—	—
	Operation Limit for Cooling (°CDB)	—	—		Photocatalytic Deodorizing Filter	—	—
	Operation Limit for Heating (°CWB)	—	—		Air Purifying Filter with Photocatalytic Deodorizing Function	—	○
	PAM Control	—	—		Titanium Apatite Photocatalytic Air-Purifying Filter	○	—
Compressor	Oval Scroll Compressor	—	—		Long life Filter (Option)	—	—
	Swing Compressor	—	—		Mold Proof Air Filter	○	○
	Rotary Compressor	—	—		Wipe-clean Flat Panel	○	○
	Reluctance DC Motor	—	—		Washable Grille	—	—
Comfortable Airflow	Power-Airflow Flap	—	—		Filter Cleaning Indicator	—	—
	Power-Airflow Dual Flaps	○	○		Mold Proof Operation	—	—
	Power-Airflow Diffuser	—	—		Heating Dry Operation	—	—
	Wide-Angle Louvers	○	○		Good-Sleep Cooling Operation	—	—
	Vertical Auto-Swing (Up and Down)	○	○	Timer	24-Hour On/Off Timer	○	○
	Horizontal Auto-Swing (Right and Left)	○	○		72-Hour On/Off Timer	—	—
	3-D Airflow	○	○		Night Set Mode	○	○
	Comfort Airflow Mode	—	—	Worry Free "Reliability & Durability"	Auto-Restart (after Power Failure)	○	○
Comfort Control	3-Step Airflow (H/P Only)	—	—		Self-Diagnosis (Digital, LED) Display	○	○
	Auto Fan Speed	○	○		Wiring-Error Check	—	—
	Indoor Unit Silent Operation	○	○	Flexibility	Anticorrosion Treatment of Outdoor Heat Exchanger	—	—
	Night Quiet Mode (Automatic)	—	—		Multi-Split / Split Type Compatible Indoor Unit	○	○
	Outdoor Unit Silent Operation (Manual)	—	—		Flexible Voltage Correspondence	—	○
	Intelligent Eye	○	○		High Ceiling Application	—	—
	Quick Warming Function	—	—		Chargeless	—	—
	Hot-Start Function	○	○		Either Side Drain (Right or Left)	○	○
	Automatic Defrosting	—	—		Power-Selection	—	—
Operation	Automatic Operation	○	○	Remote Control	5-Rooms Centralized Controller (Option)	○	○
	Programme Dry Function	○	○		Remote Control Adapter (Normal Open-Pulse Contact) (Option)	○	○
	Fan Only	○	○		Remote Control Adapter (Normal Open Contact) (Option)	○	○
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	—	—		DIII-NET Compatible (Adapter) (Option)	○	○
	Inverter Powerful Operation	○	○	Remote Control	Wireless	○	○
	Priority-Room Setting	—	—		Wired	—	—
	Cooling / Heating Mode Lock	—	—				
	Home Leave Operation	○	○				
	ECONO Mode	—	—				
	Indoor Unit On/Off Switch	○	○				
	Signal Reception Indicator	○	○				
	Temperature Display	—	—				
	Another Room Operation	—	—				

**Note:** ○ : Holding Functions

— : No Functions

Category	Functions	FDXS25/35CAVMB	FDXS50/60CVMB	FDXS25/35EAVMB	Category	Functions	FDXS25/35CAVMB	FDXS50/60CVMB	FDXS25/35EAVMB
Basic Function	Inverter (with Inverter Power Control)	○	○	○	Health & Clean	Air Purifying Filter with Bacteriostatic & Virustatic Functions	—	—	—
	Operation Limit for Cooling (°CDB)	—	—	—		Photocatalytic Deodorizing Filter	—	—	—
	Operation Limit for Heating (°CWB)	—	—	—		Air Purifying Filter with Photocatalytic Deodorizing Function	—	—	—
	PAM Control	—	—	—		Titanium Apatite Photocatalytic Air-Purifying Filter	—	—	—
Compressor	Oval Scroll Compressor	—	—	—		Mold Proof Air Filter	○	○	○
	Swing Compressor	—	—	—		Wipe-clean Flat Panel	—	—	—
	Rotary Compressor	—	—	—		Washable Grille	—	—	—
	Reluctance DC Motor	—	—	—		Mold Proof Operation	—	—	—
Comfortable Airflow	Power-Airflow Flap	—	—	—	Timer	Heating Dry Operation	—	—	—
	Power-Airflow Dual Flaps	—	—	—		Good-Sleep Cooling Operation	—	—	—
	Power-Airflow Diffuser	—	—	—		24-Hour On/Off Timer	○	○	○
	Wide-Angle Louvers	—	—	—	Worry Free "Reliability & Durability"	Night Set Mode	○	○	○
	Vertical Auto-Swing (Up and Down)	—	—	—		Auto-Restart (after Power Failure)	○	○	○
	Horizontal Auto-Swing (Right and Left)	—	—	—		Self-Diagnosis (Digital, LED) Display	○	○	○
	3-D Airflow	—	—	—		Wiring-Error Check	—	—	—
Comfort Control	3-Step Airflow (H/P Only)	—	—	—	Flexibility	Anticorrosion Treatment of Outdoor Heat Exchanger	—	—	—
	Auto Fan Speed	○	○	○		Multi-Split / Split Type Compatible Indoor Unit	○	○	○
	Indoor Unit Silent Operation	○	○	○		Flexible Voltage Correspondence	○	○	○
	Night Quiet Mode (Automatic)	—	—	—		High Ceiling Application	—	—	—
	Outdoor Unit Silent Operation (Manual)	—	—	—		Chargeless	—	—	—
	Intelligent Eye	—	—	—		Either Side Drain (Right or Left)	—	—	—
	Quick Warming Function	—	—	—		Power-Selection	—	—	—
	Hot-Start Function	○	○	○	Remote Control	5-Rooms Centralized Controller (Option)	○	○	○
Operation	Automatic Defrosting	—	—	—		Remote Control Adapter (Normal Open-Pulse Contact) (Option)	○	○	○
	Automatic Operation	○	○	○		Remote Control Adapter (Normal Open Contact) (Option)	○	○	○
	Programme Dry Function	○	○	○	Remote Control	DIII-NET Compatible (Adapter) (Option)	○	○	○
Lifestyle Convenience	Fan Only	○	○	○		Wireless	○	○	○
	New Powerful Operation (Non-Inverter)	—	—	—		Wired	—	—	—
	Inverter Powerful Operation	○	○	○					
	Priority-Room Setting	—	—	—					
	Cooling / Heating Mode Lock	—	—	—					
	Home Leave Operation	○	○	○					
	ECONO Mode	—	—	—					
	Indoor Unit On/Off Switch	○	○	○					
	Signal Reception Indicator	○	○	○					
	Temperature Display	—	—	—					
	Another Room Operation	—	—	—					

**Note:** ○ : Holding Functions  
— : No Functions

Category	Functions	FLXS25-60BAV/MB	FVXS25-50BAV/MB	Category	Functions	FLXS25-60BAV/MB	FVXS25-50BAV/MB
Basic Function	Inverter (with Inverter Power Control)	○	○	Health & Clean	Air Purifying Filter with Bacteriostatic & Virustatic Functions	○	○
	Operation Limit for Cooling (°CDB)	—	—		Photocatalytic Deodorizing Filter	○	○
	Operation Limit for Heating (°CWB)	—	—		Air Purifying Filter with Photocatalytic Deodorizing Function	—	—
	PAM Control	—	—		Titanium Apatite Photocatalytic Air-Purifying Filter	—	—
Compressor	Oval Scroll Compressor	—	—		Long life Filter (Option)	—	—
	Swing Compressor	—	—		Mold Proof Air Filter	○	○
	Rotary Compressor	—	—		Wipe-clean Flat Panel	—	—
	Reluctance DC Motor	—	—		Washable Grille	—	○
Comfortable Airflow	Power-Airflow Flap	—	—		Filter Cleaning Indicator	—	—
	Power-Airflow Dual Flaps	—	—		Mold Proof Operation	—	—
	Power-Airflow Diffuser	—	—		Heating Dry Operation	—	—
	Wide-Angle Louvers	—	○		Good-Sleep Cooling Operation	—	—
	Vertical Auto-Swing (Up and Down)	○	○	Timer	24-Hour On/Off Timer	○	○
	Horizontal Auto-Swing (Right and Left)	—	—		72-Hour On/Off Timer	—	—
	3-D Airflow	—	—		Night Set Mode	○	○
	Comfort Airflow Mode	—	—	Worry Free "Reliability & Durability"	Auto-Restart (after Power Failure)	○	○
Comfort Control	3-Step Airflow (H/P Only)	—	○		Self-Diagnosis (Digital, LED) Display	○	○
	Auto Fan Speed	○	○		Wiring-Error Check	—	—
	Indoor Unit Silent Operation	○	○	Flexibility	Anticorrosion Treatment of Outdoor Heat Exchanger	—	—
	Night Quiet Mode (Automatic)	—	—		Multi-Split / Split Type Compatible Indoor Unit	○	○
	Outdoor Unit Silent Operation (Manual)	—	—		Flexible Voltage Correspondence	○	○
	Intelligent Eye	—	—		High Ceiling Application	—	—
	Quick Warming Function	—	—		Chargeless	—	—
	Hot-Start Function	○	○		Either Side Drain (Right or Left)	—	—
	Automatic Defrosting	—	—		Power-Selection	—	—
Operation	Automatic Operation	○	○	Remote Control	5-Rooms Centralized Controller (Option)	○	○
	Programme Dry Function	○	○		Remote Control Adapter (Normal Open-Pulse Contact) (Option)	○	○
	Fan Only	○	○		Remote Control Adapter (Normal Open Contact) (Option)	○	○
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	—	—		DIII-NET Compatible (Adapter) (Option)	○	○
	Inverter Powerful Operation	○	○	Remote Control	Wireless	○	○
	Priority-Room Setting	—	—		Wired	—	—
	Cooling / Heating Mode Lock	—	—				
	Home Leave Operation	○	○				
	ECONO Mode	—	—				
	Indoor Unit On/Off Switch	○	○				
	Signal Reception Indicator	○	○				
	Temperature Display	—	—				
	Another Room Operation	—	—				

**Note:** ○ : Holding Functions

— : No Functions

Category	Functions	FFQ25-60B8V1B	FHQ35-60B8V1B	Category	Functions	FFQ25-60B8V1B	FHQ35-60B8V1B
Basic Function	Inverter (with Inverter Power Control)	○	○	Health & Clean	Air Purifying Filter with Bacteriostatic & Virustatic Functions	—	—
	Operation Limit for Cooling (°CDB)	—	—		Photocatalytic Deodorizing Filter	—	—
	Operation Limit for Heating (°CWB)	—	—		Air Purifying Filter with Photocatalytic Deodorizing Function	—	—
	PAM Control	—	—		Titanium Apatite Photocatalytic Deodorizing Function	—	—
Compressor	Oval Scroll Compressor	—	—		Longlife Filter (Option)	○	○
	Swing Compressor	—	—		Mold Proof Air Filter	○	○
	Rotary Compressor	—	—		Wipe-clean Flat Panel	—	—
	Reluctance DC Motor	—	—		Washable Grille	○	○
Comfortable Airflow	Power-Airflow Flap	—	—		Filter Cleaning Indicator	○	○
	Power-Airflow Dual Flaps	—	—		Mold Proof Operation	—	—
	Power-Airflow Diffuser	—	—		Heating Dry Operation	—	—
	Wide-Angle Louvers	—	—		Good-Sleep Cooling Operation	—	—
	Vertical Auto-Swing (Up and Down)	○	○	Timer	24-Hour On/Off Timer	—	—
	Horizontal Auto-Swing (Right and Left)	—	—		72-Hour On/Off Timer	○	○
	3-D Airflow	—	—		Night Set Mode	—	—
	Comfort Airflow Mode	—	—	Worry Free "Reliability & Durability"	Auto-Restart (after Power Failure)	○	○
Comfort Control	3-Step Airflow (H/P Only)	—	—		Self-Diagnosis (Digital, LED) Display	○	○
	Auto Fan Speed	—	—		Wiring-Error Check	—	—
	Indoor Unit Silent Operation	—	—	Flexibility	Anticorrosion Treatment of Outdoor Heat Exchanger	—	—
	Night Quiet Mode (Automatic)	—	—		Multi-Split / Split Type Compatible Indoor Unit	○	○
	Outdoor Unit Silent Operation (Manual)	—	—		Flexible Voltage Correspondence	—	—
	Intelligent Eye	—	—		High Ceiling Application	—	○
	Quick Warming Function	—	—		Chargeless	—	—
	Hot-Start Function	○	○		Either Side Drain (Right or Left)	—	—
	Automatic Defrosting	—	—		Power-Selection	—	—
Operation	Automatic Operation	○	○	Remote Control	5-Rooms Centralized Controller (Option)	—	—
	Programme Dry Function	○	○		Remote Control Adapter (Normal Open-Pulse Contact) (Option)	—	—
	Fan Only	○	○		Remote Control Adapter (Normal Open Contact) (Option)	—	—
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	—	—	Remote Control	DIII-NET Compatible (Adapter) (Option)	○	○
	Inverter Powerful Operation	—	—		Wireless	○	○
	Priority-Room Setting	—	—		Wired	○	○
	Cooling / Heating Mode Lock	—	—				
	Home Leave Operation	—	—				
	ECONO Mode	—	—				
	Indoor Unit On/Off Switch	—	—				
	Signal Reception Indicator	—	—				
	Temperature Display	—	—				
	Another Room Operation	—	—				

**Note:** ○ : Holding Functions

— : No Functions



# Part 2

# Specifications

- 1. Specifications .....10
  - 1.1 Outdoor Units .....10
  - 1.2 BP Unit .....11
  - 1.3 Indoor Units .....12

# 1. Specifications

## 1.1 Outdoor Units

50Hz 230V

Model			RMXS112E7V3B	RMXS140E7V3B	RMXS160E7V3B
			4HP	5HP	6HP
Cooling Capacity	kW (kcal/h)		11.2 (9,630)	14.0 (12,040)	15.5 (13,330)
Heating Capacity	kW (kcal/h)		12.5 (10,750)	16.0 (13,760)	17.5 (15,050)
Total Indoor Unit Capacity	kW		5.5~14.5	7.0~18.2	8.0~20.8
Power Consumption	W		—		
Running Current	A		—		
Casing Color			Ivory White		
Compressor	Type		Hermetically Sealed Scroll Type		
	Model		JT100G-VDL		
	Motor Output (2.2kW/60rps)	kW	2.5	3.0	3.5
Refrigerant Oil	Model		DAPHNE FVC68D		
	Charge	L	1.5		
Refrigerant	Type		R-410A		
	Charge	kg	4.0		
Air Flow Rate (H)	Cooling	m³/min (cfm)	106 (3,742)		
	Heating	m³/min (cfm)	106 (3,742)		
Fan	Type		Propeller		
	Motor Output	W	70+70		
	Running Current	A	0.4+0.4		
	Power Consumption	W	88+88		
Starting Current	A		19.2	23.7	25.2
Dimensions (HxWxD)	mm		1,345x900x320		
Weight	kg		127		
Operation Sound	Cooling	dBA	51	52	54
	Heating	dBA	53	54	55
Piping Connection	Liquid	mm	φ9.5 (Flare Connection)		
	Gas	mm	φ19.1 (Brazing Connection)		
	Drain	mm	φ18		
Heat Insulation			Both Liquid and Gas Pipes		
No. of Wiring Connection			3 For Power Supply (Including Earth Wiring), 2 For Interunit Wiring (Outdoor Unit-BP)		
Total piping length	O.U. - BP	m	55		
	BP - I.U.	m	60	80	90
	System Total	m	115	135	145
Max. piping length	BP - I.U.	m	15		
	1st Branch - I.U.	m	40		
Max. level difference	O.U. - BP	m	30		
	O.U. - I.U.	m	30		
	BP - BP, I.U. - I.U.	m	15		
Necessity of Additional Charge ★			Necessary		

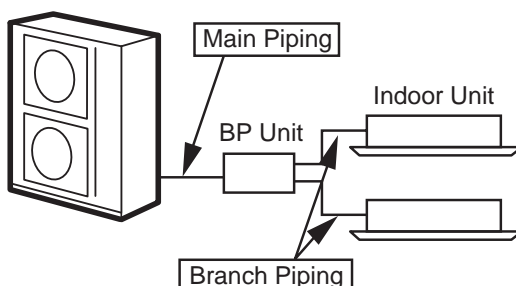
### Note:

- ★ Refrigerant charge is required. (Chargeless piping length 0m)  
Formula for calculation charge : R (kg)  
R = Total length (m) of liquid pipe size at φ9.5×0.054 + Total length (m) of liquid piping size at φ6.4×0.022
- The data are based on the conditions shown in the table below.

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

Cooling	Heating	Piping Length
Indoor ; 27°CDB / 19°CWB Outdoor ; 35°CDB	Indoor ; 20°CDB Outdoor ; 7°CDB / 6°CWB	Main Piping : 5m Branch Piping : 3m Level difference:0m

Outdoor Unit



(Q0143)

## 1.2 BP Unit

50Hz 230V

Model			BPMKS967B2B			BPMKS967B3B			
Connectable Indoor Units			1~2 Units			1~3 Units			
Casing Color			Paintingless						
Power Consumption		W	10			10			
Running Current		A	0.05			0.05			
Refrigerant Type			R-410A						
Dimension (H×W×D)		mm	180×294(650)*×350						
Package Dimension (H×W×D)		mm	257×738×427						
Machine Weight		kg	7.5			8			
Gross Weight		kg	11			12			
Number of Wiring Connections			4 for Interunit Wiring						
Piping Connection (Brazing)	Liquid	mm	Main : φ9.5×1 / Branch : φ6.4×2			Main : φ9.5×1 / Branch : φ6.4×3			
	Gas	mm	Main : φ19.1×1 / Branch : φ15.9×2			Main : φ19.1×1 / Branch : φ15.9×3			
	Drain	mm	Drain Processingless						
Heat Insulation			Both Liquid and Gas Pipes						
Max. Piping Length		m	—						
Amount of Additional Charge		g/m	—						
Max. Height Difference		m	—						
Max. Combination		kW	14.2			20.8			
Min. Combination		kW	2.0			2.0			
Accessories	Installation Manual	pc.	1						
	L Shape Reducer	pc.	For Main	Liquid	1 (For I.D. φ6.4)				
				Gas	1 (For I.D. φ12.7)				
				Gas	1 (For I.D. φ15.9, 19.1)				
			For Branch	Gas	2 (For I.D. φ12.7, 9.5)		3 (For I.D. φ12.7, 9.5)		
				Liquid	1 (For I.D. φ9.5)				
	Hanger Metal	pc.	4						
	Screws	pc.	8 (M4×8)						
	Heat Insulation (2pc. is 1 set)		3 Set			4 Set			
Binding Band	pc.	2							
Drawing No.			C : 4D050058B						

### Note:

- BP or Indoor Unit Max. Height - BP or Indoor Unit Min. Height → Max. 15m.  
Set up BP and indoor unit within 15m height difference.
- The piping connection must be cut so as to suit the piping sizes of the indoor unit which will be connected.  
The same sizes should be used for the piping on the outdoor unit.
- ( ) \* : including auxiliary piping length

### Conversion Formulae

$\text{kcal/h} = \text{kW} \times 860$   
 $\text{Btu/h} = \text{kW} \times 3414$   
 $\text{cfm} = \text{m}^3/\text{min} \times 35.3$

## 1.3 Indoor Units

### Wall Mounted Type

50Hz 230V

Model			FTXS20D3VMW		FTXS20D3VML	
			Cooling	Heating	Cooling	Heating
Rated Capacity			2.0kW Class		2.0kW Class	
Front Panel Color			White		Silver Line	
Air Flow Rates	m³/min (cfm)	H	8.7 (307)	9.4 (332)	8.7 (307)	9.4 (332)
		M	6.7 (237)	7.6 (268)	6.7 (237)	7.6 (268)
		L	4.7 (166)	5.8 (205)	4.7 (166)	5.8 (205)
		SL	3.9 (138)	5.0 (177)	3.9 (138)	5.0 (177)
Fan	Type		Cross Flow Fan		Cross Flow Fan	
	Motor Output	W	40		40	
	Speed	Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control			Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter			Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)		A	0.16	0.16	0.16	0.16
Power Consumption (Rated)		W	35	35	35	35
Power Factor		%	95.1	95.1	95.1	95.1
Temperature Control			Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)		mm	283x800x195		283x800x195	
Packaged Dimensions (HxWxD)		mm	265x855x340		265x855x340	
Weight		kg	9		9	
Gross Weight		kg	12		12	
Operation Sound	H/L/SL	dBA	38/25/22	38/28/25	38/25/22	38/28/25
Sound Power	H	dBA	56	56	56	56
Heat Insulation			Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection	Liquid	mm	φ 6.4		φ 6.4	
	Gas	mm	φ 9.5		φ 9.5	
	Drain	mm	φ18.0		φ18.0	
Drawing No.			3D051085		3D051086	

Model			FTXS25D3VMW		FTXS25D3VML	
			Cooling	Heating	Cooling	Heating
Rated Capacity			2.5kW Class		2.5kW Class	
Front Panel Color			White		Silver Line	
Air Flow Rates	m³/min (cfm)	H	8.7 (307)	9.4 (332)	8.7 (307)	9.4 (332)
		M	6.7 (237)	7.6 (268)	6.7 (237)	7.6 (268)
		L	4.7 (166)	5.8 (205)	4.7 (166)	5.8 (205)
		SL	3.9 (138)	5.0 (177)	3.9 (138)	5.0 (177)
Fan	Type		Cross Flow Fan		Cross Flow Fan	
	Motor Output	W	40		40	
	Speed	Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control			Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter			Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)		A	0.16	0.16	0.16	0.16
Power Consumption (Rated)		W	35	35	35	35
Power Factor		%	95.1	95.1	95.1	95.1
Temperature Control			Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)		mm	283x800x195		283x800x195	
Packaged Dimensions (HxWxD)		mm	265x855x340		265x855x340	
Weight		kg	9		9	
Gross Weight		kg	12		12	
Operation Sound	H/L/SL	dBA	38/25/22	38/28/25	38/25/22	38/28/25
Sound Power	H	dBA	56	56	56	56
Heat Insulation			Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection	Liquid	mm	φ 6.4		φ 6.4	
	Gas	mm	φ 9.5		φ 9.5	
	Drain	mm	φ18.0		φ18.0	
Drawing No.			3D051087		3D051088	

## Conversion Formulae

$\text{kcal/h} = \text{kW} \times 860$   
 $\text{Btu/h} = \text{kW} \times 3414$   
 $\text{cfm} = \text{m}^3/\text{min} \times 35.3$

Model			FTXS35D3VMW		FTXS35D3VML	
			Cooling	Heating	Cooling	Heating
Rated Capacity			3.5kW Class		3.5kW Class	
Front Panel Color			White		Silver Line	
Air Flow Rates	m³/min (cfm)	H	8.9 (314)	9.7 (342)	8.9 (314)	9.7 (342)
		M	6.9 (244)	7.9 (279)	6.9 (244)	7.9 (279)
		L	4.8 (169)	6.0 (212)	4.8 (169)	6.0 (212)
		SL	4.0 (141)	5.2 (184)	4.0 (141)	5.2 (184)
Fan	Type		Cross Flow Fan		Cross Flow Fan	
	Motor Output	W	40		40	
	Speed	Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control			Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter			Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)		A	0.18	0.18	0.18	0.18
Power Consumption (Rated)		W	40	40	40	40
Power Factor		%	96.6	96.6	96.6	96.6
Temperature Control			Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)		mm	283x800x195		283x800x195	
Packaged Dimensions (HxWxD)		mm	265x855x340		265x855x340	
Weight		kg	9		9	
Gross Weight		kg	12		12	
Operation Sound	H/L/SL	dBA	39/26/23	39/29/26	39/26/23	39/29/26
Sound Power	H	dBA	57	57	57	57
Heat Insulation			Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection	Liquid	mm	φ 6.4		φ 6.4	
	Gas	mm	φ 9.5		φ 9.5	
	Drain	mm	φ18.0		φ18.0	
Drawing No.			3D051089		3D051090	

Model			FTXS50D2V1W		FTXS50D2V1L	
			Cooling	Heating	Cooling	Heating
Rated Capacity			5.0kW Class		5.0kW Class	
Front Panel Color			White		White	
Air Flow Rates	m³/min (cfm)	H	11.4 (402)	11.4 (402)	11.4 (402)	11.4 (402)
		M	9.3 (328)	9.4 (332)	9.3 (328)	9.4 (332)
		L	7.1 (251)	7.4 (261)	7.1 (251)	7.4 (261)
		SL	6.2 (219)	6.3 (222)	6.2 (219)	6.3 (222)
Fan	Type		Cross Flow Fan		Cross Flow Fan	
	Motor Output	W	40		40	
	Speed	Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control			Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter			Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)		A	0.21	0.21	0.21	0.21
Power Consumption (Rated)		W	48	48	48	48
Power Factor		%	99.4	99.4	99.4	99.4
Temperature Control			Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)		mm	283x800x195		283x800x195	
Packaged Dimensions (HxWxD)		mm	265x855x340		265x855x340	
Weight		kg	9		9	
Gross Weight		kg	12		12	
Operation Sound	H/M/L/SL	dBA	46/41/35/32	46/40/34/31	46/41/35/32	46/40/34/31
Sound Power	H	dBA	62	62	62	62
Heat Insulation			Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection	Liquid	mm	φ 6.4		φ 6.4	
	Gas	mm	φ12.7		φ12.7	
	Drain	mm	φ18.0		φ18.0	
Drawing No.			3D051814		3D051815	

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

50Hz 230V

Model			FTXS20CAVMB		FTXS25CAVMB	
			Cooling	Heating	Cooling	Heating
Rated Capacity			2.0kW Class		2.5kW Class	
Front Panel Color			White		White	
Air Flow Rates	m <sup>3</sup> /min (cfm)	H	7.7 (272)	7.8 (275)	7.7 (272)	7.8 (275)
		M	5.9 (208)	6.5 (230)	5.9 (208)	6.5 (230)
		L	4.2 (148)	5.3 (187)	4.2 (148)	5.3 (187)
		SL	3.6 (127)	4.6 (162)	3.6 (127)	4.6 (162)
Fan	Type		Cross Flow Fan		Cross Flow Fan	
	Motor Output	W	18		18	
	Speed	Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control			Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter			Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)		A	0.18	0.18	0.18	0.18
Power Consumption (Rated)		W	40	40	40	40
Power Factor		%	96.6	96.6	96.6	96.6
Temperature Control			Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)		mm	273x784x195		273x784x195	
Packaged Dimensions (HxWxD)		mm	258x834x325		258x834x325	
Weight		kg	7.5		7.5	
Gross Weight		kg	11		11	
Operation Sound	H/M/L/SL	dBA	38/32/25/22	38/33/28/25	38/32/25/22	38/33/28/25
Sound Power	H	dBA	56	56	56	56
Heat Insulation			Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection	Liquid	mm	φ 6.4		φ 6.4	
	Gas	mm	φ 9.5		φ 9.5	
	Drain	mm	φ18.0		φ18.0	
Drawing No.			3D050941		3D050943	

Model			FTXS35CAVMB		FTXS50EV1B	
			Cooling	Heating	Cooling	Heating
Rated Capacity			3.5kW Class		5.0kW Class	
Front Panel Color			White		White	
Air Flow Rates	m <sup>3</sup> /min (cfm)	H	7.7 (272)	8.1 (286)	14.7 (519)	16.1 (569)
		M	6.0 (212)	6.7 (237)	12.4 (438)	13.9 (491)
		L	4.4 (155)	5.3 (187)	10.3 (364)	11.5 (406)
		SL	3.8 (134)	4.6 (162)	9.5 (335)	10.2 (360)
Fan	Type		Cross Flow Fan		Cross Flow Fan	
	Motor Output	W	18		43	
	Speed	Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control			Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter			Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)		A	0.18	0.18	0.15	0.16
Power Consumption (Rated)		W	40	40	34	36
Power Factor		%	96.6	96.6	98.6	97.8
Temperature Control			Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)		mm	273x784x195		290x1,050x238	
Packaged Dimensions (HxWxD)		mm	258x834x325		337x1,147x366	
Weight		kg	7.5		12	
Gross Weight		kg	11		17	
Operation Sound	H/M/L/SL	dBA	39/33/26/23	39/34/29/26	43/39/34/31	42/38/33/30
Sound Power	H	dBA	57	57	59	58
Heat Insulation			Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection	Liquid	mm	φ 6.4		φ 6.4	
	Gas	mm	φ 9.5		φ12.7	
	Drain	mm	φ18.0		φ18.0	
Drawing No.			3D050945		3D051645	

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

Model			FTXS60EV1B		FTXS71EV1B	
			Cooling	Heating	Cooling	Heating
Rated Capacity			6.0kW Class		7.1kW Class	
Front Panel Color			White		White	
Air Flow Rates	m³/min (cfm)	H	16.2 (572)	17.4 (614)	17.4 (614)	19.7 (695)
		M	13.6 (480)	15.1 (533)	14.6 (515)	16.6 (586)
		L	11.4 (402)	12.7 (448)	11.6 (409)	13.5 (477)
		SL	10.2 (360)	11.4 (402)	10.6 (374)	12.1 (427)
Fan	Type		Cross Flow Fan		Cross Flow Fan	
	Motor Output	W	43		43	
	Speed	Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control			Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter			Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)		A	0.18	0.20	0.20	0.22
Power Consumption (Rated)		W	40	45	45	50
Power Factor		%	96.6	97.8	97.8	98.8
Temperature Control			Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)		mm	290×1,050×238		290×1,050×238	
Packaged Dimensions (HxWxD)		mm	337×1,147×366		337×1,147×366	
Weight		kg	12		12	
Gross Weight		kg	17		17	
Operation Sound	H/M/L/SL	dBA	45/41/36/33	44/40/35/32	46/42/37/34	46/42/37/34
Sound Power	H	dBA	61	60	63	63
Heat Insulation			Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection	Liquid	mm	φ 6.4		φ 6.4	
	Gas	mm	φ12.7		φ15.9	
	Drain	mm	φ18.0		φ18.0	
Drawing No.			3D051646		3D052803	

Model			FTXS71BAVMB	
			Cooling	Heating
Rated Capacity			7.1kW Class	
Front Panel Color			White	
Air Flow Rates	m³/min (cfm)	H	16.7 (590)	18.5 (653)
		M	14.2 (501)	15.1 (533)
		L	11.6 (409)	13.5 (477)
		SL	10.6 (374)	12.1 (427)
Fan	Type		Cross Flow Fan	
	Motor Output	W	43	
	Speed	Steps	5 Steps, Silent, Auto	
Air Direction Control			Right, Left, Horizontal, Downward	
Air Filter			Removable-Washable-Mildew Proof	
Running Current (Rated)		A	0.20	0.22
Power Consumption (Rated)		W	45	50
Power Factor		%	96.4	97.6
Temperature Control			Microcomputer Control	
Dimensions (HxWxD)		mm	290×1,050×238	
Packaged Dimensions (HxWxD)		mm	337×1,147×366	
Weight		kg	12	
Gross Weight		kg	17	
Operation Sound	H/M/L/SL	dBA	46/42/37/34	46/42/37/34
Sound Power	H	dBA	63	63
Heat Insulation			Both Liquid and Gas Pipes	
Piping Connection	Liquid	mm	φ 6.4	
	Gas	mm	φ15.9	
	Drain	mm	φ18.0	
Drawing No.			3D050880	

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

## Duct Connected Type

50Hz 230V

Model				FDXS25CAVMB		FDXS35CAVMB	
				Cooling	Heating	Cooling	Heating
Rated Capacity				2.5kW Class		3.5kW Class	
Front Panel Color				—		—	
Air Flow Rates	m³/min (cfm)	H		9.5 (335)	9.5 (335)	10.0 (353)	10.0 (353)
		M		8.8 (311)	8.8 (311)	9.3 (328)	9.3 (328)
		L		8.0 (282)	8.0 (282)	8.5 (300)	8.5 (300)
		SL		6.7 (237)	6.7 (237)	7.0 (247)	7.0 (247)
Fan	Type			Sirocco Fan		Sirocco Fan	
	Motor Output	W		62		62	
	Speed	Steps		5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)				A	0.47	0.47	
Power Consumption (Rated)				W	100	100	
Power Factor				%	92.5	92.5	
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)				mm	200x900x620	200x900x620	
Packaged Dimensions (HxWxD)				mm	266x1,106x751	266x1,106x751	
Weight				kg	25	25	
Gross Weight				kg	31	31	
Operation Sound	H/M/L/SL	dBA		35/33/31/29	35/33/31/29	35/33/31/29	35/33/31/29
External Static Pressure				Pa	40	40	
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection	Liquid	mm		φ 6.4		φ 6.4	
	Gas	mm		φ 9.5		φ 9.5	
	Drain	mm		VP20 (O.D. φ 26 / I.D. φ 20)		VP20 (O.D. φ 26 / I.D. φ 20)	
Drawing No.				3D048945C		3D048946C	

Model				FDXS50CVMB		FDXS60CVMB	
				Cooling	Heating	Cooling	Heating
Rated Capacity				5.0kW Class		6.0kW Class	
Front Panel Color				—		—	
Air Flow Rates	m³/min (cfm)	H		12.0 (424)	12.0 (424)	16.0 (565)	16.0 (565)
		M		11.0 (388)	11.0 (388)	14.8 (523)	14.8 (523)
		L		10.0 (353)	10.0 (353)	13.5 (477)	13.5 (477)
		SL		8.4 (297)	8.4 (297)	11.2 (395)	11.2 (395)
Fan	Type			Sirocco Fan		Sirocco Fan	
	Motor Output	W		130		130	
	Speed	Steps		5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)				A	0.64	0.74	0.74
Power Consumption (Rated)				W	140	160	160
Power Factor				%	95.1	94.0	94.0
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)				mm	200x900x620	200x1,100x620	
Packaged Dimensions (HxWxD)				mm	266x1,106x751	266x1,306x751	
Weight				kg	27	30	
Gross Weight				kg	34	37	
Operation Sound	H/M/L/SL	dBA		37/35/33/31	37/35/33/31	38/36/34/32	38/36/34/32
External Static Pressure				Pa	40	40	
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection	Liquid	mm		φ 6.4		φ 6.4	
	Gas	mm		φ 12.7		φ 12.7	
	Drain	mm		VP20 (O.D. φ 26 / I.D. φ 20)		VP20 (O.D. φ 26 / I.D. φ 20)	
Drawing No.				3D052132		3D0452133	

**Note:** The operating sound is based on the rear side suction inlet and the external static pressure 40 Pa.  
 Operating sound for under side suction inlet : [operating sound for rear side suction inlet] +5 dB.  
 However, when installation to which the external static pressure becomes low is carried out,  
 5 dB or more may go up.

## Conversion Formulae

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

Model			FDXS25EAVMB		FDXS35EAVMB	
			Cooling	Heating	Cooling	Heating
Rated Capacity			2.5kW Class		3.5kW Class	
Front Panel Color			—		—	
Air Flow Rates	m <sup>3</sup> /min (cfm)	H	8.7 (307)	8.7 (307)	8.7 (307)	8.7 (307)
		M	8.0 (282)	8.0 (282)	8.0 (282)	8.0 (282)
		L	7.3 (258)	7.3 (258)	7.3 (258)	7.3 (258)
		SL	6.2 (219)	6.2 (219)	6.2 (219)	6.2 (219)
Fan	Type		Sirocco Fan		Sirocco Fan	
	Motor Output	W	62		62	
	Speed	Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Filter			Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)		A	0.48	0.48	0.48	0.48
Power Consumption (Rated)		W	71	71	71	71
Power Factor		%	64.3	64.3	64.3	64.3
Temperature Control			Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)		mm	200x700x620		200x700x620	
Packaged Dimensions (HxWxD)		mm	274x906x751		274x906x751	
Weight		kg	21		21	
Gross Weight		kg	29		29	
Operation Sound	H/M/L/SL	dBA	35/33/31/29	35/33/31/29	35/33/31/29	35/33/31/29
External Static Pressure		Pa	30		30	
Heat Insulation			Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection	Liquid	mm	φ 6.4		φ 6.4	
	Gas	mm	φ 9.5		φ 9.5	
	Drain	mm	VP20 (O.D. φ 26 / I.D. φ 20)		VP20 (O.D. φ 26 / I.D. φ 20)	
Drawing No.			3D051881A		3D051883A	

**Note:** The operating sound is based on the rear side suction inlet and the external static pressure 30 Pa.  
 Operating sound for under side suction inlet : [operating sound for rear side suction inlet] +6 dB.  
 However, when installation to which the external static pressure becomes low is carried out,  
 6 dB or more may go up.

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

## Floor / Ceiling Suspended Dual Type

50Hz 230V

Model			FLXS25BAVMB		FLXS35BAVMB	
			Cooling	Heating	Cooling	Heating
Rated Capacity			2.5kW Class		3.5kW Class	
Front Panel Color			Almond White		Almond White	
Air Flow Rates	m <sup>3</sup> /min (cfm)	H	7.6 (268)	9.2 (325)	8.6 (304)	9.8 (346)
		M	6.8 (240)	8.3 (293)	7.6 (268)	8.9 (314)
		L	6.0 (212)	7.4 (261)	6.6 (233)	8.0 (282)
		SL	5.2 (184)	6.6 (233)	5.6 (198)	7.2 (254)
Fan	Type		Sirocco Fan		Sirocco Fan	
	Motor Output	W	34		34	
	Speed	Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control			Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter			Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)		A	0.32	0.34	0.36	0.36
Power Consumption (Rated)		W	70	74	78	78
Power Factor		%	95.1	94.6	94.2	94.2
Temperature Control			Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)		mm	490×1,050×200		490×1,050×200	
Packaged Dimensions (HxWxD)		mm	566×1,100×280		566×1,100×280	
Weight		kg	16		16	
Gross Weight		kg	22		22	
Operation Sound	H/M/L/SL	dBA	37/34/31/28	37/34/31/29	38/35/32/29	39/36/33/30
Sound Power	H	dBA	53	—	54	—
Heat Insulation			Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection	Liquid	mm	φ 6.4		φ 6.4	
	Gas	mm	φ 9.5		φ 9.5	
	Drain	mm	φ18.0		φ18.0	
Drawing No.			3D050866		3D050868	

Model			FLXS50BAVMB		FLXS60BAVMB	
			Cooling	Heating	Cooling	Heating
Rated Capacity			5.0kW Class		6.0kW Class	
Front Panel Color			Almond White		Almond White	
Air Flow Rates	m <sup>3</sup> /min (cfm)	H	11.4 (402)	12.1 (427)	12.0 (424)	12.8 (452)
		M	10.0 (353)	9.8 (346)	10.7 (378)	10.6 (374)
		L	8.5 (300)	7.5 (265)	9.3 (328)	8.4 (297)
		SL	7.5 (265)	6.8 (240)	8.3 (293)	7.5 (265)
Fan	Type		Sirocco Fan		Sirocco Fan	
	Motor Output	W	34		34	
	Speed	Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control			Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter			Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)		A	0.45	0.45	0.47	0.45
Power Consumption (Rated)		W	96	96	98	96
Power Factor		%	92.8	92.8	90.7	92.8
Temperature Control			Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)		mm	490×1,050×200		490×1,050×200	
Packaged Dimensions (HxWxD)		mm	280×1,100×566		280×1,100×566	
Weight		kg	17		17	
Gross Weight		kg	24		24	
Operation Sound	H/M/L/SL	dBA	47/43/39/36	46/41/35/33	48/45/41/39	47/42/37/34
Sound Power	H	dBA	63	32	64	63
Heat Insulation			Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection	Liquid	mm	φ 6.4		φ 6.4	
	Gas	mm	φ12.7		φ12.7	
	Drain	mm	φ18.0		φ18.0	
Drawing No.			3D050897		3D050882	

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

## Floor Standing Type

50Hz 230V

Model			FVXS25BAVMB		FVXS35BAVMB	
			Cooling	Heating	Cooling	Heating
Rated Capacity			2.5kW Class		3.5kW Class	
Front Panel Color			Almond White		Almond White	
Air Flow Rates	m <sup>3</sup> /min (cfm)	H	8.1 (286)	9.2 (325)	8.3 (293)	9.2 (325)
		M	6.2 (219)	7.0 (247)	6.3 (222)	7.1 (251)
		L	4.3 (152)	4.8 (169)	4.3 (152)	5.0 (177)
		SL	3.4 (120)	3.5 (124)	3.4 (120)	3.6 (127)
Fan	Type		Cross Flow Fan		Cross Flow Fan	
	Motor Output	W	14+14		14+14	
	Speed	Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control			Right, Left, Horizontal, Upward		Right, Left, Horizontal, Upward	
Air Filter			Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)		A	0.14	0.14	0.14	0.14
Power Consumption (Rated)		W	32	32	32	32
Power Factor		%	99.4	99.4	99.4	99.4
Temperature Control			Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)		mm	600x650x195		600x650x195	
Packaged Dimensions (HxWxD)		mm	714x770x294		714x770x294	
Weight		kg	13		13	
Gross Weight		kg	19		19	
Operation Sound	H/M/L/SL	dBA	38/32/26/23	38/32/26/23	39/33/27/24	39/34/29/26
Sound Power	H	dBA	54	—	55	—
Heat Insulation			Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection	Liquid	mm	φ 6.4		φ 6.4	
	Gas	mm	φ 9.5		φ 9.5	
	Drain	mm	φ18.0		φ18.0	
Drawing No.			3D050874		3D050876	

Model			FVXS50BAVMB	
			Cooling	Heating
Rated Capacity			5.0kW Class	
Front Panel Color			Almond White	
Air Flow Rates	m <sup>3</sup> /min (cfm)	H	10.8 (381)	13.2 (466)
		M	9.2 (325)	11.3 (399)
		L	7.7 (272)	9.4 (332)
		SL	6.7 (237)	8.3 (293)
Fan	Type		Cross Flow Fan	
	Motor Output	W	14+14	
	Speed	Steps	5 Steps, Silent, Auto	
Air Direction Control			Right, Left, Horizontal, Upward	
Air Filter			Removable-Washable-Mildew Proof	
Running Current (Rated)		A	0.26	0.32
Power Consumption (Rated)		W	55	70
Power Factor		%	92.0	95.1
Temperature Control			Microcomputer Control	
Dimensions (HxWxD)		mm	600x650x195	
Packaged Dimensions (HxWxD)		mm	714x770x294	
Weight		kg	13	
Gross Weight		kg	19	
Operation Sound	H/M/L/SL	dBA	44/40/36/33	45/40/36/33
Sound Power	H	dBA	56	57
Heat Insulation			Both Liquid and Gas Pipes	
Piping Connection	Liquid	mm	φ 6.4	
	Gas	mm	φ12.7	
	Drain	mm	φ20.0	
Drawing No.			3D050895	

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

## Ceiling Mounted Cassette Type

50Hz 230V

Model				FFQ25B8V1B		FFQ35B8V1B	
				Cooling	Heating	Cooling	Heating
Rated Capacity				2.5kW Class		3.5kW Class	
Decoration Panel	Color			White		White	
	Dimensions (HxWxD)			55x700x700		55x700x700	
Air Flow Rates		m <sup>3</sup> /min (cfm)	H	9.0 (318)	9.0 (318)	10.0 (353)	10.0 (353)
			M	—	—	—	—
			L	6.5 (230)	6.5 (230)	6.5 (230)	6.5 (230)
			SL	—	—	—	—
Fan	Type			Turbo Fan		Turbo Fan	
	Motor Output	W		55		55	
	Speed	Steps		2 Steps		2 Steps	
Air Direction Control				Horizontal, Downward		Horizontal, Downward	
Air Filter				—		—	
Running Current (Rated)		A		0.37	0.32	0.40	0.36
Power Consumption (Rated)		W		73	64	84	76
Power Factor		%		85.8	87.0	91.3	91.8
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD) ★		mm		260(286)x575x575		260(286)x575x575	
Packaged Dimensions (HxWxD)		mm		370x687x674		370x687x674	
Weight		kg		17.5		17.5	
Gross Weight		kg		21		21	
Operation Sound	H/L	dBA		29.5/24.5	29.5/24.5	32.0/25.0	32.0/25.0
Sound Power	H	dBA		46.5	—	49.0	—
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection	Liquid	mm		φ 6.4		φ 6.4	
	Gas	mm		φ 9.5		φ 9.5	
	Drain	mm		VP20 (O.D φ 26 / I.D φ 20)		VP20 (O.D φ 26 / I.D φ 20)	
Drawing No.				3D040445		3D040443	

Model				FFQ50B8V1B		FFQ60B8V1B	
				Cooling	Heating	Cooling	Heating
Rated Capacity				5.0kW Class		6.0kW Class	
Decoration Panel	Color			White		White	
	Dimensions (HxWxD)			55x700x700		55x700x700	
Air Flow Rates		m <sup>3</sup> /min (cfm)	H	12.0 (424)	12.0 (424)	15.0 (530)	15.0 (530)
			M	—	—	—	—
			L	8.0 (283)	8.0 (283)	10.0 (353)	10.0 (353)
			SL	—	—	—	—
Fan	Type			Turbo Fan		Turbo Fan	
	Motor Output	W		55		55	
	Speed	Steps		2 Steps		2 Steps	
Air Direction Control				Horizontal, Downward		Horizontal, Downward	
Air Filter				—		—	
Running Current (Rated)		A		0.49	0.45	0.61	0.56
Power Consumption (Rated)		W		97	89	120	111
Power Factor		%		86.1	86.0	85.5	86.2
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD) ★		mm		260(286)x575x575		260(286)x575x575	
Packaged Dimensions (HxWxD)		mm		370x687x674		370x687x674	
Weight		kg		17.5		17.5	
Gross Weight		kg		21		21	
Operation Sound	H/L	dBA		36.0/27.0	36.0/27.0	41.0/32.0	41.0/32.0
Sound Power	H	dBA		53.0	—	58.0	—
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection	Liquid	mm		φ 6.4		φ 6.4	
	Gas	mm		φ 12.7		φ 12.7	
	Drain	mm		VP20 (O.D φ 26 / I.D φ 20)		VP20 (O.D φ 26 / I.D φ 20)	
Drawing No.				3D040441		3D040436	

★ ( ) : dimension including control box

Conversion Formulae

kcal/h=kW×860  
 Btu/h=kW×3414  
 cfm=m<sup>3</sup>/min×35.3

## Ceiling-suspended Type

50Hz 230V

Model			FHQ35BVV1B		FHQ50BVV1B		FHQ60BVV1B		
			Cooling	Heating	Cooling	Heating	Cooling	Heating	
Rated Capacity			3.5kW Class		5.0kW Class		6.0kW Class		
Decoration Panel	Color		White		White		White		
	Dimensions (H×W×D)		—		—		—		
Air Flow Rates		m³/min (cfm)	H	13.0 (458)	13.0 (458)	13.0 (458)	13.0 (458)	17.0 (600)	16.0 (565)
			M	—		—		—	
			L	10.0 (353)	10.0 (353)	10.0 (353)	10.0 (353)	13.0 (459)	13.0 (459)
			SL	—		—		—	
Fan	Type		Sirocco Fan		Sirocco Fan		Sirocco Fan		
	Motor Output		W	62	62		62		
	Speed		Steps	2 Steps	2 Steps		2 Steps		
Air Direction Control			Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward		
Air Filter			Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof		
Temperature Control			Microcomputer Control		Microcomputer Control		Microcomputer Control		
Dimensions (H×W×D)		mm	195×960×680		195×960×680		195×1,160×680		
Packaged Dimensions (H×W×D)		mm	279×1,046×818		279×1,046×818		279×1,246×818		
Weight		kg	24		25		27		
Gross Weight		kg	31		32		35		
Operation Sound	H/L	dBA	37/32		38/33		39/33		
Sound Power	H/L	dBA	53/48		54/49		55/49		
Heat Insulation			Both Liquid and Gas Pipes		Both Liquid and Gas Pipes		Both Liquid and Gas Pipes		
Piping Connection		Liquid	mm	φ 6.4 (Flare)		φ 6.4 (Flare)		φ 6.4 (Flare)	
		Gas	mm	φ 9.5 (Flare)		φ12.7 (Flare)		φ12.7 (Flare)	
		Drain	mm	VP20 (O.D.φ 26 / I.D.φ 20)		VP20 (O.D.φ 26 / I.D.φ 20)		VP20 (O.D.φ 26 / I.D.φ 20)	
Drawing No.			3D037992E		3D037992E		3D037992E		

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



# Part 3

## Printed Circuit Board Connector Wiring Diagram

1. Printed Circuit Board Connector Wiring Diagram .....	24
1.1 Outdoor Unit RMXS 112/140/160 E7V3B .....	24
1.2 Branch Provider Unit .....	29
1.3 Wall Mounted Type 20/25/35/50 Class - D Series .....	30
1.4 Wall Mounted Type 20/25/35 Class - C Series .....	33
1.5 Wall Mounted Type 50/60/71 Class - E(B) Series.....	35
1.6 Duct Connected Type.....	37
1.7 Floor / Ceiling Suspended Dual Type.....	39
1.8 Floor Standing Type .....	42
1.9 Ceiling Mounted Cassette 600x600 Type .....	45
1.10 Ceiling Suspended Type .....	47

# 1. Printed Circuit Board Connector Wiring Diagram

## 1.1 Outdoor Unit RMXS 112/140/160 E7V3B

### 1.1.1 Main PCB (A1P)

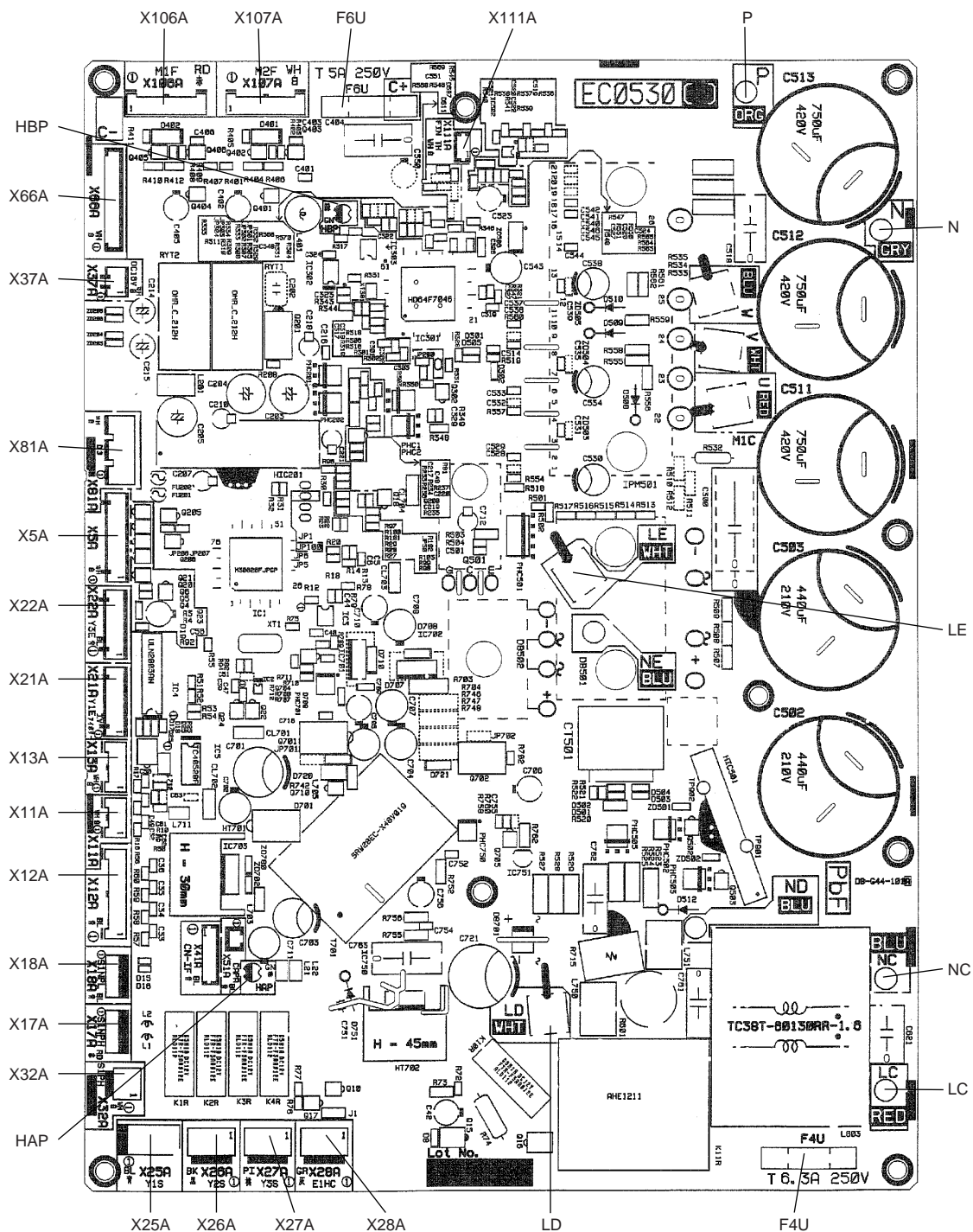
<b>Connectors</b>	1) X5A	Connector to Service PCB (A2P)
	2) X11A	Connector for Outdoor Air Thermistor
	3) X12A	Connector for Thermistors (Suction Pipe1, 2, Heat Exchanger, Discharge Pipe)
	4) X13A	Connector for Thermistors (Subcool Outlet, Liquid Pipe)
	5) X17A	Connector for High Pressure Sensor
	6) X18A	Connector for Low Pressure Sensor
	7) X21A	Connector for Electronic Expansion Valve (Main)
	8) X22A	Connector for Electronic Expansion Valve (Sub Cool)
	9) X25A	Connector for Y1S (Four Way Valve)
	10) X26A	Connector for Y2S (Hot Gas Bypass Valve)
	11) X27A	Connector for Y3S (Unload)
	12) X28A	Connector for Crankcase Heater
	13) X32A	Connector for High Pressure Switch
	14) X37A	Connector for Power Supply for Optional PCB (DC16V)
	15) X66A	Connector for C/H Selector PCB (A4P)
	16) X81A	Connector for Terminal Strip
	17) X106A, X107A	Connector for Fan Motor (Upper, lower)
	18) X111A	Connector for Fin Thermistor
	19) LD, LE	Connector for Reactor
	20) LC, NC	Connector for Noise Filter PCB (A3P)
	21) P	Connector for Capacitor C4 +
	22) N	Connector for Capacitor C4 –
	23) U, V, W	Connector for Compressor



**Note:** Other Designation

- |        |                      |
|--------|----------------------|
| 1) F4U | Fuse (6.3A / 250V)   |
| 2) F6U | Fuse (5.0A / 250V)   |
| 3) HAP | Operation Pilot Lamp |
| 4) HBP | Inverter Pilot Lamp  |

## PCB Detail



2P175758

## 1.1.2 Service PCB (A2P)

### Connectors

- 1) X205A Connector for Main PCB (A1P)

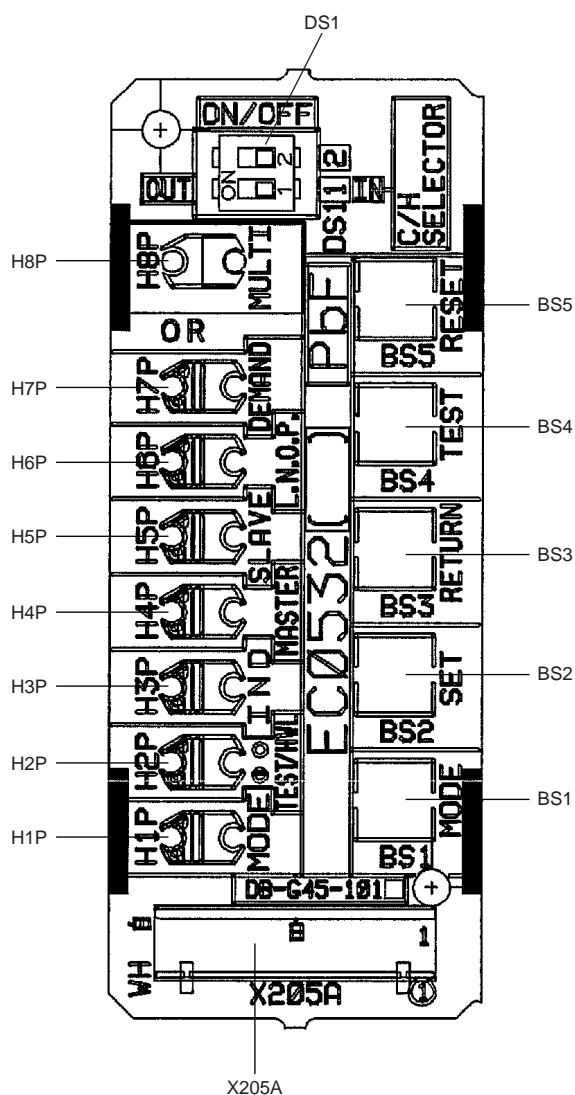


#### Note:

Other Designation

- 1) H1P to H8P Service Monitor LED
- 2) BS1 to BS5 Push Button Switch (Mode, Set, Return, Test, Reset)
- 3) DS1 DIP Switch

### PCB Detail



2P174185

### 1.1.3 Noise Filter PCB (A3P)

#### Connectors

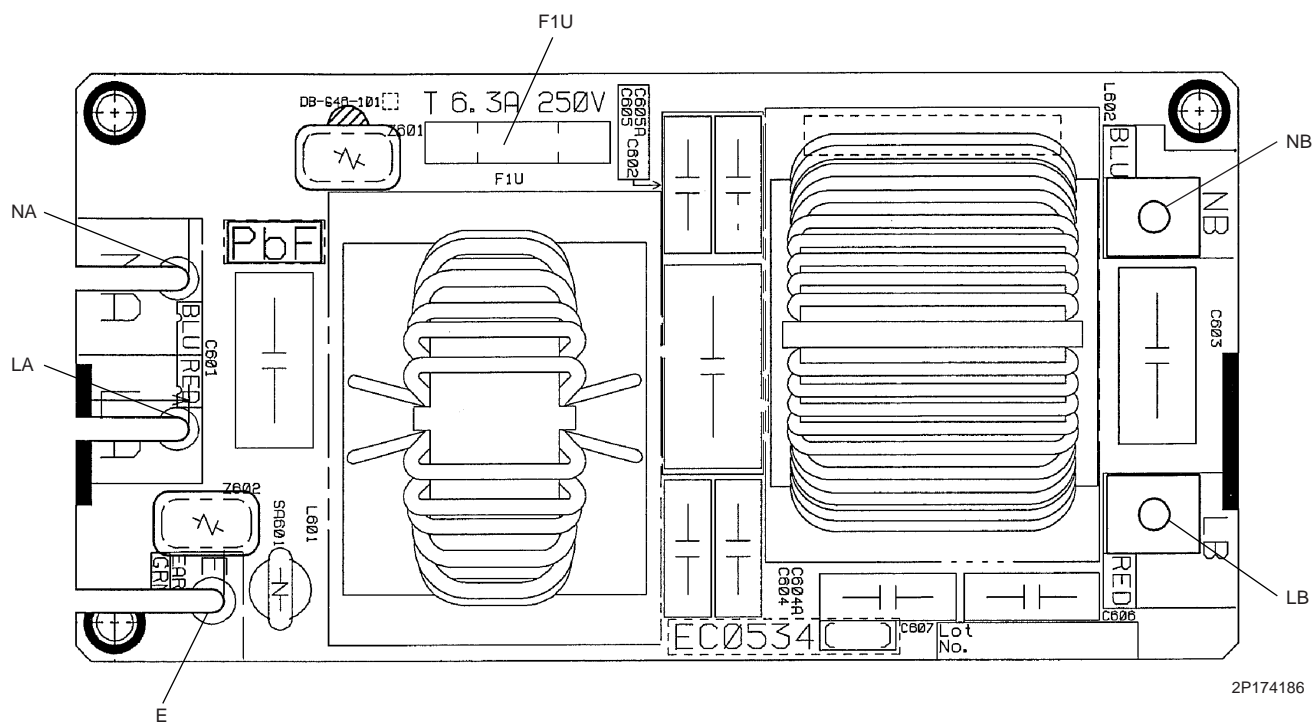
- |           |                                 |
|-----------|---------------------------------|
| 1) LA, NA | Terminal for X1M (Power Supply) |
| 2) LB, NB | Terminal for Main PCB (A1P)     |
| 3) E      | Terminal for Earth              |



**Note:** Other Designation

- |        |                  |
|--------|------------------|
| 1) F1U | Fuse (250V 6.3A) |
|--------|------------------|

#### PCB Detail



## 1.1.4 Cool / Heat Selector PCB (A4P)

### Connectors

1) X1A Connector for Main PCB (A1P)

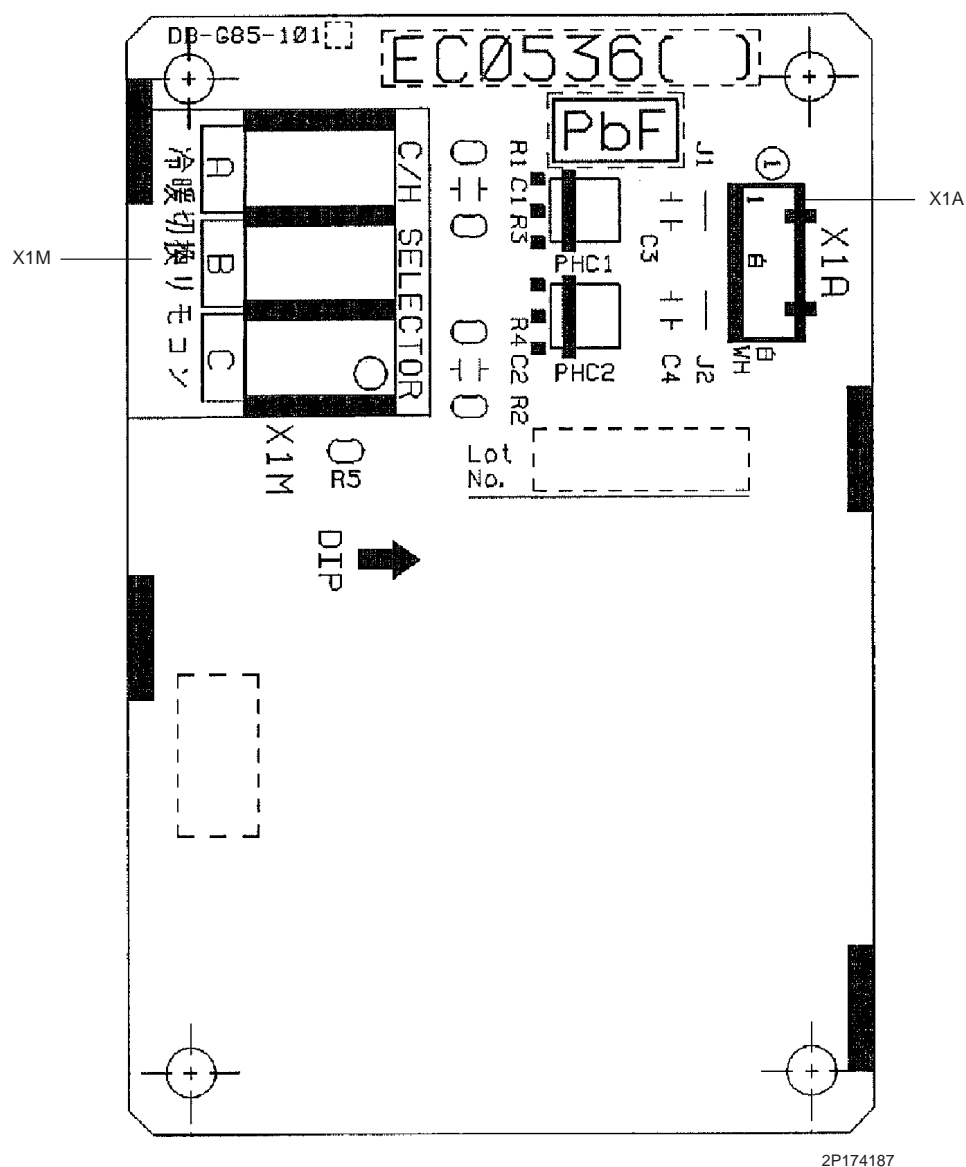


### Note:

Other Designation

1) X1M Cool / Heat Selector

### PCB Detail



## 1.2 Branch Provider Unit

### Connectors

- |                 |   |
|-----------------|---|
| 1) X20A         | Connector for Bypass Electronic Expansion Valve             |
| 2) X21A to X23A | Connector for Electronic Expansion Valve to Room A, B and C |
| 3) X90A         | Connector for Thermistors                                   |

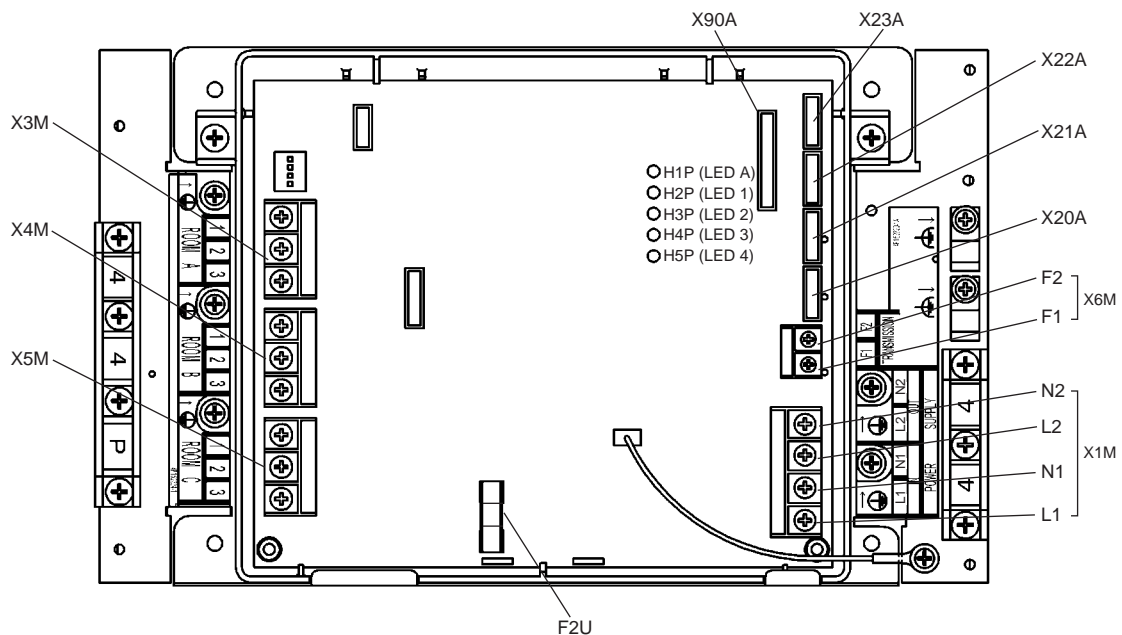


**Note:** Other Designations

- |                         |   |
|-------------------------|---|
| 1) F2U                  | Fuse (AC250V 3.15A)   |
| 2) X3M                  | Terminal for Inter Connecting Wire to Room A                |
| 3) X4M                  | Terminal for Inter Connecting Wire to Room B                |
| 4) X5M                  | Terminal for Inter Connecting Wire to Room C                |
| 5) F1, F2 (on X6M)      | Terminal for Transmission to Outdoor Unit or Other BP units |
| 6) L1, N1 (on X1M)      | Terminal for Power Supply (230V 50Hz)                       |
| 7) L2, N2 (on X1M)      | Terminal for Power Supply to other BP units                 |
| 8) H1P(LED-A)           | LED for Service Monitor                                     |
| 9) H2P~H5P (LED 1 to 4) | LED for Fault Indication                                    |

X23A and X5M are not used for BPMKS967B2B.

### PCB Detail



3P152439

## 1.3 Wall Mounted Type 20/25/35/50 Class - D Series

### Connectors

#### PCB(1) (Control PCB)

- |        |   |
|--------|---|
| 1) S1  | Connector for DC fan motor                    |
| 2) S6  | Connector for swing motor (horizontal blades) |
| 3) S21 | Connector for centralized control (HA)        |
| 4) S26 | Connector for display PCB                     |
| 5) S28 | Connector for signal receiver PCB             |
| 6) S32 | Connector for heat exchanger thermistor       |
| 7) S35 | Connector for INTELLIGENT EYE sensor PCB      |

#### PCB(2) (Signal Receiver PCB)

- |        |                           |
|--------|---------------------------|
| 1) S29 | Connector for control PCB |
|--------|---------------------------|

#### PCB(3) (Display PCB)

- |        |                           |
|--------|---------------------------|
| 1) S27 | Connector for control PCB |
|--------|---------------------------|

#### PCB(4) (INTELLIGENT EYE sensor PCB)

- |        |                           |
|--------|---------------------------|
| 1) S36 | Connector for control PCB |
|--------|---------------------------|



#### Note:

Other designations

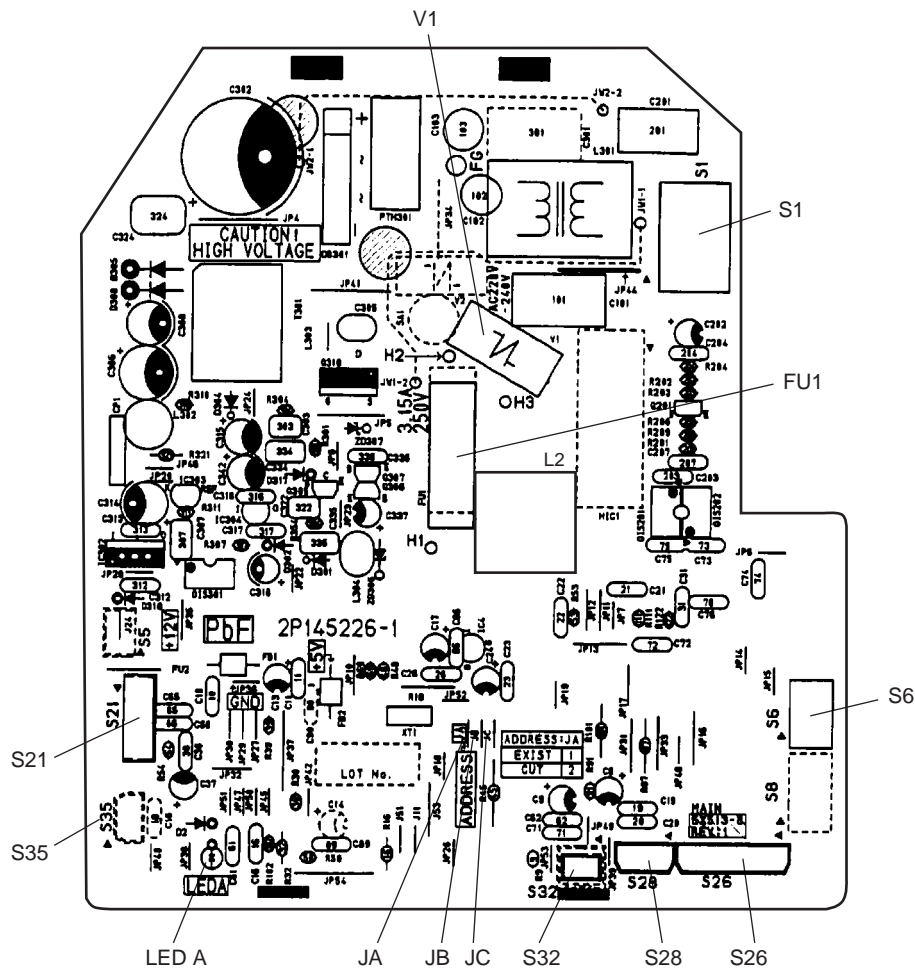
#### PCB(1) (Control PCB)

- |          |  |
|----------|--|
| 1) V1    | Varistor   |
| 2) JA    | Address setting jumper                                 |
| JB       | Fan speed setting when compressor is OFF on thermostat |
| JC       | Power failure recovery function (auto-restart)         |
|          | * Refer to page 147 for detail.                        |
| 3) LED A | LED for service monitor (green)                        |
| 4) FU1   | Fuse (3.15A)   |

#### PCB(3) (Display PCB)

- |               |                                  |
|---------------|----------------------------------|
| 1) SW1 (S1W)  | Forced operation ON / OFF switch |
| 2) LED1       | LED for operation (green)        |
| 3) LED2       | LED for timer (yellow)           |
| 4) LED3       | LED for INTELLIGENT EYE (green)  |
| 5) RTH1 (R1T) | Room temperature thermistor      |

## PCB Detail

PCB(1): Control PCB  
20/25/35 class

(R4986)



## 1.4 Wall Mounted Type 20/25/35 Class - C Series

### Connectors

#### PCB(1) (Control PCB)

- |        |  |
|--------|--|
| 1) S1  | Connector for fan motor                      |
| 2) S6  | Connector for swing motor (Horizontal Flap)  |
| 3) S7  | Connector for AC fan motor                   |
| 4) S21 | Connector for centralized control to 5 rooms |
| 5) S26 | Connector for signal receiver PCB            |
| 6) S32 | Connector for heat exchanger thermistor      |
| 7) S35 | Connector for INTELLIGENT EYE Sensor PCB     |

#### PCB(2) (Signal Receiver PCB)

- |        |                           |
|--------|---------------------------|
| 1) S27 | Connector for control PCB |
|--------|---------------------------|

#### PCB(3) (INTELLIGENT EYE Sensor PCB)

- |        |                           |
|--------|---------------------------|
| 1) S36 | Connector for control PCB |
|--------|---------------------------|



**Note:** Other designations

#### PCB(1) (Control PCB)

- |          |  |
|----------|--|
| 1) V1    | Varistor   |
| 2) JA    | Address setting jumper                                 |
| JB       | Fan speed setting when compressor is OFF on thermostat |
| JC       | Power failure recovery function                        |
|          | * Refer to page 147 for more detail.                   |
| 3) LED A | LED for service monitor (green)                        |
| 4) FU1   | Fuse (3.15A)   |

#### PCB(2) (Signal Receiver PCB)

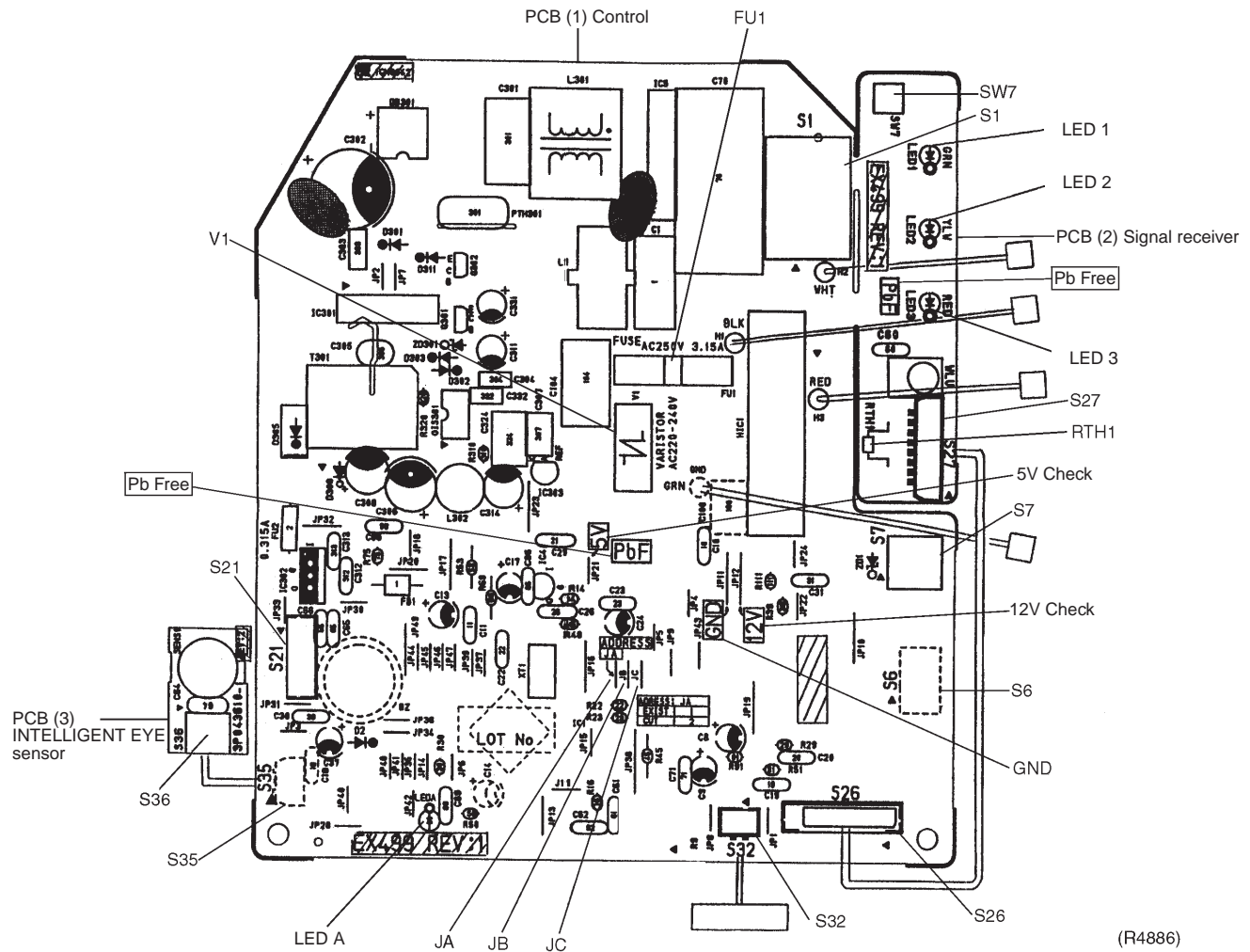
- |               |                                    |
|---------------|------------------------------------|
| 1) SW7 (S1W)  | Forced operation ON/OFF switch     |
| 2) LED1       | LED for operation (green)          |
| 3) LED2       | LED for timer (yellow)             |
| 4) LED3       | LED for HOME LEAVE operation (red) |
| 5) RTH1 (R1T) | Room temperature thermistor        |

## PCB Detail

PCB(1): Control PCB

PCB(2): Signal Receiver PCB

PCB(3): INTELLIGENT EYE Sensor PCB



## 1.5 Wall Mounted Type 50/60/71 Class - E(B) Series

### Connectors

#### PCB(1) (Control PCB)

- |        |   |
|--------|---|
| 1) S1  | Connector for DC fan motor                    |
| 2) S6  | Connector for swing motor (horizontal blades) |
| 3) S8  | Connector for swing motor (vertical blades)   |
| 4) S21 | Connector for centralized control (HA)        |
| 5) S26 | Connector for buzzer PCB                      |
| 6) S28 | Connector for signal receiver PCB             |
| 7) S32 | Connector for heat exchanger thermistor       |
| 8) S35 | Connector for Intelligent Eye sensor PCB      |

#### PCB(2) (Signal Receiver PCB)

- |        |                           |
|--------|---------------------------|
| 1) S29 | Connector for control PCB |
|--------|---------------------------|

#### PCB(3) (Buzzer PCB)

- |        |                           |
|--------|---------------------------|
| 1) S27 | Connector for control PCB |
| 2) S38 | Connector for display PCB |

#### PCB(4) (Display PCB)

- |        |                          |
|--------|--------------------------|
| 1) S37 | Connector for buzzer PCB |
|--------|--------------------------|

#### PCB(5) (INTELLIGENT EYE sensor PCB)

- |        |                           |
|--------|---------------------------|
| 1) S36 | Connector for control PCB |
|--------|---------------------------|



#### Note:

Other designations

#### PCB(1) (Control PCB)

- |          |  |
|----------|--|
| 1) V1    | Varistor   |
| 2) JA    | Address setting jumper                                 |
| JB       | Fan speed setting when compressor is OFF on thermostat |
| JC       | Power failure recovery function                        |
|          | * Refer to page 147 for detail.                        |
| 3) LED A | LED A for service monitor (green)                      |
| 4) FU1   | Fuse (3.15A)   |

#### PCB(2) (Signal Receiver PCB)

- |              |                                |
|--------------|--------------------------------|
| 1) SW1 (S1W) | Forced operation ON/OFF switch |
|--------------|--------------------------------|

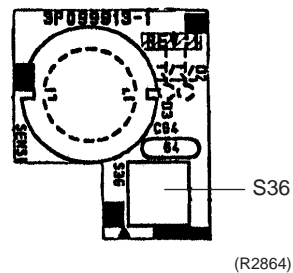
#### PCB(3) (Buzzer PCB)

- |               |                             |
|---------------|-----------------------------|
| 1) RTH1 (R1T) | Room temperature thermistor |
|---------------|-----------------------------|

#### PCB(4) (Display PCB)

- |         |                                    |
|---------|------------------------------------|
| 4) LED1 | LED for operation (green)          |
| 5) LED2 | LED for timer (yellow)             |
| 6) LED3 | LED for HOME LEAVE operation (red) |

**PCB(1): Control PCB (indoor unit)**



## 1.6 Duct Connected Type

### Connectors

#### PCB(1) (Control PCB)

- |        |  |
|--------|--|
| 1) S1  | Connector for AC fan motor                   |
| 2) S7  | Connector for AC fan motor                   |
| 3) S21 | Connector for centralized control to 5 rooms |
| 4) S26 | Connector for display PCB                    |
| 5) S32 | Connector for heat exchanger thermistor      |

#### PCB(2) (Display PCB)

- |       |                           |
|-------|---------------------------|
| 1) S1 | Connector for control PCB |
|-------|---------------------------|



**Note:** Other designations

#### PCB(1) (Control PCB)

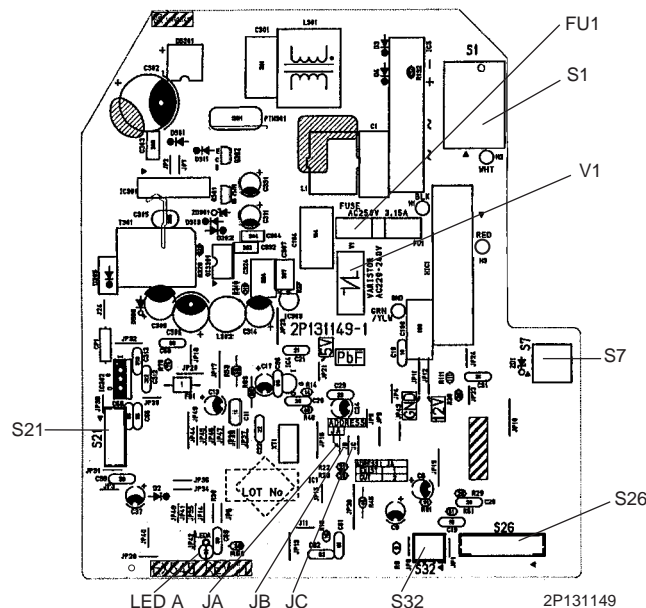
- |          |  |
|----------|--|
| 1) V1    | Varistor   |
| 2) JA    | Address setting jumper                                 |
| JB       | Fan speed setting when compressor is OFF on thermostat |
| JC       | Power failure recovery function                        |
|          | * Refer to page 147 for more detail.                   |
| 3) LED A | LED for service monitor (green)                        |
| 4) FU1   | Fuse (3.15A)   |

#### PCB(2) (Display PCB)

- |               |                                    |
|---------------|------------------------------------|
| 1) SW1 (S1W)  | Forced operation ON/OFF switch     |
| 2) LED1       | LED for operation (green)          |
| 3) LED2       | LED for timer (yellow)             |
| 4) LED3       | LED for HOME LEAVE operation (red) |
| 5) RTH1 (R1T) | Room temperature thermistor        |

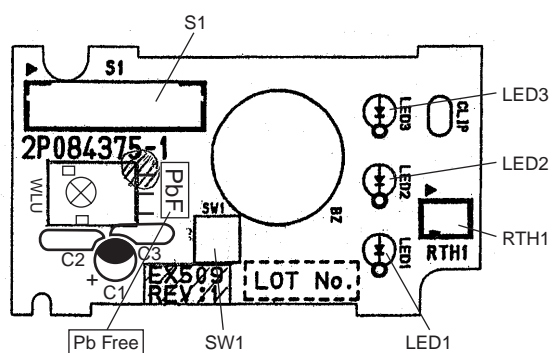
### PCB Detail

#### PCB (1): Control PCB



## PCB Detail

## PCB (2): Display PCB



2P084375

## 1.7 Floor / Ceiling Suspended Dual Type

### Connectors

#### PCB(1) (Control PCB)

- |        |  |
|--------|--|
| 1) S6  | Connector for swing motor (horizontal swing) |
| 2) S7  | Connector for AC fan motor                   |
| 3) S21 | Connector for centralized control            |
| 4) S24 | Connector for display PCB                    |
| 5) S26 | Connector for signal receiver PCB            |
| 6) S32 | Connector for heat exchanger thermistor      |
| 7) S37 | Connector for power supply PCB               |

#### PCB(2) (Power Supply PCB)

- |        |                           |
|--------|---------------------------|
| 1) S36 | Connector for control PCB |
|--------|---------------------------|

#### PCB(3) (Display PCB)

- |        |                           |
|--------|---------------------------|
| 1) S25 | Connector for control PCB |
|--------|---------------------------|

#### PCB(4) (Signal Receiver PCB)

- |        |   |
|--------|---|
| 1) S27 | Connector for control PCB                 |
| 2) S31 | Connector for room temperature thermistor |



#### Note:

Other designations

#### PCB(1) (Control PCB)

- |          |  |
|----------|--|
| 1) JA    | Address setting jumper                                 |
| JB       | Fan speed setting when compressor is OFF on thermostat |
| JC       | Power failure recovery function                        |
|          | * Refer to page 147 for detail.                        |
| 2) SW2   | Select switch ceiling or floor                         |
| 3) LED A | LED for service monitor (green)                        |

#### PCB(2) (Power Supply PCB)

- |        |              |
|--------|--------------|
| 1) V1  | Varistor     |
| 1) FU1 | Fuse (3.15A) |

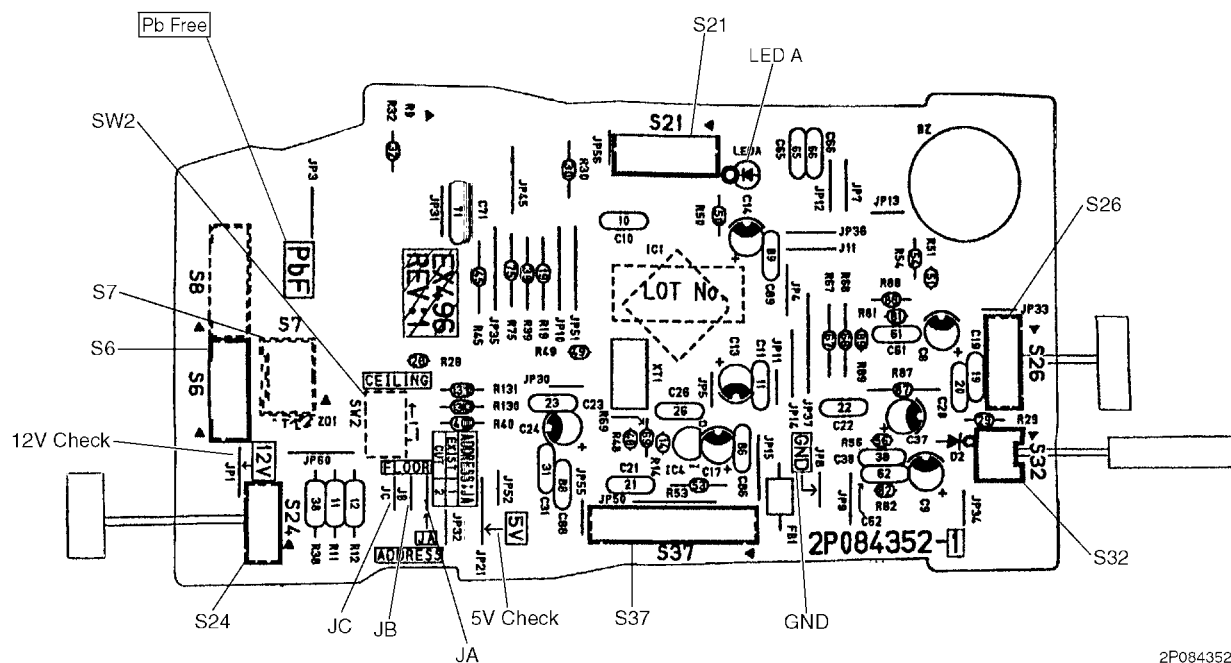
#### PCB(3) (Display PCB)

- |         |                                    |
|---------|------------------------------------|
| 1) LED1 | LED for operation (green)          |
| 2) LED2 | LED for timer (yellow)             |
| 3) LED3 | LED for HOME LEAVE operation (red) |

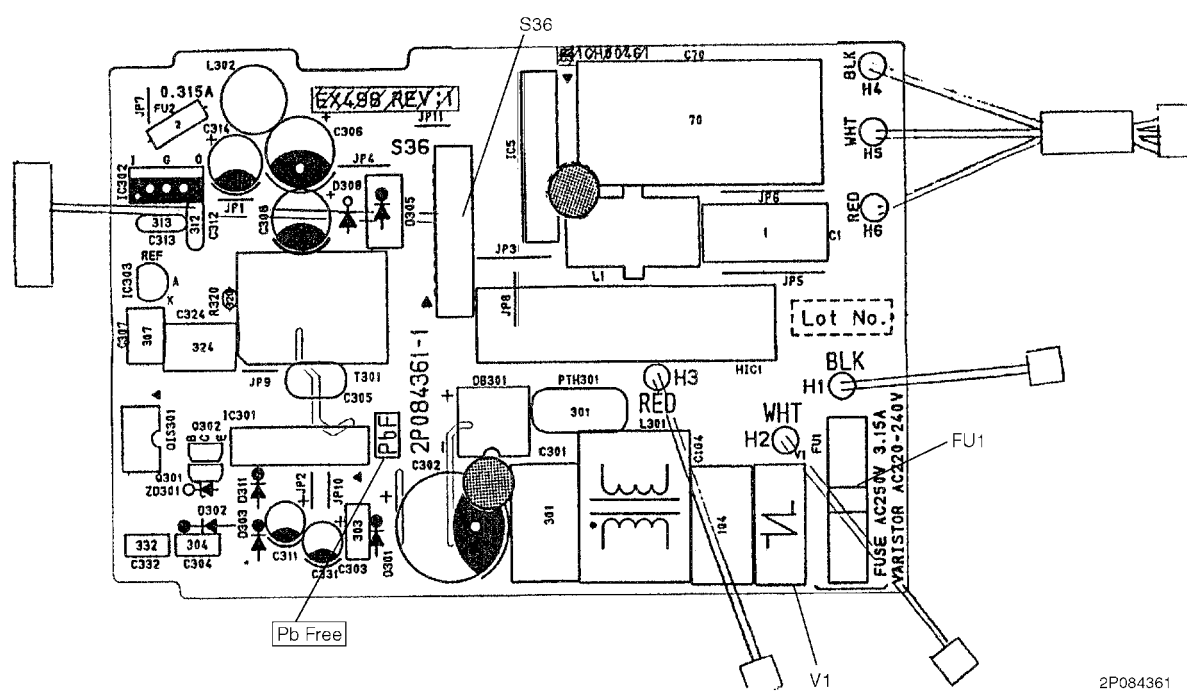
#### PCB(4) (Signal Receiver PCB)

- |              |                                |
|--------------|--------------------------------|
| 1) SW1 (S1W) | Forced operation ON/OFF switch |
|--------------|--------------------------------|

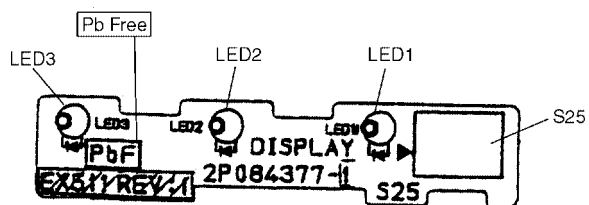
### PCB (1): Control PCB



### PCB (2): Power Supply PCB

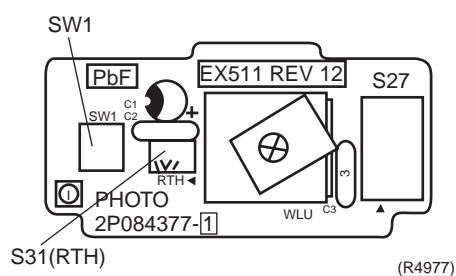


---

**PCB (3): Display PCB**

2P084377

---

**PCB (4): Signal Receiver PCB**

## 1.8 Floor Standing Type

### Connectors

#### PCB(1) (Power Supply PCB)

- |              |                           |
|--------------|---------------------------|
| 1) S8, S202, | Connector for control PCB |
| S204         |                           |

#### PCB(2) (Control PCB)

- |               |  |
|---------------|--|
| 1) S6         | Connector for swing motor and lower air outlet motor       |
| 2) S21        | Connector for centralized control                          |
| 3) S23        | Connector for display PCB                                  |
| 4) S31, S32   | Connector for room temperature / heat exchanger thermistor |
| 5) S7, S201,  | Connector for power supply PCB                             |
| S203          |  |
| 6) S25        | Connector for Signal receiver PCB                          |
| 7) S301, S302 | Connector for DC fan motors                                |

#### PCB(3) (Signal Receiver PCB)

- |        |                           |
|--------|---------------------------|
| 1) S26 | Connector for control PCB |
|--------|---------------------------|

#### PCB(4) (Display PCB)

- |        |                           |
|--------|---------------------------|
| 1) S24 | Connector for control PCB |
|--------|---------------------------|



#### Note:

Other Designations

#### PCB(2) (Control PCB)

- |          |  |
|----------|--|
| 1) V1    | Varistor   |
| 2) JA    | Address setting jumper                                 |
| JB       | Fan speed setting when compressor is OFF on thermostat |
| JC       | Power failure recovery function                        |
|          | * Refer to page 147 for detail.                        |
| 3) FU    | Fuse (3.15A)   |
| 4) LED A | LED for service monitor (green)                        |

#### PCB(3) (Signal Receiver PCB)

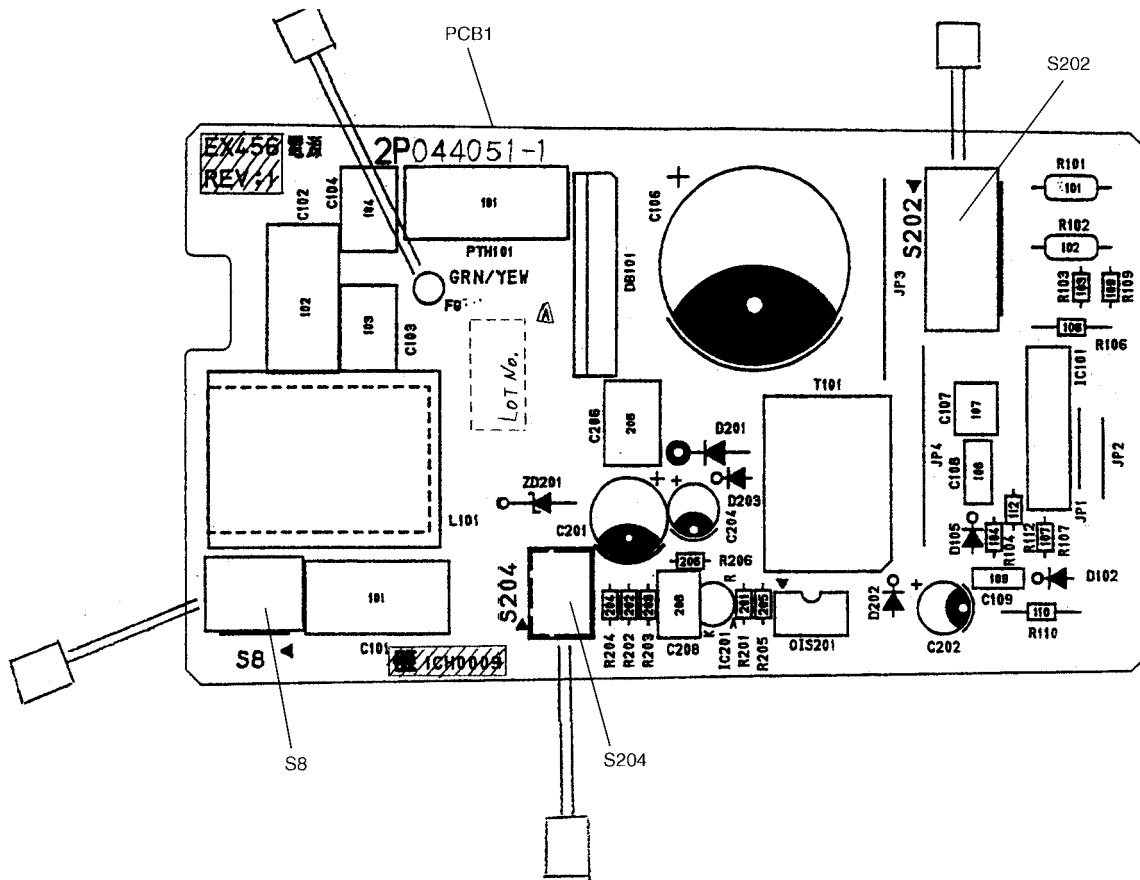
- |        |                                       |
|--------|---------------------------------------|
| 1) SW2 | Changing upward air flow limit switch |
| 2) SW4 | Discharge changeover switch           |

#### PCB(4) (Display PCB)

- |              |                                    |
|--------------|------------------------------------|
| 1) SW1 (S1W) | Forced operation ON/OFF switch     |
| 2) LED11     | LED for operation (green)          |
| 3) LED12     | LED for timer (yellow)             |
| 4) LED14     | LED for HOME LEAVE operation (red) |

## PCB Detail

## PCB (1): Power Supply PCB



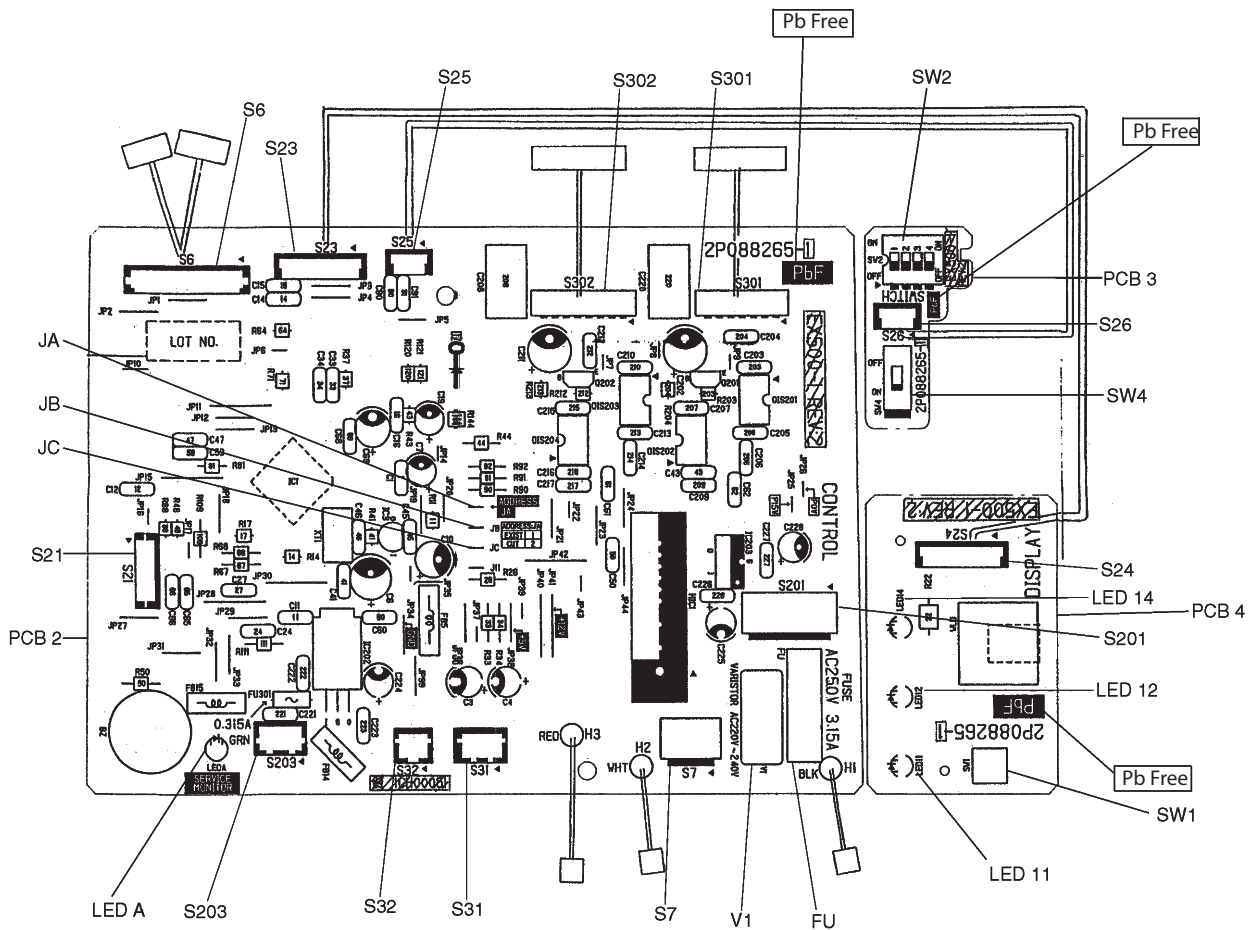
2P044051

## PCB Detail

PCB (2): Control PCB

PCB (3): Display PCB

PCB (4): Signal Receiver PCB



2P088265

## 1.9 Ceiling Mounted Cassette 600×600 Type

---

### Connectors

1) X5A	Connector for Terminal Strip (for Wired Remote Control)
2) X15A	Connector for Float Switch
3) X17A	Connector for Heat Exchanger Thermistor (2)
4) X18A	Connector for Heat Exchanger Thermistor (1)
5) X19A	Connector for Room Temperature Thermistor
6) X20A	Connector for Fan Motor
7) X24A	Connector for Infrared Remote Control Receiver Unit
8) X25A	Connector for Drain Pump Motor
9) X27A	Connector for Terminal Strip (for Inter Unit Wiring)
10) X33A	Connector for Wiring Adapter PCB (Optional Accessory)
11) X35A	Connector for Group Control Adapter (Optional Accessory)
12) X36A	Connector for Swing Motor
13) X40A	Connector for ON/OFF Input from Outside (for Optional Accessory)
14) X60A, X61A	Connector for Interface Adapter (Optional Accessory)

**Note:**

Other Designation

- |        |                     |
|--------|---------------------|
| 1) HAP | Service Monitor LED |
|--------|---------------------|



## 1.10 Ceiling Suspended Type

---

### Connectors

1) X5A	Connector for Terminal Strip (for Wired Remote Control)
2) X14A	Connector for Limit Switch (for Swing Flap)
3) X15A	Connector for Drain Pump (Optional Accessory)
4) X17A	Connector for Heat Exchanger Thermistor (2)
5) X18A	Connector for Heat Exchanger Thermistor (1)
6) X19A	Connector for Room Temperature Thermistor
7) X20A, X26A	Connector for Fan Motor
8) X24A	Connector for Infrared Remote Control Receiver Unit
9) X25A	Connector for Drain Pump Motor (Optional Accessory)
10) X27A	Connector for Terminal Strip (for Inter Unit Wiring)
11) X29A	Connector for Swing Motor
12) X33A	Connector for Wring Adapter PCB (Optional Accessory)
13) X35A	Connector for Group Control Adapter (Optional Accessory)
14) X40A	Connector for ON/OFF Input from Outside (for Optional Accessory)
15) X60A, X61A	Connector for Interface Adapter (Optional Accessory)


**Note:**

Other Designation

- |        |                     |
|--------|---------------------|
| 1) HAP | Service Monitor LED |
|--------|---------------------|

## PCB Detail



# Part 4

## Refrigerant Circuit

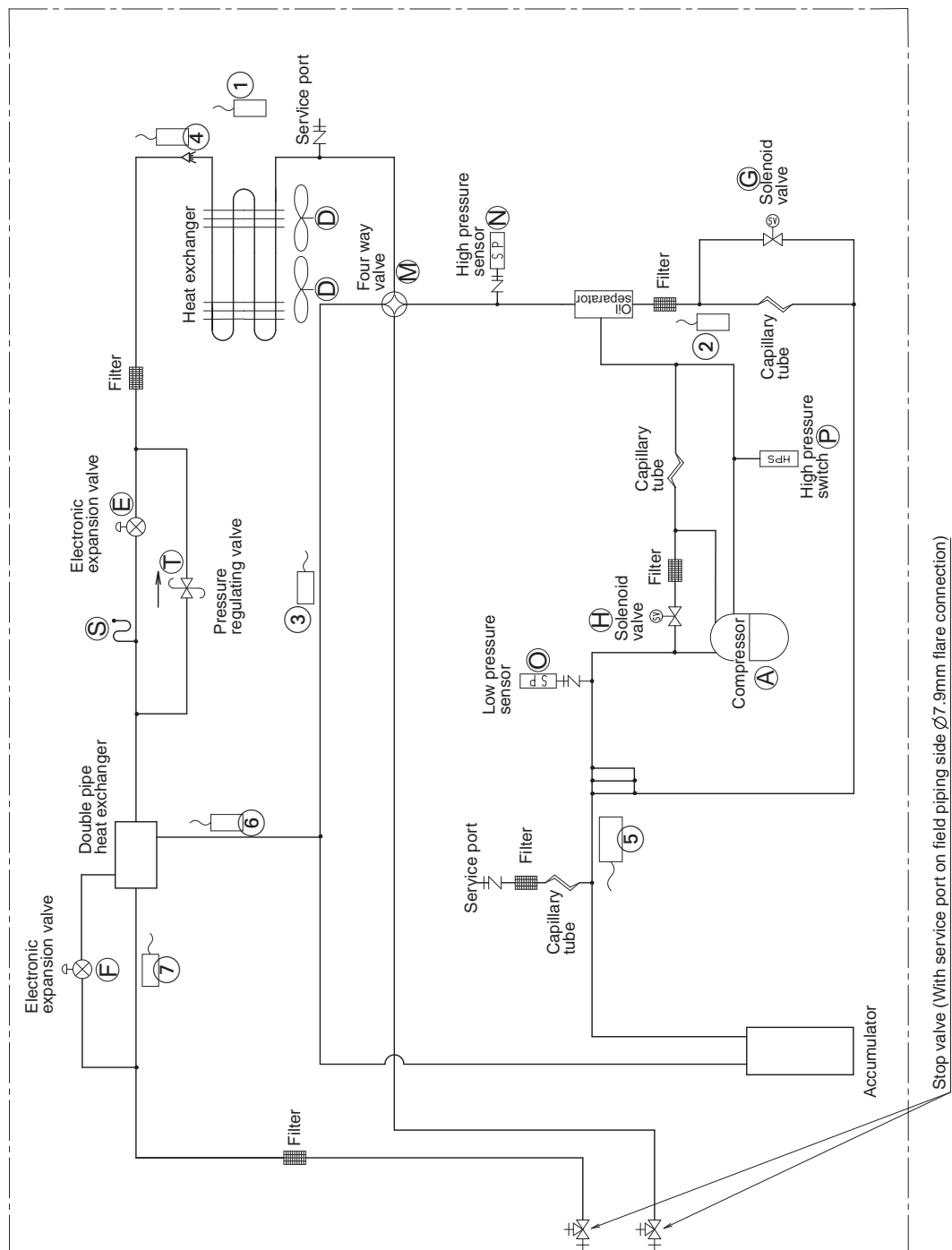
1. Refrigerant Circuit .....	50
1.1 Outdoor Units .....	50
1.2 BP Units .....	52
2. Functional Parts Layout .....	53
2.1 Outdoor Units .....	53
3. Refrigerant Flow for Each Operation Mode.....	54
3.1 Cooling Operation .....	54
3.2 Heating Operation .....	55
3.3 Cooling Oil Return Operation .....	56
3.4 Heating Oil Return Operation & Defrost Operation .....	57

# 1. Refrigerant Circuit

## 1.1 Outdoor Units

No. in refrigerant system diagram	Symbol	Name	Major Function
A	M1C	Inverter compressor (INV)	Inverter compressor is operated on frequencies between 36 Hz and 195 Hz by using the inverter. 31 steps
D	M1F M2F	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)	While in heating operation, PI control is applied to keep the outlet superheated degree of air heat exchanger constant.
F	Y3E	Electronic expansion valve (Subcool: EV3)	PI control is applied to keep the outlet superheated degree of subcooling heat exchanger constant.
G	Y2S	Solenoid valve (Hot gas: SVP)	Used to prevent the low pressure from transient falling.
H	Y3S	Solenoid valve (Unload circuit SVUL)	Used to the unloading operation of compressor.
M	Y1S	Four way valve	Used to switch the operation mode between cooling and heating.
N	S1NPH	High pressure sensor	Used to detect high pressure.
O	S1NPL	Low pressure sensor	Used to detect low pressure.
P	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 4.0 MPa or more to stop the compressor operation.
S	—	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.
T	—	Pressure regulating valve 1 (Receiver to discharge pipe)	This valve opens at a pressure of 4.0 MPa for prevention of pressure increase, thus resulting in no damage of functional parts due to the increase of pressure in transportation or storage.
1	R1T	Thermistor (Outdoor air: Ta)	Used to detect outdoor temperature, correct discharge pipe temperature, and others.
2	R2T	Thermistor (INV discharge pipe: Tdi)	used to detect discharge pipe temperature, make the temperature protection control of compressor, and others.
3	R3T	Thermistor (Suction pipe1: Ts1)	used to detect suction pipe temperature, keep the suction superheated degree constant in heating operation, and others.
4	R4T	Thermistor (Heat exchanger deicer: Tb)	Used to detect liquid pipe temperature of air heat exchanger, determine defrosting operation, and others.
5	R5T	Thermistor (Suction pipe2: Ts2)	Used to the calculation of an internal temperature of compressor etc.
6	R6T	Thermistor (Subcooling heat exchanger gas pipe: Tsh)	Used to control of subcooling electronic expansion valve.
7	R7T	Thermistor (Liquid pipe: Tl)	Used to detect refrigerant over charge in check operation, and others.

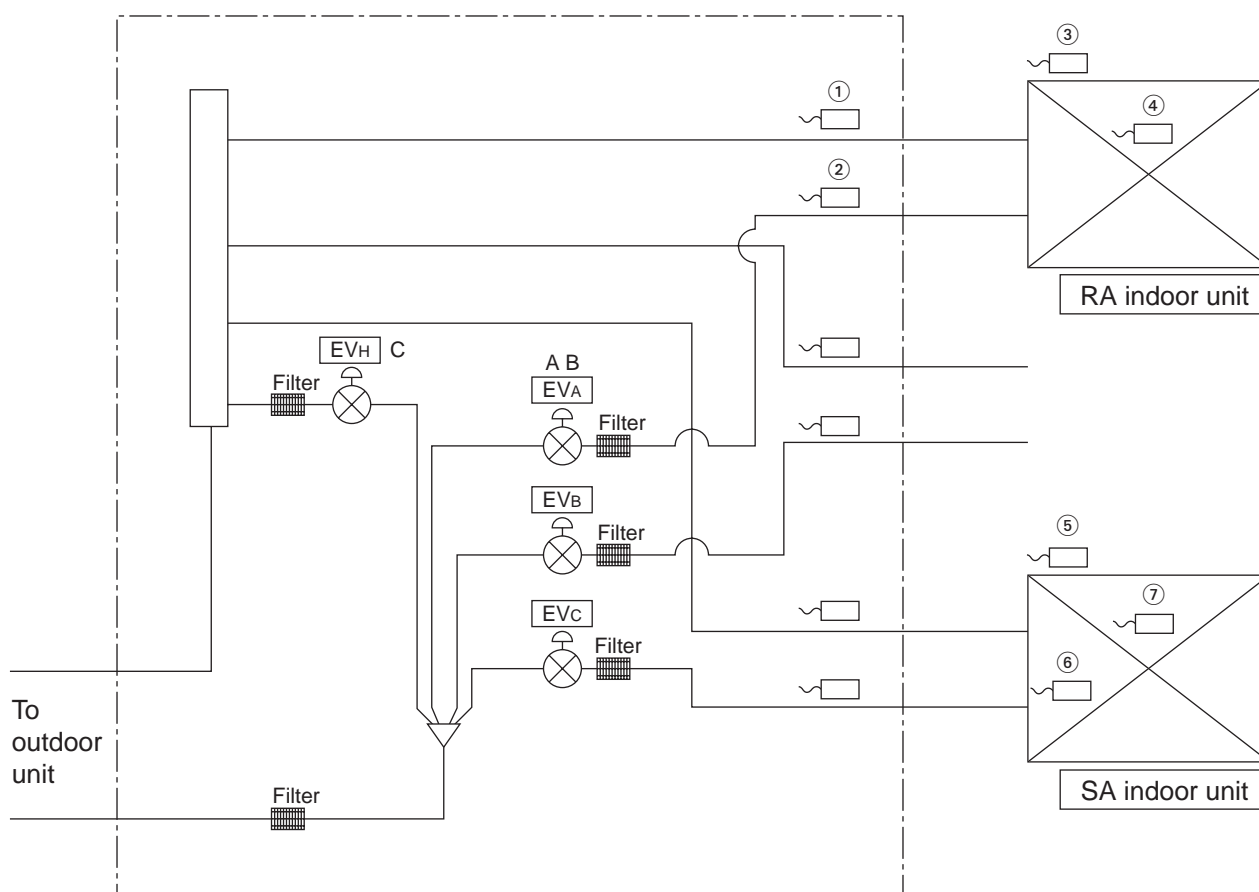
## Refrigerant Circuit Diagram



C : 3D052627A

## 1.2 BP Units

No. in refrigerant system diagram	Symbol	Name	Major Function
A	EVU	Electronic expansion valve (for operating room)	Among EVA, EVB and EVC, the electronic expansion valve of operating room is called EVU.
B	EVT	Electronic expansion valve (for stopping room)	Among EVA, EVB and EVC, the electronic expansion valve of stopping room is called EVT.
C	EVH	Electronic expansion valve (Bypass)	While in oil return operation, used to adjust the refrigerant circulating rate of indoor unit.
1	DGA ~ DGC	Thermistor (Gas pipe)	While in cooling operation, used to carry out the indoor unit SH control and cooling gas pipe isothermal control.
2	DLA ~ DLC	Thermistor (Liquid pipe)	While in heating operation, used to carry out the indoor unit SC control.
3	R1T	Thermistor (Room temp.)	Used to detect room air temperature and instructs the capacity supply to BP unit.
4	R2T	Thermistor (Heat exchanger)	Used to detect heat exchanger temperature and carry out various protection functions and controls of capacity.
5	R1T	Thermistor (Room temp.)	Used to detect room air temperature and instructs the capacity supply to BP unit.
6	R2T	Thermistor (Heat exchanger 1)	Used to detect heat exchanger temperature and carry out various protection functions and controls of capacity.
7	R3T	Thermistor (Heat exchanger 2)	Used to detect heat exchanger temperature and carry out various protection functions and controls of capacity.

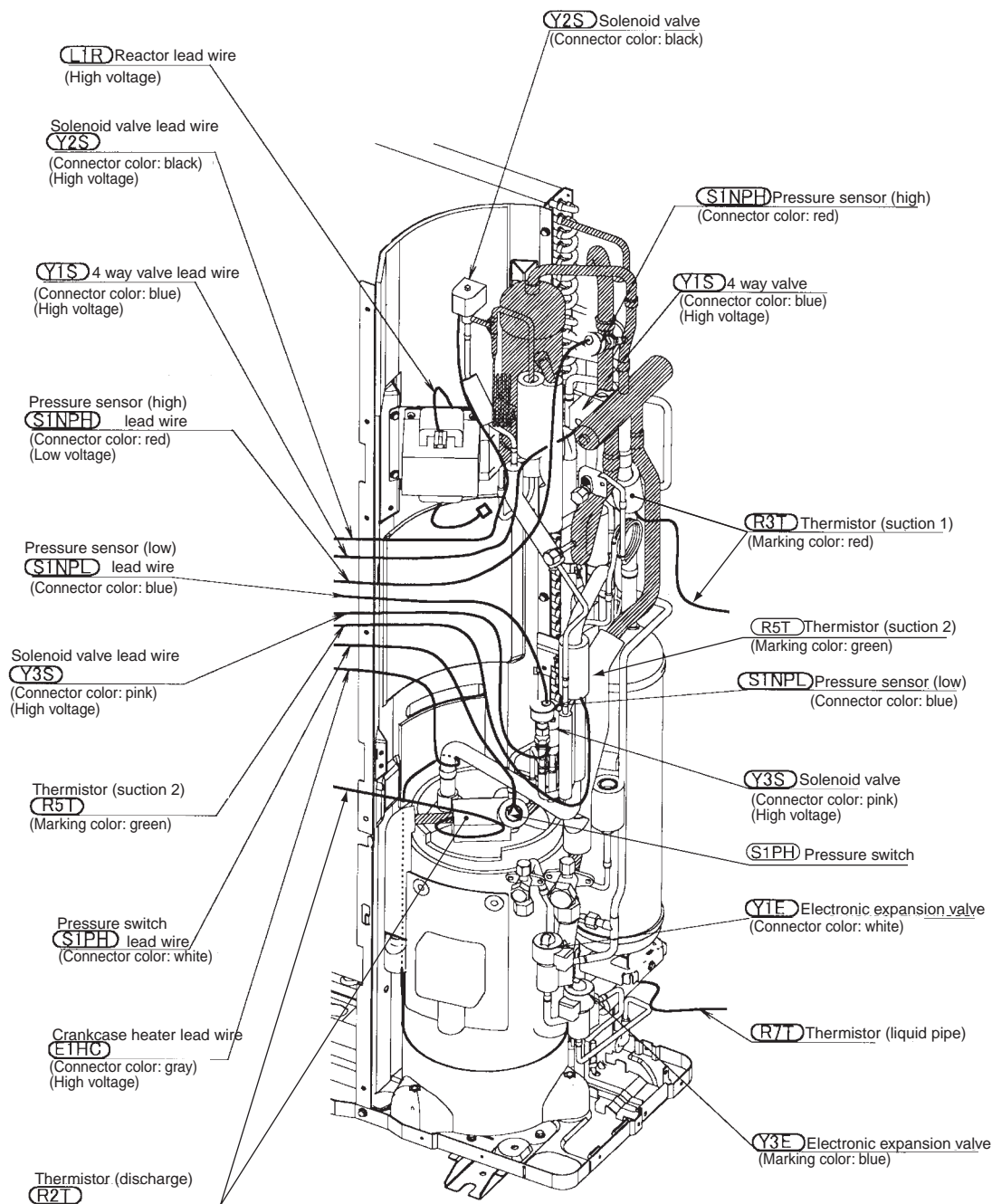


(Q0403)

## 2. Functional Parts Layout

### 2.1 Outdoor Units

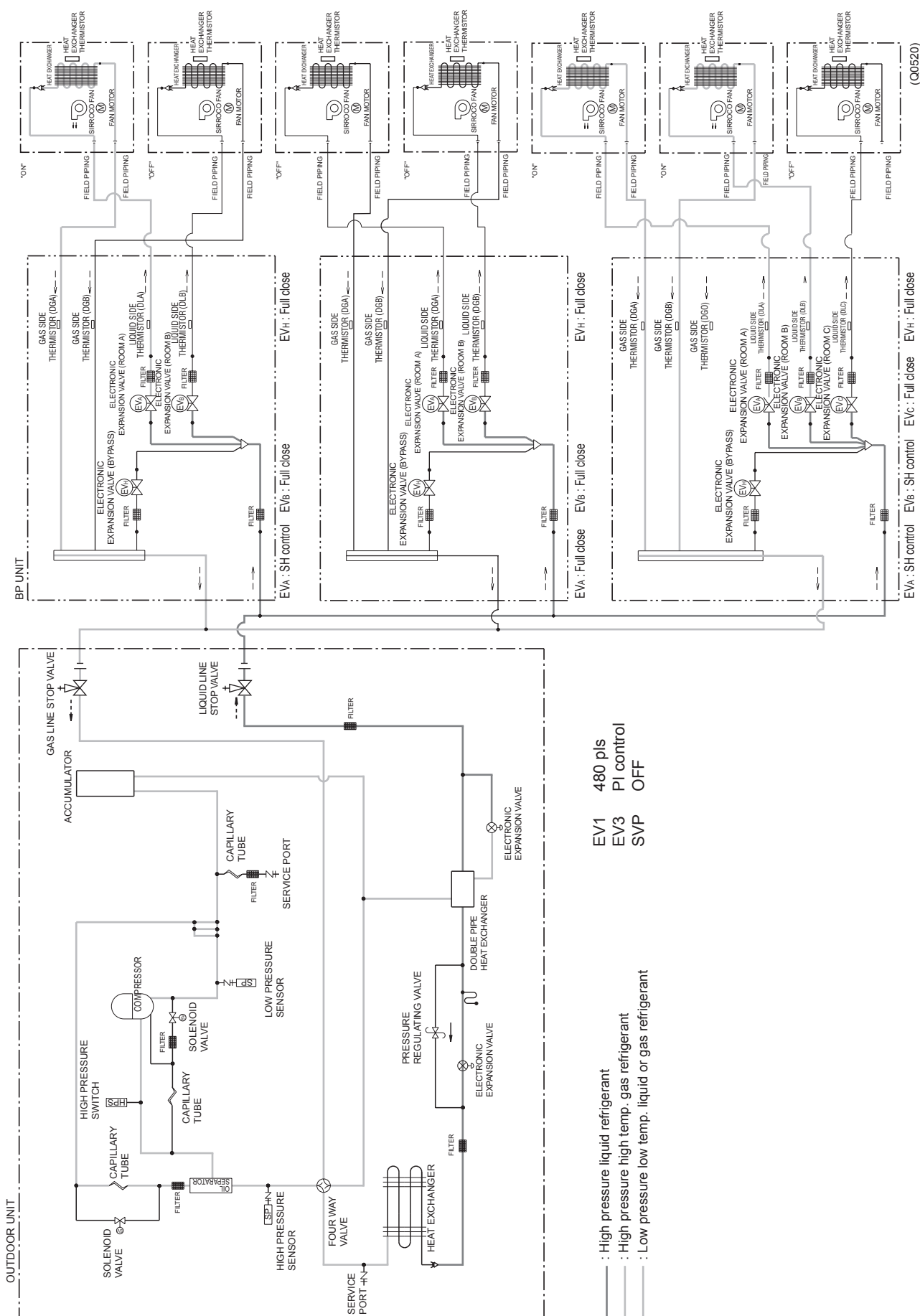
#### Birds-eye view



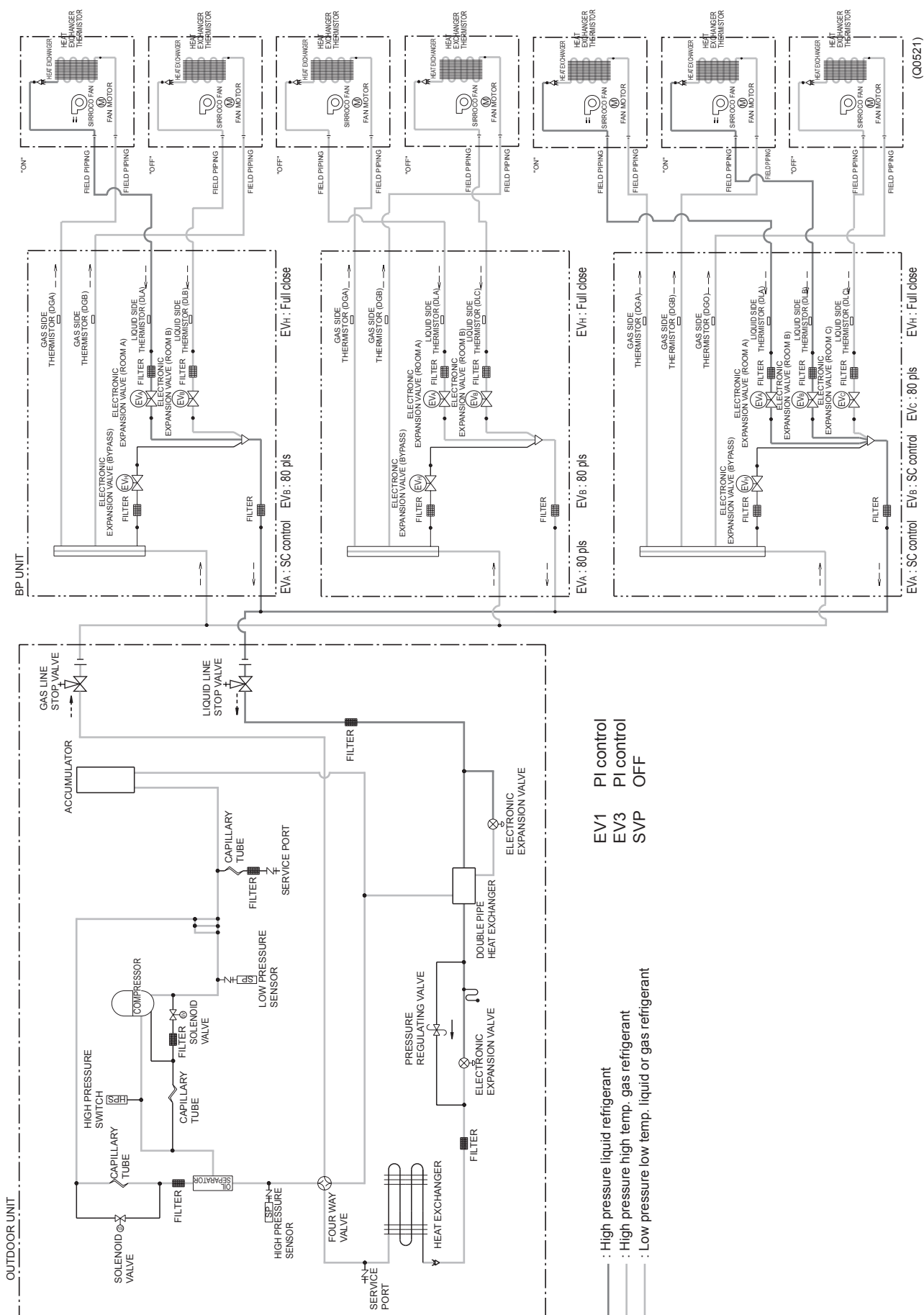
(Q0524)

## 3. Refrigerant Flow for Each Operation Mode

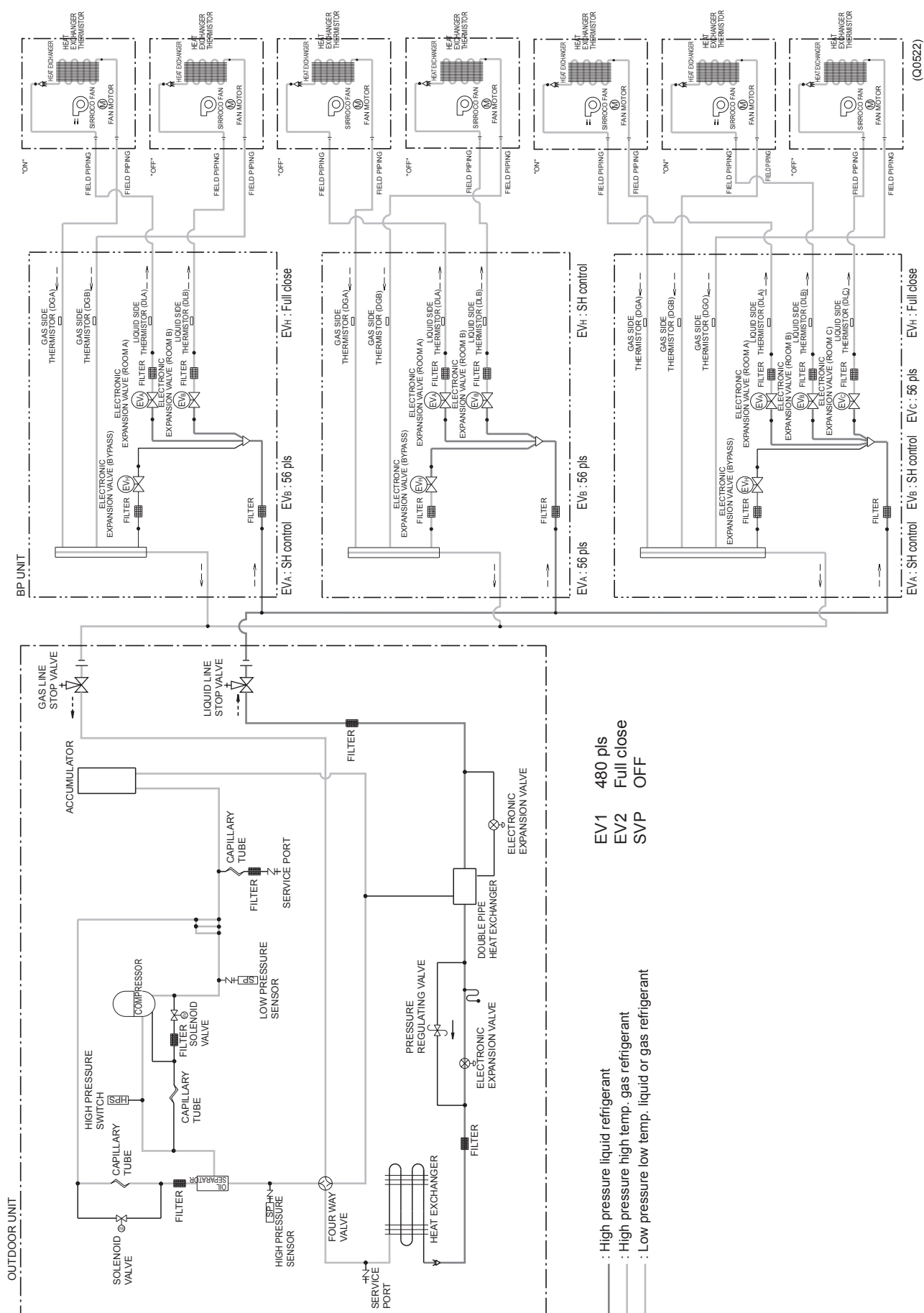
### 3.1 Cooling Operation



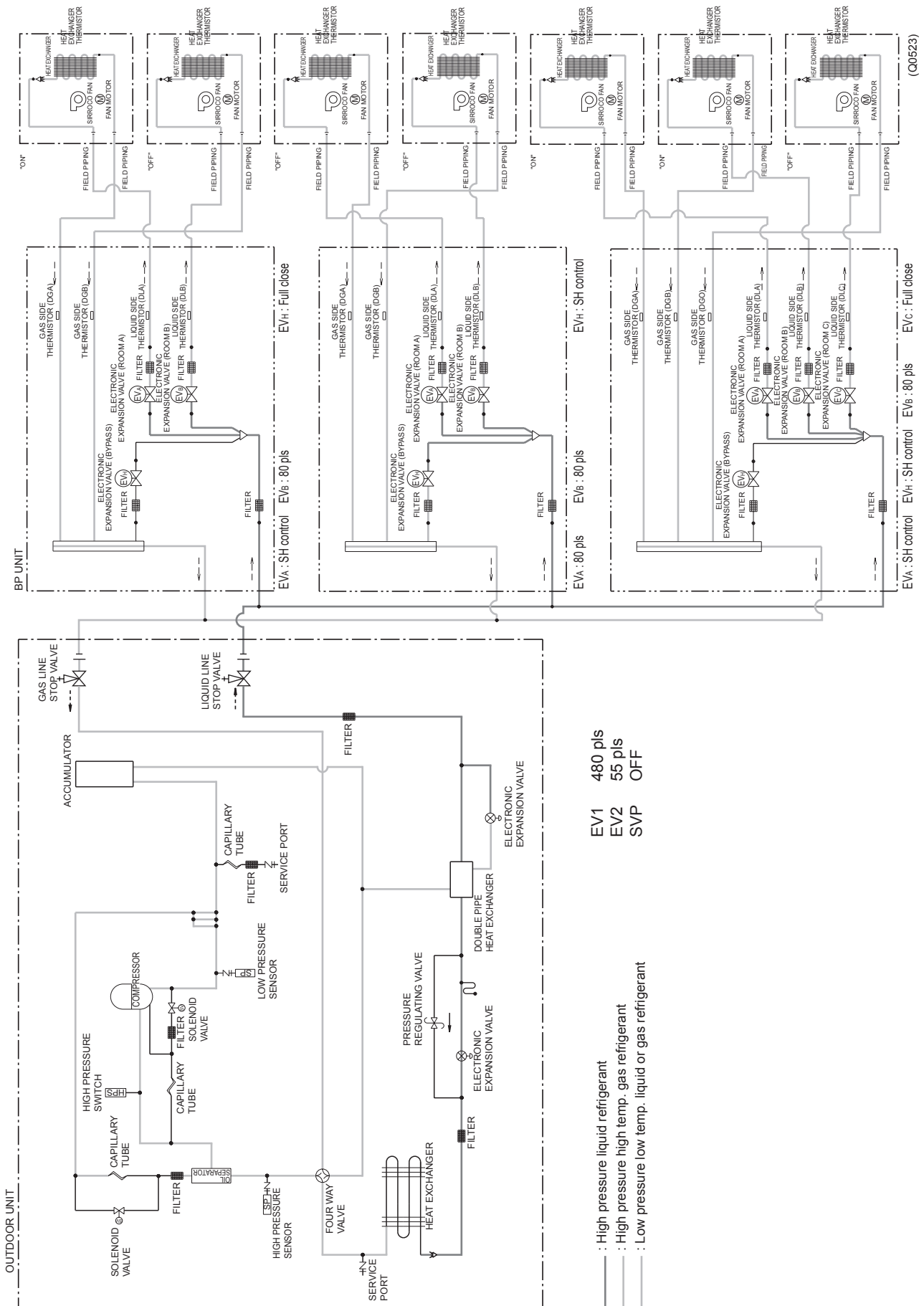
### 3.2 Heating Operation



### 3.3 Cooling Oil Return Operation



### 3.4 Heating Oil Return Operation & Defrost Operation



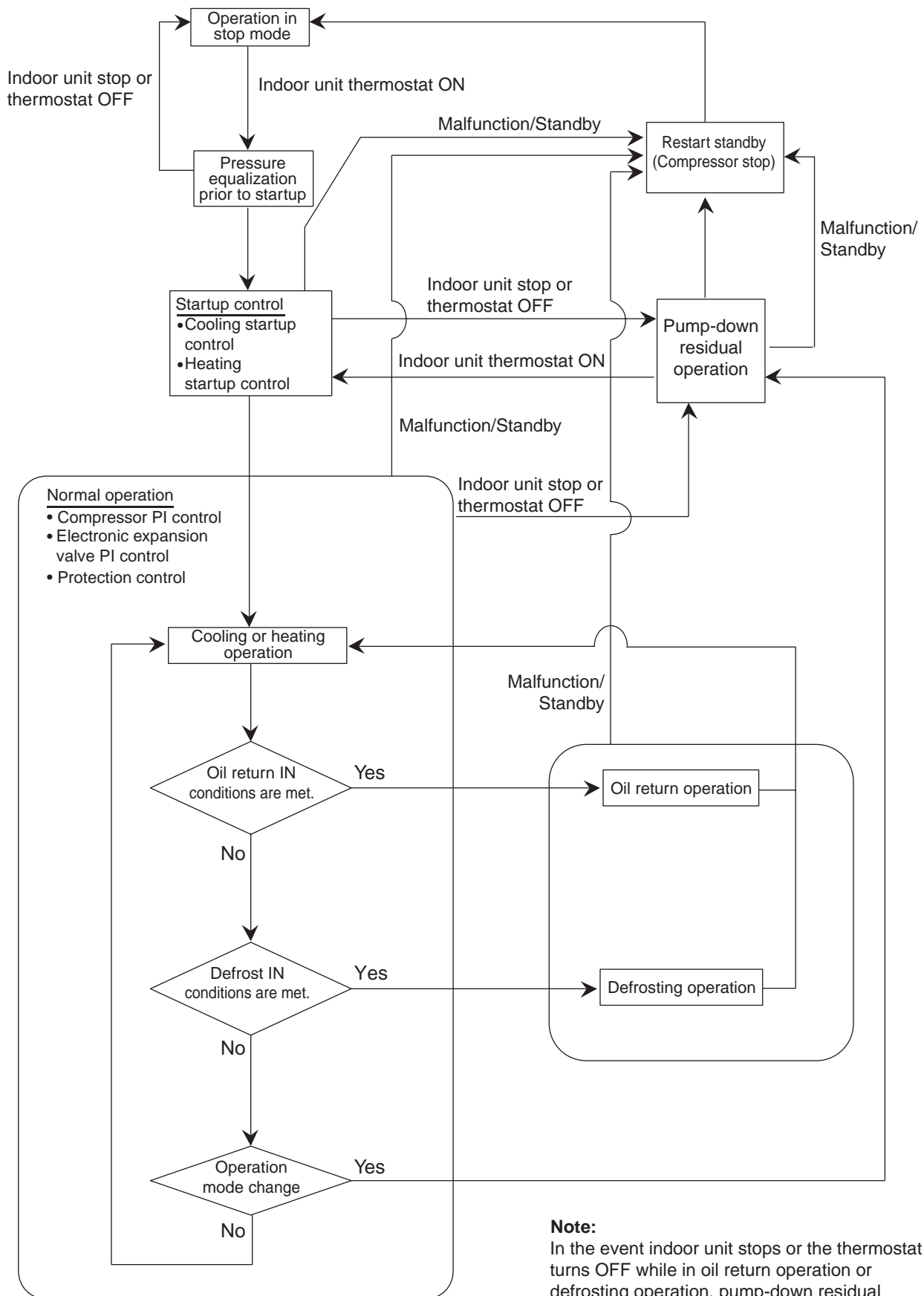


# Part 5

## Function

1. Operation Mode .....	60
2. Basic Control .....	61
2.1 Normal Operation .....	61
2.2 Compressor PI Control .....	62
2.3 Electronic Expansion Valve PI Control .....	65
2.4 Cooling Operation Fan Control .....	66
3. Special Control .....	67
3.1 Startup Control .....	67
3.2 Oil Return Operation .....	68
3.3 Defrosting Operation .....	70
3.4 Pump-down Residual Operation .....	71
3.5 Restart Standby .....	71
3.6 Stopping Operation .....	72
4. Protection Control .....	73
4.1 High Pressure Protection Control .....	73
4.2 Low Pressure Protection Control .....	74
4.3 Discharge Pipe Protection Control .....	75
4.4 Inverter Protection Control .....	76
4.5 Freeze-up Protection Control .....	77
4.6 Dew Condensation Prevention Control .....	78
5. Other Control .....	79
5.1 Demand Operation .....	79
5.2 Heating Operation Prohibition .....	79
6. BP Unit Control .....	80
6.1 BP Unit Command Conversion .....	80
6.2 BP Unit Electronic Expansion Valve Control .....	81
6.3 SH Control in Cooling Operation .....	83
6.4 SC Control in Heating Operation .....	84
6.5 Heat Exchanger Isothermal Control in Heating Operation .....	84
7. Indoor Unit (RA Models) .....	85
7.1 Power-Airflow Dual Flaps, Wide Angle Louvers and Auto-Swing .....	85
7.2 Fan Speed Control for Indoor Units .....	86
7.3 Programme Dry Function .....	87
7.4 Automatic Operation .....	88
7.5 Thermostat Control .....	89
7.6 Night Set Mode .....	90
7.7 ECONO Mode .....	91
7.8 INTELLIGENT EYE .....	92
7.9 HOME LEAVE Operation .....	94
7.10 Inverter POWERFUL Operation .....	95
7.11 Other Functions .....	96
8. Indoor Unit (SkyAir Models) .....	98
8.1 Function Outline .....	98
8.2 Electric Function Parts .....	99
8.3 Function Details .....	100

# 1. Operation Mode



(V3152)

## 2. Basic Control

### 2.1 Normal Operation

#### ■ Cooling Operation

Actuator	Operation	Remarks
Compressor	Compressor PI control	Used for high pressure protection control, low pressure protection control, discharge pipe temperature protection control, and compressor operating frequency upper limit control with inverter protection control.
Outdoor unit fan	Cooling fan control	—
Four way valve	OFF	—
Main electronic expansion valve (EV1)	480 pls	—
Subcooling electronic expansion valve (EV3)	PI control	—
Hot gas bypass valve (SVP)	OFF	This valve turns on with low pressure protection control.

#### ■ Heating Operation

Actuator	Operation	Remarks
Compressor	Compressor PI control	Used for high pressure protection control, low pressure protection control, discharge pipe temperature protection control, and compressor operating frequency upper limit control with inverter protection control.
Outdoor unit fan	STEP 7 or 8	—
Four way valve	ON	—
Main electronic expansion valve (EV1)	PI control	—
Subcooling electronic expansion valve (EV3)	PI control	—
Hot gas bypass valve (SVP)	OFF	This valve turns on with low pressure protection control.

★Heating operation is not functional at an outdoor air temperature of 24°CDB 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).

##### TeS initial value

Condition	L	M (Normal) (factory setting)	H
ΔD up	3	6	9
ΔD keep	12	12	12
ΔD down	12	12	13

Te : Low pressure equivalent saturation temperature (°C)

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

Te changes corresponding to the capacity which indoor units require the above as the initial value. (However  $-7 \leq Te \leq 15$ )

#### [Heating operation]

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

##### TcS initial value

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

Tc : High pressure equivalent saturation temperature (°C)

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

Tc changes corresponding to the capacity which indoor units require the above as the initial value. (However  $42 \leq Tc \leq 51$ )

#### RMXS112 · 140 · 160E

STn	INV(Fullload)	INV(Unload)
1		36.0Hz
2		39.0Hz
3		43.0Hz
4		47.0Hz
5		52.0Hz
6	52.0Hz	57.0Hz
7	57.0Hz	64.0Hz
8	62.0Hz	71.0Hz
9	68.0Hz	78.0Hz
10	74.0Hz	

STn	INV(Fullload)	INV(Unload)
11	80.0Hz	
12	86.0Hz	
13	92.0Hz	
14	98.0Hz	
15	104.0Hz	
16	110.0Hz	
17	116.0Hz	
18	122.0Hz	
19	128.0Hz	
20	134.0Hz	

STn	INV(Fullload)	INV(Unload)
21	140.0Hz	
22	146.0Hz	
23	152.0Hz	
24	158.0Hz	
25	164.0Hz	
26	170.0Hz	
27	175.0Hz	
28	180.0Hz	
29	185.0Hz	
30	190.0Hz	
31	195.0Hz	

- \* Compressors may operate in a pattern other than those listed in above tables subject to the operating conditions. Selection of full load operation to/from unload operation is made with the unload circuit solenoid valve (Y3S=SVUL). The full load operation is performed with the SVUL set to OFF, while the unload operation is performed with the SVUL set to ON.

**ΔD Control**

Receiving the capacity request signal from the indoor unit, the outdoor unit corrects its target pressure for capacity control.

Controls ΔD signal from indoor unit as follows.

UP control : When the UP command come from more than one indoor unit among thermostat-ON indoor units.

Down control: When the down command come from all indoor units among thermostat-ON indoor units.

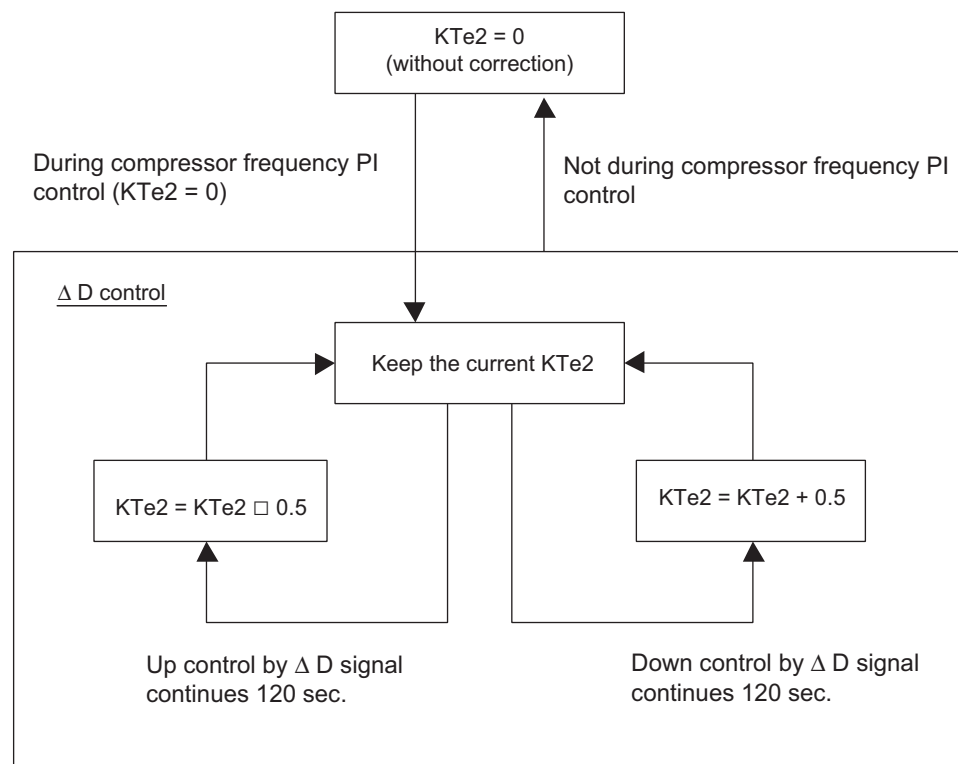
Keep control: Except for the above

About detail of ΔD signal, refer to P80

**Cooling Operation**

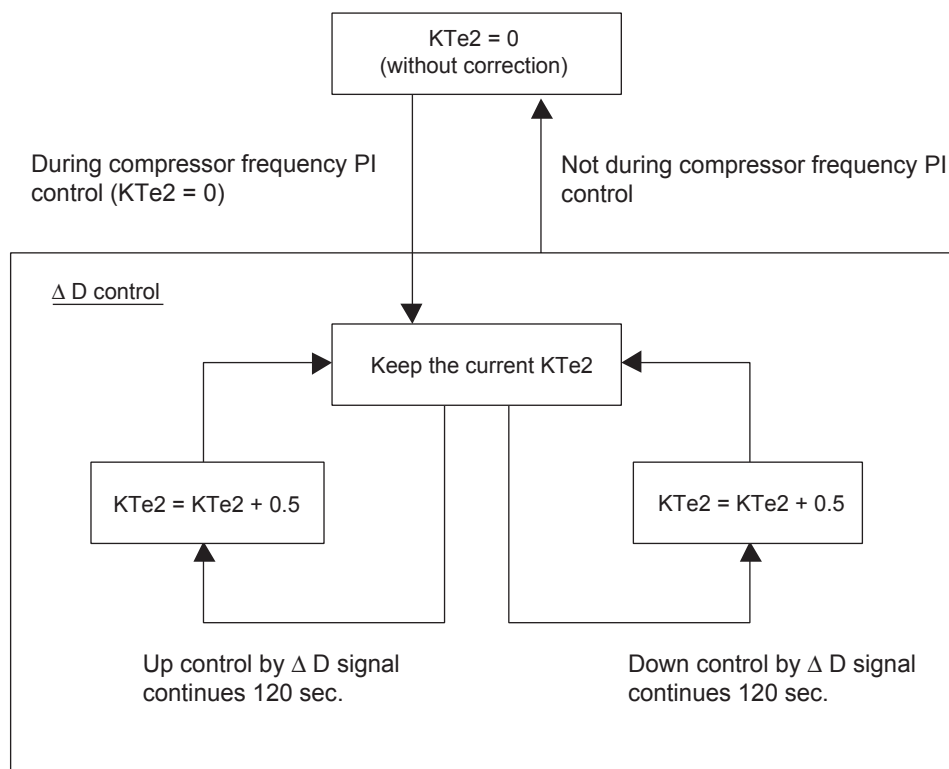
$TeS = TeS \text{ initial value} + KTe2$

KTe2 : Correction value by ΔD signal in cooling.



(Q0396)

**Heating Operation**

$$TcS = TcS \text{ initial value} + KTe2$$
 $KTe2$  : Correction value by  $\Delta D$  signal in heating.


(Q0397)

## 2.3 Electronic Expansion Valve PI Control

---

### Main Electronic Expansion Valve EV1 Control

Carries out the electronic expansion 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).

$$SH = Ts1 - Te$$

SH : Evaporator outlet superheated degree (°C)

Ts1 : Suction pipe temperature detected by thermistor R3T (°C)

Te : Low pressure equivalent saturation temperature (°C)

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

---

### Subcooling Electronic Expansion Valve EV3 Control

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

$$SH = Tsh - Te$$

SH : Outlet superheated degree of evaporator (°C)

Tsh : Suction pipe temperature detected with the thermistor R6T (°C)

Te : Low pressure equivalent saturation temperature (°C)

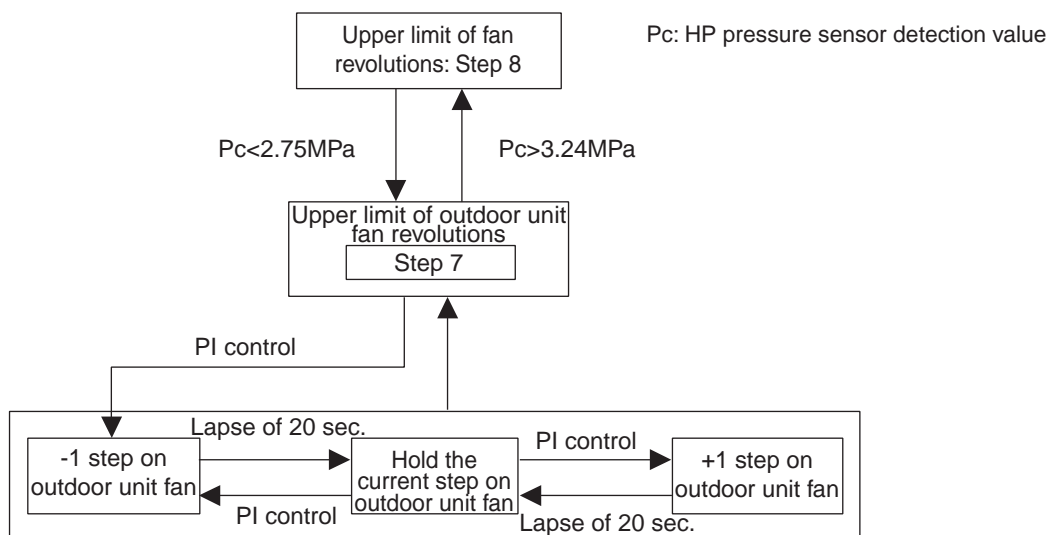
## 2.4 Cooling Operation Fan Control

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.

Furthermore, when outdoor temperature  $\geq 20^{\circ}\text{C}$ , the compressor will run in Step 7 or higher.

When outdoor temperature  $\geq 18^{\circ}\text{C}$ , it will run in Step 5 or higher.

When outdoor temperature  $\geq 12^{\circ}\text{C}$ , it will run in Step 1 or higher.



Fan Steps

Cooling	M1F	M2F
STEP0	0 rpm	0 rpm
STEP1	250 rpm	0 rpm
STEP2	400 rpm	0 rpm
STEP3	285 rpm	250 rpm
STEP4	360 rpm	325 rpm
STEP5	445 rpm	410 rpm
STEP6	580 rpm	545 rpm
STEP7	715 rpm	680 rpm
STEP8	850 rpm	815 rpm

## 3. Special Control

### 3.1 Startup Control

This control is used to equalize the pressure in the front and back of the compressor prior to the startup of the compressor, thus reducing startup loads. Furthermore, the inverter is turned ON to charge the capacitor.

In addition, to avoid stresses to the compressor due to oil return or else after the startup, the following control is made and the position of the four way valve is also determined. To position the four way valve, the master and slave units simultaneously start up.

#### 3.1.1 Startup Control in Cooling Operation

	Pressure equalization control prior to startup	Startup control	
		STEP1	STEP2
Compressor	0 Hz	57 Hz Unload	57 Hz Unload +2 steps/20 sec. (until $P_c - P_e > 0.39\text{MPa}$ is achieved)
Outdoor unit fan	STEP7	$T_a < 20^\circ\text{C}$ : OFF $T_a \geq 20^\circ\text{C}$ : STEP4	+1 step/15 sec. (when $P_c > 2.16\text{MPa}$ ) -1 step/15 sec. (when $P_c < 1.77\text{MPa}$ )
Four way valve (20S1)	Holds	OFF	OFF
Main electronic expansion valve (EV1)	0 pls	480 pls	480 pls
Subcooling electronic expansion valve (EV3)	0 pls	0 pls	0 pls
Hot gas bypass valve (SVP)	OFF	OFF	OFF
Ending conditions	OR <ul style="list-style-type: none"> <li>• <math>P_c - P_e &lt; 0.3\text{MPa}</math></li> <li>• A lapse of 1 to 5 min.</li> </ul>	A lapse of 10 sec.	OR <ul style="list-style-type: none"> <li>• A lapse of 130 sec.</li> <li>• <math>P_c - P_e &gt; 0.39\text{MPa}</math></li> </ul>

#### 3.1.2 Startup Control in Heating Operation

	Pressure equalization control prior to startup	Startup control	
		STEP1	STEP2
Compressor	0 Hz	57 Hz Unload	57 Hz Unload +2 steps/20 sec. (until $P_c - P_e > 0.39\text{MPa}$ is achieved)
Outdoor unit fan	From starting ~ 1 min. : STEP 7 1 ~ 3 min. : STEP 3 3 ~ 5 min. : OFF	STEP8	STEP8
Four way valve	Holds	ON	ON
Main electronic expansion valve (EV1)	0 pls	0 pls	0 pls
Subcooling electronic expansion valve (EV3)	0 pls	0 pls	0 pls
Hot gas bypass valve (SVP)	OFF	OFF	OFF
Ending conditions	OR <ul style="list-style-type: none"> <li>• <math>P_c - P_e &lt; 0.3\text{MPa}</math></li> <li>• A lapse of 1 to 5 min.</li> </ul>	A lapse of 10 sec.	OR <ul style="list-style-type: none"> <li>• A lapse of 130 sec.</li> <li>• <math>P_c &gt; 2.70\text{MPa}</math></li> <li>• <math>P_c - P_e &gt; 0.39\text{MPa}</math></li> </ul>

## 3.2 Oil Return Operation

Oil flown from the compressor to the side of system is collected by oil-returning operation, in case of that oil in the compressor runs down.

### 3.2.1 Oil Return Operation in Cooling Operation

#### [Conditions to start]

The cooling oil-returning operation is started referring following conditions.

- Integrated amount of displaced oil
- Timer

(After the power is turned on, integrated operating-time is 2 hours and subsequently every 8 hours.)

In addition, integrated amount of displaced oil is derived from Tc, Te, and the compressor load.

Outdoor unit actuator	Oil return preparation operation	Oil return operation	Post-oil-return operation
Compressor	Take the current step as the upper limit.	52 Hz Full load (→ Low pressure constant control)	Same as the "oil return operation" mode.
Outdoor unit fan	Fan control (Normal cooling)	Fan control (Normal cooling)	Fan control (Normal cooling)
Four way valve	OFF	OFF	OFF
Main electronic expansion valve (EV1)	480 pls	480 pls	480 pls
Subcooling electronic expansion valve (EV3)	SH control	0 pls	0 pls
Hot gas bypass valve (SVP)	OFF	OFF	OFF
Ending conditions	20 sec.	or <ul style="list-style-type: none"> <li>• 3 min.</li> <li>• <math>T_s - T_e &lt; 5^{\circ}\text{C}</math></li> </ul>	or <ul style="list-style-type: none"> <li>• 3 min.</li> <li>• <math>P_e &lt; 0.6\text{MPa}</math></li> <li>• <math>HTdi &gt; 110^{\circ}\text{C}</math></li> </ul>

Indoor actuator		Cooling oil return operation
Indoor unit fan	Thermostat ON unit	Set Air Volume
	Stopping unit	OFF
	Thermostat OFF unit	Set Air Volume
BP unit electronic expansion valve	Thermostat ON unit	SH control
	Stopping unit	77 pls
	Thermostat OFF unit	SH control

### 3.2.2 Oil Return Operation in Heating Operation

#### [Conditions to start]

The heating oil-returning operation is started referring following conditions.

- ♦ Integrated amount of displaced oil
- ♦ Timer

(After the power is turned on, integrated operating-time is 2 hours and subsequently every 8 hours.)

In addition, integrated amount of displaced oil is derived from Tc, Te, and the compressor load.

Outdoor Unit Actuator	Oil return preparation operation	Oil return operation	Post-oil-return operation
Compressor	Upper limit control	124 Hz Full load	2-step increase from 36 Hz Unload to (Pc - Pe>0.4 MPa) every 20 sec.
Outdoor unit fan	STEP8	OFF	STEP8
Four way valve	ON	OFF	ON
Main electronic expansion valve (EV1)	SH control	480 pls	55 pls
Subcooling electronic expansion valve (EV3)	0 pls	0 pls	0 pls
Hot gas bypass valve (SVP)	OFF	OFF	OFF
Ending conditions	2 min.	or <div style="display: inline-block; vertical-align: middle;"> <math>\left[ \begin{array}{l} \bullet 12 \text{ min.} \\ \bullet Ts1 - Te &lt; 5^{\circ}\text{C} \\ \bullet Tb &gt; 11^{\circ}\text{C} \end{array} \right]</math> </div>	or <div style="display: inline-block; vertical-align: middle;"> <math>\left[ \begin{array}{l} \bullet 160 \text{ sec.} \\ \bullet Pc - Pe &gt; 0.4 \text{ MPa} \end{array} \right]</math> </div>

\* From the preparing oil-returning operation to the oil-returning operation, and from the oil-returning operation to the operation after oil-returning, the compressor stops for 2 minute to reduce noise on changing of the four way valve.

Indoor actuator		Heating oil return operation
Indoor unit fan	Thermostat ON unit	OFF
	Stopping unit	OFF
	Thermostat OFF unit	OFF
BP unit electronic expansion valve	Thermostat ON unit	SH control
	Stopping unit	80 pls
	Thermostat OFF unit	SH control

### 3.3 Defrosting Operation

The defrost operation is performed to solve frost on the outdoor unit heat exchanger when heating, and the heating capacity is recovered.

**[Conditions to start]**

The defrost operation is started referring following conditions.

- ♦ Outdoor heat exchanger heat transfer co-efficiency
- ♦ Temperature of heat-exchange (Tb)
- ♦ Low pressure equivalent saturation temperature (Te)
- ♦ Timer (2 hours at the minimum)

In addition, outdoor heat-exchange co-efficiency is derived from Tc, Te, and the compressor load.

Outdoor unit actuator	Defrost preparation operation	Defrost operation	Post Defrost operation
Compressor	Upper limit control	124 Hz Full load	2-step increase from 36 Hz Unload to (Pc - Pe>0.4 MPa) every 20 sec.
Outdoor unit fan	STEP8	OFF	STEP8
Four way valve	ON	OFF	ON
Main electronic expansion valve (EV1)	SH control	480 pls	55 pls
Subcooling electronic expansion valve (EV3)	0 pls	0 pls	0 pls
Hot gas bypass valve (SVP)	OFF	ON	ON
Ending conditions	2 min.	or $\left[ \begin{array}{l} \bullet 15 \text{ min.} \\ \bullet Tb > 11^{\circ}\text{C} \\ \bullet Ts1 - Te < 5^{\circ}\text{C} \end{array} \right.$	or $\left[ \begin{array}{l} \bullet 160 \text{ sec.} \\ \bullet Pc - Pe > 0.4 \text{ MPa} \end{array} \right.$

\* From the preparing operation to the defrost operation, and from the defrost operation to the operation after defrost, the compressor stops for 2 min. to reduce noise on changing of the four way valve.

Indoor actuator		During defrost
Indoor unit fan	Thermostat ON unit	OFF
	Stopping unit	OFF
	Thermostat OFF unit	OFF
BP unit electronic expansion valve	Thermostat ON unit	SH control
	Stopping unit	80 pls
	Thermostat OFF unit	SH control

## 3.4 Pump-down Residual Operation

When activating compressor, if the liquid refrigerant remains in the heat-exchanger, the liquid enters into the compressor and dilutes oil therein resulting in decrease of lubricity.

Therefore, the pump-down residual operation is performed to collect the refrigerant in the heat-exchanger when the compressor is down.

### 3.4.1 Pump-down Residual Operation in Cooling Operation

Actuator	Pump-down residual operation Step 1	Pump-down residual operation Step 2
Compressor	124 Hz Full load	52 Hz Full load
Outdoor unit fan	Fan control	Fan control
Four way valve	OFF	OFF
Main electronic expansion valve (EV1)	480 pls	240 pls
Subcooling electronic expansion valve (EV3)	0 pls	0 pls
Hot gas bypass valve (SVP)	OFF	OFF
Ending conditions	2 sec.	2 sec.

### 3.4.2 Pump-down Residual Operation in Heating Operation

Actuator	Pump-down residual operation
Compressor	124 Hz Full load
Outdoor unit fan	STEP7
Four way valve	ON
Main electronic expansion valve (EV1)	0 pls
Subcooling electronic expansion valve (EV3)	0 pls
Hot gas bypass valve (SVP)	OFF
Ending conditions	4 sec.

## 3.5 Restart Standby

Restart is stood by force to prevent frequent power-on/off and to equalize pressure in the refrigerant system.

Actuator	Operation	Remarks
Compressor	OFF	—
Outdoor unit fan	Ta>30°C: STEP4 Ta≤30°C: OFF	—
Four way valve	Keep former condition.	—
Main electronic expansion valve (EV1)	0 pls	—
Subcooling electronic expansion valve (EV3)	0 pls	—
Hot gas bypass valve (SVP)	OFF	—
Ending conditions	2 min.	—

## 3.6 Stopping Operation

Operation of the actuator when the system is down, is cleared up.

### 3.6.1 When System is in Stop Mode

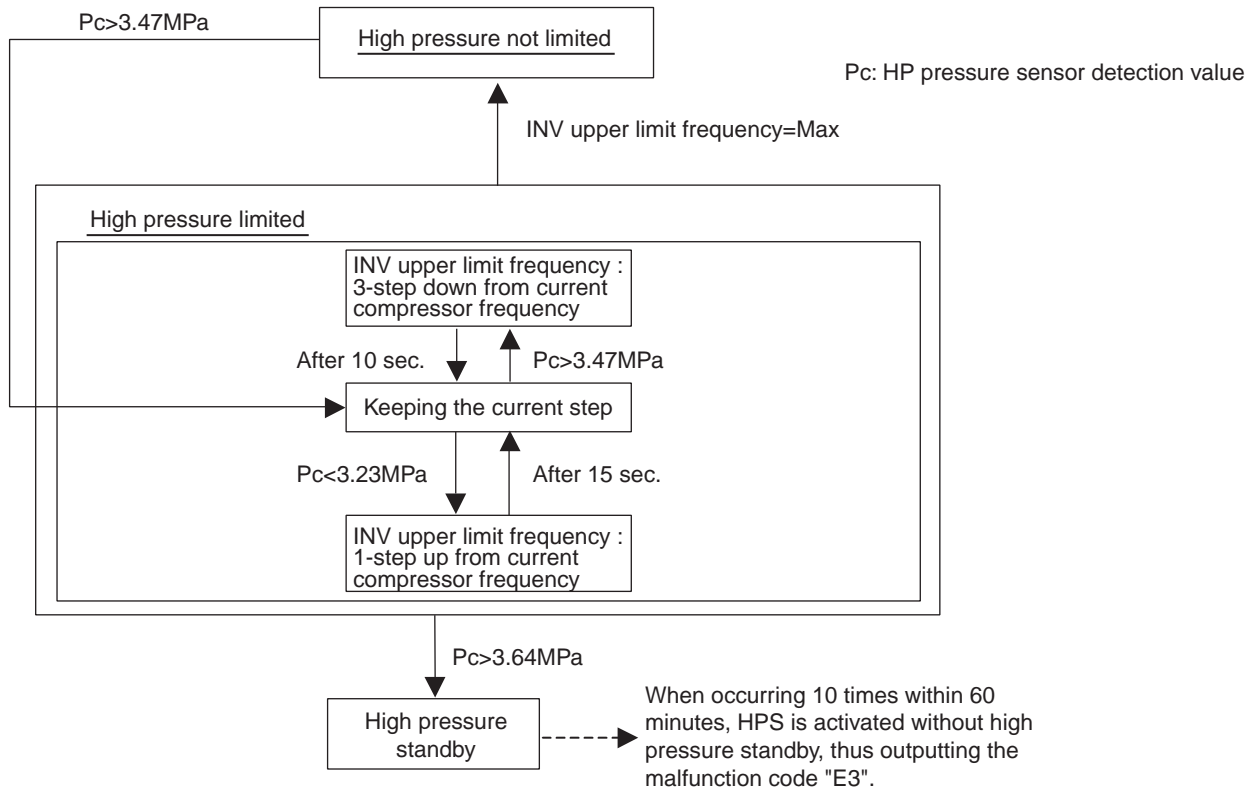
Actuator	Operation
Compressor	OFF
Outdoor unit fan	OFF
Four way valve	Keep former condition.
Main electronic expansion valve (EV1)	0 pls
Subcooling electronic expansion valve (EV3)	0 pls
Hot gas bypass valve (SVP)	OFF
Ending conditions	Indoor unit thermostat is turned ON.

## 4. Protection Control

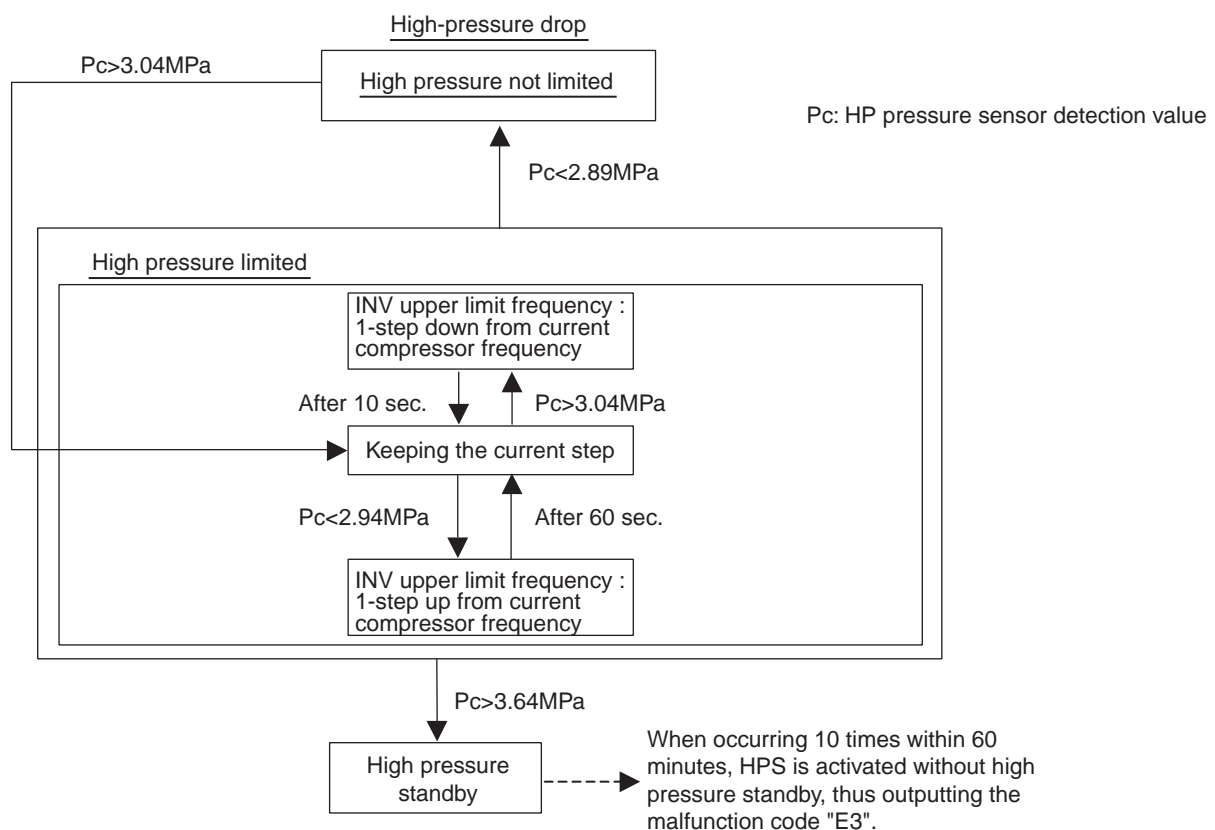
### 4.1 High Pressure Protection Control

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

#### [In cooling operation]



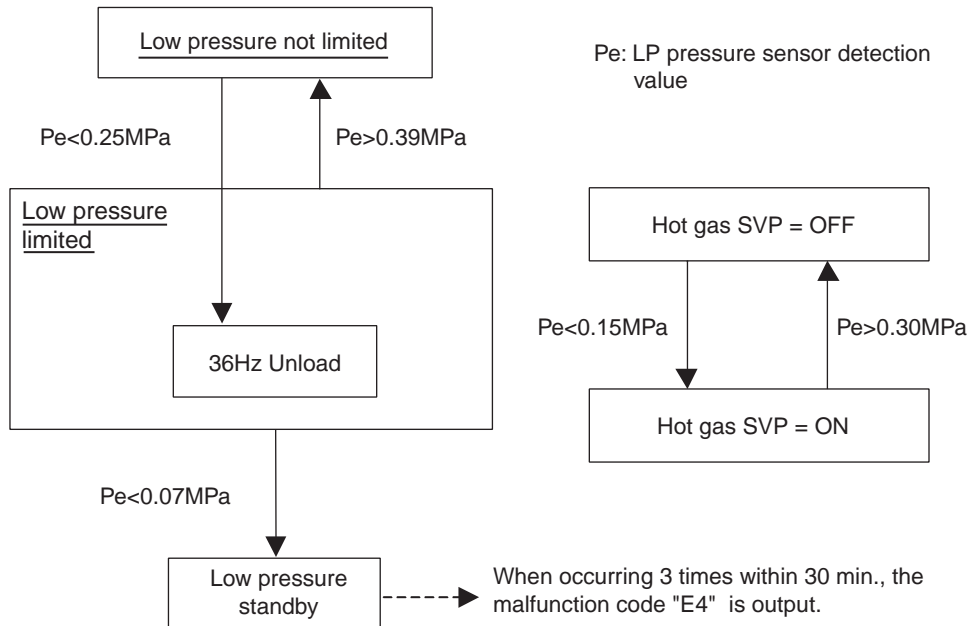
#### [In heating operation]



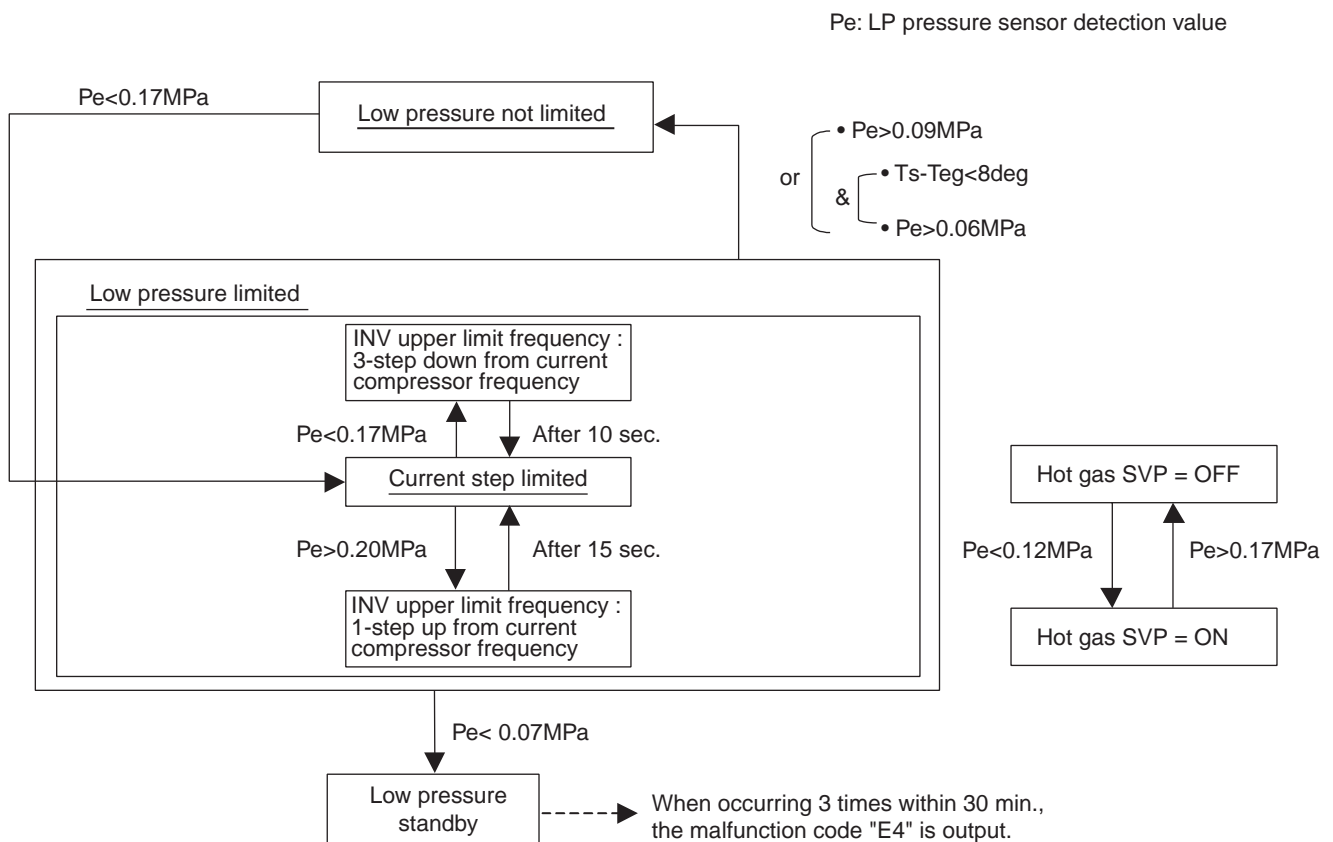
## 4.2 Low Pressure Protection Control

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

### [In cooling operation]



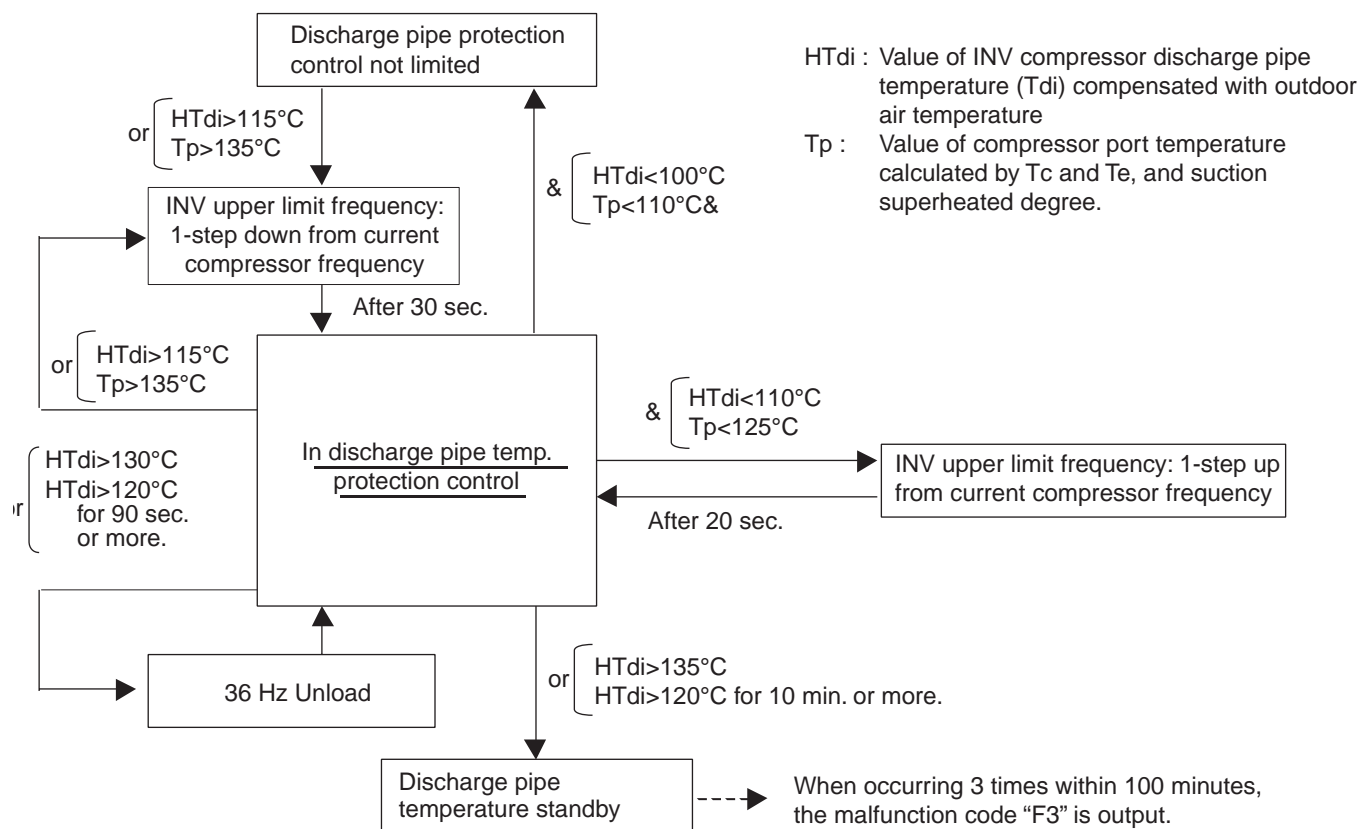
### [In heating operation]



## 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.

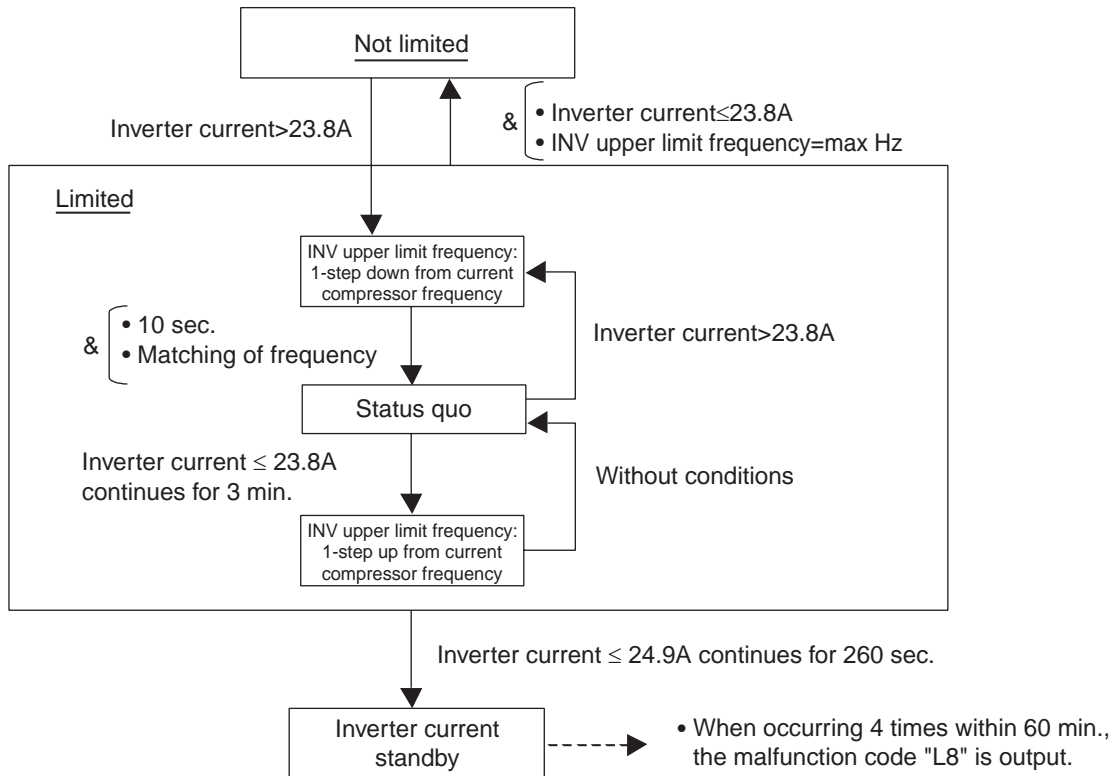
### [INV compressor]



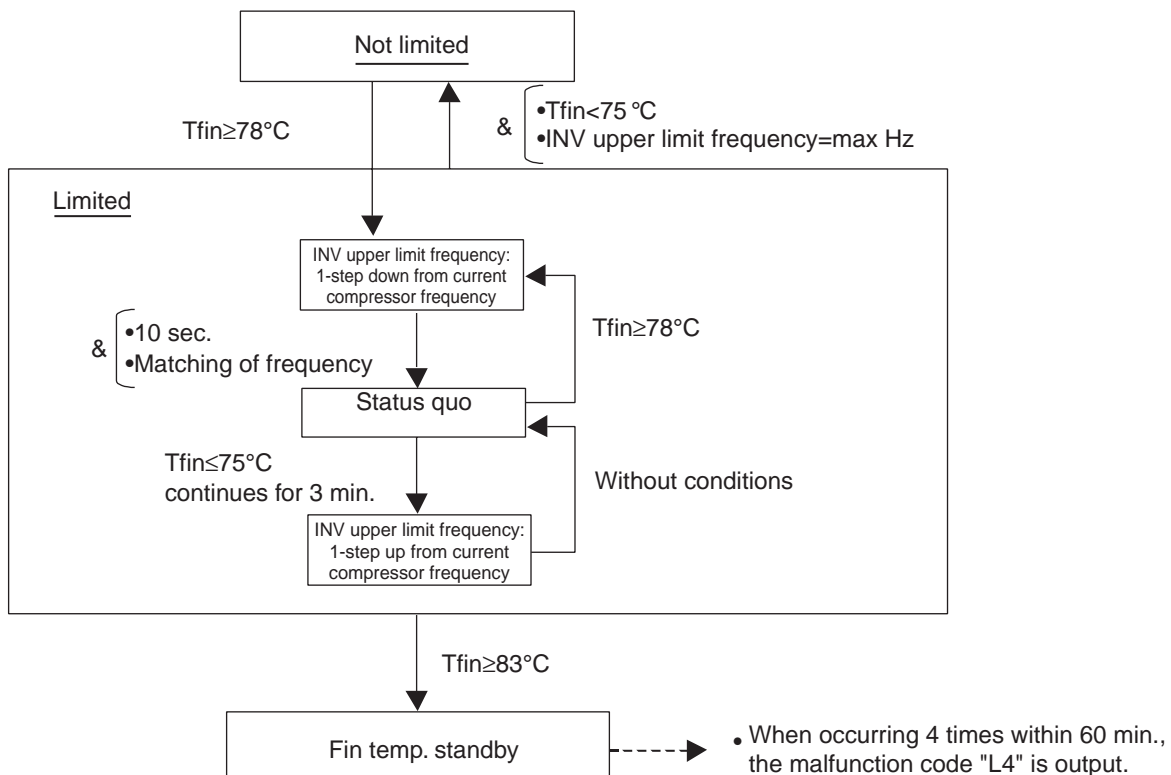
## 4.4 Inverter Protection Control

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.

### [Inverter overcurrent protection control]



### [Inverter fin temperature control]



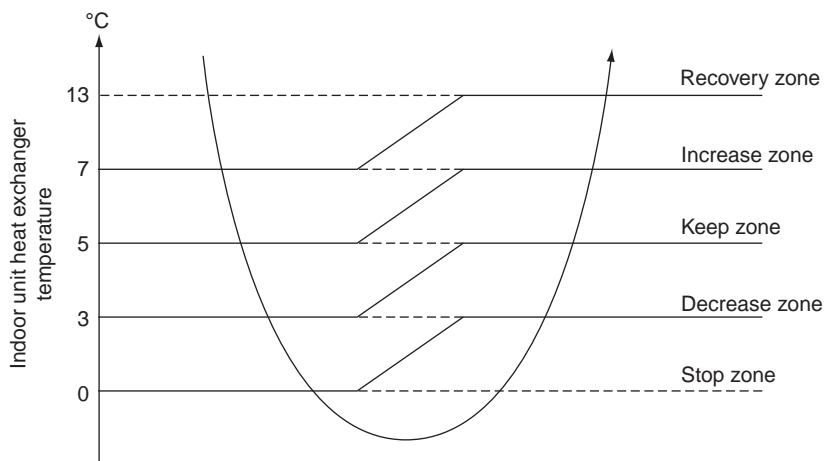
## 4.5 Freeze-up Protection Control

### Outline

According to the freeze prevention status sent from the BP unit. The compressor output frequency is regulated to decrease the compressor capacity in order to prevent the indoor heat exchanger from freezing.

### Detail

Zones are produced based on the freeze prevention status signal sent from the BP unit (Indoor unit), and the freeze prevention control prevents freezing of the indoor unit.



Recovery zone: Lift the control

Increase zone: 1 step up/60sec.

Keep zone: Frequency is not controlled

Decrease zone: 1 step down/60sec.

Stop zone: Thermostat-OFF (only the target indoor unit)

The temperature in above figure depends on models. (Reference value)

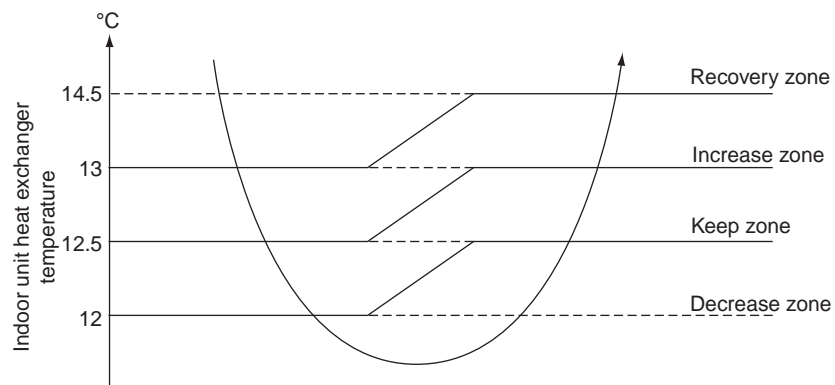
## 4.6 Dew Condensation Prevention Control

### Outline

According to the dew condensation prevention status sent from the BP unit. The compressor output frequency is regulated to decrease the compressor capacity in order to prevent the indoor unit from dew condensation.

### Detail

Zones are produced based on the dew condensation prevention status signal sent from the BP unit (Indoor unit), and the dew condensation prevention control prevents dew condensation of the indoor unit.



Recovery zone: Lift the control

Increase zone: 1 step up/60sec.

Keep zone: Frequency is not controlled

Decrease zone: 1 step down/60sec. SVG open at 52Hz

The temperature in above figure depends on models and actual room temperature. (Reference value)

## 5. Other Control

### 5.1 Demand Operation

In order to save the power consumption, the capacity of outdoor unit is saved with control forcibly by using "Demand 1 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%

### 5.2 Heating Operation Prohibition

Heating operation is prohibited above 24°CDB outdoor air temperature.

## 6. BP Unit Control

### 6.1 BP Unit Command Conversion

1.  $\Delta D$  (room temperature – temperature setting) signals from BP units are converted to capacity up / down signal.

$\Delta D$  signals from BP units are used as the capacity up / down signal in frequency commands (excludes when Powerful function is in operation).

$\Delta D$ Signal	Capacity up / down signal
0	Thermostat OFF
1	Down
2	
3	Keep
4	
5	Up
6	
7	
8	
9	
A	
B	
C	
D	
E	
F	

#### 2. Processing during Powerful operation mode

- (1) When Powerful command is received from indoor units (one or more units)
- (2) Thermostats are not OFF in room units from which Powerful commands are issued

When the above conditions are met, the Powerful operation mode is activated, and the Powerful operation signal is sent to outdoor unit.

## 6.2 BP Unit Electronic Expansion Valve Control

### Purpose of the Function

This function provides instructions regarding the absolute flow rate, relative flow rate and fully closing from the outdoor unit to the BP unit in order to ensure outdoor unit compressor safety and optimum refrigerating cycle of the system.

With the transmission a permit/prohibit flag for each distribution control in the BP unit, the distribution control startup timing is controlled by the outdoor unit.

### 6.2.1 Electronic Expansion Valve Initial Opening Setting

#### Outline

This function improves stability of the system to set initial opening of electronic expansion valve at starting operation.

When the EV opening command from outdoor unit is lifted, the following opening setting is performed.

#### During Cooling Operation

Target EV opening =  $2.5 \times (DA - 14) + P5 - KEVOPC \times (DOA - DA)$  pls

DA: room temperature, DOA: outdoor air temperature

P5:

Indoor unit capacity	P5
2.0 to 3.5 kW class	140
5.0 kW class	156
6.0, 7.1 kW class	170

KEVOPC:

	KEVOPC
$DOA \leq DA$	0
$DA < DOA$	2.5

#### During Heating Operation

Target EV opening = 350 pls

### 6.2.2 Electronic Expansion Valve Flow Rate Restriction

This function prevents the deviation from the electronic expansion valve specification range by restricting the electronic expansion valve flow rates of the operating and non-operating room units during compressor operation. It also prevents the generation of abnormal noise such as refrigerant flowing sound by restricting the circulation of refrigerant according to the operating conditions (unit ON/OFF) of room units.

#### Outline

Restriction of electronic expansion valve opening degrees of operating room units;

... Restriction of maximum and minimum flow rates based on constant

Restriction of electronic expansion valve opening degrees of non-heating room units;

... Restriction of minimum flow rate based on constant

... Maximum flow rate determined based on flow rates of operating room units

### 6.2.3 Full Closing of Electronic Expansion Valves

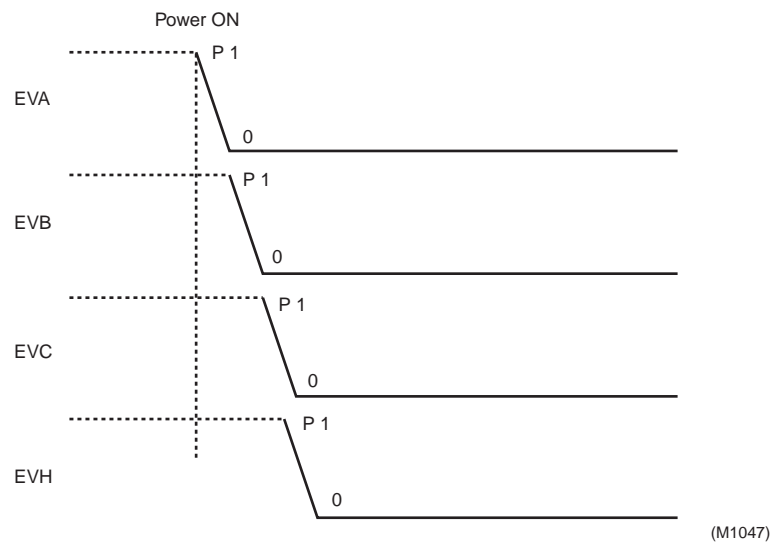
#### Purpose of the Function

The electronic expansion valves are initialized when the power is turned on.

#### Details

The following processes are conducted.

1. Conducts P1 pulses close when power is turned on, and sets current opening to 0 pulse (fully closing process).
2. Sends electronic expansion valve initialization signal to outdoor unit.
3. Closes the electronic expansion valve of each chamber (sets the electronic expansion valve pulse to 0).
4. Stops transmission of electronic expansion valve initialization signal when EVH retightening is completed.



### 6.2.4 Control Based on EV Opening Command from Outdoor Unit

#### Purpose of the Function

This function operates the electronic expansion valve based on EV opening command sent from the outdoor unit.

#### Outline

The electronic expansion valve operation based on EV opening command provides the following functions.

- 1) Pressure equalization prior to startup
- 2) Startup control
- 3) Restart standby
- 4) Pump-down residual operation
- 5) Oil return operation
- 6) Defrost operation

## 6.3 SH Control in Cooling Operation

### Purpose of the Function

This function ensures appropriate refrigerant distribution when many room units are operating in the cooling mode.

### Outline

The heat exchanger temperatures and gas pipe temperatures of operating room units are detected by the gas pipe thermistors, and the electronic expansion valves' flow rates are corrected so as to adjust the difference between heat exchanger temperature and gas pipe temperature of each room unit (hereafter referred to as SH) close to the target values.

When SH is higher than target value → Opens the valve of that room unit

When SH is lower than target value → Closes the valve of that room unit

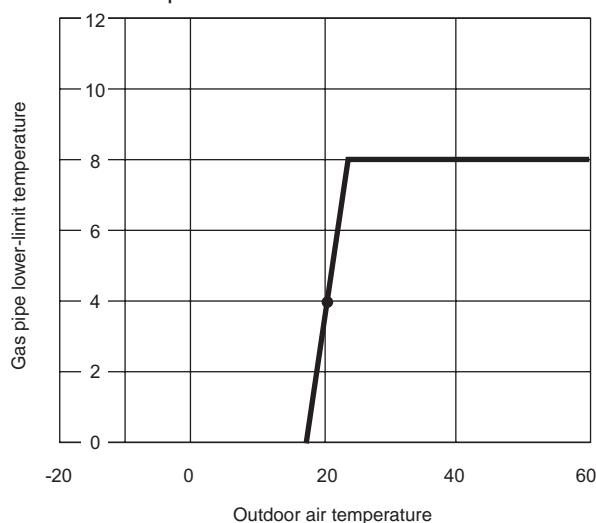
When the liquid pipe temperature is lower than the heat exchanger temperature, the electronic expansion valve is opened more than normal opening.  
(Protection function to prevent rotor dew condensation)

The gas pipe temperature and indoor heat exchanger temperature are detected at the time of every sampling time of 40 sec for the cooling SH control.

In order to prevent dew condensation in connection pipe, gas pipe lower-limit temperature is set as follows.

$$\text{Gas pipe lower-limit temperature} = \frac{240}{256} \times \text{DOA} - 17 \text{ (however } 8^{\circ}\text{C or lower)}$$

DOA: Outdoor air temperature



(Q0378)

Outdoor Temperature	Gas Pipe Lower-Limit Temperature
-5	-22
0	-17
5	-12
10	-6
15	-1
20	4
25	8
30	8
35	8
40	8
45	8

**Note:**

1. In Sky Air models, the indoor units are equipped with distribution capillary tubes ; therefore, the heat exchangers may superheat even when the condition is met.
2. In Sky Air models, the heat exchanger intermediate position is provided on the liquid connection pipe side; as a result, superheated condition is difficult to detect.

## 6.4 SC Control in Heating Operation

<b>Purpose of the Function</b>	This function ensures appropriate refrigerant distribution when many room units are operating in the heating mode.
<b>Outline</b>	<p>The heat exchanger temperatures and liquid pipe temperatures of operating room units are detected by the liquid pipe thermistors, and the electronic expansion valves' flow rates are corrected so as to adjust the difference between heat exchanger temperature and liquid pipe temperature of each room unit (hereafter referred to as SC) close to the target values.</p> <p>When SC is higher than target value → Opens the valve of that room unit  When SC is lower than target value → Closes the valve of that room unit</p> <p>The liquid pipe temperature and indoor heat exchanger temperature are detected at the time of every sampling time of 20 sec for the heating SC control.</p>

## 6.5 Heat Exchanger Isothermal Control in Heating Operation

<b>Purpose of the Function</b>	<p>This function ensures appropriate refrigerant distribution when room units are operating in the heating mode.</p> <p>It prevents abnormal increase of the high pressure and operation with gas shortage due to uneven refrigerant distribution (Protection function).</p>
<b>Outline</b>	<p>The indoor unit heat exchanger thermistors (of all connected indoor units to the same BP unit including non-operating room units) in heating operation are detected. Then, the highest heat exchanger temperature is compared with the heat exchanger temperature of each room unit. If the temperature difference exceeds the predetermined value, it is judged that indoor unit heat exchanger thermistor position in subcooled zone, and the electronic expansion valves of room units with the temperature difference exceeding the predetermined level is opened to return to the saturation zone.</p> <p>Since this is a protection function, it is effective for all connected room units in heating operation excluding those in defrosting operation. This function is inactive in room units with transmission problems.</p>
<b>Details</b>	<p>The heat exchanger temperature is detected at every sampling time of 20 sec of the heat exchanger isothermal control, and maximum value of each heat exchanger temperature is obtained.</p> <p>If the temperature difference between the heat exchanger temperature and maximum heat exchanger temperature value exceeds 8°C, it is judged that the heat exchanger intermediate is in the subcooled zone, and the electronic expansion valve is opened.</p>

## 7. Indoor Unit (RA Models)

### 7.1 Power-Airflow Dual Flaps, Wide Angle Louvers and Auto-Swing

#### Power-airflow Dual Flaps

The large flaps send a large volume of air downwards to the floor. The flap provides an optimum control area in cooling, heating and dry mode.

##### Heating Mode

During heating mode, the large flap enables direct warm air straight downwards. The flap presses the warm air above the floor to reach the entire room.

##### Cooling Mode

During cooling mode, the flap retracts into the indoor unit. Then, cool air can be blown far and pervaded all over the room.

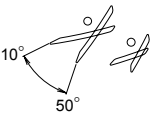

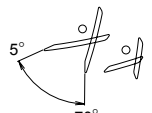
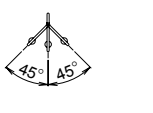
#### Wide-Angle Louvers

The louvers, made of elastic synthetic resin, provide a wide range of airflow that guarantees a comfortable air distribution.

#### Auto-Swing

##### In case of FTXS20-50D

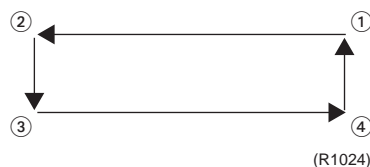
The following table explains the auto swing process for heating, cooling, dry and fan :

Vertical Swing (up and down)			Horizontal Swing (right and left: manual)
Cooling / Dry	Heating	Fan	
 (R4281)	 (R4282)	 (R4283)	 (R4284)

#### 3-D Airflow

##### FTXS50-71D, FTXS71B

- Alternative repetition of vertical and horizontal swing motions enables uniform air-conditioning of the entire room. This function is effective for starting the air conditioner.
- When the horizontal swing and vertical swing are both set to auto mode, the airflow become 3-D airflow and the horizontal swing and vertical swing motions are alternated. The order of swing motion is such that it turns counterclockwise, starting from the right upper point as viewed to the front side of the indoor unit.

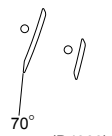



#### COMFORT AIRFLOW Mode

##### FTXS20-50D

The vertical swing flap is controlled not to blow the air directly on the person in the room.

- The airflow rate is controlled automatically within the following steps.  
Cooling: L tap – MH tap (same as AUTOMATIC)  
Heating: ML tap – M tap
- The latest command has the priority between POWERFUL and COMFORT AIRFLOW.

Heating	Cooling
 (R4303)	 (R4302)

## 7.2 Fan Speed Control for Indoor Units

### Control Mode

The airflow rate can be automatically controlled depending on the difference between the set temperature and the room temperature. This is done through phase control and Hall IC control.



For more information about Hall IC, refer to the troubleshooting for fan motor on page 273.

### Phase Steps

Phase control and fan speed control contains 9 steps: LLL, LL, SL, L, ML, M, MH, H and HH.

Step	Cooling	Heating	Dry mode
LLL			20 · 25 · 35kW class : 670 - 880 rpm (During powerful operation : 720 - 930 rpm) 50 · 60 · 71kW class : 750 - 1000 rpm (During powerful operation : 1050 rpm)
LL			
SL (Silent)			
L			
ML			
M			
MH			
H			
HH (Powerful)			

= Within this range the airflow rate is automatically controlled when the FAN setting button is set to automatic.

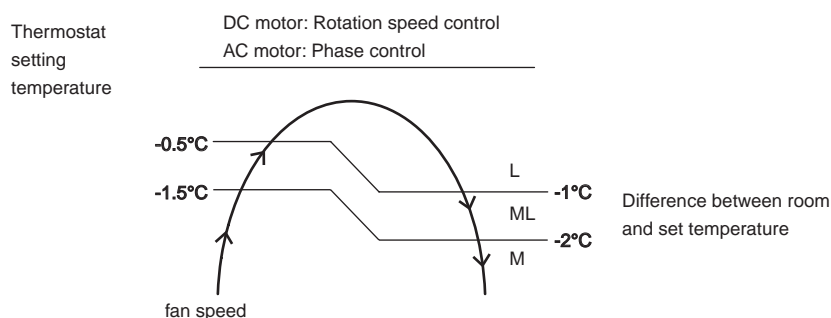


#### Note:

1. During powerful operation, fan rotates at H tap + 50 - 90 rpm.
2. Fan stops during defrost operation.

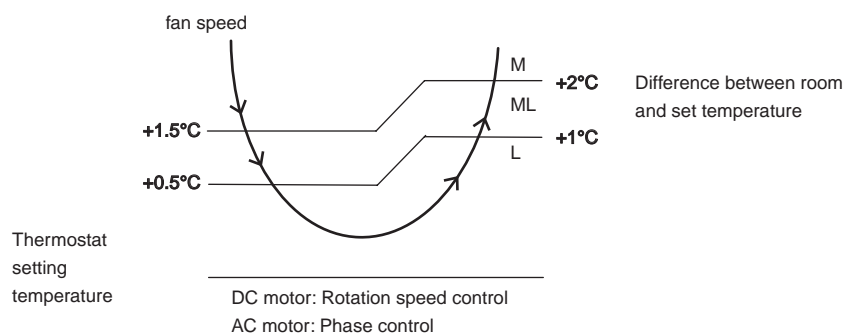
### Automatic Air Flow Control for Heating

The following drawing explains the principle for fan speed control for heating:



### Automatic Air Flow Control for Cooling

The following drawing explains the principle of fan speed control for cooling:



## 7.3 Programme Dry Function

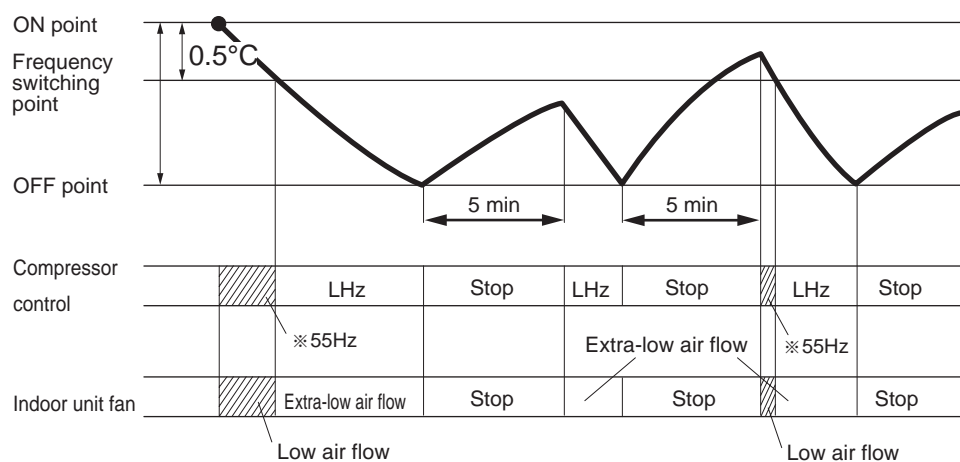
Programme dry function removes humidity while preventing the room temperature from lowering.

Since the microcomputer controls both the temperature and air flow volume, the temperature adjustment and fan adjustment buttons are inoperable in this mode.

### In Case of Inverter Units

The microcomputer automatically sets the temperature and fan settings. The difference between the room temperature at startup and the temperature set by the microcomputer is divided into two zones. Then, the unit operates in the dry mode with an appropriate capacity for each zone to maintain the temperature and humidity at a comfortable level.

Room temperature at startup	Temperature (ON point) at which operation starts	Frequency switching point	Temperature difference for operation stop
24°C	Room temperature at startup	0.5°C	1.5°C
18°C	18°C		1.0°C
17°C		—	



LHz indicates low frequency. Item marked with \* varies depending on models.

(R1359)

## 7.4 Automatic Operation

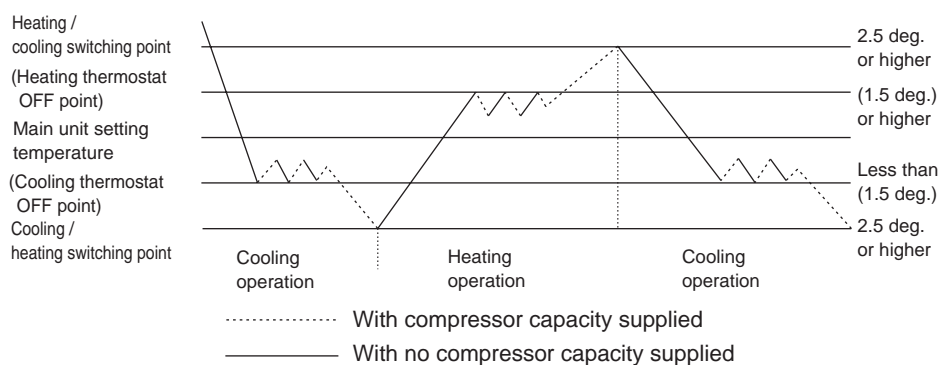
### Automatic Cooling / Heating Function (Heat Pump Only)

When the AUTO mode is selected with the remote control, the microcomputer automatically determines the operation mode from cooling and heating according to the room temperature and setting temperature at the time of the operation startup, and automatically operates in that mode.

The unit automatically switches the operation mode to cooling or heating to maintain the room temperature at the main unit setting temperature.

#### Detailed Explanation of the Function

1. Remote control setting temperature is set as automatic cooling / heating setting temperature (18 to 30°C).
2. Main unit setting temperature equals remote control setting temperature plus correction value (correction value / cooling: 0 deg, heating: 2 deg.).
3. Operation ON / OFF point and mode switching point are as follows.
  - ① Heating → Cooling switching point:  
Room temperature  $\geq$  Main unit setting temperature +2.5 deg.
  - ② Cooling → Heating switching point:  
Room temperature  $<$  Main unit setting temperature -2.5 deg.
  - ③ Thermostat ON / OFF point is the same as the ON / OFF point of cooling or heating operation.
4. During initial operation  
 Room temperature  $\geq$  remote control setting temperature: Cooling operation  
 Room temperature  $<$  remote control setting temperature: Heating operation



(R1360)

## 7.5 Thermostat Control

Thermostat control is based on the difference between the room temperature and the setpoint.

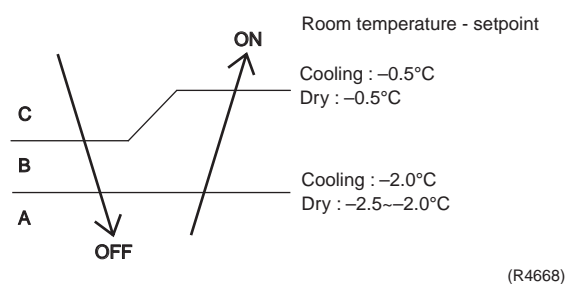
### Thermostat OFF Condition

- ♦ The temperature difference is in the zone A.

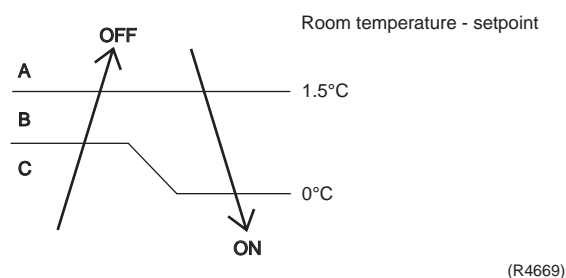
### Thermostat ON Condition

- ♦ The temperature difference is above the zone C after being in the zone A.
- ♦ The system resumes from defrost control in any zones except A.
- ♦ The operation turns on in any zones except A.
- ♦ The monitoring time has passed while the temperature difference is in the zone B.  
(Cooling / Dry : 10 minutes, Heating : 10 seconds)

### Cooling / Dry



### Heating



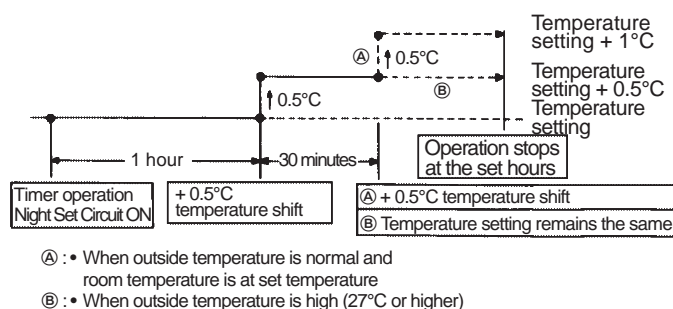
## 7.6 Night Set Mode

When the OFF timer is set, the Night Set circuit automatically activates.  
The Night Set circuit maintains the airflow setting made by users.

### The Night Set Circuit

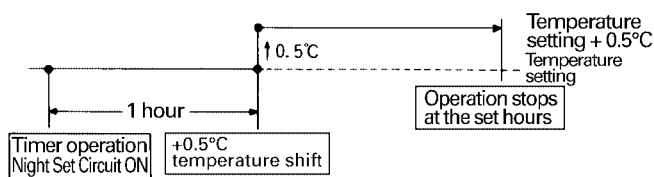
The Night Set circuit continues heating or cooling the room at the set temperature for the first one hour, then automatically raises the temperature setting slightly in the case of cooling, or lowers it slightly in the case of heating, for economical operations. This prevents excessive heating in winter and excessive cooling in summer to ensure comfortable sleeping conditions, and also conserves electricity.

### Cooling Operation



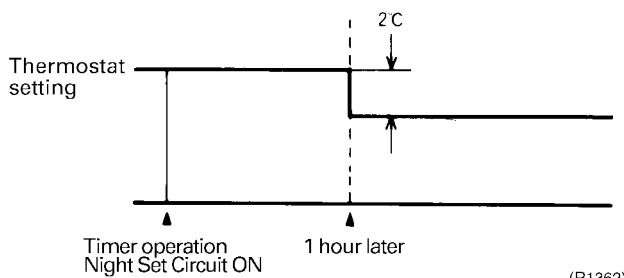
(R1361)

In case of FTXS20-50D, the temperature rises once.



(R4421)

### Heating Operation



(R1362)

## 7.7 ECONO Mode

### Outline

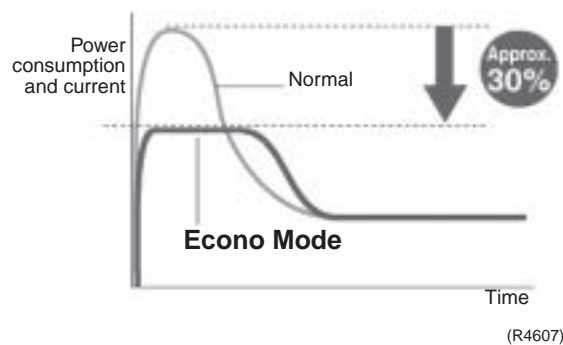
#### FTXS20-50D

The "ECONO mode" reduces the maximum operating current and power consumption by approx. 30% during start up etc..

This mode is particularly convenient for energy-saving-oriented users. It is also a major bonus for those whose breaker capacities do not allow the use of multiple electrical devices and air conditioners.

It is easily activated from the infrared remote control by pushing the ECONO button.

- When this function is ON, the maximum capacity is also down. (Approx. 20%)
- This function can only be set when the unit is running. Pressing the operation stop button causes the settings to be canceled.
- This function and POWERFUL operation cannot be used at the same time. The latest command has the priority.



### Details

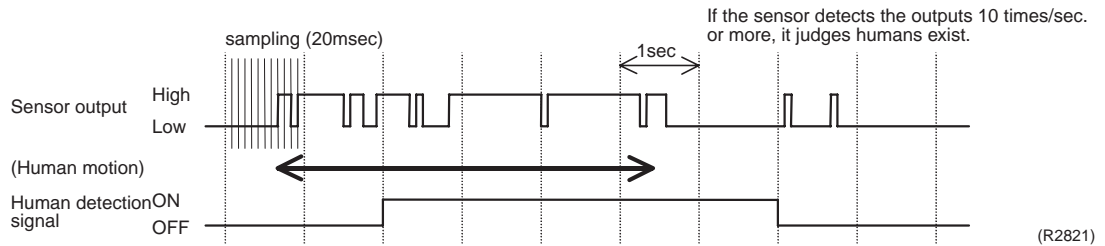
- ECONO mode can be activated while the unit is running. The remote control can send the ECONO command when the unit is in COOL, HEAT, DRY, or AUTO operation.
- When the ECONO command is valid, the upper limit of frequency is restricted.

## 7.8 INTELLIGENT EYE

This is the function that detects existence of humans in the room by a human motion sensor (INTELLIGENT EYE) and reduces the capacity when there is no human in the room in order to save electricity.

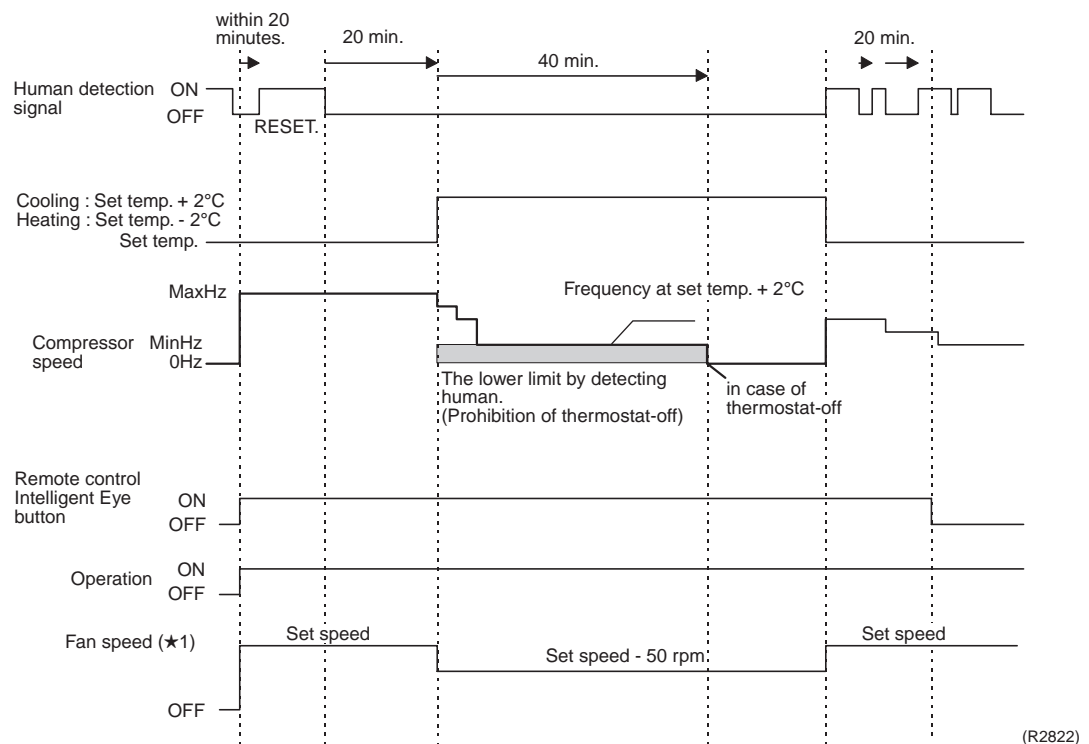
### Processing

#### 1. Detection method by Intelligent Eye



- This sensor detects human motion by receiving infrared rays and displays the pulse wave output.
- A microcomputer in an indoor unit carries out a sampling every 20 msec. and if it detects 10 cycles of the wave in one second in total (corresponding to  $20\text{msec.} \times 10 = 100\text{msec.}$ ), it judges human is in the room as the motion signal is ON.

#### 2. The motions (for example: in cooling)



- When a microcomputer doesn't have a signal from the sensor in 20 minutes, it judges that nobody is in the room and operates the unit in temperature sifted 2°C from the set temperature. (Cooling : 2°C higher, Dry: 1°C higher and Auto : according to the operation mode at that time.)

★1 In case of Fan mode, the fan speed reduces by 50 rpm.

- Since the set temperature is shifted by 2°C higher for 40 minutes, compressor speed becomes low and can realize energy saving operation. But as thermostat is prone to be off by the fact that the set temperature has been shifted, the thermostat-off action is prohibited in 40 minutes so as to prevent this phenomena.  
After this 40 minutes, the prohibition of the thermostat-off is cancelled and it can realize the conditions to conduct thermostat-off depending on the room temperature. In or after this forty minutes, if the sensor detects human motion detection signal, it let the set temperature and the fan speed return to the original set point, keeping a normal operation.

---

**Others**

- The dry operation can't command the setting temperature with a remote control, but internally the set temperature is shifted by 1°C.

## 7.9 HOME LEAVE Operation

### Outline

In order to respond to the customer's need for immediate heating and cooling of the room after returning home or for house care, a measure to switch the temperature and air volume from that for normal time over to outing time by one touch is provided. (This function responds also to the need for keeping up with weak cooling or heating.)

This time, we seek for simplicity of operation by providing the special temperature and air volume control for outing to be set by the exclusive button.

### Detail of the Control

#### 1. Start of Function

The function starts when the [HOME LEAVE] button is pressed in cooling mode or heating mode (including stopping and powerful operation). If this button is pressed while the operation is stopped, the function becomes effective when the operation is started. If this button is pressed in powerful operation, the powerful operation is reset and this function becomes effective.

- The [HOME LEAVE] button is ineffective in dry mode and fan mode.

#### 2. Details of Function

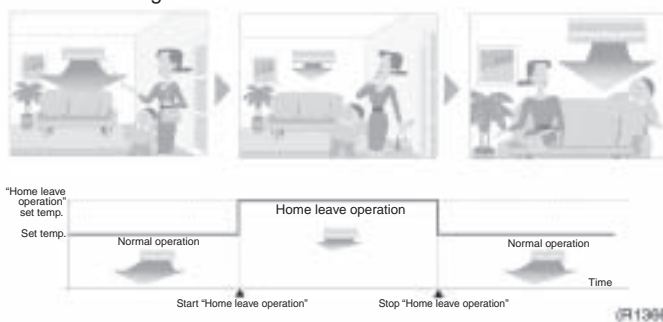
A mark representing [HOME LEAVE] is indicated on the liquid crystal display of the remote control. The indoor unit is operated according to the set temperature and air volume for HOME LEAVE which were pre-set in the memory of the remote control.

The LED (Red) of indoor unit representing [HOME LEAVE] lights up. (It goes out when the operation is stopped.)

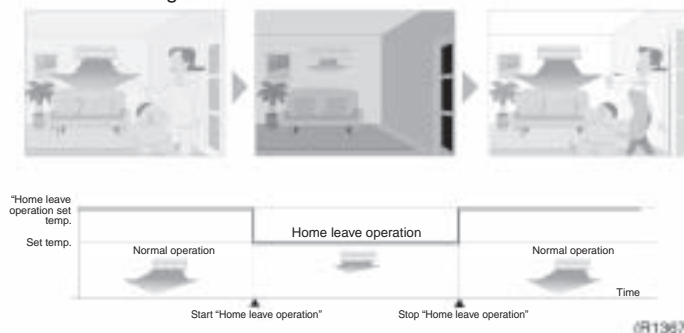
#### 3. End of Function

The function ends when the [HOME LEAVE] button is pressed again during [HOME LEAVE] operation or when the powerful operation button is pressed.

Scene <Cooling>



Scene <Heating>



### Others

The set temperature and set air volume are memorized in the remote control. When the remote control is reset due to replacement of battery, it is necessary to set the temperature and air volume again for [HOME LEAVE].

## 7.10 Inverter POWERFUL Operation

### Outline

In order to exploit the cooling and heating capacity to full extent, operate the air conditioner by increasing the indoor fan rotating speed and the compressor frequency.

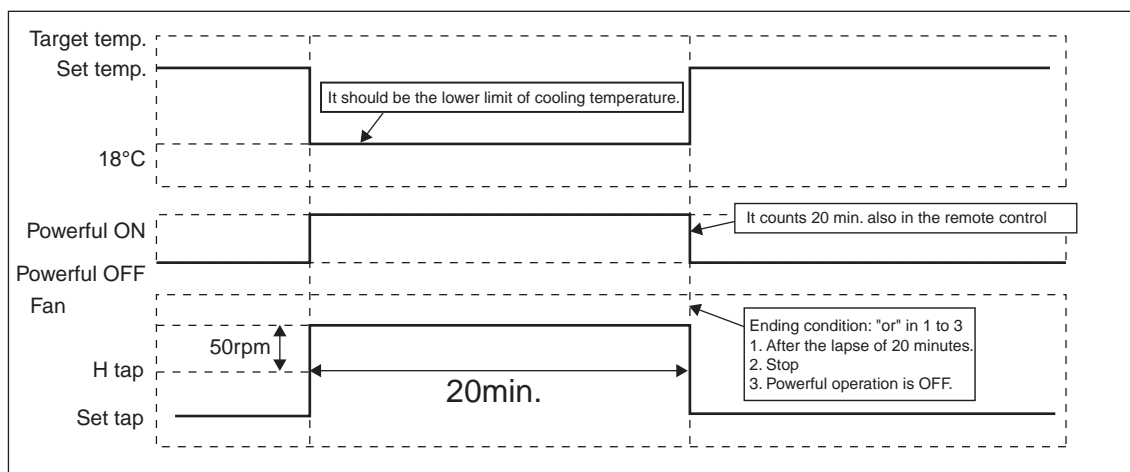
### Details of the Control

When POWERFUL button is pushed in each operation mode, the fan speed / setting temperature will be converted to the following states in a period of twenty minutes.

#### In case of FTXS20-50D

Operation mode	Fan speed	Target set temperature
COOL	H tap + 50 rpm	18°C
DRY	Dry rotating speed + 50 rpm	Normally targeted temperature in dry operation; Approx. -2°C
HEAT	H tap + 50 rpm	30°C
FAN	H tap + 50 rpm	—
AUTO	Same as cooling / heating in Powerful operation	The target is kept unchanged

Ex.) : Powerful operation in cooling mode.



(R4560)

## 7.11 Other Functions

### 7.11.1 Hot Start Function

#### Heat Pump Only

In order to prevent the cold air blast that normally comes when heating is started, the temperature of the heat exchanger of the indoor unit is detected, and either the air flow is stopped or is made very weak thereby carrying out comfortable heating of the room.

\*The cold air blast is also prevented using a similar control when the defrosting operation is started or when the thermostat gets turned ON.

### 7.11.2 Signal Receiving Sign

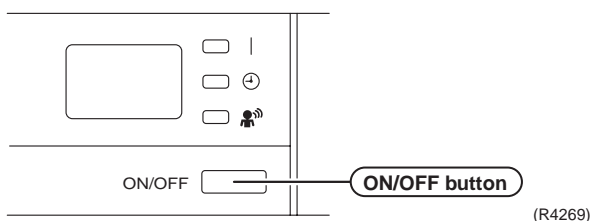
When the indoor unit receives a signal from the remote control, the unit emits a signal receiving sound.

### 7.11.3 ON/OFF Button on Indoor Unit

An ON/OFF button is provided on the front panel of the unit. Use this button when the remote control is missing or if its battery has run out.

Every press of the button switches from ON to OFF or from OFF to ON.

#### In case of FTXS20-50D



- Push this button once to start operation. Push once again to stop it.
- This button is useful when the remote control is missing.
- The operation mode refers to the following table.

	Mode	Temperature setting	Air flow rate
Cooling Only	COOL	22°C	AUTO
Heat Pump	AUTO	25°C	AUTO

- In the case of multi system operation, there are times when the unit does not activate with this button.

### 7.11.4 Titanium Apatite Photocatalytic Air-Purifying Filter

This filter combines the Air Purifying Filter and Titanium Apatite Photocatalytic Deodorizing Filter in a single highly effective unit. The filter traps microscopic particles, decompose odours and even deactivates bacteria and viruses. It lasts for three years without replacement if washed about once every six months.

### 7.11.5 Photocatalytic Deodorizing Filter

Photocatalytic Deodorizing Filter demonstrates powerful oxidation characteristics when subjected to harmless ultraviolet light. Photocatalytic deodorizing power is recovered simply by exposing the filter to the sun for 6 hours once every 6 months.

### 7.11.6 Air-Purifying Filter

A double structure made up of a bacteriostatic filter and an Air-Purifying Filter traps dust, mildew, mites, tobacco smoke, and allergy-causing pollen. Replace the Air-Purifying Filter once every 3 months.

### **7.11.7 Air Purifying Filter with Photocatalytic Deodorizing Function**

This filter incorporates the benefits the Air Purifying Filter and Photocatalytic Deodorizing Filter in a single unit. Combining the two filters in this way increases the active surface area of the new filter. This larger surface area allows the filter to effectively trap microscopic particles, decompose odours and deactivate bacteria and viruses even for the high volume of air required to air-condition large living rooms. The filter can be used for approximately 3 years if periodic maintenance is performed.

### **7.11.8 Mold Proof Air Filter**

The filter net is treated with mold resisting agent TBZ (harmless, colorless, and odorless). Due to this treatment, the amount of mold growth is much smaller than that of normal filters.

### **7.11.9 Self-Diagnosis Digital Display**

The microcomputer continuously monitors main operating conditions of the indoor unit, outdoor unit and the entire system. When an abnormality occur, the LCD remote control displays error code. These indications allow prompt maintenance operations.

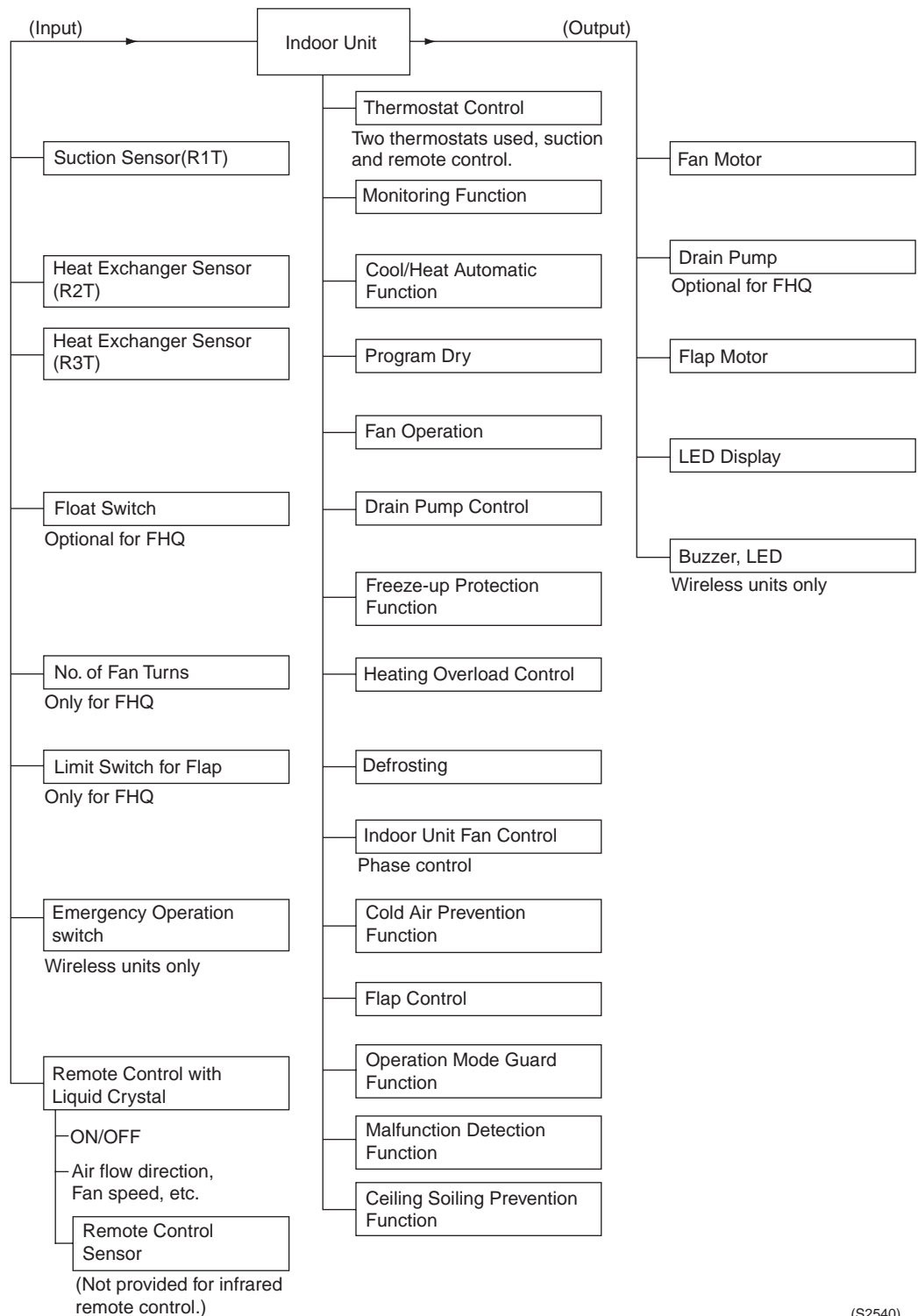
### **7.11.10 Auto-restart Function**

Even if a power failure (including one for just a moment) occurs during the operation, the operation restarts in the condition before power failure automatically when power is restored. (Note) It takes 3 minutes to restart the operation because the 3 minute stand-by function is activated

## 8. Indoor Unit (SkyAir Models)

### 8.1 Function Outline

FFQ-B, FHQ-B



(S2540)

## 8.2 Electric Function Parts

### FFQ – B8V1B

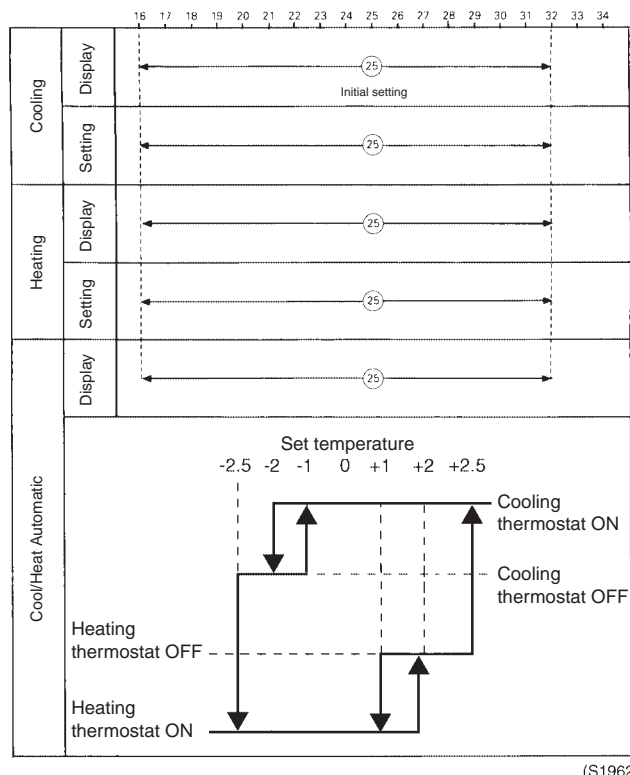
Capacity		25	35	50	60	Remarks
Wired remote control		BRC1C517				Optional Accessory
Infrared remote control	Heat pump	BRC7EA530W				Optional Accessory
	Cooling only	BRC7EA531W				
Electronic control unit		[2P095006-8] EC0608				
Fan motor		[3P104408-1] 4P 55W				
Fan motor capacitor		4μF [440VAC]				
Float switch		[4P104167-1] FS-0211B				
Drain pump		[3P103929-1] PLD-12230DM-17				

### FHQ – BVV1B

Capacity		35	50	60	Remarks
Wired remote control		BRC1D528			Optional Accessory
Infrared remote control	Heat pump	BRC7EA63W			Optional Accessory
	Cooling only	BRC7EA66			
Electronic Control Unit		[2P095007-7] EC0606			
Fan Motor		[3PN04213-1] 4P 62W			
Fan Motor Capacitor		3.0μF 440VAC			
Swing Motor		[3PN04208-1]			

## 8.3 Function Details

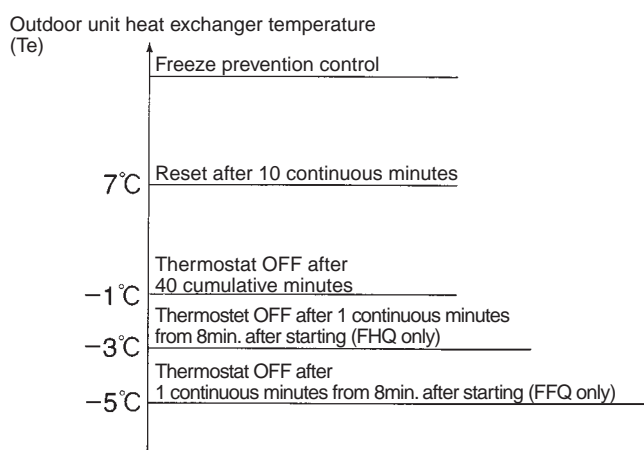
### Thermostat Control



### Freeze-up Protection Control

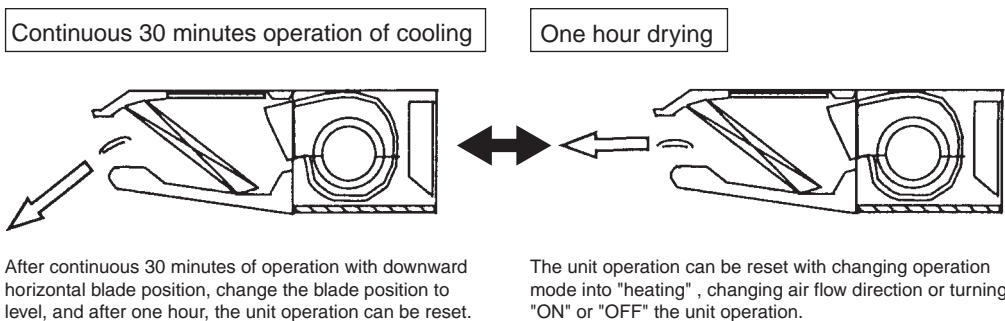
The thermostat turns OFF under the following temperature conditions to prevent freezing of the indoor unit heat exchanger.

- The motorized valve is controlled to maintain the indoor unit heat exchanger temperature ( $T_e$ ) above 0°C.
- The outdoor unit fan speed is reduced to prevent freeze-up protection control from activating during cooling operation under low outside air temperature. (For details, see the section on cooling operation under low outside air temperature.)



(S1116)

### Condensation Avoidance Control (FHQ Only)



(S1117)

**Note:**

1. Regardless of thermostat ON or OFF, the control can be functioned with the operation mode of "cooling (automatic cooling)" or "programmed drying".
2. The function is not provided for models other than FHQ models.

### Outdoor Unit Identification Function

If the indoor unit is for both a heat pump and cooling only type, this function differentiates whether the outdoor unit is functioning as a heat pump or cooling only unit, and automatically decides the which operation modes can be set.

- Operation modes which can be set  
Heat pump : Fan / cool / dry / auto / heat

### Drain Pump Control FFQ and FHQ (OPTION)

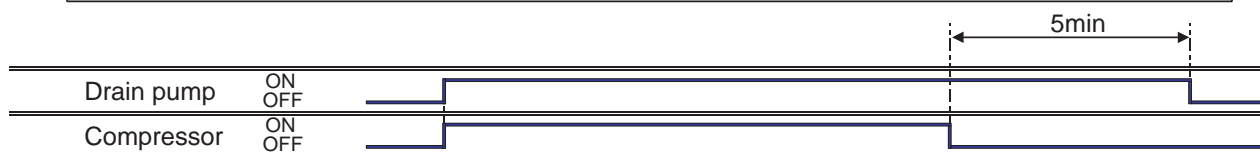
Time A shown in below diagram  
(Period from occurrence of drain water level abnormality to compressor stop)

	A [sec]
FHQ	10
Other than FHQ	0

#### 1 Cooling and dry operation

##### 1-1 Basic operation

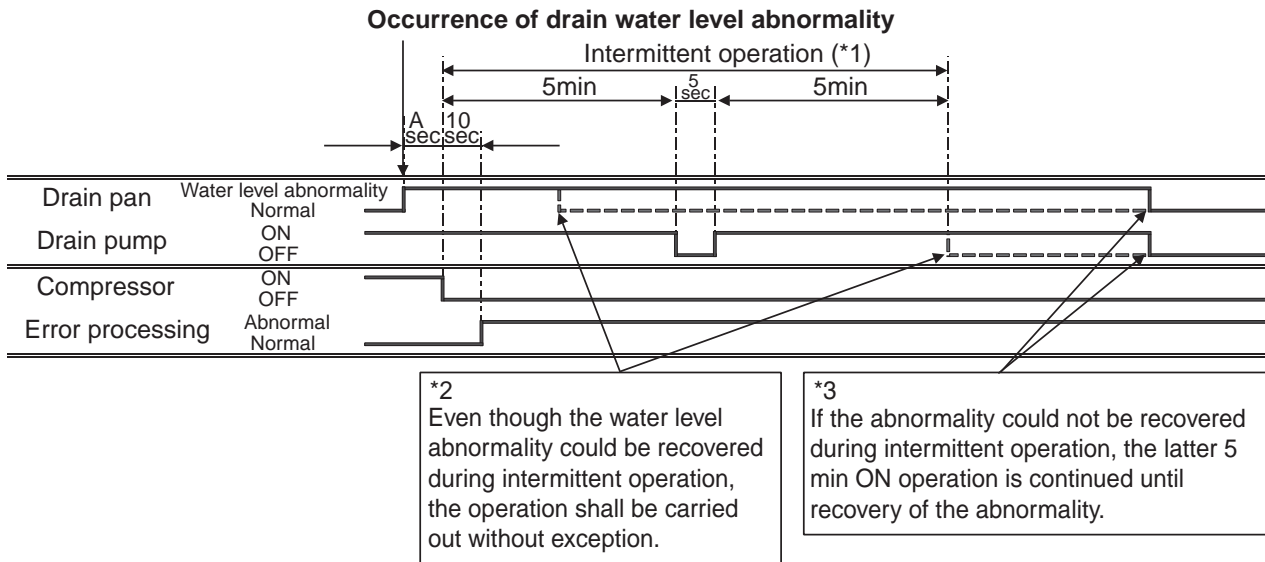
For cooling or dry operation mode, drain pump is turned ON on compressor starting while turned OFF when residual operation for 5 minutes is complete after compressor stopped.



## 1-2 Operations when an occurrence of water level abnormality

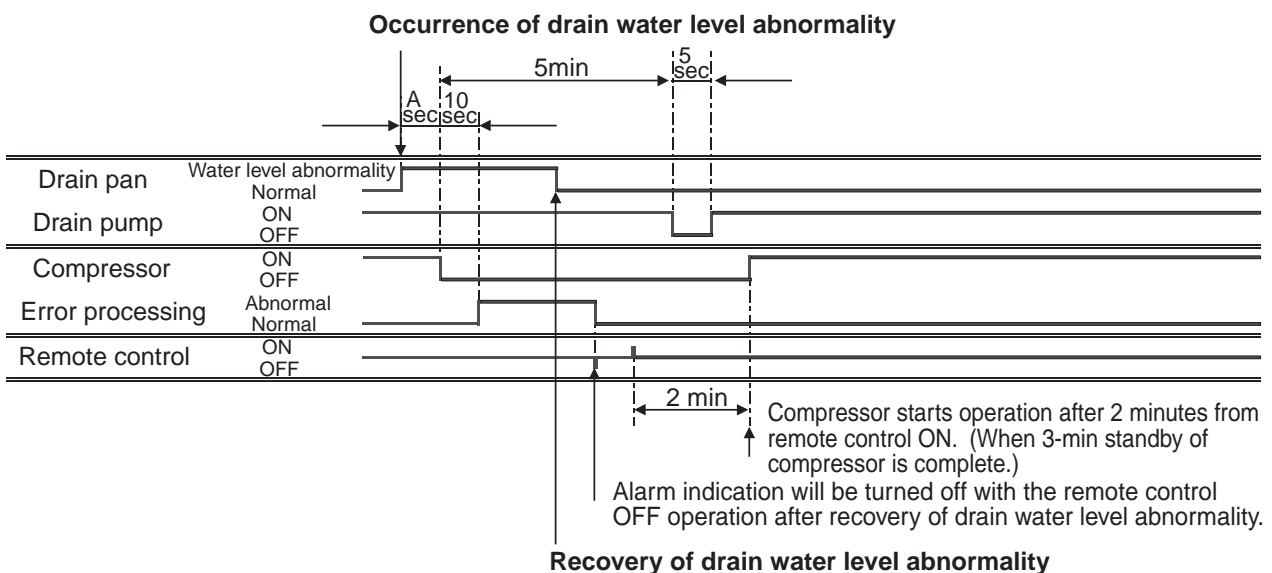
### 1-2-a) Behavior between occurrence and recovery of water level abnormality

After compressor stops due to water level abnormality, drain pump is operated intermittently, i.e. 5 min ON, 5 sec OFF and 5 min ON. (\*1) The intermittent operation is executed regardless of recovery of water level abnormality during the intermittent operation. (\*2) When the water level abnormality can not be recovered, the latter 5 min ON operation is continued until recovery of the abnormality. (\*3)



### 1-2-b) Behavior when the unit restarts by remote control after the water level abnormality is recovered

Water level abnormality shall be cancelled simultaneously when the unit is turned off with remote control after recovery of the water level abnormality. When the unit is turned on with remote control thereafter, compressor starts operation 2 minutes later from the remote control ON. (Below diagram shows an example of the case that the water level abnormality is recovered during the former 5 min intermittent operation.)



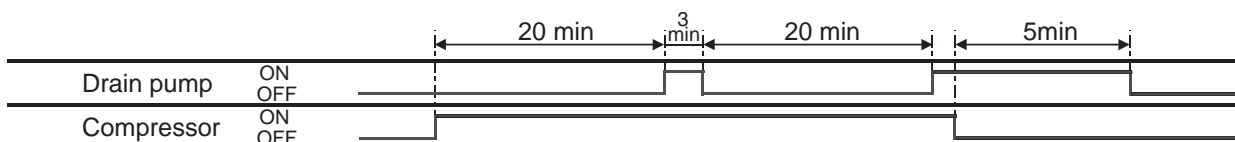
Note : (1 On the whole of cooling and dry operation)  
Recovery operation for drain water level abnormality does not activate when the water level can be returned normal within A + 10 seconds.

## 2. Heating

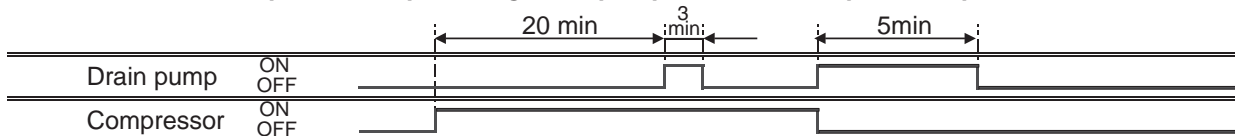
### 2-1 Basic operation

In heating operation of the unit equipped with a humidifier, when "Interlocking of drain pump / humidifier" (15(25)-3) is set to "yes" (02), the drain pump operates 20-min OFF and 3-min ON repeatedly during compressor is in operation. After compressor stops, residual operation will be conducted for 5 minutes.

#### 2-1-1 When compressor stops during drain pump ON after compressor operation started



#### 2-1-2 When compressor stops during drain pump OFF after compressor operation started



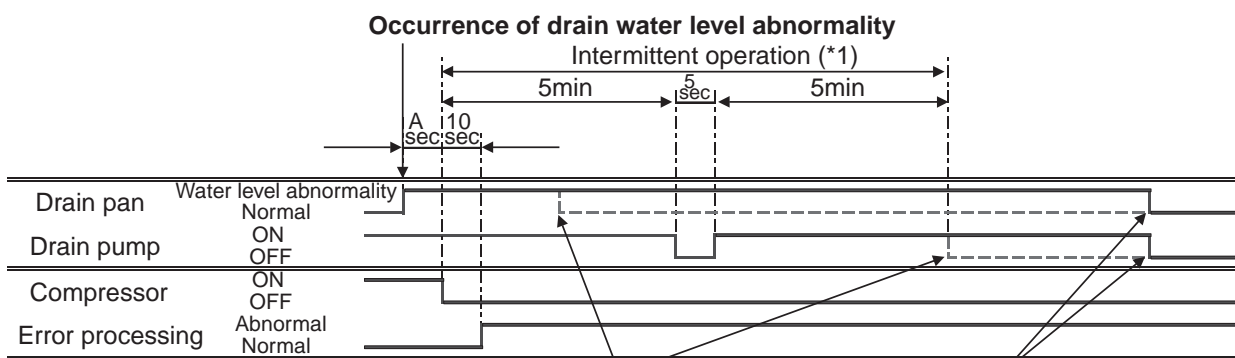
## 2-2 Operations when an occurrence of drain water level abnormality

### 2-2-a) Behavior between occurrence and recovery of drain water level abnormality

After compressor stops due to water level abnormality, drain pump is operated intermittently, i.e. 5 min ON, 5 sec OFF and 5 min ON. (\*1) The intermittent operation is executed regardless of recovery of abn. Water level during the intermittent operation. (\*2) When the abn. water level can not be recovered, the latter 5 min ON operation is continued until recovery of the abnormality. (\*3) On above diagram, the system operation in the event of a water level abnormality occurrence differs between the drain pump ON and OFF. The details are as follows.

#### 2-2-a)-1 When a water level abnormality occurs during drain pump ON

1 The same operation as 1-2-a) "Behavior between occurrence and recovery of drain water level abnormality" in the mode of cooling or dry.



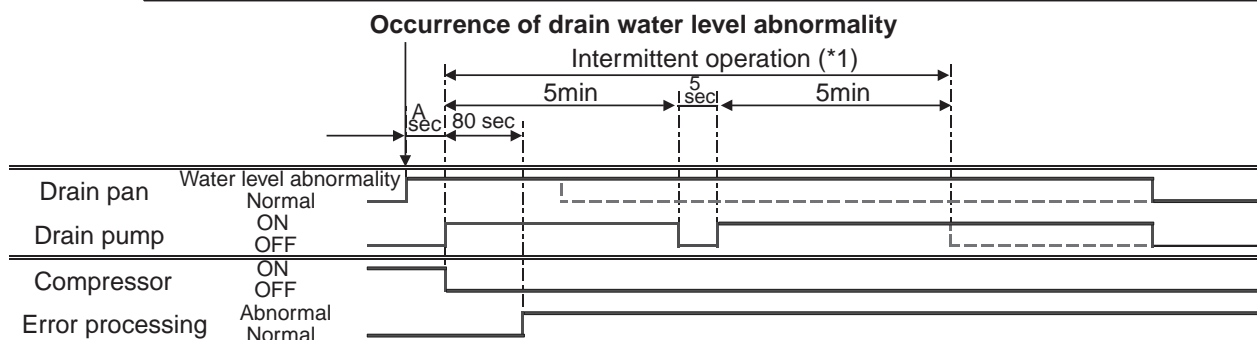
\*2 Even though the water level abnormality could be recovered during intermittent operation, the operation shall be carried out without exception.

\*3 If the abnormality could not be recovered during intermittent operation, the latter 5 min ON operation is continued until recovery of the abnormality.

Note : ((2-2-a)-1 When a water level abnormality occurs during drain pump ON)  
Recovery operation for drain water level abnormality does not activate when the water level can be returned normal within A + 10 seconds.

**2-2-a)-2 When a water level abnormality occurs during drain pump OFF**

The abnormality is determined when 80 seconds elapse from compressor stop. Other than above, behavior is same as 2-2-a).

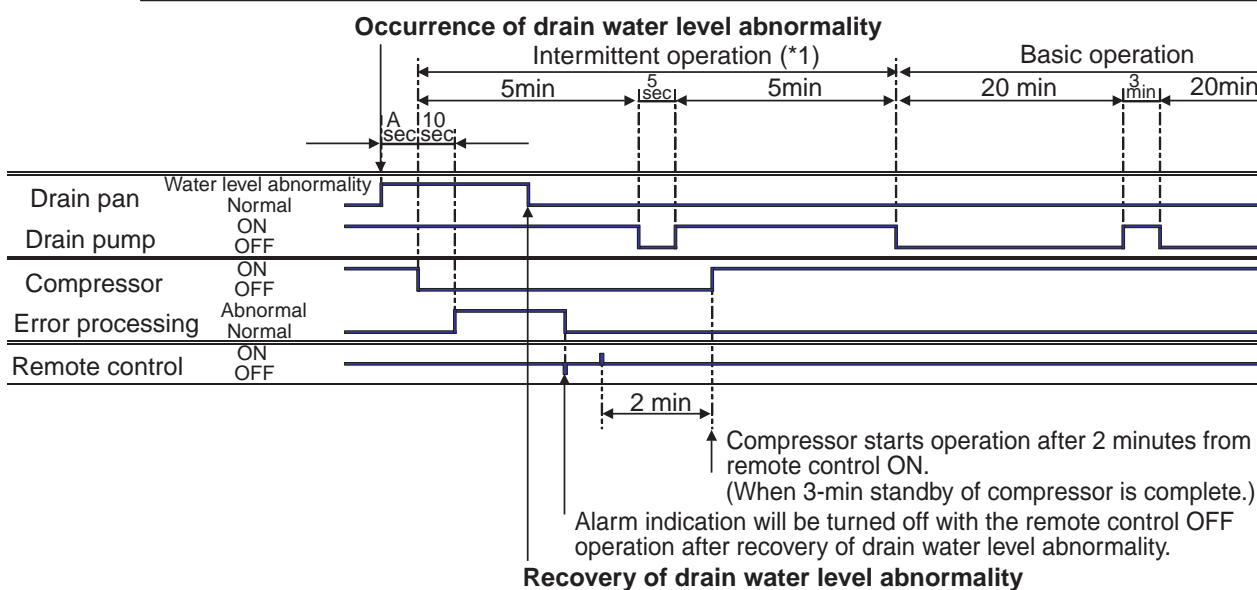


Note : ((2-2-a)-2 When a water level abnormality occurs during drain pump OFF)

Recovery operation for drain water level abnormality does not activate when the water level can be returned normal within A + 80 seconds.

**2-2-b) Behavior when the unit restarts by remote control after the water level abnormality is recovered**

Abnormal water level shall be cancelled simultaneously when the unit is turned off with remote control after recovery of abnormal water level. When the unit is turned on with remote control thereafter, compressor starts operation 2 minutes later from the remote control ON. (Below diagram shows an example of the case that the water level abnormality is recovered during the former 5 min intermittent operation after the abnormality occurred during drain pump ON.)



## Using Conditions for Remote Control Thermostat

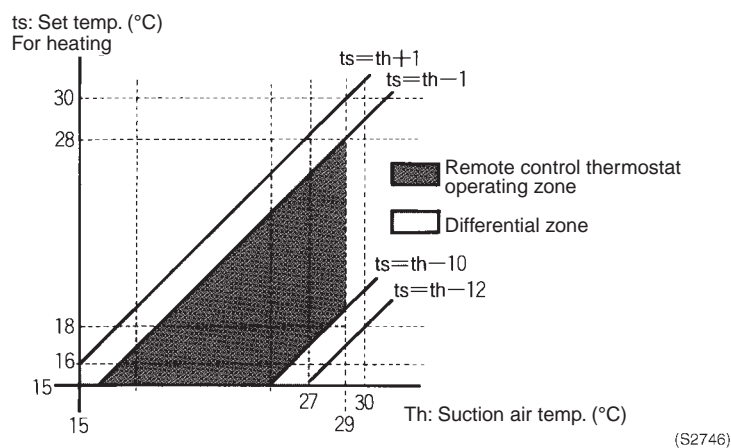
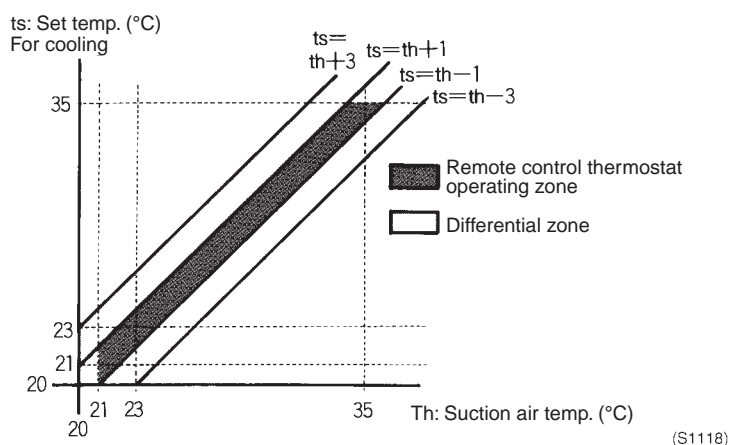
(Applicable models: FHQ & FFQ only)

Remote control thermostat is equipped only in wired remote control.

Even when "use remote control thermostat" is selected in service mode, the remote control thermostat may not be used.

< Conditions not to use >

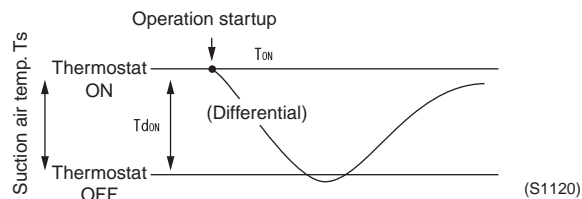
1. When the remote control thermostat malfunctions.
2. When the one remote control group control is applied.  
(Excluding simultaneous ON/OFF operation)
3. When conditions relating set temperature with remote control and suction air temperature are out of the operating zone of remote control thermostat shown in below diagram.  
(Excluding when automatic operation mode is selected. Whenever operation is in the automatic mode, remote control thermostat can be used.)



### Program Dry Operation Function

The points of thermostat ON or OFF are determined according to the suction air temperature at the startup of unit operation.

The set temperature and flow rate are not displayed on remote control.



#### 1. Thermostat ON point ( $T_{ON}$ ) according to suction air temp. ( $T_s$ ).

Suction air temp	$T_{ON}(^{\circ}\text{C})$	$T_{dON}(^{\circ}\text{C})$
$T_s > 24^{\circ}\text{C}$	$T_s$	1.5
$24^{\circ}\text{C} \geq T_s > 16^{\circ}\text{C}$	$T_s$	1.0
$16^{\circ}\text{C} \geq T_s$	$16^{\circ}\text{C}$	1.0

#### 2. Operation condition

Compressor condition	ON	OFF
Setting of flow rate Angle of flap Air flow direction set with remote control	L operation Set angle Set angle	OFF Set angle Set angle

### Auto-restart Function

If there is a power cut when the unit is operating, it will automatically resume the same operating mode when the power is restored.



#### Caution

When performing maintenance and the power supply is to be shut off, be sure to turn the remote control's ON/OFF switch OFF first.

Shutting the power supply switch off while the ON/OFF switch is still ON is dangerous because the "power failure automatic reset function" will cause the indoor fan to start turning immediately, or the outdoor unit fan to automatically start turning three minutes after the power supply is turned back on.

## Fan and Flap Operations

			Fan	Flap FHQ & FFQ	Remote Control Indication
Heating Operation	Hot Start from Defrost	In Swing Operation	OFF	Horizontal	Swing
		In Airflow Direction Setting	OFF	Horizontal	Set Position
	Defrost	In Swing Operation	OFF	Horizontal	Swing
		In Airflow Direction Setting	OFF	Horizontal	Set Position
	Thermostat OFF	In Swing Operation	LL	Horizontal	Swing
		In Airflow Direction Setting	LL	Horizontal	Set Position
	Hot Start from Thermostat OFF (Cold Air Prevention)	In Swing Operation	LL	Horizontal	Swing
		In Airflow Direction Setting	LL	Horizontal	Set Position
	Stop (Error)	In Swing Operation	OFF	Horizontal	—
		In Airflow Direction Setting	OFF	Horizontal	—
	Overload Thermostat OFF	In Swing Operation	LL	Horizontal	Swing
		In Airflow Direction Setting	LL	Horizontal	Set Position
Cooling Operation	Thermostat ON in Program Dry Mode	In Swing Operation	L	Swing	Swing
		In Airflow Direction Setting	L	Setting	Set Position
	Thermostat OFF in Program Dry Mode	In Swing Operation	OFF	Swing	Swing
		In Airflow Direction Setting	OFF	Setting	Set Position
	Cooling Thermostat OFF	In Swing Operation	Setting	Swing	Swing
		In Airflow Direction Setting	Setting	Setting	Set Position
	Stop (Error)	In Swing Operation	OFF	Horizontal	—
		In Airflow Direction Setting	OFF	Setting	—
	Freeze Prevention in Program Dry Mode (Including Cooling Operation)	In Swing Operation	L ★1	Swing	Swing
		In Airflow Direction Setting	L ★1	Setting	Set Position

★1: L or LL operation for FFQ only.  
(L for 4-way outlet and LL for 2-way or 3-way outlet)

**Mode Conflict****[Overview]**

While the indoor unit for another room and the outdoor unit are operating, when the indoor unit for the own room is activated, the operation mode which can be selected in the own room has some restrictions as mentioned below.

- i) In case an priority for operation mode selection is given to the own room by setting the dip switch of outdoor unit;  
→The own room can be operated in any mode.
- ii) In case an priority for operation mode selection is not given to the own room by setting the dip switch of outdoor unit;  
→The unit can be operated as follows:

Outdoor unit operation mode when an operation mode for the own room is selected. (The outdoor unit is operated in the mode as mentioned below.)	Operation mode selected in the own room			
	Cooling or Automatic cooling (Note)	Dry	Blowing	Heating or Automatic heating (Note)
Cooling	○	○	○	×
Heating	×	×	×	○
Blowing	○	○	○	○*

○:Operational \*:The unit for another room is switched into non-operational condition.

× : Non-operational

\* Operation of the indoor unit for the own room during non-operation.

- Fan = OFF
- Louver = becomes horizontal position.
- ON LED on the remote control = blinks.
- Indication of "under central control" on the remote control = displayed.

**Note:**

During automatic operation, at the time of changing operation mode to Automatic cooling or Automatic heating, the unit is operated as the table shown above.

## Non-operating Room Dew Prevention Fan Control

### [Overview]

After operating an indoor unit for the own room in the cooling mode or dry mode, stop the unit using the remote control. Under the condition, when an unit for another room is started operation in the heating mode, the fan in the own room may rotate in the LL mode even though the remote control of the fan is in stop mode.

### [Purpose]

On multiple units, when units of other rooms start heating operation after unit of the own room starts cooling or dry operation, high-temperature refrigerant flows to the unit of the own room, thus resulting in evaporation of condensate retained in heat exchanger or drain pan. At this time, if casing temperature is below dew point, dew gets condensed. In order to prevent the dew condensation, this control is used to operate the fan for a specified period of time, thus discharging the moisture from the indoor unit.

### [Outline]

- The fan rotates in LL mode even though the unit is turned off by the use of remote control.
- This control can be reset only by conducting the cooling or dry operation of the unit of the own room with thermostat ON.
- This control is enabled within 8 hours after the "Outdoor unit operation mode" has changed from cooling or dry operation to heating operation.
- During the 8 hours, this control is activated for a cumulative period of 40 minutes.

■ Emergency operation is not conducted.

The outdoor unit has no emergency function. Therefore, in the case of connecting to Split or Split Multi outdoor unit, only the fan operation is conducted even though the dip switch of indoor unit is set to EMERGENCY.



# Part 6

## Test Operation

1. Test Operation .....	112
1.1 Procedure and Outline .....	112
2. Outdoor Unit PCB Layout.....	117
3. Field Setting .....	118
3.1 Field Setting from Outdoor Unit.....	118
3.2 Detail of Setting Mode .....	127
4. Field Setting for SkyAir Indoor Unit .....	136
4.1 Explanation.....	136
4.2 Field Setting .....	137
4.3 Initial Setting Contents .....	138
4.4 Local Setting Mode Number .....	139
4.5 Detailed Explanation of Setting Modes .....	140
4.6 Centralized Group No. Setting .....	144
4.7 Maintenance Mode Setting.....	145
5. Test Operation and Field Setting for RA Indoor Unit.....	146
5.1 Test Operation from the Remote Control .....	146
5.2 Jumper Settings .....	147

# 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 power supply single-phase 220-230V / 50Hz?
- Have you finished a ductwork to drain?
- Have you detach transport fitting?
- Is the wiring performed as specified?
- Are the designated wires used?
- Is the grounding work completed?
  - Use a 500V megger tester to measure the insulation.
  - Do not use a megger tester for other circuits than 200-230V circuit.
- Are the setscrews of wiring not loose?
- Is the electrical component box covered with an insulation cover completely?
- Is pipe size proper? (The design pressure of this product is 4.0MPa.)
- Are pipe insulation materials installed securely?
  - Liquid and gas pipes need to be insulated. (Otherwise causes water leak.)
- Are respective stop valves on liquid and gas line securely open?
- 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"?

(V3180)

### 1.1.2 Turn power on

Turn outdoor unit power on.



Turn indoor unit power on.



Carry out field setting on outdoor PC board

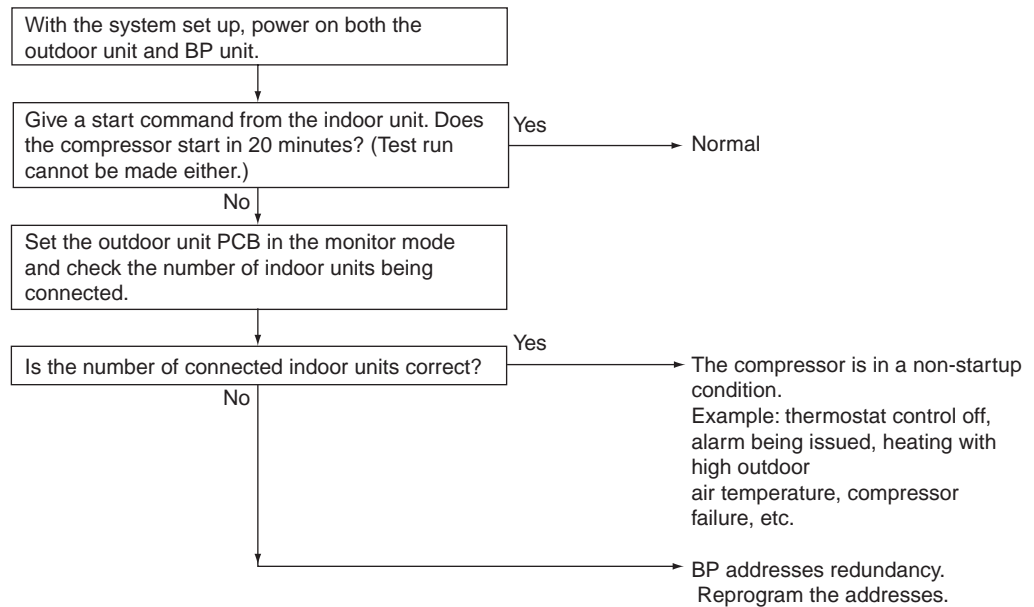
- Be sure to turn the power on 6 hours before starting operation to protect compressors.

(Q0398)

### 1.1.3 Judging and reprogramming in case of redundant BP addresses

The BP unit of this system is provided with specific addresses in its production stage. These addresses are used to conduct various controls. If by any chance (on 3 out of 260000 units) these addresses are redundant, the system may get in trouble. When replacing the PCB of the BP unit too, these addresses may be used repeatedly.

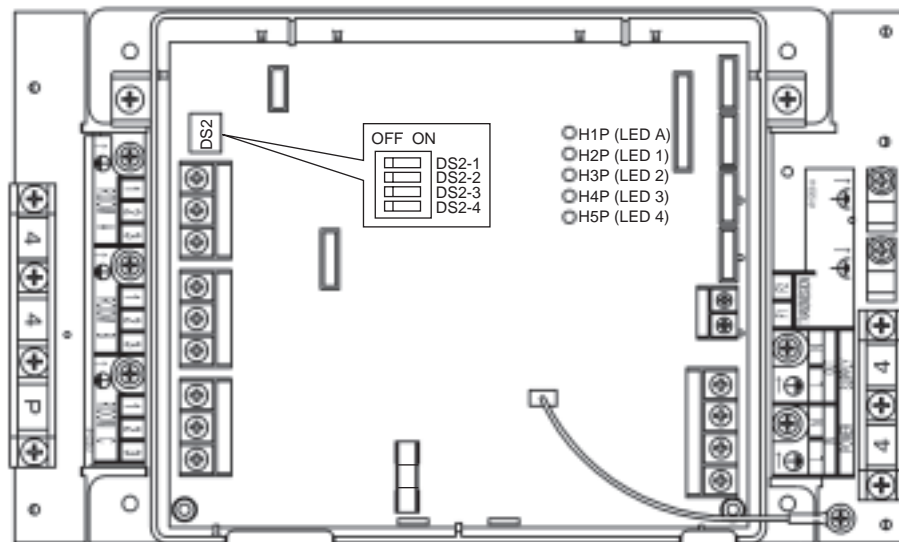
#### Address redundancy checking flowchart



(Q0517)

#### Reprogramming the PCB addresses of BP unit

Modify the DIP switch (DS2) settings on the BP unit's PCB in the following way.



(Q0444)

**Example of DIP switch (DS2) settings on the BP unit's PCB**

	DS2-1	DS2-2	DS2-3	DS2-4
BP unit 1	OFF	OFF	ON	OFF
BP unit 2	OFF	OFF	OFF	ON
BP unit 3	OFF	OFF	ON	ON

DS1~4 : Factory setting is OFF.

The BP unit 1 through 3 show the first through third unit, respectively. The order of these units is flexible.

The above table is just for your reference. The redundancy of addresses can be avoided when the DIP switch settings are individually specified.

With the DIP switch settings reprogrammed, power on the outdoor unit and BP unit again. Check for address redundancy.



**Note:** If an error display appears on the indoor unit, BP unit or outdoor unit, follow its code and description.

### 1.1.4 When Turning On Power First Time

The unit cannot be run for up to 12 minutes to automatically set 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.)

### 1.1.5 When Turning On Power the Second Time and Subsequent

Tap the RESET(BS5) button on the outdoor unit PC board. Operation becomes possible for about 2 minutes. If not, the unit cannot be run for up to 10 minutes.

**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.)

### 1.1.6 When the No. of Indoor Unit Has Been Changed, or Indoor (BP) or Outdoor Unit PC Board Has Been Changed, or the System is transferred

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

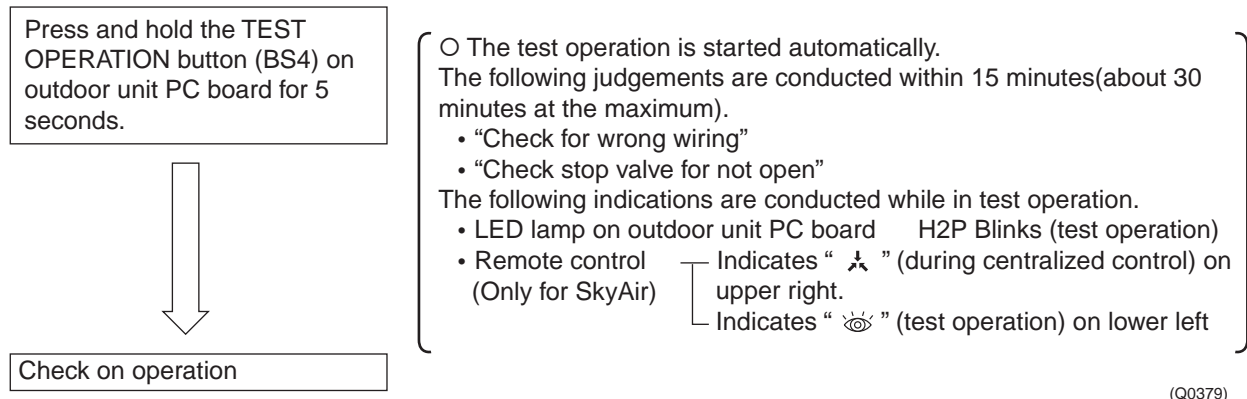
Can also be set during operation described above.

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.)

## 1.1.7 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.)



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 control for abnormal display and correct it.

### Malfunction code

In case of an alarm code displayed on remote control:

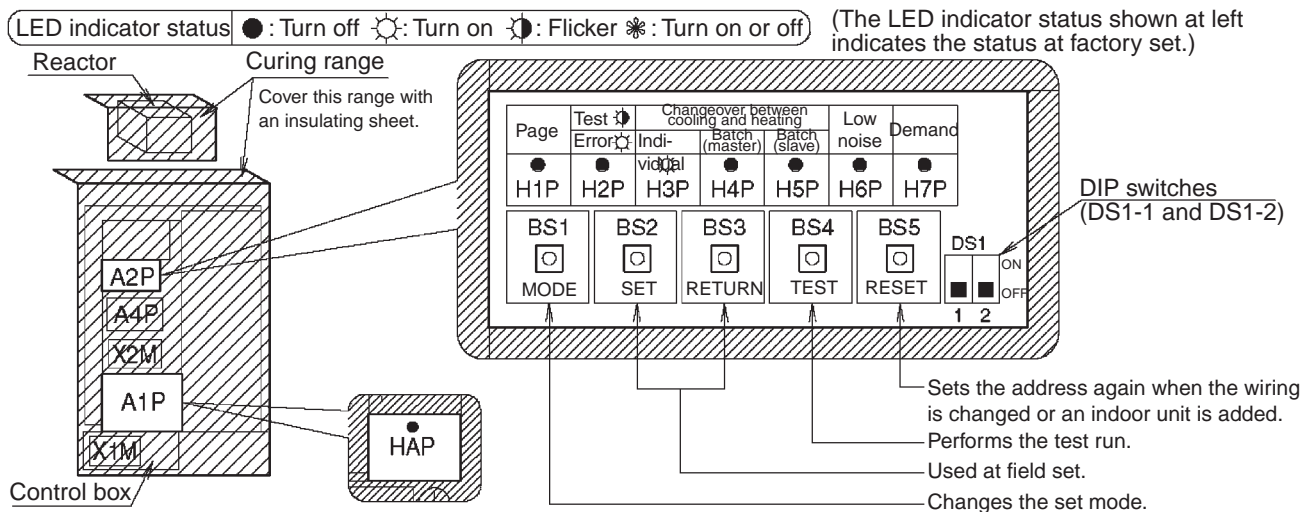
Malfunction code	Nonconformity during installation	Remedial action
E3	The stop valves in the outdoor unit remain closed.	Open the stop valve on both the gas side and liquid side.
E4 F3	The stop valves in the outdoor unit remain closed.	Open the stop valve on both the gas side and liquid side.
	The operation mode on the remote control was changed before the check run.	Set the operating mode on all indoor unit remote controls to “cooling”.
	The refrigerant is insufficient.	<ul style="list-style-type: none"> <li>• Check whether additional refrigerant charge has been finished correctly.</li> <li>• Calculate again the required quantity of refrigerant to be charged based on the piping length, then charge additionally proper quantity of refrigerant.</li> </ul>
U3	The check operation is not performed.	Perform the check operation.
U4	The power is not supplied to the outdoor unit.	Connect correctly the power cable of the outdoor unit.
UA	Improper type of indoor units or BP units are connected.	Check the type of indoor units and BP units currently connected. If they are not proper, replace them with proper ones.
UF	The stop valves in the outdoor unit remain closed.	Open the stop valve on both the gas side and liquid side.
	The piping and wiring of the specified indoor unit are not connected correctly to the outdoor unit.	Confirm that the piping and wiring of the specified indoor unit are connected correctly to the outdoor unit.
	The operation mode on the remote control was changed before the check operation.	Set the operating mode on all indoor unit remote controls to “cooling”.
UH	The unit-to-unit wirings are not connected correctly.	Connect correctly the unit-to-unit wirings to the F1 and F2(TO BP UNIT) terminals on the PC board (A1P) in the outdoor unit.

### 1.1.8 Confirmation on Normal Operation

- Conduct normal unit operation after the check operation has been completed.  
(When outdoor air temperature is 30°CDB or higher, the unit can not be operated with heating mode. See the installation 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 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.

## 2. Outdoor Unit PCB Layout

### Outdoor Unit PCB



**Caution** Cover electric parts with an insulating sheet during inspection to prevent electric shock.

## 3. Field Setting

### 3.1 Field Setting from Outdoor Unit

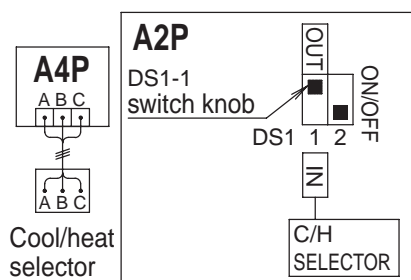
#### 3.1.1 Setting by Dip Switches

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

Dipswitch		Setting item	Description
No.	Setting		
DS1-1	ON	Cool / Heat change over setting	Used to set cool / heat change over setting by remote control equipped with outdoor unit. (Note 1)
	OFF (Factory set)		
DS1-2	ON	Not used	Do not change the factory settings.
	OFF (Factory set)		

#### Cool/heat selector connection procedure

- Set the remote controller only when changing over the operation mode between cooling and heating using the remote controller installed in the outdoor.
- ① Connect the cool/heat selector (optional accessory) to the terminals (A, B and C) on the outdoor PC board (A4P).
  - ② Set the cool/heat selector switch DS1-1 from "IN (inside) " (which is selected at the factory before shipment) to "OUT (outside) ".





### Caution

### DIP switch Setting after changing the main PCB(A1P) to spare parts PCB

When you change the main PCB(A1P) to spare parts PCB, please carry out the following setting.

Please Attach the Capacity Setting Adapter corresponding to Capacity Class (ex. 112, 140, 160) in connector X51A.  
(See Below)

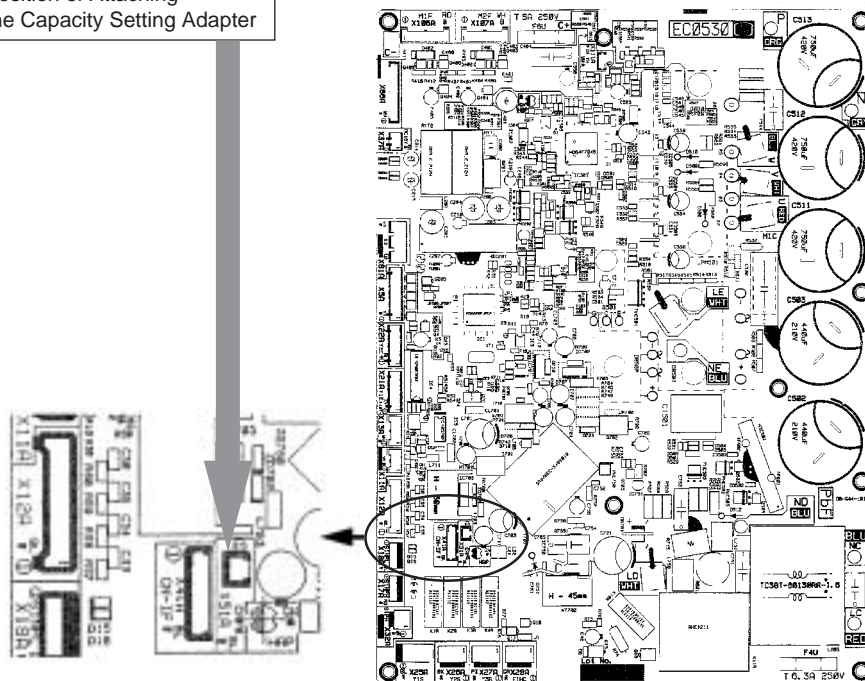
### Capacity Setting Adapter

	Capacity Class	Note
①	4 (112)	CAPACITY SETTING ADAPTER (for 100/J112)
②	5 (140)	CAPACITY SETTING ADAPTER (for 125/J140)
③	6 (160)	CAPACITY SETTING ADAPTER (for 140/J160)

### Position of Attaching the Capacity Setting Adapter

### X51A

#### Position of Attaching the Capacity Setting Adapter

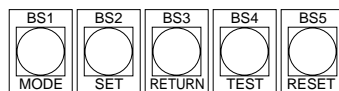


### ■ Setting by pushbutton switches

The following settings are made by pushbutton switches on PCB.

	H1P	H2P	H3P	H4P	H5P	H6P	H7P
LED indication	●	●	○	●	●	●	●

(Factory setting)



(V2760)

There are the following three setting modes.

#### ① Setting mode 1 (H1P off)

Initial status (when normal) : Also indicates during “abnormal”.

#### ② Setting mode 2 (H1P on)

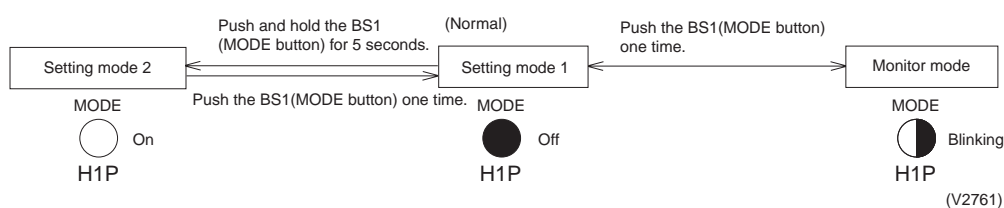
Used to modify the operating status and to set program addresses, etc. Usually used in servicing the system.

#### ③ Monitor mode (H1P blinks)

Used to check the program made in Setting mode 2.

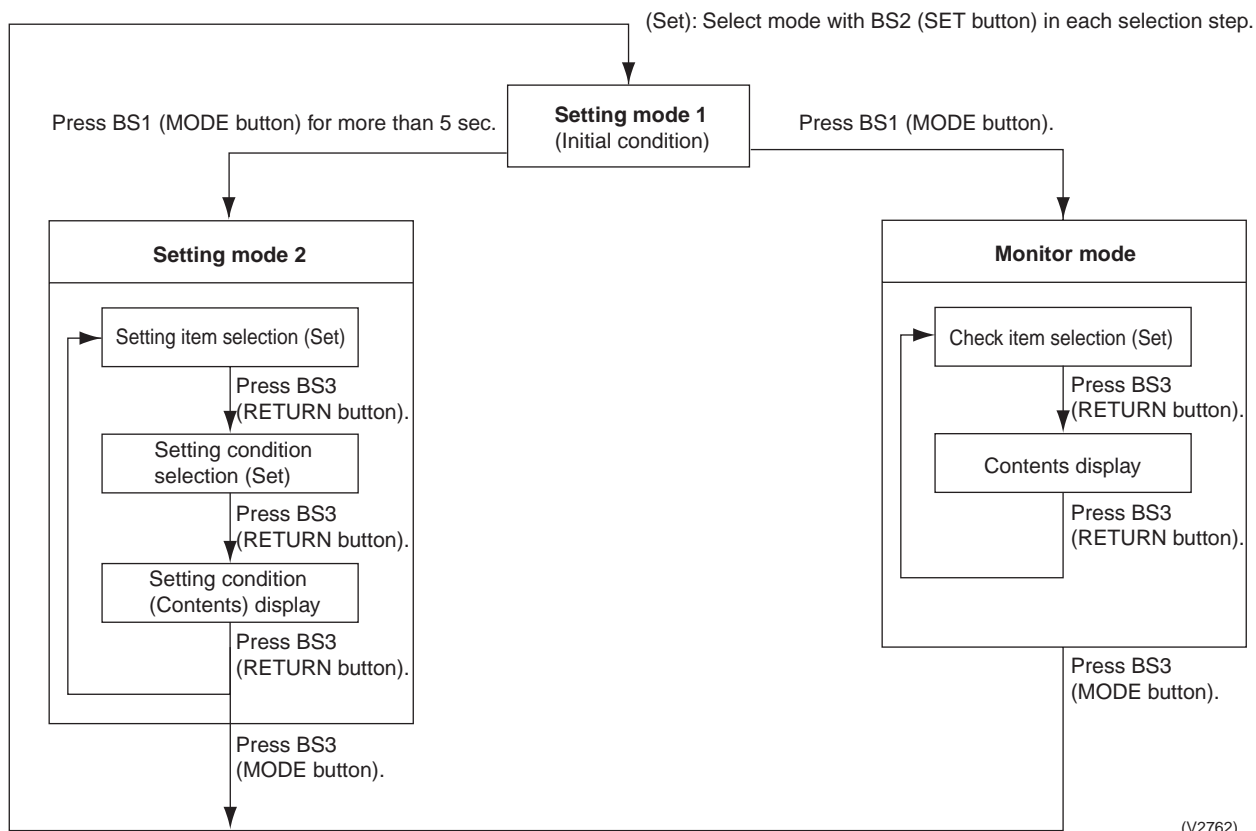
### ■ Mode changing procedure

Using the MODE button, the modes can be changed as follows.



(V2761)

### ■ Mode changing procedure



(V2762)

## a. "Setting mode 1"

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

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

### Procedure for changing COOL/HEAT selection setting

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

Push the **SET (BS2)** button to set the blinking of LED to any of conditions shown on the right.

Setting (displaying) item	MODE H1P	TEST H2P	COOL/HEAT select			Low noise H6P	Demand H7P
			IND H3P	MASTER H4P	SLAVE H5P		
For selection by individual outdoor unit (factory set)	●	●	○	●	●	●	●
For selection in a batch of outdoor unit group with master unit	●	●	●	○	●	●	●
For selection in a batch of outdoor unit group with slave unit	●	●	●	●	○	●	●

○ ON  
● OFF  
○ Blink

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

Pushing the **RETURN (BS3)** button will return the system to the initial condition of "Setting mode 1".

### Procedure for checking check items

The system is normally set to "Setting mode 1".  
Should the system be set to any mode other than that, push the **MODE (BS1)** button to set the system to "Setting mode 1".

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

Pushing the **RETURN (BS3)** button will bring the system to the initial state of "Setting mode 1".

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

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

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

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

Demand operating conditions  
● In normal operation  
○ In demand operation

(V2763)

## b. "Setting mode 2"

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

### <Selection of setting items>

Push the **SET (BS2)** button and set the LED display to a setting item shown in the table on the right.

↓  
Push the **RETURN (BS3)** button and decide the item. (The present setting condition is blinked.)

### <Selection of setting conditions>

Push the **SET (BS2)** button and set to the setting condition you want.

↓  
Push the **RETURN (BS3)** button and decide the condition.

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

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

(V2764)

No.	Setting item	Description
1	Cool/heat unified address	Sets address for cool/heat unified operation.
2	Low noise/demand address	Address for low noise/demand operation
3	Test operation settings	Used to conduct test operation without making changes to the PCB and replacing the refrigerant, after the completion of maintenance.
5	Indoor unit forced fan H	Allows forced operation of indoor unit fan while unit is stopped. (H tap)
6	Indoor unit forced operation	Allows forced operation of indoor unit.
8	Te setting	Target evaporation temperature for cooling
9	Tc setting	Target condensation temperature for heating
10	Defrost changeover setting	Changes the temperature condition for defrost and sets to quick defrost or slow defrost.
12	External low noise setting / Demand setting	Reception of external low noise or demand signal
13	AIRNET address	Set address for AIRNET.
16	Setting of hot water	Make this setting to conduct heating operation with hot water heater.
20	Additional refrigerant charge operation setting	Carries out additional refrigerant charge operation.
21	Refrigerant recovery / vacuuming mode setting	Sets to refrigerant recovery or vacuuming mode.
22	Night-time low noise setting	Sets automatic nighttime low noise operation in a simple way. The operating time is based on "Starting set" and "Ending set".
25	Setting of external low noise level	Sets low noise level when the low noise signal is input from outside.
26	Night-time low noise operation start setting	Sets starting time of nighttime low noise operation. (Night-time low noise setting is also required.)
27	Night-time low noise operation end setting	Sets ending time of nighttime low noise operation. (Night-time low noise setting is also required.)
28	Power transistor check mode *Check after disconnection of compressor wires	Used for trouble diagnosis of DC compressor. Since the waveform of inverter is output without wiring to the compressor, it is convenient to probe whether the trouble comes from the compressor or 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 display								Setting condition display
	Setting item	MODE H1P	TEST H2P	C/H selection			Low noise H6P	Demand H7P	
				IND H3P	Master H4P	Slave H5P			* Factory set
1	Cool / Heat Unified address	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Address 0 <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> *
									Binary number 1 <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
									(6 digits) ~ <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
2	Low noise/demand address	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Address 0 <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> *
									Binary number 1 <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
									(6 digits) ~ <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
3	Test operation	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	Test operation : OFF <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
									Test operation : ON <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> *
5	Indoor forced fan H	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Normal operation <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> *
									Indoor forced fan H <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input checked="" type="radio"/>
6	Indoor forced operation	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Normal operation <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> *
									Indoor forced operation <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input checked="" type="radio"/>
8	Te setting	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	High <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/>
									Normal (factory setting) <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input checked="" type="radio"/> *
									Low <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
9	Tc setting	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	High <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/>
									Normal (factory setting) <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input checked="" type="radio"/> *
									Low <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
10	Defrost changeover setting	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Quick defrost <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/>
									Normal (factory setting) <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input checked="" type="radio"/> *
									Slow defrost <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
12	External low noise/demand setting	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	External low noise/demand: NO <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> *
									External low noise/demand: YES <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input checked="" type="radio"/>
13	Ainet address	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Address 0 <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> *
									Binary number 1 <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
									(6 digits) ~ <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
16	Setting of hot water heater	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	OFF <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> *
									ON <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input checked="" type="radio"/>
20	Additional refrigerant charging operation setting	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	Refrigerant charging: OFF <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> *
									Refrigerant charging: ON <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input checked="" type="radio"/>
21	Refrigerant recovery / vacuuming mode setting	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Refrigerant recovery / vacuuming: OFF <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> *
									Refrigerant recovery / vacuuming: ON <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input checked="" type="radio"/>
22	Night-time low noise setting	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	OFF <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> *
									Level 1 (outdoor fan with 8 step or lower) <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
									Level 2 (outdoor fan with 7 step or lower) <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input checked="" type="radio"/>
									Level 3 (outdoor fan with 6 step or lower) <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>

No.	Setting item display								Setting condition display	
	Setting item	MODE H1P	TEST H2P	C/H selection			Low noise H6P	Demand H7P		
				IND H3P	Master H4P	Slave H5P				
										* Factory set
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)	○ ● ● ● ● ○ ● ●
26	Night-time low noise operation start setting	○	●	○	○	●	○	●	About 20:00	○ ● ● ● ● ● ● ○
									About 22:00 (factory setting)	○ ● ● ● ● ● ○ ● *
									About 24:00	○ ● ● ● ● ○ ● ●
27	Night-time low noise operation end setting	○	●	○	○	●	○	○	About 6:00	○ ● ● ● ● ● ● ○
									About 7:00	○ ● ● ● ● ● ○ ●
									About 8:00 (factory setting)	○ ● ● ● ● ○ ● ● *
28	Power transistor check mode	○	●	○	○	○	●	●	OFF	○ ● ● ● ● ● ● ○ *
									ON	○ ● ● ● ● ● ○ ●
29	Capacity precedence setting	○	●	○	○	○	●	○	OFF	○ ● ● ● ● ● ● ○ *
									ON	○ ● ● ● ● ● ○ ●
30	Demand setting 1	○	●	○	○	○	○	●	60 % demand	○ ● ● ● ● ● ● ○
									70 % demand	○ ● ● ● ● ● ○ ● *
									80 % demand	○ ● ● ● ● ○ ● ●
32	Normal demand setting	○	○	●	●	●	●	●	OFF	○ ● ● ● ● ● ● ○ *
									ON	○ ● ● ● ● ● ○ ●

### c. Monitor mode

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

#### <Selection of setting item>

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

#### <Confirmation on setting contents>

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

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

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

(V2765)

No.	Setting item	LED display							Data display
		H1P	H2P	H3P	H4P	H5P	H6P	H7P	
0	Various setting	●	●	●	●	●	●	●	See below
1	C/H unified address	●	●	●	●	●	●	○	Lower 6 digits
2	Low noise/demand address	●	●	●	●	●	○	●	
3	Not used	●	●	●	●	●	○	○	
4	Airnet address	●	●	●	●	○	●	●	
5	Number of connected indoor units	●	●	●	●	○	●	○	
7	Number of connected zone units (excluding outdoor and BS unit)	●	●	●	●	○	○	○	Lower 6 digits
8	Number of outdoor units	●	●	●	○	●	●	●	
11	Number of zone units (excluding outdoor and BS unit)	●	●	●	○	●	○	○	Lower 6 digits
12	Number of terminal blocks	●	●	●	○	○	●	●	Lower 4 digits: upper
13	Number of terminal blocks	●	●	●	○	○	●	○	Lower 4 digits: lower
14	Contents of malfunction (the latest)	○	●	●	○	○	○	●	Malfunction code table
15	Contents of malfunction (1 cycle before)	○	●	●	○	○	○	○	Refer page 268
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)	○	●	○	●	○	○	●	Lower 2 digits: ○ ● Abnormal ● ○ Normal ● ● Unjudgement
25	Normal judgment of outdoor units PC board	●	●	○	○	●	●	○	

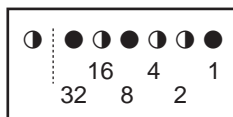
The numbers in the "No." column represent the number of times to press the SET (BS2) button.

#### Setting item 0 Display contents of "Various setting"

EMG operation / backup operation setting	ON	●	●	●	○	●	●	●
	OFF	●	●	●	●	●	●	●
Defrost select setting	Short	●	●	●	●	○	●	●
	Medium	●	●	●	●	●	●	●
	Long	●	●	●	●	●	●	●
Te setting	H	●	●	●	●	○	●	●
	M	●	●	●	●	●	○	●
	L	●	●	●	●	●	●	●
Tc setting	H	●	●	●	●	●	●	○
	M	●	●	●	●	●	●	●
	L	●	●	●	●	●	●	●

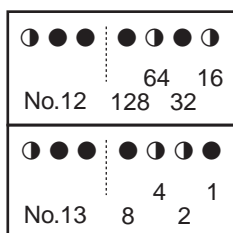
Push the SET button and match with the LEDs No. 1 - 15, push the RETURN button, and confirm the data for each setting.

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



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 - 25.

## 3.2 Detail of Setting Mode

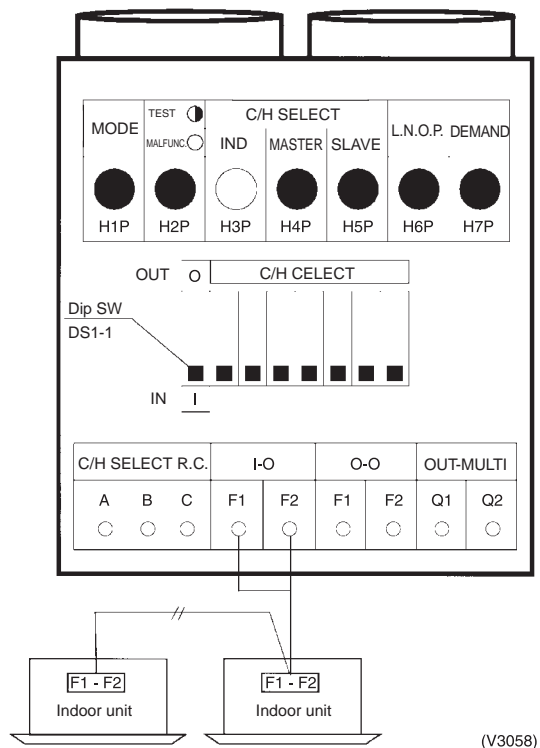
### 3.2.1 Cool / Heat Mode Switching

There are the following 4 cool/heat switching modes.

- ① Set cool/heat separately for each outdoor unit system by indoor unit remote control.
- ② Set cool/heat separately for each outdoor unit system by cool/heat switching remote control.
- ③ Set cool/heat for more than one outdoor unit system simultaneously in accordance with unified master outdoor unit by indoor unit remote control.
- ④ Set cool/heat for more than one outdoor unit system simultaneously in accordance with unified master outdoor unit by cool/heat switching remote control.

#### ① Set Cool / Heat Separately for Each Outdoor Unit System by Indoor Unit Remote Control

- ◆ It does not matter whether or not there is outdoor - outdoor unit wiring.
- ◆ Set outdoor unit PC board DS1-1 to IN (factory set).
- ◆ Set cool/heat switching to IND (individual) for "Setting mode 1" (factory set).



<Set the master unit (= indoor unit having the right to select the cooling/heating operation mode).>

#### In the case of wired remote controls

- After the check operation, "CHANGEOVER UNDER CONTROL" is flashing in all connected remote controls.
- Select an indoor unit to be used as the master unit in accordance with the request from the customer. (It is recommended to select an indoor unit which will be used most often as the master unit.)
- Press the operation mode selector button in the remote control of the indoor unit selected as the master unit.
- In that remote control, "CHANGEOVER UNDER CONTROL" disappears. That remote control will control changeover of the cooling/heating operation mode.
- In other remote controls, "CHANGEOVER UNDER CONTROL" lights.

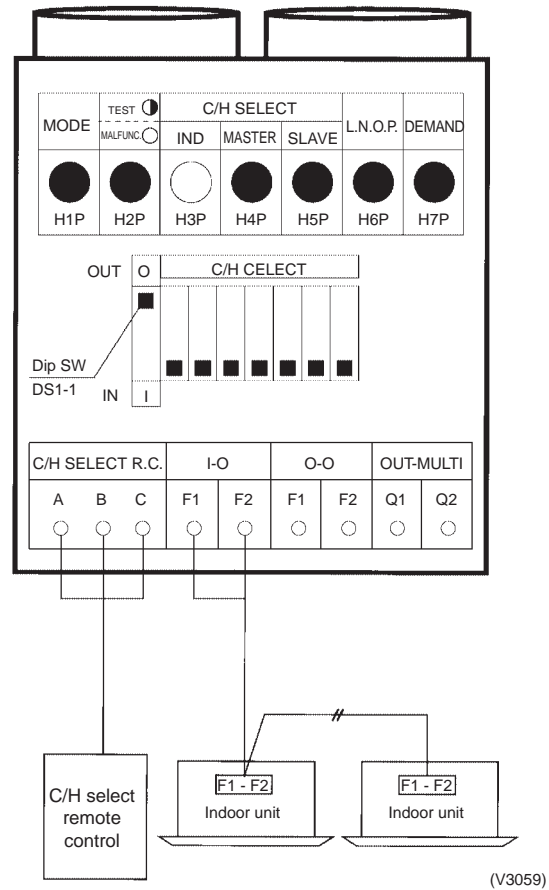
For the details, refer to the installation manual supplied together with the indoor unit.

#### In the case of infrared remote controls

- After the check operation, the timer lamp is flashing in all connected indoor units.
- Select an indoor unit to be used as the master unit in accordance with the request from the customer. (It is recommended to select an indoor unit which will be used most often as the master unit.)
- Press the operation selector mode button in the remote control of the indoor unit selected as the master unit. A "peep" sound is emitted, and the timer lamp turns off in all indoor units.
- That indoor unit will control changeover of the cooling/heating operation mode.

② **Set Cool / Heat Separately for Each Outdoor Unit System by Cool/Heat Switching Remote Control**

- ◆ It does not matter whether or not there is outdoor - outdoor unit wiring.
- ◆ Set outdoor unit PC board DS1-1 to OUT (factory set).
- ◆ Set cool/heat switching to IND (individual) for "Setting mode 1" (factory set).



## 3.2.2 Setting of Low Noise Operation and Demand Operation

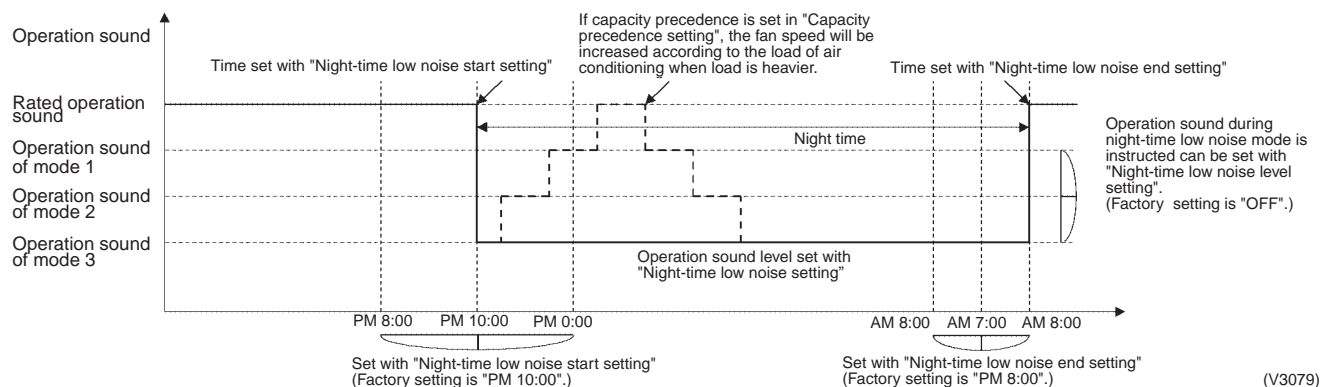
### Setting of Low Noise Operation

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.

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

1. While in "Setting mode 2", select the setting condition (i.e., "Mode 1", "Mode 2", or "Mode 3") for set item No. 22 (Setting of nighttime low noise level).
2. If necessary, while in "Setting mode 2", select the setting condition (i.e., "20:00", "22:00", or "24:00") for set item No. 26 (Setting of start time of nighttime low noise operation).  
(Use the start time as a guide since it is estimated according to outdoor temperatures.)
3. If necessary, while in "Setting mode 2", select the setting condition (i.e., "06:00", "07:00", or "08:00") for set item No. 27 (Setting of end time of nighttime low noise operation).  
(Use the end time as a guide since it is estimated according to outdoor temperatures.)
4. If necessary, while in "Setting mode 2", set the setting condition for set item No. 29 (Setting of capacity precedence) to "ON".  
(If the condition is set to "ON", when the air-conditioning load reaches a high level, the system will be put into normal operation mode even during nighttime.)

### Image of operation



## Setting of Demand Operation

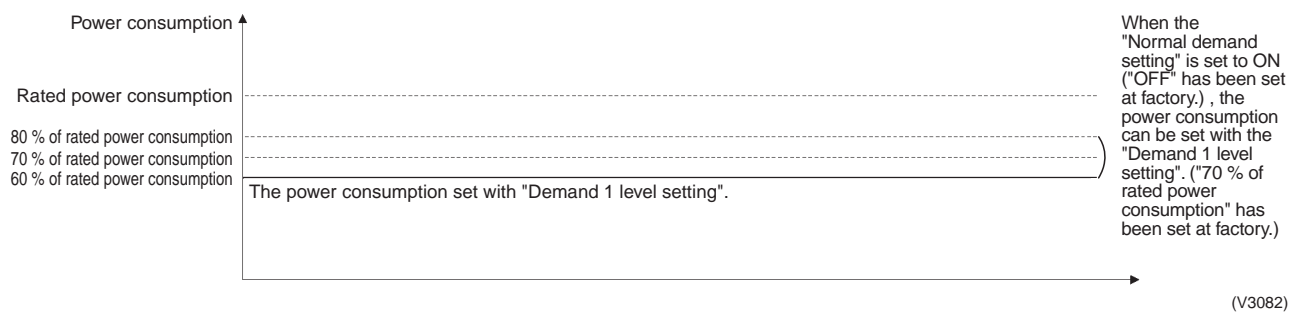
By connecting the external contact input to the demand input of the outdoor unit external control adapter (optional), the power consumption of unit operation can be saved suppressing the compressor operating condition.

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

### When the normal demand operation is carried out. (Use of the external control adapter for outdoor unit is not required.)

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

## Image of operation



---

## Detailed Setting Procedure of Low Noise Operation and Demand Control

### 1. Setting mode 1 (H1P off)

- ① In setting mode 2, push the BS1 (MODE button) one time. → Setting mode 1 is entered and H1P off.

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 on next page) 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.

○: ON   ●: OFF   ◐: Blink

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

Setting mode indication section

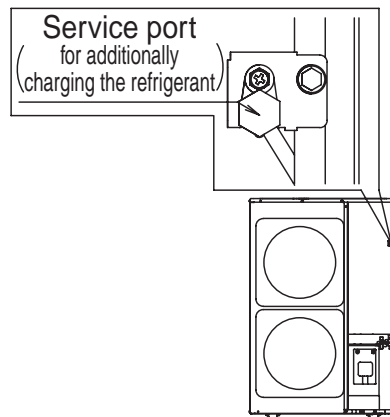
Setting No. indication section

Set contents indication section

### 3.2.3 Setting of Refrigerant Additional Charging Operation

#### Refrigerant additional charging operation procedure

- ✱ When the outdoor unit is stopped and the entire quantity of refrigerant cannot be charged from the stop valve on the liquid side, make sure to charge the remaining quantity of refrigerant using this procedure. If the refrigerant quantity is insufficient, the unit may malfunction.
- ① Turn ON the power of the indoor unit and the outdoor unit.
- ② Make sure to completely open the stop valve on the gas side and the stop valve on the liquid side.
- ③ Connect the refrigerant charge hose to the service port (for additionally charging the refrigerant).
- ④ In the stopped status, set to ON the refrigerant additional charging operation (A) in set mode 2 (H1P: Turn on)
- ⑤ The operation is automatically started.  
(The LED indicator H2P flickers, and "Test run" and "Under centralized control" are displayed in the remote control.)
- ⑥ After charging the specified quantity of refrigerant, press the RETURN button (BS3) to stop the operation.  
 (The operation is automatically stopped within 30 minutes.  
 If charging is not completed within 30 minutes, set and perform the refrigerant additional charging operation (A) again.  
 If the refrigerant additional charging operation is stopped soon, the refrigerant may be overcharged.  
 Never charge extra refrigerant.)
- ⑦ Disconnect the refrigerant charge hose.



### 3.2.4 Setting of Refrigerant Recovery Mode

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

All indoor and outdoor unit's operation are prohibited.

#### Operation procedure

- ① In "Setting Mode 2" with units in stop mode, set "B Refrigerant Recovery / Vacuuming mode" to ON. The respective expansion valve of indoor and outdoor units are fully opened. "TEST OPERATION" and "UNDER CENTRALIZED CONTROL" are displayed on the remote control, and the indoor / outdoor unit operation is prohibited.  
After setting, do not cancel "Setting Mode 2" until completion of refrigerant recovery operation.
- ② Collect the refrigerant using a refrigerant recovery unit. (See the instruction attached to the refrigerant recovery unit for more detail.)
- ③ Press Mode button "BS1" once and reset "Setting Mode 2".

### 3.2.5 Setting of Vacuuming Mode

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

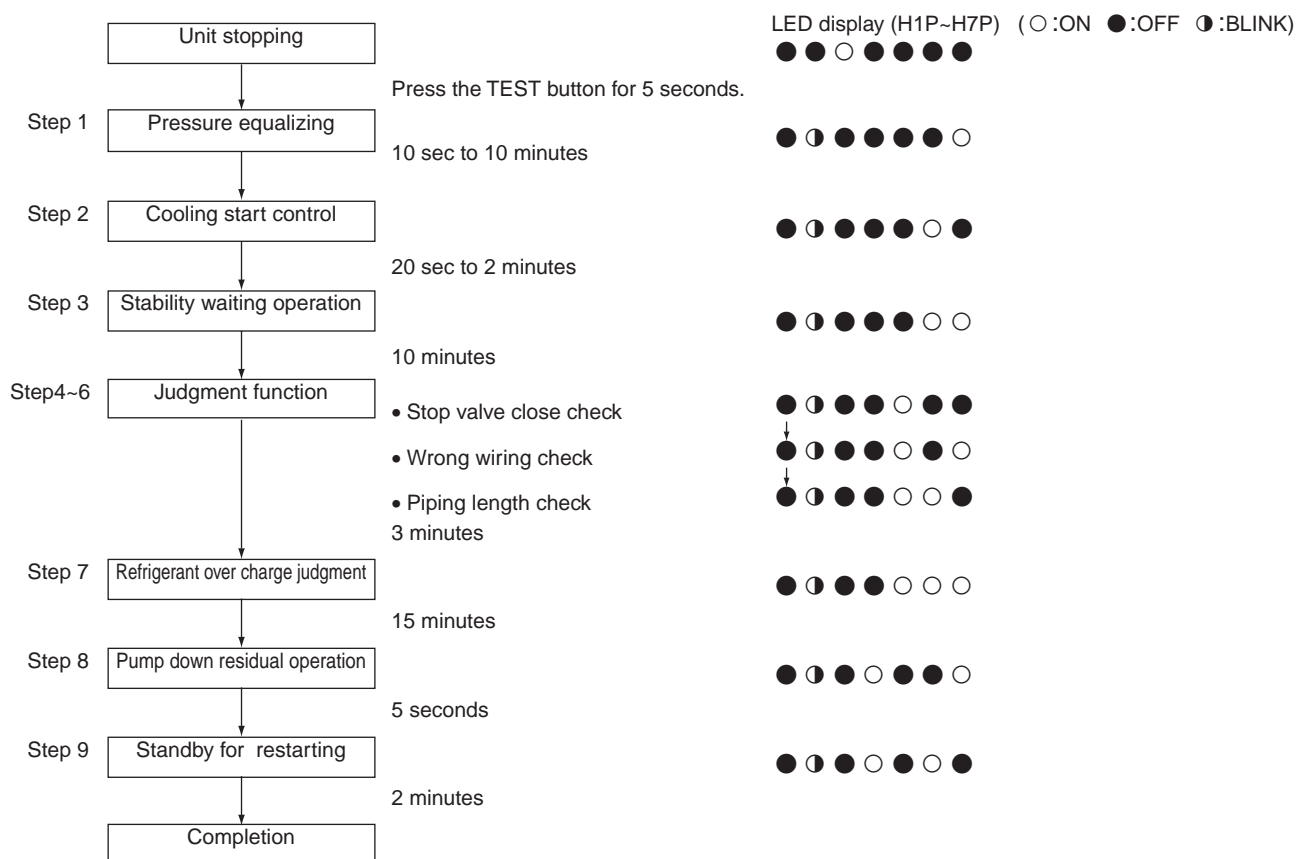
#### Operating procedure

- ① In "Setting Mode 2" with units in stop mode, set "B Refrigerant Recovery / Vacuuming mode" to ON. The respective expansion valve of indoor and outdoor units are fully opened. "TEST OPERATION" and "UNDER CENTRALIZED CONTROL" are displayed on the remote control, and the indoor / outdoor unit operation is prohibited.  
After setting, do not cancel "Setting Mode 2" until completion of Vacuuming operation.
- ② Use the vacuum pump to perform vacuuming operation.
- ③ Press Mode button "BS1" once and reset "Setting Mode 2".

### 3.2.6 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 electronic expansion valve.

#### CHECK OPERATION FUNCTION



## 4. Field Setting for SkyAir Indoor Unit

### 4.1 Explanation

Field set is carried out from the remote control. At time of installation, or after maintenance inspection/repair, carry out field set according to the explanation below. Incorrect settings will cause a malfunction to occur. (The indoor unit settings are sometimes changed if optional accessories are mounted on the indoor unit. Refer to the optional accessory manual.)

## 4.2 Field Setting








### 4.2.1 Wired Remote Control



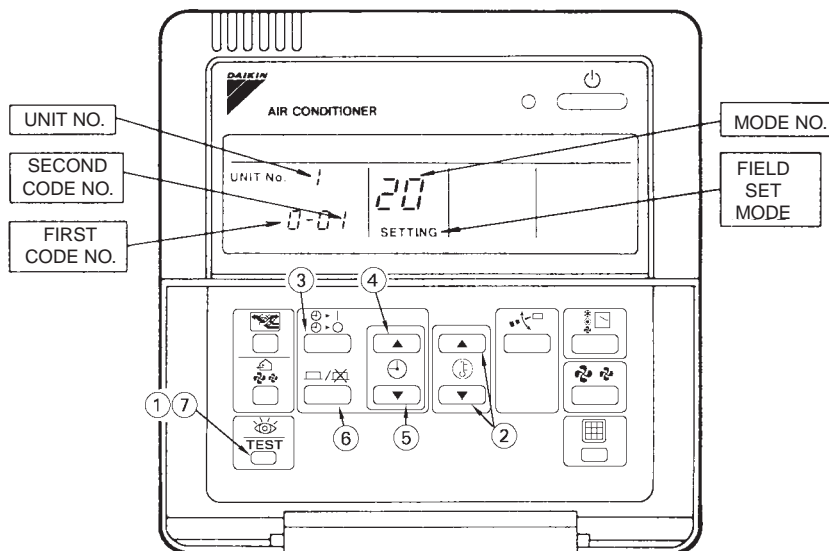
**Note:** (Field setting must be made from the remote control in accordance with the installation conditions.)

- Setting can be made by changing the “Mode number”, “FIRST CODE NO.”, and “SECOND CODE NO.”.
- Refer to the following procedures for Field setting.

#### Procedure

- ① When in the normal mode, press the “ ” button for a minimum of four seconds, and the FIELD SET MODE is entered.
- ② Select the desired MODE NO. with the “ ” button.
- ③ During group control, when setting by each indoor unit (mode No. 20, 21 and 23 have been selected), push the “ ” button and select the INDOOR UNIT NO to be set. (This operation is unnecessary when getting by group.)
- ④ Push the “ ” upper button and select FIRST CODE NO.
- ⑤ Push the “ ” lower button and select the SECOND CODE NO.
- ⑥ Push the “ ” button once and the present settings are SET.
- ⑦ Push the “ ” button for about one second to return to the NORMAL MODE.

(Example) If during group setting and the time to clean air filter is set to FILTER CONTAMINATION - HEAVY, SET MODE NO. to “10”, FIRST CODE NO. to “0”, and SECOND CODE NO. to “02”.



2P068938 -1

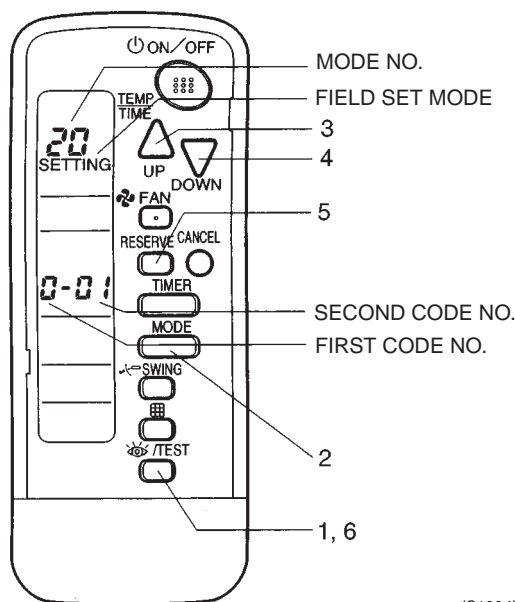
## 4.2.2 Infrared Remote Control



**Note:** If optional accessories are mounted on the indoor unit, the indoor unit setting may have to be changed. Refer to the instruction manual (optional hand book) for each optional accessory.

### Procedure

1. When in the normal mode, push the “ /TEST ” button for a minimum of four seconds, and the FIELD SET MODE is entered.
2. Select the desired MODE NO. with the “ ” button.
3. Push the “ ” button and select the FIRST CODE NO.
4. Push the “ ” button and select the SECOND CODE NO.
5. Push the “ ” button and the present settings are SET.
6. Push the “ /TEST ” button to return to the NORMAL MODE.



(S1934)

## 4.3 Initial Setting Contents

Setting Contents		Filter Sign	Filter Sign Estimation of Accumulated Operating Hours	High Air Outlet Velocity (for Application to Ceiling Higher than 2.7m)	Selection of Air Flow Direction F, T, W	Air Flow Direction Adjust	Air Flow Direction Range Setting	External Static Pressure	Long Life Filter Type	Fan Speed Up	Simultaneous operation (Twin)
Indoor Models											
Ceiling Suspended type (FHQ)	(Heat Pump) FHQ 35~60 BUV1B	○	○	○							
Ceiling Mounted Cassette type (FFQ)	(Heat Pump) FFQ 25~60 BV1B	○	○		○	○	○		○		

## 4.4 Local Setting Mode Number

### Example

To set the filter sign time to “filter contamination - heavy” for all units in a group:  
Set mode No. to “10,” setting switch No. to “0,” and setting position No. to “02.”

**Table (FHQ & FFQ)**

Mode No. Note 1	Setting Switch No.	Setting Description		Setting Position No. *Note 2				
				01		02		03
10 (20)	0	Filter contamination - heavy / light (Setting of operating hours for filter sign indication) (Change setting when reducing filter sign indication time to half due to quick soiling of filter)	Long-Life Type	Light	Approx. 2,500 hours	Heavy	Approx. 1,250 hours	—
	1	Long-life filter type (Setting of filter sign indication time) (Change setting when Ultra-long-life filter is installed)		Long-Life Filter		—		—
	2	Remote control thermostat (Set when remote control thermostat sensor is used.)		Use		Not use		
	3	Estimation of filter operating hour (Change setting when filter sign indication is not used)		ON		OFF		—
11 (21)	2	Indoor unit fan OFF when thermostat OFF in cooling/heating		—		Fan OFF		—
12 (22)	5	Automatic restart after power failure reset *Note 4		OFF		ON		—
13 (23)	0	High Ceiling	Ceiling-suspended type (FHQ only)	2.7 m or Lower		2.7~3.5 m		—
	1	Air flow direction selection (Change setting when blocking kit is installed) *Note 3		F		T		W
	4	Setting of air flow direction adjustment range		Upward		Standard		Downward



### Note:

- Setting is made in all units in a group. To set for individual indoor units or to check the setting, use the mode Nos. (with “2” in upper digit) in parentheses ( ).
- The setting position No. is set to “01” at the factory, except for the following cases in which “02” is set.
  - Setting of air flow direction adjustment range 13(23)-4
  - Automatic restart after power outage. 12(22)-5
  - Remote control thermostat 10(20)-2
  - Filter sign indication (only for ceiling-mounted duct type) 10(20)-3
- Since drafts may result, carefully select the installation location.
- When power returns, units resume the settings made before the power failure.



### Caution

When “auto restart after power failure reset” is set, be sure to turn off air conditioners, then cut off the power supply before conducting maintenance, inspection and other work. If the power supply is cut off with the power switch left ON, air conditioners will automatically start operating when the power supply is turned on.

- Do not set any items other than those listed in the above table.
- Functions that indoor units are not equipped with will not be displayed.
- When returning to normal mode, “88” may be displayed on the LCD section of the remote control due to initialization operation.

## 4.5 Detailed Explanation of Setting Modes

### 4.5.1 Air Flow Direction Setting (FFQ)

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

### 4.5.2 Filter Sign Setting (FFQ & FHQ)

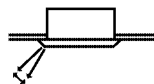
If switching the filter sign ON time, set as given in the table below.

Set Time

Filter Specs.		Long Life
Setting		
Contamination Light	01	2,500
Contamination Heavy	02	1,250

### 4.5.3 Range of Air Flow Direction Setting (FFQ)

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



(S2537)

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

### 4.5.4 Fan Speed OFF When Thermostat is OFF (FFQ & FHQ)

When the cool/heat thermostat is OFF, you can stop the indoor unit fan by switching the setting to "Fan OFF."

\* Used as a countermeasure against odor for barber shops and restaurants.

Setting Table

Mode No.	First Code No.	Second Code No.	Setting
11(21)	2	01	—
		02	Fan OFF

### 4.5.5 Fan Speed Changeover When Thermostat is OFF (FFQ & FHQ)

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

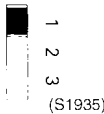
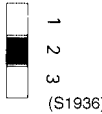
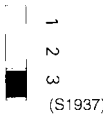
### 4.5.6 Wireless Setting (Address and MAIN/SUB Setting)

#### Explanation

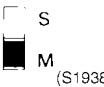
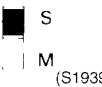
If several infrared remote control units are used together in the same room (including the case where both group control and individual remote control control are used together), be sure to set the addresses for the receiver and infrared remote control. (For group control, see the attached installation manual for the indoor unit.) If using together with a wired remote control, you have to change the main/sub setting or the receiver.

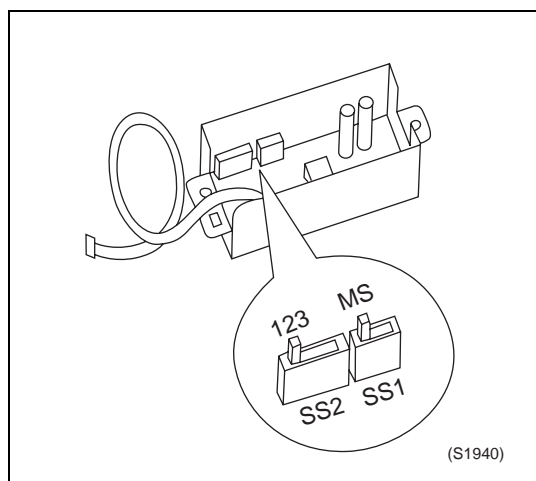
#### Receiver Setting

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

Unit No.	No.1	No.2	No.3
Wireless Address Switch (SS2)			

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






	MAIN	SUB
MAIN/SUB Switch (SS1)		



After completing setting, seal off the opening of the address switch and the MAIN/SUB switch with the attached sealing pad.

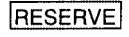

### Address Setting (It is Factory Set to "1")

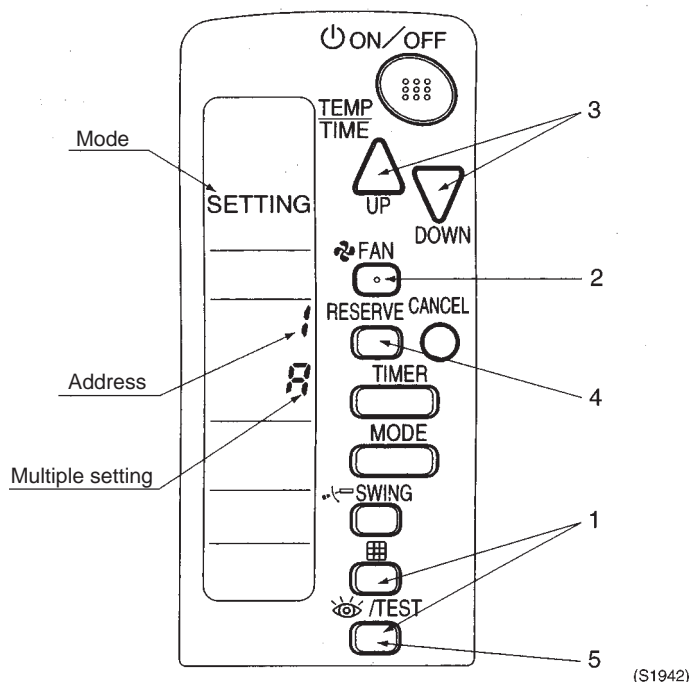
#### <Setting from the remote control>

1. Hold down the "  " button and the "  /TEST " button for at least 4 seconds, to get the FIELD SET MODE. (Indicated in the display area in the figure at below).
2. Press the "  FAN " button and select a multiple setting (A/b). Each time the button is pressed the display switches between "A" and "b".
3. Press the "  " button and "  " button to set the address.

1 → 2 → 3 → 4 → 5 → 6 (S1941)

Address can be set from 1 to 6, but set it to 1 ~ 3 and to same address as the receiver. (The receiver does not work with address 4 ~ 6.)

4. Press the "  RESERVE " button to enter the setting.
5. Hold down the "  /TEST " button for at least 1 second to quit the FIELD SET MODE and return to the normal display.



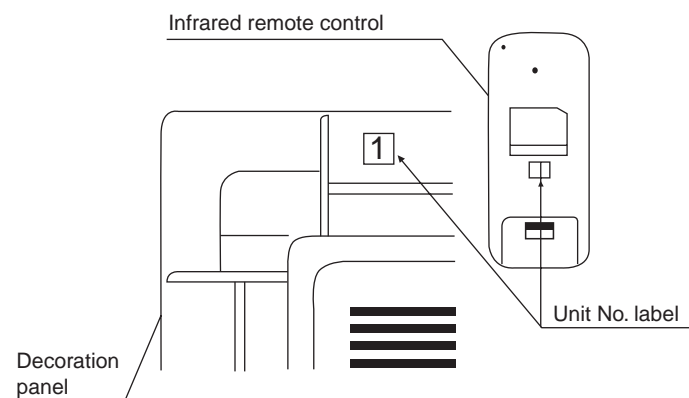
### Multiple Settings A/b

When the indoor is being operating by outside control (central remote control, etc.), it sometimes does not respond to ON/OFF and temperature setting commands from this remote control. Check what setting the customer wants and make the multiple setting as shown below.

Remote Control		Indoor Unit	
Multiple Setting	Remote Control Display	Controlled by other Air Conditioners and Devices	For other than on Left
A: Standard	All items Displayed.	Commands other than ON/OFF and Temperature Setting Accepted. (1 LONG BEEP or 3 SHORT BEEPS Emitted)	
b: Multiple display	Operations set only is displayed shortly after execution.	All Commands Accepted (2 SHORT BEEPS)	

**After Setting**

Stick the Unit No. label at decoration panel air discharge outlet as well as on the back of the infrared remote control.

**PRECAUTIONS**

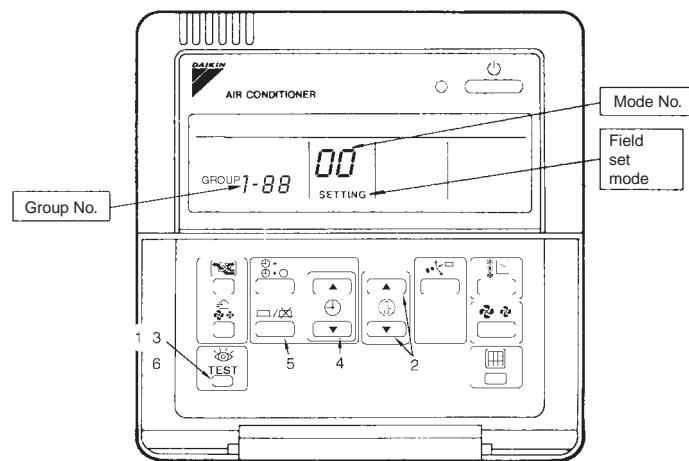
Set the Unit No. of the receiver and the infrared remote control to be equal. If the settings differ, the signal from the remote control cannot be transmitted.

## 4.6 Centralized Group No. Setting

- If carrying out centralized control with a central remote control and unified ON/OFF controller, you have to set the group No. for each group by remote control.
- To set the group No., first turn on the power supply of the central remote control, unified ON/OFF controller and indoor unit.

### Centralized Group No. Setting by Remote Control

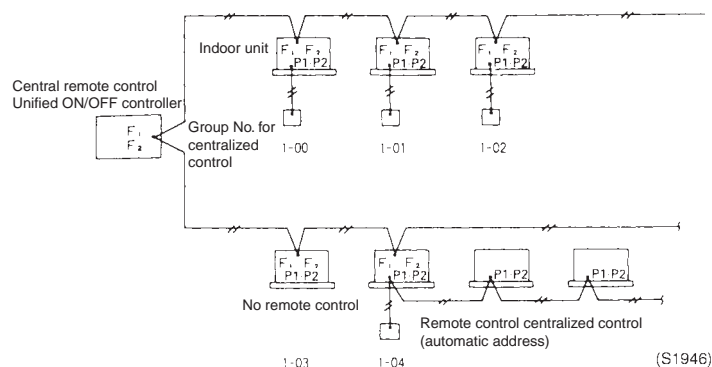
1. If the inspection/test button is pushed for 4 seconds or more when in the normal mode, operation enters the "field set mode."
2. Using the temperature control buttons, set the mode No. to "00."
3. Push the inspection/test button to inspect the group No. display.
4. Using the programming time button, set the group No. for each group. (Group No. rises in the order of 1-00, 1-01, ...1-15, 2-00 ...4-15, etc. The unified ON/OFF controller however displays only the range of group numbers selected by the switch for setting each address.)
5. Push the timer ON/OFF button and enter the selected group No.
6. Push the inspection/test button and return to the normal mode.



(S1095)

\* If the address has to be set individually for each unit for power consumption counting, etc., set the mode No. to "30."

### Group No. Setting Example



(S1946)



- Note:**
1. "F1,F2" indicates interface adapter for SkyAir series.
  2. If not using remote controls, temporarily connect a remote control to set the group No., set the group No. for centralized control, and then disconnect the controller.

## 4.7 Maintenance Mode Setting

### Procedure

1. Enter the field set mode.  
Continue to push the inspection / test operation button for a minimum of 4 seconds.
2. Enter the maintenance mode.  
After having entered the field set mode, continue to push the inspection / test operation button for a minimum of 4 seconds.
3. Select the mode No.  
Set the desired mode No. with the up/down temperature setting button.
4. Select the unit No.  
Select the indoor unit No. set with the time mode START/STOP button.
5. Carry out the necessary settings for each mode. (Modes 41, 44 and 45)  
See the table below for details.
6. Enter the setting contents. (Modes 44 and 45)  
Enter by pushing the timer ON/OFF button.
7. Return to the normal operation mode.  
Tap the inspection / test operation button one time.

Table

Mode No.	Function	Content and Operation Method	Example of Remote Control Display
40	Malfunction Hysteresis	You can change the history with the programming time up-down button.	
41	Sensor Data Display	Select the display sensor with the programming time up-down button  Display sensor 00 Remote control sensor 01 Suction (R1T) 02 Heat exchange(R2T) 03 Heat exchange(R3T)	
43	Forced Fan ON	Turns the fan ON for each unit individually.	
44	Individual Setting	Sets fan speed and air flow direction for each unit individually when using group control.  Settings are made using the "air flow direction adjust" and "fan speed adjust" buttons.	
45	Unit No. Change	Changes unit No.  Set the unit No. after changing with the programming time up-down button.	

Operation is not reset by malfunction code reset for inspection.  
(Cannot be reset because the count is updated each time a malfunction occurs.)

## 5. Test Operation and Field Setting for RA Indoor Unit

### 5.1 Test Operation from the Remote Control

#### For Heat pump

In cooling mode, select the lowest programmable temperature; in heating mode, select the highest programmable temperature.

- Trial operation may be disabled in either mode depending on the room temperature.
- After trial operation is complete, set the temperature to a normal level.  
(26°C to 28°C in cooling mode, 20°C to 24°C in heating mode)
- For protection, the system disables restart operation for 3 minutes after it is turned off.

#### For Cooling Only

Select the lowest programmable temperature.

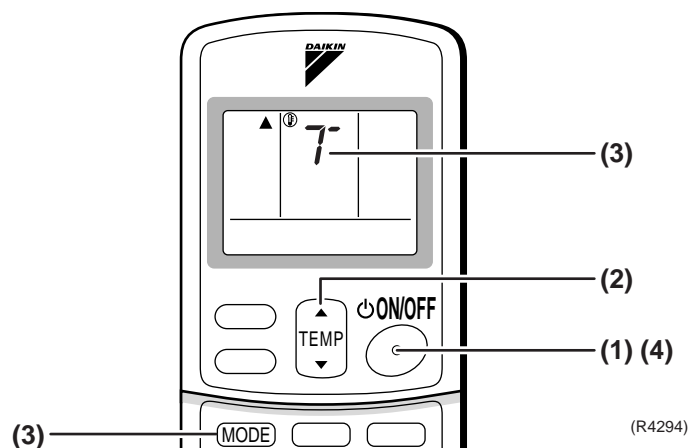
- Trial operation in cooling mode may be disabled depending on the room temperature.  
Use the remote control for trial operation as described below.
- After trial operation is complete, set the temperature to a normal level (26°C to 28°C).
- For protection, the machine disables restart operation for 3 minutes after it is turned off.

#### Trial Operation and Testing

1. Measure the supply voltage and make sure that it falls in the specified range.
  2. Trial operation should be carried out in either cooling or heating mode.
  3. Carry out the test operation in accordance with the Operation Manual to ensure that all functions and parts, such as louver movement, are working properly.
- The air conditioner requires a small amount of power in its standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
  - If the circuit breaker trips to shut off the power to the air conditioner, the system will restore the original operation mode when the circuit breaker is opened again.

#### Trial operation from Remote Control

- (1) Press ON/OFF button to turn on the system.
- (2) Simultaneously press center of TEMP button and MODE buttons.
- (3) Press MODE button twice.  
("T" will appear on the display to indicate that Trial Operation mode is selected.)
- (4) Trial run mode terminates in approx. 30 minutes and switches into normal mode. To quit a trial operation, press ON/OFF button.



## 5.2 Jumper Settings

### 5.2.1 When Two Units are Installed in One Room

When two indoor units are installed in one room, the two infrared remote controls can be set for different addresses.

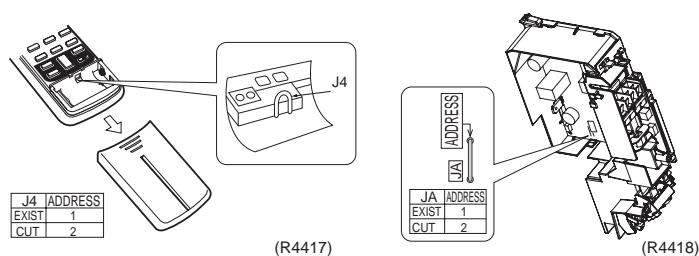
#### How to set the different addresses

##### ■ Control PCB of the indoor unit

- (1) Remove the electrical box.
- (2) Cut the address jumper JA on the control PCB.

##### ■ infrared remote control

- (1) Slide the front cover and take it off.
- (2) Cut the address jumper J4.



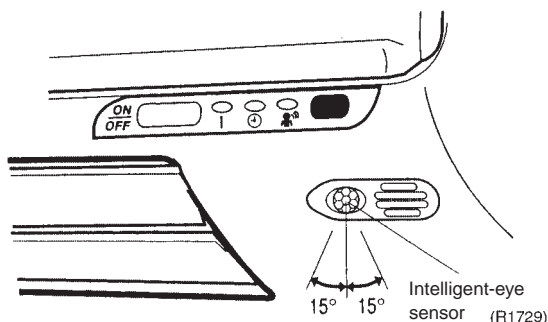
### 5.2.2 Jumper Setting

Jumper (On indoor PCB)	Function	When connected (factory set)	When cut
JC	Power failure recovery function	Auto start	Unit does not resume operation after recovering from a power failure. Timer ON-OFF settings are cleared.
JB	Fan speed setting when compressor is OFF on thermostat. (effective only at cooling operation)	Fan speed setting ; Remote control setting	Fan rpm is set to "0" <Fan stop>

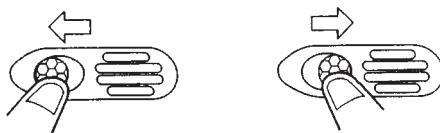
### 5.2.3 Adjusting the Angle of the Intelligent Eye Sensor

#### FTXS20-35C

- Once installation of the indoor unit is complete, adjust the angle of the Intelligent eye sensor to ensure the detection area properly covers the room.  
(Adjustable angle : 15° to right and left of center)



- Gently push and slide the sensor to adjust the angle. Aim so that the sensor is pointing to the center of the room, or to the part of the room that is most frequently used.



Moving the sensor to the left    Moving the sensor to the right  
(R1730)

- After adjusting the angle, gently wipe the sensor with a clean cloth, being careful not to scratch the sensor.



#### Caution

- Do not hit or violently push the Intelligent eye sensor. This can lead to damage and malfunction.
- Do not place large objects near the sensor. Also keep heating units or humidifiers outside the sensor's detection area.

# Part 7

## System Configuration

1. System Configuration.....	150
1.1 Operation Instructions .....	150
2. Instruction.....	151
2.1 RMXS Series.....	151
2.2 Wall Mounted, Duct, Floor/Ceiling, Floor Standing Type .....	152
2.3 Ceiling Mounted Cassette Type .....	227
2.4 Ceiling Suspended Type .....	238

# 1. System Configuration

## 1.1 Operation Instructions

After the installation and test operation of the room air conditioner have been completed, it should be operated and handled as described below. Every user would like to know the correct method of operation of the room air conditioner, to check if it is capable of cooling (or heating) well, and to know a clever method of using it.

In order to meet this expectation of the users, giving sufficient explanations taking enough time can be said to reduce about 80% of the requests for servicing. However good the installation work is and however good the functions are, the customer may blame either the room air conditioner or its installation work because of improper handling. The installation work and handing over of the unit can only be considered to have been completed when its handling has been explained to the user without using technical terms but giving full knowledge of the equipment.

## 2. Instruction

### 2.1 RMXS Series

Regarding use

Super Multi Plus System air conditioner

**Points the customer should be aware of**

#### ■ Comfort

**At startup**

- After the power is initially turned on, it will take approx. 10 minutes until startup. Usually the unit will start in 3 minutes.

**Heating operation (Not for a unit for cooling only)**

- The colder it is outside or the greater the number of indoor units, the longer the time required from the start of operation until the emission of warm air (around 35°C). When the outside temperature is -5 to 2°C, the inside temperature is 5 to 10°C, and total indoor unit combination is 100% capacity, the first startup of all indoor units in the morning will take approximately 20 to 30 minutes.
- Oil return operation will be performed once every 8 hours to preserve the lubrication of oil to the compressor. Since operation is switched to cooling cycle during heating operation in order to return the oil, heating operation will not be possible for around 5 to 10 minutes.
- When the outside temperature is 28°C or higher, the unit will be set to the standby mode for protection.

#### ■ Operating noise

**At startup**

- During startup, in order to emit warm or cool air as quickly as possible, the sound of refrigerant flowing will be heard for a short time (1 to 2 minutes) from the outdoor unit.

**At shutdown**

- In order to ensure smooth startup the next time this unit is operated, the outdoor unit will continue to operate for around 1 minute after shutdown. (The time of continued operation depends on the outside temperature, capacity of connected indoor units, and connection pipe length.)

**Cooling at low outside temperatures**

- During cooling operation when the outside temperature is 20°C or less, the fan of the outdoor unit will operate at low speed to preserve capacity and the outdoor unit valve will be opened depending on the pressure conditions, making it more likely that the sound of refrigerant flowing will be heard.

**Defrost (Not vor a unit for cooling only)**

- When the outside unit is performing defrosting operation, the fan of the indoor unit will stop temporarily, and the slight sound of refrigerant flowing will be heard.

**Excessive heating load (Not for a unit for cooling only)**

- During heating operation when the outside temperature is high (15 to 24°C), the fan of the outdoor unit will be operated at low speed, making it more likely that the sound of refrigerant flowing will be heard from the outdoor unit.

## 2.2 Wall Mounted, Duct, Floor/Ceiling, Floor Standing Type

### 2.2.1 Manual Contents and Reference Page



Model Series	Wall Mounted Type		
	FTXS20/25/35/50D	FTXS20/25/35C	FTXS50/60/71E, FTXS71B
<b>Read before Operation</b>			
Safety Precautions	153	153	153
Names of Parts	155	158	161
Preparation before Operation ★	173	173	173
<b>Operation</b>			
AUTO, DRY, COOL, HEAT, FAN Operation ★	176	176	176
Adjusting the Air Flow Direction	178	180	182
POWERFUL Operation ★	188	188	188
OUTDOOR UNIT SILENT Operation ★	189	189	189
ECONO Operation	190	—	—
HOME LEAVE Operation ★	—	191	191
INTELLIGENT EYE Operation	193	195	197
TIMER Operation ★	199	199	199
Note for Multi System	201	201	201
<b>Care</b>			
Care and Cleaning	203	206	209
<b>Trouble Shooting</b>			
Trouble Shooting	222	222	222
Drawing No.	3P142629-1C 3P170835-4	3P119293-2L	3P170835-1A 3P098586-1J






Model Series	Duct Connected Type		Floor/Ceiling Suspended Dual Type	Floor Standing Type
	FDXS25/35C	FDXS25/35E, FDXS50/60C	FLXS25/35/50/60B	FVXS25/35/50B
<b>Read before Operation</b>				
Safety Precautions	153	153	153	153
Names of Parts	164	164	167	170
Preparation before Operation ★	173	173	173	173
<b>Operation</b>				
AUTO, DRY, COOL, HEAT, FAN Operation ★	176	176	176	176
Adjusting the Air Flow Direction	—	—	184	186
POWERFUL Operation ★	188	188	188	188
OUTDOOR UNIT SILENT Operation ★	189	189	189	189
ECONO Operation	—	—	—	—
HOME LEAVE Operation ★	191	191	191	191
INTELLIGENT EYE Operation	—	—	—	—
TIMER Operation ★	199	199	199	199
Note for Multi System	201	201	201	201
<b>Care</b>				
Care and Cleaning	212	214	216	219
<b>Trouble Shooting</b>				
Trouble Shooting	222	222	222	222
Drawing No.	3P131999-2L	3P131999-3K	3P098587-2N	3P098587-1N

★ : Illustrations are for wall mounted type FTXS20/25/35/50D as representative.


## 2.2.2 Safety Precautions

- Keep this manual where the operator can easily find them.
- Read this manual attentively before starting up the unit.
- For safety reason the operator must read the following cautions carefully.
- This manual classifies precautions into WARNING and CAUTION. Be sure to follow all precautions below: they are all important for ensuring safety.


 <b>WARNING</b> If you do not follow these instructions exactly, the unit may cause property damage, personal injury or loss of life.	 <b>CAUTION</b> If you do not follow these instructions exactly, the unit may cause minor or moderate property damage or personal injury.
---	---

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li> Never do.</li> <li> Be sure to earth the air conditioner.</li> <li> Never touch the air conditioner (including the remote control) with a wet hand.</li> </ul> | <ul style="list-style-type: none"> <li> Be sure to follow the instructions.</li> <li> Never cause the air conditioner (including the remote control) to get wet.</li> </ul> |
|---|---|



### **WARNING**

- In order to avoid fire, explosion or injury, do not operate the unit when harmful, among which flammable or corrosive gases, are detected near the unit. 
- It is not good for health to expose your body to the air flow for a long time.
- Do not put a finger, a rod or other objects into the air outlet or inlet. As the fan is rotating at a high speed, it will cause injury.
- Do not attempt to repair, relocate, modify or reinstall the air conditioner by yourself. Incorrect work will cause electric shocks, fire etc.

For repairs and reinstallation, consult your Daikin dealer for advice and information.

- The refrigerant used in the air conditioner is safe. Although leaks should not occur, if for some reason any refrigerant happens to leak into the room, make sure it does not come in contact with any flame as of gas heaters, kerosene heaters or gas range. 
- If the air conditioner is not cooling (heating) properly, the refrigerant may be leaking, so call your dealer. When carrying out repairs accompanying adding refrigerant, check the content of the repairs with our service staff.
- Do not attempt to install the air conditioner by yourself. Incorrect work will result in water leakage, electric shocks or fire. For installation, consult the dealer or a qualified technician.
- In order to avoid electric shock, fire or injury, if you detect any abnormally such as smell of fire, stop the operation and turn off the breaker. And call your dealer for instructions.

### **CAUTION**

- The air conditioner must be earthed. Incomplete earthing may result in electric shocks. Do not connect the earth line to a gas pipe, water pipe, lightning rod, or a telephone earth line. 
- In order to avoid any quality deterioration, do not use the unit for cooling precision instruments, food, plants, animals or works of art. 
- Never expose little children, plants or animals directly to the air flow.
- Do not place appliances which produce open fire in places exposed to the air flow from the unit or under the indoor unit. It may cause incomplete combustion or deformation of the unit due to the heat.
- Do not block air inlets nor outlets. Impaired air flow may result in insufficient performance or trouble.

- Do not stand or sit on the outdoor unit. Do not place any object on the unit to avoid injury, do not remove the fan guard.
- Do not place anything under the indoor or outdoor unit that must be kept away from moisture. In certain conditions, moisture in the air may condense and drip.
- After a long use, check the unit stand and fittings for damage.
- Do not touch the air inlet and aluminum fins of outdoor unit. It may cause injury.
- The appliance is not intended for use by young children or infirm persons without supervision.
- Young children should be supervised to ensure that they do not play with the appliance.
- To avoid oxygen deficiency, ventilate the room sufficiently if equipment with burner is used together with the air conditioner.
- Before cleaning, be sure to stop the operation, turn the breaker off or pull out the supply cord.
- Do not connect the air conditioner to a power supply different from the one as specified. It may cause trouble or fire.
- Depending on the environment, an earth leakage breaker must be installed. Lack of an earth leakage breaker may result in electric shocks.
- Arrange the drain hose to ensure smooth drainage. Incomplete draining may cause wetting of the building, furniture etc.
- Do not place objects in direct proximity of the outdoor unit and do not let leaves and other debris accumulate around the unit.  
Leaves are a hotbed for small animals which can enter the unit. Once in the unit, such animals can cause malfunctions, smok on fire when making contact with electrical parts.
- Do not operate the air conditioner with wet hands.



- Do not wash the indoor unit with excessive water, only use a slightly wet cloth.
- Do not place things such as vessels containing water or anything else on top of the unit. Water may penetrate into the unit and degrade electrical insulations, resulting in an electric shock.



## Installation site

- To install the air conditioner in the following types of environments, consult the dealer.
  - Places with an oily ambient or where steam or soot occurs.
  - Salty environment such as coastal areas.
  - Places where sulfide gas occurs such as hot springs.
  - Places where snow may block the outdoor unit.

The drain from the outdoor unit must be discharged to a place of good drainage.

## Consider nuisance to your neighbours from noises

- For installation, choose a place as described below.
  - A place solid enough to bear the weight of the unit which does not amplify the operation noise or vibration.
  - A place from where the air discharged from the outdoor unit or the operation noise will not annoy your neighbours.

## Electrical work

- For power supply, be sure to use a separate power circuit dedicated to the air conditioner.

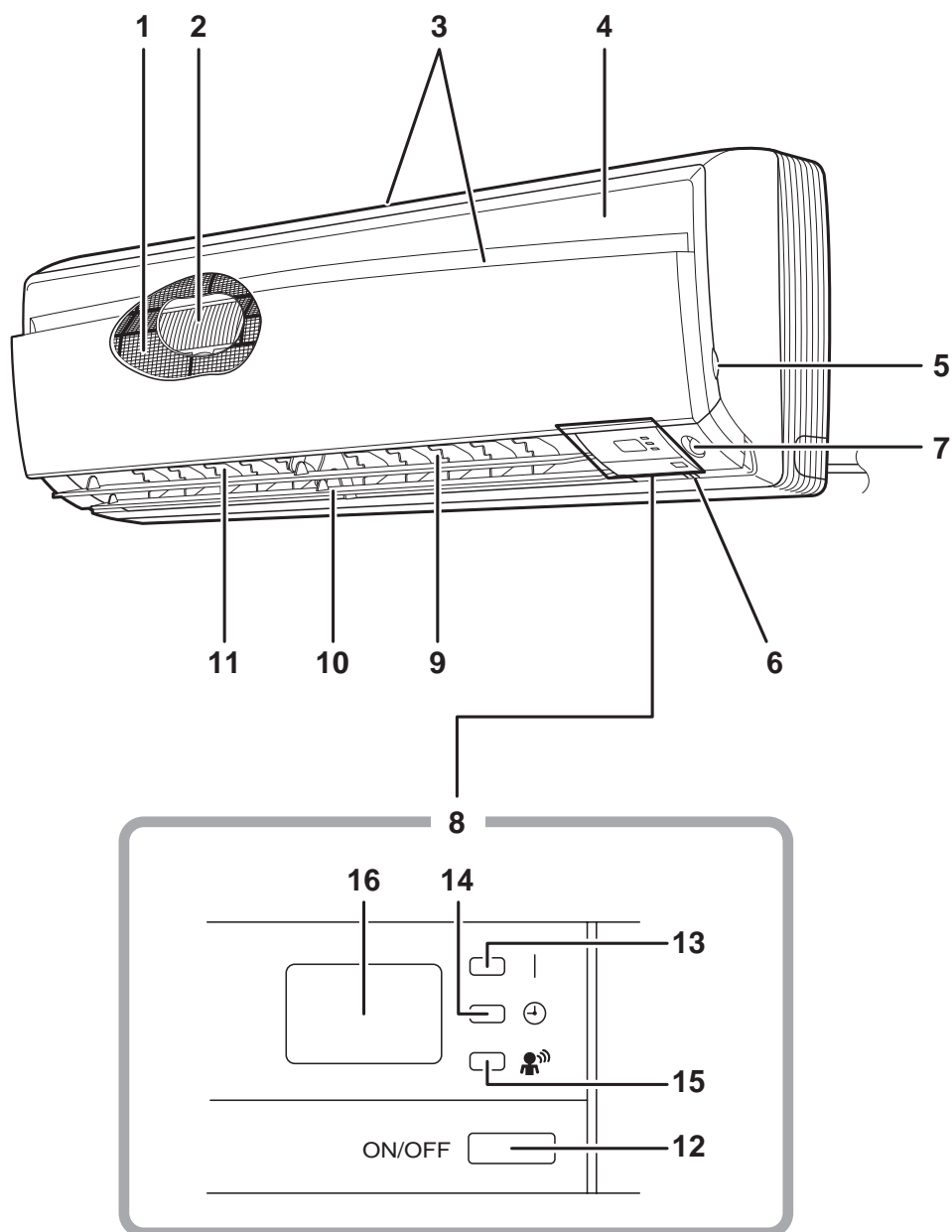
## System relocation

- Relocating the air conditioner requires specialized knowledge and skills. Please consult the dealer if relocation is necessary for moving or remodeling.

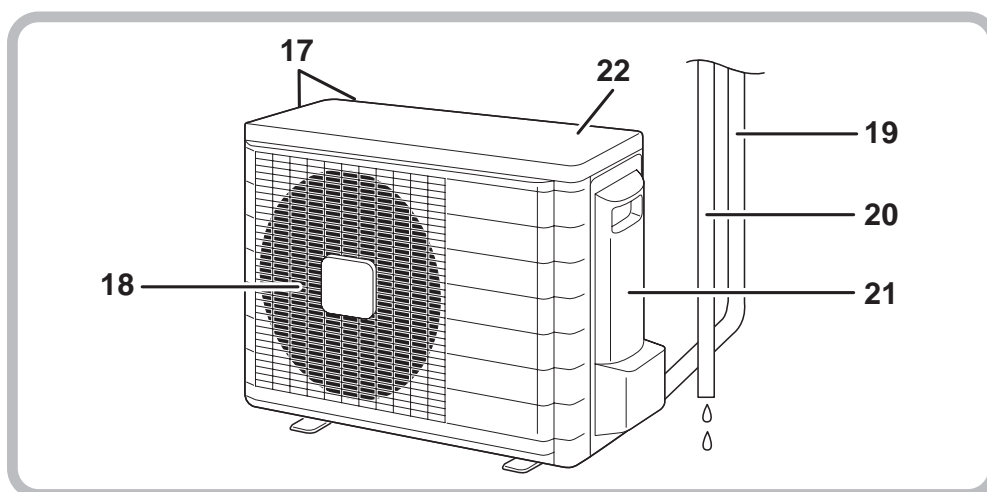
## 2.2.3 Names of Parts

### FTXS 20/25/35/50 D

#### ■ Indoor Unit



## ■ Outdoor Unit



## ■ Indoor Unit

1. Air filter
2. Titanium Apatite Photocatalytic Air-Purifying Filter:
  - These filters are attached to the inside of the air filters.
3. Air inlet
4. Front panel
5. Panel tab
6. Room temperature sensor:
  - It senses the air temperature around the unit.
7. INTELLIGENT EYE sensor:
  - It detects the movements of people and automatically switches between normal operation and energy saving operation.
8. Display
9. Air outlet
10. Flaps (horizontal blades)
11. Louvers (vertical blades):
  - The louvers are inside of the air outlet.

### 12. Indoor Unit ON/OFF switch:

- Push this switch once to start operation. Push once again to stop it.
- The operation mode refers to the following table.

	Mode	Temperature setting	Air flow rate
F(C)TKS	COOL	22°C	AUTO
F(C)TXS	AUTO	25°C	AUTO

- This switch is useful when the remote control is missing.

### 13. Operation lamp (green)

### 14. TIMER lamp (yellow)

### 15. INTELLIGENT EYE lamp (green)

### 16. Signal receiver:

- It receives signals from the remote control.
- When the unit receives a signal, you will hear a short beep.
  - Operation start .....beep-beep
  - Settings changed.....beep
  - Operation stop .....beeeeeep

## ■ Outdoor Unit

17. Air inlet: (Back and side)
18. Air outlet
19. Refrigerant piping and inter-unit cable
20. Drain hose

Appearance of the outdoor unit may differ from some models.

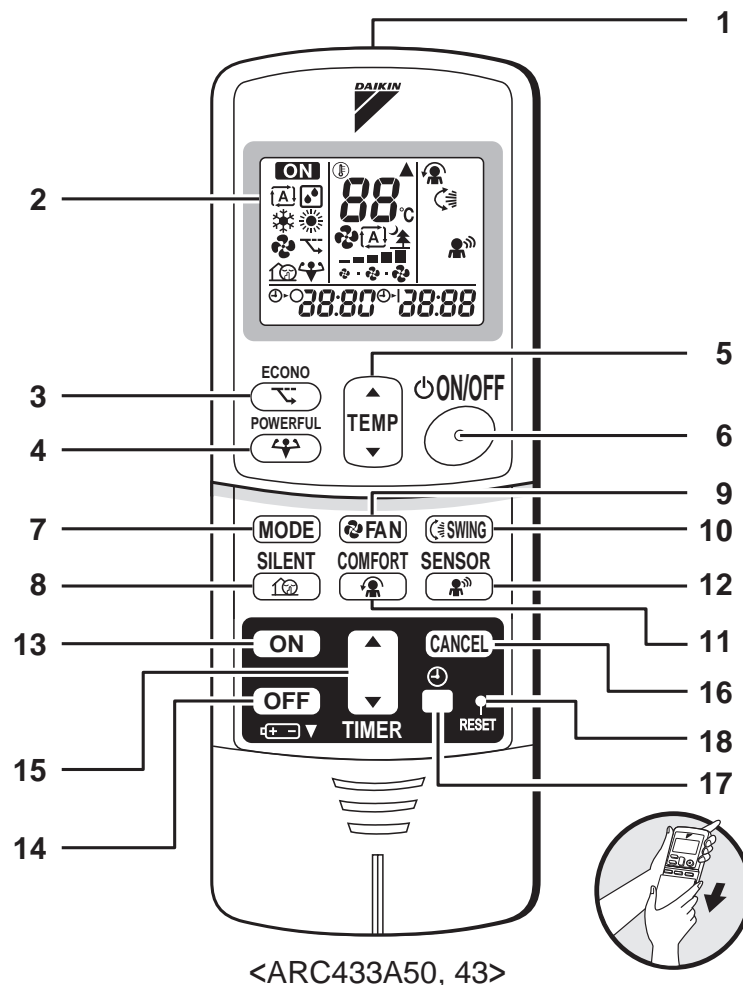
### 21. Earth terminal:

- It is inside of this cover.

### 22. Outside air temperature sensor:

- It senses the ambient temperature around the unit.

## ■ Remote control



### 1. Signal transmitter:

- It sends signals to the indoor unit.

### 2. Display:

- It displays the current settings.  
(In this illustration, each section is shown with all its displays ON for the purpose of explanation.)

### 3. ECONO button:

- ECONO operation

### 4. POWERFUL button:

- POWERFUL operation

### 5. TEMPERATURE adjustment buttons:

- It changes the temperature setting.

### 6. ON/OFF button:

- Press this button once to start operation. Press once again to stop it.

### 7. MODE selector button:

- It selects the operation mode.  
(AUTO/DRY/COOL/HEAT/FAN)

### 8. SILENT button: OUTDOOR UNIT SILENT operation

### 9. FAN setting button:

- It selects the air flow rate setting.

### 10. SWING button:

### 11. MOLD PROOF button:

- MOLD PROOF operation

### 12. SENSOR button: INTELLIGENT EYE operation

### 13. ON TIMER button

### 14. OFF TIMER button

### 15. TIMER Setting button:

- It changes the time setting.

### 16. TIMER CANCEL button:

- It cancels the timer setting.

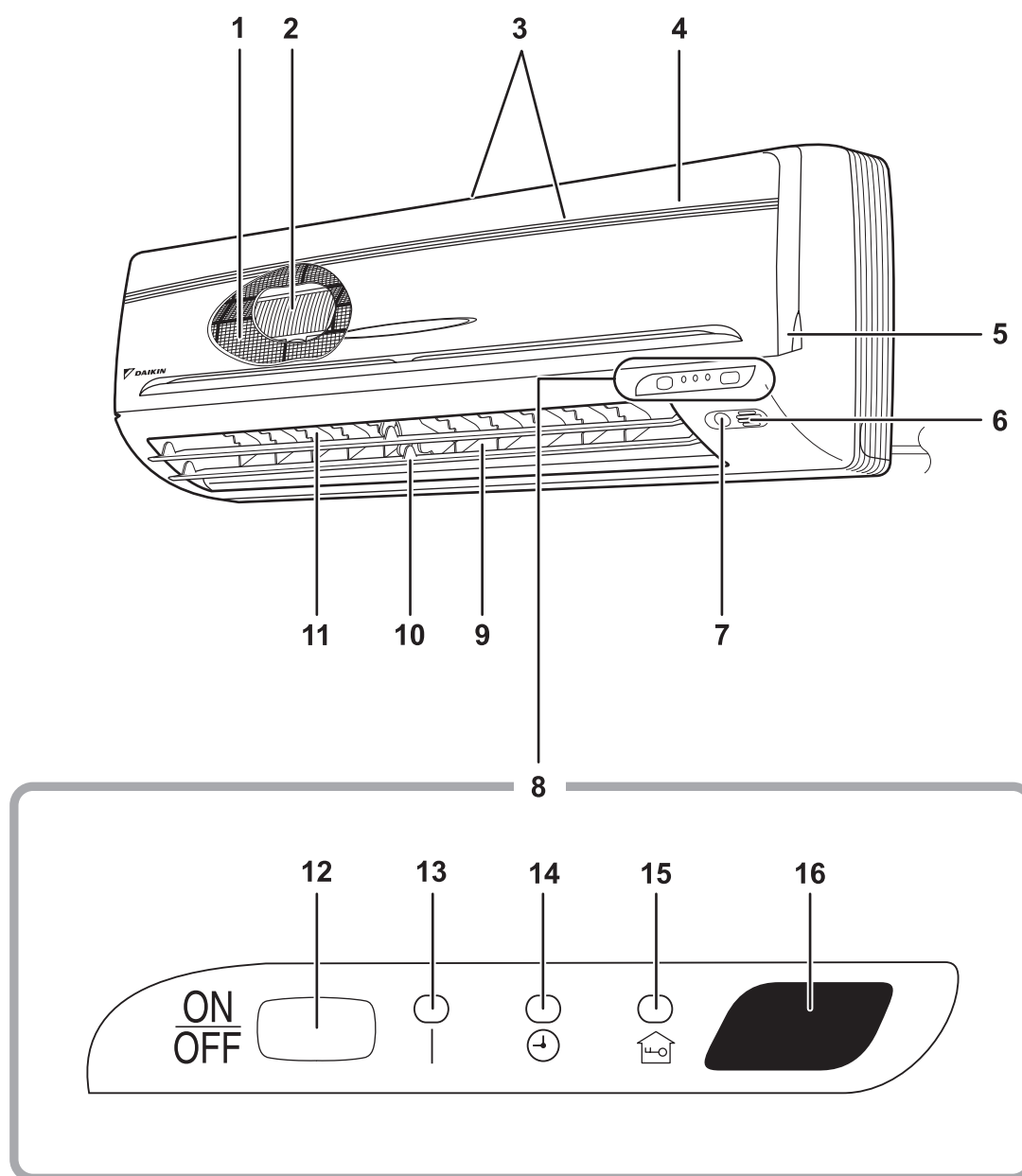
### 17. CLOCK button

### 18. RESET button:

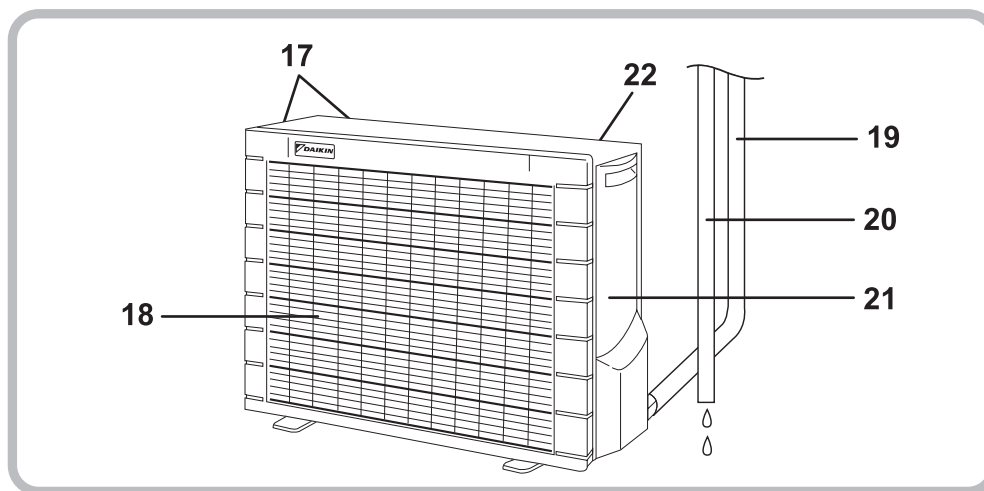
- Restart the unit if it freezes.
- Use a thin object to push.

## FTXS 20/25/35C

## ■ Indoor Unit



## ■ Outdoor Unit



## ■ Indoor Unit

1. Air filter
2. Air purifying filter with photocatalytic deodorizing function:
  - These filters are attached to the inside of the air filters.
3. Air inlet
4. Front panel
5. Panel tab
6. Room temperature sensor:
  - It senses the air temperature around the unit.
7. INTELLIGENT EYE sensor:
  - It detects the movements of people and automatically switches between normal operation and endergy saving operation.
8. Display
9. Air outlet
10. Flaps (horizontal blades):
11. Louvers (vertical blades):
  - The louvers are inside of the air outlet.

### 12. Indoor Unit ON/OFF switch:

- Push this switch once to start operation. Push once again to stop it.
- The operation mode refers to the following table.

	Mode	Temperature setting	Air flow rate
FTKS	COOL	22°C	AUTO
FTXS	AUTO	25°C	AUTO

- This switch is useful when the remote control is missing

### 13. Operation lamp (green)

### 14. TIMER lamp (yellow)

### 15. HOME LEAVE lamp (red)

### 16. Signal receiver:

- It receives signals from the remote control.
- When the unit receives a signal, you will hear a short beep.
  - Operation start .....beep-beep
  - Settings changed.....beep
  - Operation stop.....beeeeeeep

## ■ Outdoor Unit

17. Air inlet: (Back and side)
18. Air outlet
19. Refrigerant piping and inter-unit cable
20. Drain hose

Appearance of the outdoor unit may differ from some models.

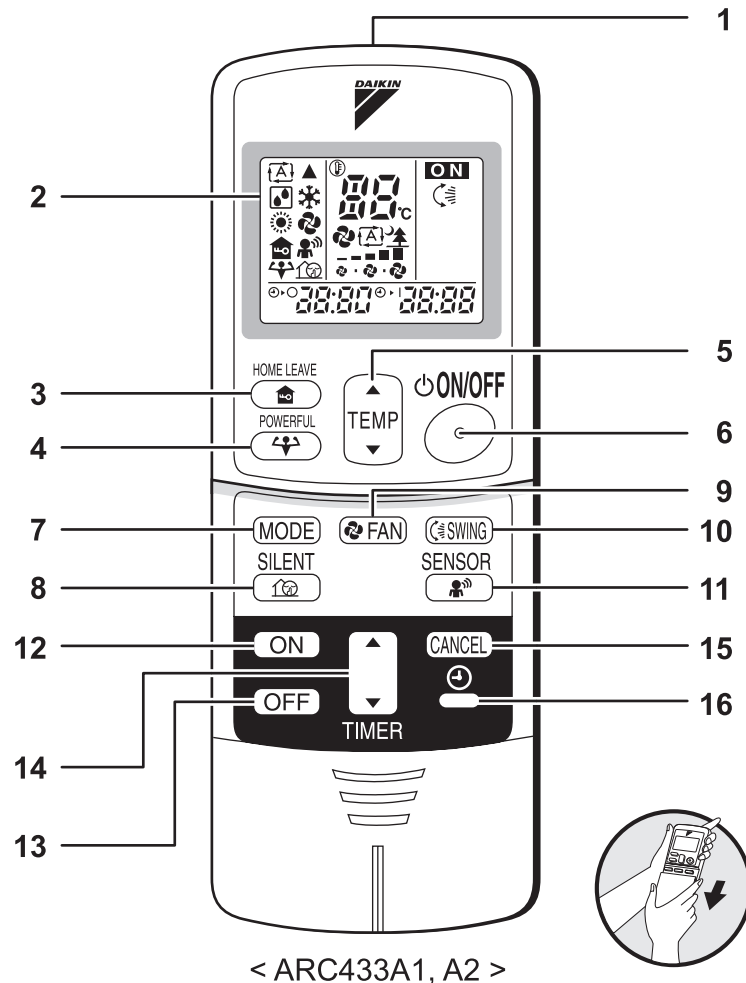
### 21. Earth terminal:

- It is inside of this cover.

### 22. Outside air temperature sensor: (Back side)

- It senses the ambient temperature around the unit.

## ■ Remote Control



### 1. Signal transmitter:

- It sends signals to the indoor unit.

### 2. Display:

- It displays the current settings. (In this illustration, each section is shown with all its displays ON for the purpose of explanation.)

### 3. HOME LEAVE button: HOME LEAVE operation

### 4. POWERFUL button: POWERFUL operation

### 5. TEMPERATURE adjustment buttons:

- It changes the temperature setting.

### 6. ON/OFF button:

- Press this button once to start operation. Press once again to stop it.

### 7. MODE selector button:

- It selects the operation mode. (AUTO/DRY/COOL/HEAT/FAN)

### 8. SILENT button:

- OUTDOOR UNIT SILENT operation

### 9. FAN setting button:

- It selects the air flow rate setting.

### 10. SWING button

### 11. SENSOR button:

- INTELLIGENT EYE operation

### 12. ON TIMER button

### 13. OFF TIMER button

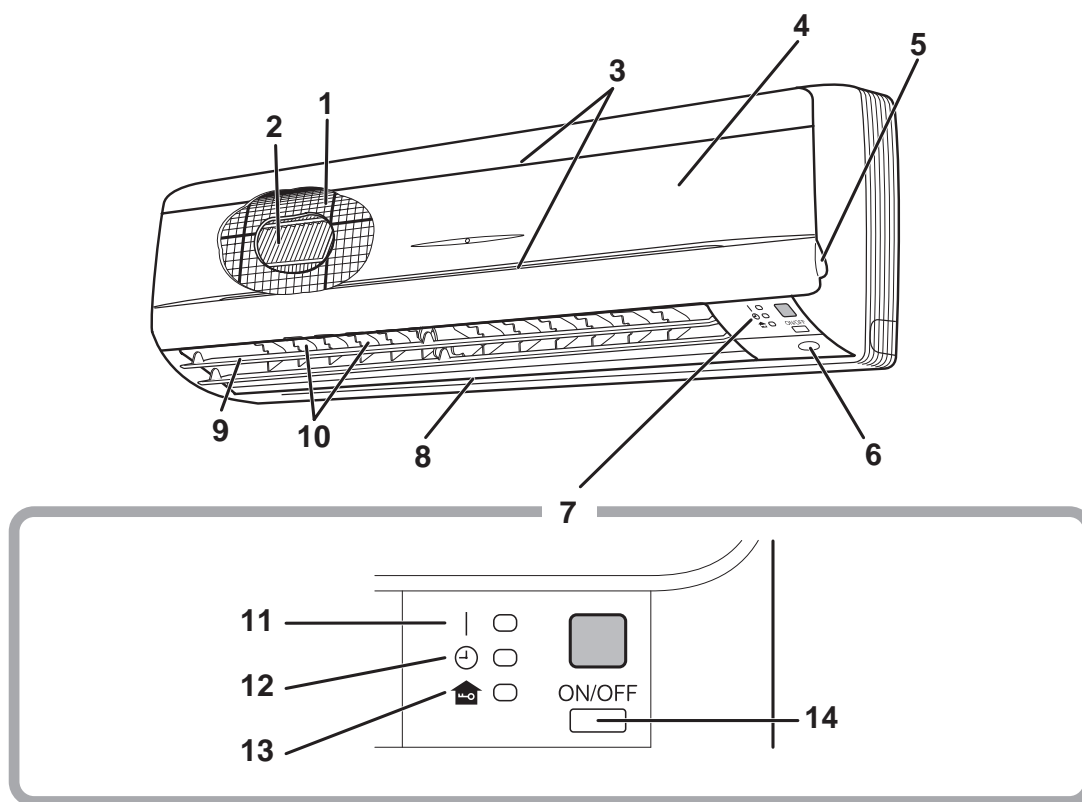
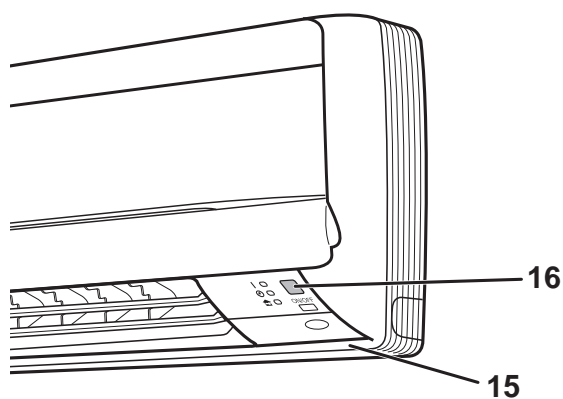
### 14. TIMER Setting button:

- It changes the time setting.

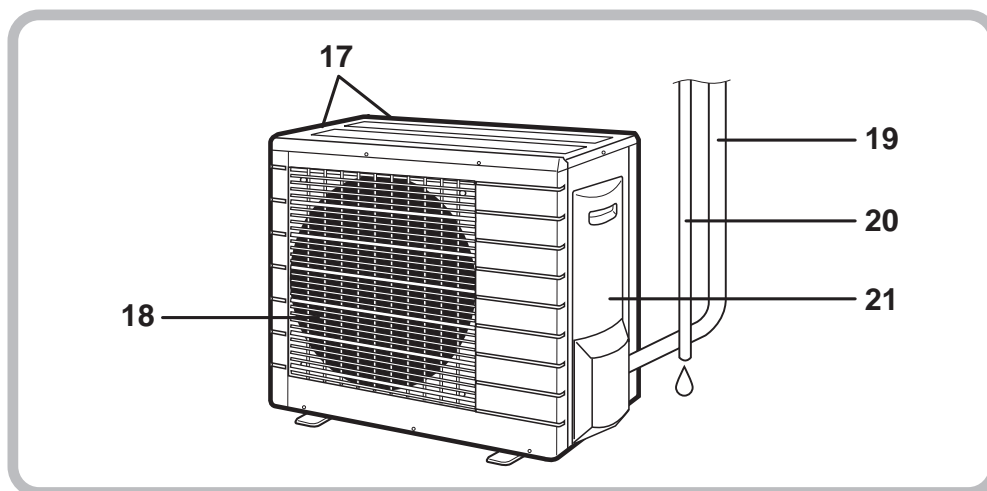
### 15. TIMER CANCEL button:

- It cancels the timer setting.

### 16. CLOCK button

**FTK(X)S 50/60/71 B, FTXS 71 D****■ Indoor Unit****■ Main unit control panel**

## ■ Outdoor Unit



## ■ Indoor Unit

1. **Air filter**
2. **Titanium Apatite Photocatalytic Air-Purifying Filter:**
  - These filters are attached to the inside of the air filters.
3. **Air inlet**
4. **Front panel**
5. **Panel tab**
6. **INTELLIGENT EYE sensor:**
  - It detects the movements of people and automatically switches between normal operation and energy saving operation.
7. **Display**
8. **Air outlet**
9. **Flap (horizontal blade)**
10. **Louvers (vertical blades):**
  - The Louvers are inside of the air outlet.
11. **Operation lamp (green)**
12. **TIMER lamp (yellow)**
13. **HOME LEAVE lamp (red):**
  - Lights up when you use HOME LEAVE Operation.

### 14. Indoor Unit ON/OFF switch:

- Push this switch once to start operation. Push once again to stop it.
- The operation mode refer to the following table.

	Mode	Temperature setting	Air flow rate
FTKS	COOL	22°C	AUTO
FTXS	AUTO	25°C	AUTO

- This switch is useful when the remote control is missing.

### 15. Room temperature sensor:

- It senses the air temperature around the unit.

### 16. Signal receiver:

- It receives signals from the remote control.
- When the unit receives a signal, you will hear a short beep.
  - Operation start .....beep-beep
  - Settings changed.....beep
  - Operation stop.....beeeeeep

## ■ Outdoor Unit

17. **Air inlet:** (Back and side)
18. **Air outlet**
19. **Refrigerant piping and inter-unit cable**

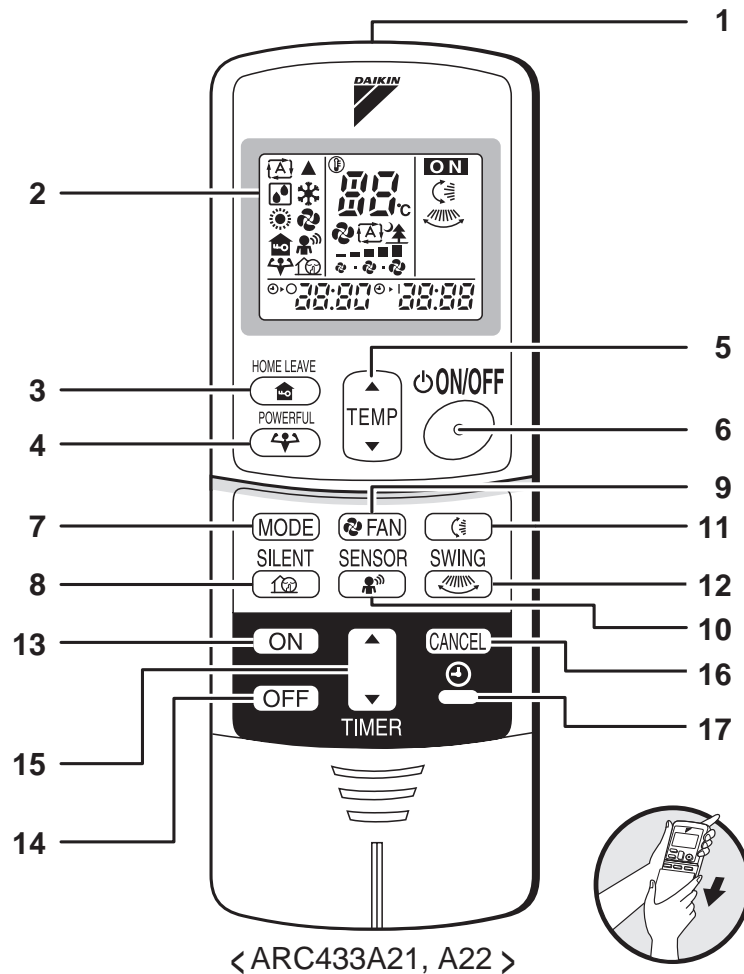
Appearance of the outdoor unit may differ from some models.

### 20. Drain hose

### 21. Earth terminal:

- It is inside of this cover.

## ■ Remote control



### 1. Signal transmitter:

- It sends signals to the indoor unit.

### 2. Display:

- It displays the current settings. (In this illustration, each section is shown with all its displays ON for the purpose of explanation.)

### 3. HOME LEAVE button:

HOME LEAVE operation

### 4. POWERFUL button:

for POWERFUL operation

### 5. TEMPERATURE adjustment buttons:

- It changes the temperature of time setting.

### 6. ON/OFF button:

- Press this button once to start operation. Press once again to stop it.

### 7. MODE selector button:

- It selects the operation mode.  
(AUTO/DRY/COOL/HEAT/FAN)

### 8. SILENT button:

for OUTDOOR UNIT SILENT operation

### 9. FAN setting button:

- It selects the air flow rate setting.

### 10. SENSOR button: INTELLIGENT EYE operation

### 11. SWING button:

- Flap (Horizontal blade)

### 12. SWING button:

- Louver (Vertical blades)

### 13. ON TIMER button

### 14. OFF TIMER button

### 15. TIMER Setting button:

- It changes the time setting.

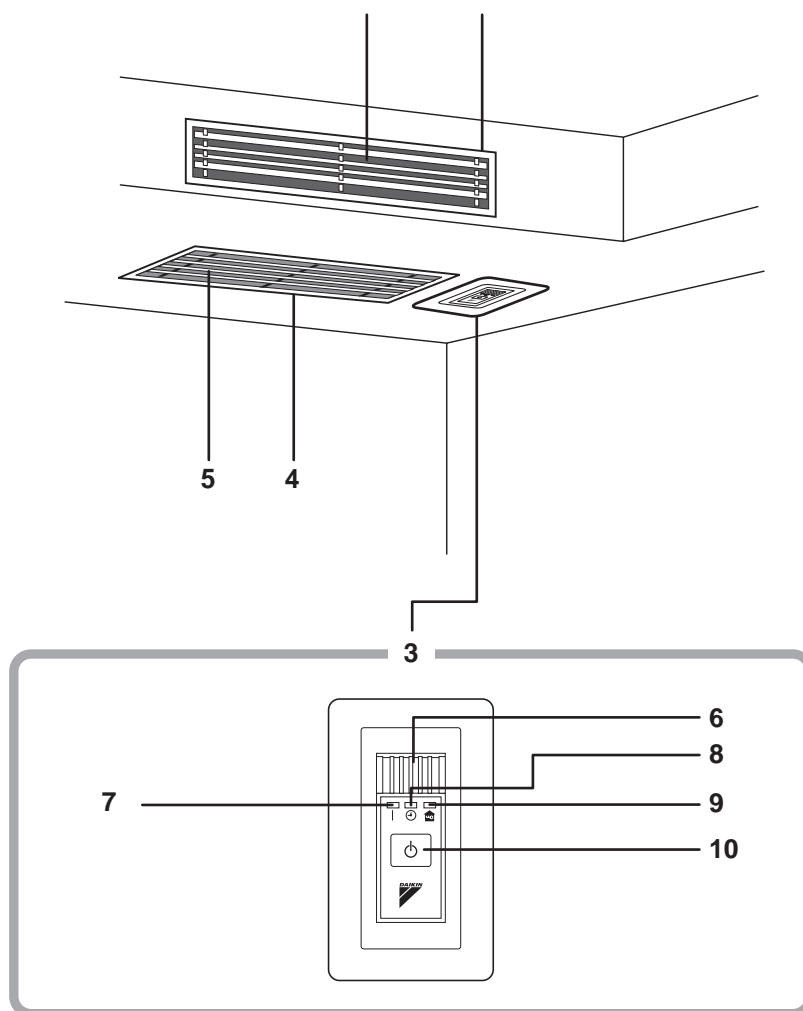
### 16. TIMER CANCEL button:

- It cancels the timer setting.

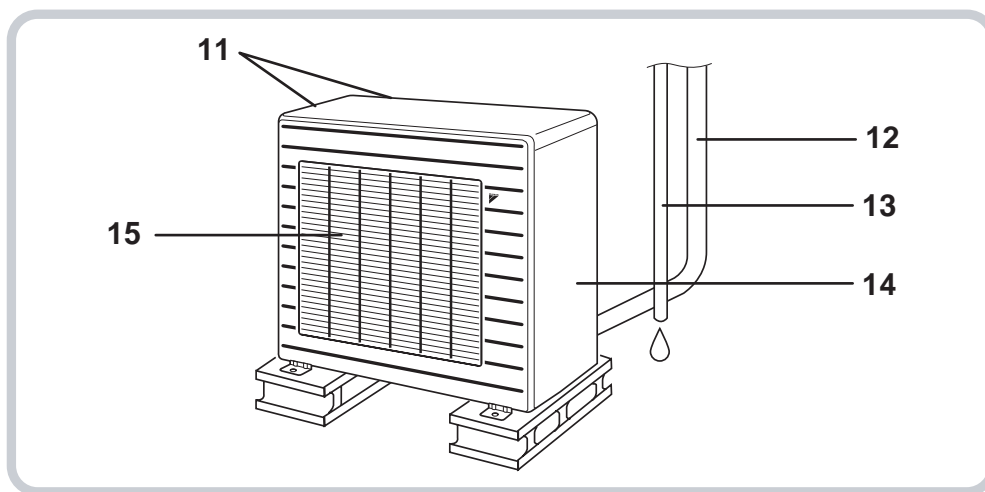
### 17. CLOCK button

## FDXS 25/35/50 C, FDXS 25/35 E

### ■ Indoor Unit



## ■ Outdoor Unit



## ■ Indoor Unit

1. **Air outlet**
2. **Air outlet grille:** (Field supply)
  - Appearance of the Air outlet grille and Air inlet grille may differ with some models
3. **Display, Control panel**
4. **Suction grille:** (option)
  - Appearance of the suction grille and Air inlet grille may differ with some models.
5. **Air inlet**
6. **Room temperature sensor:**
  - It senses the air temperature around the unit.
7. **Operation lamp (green)**
8. **TIMER lamp (yellow)**
9. **HOME LEAVE lamp (red):**
  - Lights up when you use HOME LEAVE operation.

### 10. Indoor Unit ON/OFF switch:

- Push this switch once to start operation. Push once again to stop it.
- This switch is useful when the remote control is missing.
- **The operation mode refers to the following table.**

	Mode	Temperature setting	Air flow rate
FDKS	COOL	22°C	AUTO
FDXS	AUTO	25°C	AUTO

## ■ Outdoor Unit

11. **Air inlet:** (Back and side)
12. **Refrigerant piping and inter-unit cable**
13. **Drain hose**

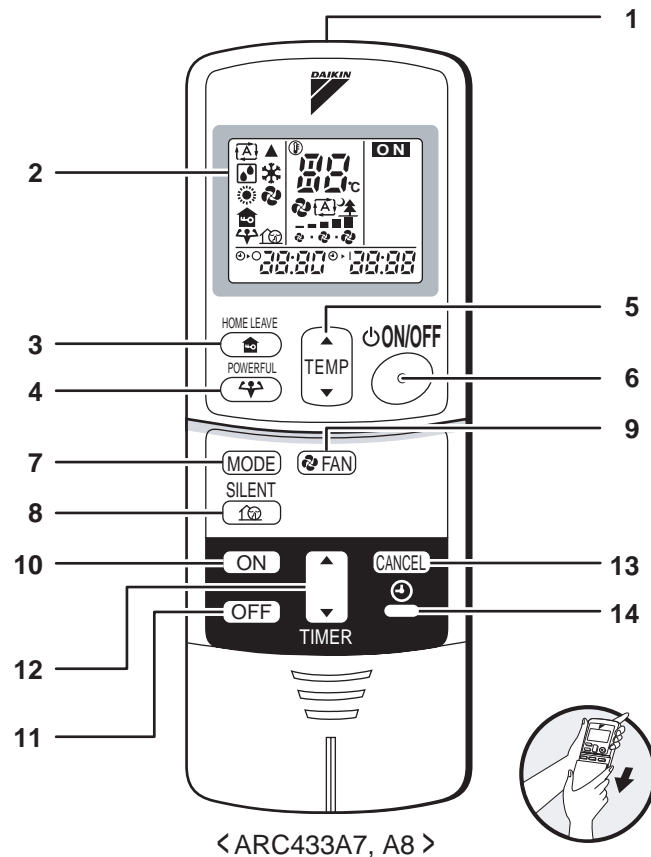
Appearance of the outdoor unit may differ from some models.

### 14. Earth terminal:

- It is inside of this cover.

### 15. Air outlet

## ■ Remote Control



### 1. Signal transmitter:

- It sends signals to the indoor unit.

### 2. Display:

- It displays the current settings.  
(In this illustration, each section is shown with all its displays ON for the purpose of explanation.)

### 3. HOME LEAVE button:

HOME LEAVE operation

### 4. POWERFUL button:

POWERFUL operation

### 5. TEMPERATURE adjustment buttons:

- It changes the temperature setting.

### 6. ON/OFF button:

- Press this button once to start operation.  
Press once again to stop it.

### 7. MODE selector button:

- It selects the operation mode.  
(AUTO/DRY/COOL/HEAT/FAN)

### 8. SILENT button: OUTDOOR UNIT SILENT operation

### 9. FAN setting button:

- It selects the air flow rate setting.

### 10. ON TIMER button

### 11. OFF TIMER button

### 12. TIMER Setting button:

- It changes the time setting.

### 13. TIMER CANCEL button:

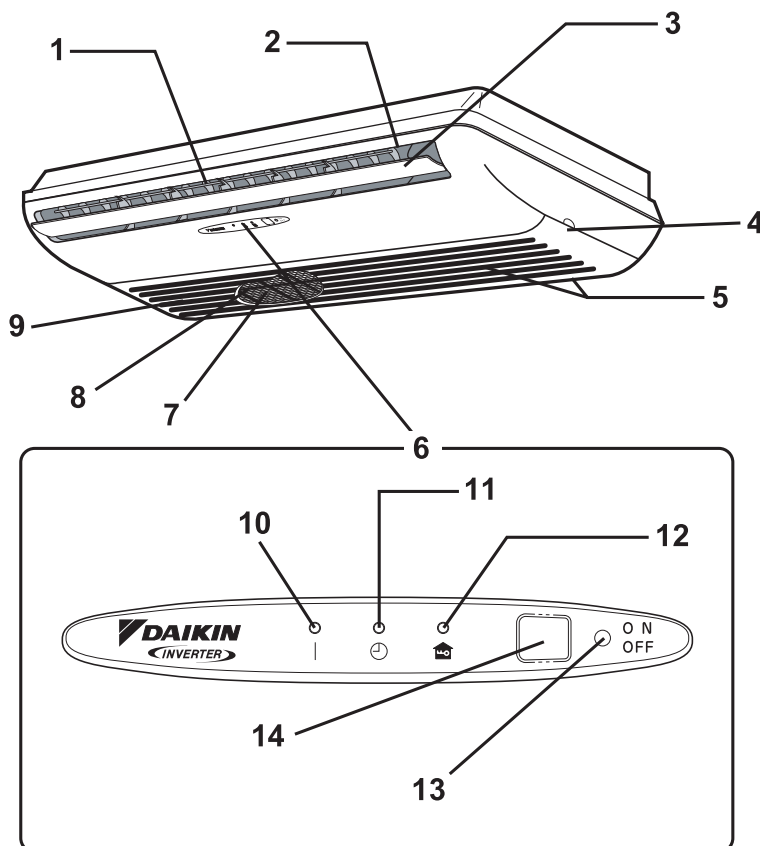
- It cancels the timer setting.

### 14. CLOCK button

## FLXS 25/35/50/60 B

### ■ Indoor Unit

The indoor unit can be installed either to the ceiling or to a wall. The descriptions contained in this manual show the case when installation is being carried out to the ceiling. (The methods of operation use are the same when installing to a wall.)



### ■ Opening the front grille

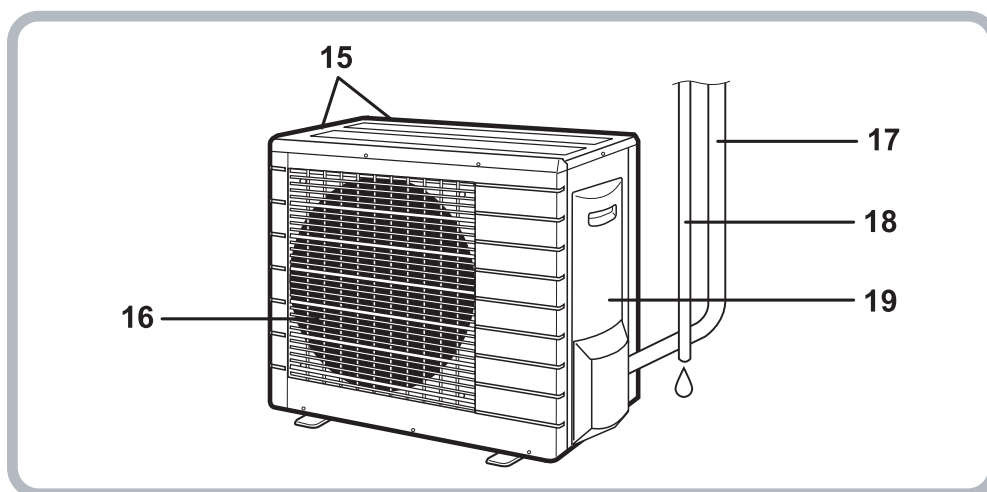
How to open the front panel



### CAUTION

- Before opening the front grille, be sure to stop the operation and turn the breaker OFF.

## ■ Outdoor Unit



## ■ Indoor Unit

1. **Louvers (vertical blades):**
  - The louvers are inside of the air outlet.
2. **Air outlet**
3. **Flap (horizontal blade)**
4. **Panel tab**
5. **Air inlet**
6. **Display**
7. **Air filter**
8. **Photocatalytic deodorizing filter and Air purifying filter:**
  - These filters are attached to the inside of the air filters.
9. **Front grille**
10. **Operation lamp (green)**
11. **TIMER lamp (yellow)**
12. **HOME LEAVE lamp (red)**
  - Lights up when you use HOME LEAVE Operation

### 13. Indoor Unit ON/OFF switch:

- Push this switch once to start operation. Push once again to stop it.
- The operation mode refers to the following table..

	Mode	Temperature setting	Air flow rate
FLKS	COOL	22°C	AUTO
FLXS	AUTO	25°C	AUTO

- Push the switch using an object with a sharp tip, such as a pen.
- This switch is useful when the remote control is missing.

### 14. Signal receiver:

- It receives signals from the remote control.
- When the unit receives a signal, you will hear a short beep.
  - Operation start .....beep-beep
  - Settings changed.....beep
  - Operation stop.....beeeeeep

## ■ Outdoor Unit

15. **Air inlet:** (Back and side)
16. **Air outlet**
17. **Refrigerant piping and inter-unit cable**

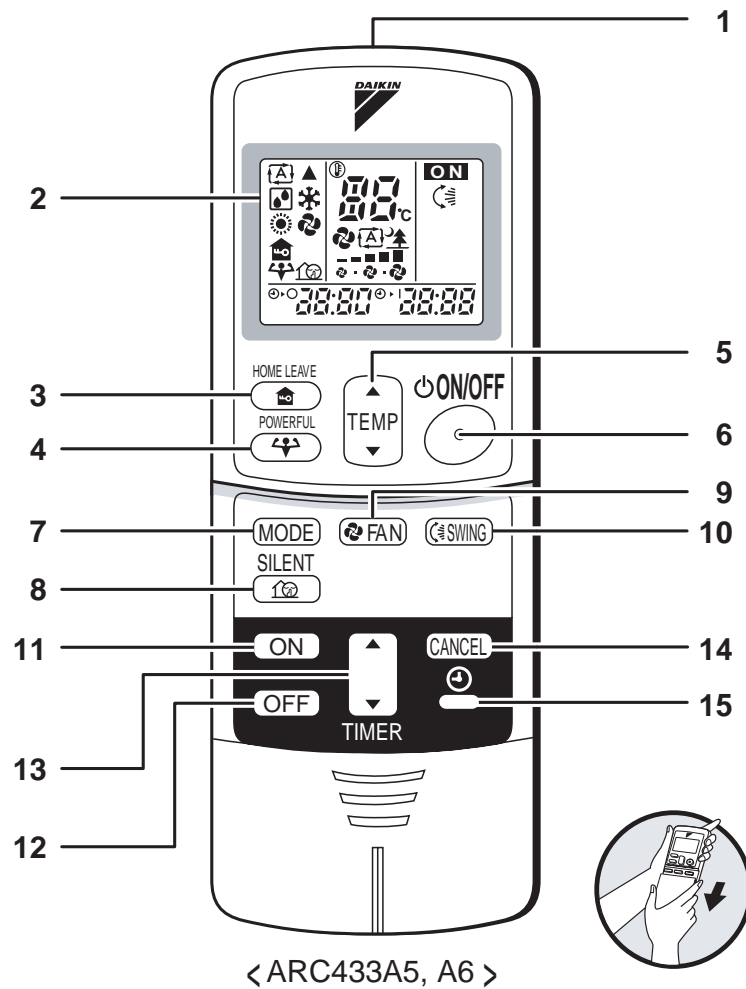
Appearance of the outdoor unit may differ from some models.

### 18. Drain hose

### 19. Earth terminal:

- It is inside of this cover.

## ■ Remote Control



### 1. Signal transmitter:

- It sends signals to the indoor unit.

### 2. Display:

- It displays the current settings.  
(In this illustration, each section is shown with all its displays ON for the purpose of explanation.)

### 3. HOME LEAVE button:

for HOME LEAVE operation

### 4. POWERFUL button:

for POWERFUL operation

### 5. TEMPERATURE adjustment buttons:

- It changes the temperature setting.

### 6. ON/OFF button:

- Press this button once to start operation. Press once again to stop it.

### 7. MODE selector button:

- It selects the operation mode.  
(AUTO/DRY/COOL/HEAT/FAN)

### 8. OUTDOOR UNIT SILENT button

### 9. FAN setting button:

- It selects the air flow rate setting.

### 10. SWING button

### 11. ON TIMER button

### 12. OFF TIMER button

### 13. TIMER Setting button:

- It changes the time setting.

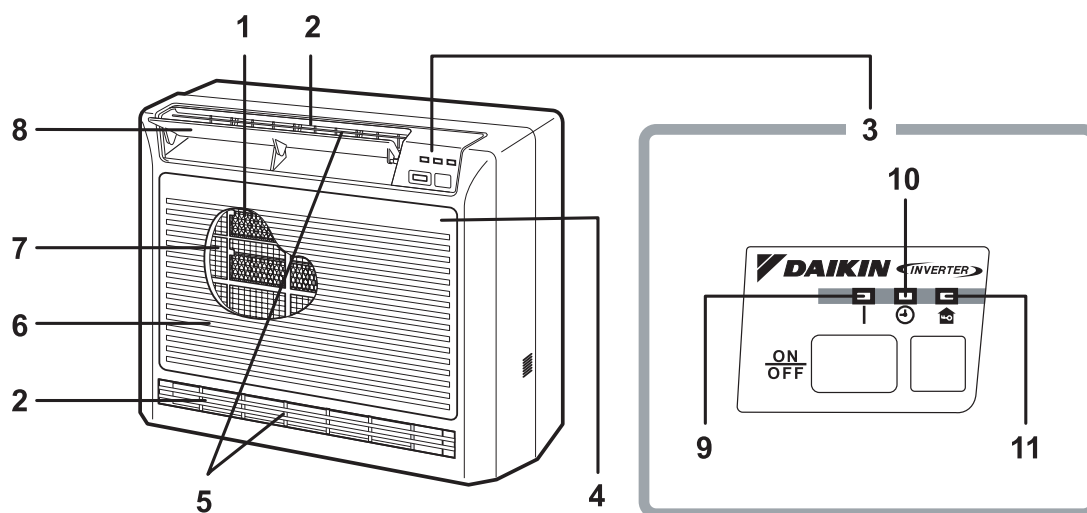
### 14. TIMER CANCEL button:

- It cancels the timer setting.

### 15. CLOCK button.

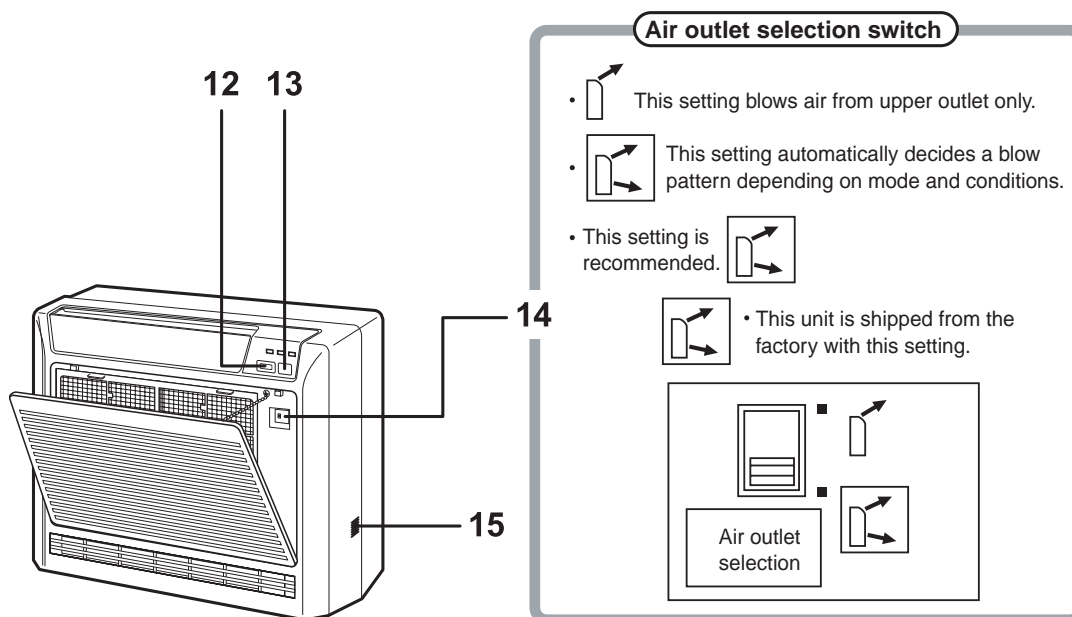
## FVXS 25/35/50 B

### ■ Indoor Unit



### ■ Opening the front grille

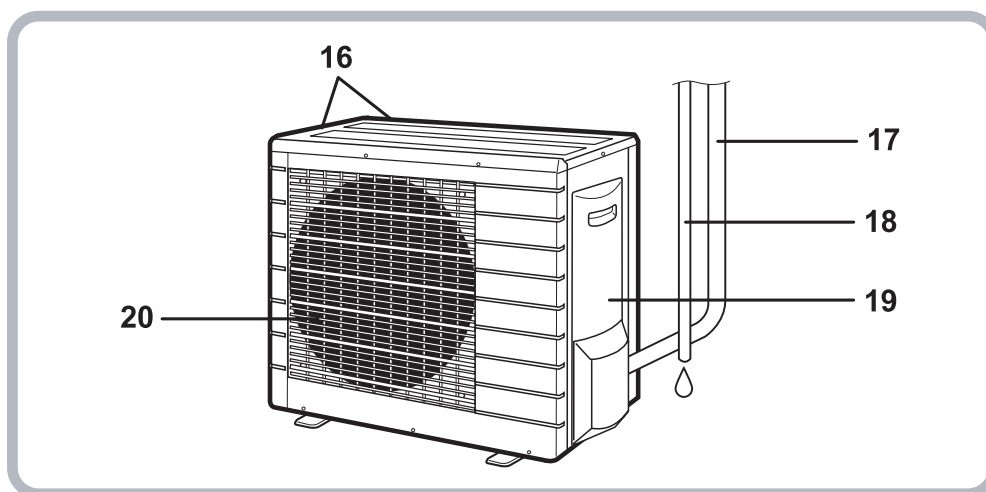
How to open the front panel



### ⚠ CAUTION

- Before opening the front grille, be sure to stop the operation and turn the breaker OFF.
- Do not touch the metal parts on the inside of the indoor unit, as it may result in injury.

## ■ Outdoor Unit



## ■ Indoor Unit

### 1. Photocatalytic deodorizing filter and Air purifying filter:

- These filters are attached to the inside of the air filters.

### 2. Air outlet

### 3. Display

### 4. Front panel

### 5. Louvers (vertical blades)

- The louvers are inside of the air outlet.

### 6. Air inlet

### 7. Air filter

### 8. Flap (horizontal blade)

### 9. Operation lamp (green)

### 10. TIMER lamp (yellow)

### 11. HOME LEAVE lamp (red)

### 12. Indoor Unit ON/OFF switch:

- Push this switch once to start operation. Push once again to stop it.

- The operation mode refers to the following table.

	Mode	Temperature setting	Air flow rate
FVKS	COOL	22°C	AUTO
FVXS	AUTO	25°C	AUTO

- This switch is useful when the remote control is missing.

### 13. Signal receiver:

- Signals are received from the remote control.
- When the unit receives a signal, you will hear a short beep.
  - Operation start .....beep-beep
  - Settings changed.....beep
  - Operation stop.....beeeeeep

### 14. Air outlet selection switch

### 15. Room temperature sensor:

- It senses the air temperature around the unit.

## ■ Outdoor Unit

### 16. Air inlet: (Back and side)

### 17. Refrigerant piping and inter-unit cable

### 18. Drain hose:

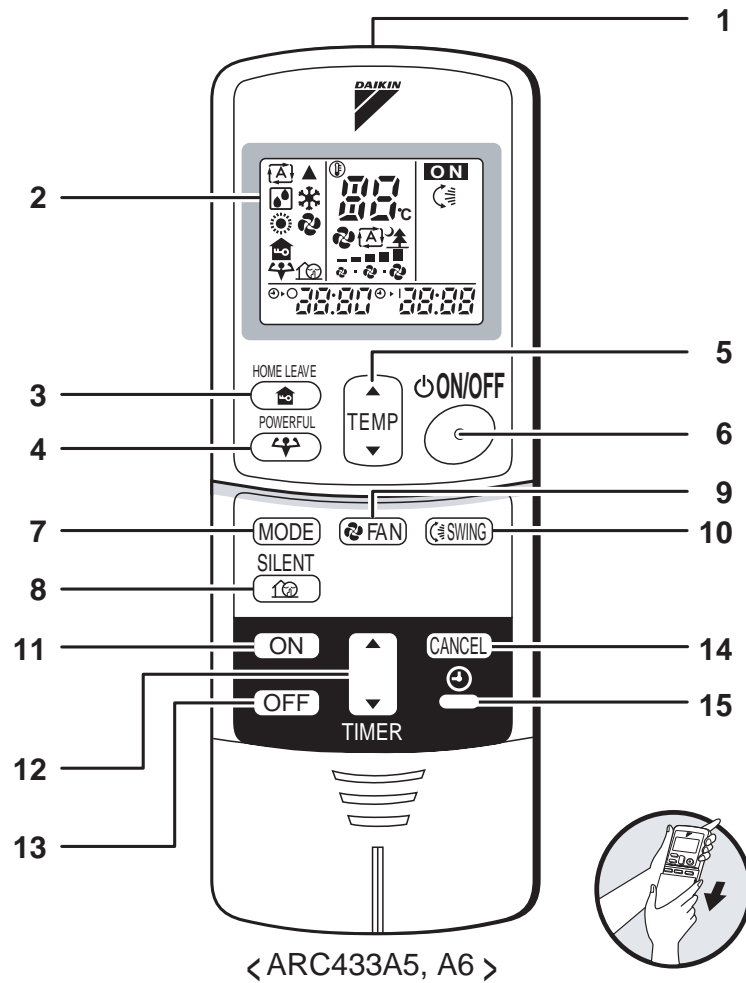
### 19. Earth terminal:

- It is inside of this cover.

### 20. Air outlet

Appearance of the outdoor unit may differ from some models.

## ■ Remote Control



### 1. Signal transmitter:

- It sends signals to the indoor unit.

### 2. Display:

- It displays the current settings.  
(In this illustration, each section is shown with all its displays ON for the purpose of explanation.)

### 3. HOME LEAVE button:

HOME LEAVE operation

### 4. POWERFUL button:

POWERFUL operation

### 5. TEMPERATURE adjustment buttons:

- It changes the temperature setting.

### 6. ON/OFF button:

- Press this button once to start operation.  
Press once again to stop it.

### 7. MODE selector button:

- It selects the operation mode.  
(AUTO/DRY/COOL/HEAT/FAN)

### 8. OUTDOOR UNIT SILENT button

### 9. FAN setting button:

- It selects the air flow rate setting.

### 10. SWING button

### 11. ON TIMER button

### 12. TIMER Setting button:

- It changes the time setting.

### 13. OFF TIMER button

### 14. TIMER CANCEL button:

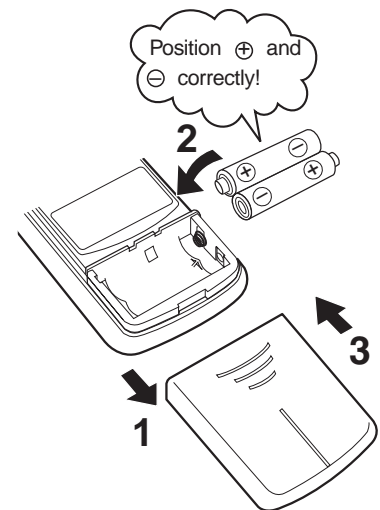
- It cancels the timer setting.

### 15. CLOCK button

## 2.2.4 Preparation before Operation

### ■ To set the batteries

1. Slide the front cover to take it off.
2. Set two dry batteries (AAA).
3. Set the front cover as before.



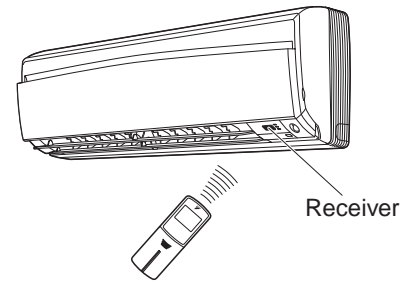
## ATTENTION

### ■ About batteries

- When replacing the batteries, use batteries of the same type, and replace the two old batteries together.
- When the system is not used for a long time, take the batteries out.
- We recommend replacing once a year, although if the remote control display begins to fade or if reception deteriorates, please replace with new alkali batteries. Do not use manganese batteries.
- The attached batteries are provided for the initial use of the system. The usable period of the batteries may be short depending on the manufactured date of the air conditioner.

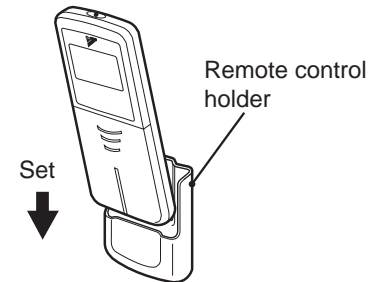
## ■ To operate the remote control

- To use the remote control, aim the transmitter at the indoor unit. If there is anything to block signals between the unit and the remote control, such as a curtain, the unit will not operate.
- Do not drop the remote control. Do not get it wet.
- The maximum distance for communication is about 7m.



## ■ To fix the remote control holder on the wall

1. Choose a place from where the signals reach the unit.
2. Fix the holder to a wall, a pillar, etc. with the screws supplied with the holder.
3. Place the remote control in the remote control holder.



- To remove, pull it upwards.

## ATTENTION

### ■ About remote control

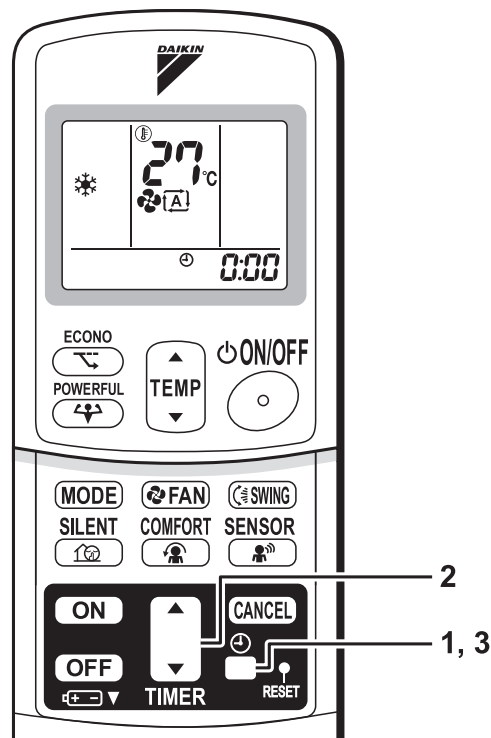
- Never expose the remote control to direct sunlight.
- Dust on the signal transmitter or receiver will reduce the sensitivity. Wipe off dust with soft cloth.
- Signal communication may be disabled if an electronic-starter-type fluorescent lamp (such as inverter-type lamps) is in the room. Consult the shop if that is the case.
- If the remote control signals happen to operate another appliance, move that appliance to somewhere else, or consult the shop.

## ■ To set the clock

1. Press “CLOCK button”.  
0:00 is displayed.  
⌚ blinks.
2. Press “TIMER setting button” to set the clock to the present time.  
Holding down “▲” or “▼” button rapidly increases or decreases the time display.
3. Press “CLOCK button”.  
: blinks.

## ■ Turn the breaker ON

- Turning ON the breaker opens the flap, then closes it again. (This is a normal procedure.)



## NOTE

### ■ Tips for saving energy

- Be careful not to cool (heat) the room too much.  
Keeping the temperature setting at a moderate level helps to save energy.
- Cover windows with a blind or a curtain.  
Blocking sunlight and air from outdoors increases the cooling (heating) effect.
- Clogged air filters cause inefficient operation and waste energy. Clean them once in about every two weeks.

#### Recommended temperature setting

For cooling: 26°C – 28°C  
For heating: 20°C – 24°C

### ■ Please note

- The air conditioner always consumes 15-35 watts of electricity even while it is not operating.
- If you are not going to use the air conditioner for a long period, for example in spring or autumn, turn the breaker OFF.
- Use the air conditioner in the following conditions.

Mode	Operating conditions	If operation is continued out of this range
COOL	Outdoor temperature <2MK(X)S40 10 to 46°C <2MXS52> –10 to 46°C <3/4/5MK(X)S> –10 to 46°C <RK(X)S –10> to 46°C Indoor temperature: 18 to 32°C Indoor humidity: 80% max.	<ul style="list-style-type: none"> <li>• A safety device may work to stop the operation. (In multi system, it may work to stop the operation of the outdoor unit only.)</li> <li>• Condensation may occur on the indoor unit and drip.</li> </ul>
HEAT	Outdoor temperature <2MXS40> –10 to 15.5°C <2MXS52> –15 to 15.5°C <3/4/5MXS> –15 to 15.5°C <RXS20/25/35> –15 to 20°C <RXS50> –15 to 18°C Indoor temperature: 18 to 32°C	<ul style="list-style-type: none"> <li>• A safety device may work to stop the operation.</li> </ul>
DRY	Outdoor temperature: <2MK(X)S40W 10 to 46°C <2MXS52W –10 to 46°C <3/4/5MK(X)SW –10 to 46°C <RK(X)S> –10 to 46°C Indoor temperature: 18 to 32°C Indoor humidity: 80% max.	<ul style="list-style-type: none"> <li>• A safety device may work to stop the operation.</li> <li>• Condensation may occur on the indoor unit and drip.</li> </ul>

- Operation outside this humidity or temperature range may cause a safety device to disable the system.

2.2.5 Auto • Dry • Cool • Heat • Fan Operation

The air conditioner operates with the operation mode of your choice.  
From the next time on, the air conditioner will operate with the same operation mode.

■ To start operation

1. Press “MODE” selector button and select an operation mode.
- Each pressing of the button advances the mode setting in sequence.
- A

: AUTO

D

: DRY

C

: COOL

H

: HEAT

F

: FAN
- <F(C)TKS>

A

C

F
- <F(C)TXS>

A

D

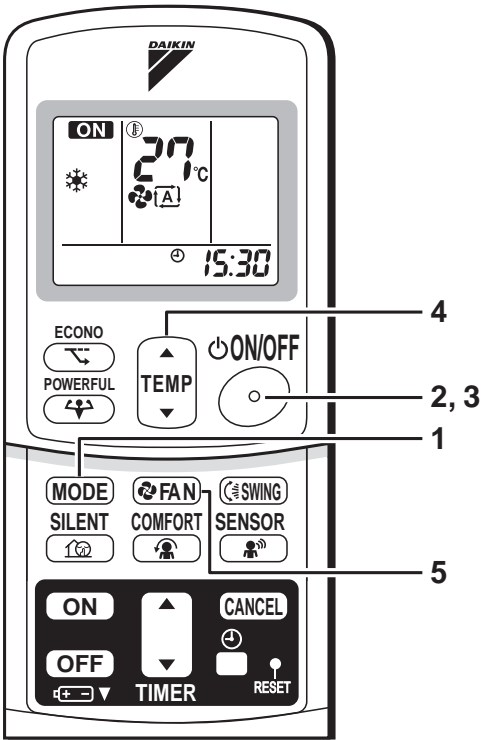
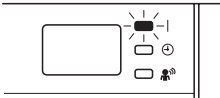
C

H

F

2. Press “ON/OFF” button .

• The OPERATION lamp lights up.



■ To stop operation

3. Press “ON/OFF” button again.
- Then OPERATION lamp goes off.


■ To change the temperature setting

4. Press “TEMPERATURE adjustment button”.

DRY or FAN mode	AUTO or COOL or HEAT mode
The temperature setting is not variable.	Press “▲” to raise the temperature and press “▼” to lower the temperature.
	Set to the temperature you like
	<div>27°C</div>

## ■ To change the air flow rate setting

### 5. Press "FAN setting button".

DRY mode	AUTO or COOL or HEAT or FAN mode
The air flow rate setting is not variable	<p>Five levels of air flow rate setting from " " to " " plus " " " " are available.</p> 

- Indoor unit quiet operation

When the air flow is set to " ", the noise from the indoor unit will become quieter.

Use this when making the noise quieter.

The unit might lose power when the fan strength is set to weak level.

## NOTE

### ■ Note on HEAT operation

- Since this air conditioner heats the room by taking heat from outdoor air to indoors, the heating capacity becomes smaller in lower outdoor temperatures. If the heating effect is insufficient, it is recommended to use another heating appliance in combination with the air conditioner.
- The heat pump system heats the room by circulating hot air around all parts of the room. After the start of heating operation, it takes some time before the room gets warmer.
- In heating operation, frost may occur on the outdoor unit and lower the heating capacity. In that case, the system switches into defrosting operation to take away the frost.
- During defrosting operation, hot air does not flow out of indoor unit.

### ■ Note on DRY operation

- The computer chip works to rid the room of humidity while maintaining the temperature as much as possible. It automatically controls temperature and fan strength, so manual adjustment of these functions is unavailable.

### ■ Note on AUTO operation

- In AUTO operation, the system selects an appropriate operation mode (COOL or HEAT) based on the room temperature at the start of the operation.
- The system automatically reselects setting at a regular interval to bring the room temperature to user-setting level.
- If you do not like AUTO operation, you can manually select the operation mode and setting you like.

### ■ Note on air flow rate setting


- At smaller air flow rates, the cooling (heating) effect is also smaller.

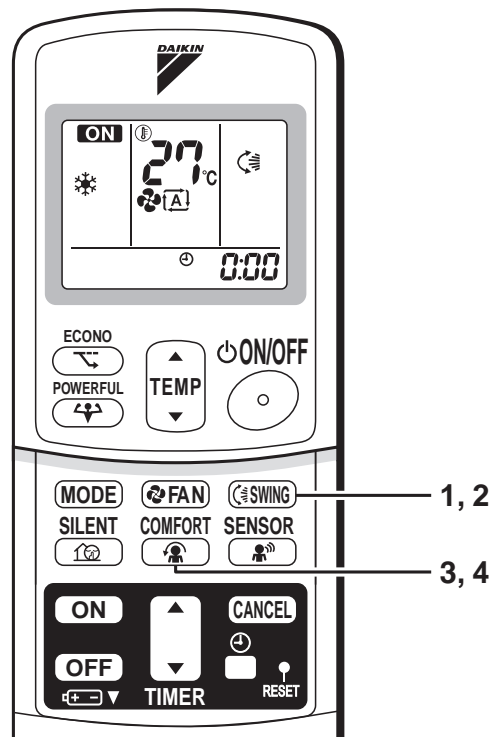
## 2.2.6 Adjusting the Air Flow Direction

### FTXS 20/25/35/50 D

You can adjust the air flow direction to increase your comfort.

#### ■ To adjust the horizontal blades (flaps)

1. Press “SWING button”.  
“” is displayed on the LCD and the flaps will begin to swing.
2. When the flaps have reached the desired position, press “SWING button” once more.  
The display will go blank.  
The flaps will stop moving.

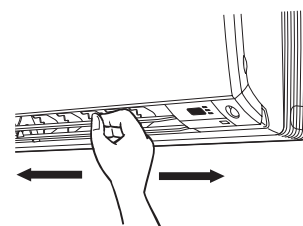


#### ■ To adjust the vertical blades (louvers)

Hold the knob and move the louvers.

(You will find a knob on the left-side and the right-side blades.)

- When the unit is installed in the corner of a room, the direction of the louvers should be facing away from the wall. If they face the wall, the wall will block off the wind, causing the cooling (or heating) efficiency to drop.



## ■ To start COMFORT AIRFLOW operation

### 3. Press "COMFORT AIRFLOW button".

- The flap position will change, preventing air from blowing directly on the occupants of the room.
  - "👤" is displayed on the LCD.
- <COOL/DRY> The flap will go up.  
<HEAT> The flap will go down.

## ■ To cancel COMFORT AIRFLOW operation

### 4. Press "COMFORT AIRFLOW button" again.

- The flaps will return to the memory position from before COMFORT AIRFLOW mode.
- "👤" disappears from the LCD.

## Notes on COMFORT AIRFLOW operation

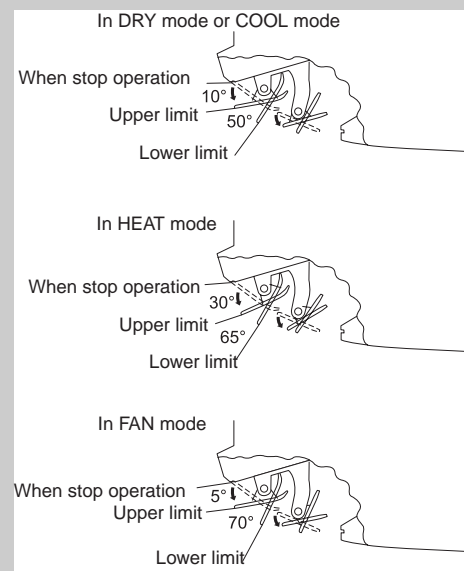
- POWERFUL operation and COMFORT AIRFLOW operation cannot be used at the same time. Priority is given to POWERFUL operation.

## Notes on flaps and louvers angles

- When "SWING button" is selected, the flaps swinging range depends on the operation mode. (See the figure.)

### ■ ATTENTION





- Always use a remote control to adjust the flaps angle. If you attempt to move it forcibly with hand when it is swinging, the mechanism may be broken.
- Be careful when adjusting the louvers. Inside the air outlet, a fan is rotating at a high speed.

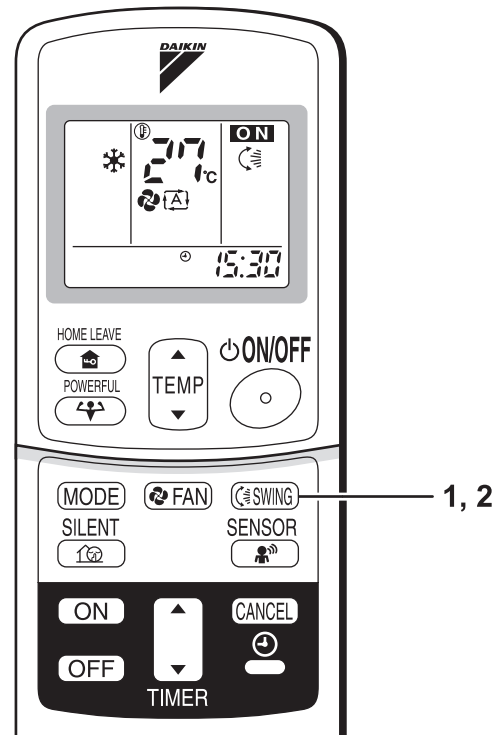


## FTXS 20/25/35 C

You can adjust the air flow direction to increase your comfort.

### ■ To adjust the horizontal blades (flaps)

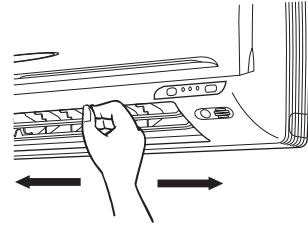
1. Press “SWING button ”.
  - “  ” is displayed on the LCD and the flaps will begin to swing.
2. When the flap has reached the desired position, press “SWING button  ” once more.
  - The flap will stop moving.
  - “  ”disappears from the LCD



## ■ To adjust the vertical blades (louvers)

Hold the knob and move the louvers.

(You will find a knob on the left-side and the right-side blades.)

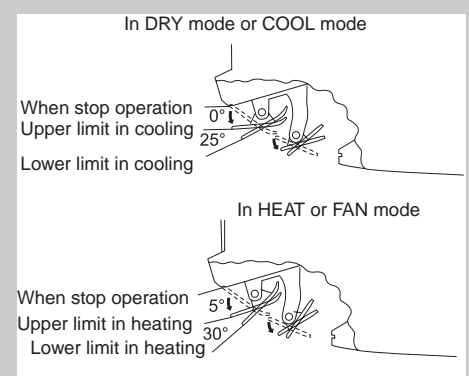


## Notes on flaps and louvers angels.

- When “**SWING button**” is selected, the flaps swinging range depends on the operation mode. (See the figure.)

### ■ ATTENTION




- Always use a remote control to adjust the flaps angle. If you attempt to move it forcibly with hand when it is swinging, the mechanism may be broken.
- Be careful when adjusting the louvers. Inside the air outlet, fan is rotating at a high speed.

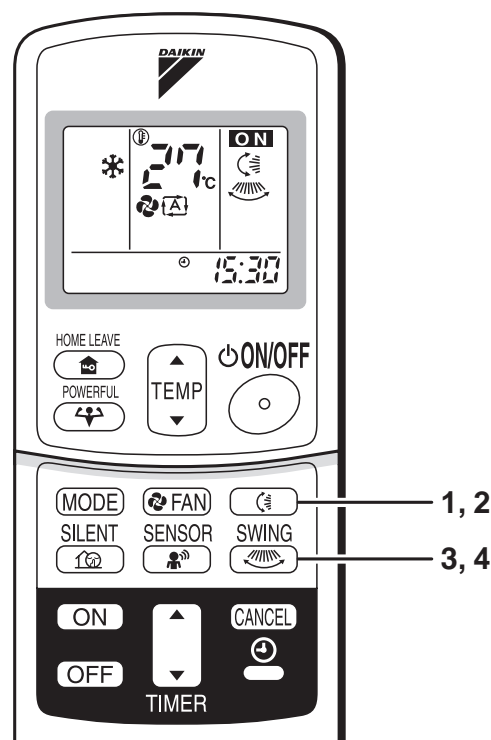


## FTXS 50/60/71 E, FTXS 71 B



You can adjust the air flow direction to increase your comfort.

### ■ To adjust the horizontal blade (flap)





1. Press "SWING button" .
  - "  " is displayed on the LCD and the flaps begin to swing.
2. When the flap has reached the desired position, press "SWING button" once more.
  - The flap will stop moving.
  - "  " disappears from the LCD.



### ■ To adjust the vertical blades (louvers)

3. Press "SWING button" .
  - "  " is displayed on the LCD.
4. When the louvers have reached the desired position, press the "SWING button" once more.
  - The louvers will stop moving.

## ■ To 3-D Airflow

1. 3. Press the “SWING button  ” and the “SWING button  ”:  
the “  ” and “  ” display will light up and the flap and louvers will move in turn.

## ■ To cancel 3-D Airflow

2. 4. Press either the “SWING button  ” or the “SWING button “  ”:

## Notes on louvers angles

### ■ ATTENTION

- Always use a remote control to adjust the louvers angles. In side the air outlet, a fan is rotating at a high speed.

## Notes on flap angle

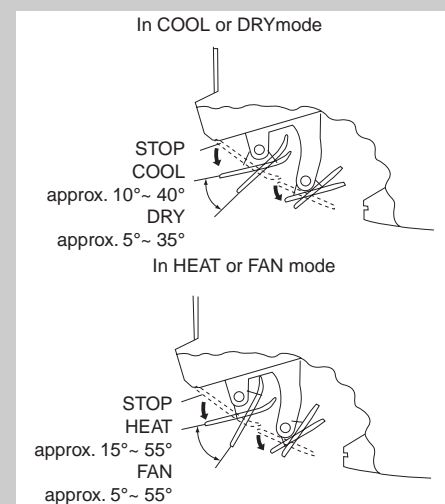
- When “**SWING button**” is selected, the flaps swinging range depends on the operation mode. (See the figure.)

### Three-Dimensional (3-D) Airflow

- Using three-dimensional airflow circulates cold air, which tends to collected at the bottom of the room, and hot air, which tends to collect near the ceiling, throughout the room, preventing areas of cold and hot developing.

### ■ ATTENTION



- Always use a remote control to adjust the flaps angle. If you attempt to move it forcibly with hand when it is swinging, the mechanism may be broken.
- Be careful when adjusting the louvers. Inside the air outlet, fan is rotating at a high speed.

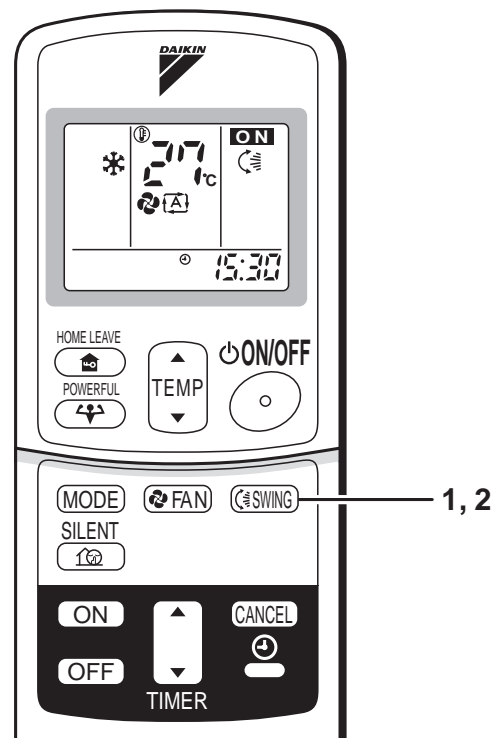


## FLXS 25/35/50/60 B

You can adjust the air flow direction to increase your comfort.

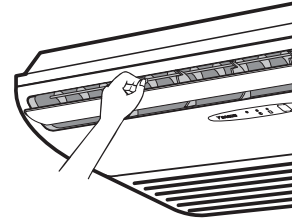
### ■ To adjust the horizontal blade (flap)

1. Press “SWING button ”.
  - “” is displayed on the LCD and the flaps begin to swing.
2. When the flap has reached the desired position, press “SWING button” once more.
  - The flap will stop moving.
  - “” disappears from the LCD.



## ■ To adjust the vertical blades (louvers)

- When adjusting the louver, use a robust and stable stool and watch your steps carefully.  
Hold the knob and move the louvers.  
(You will find a knob on the left side and the right side blades.)

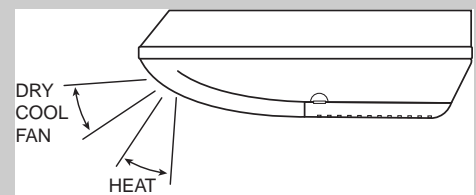


## Notes on flaps and louvers angels.

- Unless [SWING] is selected, you should set the flap at a near- horizontal angle in COOL or DRY mode to obtain the best performance.
- In COOL or DRY mode, if the flap is fixed at a downward position, the flap automatically moves in about 60 minutes to prevent condensation on it.

### ■ ATTENTION




- Always use a remote control to adjust the flap angle.If you attempt to move it forcibly with hand when it is swinging, the mechanism may be broken.
- Be careful when adjusting the louvers. Inside the air outlet, a fan is rotating at a high speed.

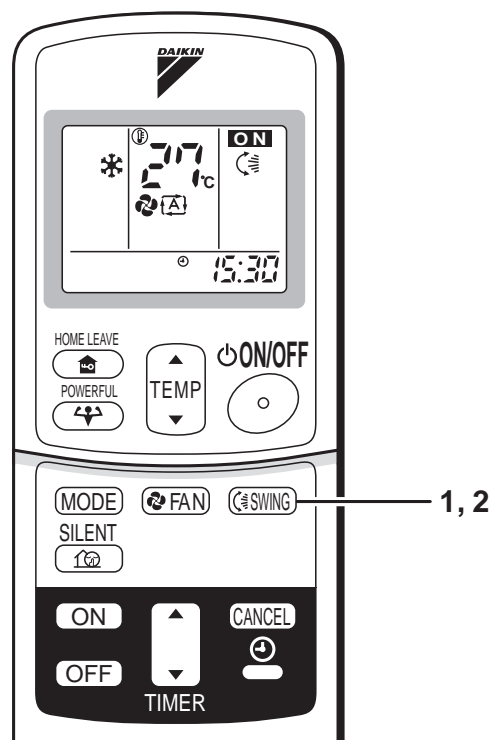


## FVXS 25/35/50 B

You can adjust the air flow direction to increase your comfort.

### ■ To adjust the horizontal blade (flap)

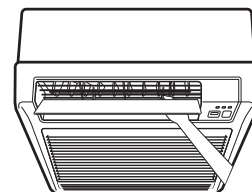
1. Press "SWING button" .
  - "  " is displayed on the LCD and the flaps will begin to swing.
2. When the flaps have reached the desired position, press "SWING button" once more.
  - The flaps will stop moving.
  - "  " disappears from the LCD



### ■ To adjust the vertical blades (louvers)

Hold the knob and move the louvers.

(You will find a knob on the left-side and the right-side blades.)

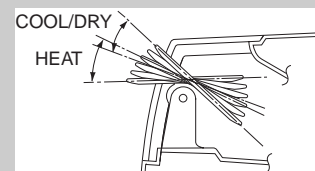


### Notes on flap and louvers angel.

- Unless [SWING] is selected, you should set the flap at a near- horizontal angle in COOL or DRY mode to obtain the best performance.

#### ■ ATTENTION

- When adjusting the flap by hand, turn off the unit, and use the remote control to restart the unit.
- Be careful when adjusting the louvers. Inside the air outlet, a fan is rotating at a high speed.

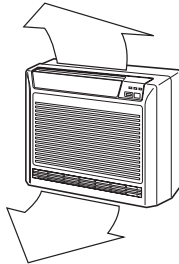


## ■ Air flow selection

- Make air flow selection according to what suits you.

### When setting the air flow selection switch to

- Air conditioner automatically decides the appropriate blowing pattern depending on the operating mode/situation.

Operating mode	Situation	Blowing pattern
COOL mode	<ul style="list-style-type: none"> <li>• When the room has become fully cool, or when one hour has passed since turning on the air conditioner.</li> </ul>	<ul style="list-style-type: none"> <li>• So that air does not come into direct contact with people, air is blown upper air outlet, room temperature is equilised.</li> </ul>
	<ul style="list-style-type: none"> <li>• At start of operation or other times when the room is not fully cooled.</li> </ul>	 <ul style="list-style-type: none"> <li>• Air is blown from the upper and lower air outlets for high speed cooling during COOL mode, and for filling the room with warm air during HEAT mode.</li> </ul>
HEAT mode	<ul style="list-style-type: none"> <li>• At times other than below. (Normal time.)</li> </ul>	
	<ul style="list-style-type: none"> <li>• At start or when air temperature is low.</li> </ul>	<ul style="list-style-type: none"> <li>• So that air does not come into direct contact with people. Air is blown upper air outlet.</li> </ul>

- During Dry mode, so that cold air does not come into direct contact with people, air is blown upper air outlet.

### When setting the air outlet selection switch to

- Regardless of the operating mode or situation, air blows from the upper air outlet.
- Use this switch when you do not want air coming out of the lower air outlet. (While sleeping etc..)

## CAUTION

- Do not try to adjust the flap by hand.
- When adjusting by hand, the mechanism may not operate properly or condensation may drip from air outlets.

## 2.2.7 POWERFUL Operation

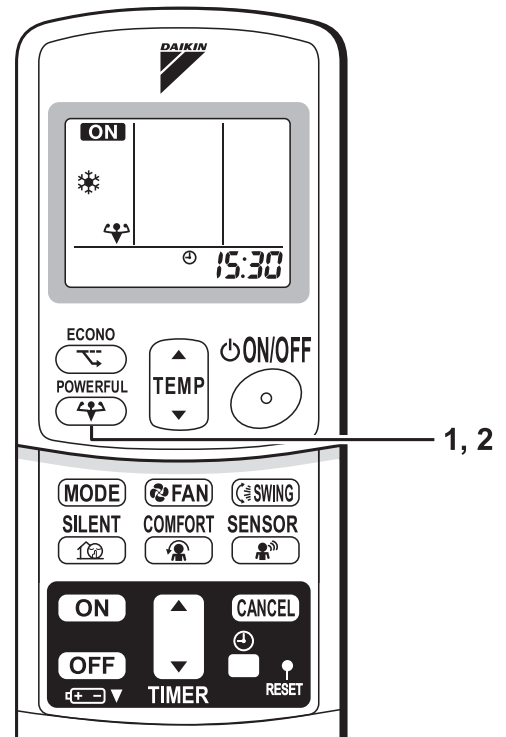
POWERFUL operation quickly maximizes the cooling (heating) effect in any operation mode. You can get the maximum capacity.

### ■ To start POWERFUL operation

1. Press "POWERFUL button".
  - POWERFUL operation ends in 20 minutes. Then the system automatically operates again with the settings which were used before POWERFUL operation.
  - When using POWERFUL operation, there are some functions which are not available.
  - " " is displayed on the LCD

### ■ To cancel POWERFUL operation

2. Press "POWERFUL button" again.
  - " " disappears from the LCD.



## NOTE

### ■ Notes on POWERFUL operation

- POWERFUL Operation cannot be used together with ECONO, SILENT or COMFORT Operation. Priority is given to the function of whichever button is pressed last.
- POWERFUL Operation can only be set when the unit is running. Pressing the operation stop button causes the settings to be canceled, and the " " disappears from the LCD.
- **In COOL and HEAT mode**  
To maximize the cooling (heating) effect, the capacity of outdoor unit must be increased and the air flow rate be fixed to the maximum setting.  
The temperature and air flow settings are not variable.
- **In DRY mode**  
The temperature setting is lowered by 2.5°C and the air flow rate is slightly increased.
- **In FAN mode**  
The air flow rate is fixed to the maximum setting.
- **When using priority-room setting**  
See "Note for multi system".

## 2.2.8 OUTDOOR UNIT SILENT Operation

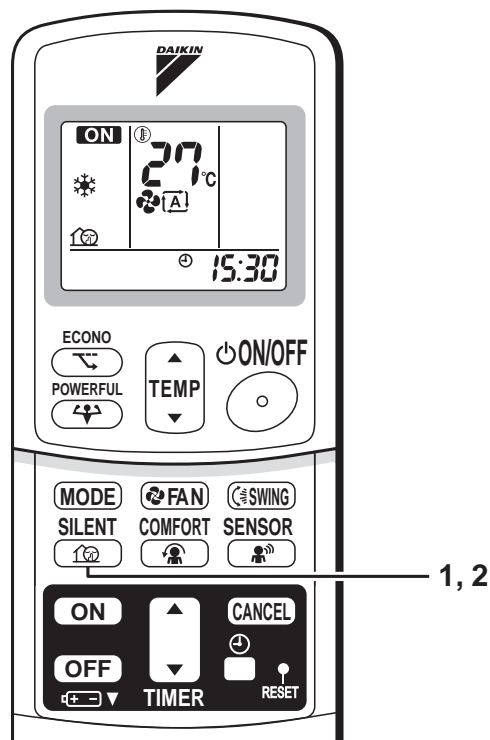
OUTDOOR UNIT SILENT operation lowers the noise level of the outdoor unit by changing the frequency and fan speed on the outdoor unit. This function is convenient during night.

### ■ To start OUTDOOR UNIT SILENT operation

1. Press "SILENT button".
  - "🔇" is displayed on the LCD.

### ■ To cancel OUTDOOR UNIT SILENT operation

2. Press "SILENT button".
  - "🔇" disappears from the LCD.



## NOTE

### ■ Note on OUTDOOR UNIT SILENT operation

- If using a multi system, this function will work only when the OUTDOOR UNIT SILENT operation is set on all operated indoor units.  
However, if using priority-room setting, see "Note for multi system".
- This function is available in COOL, HEAT, and AUTO modes.  
(This is not available in FAN and DRY mode.)
- POWERFUL operation and OUTDOOR UNIT SILENT operation cannot be used at the same time.  
Priority is given to the function of whichever button is pressed last.

## 2.2.9 ECONO Operation

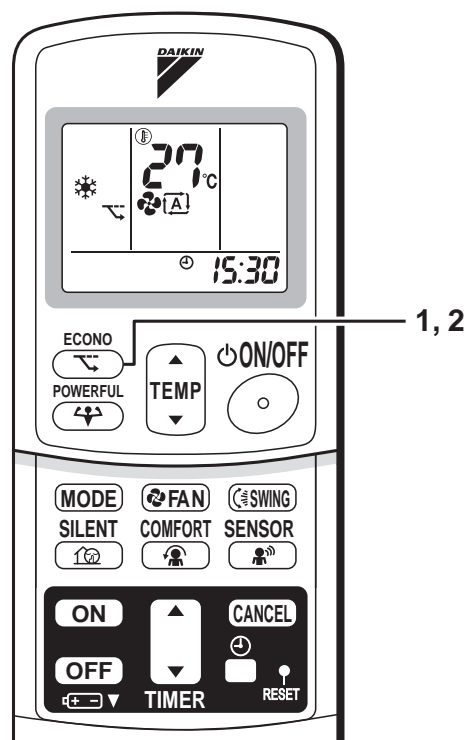
ECONO operation is a function which enables efficient operation by lowering the maximum power consumption value.

### ■ To start ECONO operation

1. Press "ECONO button".
  - " " is displayed on the LCD.

### ■ To cancel ECONO operation

2. Press "ECONO button" again.
  - " " disappears from the LCD.



## NOTE

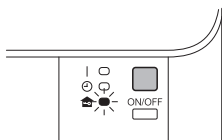
- ECONO Operation can only be set when the unit is running. Pressing the operation stop button causes the settings to be canceled, and the " " disappears from the LCD.
- ECONO operation is a function which enables efficient operation by limiting the power consumption of the outdoor unit (operating frequency).
- ECONO operation functions in AUTO, COOL, DRY and HEAT modes. The fan strength does not change in ECONO operation.
- POWERFUL operation and ECONO operation cannot be used at the same time. Priority is given to POWERFUL operation.
- Power consumption may not drop even if ECONO operation is used, when the level of power consumption is already low.

## 2.2.10 HOME LEAVE Operation

HOME LEAVE operation is a function which allows you to record your preferred temperature and air flow rate settings.

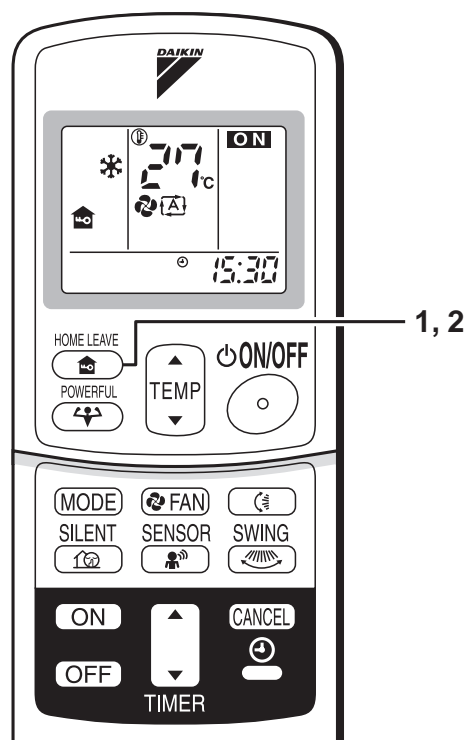
### ■ To start HOME LEAVE operation

1. Press "HOME LEAVE button".
  - "🏠" is displayed on the LCD.
  - The HOME LEAVE lamp lights up.



### ■ To cancel HOME LEAVE operation

2. Press "HOME LEAVE button" again.
  - "🏠" disappears from the LCD.
  - The HOME LEAVE lamp goes off.



## Before using HOME LEAVE operation

### ■ To set the temperature and air flow rate for HOME LEAVE operation

When using HOME LEAVE operation for the first time, please set the temperature and air flow rate for HOME LEAVE operation. Record your preferred temperature and air flow rate.

	Initial setting		Selectable range	
	temperature	Air flow rate	temperature	Air flow rate
Cooling	25°	AUTO	18-32°C	5 step, AUTO and SILENT
Heating	25°	AUTO	10-30°C	5 step, AUTO and SILENT

1. Press "HOME LEAVE button". Make sure "🏠" is displayed in the remote control display.
2. Adjust the set temperature with "▲" or "▼" as you like.
3. Adjust the air flow rate with "FAN" setting button as you like.

Home leave operation will run with these settings the next time you use the unit. To change the recorded information, repeat steps 1 – 3.

## ■ What's the HOME LEAVE operation?

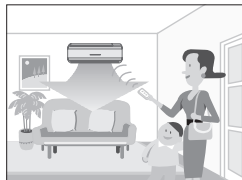
Is there a set temperature and air flow rate which is most comfortable, a set temperature and air flow rate which you use the most? HOME LEAVE operation is a function that allows you to record your favorite set temperature and air flow rate. You can start your favorite operation mode simply by pressing the HOME LEAVE button on the remote control. This function is convenient in the following situations.

### ■ Useful in these cases

#### 1. Use as an energy-saving mode

Set the temperature 2-3°C higher (cooling) or lower (heating) than normal. Setting the fan strength to the lowest setting allows the unit to be used in energy-saving mode. Also convenient for use while you are out or sleeping.

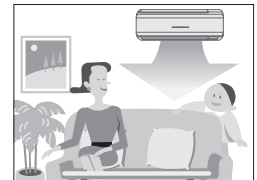
##### • Every day before you leave the house...



When you go out, push the "HOME LEAVE Operation" button, and the air conditioner will adjust capacity to reach the preset temperature for HOME LEAVE Operation.

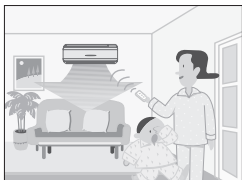


When you return, you will be welcomed by a comfortably air conditioned room.



Push the "HOME LEAVE Operation" button again, and the air conditioner will adjust capacity to the set temperature for normal operation.

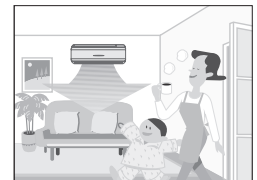
##### • Before bed...



Set the unit to HOME LEAVE Operation before leaving the living room when going to bed.



The unit will maintain the temperature in the room at a comfortable level while you sleep.



When you enter the living room in the morning, the temperature will be just right. Disengaging HOME LEAVE Operation will return the temperature to that set for normal operation. Even the coldest winters will pose no problem!

#### 2. Use as a favorite mode

Once you record the temperature and air flow rate settings you most often use, you can retrieve them by pressing HOME LEAVE button. You do not have to go through troublesome remote control operations.

## NOTE

- Once the temperature and air flow rate for HOME LEAVE operation are set, those settings will be used whenever HOME LEAVE operation is used in the future. To change these settings, please refer to the "Before using HOME LEAVE operation" section above.
- HOME LEAVE operation is only available in COOL and HEAT mode. Cannot be used in AUTO, DRY, and FAN mode.
- HOME LEAVE operation runs in accordance with the previous operation mode (COOL or HEAT) before using HOME LEAVE operation.
- HOME LEAVE operation and POWERFUL operation cannot be used at the same time. Last button that was pressed has priority.
- The operation mode cannot be changed while HOME LEAVE operation is being used.
- When operation is shut off during HOME LEAVE operation, using the remote control or the indoor unit ON/OFF switch, "🏠" will remain on the remote control display.

## 2.2.11 INTELLIGENT EYE Operation FTXS 20/25/35/50 D

“INTELLIGENT EYE” is the infrared sensor which detects the human movement.

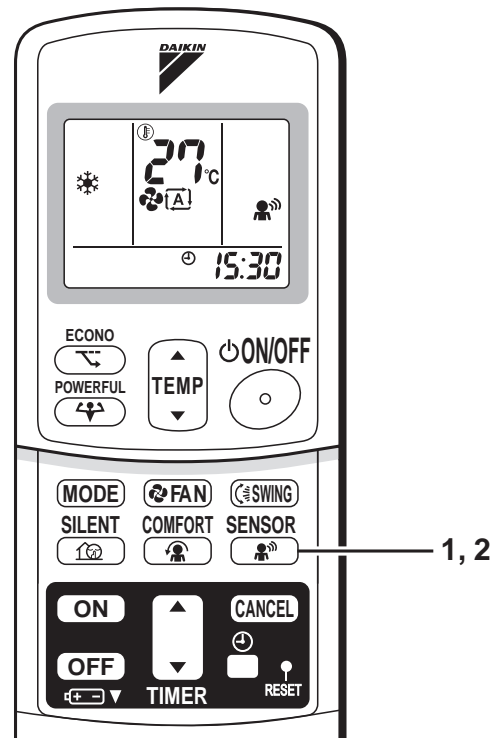
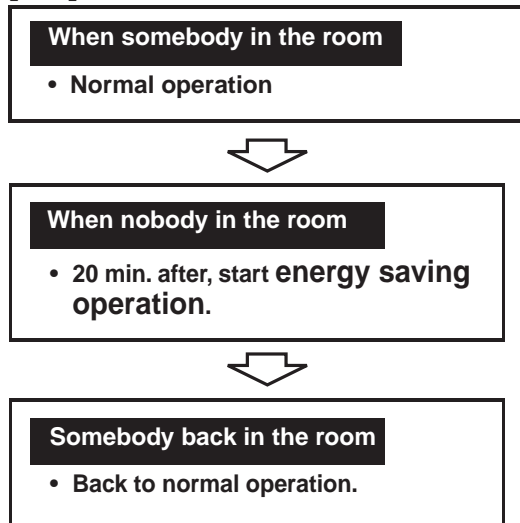
### ■ To start INTELLIGENT EYE operation

1. Press “SENSOR button”.
  - “ ” is displayed on the LCD.

### ■ To cancel the INTELLIGENT EYE operation

2. Press “SENSOR button” again.
  - “ ” disappears from the LCD.

[EX.]



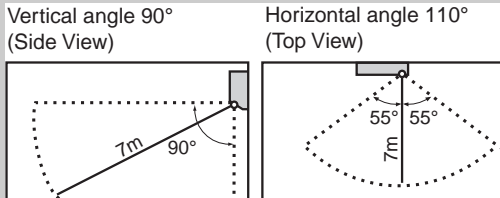
## “INTELLIGENT EYE” is useful for Energy Saving

### ■ Energy saving operation

- Change the temperature  $-2^{\circ}\text{C}$  in heating /  $+2^{\circ}\text{C}$  in cooling /  $+2^{\circ}\text{C}$  in dry mode from set temperature.
- Decrease the air flow rate slightly in fan operation. (In FAN mode only)

## Notes on “INTELLIGENT EYE”

- Application range is as follows.



- Sensor may not detect moving objects further than 7m away. (Check the application range)
- Sensor detection sensitivity changes according to indoor unit location, the speed of passersby, temperature range, etc.
- The sensor also mistakenly detects pets, sunlight, fluttering curtains and light reflected off of mirrors as passersby.
- INTELLIGENT EYE operation will not go on during powerful operation.
- Night set mode will not go on while you use INTELLIGENT EYE operation.

### CAUTION

- Do not place large objects near the sensor. Also keep heating units or humidifiers outside the sensor's detection area. This sensor can detect objects it shouldn't as well as not detect objects it should.
- Do not hit or violently push the INTELLIGENT EYE sensor. This can lead to damage and malfunction.

## FTXS 20/25/35 C

"INTELLIGENT EYE" is the infrared sensor which detects the human movement.

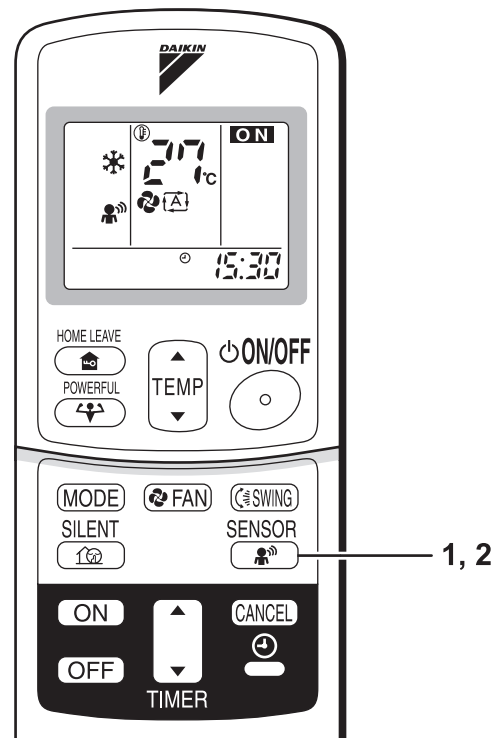
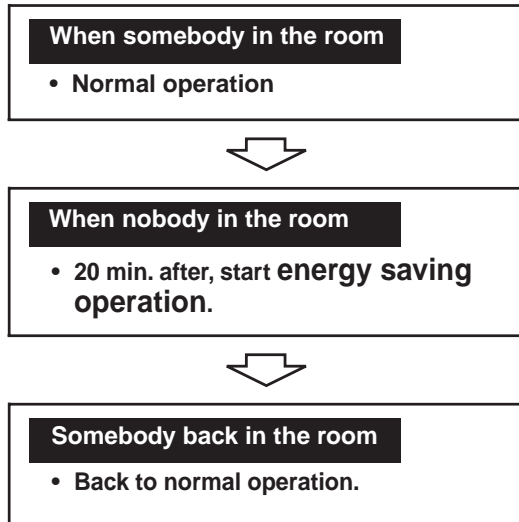
### ■ To start INTELLIGENT EYE operation

1. Press "SENSOR button".
  - " " is displayed on the LCD.

### ■ To cancel the INTELLIGENT EYE operation

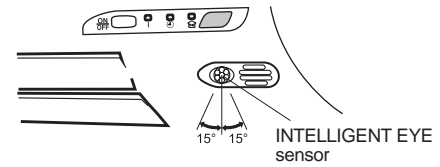
2. Press "SENSOR button" again.
  - " " disappears from the LCD.

[EX.]



## ■ To adjust the angle of the INTELLIGENT EYE sensor

- You can adjust the angle of the INTELLIGENT EYE sensor to increase the detection area. (Adjustable angle: 15° to right and left of centre)



- Gently push and slide the sensor to adjust the angle.
- After adjusting the angle, wipe the sensor gently with a clean cloth, being careful not to scratch the sensor.



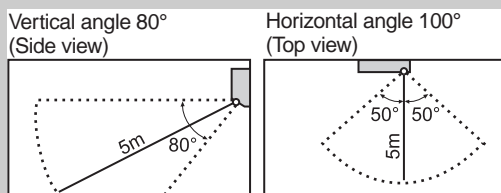
## “INTELLIGENT EYE” is useful for Energy Saving

### ■ Energy saving operation

- Change the temperature  $-2^{\circ}\text{C}$  in heating /  $+2^{\circ}\text{C}$  in cooling /  $+2^{\circ}\text{C}$  in dry mode from set temperature.
- Decrease the air flow rate slightly in fan operation. (In FAN mode only)

## Notes on “INTELLIGENT EYE”

- Application range is as follows.



- Sensor may not detect moving objects further than 5m away. (Check the application range)
- Sensor detection sensitivity changes according to indoor unit location, the speed of passersby, temperature range, etc.
- The sensor also mistakenly detects pets, sunlight, fluttering curtains and light reflected off of mirrors as passersby.
- INTELLIGENT EYE operation will not go on during powerful operation.
- Night set mode will not go on during you use INTELLIGENT EYE operation.

## ⚠ CAUTION

- Do not place large objects near the sensor. Also keep heating units or humidifiers outside the sensor's detection area. This sensor can detect objects it shouldn't as well as not detect objects it should.
- Do not hit or violently push the INTELLIGENT EYE sensor. This can lead to damage and malfunction.

## FTXS 50/60/71 E, FTXS 71 B

“INTELLIGENT EYE” is the infrared sensor which detects the human movement.

### ■ To start INTELLIGENT EYE operation

1. Press “SENSOR button”.
  - “ ” is displayed on the LCD.

### ■ To cancel the INTELLIGENT EYE operation

2. Press “SENSOR button” again.
  - “ ” disappears from the LCD.

[EX.]

**When somebody in the room**

- Normal operation



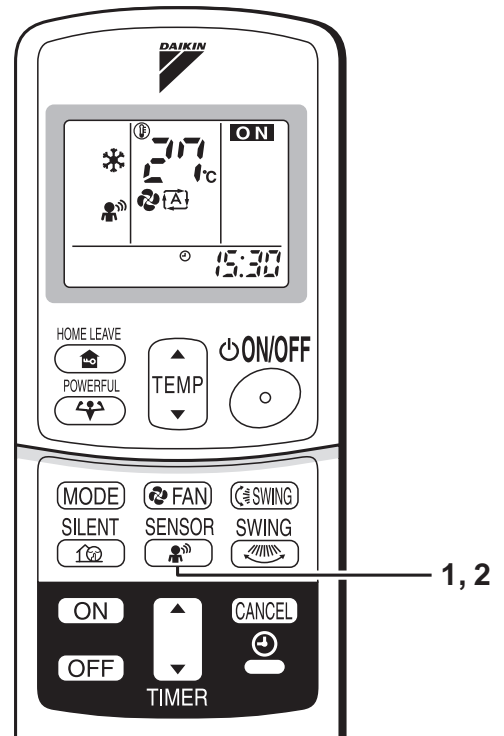
**When nobody in the room**

- 20 min. after, start energy saving operation.



**Somebody back in the room**

- Back to normal operation.



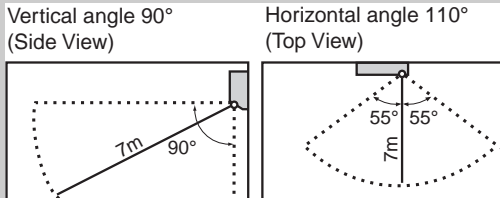
## “INTELLIGENT EYE” is useful for Energy Saving

### ■ Energy saving operation

- Change the temperature  $-2^{\circ}\text{C}$  in heating /  $+2^{\circ}\text{C}$  in cooling /  $+2^{\circ}\text{C}$  in dry mode from set temperature.
- Decrease the air flow rate slightly in fan operation. (In FAN mode only)

## Notes on “INTELLIGENT EYE”

- Application range is as follows.



- Sensor may not detect moving objects further than 7m away. (Check the application range)
- Sensor detection sensitivity changes according to indoor unit location, the speed of passersby, temperature range, etc.
- The sensor also mistakenly detects pets, sunlight, fluttering curtains and light reflected off of mirrors as passersby.
- INTELLIGENT EYE operation will not go on during powerful operation.
- Night set mode will not go on while you use INTELLIGENT EYE operation.

### CAUTION

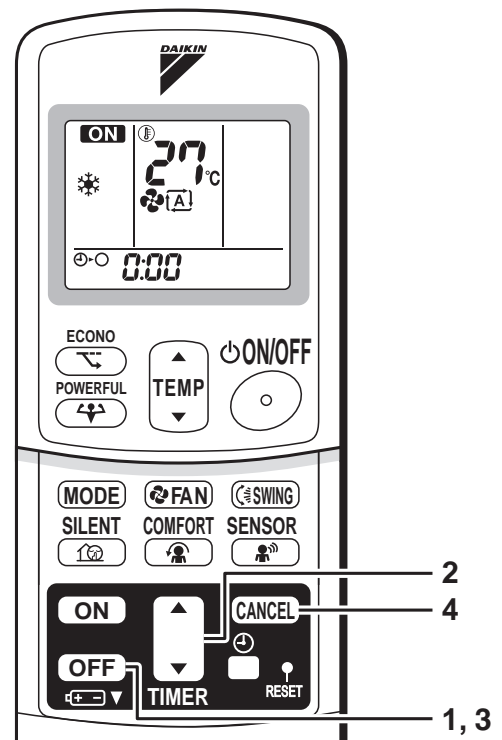
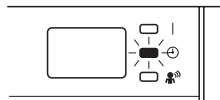
- Do not place large objects near the sensor. Also keep heating units or humidifiers outside the sensor's detection area. This sensor can detect objects it shouldn't as well as not detect objects it should.
- Do not hit or violently push the INTELLIGENT EYE sensor. This can lead to damage and malfunction.

## 2.2.12 TIMER Operation

Timer functions are useful for automatically switching the air conditioner on or off at night or in the morning. You can also use OFF TIMER and ON TIMER in combination.

### ■ To use OFF TIMER operation

- Check that the clock is correct.  
If not, set the clock to the present time.
- 1. Press **"OFF TIMER button"**.  
0:00 is displayed.  
0-0 blinks.
- 2. Press **"TIMER Setting button"** until the time setting reaches the point you like.
  - Every pressing of either button increases or decreases the time setting by 10 minutes.  
Holding down either button changes the setting rapidly.
- 3. Press **"OFF TIMER button"** again.
  - The TIMER lamp lights up.



### ■ To cancel the OFF TIMER operation

4. Press **"CANCEL button"**.
  - The TIMER lamp goes off.

## NOTE

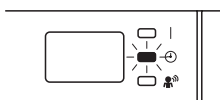
- When TIMER is set, the present time is not displayed.
- Once you set ON, OFF TIMER, the time setting is kept in the memory. (The memory is canceled when remote control batteries are replaced.)
- When operating the unit via the ON/OFF Timer, the actual length of operation may vary from the time entered by the user.

### ■ NIGHT SET MODE

When the OFF TIMER is set, the air conditioner automatically adjusts the temperature setting (0.5°C up in COOL, 2.0°C down in HEAT) to prevent excessive cooling (heating) for your pleasant sleep.

## ■ To use ON TIMER operation

- Check that the clock is correct. If not, set the clock to the present time.
- 1. Press “ON TIMER button”.
  - 6:00 is displayed.
  - “ ” blinks.
- 2. Press “TIMER Setting button” until the time setting reaches the point you like.
  - Every pressing of either button increases or decreases the time setting by 10 minutes. Holding down either button changes the setting rapidly.
- 3. Press “ON TIMER button” again.
  - The TIMER lamp lights up..

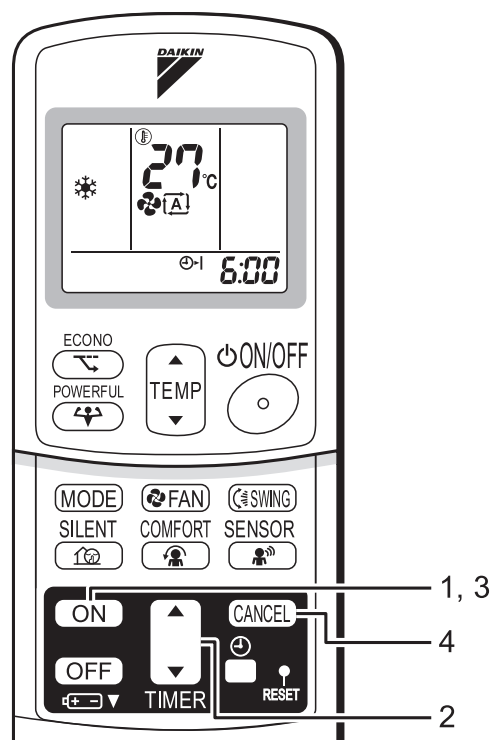
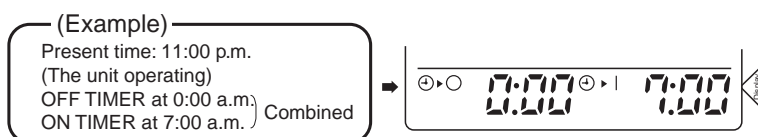


## ■ To cancel ON TIMER operation

- 4. Press “CANCEL button”.
  - The TIMER lamp goes off.

## ■ To combine ON TIMER and OFF TIMER

- A sample setting for combining the two timers is shown below.



## ATTENTION

- In the following cases, set the timer again.
  - After a breaker has turned OFF.
  - After a power failure.
  - After replacing batteries in the remote control.

## 2.2.13 Note for Multi System

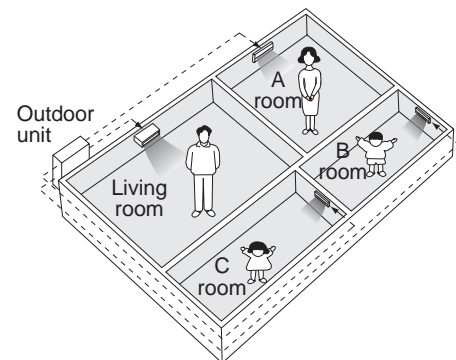
<<What is a “Multi System”? >>

This system has one outdoor unit connected to multiple indoor units.

### ■ Selecting the Operation Mode

#### 1. With the Priority Room Setting present but inactive or not present

When more than one indoor unit is operating, priority is given to the first unit that was turned on. In this case, set the units that are turned on later to the same operation mode (\*1) as the first unit.



Otherwise, they will enter the Standby Mode, and the operation lamp will flash; this does not indicate malfunction.

(\*1)

- COOL, DRY and FAN mode may be used at the same time.
- AUTO mode automatically selects COOL mode or HEAT mode based on the room temperature. Therefore, AUTO mode is available when selecting the same operation mode as that of the room with the first unit to be turned on.

#### <CAUTION>

Normally, the operation mode in the room where the unit is first run is given priority, but the following situations are exceptions, so please keep this in mind.

If the operation mode of the first room is **FAN Mode**, then using **Heating Mode** in any room after this will give priority to **heating**. In this situation, the air conditioner running in **FAN Mode** will go on standby, and the operation lamp will flash.

#### 2. With the Priority Room Setting active

See “Priority Room Setting” on the next page.

### ■ NIGHT QUIET Mode (Available only for cooling operation)

NIGHT QUIET Mode requires initial programming during installation. Please consult your retailer or dealer for assistance. NIGHT QUIET Mode reduces the operation noise of the outdoor unit during the night time hours to prevent annoyance to neighbors.

- The NIGHT QUIET Mode is activated when the temperature drops 5°C or more below the highest temperature recorded that day. Therefore, when the temperature difference is less than 5°C, this function will not be activated.
- NIGHT QUIET Mode reduces slightly the cooling (heating) efficiency of the unit.

### ■ OUTDOOR UNIT SILENT Operation

#### 1. With the Priority Room Setting present but inactive or not present

When using the OUTDOOR UNIT SILENT operation feature with the Multi system, set all indoor units to OUTDOOR UNIT SILENT operation using their remote controls.

When clearing OUTDOOR UNIT SILENT operation, clear one of the operating indoor units using their remote control. However OUTDOOR UNIT SILENT operation display remains on the remote control for other rooms. We recommend you release all rooms using their remote controls.

#### 2. With the Priority Room Setting active

See “Priority Room Setting” on the next page.

### ■ Cooling / Heating Mode Lock (Available only for heat pump models)

The Cooling / Heating Mode Lock requires initial programming during installation. Please consult your retailer or dealer for assistance. The Cooling / Heating Mode Lock sets the unit forcibly to either Cooling or Heating Mode. This function is convenient when you wish to set all indoor units connected to the Multi system to the same operation mode.

## ■ Priority Room Setting

The Priority Room Setting requires initial programming during installation. Please consult your retailer or dealer for assistance.

The room designated as the Priority Room takes priority in the following situations:

### 1. Operation Mode Priority

As the operation mode of the Priority Room takes precedence, the user can select a different operation mode from other rooms.

(Example)

\* Room A is the Priority Room in the examples.

When COOL mode is selected in Room A while operating the following modes in Room B, C and D:

Operation mode in Room B, C and D	Status of Room B, C and D when the unit in Room A is in COOL mode
COOL or DRY or FAN	Current operation mode maintained
HEAT	The unit enters Standby Mode. Operation resumes when the Room A unit stops operating.
AUTO	If the unit is set to COOL mode, operation continues. If set to HEAT mode, it enters Standby Mode. Operation resumes when the Room A unit stops operating.

### 2. Priority when POWERFUL operation is used

(Example)

\* Room A is the Priority Room in the examples.

The indoor units in Rooms A,B,C and D are all operating. If the unit in Room A enters POWERFUL operation, operation capacity will be concentrated in Room A. In such a case, the cooling (heating) efficiency of the units in Rooms B,C and D may be slightly reduced.

### 3. Priority when using OUTDOOR UNIT SILENT operation

(Example)

\* Room A is the Priority Room in the examples.

Just by setting the unit in Room A to SILENT operation, the air conditioner starts OUTDOOR UNIT SILENT operation.

You don't have to set all the operated indoor units to SILENT operation.

## 2.2.14 Care and cleaning

### FTXS 20/25/35/50 D



#### CAUTION

Before cleaning, be sure to stop the operation and turn the breaker OFF.

### UNITS

#### ■ Indoor unit, Outdoor unit and Remote control

1. Wipe them with dry soft cloth.

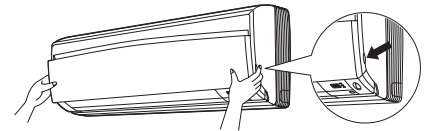
#### ■ Front panel

##### 1. Open the front panel.

- Hold the panel by the tabs on the two sides and lift it until it stops with a click.

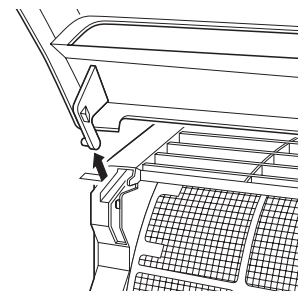
##### 2. Remove the front panel.

- Lift the front panel up, slide it slightly to the right, and remove it from the horizontal axle.



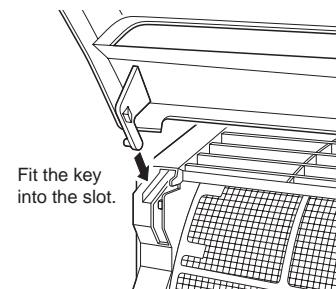
##### 3. Clean the front panel.

- Wipe it with a soft cloth soaked in water.
- Only neutral detergent may be used.
- In case of washing the panel with water, dry it with cloth, dry it up in the shade after washing.



##### 4. Attach the front panel.

- Set the 2 keys of the front panel into the slots and push them in all the way.
- Close the front panel slowly and push the panel at the 3 points. (1 on each side and 1 in the middle).

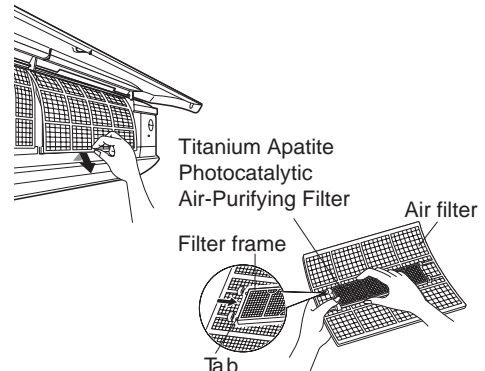
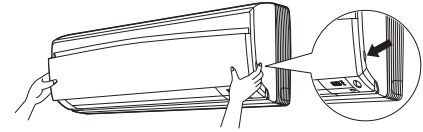


#### CAUTION

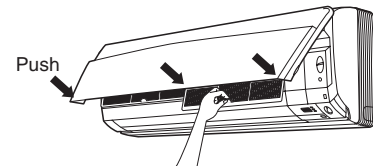
- Don't touch the metal parts of the indoor unit. If you touch those parts, this may cause an injury.
- When removing or attaching the front panel, use a robust and stable stool and watch your steps carefully.
- When removing or attaching the front panel, support the panel securely with hand to prevent it from falling.
- For cleaning, do not use hot water above 40 °C, benzine, gasoline, thinner, nor other volatile oils, polishing compound, scrubbing brushes, nor other hand stuff.
- After cleaning, make sure that the front panel is securely fixed.

## FILTERS

1. **Open the front panel.**
2. **Pull out the air filters.**
  - Push a little upwards the tab at the center of each air filter, then pull it down.
3. **Take off the Titanium Apatite Photocatalytic Air-Purifying Filter.**
  - Hold the recessed parts of the frame and unhook the four claws.
4. **Clean or replace each filter.**
  - See figure.

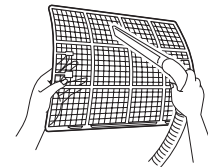


5. **Set the air filter Titanium Apatite Photocatalytic Air-Purifying Filter as they were and close the front panel.**
  - Insert claws of the filters into slots of the front panel. Close the front panel slowly and push the panel at the 3 points. (1 on each side and 1 in the middle.)



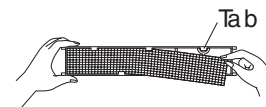
### ■ Air Filter

1. **Wash the air filters with water or clean them with vacuum cleaner.**
  - If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water, then dry them up in the shade.
  - It is recommended to clean the air filters every two weeks.



### ■ Titanium Apatite Photocatalytic Air-Purifying Filter

The Titanium Apatite Photocatalytic Air-Purifying Filter can be renewed by washing it with water once every 6 months. We recommend replacing it once every 3 years.



#### [Maintenance]

1. **Remove dust with a vacuum cleaner and wash lightly with water.**
2. **If it is very dirty, soak it for 10 to 15 minutes in water mixed with a neutral cleaning agent.**
3. **Do not remove filter from frame when washing with water.**
4. **After washing, shake off remaining water and dry in the shade.**
5. **Since the material is made out of paper, do not wring out the filter when removing water from it.**

#### [Replacement]

1. **Remove the tabs on the filter frame and replace with a new filter.**
  - Dispose of the old filter as flammable waste.

## NOTE

- Operation with dirty filters:  
 (1) cannot deodorize the air. (2) cannot clean the air.  
 (3) results in poor heating or cooling. (4) may cause odour.
- To order Titanium Apatite Photocatalytic Air-Purifying Filter contact to the service shop where you bought the air conditioner.
- Dispose of old filters as burnable waste.

Item	Part No.
Titanium Apatite Photocatalytic Air-Purifying Filter. (without frame) 1 set	KAF970A46

## Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.
Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.
Check that the drain comes smoothly out of the drain hose during COOL or DRY operation
• If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.

## ■ Before a long idle period

1. Operate the “FAN only” for several hours on a fine day to dry out the inside.
  - Press “MODE selector button” and select “FAN” operation.
  - Press “ON/OFF button” and start operation.
2. Clean the air filters and set them again.
3. Take out batteries from the remote control.
4. Turn OFF the breaker for the room air conditioner.
  - When a multi outdoor unit is connected, make sure the heating operation is not used at the other room before you use the fan operation.

## FTK(X)S 20/25/35 C



### CAUTION

Before cleaning, be sure to stop the operation and turn the breaker OFF.

## UNITS

### ■ Indoor unit, outdoor unit and remote control

1. Wipe them with dry soft cloth.

### ■ Front panel

#### 1. Open the front panel.

- Hold the panel by the tabs on the two sides and lift it until it stops with a click.

#### 2. Remove the front panel.

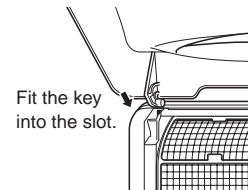
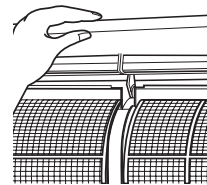
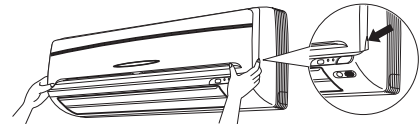
- Supporting the front panel with one hand, release the lock by sliding down the knob with the other hand.
- To remove the front panel, pull it toward yourself with both hands.

#### 3. Clean the front panel.

- Wipe it with a soft cloth soaked in water.
- Only neutral detergent may be used.
- In case of washing the panel with water, dry it with cloth, dry it up in the shade after washing.

#### 4. Attach the front panel.

- Set the 3 keys of the front panel into the slots and push them in all the way.
- Close the front panel slowly and push the panel at the 3 points.  
(1 on each side and 1 in the middle.)
- Check to see if the rotating axis in the upper center section is moving.

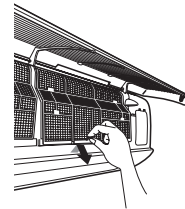
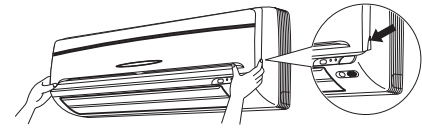


### CAUTION

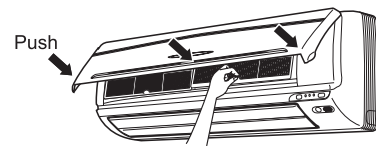
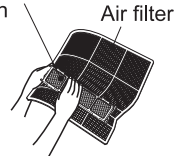
- Don't touch the metal parts of the indoor unit. If you touch those parts, this may cause an injury.
- When removing or attaching the front panel, use a robust and stable stool and watch your steps carefully.
- When removing or attaching the front panel, support the panel securely with hand to prevent it from falling.
- For cleaning, do not use hot water above 40°C, benzine, gasoline, thinner, nor other volatile oils, polishing compound, scrubbing brushes, nor other hand stuff.
- After cleaning, make sure that the front panel is securely fixed.

## Filters

1. **Open the front panel.**
2. **Pull out the air filters.**
  - Push a little upwards the tab at the center of each air filter, then pull it down.
3. **Take off the air purifying filter with photocatalytic deodorizing function**
  - Hold the recessed parts of the frame and unhook the four claws.
4. **Clean or replace each filter.**
  - See figure.
5. **Set the air filter and the air purifying filter with photocatalytic deodorizing function as they were and close the front panel.**
  - Insert claws of the filters into slots of the front panel. Close the front panel slowly and push the panel at the 3 points. (1 on each side and 1 in the middle.)

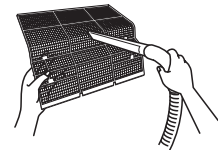


Air purifying filter with photocatalytic deodorizing function



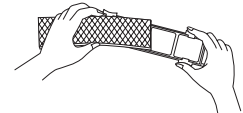
### ■ Air Filter

1. **Wash the air filters with water or clean them with vacuum cleaner.**
  - If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water, then dry them up in the shade.
  - It is recommended to clean the air filters every two weeks.



### ■ Air purifying filter with photocatalytic deodorizing function. (gray)

The Air purifying filter with photocatalytic deodorizing function can be renewed by washing it with water once every 6 months. We recommend replacing it once every 3 years.



#### [Maintenance]

1. Remove dust with a vacuum cleaner and wash lightly with water.
2. If it is very dirty, soak it for 10 to 15 minutes in water mixed with a neutral cleaning agent.
3. Do not remove filter from frame when washing with water.
4. After washing, shake off remaining water and dry in the shade.
5. Since the material is made out of paper, do not wring out the filter when removing water from it.

#### [Replacement]

1. Remove the tabs on the filter frame and replace with a new filter.
  - Dispose of the old filter as flammable waste.

## Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.
Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.
Check that the drain comes smoothly out of the drain hose during COOL or DRY operation.
• If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.

## ■ Before a long idle period

1. **Operate the “FAN only” for several hours on a fine day to dry out the inside.**
  - Press “MODE selector button” and select “FAN” operation.
  - Press “ON/OFF button” and start operation.
2. **After operation stops, turn off the breaker for the room air conditioner.**
3. **Clean the air filters and set them again.**
4. **Take out batteries from the remote control.**
  - When a multi outdoor unit is connected, make sure the heating operation is not used at the other room before you use the fan operation.

## NOTE

- Operation with dirty filters:
  - (1) cannot deodorize the air.                      (2) cannot clean the air.
  - (3) results in poor heating or cooling.      (4) may cause odour.
- To order Air-Purifying Filter with photocatalytic deodorizing functioning contact to the service shop where you bought the air conditioner.
- Dispose of old filters as non-burnable and photocatalytic deodorizing filters as burnable waste.

Item	Part No.
Air-Purifying Filter with photocatalytic deodorizing function (without frame) 1 set	KAF918A43
Air-Purifying Filter with photocatalytic deodorizing function (without frame) 1 set	KAF918A44

## FTXS 50/60/71 E, FTXS 71 B

**⚠ CAUTION** Before cleaning, be sure to stop the operation and turn the breaker OFF.

### UNITS

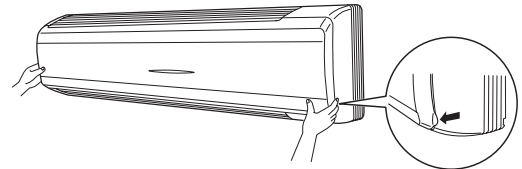
#### ■ Indoor unit, Outdoor unit and Remote control

1. Wipe them with dry soft cloth.

#### ■ Front panel

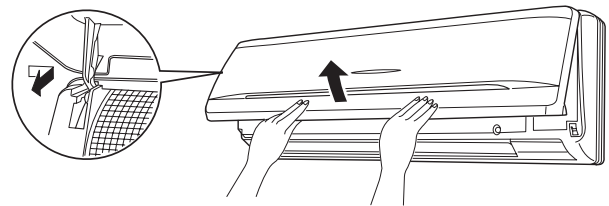
1. **Open the front grille.**

- Hold the panel by the tabs on the two sides and lift it until it stops with a click.



2. **Remove the front grille.**

- Open the front panel further while sliding it to either the left or right and pulling it toward you. This will disconnect the rotation dowel on one side. Then disconnect the rotation dowel on the other side in the same manner.

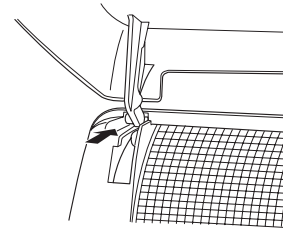


3. **Clean the front grille.**

- Wipe it with a soft cloth soaked in water.
- Only neutral detergent may be used.
- In case of washing the grille with water, dry it with cloth, dry it up in the shade after washing.

4. **Attach the front grille.**

- Align the rotation dowels on the left and right of the front panel with the slots, then push them all the way in.
- Close the front panel slowly.  
(Press the panel at both sides and the center).

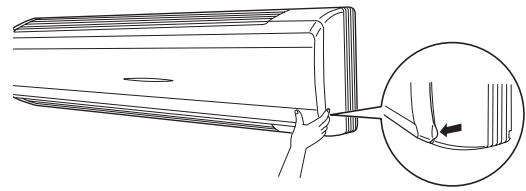


**⚠ CAUTION**

- Don't touch the metal parts of the indoor unit. If you touch those parts, this may cause an injury.
- When removing or attaching the front panel, use a robust and stable stool and watch your steps carefully.
- When removing or attaching the front panel, support the panel securely with hand to prevent it from falling.
- For cleaning, do not use hot water above 40°C, benzene, gasoline, thinner, nor other volatile oils, polishing compound, scrubbing brushes, nor other hand stuff.
- After cleaning, make sure that the front panel is securely fixed.

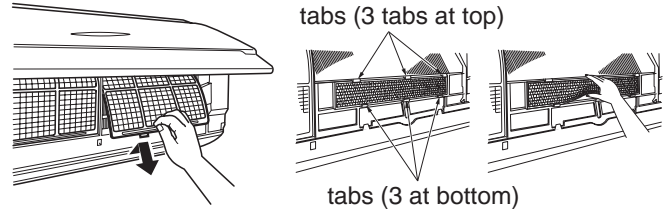
## FILTERS

1. **Open the front panel.**
2. **Pull out the air filters.**
  - Push a little upwards the tab at the center of each air filter, then pull it down.

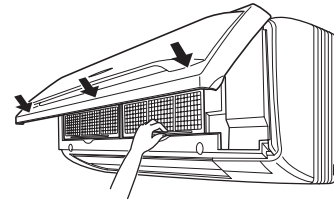


3. **Take off the Titanium Apatite Photocatalytic Air-Purifying Filter.**

- Press the top of the air-cleaning filter onto the tabs (3 tabs at top). Then press the bottom of the filter up slightly, and press it onto the tabs (2 at bottom) (3 at bottom).

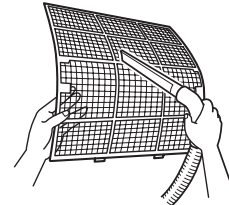


4. **Clean or replace each filter.**  
See figure.
5. **Set the air filter and the titanium Apatite Photocatalytic Air-Purifying Filter as they were and close the front panel**
  - Press the front panel at both sides and the center.



### ■ Air Filter

1. **Wash the air filters with water or clean them with vacuum cleaner.**
  - If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water, then dry them up in the shade.
  - It is recommended to clean the air filters every two weeks.



### ■ Titanium Apatite Photocatalytic Air-purifying Filter (gray)

The Titanium Apatite Photocatalytic Air-Purifying Filter can be renewed by washing it with water once every 6 months. We recommend replacing it once every 3 years.

#### [Maintenance]

1. **Remove dust with a vacuum cleaner and wash lightly with water.**
2. **If it is very dirty, soak it for 10 to 15 minutes in water mixed with a neutral cleaning agent.**
3. **After washing, shake off remaining water and dry in the shade.**
4. **Since the material is made out of paper, do not wring out the filter when removing water from it.**

#### [Replacement]

1. **Remove the tabs on the filter frame and replace with a new filter.**
  - Dispose of the old filter as flammable waste.

## Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.
Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.
Check that the drain comes smoothly out of the drain hose during COOL or DRY operation. • If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.

## ■ Before a long idle period

1. **Operate the “FAN only” for several hours on a fine day to dry out the inside.**
  - Press “MODE selector button” and select “FAN” operation.
  - Press “ON/OFF button” and start operation.
2. **After operation stops, turn off the breaker for the room air conditioner.**
3. **Clean the air filters and set them again.**
4. **Take out batteries from the remote control.**
5. When a multi outdoor unit is connected, make sure the heating operation is not used at the other room before you use the fan operation.

## NOTE

- Operation with dirty filters:  
(1) cannot deodorize the air.                      (2) cannot clean the air.  
(3) results in poor heating or cooling.      (4) may cause odour.
- To order Air-Purifying Filter with photocatalytic deodorizing functioning contact to the service shop where you bought the air conditioner.
- Dispose of old filters as non-burnable and photocatalytic deodorizing filters as burnable waste.

Item	Part No.
Titanium Apatite Photocatalytic Air-Purifying Filter. (without frame) 1 set	KAF952B42

## FDXS 25/35 C



### CAUTION

- Only a qualified service person is allowed to perform maintenance.
- Before cleaning, be sure to stop the operation and turn the breaker OFF.

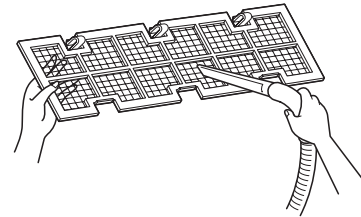
## ■ Cleaning the air filter

### 1. Removing the air filter.

- Rear suction  
Pull the bottom side of the air filter backwards, over the 3 bends.
- Bottom suction  
Pull the filter over the 3 bends situated at the backside of the unit.

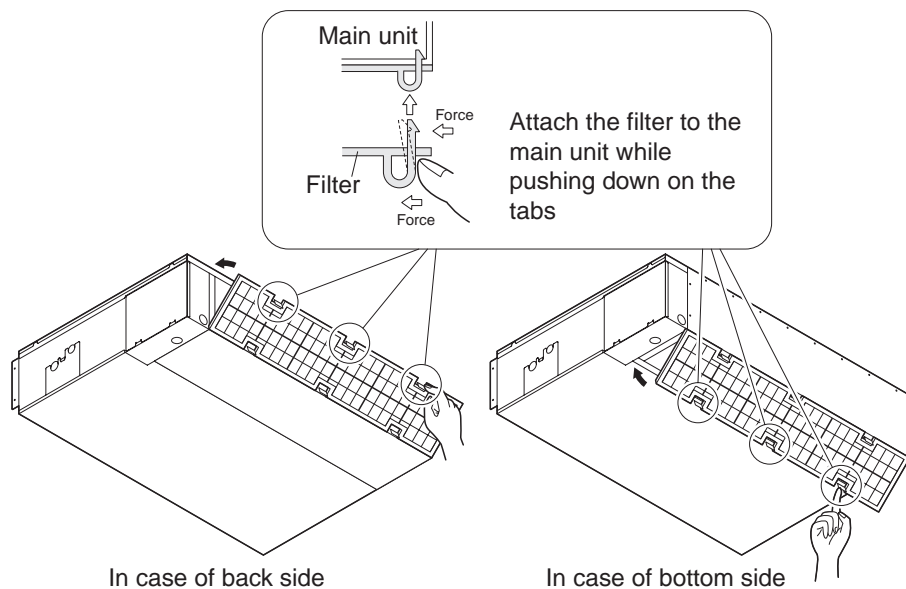
### 2. Cleaning the air filter.

- Remove dust from the air filter using a vacuum cleaner and gently rinse them in cool water. Do not use detergent or hot water to avoid filter shrinking or deformation. After cleaning dry them in the shade.



### 3. Replacing the air filter.

- Rear suction  
Hook the filter behind the flap situated at the top of the unit and push the other side gently over the 3 bends.
- Bottom suction  
Hook the filter behind the flap situated at the middle of the unit and push the other side gently over the 3 bends.



## ■ Cleaning the drain pan

- Clean the drain pan periodically, or drain piping may be clogged with dust and may result in water leakage. Ask your DAIKIN dealer to clean them.
- Prepare a cover locally to prevent any dust in the air around the indoor unit from getting in the drain pan, if there is a great deal of dust present.



## CAUTION

- Do not operate the air conditioner without filters, this to avoid dust accumulation inside the unit.
- Do not remove the air filter except when cleaning.  
Unnecessary handling may damage the filter.
- Do not use gasoline, benzine, thinner, polishing powder, liquid insecticide. It may cause discoloring or warping.
- Do not let the indoor unit get wet. It may cause an electric shock or a fire.
- Operation with dusty air filters lowers the cooling and heating capacity and wastes energy.
- The suction grille is option.
- Do not use water or air of 50°C or higher for cleaning air filters and outside panels.

## Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.
--

Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.
---

Check that the drain comes smoothly out of the drain hose during COOL or DRY operation
--

- |  |
|--|
| <ul style="list-style-type: none"> <li>• If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.</li> </ul> |
|--|

## ■ Before a long idle period

1. **Operate the "FAN only" for several hours on a fine day to dry out the inside.**
  - Press "MODE selector button" and select "FAN" operation.
  - Press "ON/OFF button" and start operation.
2. **After operation stops, turn off the breaker for the room air conditioner.**
3. **Clean the air filters and set them again.**
4. **Take out batteries from the remote control.**
  - When a multi outdoor unit is connected, make sure the heating operation is not used at the other room before you use the fan operation.

## FDXS 50/60 C, FDXS 25/35 E



### CAUTION

- Only a qualified service person is allowed to perform maintenance.
- Before cleaning, be sure to stop the operation and turn the breaker OFF.

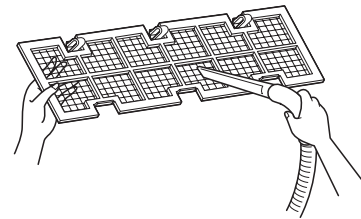
## ■ Cleaning the air filter

### 1. Removing the air filter.

- Rear suction  
Pull the bottom side of the air filter backwards, over the bends. (2 bends for 25/35 type, 3 bends for 50/60 type)
- Bottom suction  
Pull the filter over the bends (2 bends for 25/35 type, 3 bends for 50/60 type) situated at the backside of the unit.

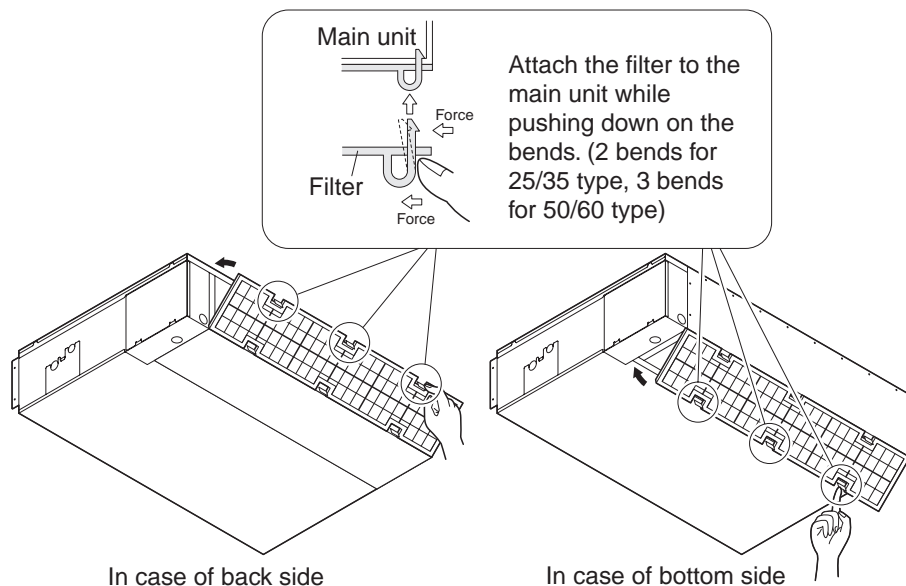
### 2. Cleaning the air filter.

- Remove dust from the air filter using a vacuum cleaner and gently rinse them in cool water. Do not use detergent or hot water to avoid filter shrinking or deformation. After cleaning dry them in the shade.



### 3. Replacing the air filter.

- Rear suction  
Hook the filter behind the flap situated at the top of the unit and push the other side gently over the bends. (2 bends for 25/35 type, 3 bends for 50/60 type)
- Bottom suction  
Hook the filter behind the flap situated at the middle of the unit and push the other side gently over the 3 bends. (2 bends for 25/35 type, 3 bends for 50/60 type)



## ■ Cleaning the drain pan

- Clean the drain pan periodically, or drain piping may be clogged with dust and may result in water leakage. Ask your DAIKIN dealer to clean them.
- Prepare a cover locally to prevent any dust in the air around the indoor unit from getting in the drain pan, if there is a great deal of dust present.



## CAUTION

- Do not operate the air conditioner without filters, this to avoid dust accumulation inside the unit.
- Do not remove the air filter except when cleaning. Unnecessary handling may damage the filter.
- Do not use gasoline, benzene, thinner, polishing powder, liquid insecticide. It may cause discoloring or warping.
- Do not let the indoor unit get wet. It may cause an electric shock or a fire.
- Operation with dusty air filters lowers the cooling and heating capacity and wastes energy.
- The suction grille is option.
- Do not use water or air of 50°C or higher for cleaning air filters and outside panels.
- Ask your DAIKIN dealer how to clean it.

## Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.
--

Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.
---

Check that the drain comes smoothly out of the drain hose during COOL or DRY operation.
---

<ul style="list-style-type: none"> <li>• If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.</li> </ul>
--

## ■ Before a long idle period

- 1. Operate the "FAN only" for several hours on a fine day to dry out the inside.**
  - Press "MODE selector button" and select "FAN" operation.
  - Press "ON/OFF button" and start operation.
- 2. Clean the air filters and set them again.**
- 3. Take out batteries from the remote control.**
- 4. Turn OFF the breaker for the room air conditioner.**
  - When a multi outdoor unit is connected, make sure the heating operation is not used at the other room before you use the fan operation.

## FLXS 25/35/50/60 B



### CAUTION

Before cleaning, be sure to stop the operation and turn the breaker OFF.

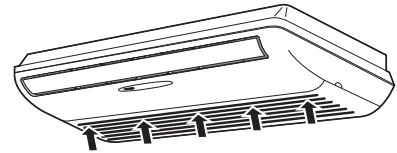
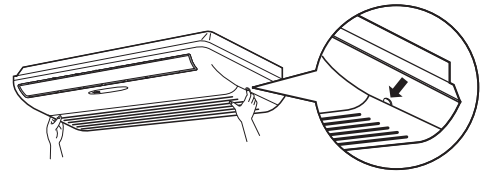
### UNITS

#### ■ Indoor unit, Outdoor unit and Remote control

1. Wipe them with dry soft cloth.

#### ■ Front panel

1. **Open the front grille.**
  - Hold the panel by the tabs on the two sides and lift it until it stops with a click.
2. **Clean the front panel.**
  - Wipe it with a soft cloth soaked in water.
  - Only neutral detergent may be used.
  - In case of washing the panel with water, dry it with cloth, dry it up in the shade after washing.
3. **Close the front panel.**
  - Push the panel at the 5 points indicated by ↑.
  - Operation without air filters may result in troubles as dust will accumulate inside the indoor unit.

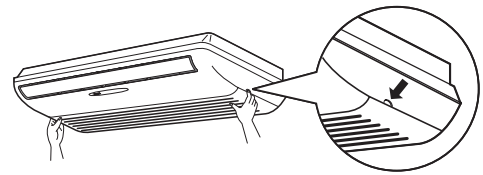


### CAUTION

- Don't touch the metal parts of the indoor unit. If you touch those parts, this may cause an injury.
- When removing or attaching the front panel, use a robust and stable stool and watch your steps carefully.
- When removing or attaching the front panel, support the panel securely with hand to prevent it from falling.
- For cleaning, do not use hot water above 40°C, benzene, gasoline, thinner, nor other volatile oils, polishing compound, scrubbing brushes, nor other hand stuff.
- After cleaning, make sure that the front panel is securely fixed.

## FILTERS

### 1. Open the front grille.



### 2. Pull out the air filter.

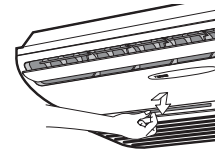
- Push upwards the tab at the center of each air filter, then pull it down.

### 3. Take off the air purifying filter, Photocatalytic deodorizing filter.

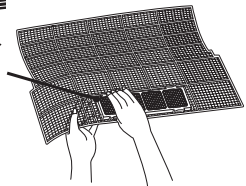
- Hold the tabs of the frame, and remove the claws in 4 places.

### 4. Clean or replace each filter.

- See below.

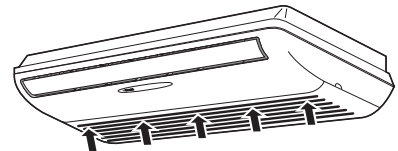


Air purifying filter  
or Photocatalytic  
deodorizing filter



### 5. Set the air filter, air purifying filter and photocatalytic deodorizing filter as they were and close the front grille.

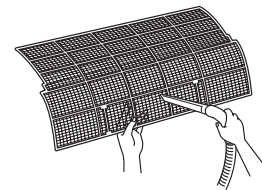
- Insert claws of the filters into slots of the front panel.
- Push the panel at the 5 points.



## ■ Air Filter

### 1. Wash the air filters with water or clean them with vacuum cleaner.

- If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water, then dry them up in the shade.
- It is recommended to clean the air filters every two weeks.

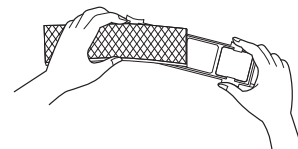


## ■ Air Purifying Filter (green)

(Replace approximately once every 3 months.)

### 1. Detach the filter element and attach a new one.

- Insert with the green side up.
- It is recommended to replace the air purifying filter every three months.



## ■ Photocatalytic Deodorizing Filter (gray)

#### [Maintenance]

### 1. Dry the photocatalytic deodorizing filter in the sun.

- After removing the dust with a vacuum cleaner, place the filter in the sun for approximately 6 hours. By drying the photocatalytic deodorizing filter in the sun, its deodorizing and antibacterial capabilities are regenerated.
- Because the filter material is paper, it can not be cleaned with water.
- It is recommended to dry the filter once every 6 months.

#### [Replacement]

### 1. Detach the filter element and attach a new one.

## Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.
Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.
Check that the drain comes smoothly out of the drain hose during COOL or DRY operation.
• If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.

## ■ Before a long idle period

1. **Operate the “FAN only” for several hours on a fine day to dry out the inside.**
  - Press “MODE selector button” and select “FAN” operation.
  - Press “ON/OFF button” and start operation.
2. **After operation stops, turn off the breaker for the room air conditioner.**
3. **Clean the air filters and set them again.**
4. **Take out batteries from the remote control.**
  - When a multi outdoor unit is connected, make sure the heating operation is not used at the other room before you use the fan operation.

## NOTE

- Operation with dirty filters :
  - (1) cannot deodorize the air.
  - (2) cannot clean the air.
  - (3) results in poor heating or cooling.
  - (4) may cause odour.
- The air purifying filter and Photocatalytic deodorizing filter cannot be reused, even if washed.
- In principle, there is no need to replace the photocatalytic deodorizing filter. Remove the dust periodically with a vacuum cleaner. However, it is recommended to replace the filter in the following cases.
  - (1) The paper material is torn or broken during cleaning.
  - (2) The filter has become extremely dirty after long use.
- To order air purifying filter or Photocatalytic deodorizing filter, contact to the service shop where you bought the air conditioner.
- Dispose of old air filters as non-burnable waste and Photocatalytic deodorizing filters as burnable waste.

Item	Part No.
Photocatalytic deodorizing filter (with frame)	KAZ917B41
Photocatalytic deodorizing filter (without frame)	KAZ917B42
Air purifying filter (with frame)	KAF925B41
Air purifying filter (without frame)	KAF925B42

## FVXS 25/35/50 B

**! CAUTION** Before cleaning, be sure to stop the operation and turn the breaker OFF.

### UNITS

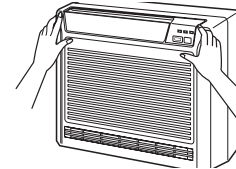
#### ■ Indoor unit, Outdoor unit and Remote control

1. Wipe them with dry soft cloth.

#### ■ Front grille

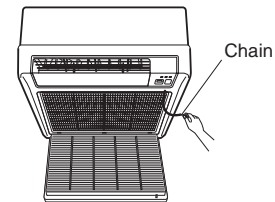
1. **Open the front panel.**

- Press the two “” places on the left and right of the front panel.



2. **Remove the front panel.**

- Remove the chain.
- Allowing the front panel to fall forward will enable you to remove it.

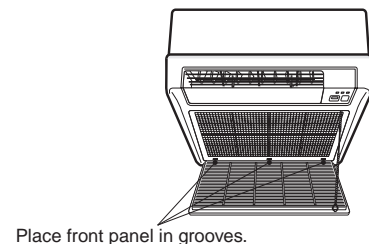


3. **Clean the front panel**

- Wipe softly with a damp cloth.
- Only neutral detergent may be used.
- In case of washing the front panel with water, dry it with cloth, dry it up in the shade after washing.

4. **Attach the front panel.**

- Insert the front panel into the grooves of the unit (3 places).
- Attach the chain to the right, inner-side of the front panel.
- Close the panel slowly.

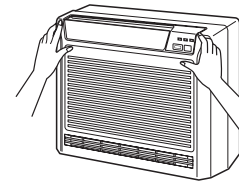


### **! CAUTION**

- Hold the front grille firmly so that it does not fall.
- Do not touch the metal parts on the inside of the indoor unit, as it may result in injury.
- When removing or attaching the front panel, use a robust and stable stool and watch your steps carefully.
- When removing or attaching the front panel, support the panel securely with hand to prevent it from falling.
- For cleaning, do not use hot water above 40°C, benzine, gasoline, thinner, nor other volatile oils, polishing compound, scrubbing brushes, nor other hand stuff.
- After cleaning, make sure that the front panel is securely fixed.

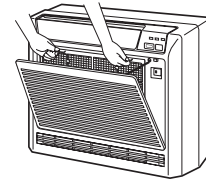
## FILTERS

### 1. Open the front grille.



### 2. Remove the air filter.

- Press the claws on the right and left of the air filter down slightly, then pull upward.



### 3. Take off the air purifying filter, Photocatalytic deodorizing filter.

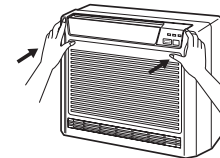
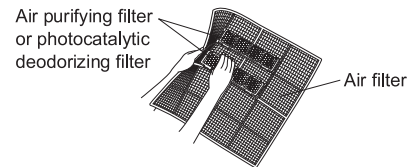
- Hold the tabs of the frame, and remove the claws in 4 places.

### 4. Clean or replace each filter.

- See below.

### 5. Set the air filter, air purifying filter and photocatalytic deodorizing filter as they were and close the front panel.

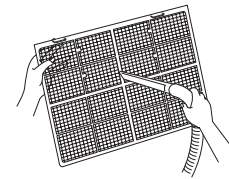
- Operation without air filters may result in troubles as dust will accumulate inside the indoor unit.



## ■ Air Filter

### 1. Wash the air filters with water or clean them with vacuum cleaner.

- If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water, then dry them up in the shade.
- It is recommended to clean the air filters every two weeks.

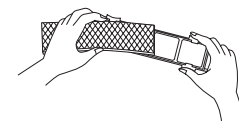


## ■ Air Purifying Filter (green)

(Replace approximately once every 3 months.)

### 1. Detach the filter element and attach a new one.

- Insert with the green side up.
- It is recommended to replace the air purifying filter every three months.



## ■ Photocatalytic Deodorizing Filter (gray)

### [Maintenance]

#### 1. Dry the photocatalytic deodorizing filter in the sun.

- After removing the dust with a vacuum cleaner, place the filter in the sun for approximately 6 hours. By drying the photocatalytic deodorizing filter in the sun, its deodorizing and antibacterial capabilities are regenerated.
- Because the filter material is paper, it can not be cleaned with water.
- It is recommended dry the filter once every 6 months.

### [Replacement]

#### 1. Detach the filter element and attach a new one.

## Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.
Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.
Check that the drain comes smoothly out of the drain hose during COOL or DRY operation.
• If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.

## ■ Before a long idle period

1. **Operate the “FAN only” for several hours on a fine day to dry out the inside.**
  - Press “MODE selector button” and select “FAN” operation.
  - Press “ON/OFF button” and start operation.
2. **After operation stops, turn off the breaker for the room air conditioner.**
3. **Clean the air filters and set them again.**
4. **Take out batteries from the remote control.**
  - When a multi outdoor unit is connected, make sure the heating operation is not used at the other room before you use the fan operation.

## NOTE

- Operation with dusty air filters lowers the cooling (heating) capacity and wastes energy. Air is also prevented from flowing smoothly through the unit creating a noise.
- Operation with dirty filters :
  - (1) cannot deodorize the air.                      (2) cannot clean the air.
  - (3) results in poor heating or cooling.      (4) may cause odour.
- The air purifying filter and Photocatalytic deodorizing filter cannot be reused, even if washed.
- In principle, there is no need to replace the photocatalytic deodorizing filter. Remove the dust periodically with a vacuum cleaner. However, it is recommended to replace the filter in the following cases.
  - (1) The paper material is torn or broken during cleaning.
  - (2) The filter has become extremely dirty after long use.
- To order air purifying filter or Photocatalytic deodorizing filter, contact to the service shop where you bought the air conditioner.
- Dispose of old air filters as non-burnable waste and Photocatalytic deodorizing filters as burnable waste.

Item	Part No.
Photocatalytic deodorizing filter (with frame)	KAZ917B41
Photocatalytic deodorizing filter (without frame)	KAZ917B42
Air purifying filter (with frame)	KAF925B41
Air purifying filter (without frame)	KAF925B42

## 2.2.15 Troubleshooting

### These cases are not troubles

The following cases are not air conditioner troubles but have some reasons. You may just continue using it.

Case	Explanation
<b>Operation does not start soon.</b> <ul style="list-style-type: none"> <li>When ON/OFF button was pressed soon after operation was stopped.</li> <li>When the mode was reselected.</li> </ul>	<ul style="list-style-type: none"> <li>This is to protect the air conditioner. You should wait for about 3 minutes.</li> </ul>
<b>Hot air does not flow out soon after the start of heating operation.</b>	<ul style="list-style-type: none"> <li>The air conditioner is warming up. You should wait for 1 to 4 minutes. (The system is designed to start discharging air only after it has reached a certain temperature.)</li> </ul>
<b>The heating operation stops suddenly and a flowing sound is heard.</b>	<ul style="list-style-type: none"> <li>The system is taking away the frost on the outdoor unit. You should wait for about 3 to 8 minutes.</li> </ul>
<b>The outdoor unit emits water or steam.</b>	<ul style="list-style-type: none"> <li>In HEAT mode               <ul style="list-style-type: none"> <li>The frost on the outdoor unit melts into water or steam when the air conditioner is in defrost operation.</li> </ul> </li> <li>In COOL or DRY mode               <ul style="list-style-type: none"> <li>Moisture in the air condenses into water on the cool surface of outdoor unit piping and drips.</li> </ul> </li> </ul>
<b>Mists come out of the indoor unit.</b>	<ul style="list-style-type: none"> <li>This happens when the air in the room is cooled into mist by the cold air flow during cooling operation.</li> </ul>
<b>The indoor unit gives out odour.</b>	<ul style="list-style-type: none"> <li>This happens when smells of the room, furniture, or cigarettes are absorbed into the unit and discharged with the air flow. (If this happens, we recommend you to have the indoor unit washed by a technician. Consult the service shop where you bought the air conditioner.)</li> </ul>
<b>The outdoor fan rotates while the air conditioner is not in operation.</b>	<ul style="list-style-type: none"> <li>After operation is stopped:               <ul style="list-style-type: none"> <li>The outdoor fan continues rotating for another 60 seconds for system protection.</li> </ul> </li> <li>While the air conditioner is not in operation:               <ul style="list-style-type: none"> <li>When the outdoor temperature is very high, the outdoor fan starts rotating for system protection.</li> </ul> </li> </ul>
<b>The operation stopped suddenly. (OPERATION lamp is on)</b>	<ul style="list-style-type: none"> <li>For system protection, the air conditioner may stop operating on a sudden large voltage fluctuation. It automatically resumes operation in about 3 minutes.</li> </ul>

## Check again

Please check again before calling a repair person.

Case	Check
The air conditioner does not operate. (OPERATION lamp is off)	<ul style="list-style-type: none"> <li>• Hasn't a breaker turned OFF or a fuse blown?</li> <li>• Isn't it a power failure?</li> <li>• Are batteries set in the remote control?</li> <li>• Is the timer setting correct?</li> </ul>
Cooling (Heating) effect is poor.	<ul style="list-style-type: none"> <li>• Are the air filters clean?</li> <li>• Is there anything to block the air inlet or the outlet of the indoor and the outdoor units?</li> <li>• Is the temperature setting appropriate?</li> <li>• Are the windows and doors closed?</li> <li>• Are the air flow rate and the air direction set appropriately?</li> <li>• Is the unit set to the INTELLIGENT EYE mode?</li> </ul>
Operation stops suddenly. (OPERATION lamp flashes)	<ul style="list-style-type: none"> <li>• Are the air filters clean?</li> <li>• Is there anything to block the air inlet or the outlet of the indoor and the outdoor units? Clean the air filters or take all obstacles away and turn the breaker OFF. Then turn it ON again and try operating the air conditioner with the remote control. If the lamp still flashes, call the service shop where you bought the air conditioner.</li> <li>• Are operation modes all the same for indoor units connected to outdoor units in the <b>multi system</b>? If not, set all indoor units to the same operation mode and confirm that the lamps flash. Moreover, when the operation mode is in "AUTO", set all indoor unit operation modes to "COOL" or "HEAT" for a moment and check again that the lamps are normal. If the lamps stop flashing after the above steps, there is no malfunction.</li> </ul>
An abnormal functioning happens during operation.	<ul style="list-style-type: none"> <li>• The air conditioner may malfunction with lightning or radio waves. Turn the breaker OFF, turn it ON again and try operating the air conditioner with the remote control.</li> </ul>

### Call the service shop immediately

#### **WARNING**

- When an abnormality (such as a burning smell) occurs, stop operation and turn the breaker OFF. Continued operation in an abnormal condition may result in troubles, electric shocks or fire. Consult the service shop where you bought the air conditioner.
- Do not attempt to repair or modify the air conditioner by yourself. Incorrect work may result in electric shocks or fire. Consult the service shop where you bought the air conditioner.

If one of the following symptoms takes place, call the service shop immediately.

- The power cord is abnormally hot or damaged.
- An abnormal sound is heard during operation.
- The safety breaker, a fuse, or the earth leakage breaker cuts off the operation frequently.
- A switch or a button often fails to work properly.
- There is a burning smell.
- Water leaks from the indoor unit.



Turn the breaker  
OFF and call the  
service shop.

- After a power failure  
The air conditioner automatically resumes operation in about 3 minutes. You should just wait for a while.

- Lightning  
If lightning may strike the neighbouring area, stop operation and turn the breaker OFF for system protection.

### Disposal requirements



Your air conditioning product is marked with this symbol. This means that electrical and electronic products shall not be mixed with unsorted household waste.

Do not try to dismantle the system yourself: the dismantling of the air conditioning system, treatment of the refrigerant, of oil and of other parts must be done by a qualified installer in accordance with relevant local and national legislation.

Air conditioners must be treated at a specialized treatment facility for re-use, recycling and recovery. By ensuring this product is disposed of correctly, you will help to prevent potential negative consequences for the environment and human health. Please contact the installer or local authority for more information.

Batteries must be removed from the remote control and disposed of separately in accordance with relevant local and national legislation.

### We recommend periodical maintenance

In certain operating conditions, the inside of the air conditioner may get foul after several seasons of use, resulting in poor performance. It is recommended to have periodical maintenance by a specialist aside from regular cleaning by the user. For specialist maintenance, contact the service shop where you bought the air conditioner.

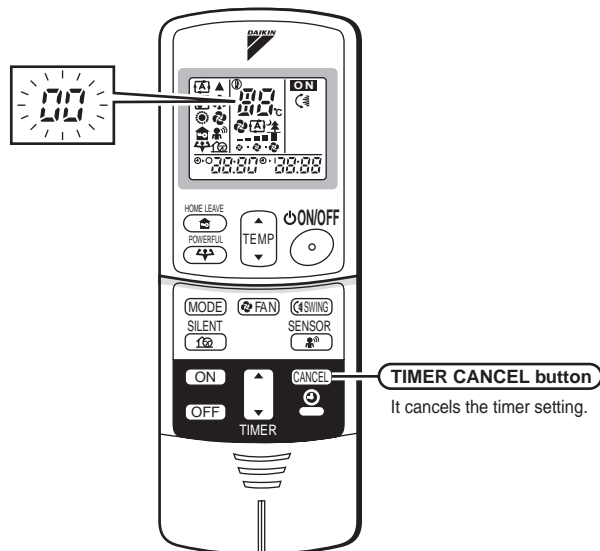
The maintenance cost must be born by the user.

## Fault diagnosis

### Fault diagnosis by remote control

In the ARC433A series, the temperature display sections on the main unit indicate corresponding codes.

1. When the **TIMER CANCEL** button is held down for 5 seconds, a “00” indication flashes on the temperature display section.



2. Press the **TIMER CANCEL** button repeatedly until a continuous beep is produced.




































































- The code indication changes as shown below, and notifies with a long beep.

	CODE	MEANING
<b>SYSTEM</b>	00	NORMAL
	U0	REFRIGERANT SHORTAGE
	U2	DROP VOLTAGE OR MAIN CIRCUIT OVERVOLTAGE
	U4	FAILURE OF TRANSMISSION (BETWEEN INDOOR UNIT AND OUTDOOR UNIT)
<b>INDOOR UNIT</b>	A1	INDOOR PCB DEFECTIVENESS
	A5	HIGH PRESSURE CONTROL OR FREEZE-UP PROTECTOR
	A6	FAN MOTOR FAULT
	C4	FAULTY HEAT EXCHANGER TEMPERATURE SENSOR
	C9	FAULTY SUCTION AIR TEMPERATURE SENSOR
<b>OUTDOOR UNIT</b>	EA	COOLING-HEATING SWITCHING ERROR
	E5	OL STARTED
	E6	FAULTY COMPRESSOR START UP
	E7	DC FAN MOTOR FAULT
	E8	OPERATION HALT DUE TO DETECTION OF INPUT OVER CURRENT
	F3	HIGH TEMPERATURE DISCHARGE PIPE CONTROL
	F6	HIGH PRESSURE CONTROL (IN COOLING)
	H6	OPERATION HALT DUE TO FAULTY POSITION DETECTION SENSOR
	H8	CT ABNORMALITY
	H9	FAULTY SUCTION AIR TEMPERATURE SENSOR
	J3	FAULTY DISCHARGE PIPE TEMPERATURE SENSOR
	J6	FAULTY HEAT EXCHANGER TEMPERATURE SENSOR
	L4	HIGH TEMPERATURE AT INVERTER CIRCUIT HEATSINK
	L5	OUTPUT OVERCURRENT
	P4	FAULTY INVERTER CIRCUIT HEATSINK TEMPERATURE SENSOR

## NOTE

1. A short beep and two consecutive beeps indicate non-corresponding codes.
2. To cancel the code display, hold the **TIMER CANCEL** button down for 5 seconds. The code display also cancel itself if the button is not pressed for 1 minute.

## LED ON OUTDOOR UNIT PCB 3MXS, 3MKS, 4MXS, 4MKS series

GREEN	RED				
MICROCOMPUTER NORMAL	MALFUNCTION DETECTION				
LED_A	LED1	LED2	LED3	LED4	DIAGNOSIS
					NORMAL→CHECK INDOOR UNIT
					HIGH PRESSURE PROTECTOR WORKED OR FREEZE-UP IN OPERATING UNIT OR STAND-BY UNIT
					* OVERLOAD RELAY WORKED OR HIGH DISCHARGE PIPE TEMPERATURE
					FAULTY COMPRESSOR START
					INPUT OVERCURRENT
					* THERMISTOR OR CT ABNORMALITY
					HIGH TEMPERATURE SWITCHBOX
					HIGH TEMPERATURE AT INVERTER CIRCUIT HEATSINK
					* OUTPUT OVERCURRENT
					* REFRIGERANT SHORTAGE
					LOW VOLTAGE TO MAIN CIRCUIT OR MOMENTARY VOLTAGE LOSS
					REVERSING SOLENOID VALVE SWITCHING FAILURE
					FAN MOTOR FAULT
	—	—	—	—	[NOTE 1]
	—	—	—	—	POWER SUPPLY FAULT OR [NOTE 2]

GREEN	NORMALLY FLASHING
RED	NORMALLY OFF
☀	ON
☀	FLASHING
●	OFF
-	IRRELEVANT

## LED ON OUTDOOR UNIT PCB 2MXS, 2MKS serie

GREEN	
MICROCOMPUTER NORMAL	
LED_A	DIAGNOSIS
☀	NORMAL→CHECK INDOOR UNIT
☀	[NOTE 1]
●	POWER SUPPLY FAULT OR [NOTE 2]

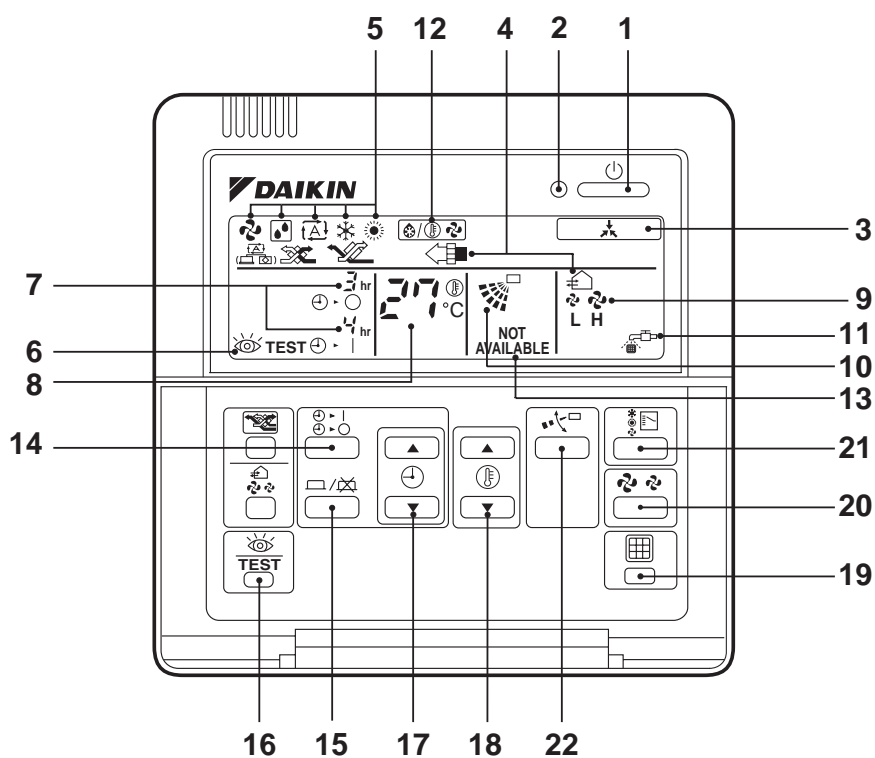
GREEN	NORMALLY FLASHING
☀	ON
☀	FLASHING
●	OFF

## NOTES

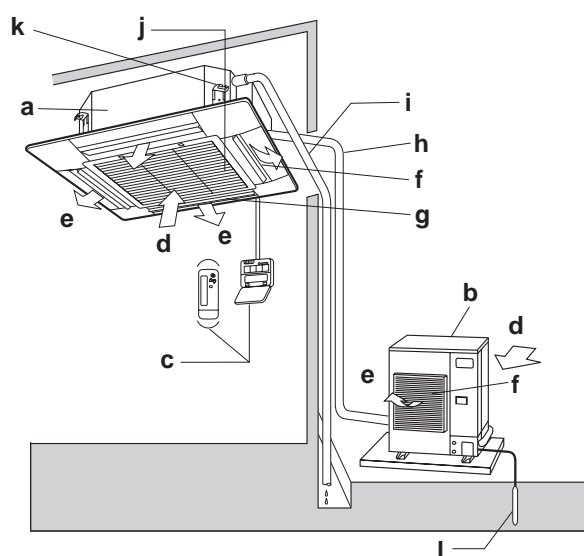
1. Turn the power off and then on again. If the LED display recurs, the outdoor unit PCB is faulty.
2. Diagnosis marked

\*Do not apply to some cases. For details, refer to the service guide.

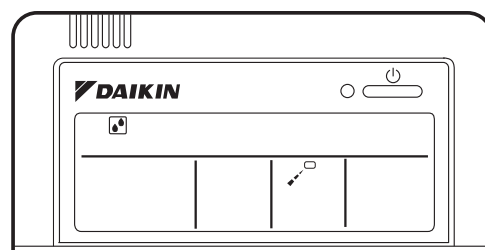
## 2.3 Ceiling Mounted Cassette Type



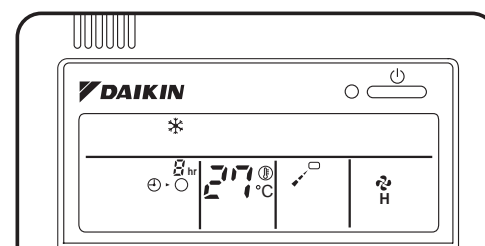
1



2



3

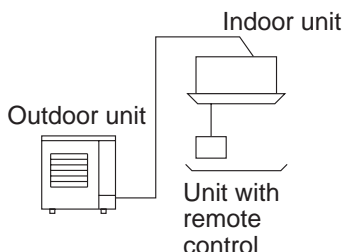


4

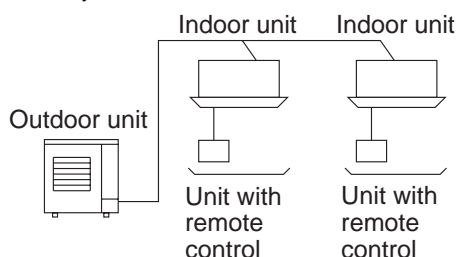
## 1. What to do before operation

This operation manual is for the following systems with standard control. Before initiating operation, contact your Daikin dealer for the operation that corresponds to your system.

- Pair system



- Multi system



### NOTE

- If the unit you purchased is controlled by an infrared remote control, also refer to the infrared remote control's operation manual.

If your installation has a customized control system, ask your Daikin dealer for operation that corresponds to your system.

- Heat pump type  
This system provides cooling, heating, automatic, program dry, and fan operation modes.
- Cooling only type  
This system provides cooling, program dry, and fan operation modes.

### Precautions for group control system or two remote control control system

This system provides two other control systems beside individual control (one remote control controls one indoor unit) system. Confirm the following if your unit is of the following control system type.

- **Group control system**  
One remote control controls up to 16 indoor units.  
All indoor units are equally set.
- **Two remote controls control system**  
Two remote controls control one indoor unit  
(In case of group control system, one group of indoor units)  
The unit is individually operated.

### NOTE

- Contact your Daikin dealer in case of changing the combination or setting of group control and two remote controls control system.

### Names and functions of parts

Refer to figure 2 on page [1]

<b>a</b>	Indoor unit
<b>b</b>	Outdoor unit <ul style="list-style-type: none"> <li>• The external appearance of the outdoor unit varies depending on its capacity class. The outdoor unit shown in the figure is for reference to indicate features. Contact your Daikin Dealer and verify which outdoor unit you have.</li> </ul>
<b>c</b>	Remote control
<b>d</b>	Inlet air
<b>e</b>	Discharged air
<b>f</b>	Air outlet
<b>g</b>	Air flow flap (at air outlet)
<b>h</b>	Refrigerant piping, connection electric wire
<b>i</b>	Drain pipe
<b>j</b>	Air inlet The built-in air filter removes dust and dirt.
<b>k</b>	Drain pumping out device (built-in) Drains water removed from the room during cooling.
<b>l</b>	Ground wire Wire to ground from the outdoor unit to prevent electrical shocks.

## 2. Safety considerations

We recommend that you read this instruction manual carefully before use to gain full advantage of the function of the air conditioner, and to avoid malfunction due to erroneous handling.

This air conditioner comes under the term “appliances not accessible to the general public”.

- **The precautions described below are WARNING and CAUTION. These are very important precautions concerning safety. Be sure to observe all of them without fail.**



### WARNING

These are the matters with possibilities leading to serious consequences such as death or serious injury due to erroneous handling.



### CAUTION

These are the matters with possibilities leading to injury or material damage due to erroneous handling including probabilities leading to serious consequences in some cases.

- **After reading, keep this manual at a place where any user can read at any time. Furthermore, make certain that this operation manual is handed to a new user when he takes over the operation.**



### WARNING

**Avoid exposure of your body directly to the cold air for a long time, or avoid excessive exposure of your body to the cold air.**

Otherwise, your physical condition may be deteriorated and/or your health may be ruined.

**When the air conditioner is in abnormal conditions (smell of something burning, etc), unplug the power cord from the outlet, and contact the dealer where you purchased the air conditioner.**

Continued operation under such circumstances may result in a failure, electric shock, and fire.

**Ask your dealer for installation of the air conditioner.** Incomplete installation performed by yourself may result in a failure, a water leakage, electric shock, and fire.

**Ask your dealer for improvement, repair and maintenance.**

Incomplete improvement, repair, and maintenance may result in a failure, a water leakage, electric shock, and fire.

**Do not insert your finger, a stick, etc., into the air inlet, outlet, and fan blades.**

A fan in high-speed running may result in injury.

**For refrigerant leakage, consult your dealer.**

When the air conditioner is to be installed in a small room, it is necessary to take proper measures so that the amount of any leaked refrigerant dose not exceed the limiting concentration even when it leaks. If the refrigerant leaks exceeding the level of limiting concentration, an oxygen deficiency accident may happen.

**For installation of separately sold component parts, ask a specialist.**

Be sure to use the separately sold component parts designated by our company.

Incomplete installation performed by yourself may result in a failure, a water leakage, electric shock, and fire.

**Ask your dealer to move and reinstall the air conditioner.**

Incomplete installation may result in a failure, a water leakage, electric shock, and fire.

**The refrigerant in the air conditioner is safe and normally does not leak. If the refrigerant leaks inside the room, the contact with a fire of a burner, a heater or a cooker may result in a harmful gas.**

Do not use the air conditioner until when a service person confirms to finish repairing the portion where the refrigerant leaks.



### CAUTION

**Do not use the air conditioner for other purposes.**

Do not use the air conditioner for a special application such as the storage of foods, animals and plants, precision machines, and art objects as otherwise the deterioration of quality may result.

**Do not remove the air outlet of the outdoor unit.**

The fan may get exposed and result in injury.

**When the air conditioner is used in combination with burners or heaters, perform sufficient ventilation.**

Insufficient ventilation may result in an oxygen deficiency accident.

**Check and make sure that foundation blocks are not damaged after a long use.**

If they are left in a damaged condition, the unit may fall and result in injury.

**Neither place a flammable spray bottle near the air conditioner nor perform spraying.**

Doing so may result in a fire.

**To clean the air conditioner, stop operation, and unplug the power cord from the outlet.**

Otherwise, an electric shock and injury may result.

**Do not operate the air conditioner with a wet hand.**

An electric shock may result.

**Do not use any fuse with improper capacity.**

The use of piece of wire and what not may result in a failure and fire.

**Do not place a burner or heater at a place directly exposed to the wind from the air conditioner.**

Incomplete combustion of the burner or heater may result.

**Do not allow a child to mount on the outdoor unit or avoid placing any object on it.**

Falling or tumbling may result in injury.

**Do not expose animals and plants directly to the wind from the air conditioner.**

Adverse influence to animals and plants may result.

**Do not wash the air conditioner with water.**

An electrical shock may result.

**Do not install the air conditioner at any place where flammable gas may leak out.**

If the gas leaks out and stays around the air conditioner, a fire may break out.

**Be sure to install an earth leakage breaker.**

Unless it is installed, an electric shock may result.

**Be sure the air conditioner is electrically grounded.**

Do not connect the grounding conductor to a gas pipe, water pipe, lightning arrester and the grounding conductor for a telephone.

Imperfect grounding work may result in an electric shock.

**Execute complete drain piping for perfect drainage.**

Incomplete piping may result in a water leakage.

**The appliance is not intended for use by young children or infirm persons without supervision. Young children should be supervised to ensure that they do not play with the appliance.**

### 3. Operation range

If the temperature or the humidity is beyond the following conditions, safety devices may work and the air conditioner may not operate, or sometimes, water may drop from the indoor unit.

#### COOLING

OUTDOOR UNIT	INDOOR		OUTDOOR TEMPERATURE
	TEMPERATURE	HUMIDITY	
RS50 · 60 RKS25 · 35 · 50 · 60 RXS25 · 35 · 50 · 60	D B	21 to 32	D B -10 to 46 (-5)
	W B	14 to 23	
3MKS50 4MKS58 · 75 · 90 3MXS52 4MXS68 · 80	D B	21 to 32	D B -10 to 46
	W B	14 to 23	

#### HEATING

OUTDOOR UNIT	INDOOR TEMPERATURE		OUTDOOR TEMPERATURE	
			DB	WB
RXS25 · 35	DB	10 to 30	DB	-14 to 24
			WB	-15 to 20
RXS50 · 60	DB	10 to 30	DB	-14 to 24
			WB	-15 to 18
3MXS52 4MXS68 · 80	DB	10 to 30	DB	-14 to 21
			WB	-15 to 15.5

DB: Dry bulb temperature (°C)

WB: Wet bulb temperature (°C)

The setting temperature range of the remote control is 16°C to 32°C.

The numerical value in a parenthesis shows the operation range of the model for Australia.

### 4. Installation site

#### Regarding places for installation

- **Is the air conditioner installed at a well-ventilated place where there are no obstacles around?**
- **Do not use the air conditioner in the following places.**
  - Filled with much mineral oil such as cutting oil.
  - Where there is much salt such as a beach area.
  - Where sulfured gas exists such as a hot-spring resort.
  - Where there are considerable voltage fluctuations such as a factory or plant.
  - Vehicles and vessels.
  - Where there is much spray of oil and vapor such as a cookery, etc.
  - Where there are machines generating electromagnetic waves.
  - Filled with acid and/or alkaline steam or vapor
- **Is a snow protection measure taken?**  
For details, consult your dealer.

#### Regarding wiring

- **All wiring must be performed by an authorized electrician.**  
To do wiring, ask your dealer. Never do it by yourself.
- **Make sure that a separate power supply circuit is provided for this air conditioner and that all electrical work is carried out by qualified personnel according to local laws and regulations.**

#### Pay attention to running noises, too

- **Are the following places selected?**
  - A place that can sufficiently withstand the weight of the air conditioner with less running noises and vibrations.
  - A place where the hot wind discharged from the air outlet of outdoor unit and the running noises.
- **Are you sure that there are no obstacles near the air outlet of the outdoor unit?**  
Such obstacles may result in declined performance and increased running noises.
- **If abnormal noises occur in use, stop the operation of the air conditioner, and then consult your dealer or our service station.**




















#### Regarding drainage of drain piping

- **Is the drain piping executed to perform complete drainage?**

If proper drainage is not carried out from the outdoor drain pipes during air-conditioning operation, chances are that dust and dirt are clogged in the pipe. This may result in a water leakage from the indoor unit. Under such circumstances, stop the operation of the air conditioner, and then consult your dealer or our service station.

## 5. Name and function of each switch and display on the remote control

Refer to figure 1 on page [1]

	<b>ON/OFF BUTTON</b>
1	Press the button and the system will start. Press the button again and the system will stop.
2	<b>OPERATION LAMP (RED)</b> The lamp lights up during operation.
3	<b>DISPLAY “” (UNDER CENTRALIZED CONTROL)</b> When this display shows, the system is UNDER CENTRALIZED CONTROL.
4	<b>DISPLAY “   ” (VENTILATION/AIR CLEANING)</b> This display shows that the total heat exchange and the air cleaning unit are in operation (These are optional accessories).
5	<b>DISPLAY “” “” “” “” “” (OPERATION MODE)</b> This display shows the current OPERATION MODE. For cooling only type, “  ” (Auto) and “  ” (Heating) are not installed.
6	<b>DISPLAY “ TEST” (INSPECTION/TEST OPERATION)</b> When the INSPECTION/TEST OPERATION BUTTON is pressed, the display shows the system mode is in.
7	<b>DISPLAY “” (PROGRAMMED TIME)</b> This display shows the PROGRAMMED TIME of the system start or stop.
8	<b>DISPLAY “” (SET TEMPERATURE)</b> This display shows the set temperature.
9	<b>DISPLAY “” (FAN SPEED)</b> This display shows the set fan speed.
10	<b>DISPLAY “” (AIR FLOW FLAP)</b> Refer to “AIR FLOW DIRECTION ADJUST”.
11	<b>DISPLAY “” (TIME TO CLEAN AIR FILTER)</b> Refer to “HOW TO CLEAN THE AIR FILTER”.
12	<b>DISPLAY “” (DEFROST)</b> Refer to “DEFROST OPERATION”.
13	<b>NON-FUNCTIONING DISPLAY</b> If that particular function is not available, pressing the button may display the words “NOT AVAILABLE” for a few seconds. When running multiple units simultaneously, the “NOT AVAILABLE” message will only appear if none of the indoor units is equipped with the function. If even one unit is equipped with the function, the display will not appear.
14	<b>TIMER MODE START/STOP BUTTON</b> Refer to “PROGRAM TIMER OPERATION”.

15	<b>TIMER ON/OFF BUTTON</b> Refer to “PROGRAM TIMER OPERATION”.
16	<b>INSPECTION/TEST OPERATION BUTTON</b> This button is used only by qualified service persons for maintenance purposes.
17	<b>PROGRAMMING TIME BUTTON</b> Use this button for programming “START and/or STOP” time.
18	<b>TEMPERATURE SETTING BUTTON</b> Use this button for SETTING TEMPERATURE.
19	<b>FILTER SIGN RESET BUTTON</b> Refer to “HOW TO CLEAN THE AIR FILTER”.
20	<b>FAN SPEED CONTROL BUTTON</b> Press this button to select the fan speed, HIGH or LOW, of your choice.
21	<b>OPERATION MODE SELECTOR BUTTON</b> Press this button to select OPERATION MODE.
22	<b>AIR FLOW DIRECTION ADJUST BUTTON</b> Refer to “AIR FLOW DIRECTION ADJUST”.
<b>NOTE</b> • For the sake of explanation, all indications are shown on the display in figure 1 contrary to actual running situations.	

## 6. Operation procedure

Refer to figure 1 on page [1]

- Operating procedure varies with heat pump type and cooling only type. Contact your Daikin dealer to confirm your system type.
- To protect the unit, turn on the main power switch 6 hours before operation.
- If the main power supply is turned off during operation, operation will restart automatically after the power turns back on again.




### Cooling, heating, automatic, fan, and program dry operation

Operate in the following order.





### Operation mode selector

Press OPERATION MODE SELECTOR button several times and select the OPERATION MODE of your choice as follows.

- COOLING OPERATION.....“”
- HEATING OPERATION .....“”
- AUTOMATIC OPERATION .....“”

- In this operation mode, COOL/HEAT changeover is automatically conducted.

- FAN OPERATION.....“”
- DRY OPERATION .....“”
  - The function of this program is to decrease the humidity in your room with the minimum temperature decrease.
  - Micro computer automatically determines TEMPERATURE and FAN SPEED.
  - This system does not go into operation if the room temperature is below 16°C.

Refer to figure 3 on page [1]

- For cooling only type, “COOLING”, “FAN” and “DRY” operation are able to select.




#### Press ON/OFF button


OPERATION lamp lights up or goes off and the system starts or stops OPERATION.

#### [EXPLANATION OF HEATING OPERATION]

##### DEFROST OPERATION

- As the frost on the coil of an outdoor unit increase, heating effect decreases and the system goes into DEFROST OPERATION.
- The indoor unit fan stops and the remot control display shows “”.
- After 6 to 8 minutes (maximum 10 minutes) of DEFROST OPERATION, the system returns to HEATING OPERATION.

##### Regarding outside air temperature and heating capacity

- The heating capacity of the air conditioner declines as the outside air temperature falls.  
In such a case, use the air conditioner in combination with other heating systems.
- A warm air circulating system is employed, and therefore it takes some time until the entire room is warmed up after the start of operation.
- An indoor fan runs to discharge a gentle wind automatically until the temperature inside the air conditioner reaches a certain level. At this time, the remote control displays “”. Leave it as it stands and wait for a while.
- When the warm air stays under the ceiling and your feet are cold, we recommend that you use a circulator (a fan to circulate the air inside the room). For details, consult your dealer.

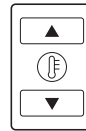
#### Adjustment

For programming TEMPERATURE, FAN SPEED and AIR FLOW DIRECTION, follow the procedure shown below.



#### Temperature setting

Press TEMPERATURE SETTING button and program the setting temperature.



Each time this button is pressed, setting temperature rises 1°C

Each time thus button is pressed, setting temperature lowers 1°C

- The setting is impossible for fan operation.

#### NOTE

- The setting temperature range of the remote control is 16°C to 32°C.



#### Fan speed control

Press FAN SPEED CONTROL button.

High or Low fan speed can be selected.

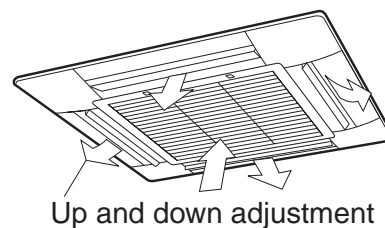
Micro computer may sometimes control the fan speed in order to protect the unit.



#### Air flow direction adjust

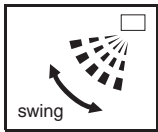
- There are 2 ways of adjusting the air discharge angle
  1. A. Up and down adjustment
  2. B. Left and right direction

Fig 1



- The movable limit of the flap is changeable.  
Contact your Daikin dealer for details.

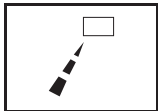
### Press the AIR FLOW DIRECTION ADJUST button to select the air direction as following.



The AIR FLOW FLAP display swings as shown left and the air flow direction continuously varies. (Automatic swing setting)



Press AIR FLOW DIRECTION ADJUST button to select the air direction of your choice.



The AIR FLOW FLAP display stops swinging and the air flow direction is fixed (Fixed air flow direction setting).

#### Movement of the air flow flap

For the following conditions, micro computer controls the air flow direction so it may be different from the display.

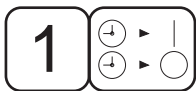
Operation mode	Heating
Operation condition	<ul style="list-style-type: none"> <li>When starting operation</li> <li>When room temperature is higher than the set temperature</li> <li>At defrost operation (Air is blown horizontally to prevent the cool air from being blown directly onto anyone in the room.)</li> </ul>

Operation mode includes automatic operation.

#### Program timer operation

Operate in the following order.

- The timer is operated in the following two ways.
- Programming the stop time (  $\oplus \cdot \bigcirc$  ) ... The system stops operating after the set time has elapsed.
- Programming the start time (  $\oplus \cdot |$  ) ... The system starts operating after the set time has elapsed.
- The timer can be programmed a maximum of 72 hours.
- The start and the stop time can be simultaneously programmed.



### Timer mode START/STOP

Press the TIMER MODE START/STOP button several times and select the mode on the display.

The display flashes.

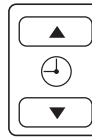
For setting the timer stop ... "  $\oplus \cdot \bigcirc$  "

For setting the timer start ... "  $\oplus \cdot |$  "



### Programming time

Press the PROGRAMMING TIME button and set the time for stopping or starting the system.



When this button is pressed, the time advances by 1 hour.



When this button is pressed, the time goes backward by 1 hour.



### Timer ON/OFF

Press the TIMER ON/OFF button.

The timer setting procedure ends.

The display "  $\oplus \cdot \bigcirc$  " or "  $\oplus \cdot |$  " changes from flashing light to a constant light.

Refer to figure 4 on page [1]

#### NOTE

- When setting the timer OFF and On at the same time, repeat the above procedure from 1 to 3 once again.

When the timer is programmed to stop the system after 3 hours and start the system after 4 hours, the system will stop after 3 hours and then 1 hour later the system will start.

- After the timer is programmed, the display shows the remaining time.
- Press the TIMER ON/OFF button once again to cancel programming. the display vanishes.

## 7. Optimum operation

Observe the following precautions to ensure the system operates.

- Adjust the room temperature properly for a comfortable environment. Avoid excessive heating or cooling.
- Prevent direct sunlight from entering a room during cooling operation by using curtains or blinds.
- Ventilate the room regularly.  
Using the unit for long periods of time requires attentive ventilation of the room.
- Do not place items that might be damaged by water under the indoor unit.  
Water may condensate and drip if the humidity reaches 80% or if the drain exit gets clogged.
- Keep doors and windows closed. If the doors and windows remain open, room air will flow out and cause to decrease the effect of cooling and heating.
- Do not place other heaters directly below the indoor unit. They may deform due to the heat.
- Never place objects near the air inlet and the air outlet of the unit. It may cause deterioration in the effect or stop in the operation.
- Turn off the main power supply switch when it is not used for long periods of time. When the main power switch is turned on, some watts of electricity is being used even if the system is not operating. Turn off the main power supply switch for saving energy. When reoperating, turn on the main power supply switch 6 hours before operation for smooth running (Refer to MAINTENANCE)
- When the display shows "  $\text{FILT}$  " (TIME TO CLEAN AIR FILTER), ask a qualified service person to clean the filters (Refer to MAINTENANCE).


## 8. Maintenance (For service personnel)

Only a qualified service person is allowed to perform maintenance

### IMPORTANT!

- Before obtaining access to terminal devices, all power supply circuits must be interrupted
- To clean the air conditioner, be sure to stop operation, and turn the power switch off. Otherwise, an electric shock and injury may result.
- Do not wash the air conditioner with water. Doing so may result in an electric shock.
- Be careful with a scaffold or staging. Caution must be exercised because of work at a high place.

### How to clean the air filter

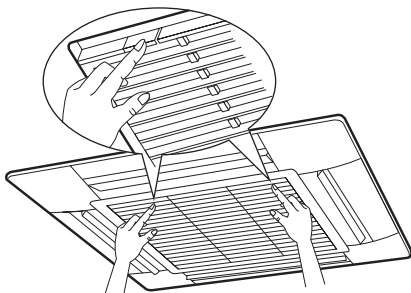
Clean the air filter when the display shows “” (TIME TO CLEAN AIR FILTER).

It will display that it will operate for a set amount of time. Increase the frequency of cleaning if the unit is installed in a room where the air is extremely contaminated. If the dirt becomes impossible to clean, change the air filter (Air filter for exchange is optional)

#### 1. Open the suction grille

Push it downward slowly while pressing horizontally the buttons provided on two spots.  
(Follow the same procedure for closing).

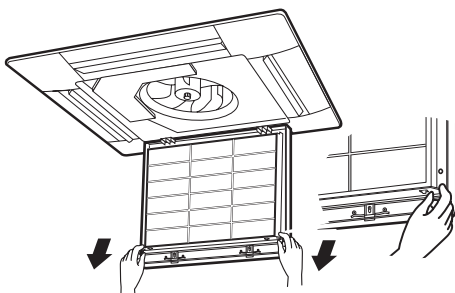
Fig. 1



#### 2. Detach the air filter

Pull the hook of the air filter out diagonally downward, and remove the filter.

Fig. 2



#### 3. Clean the air filter

Use a vacuum cleaner **A)** or wash the air filter with water **B)**.

#### A) Using a vacuum cleaner



#### B) Washing with water

When the air filter is very dirty, use soft brush and neutral detergent.



Remove water and dry in the shade.

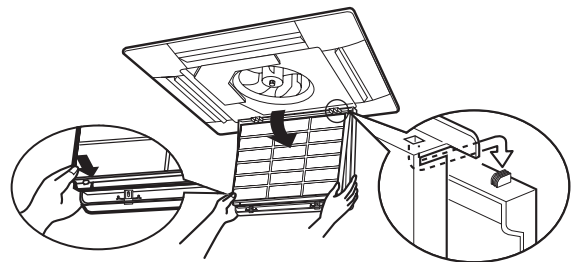
### NOTE

- Do not wash the air conditioner with hot water of more than 50°C, as doing so may result in discoloration and/or deformation.
- Do not expose it to fire, as doing so may result in burning.

#### 4. Fix the air filter

- (1) Hook the air filter to a protrusion on the suction grille.
- (2) Push the lower part of the air filter onto the protrusion at the lower part of the suction grille, and fix the air filter there.

Fig. 3



#### 5. Shut the suction grille.

Refer to item No. 1.

#### 6. After turning on the power, press FILTER SIGN RESET button.

The “TIME TO CLEAN AIR FILTER” display vanishes.

### How to clean air outlet and outside panels

- Clean with soft cloth.
- When it is difficult to remove stains, use water or neutral detergent.

### NOTE

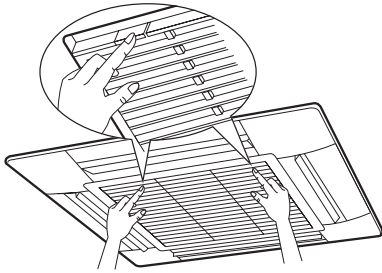
- Do not use gasoline, benzene, thinner, polishing powder, liquid insecticide. It may cause discoloring or warping.
- Do not let the indoor unit get wet. It may cause an electric shock or a fire.
- Do not use water or air of 50°C or higher for cleaning air filters and outside panels.

### How to clean the suction grille

#### 1. Open the suction grille.

Push it downward slowly while pressing horizontally the buttons provided on two spots. (Follow the same procedure for closing.)

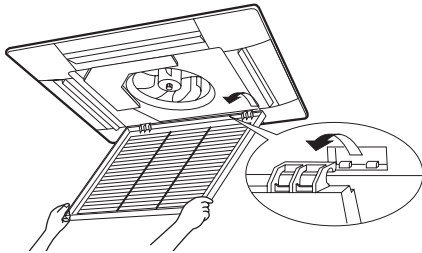
Fig. 4



## 2. Detach the suction grille.

Open the suction grille 45 degrees and lift it upward.

Fig. 5



## 3. Detach the air filter.

Refer to "How to clean the air filter".  
(Refer to Fig. 2)

## 4. Clean the suction grille.

Wash with a soft bristle brush and neutral detergent or water, and dry thoroughly.

### When very grimy

Directly apply the type of detergent used for cleaning ventilation fans or ovens, wait 10 minutes, and then rinse with water.



## 5. Fix the air filter.

Refer to "How to clean the air filter".  
(Refer to Fig. 3)

## 6. Fix the suction grille.

Refer to item No. 2.

## 7. Shut the suction grille.

Refer to item No. 1.

## Start up after a long stop

### Confirm the following

- Check that the air inlet and outlet are not blocked. Remove any obstacle.
- Check if the earth is connected.  
Might there be a broken wire somewhere?  
Contact your dealer if there are any problems.

### Clean the air filter and outside panels

- After cleaning the air filter, make sure to attach it.

### Turn on the main power supply switch

- The display on the remote control will be shown when the power is turned on.
- To protect the unit, turn on the main power switch at least 6 hours before operation.

## What to do when stopping the system for a long period

Turn on FAN OPERATION for half a day and dry the unit.

- Refer to "6. Operation procedure".

### Cut off the power supply.

- When the main power switch is turned on, some watts of electricity is being used even if the system is not operating. Turn off the main power supply switch for saving energy.
- The display on the remote control will vanish when the main power switch is turned off.

### Clean the air filter and the exterior.

- Be sure to replace the air filter to its original place after cleaning. Refer to "Maintenance".

## 9. Not malfunction of the air conditioner

The following symptoms do not indicate air conditioner malfunction

### I. The system does not operate

- **The system does not restart immediately after the ON/OFF button is pressed.**

If the OPERATION lamp lights, the system is in normal condition.

It does not restart immediately because a safety device operates to prevent overload of the system. After 3 minutes, the system will turn on again automatically.

- **The system does not restart immediately when TEMPERATURE SETTING button is returned to the former position after pushing the button.**

If the OPERATION lamp lights, the system is in normal condition.

It does not restart immediately because a safety device operates to prevent overload of the system. After 3 minutes, the system will turn on again automatically.

- **The system does not start when the display shows "⏸" (UNDER CENTRALIZED CONTROL) and it flashes for few seconds after pressing an operation button.**

This is because the system is under centralized control. Flashes on the display indicates that the system cannot be controlled by the remote control.

- **The system does not start immediately after the power supply is turned on.**

Wait one minute until the micro computer is prepared for operation.

- **The outdoor unit is stopped.**

This is because the room temperature has reached the set temperature. The indoor unit switches to fan operation.

### II. The display shows "⏸" (UNDER CENTRALIZED CONTROL) and the unit operates in a mode different to what is shown on the remote control display.

When using a unit in a multi system, the operation condition of that unit is controlled by a micro computer as described below, according to the operation condition of other indoor units connected to the system.

- If the operation mode does not match other indoor units that are already running, the indoor unit will assume the STANDBY state (the fan is stopped and the air flow flap is positioned horizontally).  
If HEATING mode is set together with COOLING, DRY or FAN mode, the above mentioned condition will occur.

#### NOTE

- Normally, the operation mode in the room where the unit is first run is given priority, but the following situations are exceptions, so please keep this in mind.
  - a. If the operation mode of the first room is **FAN Mode**, then using **Heating Mode** in any room after this will give priority to heating. In this situation, the air conditioner running in FAN Mode will go on standby.
  - b. With the Priority Room Setting active.  
Contact your Daikin dealer for the operation that corresponds to your system.
- If the total capacity of operating indoor units exceeds the limit, the indoor unit will assume the STANDBY state (FAN and AIR FLOW DIRECTION will be left as set). (This only applies to cooling only type.)
- If another indoor unit commences a HEATING operation after this indoor unit is running in COOLING mode, this indoor unit may switch to DRY operation (fan on low, air flow flap set at horizontal).

#### III. The fan speed is different from the setting.

- **Pressing the fan speed control button does not change the fan speed.**  
When the room temperature reaches the set temperature in heating mode, the power supply from the outdoor unit is stopped and the indoor unit will operate on the low fan setting. (If using the multi system, the fan will alternate between off and low.)  
This is to prevent the cool air from being blown directly onto anyone in the room.

#### IV. Air blow direction is not as specified.

- **Actual air blow direction is not as shown on the remote control.**
- **Automatic swing setting does not work.**  
Refer to "AIR FLOW DIRECTION ADJUST."

#### V. White mist comes out of a unit

- **When humidity is high during cooling operation (In oily or dusty places)**  
If the inside of an indoor unit is extremely contaminated, the temperature distribution inside a room becomes uneven. It is necessary to clean the inside of the indoor unit. Ask your Daikin dealer for details on cleaning the unit. This operation requires a qualified service person.
- **When the system is changed over to HEATING OPERATION after DEFROST OPERATION.**  
Moisture generated by DEFROST becomes steam and exists.

#### VI. Noise of air conditioners

##### **A ringing sound after the unit is started.**

This sound is generated by the temperature regulator working.  
It will quiet down after about a minute.

- **A continuous flow "Shuh" sound is heard when the system is in COOLING or DEFROST OPERATION.**  
This is the sound of refrigerant gas flowing through both indoor and outdoor units.
- **A "Shuh" sound which is heard at the start or immediately after the stop of operation or which is heard at the start or immediately after the stop of DEFROST OPERATION.**  
This is the noise of refrigerant caused by flow stop and flow change.
- **A continuous flowing sound "Shah" or a trickling sound "Jyuru Jyuru" are heard when the system is in COOLING OPERATION or at a stop.**  
The noise is heard when the drain pump is in operation.
- **A "Pishi-Pishi" squeaking sound is heard when the system is in operation or after the stop of operation.**  
Expansion and contraction of plastic parts caused by temperature change makes this noise.

#### VII. Dust from the units

- **Dust may blow out from the unit after starting operation from long resting time.**  
Dust absorbed by the unit blows out.

#### VIII. The units give off odors

The unit absorbs the smell of rooms, furniture, cigarettes, etc., and then emits them.

#### IX. The liquid crystal of the remote control show "88"

- **It happens immediately after the main power supply switch is turned on.**  
This shows that the remote control is in normal condition.  
This continues temporary.

### 10. Trouble shooting

- I. If one of the following malfunctions occurs, take the measures shown below and contact your Daikin dealer.  
The system must be repaired by a qualified service person.




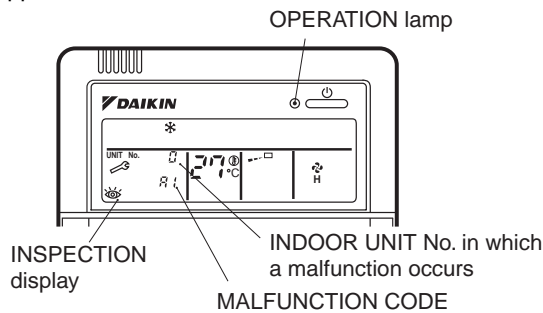
#### **WARNING**

**When the air conditioner is in abnormal conditions (smell of something burning, etc.), unplug the power cord from the outlet, and contact your dealer**

Continued operation under such circumstances may result in a failure, electric shock, and fire.

- If a safety device such as a fuse, a breaker, or an earth leakage breaker frequently actuates, or ON/OFF switch does not properly work.  
**Measure:** Turn off the main power switch
- If water leaks from unit.  
**Measure:** Stop the operation.

- If the display “” (INSPECTION), “UNIT No.”, and the OPERATION lamp flash and the “MALFUNCTION CODE” appears.



**Measure:** Notify and inform the model name and what the malfunction code indicates to your Daikin dealer.

**II. If the system does not properly operate except for the above mentioned case, and none of the above mentioned malfunctions is evident, investigate the system according to the following procedures.**

**1. If the system does not operate at all.**

- Check if there is a power failure.  
Wait until power is restored. If power failure occurs during operation, the system automatically restarts immediately after the power supply recovers.
- Check if the fuse has blown or breaker has worked.  
Change the fuse or set the breaker.

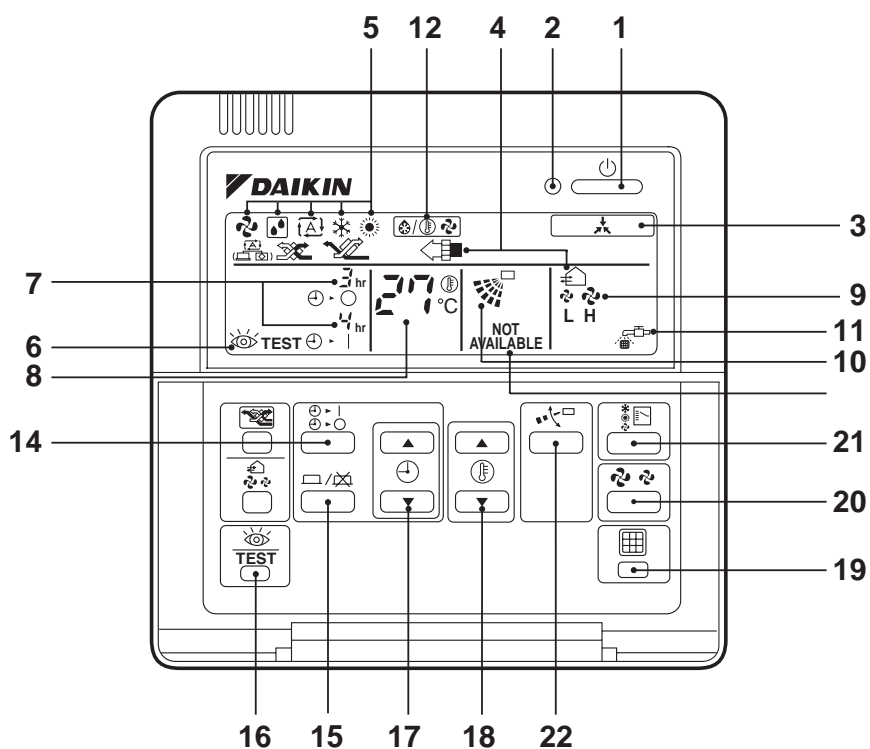
**2. If the system stops operating after operating the system.**

- Check if the air inlet or outlet of outdoor or indoor unit is blocked by obstacles.  
Remove the obstacle and make it well-ventilated.
- Check if the air filter is clogged.  
Ask a qualified service person to clean the air filters (Refer to MAINTENANCE).

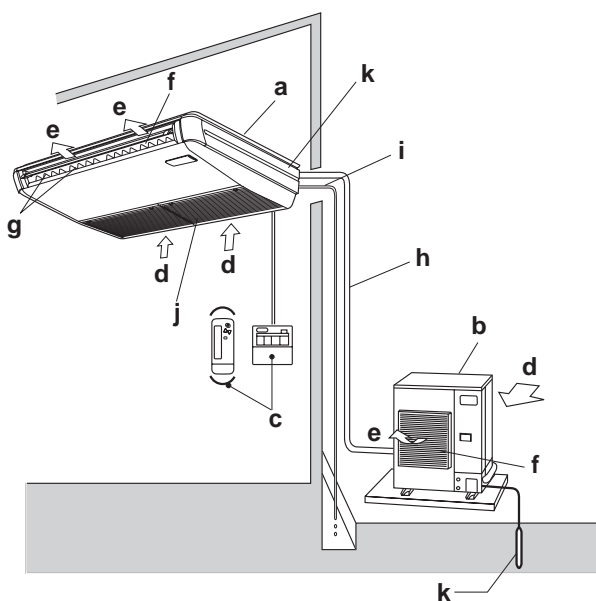
**3. The system operates but it does not sufficiently cool or heat.**

- If the air inlet or outlet of the indoor or the outdoor unit is blocked with obstacles.  
Remove the obstacle and make it well-ventilated.
- If the air filter is clogged.  
Ask a qualified service person to clean the air filters (Refer to MAINTENANCE).
- If the set temperature is not proper (Refer to ADJUSTMENT).
- If the FAN SPEED button is set to LOW SPEED (Refer to ADJUSTMENT).
- If the air flow angle is not proper (Refer to AIR FLOW DIRECTION ADJUST).
- If the doors or the windows are open.  
Shut the doors or windows to prevent wind from coming in.
- If direct sunlight enters the room (when cooling).  
Use curtains or blinds.
- When there are too many inhabitants in the room (when cooling).  
Cooling effect decreases if heat gain of the room is too large.
- If the heat source of the room is excessive (when cooling).  
Cooling effect decreases if heat gain of the room is too large.

## 2.4 Ceiling Suspended Type

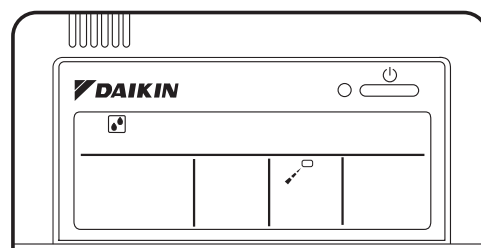


1

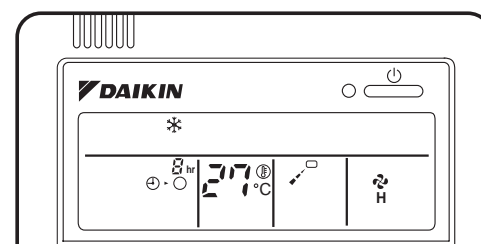


2

[1]



3

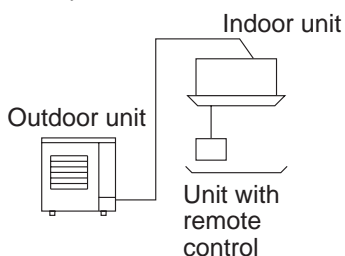


4

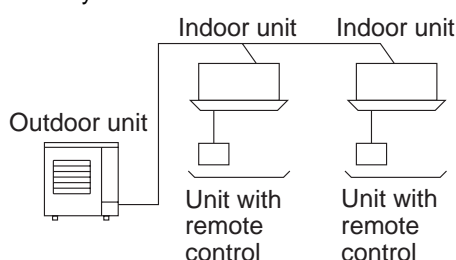
## 1. What to do before operation

This operation manual is for the following systems with standard control. Before initiating operation, contact your Daikin dealer for the operation that corresponds to your system.

- Pair system



- Multi system



### NOTE

- If the unit you purchased is controlled by a infrared remote control, also refer to the infrared remote control's operation manual.

If your installation has a customized control system, ask your Daikin dealer for operation that corresponds to your system.

- Heat pump type  
This system provides cooling, heating, automatic, program dry, and fan operation modes.
- Cooling only type  
This system provides cooling, program dry, and fan operation modes.

### Precautions for group control system or two remote control control system

This system provides two other control systems beside individual control (one remote control controls one indoor unit) system. Confirm the following if your unit is of the following control system type.

- **Group control system**  
One remote control controls up to 16 indoor units.  
All indoor units are equally set.
- **Two remote controls control system**  
Two remote controls control one indoor unit  
(In case of group control system, one group of indoor units)  
The unit is individually operated.

### NOTE

- Contact your Daikin dealer in case of changing the combination or setting of group control and two remote controls control system.

### Names and functions of parts

Refer to figure 2 on page [1]

<b>a</b>	Indoor unit
<b>b</b>	Outdoor unit <ul style="list-style-type: none"> <li>• The external appearance of the outdoor unit varies depending on its capacity class. The outdoor unit shown in the figure is for reference to indicate features. Contact your Daikin Dealer and verify which outdoor unit you have.</li> </ul>
<b>c</b>	Remote control
<b>d</b>	Inlet air
<b>e</b>	Discharged air
<b>f</b>	Air outlet
<b>g</b>	Air flow flap (at air outlet)
<b>h</b>	Refrigerant piping, connection electric wire
<b>i</b>	Drain pipe
<b>j</b>	Air inlet The built-in air filter removes dust and dirt.
<b>k</b>	Drain pumping out device (built-in) Drains water removed from the room during cooling.
<b>l</b>	Ground wire Wire to ground from the outdoor unit to prevent electrical shocks.

- The precautions described below are **WARNING** and **CAUTION**. These are very important precautions concerning safety. Be sure to observe all of them without fail.

 **WARNING**

These are the matters with possibilities leading to serious consequences such as death or serious injury due to erroneous handling.

 **CAUTION**

These are the matters with possibilities leading to injury or material damage due to erroneous handling including probabilities leading to serious consequences in some cases.

- After reading, keep this manual at a place where any user can read at any time. Furthermore, make certain that this operation manual is handed to a new user when he takes over the operation.

 **WARNING**

**Avoid exposure of your body directly to the cold air for a long time, or avoid excessive exposure of your body to the cold air.**

Otherwise, your physical condition may be deteriorated and/or your health may be ruined.

**When the air conditioner is in abnormal condition (smell of something burning, etc.), unplug the power cord from the outlet, and contact the dealer where you purchased the air conditioner.**

Continued operation under such circumstances may result in a failure, electrical shock, and fire.

**Ask your dealer for installation of the air conditioner.**  
Incomplete installation performed by yourself may result in a failure water leakage, electric shock, and fire.

**Ask your dealer for improvement, repair and maintenance.**

Incomplete improvement, repair, and maintenance may result in a water leakage, electric shock, and fire.

**Do not insert your finger, a stick, etc., into the air inlet, outlet, and fan blades.**

A fan in high-speed running may result in injury.

**For refrigerant leakage, consult your dealer.**

When the air conditioner is to be installed in a small room, it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the limiting concentration even when it leaks. If the refrigerant leaks exceeding the level of limiting concentration, an oxygen deficiency accident may happen.

**For installation of separately sold component parts, ask a specialist.**

Be sure to use the separately sold component parts designated by our company.

Incomplete installation performed by yourself may result in a failure, a water leakage, electric shock, and fire.

**Ask your dealer to move and reinstall the air conditioner.**

Incomplete installation may result in a failure, a water leakage, electric shock, and fire.

**Do not use any fuse with improper capacity.**

The use of a piece of wire and whatnot may result in a failure and fire.

**The refrigerant in the air conditioner is safe and normally does not leak. If the refrigerant leaks inside the room, the contact with a fire of a burner, a heater or a cooker may result in a harmful gas.**

Do not use the air conditioner until when a service person confirms to finish repairing the portion where the refrigerant leaks.

 **CAUTION**

**Do not use the air conditioner for other purposes.**

Do not use the air conditioner for a special application such as the storage of foods, animals and plants, precision machines, and art objects as otherwise the deterioration of quality may result.

**Do not remove the air outlet of the outdoor unit.**

The fan may get exposed and result in injury.

**Do not place items that might be damaged by water under the indoor unit.**

Water may condensate and drip if the humidity reaches 80% or if the drain exit gets clogged.

**When the air conditioner is used in combination with burners or heaters, perform sufficient ventilation.**

Insufficient ventilation may result in an oxygen deficiency accident.

**Check and make sure that foundation blocks are not damaged after a long use.**

If they are left in a damaged condition, the unit may fall and result in injury.

**Neither place a flammable spray bottle near the air conditioner nor perform spraying.**

Doing so may result in a fire.

**To clean the air conditioner, stop operation, and unplug the power cord from the outlet.**

Otherwise, an electric shock and injury may result.

**Do not operate the air conditioner with a wet hand.**

An electric shock may result.

**Do not place a burner or heater at a place directly exposed to the wind from the air conditioner.**

Water may condensate and drip if the humidity reaches 80% or if the drain exit gets clogged.

**Do not place a burner or heater at a place directly exposed to the wind from the air conditioner.**

Incomplete combustion of the burner or heater may result.

**Do not allow a child to mount on the outdoor unit or avoid placing any object on it.**

Falling or tumbling may result in injury

**Do not expose animals and plants directly to the wind from air conditioner.**

Adverse influence to little children, plants or animals may result.

**Do not wash the air conditioner with water.**

An electric shock or fire may result.

**Do not install the air conditioner at any place where flammable gas may leak out.**

If the gas leaks out and stays around the air conditioner, a fire may break out.

**Be sure to install an earth leakage breaker.**

Unless it is installed, an electric shock may result.

**Be sure the air conditioner is electrically grounded.**

Do not connect the grounding conductor to a gas pipe, water pipe, lightning arrester and the grounding conductor for a telephone.

Imperfect grounding work may result in an electric shock.

**Execute complete drain piping for perfect drainage.**

Incomplete piping may result in a water leakage.

**The appliance is not intended for use by young children or infirm persons without supervision.**

**Young children should be supervised to ensure that they do not play with the appliance.**

### 3. Operation range

If the temperature or the humidity is beyond the following conditions, safety devices may work and the air conditioner may not operate, or sometimes, water may drop from the indoor unit.

#### COOLING

OUTDOOR UNIT	INDOOR		OUTDOOR TEMPERATURE
	TEMPERATURE	HUMIDITY	
R35 · 45 · 60	DB 18 to 33	80% or below	DB -15 to 46
	WB 12 to 24		
RY35 · 45 · 60	DB 18 to 33	80% or below	DB -5 to 46
	WB 12 to 24		
R71 · 100 · 125 RP71 · 100 · 125 REP71 · 100 · 125	DB 21 to 35	80% or below	DB -15 to 46
	WB 14 to 25		
RY71 · 100 · 125 RYP71 · 100 · 125 RYEP71 · 100 · 125	DB 18 to 35	80% or below	DB -5 to 46
	WB 12 to 25		
RZP71 · 100 · 125	DB 21 to 35	80% or below	DB -5 to 50
	WB 14 to 25		
RQ71 · 100 · 125	DB 18 to 37	80% or below	DB -5 to 46
	WB 12 to 28		
RR71 · 100 · 125	DB 18 to 37	80% or below	DB -15 to 46
	WB 12 to 28		
RZQ71 · 100 · 125 · 140	DB 18 to 37	80% or below	DB -15 to 50
	WB 12 to 28		
RS50 · 60 RKS35 · 50 · 60 RXS35 · 50 · 60	DB 21 to 32	80% or below	DB -10 to 46
	WB 14 to 23		
3MKS50 4MKS58 · 75 · 90 3MXS52 · 2MXS52 4MXS68 · 80	DB 21 to 32	80% or below	DB -10 to 46
	WB 14 to 23		
RMKS112 · 140 · 160 RMXS112 · 140 · 160	DB 21 to 32	80% or below	DB -5 to 46
	WB 14 to 23		

#### HEATING

OUTDOOR UNIT	INDOOR TEMPERATURE		OUTDOOR TEMPERATURE	
	DB	WB	DB	WB
RY35 · 45 · 60	15 to 27		-9 to 21	-10 to 15.5
RY71 · 100 · 125 RYP71 · 100 · 125 RYEP71 · 100 · 125	15 to 27		-9 to 21	-10 to 15.5
RZP71 · 100 · 125	15 to 27		-14 to 21	-15 to 15.5
RQ71 · 100 · 125	10 to 27		-9 to 21	-10 to 15
RZQ71 · 100 · 125 · 140	10 to 27		-19.5 to 21	-20 to 15.5
RXS35 · 50 · 60	10 to 30		-14 to 24	-15 to 18
3MXS52 · 2MXS52 4MXS68 · 80	10 to 30		-14 to 21	-15 to 15.5
RMXS112 · 140 · 160	10 to 30		-14 to 21	-15 to 15.5

DB: Dry bulb temperature (°C)

WB: Wet bulb temperature (°C)

The setting temperature range of the remote control is 16°C to 32°C.

### 4. Installation site

#### Regarding places for installation

- Is the air conditioner installed at a well-ventilated place where there are no obstacles around?
- Do not use the air conditioner in the following places.
  - Filled with much mineral oil such as cutting oil.
  - Where there is much salt such as a beach area.
  - Where sulfured gas exists such as a hot-spring resort.
  - Where there are considerable voltage fluctuations such as a factory or plant.
  - Vehicles and vessels.
  - Where there is much spray of oil and vapor such as a cookery, etc.
  - Where there are machines generating electromagnetic waves.
  - Filled with acid and/or alkaline steam or vapor.
- Is a snow protection measure taken?  
For details, consult your dealer.

#### Regarding wiring

- All wiring must be performed by an authorized electrician.  
To do wiring, ask your dealer. Never do it by yourself.
- Make sure that a separate power supply circuit is provided for this air conditioner and that all electrical work is carried out by qualified personnel according to local laws and regulations.

### Pay attention to running noises, too

- **Are the following places selected?**
  - A place that can sufficiently withstand the weight of the air conditioner with less running noises and vibrations.
  - A place where the hot wind discharged from the air outlet of outdoor unit and the running noises.
- **Are you sure that there are no obstacles near the air outlet of the outdoor unit?**  
Such obstacles may result in declined performance and increased running noises.
- **If abnormal noises occur in use, stop the operation of the air conditioner, and then consult your dealer or our service station.**













### Regarding drainage of drain piping







- **Is the drain piping executed to perform complete drainage?**  
If proper drainage is not carried out from the outdoor drain pipes during air-conditioning operation, chances are that dust and dirt are clogged in the pipe. This may result in a water leakage from the indoor unit. Under such circumstances, stop the operation of the air conditioner, and then consult your dealer or our service station

### 5. Name and function of each switch and display on the remote control

Refer to figure 1 on page [1]

The illustrations in this operating manual correspond to the remote control format BRC1C type. Although the display and shape of the buttons on the BRC1B type are slightly different, they may be operated in the same manner.

1	<b>ON/OFF BUTTON</b>
	Press the button and the system will start. Press the button again and the system will stop.
2	<b>OPERATION LAMP (RED)</b>
	The lamp lights up during operation.
3	<b>DISPLAY “” (UNDER CENTRALIZED CONTROL)</b>
	When this display shows, the system is UNDER CENTRALIZED CONTROL.
4	<b>DISPLAY “” “” “” “” (VENTILATION/AIR CLEANING)</b>
	This display shows that the total heat exchange and the air cleaning unit are in operation (These are optional accessories).
5	<b>DISPLAY “” “” “” “” (OPERATION MODE)</b>
	This display shows the current OPERATION MODE. For cooling only type, “  ” (Auto) and “  ” (Heating) are not installed.
6	<b>DISPLAY “ TEST” (INSPECTION/TEST OPERATION)</b>
	When the INSPECTION/TEST OPERATION BUTTON is pressed, the display shows the system mode is in.

7	<b>DISPLAY “” (PROGRAMMED TIME)</b>
	This display shows the PROGRAMMED TIME of the system start or stop.
8	<b>DISPLAY “” (SET TEMPERATURE)</b>
	This display shows the set temperature.
9	<b>DISPLAY “” (FAN SPEED)</b>
	This display shows the set fan speed.
10	<b>DISPLAY “” (AIR FLOW FLAP)</b>
	Refer to “AIR FLOW DIRECTION ADJUST”.
11	<b>DISPLAY “” (TIME TO CLEAN AIR FILTER)</b>
	Refer to “HOW TO CLEAN THE AIR FILTER”.
12	<b>DISPLAY “” (DEFROST)</b>
	Refer to “DEFROST OPERATION”.
13	<b>NON-FUNCTIONING DISPLAY</b>
	If that particular function is not available, pressing the button may display the words “NOT AVAILABLE” for a few seconds. When running multiple units simultaneously, the “NOT AVAILABLE” message will only appear if none of the indoor units is equipped with the function. If even one unit is equipped with the function, the display will not appear.
14	<b>TIMER MODE START/STOP BUTTON</b>
	Refer to “PROGRAM TIMER OPERATION”.
15	<b>TIMER ON/OFF BUTTON</b>
	Refer to “PROGRAM TIMER OPERATION”.
16	<b>INSPECTION/TEST OPERATION BUTTON</b>
	This button is used only by qualified service persons for maintenance purposes.
17	<b>PROGRAMMING TIME BUTTON</b>
	Use this button for programming “START and/or STOP” time.
18	<b>TEMPERATURE SETTING BUTTON</b>
	Use this button for SETTING TEMPERATURE.
19	<b>FILTER SIGN RESET BUTTON</b>
	Refer to “HOW TO CLEAN THE AIR FILTER”.
20	<b>FAN SPEED CONTROL BUTTON</b>
	Press this button to select the fan speed, HIGH or LOW, of your choice.
21	<b>OPERATION MODE SELECTOR BUTTON</b>
	Press this button to select OPERATION MODE.
22	<b>AIR FLOW DIRECTION ADJUST BUTTON</b>
	Refer to “AIR FLOW DIRECTION ADJUST”.
<b>NOTE</b> • For the sake of explanation, all indications are shown on the display in figure 1 contrary to actual running situations.	

## 6. Operation procedure

Refer to figure 1 on page [1]






- Operating procedure varies with heat pump type and cooling only type. Contact your Daikin dealer to confirm your system type.
- to protect the unit, turn on the main power switch 6 hours before operation.
- If the main power supply is turned off during operation, operation will restart automatically after the power turns back on again.

### Cooling, heating, automatic, fan, and program dry operation

Operate in the following order.

## 1 Operation mode selector

Press **OPERATION MODE SELECTOR** button several times and select the **OPERATION MODE** of your choice as follows.

- COOLING OPERATION..... “”
- HEATING OPERATION..... “”
- AUTOMATIC OPERATION..... “”
  - In this operation mode, COOL/HEAT changeover is automatically conducted
- FAN OPERATION..... “”
- DRY OPERATION ..... “”
  - The function of this program is to decrease the humidity in your room with the minimum temperature decrease.
  - Micro computer automatically determines TEMPERATURE and FAN SPEED.
  - This system does not go into operation if the room temperature is below 16°C.

Refer to figure 3 on page [1]

- For cooling only type, “COOLING”, “FAN” and “DRY” operation are able to select.


## 2 ON/OFF

Press **ON/OFF** button


OPERATION lamp lights up or goes off and the system starts or stops OPERATION.

### [EXPLANATION OF HEATING OPERATION]

#### DEFROST OPERATION

- As the frost on the coil of an outdoor unit increases, heating effect decreases and the system goes into DEFROST OPERATION.
- The indoor unit fan stops and the remote control display shows “”.
- After 6 to 8 minutes (maximum 10 minutes) of DEFROST OPERATION, the system returns to HEATING OPERATION.

### Regarding outside air temperature and heating capacity

- The heating capacity of the air conditioner declines as the outside air temperature falls.  
In such a case, use the air conditioner in combination with other heating systems.
- A warm air circulation system is employed, and therefore it takes some time until the entire room is warmed up after the start of operation.
- An indoor fan runs to discharge a gentle wind automatically until the temperature inside the air conditioner reaches a certain level. At this time, the remote control displays “”. Leave it as it stands and wait for a while.
- When the warm air stays under the ceiling and your feet are cold, we recommend that you use a circulator (a fan to circulate the air inside the room). For details, consult your dealer.

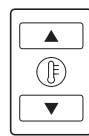
### Adjustment

For programming TEMPERATURE, FAN SPEED and AIR FLOW DIRECTION, follow the procedure shown below.



## Temperature setting

Press **TEMPERATURE SETTING** button and program the setting temperature.



Each time this button is pressed, setting temperature rises 1°C

Each time this button is pressed, setting temperature lowers 1°C

- The setting is impossible for fan operation

#### NOTE

- The setting temperature range of the remote control is 16°C to 32°C.



## Fan speed control

Press **FAN SPEED CONTROL** button.

High or Low fan speed can be selected.

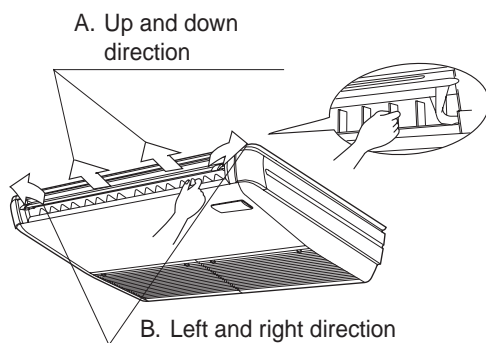
Micro computer may sometimes control the fan speed in order to protect the unit.



## Air flow direction adjust

- There are 2 ways of adjusting the air discharge angle.
  - A. Up and down adjustment
  - B. Left and right direction

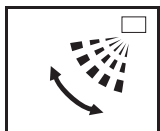
Fig. 1



### A. UP AND DOWN DIRECTION

- The movable limit of the flap is changeable. Contact your Daikin dealer for details.

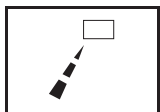
**Press the AIR FLOW DIRECTION ADJUST button to select the air direction as following.**



The AIR FLOW FLAP display swings as shown left and the air flow direction continuously varies. (Automatic swing setting)



Press AIR FLOW DIRECTION ADJUST button to select the air direction of your choice.



The AIR FLOW FLAP display stops swinging and the air flow direction is fixed (Fixed air flow direction setting).

### Movement of the air flow flap

For the following conditions, micro computer controls the air flow direction so it may be different from the display.

Operation mode	Cooling	Heating
Operation condition	<ul style="list-style-type: none"> <li>When room temperature is lower than the set temperature</li> </ul>	<ul style="list-style-type: none"> <li>When room temperature is higher than the set temperature</li> <li>At defrost operation</li> </ul>
	<ul style="list-style-type: none"> <li>When operating continuously at downward air flow direction</li> </ul>	

Operation mode includes automatic operation.

### A. LEFT AND RIGHT DIRECTION

- Adjusting air flow direction in the left and right direction. (Refer to Fig. 1)

#### NOTE

- The movable limit of the flap is changeable. Contact your Daikin dealer for details

## Program timer operation

Operate in the following order.

- The timer is operated in the following two ways.
- Programming the stop time (  $\oplus \cdot \bigcirc$  ) ... The system stops operating after the set time has elapsed.
- Programming the start time (  $\oplus \cdot |$  ) ... The system starts operating after the set time has elapsed.
- The timer can be programmed a maximum of 72 hours.
- The start and the stop time can be simultaneously programmed.



### Timer mode START/STOP

**Press the TIMER MODE START/STOP button several times and select the mode on the display.**

The display flashes.

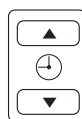
For setting the timer stop ... "  $\oplus \cdot \bigcirc$  "

For setting the timer start ... "  $\oplus \cdot |$  "



### Programming time

**Press the PROGRAMMING TIME button and set the time for stopping or starting the system.**



When this button is pressed, the time advances by 1 hour.



When this button is pressed, the time goes backward by 1 hour.



### Timer ON/OFF

**Press the TIMER ON/OFF button.**

The timer setting procedure ends.

The display "  $\oplus \cdot \bigcirc$  " or "  $\oplus \cdot |$  " changes from flashing light to a constant light.


Refer to figure 4 on page [1]

#### NOTE

- When setting the timer OFF and On at the same time, repeat the above procedure from 1 to 3 once again.
- When the timer is programmed to stop the system after 3 hours and start the system after 4 hours, the system will stop after 3 hours and then 1 hour later the system will start.
- After the timer is programmed, the display shows the remaining time.
- Press the TIMER ON/OFF button once again to cancel programming. the display vanishes.

## 7. Optimum operation

Observe the following precautions to ensure the system operates.

- Adjust the room temperature properly for a comfortable environment. Avoid excessive heating or cooling.
- Prevent direct sunlight from entering a room during cooling operation by using curtains or blinds.
- Ventilate the room regularly.  
Using the unit for long periods of time requires attentive ventilation of the room.
- Keep doors and windows closed. If the doors and windows remain open, room air will flow out and cause to decrease the effect of cooling and heating.
- Do not place other heaters directly below the indoor unit. They may deform due to the heat.
- Never place objects near the air inlet and the air outlet of the unit. It may cause deterioration in the effect or stop in the operation.
- Turn off the main power supply switch when it is not used for long periods of time. When the main power switch is turned on, some watts of electricity is being used even if the system is not operating. Turn off the main power supply switch for saving energy. When reoperating, turn on the main power supply switch 6 hours before operation for smooth running (Refer to MAINTENANCE)
- When the display shows “” (TIME TO CLEAN AIR FILTER), ask a qualified service person to clean the filters (Refer to MAINTENANCE).

## 8. Maintenance (For service personnel)

**Only a qualified service person is allowed to perform maintenance**

### IMPORTANT

- **Before obtaining access to terminal devices, all power supply circuits must be interrupted**
- To clean the air conditioner, be sure to stop operation, and turn the power switch off. Otherwise, an electric shock and injury may result.
- Do not wash the air conditioner with water. Doing so may result in an electric shock.
- Be careful with a scaffold or staging. Caution must be exercised because of work at a high place

Fig. 2

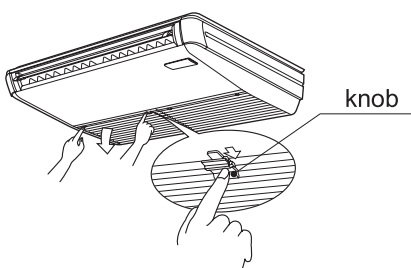


Fig. 3

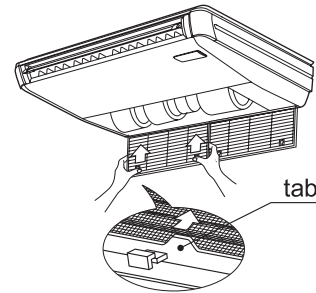


Fig. 4

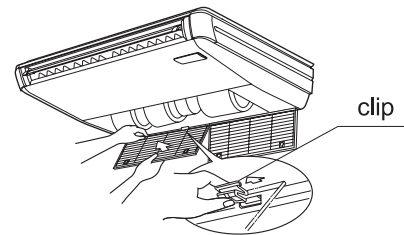
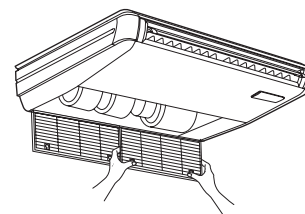



Fig. 5



### How to clean the air filter

Clean the air filter when the display shows “” (TIME TO CLEAN AIR FILTER).

It will display that it will operate for a set amount of time.

Increase the frequency of cleaning if the unit is installed in a room where the air is extremely contaminated.

If the dirt becomes impossible to clean, change the air filter (Air filter for exchange is optional)

#### 1. Open the suction grille

Slide both knobs simultaneously as shown and then pull them downward.

(Do the same procedure for closing).

(Refer to Fig. 2)

#### 2. Remove the air filters.

Push the 2 tabs up, and slowly lower the grille.

(Refer to Fig. 3)

#### 3. Clean the air filter

Use a vacuum cleaner **A)** or wash the air filter with water **B).**

**A) Using a vacuum cleaner**



**B) Washing with water**

When the air filter is very dirty, use soft brush and neutral detergent.



Remove water and dry in the shade.

**NOTE**

- Do not wash the air conditioner with hot water of more than 50°C, as doing so may result in discoloration and/or deformation.
- Do not expose it to fire, as doing so may result in burning.

**4. Fix the air filter**

Set the hatch of the air filter to the hook of the suction grille, and fix the air filter.

(Refer to Fig.5)

**5. Close the suction grille.**

Refer to item No. 1.

**6. After turning on the power, press FILTER SIGN RESET button.**

The "TIME TO CLEAN AIR FILTER" display vanishes.

**How to clean air outlet, suction grille and outside panels**

- Clean with soft cloth.
- When it is difficult to remove stains, use water or neutral detergent

**NOTE**

- Do not use gasoline, benzine, thinner, polishing powder, liquid insecticide. It may cause discoloring or warping.
- Do not let the indoor unit get wet. It may cause an electric shock or a fire.
- Do not use water or air of 50°C or higher for cleaning air filters and outside panels.

**How to clean the suction grille****1. Open the suction grille**

Slide both knobs simultaneously as shown and then pull them downward.

(Do the same procedure for closing).

**2. Remove the suction grille.**

Refer to "HOW TO CLEAN THE AIR FILTER".

(Refer to Fig. 3)

**3. Remove the suction grille.**

Open the suction grille and pull the clips on the back of the suction grille forward.

(Refer to Fig. 4)

**4. Clean the air filter**

Wash with a soft bristle brush and neutral detergent or water, and dry thoroughly.

- **When very grimy**

Directly apply the type of detergent used for cleaning ventilation fans or ovens, wait 10 minutes, and then rinse with water.

**NOTE**

- Do not wash the air conditioner with hot water of more than 50°C, as doing so may result in discoloration and/or deformation.
- 5. Fix the air filter.**  
Refer to "HOW TO CLEAN THE AIR FILTER".
- 6. Fix the suction grille.**  
Refer to item No. 3.
- 5. Close the suction grille.**  
Refer to item No. 1.

**Start up after a long stop****Confirm the following**

- Check that the air inlet and outlet are not blocked.  
Remove any obstacle.
- Check if the earth is connected  
Might there be a broken wire somewhere?  
Contact your dealer if there are any problems.

**Clean the air filter and outside panels**

- After cleaning the air filter, make sure to attach it.

**Turn on the main power supply switch**

- The display on the remote control will be shown when the power is turned on.
- To protect the unit, turn on the main power switch at least 6 hours before operation.

**What to do when stopping the system for a long period****Turn on FAN OPERATION for half a day and dry the unit.**

- Refer to "6. Operation procedure".

**Cut off the power supply.**

- When the main power switch is turned on, some watts of electricity is being used even if the system is not operating.  
Turn off the main power supply switch for saving energy.
- The display on the remote control will vanish when the main power switch is turned off.

**Clean the air filter and the exterior.**

- Be sure to replace the air filter to its original place after cleaning. Refer to "Maintenance".
- 

**9. Not malfunction of the air conditioner**

The following symptoms do not indicate air conditioner malfunction

**I. The system does not operate**

- **The system does not restart immediately after the ON/OFF button is pressed.**


If the OPERATION lamp lights, the system is in normal condition.

It does not restart immediately because a safety device operates to prevent overload of the system. After 3 minutes, the system will turn on again automatically.

- **The system does not restart immediately when TEMPERATURE SETTING button is returned to the former position after pushing the button.**

If the OPERATION lamp lights, the system is in normal condition.

It does not restart immediately because a safety device operates to prevent overload of the system. After 3 minutes, the system will turn on again automatically.

- **The system does not start when the display shows "  " (UNDER CENTRALIZED CONTROL) and it flashes for few seconds after pressing an operation button.**

This is because the system is under centralized control. Flashes on the display indicate that the system cannot be controlled by the remote control.

- **The system does not start immediately after the power supply is turned on.**

Wait one minute until the micro computer is prepared for operation.

- **The outdoor unit is stopped**

This is because the room temperature has reached the set temperature. The indoor unit switches to fan operation.

## II. When “” (under centralized control) is displayed and operation is different from the remote control display.

This is because operating mode is controlled by a micro computer, as shown below, depending on the operating mode of the other connected indoor units when using in a multi system.

- **If the operating mode does not match that of the other indoor units which are already running, the indoor unit goes into standby mode (the fan stops and the air flow flaps become horizontal).**

The unit will go into the above mode if either cool-ing, dry, or fan operation mode are set together with heating mode.

### NOTE

- Normally, the operation mode in the room where the unit is first run is given priority, but the follow-ing situations are exceptions, so please keep this in mind.
  - a If the operation mode of the first room is FAN Mode, then using Heating Mode in any room after this will give priority to heating. In this sit-uation, the air conditioner running in FAN Mode will go on standby.
  - b With the Priority Room Setting activeContact your Daikin dealer for the operation that corresponds to your system.
- **If the total capacity of all the indoor units run-ning exceeds the limit, the indoor unit will go into standby mode (fan and air flow direction remain as set). (Only for cooling-only type.)**
- **If another indoor unit goes into heating mode after cooling, the unit may go into dry mode (fan operates whisper and the air flow flaps become horizontal).**

## III. THE FAN SPEED IS DIFFERENT FROM THE SETTING.

- **Pressing the fan speed control button does not change the fan speed.**  
When the room temperature reaches the set tem-perature in heating mode, the power supply from the outdoor unit stops and the indoor unit goes into whisper mode (in a multi system, the fan goes back and forth between stop and whisper). This is to prevent the cool air from being blown directly onto anyone in the room.

## IV. AIR BLOW DIRECTION IS NOT AS SPECIFIED.

- **Actual air blow direction is not as shown on the remote control.**
- **Automatic swing setting does not work.**  
Refer to “AIR FLOW DIRECTION ADJUST”.
- 

## V. White mist comes out of a unit

- **When humidity is high during cooling operation. (In oily or dusty places)**

If the inside of an indoor unit is extremely contaminated, the temperature distribution inside a room becomes uneven. It is necessary to clean the inside of the indoor unit. Ask your Daikin dealer for details on cleaning the unit. This operation requires a qualified service person.

- **When the system is changed over to HEATING OPERATION after DEFROST OPERATION.**

Moisture generated by DEFROST becomes steam and exists.

## VI. Noise of air conditioners

- **A ringing sound after the unit is started.**  
This sound is generated by the temperature regulator working. It will quiet down after about a minute.
- **A continuous flow “Shuh” sound is heard when the system is in COOLING or DEFROST OPERATION.**  
This is the sound of refrigerant gas flowing through both indoor units.
- **A “Shuh” sound which is heard at the start or immediatly after the stop of operation or which is heard at the start or immediatly after the stop of DEFROST OPERATION.**  
This is the noise of refrigerant caused by flow stop and flow change.
- **A continuous flow “Shuh” sound is heard when the systems is in COOLING OPERATION or at a stop.**  
The noise is heard when the drain pump is in operation.
- **A “Pishi-pishi” squeaking sound is heard when the system is in operation or after the stop of operation.**  
Expansion and contraction of plastic caused by temperature change makes this noise.

## VII. Dust from the units.

- **Dust may blow out from the unit after starting operation from long resting time.**  
Dust absorbed by the unit blows out.

## VIII. The units give off odors

The unit absorbs the smell of rooms, furniture, cigarettes, ect., and then emits them.

## IX. The liquid crystal of the remote control show “88”

- **It happens immediately after the main power supply switch is turned on.**  
This shows that the remote control is in normal condition. This continues temporary.


## 10. Trouble shooting

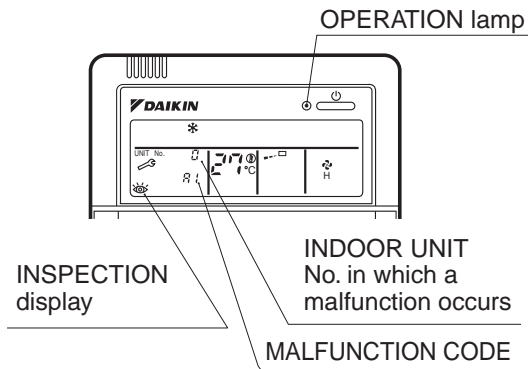
- I. **If one of the following malfunctions occurs, take the measures shown below and contact your Daikin dealer.**  
The system must be repaired by a qualified service person.

### **WARNING**

**When the air conditioner is in abnormal conditions (smell of something burning, etc), unplug the power cord from the outlet, and contact your dealer**

Continued operation under such circumstances may result in a failure, electric shock, and fire.

- If a safety device such as a fuse, a breaker, or an earth leakage breaker frequently actuates, or ON/OFF switch does not properly work.  
**Measure:** Turn off the main power switch
- If water leaks from unit.  
**Measure:** Stop the operation.
- If the display “” (INSPECTION), “UNIT No.”, and the OPERATION lamp flash and the “MALFUNCTION CODE” appears.



**Measure:** Notify and inform the model name and what the malfunction code indicates to your Daikin dealer.

**II. If the system does not properly operate except for the above mentioned case, and none of the above mentioned malfunctions is evident, investigate the system according to the following procedures.**

**1. If the system does not operate at all.**

- Check if there is a power failure.  
Wait until power is restored. If power failure occurs during operation, the system automatically restarts immediately after the power supply recovers.
- Check if the fuse has blown or breaker has worked.  
Change the fuse or set the breaker.

**2. If the system stops operating after operating the system.**

- Check if the air inlet or outlet of outdoor or indoor unit is blocked by obstacles.  
Remove the obstacle and make it well-ventilated.
- Check if the air filter is clogged.  
Ask a qualified service person to clean the air filters (Refer to MAINTENANCE).

**3. The system operates but it does not sufficiently cool or heat.**

- If the air inlet or outlet of the indoor or the outdoor unit is blocked with obstacles.  
Remove the obstacle and make it well-ventilated.
- If the air filter is clogged.  
Ask a qualified service person to clean the air filters (Refer to MAINTENANCE).
- If the set temperature is not proper  
(Refer to ADJUSTMENT).
- If the air flow angle is not proper (Refer to AIR FLOW DIRECTION ADJUST).
- If the FAN SPEED button is set to LOW SPEED

(Refer to ADJUSTMENT).

- If the doors or the windows are open.  
Shut the doors or windows to prevent wind from coming in.
- If direct sunlight enters the room (when cooling).  
Use curtains or blinds.
- When there are too many inhabitants in the room (when cooling).  
Cooling effect decreases if heat gain of the room is too large.
- If the heat source of the room is excessive (when cooling).  
Cooling effect decreases if heat gain of the room is too large.

# Part 8

## Troubleshooting

1. Caution for Diagnosis .....	251
1.1 Troubleshooting with the Operation Lamp (RA Indoor Unit) .....	251
1.2 Troubleshooting with the LED on the SkyAir Indoor Unit .....	252
1.3 Troubleshooting with the LED on the Outdoor Unit .....	253
1.4 Troubleshooting with the LED on the BP Unit .....	254
2. Service Check Function .....	255
2.1 RA Indoor Unit Infrared Remote Control .....	255
2.2 SkyAir Indoor Unit INSPECTION/TEST Button .....	259
2.3 SkyAir Indoor Unit Wired Remote Control .....	260
2.4 SkyAir Indoor Unit Infrared Remote Control .....	261
2.5 Sky Air Indoor Unit Error Codes and LED Indication .....	263
2.6 Malfunction Code Indication by Outdoor Unit PCB .....	264
3. List of Malfunction Code .....	268
4. Troubleshooting for RA Indoor Unit .....	270
4.1 Indoor Unit PCB Abnormality .....	270
4.2 Freeze-up Protection Control or High Pressure Control .....	271
4.3 Fan Motor or Related Abnormality .....	273
4.4 Thermistor or Related Abnormality (Indoor Unit) .....	276
4.5 Shutter Drive Motor / Shutter Limit Switch Abnormality .....	277
4.6 Check .....	278
5. Troubleshooting for SkyAir Indoor Unit .....	281
5.1 Indoor Unit PCB Abnormality .....	281
5.2 Malfunction of Drain Water Level System (Float Type) .....	282
5.3 Malfunction of Drain System .....	284
5.4 Indoor Unit Fan Motor Lock .....	285
5.5 Malfunction of Indoor Unit Fan Motor .....	286
5.6 Swing Flap Motor Malfunction / Lock .....	288
5.7 Malfunction of Capacity Setting .....	290
5.8 Malfunction of Heat Exchanger Thermistor (R2T) .....	291
5.9 Malfunction of Heat Exchanger Thermistor (R3T) .....	292
5.10 Malfunction of Suction Air Thermistor .....	293
5.11 Malfunction of Remote Control Thermistor .....	294
5.12 Transmission Error (between Indoor Unit and Remote Control) .....	295
5.13 Transmission Error (between Main and Sub Remote Control) .....	296
5.14 Malfunction of Field Setting Switch .....	297
5.15 Check .....	298
6. Troubleshooting for BP Unit .....	300
6.1 Malfunction of Electronic Expansion Valve .....	300
6.2 Faulty BP Unit PCB .....	301
6.3 Faulty BP Liquid or Gas Pipe Thermistor .....	302
6.4 Transmission Error between Indoor Unit and BP Unit .....	303
6.5 Transmission Error between Outdoor Unit and BP Unit .....	305
6.6 Check .....	306

7. Troubleshooting for Outdoor Unit.....	307
7.1 Faulty Outdoor Unit PCB.....	307
7.2 Actuation of High Pressure Switch.....	308
7.3 Actuation of Low Pressure Sensor.....	310
7.4 Compressor Motor Lock.....	312
7.5 Malfunction of Outdoor Unit Fan Motor.....	313
7.6 Malfunction of Moving Part of Electronic Expansion Valve (Y1E, Y3E).....	314
7.7 Abnormal Discharge Pipe Temperature.....	316
7.8 Refrigerant Overcharged.....	317
7.9 Malfunction of Thermistor for Outdoor Air (R1T).....	318
7.10 Malfunction of Discharge Pipe Thermistor (R2T).....	319
7.11 Malfunction of Thermistor (R3T, R5T) for Suction Pipe1, 2.....	320
7.12 Malfunction of Thermistor (R4T) for Outdoor Unit Heat Exchanger.....	321
7.13 Malfunction of Thermistor (R7T) for Outdoor Unit Liquid Pipe.....	322
7.14 Malfunction of Subcooling Heat Exchanger Thermistor (R6T).....	323
7.15 Malfunction of High Pressure Sensor.....	324
7.16 Malfunction of Low Pressure Sensor.....	325
7.17 Malfunction of PCB.....	326
7.18 Malfunction of Inverter Radiating Fin Temperature Rise.....	327
7.19 Inverter Compressor Abnormal.....	328
7.20 Inverter Current Abnormal.....	329
7.21 Inverter Start up Error.....	330
7.22 Malfunction of Transmission between Inverter and Control PCB.....	331
7.23 High Voltage of Capacitor in Main Inverter Circuit.....	332
7.24 Malfunction of Inverter Radiating Fin Temperature Rise Sensor.....	333
7.25 Faulty Combination of Inverter and Fan Driver.....	334
7.26 Low Pressure Drop Due to Refrigerant Shortage or Electronic Expansion Valve Failure.....	335
7.27 Power Supply Insufficient or Instantaneous Failure.....	337
7.28 Check Operation not Executed.....	339
7.29 Malfunction of Transmission between Indoor Units and Outdoor Units.....	340
7.30 Malfunction of Transmission between Remote Control and Indoor Unit.....	342
7.31 Malfunction of Transmission between Main and Sub Remote Controls.....	343
7.32 Malfunction of Transmission between Indoor and Outdoor Units in the Same System.....	344
7.33 Excessive Number of Indoor Units.....	346
7.34 Address Duplication of Central Remote Control.....	347
7.35 Malfunction of Transmission between Central Remote Controller and Indoor Unit.....	348
7.36 System is not Set yet.....	350
7.37 Malfunction of System, Refrigerant System Address Undefined.....	351
8. Check.....	352
9. Thermistor Resistance / Temperature Characteristics.....	355
10. Pressure Sensor.....	357
11. Method of Replacing The Inverter's Power Transistors Modules.....	358

# 1. Caution for Diagnosis

## 1.1 Troubleshooting with the Operation Lamp (RA Indoor Unit)

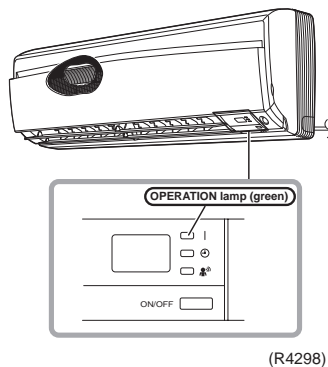
The operation lamp blinks when any of the following errors is detected.

1. When a protection device of the indoor or outdoor unit is activated or when the thermistor malfunctions, disabling equipment operation.
2. When a signal transmission error occurs between the indoor and outdoor units.

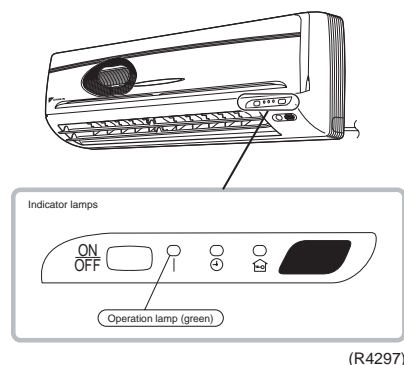
In either case, conduct the diagnostic procedure described in the following pages.

### Location of Operation Lamp

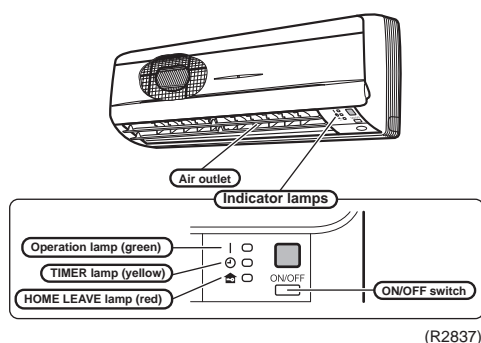
In case of  
FTXS 20/25/35/50 D Series



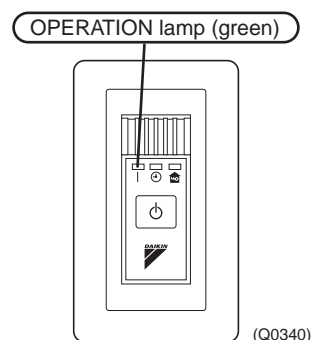
In case of  
FTXS 20/25/35 C Series



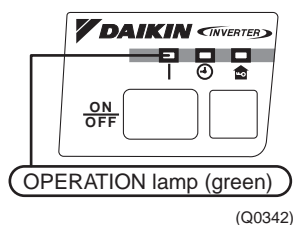
In case of  
FTXS 50/60/71 E Series  
FTXS 71 B Series



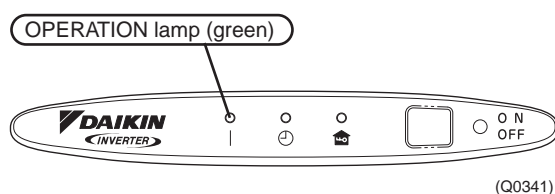
In case of  
FDXS 25/35/50/60 C Series  
FDXS 25/35 E Series



In case of  
FVXS 25/35/50 B Series



In case of  
FLXS 25/35/50/60 B Series





**Caution:** Operation stops suddenly. (Operation lamp blinks.)  
Cause of above trouble could be "Operation mode butting".  
Check followings;  
Are the operation modes all the same for indoor units connected to Multi system outdoor unit?  
If not set all indoor units to the same operation mode and confirm that the operation lamp is not blinking.  
Moreover, when the operation mode is in "Auto", set all indoor unit operation mode to "Cool" or "Heat" and check again if the operation lamp is normal.  
If the lamp stops blinking after the above steps, there is no malfunction.

★Operation stops and operation lamp blinks only for indoor unit which the different operation mode is set later. (The first set operation mode has priority.)

## 1.2 Troubleshooting with the LED on the SkyAir Indoor Unit

### Foreword

Troubleshooting can be carried out by service monitor LED (green). (Blinks when normal)

☀ : LED on ● : LED off ⚡ : LED blinks — : No connection with troubleshooting

Microcomputer Normal Monitor	Contents/Processing
HAP	
⚡	Incorrect wiring between indoor and outdoor unit If outdoor unit's HAP is off, proceed outdoor unit's trouble shooting. If outdoor unit's HAP blinks, failure of wiring or indoor or outdoor unit P.C board ass'y. (Note 4)
☀	Failure of indoor unit PC board ass'y (Note 5)
●	Malfunction of power supply or failure of PC board ass'y or broken transmission wire between indoor and outdoor unit. (Note 5)



- Note:**
1. When the INSPECTION/TEST button of remote control is pushed, **INSPECTION** display blinks entering **INSPECTION** mode.
  2. In the **INSPECTION** mode, when the ON/OFF button is pushed and held for 5 seconds or more, the aforementioned malfunctioning history display is off. In this case, after the malfunction code blinks 2 times, the code display turns to "00" (=Normal) and the unit No. turns to "0". The INSPECTION mode automatically switches to the normal mode (set temperature display).
  3. Operation halts due to malfunction depending on the model or condition.
  4. The wiring between indoor and outdoor unit may be incorrect or disconnected. Before performing the previously described troubleshooting, check the wiring. If the outdoor unit is inverter unit, the outdoor unit fuse may be blown.
  5. Troubleshoot by turning off the power supply for a minimum of 5 seconds, turning it back on, and then rechecking the LED display.

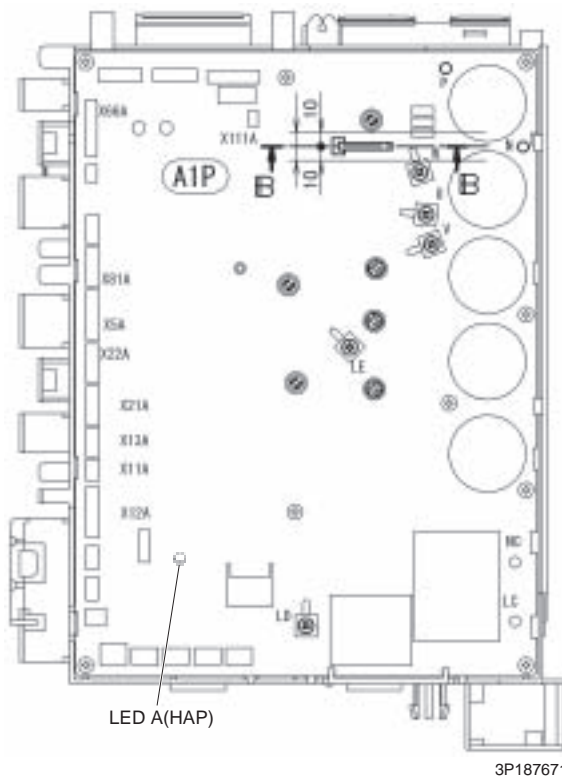
## 1.3 Troubleshooting with the LED on the Outdoor Unit

There are green and orange LEDs on the PCB. The blinking green LED indicates normal equipment condition, and the OFF condition of the orange LED indicates normal equipment condition.

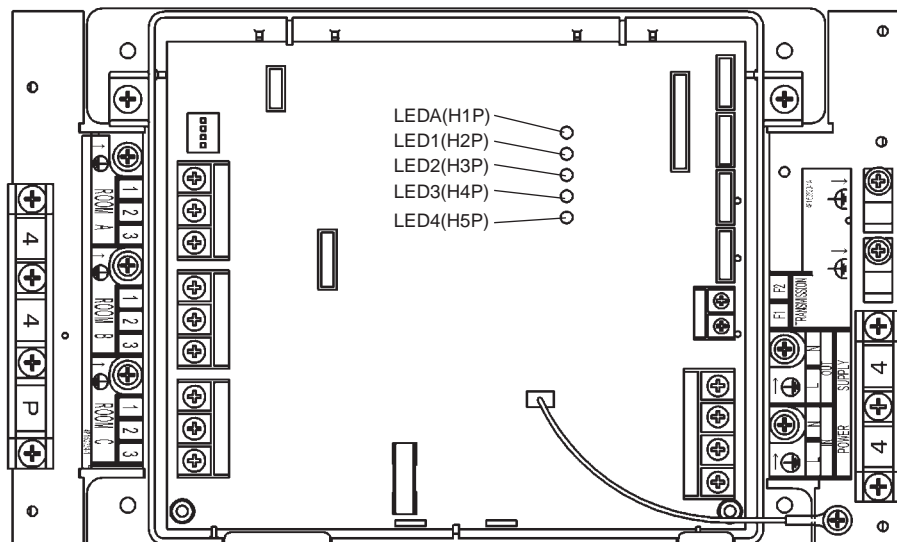
(Troubleshooting with the green LED)

The LED A (green) of the outdoor unit indicate microcomputer operation condition.

Even after the error is cancelled and the equipment operates in normal condition, the LED indication remains.



## 1.4 Troubleshooting with the LED on the BP Unit



(Q0395)

LED-B (GREEN)	DIAGNOSIS
INTERCOMMUNICATION TO OUTDOOR UNIT : NORMAL	
●	NORMAL
○	ABNORMALITY ? CHECK INTER-UNIT WIRING
●	ABNORMALITY ? CHECK INTER-UNIT WIRING

GREEN	NORMALLY FLASHING
RED	NORMALLY OFF
○	ON
●	FLASH
●	OFF
—	IRRELEVANT

GREEN	RED				DIAGNOSIS
MICROCOMPUTER: NORMAL LED-A	MALFUNCTION DETECTION LED-1	LED-2	LED-3	LED-4	
●	●	●	●	●	NORMAL → CHECK INDOOR OR OUTDOOR UNIT
○	○	○	○	○	THERMISTOR ABNORMALITY
○	○	○	○	○	HIGH PRESSURE PROTECTOR WORKED, OR FREEZE-UP IN OPERATING UNIT OR STAND-BY UNIT
○	○	○	○	○	ELECTRONIC EXPANSION VALVE ABNORMALITY
○	—	—	—	—	[NOTE 1]
●	—	—	—	—	POWER SUPPLY FAULT OR [NOTE 2]

NOTES 1.TURN THE POWER OFF THEN ON AGAIN, IF THE LED DISPLAY RECURS, THE BRANCH PROVIDER UNIT PCB IS FAULTY.  
2.TURN THE POWER OFF AND THEN ON AGAIN, IF THE LED DISPLAY RECURS, TURN THE POWER OFF AND DISCONNECT LINE 2 OF INTER-UNIT WIRING FOR ALL UNITS, THEN TURN THE POWER ON AGAIN.

<IF LED-A IS OFF : >

THE BRANCH PROVIDER UNIT PCB IS FAULTY.

<IF LED-A IS FLASHING : >

THE INDOOR UNIT PCB IS FAULTY. TURN THE RECONNECT LINE 2 OF ALL INTER-UNIT WIRING AND CHECK THE DAIGNOSIS BY LEDS ON INDOOR UNIT PCB.

3P058760C

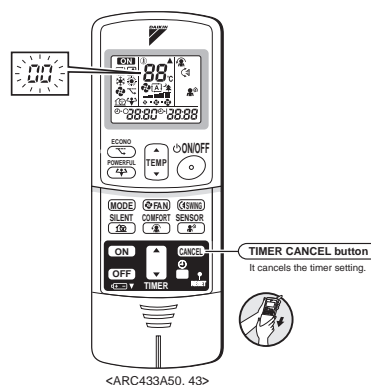
## 2. Service Check Function

### 2.1 RA Indoor Unit Infrared Remote Control

In the ARC433A series remote control, the temperature display sections on the main unit indicate corresponding codes.

#### Check Method 1

- When the timer cancel button is held down for 5 seconds, a "00" indication flashes on the temperature display section.



- Press the timer cancel button repeatedly until a continuous beep is produced.
  - The code indication changes in the sequence shown below, and notifies with a long beep.

No.	Code	No.	Code	No.	Code
1	00	12	C7	23	H0
2	U4	13	H8	24	E1
3	F3	14	J3	25	P4
4	E6	15	R3	26	L3
5	L5	16	R1	27	L4
6	R6	17	C4	28	H6
7	E5	18	C5	29	H7
8	F6	19	H9	30	U2
9	C9	20	J6	31	UH
10	U0	21	UR	32	ER
11	E7	22	R5	33	RH

#### <In case of ARC433A50, 43>

No.	Code	No.	Code	No.	Code
1	00	12	F6	23	R1
2	U4	13	C7	24	E1
3	L5	14	R3	25	UR
4	E6	15	H8	26	UH
5	H6	16	H9	27	P4
6	H0	17	C9	28	L3
7	R6	18	C4	29	L4
8	E7	19	C5	30	H7
9	U0	20	J3	31	U2
10	F3	21	J6	32	ER
11	R5	22	E5	33	RH

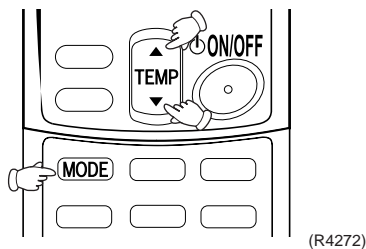


#### Note:

- A short beep and two consecutive beeps indicate non-corresponding codes.
- To cancel the code display, hold the timer cancel button down for 5 seconds. The code display also cancels itself if the button is not pressed for 1 minute.

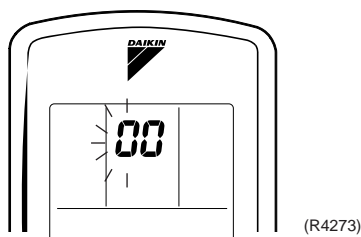
## Check Method 2

1. Enter the diagnosis mode.  
Press the 3 buttons (TEMP▲, TEMP▼, MODE) simultaneously.

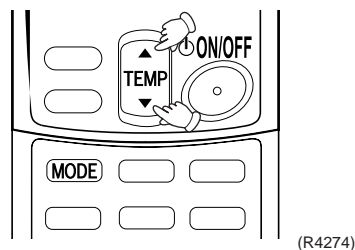


The digit of the number of tens blinks.

★Try again from the start when the digit does not blink.

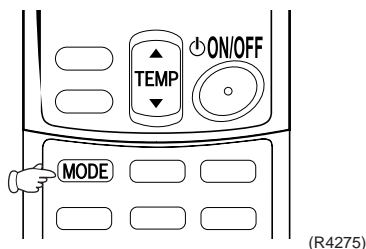


2. Press the TEMP button.  
Press TEMP▲ or TEMP▼ and change the digit until you hear the sound of “beep” or “pi pi”.

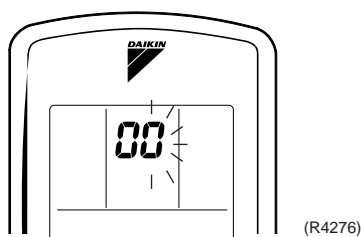


3. Diagnose by the sound.  
 ★“pi” : The number of tens does not accord with the error code.  
 ★“pi pi” : The number of tens accords with the error code.  
 ★“beep” : The both numbers of tens and units accord with the error code. (→See 7.)

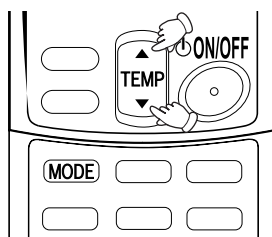
4. Enter the diagnosis mode again.  
Press the MODE button.



The digit of the number of units blinks.

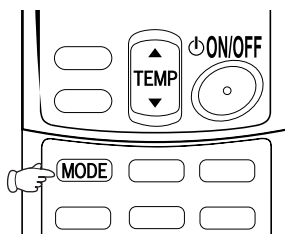


5. Press the TEMP button.  
Press TEMP▲ or TEMP▼ and change the digit until you hear the sound of “beep”.



(R4277)

6. Diagnose by the sound.
  - ★“pi” : The both numbers of tens and units do not accord with the error code.
  - ★“pi pi” : The number of tens accords with the error code.
  - ★“beep” : The both numbers of tens and units accord with the error code.
7. Determine the error code.  
The digits indicated when you hear the “beep” sound are error code.
8. Exit from the diagnosis mode.  
Press the MODE button.



(R4278)

**Error Code List in  
Relation to RA  
Indoor Units**

- : Not used for troubleshooting

Indication on the remote control	Description of the Fault		Details of fault (Refer to the indicated page.)
00	Indoor unit in normal condition (Conduct a diagnosis of the outdoor unit.)		—
A1	Indoor unit PCB abnormality		270
A5	Freeze-up protection control or high pressure control (heat pump model only)		271
A6	Fan motor or related abnormality	AC motor (Wall : 20~35 C series, Duct, Floor / Ceiling)	273
		DC motor (Wall : 50~71 E series, 20~50 D series, and 71 B series, Floor)	274
C4	Heat exchanger thermistor or related abnormality		276
C7	Shutter drive motor / shutter limit switch abnormality		277
C9	Room temperature thermistor abnormality		276

## 2.2 SkyAir Indoor Unit INSPECTION/TEST Button

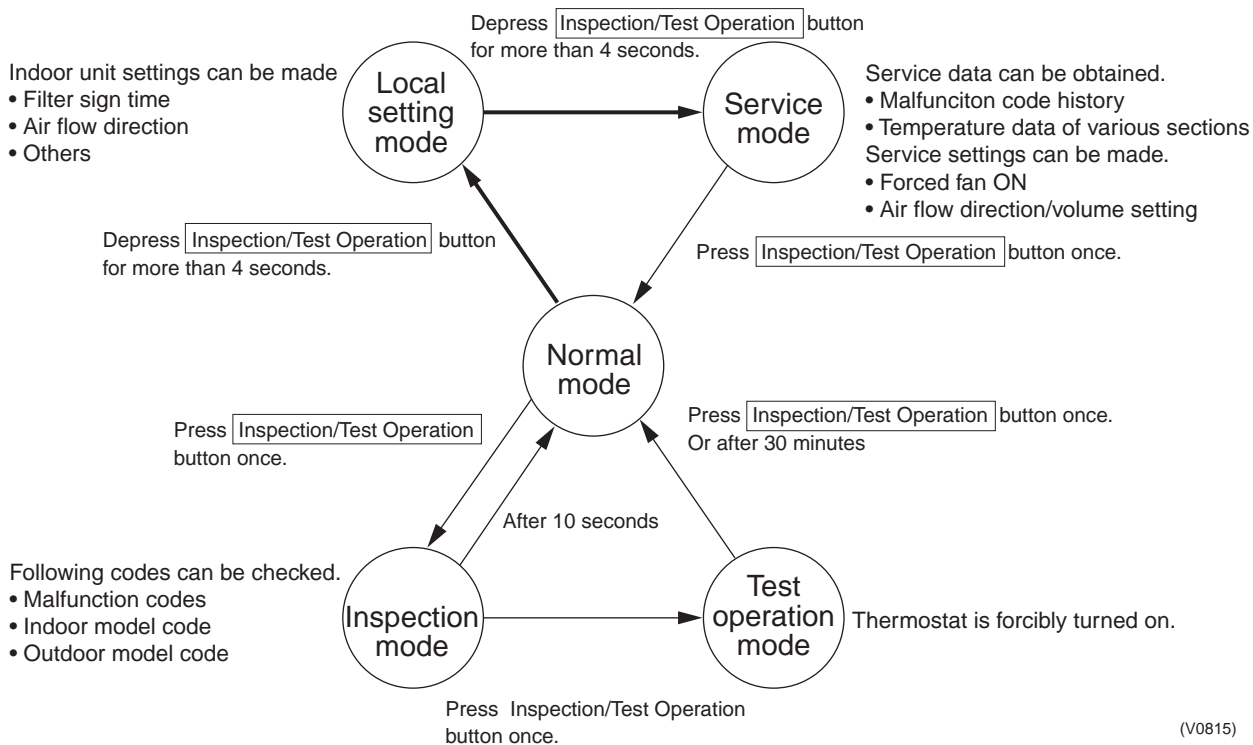
### Explanation

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



#### Caution

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

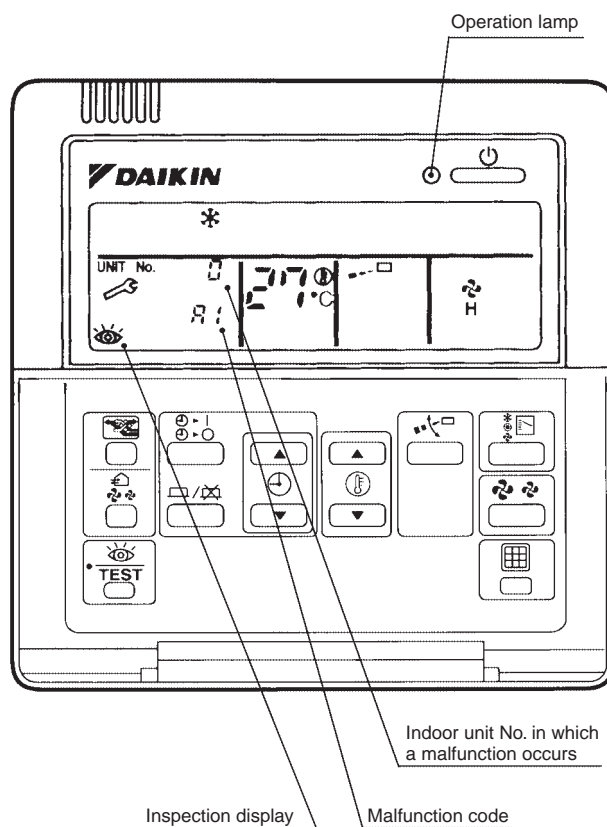


(V0815)

## 2.3 SkyAir Indoor Unit Wired Remote Control

### Explanation

If operation stops due to malfunction, the remote control'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 264 for malfunction code and malfunction contents.



(S2001)

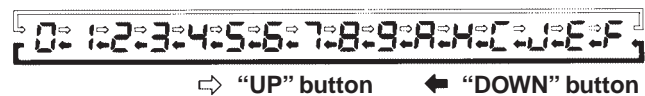
## 2.4 SkyAir Indoor Unit Infrared Remote Control

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.)

### Procedure

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.

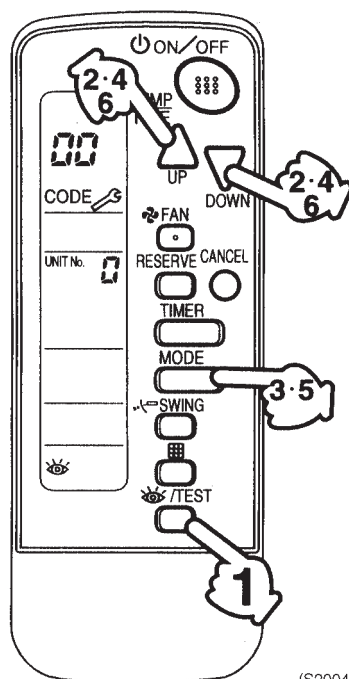


(S2002)

- \*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.

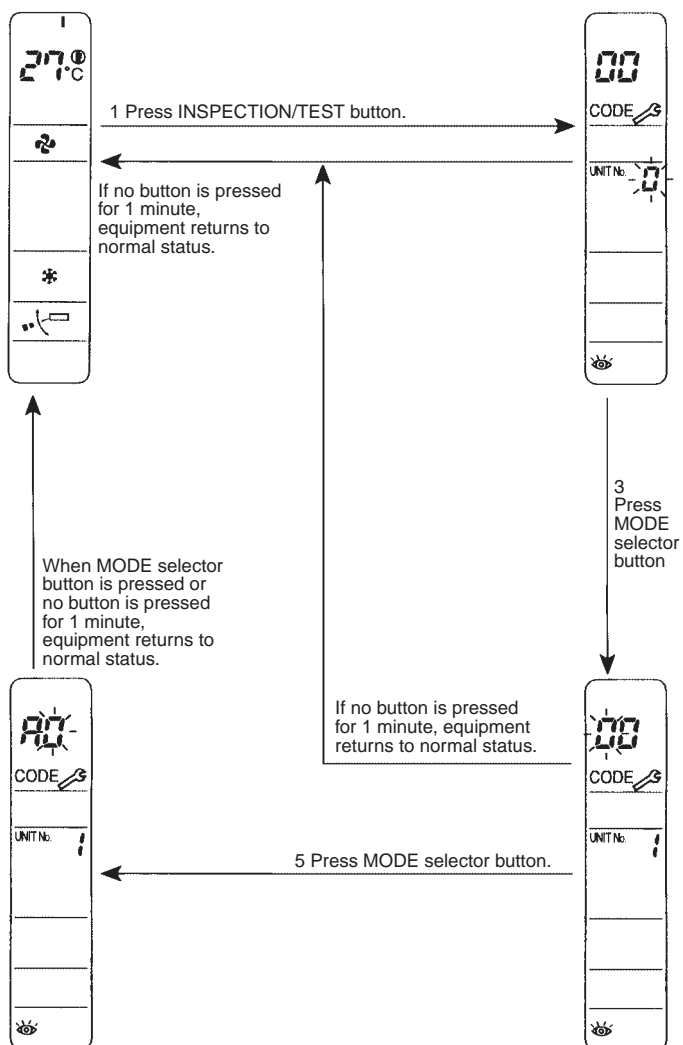


(S2003)



(S2004)

Normal status  
 Enters inspection mode from normal status when the INSPECTION/TEST button is pressed.



(S2005)

## 2.5 Sky Air Indoor Unit Error Codes and LED Indication

### Symbols

◐ : Blinks   ◑ : On   ● : Off   — : No connection with troubleshooting

◎ : High probability of malfunction

○ : Possibility of malfunction














□ : Low probability of malfunction

— : No possibility of malfunction (do not replace)

### System

Remote Control Display	Location of Malfunction				Contents of Malfunction	Details of Malfunction (Reference Page)
	Other than PC Board	PC Board				
		Outdoor Unit	Indoor Unit	Remote Control		
U5	◎	—	○	○	Transmission error (between indoor and remote control)	295
U8	◎	—	○	○	Transmission error between “main” remote control and “sub” remote control	296
UR	◎	—	○	—	Excessive indoor units connected to this system.	297

### Indoor Unit

Indoor Unit LED Display (H1P)	Remote Control Display	Location of Malfunction				Contents of Malfunction	Details of Malfunction (Reference Page)
		Other than PC Board	PC Board				
			Outdoor Unit	Indoor Unit	Remote Control		
		—	—	—	—	Normal → to outdoor unit	—
	R1	—	—	○	—	Failure of indoor unit PC board (For self-diagnosis by LED, refer to p.252.)	281
							
							
	R3	◎	—	—	—	Malfunction of drain water level system	282
	RF	◎	—	—	—	Float switch operation during compressor stop	284
	R6 (FHQ only)	◎	—	□	—	Indoor unit fan motor overload / overcurrent / lock	285, 286
	R7	◎	—	□	—	Swing flap motor Malfunction / Lock	288
	RU	◎	—	○	—	Failure of capacity setting	290
	C4	◎	—	□	—	Malfunction of heat exchanger temperature sensor system (R2T)	291
	C5	◎	—	□	—	Malfunction of heat exchanger temperature sensor system (R3T)	292
	C9	◎	—	□	—	Malfunction of suction air temperature sensor system	293
	CJ	—	—	□	—	Malfunction of remote control air temperature sensor system	294

## 2.6 Malfunction Code Indication by Outdoor Unit PCB

### <Monitor mode>

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

### <Selection of setting item>

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

### <Confirmation of malfunction 1>

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

### <Confirmation of malfunction 2>

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

### <Confirmation of malfunction 3>

Push the **SET (BS2)** button once to display "malfunction location".

### <Confirmation of malfunction 4>

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

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

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

Detail description on next page.

Contents of malfunction		Malfunction code
In-phase malfunction of DIII-NET	Detection of DIII-NET	E1
Abnormal discharge pressure	HPS activated	E3
Abnormal suction pressure	Abnormal Pe	E4
Compressor lock	Detection of INV compressor lock	E5
Over load, over current, abnormal lock of outdoor unit fan motor	Detection of DC fan 1 motor lock	E7
	Detection of DC fan 2 motor lock	
Malfunction of electronic expansion valve	EV1	E9
	EV3	
Faulty sensor of outdoor air temperature	Faulty Ta sensor (short)	H9
Abnormal discharge pipe temperature	Abnormal Td	F3
Abnormal heat exchanger temperature	Refrigerant over charge	F6
Faulty sensor of discharge pipe temperature	Faulty Tdi sensor (short)	J3
Faulty sensor of suction pipe temperature	Faulty Ts1 sensor (short)	J5
	Faulty Ts2 sensor (short)	
Faulty sensor of heat exchanger temperature	Faulty Tb sensor (short)	J6
Malfunction of the liquid pipe temperature sensor	Faulty TI sensor (short)	J7
Faulty sensor of subcool heat exchanger temperature	Faulty Tsh sensor (short)	J9
Faulty sensor of discharge pressure	Faulty Pc sensor (short)	JA
Faulty sensor of suction pressure	Faulty Pe sensor (short)	JC
Faulty Inverter PC board	Faulty IPM	L1
	Abnormal Current sensor offset	
	Abnormal IGBT	
	Faulty Current sensor	
	Abnormal SP-PAM over-voltage	
Inverter radiation fin temperature rising	Over heating of inverter radiation fin temperature	L4
DC output over current	Inverter instantaneous over current	L5
Electronic thermal	Electronic thermal switch 1	L8
	Electronic thermal switch 2	
	Out-of-step	
	Speed down after startup	
	Lightening detection	
Stall prevention (Limit time)	Stall prevention (Current increasing)	L9
	Stall prevention (Faulty start up)	
	Abnormal wave form in startup	
	Out-of-step	
Transmission error between inverter and outdoor unit	Inverter transmission error	LC

○: ON ●: OFF ◐: Blink

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

Display of contents of  
malfunction (first digit)Display of contents of  
malfunction (second digit)Display 1 of  
malfunction in detailDisplay 2 of  
malfunction in detail

\*1

●	●	Master
●	◐	Slave1
◐	●	Slave2
◐	◐	System

**<Monitor mode>**

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

**<Selection of setting item>**

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

**<Confirmation of malfunction 1>**

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

**<Confirmation of malfunction 2>**

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

**<Confirmation of malfunction 3>**

Push the **SET (BS2)** button once to display "malfunction location".

**<Confirmation of malfunction 4>**

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

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

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

Detail description on next page.

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

○: ON ●: OFF ◐: Blink

Malfunction code	Confirmation of malfunction 1							Confirmation of malfunction 2							Confirmation of malfunction 3							Confirmation of malfunction 4						
	H1P	H2P	H3P	H4P	H5P	H6P	H7P	H1P	H2P	H3P	H4P	H5P	H6P	H7P	H1P	H2P	H3P	H4P	H5P	H6P	H7P	H1P	H2P	H3P	H4P	H5P	H6P	H7P
P1	◐			◐	●	●	●	◐			●	●	●	◐	◐			●	●	●	●	◐			●	●	*1	
P4								◐			●	◐	●	●	◐			●	●	●	●	◐			●	●		
U0	◐			◐	●	●	◐	◐			●	●	●	●	◐			●	●	●	●	◐			●	●	◐	◐
U2								◐			●	●	◐	●	◐			●	●	●	●	◐			●	●	*1	
															◐			●	●	●	●				●	◐		
															◐			●	●	●	●	◐			●	●		
															◐			●	●	●	●	◐			●	●		
U3								◐			●	●	◐	◐	◐			●	●	●	●	◐			●	●	◐	◐
U4								◐			●	◐	●	●	◐			●	●	●	●	◐			●	●	◐	◐
U9								◐			◐	●	●	◐	◐			●	●	●	●	◐			●	●	◐	◐
UA								◐			◐	●	◐	●	◐			●	●	●	●	◐			●	●	◐	◐
															◐			●	●	●	●	◐			●	◐	◐	◐
															◐			●	●	●	●	◐			◐	●	◐	◐
															◐			●	●	●	●	◐			●	●	◐	◐
UH								◐			◐	●	◐	◐	◐			●	●	●	●	◐			●	●	◐	◐
UF								◐			◐	◐	◐	◐	◐			●	●	●	●	◐			●	●	◐	◐

Display of contents of  
malfunction (first digit)Display of contents of  
malfunction (second digit)Display 1 of  
malfunction in detailDisplay 2 of  
malfunction in detail

*1	●	●	Master
	●	◐	Slave1
	◐	●	Slave2
	◐	◐	System


### 3. List of Malfunction Code

●: Blink ○: ON ●: OFF

	Malfunction code	Malfunction contents	Page Referred			
			RA Indoor Unit	SkyAir Indoor Unit	BP Unit	Outdoor Unit
Indoor Unit	A0	Error of external protection device	—	—	—	—
	A1	PC board defect, E <sup>2</sup> PROM defect	270	281	—	—
	A3	Malfunction of drain level control system (33H)	—	282	—	—
	A5	Freeze-up protection or high pressure control	271	—	—	—
	A6	Fan motor (MF) lock, overload	273, 274	285, 286	—	—
	A7	Malfunction of swing flap motor (MA)	—	288	—	—
	A9	Malfunction of electronic expansion valve (20E)	—	—	300	—
	AF	Drain pump error	—	284	—	—
	AJ	Malfunction of capacity setting	—	290	—	—
	C4	Malfunction of thermistor (R2T) for heat exchanger (loose connection, disconnection, short circuit, failure)	276	291	—	—
	C5	Malfunction of thermistor (R3T) for heat exchanger (loose connection, disconnection, short circuit, failure)	—	292	—	—
	C7	Shutter drive motor / shutter limit switch abnormality	277	—	—	—
	C9	Malfunction of thermistor (R1T) for air inlet (loose connection, disconnection, short circuit, failure)	276	293	—	—
	CA	Malfunction of thermistor for air outlet (loose connection, disconnection, short circuit, failure)	—	—	—	—
	CJ	Malfunction of thermostat sensor in remote control	—	294	—	—
Outdoor Unit	E1	PC board defect, E <sup>2</sup> PROM defect	—	—	—	307
	E2	Faulty BP unit PCB	—	—	301	—
	E3	Actuation of high pressure switch	—	—	—	308
	E4	Actuation of low pressure switch	—	—	—	310
	E5	Compressor motor lock	—	—	—	312
	E6	Standard compressor lock or over current	—	—	—	—
	E7	Malfunction of outdoor unit fan motor	—	—	—	313
	E9	Malfunction of moving part of electronic expansion valve (Y1E~3E)	—	—	—	314
	F3	Abnormal discharge pipe temperature	—	—	—	316
	F6	Refrigerant overcharged	—	—	—	317
	H3	Malfunction of high pressure switch	—	—	—	—
	H4	Actuation of low pressure switch	—	—	—	—
	H7	Abnormal outdoor fan motor signal	—	—	—	—
	H9	Malfunction of thermistor (R1T) for outdoor air (loose connection, disconnection, short circuit, failure)	—	—	—	318
	J0	Faulty BP liquid or gas pipe thermistor	—	—	302	—
	J2	Current sensor malfunction	—	—	—	—
	J3	Malfunction of discharge pipe thermistor (R2T) (loose connection, disconnection, short circuit, failure)	—	—	—	319
	J5	Malfunction of thermistor (R3T, R5T) for suction pipe (loose connection, disconnection, short circuit, failure)	—	—	—	320
	J6	Malfunction of thermistor (R4T) for heat exchanger (loose connection, disconnection, short circuit, failure)	—	—	—	321
	J7	Malfunction of liquid thermistor (R7T)	—	—	—	322
	J8	Malfunction of thermistor (R7T) for oil equalizing pipe. (loose connection, disconnection, short circuit, failure)	—	—	—	—
	J9	Malfunction of subcooling heat exchanger thermistor (R6T)	—	—	—	323
	JA	Malfunction of discharge pipe pressure sensor	—	—	—	324
	JC	Malfunction of suction pipe pressure sensor	—	—	—	325
	L0	Inverter system error	—	—	—	—

●: Blink ○: ON ●: OFF

	Malfunction code	Malfunction contents	Page Referred			
			RA Indoor Unit	SkyAir Indoor Unit	BP Unit	Outdoor Unit
Outdoor Unit	L1	Malfunction of PC board	—	—	—	326
	L4	Malfunction of inverter radiating fin temperature rise	—	—	—	327
	L5	Inverter compressor motor grounding, short circuit	—	—	—	328
	L8	Inverter current abnormal	—	—	—	329
	L9	Inverter start up error	—	—	—	330
	LA	Malfunction of power unit	—	—	—	—
	LC	Malfunction of transmission between inverter and control PC board	—	—	—	331
	P1	High voltage of capacitor in main inverter circuit	—	—	—	332
	P4	Malfunction of inverter radiating fin temperature rise sensor	—	—	—	333
	PJ	Faulty combination inverter and fan driver, Malfunction of capacity setting	—	—	—	334
System	U0	Low pressure drop due to refrigerant shortage or electronic expansion valve failure	—	—	—	335
	U1	Reverse phase / open phase	—	—	—	—
	U2	Power supply insufficient or instantaneous failure	—	—	—	337
	U3	Check operation is not conducted.	—	—	—	339
	U4	Malfunction of transmission between indoor and outdoor units, etc.	—	—	303	340
	U5	Malfunction of transmission between remote control and indoor unit	—	295	—	342
	U5	Failure of remote control PC board or setting during control by remote control	—	—	—	—
	U7	Malfunction of transmission between outdoor units	—	—	—	—
	U8	Malfunction of transmission between main and sub remote controls	—	296	—	—
	U9	Malfunction of transmission between indoor unit and outdoor unit in the same system	—	—	—	337
	UA	Excessive number of indoor units etc.	—	297	—	339
	UC	Address duplication of central remote control	—	—	—	347
	UE	Malfunction of transmission between central remote control and indoor unit	—	—	—	348
	UF	System is not set yet	—	—	—	339
	UH	Malfunction of system, refrigerant system address undefined	—	—	—	340
	UJ	Transmission error between outdoor unit and BP unit	—	—	305	—

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

## 4. Troubleshooting for RA Indoor Unit

### 4.1 Indoor Unit PCB Abnormality

Remote Control  
Display

*R1*

Method of  
Malfunction  
Detection

Evaluation of zero-cross detection of power supply by indoor unit.

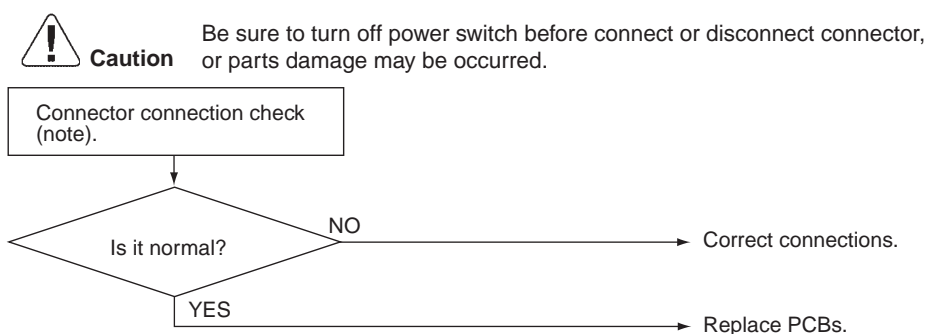
Malfunction  
Decision  
Conditions

When there is no zero-cross detection in approximately 10 continuous seconds.

Supposed  
Causes

- Faulty indoor unit PCB
- Faulty connector connection

Troubleshooting



(R1400)



**Note:** Connector Nos. vary depending on models.  
Control connector

Model Type	Connector No.
Wall Mounted Type 20 / 25 / 35 class	Terminal strip~Control PCB
Wall Mounted Type 50 / 60 / 71 class	Terminal strip~Control PCB
Duct Connected Type	Terminal strip~Control PCB
Floor / Ceiling Suspended Dual Type	S37
Floor Standing Type	Control PCB : S7, S201, S203 Power Supply PCB : S8, S202, S204

## 4.2 Freeze-up Protection Control or High Pressure Control

Remote Control  
Display

*A5*

**Method of  
Malfunction  
Detection**

- High pressure control (heat pump model only)  
During heating operations, the temperature detected by the indoor heat exchanger thermistor is used for the high pressure control (stop, outdoor fan stop, etc.)
- The freeze-up protection control (operation halt) is activated during cooling operation according to the temperature detected by the indoor unit heat exchanger thermistor.

**Malfunction  
Decision  
Conditions**

- High pressure control  
During heating operations, the temperature detected by the indoor heat exchanger thermistor is above 65°C
- Freeze-up protection  
When the indoor unit heat exchanger temperature is below 0°C during cooling operation.

**Supposed  
Causes**

- Operation halt due to clogged air filter of the indoor unit.
- Operation halt due to dust accumulation on the indoor unit heat exchanger.
- Operation halt due to short-circuit.
- Detection error due to faulty indoor unit heat exchanger thermistor.
- Detection error due to faulty indoor unit PCB.

# Troubleshooting

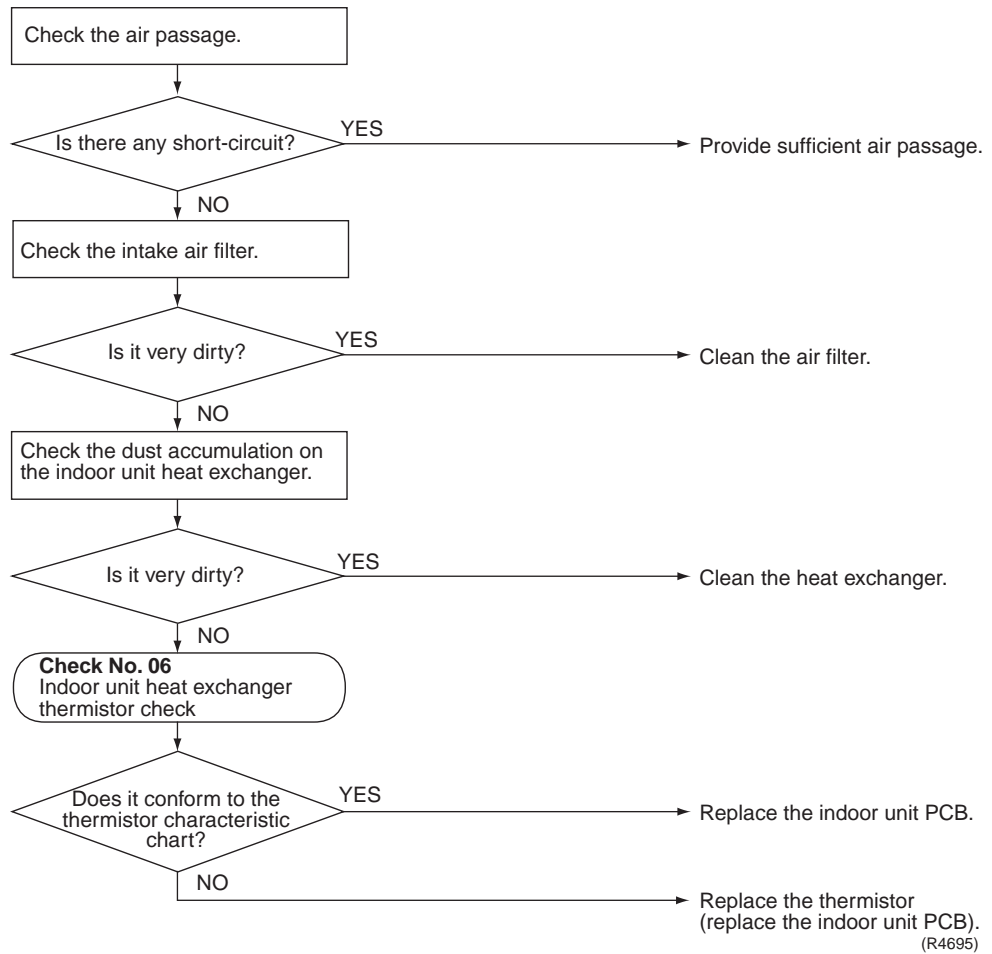


**Check No.06**  
Refer to P.279



## Caution

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



## 4.3 Fan Motor or Related Abnormality

### 4.3.1 AC Motor (Wall 20~35 C series, Duct, Floor / Ceiling)

Remote Control  
Display

RG

Method of  
Malfunction  
Detection

The rotation speed detected by the Hall IC during fan motor operation is used to determine abnormal fan motor operation.

Malfunction  
Decision  
Conditions

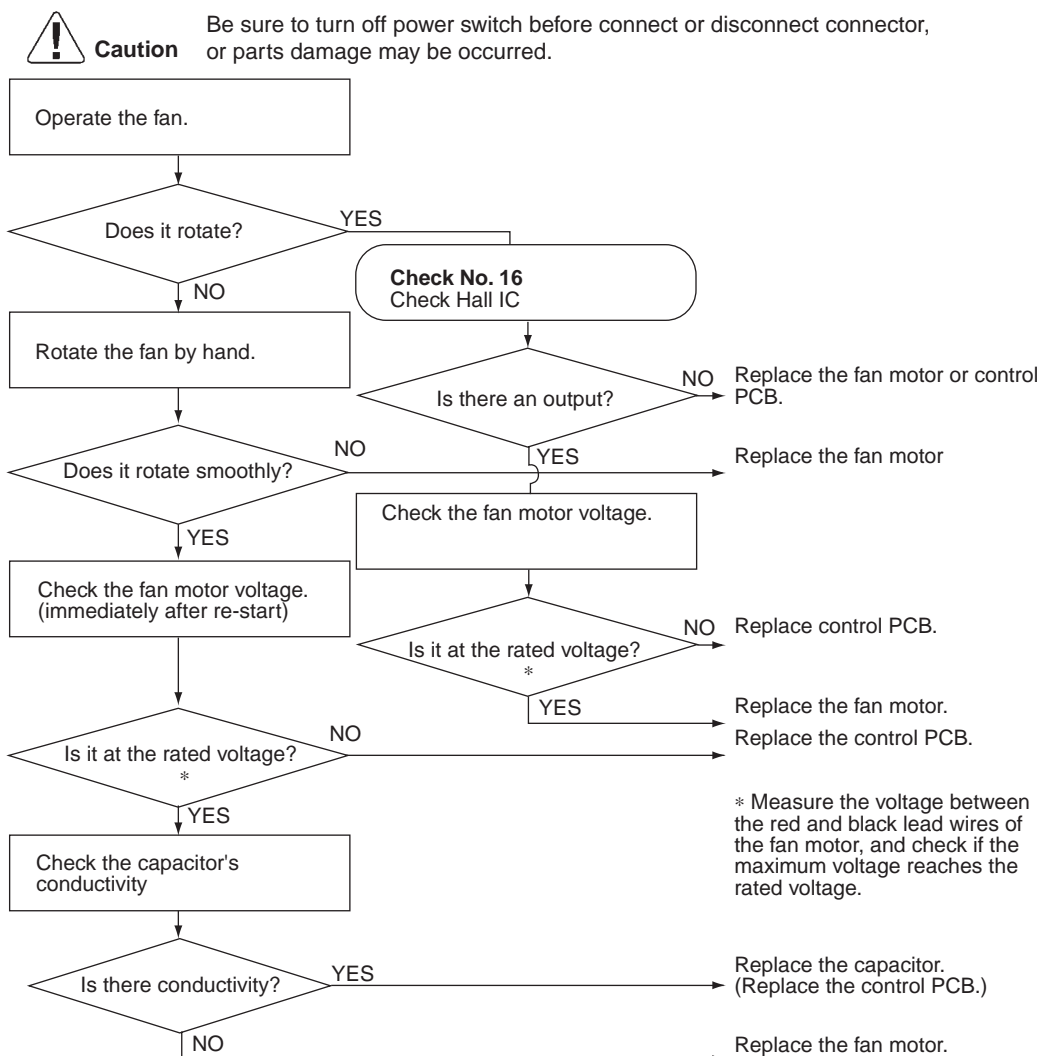
When the detected rotation speed is less than 50% of the HH tap under maximum fan motor rotation demand.

Supposed  
Causes

- Operation halt due to short circuit inside the fan motor winding.
- Operation halt due to breaking of wire inside the fan motor.
- Operation halt due to breaking of the fan motor lead wires.
- Operation halt due to faulty capacitor of the fan motor.
- Detection error due to faulty control PCB.

#### Troubleshooting

  
Check No.16  
Refer to P.280



(R3219)

### 4.3.2 DC Motor (Wall 20~35 D series and 50~71 class, Floor)

Remote Control  
Display

*RE*

**Method of  
Malfunction  
Detection**

The rotation speed detected by the Hall IC during fan motor operation is used to determine abnormal fan motor operation.

**Malfunction  
Decision  
Conditions**

When the detected rotation speed is less than 50% of the H tap under maximum fan motor rotation demand.

**Supposed  
Causes**

- Operation halt due to short circuit inside the fan motor winding.
- Operation halt due to breaking of wire inside the fan motor.
- Operation halt due to breaking of the fan motor lead wires.
- Operation halt due to faulty capacitor of the fan motor.
- Detection error due to faulty indoor unit PCB (1).

## Troubleshooting



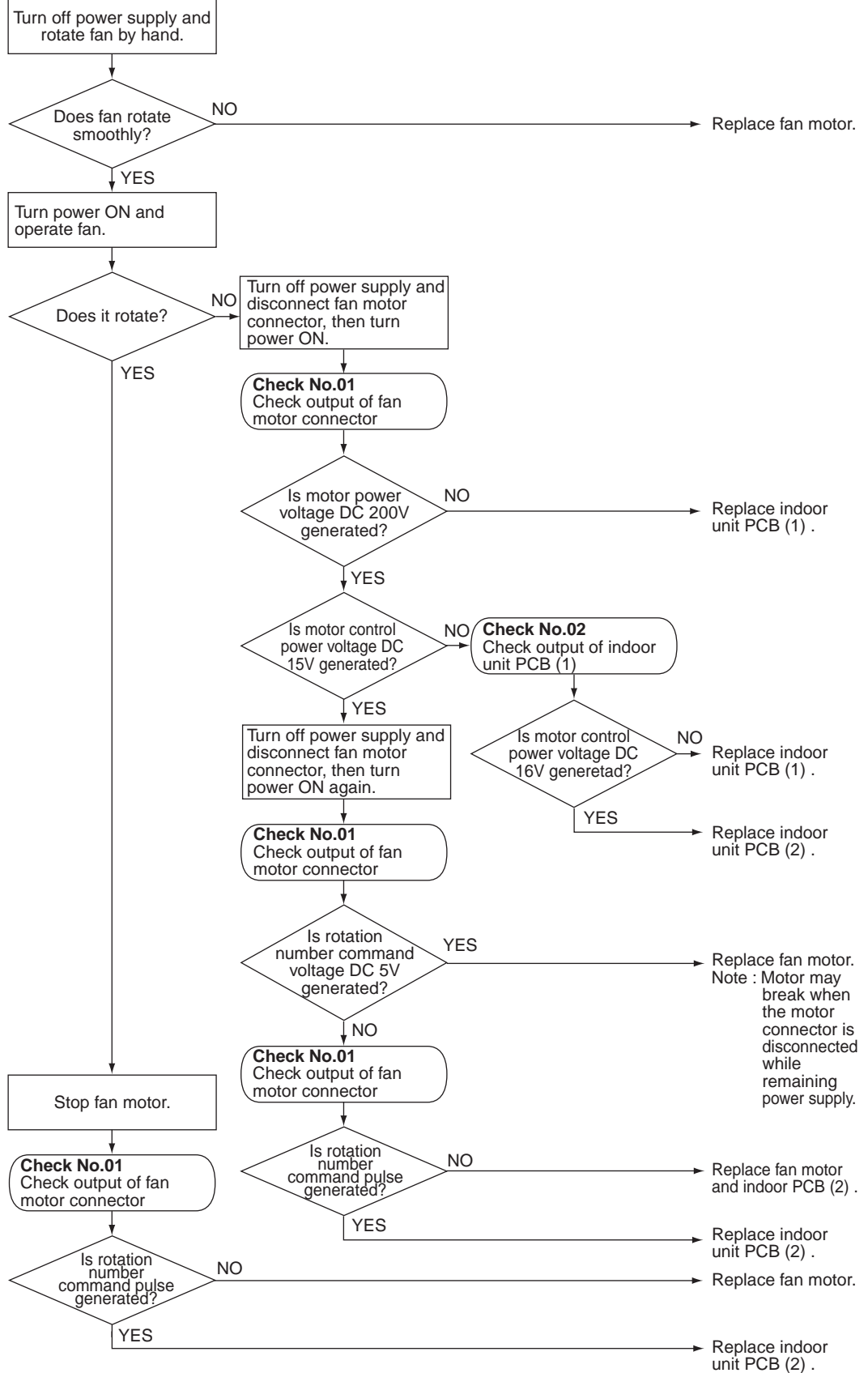
**Check No.01**  
Refer to P.278



**Check No.02**  
Refer to P.278

**Caution**

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



(R1214)

## 4.4 Thermistor or Related Abnormality (Indoor Unit)

Remote Control  
Display

Ⓒ4, Ⓒ9

Method of  
Malfunction  
Detection

The temperatures detected by the thermistors are used to determine thermistor errors.

Malfunction  
Decision  
Conditions

When the thermistor input is more than 4.96 V or less than 0.04 V during compressor operation\*.

\* (reference)

When above about 212°C (less than 120 ohms) or below about -50°C (more than 1,860 kohms).



**Note:** The values vary slightly in some models.

Supposed  
Causes

- Faulty connector connection
- Faulty thermistor
- Faulty PCB

Troubleshooting

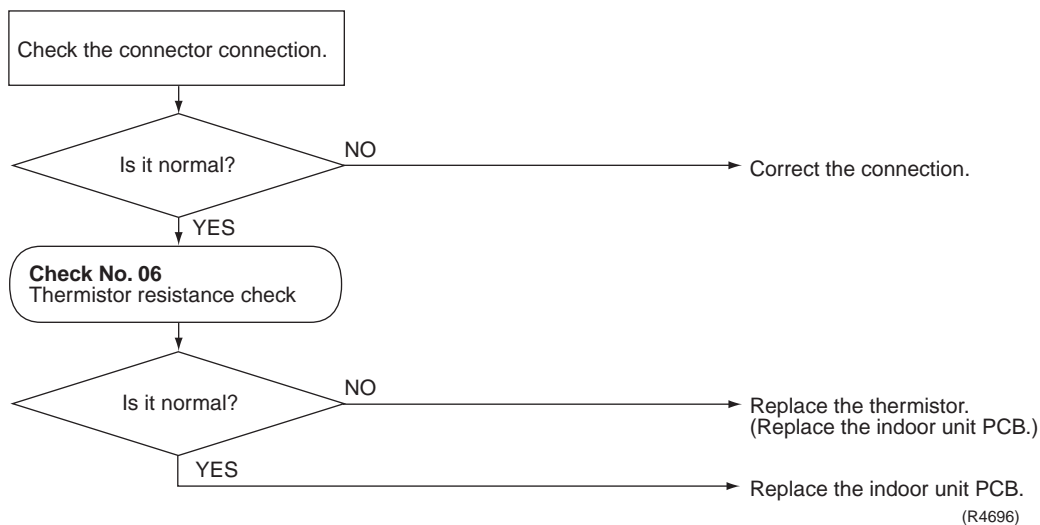


**Check No.06**  
**Refer to P.279**



**Caution**

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



Ⓒ4 : Heat exchanger temperature thermistor

Ⓒ9 : Room temperature thermistor

## 4.5 Shutter Drive Motor / Shutter Limit Switch Abnormality

Remote Control  
Display



Method of  
Malfunction  
Detection

The shutter open / close performance is detected by the limit switch attached on its structure. In this way, the shutter drive motor and the shutter limit switch are checked for failure.

Malfunction  
Decision  
Conditions

When the shutter is open, the limit switch is closed.

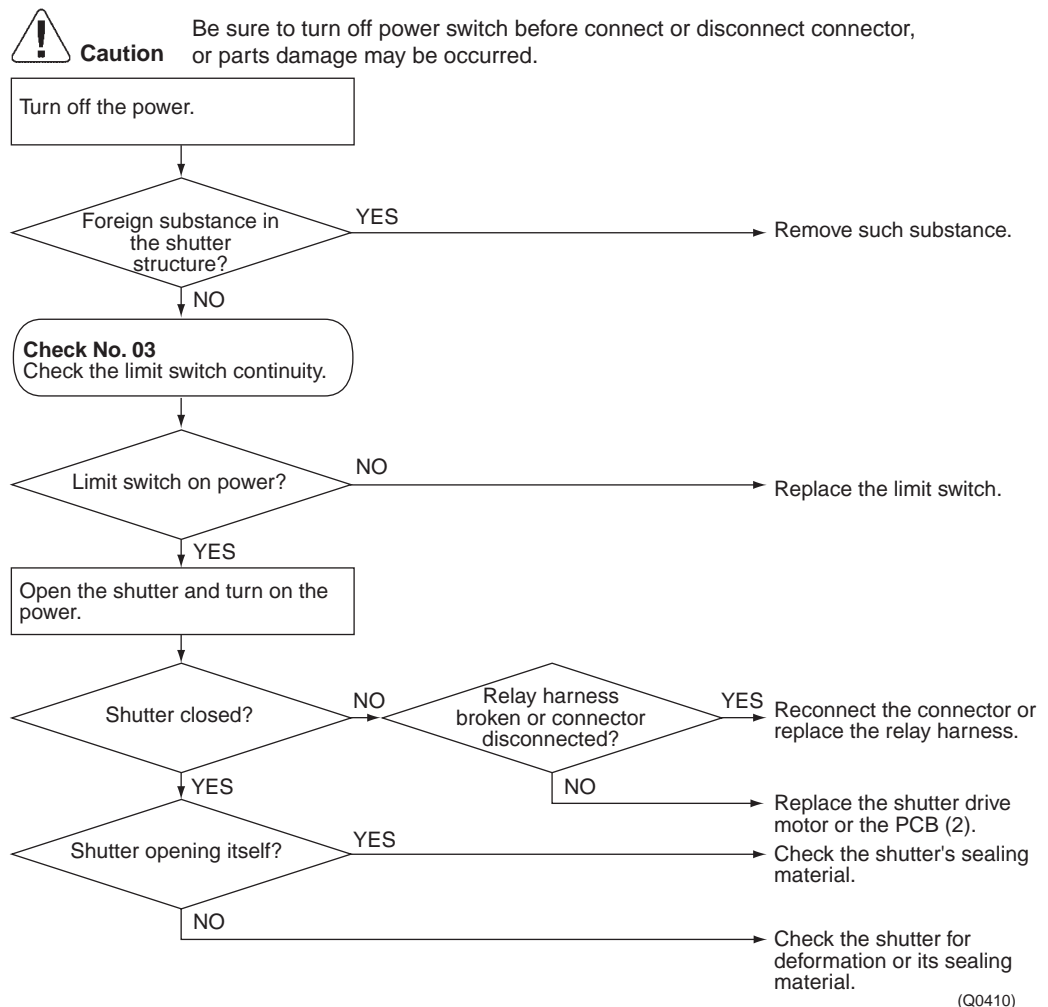
Supposed  
Causes

- Shutter drive motor defective
- Shutter limit switch defective
- Shutter itself deformed (warped)
- Shutter's sealing material too thick
- Detection error by broken relay harness or disconnected connector
- Detection error due to defective PCB (2)
- Foreign substance in blow port

### Troubleshooting



Check No.03  
Refer to P.278



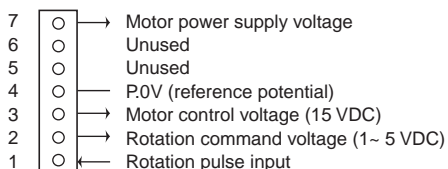
## 4.6 Check

### 4.6.1 Fan Motor Connector Output Check

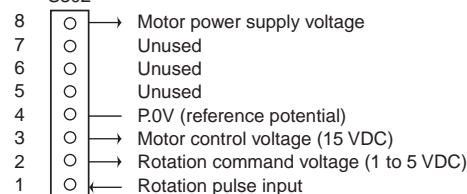
#### Check No.01

1. Check connector connection.
2. Check motor power supply voltage output (pins 4-7 and 4-8).
3. Check motor control voltage (pins 4-3).
4. Check rotation command voltage output (pins 4-2).
5. Check rotation pulse input (pins 4-1).

S1 or S301



S302

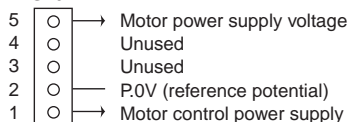


(R4684)

#### Check No.02

1. Check connector connection.
2. Check motor control voltage output (pins 2-1).

S202

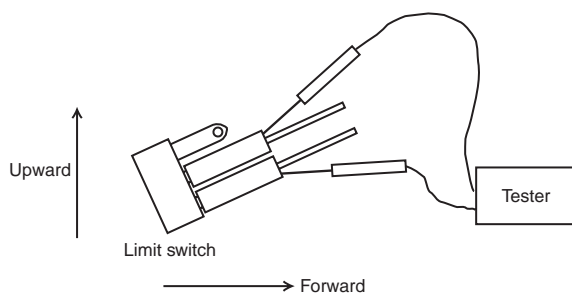


(R1073)

### 4.6.2 Limit Switch Continuity Check

#### Check No.03

Remove the front grille. The limit switch is located at the left side of the drain pan assembly. Check the continuity of the switch connection.



Shutter status	Open	Closed
Continuity	Continuity	No continuity

(Q0363)

- \* The shutter can be opened and closed with hand. Keep the shutter open and closed all the way for each continuity check steps.

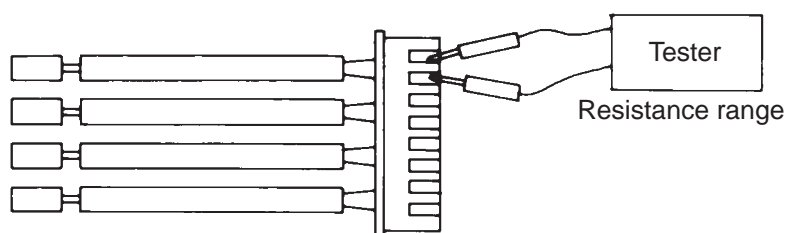
### 4.6.3 Thermistor Resistance Check

#### Check No.06

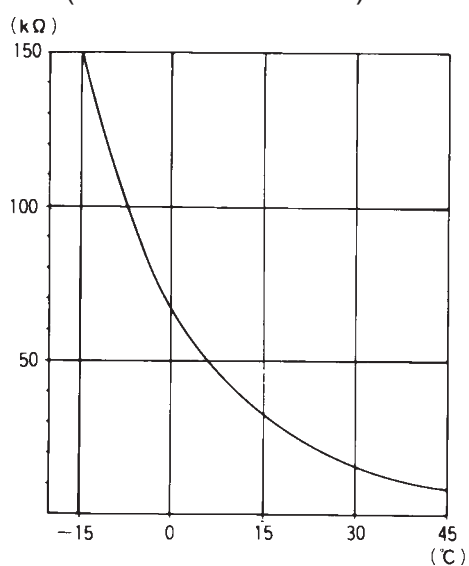
Remove the connectors of the thermistors on the PCB, and measure the resistance of each thermistor using tester.

The relationship between normal temperature and resistance is shown in the graph and the table below.

Thermistor Temperature (°C)	R25°C=20kΩ B=3950
-20	211.0 (kΩ)
-15	150
-10	116.5
-5	88
0	67.2
5	51.9
10	40
15	31.8
20	25
25	20
30	16
35	13
40	10.6
45	8.7
50	7.2



(R25=20kΩ B=3950)



(R1437)

## 4.6.4 Hall IC Check

### Check No.16

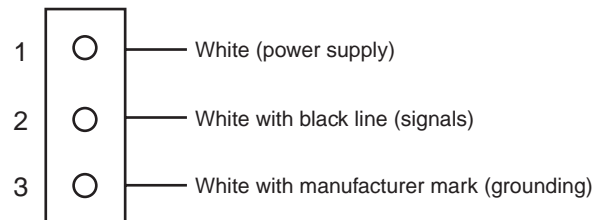
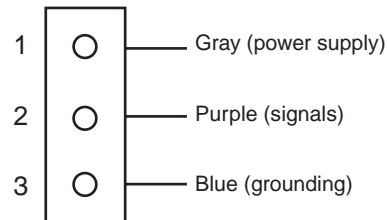
1. Check the connector connection.
2. With the power ON, operation OFF, and the connector connected, check the following.
  - \*Output voltage of about 5 V between pins 1 and 3.
  - \*Generation of 3 pulses between pins 2 and 3 when the fan motor is operating.

Failure of (1) → faulty PCB → Replace the PCB.

Failure of (2) → faulty hall IC → Replace the fan motor.

Both (1) and (2) result → Replace the PCB.

The connector has 3 pins, and there are two patterns of lead wire colors.



(R1990)

## 5. Troubleshooting for SkyAir Indoor Unit

### 5.1 Indoor Unit PCB Abnormality

Remote Control  
Display

*R1*

Applicable  
Models

FFQ-B & FHQ-BU

Method of  
Malfunction  
Detection

Check data from E<sup>2</sup>PROM.

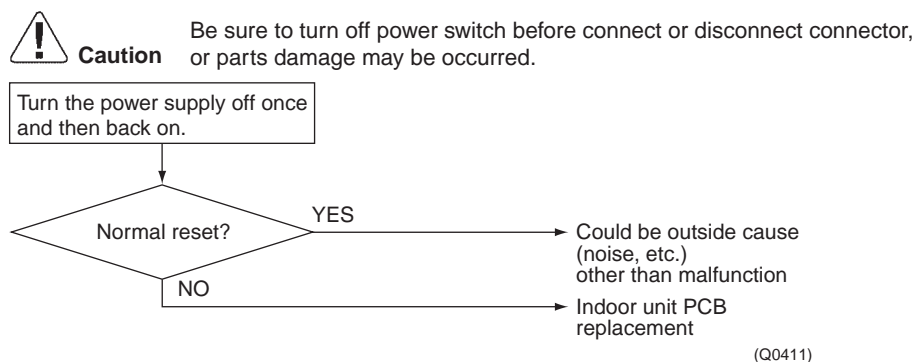
Malfunction  
Decision  
Conditions

When data could not be correctly received from the E<sup>2</sup>PROM  
E<sup>2</sup>PROM : Type of nonvolatile memory. Maintains memory contents even when the power supply is turned off.

Supposed  
Causes

■ Failure of PCB

Troubleshooting



## 5.2 Malfunction of Drain Water Level System (Float Type)

**Remote Control  
Display**

*A3*

**Applicable  
Models**

FFQ-B & FHQ-BU

**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**

- Failure of drain pump
- Improper drain piping work
- Drain piping clogging
- Failure of float switch
- Failure of indoor unit PCB
- Failure of short-circuit connector

## Troubleshooting

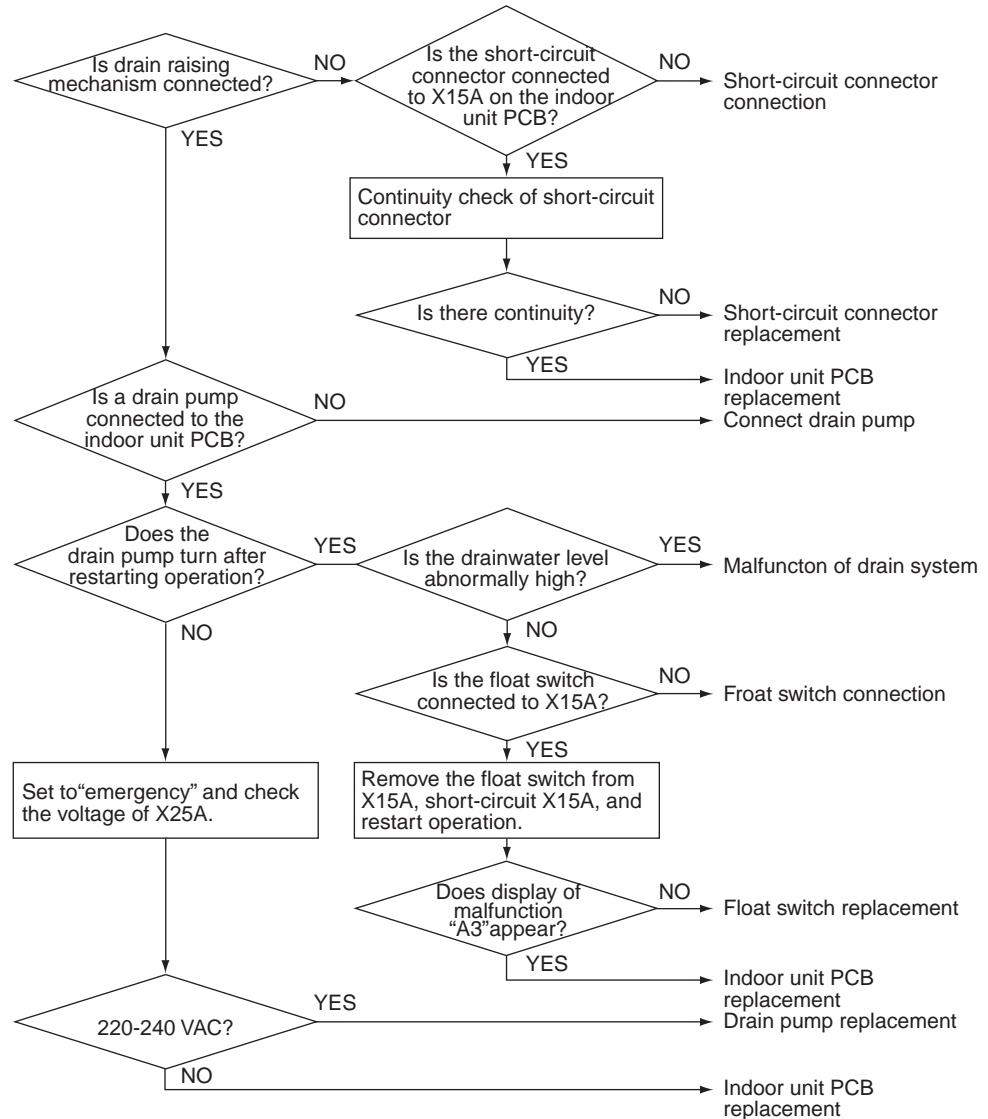


### Caution

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



If "A3" is detected by a PC board which is not mounted with X15A, the PC board is defective.



(Q0412)

## 5.3 Malfunction of Drain System

Remote Control  
Display

RF

Applicable  
Models

FHQ-BU

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

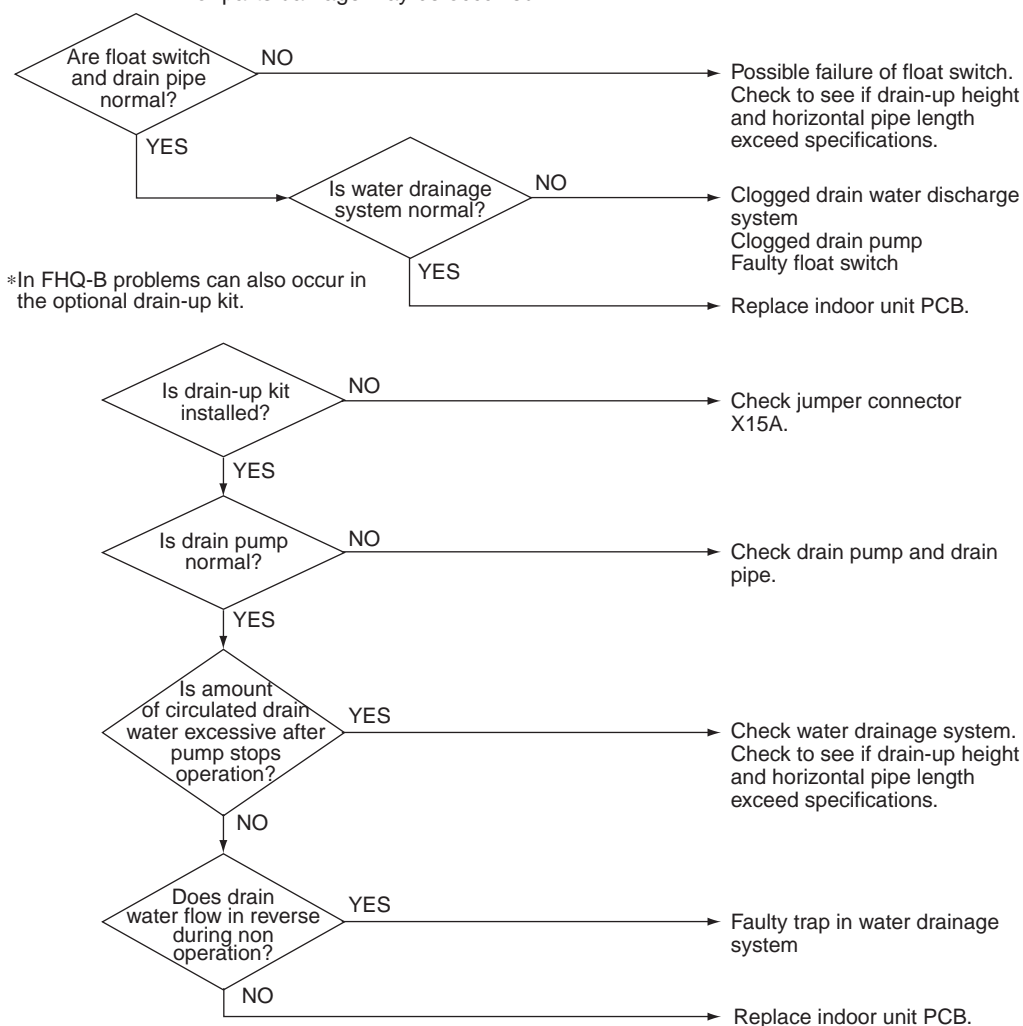
- Error in drain pipe installation
- Faulty float switch
- Faulty indoor unit PCB

### Troubleshooting



#### Caution

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



(S2733)

## 5.4 Indoor Unit Fan Motor Lock

Remote Control  
Display

*AB*

Applicable  
Models

FHQ-BU

Method of  
Malfunction  
Detection

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

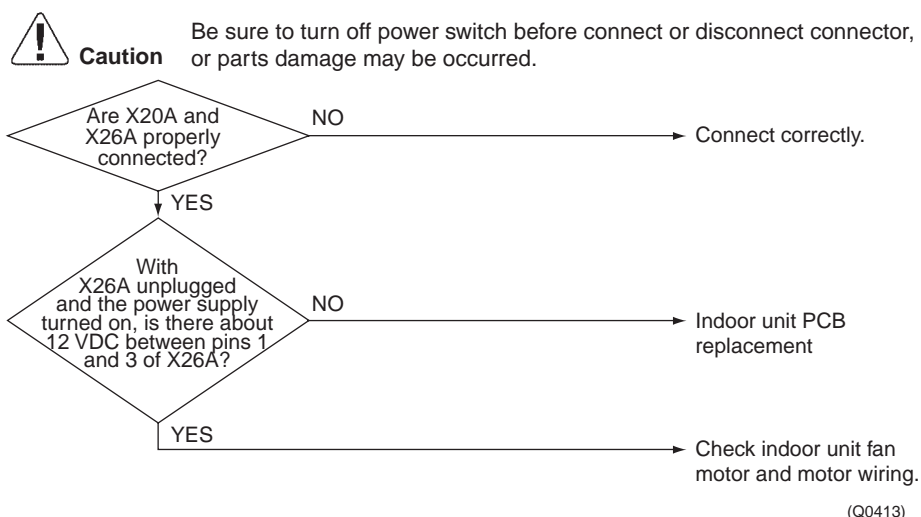
Malfunction  
Decision  
Conditions

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

Supposed  
Causes

- Failure of indoor unit fan motor
- Broken or disconnected wire
- Failure of contact
- Failure of indoor unit PCB

Troubleshooting



## 5.5 Malfunction of Indoor Unit Fan Motor

<b>Remote Control Display</b>	<i>R6</i>
<b>Applicable Models</b>	FFQ-B
<b>Method of Malfunction Detection</b>	Detection of abnormal fan speed by signal from the fan motor
<b>Malfunction Decision Conditions</b>	When fan speed does not increase
<b>Supposed Causes</b>	<ul style="list-style-type: none"> <li>■ Disconnection, short circuit or disengagement of connector in fan motor harness</li> <li>■ Faulty fan motor (disconnection, poor insulation)</li> <li>■ Abnormal signal from fan motor (faulty circuit)</li> <li>■ Faulty PCB</li> <li>■ Instantaneous fluctuation of power supply voltage</li> <li>■ Fan motor lock (Caused by motor or other external factors)</li> <li>■ Fan does not turn due to a tangle of foreign matters.</li> </ul>

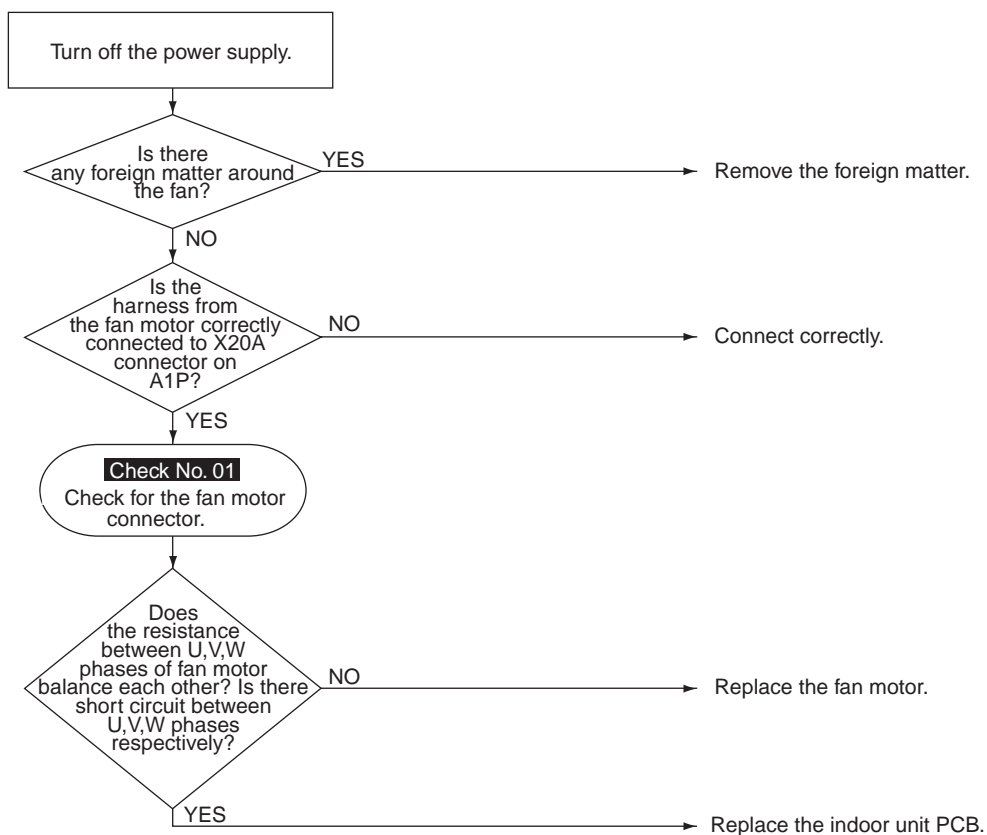
## Troubleshooting



**Check No.01**  
**Refer to P.298**

**Caution**

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

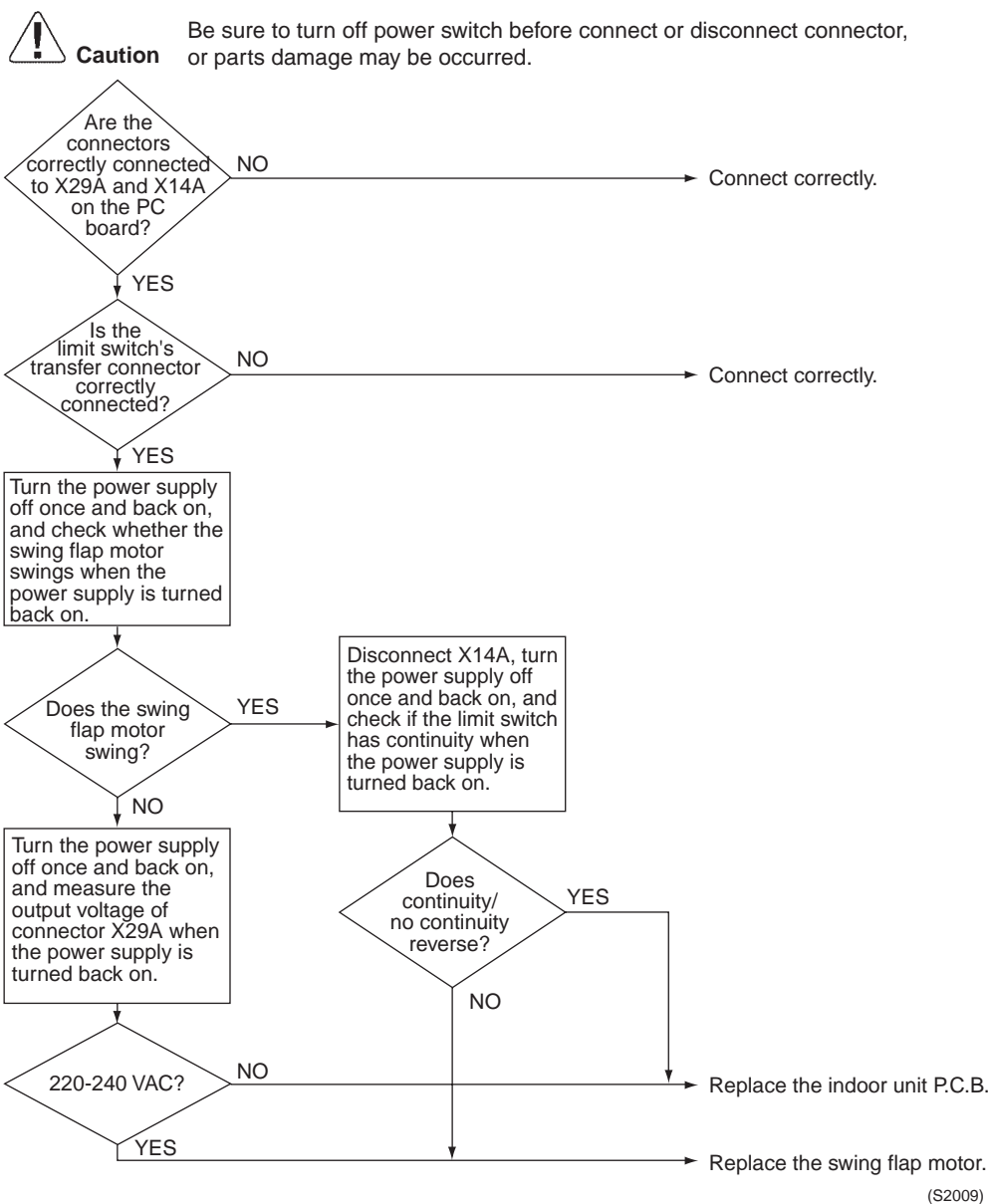


(Q0414)

## 5.6 Swing Flap Motor Malfunction / Lock

Remote Control Display	<i>A7</i>
Applicable Models	FHQ-BU
Method of Malfunction Detection	Utilizes ON/OFF of the limit switch when the motor turns.
Malfunction Decision Conditions	When ON/OFF of the microswitch for positioning cannot be reversed even though the swing flap motor is energized for a specified amount of time (about 30 seconds).
Supposed Causes	<ul style="list-style-type: none"><li>■ Failure of motor</li><li>■ Failure of microswitch</li><li>■ Failure of connector connection</li><li>■ Failure of indoor unit PCB</li></ul>

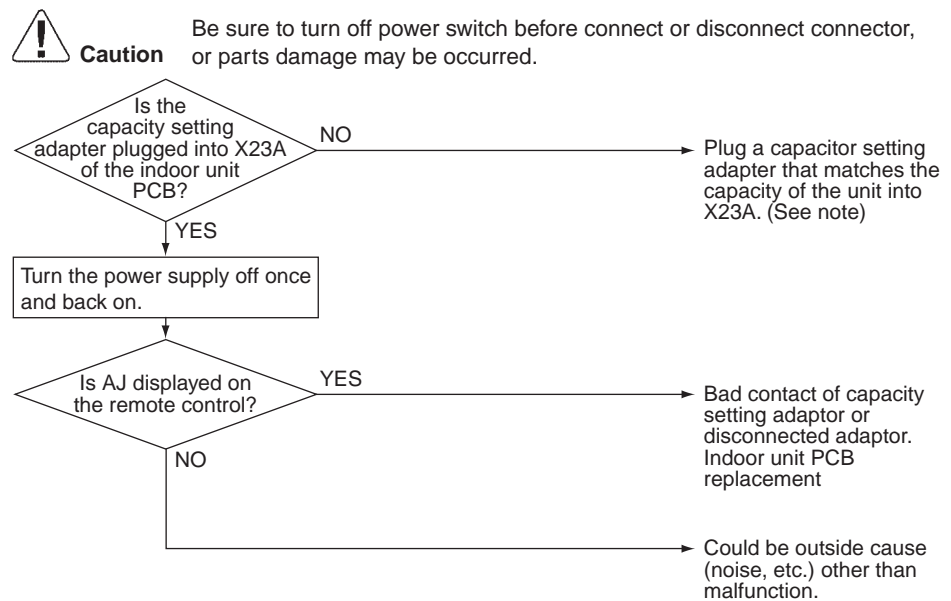
## Troubleshooting



# 5.7 Malfunction of Capacity Setting

Remote Control Display	<i>AJ</i>
Applicable Models	FFQ-B, FHQ-BU
Method of Malfunction Detection	Capacity is determined according to resistance of the capacity setting adapter and the memory inside the IC memory on the indoor unit PCB, 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 PCB's memory, and the capacity setting adapter is not connected. (2)When a capacity that doesn't exist for that unit is set.
Supposed Causes	<ul style="list-style-type: none"> <li>■ Failure of capacity setting adapter connection</li> <li>■ Failure of indoor unit PCB</li> </ul>

## Troubleshooting



(Q0415)



**Note:** Capacity is factory set in the data IC on the PCB. A capacity setting adapter that matches the capacity of the unit is required in the following case.  
If the indoor PCB installed at the factory is for some reason changed at the installation site, the capacity will not be contained in the replacement PCB.  
If you connect a capacity setting adapter to a PCB in which the capacity is memorized, the capacity setting for the PCB will become the capacity setting of the adapter. (Priority of capacity setting adapter)

## 5.8 Malfunction of Heat Exchanger Thermistor (R2T)

Remote Control  
Display

4

Applicable  
Models

FFQ-B, FHQ-BU

Method of  
Malfunction  
Detection

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

Malfunction  
Decision  
Conditions

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

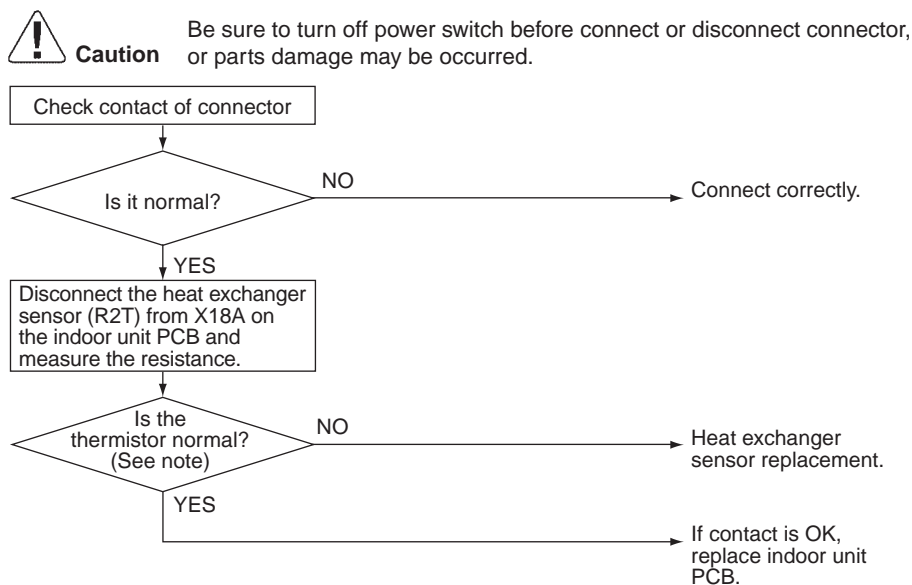
Supposed  
Causes

- Failure of the sensor itself
- Broken or disconnected wire
- Failure of electronic circuitry (indoor unit PCB)
- Failure of connector contact

Troubleshooting



Check No.02  
Refer to P.299



★See **Check No. 02** for "Thermistor temperature and resistance characteristics".

(Q0416)

## 5.9 Malfunction of Heat Exchanger Thermistor (R3T)

Remote Control  
Display



Applicable  
Models

FFQ-B, FHQ-BU

Method of  
Malfunction  
Detection

Malfunction detection is carried out by temperature detected by heat exchanger sensor (R3T).

Malfunction  
Decision  
Conditions

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

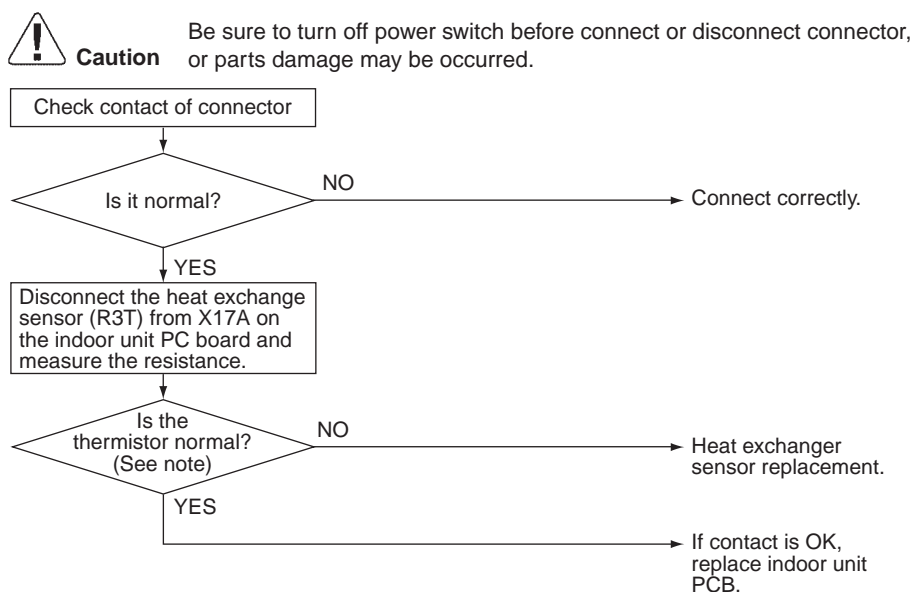
Supposed  
Causes

- Failure of the sensor itself
- Broken or disconnected wire
- Failure of electronic circuitry (indoor unit PCB)
- Failure of connector contact

Troubleshooting



Check No.02  
Refer to P.299



★See **Check No. 02** for "Thermistor temperature and resistance characteristics".

(Q0417)

## 5.10 Malfunction of Suction Air Thermistor

Remote Control  
Display



Applicable  
Models

FFQ-B, FHQ-BU

Method of  
Malfunction  
Detection

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

Malfunction  
Decision  
Conditions

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

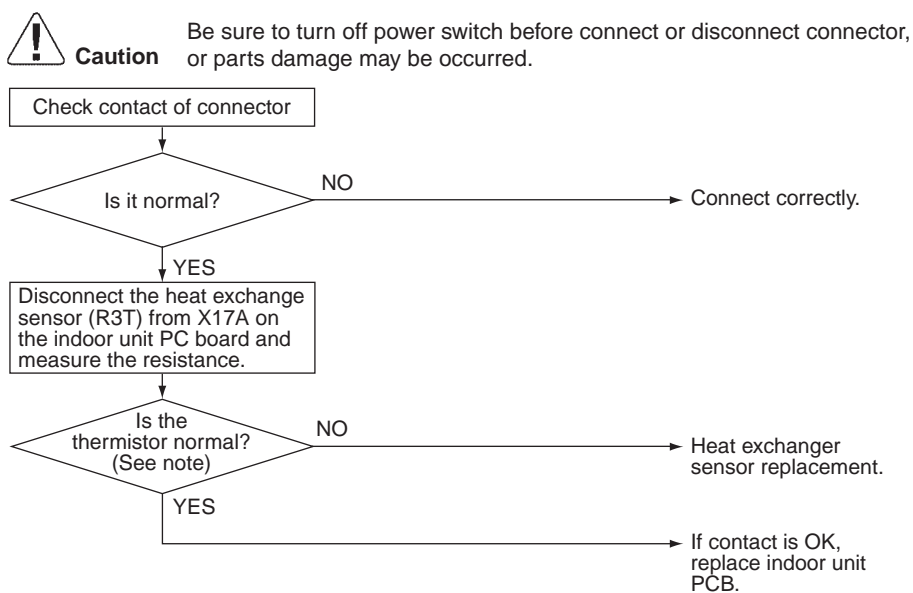
Supposed  
Causes

- Failure of the sensor itself
- Broken or disconnected wire
- Failure of indoor unit PCB
- Failure of connector contact

Troubleshooting



Check No.02  
Refer to P.299



★See **Check No. 02** for "Thermistor temperature and resistance characteristics".

(Q0417)

# 5.11 Malfunction of Remote Control Thermistor

Remote Control  
Display



Applicable  
Models

FFQ-B, FHQ-BU

Method of  
Malfunction  
Detection

Even if remote control thermistor is faulty, system is possible to operate by system thermistor.  
Malfunction detection is carried out by temperature detected by remote control thermistor.

Malfunction  
Decision  
Conditions

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

Supposed  
Causes

- Failure of sensor itself
- Broken wire

Troubleshooting



Check No.02  
Refer to P.299



**Caution**

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

Turn the power supply  
off once and then  
back on

Is CJ  
displayed on the  
remote control?

YES

→ Replace remote control.

NO

→ Could be outside cause  
(noise,etc.) other than  
malfunction

★See **Check No. 02** for “Thermistor temperature and resistance characteristics”.

(Q0419)

## 5.12 Transmission Error (between Indoor Unit and Remote Control)

Remote Control  
Display

U5

Applicable  
Models

FFQ-B, FHQ-BU

Method of  
Malfunction  
Detection

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

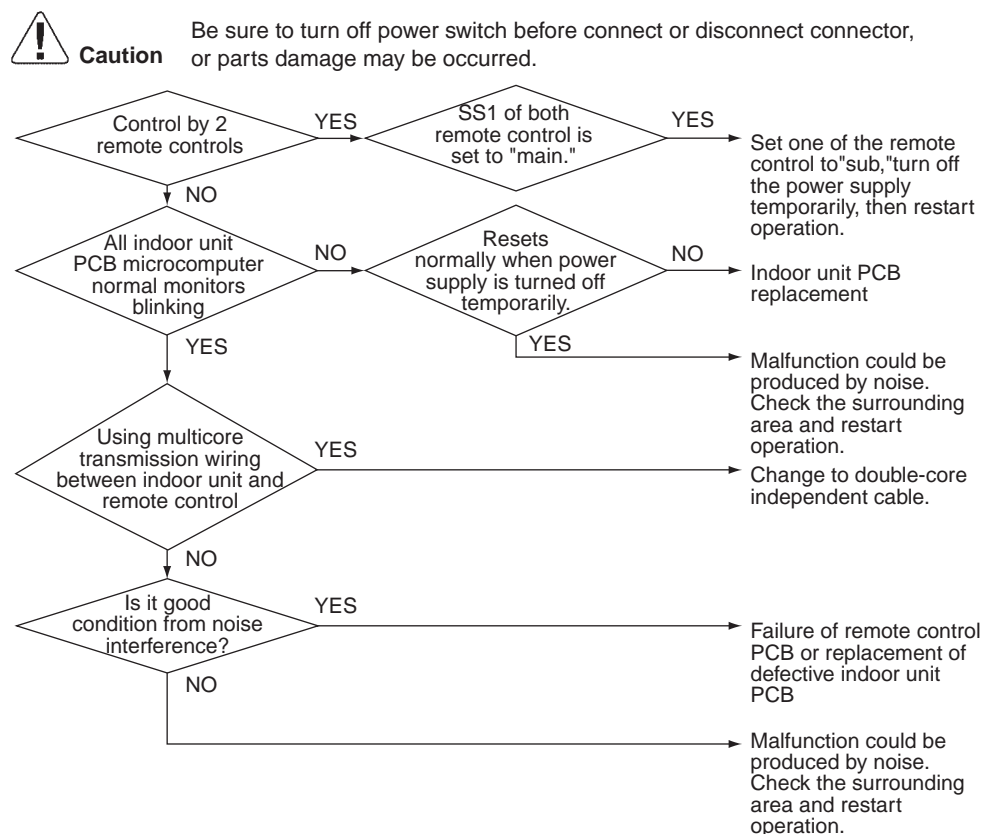
Malfunction  
Decision  
Conditions

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

Supposed  
Causes

- Failure of remote control
- Failure of indoor PCB
- Outside cause (noise, etc.)
- Connection of 2 master remote controls (When using 2 remote controls)

### Troubleshooting



(Q0420)

## 5.13 Transmission Error (between Main and Sub Remote Control)

Remote Control Display *U8*

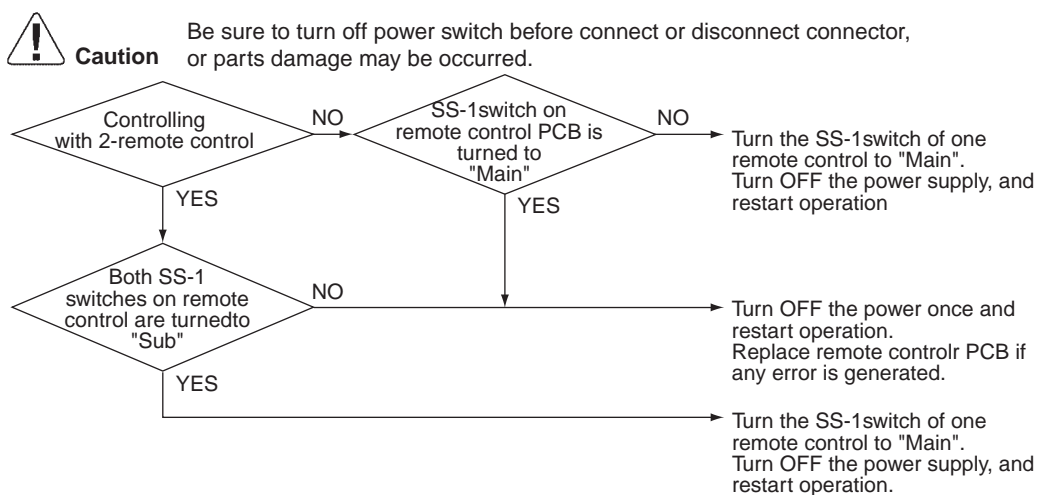
Applicable Models FFQ-B, FHQ-BU

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

**Malfunction Decision Conditions**  
Normal transmission does not continue for specified period.

- Supposed Causes**
- Transmission error between Main remote control and Sub remote control
  - Connection among "Sub" remote controls
  - Faulty remote control PCB

### Troubleshooting



## 5.14 Malfunction of Field Setting Switch

Remote Control  
Display

UR

Applicable  
Models

FFQ-B, FHQ-BU

Method of  
Malfunction  
Detection

Malfunction  
Decision  
Conditions

Incorrect field setting

Supposed  
Causes

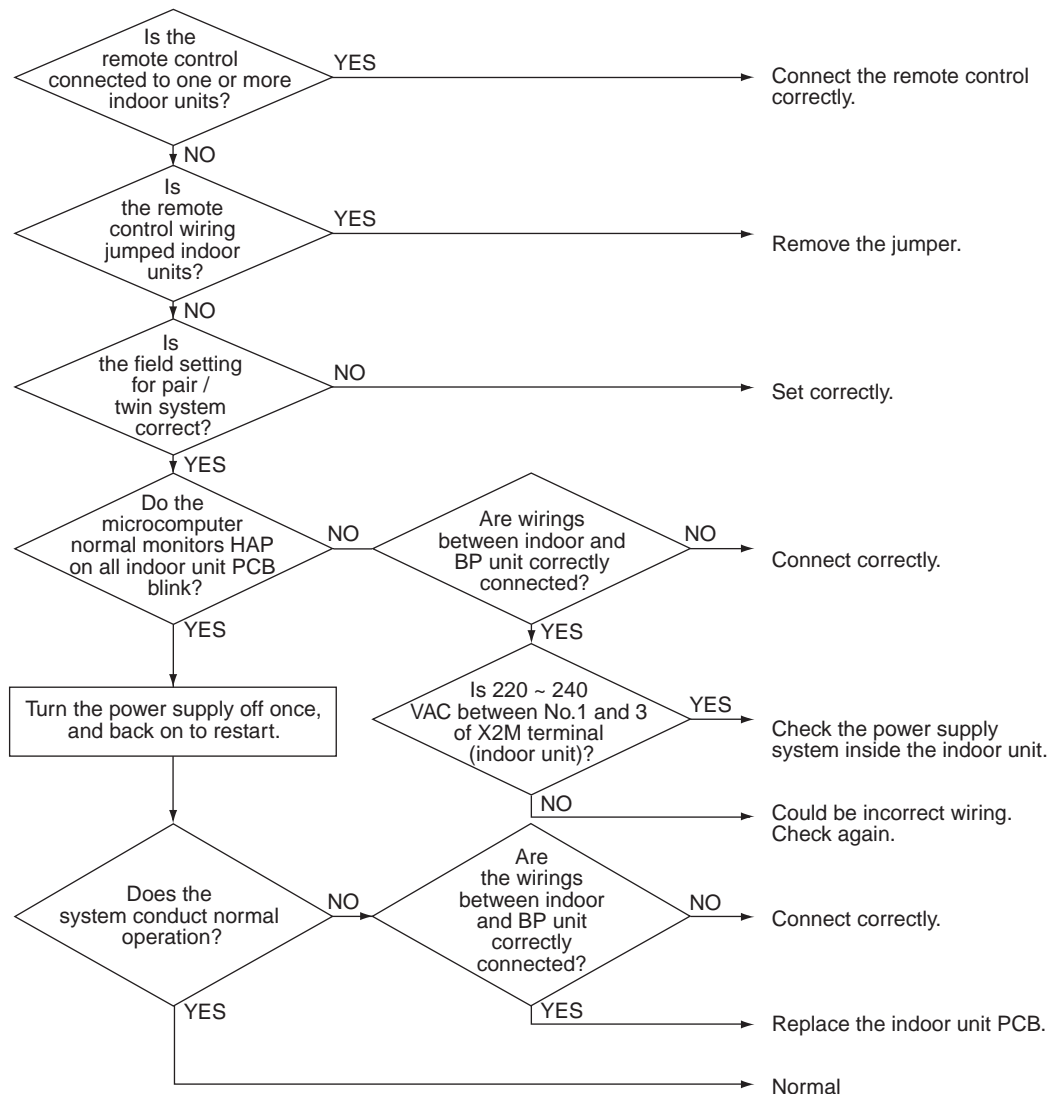
- Indoor-Outdoor (BP) transmission line
- Faulty remote control wiring

Troubleshooting



**Caution**

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



(Q0401)

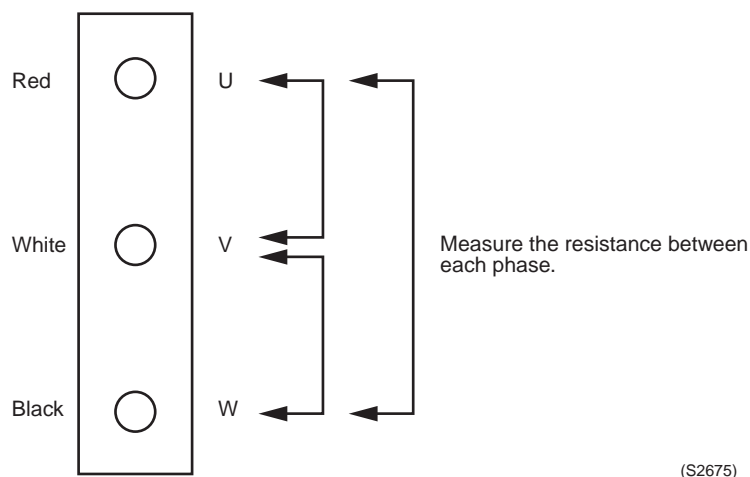
## 5.15 Check

### Check No. 01

#### Check for Fan Motor Connector (Power Supply Line)

(1) Turn the power supply off.

With the relay connector disconnected, measure the resistance between UVW phases of the connector (3 cores) at the motor side, then make sure that the resistance between each phase is balanced and not short-circuited.



## Check No. 02

## Check for Thermistors

Disconnect the thermistor connector from PCB, then measure the resistance by using a tester.

Thermistor temperature and resistance characteristics Unit : k $\Omega$

Temperature °C	A	B
-6.0	90.8	88.0
-4.0	81.7	79.1
-2.0	73.5	71.1
0.0	66.3	64.1
2.0	59.8	57.8
4.0	54.1	52.3
6.0	48.9	47.3
8.0	44.3	42.9
10.0	40.2	38.9
12.0	36.5	35.3
14.0	33.2	32.1
16.0	30.2	29.2
18.0	27.5	26.6
20.0	25.1	24.3
22.0	23.0	22.2
24.0	21.0	20.3
26.0	19.2	18.5
28.0	17.6	17.0
30.0	16.2	15.6
32.0	14.8	14.2
34.0	13.6	13.1
36.0	12.5	12.0
38.0	11.5	11.1
40.0	10.6	10.3
42.0	9.8	9.5
44.0	9.1	8.8
46.0	8.4	8.2
48.0	7.8	7.6
50.0	7.2	7.0
52.0	6.9	6.7
54.0	6.2	6.0
56.0	5.7	5.5
58.0	5.3	5.2
Application	<ul style="list-style-type: none"> <li>● Heat exchanger (Indoor/Outdoor units)</li> <li>● Suction air</li> <li>● Remote control</li> <li>● Air</li> <li>● Outdoor air</li> <li>● Suction pipe</li> </ul>	<ul style="list-style-type: none"> <li>● Radiator fin</li> </ul>

# 6. Troubleshooting for BP Unit

## 6.1 Malfunction of Electronic Expansion Valve

Remote Control  
Display

*R9*

Method of  
Malfunction  
Detection

Detection by checking continuity and lack of connector.

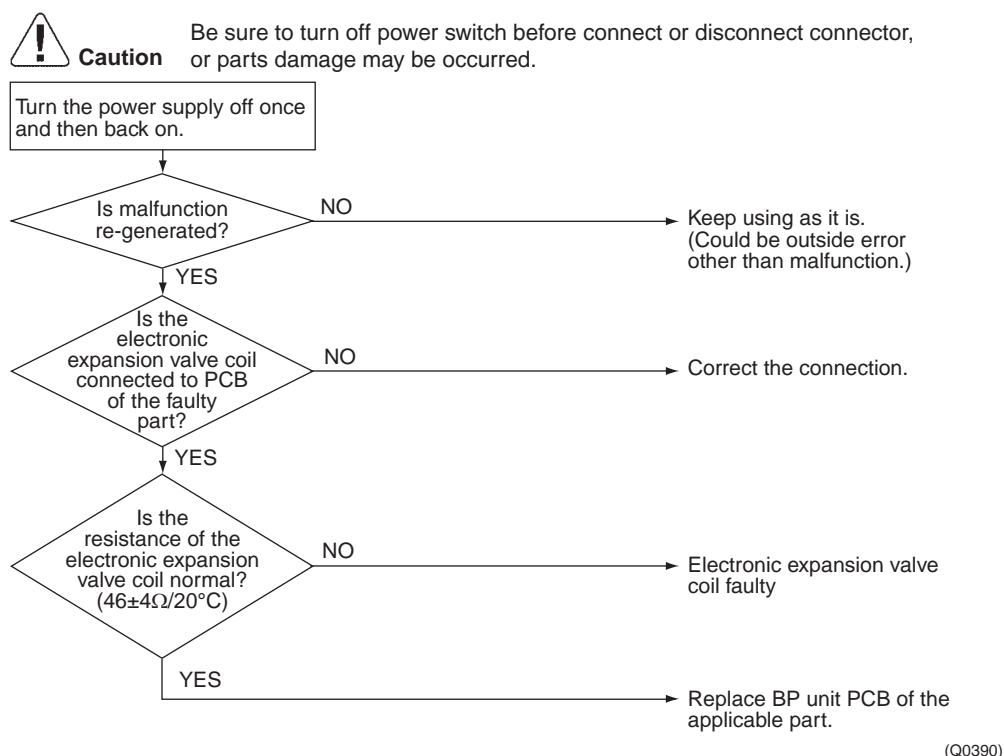
Malfunction  
Decision  
Conditions

Malfunction is determined by no common voltage applied when turning the power supply on.

Supposed  
Causes

- Faulty harness of electronic expansion valve
- Incorrect connectors connection of electronic expansion valve

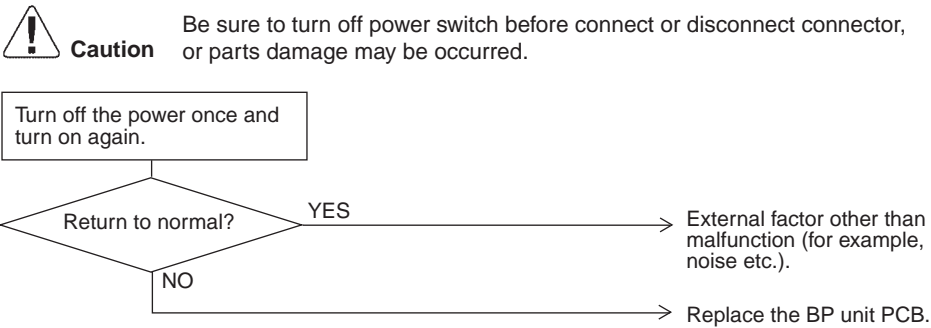
Troubleshooting



## 6.2 Faulty BP Unit PCB

Remote Control Display	E2
Method of Malfunction Detection	Check data from E <sup>2</sup> PROM
Malfunction Decision Conditions	When data could not be correctly received from the E <sup>2</sup> PROM E <sup>2</sup> PROM : Type of nonvolatile memory. Maintains memory contents even when the power supply is turned off.
Supposed Causes	■ Defect of BP unit PCB

### Troubleshooting



(Q0391)

## 6.3 Faulty BP Liquid or Gas Pipe Thermistor

Remote Control  
Display



Method of  
Malfunction  
Detection

Malfunction  
Decision  
Conditions

When the BP liquid or gas pipe temperature sensor became short-circuited or open.

Supposed  
Causes

- Faulty BP liquid or gas pipe temperature sensor
- Faulty connectors connection of BP liquid or gas pipe temperature sensor

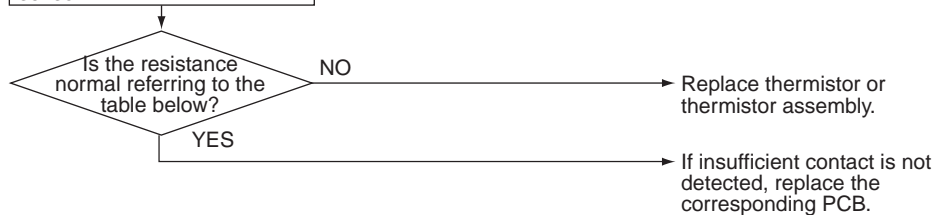
Troubleshooting



**Caution**

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

Disconnect the thermistor connectors from the corresponding BP PCB and measure the resistance of liquid or gas tube temperature sensor.



(Q0392)

Temp.	Resistance
-10°C	117kΩ
0°C	67kΩ
10°C	40kΩ
20°C	25kΩ
30°C	16kΩ
40°C	10kΩ
50°C	7kΩ
60°C	5kΩ
70°C	3kΩ

## 6.4 Transmission Error between Indoor Unit and BP Unit

### Outdoor Unit Indication

**U4**

### Method of Malfunction Detection

The data received from the BP unit in indoor unit-BP unit signal transmission is checked whether it is normal.

### Malfunction Decision Conditions

When the data sent from the BP unit cannot be received normally, or when the content of the data is abnormal.

### Supposed Causes

- Faulty BP unit PCB.
- Faulty indoor unit PCB.
- Indoor unit-BP unit signal transmission error due to wiring error.
- Indoor unit-BP unit signal transmission error due to disturbed power supply waveform.
- Indoor unit-BP unit signal transmission error due to breaking of wire in the connection wires between the indoor and BP units (wire No. 2).

# Troubleshooting



**Check No.14**  
Refer to P.306



## Caution

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

Push and hold the RESET button on the outdoor unit PCB for 5 seconds

Does the malfunction occur again?

NO

Normal  
(Address Setting was not conducted)

YES

Check the indoor unit-outdoor unit connection wires.

Is there any wiring error?

YES

Correct the indoor unit-outdoor unit connection wires.

NO

Is HAP blinking?

NO (ON or OFF)

Check for indoor unit microcomputer normal HAP

Turn the power supply off once and then back on.

Is HAP blinking?

NO

Faulty indoor unit PCB or malfunction of power supply system.

YES

Resets normally. Could result from external cause (e.g. noise).

Check the outdoor unit's LED A.

Is LED A blinking?

NO

Turn power supply off, and turn on again.

YES

Is LED A blinking?

NO

Faulty BP unit PCB or malfunction of power supply system.

YES

Could result from external cause (e.g. noise).

Check the voltage of the indoor unit-outdoor unit connection wires between No. 1 and No. 2, and between No 2 and No. 3.

Is the voltage 0 V?

YES

Replace the connection wires between the indoor and outdoor units.

NO

**Check No. 14**  
Check power supply waveform.

Is there any disturbance?

NO

Replace indoor unit control PCB .

YES

Locate the cause of the disturbance of the power supply waveform, and correct it.

(Q0393)

## 6.5 Transmission Error between Outdoor Unit and BP Unit

Outdoor Unit  
Indication

UU

Method of  
Malfunction  
Detection

Transmission error is detected when the outdoor unit could not received the data from BP unit correctly.

Malfunction  
Decision  
Conditions

When the data from BP unit could not be correctly received continuously for 10 minutes

Supposed  
Causes

- Incorrect connection of transmission wire
- Faulty outdoor unit power supply
- Faulty BP unit PCB
- Faulty outdoor unit PCB
- Distortion of power supply wave

### Troubleshooting

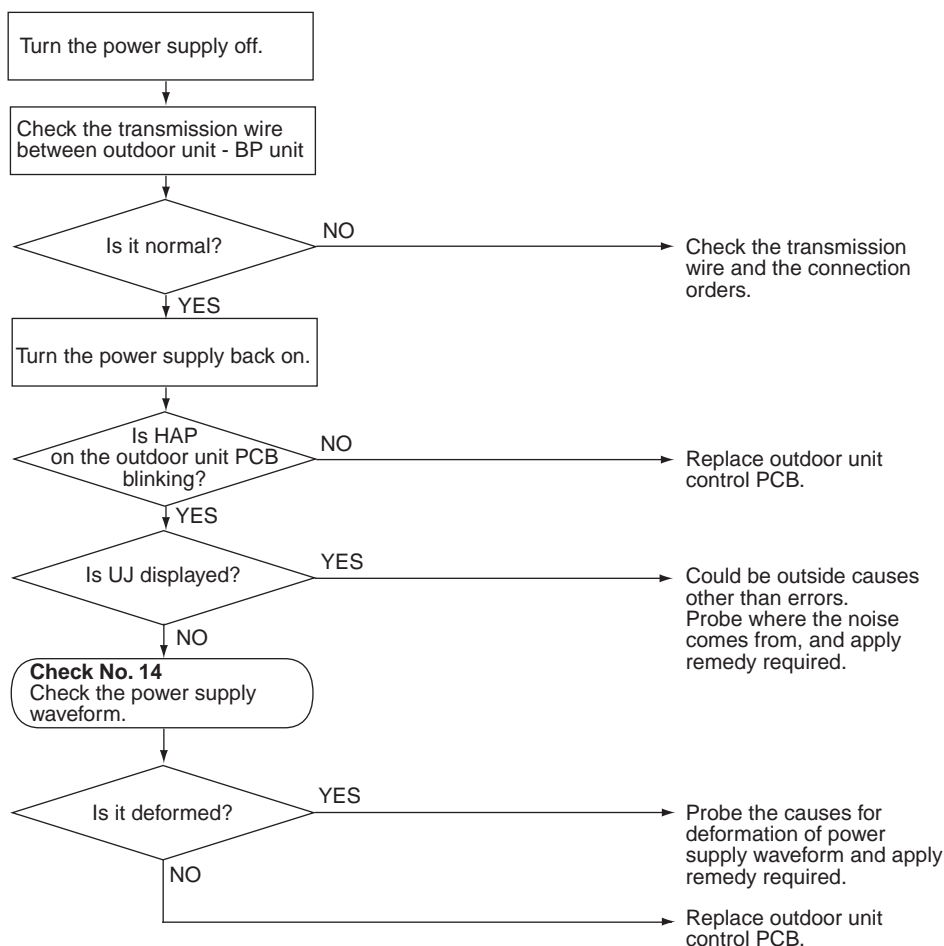


Check No.14  
Refer to P.306



#### Caution

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



(Q0394)

## 6.6 Check

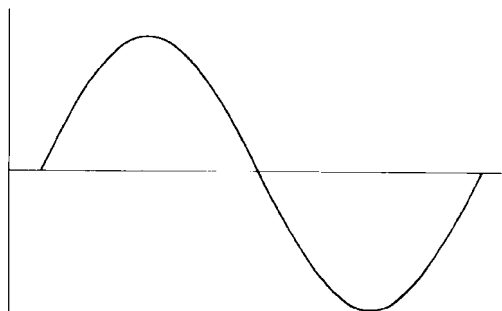
### 6.6.1 Power Supply Waveforms Check

**Check No.14**

Measure the power supply waveform between pins 1 and 3 on the terminal board, and check the waveform disturbance.

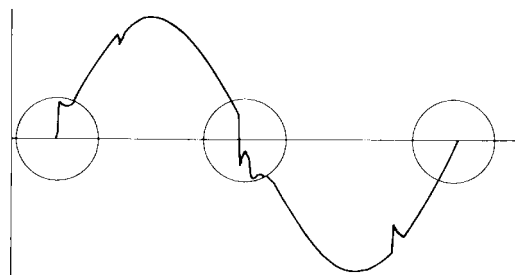
- Check to see if the power supply waveform is a sine wave (Fig.1).
- Check to see if there is waveform disturbance near the zero cross (sections circled in Fig.2)

[Fig.1]



(ML104)

[Fig.2]



(ML105)

## 7. Troubleshooting for Outdoor Unit

### 7.1 Faulty Outdoor Unit PCB

Remote Control  
Display

*E1*

Applicable  
Models

All outdoor unit models

Method of  
Malfunction  
Detection

Check data from E<sup>2</sup>PROM

Malfunction  
Decision  
Conditions

When data could not be correctly received from the E<sup>2</sup>PROM  
E<sup>2</sup>PROM : Type of nonvolatile memory. Maintains memory contents even when the power supply is turned off.

Supposed  
Causes

- Defect of outdoor unit PCB (A1P)

Troubleshooting




**Caution**

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



## 7.2 Actuation of High Pressure Switch

<b>Remote Control Display</b>	
<b>Applicable Models</b>	All outdoor unit models
<b>Method of Malfunction Detection</b>	Abnormality is detected when the contact of the high pressure protection switch opens.
<b>Malfunction Decision Conditions</b>	<p>Error is generated when the HPS activation count reaches the number specific to the operation mode.</p> <p>(Reference) Operating pressure of high pressure switch Operating pressure: 4.0MPa Reset pressure: 3.0MPa</p>
<b>Supposed Causes</b>	<ul style="list-style-type: none"><li>■ Actuation of outdoor unit high pressure switch</li><li>■ Defect of High pressure switch</li><li>■ Defect of outdoor unit PCB</li><li>■ Instantaneous power failure</li><li>■ Faulty high pressure sensor</li></ul>

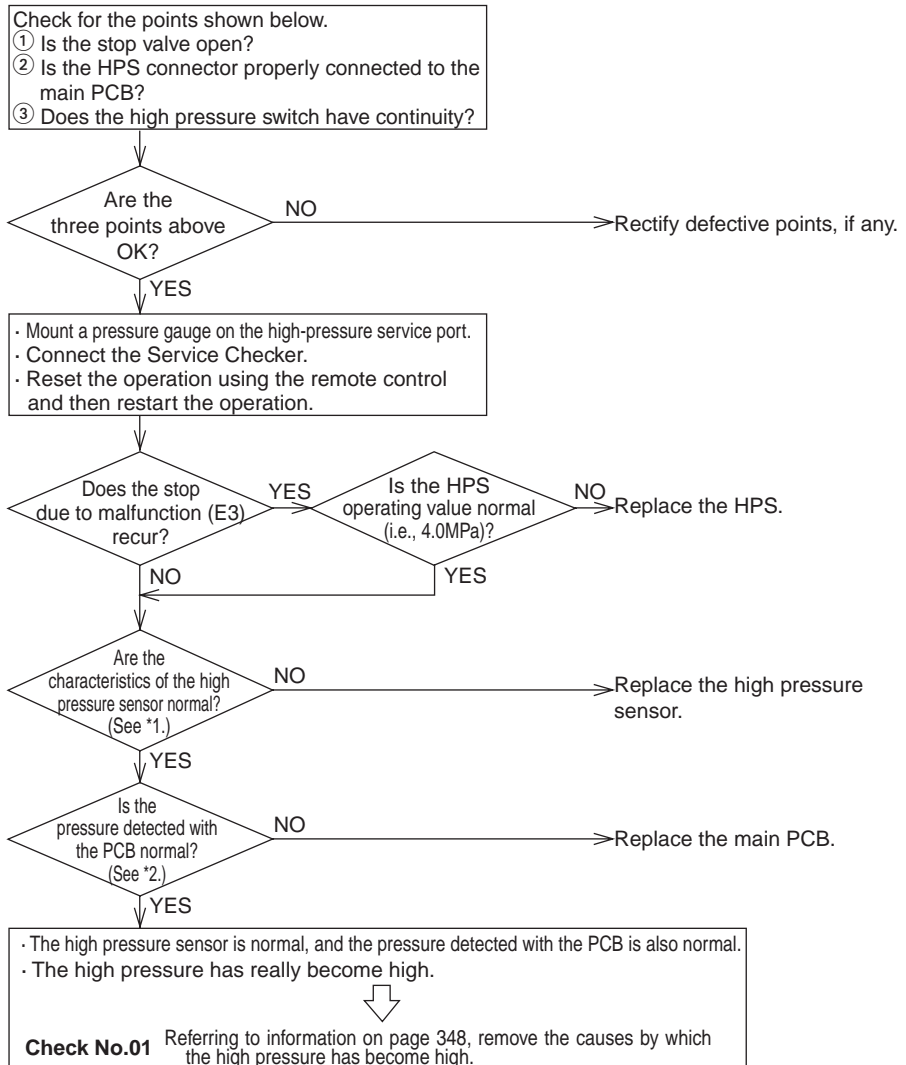
## Troubleshooting



**Check No.01**  
**Refer to P.352**

**Caution**

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

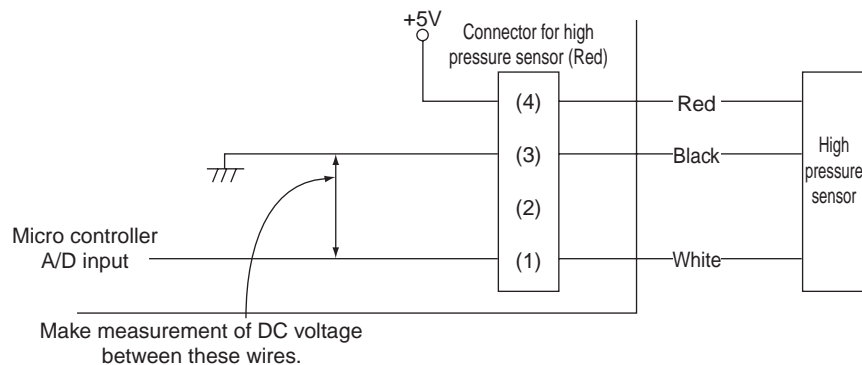


\*1: Make a comparison between the voltage of the pressure sensor and that read by the pressure gauge.

(As to the voltage of the pressure sensor, make measurement of voltage at the connector, and then convert it to pressure according to information on page 353.)

\*2: Make a comparison between the high pressure value checked with the Service Checker and the voltage of the pressure sensor (see \*1).

\*3: Make measurement of voltage of the pressure sensor.



## 7.3 Actuation of Low Pressure Sensor

**Remote Control  
Display**

---

*E4*

---

**Applicable  
Models**

---

All outdoor unit models

---

**Method of  
Malfunction  
Detection**

---

Abnormality is detected by the pressure value with the low pressure sensor.

---

**Malfunction  
Decision  
Conditions**

---

Error is generated when the low pressure is dropped under specific pressure.  
Operating pressure:0.07MPa

---

**Supposed  
Causes**

- 
- Abnormal drop of low pressure (Lower than 0.07MPa)
  - Defect of low pressure sensor
  - Defect of outdoor unit PCB
  - Stop valve is not opened.
-

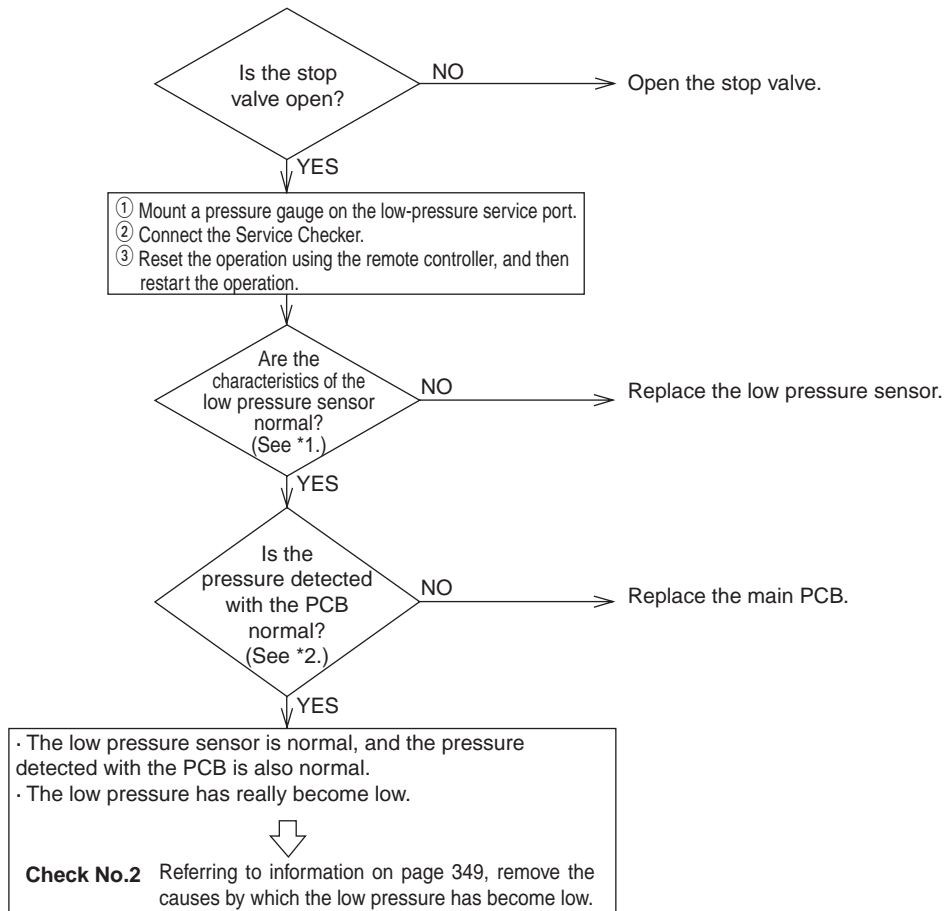
## Troubleshooting



**Check No.02**  
Refer to P.353

**Caution**

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

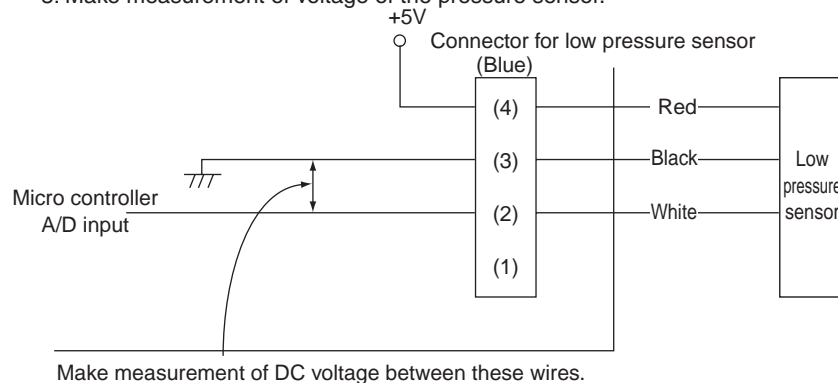


\*1: Make a comparison between the voltage of the pressure sensor and that read by the pressure gauge.

(As to the voltage of the pressure sensor, make measurement of voltage at the connector, and then convert it to pressure according to information on page 353.)

\*2: Make a comparison between the low pressure value checked with the Service Checker and the voltage of the pressure sensor (see \*1).

\*3: Make measurement of voltage of the pressure sensor.



# 7.4 Compressor Motor Lock

Remote Control  
Display

E5

Applicable  
Models

All outdoor unit models

Method of  
Malfunction  
Detection

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

Malfunction  
Decision  
Conditions

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

Supposed  
Causes

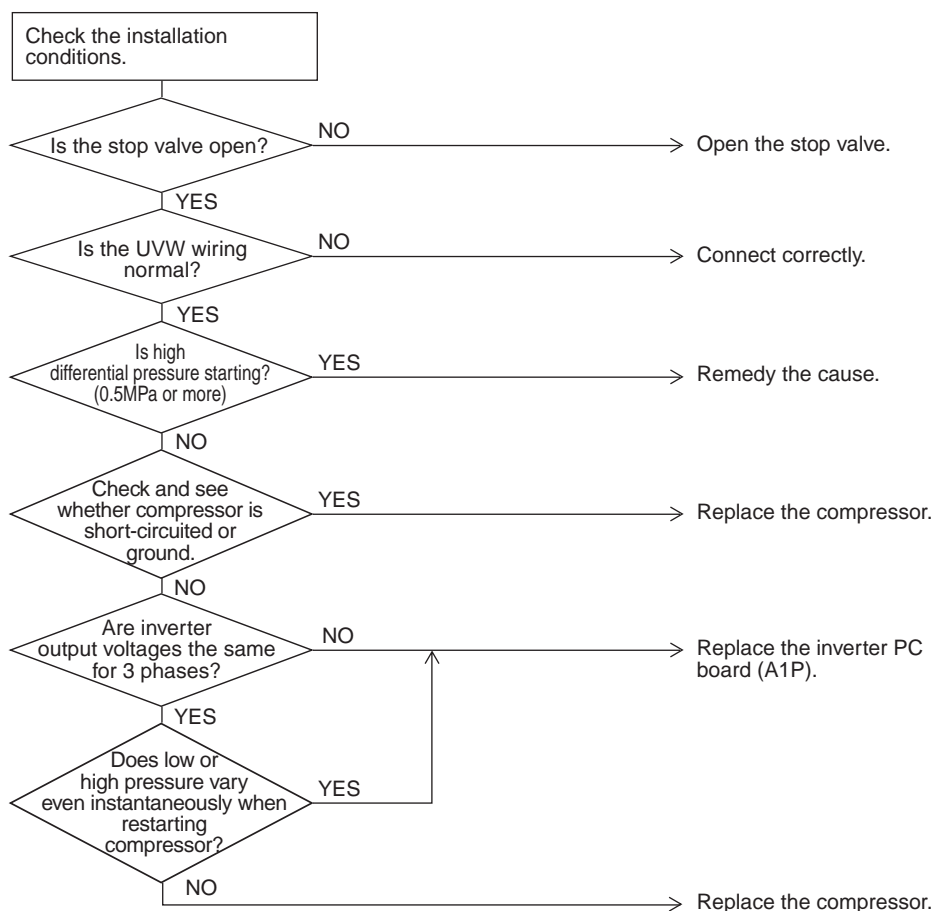
- Compressor lock
- High differential pressure (0.5MPa or more)
- Incorrect UVW wiring
- Faulty inverter PCB
- Stop valve is left in closed.

## Troubleshooting



### Caution

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



(V2793)

## 7.5 Malfunction of Outdoor Unit Fan Motor

Remote Control  
Display

**E7**

Applicable  
Models

All outdoor unit models

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 6 seconds or more when the fan motor running conditions are met
- When malfunction is generated 4 times, the system shuts down.

Supposed  
Causes

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

### Troubleshooting

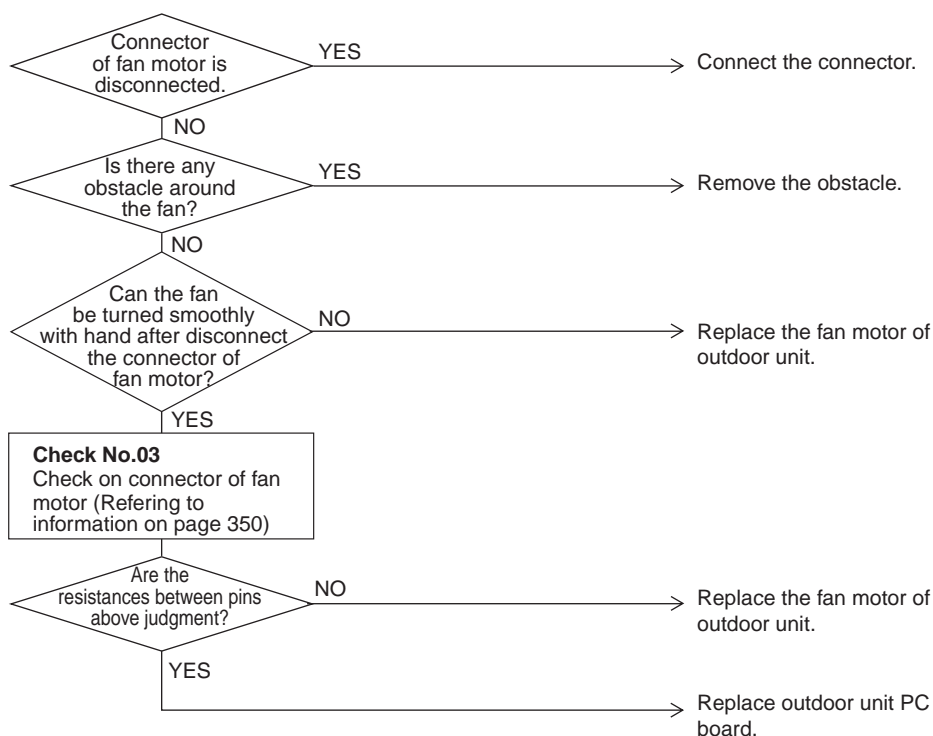


**Check No.03**  
Refer to P.354



#### Caution

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



## 7.6 Malfunction of Moving Part of Electronic Expansion Valve (Y1E, Y3E)

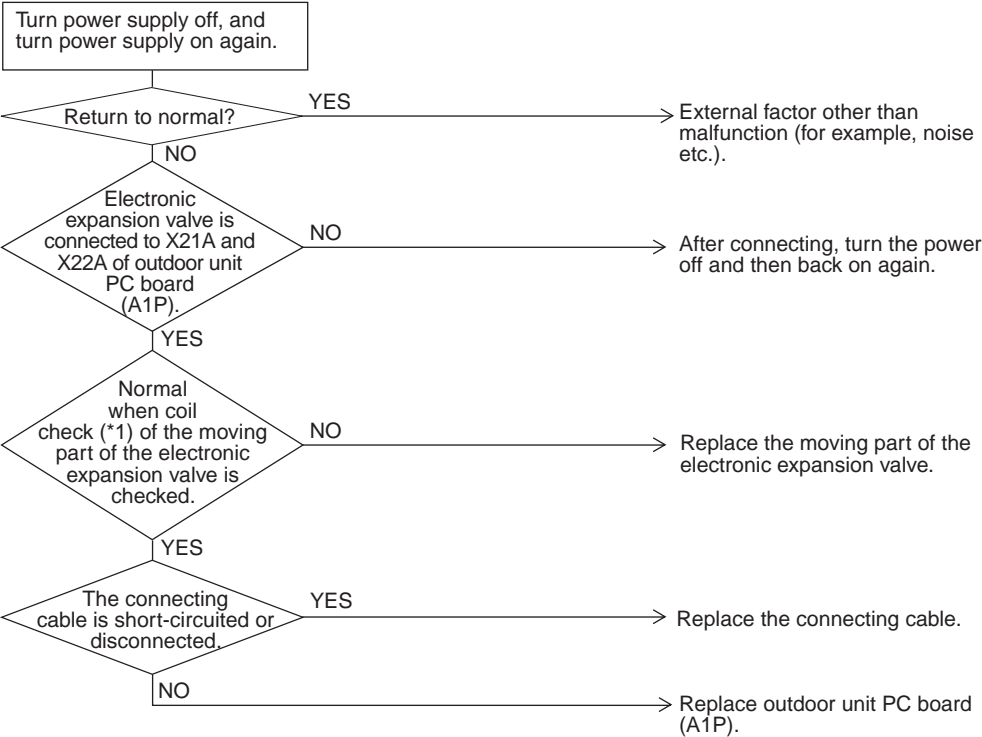
Remote Control Display	<i>E9</i>
Applicable Models	All outdoor unit models
Method of Malfunction Detection	Check disconnection of connector Check continuity of expansion valve coil
Malfunction Decision Conditions	Error is generated under no common power supply when the power is on.
Supposed Causes	<ul style="list-style-type: none"><li>■ Defect of moving part of electronic expansion valve</li><li>■ Defect of outdoor unit PCB (A1P)</li><li>■ Defect of connecting cable</li></ul>

Troubleshooting



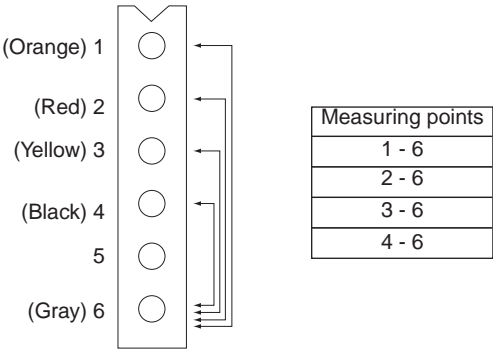
Caution

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



(V3067)

\*Make measurement of resistance between the connector pins, and then make sure the resistance falls in the range of 40 to 50W.



(V3067)

# 7.7 Abnormal Discharge Pipe Temperature

Remote Control  
Display

F3

Applicable  
Models

All outdoor unit models

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

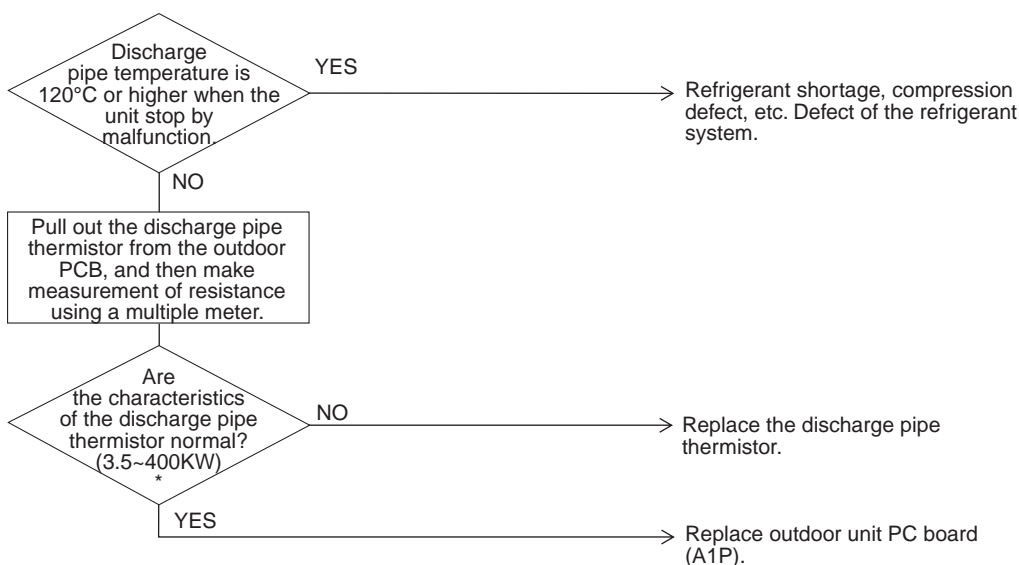
- Faulty discharge pipe temperature sensor
- Faulty connection of discharge pipe temperature sensor
- Faulty outdoor unit PCB

Troubleshooting



**Caution**

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



(V3068)



\* Refer to "Thermistor Resistance / Temperature Characteristics" table on P355.

## 7.8 Refrigerant Overcharged

Remote Control  
Display

**F6**

Applicable  
Models

All outdoor unit models

Method of  
Malfunction  
Detection

Excessive charging of refrigerant is detected by using the heat exchanging deicer temperature during a check operation.

Malfunction  
Decision  
Conditions

When the amount of refrigerant, which is calculated by using the heat exchanging deicer temperature during a check run, exceeds the standard.

Supposed  
Causes

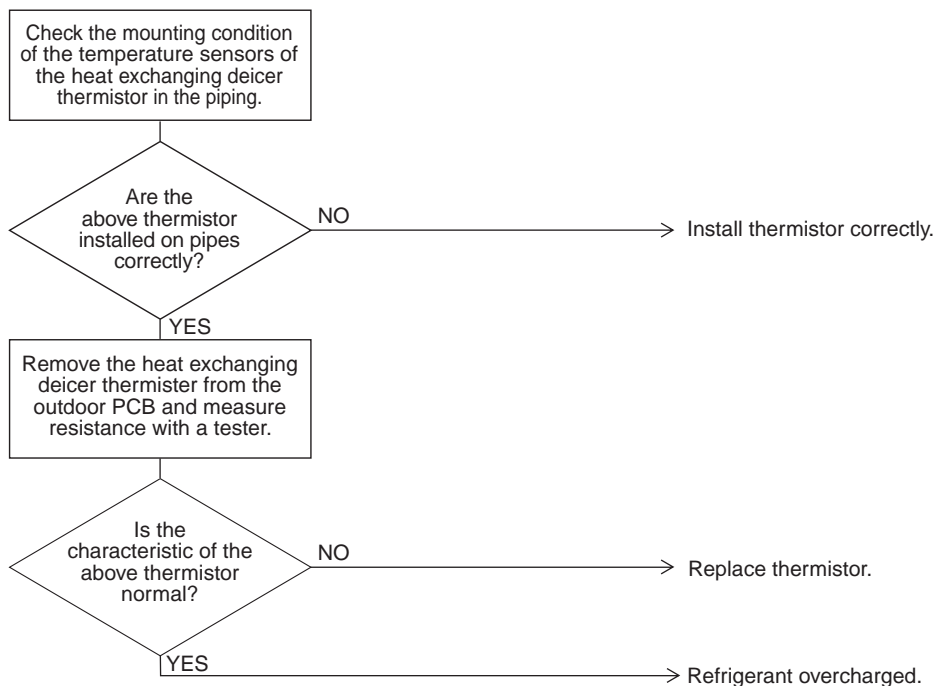
- Refrigerant overcharge
- Misalignment of the thermistor for heat exchanger
- Defect of the thermistor for heat exchanger

Troubleshooting



**Caution**

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



(V2797)



\* Refer to "Thermistor Resistance / Temperature Characteristics" table on P355.

# 7.9 Malfunction of Thermistor for Outdoor Air (R1T)

Remote Control  
Display

H9

Applicable  
Models

All outdoor unit models

Method of  
Malfunction  
Detection

Malfunction is detected from the temperature detected by the outdoor air thermistor.

Malfunction  
Decision  
Conditions

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

Supposed  
Causes

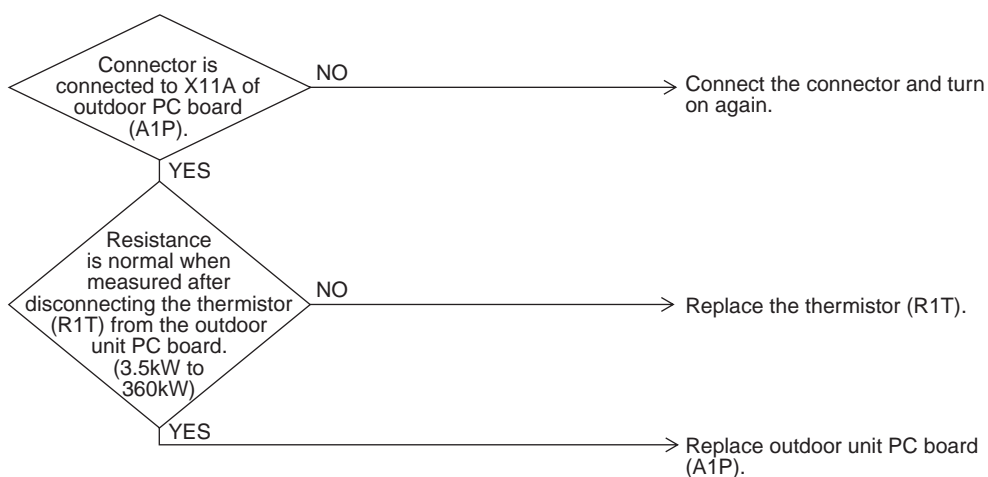
- Defect of thermistor (R1T) for outdoor air
- Defect of outdoor unit PCB (A1P)

Troubleshooting



**Caution**

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



(V3070)



\* Refer to "Thermistor Resistance / Temperature Characteristics" table on P355.

## 7.10 Malfunction of Discharge Pipe Thermistor (R2T)

Remote Control  
Display



Applicable  
Models

All outdoor unit models

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

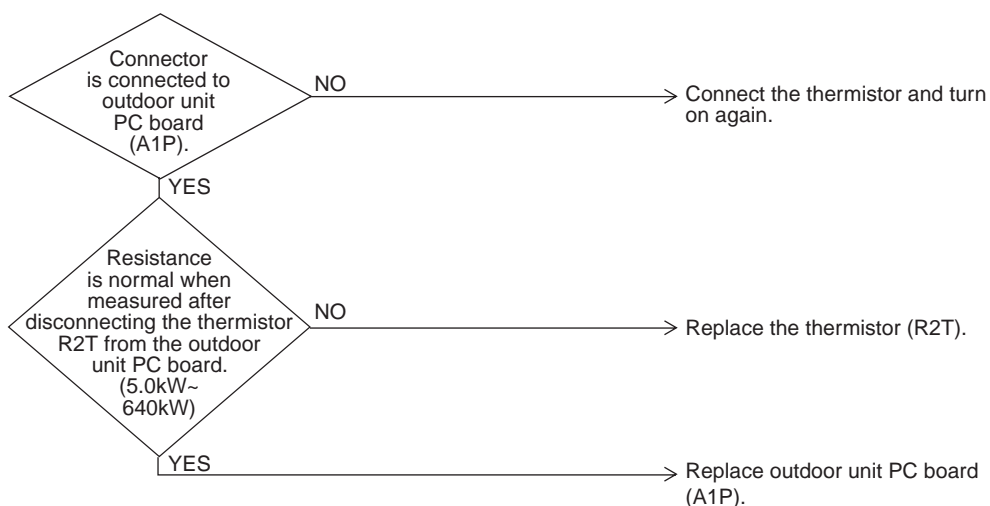
- Defect of thermistor (R2T) for outdoor unit discharge pipe
- Defect of outdoor unit PCB (A1P)

Troubleshooting



**Caution**

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



(V3072)



\* Refer to thermistor resistance / temperature characteristics table on P355.

## 7.11 Malfunction of Thermistor (R3T, R5T) for Suction Pipe1, 2

Remote Control Display J5

Applicable Models All outdoor unit models

Method of Malfunction Detection Malfunction is detected from the temperature detected by the thermistor for suction pipe 1, 2.

Malfunction Decision Conditions When a short circuit or an open circuit in the thermistor for suction pipe 1, 2 are detected.

Supposed Causes

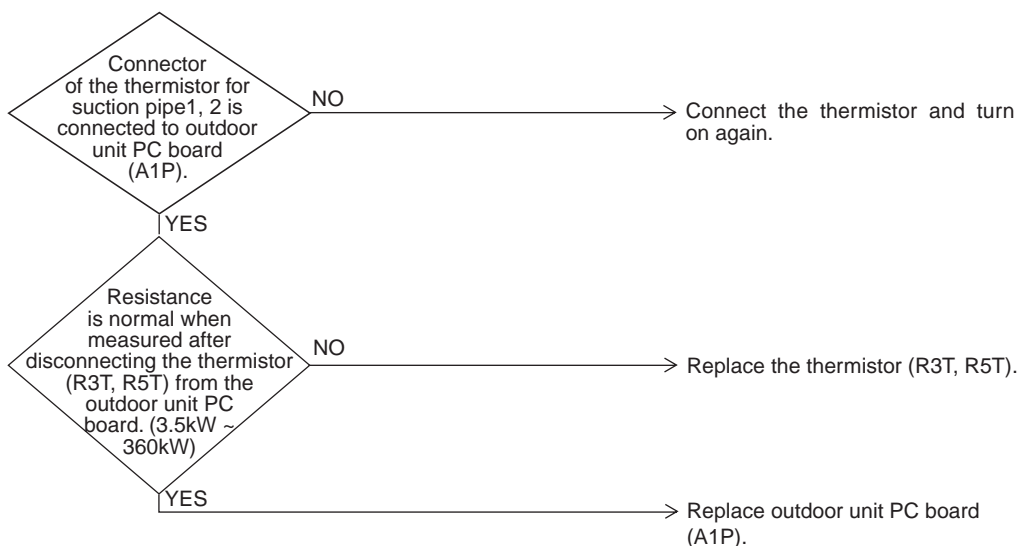
- Defect of thermistor (R3T, R5T) for outdoor unit suction pipe
- Defect of outdoor unit PCB (A1P)

### Troubleshooting



**Caution**

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



(V3073)



\* Refer to thermistor resistance / temperature characteristics table on P355.

## 7.12 Malfunction of Thermistor (R4T) for Outdoor Unit Heat Exchanger

Remote Control  
Display

J6

Applicable  
Models

All outdoor unit models

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

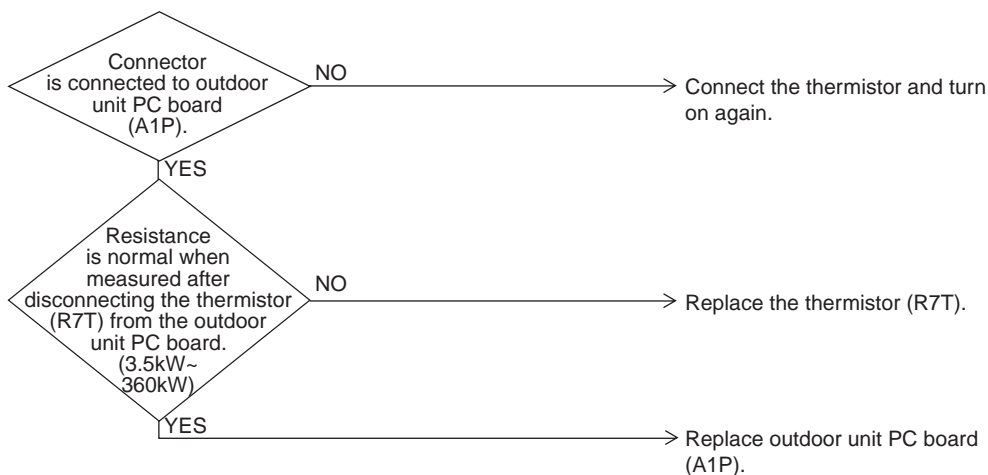
- Defect of thermistor (R4T) for outdoor unit heat exchanger
- Defect of outdoor unit PCB (A1P)

Troubleshooting



**Caution**

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



(V3074)



\* Refer to thermistor resistance / temperature characteristics table on P355.

# 7.13 Malfunction of Thermistor (R7T) for Outdoor Unit Liquid Pipe

Remote Control Display



Applicable Models

All outdoor unit models

Method of Malfunction Detection

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

Malfunction Decision Conditions

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

Supposed Causes

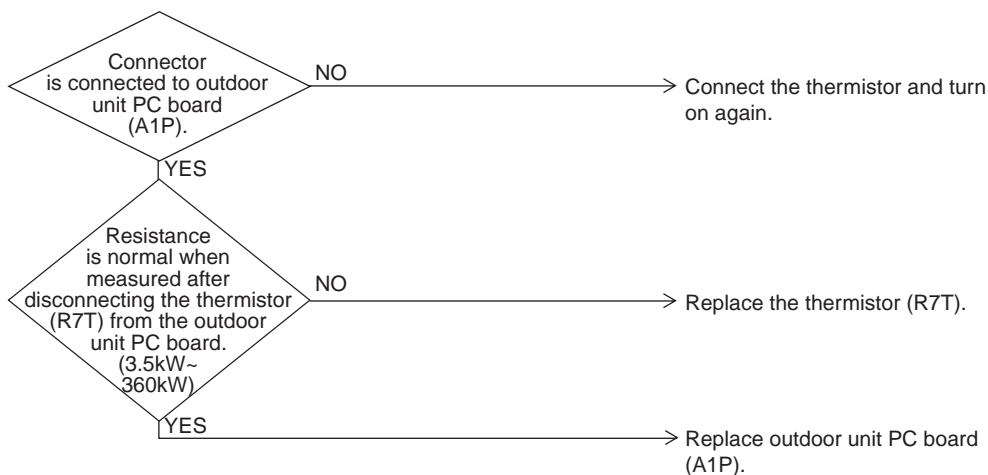
- Defect of thermistor (R7T) for outdoor unit liquid pipe
- Defect of outdoor unit PCB (A1P)

Troubleshooting



**Caution**

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



(V3074)



\* Refer to thermistor resistance / temperature characteristics table on P355.

## 7.14 Malfunction of Subcooling Heat Exchanger Thermistor (R6T)

Remote Control Display *J9*

Applicable Models All outdoor unit models

Method of Malfunction Detection Malfunction is detected according to the temperature detected by subcooling heat exchanger gas pipe thermistor.

Malfunction Decision Conditions When the subcooling heat exchanger gas pipe thermistor is short circuited or open.

Supposed Causes

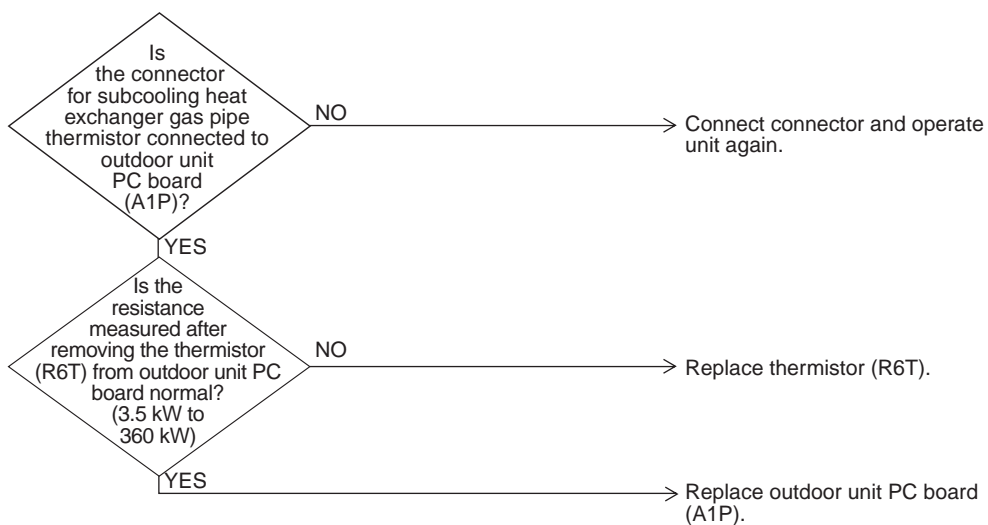
- Faulty subcooling heat exchanger gas pipe thermistor (R6T)
- Faulty outdoor unit PCB

### Troubleshooting



#### Caution

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



(V3075)



\* Refer to "Thermistor Resistance / Temperature Characteristics" table on P355.

# 7.15 Malfunction of High Pressure Sensor

Remote Control  
Display



Applicable  
Models

All outdoor unit models

Method of  
Malfunction  
Detection

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

Malfunction  
Decision  
Conditions

When the high pressure sensor is short circuit or open circuit.

Supposed  
Causes

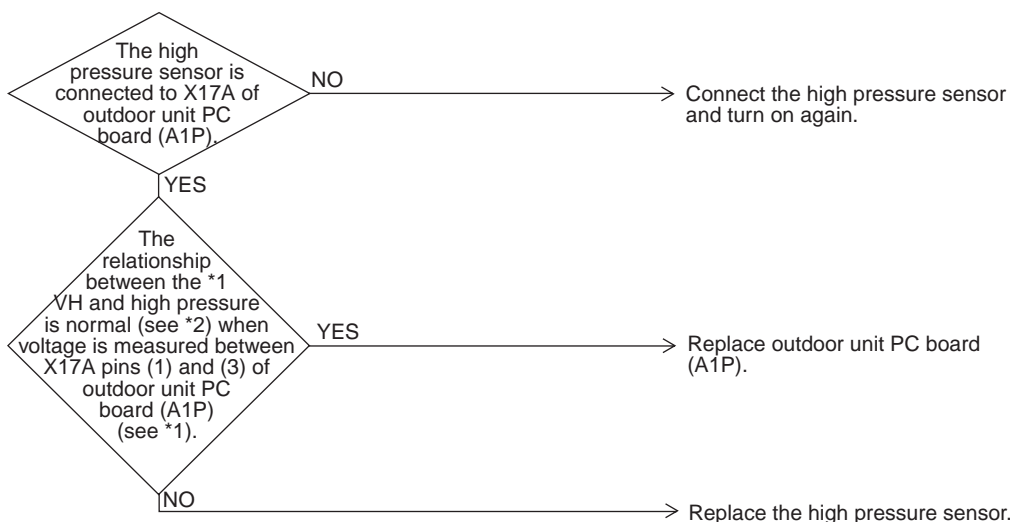
- Defect of high pressure sensor
- Connection of low pressure sensor with wrong connection.
- Defect of outdoor unit PCB.

## Troubleshooting



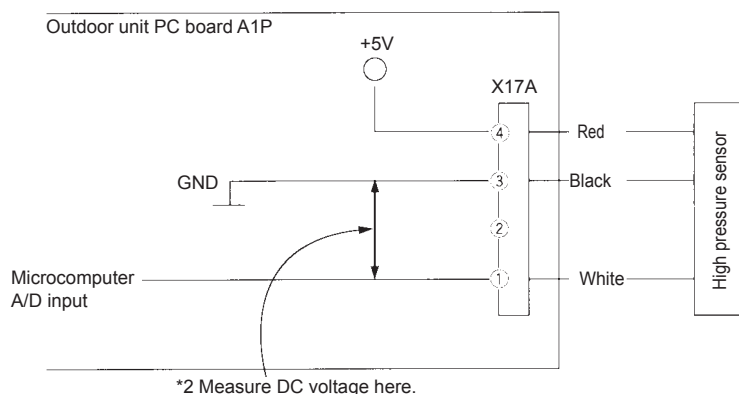
### Caution

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 P357.

## 7.16 Malfunction of Low Pressure Sensor

Remote Control  
Display



Applicable  
Models

All outdoor unit models

Method of  
Malfunction  
Detection

Malfunction is detected from pressure detected by low pressure sensor.

Malfunction  
Decision  
Conditions

When the low pressure sensor is short circuit or open circuit.

Supposed  
Causes

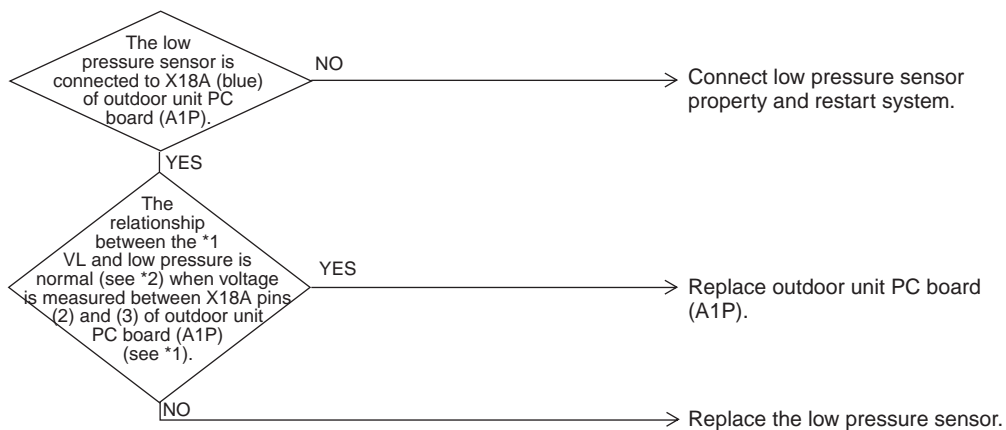
- Defect of low pressure sensor
- Connection of high pressure sensor with wrong connection.
- Defect of outdoor unit PCB.

Troubleshooting



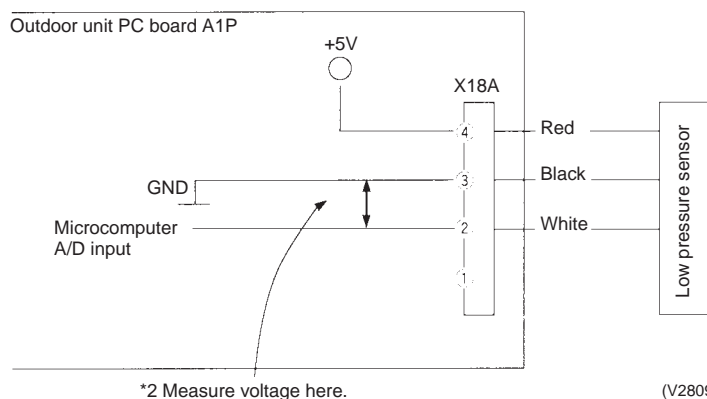
**Caution**

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



(V2808)

\*1: Voltage measurement point



\*2: Refer to "Pressure Sensor", pressure/voltage characteristics table on P357.

## 7.17 Malfunction of PCB

Remote Control  
Display

L1

Applicable  
Models

All outdoor unit models

Method of  
Malfunction  
Detection

- Detect malfunctions by current value during waveform output before compressor startup.
- Detect malfunctions by current sensor value during synchronized operation at the time of startup.
- Detect malfunctions using an SP-PAM series capacitor overvoltage sensor.

Malfunction  
Decision  
Conditions

- In case of overcurrent (OCP) during waveform output
- When the current sensor malfunctions during synchronized operation
- When overvoltage occurs in SP-PAM
- In case of IGBT malfunction

Supposed  
Causes

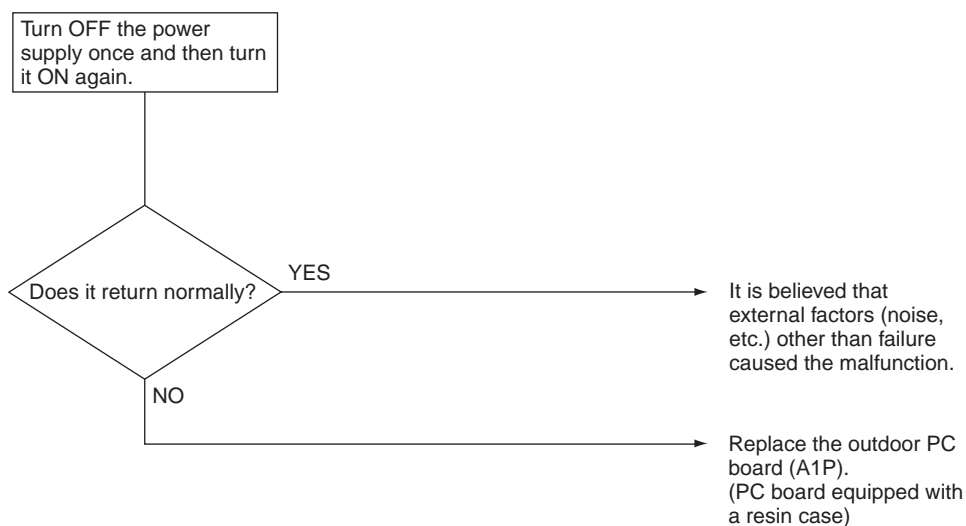
- Faulty outdoor PCB (A1P)
  - IPM failure
  - Current sensor failure
  - SP-PAM failure
  - Failure of IGBT or drive circuit

### Troubleshooting



**Caution**

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



## 7.18 Malfunction of Inverter Radiating Fin Temperature Rise

Remote Control  
Display

L4

Applicable  
Models

All outdoor unit models

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 83°C.

Supposed  
Causes

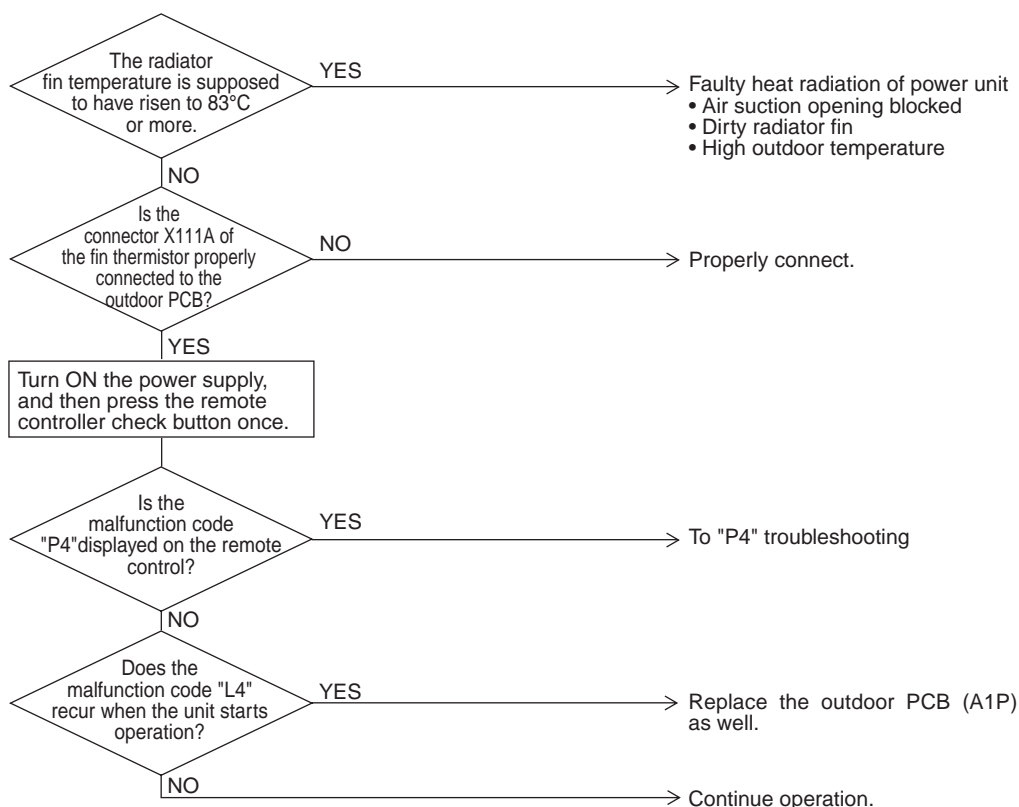
- Actuation of fin thermal (Actuates above 83°C)
- Defect of inverter PCB
- Defect of fin thermistor

Troubleshooting



**Caution**

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



# 7.19 Inverter Compressor Abnormal

Remote Control  
Display

L5

Applicable  
Models

All outdoor unit models

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 PCB

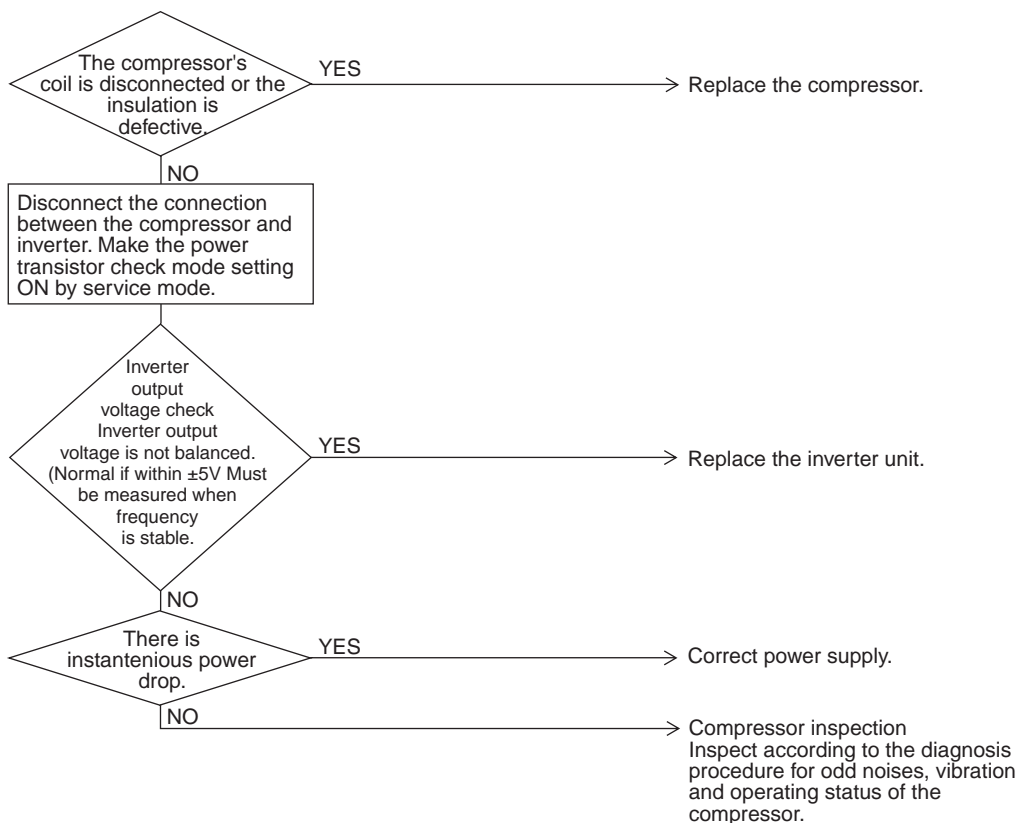
## Troubleshooting



### Caution

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

Compressor inspection



(V2812)

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

## 7.20 Inverter Current Abnormal

Remote Control  
Display

**L8**

Applicable  
Models

All outdoor unit models

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 outdoor unit PCB (A1P)

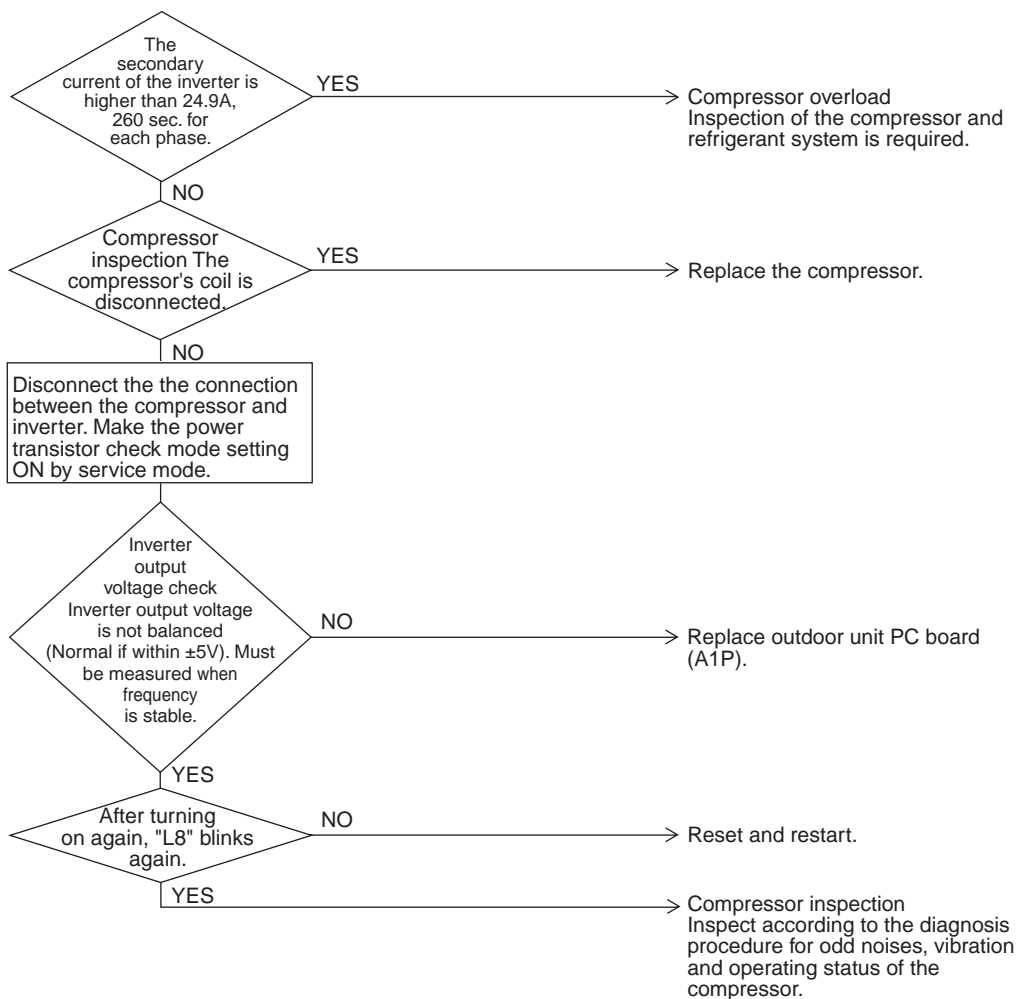
### Troubleshooting



**Caution**

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

Output current check



(V3184)

# 7.21 Inverter Start up Error

Remote Control  
Display **L9**

Applicable  
Models All outdoor unit models

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

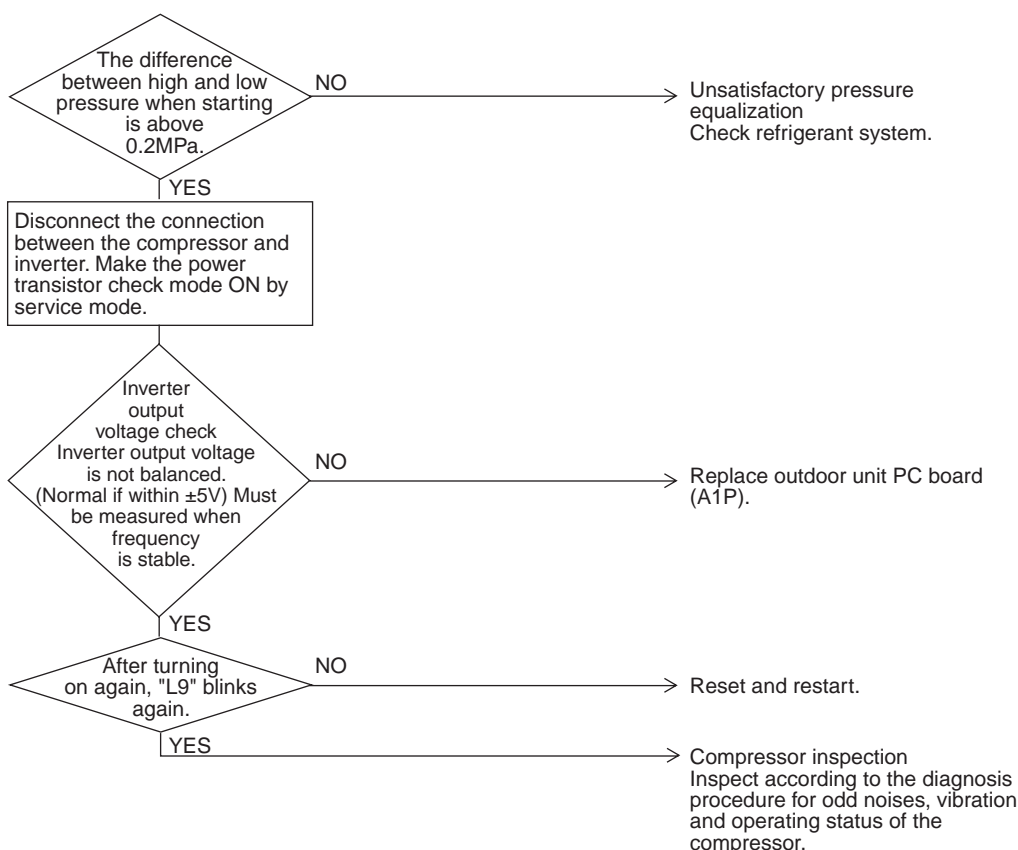
- Defect of compressor
- Pressure differential start
- Defect of outdoor unit PCB (A1P)

## Troubleshooting



### Caution

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



(V2814)

## 7.22 Malfunction of Transmission between Inverter and Control PCB

Remote Control  
Display

LC

Applicable  
Models

All outdoor unit models

Method of  
Malfunction  
Detection

Check the communication state between inverter PCB and control PCB by micro-computer.

Malfunction  
Decision  
Conditions

When the correct communication is not conducted in certain period.

Supposed  
Causes

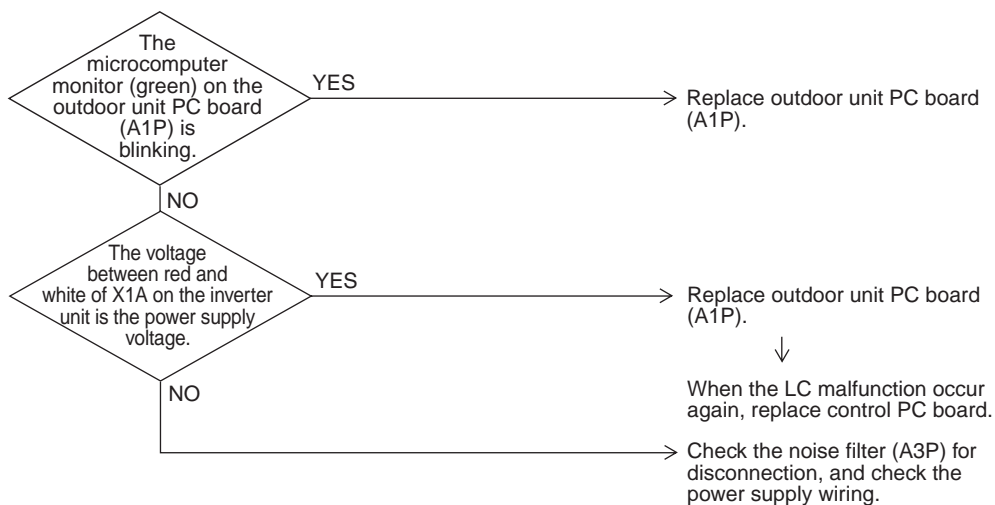
- Malfunction of connection between the inverter microcomputer and outdoor control microcomputer
- Defect of outdoor unit PCB
- Defect of noise filter
- External factor (Noise etc.)

### Troubleshooting



**Caution**

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



## 7.23 High Voltage of Capacitor in Main Inverter Circuit

Remote Control  
Display

P1

Applicable  
Models

All outdoor unit models

Method of  
Malfunction  
Detection

Malfunction is detected according to the voltage waveform of main circuit capacitor built in the inverter.

Malfunction  
Decision  
Conditions

When the aforementioned voltage waveform becomes identical with the waveform of the power supply open phase.

Supposed  
Causes

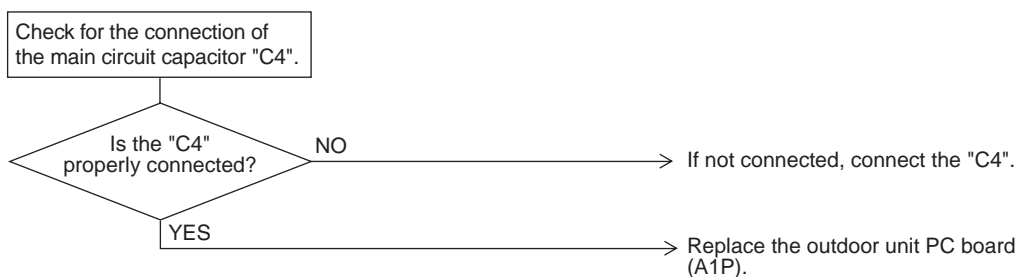
- Defect of main circuit capacitor
- Improper main circuit wiring
- Defect of outdoor unit PCB (A1P)

Troubleshooting



**Caution**

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



## 7.24 Malfunction of Inverter Radiating Fin Temperature Rise Sensor

Remote Control Display *P4*

Applicable Models All outdoor unit models

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.

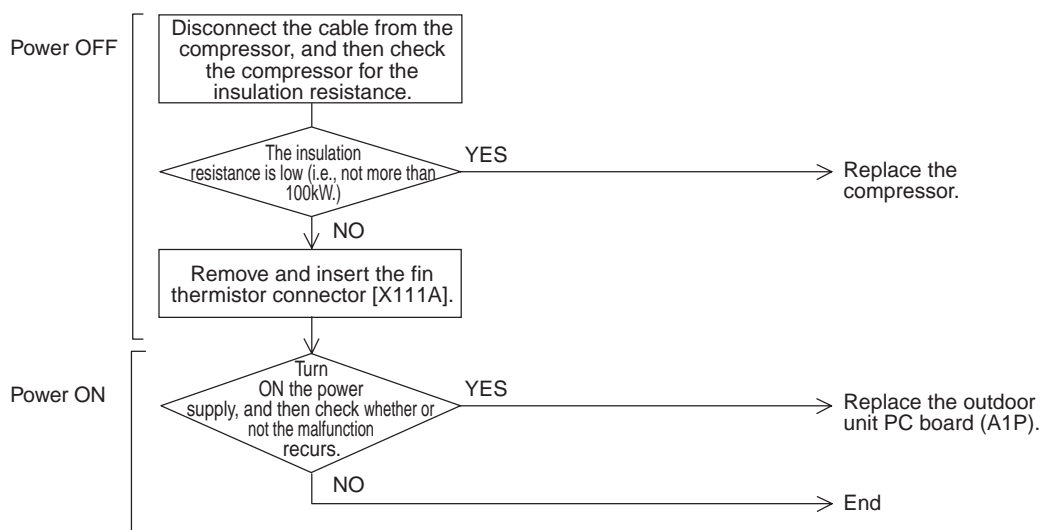
Supposed Causes  
 ■ Defect of radiator fin temperature sensor  
 ■ Defect of outdoor unit PC board (A1P)

### Troubleshooting



#### Caution

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



## 7.25 Faulty Combination of Inverter and Fan Driver

Remote Control Display *PJ*

Applicable Models All outdoor unit models

Method of Malfunction Detection Check the communication state between inverter PCB and control PCB by micro-computer.

Malfunction Decision Conditions When the communication data about inverter PCB type is incorrect.

Supposed Causes

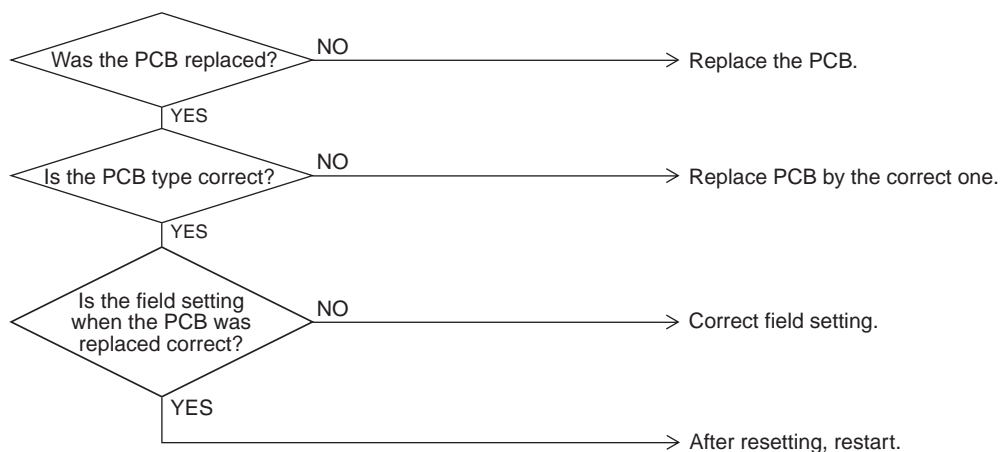
- Mismatching of inverter PCB
- Faulty field setting

### Troubleshooting



**Caution**

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



(Q0441)



\* Refer to "Field Setting from Outdoor Unit" on P118.

## 7.26 Low Pressure Drop Due to Refrigerant Shortage or Electronic Expansion Valve Failure

Remote Control  
Display

U0

Applicable  
Models

All outdoor unit models

Method of  
Malfunction  
Detection

Short of gas malfunction is detected by discharge pipe temperature thermistor and low pressure saturation temperature.

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

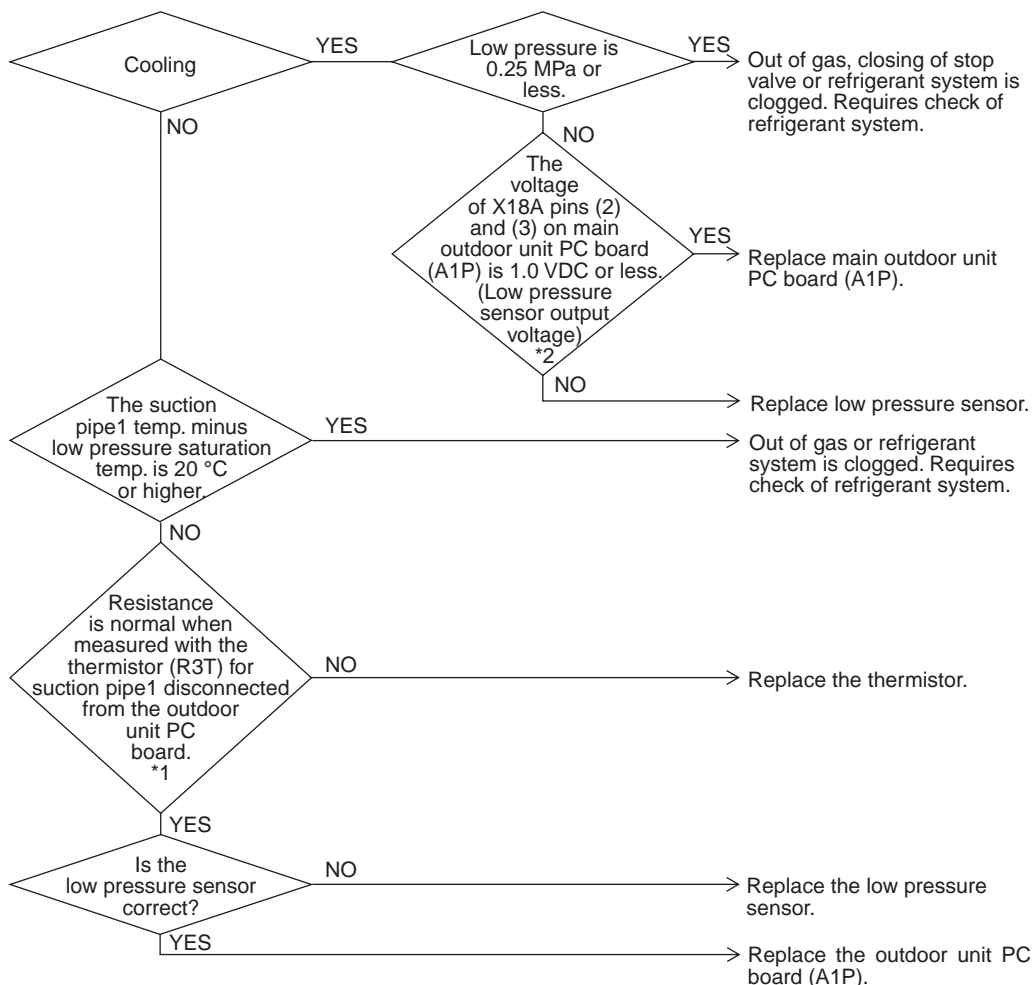
- Out of gas or refrigerant system clogging (incorrect piping)
- Defect of pressure sensor
- Defect of outdoor unit PCB (A1P)
- Defect of thermistor R3T

# Troubleshooting



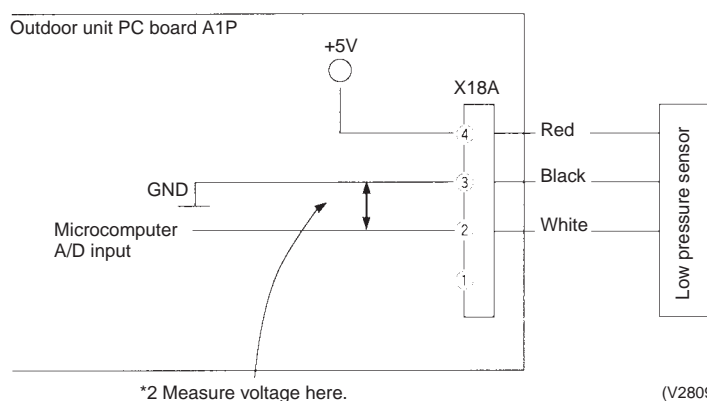
## Caution

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



(V2819)

\*2: Voltage measurement point



\*1: Refer to "Thermistor Resistance / Temperature Characteristics" table on P355.

\*2: Refer to "Pressure Sensor, Pressure / Voltage Characteristics" table on P357.

## 7.27 Power Supply Insufficient or Instantaneous Failure

Remote Control Display	<i>U2</i>
Applicable Models	All outdoor unit models
Method of Malfunction Detection	Detection of voltage of main circuit capacitor built in the inverter and power supply voltage.
Malfunction Decision Conditions	When the abnormal voltage of main circuit capacitor built in the inverter and abnormal power supply voltage are detected.
Supposed Causes	<ul style="list-style-type: none"><li>■ Power supply insufficient</li><li>■ Instantaneous power failure</li><li>■ Defect of outdoor unit fan motor</li><li>■ Defect of outdoor control PCB (A1P)</li></ul>

Troubleshooting

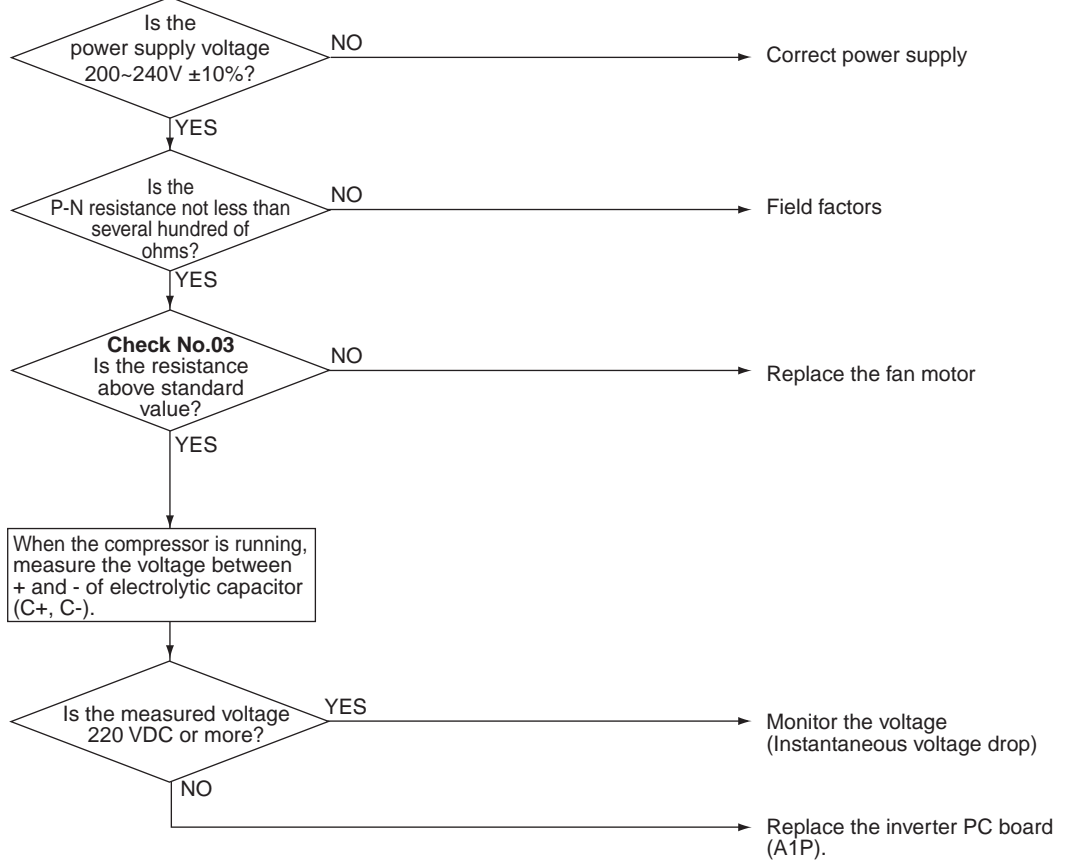


Check No.03  
Refer to P.354



**Caution**

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



(S2605)

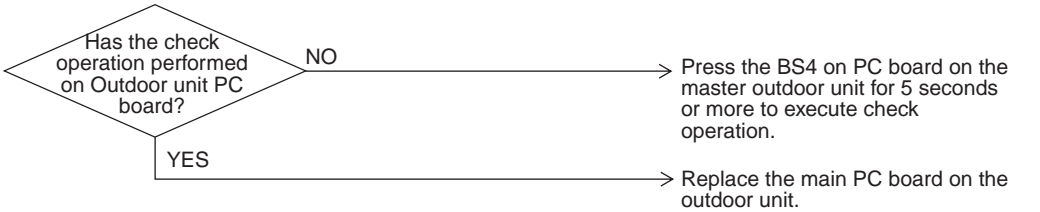
## 7.28 Check Operation not Executed

Remote Control Display	U3
Applicable Models	All outdoor unit models
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	<div>■ Check operation is not executed.</div>
Troubleshooting	



**Caution**

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



(V3052)

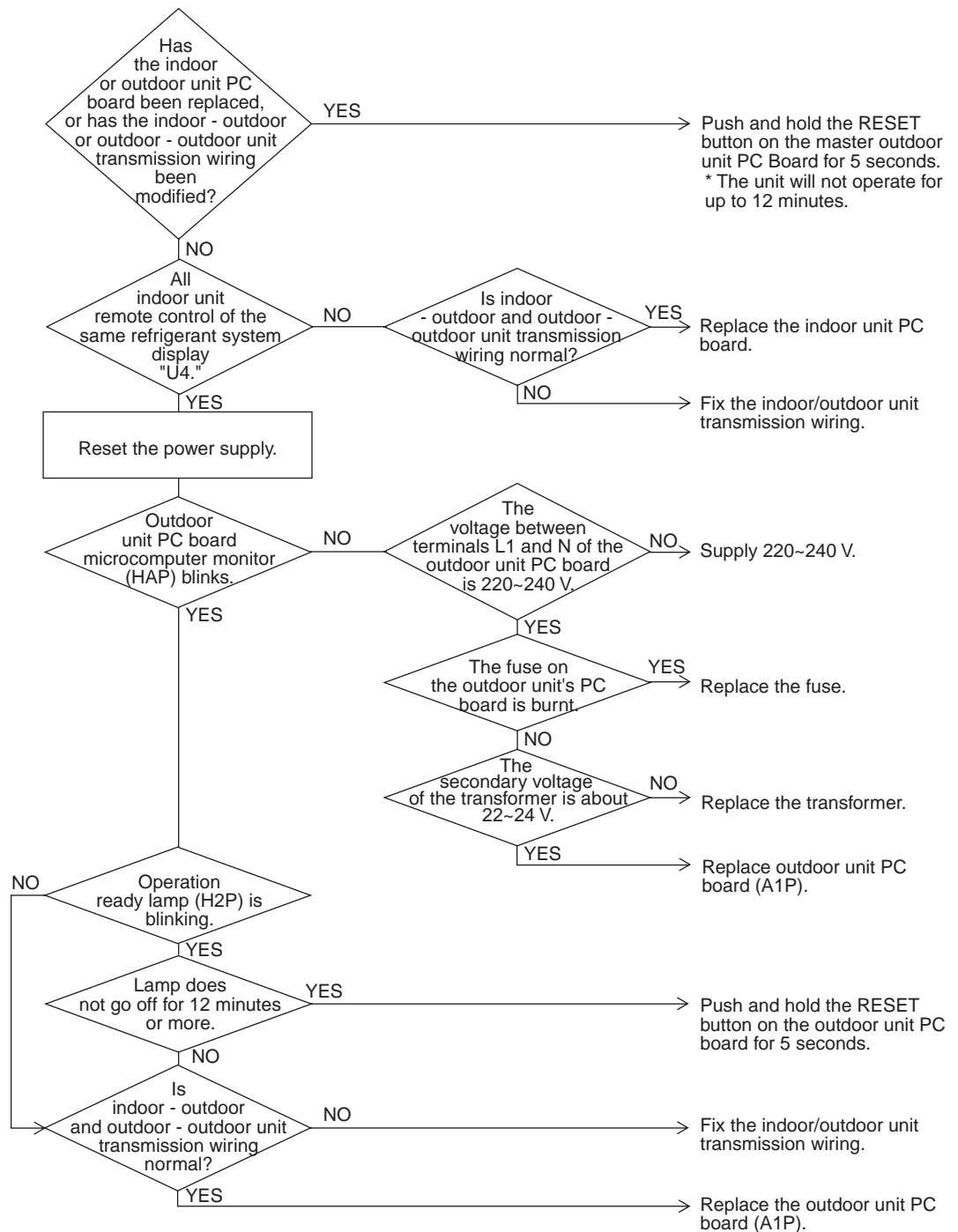
## 7.29 Malfunction of Transmission between Indoor Units and Outdoor Units

<b>Remote Control Display</b>	U4
<b>Applicable Models</b>	All indoor unit models All outdoor unit models
<b>Method of Malfunction Detection</b>	Microcomputer checks if transmission between indoor and outdoor units is normal.
<b>Malfunction Decision Conditions</b>	When transmission is not carried out normally for a certain amount of time
<b>Supposed Causes</b>	<ul style="list-style-type: none"><li>■ Indoor to outdoor, outdoor to outdoor transmission wiring F1, F2 disconnection, short circuit or wrong wiring</li><li>■ Outdoor unit power supply is OFF</li><li>■ System address doesn't match</li><li>■ Defect of outdoor unit PCB</li><li>■ Defect of indoor unit PCB</li></ul>

## Troubleshooting

**Caution**

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



(V3187)

# 7.30 Malfunction of Transmission between Remote Control and Indoor Unit

Remote Control Display

U5

Applicable Models

All indoor unit models

Method of Malfunction Detection

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

Malfunction Decision Conditions

Normal transmission does not continue for specified period.

Supposed Causes

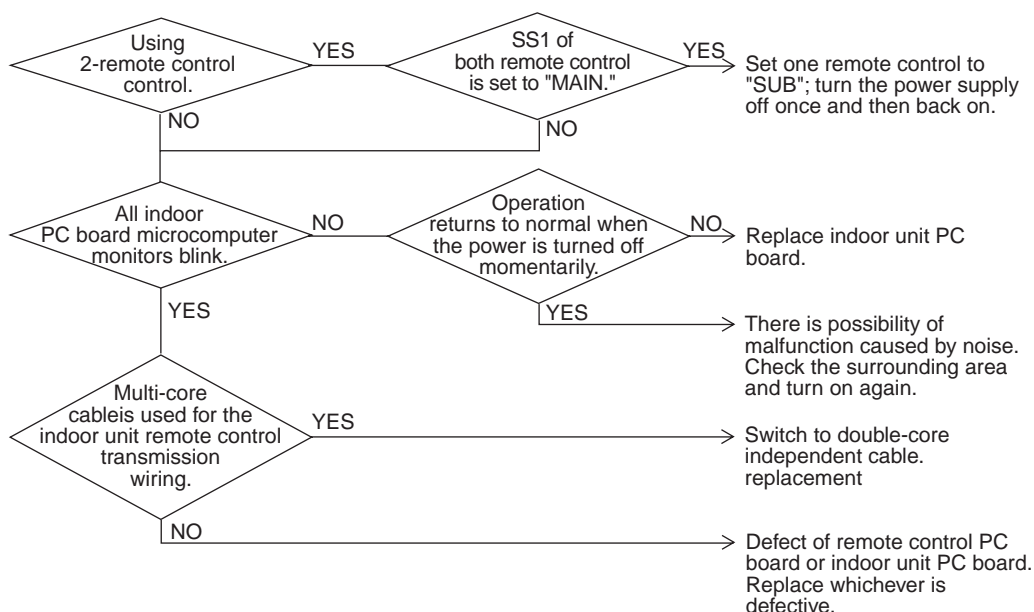
- Malfunction of indoor unit remote control transmission
- Connection of two main remote controls (when using 2 remote controls)
- Defect of indoor unit PCB
- Defect of remote control PCB
- Malfunction of transmission caused by noise

## Troubleshooting



**Caution**

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



(V2823)

## 7.31 Malfunction of Transmission between Main and Sub Remote Controls

Remote Control  
Display

U8

Applicable  
Models

All indoor unit models

Method of  
Malfunction  
Detection

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

Malfunction  
Decision  
Conditions

Normal transmission does not continue for specified period.

Supposed  
Causes

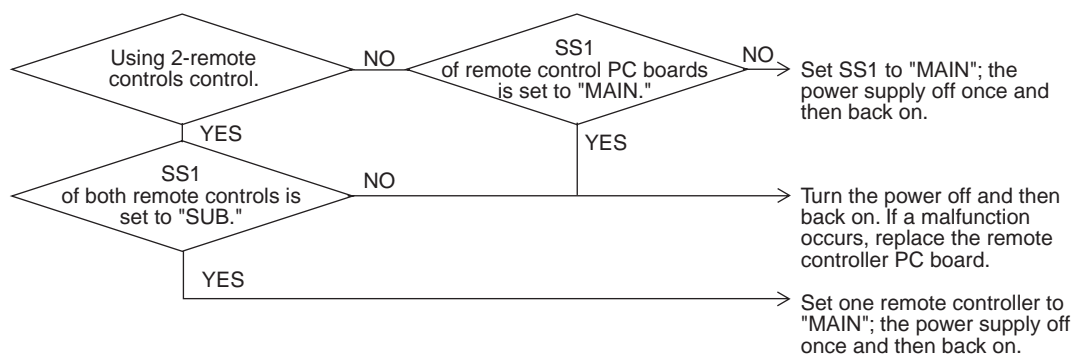
- Malfunction of transmission between main and sub remote control
- Connection between sub remote controls
- Defect of remote control PCB

Troubleshooting



**Caution**

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



(V2825)

## 7.32 Malfunction of Transmission between Indoor and Outdoor Units in the Same System

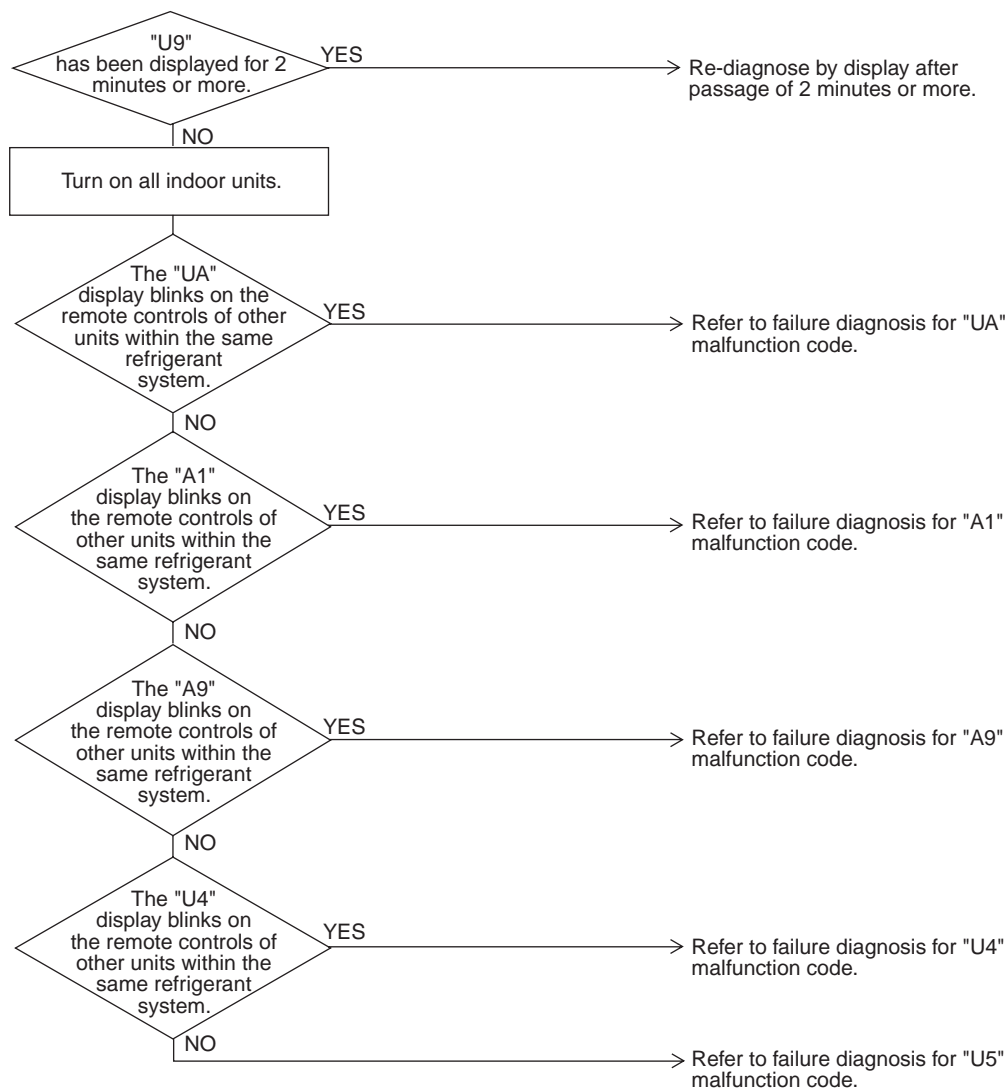
Remote Control Display	<i>U9</i>
Applicable Models	All indoor unit models
Method of Malfunction Detection	
Malfunction Decision Conditions	
Supposed Causes	<ul style="list-style-type: none"><li>■ Malfunction of transmission within or outside of other system</li><li>■ Malfunction of electronic expansion valve in indoor unit of other system</li><li>■ Defect of PCB of indoor unit in other system</li><li>■ Improper connection of transmission wiring between indoor and outdoor unit</li></ul>

## Troubleshooting



### Caution

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



(V2826)

## 7.33 Excessive Number of Indoor Units

Remote Control  
Display

UA

Applicable  
Models

All indoor unit models

Method of  
Malfunction  
Detection

Malfunction  
Decision  
Conditions

Supposed  
Causes

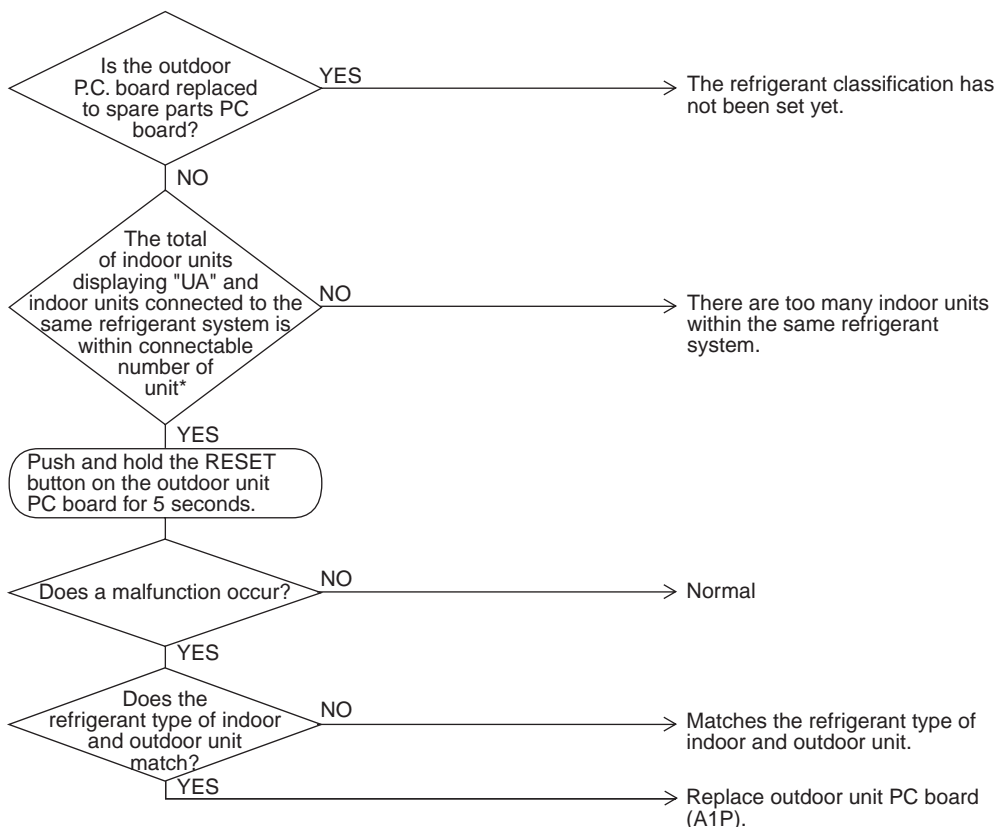
- Excess of connected indoor units
- Defect of outdoor unit PCB (A1P)
- Mismatching of the refrigerant type of indoor and outdoor unit.
- Setting of outdoor PCB was not conducted after replacing to spare parts PCB.

### Troubleshooting



**Caution**

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



(V3169)

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

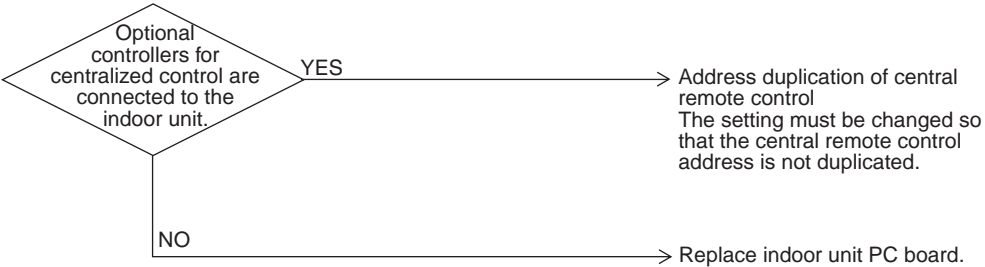
# 7.34 Address Duplication of Central Remote Control

Remote Control Display	UC
Applicable Models	All indoor unit models
Method of Malfunction Detection	
Malfunction Decision Conditions	
Supposed Causes	<div><div></div>Address duplication of centralized remote control</div> <div><div></div>Defect of indoor unit PCB</div>
Troubleshooting	



**Caution**

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



(V2828)

## 7.35 Malfunction of Transmission between Central Remote Control and Indoor Unit

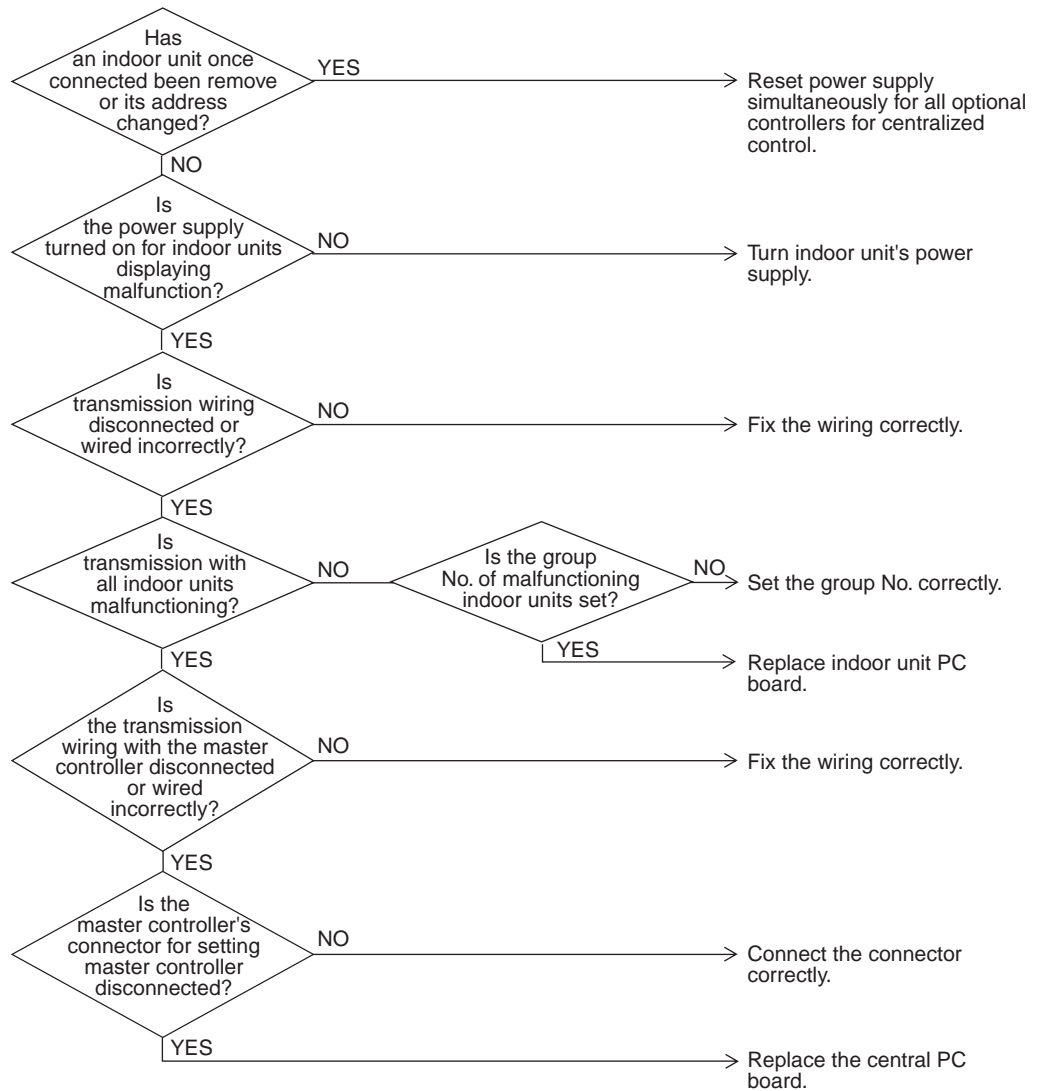
<b>Remote Control Display</b>	<i>UE</i>
<b>Applicable Models</b>	All indoor unit models Centralized controller
<b>Method of Malfunction Detection</b>	Microcomputer checks if transmission between indoor unit and centralized remote control is normal.
<b>Malfunction Decision Conditions</b>	When transmission is not carried out normally for a certain amount of time
<b>Supposed Causes</b>	<ul style="list-style-type: none"> <li>■ Malfunction of transmission between optional controllers for centralized control and indoor unit</li> <li>■ Connector for setting master controller is disconnected.</li> <li>■ Failure of PCB for centralized remote control</li> <li>■ Defect of indoor unit PCB</li> </ul>

## Troubleshooting



### Caution

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



(V2829)

## 7.36 System is not Set yet

Remote Control  
Display

UF

Applicable  
Models

All indoor unit models  
All outdoor unit models

Method of  
Malfunction  
Detection

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

Malfunction  
Decision  
Conditions

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

Supposed  
Causes

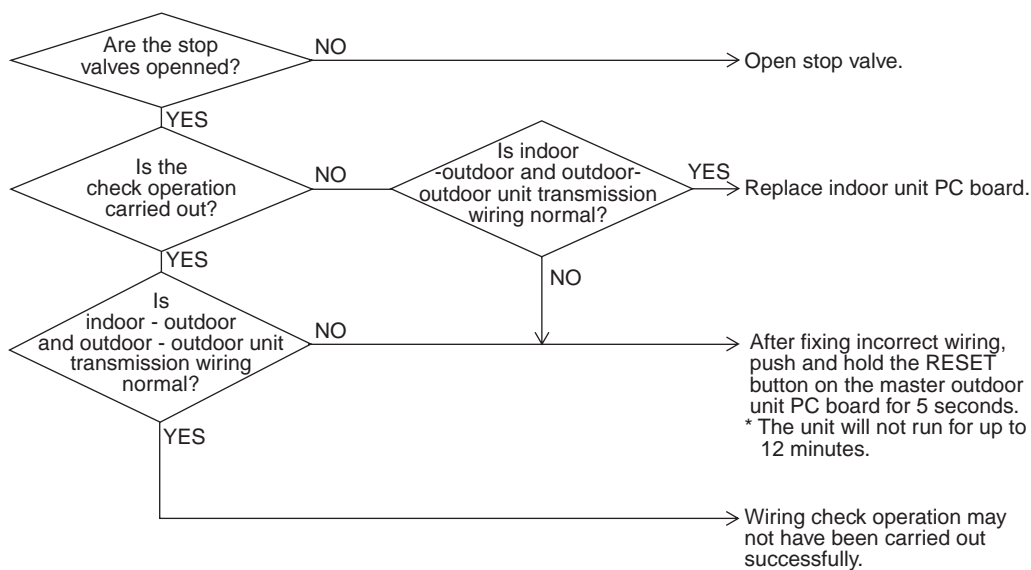
- Improper connection of transmission wiring between indoor-outdoor units and outdoor-outdoor units
- Failure to execute check operation
- Defect of indoor unit PC board
- Stop valve is left in closed

### Troubleshooting



**Caution**

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



(V2830)



**Note:**

Wiring check 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.

## 7.37 Malfunction of System, Refrigerant System Address Undefined

Remote Control  
Display

*UH*

Applicable  
Models

All indoor unit models  
All outdoor unit models

Method of  
Malfunction  
Detection

Malfunction  
Decision  
Conditions

Supposed  
Causes

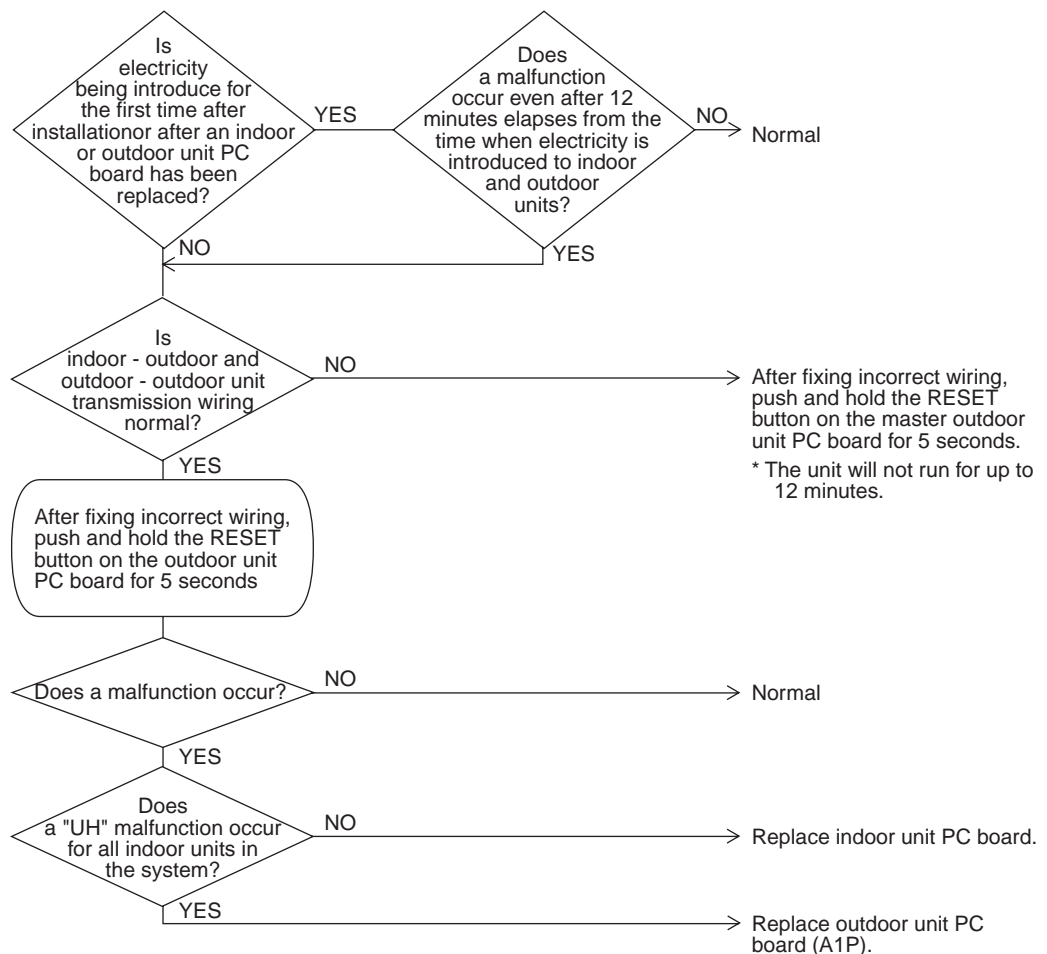
- Improper connection of transmission wiring between outdoor unit and outdoor unit outside control adapter
- Defect of indoor unit PCB
- Defect of outdoor unit PCB (A1P)

Troubleshooting



**Caution**

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



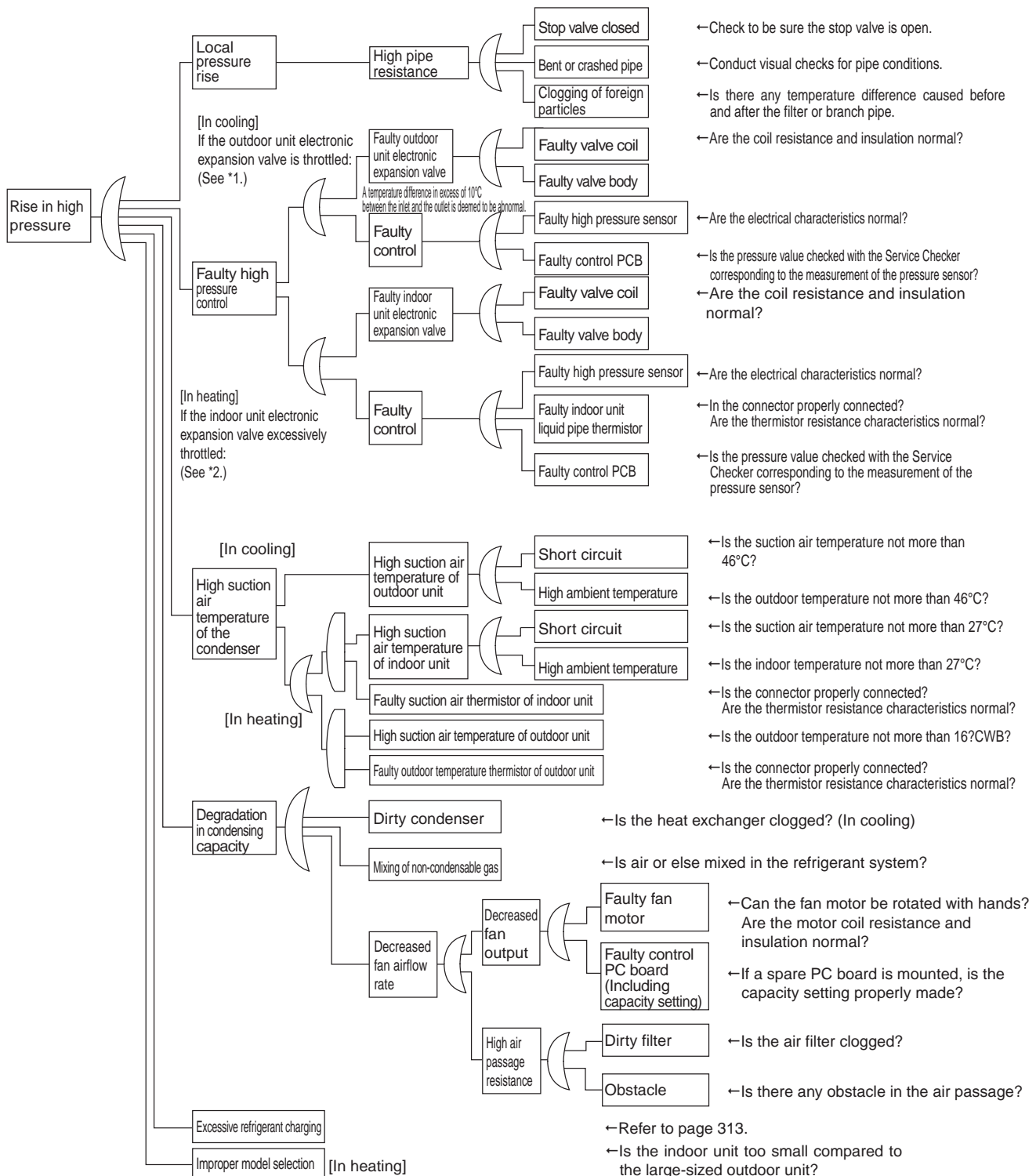
(V2831)

## 8. Check

### Check No.01

#### Check for causes of rise in high pressure

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



\*1: In cooling, it is normal if the outdoor unit electronic expansion valve (EV1) is fully open.

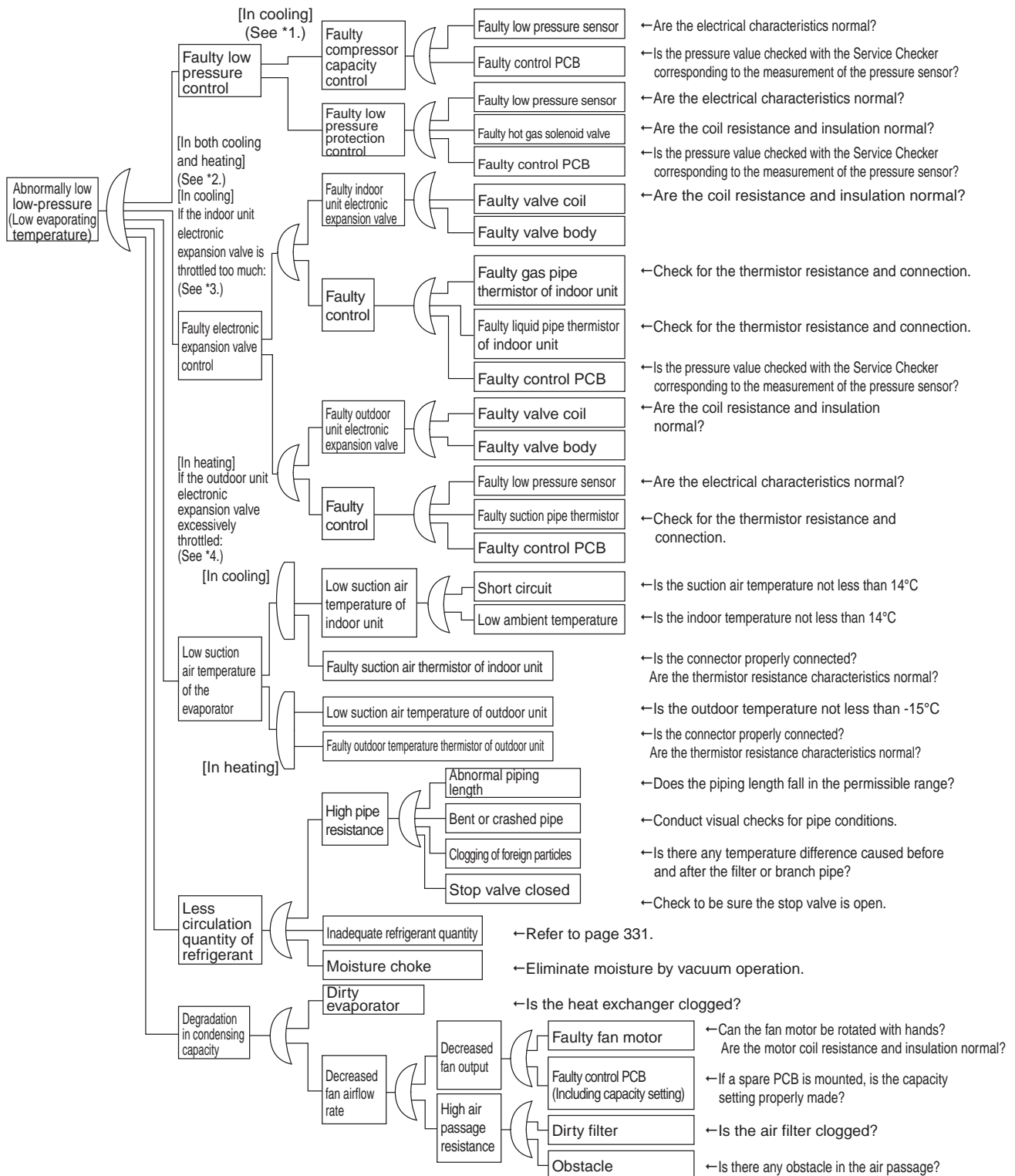
\*2: In heating, the indoor unit electronic expansion valve is used for "subcooled degree control".

C: SDK04009

## Check No.02

## Check for causes of drop in low pressure

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



\*1: For details of the compressor capacity control while in cooling, refer to "Compressor PI Control" on page 72.

\*2: The "low pressure protection control" includes low pressure protection control and hot gas bypass control. For details, refer to page 84.

\*3: In cooling, the indoor unit electronic expansion valve is used for "superheated degree control".

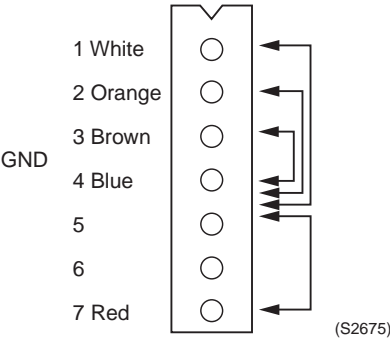
\*4: In heating, the outdoor unit electronic expansion valve (EV1) is used for "superheated degree control of outdoor unit heat exchanger". (For details, refer to page 75.)

C: SDK04009

Check No. 03

Check for Fan Motor Connector

- (1) Turn the power supply off.
- (2) With the fan motor connector disconnected, measure the resistance between each pin, then make sure that the resistance is more than the value mentioned in the following table.



Measurement point	Judgment
1 - 4	1MΩ or more
2 - 4	100kΩ or more
3 - 4	100Ω or more
4 - 7	100kΩ or more

## 9. Thermistor Resistance / Temperature Characteristics

Indoor unit    For air suction                      R1T  
                     For liquid pipe                      R2T  
                     For gas pipe                                  R3T

Outdoor unit for fin thermistor                      R1T

Outdoor unit    For outdoor air                      R1T  
                     For suction pipe 1                      R3T  
                     For heat exchanger                      R4T  
                     For suction pipe 2                      R5T  
                     For Subcooling heat exchanger outlet    R6T  
                     For Liquid pipe                              R7T

(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
60	4.79
62	4.46
64	4.15
66	3.87
68	3.61
70	3.37
72	3.15
74	2.94
76	2.75
78	2.51
80	2.41
82	2.26
84	2.12
86	1.99
88	1.87
90	1.76
92	1.65
94	1.55
96	1.46
98	1.38

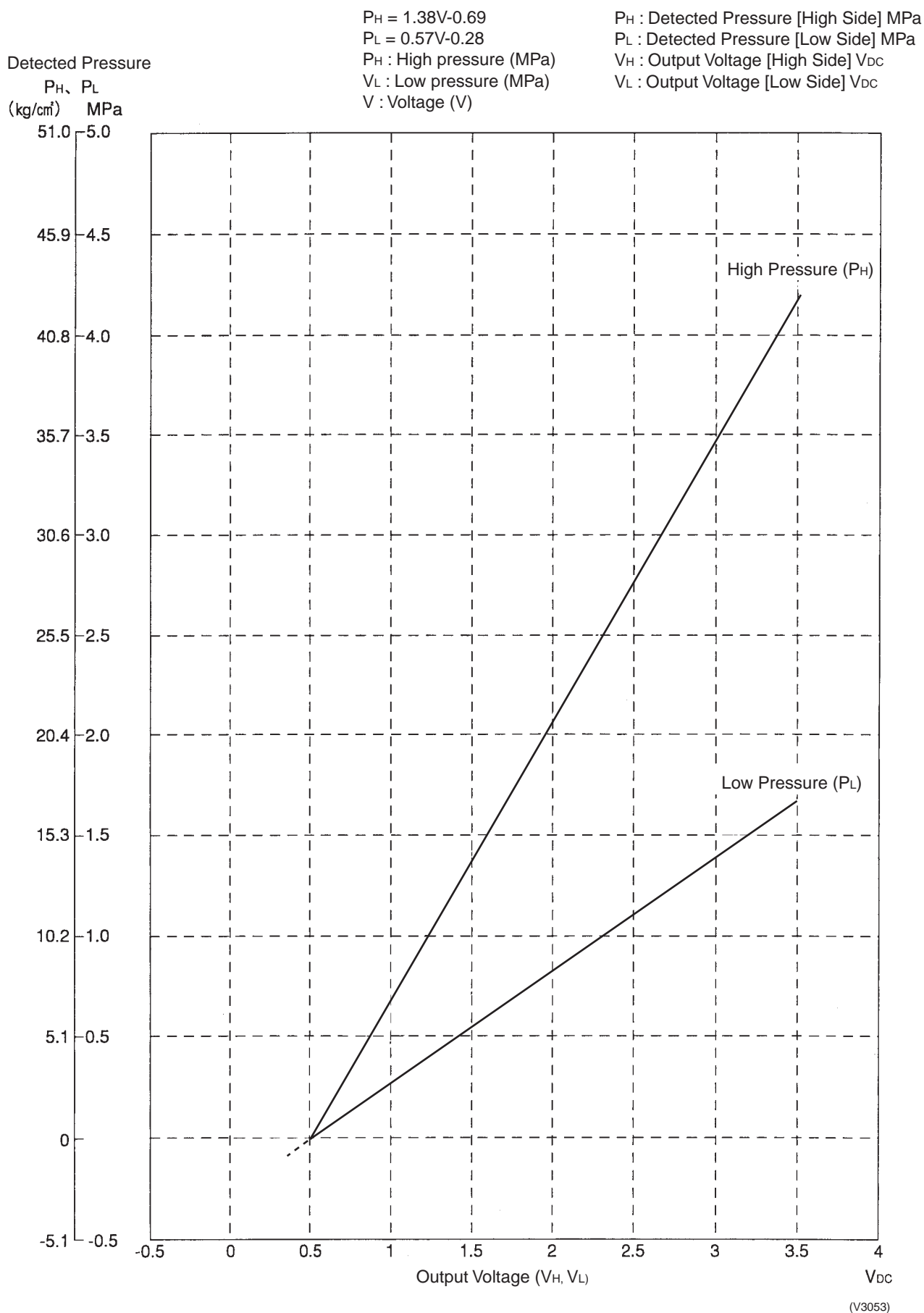
T°C	0.0	0.5
-20	197.81	192.08
-19	186.53	181.16
-18	175.97	170.94
-17	166.07	161.36
-16	156.80	152.38
-15	148.10	143.96
-14	139.94	136.05
-13	132.28	128.63
-12	125.09	121.66
-11	118.34	115.12
-10	111.99	108.96
-9	106.03	103.18
-8	100.41	97.73
-7	95.14	92.61
-6	90.17	87.79
-5	85.49	83.25
-4	81.08	78.97
-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

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  
(R2T)

						(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

# 10. Pressure Sensor



# 11.Method of Replacing The Inverter's Power Transistors Modules

## Checking failures in power semiconductors mounted on inverter PCB

Check the power semiconductors mounted on the inverter PCB by the use of a multiple tester.

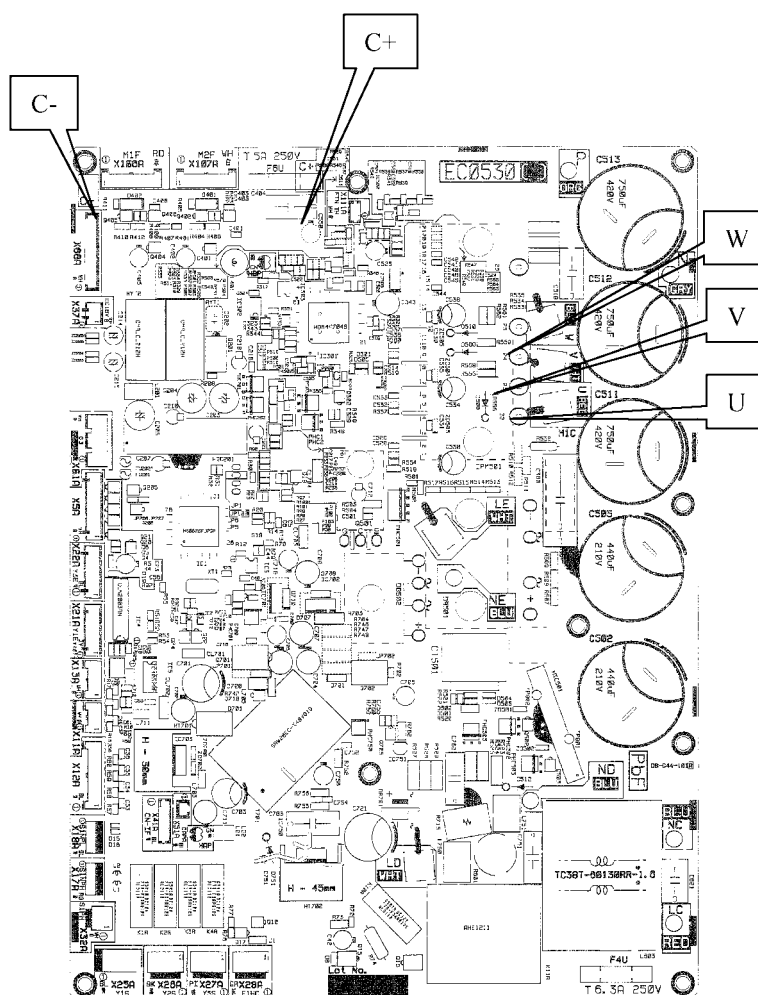
### <Items to be prepared>

- Multiple tester : Prepare the digital type of multiple tester with diode check function.

### <Preparation>

- Turn OFF the power supply. Then, after a lapse of 10 minutes or more, make measurement of resistance.
- To make measurement, disconnect all connectors and terminals.

### Inverter PCB



**Power module checking**

When using the digital type of multiple tester, make measurement in diode check mode.

Tester terminal		Criterion	Remark
+	-		
C+	U	Not less than 0.3V (including ?)*	It may take time to determine the voltage due to capacitor charge or else.
	V		
	W		
U	C-	Not less than 0.3V (including ?)*	
V			
W			
U	C+	0.3 to 0.7V (including ?)*	
V			
W			
C-	U	0.3 to 0.7V (including ?)*	
	V		
	W		

\*There needs to be none of each value variation.

The following abnormalities are also doubted besides the PC board abnormality.

- Faulty compressor (ground fault, ground leakage)
- Faulty fan motor (ground leakage)



# Part 9

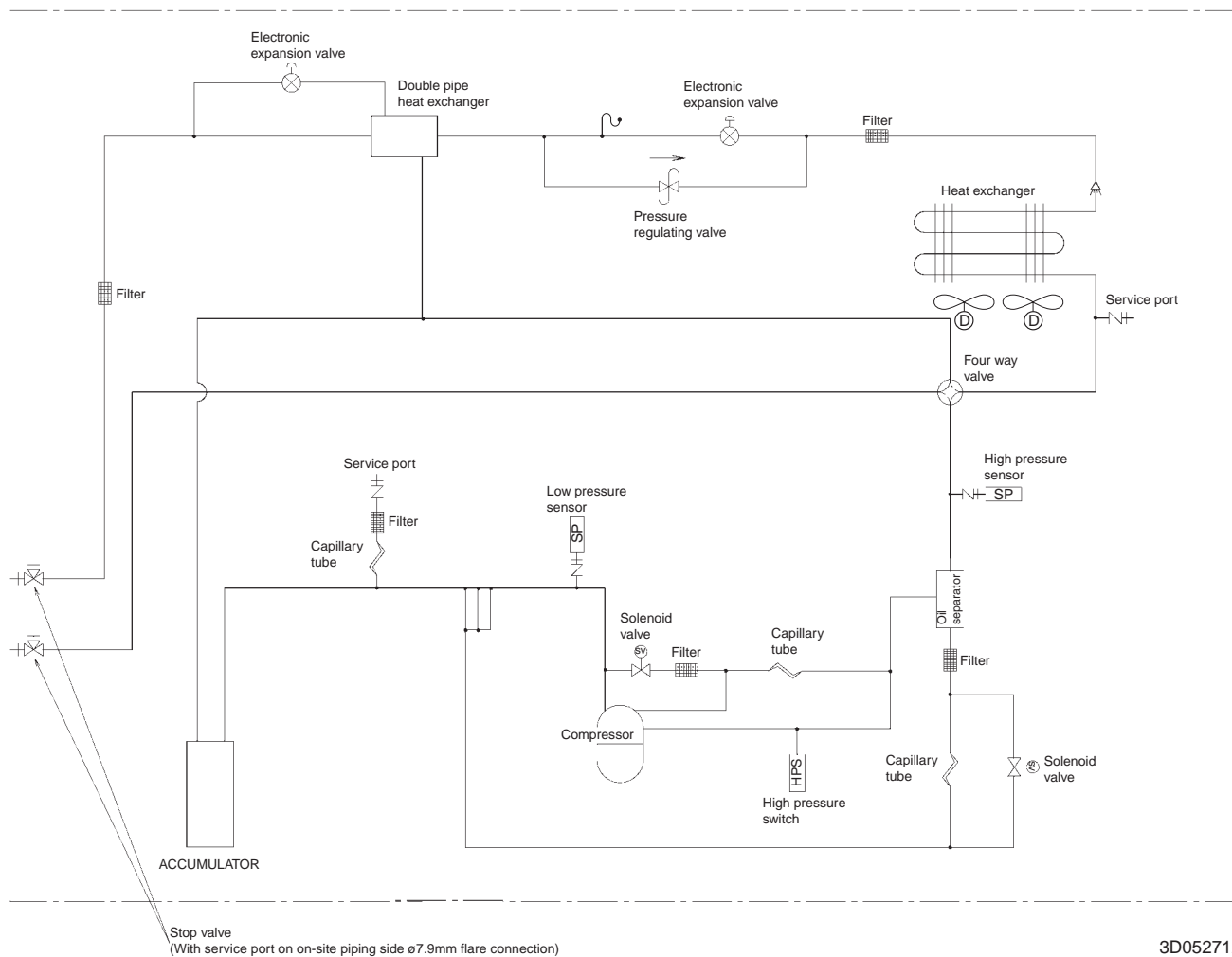
## Appendix

1. Piping Diagrams.....	362
1.1 Outdoor Units .....	362
1.2 BP Units .....	363
1.3 Indoor Units .....	364
2. Wiring Diagrams.....	369
2.1 Outdoor Units .....	369
2.2 BP Units .....	370
2.3 Indoor Units .....	371

# 1. Piping Diagrams

## 1.1 Outdoor Units

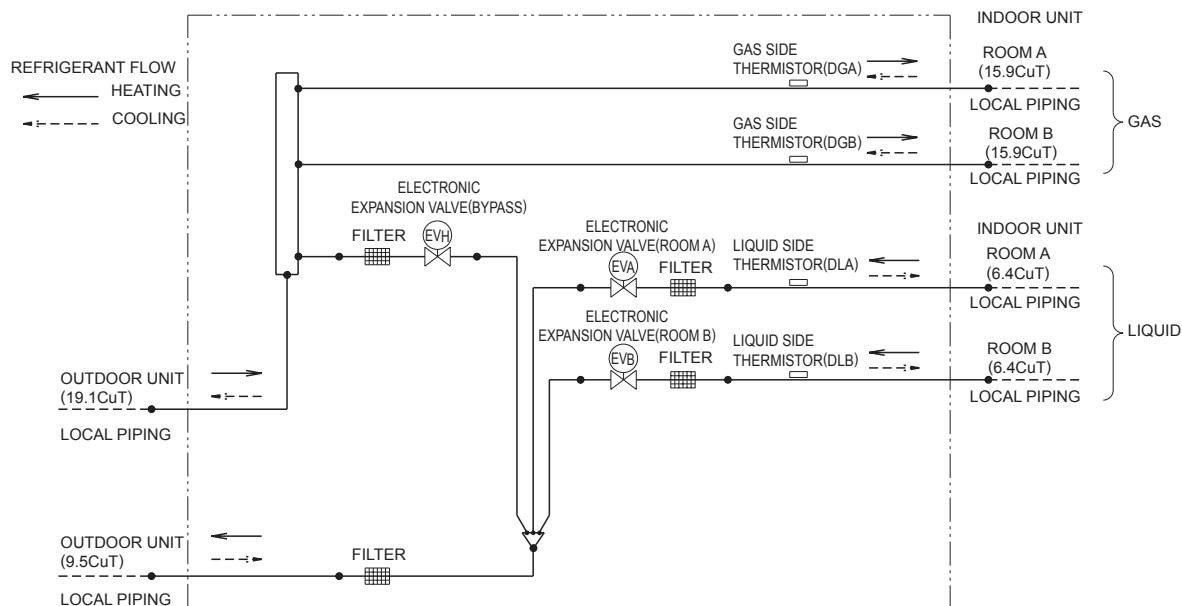
RMXS112/140/160E7V3B



3D052712

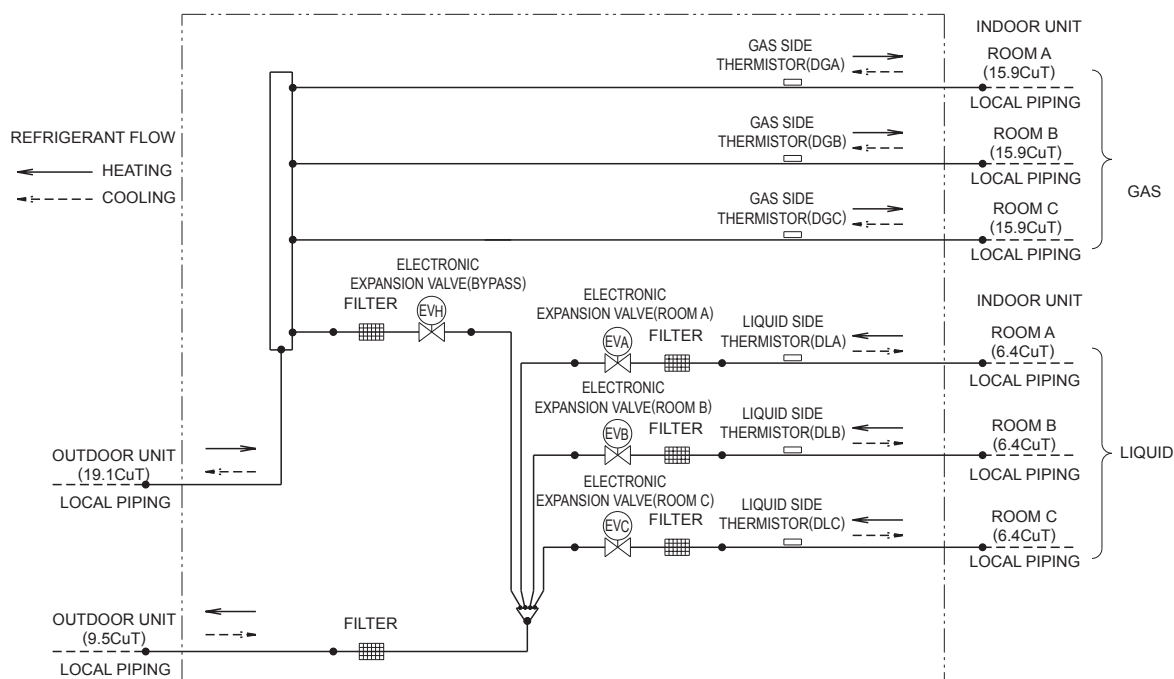
## 1.2 BP Units

### BPMKS967B2B



3D048286B

### BPMKS967B3B

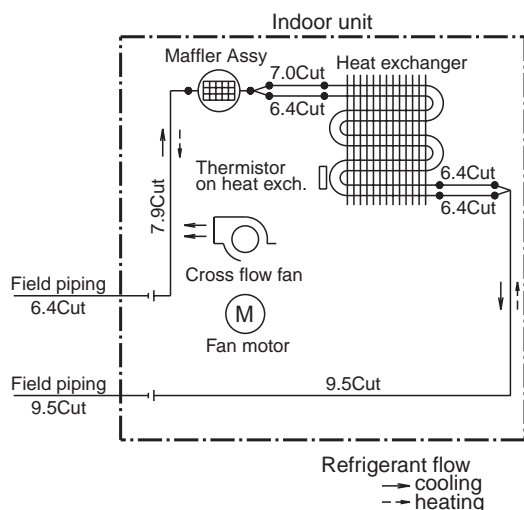


3D048285A

## 1.3 Indoor Units

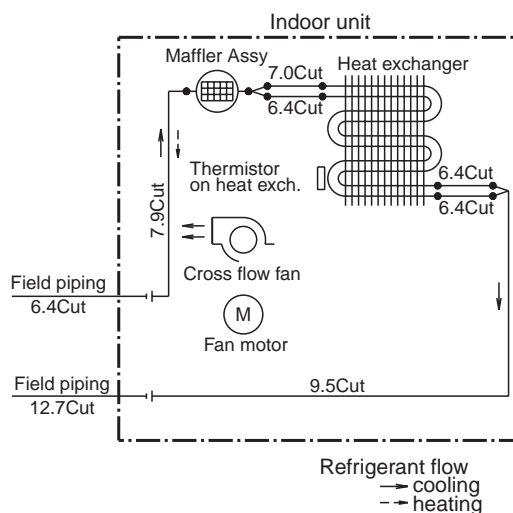
### 1.3.1 Wall Mounted Type

FTXS20/25/35D3VMW(L)



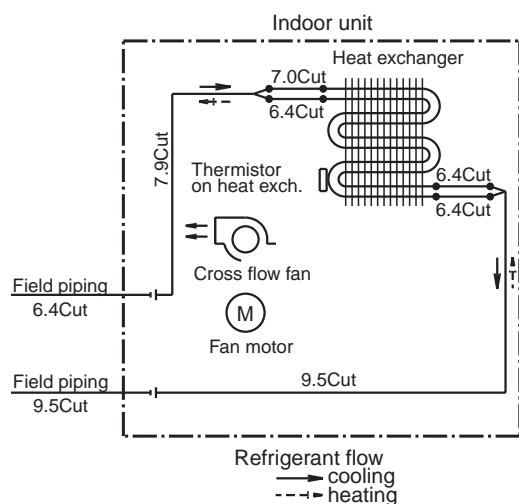
4D047912E

FTXS50D2V1W(L)



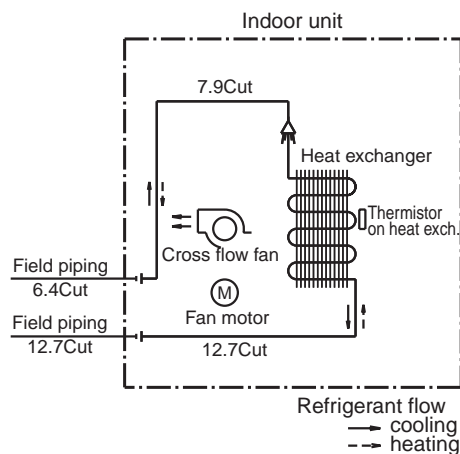
4D047913D

FTXS20/25/35CAVMB



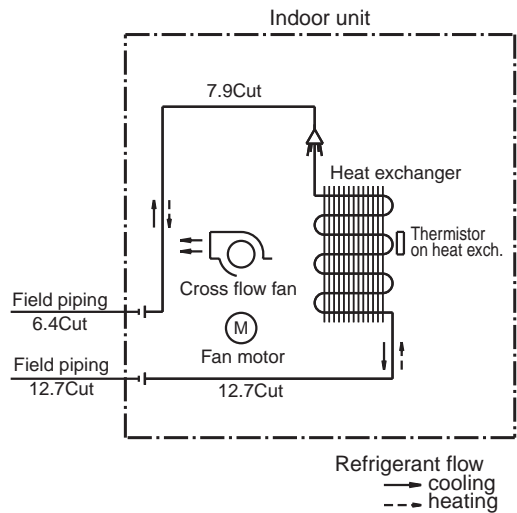
4D049319A

FTXS50/60EV1B



4D040081M

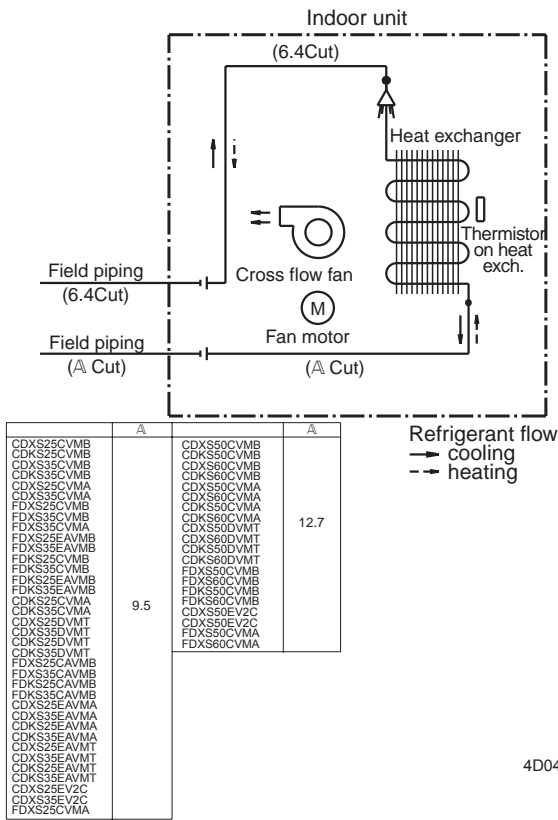
FTXS71EV1B, FTXS71BAVMB



4D040082M

1.3.2 Duct Connected Type

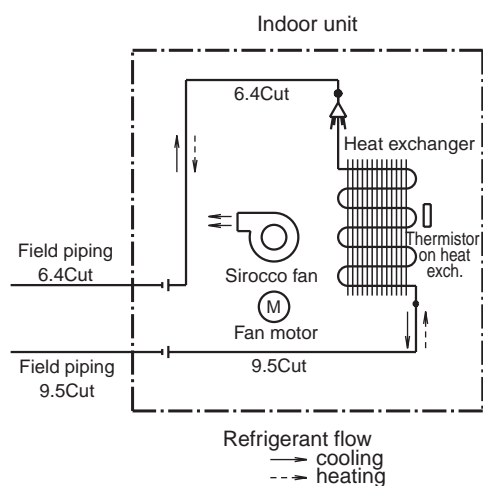
FDXS25/35CAVMB, FDXS50/60CVMB, FDXS25/35EAVMB



4D045449J

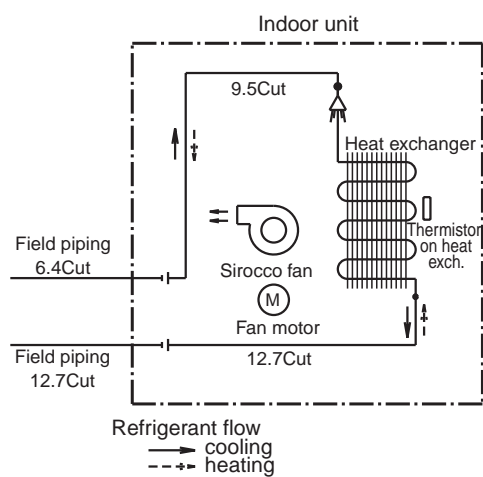
### 1.3.3 Floor / Ceiling Suspended Dual Type

#### FLXS25/35BAVMB



4D048722A

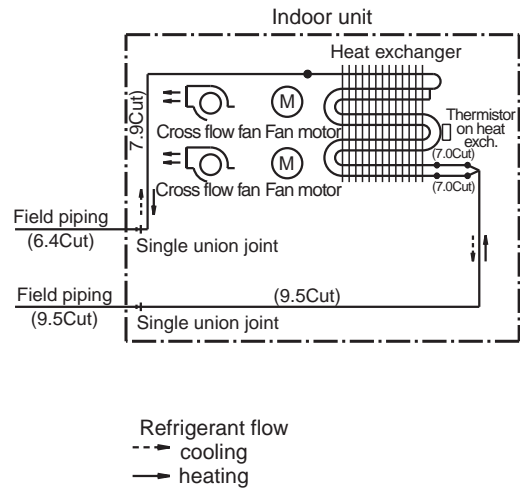
#### FLXS50/60BAVMB



4D048724A

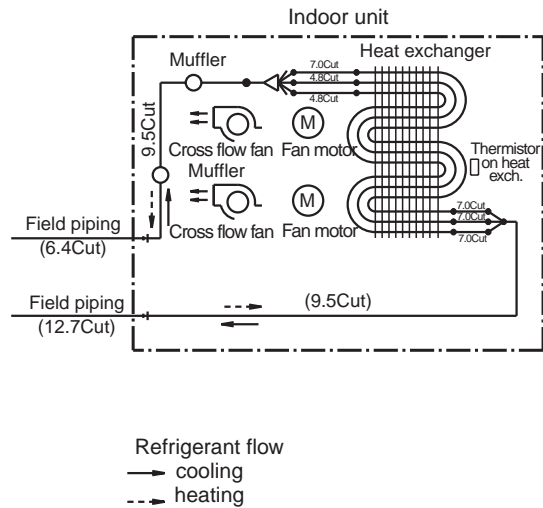
1.3.4 Floor Standing Type

FVXS25/35BAVMB



4D034714C

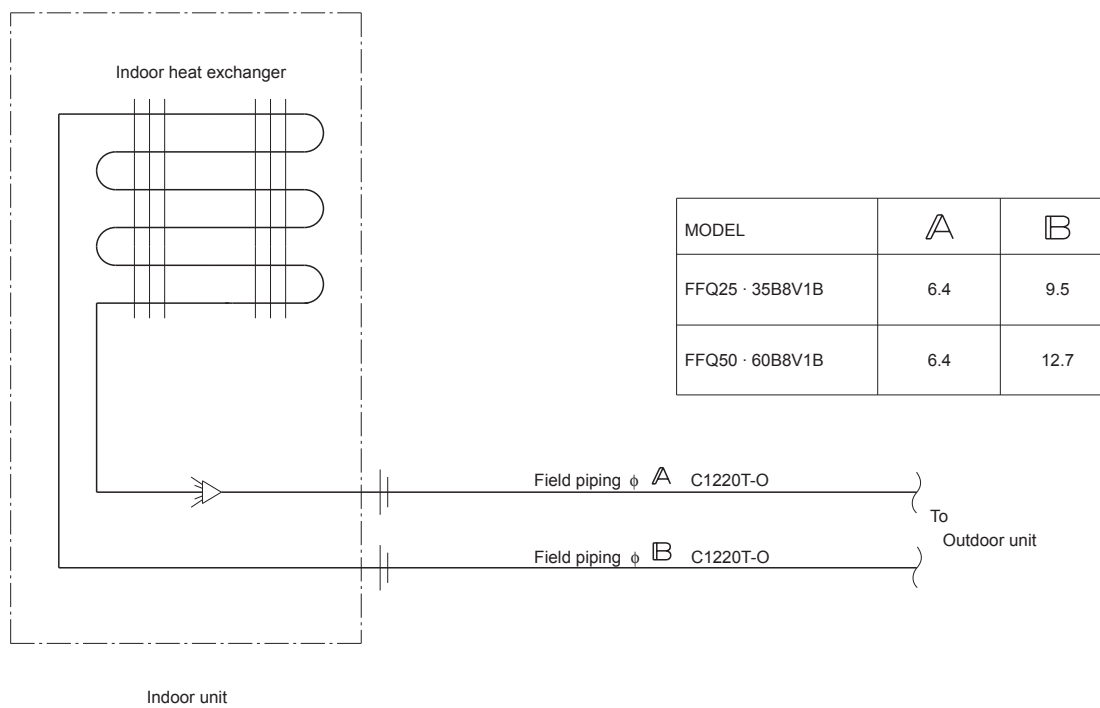
FVXS50BAVMB



4D020911D

### 1.3.5 Ceiling Mounted Cassette Type

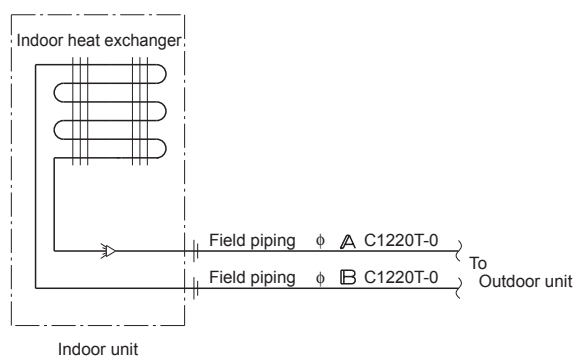
FFQ25/35/50/60B8V1B



C : 4D039335

### 1.3.6 Ceiling Suspended Type

FHQ35/50/60BVV1B



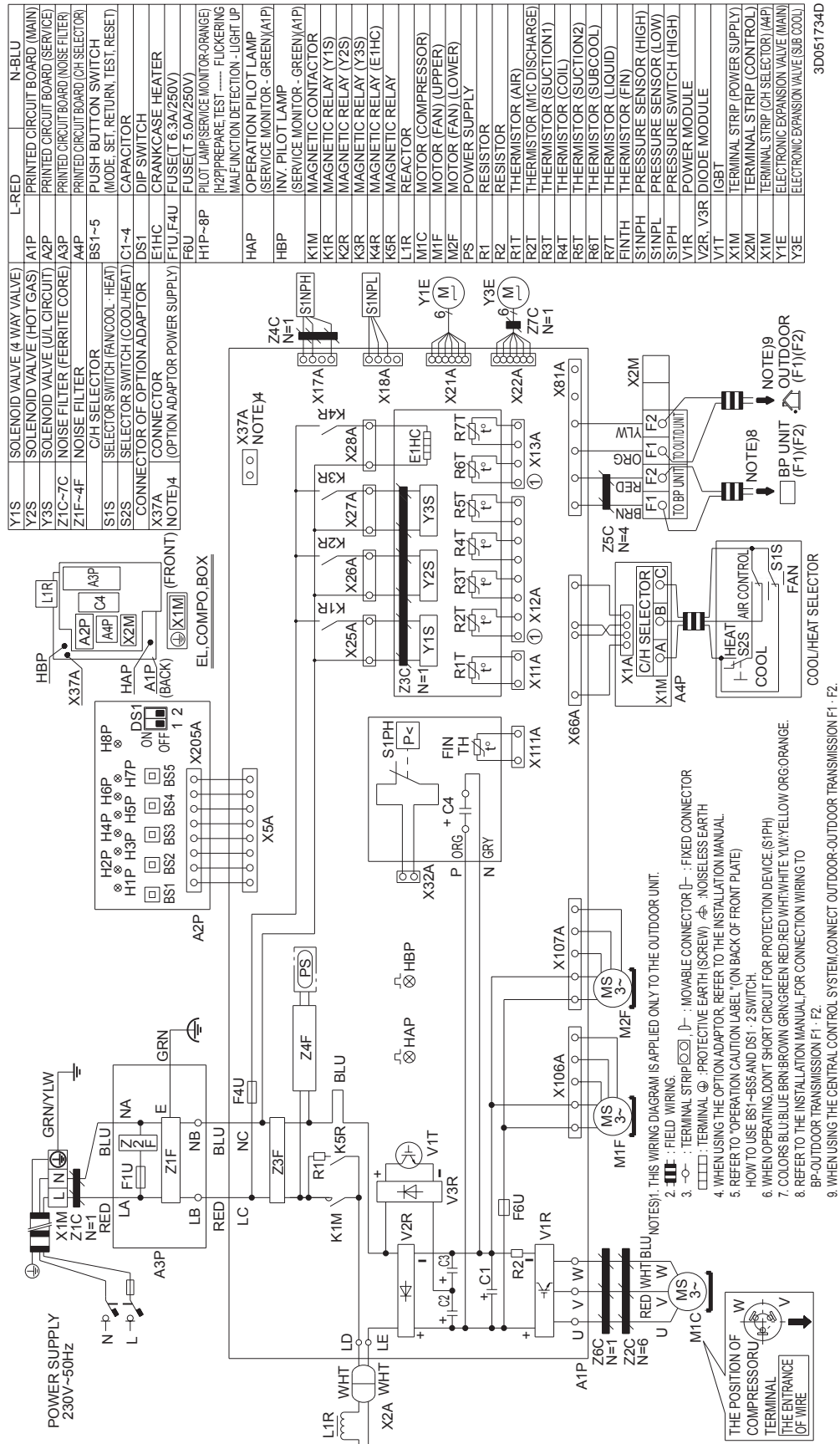
MODEL	A	B
FHQ35BUV1B FHQ35BVV1B FCQ35BVE	6.4	9.5
FHQ50 • 60BUV1B FHQ50 • 60BVV1B FCQ50 • 60BVE FBQ60BV1, FBQ60BVL	6.4	12.7
FUQ71, 100, 125BUV1B FUQ71, 100, 125BVV1B FHQ71, 100, 125BUV1B FHQ71, 100, 125BVV1B FAQ71, 100BUV1B FAQ71, 100BVV1B FXUQ70, 100, 125MV1 FHQ71, 100, 125BAV3B FCQ71, 100, 125, 140DV3B FCQ71, 100, 125, 140DAV3B FCQ71BVE FBQ71BV1, FBQ71BVL	9.5	15.9

4D037995F

## 2. Wiring Diagrams

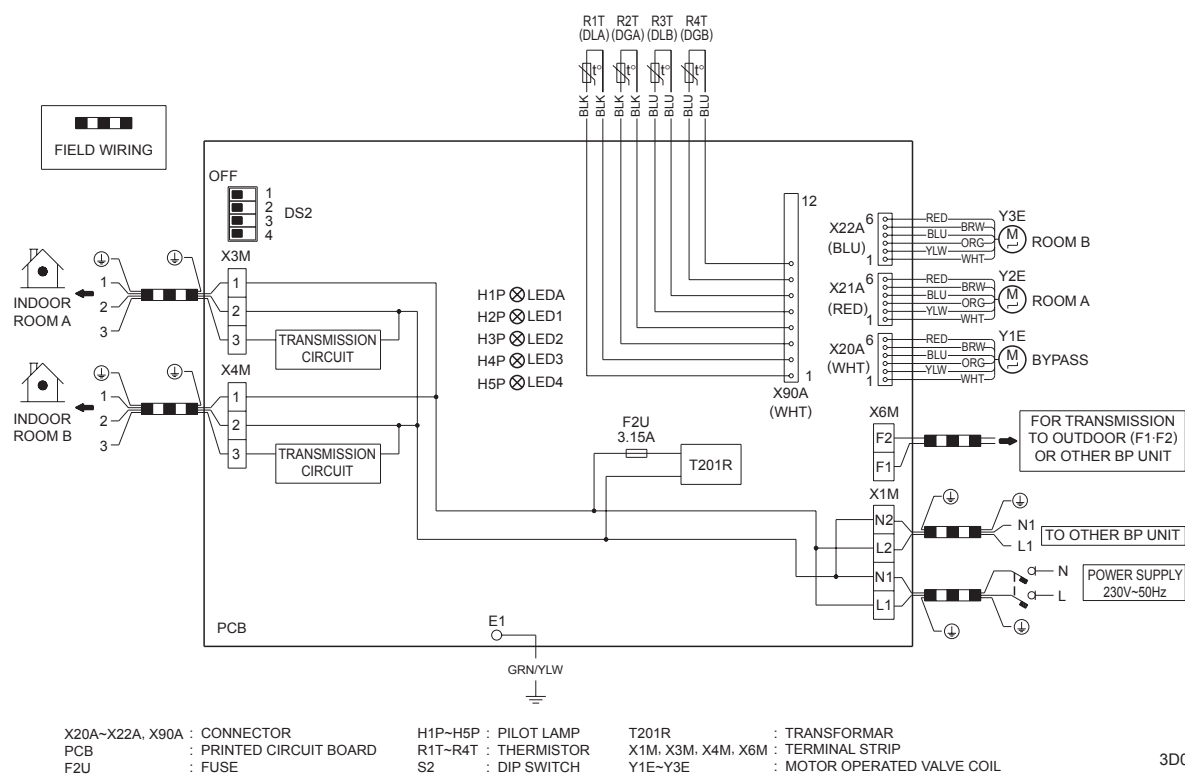
### 2.1 Outdoor Units

#### RMXS112/140/160E7V3B

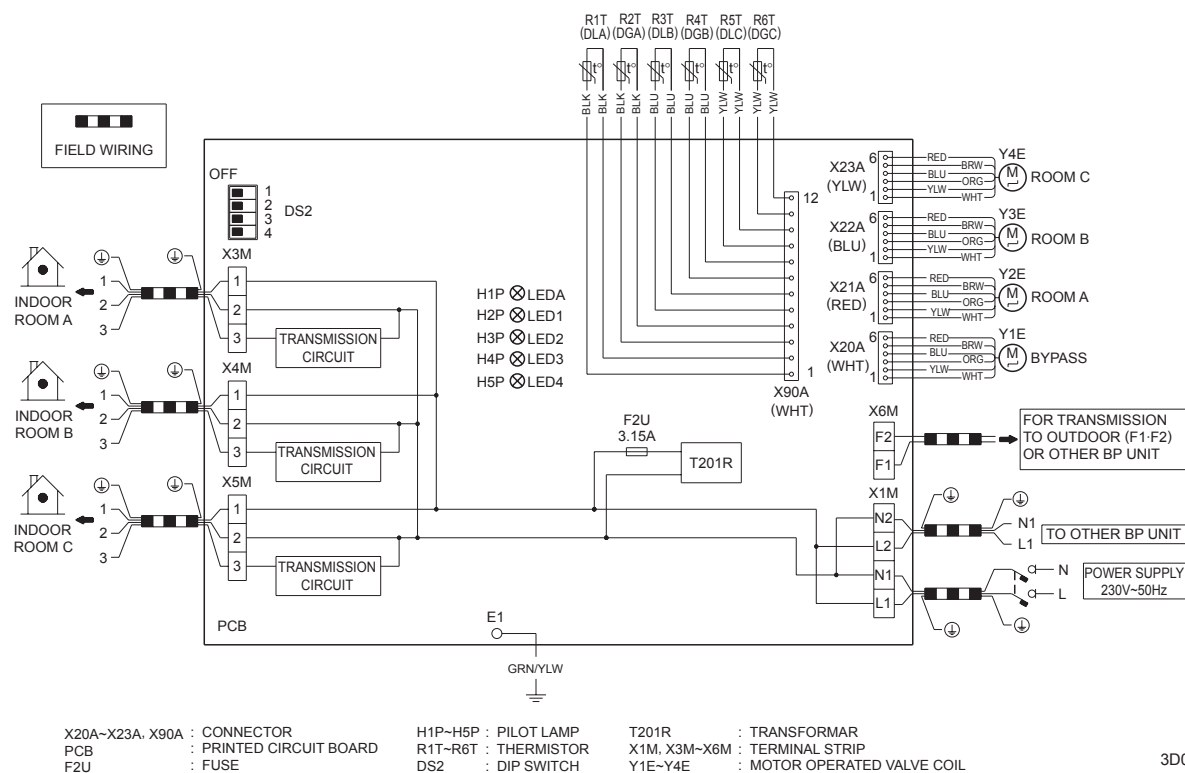


## 2.2 BP Units

### BPMKS967B2B



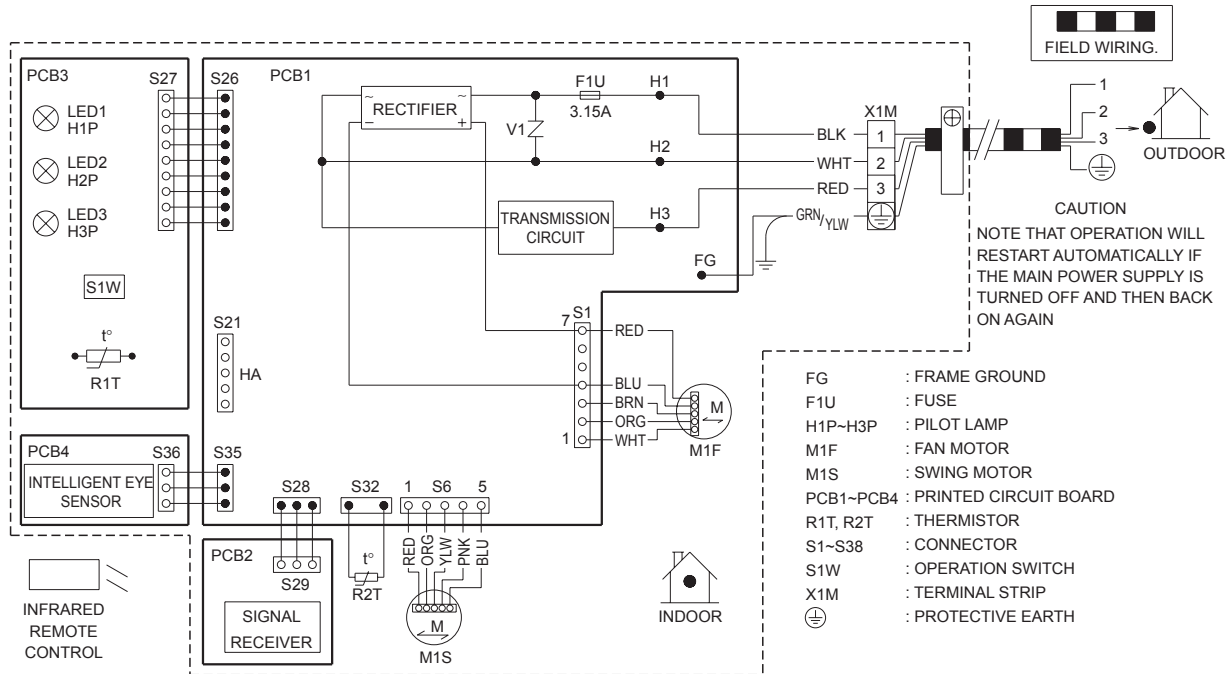
### BPMKS967B3B



## 2.3 Indoor Units

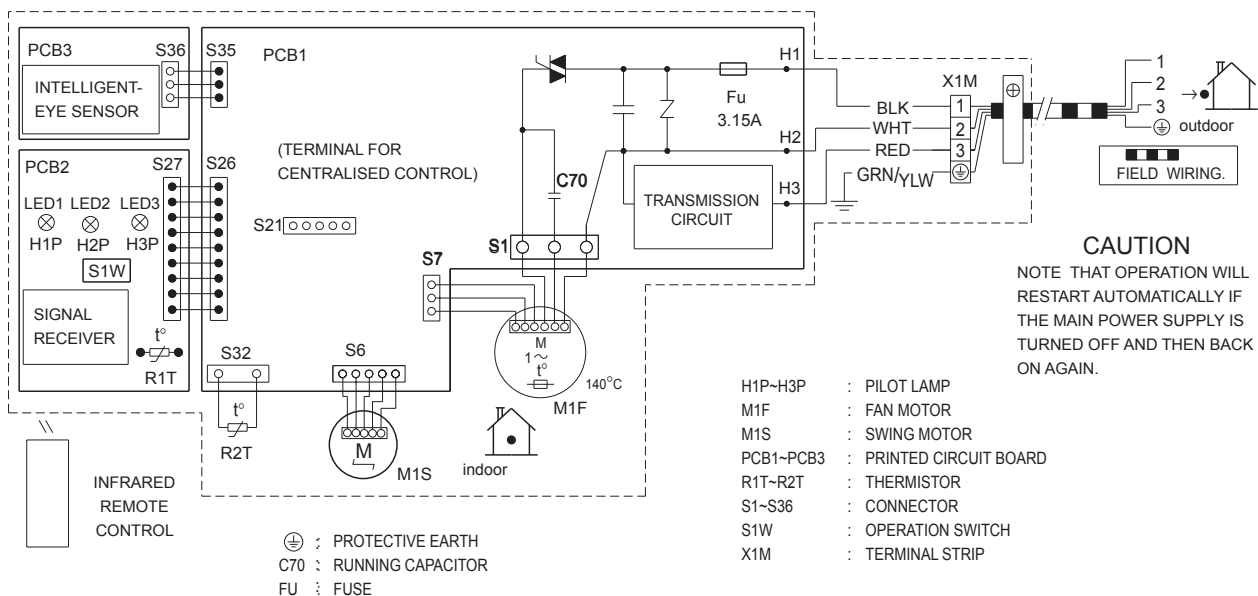
### 2.3.1 Wall Mounted Type

#### FTXS20/25/35D3VMW(L)



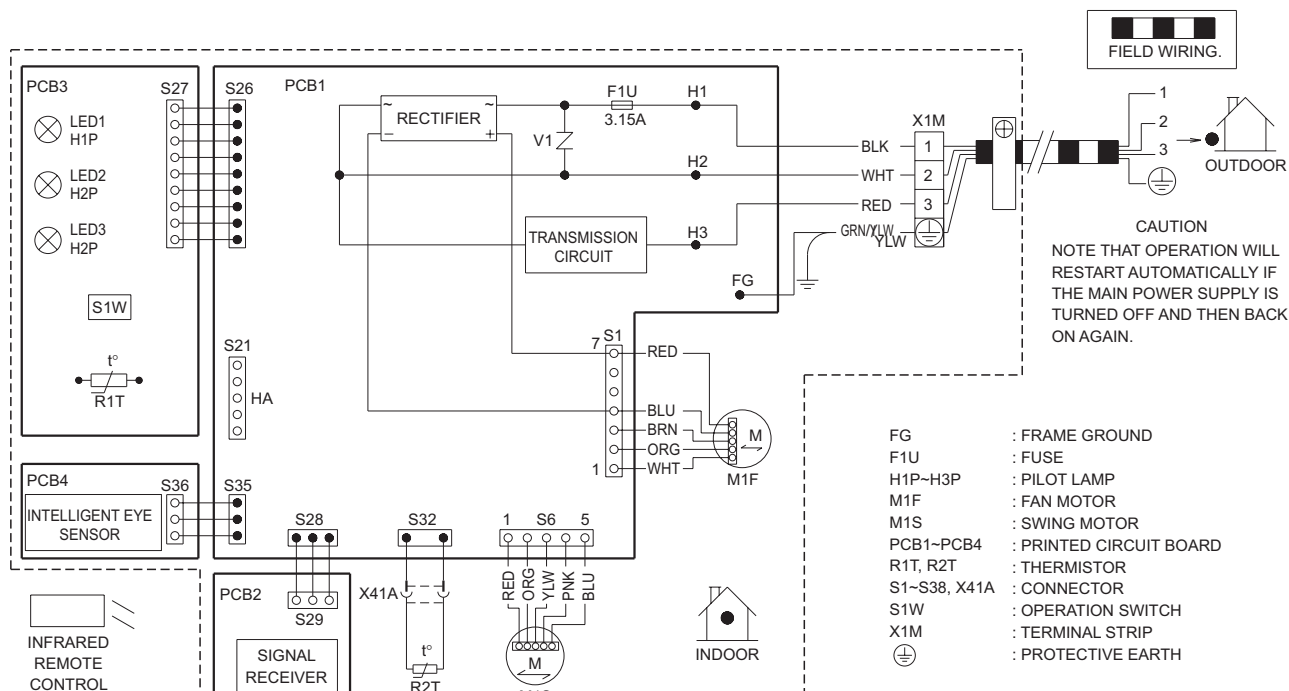
3D051268A

#### FTXS20/25/35CAVMB



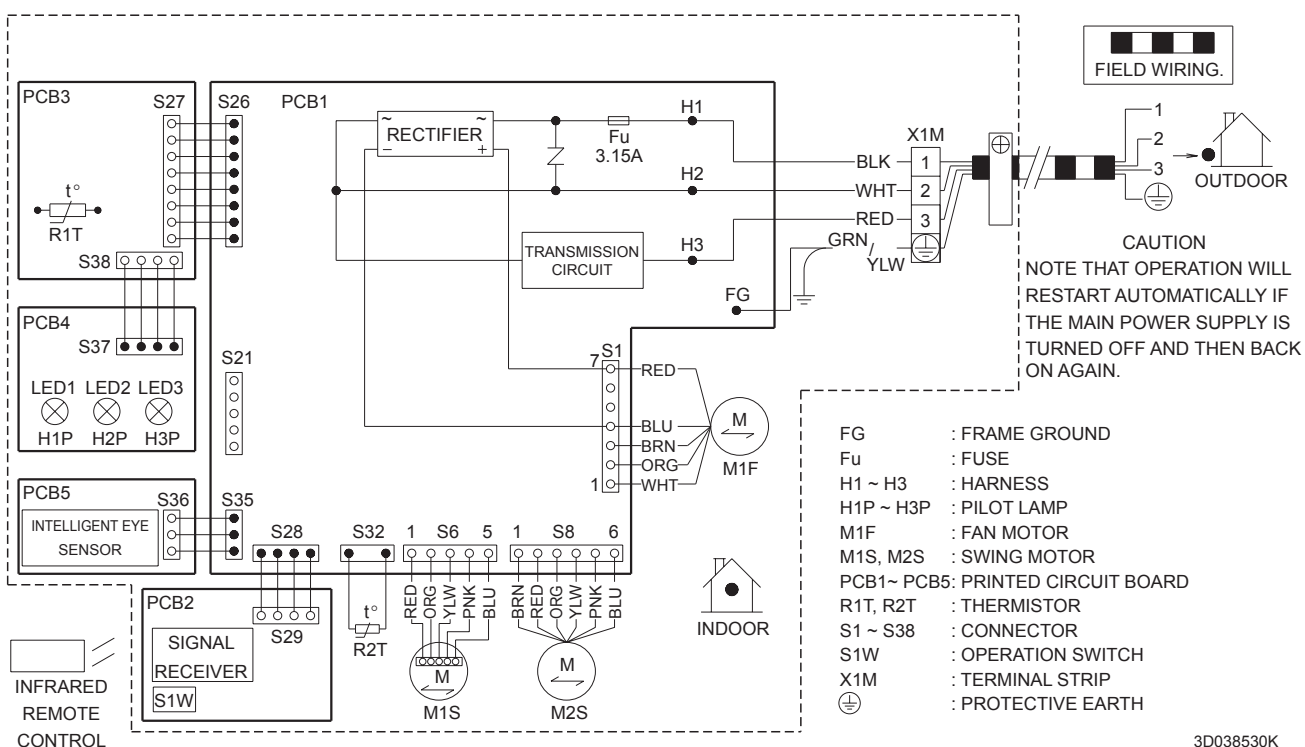
3D033599G

## FTXS50D2V1W(L)



3D051652

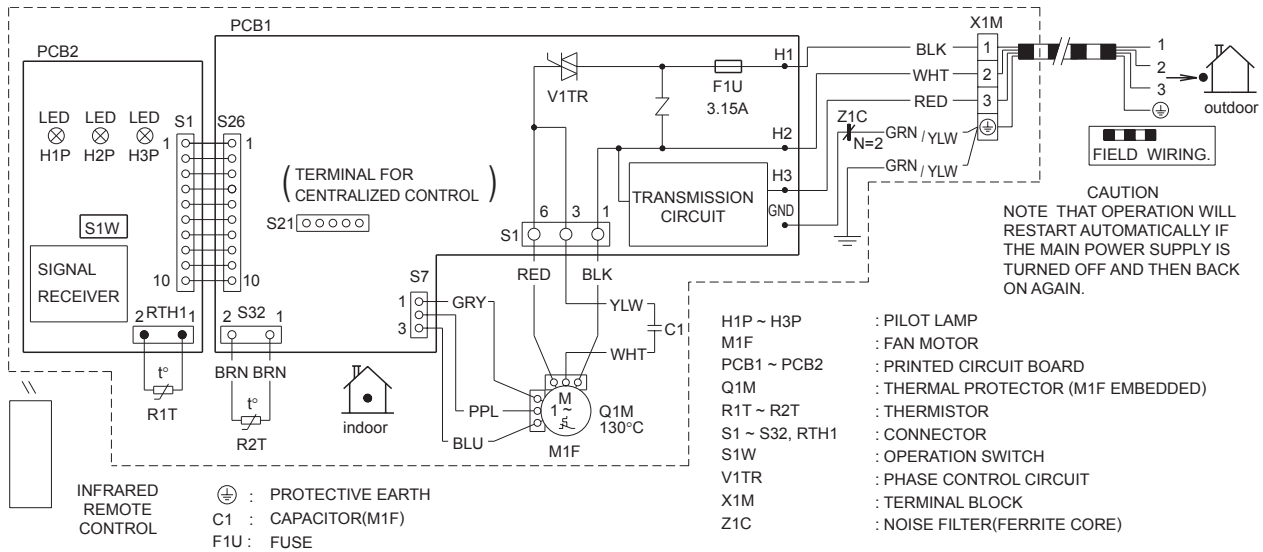
## FTXS50/60/71EV1B, FTXS71BAVMB



3D038530K

## 2.3.2 Duct Connected Type

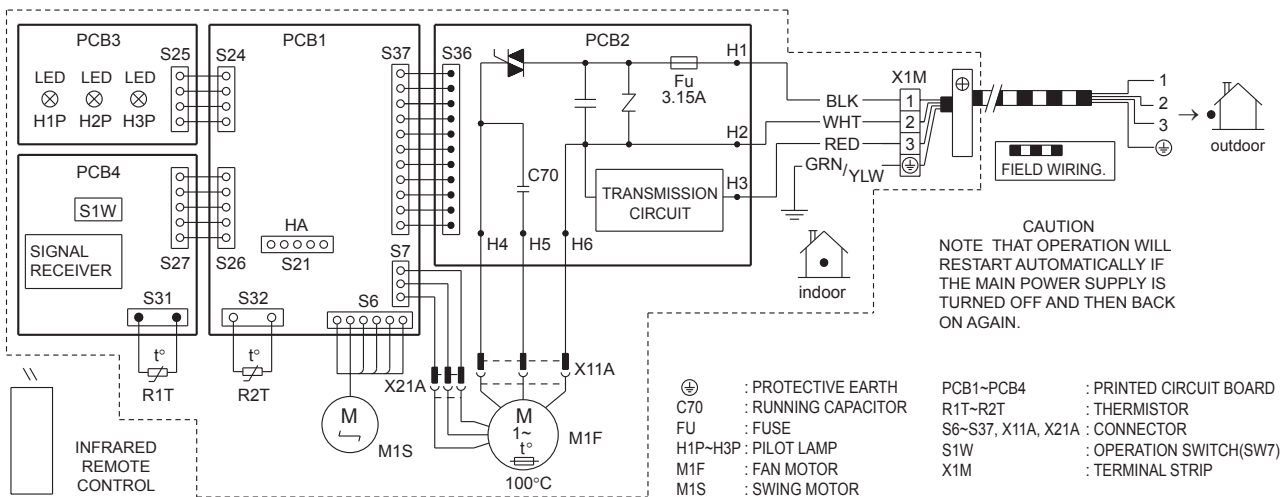
FDXS25/35CAVMB, FDXS50/60CVMB, FDXS25/35EAVMB



3D045012K

## 2.3.3 Floor / Ceiling Suspended Dual Type

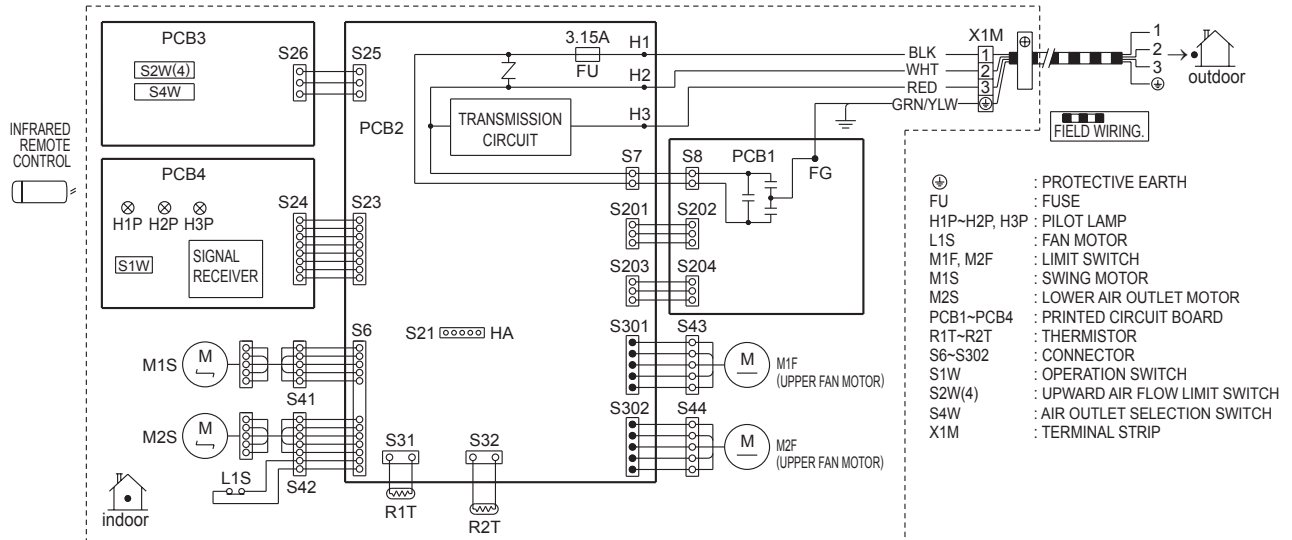
FLXS25/35/50/60BAVMB



3D033909E

## 2.3.4 Floor Standing Type

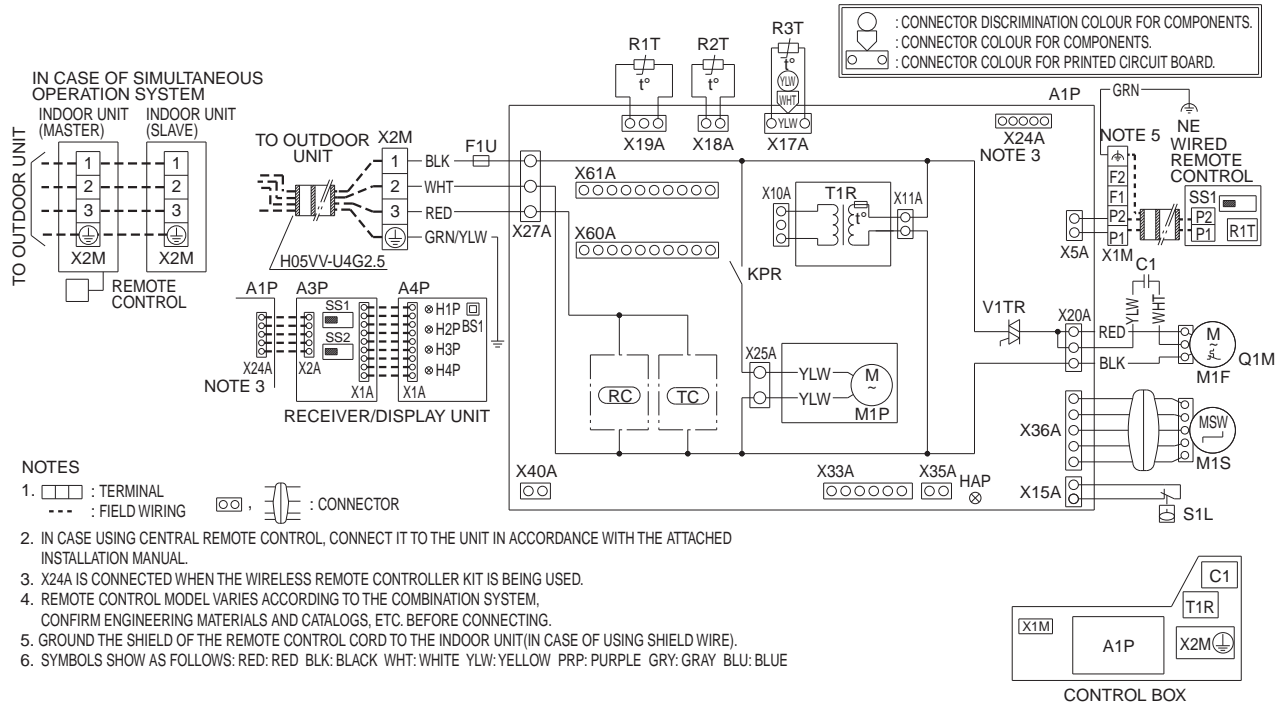
### FVXS25/35/50BAVMB



3D034713C

## 2.3.5 Ceiling Mounted Cassette Type

### FFQ25/35/50/60B8V1B

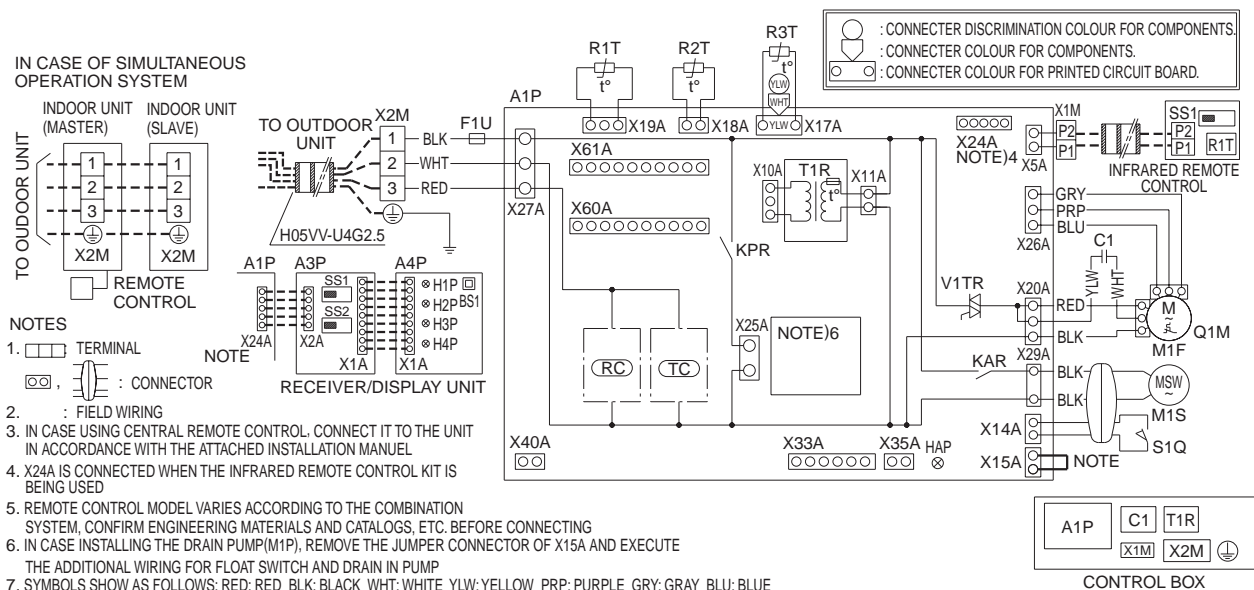


A1P	PRINTED CIRCUIT BOARD	BS1	PUSH BUTTON (ON/OFF)
C1	CAPACITOR(M1F)	H1P	LIGHT EMITTING DIODE (ON-RED)
F1U	FUSE(F5A 250V)	H2P	LIGHT EMITTING DIODE (TIMER-GREEN)
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR GREEN)	H3P	LIGHT EMITTING DIODE (FILTER SIGN-RED)
KPR	MAGNETIC RELAY(M1P)	H4P	LIGHT EMITTING DIODE (DEFROST-ORANGE)
M1F	MOTOR (INDOOR FAN)	SS1	SELECTOR SWITCH (MAIN/SUB)
M1P	MOTOR (DRAIN PUMP)	SS2	SELECTOR SWITCH (WIRELESS ADDRESS SET)
M1S	MOTOR (SWING FLAP)		
Q1M	THERMO SWITCH (M1F EMBEDDED)		
R1T	THERMISTOR (AIR)		
R2T	THERMISTOR (COIL-1)		
R3T	THERMISTOR (COIL-2)		
S1L	FLOAT SWITCH		
T1R	TRANSFORMER(220-240V/22V)		
V1TR	PHASE CONTROL CIRCUIT		
X1M	TERMINAL STRIP		
X2M	TERMINAL STRIP		
(RC)	SIGNAL RECEIVER CIRCUIT		
(TC)	SIGNAL TRANSMISSION CIRCUIT		
	WIRED REMOTE CONTROL		
R1T	THERMISTOR (AIR)		
SS1	SELECTOR SWITCH (MAIN/SUB)		
	INFRARED REMOTE CONTROL (RECEIVER/DISPLAY UNIT)		
A3P	PRINTED CIRCUIT BOARD		
A4P	PRINTED CIRCUIT BOARD		

3D038357B

## 2.3.6 Ceiling Suspended Type

### FHQ35/50/60BVV1B



A1P	PRINTED CIRCUIT BOARD	BS1	PUSH BUTTON (ON/OFF)
C1	CAPACITOR (M1F)	H1P	LIGHT EMITTING DIODE (ON-RED)
F1U	FUSE (F5A 250V)	H2P	LIGHT EMITTING DIODE (TIMER GREEN)
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR GREEN)	H3P	LIGHT EMITTING DIODE (FILTER SIGN-RED)
KAR	MAGNETIC RELAY (M1S)	H4P	LIGHT EMITTING DIODE (DEFROST-ORANGE)
KPR	MAGNETIC RELAY (M1P)	SS1	SELECTOR SWITCH (MAIN/SUB)
M1F	MOTOR (INDOOR FAN)	SS2	SELECTOR SWITCH (WIRELESS ADDRESS SET)
M1S	MOTOR (SWING FLAP)		
Q1M	THERMO SWITCH (M1F EMBEDDED)		
R1T	THERMISTOR (AIR)		
R2T	THERMISTOR (COIL-1)		
R3T	THERMISTOR (COIL-2)		
S1Q	LIMIT SWITCH (SWING FLAP)		
T1R	TRANSFORMER (220-240V/22V)		
V1TR	PHASE CONTROL CIRCUIT		
X1M	TERMINAL BLOCK		
X2M	TERMINAL BLOCK		
RC	SIGNAL RECEIVER CIRCUIT		
TC	SIGNAL TRANSMISSION CIRCUIT		
	INFRARED REMOTE CONTROL		
	R1T		
	SS1		
	INFRARED REMOTE CONTROL (RECEIVER/DISPLAY UNIT)		
A3P	PRINTED CIRCUIT BOARD		
A4P	PRINTED CIRCUIT BOARD		

3D037842C

# Index

## A

A1 .....	270, 281
A1P .....	25
A2P .....	26
A3 .....	282
A3P .....	27
A4P .....	28
A5 .....	271
A6 .....	273, 274, 285, 286
A7 .....	288
A9 .....	300
abnormal discharge pipe temperature .....	316
actuation of high pressure switch .....	308
actuation of low pressure switch .....	310
address duplication of central remote control .....	347
address setting jumper .....	30, 33, 35, 37, 39, 42
adjusting the air flow direction .....	178
AF .....	284
air purifying filter .....	96
air purifying filter with photocatalytic deodorizing function .....	97
AJ .....	290
ARC433A .....	255
AUTO · DRY · COOL · HEAT · FAN operation .....	176
automatic air flow control .....	86
automatic operation .....	88
auto-restart .....	30
auto-restart function .....	97, 106
auto-swing .....	85

## B

BP unit command conversion .....	80
BP unit control .....	80
BP unit electronic expansion valve control .....	81
BP unit PCB .....	29
BS1 .....	26
BS2 .....	26
BS3 .....	26
BS4 .....	26
BS5 .....	26
buzzer PCB .....	36

## C

C4 .....	276, 291
C5 .....	292
C7 .....	277
C9 .....	276, 293
care and cleaning .....	203
centralized control .....	30, 33, 35, 37, 39
centralized group No. setting .....	144
check	
check for causes of drop in low pressure .....	353
check for causes of rise in high pressure .....	352
check for fan motor connector .....	354

fan motor connector output check .....	278, 298
Hall IC check .....	280
limit switch continuity check .....	278
power supply waveforms check .....	306
thermistor resistance check .....	279, 299
check for causes of drop in low pressure .....	353
check for causes of rise in high pressure .....	352
check for fan motor connector .....	354
check operation .....	115, 135
check operation not executed .....	339
CJ .....	294
compressor motor lock .....	312
compressor PI control .....	62
condensation avoidance control (FHQ only) .....	101
connectors .....	24
control PCB (indoor unit) .....	31, 34, 36, 37, 40, 44, 46, 48
cool/heat mode switching .....	127
cool/heat selector PCB (A4P) .....	28
cooling operation fan control .....	66

## D

defrosting operation .....	70
demand operation .....	79
dew condensation prevention control .....	78
dew prevention fan control .....	109
diagnosis mode .....	256
discharge pipe protection control .....	75
display PCB .....	32, 36, 38, 41, 44
drain pump control .....	101
DS1 .....	26

## E

E .....	27
E1 .....	307
E2 .....	301
E3 .....	308
E4 .....	310
E5 .....	312
E7 .....	313
E9 .....	314
econo mode .....	91
econo operation .....	190
electric function parts .....	99
electronic expansion valve PI control .....	65
error codes	
A1 .....	270, 281
A3 .....	282
A5 .....	271
A6 .....	273, 274, 285, 286
A7 .....	288
A9 .....	300
AF .....	284
AJ .....	290
C4 .....	276, 291

C5 .....	292	fan motor or related abnormality	
C7 .....	277	AC motor .....	273
C9 .....	276, 293	DC motor .....	274
CJ .....	294	fan speed control .....	86
E1 .....	307	fan speed setting .....	30, 33, 35, 37, 39, 42
E2 .....	301	faulty BP liquid pipe thermistor .....	302
E3 .....	308	faulty BP unit PCB .....	301
E4 .....	310	faulty combination of inverter and fan driver .....	334
E5 .....	312	faulty outdoor unit PCB .....	307
E7 .....	313	field setting	
E9 .....	314	wired remote control .....	137
F3 .....	316	infrared remote control .....	138
F6 .....	317	field setting from outdoor unit .....	118
H9 .....	318	forced fan on .....	145
J0 .....	302	forced operation ON/OFF switch .....	30
J3 .....	319	freeze-up protection control .....	77, 100
J5 .....	320	freeze-up protection control or	
J6 .....	321	high pressure control .....	271
J7 .....	322	FU .....	42
J9 .....	323	FU1 .....	30, 33, 35, 37, 39
JA .....	324	function outline (skyair) .....	98
JC .....	325	functional parts layout .....	53
L1 .....	326	functions .....	1, 2
L4 .....	327	fuse .....	30, 33, 35, 37, 42
L5 .....	328		
L8 .....	329	<b>H</b>	
L9 .....	330	H1P .....	26, 29
LC .....	331	H2P .....	26, 29
P1 .....	332	H3P .....	26, 29
P4 .....	333	H4P .....	26, 29
PJ .....	334	H5P .....	26, 29
U0 .....	335	H6P .....	26
U2 .....	337	H7P .....	26
U3 .....	339	H8P .....	26
U4 .....	303, 340	H9 .....	318
U5 .....	295, 342	HA .....	30, 35
U8 .....	296, 343	Hall IC .....	86, 273, 274
U9 .....	344	Hall IC check .....	280
UA .....	297, 346	HAP .....	24, 45, 47
UC .....	347	HBP .....	24
UE .....	348	heat exchanger isothermal control	
UF .....	350	in heating operation .....	84
UH .....	351	heat exchanger thermistor	
UJ .....	305	troubleshooting (indoor unit) .....	291, 292
error codes and LED indication		heating operation prohibition .....	79
indoor unit .....	263	high pressure protection control .....	73
system .....	263	high voltage of capacitor in main	
excessive number of indoor units .....	346	inverter circuit .....	332
<b>F</b>		HOME LEAVE operation .....	94, 191
F1 .....	29	hot start function .....	96
F1U .....	27		
F2 .....	29	<b>I</b>	
F2U .....	29	individual setting .....	145
F3 .....	316	indoor unit fan motor lock .....	285
F4U .....	24	indoor unit PCB abnormality .....	270, 281
F6 .....	317	initial setting contents .....	138
F6U .....	24	inspection/test button .....	259
fan and flap operations .....	107	instruction .....	151
fan motor connector output check .....	278, 298	INTELLIGENT EYE .....	92
		INTELLIGENT EYE operation .....	193
		INTELLIGENT EYE sensor .....	148

INTELLIGENT EYE sensor PCB .....	32, 34, 36
inverter compressor abnormal .....	328
inverter current abnormal .....	329
inverter POWERFUL operation .....	95
inverter protection control .....	76
inverter start up error .....	330

**J**

J0 .....	302
J3 .....	319
J4 .....	147
J5 .....	320
J6 .....	321
J7 .....	322
J9 .....	323
JA .....	30, 33, 35, 37, 39, 42, 147, 324
JB .....	30, 33, 35, 37, 39, 42, 147
JC .....	30, 33, 35, 37, 39, 42, 147, 325
jumper setting .....	147

**L**

L1 .....	29, 326
L2 .....	29
L4 .....	327
L5 .....	328
L8 .....	329
L9 .....	330
LA .....	27
LB .....	27
LC .....	24, 331
LD .....	24
LE .....	24
LED A .....	30, 33, 35, 37, 39, 42
LED1 .....	30, 33, 35, 37, 39
LED11 .....	42
LED12 .....	42
LED14 .....	42
LED2 .....	30, 33, 35, 37, 39
LED3 .....	30, 33, 35, 37, 39
limit switch continuity check .....	278
list of malfunction code .....	268
local setting	
air flow direction .....	140
fan off .....	140
fan speed changeover .....	141
filter sign .....	140
list of mode No. ....	139
range of air flow direction .....	140
infrared remote control .....	141
low pressure drop due to refrigerant shortage or electronic expansion valve failure .....	335
low pressure protection control .....	74

**M**

main PCB (A1P) .....	25
main/sub switch (SS1) .....	141
maintenance mode setting	
forced fan on .....	145
individual setting .....	145
malfunction hysteresis .....	145
sensor data display .....	145

unit No. change .....	145
malfunction code indication	
by outdoor unit PCB .....	264
malfunction code, list .....	268
malfunction hysteresis .....	145
malfunction of capacity setting .....	290
malfunction of discharge pipe	
thermistor (R2T) .....	319
malfunction of drain system .....	284
malfunction of drain water level system .....	282
malfunction of electronic expansion valve .....	300
malfunction of field setting switch .....	297
malfunction of heat exchanger	
thermistor (R2T) .....	291
malfunction of heat exchanger	
thermistor (R3T) .....	292
malfunction of high pressure sensor .....	324
malfunction of indoor unit fan motor .....	286
malfunction of inverter radiating	
fin temperature rise .....	327
malfunction of inverter radiating fin temperature	
rise sensor .....	333
malfunction of low pressure sensor .....	325
malfunction of moving part of electronic	
expansion valve .....	314
malfunction of outdoor unit fan motor .....	313
malfunction of PCB .....	326
malfunction of remote control thermistor .....	294
malfunction of subcooling heat exchanger	
thermistor (R6T) .....	323
malfunction of suction air thermistor .....	293
malfunction of system,	
refrigerant system address undefined .....	351
malfunction of thermistor (R3T, R5T)	
for suction pipe1, 2 .....	320
malfunction of thermistor (R4T) for outdoor unit	
heat exchanger .....	321
malfunction of thermistor (R7T) for outdoor unit	
liquid pipe .....	322
malfunction of thermistor for outdoor air (R1T) ...	318
malfunction of transmission between central	
remote control and indoor unit .....	348
malfunction of transmission between indoor and	
outdoor units in the same system .....	344
malfunction of transmission between indoor units	
and outdoor units .....	340
malfunction of transmission between inverter	
and control PCB .....	331
malfunction of transmission between main and	
sub remote controls .....	343
malfunction of transmission between remote	
controller and indoor unit .....	342
method of replacing the inverter's power	
transistors modules .....	358
mode conflict .....	108
mold proof air filter .....	97
multi system .....	201
multiple settings .....	142

<b>N</b>		
N	24	
N1	29	
N2	29	
NA	27	
names of parts	155	
NB	27	
NC	24	
night set mode	90	
noise filter PCB (A3P)	27	
normal operation	61	
<b>O</b>		
oil return operation	68	
ON/OFF button on indoor unit	96	
operation lamp	251	
operation mode	60	
outdoor unit identification function	101	
outdoor unit PCB layout	117	
OUTDOOR UNIT SILENT operation	189	
outdoor unit thermistors for discharge pipe	356	
<b>P</b>		
P	24	
P1	332	
P4	333	
photocatalytic deodorizing filter	96	
piping diagrams	362	
PJ	334	
power failure recovery		
function	30, 33, 35, 37, 39, 42	
power supply insufficient or		
instantaneous failure	337	
power supply PCB	40, 43	
power supply waveforms check	306	
power-airflow dual flaps	85	
POWERFUL operation	188	
preparation before operation	173	
pressure sensor	357	
printed circuit board (PCB)		
BP unit PCB	29	
buzzer PCB	36	
control PCB (indoor unit)	31, 34, 36, 37, 40, 44, 46, 48	
cool/heat selector PCB (A4P)	28	
display PCB	32, 36, 38, 41, 44	
INTELLIGENT EYE sensor PCB	32, 34, 36	
main PCB (A1P)	25	
noise filter PCB (A3P)	27	
power supply PCB	40, 43	
service PCB (A2P)	26	
signal receiver PCB	32, 34, 36, 41, 44	
printed circuit board connector wiring diagram	24	
program dry operation function	106	
programme dry function	87	
protection control	73	
pump-down residual operation	71	
<b>R</b>		
refrigerant circuit	50	
refrigerant flow for each operation mode	54	
refrigerant overcharged	317	
refrigerant recovery mode	134	
remote control	255	
remote control thermistor	294	
remote control thermostat	105	
restart standby	71	
RTH1	30, 33, 35, 37	
<b>S</b>		
S1	30, 33, 35, 37	
S201	42	
S202	42	
S203	42	
S204	42	
S21	30, 33, 35, 37, 39, 42	
S23	42	
S24	39, 42	
S25	39, 42	
S26	30, 33, 35, 37, 39, 42	
S27	30, 33, 35, 39	
S28	30, 35	
S29	30, 35	
S301	42	
S302	42	
S31	39, 42	
S32	30, 33, 35, 37, 39, 42	
S35	30, 33, 35	
S36	30, 33, 35, 39	
S37	35, 39	
S38	35	
S6	30, 33, 35, 39, 42	
S7	33, 37, 39, 42	
S8	35, 42	
safety precautions	153	
SC control in heating operation	84	
self-diagnosis by wired remote control	260	
self-diagnosis by infrared remote control	261	
self-diagnosis digital display	97	
sensor data display	145	
service check function	255	
service PCB (A2P)	26	
setting by dip switches	118	
setting by pushbutton switches	120	
setting of low noise operation and		
demand operation	129	
setting of refrigerant additional charging		
operation	133	
SH control in cooling operation	83	
shutter drive motor /		
shutter limit switch abnormality	277	
signal receiver PCB	32, 34, 36, 41, 44	
signal receiving sign	96	
special control	67	
specifications	10	
startup control	67	
stopping operation	72	
suction air thermistor	293	
SW1	30, 35, 37, 39, 42	
SW2	39, 42	
SW4	42	
SW7	33	

swing flap motor malfunction / lock .....	288
system is not set yet .....	350

**T**

test operation	
procedure and outline .....	112
test operation from the remote control .....	146
thermistor	
indoor heat exchanger,	
troubleshooting .....	291, 292
remote control .....	294
suction air .....	293
thermistor or related abnormality (indoor unit) .....	276
thermistor resistance /	
temperature characteristics .....	355
thermistor resistance check .....	279, 299
thermostat control .....	89, 100
TIMER operation .....	199
titanium apatite photocatalytic air-purifying filter .....	96
transmission error	
between indoor unit and remote control .....	295
between main and sub remote control .....	296
transmission error between indoor unit and	
BP unit .....	303
transmission error between outdoor unit and	
BP unit .....	305
troubleshooting .....	222
troubleshooting with the LED	
BP unit .....	254
outdoor unit .....	253
skyair indoor unit .....	252
troubleshooting with the operation lamp .....	251

**U**

U .....	24
U0 .....	335
U2 .....	337
U3 .....	339
U4 .....	303, 340
U5 .....	295, 342
U8 .....	296, 343
U9 .....	344
UA .....	297, 346
UC .....	347
UE .....	348
UF .....	350
UH .....	351
UJ .....	305
unit No. change .....	145

**V**

V .....	24
V1 .....	30, 33, 35, 37, 39, 42
vacuuming mode .....	134
varistor .....	30, 33, 35, 37

**W**

W .....	24
wide-angle louvers .....	85
wireless address switch (SS2) .....	141
wiring diagrams .....	369

**X**

X106A .....	24
X107A .....	24
X111A .....	24
X11A .....	24
X12A .....	24
X13A .....	24
X14A .....	47
X15A .....	45, 47
X17A .....	24, 45, 47
X18A .....	24, 45, 47
X19A .....	45, 47
X205A .....	26
X20A .....	29, 45, 47
X21A .....	24, 29
X22A .....	24, 29
X23A .....	29
X24A .....	45, 47
X25A .....	24, 45, 47
X26A .....	24, 47
X27A .....	24, 45, 47
X28A .....	24
X29A .....	47
X32A .....	24
X33A .....	45, 47
X35A .....	45, 47
X36A .....	45
X37A .....	24
X3M .....	29
X40A .....	45, 47
X4M .....	29
X5A .....	24, 45, 47
X5M .....	29
X60A .....	45, 47
X61A .....	45, 47
X66A .....	24
X81A .....	24
X90A .....	29



# Drawings & Flow Charts

<b>A</b>		
abnormal discharge pipe temperature .....	316	
actuation of high pressure switch .....	308	
actuation of low pressure sensor .....	310	
address duplication of central remote control .....	347	
address setting .....	142	
after setting .....	143	
ARC433A .....	255	
automatic air flow control .....	86	
automatic operation .....	88	
auto-swing .....	85	
<b>B</b>		
buzzer PCB .....	36	
<b>C</b>		
centralized group No. setting .....	144	
check for causes of drop in low pressure .....	353	
check for causes of rise in high pressure .....	352	
check for fan motor connector .....	354	
check operation .....	115	
check operation not executed .....	339	
check work prior to turn power supply on .....	112	
compressor motor lock .....	312	
condensation avoidance control (FHQ only) .....	101	
control PCB (A1P) .....	25	
control PCB (indoor unit) ....31, 32, 34, 36, 37, 40, 44		
cool/heat selector PCB (A4P) .....	28	
cooling operation fan control .....	66	
<b>D</b>		
dew condensation prevention control .....	78	
diagnosis mode .....	256	
discharge pipe protection control .....	75	
display PCB .....	32, 36, 38, 41, 44	
drain pump control .....	101	
<b>E</b>		
econo mode .....	91	
excessive number of indoor units .....	346	
<b>F</b>		
fan motor connector output check .....	278, 298	
fan motor or related abnormality		
AC motor .....	273	
DC motor .....	274	
faulty BP liquid or gas pipe thermistor .....	302	
faulty BP unit PCB .....	301	
faulty combination of inverter and fan driver .....	334	
faulty outdoor unit PCB .....	307	
field setting		
cool/heat mode switching .....	127	
setting by dip switches .....	118	
wired remote control .....	137	
infrared remote control .....	138	
freeze-up protection control .....	77, 100	
freeze-up protection control or high pressure control .....	271	
full closing of electronic expansion valves .....	82	
function outline .....	98	
functional parts layout .....	53	
<b>H</b>		
Hall IC check .....	280	
high pressure protection control .....	73	
high voltage of capacitor in main inverter circuit .....	332	
HOME LEAVE operation .....	94	
<b>I</b>		
indoor unit fan motor lock .....	285	
indoor unit PCB abnormality .....	270, 281	
inspection/test button .....	259	
INTELLIGENT EYE .....	92	
INTELLIGENT EYE sensor .....	148	
INTELLIGENT EYE sensor PCB .....	32, 34, 36	
inverter compressor abnormal .....	328	
inverter current abnormal .....	329	
inverter POWERFUL operation .....	95	
inverter protection control .....	76	
inverter start up error .....	330	
<b>J</b>		
jumper settings .....	147	
<b>L</b>		
limit switch continuity check .....	278	
location of operation lamp .....	251	
low pressure drop due to refrigerant shortage or electronic expansion valve failure .....	335	
low pressure protection control .....	74	
<b>M</b>		
main/sub switch (SS1) .....	141	
maintenance mode setting .....	145	
malfunction of capacity setting .....	290	
malfunction of discharge pipe thermistor (R2T) .....	319	
malfunction of drain system .....	284	
malfunction of drain water level system .....	282	
malfunction of electronic expansion valve .....	300	
malfunction of field setting switch .....	297	
malfunction of heat exchanger thermistor (R2T) .....	291	
malfunction of heat exchanger thermistor (R3T) .....	292	
malfunction of high pressure sensor .....	324	
malfunction of indoor unit fan motor .....	286	

malfunction of inverter radiating fin		FTXS20/25/35D3VMW(L) .....	364
temperature rise .....	327	FTXS50/60EV1B .....	364
malfunction of inverter radiating fin		FTXS50D2VMW(L) .....	364
temperature rise sensor .....	333	FTXS71BAVMB .....	365
malfunction of low pressure sensor .....	325	FTXS71EV1B .....	365
malfunction of moving part of electronic		FVXS25/35BAVMB .....	367
expansion valve .....	314	FVXS50BAVMB .....	367
malfunction of outdoor unit fan motor .....	313	RMXS112/140/160E7V3B .....	362
malfunction of PCB .....	326	power supply insufficient or	
malfunction of remote control thermistor .....	294	instantaneous failure .....	337
malfunction of subcooling heat exchanger		power supply PCB .....	40, 43
thermistor (R6T) .....	323	power supply waveforms check .....	306
malfunction of suction air thermistor .....	293	pressure sensor .....	357
malfunction of system,		program dry operation function .....	106
refrigerant system address undefined .....	351	programme dry function .....	87
malfunction of thermistor (R3T, R5T)		<b>R</b>	
for suction pipe1, 2 .....	320	range of air flow direction setting .....	140
malfunction of thermistor (R4T) for outdoor unit		receiver setting .....	141
heat exchanger .....	321	refrigerant circuit .....	50
malfunction of thermistor (R7T) for outdoor unit		refrigerant flow for each operation mode .....	54
liquid pipe .....	322	refrigerant overcharged .....	317
malfunction of thermistor for outdoor air (R1T) ....	318	remote control .....	255
malfunction of transmission between central		remote control thermostat .....	105
remote control and indoor unit .....	348	reprogramming the PCB addresses of BP unit ...	113
malfunction of transmission between indoor and		<b>S</b>	
outdoor units in the same system .....	344	self-diagnosis by wired remote control .....	260
malfunction of transmission between indoor units		self-diagnosis by infrared remote control .....	261
and outdoor units .....	340	service check function .....	255
malfunction of transmission between inverter and		service PCB (A2P) .....	26
control PCB .....	331	setting of low noise operation and demand	
malfunction of transmission between main and		operation .....	129
sub remote controls .....	343	setting of refrigerant additional charging	
malfunction of transmission between remote		operation .....	133
controller and indoor unit .....	342	SH control in cooling operation .....	83
method of replacing the inverter's power		shutter drive motor / shutter limit switch	
transistors modules .....	358	abnormality .....	277
<b>N</b>		signal receiver PCB .....	32, 34, 36, 41, 44
night set mode .....	90	swing flap motor malfunction / lock .....	288
noise filter PCB (A3P) .....	27	system is not set yet .....	350
<b>O</b>		<b>T</b>	
ON/OFF button on indoor unit .....	96	thermistor or related abnormality (indoor unit) ....	276
operation mode .....	60	thermistor resistance check .....	279
outdoor unit PCB layout .....	117	thermostat control .....	89, 100
<b>P</b>		transmission error	
PCB (BP unit) .....	29	between indoor unit and remote control .....	295
PCB (ceiling mounted cassette type) .....	46	between main and sub remote control .....	296
PCB (ceiling suspended type) .....	47	transmission error between indoor unit and	
piping diagrams		BP unit .....	303
BPMKS967B2B .....	363	transmission error between outdoor unit and	
BPMKS967B3B .....	363	BP unit .....	305
FDXS25/35CAVMB .....	365	trial operation from remote control .....	146
FDXS25/35EAVMB .....	365	troubleshooting with the LED on the BP unit .....	254
FDXS50/60CVMB .....	365	troubleshooting with the LED on the	
FFQ25/35/50/60B8V1B .....	368	outdoor unit .....	253
FHQ35/50/60BVV1B .....	368	turn power on .....	112
FLXS25/35BAVMB .....	366		
FLXS50/60BAVMB .....	366		
FTXS20/25/35CAVMB .....	364		

**W**

wired remote control	
field setting .....	137
wireless address switch (SS2) .....	141
infrared remote control	
field setting .....	138
wiring diagrams	
BPMKS967B2B .....	370
BPMKS967B3B .....	370
FDXS25/35CAVMB .....	373
FDXS25/35EAVMB .....	373
FDXS50/60CVMB .....	373
FFQ25/35/50/60B8V1B .....	375
FHQ35/50/60BVV1B .....	376
FLXS25/35/50/60BAVMB .....	373
FTXS20/25/35CAVMB .....	371
FTXS20/25/35D3VMW(L) .....	371
FTXS50/60/71EV1B .....	372
FTXS50D2V1W(L) .....	372
FTXS71BAVMB .....	372
FVXS25/35/50BAVMB .....	374
RMXS112/140/160E7V3B .....	369



In all of us,  
a green heart



Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues. For several years Daikin has had the intention to become a leader in the provision of products that have limited impact on the environment. This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.



Daikin Europe N.V. is approved by LRQA for its Quality Management System in accordance with the ISO9001 standard. ISO9001 pertains to quality assurance regarding design, development, manufacturing as well as to services related to the product.



ISO14001 assures an effective environmental management system in order to help protect human health and the environment from the potential impact of our activities, products and services and to assist in maintaining and improving the quality of the environment.



Daikin units comply with the European regulations that guarantee the safety of the product.



Daikin Europe N.V. participates in the Eurovent Certification Programme for Air Conditioners (AC), Liquid Chilling Packages (LCP) and Fan Coil Units (FC); the certified data of certified models are listed in the Eurovent Directory.

"The present publication is drawn up by way of information only and does not constitute an offer binding upon Daikin Europe N.V.. Daikin Europe N.V. has compiled the content of this publication to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability or fitness for particular purpose of its content and the products and services presented therein. Specifications are subject to change without prior notice. Daikin Europe N.V. explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this publication. All content is copyrighted by Daikin Europe N.V.."



**DAIKIN EUROPE N.V.**  
Naamloze Vennootschap  
Zandvoordestraat 300  
B-8400 Oostende - Belgium  
[www.daikin.eu](http://www.daikin.eu)  
BTW: BE 0412 120 336  
RPR Oostende



SIENBE18-621

SIENBE18-621 • 10/2007 • Copyright © Daikin  
Prepared in Belgium by Lannoo ([www.lannooprint.be](http://www.lannooprint.be)), a company whose concern for the environment is set in the EMAS and ISO 14001 systems.  
Responsible Editor: Daikin Europe N.V., Zandvoordestraat 300, B-8400 Oostende