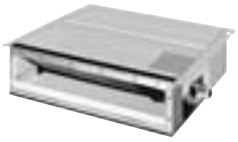
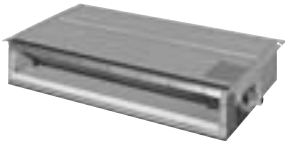
DAIKIN

SiBE12-933_A

Service Manual

Inverter Multi for 2 Rooms
G-Series / H-Series





[Applied Models]

- **Inverter Multi : Cooling Only**
- **Inverter Multi : Heat Pump**

Inverter Multi for 2 Rooms G-Series / H-Series

●Cooling Only

Indoor Unit

FTXS20G2V1B	FDKS50CVMB	FVXS25FV1B
FTXS25G2V1B	FDKS25EAVMB	FVXS35FV1B
FTXS35G2V1B	FDKS35EAVMB	FVXS50FV1B
FTXS42G2V1B	FLKS25BAVMB	FFQ25B8V1B
FTXS50G2V1B	FLKS35BAVMB	FFQ35B8V1B
	FLKS50BAVMB	FFQ50B8V1B

Outdoor Unit

2MKS40H2V1B
2MKS50H2V1B

●Heat Pump

Indoor Unit

ATX20GV1B	FTXG25EV1BW(S)	FDXS50CVMB
ATX25GV1B	FTXG35EV1BW(S)	FDXS25EAVMB
ATX35GV1B	CTXG50EV1BW(S)	FDXS35EAVMB
ATXS20G2V1B	FTXS20G2V1B	FLXS25BAVMB
ATXS25G2V1B	FTXS25G2V1B	FLXS35BAVMB
ATXS35G2V1B	FTXS35G2V1B	FLXS50BAVMB
ATXS42G2V1B	FTXS42G2V1B	FVXS25FV1B
ATXS50G2V1B	FTXS50G2V1B	FVXS35FV1B
ATXG25EV1B		FVXS50FV1B
ATXG35EV1B		FFQ25B8V1B
ATXG50EV1B		FFQ35B8V1B
		FFQ50B8V1B

Outdoor Unit

2AMX40G2V1B	2MXS40H2V1B
2AMX50G2V1B	2MXS50H2V1B

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 the item for which caution must be exercised.
The pictogram shows the item to which attention must be paid.

◯ This symbol indicates the prohibited action.
The prohibited item or action is shown in the illustration or near the symbol.

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

- 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 Cautions Regarding Safety of Workers

⚠ Warning	
Be sure to disconnect the power cable plug from the plug socket before disassembling the equipment for repair. Working on the equipment that is connected to the power supply may cause an electrical shock. If it is necessary to supply power to the equipment to conduct the repair or inspecting the circuits, do not touch any electrically charged sections of the equipment.	
If the refrigerant gas is discharged during the repair work, do not touch the discharged refrigerant gas. The refrigerant gas may cause frostbite.	
When disconnecting the suction or discharge pipe of the compressor at the welded section, evacuate the refrigerant gas completely at a well-ventilated place first. If there is a gas remaining inside the compressor, the refrigerant gas or refrigerating machine oil discharges when the pipe is disconnected, and it may cause injury.	
If the refrigerant gas leaks during the repair work, ventilate the area. The refrigerant gas may 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 may 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 may cause an electrical shock or fire.	

Warning	
Be sure to wear a safety helmet, gloves, and a safety belt when working at a high place (more than 2m). Insufficient safety measures may cause a fall accident.	
In case of R-410A refrigerant models, be sure to use pipes, flare nuts and tools for the exclusive use of the R-410A refrigerant. The use of materials for R-22 refrigerant models may cause a serious accident such as a damage of refrigerant cycle as well as an equipment failure.	

Caution	
Do not repair the electrical components with wet hands. Working on the equipment with wet hands may cause an electrical shock.	
Do not clean the air conditioner by splashing water. Washing the unit with water may 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.	
Be sure to conduct repair work with appropriate tools. The use of inappropriate tools may cause injury.	
Be sure to check that the refrigerating cycle section has cooled down enough before conducting repair work. Working on the unit when the refrigerating cycle section is hot may cause burns.	
Use the welder in a well-ventilated place. Using the welder in an enclosed room may cause oxygen deficiency.	

1.1.2 Cautions Regarding Safety of Users

Warning	
Be sure to use parts listed in the service parts list of the applicable model and appropriate tools to conduct repair work. Never attempt to modify the equipment. The use of inappropriate parts or tools may cause an electrical shock, excessive heat generation or fire.	
If the power cable and lead wires have scratches or deteriorated, be sure to replace them. Damaged cable and wires may cause an electrical shock, excessive heat generation or fire.	
Do not use a joined power cable or extension cable, or share the same power outlet with other electrical appliances, since it may cause an electrical shock, excessive heat generation or fire.	
Be sure to use an exclusive power circuit for the equipment, and follow the local technical standards related to the electrical equipment, the internal wiring regulations, and the instruction manual for installation when conducting electrical work. Insufficient power circuit capacity and improper electrical work may cause an electrical shock or fire.	
Be sure to use the specified cable for wiring between the indoor and outdoor units. Make the connections securely and route the cable properly so that there is no force pulling the cable at the connection terminals. Improper connections may cause excessive heat generation or fire.	
When wiring between the indoor and outdoor units, make sure that the terminal cover does not lift off or dismount because of the cable. If the cover is not mounted properly, the terminal connection section may cause an electrical shock, excessive heat generation or fire.	
Do not damage or modify the power cable. Damaged or modified power cable may cause an electrical shock or fire. Placing heavy items on the power cable, and heating or pulling the power cable may damage the cable.	
Do not mix air or gas other than the specified refrigerant (R-410A / R-22) 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 leaking point and repair it before charging the refrigerant. After charging refrigerant, make sure that there is no refrigerant leak. If the leaking point 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 may generate toxic gases when it contacts flames, such as fan and other heaters, stoves and ranges.	
When relocating the equipment, make sure that the new installation site has sufficient strength to withstand the weight of the equipment. If the installation site does not have sufficient strength and if the installation work is not conducted securely, the equipment may fall and cause injury.	

Warning	
Check to make sure that the power cable plug is not dirty or loose, then insert the plug into a power outlet securely. If the plug has dust or loose connection, it may cause an electrical shock or fire.	
Be sure to install the product correctly by using the provided standard installation frame. Incorrect use of the installation frame and improper installation may cause the equipment to fall, resulting in injury.	For unitary type only 
Be sure to install the product securely in the installation frame mounted on the window frame. If the unit is not securely mounted, it may fall and cause injury.	For unitary type only 
When replacing the coin battery in the remote controller, be sure to disposed of the old battery to prevent children from swallowing it. If a child swallows the coin battery, see a doctor immediately.	

Caution	
Installation of a leakage breaker is necessary in some cases depending on the conditions of the installation site, to prevent electrical shocks.	
Do not install the equipment in a place where there is a possibility of combustible gas leaks. If the combustible gas leaks and remains around the unit, it may cause a fire.	
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 may cause excessive heat generation, fire or an electrical shock.	
If the installation platform or frame has corroded, replace it. Corroded installation platform or frame may cause the unit to fall, resulting in injury.	
Check the grounding, and repair it if the equipment is not properly grounded. Improper grounding may cause an electrical shock.	

Caution	
Be sure to measure the insulation resistance after the repair, and make sure that the resistance is 1 MΩ or higher. Faulty insulation may cause an electrical shock.	
Be sure to check the drainage of the indoor unit after the repair. Faulty drainage may cause the water to enter the room and wet the furniture and floor.	
Do not tilt the unit when removing it. The water inside the unit may spill and wet the furniture and floor.	
Be sure to install the packing and seal on the installation frame properly. If the packing and seal are not installed properly, water may enter the room and wet the furniture and floor.	For unitary type only 

1.2 Used 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:

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

Part 1
List of Functions

1. List of Functions

1.1 Cooling Only Models

Category	Functions	FTXS20-50G2V1B	Category	Functions	FTXS20-50G2V1B
Basic Function	Inverter (with Inverter Power Control)	○	Health & Clean	Air-Purifying Filter	—
	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	○
	Standby Electricity Saving	—		Air Filter (Prefilter)	○
Compressor	Oval Scroll Compressor	—		Wipe-clean Flat Panel	○
	Swing Compressor	—		Washable Grille	—
	Rotary Compressor	—		Mold Proof Operation	—
	Reluctance DC Motor	—		Heating Dry Operation	—
Comfortable Airflow	Power-Airflow Flap	—		Good-Sleep Cooling Operation	—
	Power-Airflow Dual Flaps	○	Timer	Weekly Timer	○
	Power-Airflow Diffuser	—		24-Hour ON/OFF Timer	○
	Wide-Angle Louvers	○		NIGHT SET Mode	○
	Vertical Auto-Swing (Up and Down)	○	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	○
	Horizontal Auto-Swing (Right and Left)	○		Self-Diagnosis (Digital, LED) Display	○
	3-D Airflow	○		Wiring Error Check	—
	Comfort Airflow Mode	○		Anticorrosion Treatment of Outdoor Heat Exchanger	—
Comfort Control	Auto Fan Speed	○	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○
	Indoor Unit Quiet Operation	○		H/P, C/O Compatible Indoor Unit	○
	Night Quiet Mode (Automatic)	—		Flexible Voltage Correspondence	—
	Outdoor Unit Quiet Operation (Manual)	—		High Ceiling Application	—
	INTELLIGENT EYE	—		Chargeless	—
	2 Area INTELLIGENT EYE	○		Either Side Drain (Right or Left)	○
	Quick Warming Function	—		Power Selection	—
	Hot-Start Function	—	Remote Control	5-Rooms Centralized Controller (Option)	○
	Automatic Defrosting	—		Remote Control Adaptor (Normal Open-Pulse Contact) (Option)	○
Operation	Automatic Operation	—		Remote Control Adaptor (Normal Open Contact) (Option)	○
	Program Dry Function	○		DIII-NET Compatible (Adaptor) (Option)	○
	Fan Only	○	Remote Controller	Wireless	○
Lifestyle Convenience	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	—			

Note: ○ : Holding Functions
— : No Functions

Category	Functions	FDKS50CVMB	FDKS25/35EAVMB	Category	Functions	FDKS50CVMB	FDKS25/35EAVMB
Basic Function	Inverter (with Inverter Power Control)	○	○	Health & Clean	Air-Purifying Filter	—	—
	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	—	—
	Standby Electricity Saving	—	—		Air Filter (Prefilter)	○	○
Compressor	Oval Scroll Compressor	—	—		Wipe-clean Flat Panel	—	—
	Swing Compressor	—	—		Washable Grille	—	—
	Rotary Compressor	—	—		Mold Proof Operation	—	—
	Reluctance DC Motor	—	—		Heating Dry Operation	—	—
Comfortable Airflow	Power-Airflow Flap	—	—		Good-Sleep Cooling Operation	—	—
	Power-Airflow Dual Flaps	—	—	Timer	Weekly Timer	—	—
	Power-Airflow Diffuser	—	—		24-Hour ON/OFF Timer	○	○
	Wide-Angle Louvers	—	—		NIGHT SET Mode	○	○
	Vertical Auto-Swing (Up and Down)	—	—	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	○	○
	Horizontal Auto-Swing (Right and Left)	—	—		Self-Diagnosis (Digital, LED) Display	○	○
	3-D Airflow	—	—		Wiring-Error Check	—	—
	Comfort Airflow Mode	—	—		Anticorrosion Treatment of Outdoor Heat Exchanger	—	—
Comfort Control	Auto Fan Speed	○	○	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○	○
	Indoor Unit Quiet Operation	○	○		H/P, C/O Compatible Indoor Unit	—	—
	Night Quiet Mode (Automatic)	—	—		Flexible Voltage Correspondence	○	○
	Outdoor Unit Quiet Operation (Manual)	—	—		High Ceiling Application	—	—
	INTELLIGENT EYE	—	—		Chargeless	—	—
	2 Area INTELLIGENT EYE	—	—		Either Side Drain (Right or Left)	—	—
	Quick Warming Function	—	—		Power-Selection	—	—
	Hot-Start Function	—	—	Remote Control	5-Rooms Centralized Controller (Option)	○	○
	Automatic Defrosting	—	—		Remote Control Adaptor (Normal Open-Pulse Contact) (Option)	○	○
Operation	Automatic Operation	—	—		Remote Control Adaptor (Normal Open Contact) (Option)	○	○
	Program Dry Function	○	○		DIII-NET Compatible (Adaptor) (Option)	○	○
	Fan Only	○	○	Remote Controller	Wireless	○	○
Lifestyle Convenience	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	—	—				

Note: ○ : Holding Functions
— : No Functions

Category	Functions	FLKS25-50BAVMB	FVXS25-50FV1B	Category	Functions	FLKS25-50BAVMB	FVXS25-50FV1B
Basic Function	Inverter (with Inverter Power Control)	○	○	Health & Clean	Air-Purifying Filter	○	—
	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	—	○
	Standby Electricity Saving	—	—		Air Filter (Prefilter)	○	○
Compressor	Oval Scroll Compressor	—	—		Wipe-clean Flat Panel	—	○
	Swing Compressor	—	—		Washable Grille	—	—
	Rotary Compressor	—	—		Mold Proof Operation	—	—
	Reluctance DC Motor	—	—		Heating Dry Operation	—	—
Comfortable Airflow	Power-Airflow Flap	—	—		Good-Sleep Cooling Operation	—	—
	Power-Airflow Dual Flaps	—	—	Timer	Weekly Timer	—	○
	Power-Airflow Diffuser	—	—		24-Hour ON/OFF Timer	○	○
	Wide-Angle Louvers	—	○		NIGHT SET Mode	○	○
	Vertical Auto-Swing (Up and Down)	○	○	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	○	○
	Horizontal Auto-Swing (Right and Left)	—	—		Self-Diagnosis (Digital, LED) Display	○	○
	3-D Airflow	—	—		Wiring-Error Check	—	—
	Comfort Airflow Mode	—	—		Anticorrosion Treatment of Outdoor Heat Exchanger	—	—
Comfort Control	Auto Fan Speed	○	○	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○	○
	Indoor Unit Quiet Operation	○	○		H/P, C/O Compatible Indoor Unit	—	○
	Night Quiet Mode (Automatic)	—	—		Flexible Voltage Correspondence	○	—
	Outdoor Unit Quiet Operation (Manual)	—	—		High Ceiling Application	—	—
	INTELLIGENT EYE	—	—		Chargeless	—	—
	2 Area INTELLIGENT EYE	—	—		Either Side Drain (Right or Left)	—	—
	Quick Warming Function	—	—		Power-Selection	—	—
	Hot-Start Function	—	—	Remote Control	5-Rooms Centralized Controller (Option)	○	○
	Automatic Defrosting	—	—		Remote Control Adaptor (Normal Open-Pulse Contact) (Option)	○	○
Operation	Automatic Operation	—	—		Remote Control Adaptor (Normal Open Contact) (Option)	○	○
	Program Dry Function	○	○		DIII-NET Compatible (Adaptor) (Option)	○	○
	Fan Only	○	○	Remote Controller	Wireless	○	○
Lifestyle Convenience	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	—	—				

Note: ○ : Holding Functions
— : No Functions

Category	Functions	FFQ25-50B8V1B	Category	Functions	FFQ25-50B8V1B
Basic Function	Inverter (with Inverter Power Control)	○	Health & Clean	Air-Purifying Filter	—
	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	—
	Standby Electricity Saving	—		Longlife Filter (Option)	○
Compressor	Oval Scroll Compressor	—		Air Filter (Prefilter)	○
	Swing Compressor	—		Wipe-clean Flat Panel	—
	Rotary Compressor	—		Washable Grille	—
	Reluctance DC Motor	—		Filter Cleaning Indicator	○
Comfortable Airflow	Power-Airflow Flap	—		Mold Proof Operation	—
	Power-Airflow Dual Flaps	—		Heating Dry Operation	—
	Power-Airflow Diffuser	—		Good-Sleep Cooling Operation	—
	Wide-Angle Louvers	—	Timer	Weekly Timer	—
	Vertical Auto-Swing (Up and Down)	○		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	Auto Fan Speed	—		Self-Diagnosis (Digital, LED) Display	○
	Indoor Unit Quiet Operation	—		Wiring-Error Check	—
	Night Quiet Mode (Automatic)	—		Anticorrosion Treatment of Outdoor Heat Exchanger	—
	Outdoor Unit Quiet Operation (Manual)	—	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○
	INTELLIGENT EYE	—		H/P, C/O Compatible Indoor Unit	○
	2 Area INTELLIGENT EYE	—		Flexible Voltage Correspondence	—
	Quick Warming Function	—		High Ceiling Application	—
	Hot-Start Function	—		Chargeless	—
	Automatic Defrosting	—		Either Side Drain (Right or Left)	—
Operation	Automatic Operation	—		Power-Selection	—
	Program Dry Function	○	Remote Control	5-Rooms Centralized Controller (Option)	—
	Fan Only	○		Remote Control Adaptor (Normal Open-Pulse Contact) (Option)	—
Lifestyle Convenience	New POWERFUL Operation (Non-Inverter)	—		Remote Control Adaptor (Normal Open Contact) (Option)	—
	Inverter POWERFUL Operation	—		DIII-NET Compatible (Adaptor) (Option)	○
	Priority-Room Setting	—	Remote Controller	Wireless	○ ★1
	Cooling / Heating Mode Lock	—		Wired	○
	HOME LEAVE Operation	—			
	ECONO Mode	—			
	Indoor Unit ON/OFF Switch	—			
	Signal Reception Indicator	—			
	Temperature Display	—			

Note: ○ : Holding Functions ★1 : Option

— : No Functions

Category	Functions	2MKS40/50H2V1B	Category	Functions	2MKS40/50H2V1B
Basic Function	Inverter (with Inverter Power Control)	○	Health & Clean	Air-Purifying Filter	—
	Operation Limit for Cooling (°CDB)	10 ~ 46		Photocatalytic Deodorizing Filter	—
	Operation Limit for Heating (°CWB)	—		Air-Purifying Filter with Photocatalytic Deodorizing Function	—
	PAM Control	○		Titanium Apatite Photocatalytic Air-Purifying Filter	—
	Standby Electricity Saving	—		Air Filter (Prefilter)	—
Compressor	Oval Scroll Compressor	—		Wipe-clean Flat Panel	—
	Swing Compressor	○		Washable Grille	—
	Rotary Compressor	—		Mold Proof Operation	—
	Reluctance DC Motor	○		Heating Dry Operation	—
Comfortable Airflow	Power-Airflow Flap	—		Good-Sleep Cooling Operation	—
	Power-Airflow Dual Flaps	—	Timer	Weekly Timer	—
	Power-Airflow Diffuser	—		24-Hour ON/OFF Timer	—
	Wide-Angle Louvers	—		NIGHT SET Mode	—
	Vertical Auto-Swing (Up and Down)	—	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	—
	Horizontal Auto-Swing (Right and Left)	—		Self-Diagnosis (Digital, LED) Display	○
	3-D Airflow	—		Wiring-Error Check	—
	Comfort Airflow Mode	—		Anticorrosion Treatment of Outdoor Heat Exchanger	○
Comfort Control	Auto Fan Speed	—	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	—
	Indoor Unit Quiet Operation	—		H/P, C/O Compatible Indoor Unit	—
	Night Quiet Mode (Automatic)	—		Flexible Voltage Correspondence	—
	Outdoor Unit Quiet Operation (Manual)	○		High Ceiling Application	—
	INTELLIGENT EYE	—		Chargeless	20m
	2 Area INTELLIGENT EYE	—		Either Side Drain (Right or Left)	—
	Quick Warming Function	—		Power-Selection	○
	Hot-Start Function	—	Remote Control	5-Rooms Centralized Controller (Option)	—
	Automatic Defrosting	—		Remote Control Adaptor (Normal Open-Pulse Contact) (Option)	—
Operation	Automatic Operation	—		Remote Control Adaptor (Normal Open Contact) (Option)	—
	Program Dry Function	—		DIII-NET Compatible (Adaptor) (Option)	—
	Fan Only	—	Remote Controller	Wireless	—
Lifestyle Convenience	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	—			

Note: ○ : Holding Functions
— : No Functions

1.2 Heat Pump Models

Category	Functions	ATX20-35GV1B	ATXS20-50G2V1B	Category	Functions	ATX20-35GV1B	ATXS20-50G2V1B
Basic Function	Inverter (with Inverter Power Control)	○	○	Health & Clean	Air-Purifying Filter	—	—
	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	○	○
	Standby Electricity Saving	—	—		Air Filter (Prefilter)	○	○
Compressor	Oval Scroll Compressor	—	—		Wipe-clean Flat Panel	○	○
	Swing Compressor	—	—		Washable Grille	—	—
	Rotary Compressor	—	—		Mold Proof Operation	—	—
	Reluctance DC Motor	—	—		Heating Dry Operation	—	—
Comfortable Airflow	Power-Airflow Flap	○	—		Good-Sleep Cooling Operation	—	—
	Power-Airflow Dual Flaps	—	○	Timer	Weekly Timer	—	—
	Power-Airflow Diffuser	—	—		24-Hour ON/OFF Timer	○	○
	Wide-Angle Louvers	○	○		NIGHT SET Mode	○	○
	Vertical Auto-Swing (Up and Down)	○	○	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	○	○
	Horizontal Auto-Swing (Right and Left)	—	○		Self-Diagnosis (Digital, LED) Display	○	○
	3-D Airflow	—	○		Wiring Error Check	—	—
	Comfort Airflow Mode	○	○		Anticorrosion Treatment of Outdoor Heat Exchanger	—	—
Comfort Control	Auto Fan Speed	○	○	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○	○
	Indoor Unit Quiet Operation	○	○		H/P, C/O Compatible Indoor Unit	—	—
	Night Quiet Mode (Automatic)	—	—		Flexible Voltage Correspondence	—	—
	Outdoor Unit Quiet Operation (Manual)	—	—		High Ceiling Application	—	—
	INTELLIGENT EYE	—	○		Chargeless	—	—
	2 Area INTELLIGENT EYE	—	—		Either Side Drain (Right or Left)	○	○
	Quick Warming Function	—	—		Power Selection	—	—
	Hot-Start Function	○	○	Remote Control	5-Rooms Centralized Controller (Option)	—	○
	Automatic Defrosting	—	—		Remote Control Adaptor (Normal Open-Pulse Contact) (Option)	—	○
Operation	Automatic Operation	○	○		Remote Control Adaptor (Normal Open Contact) (Option)	—	○
	Program Dry Function	○	○		DIII-NET Compatible (Adaptor) (Option)	—	○
	Fan Only	○	○	Remote Controller	Wireless	○	○
Lifestyle Convenience	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	—	—				

Note: ○ : Holding Functions
— : No Functions

Category	Functions	ATXG25/35EV1B	ATXG50EV1B	Category	Functions	ATXG25/35EV1B	ATXG50EV1B
Basic Function	Inverter (with Inverter Power Control)	○	○	Health & Clean	Air-Purifying Filter	—	—
	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	○	○
	Standby Electricity Saving	—	—		Air Filter (Prefilter)	○	○
Compressor	Oval Scroll Compressor	—	—		Wipe-clean Flat Panel	○	○
	Swing Compressor	—	—		Washable Grille	—	—
	Rotary Compressor	—	—		Mold Proof Operation	—	—
	Reluctance DC Motor	—	—		Heating Dry Operation	—	—
Comfortable Airflow	Power-Airflow Flap	○	○		Good-Sleep Cooling Operation	—	—
	Power-Airflow Dual Flaps	—	—	Timer	Weekly Timer	—	—
	Power-Airflow Diffuser	—	—		24-Hour ON/OFF Timer	○	○
	Wide-Angle Louvers	○	○		NIGHT SET Mode	○	○
	Vertical Auto-Swing (Up and Down)	○	○	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	○	○
	Horizontal Auto-Swing (Right and Left)	○	○		Self-Diagnosis (Digital, LED) Display	○	○
	3-D Airflow	○	○		Wiring Error Check	—	—
	Comfort Airflow Mode	○	○		Anticorrosion Treatment of Outdoor Heat Exchanger	—	—
Comfort Control	Auto Fan Speed	○	○	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○	—
	Indoor Unit Quiet Operation	○	○		H/P, C/O Compatible Indoor Unit	—	—
	Night Quiet Mode (Automatic)	—	—		Flexible Voltage Correspondence	—	—
	Outdoor Unit Quiet Operation (Manual)	—	—		High Ceiling Application	—	—
	INTELLIGENT EYE	○	○		Chargeless	—	—
	2 Area INTELLIGENT EYE	—	—		Either Side Drain (Right or Left)	○	○
	Quick Warming Function	—	—		Power Selection	—	—
	Hot-Start Function	○	○	Remote Control	5-Rooms Centralized Controller (Option)	○	○
	Automatic Defrosting	—	—		Remote Control Adaptor (Normal Open-Pulse Contact) (Option)	○	○
Operation	Automatic Operation	○	○		Remote Control Adaptor (Normal Open Contact) (Option)	○	○
	Program Dry Function	○	○		DIII-NET Compatible (Adaptor) (Option)	○	○
	Fan Only	○	○	Remote Controller	Wireless	○	○
Lifestyle Convenience	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	—	—				

Note: ○ : Holding Functions
— : No Functions

Category	Functions	FTXG25/35EV1BW(S)	CTXG50EV1BW(S)	FTXS20-50G2V1B	Category	Functions	FTXG25/35EV1BW(S)	CTXG50EV1BW(S)	FTXS20-50G2V1B
Basic Function	Inverter (with Inverter Power Control)	○	○	○	Health & Clean	Air-Purifying Filter	—	—	—
	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	○	○	○
	Standby Electricity Saving	—	—	—		Air Filter (Prefilter)	○	○	○
Compressor	Oval Scroll Compressor	—	—	—		Wipe-clean Flat Panel	○	○	○
	Swing Compressor	—	—	—		Washable Grille	—	—	—
	Rotary Compressor	—	—	—		Mold Proof Operation	—	—	—
	Reluctance DC Motor	—	—	—		Heating Dry Operation	—	—	—
Comfortable Airflow	Power-Airflow Flap	○	○	—		Good-Sleep Cooling Operation	—	—	—
	Power-Airflow Dual Flaps	—	—	○	Timer	Weekly Timer	—	—	○
	Power-Airflow Diffuser	—	—	—		24-Hour ON/OFF Timer	○	○	○
	Wide-Angle Louvers	○	○	○		NIGHT SET Mode	○	○	○
	Vertical Auto-Swing (Up and Down)	○	○	○	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	○	○	○
	Horizontal Auto-Swing (Right and Left)	○	○	○		Self-Diagnosis (Digital, LED) Display	○	○	○
	3-D Airflow	○	○	○		Wiring Error Check	—	—	—
	Comfort Airflow Mode	○	○	○		Anticorrosion Treatment of Outdoor Heat Exchanger	—	—	—
Comfort Control	Auto Fan Speed	○	○	○	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○	—	○
	Indoor Unit Quiet Operation	○	○	○		H/P, C/O Compatible Indoor Unit	—	—	○
	Night Quiet Mode (Automatic)	—	—	—		Flexible Voltage Correspondence	—	—	—
	Outdoor Unit Quiet Operation (Manual)	—	—	—		High Ceiling Application	—	—	—
	INTELLIGENT EYE	○	○	—		Chargeless	—	—	—
	2 Area INTELLIGENT EYE	—	—	○		Either Side Drain (Right or Left)	○	○	○
	Quick Warming Function	—	—	—		Power Selection	—	—	—
	Hot-Start Function	○	○	○	Remote Control	5-Rooms Centralized Controller (Option)	○	○	○
	Automatic Defrosting	—	—	—		Remote Control Adaptor (Normal Open-Pulse Contact) (Option)	○	○	○
Operation	Automatic Operation	○	○	○		Remote Control Adaptor (Normal Open Contact) (Option)	○	○	○
	Program Dry Function	○	○	○		DIII-NET Compatible (Adaptor) (Option)	○	○	○
	Fan Only	○	○	○	Remote Controller	Wireless	○	○	○
Lifestyle Convenience	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	—	—	—					

Note: ○ : Holding Functions
— : No Functions

Category	Functions	FDXS50CVMB	FDXS25/35EAVMB	Category	Functions	FDXS50CVMB	FDXS25/35EAVMB
Basic Function	Inverter (with Inverter Power Control)	○	○	Health & Clean	Air-Purifying Filter	—	—
	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	—	—
	Standby Electricity Saving	—	—		Air Filter (Prefilter)	○	○
Compressor	Oval Scroll Compressor	—	—		Wipe-clean Flat Panel	—	—
	Swing Compressor	—	—		Washable Grille	—	—
	Rotary Compressor	—	—		Mold Proof Operation	—	—
	Reluctance DC Motor	—	—		Heating Dry Operation	—	—
Comfortable Airflow	Power-Airflow Flap	—	—		Good-Sleep Cooling Operation	—	—
	Power-Airflow Dual Flaps	—	—	Timer	Weekly Timer	—	—
	Power-Airflow Diffuser	—	—		24-Hour ON/OFF Timer	○	○
	Wide-Angle Louvers	—	—		NIGHT SET Mode	○	○
	Vertical Auto-Swing (Up and Down)	—	—	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	○	○
	Horizontal Auto-Swing (Right and Left)	—	—		Self-Diagnosis (Digital, LED) Display	○	○
	3-D Airflow	—	—		Wiring-Error Check	—	—
	Comfort Airflow Mode	—	—		Anticorrosion Treatment of Outdoor Heat Exchanger	—	—
Comfort Control	Auto Fan Speed	○	○	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○	○
	Indoor Unit Quiet Operation	○	○		H/P, C/O Compatible Indoor Unit	—	—
	Night Quiet Mode (Automatic)	—	—		Flexible Voltage Correspondence	○	○
	Outdoor Unit Quiet Operation (Manual)	—	—		High Ceiling Application	—	—
	INTELLIGENT EYE	—	—		Chargeless	—	—
	2 Area INTELLIGENT EYE	—	—		Either Side Drain (Right or Left)	—	—
	Quick Warming Function	—	—		Power-Selection	—	—
	Hot-Start Function	○	○	Remote Control	5-Rooms Centralized Controller (Option)	○	○
	Automatic Defrosting	—	—		Remote Control Adaptor (Normal Open-Pulse Contact) (Option)	○	○
Operation	Automatic Operation	○	○		Remote Control Adaptor (Normal Open Contact) (Option)	○	○
	Program Dry Function	○	○		DIII-NET Compatible (Adaptor) (Option)	○	○
	Fan Only	○	○	Remote Controller	Wireless	○	○
Lifestyle Convenience	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	—	—				

Note: ○ : Holding Functions
— : No Functions

Category	Functions	FLXS25-50BAVMB	FVXS25-50FV1B	Category	Functions	FLXS25-50BAVMB	FVXS25-50FV1B
Basic Function	Inverter (with Inverter Power Control)	○	○	Health & Clean	Air-Purifying Filter	○	—
	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	—	○
	Standby Electricity Saving	—	—		Air Filter (Prefilter)	○	○
Compressor	Oval Scroll Compressor	—	—		Wipe-clean Flat Panel	—	○
	Swing Compressor	—	—		Washable Grille	—	—
	Rotary Compressor	—	—		Mold Proof Operation	—	—
	Reluctance DC Motor	—	—		Heating Dry Operation	—	—
Comfortable Airflow	Power-Airflow Flap	—	—		Good-Sleep Cooling Operation	—	—
	Power-Airflow Dual Flaps	—	—	Timer	Weekly Timer	—	○
	Power-Airflow Diffuser	—	—		24-Hour ON/OFF Timer	○	○
	Wide-Angle Louvers	—	○		NIGHT SET Mode	○	○
	Vertical Auto-Swing (Up and Down)	○	○	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	○	○
	Horizontal Auto-Swing (Right and Left)	—	—		Self-Diagnosis (Digital, LED) Display	○	○
	3-D Airflow	—	—		Wiring-Error Check	—	—
	Comfort Airflow Mode	—	—		Anticorrosion Treatment of Outdoor Heat Exchanger	—	—
Comfort Control	Auto Fan Speed	○	○	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○	○
	Indoor Unit Quiet Operation	○	○		H/P, C/O Compatible Indoor Unit	—	○
	Night Quiet Mode (Automatic)	—	—		Flexible Voltage Correspondence	○	—
	Outdoor Unit Quiet Operation (Manual)	—	—		High Ceiling Application	—	—
	INTELLIGENT EYE	—	—		Chargeless	—	—
	2 Area INTELLIGENT EYE	—	—		Either Side Drain (Right or Left)	—	—
	Quick Warming Function	—	—		Power-Selection	—	—
	Hot-Start Function	○	○	Remote Control	5-Rooms Centralized Controller (Option)	○	○
	Automatic Defrosting	—	—		Remote Control Adaptor (Normal Open-Pulse Contact) (Option)	○	○
Operation	Automatic Operation	○	○		Remote Control Adaptor (Normal Open Contact) (Option)	○	○
	Program Dry Function	○	○		DIII-NET Compatible (Adaptor) (Option)	○	○
	Fan Only	○	○	Remote Controller	Wireless	○	○
Lifestyle Convenience	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	—	—				

Note: ○ : Holding Functions
— : No Functions

Category	Functions	FFQ25-50B8V1B	Category	Functions	FFQ25-50B8V1B
Basic Function	Inverter (with Inverter Power Control)	○	Health & Clean	Air-Purifying Filter	—
	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	—
	Standby Electricity Saving	—		Longlife Filter (Option)	○
Compressor	Oval Scroll Compressor	—		Air Filter (Prefilter)	○
	Swing Compressor	—		Wipe-clean Flat Panel	—
	Rotary Compressor	—		Washable Grille	—
	Reluctance DC Motor	—		Filter Cleaning Indicator	○
Comfortable Airflow	Power-Airflow Flap	—		Mold Proof Operation	—
	Power-Airflow Dual Flaps	—		Heating Dry Operation	—
	Power-Airflow Diffuser	—		Good-Sleep Cooling Operation	—
	Wide-Angle Louvers	—	Timer	Weekly Timer	—
	Vertical Auto-Swing (Up and Down)	○		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	Auto Fan Speed	—		Self-Diagnosis (Digital, LED) Display	○
	Indoor Unit Quiet Operation	—		Wiring-Error Check	—
	Night Quiet Mode (Automatic)	—		Anticorrosion Treatment of Outdoor Heat Exchanger	—
	Outdoor Unit Quiet Operation (Manual)	—	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○
	INTELLIGENT EYE	—		H/P, C/O Compatible Indoor Unit	○
	2 Area INTELLIGENT EYE	—		Flexible Voltage Correspondence	—
	Quick Warming Function	—		High Ceiling Application	—
	Hot-Start Function	○		Chargeless	—
	Automatic Defrosting	—		Either Side Drain (Right or Left)	—
Operation	Automatic Operation	○		Power-Selection	—
	Program Dry Function	○	Remote Control	5-Rooms Centralized Controller (Option)	—
	Fan Only	○		Remote Control Adaptor (Normal Open-Pulse Contact) (Option)	—
Lifestyle Convenience	New POWERFUL Operation (Non-Inverter)	—		Remote Control Adaptor (Normal Open Contact) (Option)	—
	Inverter POWERFUL Operation	—		DIII-NET Compatible (Adaptor) (Option)	○
	Priority-Room Setting	—	Remote Controller	Wireless	○ ★1
	Cooling / Heating Mode Lock	—		Wired	○
	HOME LEAVE Operation	—			
	ECONO Mode	—			
	Indoor Unit ON/OFF Switch	—			
	Signal Reception Indicator	—			
	Temperature Display	—			

Note: ○ : Holding Functions ★1 : Option

— : No Functions

Category	Functions	2MXS40/50H2V1B 2AMX40/50G2V1B	Category	Functions	2MXS40/50H2V1B 2AMX40/50G2V1B
Basic Function	Inverter (with Inverter Power Control)	○	Health & Clean	Air-Purifying Filter	—
	Operation Limit for Cooling (°CDB)	10 ~ 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	—
	Standby Electricity Saving	—		Air Filter (Prefilter)	—
Compressor	Oval Scroll Compressor	—		Wipe-clean Flat Panel	—
	Swing Compressor	○		Washable Grille	—
	Rotary Compressor	—		Mold Proof Operation	—
	Reluctance DC Motor	○		Heating Dry Operation	—
Comfortable Airflow	Power-Airflow Flap	—		Good-Sleep Cooling Operation	—
	Power-Airflow Dual Flaps	—	Timer	Weekly Timer	—
	Power-Airflow Diffuser	—		24-Hour ON/OFF Timer	—
	Wide-Angle Louvers	—		NIGHT SET Mode	—
	Vertical Auto-Swing (Up and Down)	—	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	—
	Horizontal Auto-Swing (Right and Left)	—		Self-Diagnosis (Digital, LED) Display	○
	3-D Airflow	—		Wiring-Error Check	—
	Comfort Airflow Mode	—		Anticorrosion Treatment of Outdoor Heat Exchanger	○
Comfort Control	Auto Fan Speed	—	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	—
	Indoor Unit Quiet Operation	—		H/P, C/O Compatible Indoor Unit	—
	Night Quiet Mode (Automatic)	—		Flexible Voltage Correspondence	—
	Outdoor Unit Quiet Operation (Manual)	○		High Ceiling Application	—
	INTELLIGENT EYE	—		Chargeless	20m
	2 Area INTELLIGENT EYE	—		Either Side Drain (Right or Left)	—
	Quick Warming Function	○		Power-Selection	—
	Hot-Start Function	—	Remote Control	5-Rooms Centralized Controller (Option)	—
	Automatic Defrosting	○		Remote Control Adaptor (Normal Open-Pulse Contact) (Option)	—
Operation	Automatic Operation	—		Remote Control Adaptor (Normal Open Contact) (Option)	—
	Program Dry Function	—		DIII-NET Compatible (Adaptor) (Option)	—
	Fan Only	—	Remote Controller	Wireless	—
Lifestyle Convenience	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	—			

Note: ○ : Holding Functions
— : No Functions

Part 2
Specifications

1. Specifications

1.1 Indoor Units - Cooling Only

Wall Mounted Type

50Hz 220-230-240V

Model				FTXS20G2V1B	FTXS25G2V1B
Rated Capacity				2.0kW Class	2.5kW Class
Front Panel Color				White	White
Airflow Rates		m³/min (cfm)	H	9.4 (332)	9.1 (321)
			M	7.4 (262)	7.1 (252)
			L	5.5 (193)	5.2 (182)
			SL	4.0 (141)	3.7 (130)
Fan	Type			Cross Flow Fan	Cross Flow Fan
	Motor Output		W	23	23
	Speed		Steps	5 Steps, Quiet, Auto	5 Steps, Quiet, 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	0.09-0.08-0.08	0.09-0.08-0.08
Power Consumption (Rated)			W	18-18-18	18-18-18
Power Factor			%	90.9-97.8-93.8	90.9-97.8-93.8
Temperature Control				Microcomputer Control	Microcomputer Control
Dimensions (HxWxD)			mm	295x800x215	295x800x215
Packaged Dimensions (HxWxD)			mm	274x870x366	274x870x366
Weight			kg	9	9
Gross Weight			kg	13	13
Operation Sound	H/M/L/SL		dBA	38/32/25/22	38/32/25/22
Sound Power	H		dBA	54	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.				3D059727	3D059728

Model				FTXS35G2V1B	FTXS42G2V1B
Rated Capacity				3.5kW Class	4.2kW Class
Front Panel Color				White	White
Airflow Rates		m³/min (cfm)	H	10.4 (367)	9.1 (321)
			M	7.7 (270)	7.7 (273)
			L	4.8 (170)	6.3 (221)
			SL	3.5 (125)	5.4 (190)
Fan	Type			Cross Flow Fan	Cross Flow Fan
	Motor Output		W	23	23
	Speed		Steps	5 Steps, Quiet, Auto	5 Steps, Quiet, 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	0.12-0.12-0.11	0.11-0.11-0.10
Power Consumption (Rated)			W	26-26-26	24-24-24
Power Factor			%	98.5-94.2-98.5	99.2-94.9-100.0
Temperature Control				Microcomputer Control	Microcomputer Control
Dimensions (HxWxD)			mm	295x800x215	295x800x215
Packaged Dimensions (HxWxD)			mm	274x870x366	274x870x366
Weight			kg	10	10
Gross Weight			kg	13	13
Operation Sound	H/M/L/SL		dBA	42/34/26/23	42/38/33/30
Sound Power	H		dBA	58	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	ϕ 9.5
		Drain	mm	ϕ18.0	ϕ18.0
Drawing No.				3D059729	3D059730

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3412 cfm=m³/min×35.3

50Hz 220-230-240V

Model				FTXS50G2V1B
Rated Capacity				5.0kW Class
Front Panel Color				White
Airflow Rates		m³/min (cfm)	H	10.2 (360)
			M	8.6 (305)
			L	7.0 (246)
			SL	6.0 (212)
Fan	Type			Cross Flow Fan
	Motor Output		W	23
	Speed		Steps	5 Steps, Quiet, Auto
Air Direction Control				Right, Left, Horizontal, Downward
Air Filter				Removable / Washable / Mildew Proof
Running Current (Rated)			A	0.12-0.12-0.11
Power Consumption (Rated)			W	26-26-26
Power Factor			%	98.5-94.2-98.5
Temperature Control				Microcomputer Control
Dimensions (H×W×D)			mm	295×800×215
Packaged Dimensions (H×W×D)			mm	274×870×366
Weight			kg	10
Gross Weight			kg	13
Operation Sound	H/M/L/SL		dBA	43/39/34/31
Sound Power	H		dBA	59
Heat Insulation				Both Liquid and Gas Pipes
Piping Connection		Liquid	mm	ϕ 6.4
		Gas	mm	ϕ 12.7
		Drain	mm	ϕ18.0
Drawing No.				3D059731

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3412 cfm=m³/min×35.3

Duct Connected Type

50Hz 230V

Model				FDKS50CVMB
Rated Capacity				5.0kW Class
Front Panel Color				—
Airflow Rates		m³/min (cfm)	H	12.0 (424)
			M	11.0 (388)
			L	10.0 (353)
			SL	8.4 (297)
Fan	Type			Sirocco Fan
	Motor Output		W	130
	Speed		Steps	5 Steps, Quiet, Auto
Air Filter				Removable / Washable / Mildew Proof
Running Current (Rated)			A	0.64
Power Consumption (Rated)			W	140
Power Factor			%	95.1
Temperature Control				Microcomputer Control
Dimensions (H×W×D)			mm	200×900×620
Packaged Dimensions (H×W×D)			mm	266×1,106×751
Weight			kg	27
Gross Weight			kg	34
Operation Sound	H/M/L/SL		dBA	37/35/33/31
External Static Pressure			Pa	40
Heat Insulation				Both Liquid and Gas Pipes
Piping Connection		Liquid	mm	ϕ 6.4
		Gas	mm	ϕ12.7
		Drain	mm	VP20 (O.D. ϕ26 / I.D. ϕ20)
Drawing No.				3D052134A

Note: 1. 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.

Model				FDKS25EAVMB	FDKS35EAVMB
Rated Capacity				2.5kW Class	3.5kW Class
Front Panel Color				—	—
Airflow Rates		m³/min (cfm)	H	8.7 (307)	8.7 (307)
			M	8.0 (282)	8.0 (282)
			L	7.3 (258)	7.3 (258)
			SL	6.2 (219)	6.2 (219)
Fan	Type			Sirocco Fan	Sirocco Fan
	Motor Output		W	62	62
	Speed		Steps	5 Steps, Quiet, Auto	5 Steps, Quiet, Auto
Air Filter				Removable / Washable / Mildew Proof	Removable / Washable / Mildew Proof
Running Current (Rated)			A	0.48	0.48
Power Consumption (Rated)			W	71	71
Power Factor			%	64.3	64.3
Temperature Control				Microcomputer Control	Microcomputer Control
Dimensions (H×W×D)			mm	200×700×620	200×700×620
Packaged Dimensions (H×W×D)			mm	274×906×751	274×906×751
Weight			kg	21	21
Gross Weight			kg	29	29
Operation Sound	H/M/L/SL		dBA	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.				3D051882A	3D051884A

Note: 1. 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×3412
cfm=m³/min×35.3

Floor / Ceiling Suspended Dual Type

50Hz 230V

Model				FLKS25BAVMB	FLKS35BAVMB
Rated Capacity				2.5kW Class	3.5kW Class
Front Panel Color				Almond White	Almond White
Airflow Rates		m³/min (cfm)	H	7.6 (268)	8.6 (304)
			M	6.8 (240)	7.6 (268)
			L	6.0 (212)	6.6 (233)
			SL	5.2 (184)	5.6 (198)
Fan	Type			Sirocco Fan	Sirocco Fan
	Motor Output		W	34	34
	Speed		Steps	5 Steps, Quiet, Auto	5 Steps, Quiet, 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	0.34	0.36
Power Consumption (Rated)			W	74	78
Power Factor			%	94.6	94.2
Temperature Control				Microcomputer Control	Microcomputer Control
Dimensions (H×W×D)			mm	200×1,050×490	200×1,050×490
Packaged Dimensions (H×W×D)			mm	280×1,100×566	280×1,100×566
Weight			kg	16	16
Gross Weight			kg	22	22
Operation Sound	H/M/L/SL		dBA	37/34/31/28	38/35/32/29
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.				3D050862	3D050864

Model				FLKS50BAVMB
Rated Capacity				5.0W Class
Front Panel Color				Almond White
Airflow Rates		m³/min (cfm)	H	11.4 (402)
			M	10.0 (353)
			L	8.5 (300)
			SL	7.5 (265)
Fan	Type			Sirocco Fan
	Motor Output		W	34
	Speed		Steps	5 Steps, Quiet, Auto
Air Direction Control				Right, Left, Horizontal, Downward
Air Filter				Removable / Washable / Mildew Proof
Running Current (Rated)			A	0.45
Power Consumption (Rated)			W	96
Power Factor			%	92.8
Temperature Control				Microcomputer Control
Dimensions (H×W×D)			mm	200×1,050×490
Packaged Dimensions (H×W×D)			mm	280×1,100×566
Weight			kg	17
Gross Weight			kg	24
Operation Sound	H/M/L/SL		dBA	47/43/39/36
Sound Power	H		dBA	63
Heat Insulation				Both Liquid and Gas Pipes
Piping Connection		Liquid	mm	ϕ 6.4
		Gas	mm	ϕ12.7
		Drain	mm	ϕ18.0
Drawing No.				3D050896

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3412 cfm=m³/min×35.3

Floor Standing Type

50Hz 220-230-240V

Model				FVXS25FV1B	FVXS35FV1B
Rated Capacity				2.5kW Class	3.5kW Class
Front Panel Color				White	White
Airflow Rates		m³/min (cfm)	H	8.2 (290)	8.5 (300)
			M	6.5 (229)	6.7 (237)
			L	4.8 (169)	4.9 (174)
			SL	4.1 (146)	4.5 (158)
Fan	Type			Turbo Fan	Turbo Fan
	Motor Output		W	48	48
	Speed		Steps	5 Steps, Quiet, Auto	5 Steps, Quiet, 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	0.13	0.13
Power Consumption (Rated)			W	15	15
Power Factor			%	50.2	50.2
Temperature Control				Microcomputer Control	Microcomputer Control
Dimensions (H×W×D)			mm	600×700×210	600×700×210
Packaged Dimensions (H×W×D)			mm	696×786×280	696×786×280
Weight			kg	14	14
Gross Weight			kg	18	18
Operation Sound	H/M/L/SL		dBA	38/32/26/23	39/33/27/24
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	ϕ 20.0	ϕ 20.0
Drawing No.				C: 3D056295A	C: 3D056296A

Model				FVXS50FV1B
Rated Capacity				5.0kW Class
Front Panel Color				White
Airflow Rates		m³/min (cfm)	H	10.7 (378)
			M	9.2 (326)
			L	7.8 (274)
			SL	6.6 (233)
Fan	Type			Turbo Fan
	Motor Output		W	48
	Speed		Steps	5 Steps, Quiet, Auto
Air Direction Control				Right, Left, Horizontal, Downward
Air Filter				Removable / Washable / Mildew Proof
Running Current (Rated)			A	0.17
Power Consumption (Rated)			W	27
Power Factor			%	69.1
Temperature Control				Microcomputer Control
Dimensions (H×W×D)			mm	600×700×210
Packaged Dimensions (H×W×D)			mm	696×786×280
Weight			kg	14
Gross Weight			kg	18
Operation Sound	H/M/L/SL		dBA	44/40/36/32
Sound Power	H		dBA	56
Heat Insulation				Both Liquid and Gas Pipes
Piping Connection		Liquid	mm	ϕ 6.4
		Gas	mm	ϕ12.7
		Drain	mm	ϕ20.0
Drawing No.				C: 3D056297

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3412 cfm=m³/min×35.3

Ceiling Mounted Cassette Type

50Hz 230V

Model				FFQ25B8V1B	FFQ35B8V1B
Rated Capacity				2.5kW Class	3.5kW Class
Decoration Panel	Color			White	White
	Dimensions (H×W×D)			55×700×700	55×700×700
Airflow Rates		m³/min (cfm)	H	9.0 (318)	10.0 (353)
			M	—	—
			L	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	0.40
Power Consumption (Rated)			W	73	84
Power Factor			%	85.8	91.3
Temperature Control				Microcomputer Control	Microcomputer Control
Dimensions (H×W×D) ★1			mm	260 (286)×575×575	260 (286)×575×575
Packaged Dimensions (H×W×D)			mm	370×687×674	370×687×674
Weight			kg	17.5	17.5
Gross Weight			kg	21	21
Operation Sound	H/L		dBA	29.5/24.5	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.				3D040444A	3D040442A

Model				FFQ50B8V1B
Rated Capacity				5.0kW Class
Decoration Panel	Color			White
	Dimensions (H×W×D)			55×700×700
Airflow Rates		m³/min (cfm)	H	12.0 (424)
			M	—
			L	8.0 (283)
			SL	—
Fan	Type			Turbo Fan
	Motor Output		W	55
	Speed		Steps	2 Steps
Air Direction Control				Horizontal, Downward
Air Filter				—
Running Current (Rated)			A	0.49
Power Consumption (Rated)			W	97
Power Factor			%	86.1
Temperature Control				Microcomputer Control
Dimensions (H×W×D) ★1			mm	260 (286)×575×575
Packaged Dimensions (H×W×D)			mm	370×687×674
Weight			kg	17.5
Gross Weight			kg	21
Operation Sound	H/L		dBA	36/27
Sound Power	H		dBA	53
Heat Insulation				Both Liquid and Gas Pipes
Piping Connection		Liquid	mm	ϕ 6.4
		Gas	mm	ϕ12.7
		Drain	mm	VP20 (O.D.ϕ 26 / I.D.ϕ 20)
Drawing No.				3D040437

★1 ( ) : dimension including control box

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3412 cfm=m³/min×35.3

1.2 Outdoor Units - Cooling Only

50Hz 220-240V

Model				2MKS40H2V1B
Cooling Capacity			kW	—
Power Consumption			W	—
Running Current			A	—
Casing Color				Ivory White
Compressor	Type			Hermetically Sealed Swing Type
	Model			1YC23AGXD
	Motor Output		W	600
Refrigerant Oil	Model			FVC50K
	Charge		L	0.45
Refrigerant	Type			R-410A
	Charge		kg	1.20
Airflow Rate		m^3/min	H	36
			M	33
			L	30
		cfm	H	1,271
			M	1,165
			L	1,059
Fan	Type			Propeller
	Motor Output		W	50
Starting Current			A	4.6
Dimension (H×W×D)			mm	550×765×285
Packaged Dimension (H×W×D)			mm	612×906×364
Weight			kg	38
Gross Weight			kg	43
Operation Noise	Sound Pressure		dBA	47
	Sound Power		dBA	62
Piping Connection	Liquid		mm	ϕ 6.4×2
	Gas		mm	ϕ 9.5×2
	Drain		mm	ϕ18
Heat Insulation				Both Liquid & Gas Pipes
No. of Wiring Connection				3 for Power Supply, 4 for Interunit Wiring
Max. Piping Length			m	30 (for Total of Each Room)
				20 (for One Room)
Min. Piping Length			m	3 (for One Room)
Amount of Additional Charge			g/m	20 (20m or more)
Max. Installation Height Difference			m	15 (between Indoor Unit and Outdoor Unit)
				7.5 (between Indoor Units)
Drawing No.				3D063352

Note: 1. The data are based on the conditions shown in the table below.

Cooling	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB	5m

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3412 cfm=m^3/min×35.3

50Hz 220-240V

Model				2MKS50H2V1B
Cooling Capacity			kW	—
Power Consumption			W	—
Running Current			A	—
Casing Color				Ivory White
Compressor	Type			Hermetically Sealed Swing Type
	Model			2YC36BXD
	Motor Output		W	1,100
Refrigerant Oil	Model			FVC50K
	Charge		L	0.65
Refrigerant	Type			R-410A
	Charge		kg	1.60
Airflow Rates		m^3/min	H	37
			M	34
			L	34
		cfm	H	1,306
			M	1,200
			L	1,200
Fan	Type			Propeller
	Motor Output		W	50
Starting Current			A	6.1
Dimensions (H×W×D)			mm	550×765×285
Packaged Dimensions (H×W×D)			mm	612×906×364
Weight			kg	42
Gross Weight			kg	47
Operation Noise	Sound Pressure		dBA	48
	Sound Power		dBA	63
Piping Connection		Liquid	mm	ϕ 6.4×2
		Gas	mm	ϕ 9.5×1, ϕ12.7×1
		Drain	mm	ϕ18.0
Heat Insulation				Both Liquid and Gas Pipes
No. of Wiring Connection				3 for Power Supply, 4 for Interunit Wiring
Max. Interunit Piping Length			m	30 (for Total of Each Room)
			m	20 (for One Room)
Min. Interunit Piping Length			m	3 (for One Room)
Amount of Additional Charge			g/m	20 (20m or more)
Max. Installation Height Difference			m	15 (between Indoor Unit and Outdoor Unit)
			m	7.5 (between Indoor Units)
Drawing No.				3D063353

Note: 1. The data are based on the conditions shown in the table below.

Cooling	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB	5m

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3412 cfm=m^3/min×35.3

1.3 Indoor Units - Heat Pump

Wall Mounted Type

50Hz 230V

Model				ATX20GV1B		ATX25GV1B	
				Cooling	Heating	Cooling	Heating
Rated Capacity				2.0kW Class		2.5kW Class	
Front Panel Color				White		White	
Airflow Rates		m³/min (cfm)	H	9.1 (321)	9.4 (331)	9.2 (325)	9.7 (342)
			M	7.4 (261)	7.8 (276)	7.6 (268)	8.0 (283)
			L	5.9 (208)	6.3 (222)	6.0 (212)	6.3 (222)
			SL	4.7 (166)	5.5 (194)	4.8 (169)	5.5 (194)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	16		16	
	Speed		Steps	5 Steps, Quiet, Auto		5 Steps, Quiet, 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 (H×W×D)			mm	283×770×198		283×770×198	
Packaged Dimensions (H×W×D)			mm	263×840×344		263×840×344	
Weight			kg	7		7	
Gross Weight			kg	11		11	
Operation Sound	H/M/L/SL		dBA	39/33/25/22	39/34/28/25	40/33/26/22	40/34/28/25
Sound Power	H		dBA	55	55	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.				3D059076		3D059077	

Model				ATX35GV1B	
				Cooling	Heating
Rated Capacity				3.5kW Class	
Front Panel Color				White	
Airflow Rates		m³/min (cfm)	H	9.3 (328)	10.1 (356)
			M	7.7 (272)	8.4 (295)
			L	6.1 (215)	6.7 (235)
			SL	4.9 (173)	5.7 (201)
Fan	Type			Cross Flow Fan	
	Motor Output		W	16	
	Speed		Steps	5 Steps, Quiet, Auto	
Air Direction Control				Right, Left, Horizontal, Downward	
Air Filter				Removable / Washable / Mildew Proof	
Running Current (Rated)			A	0.18	0.18
Power Consumption (Rated)			W	40	40
Power Factor			%	96.6	96.6
Temperature Control				Microcomputer Control	
Dimensions (H×W×D)			mm	283×770×198	
Packaged Dimensions (H×W×D)			mm	263×840×344	
Weight			kg	7	
Gross Weight			kg	11	
Operation Sound	H/M/L/SL		dBA	41/34/27/23	41/35/29/26
Sound Power	H		dBA	57	57
Heat Insulation				Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4	
		Gas	mm	ϕ 9.5	
		Drain	mm	ϕ18.0	
Drawing No.				3D059078	

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3412 cfm=m³/min×35.3

50Hz 220-230-240V

Model				ATXS20G2V1B		ATXS25G2V1B	
				Cooling	Heating	Cooling	Heating
Rated Capacity				2.0kW Class		2.5kW Class	
Front Panel Color				White		White	
Airflow Rates		m³/min (cfm)	H	9.4 (332)	9.9 (350)	9.1 (321)	9.8 (346)
			M	7.4 (262)	8.2 (290)	7.1 (252)	7.9 (280)
			L	5.5 (193)	6.5 (228)	5.2 (182)	6.2 (217)
			SL	4.0 (141)	5.5 (193)	3.7 (130)	5.2 (183)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	23		23	
	Speed		Steps	5 Steps, Quiet, Auto		5 Steps, Quiet, 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	0.09-0.08-0.08	0.10-0.10-0.09	0.09-0.08-0.08	0.10-0.10-0.09
Power Consumption (Rated)			W	18-18-18	21-21-21	18-18-18	21-21-21
Power Factor			%	90.9-97.8-93.8	95.5-91.3-97.2	90.9-97.8-93.8	95.5-91.3-97.2
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)			mm	295x800x215		295x800x215	
Packaged Dimensions (HxWxD)			mm	274x870x366		274x870x366	
Weight			kg	9		9	
Gross Weight			kg	13		13	
Operation Sound	H/M/L/SL		dBA	38 / 32 / 25 / 22	38 / 33 / 28 / 25	38 / 32 / 25 / 22	39 / 34 / 28 / 25
Sound Power	H		dBA	54	54	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.				3D059732		3D059733	

Model				ATXS35G2V1B		ATXS42G2V1B	
				Cooling	Heating	Cooling	Heating
Rated Capacity				3.5kW Class		4.2kW Class	
Front Panel Color				White		White	
Airflow Rates		m³/min (cfm)	H	10.4 (367)	10.6 (374)	9.1 (321)	11.2 (395)
			M	7.7 (270)	8.5 (302)	7.7 (273)	9.4 (333)
			L	4.8 (170)	6.4 (226)	6.3 (221)	7.7 (271)
			SL	3.5 (125)	5.4 (191)	5.4 (190)	6.8 (240)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	23		23	
	Speed		Steps	5 Steps, Quiet, Auto		5 Steps, Quiet, 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	0.12-0.12-0.11	0.13-0.13-0.12	0.11-0.11-0.10	0.14-0.14-0.13
Power Consumption (Rated)			W	26-26-26	28-28-28	24-24-24	30-30-30
Power Factor			%	98.5-94.2-98.5	97.9-93.6-97.2	99.2-94.9-100.0	97.4-93.2-96.2
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)			mm	295x800x215		295x800x215	
Packaged Dimensions (HxWxD)			mm	274x870x366		274x870x366	
Weight			kg	10		10	
Gross Weight			kg	13		13	
Operation Sound	H/M/L/SL		dBA	42 / 34 / 26 / 23	42 / 36 / 29 / 26	42 / 38 / 33 / 30	42 / 38 / 33 / 30
Sound Power	H		dBA	58	58	58	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		ϕ9.5	
		Drain	mm	ϕ18.0		ϕ18.0	
Drawing No.				3D059734		3D059735	

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3412 cfm=m³/min×35.3

50Hz 220-230-240V

Model				ATXS50G2V1B		ATXG25EV1B	
				Cooling	Heating	Cooling	Heating
Rated Capacity				5.0kW Class		2.5kW Class	
Front Panel Color				White		Mat Crystal White	
Airflow Rates		m³/min (cfm)	H	10.2 (360)	11.0 (388)	7.7 (271)	9.0 (317)
			M	8.6 (305)	9.3 (330)	6.1 (215)	7.9 (278)
			L	7.0 (246)	7.6 (267)	4.7 (165)	6.7 (236)
			SL	6.0 (212)	6.7 (236)	3.8 (134)	5.4 (190)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	23		40	
	Speed		Steps	5 Steps, Quiet, Auto		5 Steps, Quiet, 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	0.12-0.12-0.11	0.15-0.14-0.14	0.15-0.14-0.13	0.15-0.14-0.13
Power Consumption (Rated)			W	26-26-26	32-32-32	30	30
Power Factor			%	98.5-94.2-98.5	97.0-99.4-95.2	90.9-93.2-96.2	90.9-93.2-96.2
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)			mm	295x800x215		275x840x150	
Packaged Dimensions (HxWxD)			mm	274x870x366		222x894x345	
Weight			kg	10		9	
Gross Weight			kg	13		13	
Operation Sound	H/M/L/SL		dBA	43 / 39 / 34 / 31	44 / 39 / 34 / 31	38/32/25/22	38/33/28/25
Sound Power	H		dBA	59	60	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	ϕ12.7		ϕ 9.5	
		Drain	mm	ϕ18.0		ϕ18.0	
Drawing No.				3D059736		3D051107	

Model				ATXG35EV1B		ATXG50EV1B	
				Cooling	Heating	Cooling	Heating
Rated Capacity				3.5kW Class		5.0kW Class	
Front Panel Color				Mat Crystal White		Mat Crystal White	
Airflow Rates		m³/min (cfm)	H	8.1 (285)	9.6 (338)	11.3 (398)	12.6 (444)
			M	6.5 (229)	8.2 (289)	9.1 (320)	10.6 (373)
			L	4.9 (173)	6.7 (236)	7.1 (250)	8.7 (306)
			SL	4.1 (144)	5.9 (208)	6.7 (236)	7.7 (271)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	40		40	
	Speed		Steps	5 Steps, Quiet, Auto		5 Steps, Quiet, 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	0.15-0.14-0.13	0.15-0.14-0.13	0.15-0.14-0.13	0.15-0.14-0.13
Power Consumption (Rated)			W	30	30	30	30
Power Factor			%	90.9-93.2-96.2	90.9-93.2-96.2	90.9-93.2-96.2	90.9-93.2-96.2
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)			mm	275x840x150		275x840x150	
Packaged Dimensions (HxWxD)			mm	222x894x345		222x894x345	
Weight			kg	9		9	
Gross Weight			kg	13		13	
Operation Sound	H/M/L/SL		dBA	39/33/26/23	39/34/29/26	47/41/35/32	47/41/35/32
Sound Power	H		dBA	57	57	64	64
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.				3D051108		3D051109	

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3412 cfm=m³/min×35.3

50Hz 220-230-240V

Model				FTXG25EV1BW		FTXG25EV1BS	
				Cooling	Heating	Cooling	Heating
Rated Capacity				2.5kW Class		2.5kW Class	
Front Panel Color				Mat Crystal White		Mat Crystal Silver	
Airflow Rates		m³/min (cfm)	H	7.7 (271)	9.0 (317)	7.7 (271)	9.0 (317)
			M	6.1 (215)	7.9 (278)	6.1 (215)	7.9 (278)
			L	4.7 (165)	6.7 (236)	4.7 (165)	6.7 (236)
			SL	3.8 (134)	5.4 (190)	3.8 (134)	5.4 (190)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	40		40	
	Speed		Steps	5 Steps, Quiet, Auto		5 Steps, Quiet, 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	0.15-0.14-0.13	0.15-0.14-0.13	0.15-0.14-0.13	0.15-0.14-0.13
Power Consumption (Rated)			W	30-30-30	30-30-30	30-30-30	30-30-30
Power Factor			%	90.9-93.2-96.2	90.9-93.2-96.2	90.9-93.2-96.2	90.9-93.2-96.2
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)			mm	275x840x150		275x840x150	
Packaged Dimensions (HxWxD)			mm	222x894x345		222x894x345	
Weight			kg	9		9	
Gross Weight			kg	13		13	
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.				3D051101		3D051102	

Model				FTXG35EV1BW		FTXG35EV1BS	
				Cooling	Heating	Cooling	Heating
Rated Capacity				3.5kW Class		3.5kW Class	
Front Panel Color				Mat Crystal White		Mat Crystal Silver	
Airflow Rates		m³/min (cfm)	H	8.1 (285)	9.6 (338)	8.1 (285)	9.6 (338)
			M	6.5 (229)	8.2 (289)	6.5 (229)	8.2 (289)
			L	4.9 (173)	6.7 (236)	4.9 (173)	6.7 (236)
			SL	4.1 (144)	5.9 (208)	4.1 (144)	5.9 (208)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	40		40	
	Speed		Steps	5 Steps, Quiet, Auto		5 Steps, Quiet, 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	0.15-0.14-0.13	0.15-0.14-0.13	0.15-0.14-0.13	0.15-0.14-0.13
Power Consumption (Rated)			W	30-30-30	30-30-30	30-30-30	30-30-30
Power Factor			%	90.9-93.2-96.2	90.9-93.2-96.2	90.9-93.2-96.2	90.9-93.2-96.2
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)			mm	275x840x150		275x840x150	
Packaged Dimensions (HxWxD)			mm	222x894x345		222x894x345	
Weight			kg	9		9	
Gross Weight			kg	13		13	
Operation Sound	H/M/L/SL		dBA	39/33/26/23	39/34/29/26	39/33/26/23	39/34/29/26
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.				3D051103		3D051104	

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3412 cfm=m³/min×35.3

50Hz 220-230-240V

Model				CTXG50EV1BW		CTXG50EV1BS	
				Cooling	Heating	Cooling	Heating
Rated Capacity				5.0kW Class		5.0kW Class	
Front Panel Color				Mat Crystal White		Mat Crystal Silver	
Airflow Rates		m³/min (cfm)	H	11.3 (398)	12.6 (444)	11.3 (398)	12.6 (444)
			M	9.1 (320)	10.6 (373)	9.1 (320)	10.6 (373)
			L	7.1 (250)	8.7 (306)	7.1 (250)	8.7 (306)
			SL	6.7 (236)	7.7 (271)	6.7 (236)	7.7 (271)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	40		40	
	Speed		Steps	5 Steps, Quiet, Auto		5 Steps, Quiet, 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	0.15-0.14-0.13	0.15-0.14-0.13	0.15-0.14-0.13	0.15-0.14-0.13
Power Consumption (Rated)			W	30	30	30	30
Power Factor			%	90.9-93.2-96.2	90.9-93.2-96.2	90.9-93.2-96.2	90.9-93.2-96.2
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)			mm	275×840×150		275×840×150	
Packaged Dimensions (HxWxD)			mm	222×894×345		222×894×345	
Weight			kg	9		9	
Gross Weight			kg	13		13	
Operation Sound	H/M/L/SL		dBA	47/41/35/32	47/41/35/32	47/41/35/32	47/41/35/32
Sound Power	H		dBA	64	64	64	64
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.				3D051105		3D051106	

Model				FTXS20G2V1B		FTXS25G2V1B	
				Cooling	Heating	Cooling	Heating
Rated Capacity				2.0kW Class		2.5kW Class	
Front Panel Color				White		White	
Airflow Rates		m³/min (cfm)	H	9.4 (332)	9.9 (350)	9.1 (321)	9.8 (346)
			M	7.4 (262)	8.2 (290)	7.1 (252)	7.9 (280)
			L	5.5 (193)	6.5 (228)	5.2 (182)	6.2 (217)
			SL	4.0 (141)	5.5 (193)	3.7 (130)	5.2 (183)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	23		23	
	Speed		Steps	5 Steps, Quiet, Auto		5 Steps, Quiet, 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	0.09-0.08-0.08	0.10-0.10-0.09	0.09-0.08-0.08	0.10-0.10-0.09
Power Consumption (Rated)			W	18-18-18	21-21-21	18-18-18	21-21-21
Power Factor			%	90.9-97.8-93.8	95.5-91.3-97.2	90.9-97.8-93.8	95.5-91.3-97.2
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)			mm	295×800×215		295×800×215	
Packaged Dimensions (HxWxD)			mm	274×870×366		274×870×366	
Weight			kg	9		9	
Gross Weight			kg	13		13	
Operation Sound	H/M/L/SL		dBA	38/32/25/22	38/33/28/25	38/32/25/22	39/34/28/25
Sound Power	H		dBA	54	54	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.				3D059722		3D059723	

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3412 cfm=m³/min×35.3

50Hz 220-230-240V

Model				FTXS35G2V1B		FTXS42G2V1B	
				Cooling	Heating	Cooling	Heating
Rated Capacity				3.5kW Class		4.2kW Class	
Front Panel Color				White		White	
Airflow Rates		m³/min (cfm)	H	10.4 (367)	10.6 (374)	9.1 (321)	11.2 (395)
			M	7.7 (270)	8.5 (302)	7.7 (273)	9.4 (333)
			L	4.8 (170)	6.4 (226)	6.3 (221)	7.7 (271)
			SL	3.5 (125)	5.4 (191)	5.4 (190)	6.8 (240)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	23		23	
	Speed		Steps	5 Steps, Quiet, Auto		5 Steps, Quiet, 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	0.12-0.12-0.11	0.13-0.13-0.12	0.11-0.11-0.10	0.14-0.14-0.13
Power Consumption (Rated)			W	26-26-26	28-28-28	24-24-24	30-30-30
Power Factor			%	98.5-94.2-98.5	97.9-93.6-97.2	99.2-94.9-100.0	97.4-93.2-96.2
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)			mm	295×800×215		295×800×215	
Packaged Dimensions (HxWxD)			mm	274×870×366		274×870×366	
Weight			kg	10		10	
Gross Weight			kg	13		13	
Operation Sound	H/M/L/SL		dBA	42/34/26/23	42/36/29/26	42/38/33/30	42/38/33/30
Sound Power	H		dBA	58	58	58	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		ϕ 9.5	
		Drain	mm	ϕ18.0		ϕ18.0	
Drawing No.				3D059724		3D059725	

Model				FTXS50G2V1B	
				Cooling	Heating
Rated Capacity				5.0kW Class	
Front Panel Color				White	
Airflow Rates		m³/min (cfm)	H	10.2 (360)	11.0 (388)
			M	8.6 (305)	9.3 (330)
			L	7.0 (246)	7.6 (267)
			SL	6.0 (212)	6.7 (236)
Fan	Type			Cross Flow Fan	
	Motor Output		W	23	
	Speed		Steps	5 Steps, Quiet, Auto	
Air Direction Control				Right, Left, Horizontal, Downward	
Air Filter				Removable / Washable / Mildew Proof	
Running Current (Rated)			A	0.12-0.12-0.11	0.15-0.14-0.14
Power Consumption (Rated)			W	26-26-26	32-32-32
Power Factor			%	98.5-94.2-98.5	97.0-99.4-95.2
Temperature Control				Microcomputer Control	
Dimensions (HxWxD)			mm	295×800×215	
Packaged Dimensions (HxWxD)			mm	274×870×366	
Weight			kg	10	
Gross Weight			kg	13	
Operation Sound	H/M/L/SL		dBA	43/39/34/31	44/39/34/31
Sound Power	H		dBA	59	60
Heat Insulation				Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4	
		Gas	mm	ϕ12.7	
		Drain	mm	ϕ18.0	
Drawing No.				3D059726	

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3412 cfm=m³/min×35.3

Duct Connected Type

50Hz 230V

Model				FDXS50CVMB	
				Cooling	Heating
Rated Capacity				5.0kW Class	
Front Panel Color				—	
Airflow Rates		m³/min (cfm)	H	12.0 (424)	12.0 (424)
			M	11.0 (388)	11.0 (388)
			L	10.0 (353)	10.0 (353)
			SL	8.4 (297)	8.4 (297)
Fan	Type			Sirocco Fan	
	Motor Output		W	130	
	Speed		Steps	5 Steps, Quiet, Auto	
Air Filter				Removable / Washable / Mildew Proof	
Running Current (Rated)			A	0.64	0.64
Power Consumption (Rated)			W	140	140
Power Factor			%	95.1	95.1
Temperature Control				Microcomputer Control	
Dimensions (H×W×D)			mm	200×900×620	
Packaged Dimensions (H×W×D)			mm	266×1,106×751	
Weight			kg	27	
Gross Weight			kg	34	
Operation Sound	H/M/L/SL		dBA	37/35/33/31	37/35/33/31
External Static Pressure			Pa	40	
Heat Insulation				Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4	
		Gas	mm	ϕ12.7	
		Drain	mm	VP20 (O.D. ϕ 26 / I.D. ϕ 20)	
Drawing No.				3D052132	

Note: 1. 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.

Model				FDXS25EAVMB		FDXS35EAVMB	
				Cooling	Heating	Cooling	Heating
Rated Capacity				2.5kW Class		3.5kW Class	
Front Panel Color				—		—	
Airflow Rates		m³/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, Quiet, Auto		5 Steps, Quiet, 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 (H×W×D)			mm	200×700×620		200×700×620	
Packaged Dimensions (H×W×D)			mm	274×906×751		274×906×751	
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: 1. 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×3412 cfm=m³/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	
Airflow Rates		m³/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, Quiet, Auto		5 Steps, Quiet, 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 (H×W×D)			mm	200×1,050×490		200×1,050×490	
Packaged Dimensions (H×W×D)			mm	280×1,100×566		280×1,100×566	
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	
				Cooling	Heating
Rated Capacity				5.0kW Class	
Front Panel Color				Almond White	
Airflow Rates		m³/min (cfm)	H	11.4 (402)	12.1 (427)
			M	10.0 (353)	9.8 (346)
			L	8.5 (300)	7.5 (265)
			SL	7.5 (265)	6.8 (240)
Fan	Type			Sirocco Fan	
	Motor Output		W	34	
	Speed		Steps	5 Steps, Quiet, Auto	
Air Direction Control				Right, Left, Horizontal, Downward	
Air Filter				Removable / Washable / Mildew Proof	
Running Current (Rated)			A	0.45	0.45
Power Consumption (Rated)			W	96	96
Power Factor			%	92.8	92.8
Temperature Control				Microcomputer Control	
Dimensions (H×W×D)			mm	200×1,050×490	
Packaged Dimensions (H×W×D)			mm	280×1,100×566	
Weight			kg	17	
Gross Weight			kg	24	
Operation Sound	H/M/L/SL		dBA	47/43/39/36	46/41/35/33
Sound Power	H		dBA	63	32
Heat Insulation				Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4	
		Gas	mm	ϕ12.7	
		Drain	mm	ϕ18.0	
Drawing No.				3D050897	

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3412 cfm=m³/min×35.3

Floor Standing Type

50Hz 220-230-240V

Model				FVXS25FV1B		FVXS35FV1B	
				Cooling	Heating	Cooling	Heating
Rated Capacity				2.5kW Class		3.5kW Class	
Front Panel Color				White		White	
Airflow Rates		m³/min (cfm)	H	8.2 (290)	8.8 (311)	8.5 (300)	9.4 (332)
			M	6.5 (229)	6.9 (244)	6.7 (237)	7.3 (258)
			L	4.8 (169)	5.0 (178)	4.9 (174)	5.2 (184)
			SL	4.1 (146)	4.4 (155)	4.5 (158)	4.7 (168)
Fan	Type			Turbo Fan		Turbo Fan	
	Motor Output		W	48		48	
	Speed		Steps	5 Steps, Quiet, Auto		5 Steps, Quiet, 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	0.13	0.14	0.13	0.14
Power Consumption (Rated)			W	15	17	15	17
Power Factor			%	50.2	52.8	50.2	52.8
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (H×W×D)			mm	600×700×210		600×700×210	
Packaged Dimensions (H×W×D)			mm	696×786×280		696×786×280	
Weight			kg	14		14	
Gross Weight			kg	18		18	
Operation Sound	H/M/L/SL		dBA	38/32/26/23	38/32/26/23	39/33/27/24	39/33/27/24
Sound Power	H		dBA	54	54	55	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	ϕ 20.0		ϕ 20.0	
Drawing No.				C: 3D056274A		C: 3D056275A	

Model				FVXS50FV1B	
				Cooling	Heating
Rated Capacity				5.0kW Class	
Front Panel Color				White	
Airflow Rates		m³/min (cfm)	H	10.7 (378)	11.8 (417)
			M	9.2 (326)	10.1 (358)
			L	7.8 (274)	8.5 (300)
			SL	6.6 (233)	7.1 (250)
Fan	Type			Turbo Fan	
	Motor Output		W	48	
	Speed		Steps	5 Steps, Quiet, Auto	
Air Direction Control				Right, Left, Horizontal, Downward	
Air Filter				Removable / Washable / Mildew Proof	
Running Current (Rated)			A	0.17	0.19
Power Consumption (Rated)			W	27	34
Power Factor			%	69.1	77.8
Temperature Control				Microcomputer Control	
Dimensions (H×W×D)			mm	600×700×210	
Packaged Dimensions (H×W×D)			mm	696×786×280	
Weight			kg	14	
Gross Weight			kg	18	
Operation Sound	H/M/L/SL		dBA	44/40/36/32	45/40/36/32
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.				C: 3D056276	

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3412 cfm=m³/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 (H×W×D)			55×700×700		55×700×700	
Airflow Rates		m³/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 (H×W×D) ★1			mm	260(286)×575×575		260(286)×575×575	
Packaged Dimensions (H×W×D)			mm	370×687×674		370×687×674	
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	
				Cooling	Heating
Rated Capacity				5.0kW Class	
Decoration Panel	Color			White	
	Dimensions (H×W×D)			55×700×700	
Airflow Rates		m³/min (cfm)	H	12.0 (424)	12.0 (424)
			M	—	—
			L	8.0 (283)	8.0 (283)
			SL	—	—
Fan	Type			Turbo Fan	
	Motor Output		W	55	
	Speed		Steps	2 Steps	
Air Direction Control				Horizontal, Downward	
Air Filter				—	
Running Current (Rated)			A	0.49	0.45
Power Consumption (Rated)			W	97	89
Power Factor			%	86.1	86.0
Temperature Control				Microcomputer Control	
Dimensions (H×W×D) ★1			mm	260(286)×575×575	
Packaged Dimensions (H×W×D)			mm	370×687×674	
Weight			kg	17.5	
Gross Weight			kg	21	
Operation Sound	H/L		dBA	36.0/27.0	36.0/27.0
Sound Power	H		dBA	53.0	—
Heat Insulation				Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4	
		Gas	mm	ϕ 12.7	
		Drain	mm	VP20 (O.D ϕ 26 / I.D ϕ 20)	
Drawing No.				3D040441	

Note: ★1 ( ) : dimension including control box

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3412 cfm=m³/min×35.3

1.4 Outdoor Units - Heat Pump

50Hz 220-240V

Model				2MXS40H2V1B, 2AMX40G2V1B	
				Cooling	Heating
Capacity			kW	—	
Power Consumption			W	—	
Running Current			A	—	
Casing Color				Ivory White	
Compressor	Type			Hermetically Sealed Swing Type	
	Model			1YC23AGXD	
	Motor Output		W	600	
Refrigerant Oil	Model			FVC50K	
	Charge		L	0.45	
Refrigerant	Type			R-410A	
	Charge		kg	1.20	
Airflow Rate		m^3/min	H	36	32
			M	33	32
			L	30	32
		cfm	H	1,271	1,130
			M	1,165	1,130
			L	1,059	1,130
Fan	Type			Propeller	
	Motor Output		W	50	
Starting Current			A	4.6	
Dimension (H×W×D)			mm	550×765×285	
Packaged Dimension (H×W×D)			mm	612×906×364	
Weight			kg	38	
Gross Weight			kg	43	
Operation Noise	Sound Pressure		dBA	47	48
	Sound Power		dBA	62	—
Piping Connection	Liquid		mm	ϕ 6.4×2	
	Gas		mm	ϕ 9.5×2	
	Drain		mm	ϕ18	
Heat Insulation				Both Liquid & Gas Pipes	
No. of Wiring Connection				3 for Power Supply, 4 for Interunit Wiring	
Max. Piping Length			m	30 (for Total of Each Room)	
				20 (for One Room)	
Min. Piping Length			m	3 (for One Room)	
Amount of Additional Charge			g/m	20 (20m or more)	
Max. Installation Height Difference			m	15 (between Indoor Unit and Outdoor Unit)	
				7.5 (between Indoor Units)	
Drawing No.				3D063350	

Note: 1. The data are based on the conditions shown in the table below.

Cooling	Heating	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB	Indoor ; 20°CDB Outdoor ; 7°CDB/6°CWB	5m

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3412 cfm=m^3/min×35.3

50Hz 220-240V

Model				2MXS50H2V1B, 2AMX50G2V1B	
				Cooling	Heating
Capacity			kW	—	
Power Consumption			W	—	
Running Current			A	—	
Casing Color				Ivory White	
Compressor	Type			Hermetically Sealed Swing Type	
	Model			2YC36BXD	
	Motor Output		W	1,100	
Refrigerant Oil	Model			FVC50K	
	Charge		L	0.65	
Refrigerant	Type			R-410A	
	Charge		kg	1.60	
Airflow Rates		m^3/min	H	37	34
			M	34	34
			L	34	34
		cfm	H	1,306	1,200
			M	1,200	1,200
			L	1,200	1,200
Fan	Type			Propeller	
	Motor Output		W	50	
Starting Current			A	6.3	
Dimensions (H×W×D)			mm	550×765×285	
Packaged Dimensions (H×W×D)			mm	612×906×364	
Weight			kg	42	
Gross Weight			kg	47	
Operation Noise	Sound Pressure		dBA	48	50
	Sound Power		dBA	63	—
Piping Connection		Liquid	mm	ϕ 6.4×2	
		Gas	mm	ϕ 9.5×1, ϕ12.7×1	
		Drain	mm	ϕ18.0	
Heat Insulation				Both Liquid and Gas Pipes	
No. of Wiring Connection				3 for Power Supply, 4 for Interunit Wiring	
Max. Interunit Piping Length			m	30 (for Total of Each Room)	
			m	20 (for One Room)	
Min. Interunit Piping Length			m	3 (for One Room)	
Amount of Additional Charge			g/m	20 (20m or more)	
Max. Installation Height Difference			m	15 (between Indoor Unit and Outdoor Unit)	
			m	7.5 (between Indoor Units)	
Drawing No.				3D063351	

Note: 1. The data are based on the conditions shown in the table below.

Cooling	Heating	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB	Indoor ; 20°CDB Outdoor ; 7°CDB/6°CWB	5m

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3412 cfm=m^3/min×35.3

Part 3
Printed Circuit Board Connector Wiring Diagram

1. Printed Circuit Board Connector Wiring Diagram

1.1 Wall Mounted Type

1.1.1 ATX20-35G

Connectors

PCB (1) (Control PCB)

1)	S6	Connector for swing motor (horizontal blades)
2)	S26	Connector for display PCB
3)	S32	Connector for heat exchanger thermistor
4)	S200	Connector for fan motor
5)	S403	Connector for adaptor for wired remote controller (optional accessory)

PCB (2) (Display PCB)

1)	S27	Connector for control PCB

Note: Other designations

PCB (1) (Control PCB)

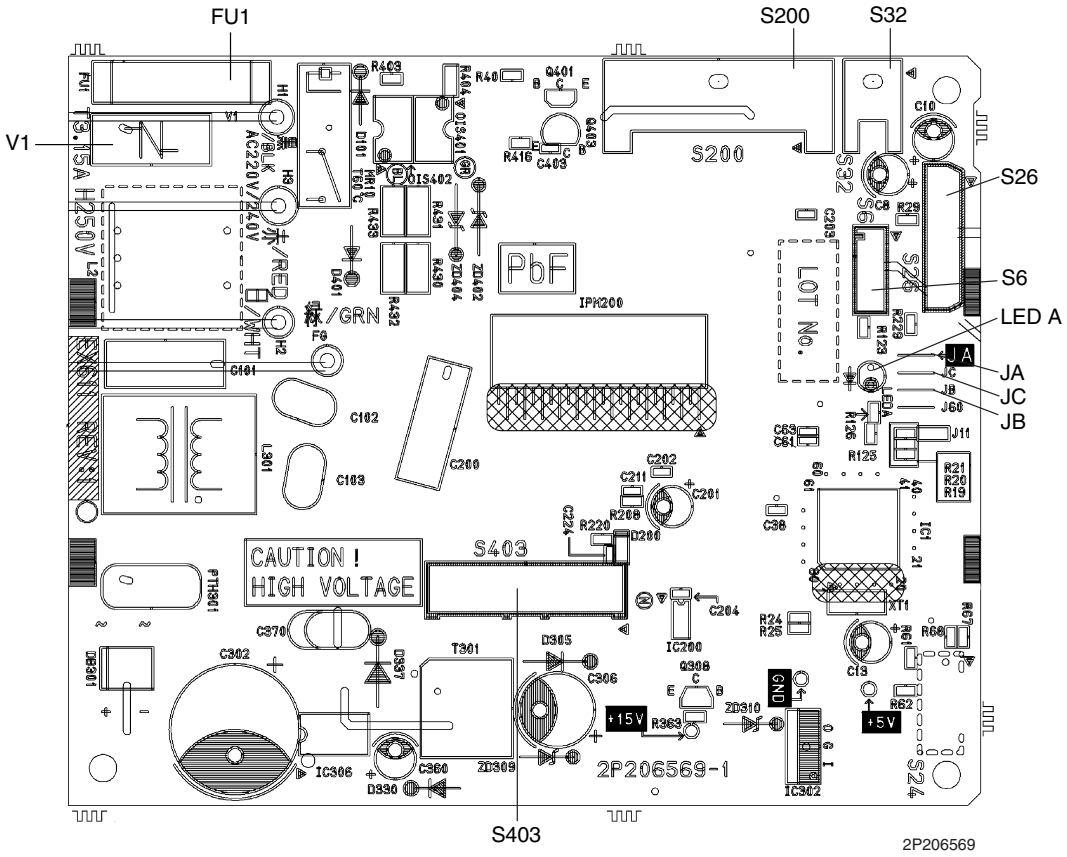
1)	V1	Varistor
2)	JA	Address setting jumper
	JB	Fan speed setting when compressor is OFF on thermostat
	JC	Power failure recovery function (auto-restart)
		∗ Refer to page 255 for detail.
3)	LED A	LED for service monitor (green)
4)	FU1 (F1U)	Fuse (3.15A)

PCB (2) (Display PCB)

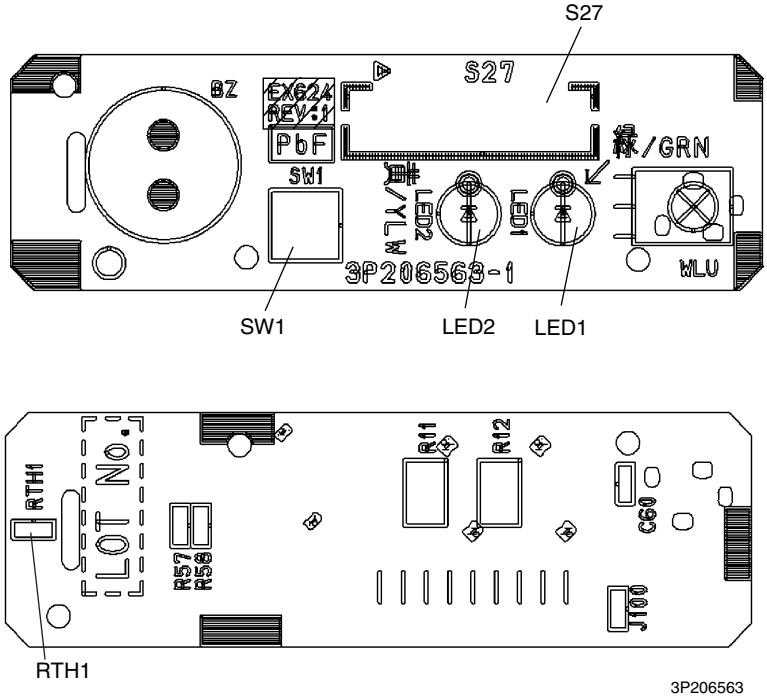
1)	SW1 (S1W)	Forced cooling operation ON / OFF switch
2)	LED1	LED for operation (green)
3)	LED2	LED for timer (yellow)
4)	RTH1 (R1T)	Room temperature thermistor

PCB Detail

PCB (1): Control PCB



PCB (2): Display PCB



1.1.2 FTXS20~50G, ATXS20~50G

Connectors

PCB (1) (Control PCB)

1)	S1	Connector for DC fan motor
2)	S21	Connector for centralized control (HA)
3)	S25	Connector for INTELLIGENT EYE sensor PCB
4)	S32	Connector for heat exchanger thermistor
5)	S41	Connector for swing motor
6)	S46	Connector for display PCB
7)	S47	Connector for signal receiver PCB

PCB (2) (Signal Receiver PCB)

1)	S48	Connector for control PCB

PCB (3) (Display PCB)

1)	S49	Connector for control PCB

PCB (4) (INTELLIGENT EYE sensor PCB)

1)	S26	Connector for control PCB

Note: Other designations

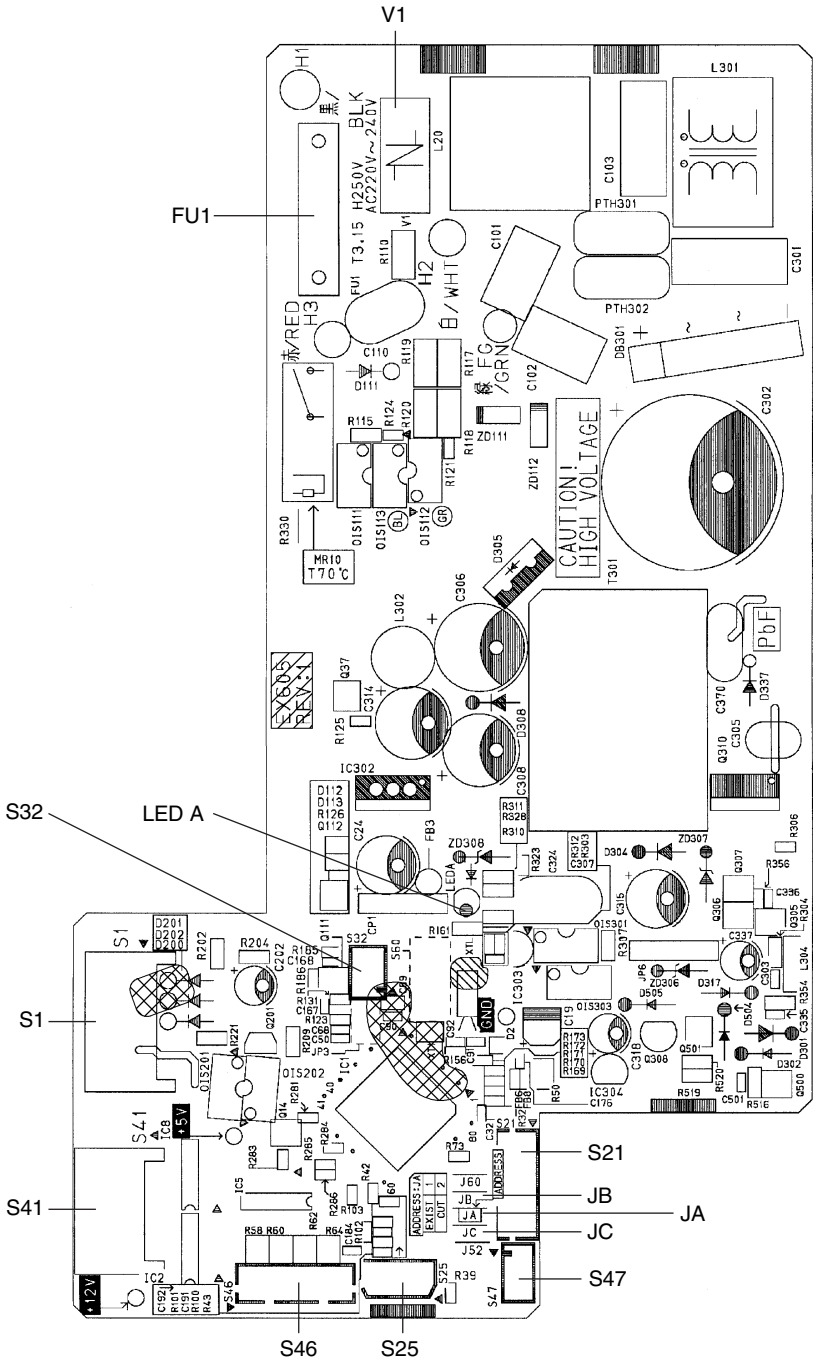
PCB (1) (Control PCB)

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 255 for detail.
3)	LED A	LED for service monitor (green)
4)	FU1 (F1U)	Fuse (3.15A)

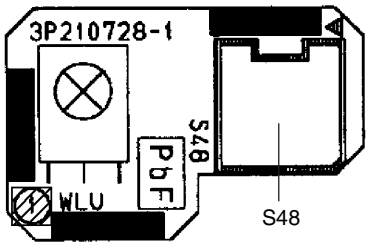
PCB (3) (Display PCB)

1)	SW1 (S1W)	Forced cooling 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**

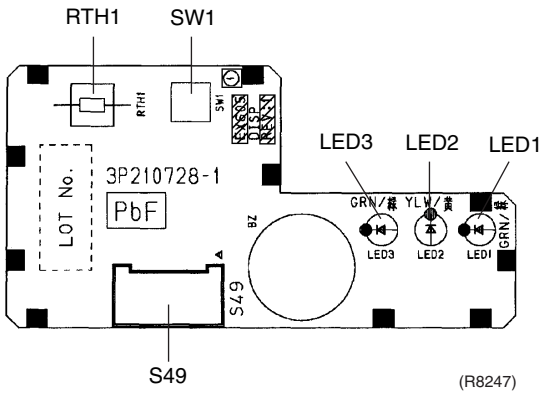


PCB (2): Signal Receiver PCB



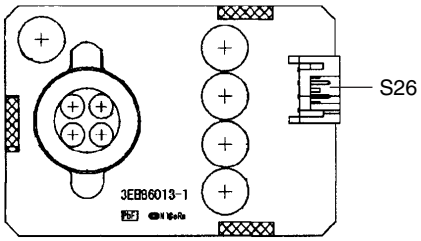
(R8246)

PCB (3): Display PCB



(R8247)

PCB (4): INTELLIGENT EYE sensor PCB



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1.1.3 FTXG25/35E, CTXG50E, ATXG25-50E

Connectors

PCB (1) (Control PCB)

1)	S1	Connector for fan motor
2)	S21	Connector for centralized control (HA)
3)	S32	Connector for heat exchanger thermistor
4)	S36	Connector for INTELLIGENT EYE sensor PCB
5)	S41	Connector for swing motor
6)	S46	Connector for signal receiver PCB
7)	S49	Connector for reduction motor (front panel mechanism)
8)	S51	Connector for front panel limit switch

PCB (2) (Signal Receiver PCB)

1)	S47	Connector for control PCB

PCB (3) (INTELLIGENT EYE sensor PCB)

1)	S36	Connector for control PCB

Note: Other designations

PCB (1) (Control PCB)

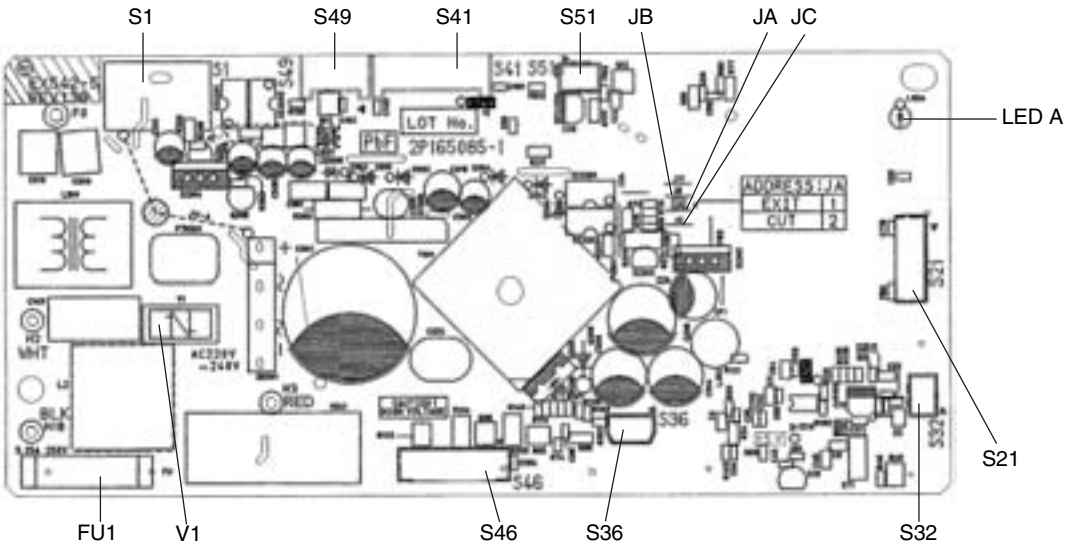
1)	V1	Varistor
2)	JA	Address setting jumper
	JB	Fan speed setting when compressor is OFF on thermostat
	JC	Power failure recovery function (auto-restart)
		∗ Refer to page 255 for detail.
3)	FU1 (F1U)	Fuse (3.15A)
4)	LED A	LED for service monitor (green)

PCB (2) (Signal Receiver PCB)

1)	SW1 (S1W)	Forced cooling operation ON / OFF switch
2)	LED2	LED for INTELLIGENT EYE (green)
3)	LED3	LED for timer (yellow)
4)	LED4	LED for operation (green)
5)	RTH1 (R2T)	Room temperature thermistor

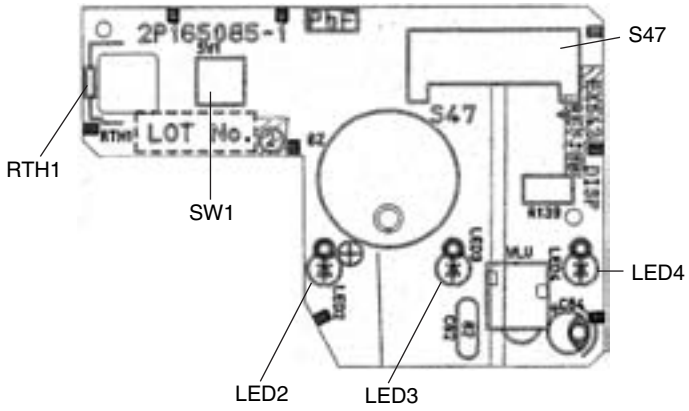
PCB Detail

PCB (1): Control PCB (indoor unit)



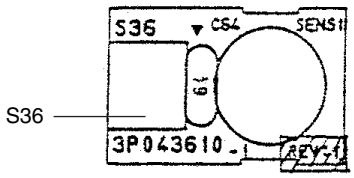
(R4991)

PCB (2): Signal Receiver PCB



(R4992)

PCB (3): INTELLIGENT EYE sensor PCB



(R4988)

1.2 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 (HA)
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)

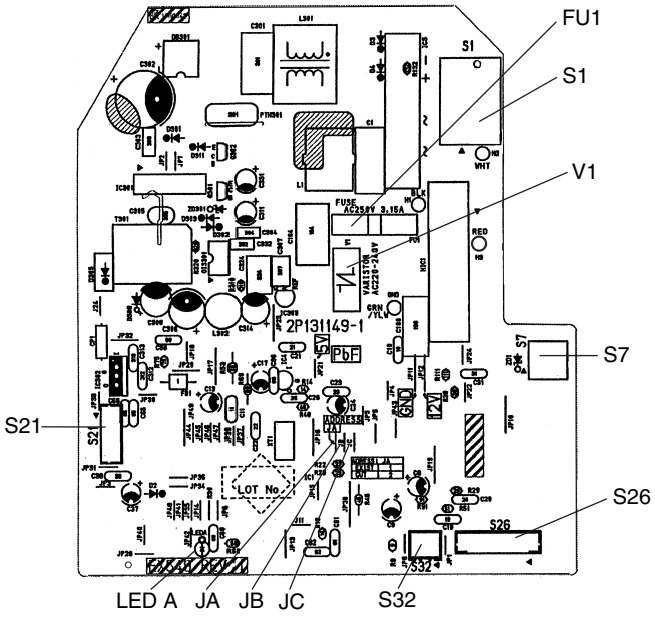
1)	V1	Varistor
2)	JA	Address setting jumper
	JB	Fan speed setting when compressor is OFF on thermostat
	JC	Power failure recovery function
		∗ Refer to page 255 for more detail.
3)	LED A	LED for service monitor (green)
4)	FU1 (F1U)	Fuse (3.15A)

PCB (2) (Display PCB)

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

PCB Detail

PCB (1): Control PCB



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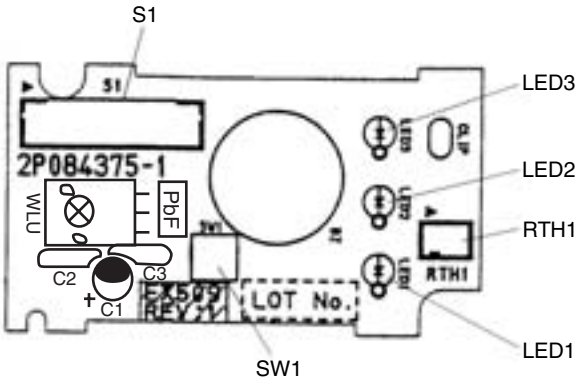
PCB (2): Display PCB



2P084375

1.3 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 255 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)

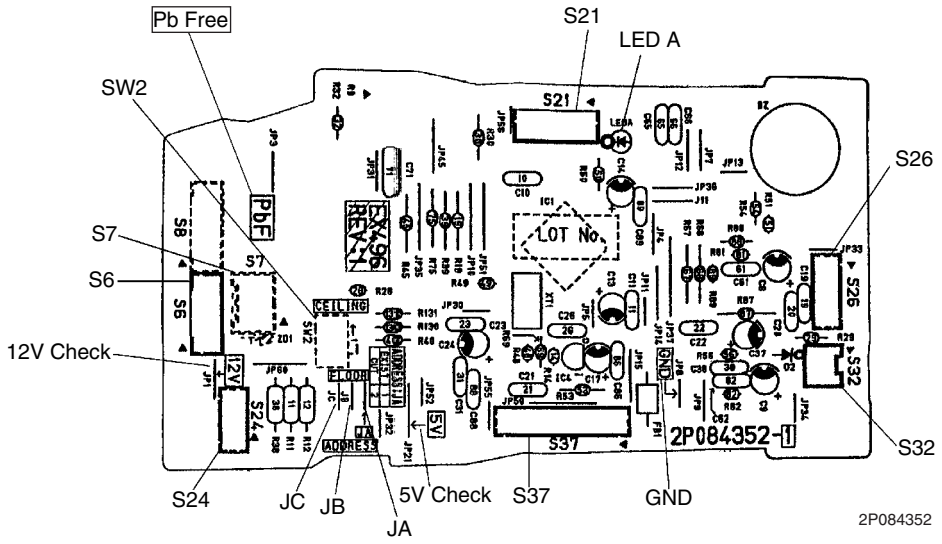
1) LED1 LED for HOME LEAVE operation (red)
2) LED2 LED for timer (yellow)
3) LED3 LED for operation (green)

PCB (4) (Signal Receiver PCB)

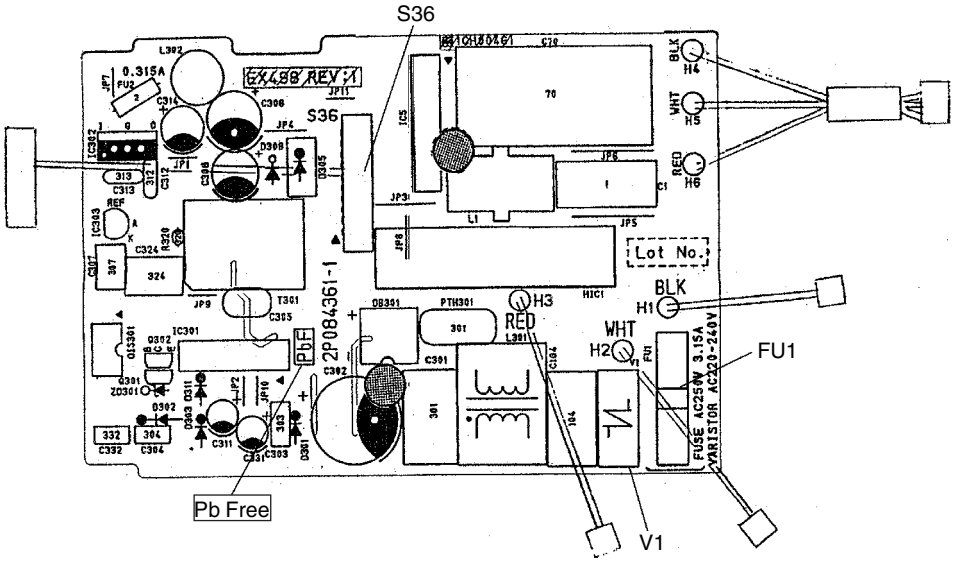
1) SW1 (S1W) Forced cooling operation ON/OFF switch

PCB Detail

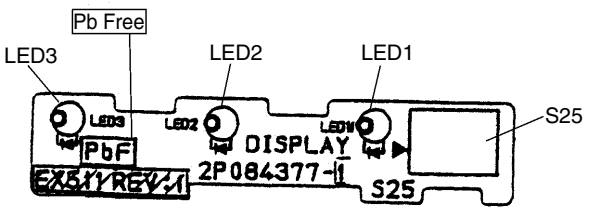
PCB (1): Control PCB



PCB (2): Power Supply PCB

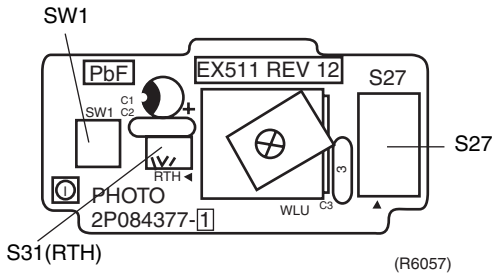


PCB (3): Display PCB



2P084377

PCB (4): Signal Receiver PCB



(R6057)

1.4 Floor Standing Type

Connectors

PCB (1) (Sensor PCB)

1)	S49	Connector for control PCB

PCB (2) (Control PCB)

1)	S1	Connector for fan motor
2)	S21	Connector for centralized control
3)	S26	Connector for service PCB
4)	S32	Connector for heat exchanger thermistor
5)	S41	Connector for lower air outlet motor
6)	S42	Connector for swing motor
7)	S46	Connector for display PCB
8)	S48	Connector for sensor PCB

PCB (3) (Service PCB)

1)	S27	Connector for control PCB

PCB (4) (Display PCB)

1)	S47	Connector for control PCB

Note: Other Designations

PCB (1) (Sensor PCB)

1)	RTH2 (R1T)	Room temperature sensor

PCB (2) (Control PCB)

1)	V2	Varistor
2)	JA	Address setting jumper
	JB	Fan speed setting when compressor is OFF on thermostat
	JC	Power failure recovery function ∗ Refer to page 255 for detail.
3)	FU1 (F1U)	Fuse (3.15A)
4)	LED A	LED for service monitor (green)

PCB (3) (Service PCB)

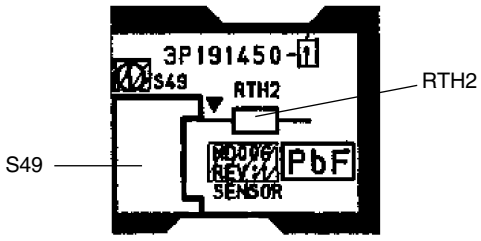
1)	SW2 (S2W)	Changing upward airflow limit switch
2)	SW4 (S4W)	Discharge changeover switch

PCB (4) (Display PCB)

1)	SW1 (S1W)	Forced cooling operation ON/OFF switch
2)	LED1	LED for operation (green)
3)	LED2	LED for timer (yellow)

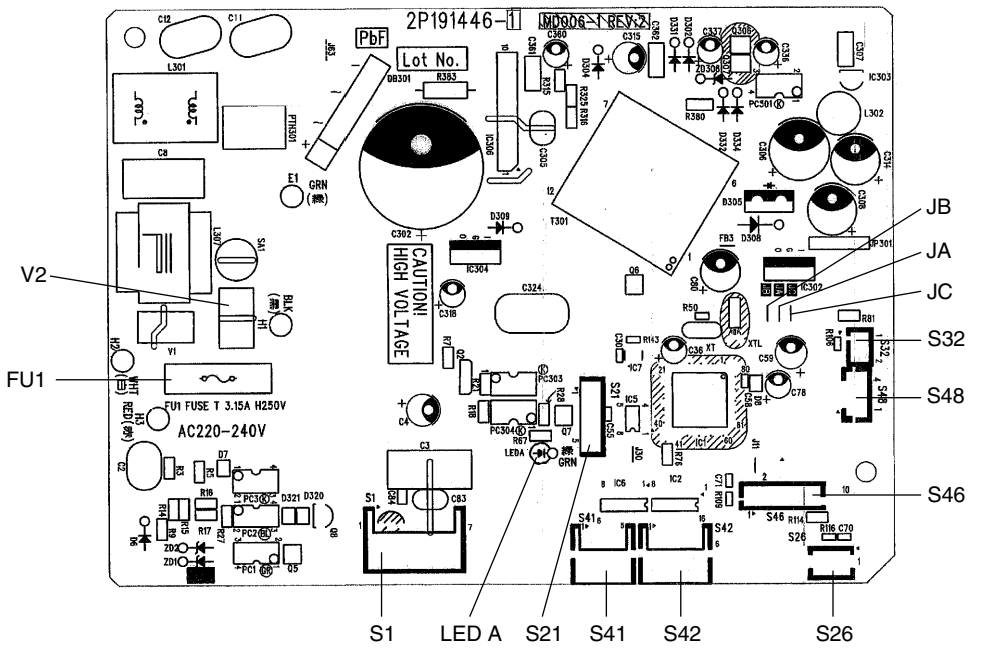
PCB Detail

PCB (1): Sensor PCB



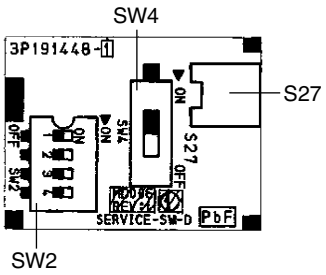
3P191450

PCB (2): Control PCB



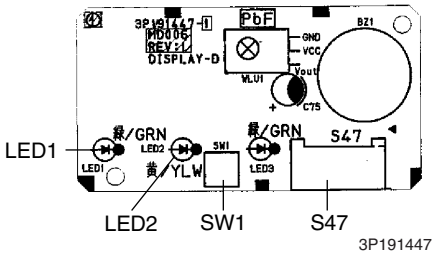
2P191446

PCB (3): Service PCB



3P191448

PCB (4): Display PCB



3P191447

★ LED3 does not function.

1.5 Ceiling Mounted Cassette Type (600×600)

Connectors

PCB (1) (Control PCB [A1P])

1)	X5A	Connector for terminal strip (for wired remote controller)
2)	X10A, X11A	Connector for transformer
3)	X15A	Connector for float switch
4)	X17A, X18A	Connector for heat exchanger thermistor
5)	X19A	Connector for room temperature thermistor
6)	X20A	Connector for fan motor
7)	X24A	Connector for signal receiver PCB (when the wireless remote controller is used)
8)	X25A	Connector for drain pump motor
9)	X27A	Connector for terminal strip (for inter unit wiring)
10)	X33A	Optional connector for wiring adaptor PCB
11)	X35A	Optional connector for group control adaptor
12)	X36A	Connector for swing motor
13)	X40A	Optional connector for ON/OFF input from outside
14)	X60A, X61A	Optional connector for interface adaptor

PCB (2) (Signal Receiver PCB [A3P])

1)	X1A	Connector for display PCB
2)	X2A	Connector for control PCB

PCB (3) (Display PCB [A4P])

1)	X1A	Connector for signal receiver PCB

Note: Other designation

PCB (1) (Control PCB [A1P])

1)	HAP	Service monitor LED

PCB (2) (Signal Receiver PCB [A3P])

1)	SS2	Address setting switch

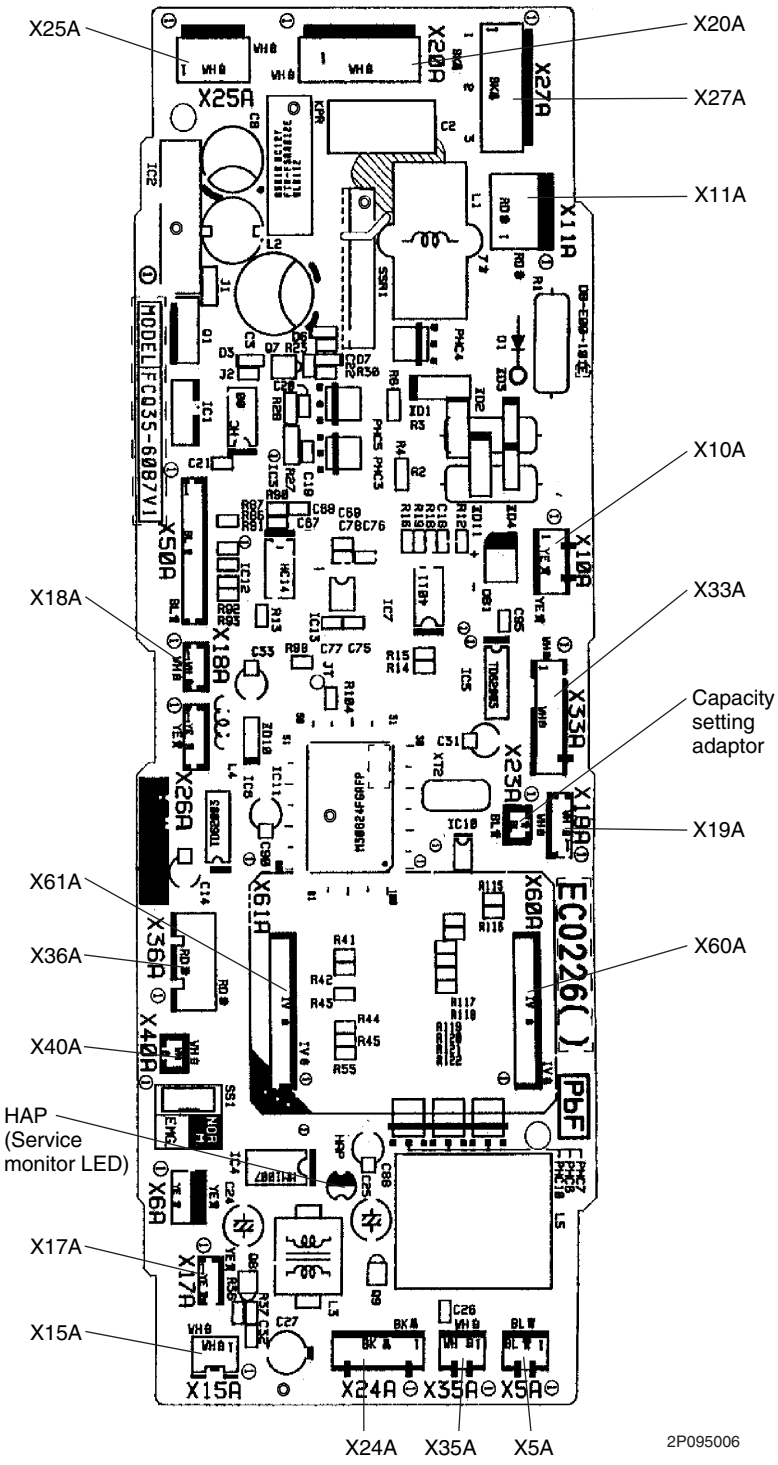
PCB (3) (Display PCB [A4P])

1)	BS1	Forced cooling operation ON/OFF switch
2)	LED1(H1P)	LED for operation (red)
3)	LED2(H2P)	LED for timer (green)
4)	LED3(H3P)	LED for filter cleaning sign (red)
5)	LED4(H4P)	LED for defrost operation (orange)

Note: The wireless remote controller kit contains A3P and A4P.

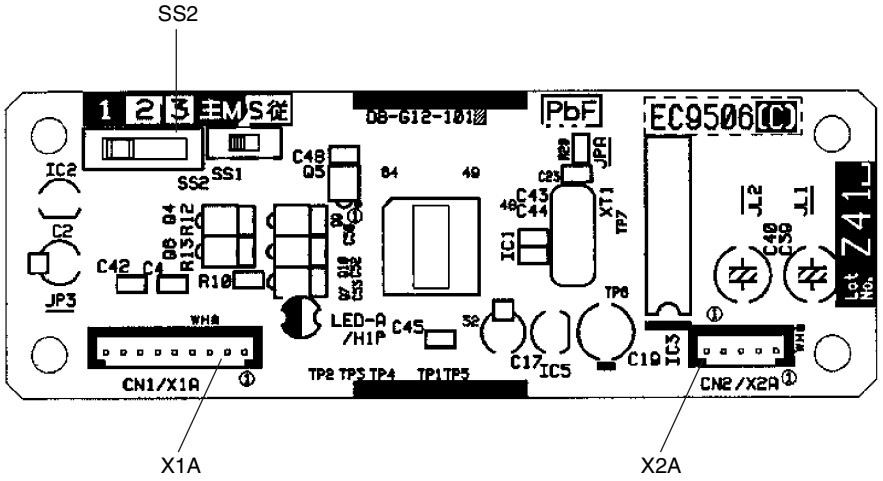
PCB Detail

PCB (1): Control PCB (A1P)



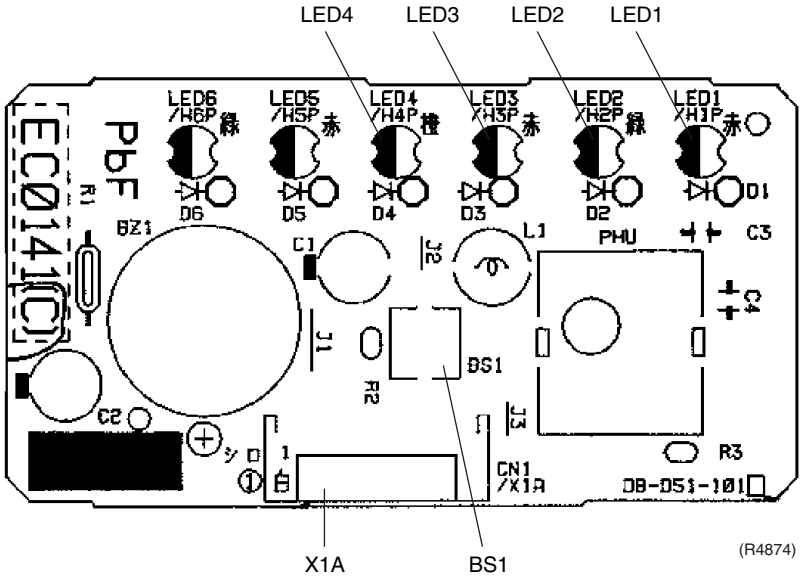
PCB Detail

PCB (2): Signal Receiver PCB (A3P)



(R4873)

PCB (3): Display PCB (A4P)



(R4874)

★ LED5 and LED6 do not function.

1.6 Outdoor Units

Connectors

PCB (1) (Control PCB)

1) S20	Connector for electronic expansion valve coil A port
2) S21	Connector for electronic expansion valve coil B port
3) S40	Connector for overload protector
4) S45	Connector for terminal strip (thermal fuse)
5) S70	Connector for fan motors
6) S80	Connector for four way valve coil
7) S90	Connector for thermistors (outdoor air, heat exchanger and discharge pipe)
8) S91	Connector for thermistors (gas pipe)
9) S92	Connector for thermistors (liquid pipe)

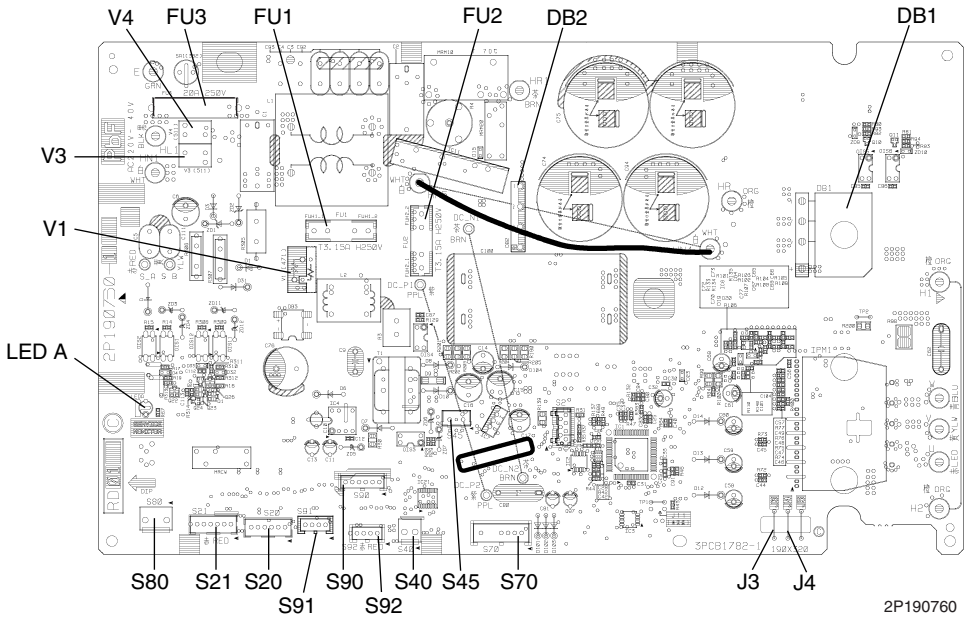
Note: Other Designations

PCB (1) (Control PCB)

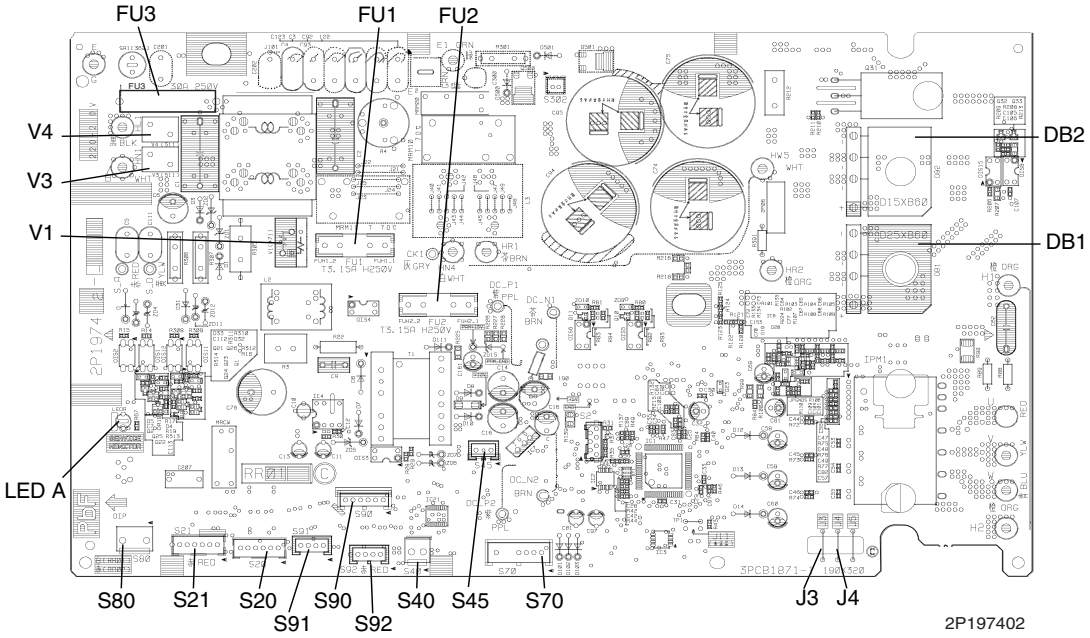
1) LED A	Service Monitor LED (Green)
2) FU1, FU2	Fuse (3.15A/250V)
3) FU3	Fuse (40 class: 20A, 50 class: 30A)
4) DB1, DB2	Diode bridge
5) J3	Jumper for ECONO mode prohibition setting (Refer to page 262)
6) J4	Jumper for maximum power input limitation setting (Refer to page 263)
7) V1, V3, V4	Varistor

PCB Detail

PCB (1): Control PCB (40 class)



PCB (1): Control PCB (50 class)



Part 4
Function and Control

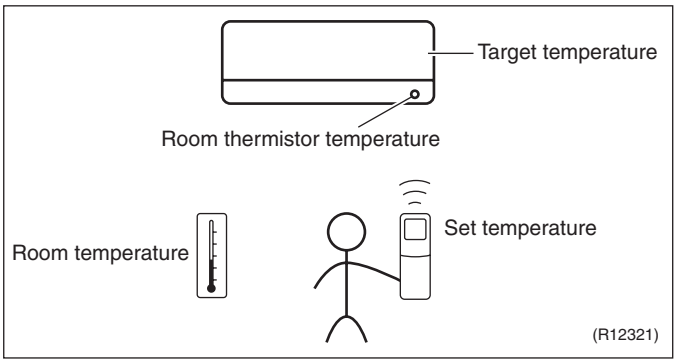
1. Main Functions

1.1 Temperature Control

Definitions of Temperatures

The definitions of temperatures are classified as following.

- Room temperature: temperature of lower part of the room
- Set temperature: temperature set by remote controller
- Room thermistor temperature: temperature detected by room temperature thermistor
- Target temperature: temperature determined by microcomputer



★ The illustration is for wall mounted type as representative.

Temperature Control

The temperature of the room is detected by the room temperature thermistor. However, there is difference between the “temperature detected by room temperature thermistor” and the “temperature of lower part of the room”, depending on the type of the indoor unit or installation condition. Practically, the temperature control is done by the “target temperature appropriately adjusted for the indoor unit” and the “temperature detected by room temperature thermistor”.

1.2 Frequency Principle

Main Control Parameters

The compressor is frequency-controlled during normal operation. The target frequency is set by the following 2 parameters coming from the operating indoor unit:

- The load condition of the operating indoor unit
- The difference between the room thermistor temperature and the target temperature

Additional Control Parameters

The target frequency is adapted by additional parameters in the following cases:

- Frequency restrictions
- Initial settings
- Forced cooling operation

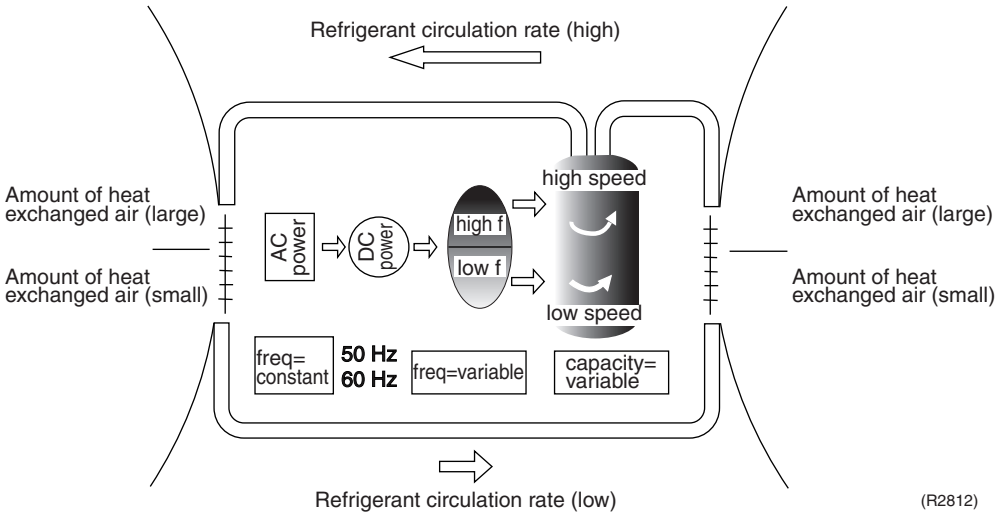
Inverter Principle

To regulate the capacity, a frequency control is needed. The inverter makes it possible to vary the rotation speed of the compressor. The following table explains the conversion principle:

Phase	Description
1	The supplied AC power source is converted into the DC power source for the present.
2	The DC power source is reconverted into the three phase AC power source with variable frequency. ■ When the frequency increases, the rotation speed of the compressor increases resulting in an increased refrigerant circulation. This leads to a higher amount of the heat exchange per unit. ■ When the frequency decreases, the rotation speed of the compressor decreases resulting in a decreased refrigerant circulation. This leads to a lower amount of the heat exchange per unit.

Drawing of Inverter

The following drawing shows a schematic view of the inverter principle:



Inverter Features

The inverter provides the following features:

- The regulating capacity can be changed according to the changes in the outdoor temperature and cooling / heating load.
- Quick heating and quick cooling
  The compressor rotational speed is increased when starting the heating (or cooling). This enables to reach the set temperature quickly.
- Even during extreme cold weather, the high capacity is achieved. It is maintained even when the outdoor temperature is 2°C.
- Comfortable air conditioning
  A fine adjustment is integrated to keep the room temperature constant.
- Energy saving heating and cooling
  Once the set temperature is reached, the energy saving operation enables to maintain the room temperature at low power.

Frequency Limits

The following table shows the functions that define the minimum and maximum frequency:

Frequency limits	Limited during the activation of following functions
Low	■ Four way valve operation compensation. Refer to page 83.
High	■ Discharge pipe temperature control. Refer to page 85. ■ Input current control. Refer to page 85. ■ Compressor protection function. Refer to page 84. ■ Heating peak-cut control. Refer to page 86. ■ Freeze-up protection control. Refer to page 86. ■ Defrost control. Refer to page 88.

Forced Cooling Operation

For more information, refer to “Forced cooling operation mode” on page 251.

1.3 Power-Airflow Flaps, Wide-Angle Louvers, Auto-Swing, COMFORT AIRFLOW Mode and 3-D Airflow

Power-airflow 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 / Dry Mode

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

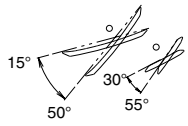
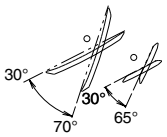
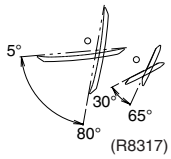
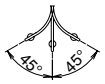
Wide-Angle Louvers

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

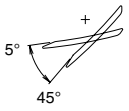
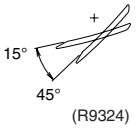
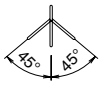
Auto-Swing

In case of F(A)TXS20-50G

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

Vertical Swing (up and down)			Horizontal Swing (right and left)
Cooling / Dry	Heating	Fan	
 (R8315)	 (R8316)	 (R8317)	 (R8318)

In case of ATX20-35G

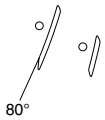
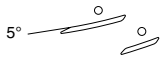
Vertical Swing (up and down)		Horizontal Swing (right and left: manual)
Cooling / Dry / Fan	Heating	
 (R9323)	 (R9324)	 (R9325)

COMFORT AIRFLOW Mode

F(A)TXS20-50G

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

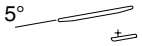
- The airflow rate is controlled automatically within the following steps.
  Cooling: L tap – MH tap (same as AUTOMATIC)
  Heating: Equivalent to ML tap – MH tap
- The latest command has the priority between POWERFUL and COMFORT AIRFLOW.

Heating	Cooling
 (R8413)	 (R4302)

F(C)(A)TXG25-50E

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

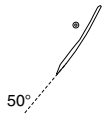
- The airflow rate is set to AUTOMATIC.
- The airflow rate has the upper limit (M tap) in heating mode.
- The latest command has the priority between POWERFUL and COMFORT AIRFLOW.

Heating	Cooling, Dry
 (R3297)	 (R3298)

ATX20-35G

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

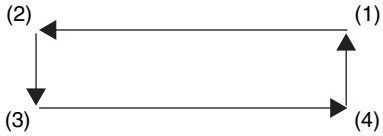
- The airflow rate is controlled automatically within the following steps.
  Cooling: L tap – H tap (same as AUTOMATIC)
  Heating: LL tap – H tap
- The latest command has the priority between POWERFUL and COMFORT AIRFLOW.

Heating	Cooling
 (R9326)	 (R9327)

3-D Airflow

F(A)TXS20-50G, F(C)(A)TXG25-50E

- 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.



(R1024)

1.4 Operation Starting Control

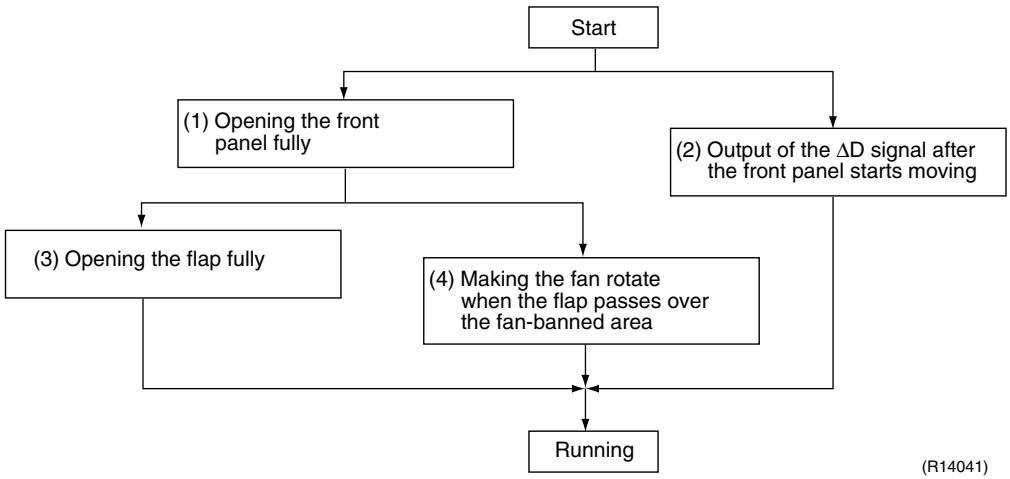
F(C)(A)TXG25-50E

The system carries out the following control at the beginning to conduct every functional parts properly.

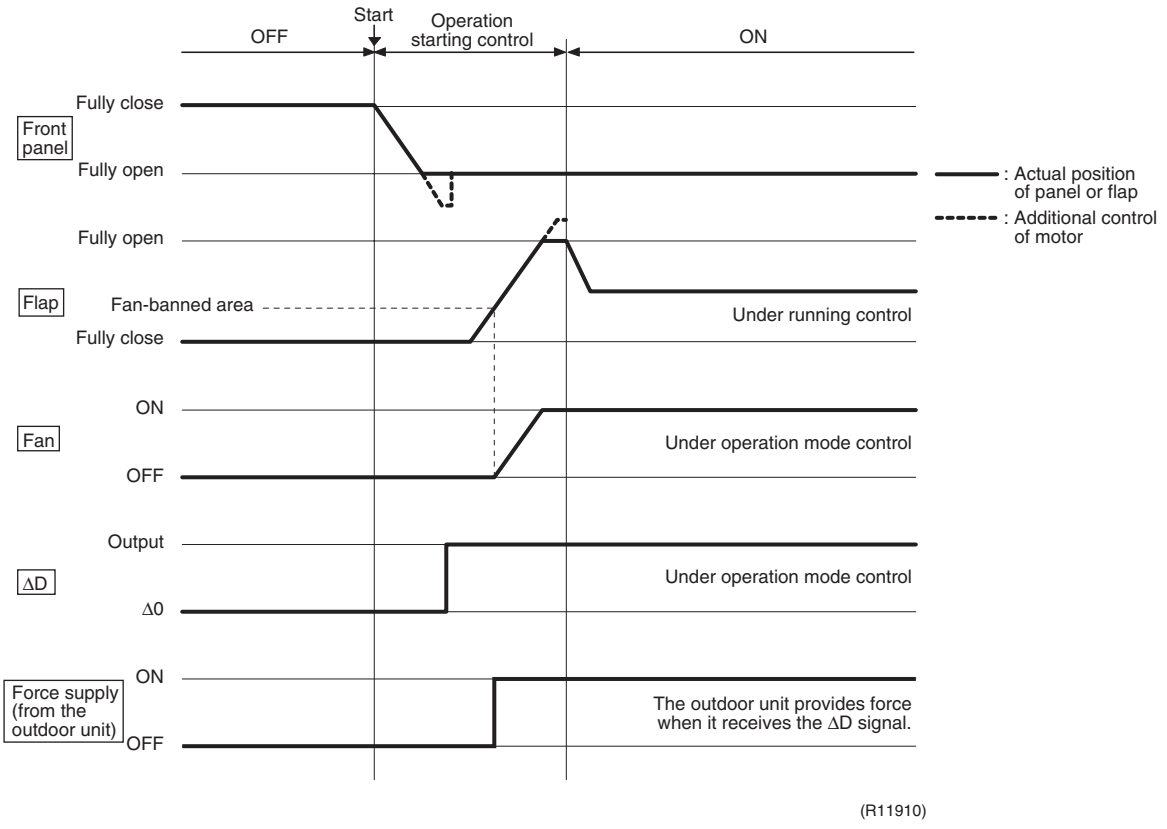
1. Opening the front panel fully
2. Output of the ΔD signal after the front panel starts moving
3. Opening the flap fully after the front panel opens fully
4. Making the fan rotate when the flap passes over the fan-banned area

Fan-banned area: The fan is prohibited to rotate until the flap angle exceeds certain level.

Control Flow



Timing Chart



1.5 Fan Speed Control for Indoor Units

Control Mode

Phase control and fan speed control contains 9 steps: LLL, LL, SL, L, ML, M, MH, H, and HH. The airflow rate can be automatically controlled depending on the difference between the room thermistor temperature and the target 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 177.

Fan Speed Steps

In automatic fan speed operation, the step “SL” is not available.

	F(A)TXS20-50G F(C)(A)TXG25-50E FVXS25-50F		FDK(X)S25-35EA FDK(X)S50C FLK(X)S25-50BA	
Step	**Cooling**	**Heating**	**Cooling**	**Heating**
LLL LL L ML M MH H	⟺ (R11681)	⟺ (R6834)	⟺ (R6833)	⟺ (R6834)
HH (POWERFUL)	H+70 (FTXG25/35E, ATXG25/35E) H+50 (FTXS20-50G, ATXS20-50G, ATXG50E, CTXG50E) H+40 (FVXS25-50F)	H+50 (FTXS20-50G, ATXS20-50G, FTXG25/35E, ATXG25-50E, CTXG50E) H+40 (FVXS25-50F)	H+50	H+50

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

Note:

1. Fan stops during defrost operation.
2. In time of thermostat OFF, the fan rotates at the following speed.
   Cooling : The fan keeps rotating at the set tap.
   Heating : The fan keeps rotating at LLL tap (FTXS, ATXS and FVXS series) or stops (the other models).

In case of ATX20-35G

Step	Cooling	Heating	Dry Mode
LLL (Heating thermostat OFF) LL L ML M MH H HH (POWERFUL)	⟺ (R14044)	⟺ (R14045)	L tap (During POWERFUL operation: L+80rpm)

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

Note:

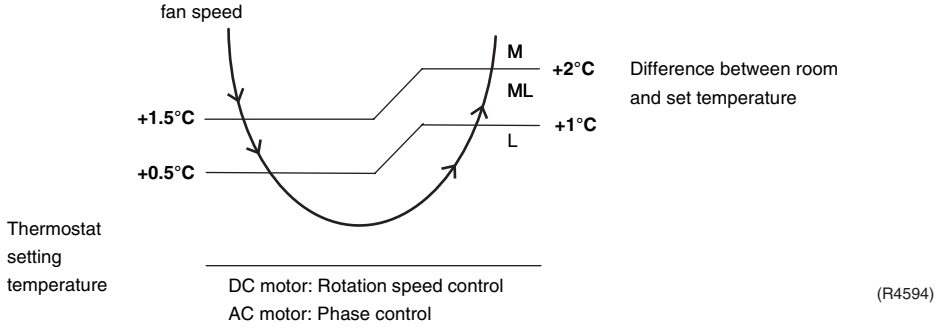
1. During POWERFUL operation, fan operate H tap + 80 rpm.
2. Fan stops during defrost operation.
3. The airconditioner does not operate with MH tap from a start of the auto fan speed operation for about 30 minutes.

Automatic Airflow Control for Heating

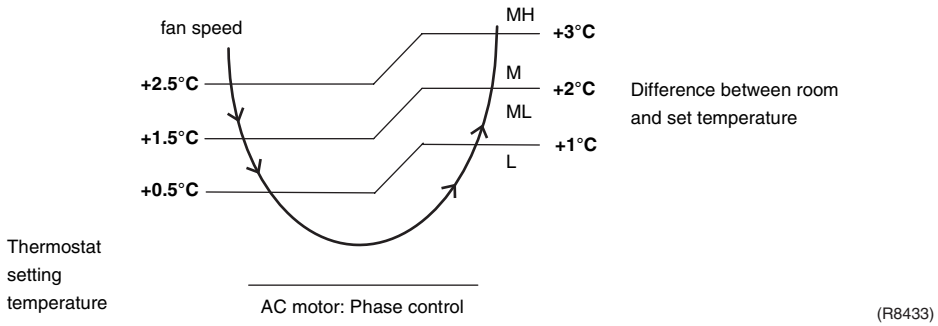
On heating mode, the indoor fan speed is regulated according to the indoor heat exchanger temperature and the difference between the room temperature and the required set point.

Automatic Airflow Control for Cooling

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



In case of ATX20-35G



1.6 Program Dry Function

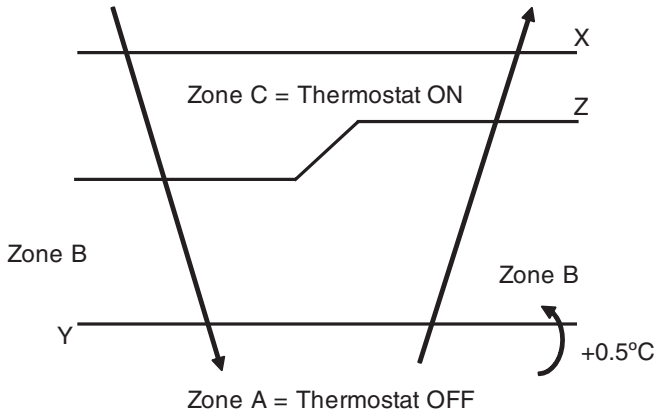
Outline

Program dry operation removes humidity while preventing the room temperature from lowering. Since the microcomputer controls both the temperature and airflow rate, the temperature adjustment and fan adjustment buttons are inoperable in this mode.

Detail

The microcomputer automatically sets the temperature and airflow rate. The difference between the room thermistor temperature at start-up and the target temperature 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 thermistor temperature at start-up	Target temperature X	Thermostat OFF point Y	Thermostat ON point Z
24°C or more	Room thermistor temperature at start-up	X – 2.5°C	X – 0.5°C or Y + 0.5°C (zone B) continues for 10 min.
23.5°C ~ 18°C		X – 2.0°C	X – 0.5°C or Y + 0.5°C (zone B) continues for 10 min.
17.5°C ~	18°C	X – 2.0°C	X – 0.5°C = 17.5°C or Y + 0.5°C (zone B) continues for 10 min.



(R11581)

1.7 Automatic Operation

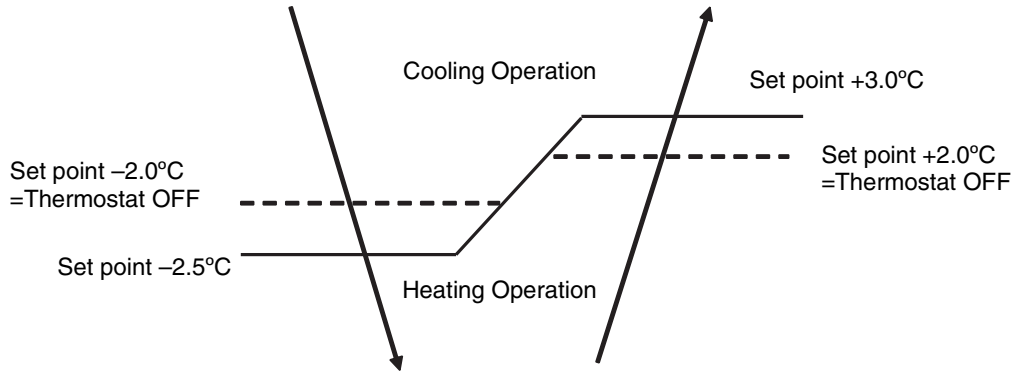
Automatic Cooling / Heating Function (Heat Pump Only)

When the AUTO mode is selected with the remote controller, 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 controller setting temperature is set as automatic cooling / heating setting temperature (18 to 30°C).
2. Main unit setting temperature equals remote controller setting temperature.
3. Operation ON / OFF point and mode switching point are as follows.
   (1) Heating → Cooling switching point:
   Room temperature ≥ Main unit setting temperature +3.0 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 ≥ Remote controller setting temperature: Cooling operation
   Room temperature < Remote controller setting temperature: Heating operation



(R9417)

Ex: When the set point is 25°C

Cooling Operation → 23°C: Thermostat OFF → 22°C: Switch to Heating Operation
Heating Operation → 27°C: Thermostat OFF → 28°C: Switch to Cooling Operation

1.8 Thermostat Control

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

Thermostat OFF Condition

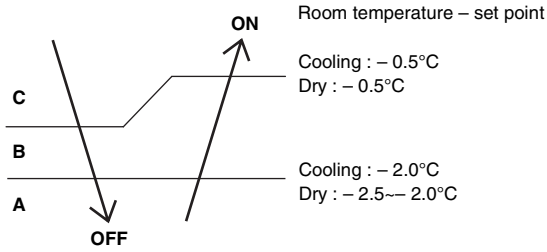
- The temperature difference is in the zone A.

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)

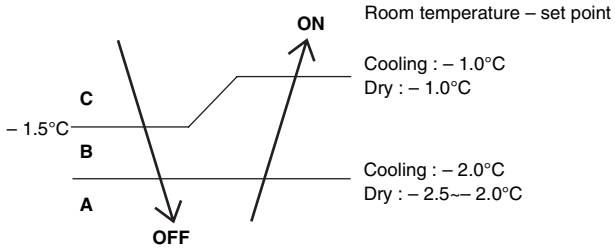
Cooling / Dry

- Wall Mounted Type
- Floor standing Type



(R4668)

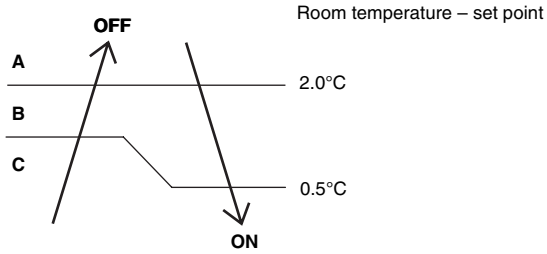
- Floor/Ceiling suspended Type
- Duct Connected Type



(R6032)

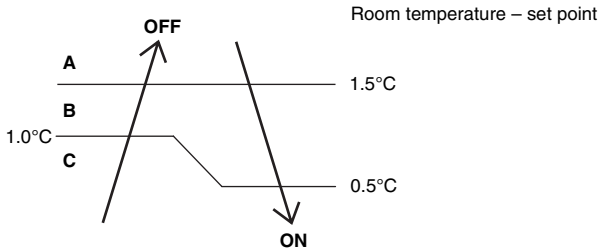
Heating

- Wall Mounted Type
- Floor standing Type



(R9686)

- Floor/Ceiling suspended Type
- Duct Connected Type



(R6033)

1.9 Night Set Mode

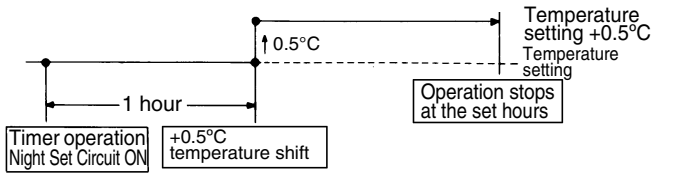
When the OFF timer is set, the NIGHT SET Mode is automatically activated. The NIGHT SET Mode keeps the airflow rate setting.

The Night Set Circuit

The NIGHT SET Mode continues operation at the target temperature for the first one hour, then automatically raises the target temperature slightly in the case of cooling, or lowers it slightly in the case of heating. This prevents excessive cooling in summer and excessive heating in winter to ensure comfortable sleeping conditions, and also conserves electricity.

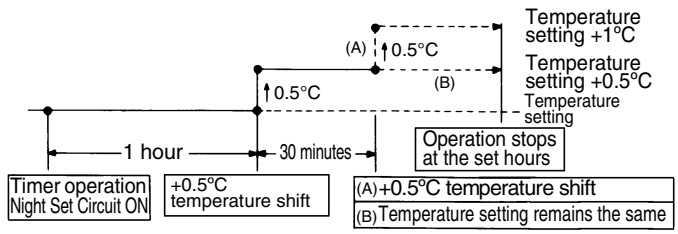
Cooling Operation

Wall Mounted Type, Floor Standing Type



(R4421)

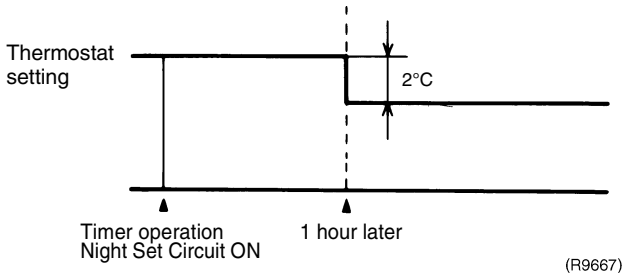
Duct Connected Type, Floor / Ceiling Suspended Dual Type



(A): ● When outside temperature is normal and room temperature is at set temperature.
(B): ● When outside temperature is high (27°C or higher).

(R1361)

Heating Operation



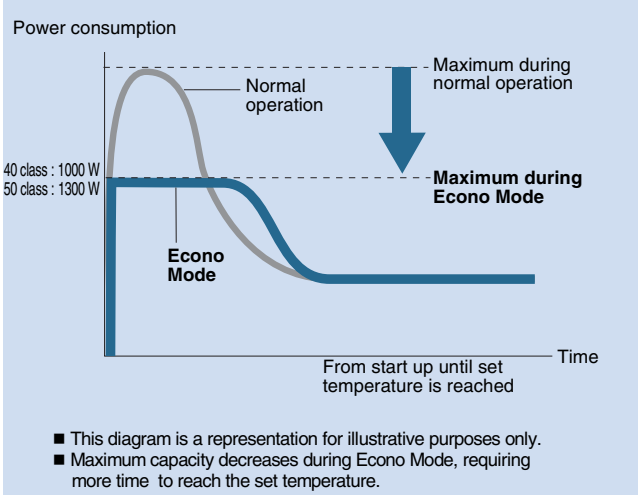
(R9667)

1.10 ECONO Mode

Outline

F(A)TXS20-50G, ATX20-35G, FVXS25-50F

ECONO Mode is a function that sets a limit for power consumption. A maximum power consumption of 1000 W (40 class) or 1300W (50 class) is the limit for the 2MK(X)S40/50H and 2AMX40/50G. This mode is useful for preventing circuit breakers from being overloaded by the use of multiple air conditioners and other electrical devices. The function is easily activated from the remote controller by pushing the ECONO button. ECONO Mode is available for all wall-mounted models.



(R8461)

Details

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

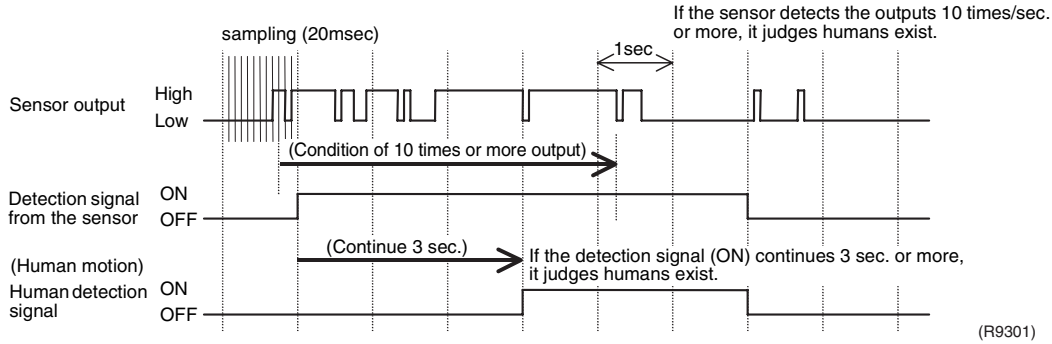
1.11 2 AREA INTELLIGENT EYE (FTXS)

The following functions can be performed by a human motion sensor (INTELLIGENT EYE).

1. Reduces the capacity when there is no human in the room in order to save electricity. (energy saving operation)
2. Divides the room into plural areas and detects existence of humans in each area. Shifts the airflow direction to the area having no human automatically to avoid direct airflow on humans.

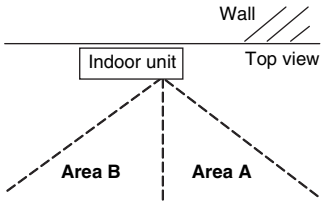
Processing

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 msec.× 10 = 200 msec.), and when the ON signal continues 3 seconds, it judges human is in the room as the motion signal is ON
- INTELLIGENT EYE sensor is divided into 2 areas and detects humans in each area.

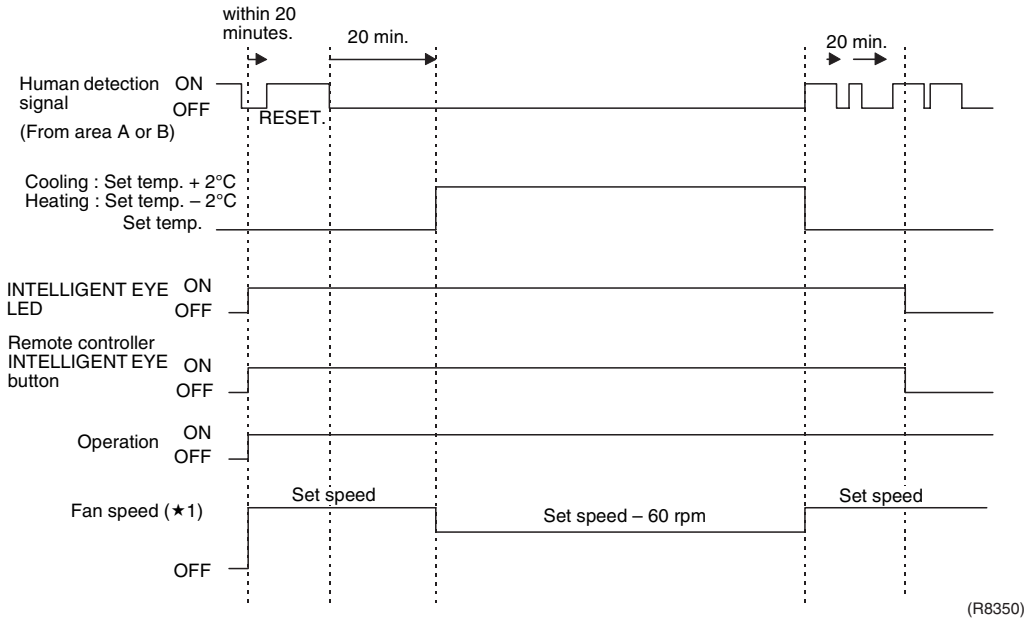
■ **Image of 2 AREA INTELLIGENT EYE**



· A microcomputer judges human existence in area A and B by the sensor signal from each

(R3854)

2. The motions in energy saving operation (for example: in cooling)

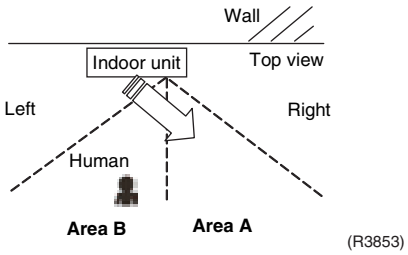


- When a microcomputer does not have a signal from the sensor in 20 minutes, it judges that nobody is in the room and operates the unit in temperature shifted 2°C from the set temperature. (Cooling/Dry : 2°C higher, Heating : 2°C lower and AUTO : according to the operation mode at that time.)

★1 In case of FAN mode, the fan speed reduces by 60 rpm.

3. Airflow direction in 2 AREA INTELLIGENT EYE operation

- Detection method: The opposite area of detected area is set as the target direction.



1. Detection signal ON in both area A and B: Shift the airflow direction to area B (left side)
2. Detection signal ON in area A: Shift the airflow direction to area B (left side)
3. Detection signal ON in area B: Shift the airflow direction to area A (right side)
4. Detection signal OFF in both area A and B: No change

* When the detection signal OFF in both area A and B, the unit starts energy saving operation.

Others

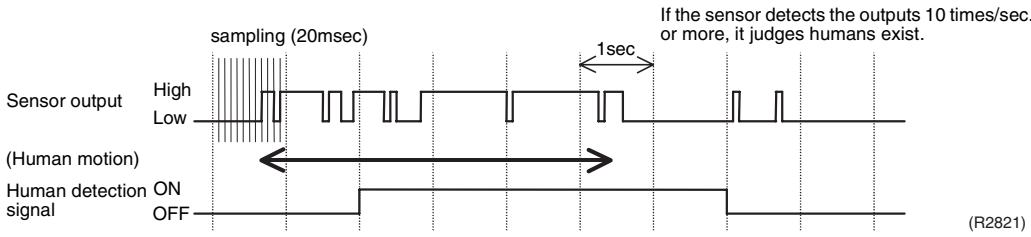
- The dry operation can not command the setting temperature with a remote controller, but internally the set temperature is shifted by 1°C.

1.12 INTELLIGENT EYE (ATXS, FTXG, ATXG, CTXG)

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.

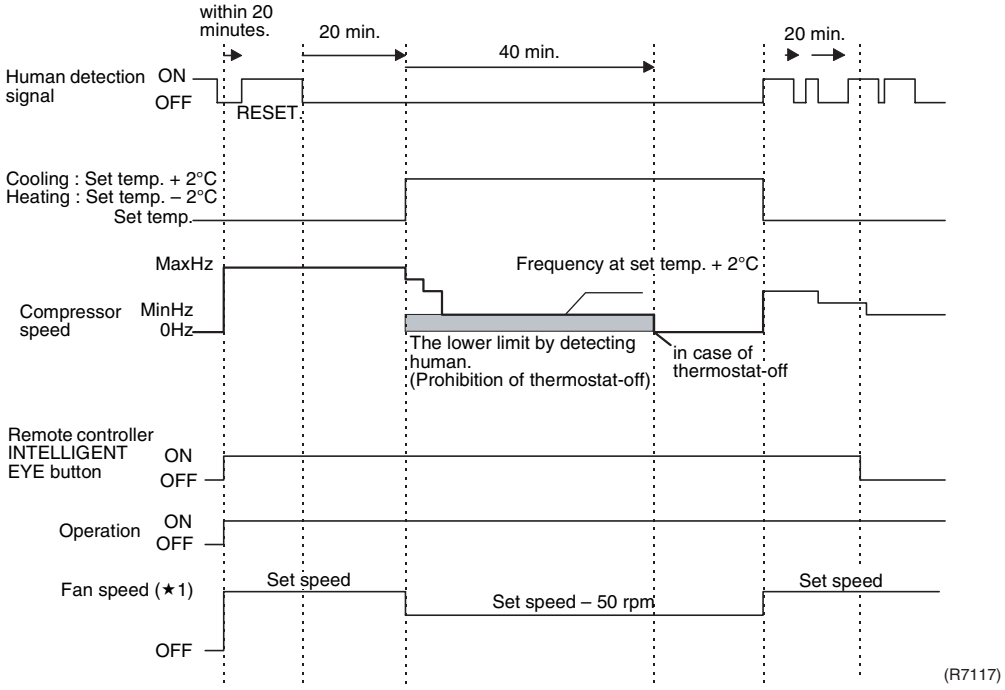
Processing

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 msec.× 10 = 200 msec.), it judges human is in the room as the motion signal is ON.

2. The motions (for example: in cooling)



- When a microcomputer does not have a signal from the sensor in 20 minutes, it judges that nobody is in the room and operating the unit in temperature shifted 2°C from the set temperature. (Cooling/Dry : 2°C higher, Heating : 2°C lower 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 40 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 not command the setting temperature with a remote controller, but internally the set temperature is shifted by 1°C.

1.13 HOME LEAVE Operation

Outline

FDK(X)S, FLK(X)S

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

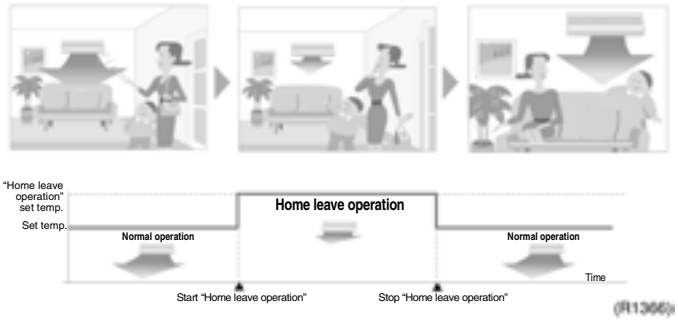
A mark representing [HOME LEAVE] is indicated on the liquid crystal display of the remote controller. The indoor unit is operated according to the set temperature and air volume for HOME LEAVE which were pre-set in the memory of the remote controller.

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

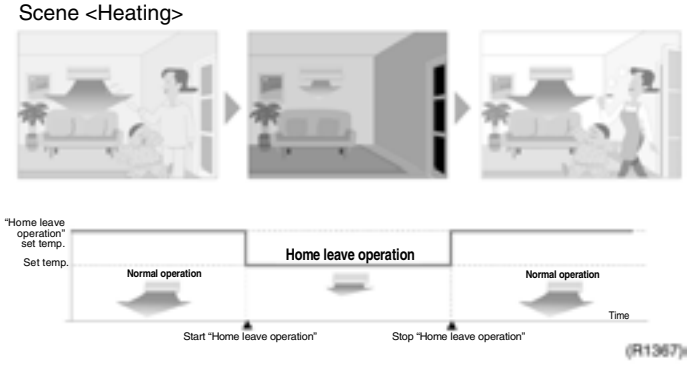
3. End of Function

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

1.14 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.

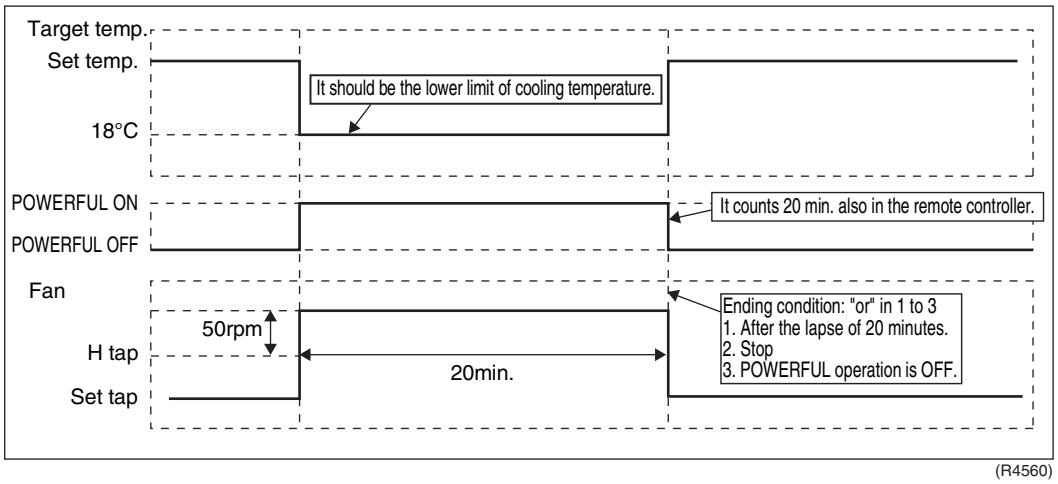
Details of the Control

When POWERFUL button is pushed in each operation mode, the fan speed / setting temperature is converted to the following states in a period of 20 minutes.

In case of F(A)TXS20-50G

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.



Refer to “Fan Speed Control” on page 61 for detail.

1.15 Other Functions

1.15.1 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 airflow 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.

1.15.2 Signal Receiving Sign

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

1.15.3 ON/OFF Button on Indoor Unit

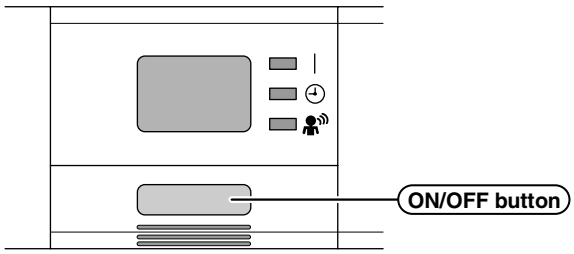
An ON/OFF button is provided on the display of the unit.

- Press this button once to start operation. Press once again to stop it.
- This button is useful when the remote controller is missing or the battery has run out.
- The operation mode refers to the following table.

	Mode	Temperature setting	Airflow rate
Cooling Only	COOL	22°C	Automatic
Heat Pump	AUTO	25°C	Automatic

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

In case of F(A)TXS20-50G



(R8302)

<Forced operation mode>

Forced operation mode can be started by pressing the ON/OFF button for 5 to 9 seconds while the unit is not operating.
Refer to "Forced cooling operation mode" on page 251 for detail.

Note: When the ON/OFF button is pressed for 10 seconds or more, the forced operation is stopped.

1.15.4 Titanium Apatite Photocatalytic Air-Purifying Filter

For F(A)TXS20-50G, ATX20-35G, F(C)(A)TXG25-50E, FVXS25-50F

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 odors and even deactivates bacteria and viruses. It lasts for 3 years without replacement if washed about once every 6 months.

1.15.5 Photocatalytic Deodorizing Filter

For FLK(X)S25-50B

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.

1.15.6 Air-Purifying Filter

For FLK(X)S25-50B

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.

1.15.7 Air Filter (Prefilter)

The air filter net is impregnated with a safe, odourless mould preventative to make the filter virtually immune to mould.

1.15.8 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 standby function is activated.

1.15.9 WEEKLY TIMER Operation

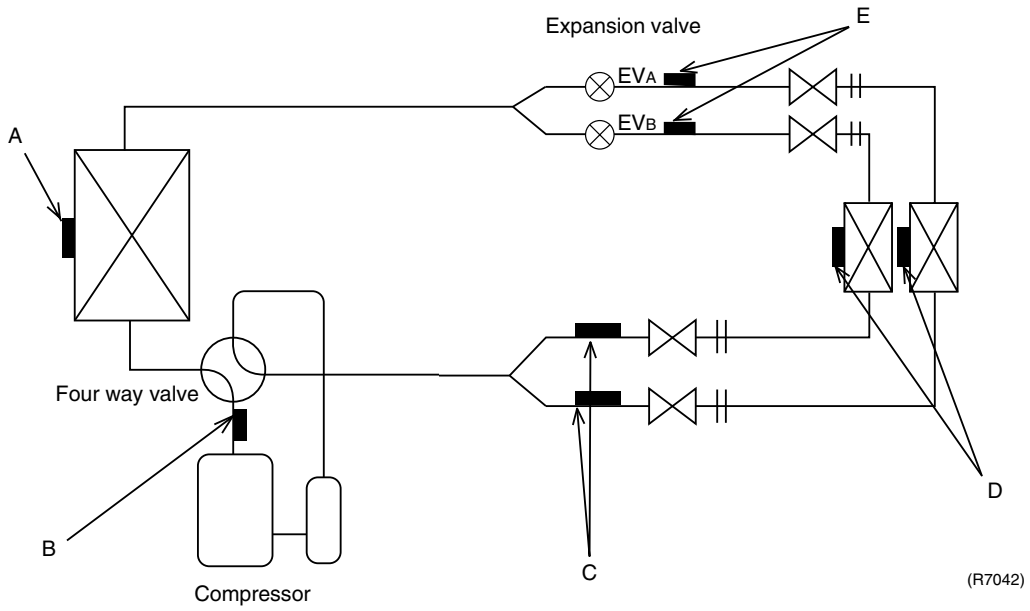
For FTXS20-50G, FVXS25-50F

Up to 4 timer settings can be saved for each day of the week (up to 28 settings in total). Those 3 items of “ON / OFF”, “temperature” and “time” can be set.

See page 145 for detail.

2. Function of Thermistor

2.1 Heat Pump Model



A Outdoor Heat Exchanger Thermistor

1. The outdoor heat exchanger thermistor is used for controlling target discharge pipe temperature.
   The system sets a target discharge pipe temperature according to the outdoor and indoor heat exchanger temperature, and controls the electronic expansion valve opening so that the target discharge pipe temperature can be obtained.
2. The outdoor heat exchanger thermistor is used for detecting disconnection of the discharge pipe thermistor when cooling.
   When the discharge pipe temperature becomes lower than the outdoor heat exchanger temperature, the discharge pipe thermistor is judged as disconnected.
3. The outdoor heat exchanger thermistor is used for high pressure protection during cooling operation.

B Discharge Pipe Thermistor

1. The discharge pipe thermistor is used for controlling temperature of the discharge pipe.
   If the temperature of discharge pipe (used in place of the inner temperature of the compressor) rises abnormally, the operating frequency drops or the operation halts.
2. The discharge pipe thermistor is used for detecting disconnection of the discharge pipe thermistor.

C Gas Pipe Thermistor

1. In cooling, the gas pipe thermistors are used for gas pipe isothermal control.
   The system controls electronic expansion valve opening so that gas pipe temperature in each room becomes equal.

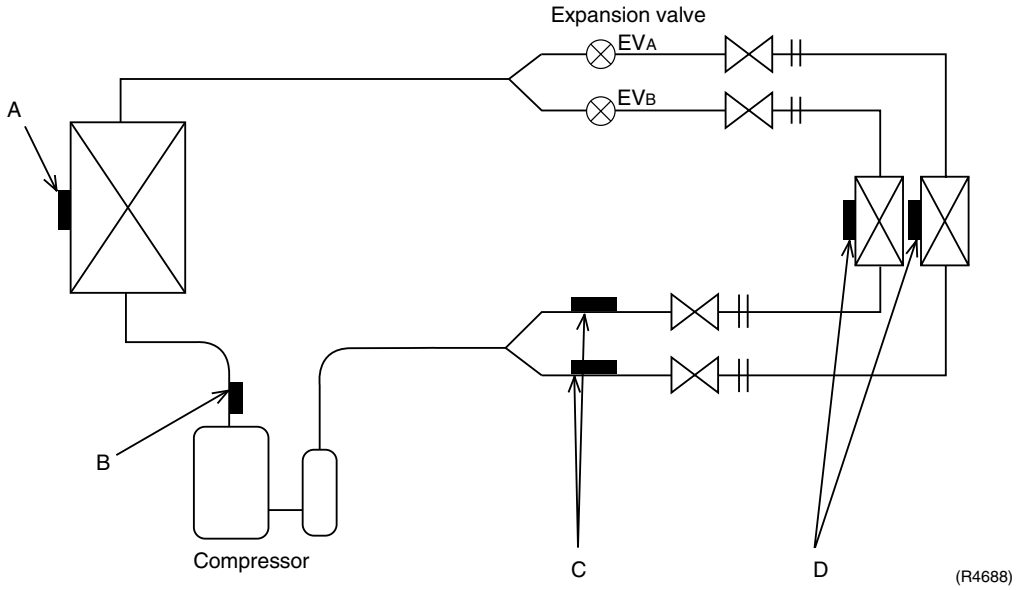
D Indoor Heat Exchanger Thermistor

1. The indoor heat exchanger thermistors are used for controlling target discharge pipe temperature.
   The system sets a target discharge pipe temperature according to the outdoor and indoor heat exchanger temperature, and controls the electronic expansion valve opening so that the target discharge pipe temperature can be obtained.
2. The indoor heat exchanger thermistor is used to prevent freezing.
   During the cooling operation, if the temperature drops abnormally, the operating frequency becomes lower, then the operation halts.
3. The indoor heat exchanger thermistor is used for anti-icing control.
   During the cooling operation, if the heat exchanger temperature in the room where operation is halted becomes –1°C, or if the room temperature - heat exchanger temperature in the room where operation is halted becomes ≥10°C, it is assumed as icing.
4. The indoor heat exchanger thermistors are used for detecting disconnection of the discharge pipe thermistor when heating.
   When the discharge pipe temperature become lower than the maximum temperature of the indoor heat exchanger temperature, the discharge pipe thermistor is judged as disconnected.
   The indoor heat exchanger thermistors are also used for preventing abnormal high pressure.
5. When only one indoor unit is operating, the indoor heat exchanger thermistor is used for sub-cooling control.
   The actual sub-cooling is calculated from the liquid pipe temperature and the heat exchanger temperature. The system controls the electronic expansion valve opening to reach the target sub-cooling.

E Liquid Pipe Thermistor

1. When only one indoor unit is heating, the indoor liquid pipe thermistor is used for a sub-cooling control.
   The system calculates the actual sub-cooling with the liquid pipe temperature and the maximum heat exchanger temperature between rooms, and controls the opening of the electronic expansion valve to reach the target sub-cooling.
2. When all indoor units are heating, the liquid pipe thermistor is used for liquid pipes isothermal control.
   The system controls electronic expansion valve opening so that liguid pipe temperature in each room becomes equal.

2.2 Cooling Only Model



A Outdoor Heat Exchanger Thermistor

1. The outdoor heat exchanger thermistor is used for controlling target discharge pipe temperature.
   The system sets a target discharge pipe temperature according to the outdoor and indoor heat exchanger temperature, and controls the electronic expansion valve opening so that the target discharge pipe temperature can be obtained.
2. The outdoor heat exchanger thermistor is used for detecting disconnection of the discharge thermistor when cooling.
   When the discharge pipe temperature becomes lower than the outdoor heat exchanger temperature, the discharge pipe thermistor is judged as disconnected.
3. The outdoor heat exchanger thermistor is used for high pressure protection during cooling operation.

B Discharge Pipe Thermistor

1. The discharge pipe thermistor is used for controlling temperature of the discharge pipe.
   If the temperature of discharge pipe (used in place of the inner temperature of the compressor) rises abnormally, the operating frequency drops or the operation halts.
2. The discharge pipe thermistor is used for detecting disconnection of the discharge thermistor.

C Gas Pipe Thermistor

1. In cooling, the gas pipe thermistors are used for gas pipe isothermal control.
   The system controls electronic expansion valve opening so that gas pipe temperature in each room becomes equal.

D Indoor Heat Exchanger Thermistor

1. The indoor heat exchanger thermistor is used for controlling target discharge pipe temperature.
   The system sets a target discharge pipe temperature according to the outdoor and indoor heat exchanger temperature, and controls the electronic expansion valve opening so that the target discharge pipe temperature can be obtained.
2. The indoor heat exchanger thermistors are used to prevent freezing.
   During the cooling operation, if the temperature drops abnormally, the operating frequency becomes lower, then the operation halts.
3. The indoor heat exchanger thermistor is used for anti-icing control.
   During the cooling operation, if the heat exchanger temperature in the room where operation is halted becomes –1°C, or if the room temperature - heat exchanger in the room where operation is halted becomes ≥10°C, it is assumed as icing.

3. Control Specification

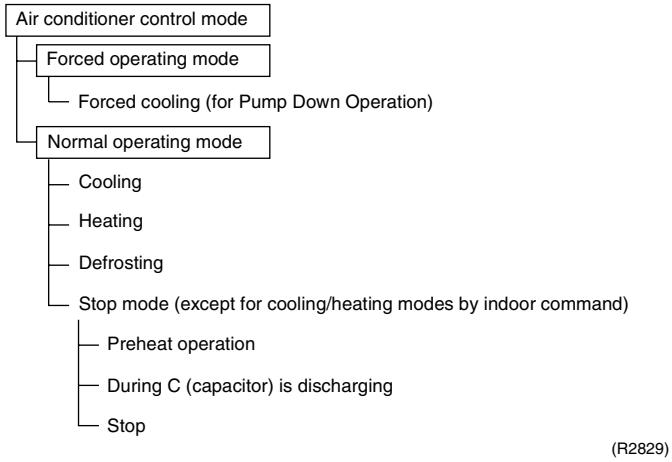
3.1 Mode Hierarchy

Outline

There are two modes; the mode selected in user's place (normal air conditioning mode) and forced operation mode for installation and providing service.

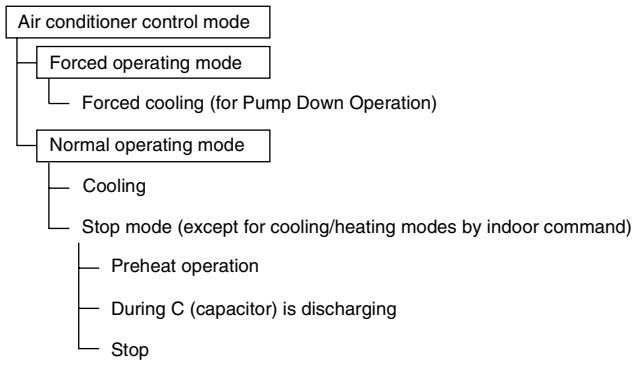
Detail

1. For heat pump model
   There are following modes; stop, cooling (includes drying), heating (include defrosting)



(R2829)

2. For cooling only model
   There are following models; stop and cooling (including drying).



(R2830)

Note: Unless specified otherwise, an indoor dry operation command must be regarded as cooling operation.

Determine Operating Mode

Judge the operating mode command set by each room in accordance with the instructing procedure, and determine the operating mode of the system.

The following procedure is taken as the modes conflict with each other.

- The system follows the mode determined first. (First-push, first-set)
- For the rooms set with different mode, select standby mode. (Operation lamp flashes)

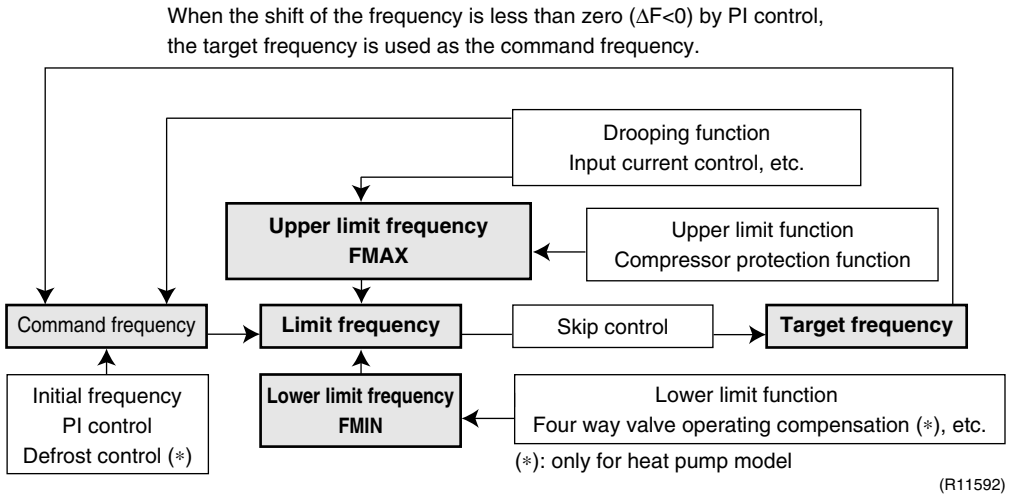
Command of the first set room	Command of the second set room	Operation of the first set room	Operation of the second set room
Cooling	Heating	Cooling	Standby
Cooling	Fan	Cooling	Fan
Heating	Cooling	Heating	Standby
Heating	Fan	Heating	Standby
Fan	Cooling	Fan	Cooling
Fan	Heating	Standby	Heating

3.2 Frequency Control

Outline

Frequency that corresponds to each room's capacity is determined according to the difference between the target temperature and the temperature of each room.
The function is explained as follows.

1. How to determine frequency
2. Frequency command from an indoor unit (Difference between a room thermistor temperature and the target temperature)
3. Frequency command from an indoor unit (The ranked capacity of the operating room)
4. Frequency initial setting
5. PI control



Detail

How to Determine Frequency

The compressor's frequency is determined by taking the following steps.

For Heat Pump Model

1. Determine command frequency

- Command frequency is determined in the following order of priority.

1.1 Limiting defrost control time
1.2 Forced cooling
1.3 Indoor frequency command

2. Determine upper limit frequency

- Set a minimum value as an upper limit frequency among the frequency upper limits of the following functions:
  Compressor protection, input current, discharge pipe temperature, low Hz high pressure limit, heating peak-cut, freeze-up protection, defrost.

3. Determine lower limit frequency

- Set a maximum value as an lower limit frequency among the frequency lower limits of the following functions:
  Four way valve operation compensation, draft prevention, pressure difference upkeep.

4. Determine prohibited frequency

- There is a certain prohibited frequency such as a power supply frequency.

For Cooling Only Model

1. Determine command frequency

- Command frequency is determined in the following order of priority.

1.1 Limiting frequency by drooping function

- Input current, discharge pipes, freeze prevention, dew prevention, fin thermistor temperature.

1.2 Indoor frequency command

2. Determine upper limit frequency

- Set a minimum value as an upper limit frequency among the frequency upper limits of the following functions:
  Compressor protection, input current, discharge pipes, freeze prevention, dew prevention, fin thermistor temperature.

3. Determine lower limit frequency

- Set a maximum value as an lower limit frequency among the frequency lower limits of the following functions:
  Pressure difference upkeep.

4. Determine prohibited frequency

- There is a certain prohibited frequency such as a power supply frequency.

Indoor Frequency Command (∆D signal)

The difference between a room thermistor temperature and the target temperature is taken as the "∆D signal" and is used for frequency command.

Temperature difference	∆D signal	Temperature difference	∆D signal	Temperature difference	∆D signal	Temperature difference	∆D signal
0	∗Th OFF	2.0	4	4.0	8	6.0	C
0.5	1	2.5	5	4.5	9	6.5	D
1.0	2	3.0	6	5.0	A	7.0	E
1.5	3	3.5	7	5.5	B	7.5	F

Values depend on the type of indoor unit

∗Th OFF = Thermostat OFF

Indoor Unit Capacity (S value)

The capacity of the indoor unit is a "S" value and is used for frequency command.

ex.)

Capacity	S value
2.5 kW	25
3.5 kW	35

Frequency Initial Setting

< Outline >

When starting the compressor, or when conditions are varied due to the change of the operating room, the frequency must be initialized according to the total of a maximum ∆D value of each room and a total value of Q (ΣQ) of the operating room (the room in which the thermostat is set to ON).

Q value: Indoor unit output determined from indoor unit volume, airflow rate and other factors.

PI Control (Determine Frequency Up / Down by ∆D Signal)

1. P control

A total of the ∆D value is calculated in each sampling time (20 seconds), and the frequency is adjusted according to its difference from the frequency previously calculated.

2. I control

If the operating frequency is not change more than a certain fixed time, the frequency is adjusted according to the Σ∆D value.

When the Σ∆D value is small...lower the frequency.

When the Σ∆D value is large...increase the frequency.

3. Limit of frequency variation width

When the difference between input current and input current drooping value is less than 1 A, the frequency increase width must be limited.

4. Frequency management when other controls are functioning

- When each frequency is drooping;
  Frequency management is carried out only when the frequency droops.
- For limiting lower limit
  Frequency management is carried out only when the frequency rises.

5. Upper and lower limit of frequency by PI control

The frequency upper and lower limits are set depending on the total of S values of a room. When low noise commands come from the indoor unit more than one room or when outdoor unit low noise or quiet commands come from all the rooms, the upper limit frequency must be lowered than the usual setting.

3.3 Controls at Mode Changing / Start-up

3.3.1 Preheating Operation

Outline

Operate the inverter in the open phase operation with the conditions including the preheating command from the indoor, the outdoor air temperature and discharge pipe temperature.

Detail

Preheating ON Condition

- When outdoor air temperature is below 10.5ºC and discharge pipe temperature is below 10.5ºC, inverter in open phase operation starts. (The power consumption of compressor during preheating operation is 25 W.)

OFF Condition

- When outdoor air temperature is higher than 12ºC or discharge pipe temperature is higher than 12ºC, inverter in open phase operation stops.

3.3.2 Four Way Valve Switching

Outline

Heat Pump Only

During the heating operation current must be conducted and during cooling and defrosting current must not be conducted. In order to eliminate the switching sound (as the four way valve coil switches from ON to OFF) when the heating is stopped, the delay switch of the four way valve must be carried out after the operation stopped.

Detail

The OFF delay of four way valve

Energize the coil for 150 seconds after unit operation is stopped.

3.3.3 Four Way Valve Operation Compensation

Outline

Heat Pump Only

At the beginning of the operation as the four way valve is switched, acquire the differential pressure required for activating the four way valve by having output frequency which is more than a certain fixed frequency, for a certain fixed time.

Detail

Staring Conditions

1. When starting compressor for heating.
2. When the operating mode changes from the previous time.
3. When starting compressor for starting defrosting or resetting.
4. When starting compressor for the first time after the reset with the power is ON.
5. When starting compressor after operation stop by the cooling / heating mode change-over malfunction.

Set the lower limit frequency to **A** Hz for 60 seconds with any conditions with 1 through 5 above.

		40 class	50 class
A	Cooling	56Hz	40Hz
	Heating	68Hz	54Hz

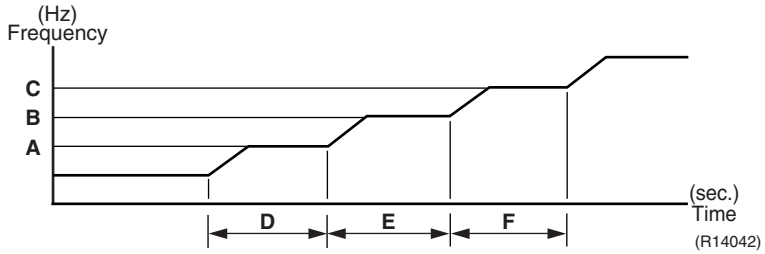
3.3.4 3-Minute Standby

Prohibit to turn ON the compressor for 3 minutes after turning it off.

(Except when defrosting. (Only for Heat Pump Model).)

3.3.5 Compressor Protection Function

When turning the compressor from OFF to ON, the upper limit of frequency is set as follows. (The function is not used when defrosting.)



	40 class	50 class	Unit
A	62	55	Hz
B	72	70	
C	90	85	
D	140	150	seconds
E	180	180	
F	300	300	

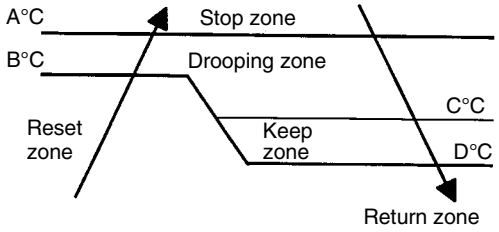
3.4 Discharge Pipe Temperature Control

Outline

The discharge pipe temperature is used as the compressor's internal temperature. If the discharge pipe temperature rises above a certain level, the operating frequency upper limit is set to keep this temperature from going up further.

Detail

Divide the Zone



(R2836)

A	110
B	103
C	102
D	101

Management within the Zones

Zone	Control contents
Stop zone	When the temperature reaches the stop zone, stop the compressor and correct abnormality.
Drooping zone	Start the timer, and the frequency is drooping.
Keep zone	Keep the upper limit of frequency.
Return / Reset zone	Cancel the upper limit of frequency.

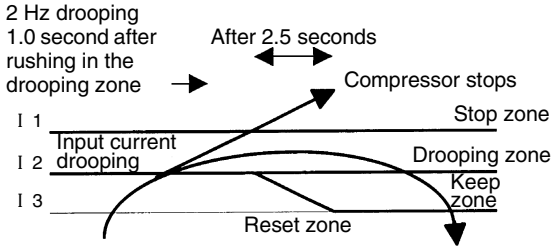
3.5 Input Current Control

Outline

Detect an input current by the CT during the compressor is running, and set the frequency upper limit from such input current.
In case of heat pump model, this control is the upper limit control function of the frequency which takes priority of the lower limit of four way valve activating compensation.

Detail

The frequency control is made within the following zones.



(R1378)

When a “stop current” continues for 2.5 seconds after rushing on the stop zone, the compressor operation stops.
If a “drooping current” is continues for 1.0 second after rushing on the drooping zone, the frequency is 2 Hz drooping.
Repeating the above drooping continues until the current rushes on the drooping zone without change.
In the keep zone, the frequency limit remains.
In the return / reset zone, the frequency limit is cancelled.

Limitation of current drooping and stop value according to the outdoor air temperature

1. In case the operation mode is cooling
- The current droops when outdoor air temperature becomes higher than a certain level (model by model).

2. In case the operation mode is heating (only for heat pump model)
- The current droops when outdoor air temperature becomes higher than a certain level (model by model).

3.6 Freeze-up Protection Control

Outline

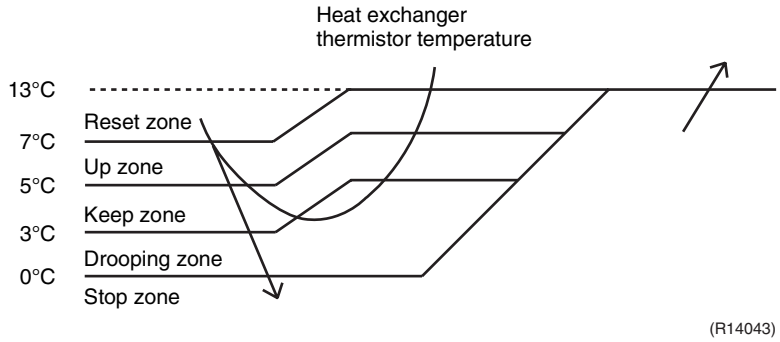
During cooling operation, the signals being sent from the indoor unit allow the operating frequency limitation and then prevent freezing of the indoor heat exchanger. (The signal from the indoor unit must be divided into the zones as the followings.

Detail

Conditions for Start Controlling

Judge the controlling start with the indoor heat exchanger temperature after 2 seconds from operation start and after 30 seconds from changing number of operation room.

Control in Each Zone



3.7 Heating Peak-cut Control

Outline

Heat Pump Only

During heating operation, the signals being sent from the indoor unit allow the operating frequency limitation and prevent abnormal high pressure. (The signal from the indoor unit must be divided as follows.)

Detail

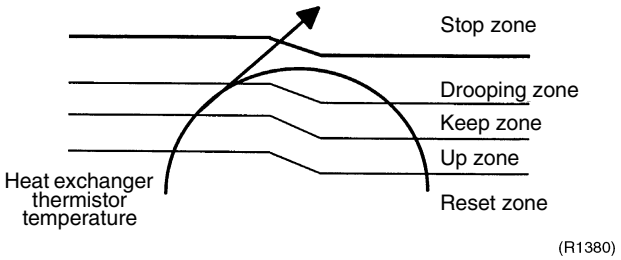
Conditions for Start Controlling

Judge the controlling start with the indoor heat exchanger temperature after 2 minutes from operation start and **A** seconds from changing number of operation room.

Control in Each Zone

The maximum value of heat exchange intermediate temperature of each indoor unit controls the following (excluding stopped rooms).

	A
When increase	30
When decrease	2



3.8 Fan Control

Outline

Fan control is carried out according to the following conditions.

1. Fan ON control for electric component cooling fan
2. Fan control when defrosting
3. Fan OFF delay when stopped
4. ON/OFF control when cooling operation
5. Fan control when the number of heating rooms decreases
6. Fan control when forced operation
7. Fan control in indoor / outdoor unit quiet operation
8. Fan control during heating operation
9. Fan control in the POWERFUL mode
10. Fan control for pressure difference upkeep

Detail

Fan OFF Control when Stopped

■ Fan OFF delay for 60 seconds must be made when the compressor is stopped.

Tap Control in Indoor / Outdoor Unit Quiet Operation

1. When Cooling Operation
   When the outdoor air temperature is higher than 37°C, the fan tap must be set to H.
   When the outdoor air temperature is 18 ~ 37°C, the fan tap must be set to M.
   When the outdoor air temperature is lower than 18°C, the fan tap must be set to L.
2. When Heating Operation (Only for heat pump model)
   When the outdoor air temperature is lower than 4°C, the fan tap must be set to H.
   When the outdoor air temperature is 4 ~ 12°C, the fan tap must be set to M.
   When the outdoor air temperature is higher than 12°C, the fan tap must be set to L.

3.9 Liquid Compression Protection Function 2

Outline

In order to obtain the dependability of the compressor, the compressor must be stopped according to the conditions of the temperature of the outdoor air and outdoor heat exchanger.

Detail

Heat Pump Model

■ Operation stops depending on the outdoor air temperature.

Compressor operation turns OFF under the conditions that the system is in cooling operation and outdoor air temperature is below 10°C.

Cooling Only Model

■ Operation stops depending on the outdoor air temperature.

Compressor operation turns OFF under the condition that outdoor air temperature is below 10°C.

3.10 Defrost Control

Outline

Defrosting is carried out by the cooling cycle (reverse cycle). The defrosting time or outdoor heat exchanger temperature must be more than a certain value to finish.

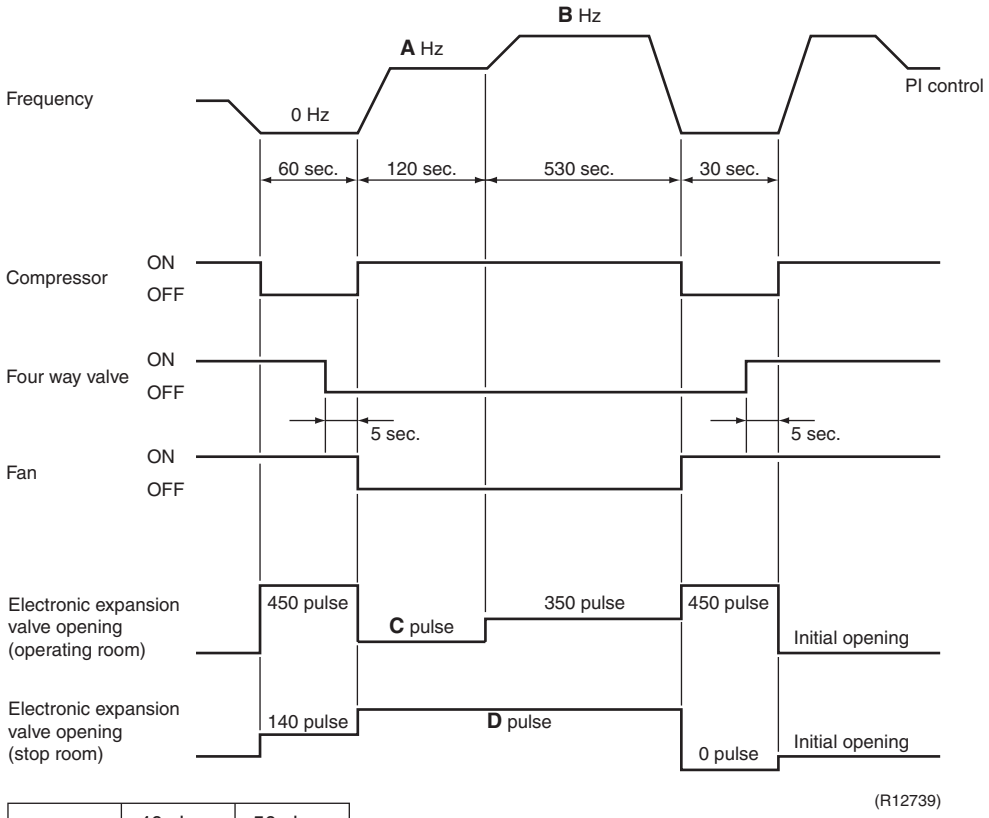
Detail

Conditions for Starting Defrost

- The starting conditions is determined with the outdoor temperature and the outdoor heat exchanger temperature.
- The system is in heating operation.
- The compressor operates for 6 minutes.
- More than 30 minutes of accumulated time pass since the start of the operation, or ending the previous defrosting.

Conditions for Canceling Defrost

The target heat exchanger temperature as the canceling condition is selected in the range of **E** °C according to the outdoor temperature.



	40 class	50 class
A (Hz)	70	48
B (Hz)	86	70
C (pulse)	350	300
D (pulse)	160	200
E (˚C)	4 ~ 12	4 ~ 15

3.11 Electronic Expansion Valve Control

Outline

The following items are included in the electronic expansion valve control.

Electronic expansion valve is fully closed

1. Electronic expansion valve is fully closed when turning on the power.
2. Pressure equalizing control

Room Distribution Control

1. Gas pipe isothermal control
2. SC (supercooling) control (only for heat pump model)
3. Liquid pipe temperature control (with all ports connected and all rooms being air-conditioned)
4. Dew prevention function for indoor rotor

Open Control

1. Electronic expansion valve control when starting operation
2. Electronic expansion valve control when frequency changed
3. Electronic expansion valve control for defrosting (only for heat pump model)
4. Electronic expansion valve control for oil recovery
5. Electronic expansion valve control when a discharge pipe temperature is abnormally high
6. Electronic expansion valve control when the discharge pipe thermistor is disconnected
7. Electronic expansion valve control for indoor unit freeze-up protection

Feedback Control

1. Discharge pipe temperature control

Detail

The followings are the examples of control which function in each mode by the electronic expansion valve control.

Operation pattern	○ : function × : not function	Gas pipe isothermal control	SC (supercooling) control (only for heat pump model)	Control when frequency changed	Control for abnormally high discharge pipe temperature	Oil recovery control	Indoor freeze prevention control	Liquid pipe temperature control	Dew buildup prevention control for indoor rotor
When power is turned ON	Fully closed when power is turned ON	×	×	×	×	×	×	×	×
Cooling, 1 room operation	Open control when starting	×	×	×	○	×	○	×	○
	(Control of target discharge pipe temperature)	×	×	○	○	○	○	×	○
Cooling, 2 rooms operation	Control when the operating room is changed	×	×	×	○	×	○	×	○
	(Control of target discharge pipe temperature)	○	×	○	○	×	○	×	○
Stop	Pressure equalizing control	×	×	×	×	×	×	×	×
Heating, 1 room operation (only for heat pump model)	Open control when starting	×	×	×	○	×	×	×	×
	(Control of target discharge pipe temperature)	×	○	○	○	×	×	×	×
Heating, 2 rooms operation (only for heat pump model)	Control when the operating room is changed	×	×	×	○	×	×	×	×
	(Control of target discharge pipe temperature)	×	×	○	○	×	×	○	×
	(Defrost control FD=1) (only for heat pump model)	×	×	×	×	×	×	×	×
Stop	Pressure equalizing control	×	×	×	×	×	×	×	×
Heating, 1 room operation (only for heat pump model)	Open control when starting	×	×	×	○	×	×	×	×
Control of discharge pipe thermistor disconnection	Continue	×	○	○	×	×	×	○	×
Stop	Pressure equalizing control	×	×	×	×	×	×	×	×

(R7045)

3.11.1 Fully Closing with Power On

Initialize the electronic expansion valve when turning on the power, set the opening position and develop pressure equalizing.

3.11.2 Pressure Equalization Control

When the compressor is stopped, the pressure equalization control is activated. The electronic expansion valve opens, and develops the pressure equalization.

3.11.3 Opening Limit

Outline

Limit a maximum and minimum opening of the electronic expansion valve in the operating room.

Detail

- A maximum electronic expansion valve opening in the operating room : 450 pulses
- A minimum electronic expansion valve opening in the operating room : 60 pulses

The electronic expansion valve is fully closed in the room where cooling is stopped and is opened with fixed opening during defrosting.

3.11.4 Gas Pipe Isothermal Control During Cooling

When the units are operating in multiple rooms, detect the gas pipe temperature and adjust the electronic expansion valve opening so that the gas pipe temperature in each room becomes the same value.

- When the gas pipe temperature > the average gas pipe temperature → open the electronic expansion valve in that room
- When the gas pipe temperature < the average gas pipe temperature → close the electronic expansion valve in that room

3.11.5 SC (supercooling) Control

Outline

Heat Pump Only

Detect the temperature of liquid pipe and heat exchanger of the rooms and compensate the electronic expansion valve opening so that the SC of each room becomes the target SC.

- When the actual SC is > target SC, open the electronic expansion valve of the room.
- When the actual SC is < target SC, close the electronic expansion valve of the room.

Detail

Start Functioning Conditions

After finishing the open control (810 seconds after the beginning of the operation), control all the electronic expansion valve in the operating room.

Determine Electronic Expansion Valve Opening

Adjust the electronic expansion valve so that the temperature difference between the maximum heat exchanger temperature of connected room and the temperature of liquid pipe thermistor becomes constant.

3.11.6 Starting Operation / Changing Operating Room Control

Control the electronic expansion valve opening when the system is starting or the operating room is changed, and prevent the system to be superheated or moistened.

3.11.7 Disconnection of the Discharge Pipe Thermistor

Outline

Detect a disconnected discharge pipe thermistor by comparing the discharge pipe temperature with the condensation temperature. If the discharge pipe thermistor is disconnected, open the electronic expansion valve according to the outdoor air temperature and the operating frequency, and operate for a specified time, and then stop.

After 3 minutes of waiting, restart the unit and check if the discharge pipe thermistor is disconnected. If the discharge pipe thermistor is disconnected stop the system after operating for a specified time. If the disconnection is detected 4 times in succession, then the system is shut down.

Detail

Detect Disconnection

If a 780-second timer for open control becomes over, the following adjustment must be made.

1. When the operation mode is cooling
   When the discharge pipe temperature is lower than the outdoor heat exchanger temperature, the discharge pipe thermistor disconnection must be ascertained.
2. When the operation mode is heating (only for heat pump model)
   When the discharge pipe temperature is lower than the max temperature of operating room heat exchanger, the discharge pipe thermistor disconnection must be ascertained.

When the condition of the above 1 or 2 is decided, the system stops after operating for continuous 9 minutes.

Adjustment when the thermistor is disconnected

When compressor stop repeats specified time, the system is shut down.

3.11.8 Control when frequency is changed

When the target discharge pipe temperature control is active, if the target frequency is changed for a specified value in a certain time period, cancel the target discharge pipe temperature control and change the target opening of the electronic expansion valve according to the shift.

3.11.9 High Discharge Pipe Temperature

When the compressor is operating, if the discharge pipe temperature exceeds a certain value, the electronic expansion valve opens and the refrigerant runs to the low pressure side.
This procedure lowers the discharge pipe temperature.

3.11.10 Oil Recovery Function

Outline

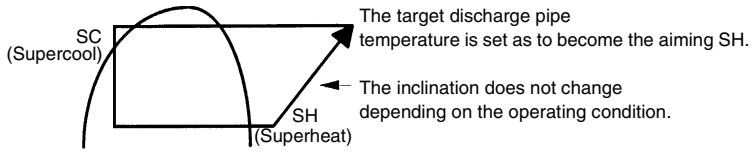
The electronic expansion valve opening in the cooling stopped room must be set as to open for a certain time at a specified interval so that the oil in the cooling stopped room may not be accumulated.

Detail

During cooling operation, every 1 hour continuous operation, the electronic expansion valves in the operation stopped room must be opened by 80 pulses for specified time.

3.11.11 Target Discharge Pipe Temperature Control

The target discharge pipe temperature is obtained from the indoor and outdoor heat exchanger temperature, and the electronic expansion valve opening is adjusted so that the actual discharge pipe temperature becomes close to the target discharge pipe temperature. (Indirect SH (superheating) control using the discharge pipe temperature)



(R10626)

The electronic expansion valve opening and the target discharge pipe temperature are adjusted every 20 seconds. The target discharge pipe temperature is controlled by indoor heat exchanger temperature and outdoor heat exchanger temperature. The opening degree of the electronic expansion valve is controlled by followings.

- Target discharge pipe temperature
- Actual discharge pipe temperature
- Previous discharge pipe temperature

3.12 Malfunctions

3.12.1 Sensor Malfunction Detection

Sensor malfunction may occur either in the thermistor or current transformer (CT) system.

Relating to Thermistor Malfunction

1. Outdoor heat exchanger thermistor
2. Discharge pipe thermistor
3. Radiation fin thermistor
4. Gas pipe thermistor
5. Outdoor air thermistor
6. Liquid pipe thermistor

Relating to CT Malfunction

When the output frequency is more than 52 Hz and the input current is less than 1.25A, carry out abnormal adjustment.

3.12.2 Detection of Overload and Overcurrent

Outline

In order to protect the inverter, detect an excessive output current, and for protecting compressor, monitor the OL operation.

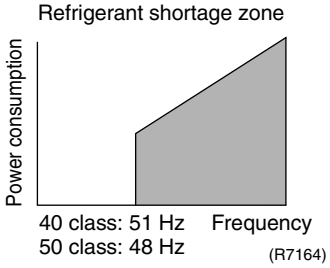
Detail

- **If the OL (compressor head) temperature exceeds 120~130°C (depending on the model), the system shuts down the compressor.**
- **If the inverter current exceeds 22 A, the system shuts down the compressor.**

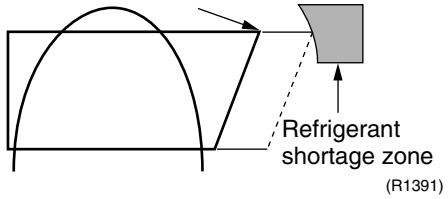
3.12.3 Refrigerant Shortage Control

Outline

If a power consumption is below the specified value in which the frequency is higher than the specified frequency, it must be regarded as refrigerant shortage.
In addition to such conventional function, if the discharge pipe temperature is higher than the target discharge pipe temperature, and the electronic expansion valve is fully open (450 pulses) more than the specified time, it is considered as refrigerant shortage.



With the conventional function, a power consumption is weak comparing with that in the normal operation when refrigerant is insufficient, and refrigerant shortage is detected by checking a power consumption.



When operating with refrigerant shortage, although the rise of discharge pipe temperature is great and the electronic expansion valve is open, it is presumed as refrigerant shortage if the discharge pipe temperature is higher than the target discharge pipe temperature.

Refer to “Refrigerant Shortage” on page 205 for detail.

Detail

Judgment by Input Current
When an output frequency is exceeds 51 Hz (40 class) or 48 Hz (50 class) and the input current is less than specified value, the adjustment is made for refrigerant shortage.
Judgment by Discharge Pipe Temperature
When discharge pipe temperature is higher than 101°C, the electronic expansion value opening is 450 plus (max.) and the adjustment is made for refrigerant shortage.

3.12.4 Preventing Indoor Freezing

During cooling, if the heat exchanger temperature in the operation stopped room becomes below the specified temperature for the specified time, open the electronic expansion valve in the operation stopped room as specified, and carry out the fully closed operation. After this, if freezing abnormality occurs more than specified time, the system shall be down as the system abnormality.

3.13 Additional Function

3.13.1 POWERFUL Operation Mode

Compressor operating frequency and outdoor unit airflow rate are increased.

3.13.2 Voltage Detection Function

Power supply voltage is detected each time equipment operation starts.

Part 5
Operation Manual

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 ATXS, ATX, FTXG, CTXG, ATXG, FDK(X)S, FLK(X)S Series

2.1.1 Manual Contents and Reference Page

Model Series	Wall Mounted Type		
	ATXS20-50G	ATX20-35G	FTXG25/35E, CTXG50E ATXG25-50E
Read Before Operation			
Remote Controller	98	99	100★3
Operation			
AUTO, DRY, COOL, HEAT, FAN Operation ★1	103	103	103
Adjusting the Airflow Direction	105	107	109★3
COMFORT AIRFLOW Operation	113	113	113
POWERFUL Operation ★1	114	114	114
OUTDOOR UNIT QUIET Operation ★1	115	—	115
ECONO Operation	116	117	—
HOME LEAVE Operation ★2	—	—	—
INTELLIGENT EYE Operation	120	—	122★3
TIMER Operation ★1	124	124	124
Note for Multi System	126	126	126
Drawing No.	3P207037-2C	3P208145-2E	3P194513-2C 3P194513-1C

Model Series	Duct Connected Type	Floor/Ceiling Suspended Dual Type
	FDK(X)S25/35EA FDK(X)S50C	FLK(X)S25-50BA
Read Before Operation		
Remote Controller	101	102
Operation		
AUTO, DRY, COOL, HEAT, FAN Operation ★1	103	103
Adjusting the Airflow Direction	—	111
COMFORT AIRFLOW Operation	—	—
POWERFUL Operation ★1	114	114
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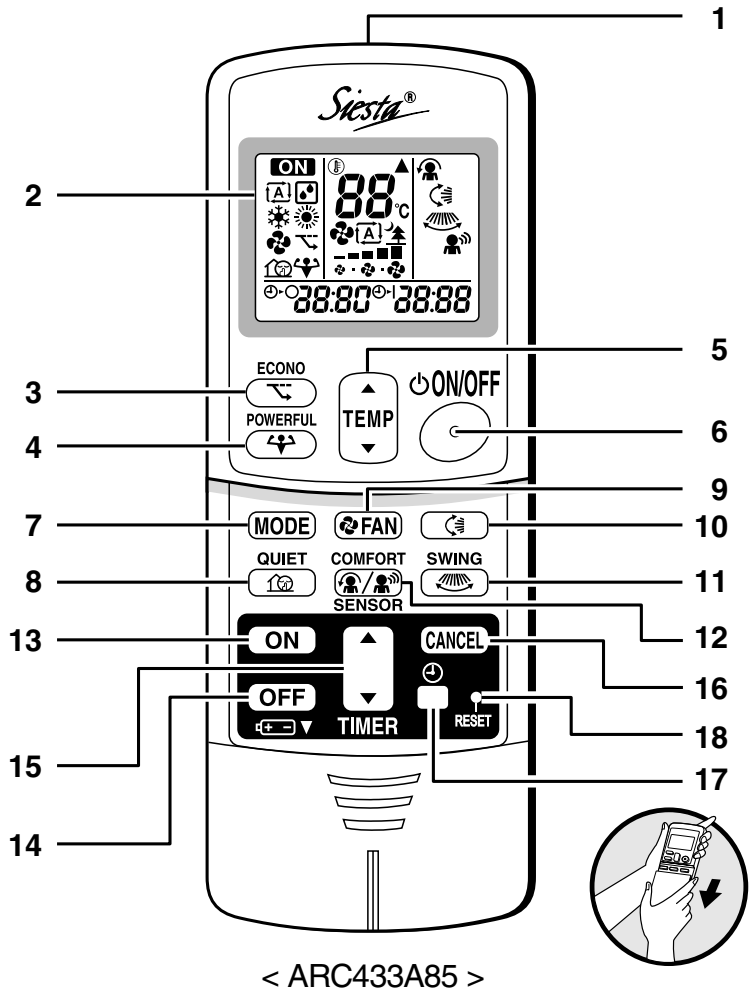
★1 : Illustrations are for wall mounted type ATXS20-50G as representative.
★2 : Illustrations are for duct connected type FDK(X)S50C as representative.
★3 : Illustrations are for wall mounted type FTXG25/35E as representative.

2.1.2 Remote Controller

ATXS 20/25/35/42/50 G

■ Remote Controller



< ARC433A85 >

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. QUIET button: OUTDOOR UNIT QUIET operation

9. FAN setting button:
- It selects the airflow rate setting.

10. SWING button:
- Adjusting the Airflow Direction.

11. SWING button:
- Louvers (vertical blades)

12. COMFORT/SENSOR button:
- COMFORT AIRFLOW and INTELLIGENT EYE operation

13. ON TIMER button

14. OFF TIMER button

15. TIMER Setting button:
- It changes the time setting.

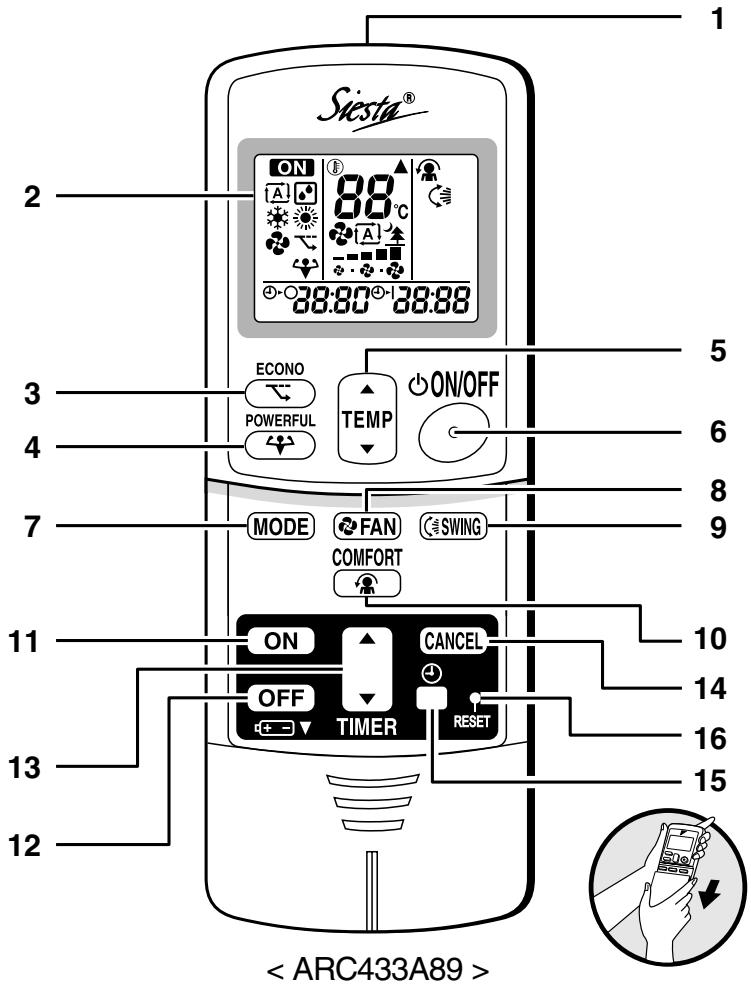
16. TIMER CANCEL button:
- It cancels the timer setting.

17. CLOCK button

18. RESET button:
- Restart the unit if it freezes.
- Use a thin object to push.

ATX 20/25/35 G

■ Remote Controller



< ARC433A89 >

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. FAN setting button:
- It selects the airflow rate setting.

9. SWING button:
- Adjusting the Airflow Direction.

10. COMFORT AIRFLOW button: COMFORT AIRFLOW operation

11. ON TIMER button

12. OFF TIMER button

13. TIMER Setting button:
- It changes the time setting.

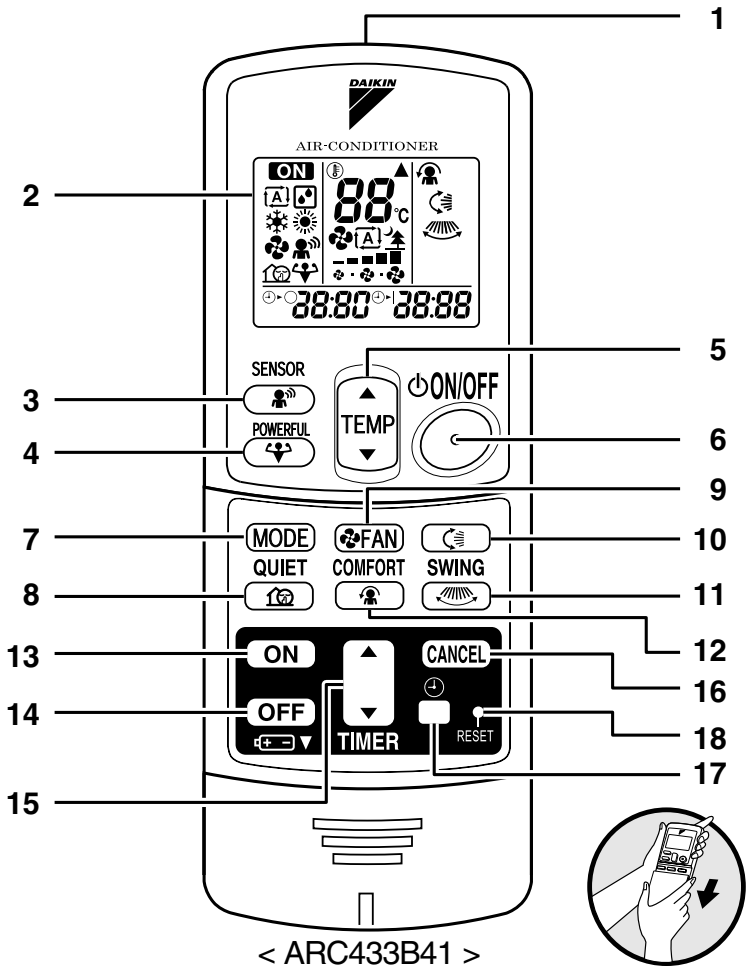
14. TIMER CANCEL button:
- It cancels the timer setting.

15. CLOCK button

16. RESET button:
- Restart the unit if it freezes.
- Use a thin object to push.

FTXG 25/35 E, ATXG 25/35/50 E, CTXG 50 E

■ Remote Controller



< ARC433B41 >

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. SENSOR button: INTELLIGENT EYE 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. QUIET button: OUTDOOR UNIT QUIET operation

9. FAN setting button:
- It selects the air flow rate setting.

10. SWING button:
- Flap (Horizontal blade)

11. SWING button:
- Louvers (Vertical blades)

12. COMFORT AIRFLOW mode button

13. ON TIMER button

14. OFF TIMER button

15. TIMER Setting button:
- It changes the time setting.

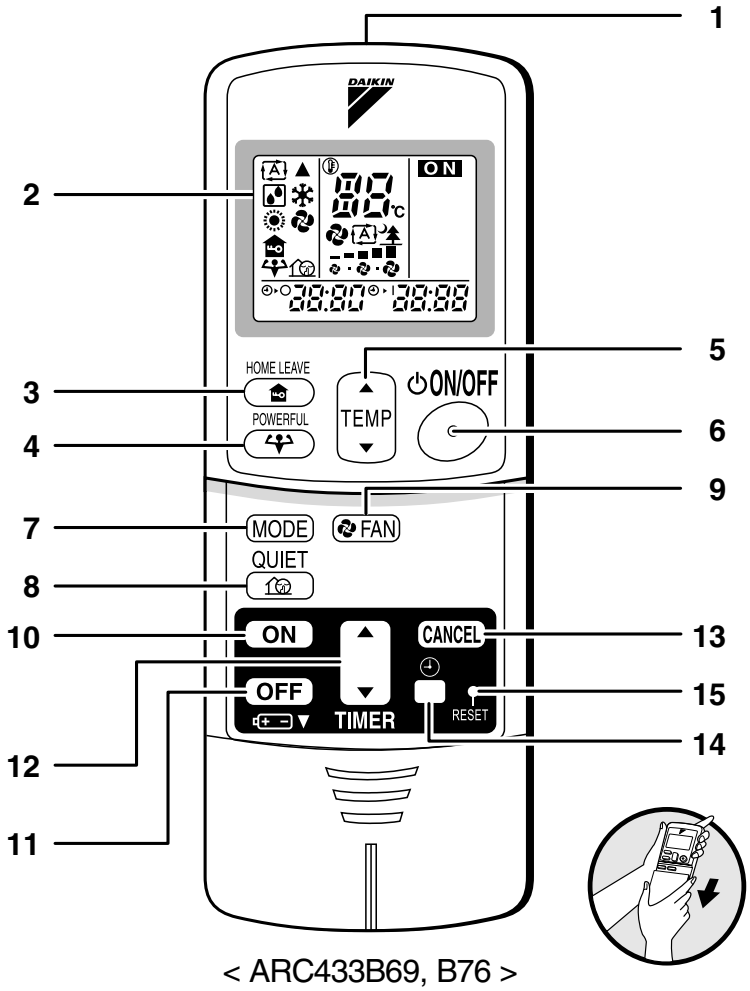
16. TIMER CANCEL button:
- It cancels the timer setting.

17. CLOCK button

18. RESET button:
- Restart the unit if it freezes.

FDK(X)S 50 C, FDK(X)S 25/35 EA

■ Remote Controller



< ARC433B69, B76 >

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. QUIET button: OUTDOOR UNIT QUIET 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.

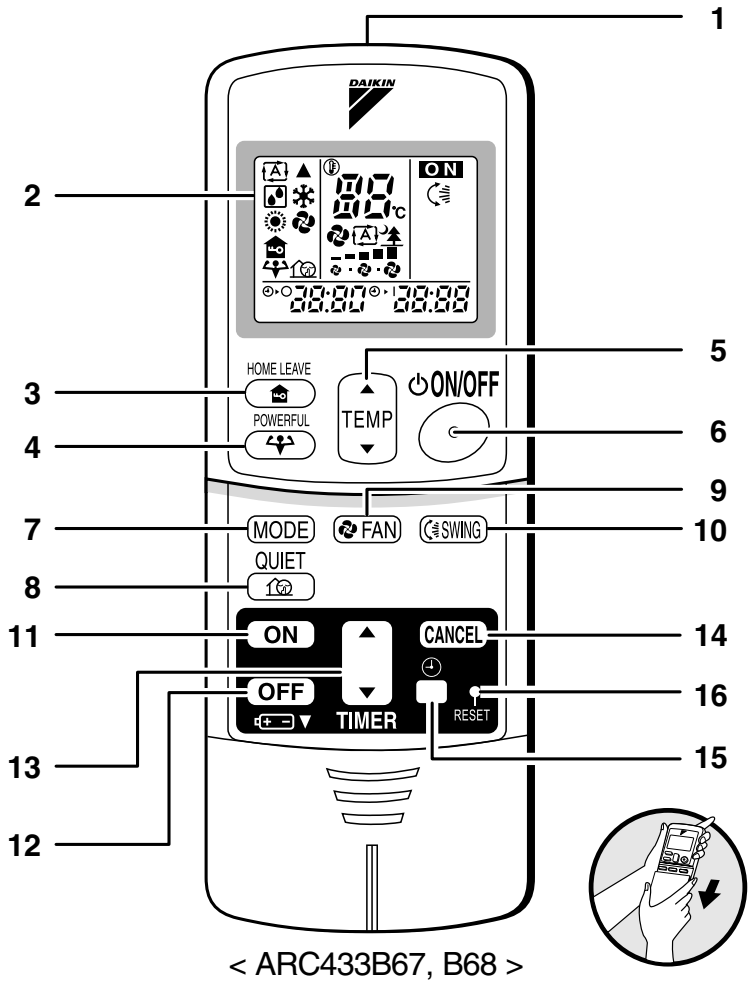
13. TIMER CANCEL button:
- It cancels the timer setting.

14. CLOCK button

15. RESET button:
- Restart the unit if it freezes.
- Use a thin object to push.

FLK(X)S 25/35/50 BA

■ Remote Controller



< ARC433B67, B68 >

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. QUIET button: OUTDOOR UNIT QUIET operation

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

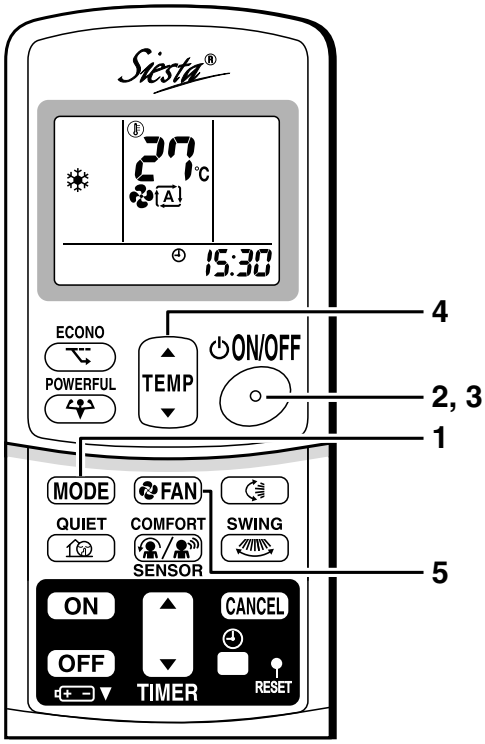
16. RESET button:
- Restart the unit if it freezes.
- Use a thin object to push.

2.1.3 AUTO · DRY · COOL · HEAT · FAN Operation

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 a operation mode.

- Each pressing of the button advances the mode setting in sequence.

: AUTO

: DRY

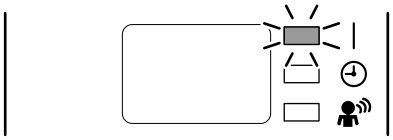
: COOL

: HEAT

: FAN

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. 

■ To change the airflow rate setting

5. Press “FAN setting button”.

DRY mode	AUTO or COOL or HEAT or FAN mode
The airflow rate setting is not variable.	Five levels of airflow rate setting from “ ” to “ ” plus “ ” “ ” are available. 

- Indoor unit quiet operation
  When the airflow is set to “ ”, the noise from the indoor unit will become quieter.
  Use this when making the noise quieter.

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.
- A pinging sound may be heard during defrosting operation, which, however does not mean that the air conditioner has failures.

■ **Note on COOL operation**
- This air conditioner cools the room by blowing the hot air in the room outside, so if the outside temperature is high, the performance of the air conditioner drops.

■ **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 airflow rate, so manual adjustment of these functions is unavailable.

■ **Note on AUTO operation**
- In AUTO operation, the system selects a temperature setting and 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, manually change the set temperature.

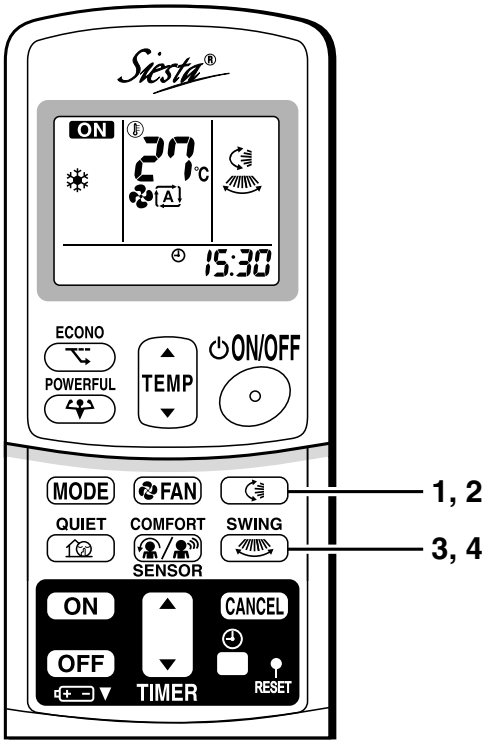
■ **Note on airflow rate setting**
- At smaller airflow rates, the cooling (heating) effect is also smaller.

2.1.4 Adjusting the Airflow Direction

ATXS 20/25/35/42/50 G

Adjusting the Airflow Direction

You can adjust the airflow 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 flaps 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.
   - " " disappears from the LCD.

■ To start 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 flaps and louvers angles

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

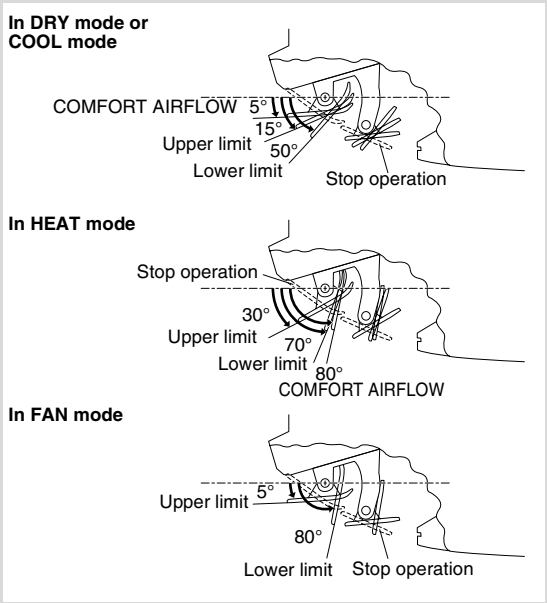
Three-Dimensional (3-D) Airflow

• 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 controller to adjust the angles of the flaps and louvers. If you attempt to move it forcibly with hand when it is swinging, the mechanism may be broken.

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



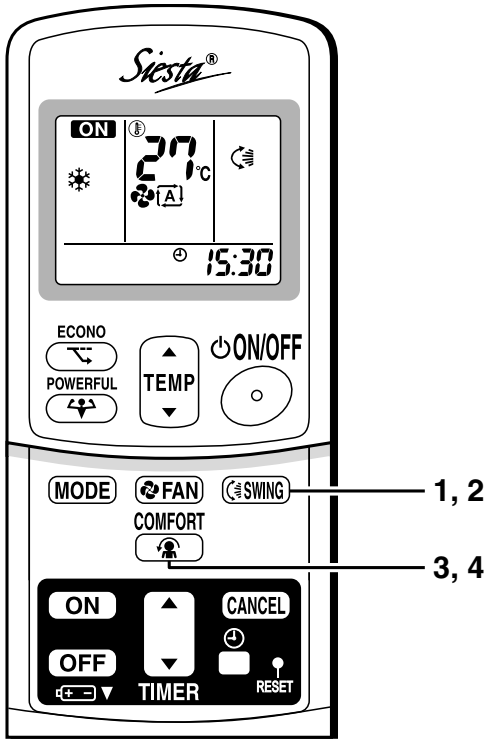
ATX 20/25/35 G

Adjusting the Airflow Direction

You can adjust the airflow direction to increase your comfort.

■ To adjust the horizontal blades (flaps)

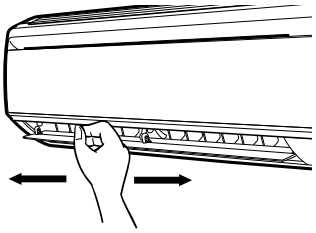
1. **Press "SWING button".**
   - " " is displayed on the LCD and the flaps will begin to swing.
2. **When the flaps have reached the desired position, press "SWING button" once more.**
   - The flaps will stop moving.
   - " " disappears from the LCD.



■ 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.)

- 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.
- Airflow rate is set to “AUTO”.

<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

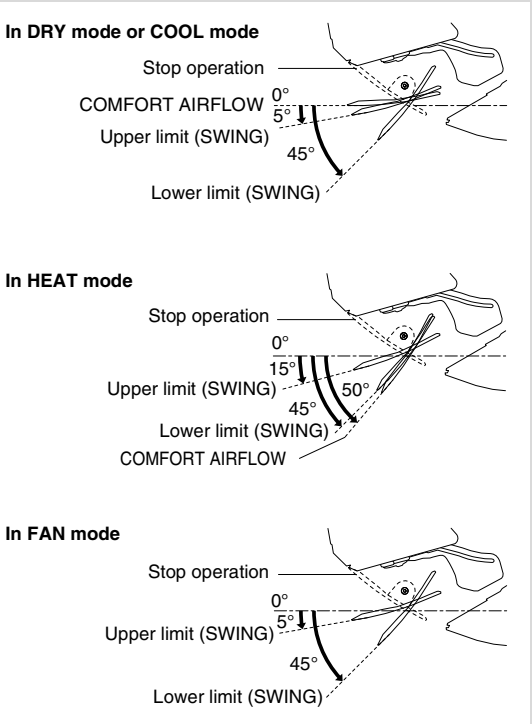
- POWERFUL operation and COMFORT AIRFLOW operation cannot be used at the same time. Priority is given to POWERFUL operation.

Notes on flaps and louvers angles

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

■ **ATTENTION**

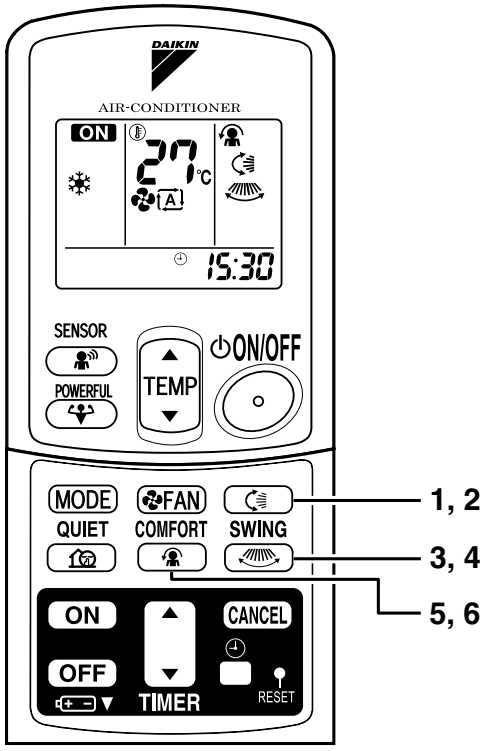
- Always use a remote controller to adjust the flaps angle. If you attempt to move it forcibly with hand when it is swinging, the mechanism may be broken.
- Be careful when adjusting the louvers. Inside the air outlet, a fan is rotating at a high speed.
- If the air conditioner is operated in cooling or dry mode with the flap kept stopped in the downward direction, the flap will automatically start operating in approximately an hour in order to prevent dew condensation.



FTXG 25/35 E, CTXG 50 E, ATXG 25/35/50 E

Adjusting the Air Flow Direction

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.
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 ".

■ To start COMFORT AIRFLOW operation

5. Press “COMFORT AIRFLOW button”.

- The flap orientation 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

6. Press “COMFORT AIRFLOW button” again.

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

NOTE

- When “**SWING button** ” is selected, the flap 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.

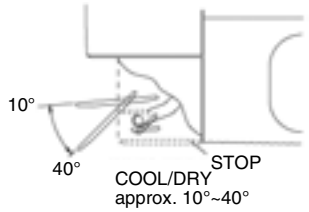
Comfort Airflow

- The air flow is set automatically.
- The air direction is as shown in the figure at right.

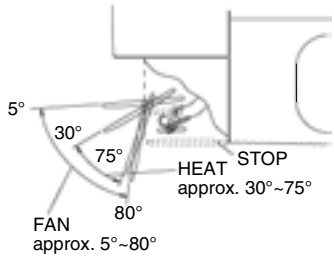
■ **ATTENTION**

- Always use a remote controller to adjust the flap angle. If you attempt to move it forcibly with hand when it is swinging, the mechanism may be broken.
- Always use a remote controller to adjust the louvers angles.

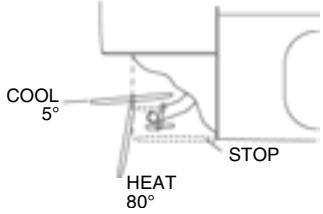
In COOL or DRY mode



In HEAT or FAN mode



In COMFORT AIRFLOW mode



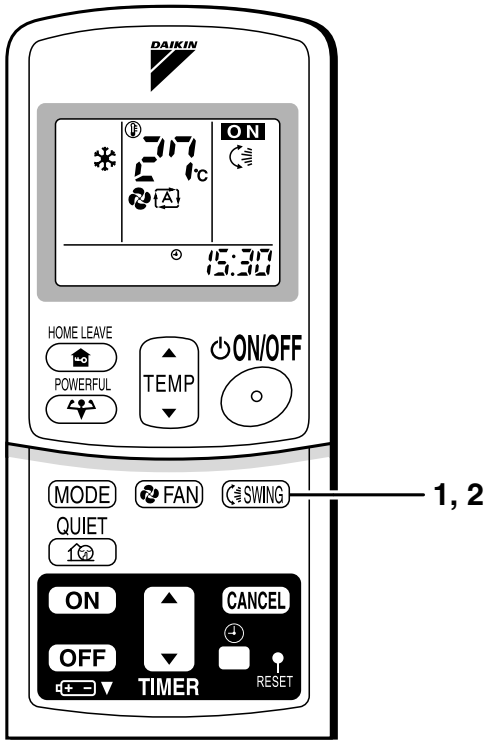
FLK(X)S 25/35/50 BA

Adjusting the Airflow Direction

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

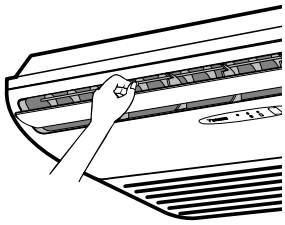
■ To adjust the horizontal blade (flap)

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 flap will stop moving.
   - " " disappears from the LCD.



■ To adjust the vertical blades (louvers)

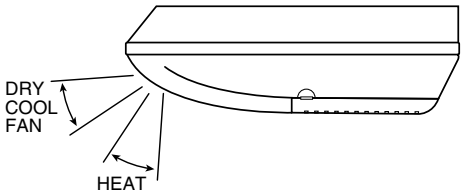
• When adjusting the louver, use a robust and stable stool and watch your steps carefully.
Hold the knob and move the louvers.
(You will find a knob on the left side and the right side blades.)



Notes on flap and louvers angles.

• 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**

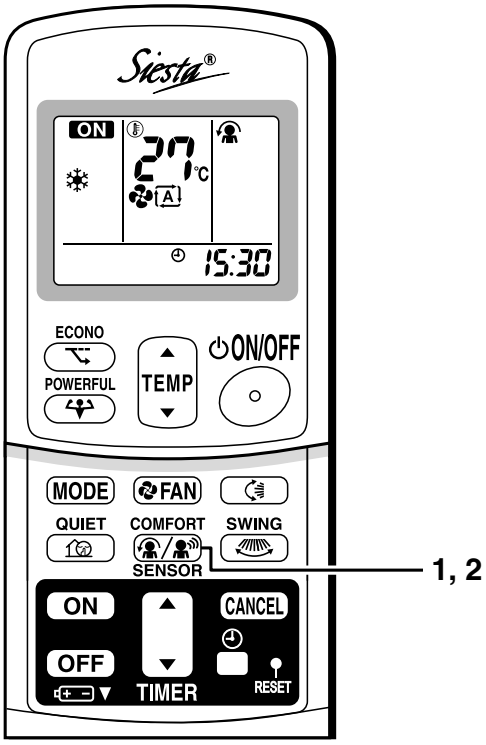
• Always use a remote controller to adjust the flap angle.
If you attempt to move it forcibly with hand when it is swinging, the mechanism may be broken.

• Be careful when adjusting the louvers. Inside the air outlet, a fan is rotating at a high speed.

2.1.5 COMFORT AIRFLOW Operation

COMFORT AIRFLOW Operation

The flow of air will be in the upward direction while in cooling mode and in the downward direction while in heating mode, which will provide a comfortable wind that will not come in direct contact with people.



■ To start COMFORT AIRFLOW operation

1. Press "COMFORT/SENSOR button" and select " " on the LCD.

- Each time the "COMFORT/SENSOR button" is pressed a different setting option is displayed on the LCD.
- By selecting " • " from the following icons, the air conditioner will be in COMFORT AIRFLOW operation combined with INTELLIGENT EYE operation.

→ → → → Blank

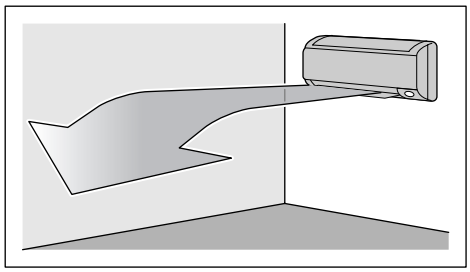
■ To cancel COMFORT AIRFLOW operation

2. Press "COMFORT/SENSOR button".

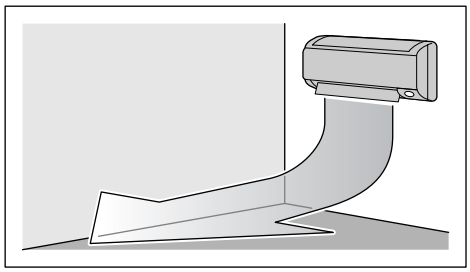
- Press the button to select "Blank".

Notes on "COMFORT AIRFLOW Operation"

- The flap position will change, preventing air from blowing directly on the occupants of the room.
- POWERFUL operation and COMFORT AIRFLOW operation cannot be used at the same time.
- The volume of air will be set to AUTO. If the upward and downward airflow direction is selected, the COMFORT AIRFLOW function will be canceled.
- Priority is given to the function of whichever button is pressed last.
- The COMFORT AIRFLOW function makes the following airflow direction adjustments.
  The flaps will move upward while cooling so that the airflow will be directed upward.
  The flaps will move downward while heating so that the airflow will be directed downward.



Cooling operation

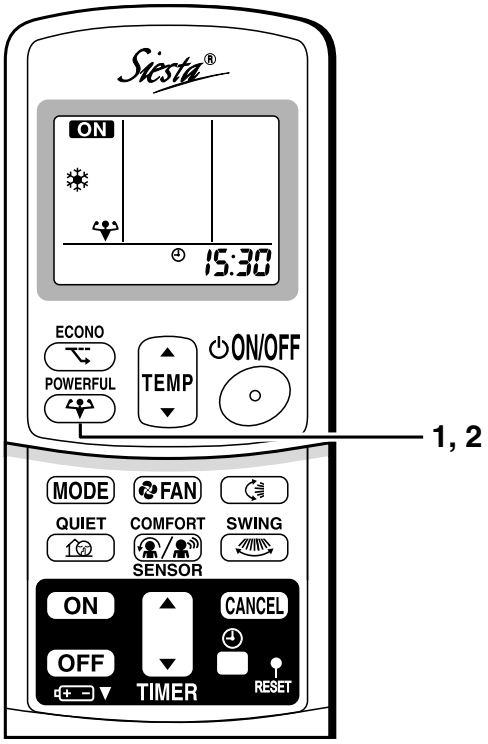


Heating operation

2.1.6 POWERFUL Operation

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

■ 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, QUIET, 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 airflow rate be fixed to the maximum setting.

  The temperature and airflow settings are not variable.
- **In DRY mode**

  The temperature setting is lowered by 2.5°C and the airflow rate is slightly increased.
- **In FAN mode**

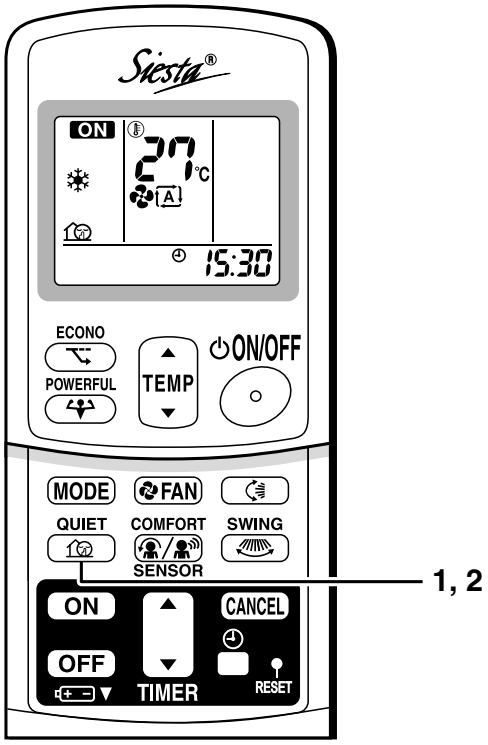
  The airflow rate is fixed to the maximum setting.
- **When using priority-room setting**

  See "Note for multi system"

2.1.7 OUTDOOR UNIT QUIET Operation

OUTDOOR UNIT QUIET Operation

OUTDOOR UNIT QUIET 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 QUIET operation

1. **Press “QUIET button”.**
   • “ ” is displayed on the LCD.

■ To cancel OUTDOOR UNIT QUIET operation

2. **Press “QUIET button” again.**
   • “ ” disappears from the LCD.

NOTE

■ **Note on OUTDOOR UNIT QUIET operation**

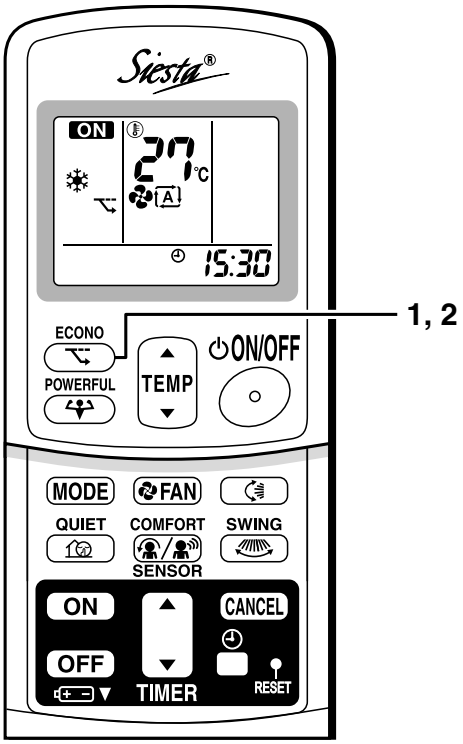
- If using a multi system, this function will work only when the OUTDOOR UNIT QUIET operation is set on all operated indoor units.
  However, if using priority-room setting, see “Note for multi system”
- This function is available in COOL, HEAT, and AUTO modes.
  (This is not available in FAN and DRY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

2.1.8 ECONO Operation

ATXS 20/25/35/42/50 G

ECONO Operation

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

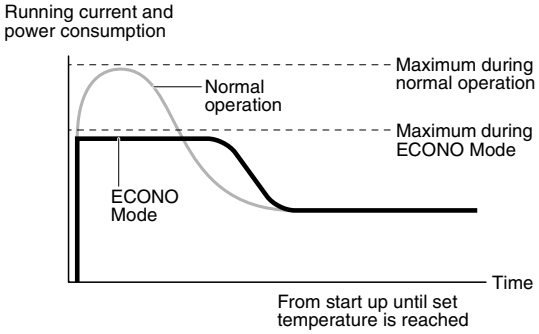


■ To start ECONO operation

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

■ To cancel ECONO operation

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



- This diagram is a representation for illustrative purposes only.

* The maximum running current and power consumption of the air conditioner in ECONO mode vary with the connecting outdoor unit.

NOTE

- ECONO Operation can only be set when the unit is running. Pressing the OFF button causes the setting 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.
- POWERFUL and ECONO operation cannot be used at the same time.
  Priority is given to the function of whichever button is pressed last.
- Power consumption may not drop even if ECONO operation is used of the level of power consumption is already low.

ATX 20/25/35 G

ECONO Operation

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

■ To start ECONO operation

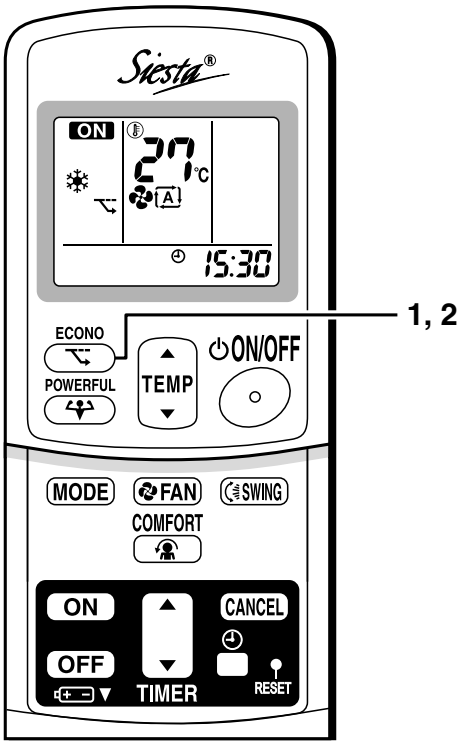
1. Press “ECONO button”.

• “ ⌥ ” 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.
- POWERFUL operation and ECONO operation cannot be used at the same time.
  Priority is given to the function of whichever button is pressed last.
- Power consumption may not drop even if ECONO operation is used, when the level of power consumption is already low.

2.1.9 HOME LEAVE Operation

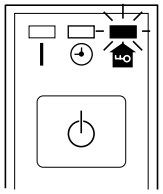
HOME LEAVE Operation

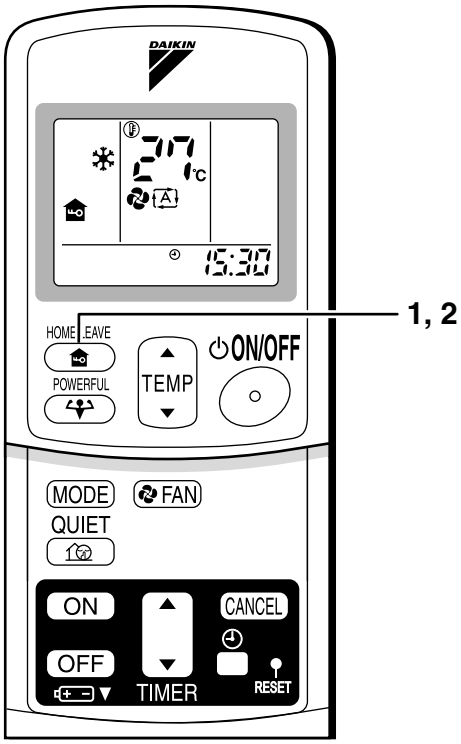
HOME LEAVE operation is a function which allows you to record your preferred temperature and air flow rate settings.

■ 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.

- The HOME LEAVE lamp goes off.
- " " disappears from the LCD.

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°C	" A "	18-32°C	5 step, " A " and " "
Heating	25°C	" A "	10-30°C	5 step, " A " and " "

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?

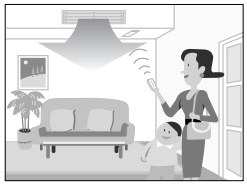
Is there a set temperature and air flow rate which is most comfortable, a set temperature and air flow rate which you use the most? HOME LEAVE operation is a function that allows you to record your favorite set temperature and air flow rate. You can start your favorite operation mode simply by pressing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

■ Useful in these cases

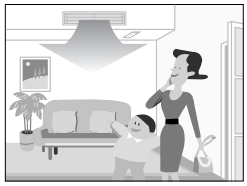
1. Use as an energy-saving mode.

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.

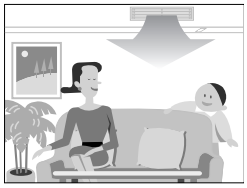
- **Every day before you leave the house...**



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.

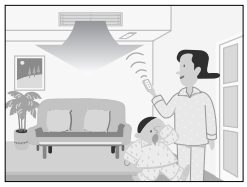


When you return, you will be welcomed by a comfortably air conditioned room.



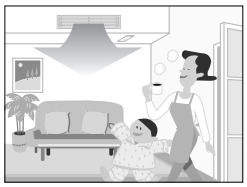
Push the "HOME LEAVE Operation" button again, and the air conditioner will adjust capacity to the set temperature for normal operation.

- **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

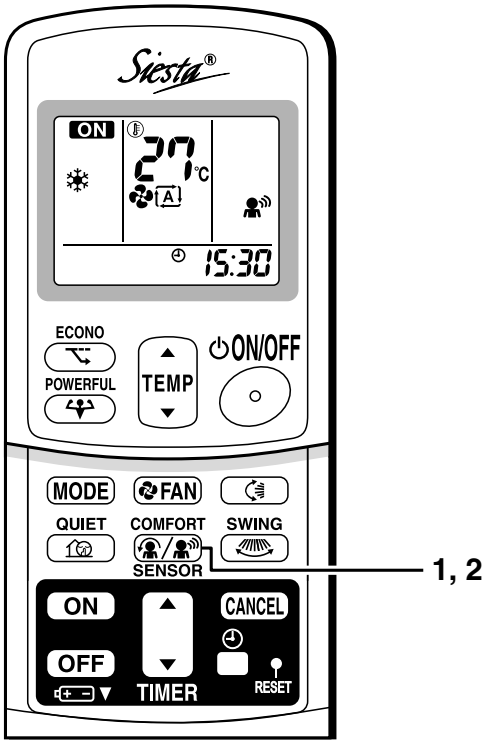
- Once the temperature and air flow rate for HOME LEAVE operation are set, those settings will be used whenever HOME LEAVE operation is used in the future. To change these settings, please refer to the "Before using HOME LEAVE operation" section above.
- HOME LEAVE operation is only available in COOL 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 controller or the indoor unit ON/OFF switch, " " will remain on the remote controller display.

2.1.10 INTELLIGENT EYE Operation

ATXS 20/25/35/42/50 G

INTELLIGENT EYE Operation

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



■ To start INTELLIGENT EYE operation

1. Press "COMFORT/SENSOR button" and select " " on the LCD.

- Each time the "COMFORT/SENSOR button" is pressed a different setting option is displayed on the LCD.
- By selecting " • " from the following icons, the air conditioner will be in COMFORT AIRFLOW operation combined with INTELLIGENT EYE operation.

→ → → → Blank

■ To cancel the INTELLIGENT EYE operation

2. Press "COMFORT/SENSOR button".

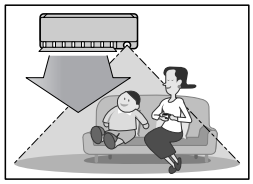
- Press the button to select "Blank".

[EX.]

When somebody in the room

- **Normal operation**

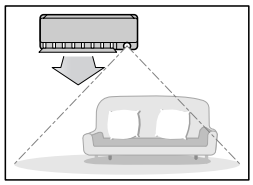
The air conditioner is in normal operation while the sensor is detecting the movement of people.



When nobody in the room

- **20 min. after, start energy saving operation.**

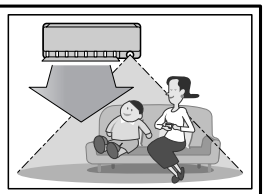
The set temperature is shifted in ±2°C steps.



Somebody back in the room

- **Back to normal operation.**

The air conditioner will return to normal operation when the sensor detects the movement of people again.



INTELLIGENT EYE Operation

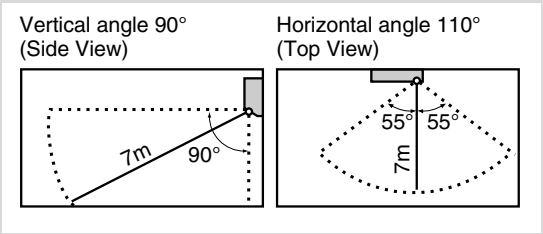
“INTELLIGENT EYE” is useful for Energy Saving

■ **Energy saving operation**

- Change the temperature –2°C in heating / +2°C in cooling / +2°C in dry mode from set temperature.
- Decrease the air flow rate slightly in FAN mode only. If no presence detected in the room for 20 minutes.

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 operatipon will not go on during powerful operation.
- NIGHT SET MODE will not go on during use of INTELLIGENT EYE operation.

■ To combine “COMFORT AIRFLOW Operation” and “INTELLIGENT EYE Operation”

1. Press “COMFORT/SENSOR button” and select “ ” on the LCD.

- Each time the “COMFORT/SENSOR button” is pressed a different setting option is displayed on the LCD.

2. Press “COMFORT/SENSOR button”.

- Press the button to select “Blank”.

- The air conditioner can go into operation with the COMFORT AIRFLOW and INTELLIGENT EYE functions combined.
- The volume of air will be set to AUTO. If the upward and downward airflow direction is selected, the CONFORT AIRFLOW operation will be canceled.
  Priority is given to the function of whichever button is pressed last.

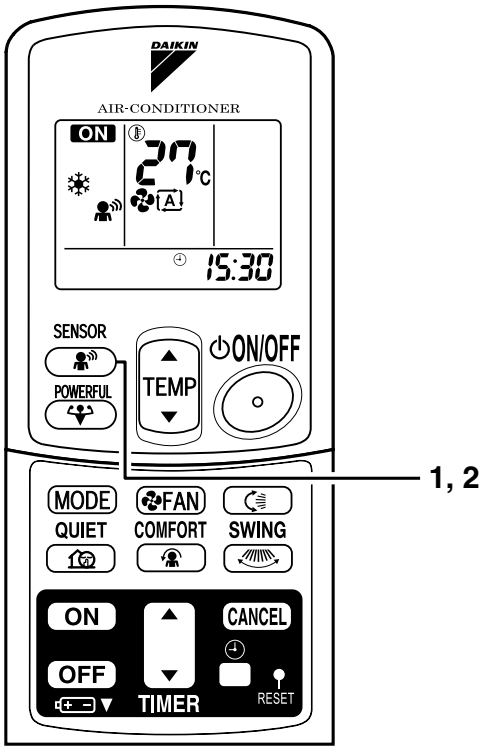
⚠ CAUTION

- Do not place large objects near the sensor.
  Also keep heating units or humidifiers outside the sensor’s detection area. This sensor can detect undesirable objects.
- Do not hit or violently push the INTELLIGENT EYE sensor. This can lead to damage and malfunction.

FTXG 25/35 E, CTXG 50 E, ATXG 25/35/50 E

INTELLIGENT EYE Operation

"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

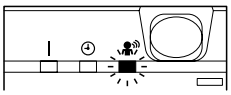
2. Press "SENSOR button" again.

• " " disappears from the LCD.

[EX.]

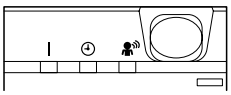
When somebody in the room

- **Normal operation.**
- **The INTELLIGENT EYE lamp lights up.**



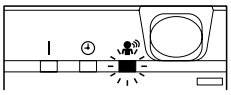
When somebody in the room

- **20 min. after, start energy saving operation.**
- **The INTELLIGENT EYE lamp goes off.**



Somebody back in the room

- **Back to normal operation.**
- **The INTELLIGENT EYE lamp lights up.**



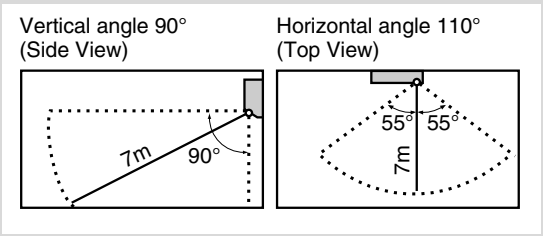
“INTELLIGENT EYE” is useful for Energy Saving

■ **Energy saving operation**

- Change the temperature –2°C in heating / +2°C in cooling / +2°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 during you use INTELLIGENT EYE operation.

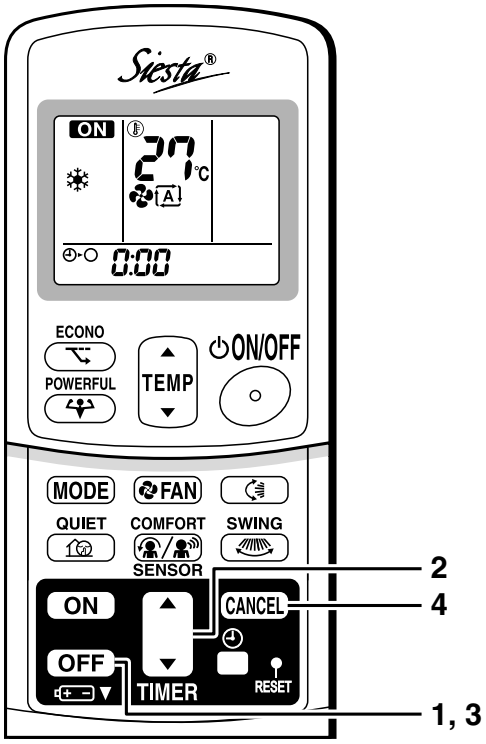
⚠ CAUTION

- 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.

2.1.11 TIMER Operation

TIMER Operation

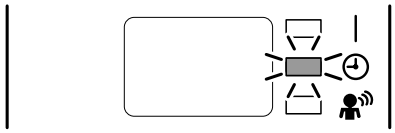
Timer functions are useful for automatically switching the air conditioner on or off at night or in the morning. You can also use OFF TIMER and ON TIMER in combination.



■ 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.
   ⊙▸○ 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

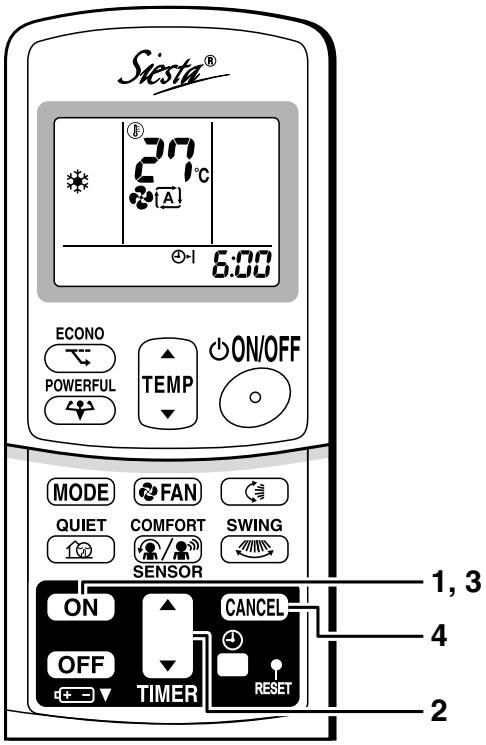
• When TIMER is set, the present time is not displayed.
• Once you set ON, OFF TIMER, the time setting is kept in the memory. (The memory is canceled when remote controller batteries are replaced.)
• When operating the unit via the ON/OFF Timer, the actual length of operation may vary from the time entered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

■ **NIGHT SET MODE**

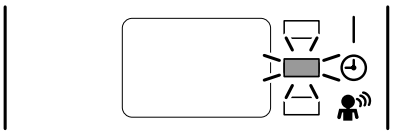
When the OFF TIMER is set, the air conditioner automatically adjusts the temperature setting (0.5°C up in COOL, 2.0°C down in HEAT) to prevent excessive cooling (heating) for your pleasant sleep.

■ 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.

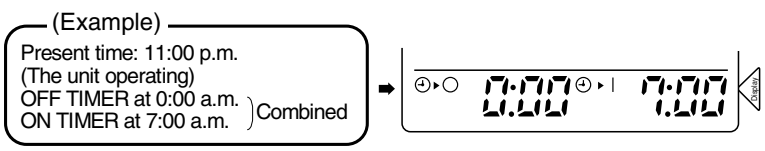


■ To cancel ON TIMER operation

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

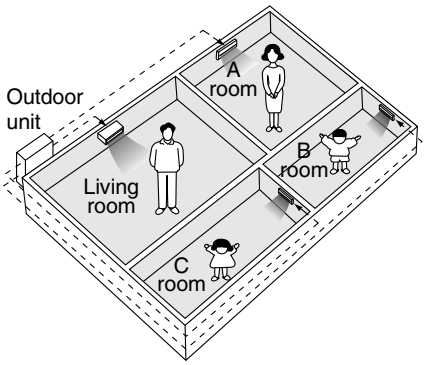
■ **In the following cases, set the timer again.**
- After a breaker has turned OFF.
- After a power failure.
- After replacing batteries in the remote controller.

2.1.12 Note for Multi System

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 efficiency of the unit.

■ OUTDOOR UNIT QUIET Operation

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

When using the OUTDOOR UNIT QUIET operation feature with the Multi system, set all indoor units to OUTDOOR UNIT QUIET operation using their remote controllers.

When clearing OUTDOOR UNIT QUIET operation, clear one of the operating indoor units using their remote controller.

However OUTDOOR UNIT QUIET operation display remains on the remote controller for other rooms.

We recommend you release all rooms using their remote controllers.

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.

Note for Multi System

■ 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 QUIET operation.

〈Example〉

* Room A is the Priority Room in the examples.

Just by setting the unit in Room A to QUIET operation, the air conditioner starts OUTDOOR UNIT QUIET operation.

You don’t have to set all the operated indoor units to QUIET operation.

2.2 FTXS, FVXS Series

2.2.1 Manual Contents and Reference Page

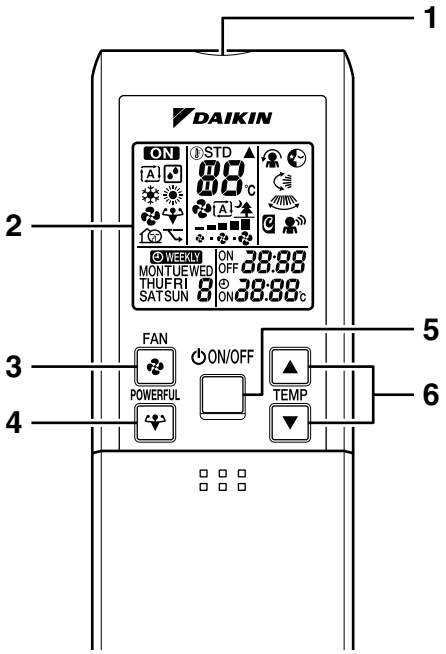
Model Series	Wall Mounted Type	Floor Standing Type
	FTXS20-50G	FVXS25-50F
Read Before Operation		
Remote Controller	129	130
Operation		
AUTO, DRY, COOL, HEAT, FAN Operation ★1	131	131
Adjusting the Airflow Direction	133	135
Comfort Airflow and INTELLIGENT EYE Operation	137	—
POWERFUL Operation ★1	140	140
OUTDOOR UNIT QUIET Operation ★1	141	141
ECONO Operation ★1	142	142
HOME LEAVE Operation	—	—
INTELLIGENT EYE Operation	—	—
TIMER Operation ★1	143	143
WEEKLY TIMER Operation ★1	145	145
Note for Multi System ★1	150	150
Drawing No.	3P207037-1C	3P191290-1G

★1 : Illustrations are for wall mounted type FTXS20-50G as representative.

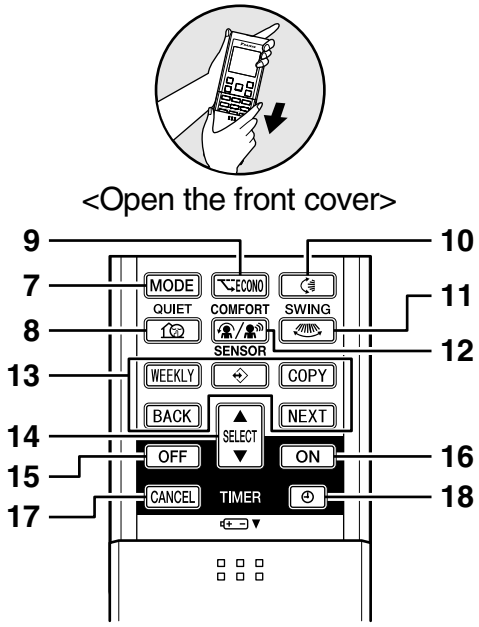
2.2.2 Remote Controller

FTXS 20/25/35/42/50 G

■ Remote Controller



< ARC452A3 >



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. FAN setting button:
- It selects the airflow rate setting.

4. POWERFUL button:
POWERFUL operation

5. ON/OFF button:
- Press this button once to start operation. Press once again to stop it.

6. TEMPERATURE adjustment buttons:
- It changes the temperature setting.

7. MODE selector button:
- It selects the operation mode. (AUTO/DRY/COOL/HEAT/FAN)

8. QUIET button:
OUTDOOR UNIT QUIET operation

9. ECONO button:
ECONO operation

10. SWING button:
- Horizontal blades (flaps)

11. SWING button:
- Vertical blades (louvers)

12. COMFORT/SENSOR button:
- COMFORT AIRFLOW and INTELLIGENT EYE operation

13. WEEKLY/PROGRAM/COPY/BACK/NEXT button:
- WEEKLY TIMER operation

14. SELECT button:
- It changes the ON/OFF TIMER and WEEKLY TIMER settings.

15. OFF TIMER button

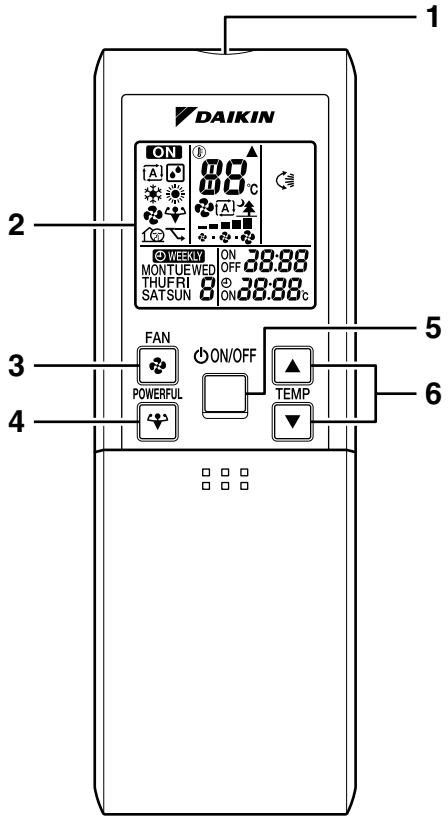
16. ON TIMER button

17. TIMER CANCEL button:
- It cancels the timer setting.
- It cannot be used for the WEEKLY TIMER operation.

18. CLOCK button

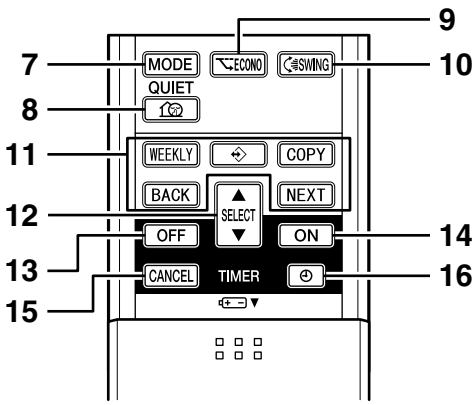
FVXS 25/35/50 F

■ Remote Controller



< ARC452A1 >

<Open the lid>



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. FAN setting button:
- It selects the airflow rate setting.

4. POWERFUL button:
POWERFUL operation

5. ON/OFF button:
- Press this button once to start operation. Press once again to stop it.

6. TEMPERATURE adjustment buttons:
- It changes the temperature setting.

7. MODE selector button:
- It selects the operation mode. (AUTO/DRY/COOL/HEAT/FAN)

8. QUIET button:
OUTDOOR UNIT QUIET operation

9. ECONO button:
ECONO operation

10. SWING button:
- Adjusting the Airflow Direction

11. WEEKLY/PROGRAM/COPY/BACK/NEXT button:
WEEKLY TIMER operation

12. SELECT button:
- It changes the ON/OFF TIMER and WEEKLY TIMER settings.

13. OFF TIMER button

14. ON TIMER button

15. TIMER CANCEL button:
- It cancels the timer setting.
- It cannot be used for the WEEKLY TIMER operation.

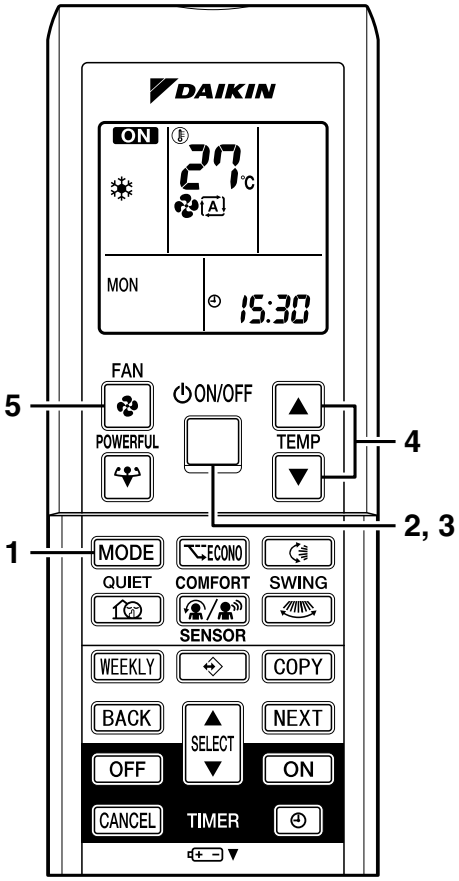
16. CLOCK button

2.2.3 AUTO • DRY • COOL • HEAT • FAN Operation

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 a operation mode.

- Each pressing of the button advances the mode setting in sequence.

: AUTO

: DRY

: COOL

: HEAT

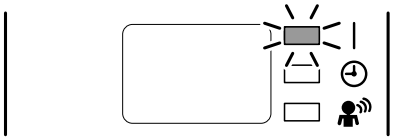
: FAN

Cooling only model

Heat pump model

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. 

■ To change the airflow rate setting

5. Press “FAN setting button”.

DRY mode	AUTO or COOL or HEAT or FAN mode
The airflow rate setting is not variable.	Five levels of airflow rate setting from “ ” to “ ” plus “ ” “ ” are available. 

• Indoor unit quiet operation

When the airflow is set to “ ”, the noise from the indoor unit will become quieter. Use this when making the noise quieter.

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.
- A pinging sound may be heard during defrosting operation, which, however does not mean that the air conditioner has failures.

■ **Note on COOL operation**
- This air conditioner cools the room by blowing the hot air in the room outside, so if the outside temperature is high, the performance of the air conditioner drops.

■ **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 airflow rate, so manual adjustment of these functions is unavailable.

■ **Note on AUTO operation**
- In AUTO operation, the system selects a temperature setting and 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, manually change the set temperature.

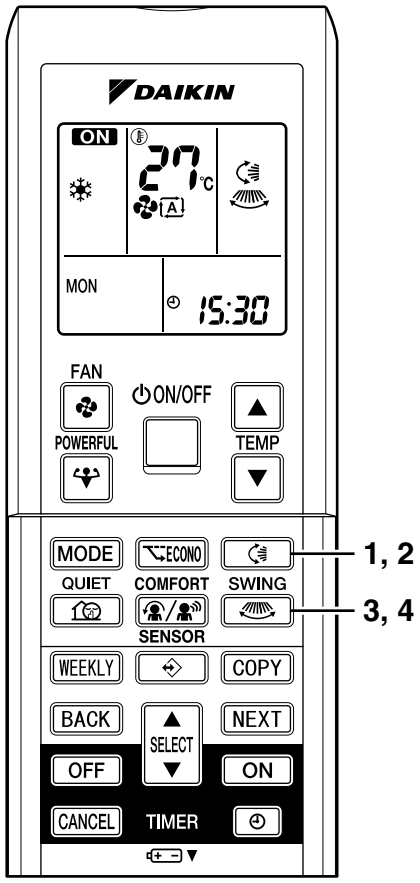
■ **Note on airflow rate setting**
- At smaller airflow rates, the cooling (heating) effect is also smaller.

2.2.4 Adjusting the Airflow Direction

FTXS 20/25/35/42/50 G

Adjusting the Airflow Direction

You can adjust the airflow 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 flaps 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.
   - " " disappears from the LCD.

■ To start 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 ”.

■ COMFORT AIRFLOW operation

- Check COMFORT AIRFLOW operation in the section of “COMFORT AIRFLOW Operation” and “INTELLIGENT EYE Operation”.

Notes on flaps and louvers angles

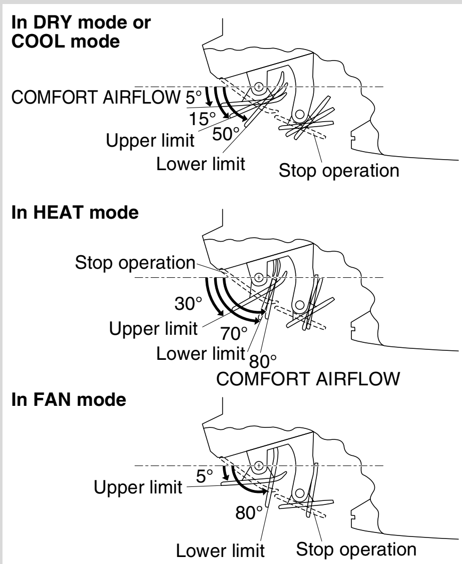
- When “**SWING button**” is selected, the flaps swinging range depends on the operation mode. (See the figure.)

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

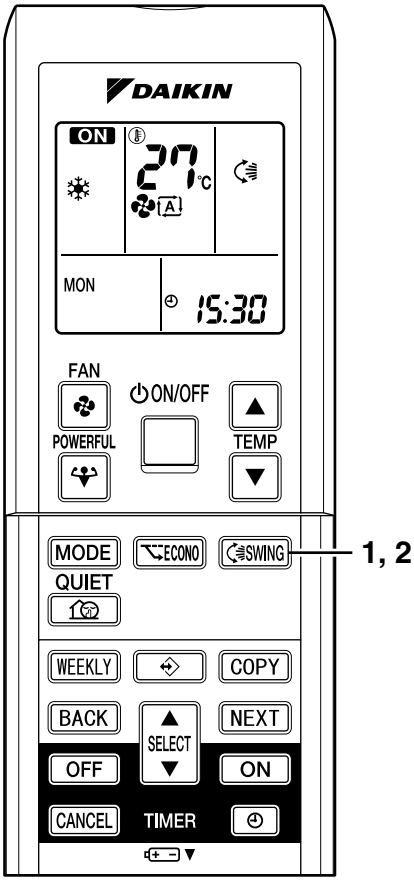
- Always use a remote controller to adjust the angles of the flaps and louvers. If you attempt to move it forcibly with hand when it is swinging, the mechanism may be broken.
- Always use a remote controller to adjust the louvers angles. In side the air outlet, a fan is rotating at a high speed.



FVXS 25/35/50 F

Adjusting the Airflow Direction

You can adjust the airflow direction to increase your comfort.



1, 2

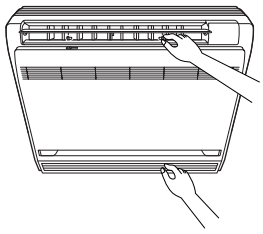
■ To adjust the horizontal blade (flap)

1. **Press "SWING button ".**
   - " is displayed on the LCD and the flaps will begin to swing.
2. **When the 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)

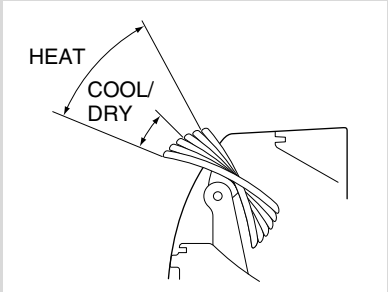
Hold the knob and move the louver.

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



Notes on flap and louvers angle

- Unless "SWING" is selected, you should set the flap at a near-horizontal angle in HEAT mode and at a upward position in COOL or DRY mode to obtain the best performance.



■ ATTENTION

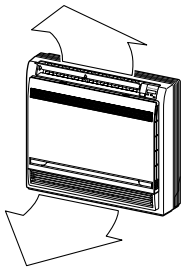
- When adjusting the flap by hand, turn off the unit, and use the remote controller to restart the unit.
- Be careful when adjusting the louvers. Inside the air outlet, a fan is rotating at a high speed.

■ Airflow selection

• Make airflow selection according to what suits you.

When setting the airflow selection switch to .

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

Operating mode	Situation	Blowing pattern
COOL mode	• When the room has become fully cool, or when one hour has passed since turning on the air conditioner.	• So that air does not come into direct contact with people, air is blown upper air outlet, room temperature is equalized.
	• At start of operation or other times when the room is not fully cooled.	 • 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.
HEAT mode	• At times other than below. (Normal time.)	
	• At start or when air temperature is low.	• So that air does not come into direct contact with people. Air is blown upper air outlet.

• 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.)

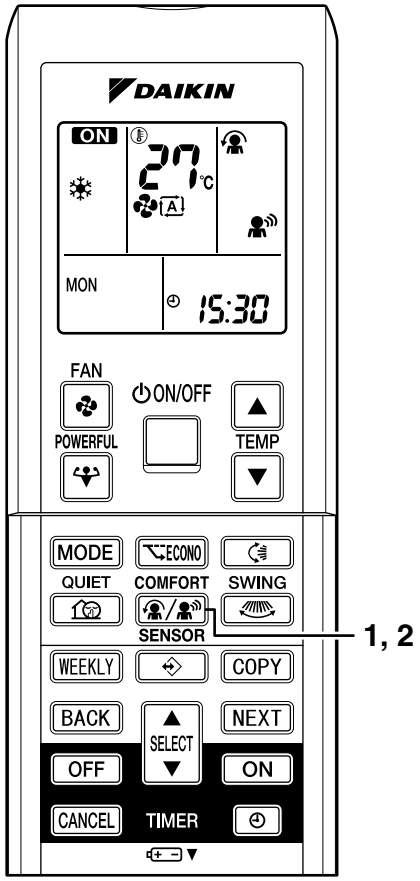
⚠ CAUTION

• 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.

2.2.5 COMFORT AIRFLOW and INTELLIGENT EYE Operation

COMFORT AIRFLOW and INTELLIGENT EYE Operation

The INTELLIGENT EYE incorporates infrared sensors to detect the presence of people in the conditioned room.
When these sensors detect people, the louvers will adjust the airflow direction to an area where people are not present. When there are no people in the sensing areas, the air conditioner will go into energy-saving mode.



■ To start operation

1. Press “COMFORT/SENSOR button” and select an operation mode.

- Choose the desired operation mode out of the following sequence.
- Each time the “COMFORT/SENSOR button” is pressed a different setting option is displayed on the LCD.

→ → → → Blank

■ To cancel operation

2. Press “COMFORT/SENSOR button”.

- Press the button to select “Blank”.

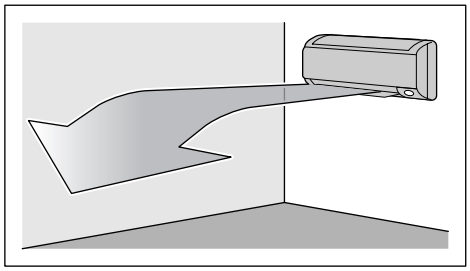
Display	Operation mode	Explanation
	COMFORT AIRFLOW	The flaps will adjust the airflow direction upward while cooling, and adjust the airflow direction downward while heating.
	INTELLIGENT EYE	The sensors will detect the movement of people in the sensing areas and the louvers will adjust the airflow direction to an area where people are not present. When there are no people in the sensing areas, the air conditioner will go into energy-saving mode.
	COMFORT AIRFLOW and INTELLIGENT EYE	The air conditioner will be in COMFORT AIRFLOW operation combined with INTELLIGENT EYE operation.
Blank	No function	–

Notes on “COMFORT AIRFLOW Operation”

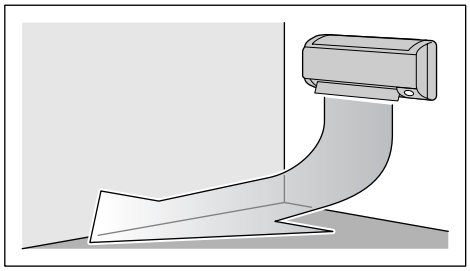
- The flap position will change, preventing air from blowing directly on the occupants of the room.
- POWERFUL operation and COMFORT AIRFLOW operation cannot be used at the same time.
- The volume of air will be set to AUTO. If the upward and downward airflow direction is selected, the COMFORT AIRFLOW function will be canceled.
- Priority is given to the function of whichever button is pressed last.
- The COMFORT AIRFLOW function makes the following airflow direction adjustments.

The flaps will move upward while cooling so that the airflow will be directed upward.

The flaps will move downward while heating so that the airflow will be directed downward.



Cooling operation

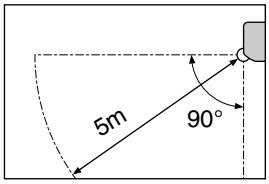


Heating operation

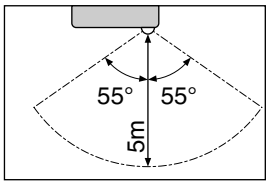
Notes on “INTELLIGENT EYE Operation”

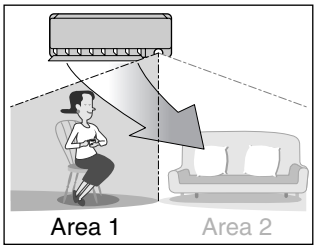
- The INTELLIGENT EYE sensor according to the following situations.

Vertical angle 90°
(Side View)

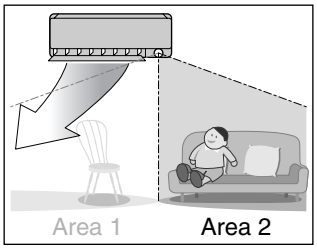


Horizontal angle 110°
(Top View)

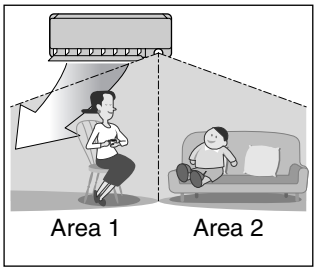




A person is detected in area 1.

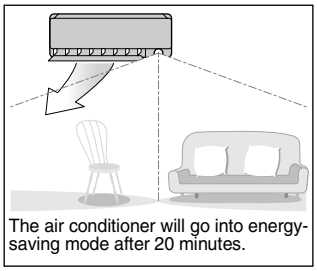


A person is detected in area 2.



People are detected in both areas.

(Use the INTELLIGENT EYE Operation in combination with the COMFORT AIRFLOW Operation.)



No people are detected in the areas.

* The wind direction may differ from the illustrated direction depending on the actions and movements of the people in the areas.

COMFORT AIRFLOW and INTELLIGENT EYE Operation

Notes on “INTELLIGENT EYE Operation”

- While the air conditioner is in INTELLIGENT EYE operation, the louvers will adjust the airflow direction if there are people in the sensing areas of the INTELLIGENT EYE so that the leftward or rightward airflow will not be directed to the people.
  If no people are detected in either area 1 or 2 in 20 minutes, the air conditioner will go into energy-saving mode with the set temperature shifted by 2°C.
  The air conditioner may go into energy-saving operation even if there are people in the areas. This may occur depending on the clothes the people are wearing if there are no movements of the people in the areas.
- The airflow direction from the louvers will be leftward if there are people in both areas 1 and 2 or if there is a person right in front of the sensors because the sensors on the both sides will detect the person.
- Due to the position of the sensor, people might be exposed to the airflow of the indoor unit if they are close to the front side of the indoor unit.
  If there are people close to the front side of the indoor unit or in both areas, it is recommended to use the COMFORT AIRFLOW and INTELLIGENT EYE functions simultaneously. When both of them are in use, the air conditioner will not direct the airflow towards the people.
- 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.
- NIGHT SET MODE will not go on during use of INTELLIGENT EYE operation.

“INTELLIGENT EYE” is useful for Energy Saving

■ **Energy saving operation**

- Change the temperature –2°C in heating / +2°C in cooling / +2°C in dry mode from set temperature.
- Decrease the airflow rate slightly in FAN mode only. If no presence detected in the room during 20 minutes.

■ To combine “COMFORT AIRFLOW Operation” and “INTELLIGENT EYE Operation”

- The air conditioner can go into operation with the COMFORT AIRFLOW and INTELLIGENT EYE functions combined.
  The flaps adjust the airflow direction upward (while in cooling operation) and downward (while in heating operation), during which the sensors of the INTELLIGENT EYE are working to detect the movement of people. When the sensors detect people, the louvers will direct the airflow in such way that it will not be blown directly on them. If there are no people, the air conditioner will go into energy-saving operation after 20 minutes.

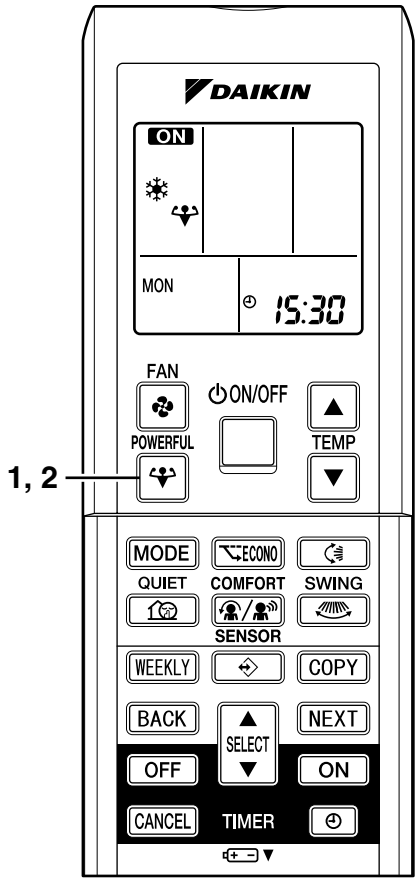
⚠ CAUTION

- Do not place large objects near the sensor.
  Also keep heating units or humidifiers outside the sensor’s detection area. This sensor can detect undesirable objects.
- Do not hit or violently push the INTELLIGENT EYE sensor. This can lead to damage and malfunction.

2.2.6 POWERFUL Operation

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

■ To cancel POWERFUL operation

2. Press "POWERFUL button" again.

- "" disappears from the LCD.

NOTE

■ **Notes on POWERFUL operation**

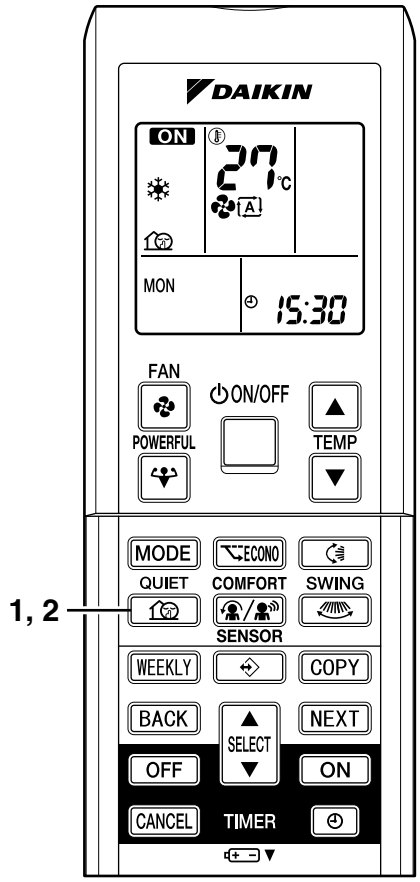
- POWERFUL Operation cannot be used together with ECONO, QUIET, or COMFORT Operation. Priority is given to the function of whichever button is pressed last.
- POWERFUL Operation can only be set when the unit is running. Pressing the operation stop button causes the settings to be canceled, and the "" 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 airflow rate be fixed to the maximum setting.
  The temperature and airflow settings are not variable.
- **In DRY mode**
  The temperature setting is lowered by 2.5°C and the airflow rate is slightly increased.
- **In FAN mode**
  The airflow rate is fixed to the maximum setting.
- **When using priority-room setting**
  See "Note for Multi System".

2.2.7 OUTDOOR UNIT QUIET Operation

OUTDOOR UNIT QUIET Operation

OUTDOOR UNIT QUIET 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 QUIET operation

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

■ To cancel OUTDOOR UNIT QUIET operation

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

NOTE

■ **Note on OUTDOOR UNIT QUIET operation**

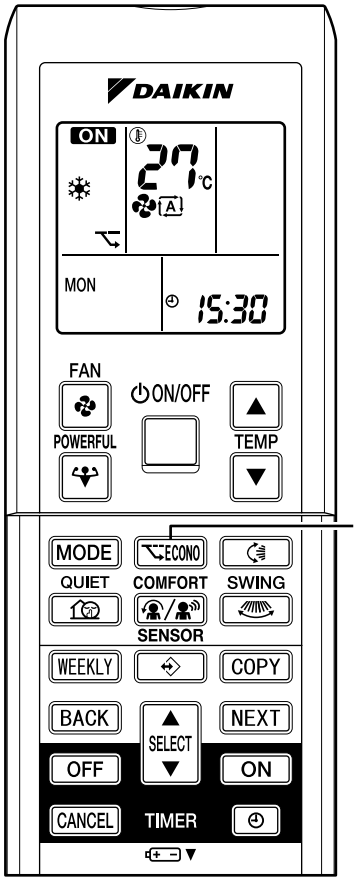
- If using a multi system, this function will work only when the OUTDOOR UNIT QUIET operation is set on all operated indoor units.
  However, if using priority-room setting, see “Note for Multi System”.
- This function is available in COOL, HEAT, and AUTO modes.
  (This is not available in FAN and DRY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

2.2.8 ECONO Operation

ECONO Operation

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

This function is useful for cases in which attention should be paid to ensure a circuit breaker will not trip when the product runs alongside other appliances.



■ To start ECONO operation

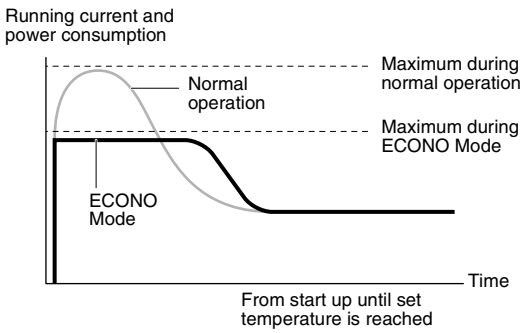
1. Press “ECONO button”.

- “⌥” is displayed on the LCD.

■ To cancel ECONO operation

2. Press “ECONO button” again.

- “⌥” disappears from the LCD.



- This diagram is a representation for illustrative purposes only.

* The maximum running current and power consumption of the air conditioner in ECONO mode vary with the connecting outdoor unit.

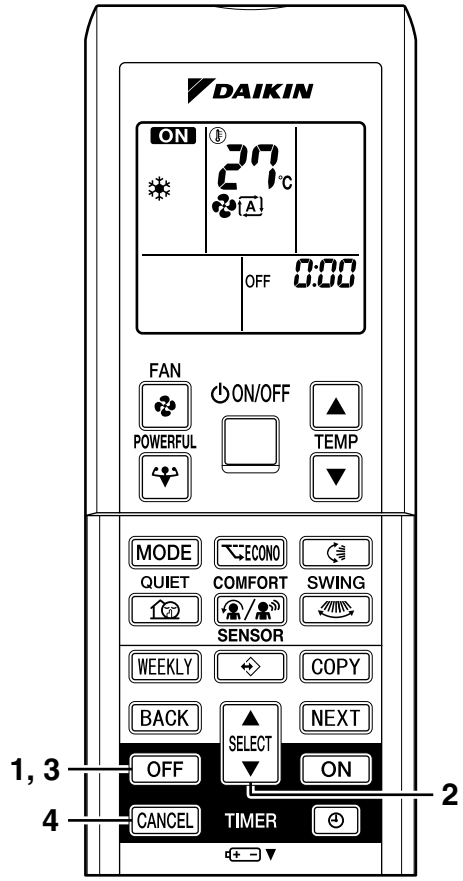
NOTE

- ECONO Operation can only be set when the unit is running. Pressing the OFF button causes the setting 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.
- POWERFUL and ECONO operation cannot be used at the same time.
  Priority is given to the function of whichever button is pressed last.
- Power consumption may not drop even if ECONO operation is used of the level of power consumption is already low.

2.2.9 TIMER Operation

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.
OFF blinks.

2. Press “SELECT 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 controller 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. (Maximum approx. 10 minutes)

■ **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".

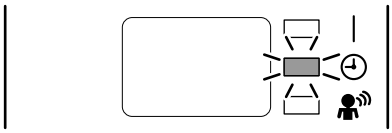
6:00 is displayed.
ON blinks.

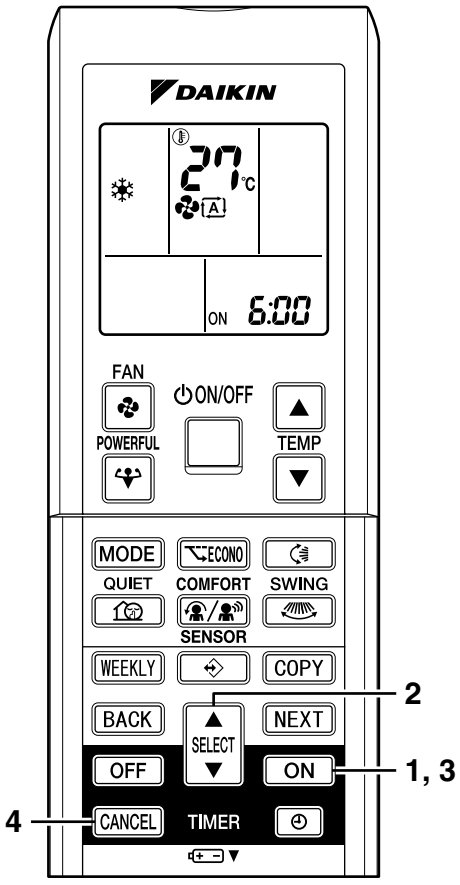
2. Press "SELECT button" until the time setting reaches the point you like.

• 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.





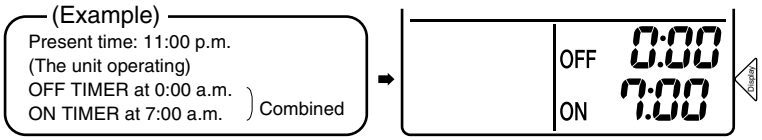
■ To cancel ON TIMER operation

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 controller.

2.2.10 WEEKLY TIMER Operation

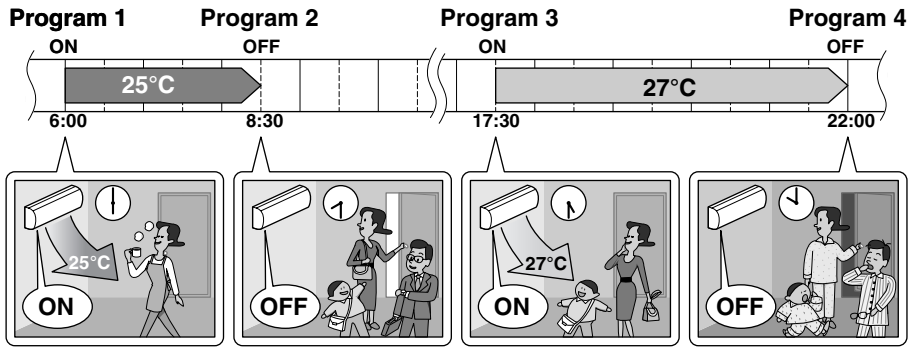
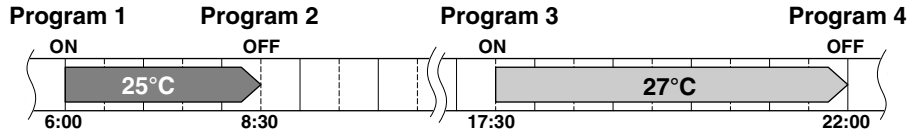
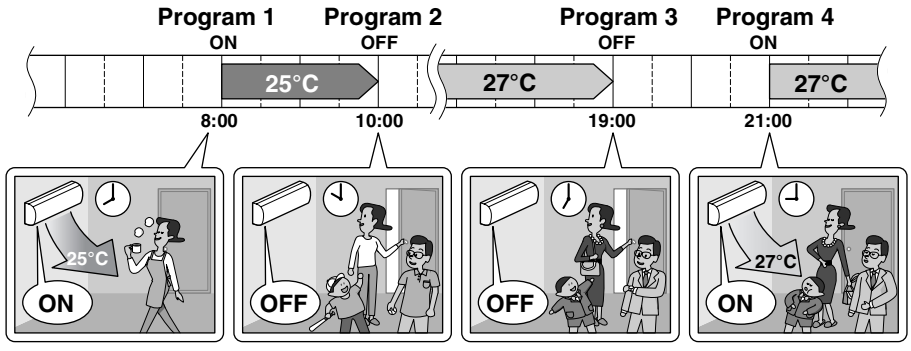
WEEKLY TIMER Operation

Up to 4 timer settings can be saved for each day of the week. It is convenient if the WEEKLY TIMER is set according to the family's life style.

■ Using in these cases of WEEKLY TIMER

An example of WEEKLY TIMER settings is shown below.

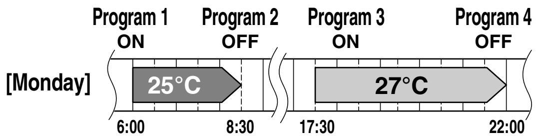
Example: The same timer settings are made for the week from Monday through Friday while different timer settings are made for the weekend.

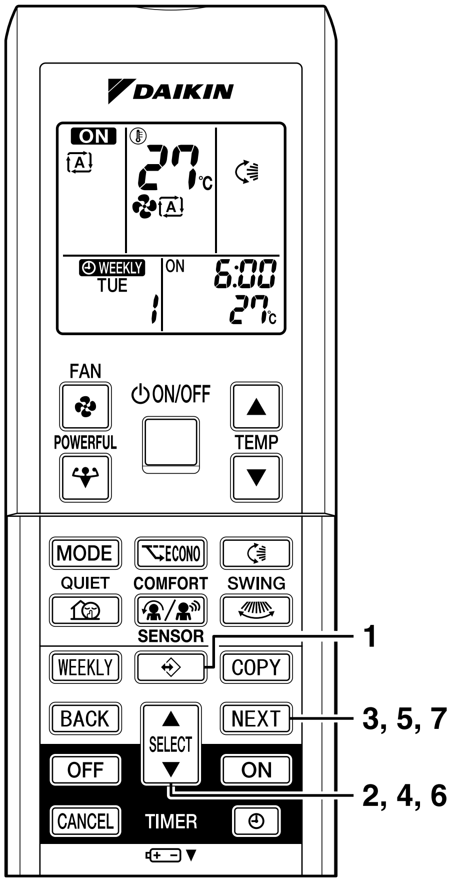
<table>
<tr><td>[Monday]</td><td>Make timer settings up to programs 1-4.
 
</td></tr>
<tr><td>[Tuesday] to [Friday]</td><td>Use the copy mode to make settings for Tuesday to Friday, because these settings are the same as those for Monday.
 
</td></tr>
<tr><td>[Saturday]</td><td>No timer settings</td></tr>
<tr><td>[Sunday]</td><td>Make timer settings up to programs 1-4.
 
</td></tr>
</table>

- Up to 4 reservations per day and 28 reservations per week can be set in the WEEKLY TIMER. The effective use of the copy mode ensures ease of making reservations.
- The use of ON-ON-ON-ON settings, for example, makes it possible to schedule operating mode and set temperature changes. Furthermore, by using OFF-OFF-OFF-OFF settings, only the turn-OFF time of each day can be set. This will turn OFF the air conditioner automatically if the user forgets to turn it OFF.

■ To use WEEKLY TIMER operation

- Make sure the day of the week and time are set. If not, set the day of the week and time.





1. Press “ [button] button”.

- The day of the week and the reservation number will be displayed.
- 1 to 4 settings can be made per day.

2. Press the “SELECT button” to select the desired day of the week and reservation number.

- Pressing the “SELECT button” changes the reservation number and the day of the week.

3. Press “NEXT button”.

- The day of the week will be set.
- “ WEEKLY ” and “ **ON** ” blink.

4. Press “SELECT button” to select the desired mode.

- “ WEEKLY ” and “ **ON** ” or “ **OFF** ” will flash.

→ **ON** (ON TIMER) → **OFF** (OFF TIMER) → Blank (no setting) →

- Go to STEP **9** if “no setting” is selected.

5. Press “NEXT button”.

- The weekly mode will be set.
- “ WEEKLY ” and “ 6:00 ” blink.

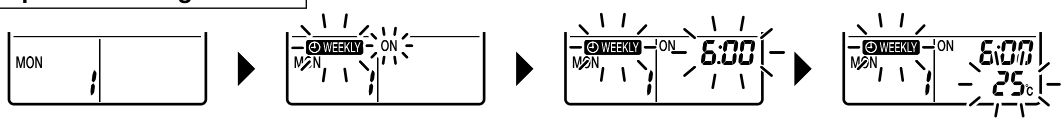
6. Press “SELECT button” to select the desired time.

- The time can be set between 0:00 and 23:50 in 10 minute intervals.
- Press “BACK button” to return to the mode setting.
- Go to STEP **9** if “OFF” is selected at STEP **4**.

7. Press “NEXT button”.

- The time will be set.
- “ WEEKLY ” and the temperature blink.

Respective Setting Screens



Day and number settings ▶ ON/OFF settings ▶ Time settings ▶ Temperature settings

WEEKLY TIMER Operation

8. Press “SELECT button” to select the desired temperature.

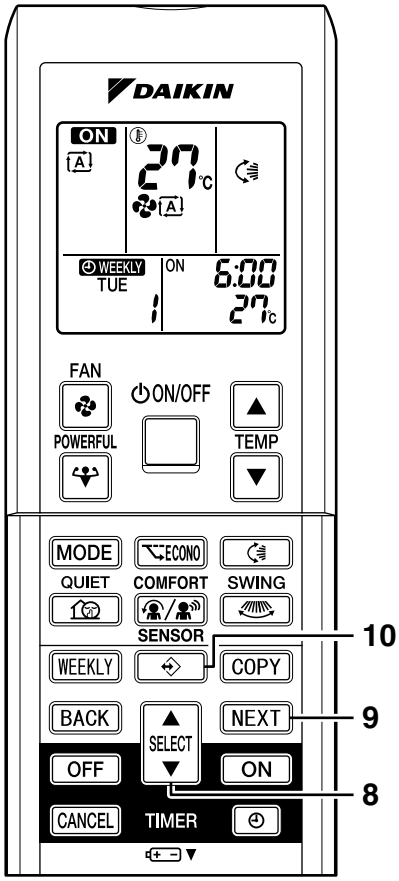
- The temperature can be set between 10°C and 32°C.
  Cooling: The unit operates at 18°C even if it is set at 10 to 17°C.
  Heating: The unit operates at 30°C even if it is set at 31 to 32°C.
- To return to the time setting, press “BACK button”.
- The set temperature is only displayed when the mode setting is on.

9. Press “NEXT button”.

- The temperature will be set and go to the next reservation setting.
- To continue further settings, repeat the procedure from STEP **2**.

10. Press “ [⇗] button” to complete the setting.

- Point the remote controller toward the air conditioner and press the buttons to operate. The air conditioner will beep and the operation lamp will flash.



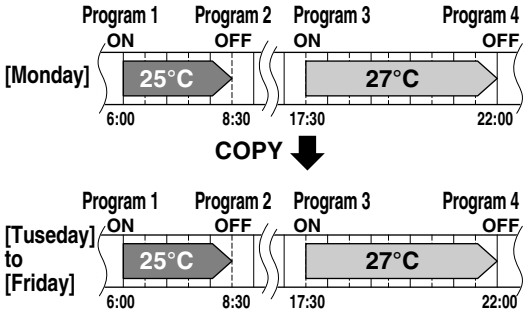
NOTE

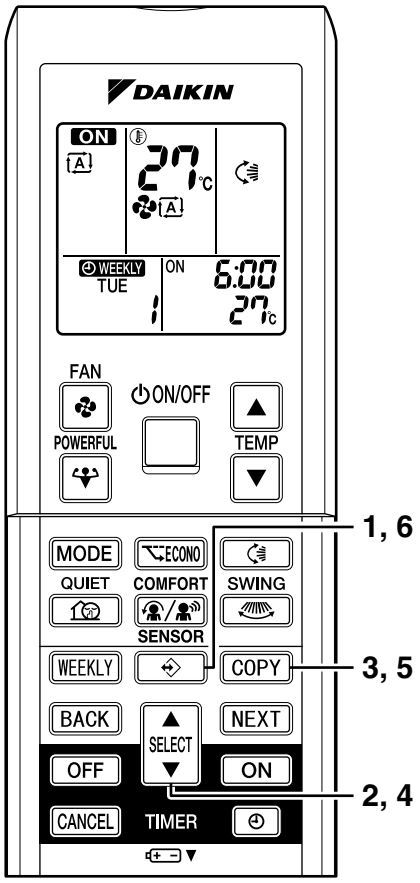
■ **WEEKLY TIMER**

- Do not forget to set the time on the remote control first.
- The day of the week, ON/OFF time can be set with WEEKLY TIMER. For ON-TIMER, settings other than the above are based on the remote controller settings just before the operation.
- Both WEEKLY TIMER and ON/OFF timer cannot be used at the same time. The ON/OFF timer has priority if it is set while WEEKLY TIMER is still active. WEEKLY TIMER is activated after the reserved ON/OFF timer is completed.
- The “WEEKLY button” activates or deactivates the reservation.
- To set WEEKLY TIMER, press “ [⇗] button” and make a reservation according to the procedures.
- Only the time and set temperature set with the weekly timer are sent with the “ [⇗] button”.
  Set the weekly timer only after setting the operation mode, the fan strength, and the fan direction ahead of time.
- Up to 4 settings per day and up to 28 settings per week can be reserved with WEEKLY TIMER. If a reservation deactivated with “WEEKLY button” is activated once again, the last reservation mode will be used.
- Shutting the breaker off, power failure, and other similar events will render operation of the indoor unit’s internal clock inaccurate. Reset the clock.
- The “BACK button” can be used only for the mode, time and temperature settings.
  It cannot be used to go back to the reservation number.

■ Using copy mode

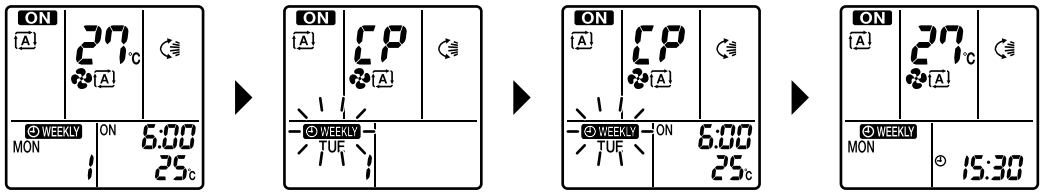
• A reservation made once can be easily copied and the same settings used for another day of the week.





1. **Press “ button”.**
2. **Press “SELECT button” to confirm the day of the week to be copied.**
3. **Press “COPY button”.**
   • This activates copy mode.
   • Copy whole reservation of the selected day of the week.
4. **Press “SELECT button” to select the destination day of the week.**
5. **Press “COPY button”.**
   • The reservation will be copied to the selected day of the week. The whole reservation of the selected day of the week will be copied.
   • To continue copying the settings to other days of the week, repeat STEP **4** and STEP **5**.
6. **Press “ button”.**
   • Exit copy mode.

Setting Screens



Confirmation screen | Copy screen | Paste screen | Normal screen

NOTE

■ COPY MODE

• The entire reservation of the source day of the week is copied in the copy mode. Detailed settings can be made after the copy is completed.

WEEKLY TIMER Operation

■ Confirming a reservation

• The reservation can be confirmed.

1. Press " button".

• The day of the week and the reservation number of the current day will be displayed.

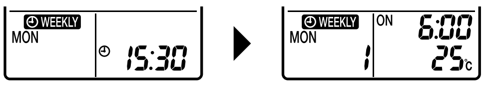
2. Press "SELECT button" to select the day of the week and the reservation number to be confirmed.

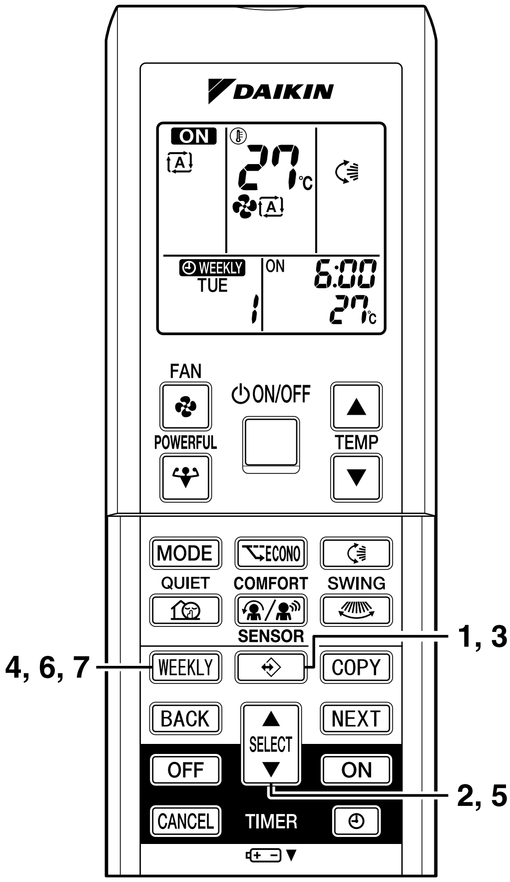
• Pressing the "SELECT button" displays the reservation details.

3. Press " button".

• Reservation confirmation complete.

Setting Screens





■ Canceling all reservations

4. Hold the "WEEKLY button" for 5 seconds.

• Be sure to direct the remote control toward the main unit and check for a receiving tone.

• This operation is not effective while WEEKLY TIMER is being set.

• All reservations will be canceled.

■ Canceling individual reservations

• This function can be used for canceling reservations for each day of the week.

• It can be used while confirming or setting reservations.

5. Select the day of the week to be canceled with the "SELECT button".

6. Hold the "WEEKLY button" for 5 seconds.

• The selected reservation will be canceled.

■ To cancel WEEKLY TIMER operation

7. Press "WEEKLY button" to deactivate the WEEKLY operation.

• The " WEEKLY " will disappear from the display.

• The TIMER lamp goes off.

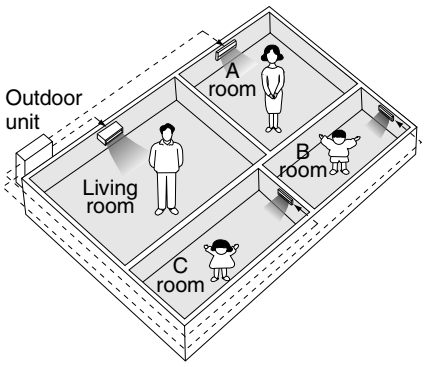
• To reactivate the WEEKLY TIMER operation, press the "WEEKLY button" again.

2.2.11 Note for Multi System

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 QUIET operation

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

When using the OUTDOOR UNIT QUIET operation feature with the Multi system, set all indoor units to OUTDOOR UNIT QUIET operation using their remote controllers.

When clearing OUTDOOR UNIT QUIET operation, clear one of the operating indoor units using their remote controller.

However OUTDOOR UNIT QUIET operation display remains on the remote controller for other rooms.

We recommend you release all rooms using their remote controllers.

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.

Note for Multi System

■ 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 QUIET operation.

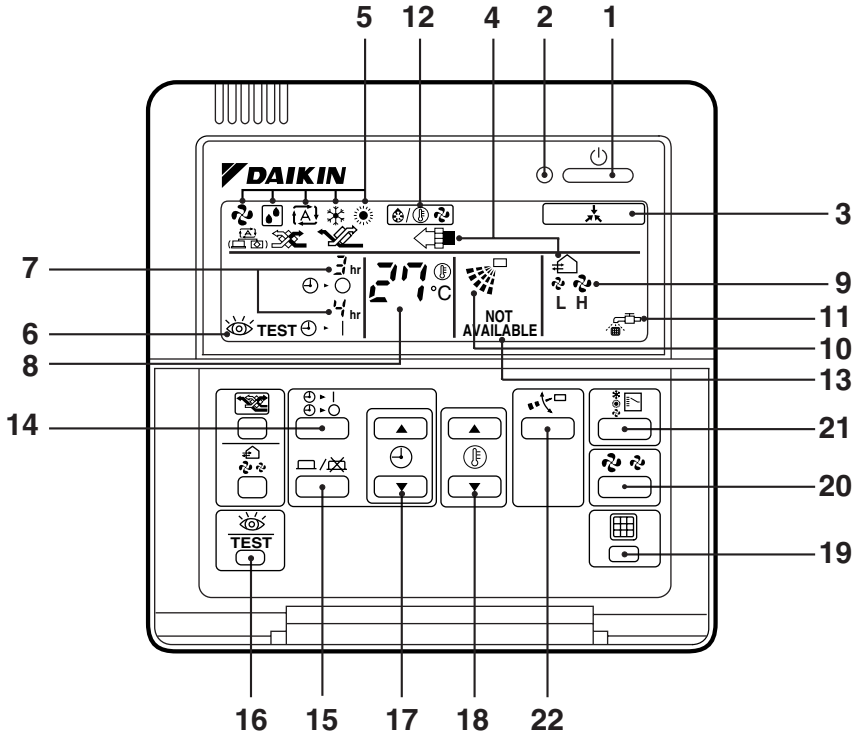
<Example>

* Room A is the Priority Room in the examples.

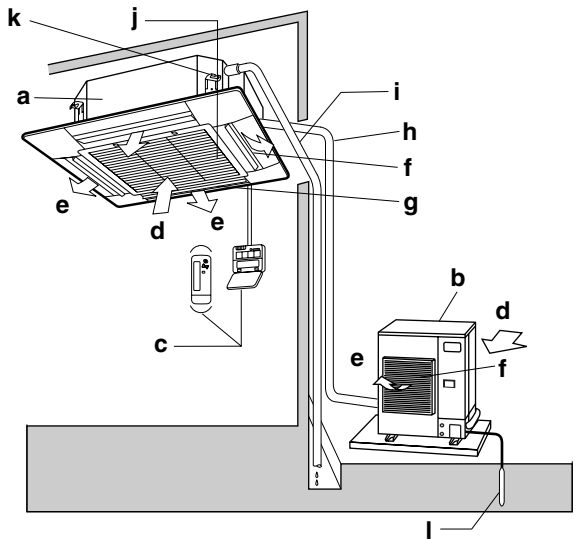
Just by setting the unit in Room A to QUIET operation, the air conditioner starts OUTDOOR UNIT QUIET operation.

You don’t have to set all the operated indoor units to QUIET operation.

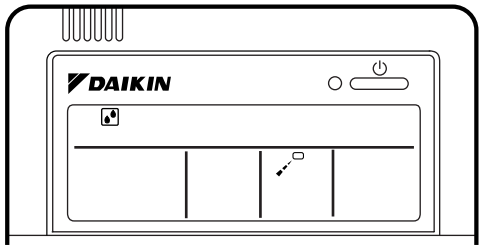
2.3 FFQ Series



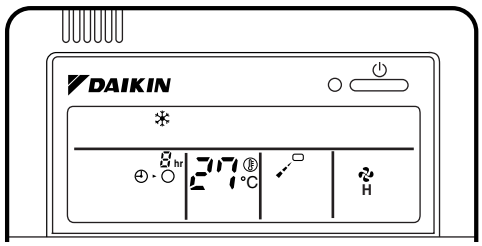
1



2



3



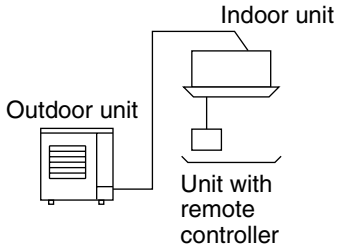
4

[1]

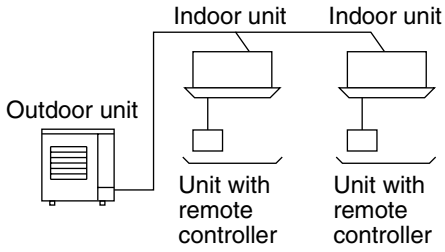
1. WHAT TO DO BEFORE OPERATION

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 sysem.

• Pair system



• Multi system



NOTE

• If the unit you purchased is controlled by a wireless remote controller, also refer to the wireless remote controller'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 CONTROLLER CONTROL SYSTEM

This system provides two other control systems beside individual control (one remote controller controls one indoor unit) system. Confirm the following if your unit is of the following control system type.

• **Group control system**
One remote controller controls up to 16 indoor units.
All indoor units are equally set.
• **Two remote controllers control system**
Two remote controllers 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 controllers control system.

Names and functions of parts

Refer to figure 2 on page [1]

a	Indoor unit
b	Outdoor unit • 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.
c	Remote controller
d	Inlet air
e	Discharged air
f	Air outlet
g	Air flow flap (at air outlet)
h	Refrigerant piping, connection electric wire
i	Drain pipe
j	Air inlet The built-in air filter removes dust and dirt.
k	Drain pumping out device (built-in) Drains water removed from the room during cooling.
l	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 maintenence.
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 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.
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 not 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 whatnot 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 electric 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	DB	21 to 32	80% or below	DB	-10 to 46 (-5)
	WB	14 to 23			
3MKS50 4MKS58 · 75 · 90 3MXS52 4MXS68 · 80	DB	21 to 32	80% or below	DB	-10 to 46
	WB	14 to 23			

HEATING

OUTDOOR UNIT	INDOOR TEMPERATURE		OUTDOOR TEMPERATURE	
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 controller 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.**
  a. Filled with much mineral oil such as cutting oil
  b. Where there is much salt such as a beach area
  c. Where sulfured gas exists such as a hot-spring resort.
  d. Where there are considerable voltage fluctuations such as a factory or plant
  e. Vehicles and vessels
  f. Where there is much spray of oil and vapor such as a cookery, etc.
  g. Where there are machines generating electromagnetic waves.
  h. 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. A place that can sufficiently withstand the weight of the air conditioner with less running noises and vibrations.
  b. 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 con sult your dealer or our service station.

5. NAME AND FUNCTION OF EACH SWITCH AND DISPLAY ON THE REMOTE CONTROLLER

Refer to figure 1 on page [1]

1	**ON/OFF BUTTON**
	Press the button and the system will start. Press the button again and the system will stop.
2	**OPERATION LAMP (RED)**
	The lamp lights up during operation.
3	**DISPLAY “ ” (UNDER CENTRALIZED CONTROL)**
	When this display shows, the system is UNDER CENTRALIZED CONTROL.
4	**DISPLAY “ ” “ ” “ ” “ ” (VENTILATION/AIR CLEANING)**
	This display shows that the total heat exchange and the air cleaning unit are in operation (These are optional accessories).
5	**DISPLAY “ ” “ ” “ ” “ ” “ ” (OPERATION MODE)**
	This display shows the current OPERATION MODE. For cooling only type, “ ” (Auto) and “ ” (Heating) are not installed.
6	**DISPLAY “ TEST ” (INSPECTION/TEST OPERATION)**
	When the INSPECTION/TEST OPERATION BUTTON is pressed, the display shows the system mode is in.
7	**DISPLAY “ ” (PROGRAMMED TIME)**
	This display shows the PROGRAMMED TIME of the system start or stop.
8	**DISPLAY “ ” (SET TEMPERATURE)**
	This display shows the set temperature.
9	**DISPLAY “ ” (FAN SPEED)**
	This display shows the set fan speed.
10	**DISPLAY “ ” (AIR FLOW FLAP)**
	Refer to “AIR FLOW DIRECTION ADJUST”.
11	**DISPLAY “ ” (TIME TO CLEAN AIR FILTER)**
	Refer to “HOW TO CLEAN THE AIR FILTER”.
12	**DISPLAY “ ” (DEFROST)**
	Refer to “DEFROST OPERATION”.
13	**NON-FUNCTIONING DISPLAY**
	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 be 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	**TIMER MODE START/STOP BUTTON**
	Refer to “PROGRAM TIMER OPERATION”.
15	**TIMER ON/ OFF BUTTON**
	Refer to “PROGRAM TIMER OPERATION”
16	**INSPECTION/TEST OPERATION BUTTON**
	This button is used only by qualified service persons for maintenance purposes.
17	**PROGRAMMING TIME BUTTON**
	Use this button for programming “START and/or STOP” time.
18	**TEMPERATURE SETTING BUTTON**
	Use this button for SETTING TEMPERATURE.
19	**FILTER SIGN RESET BUTTON**
	Refer to “HOW TO CLEAN THE AIR FILTER”.
20	**FAN SPEED CONTROL BUTTON**
	Press this button to select the fan speed, HIGH or LOW, of your choice.
21	**OPERATION MODE SELECTOR BUTTON**
	Press this button to select OPERATION MODE.
22	**AIR FLOW DIRECTION ADJUST BUTTON**
	Refer to “AIR FLOW DIRECTION ADJUST”.

NOTE

- 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 increase, heating effect decreases and the system goes into DEFROST OPERATION.
• The indoor unit fan stops and the remote controller 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

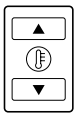
• The heating capacity of the air conditioner declines as the outside air temperature falls. In such a case, use the air conditioner in combination with other heating systems.
• A warm air circulating system is employed, and therefore it takes some time until the entire room is warmed up after the start 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 controller 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

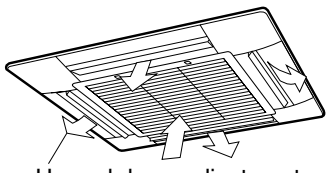
• The setting temperature range of the remote controller is 16°C to 32°C.

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

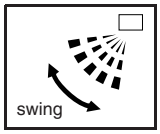
Press the AIR FLOW DIRECTION ADJUST button to adjust the air flow angle.



Up and down adjustment

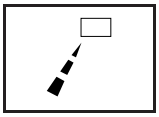
• The movable limit of the flap is changeable. Contact your Daikin dealer for details.

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.

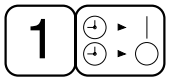
Operation mode	Heating
Operation condition	• When starting operation • When room temperature is higher than the set temperature • At defrost operation (Air is blown horizontally to prevent the cool air from being blown directly onto anyone in the room.)

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 (◷ ▸ ○) .... The system stops operating after the set time has elapsed.
- Programming the start time (◷ ▸ \|) .... 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.



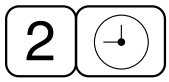
TIMER MODE START/STOP

Press the TIMER MODE START/STOP button several times and select the mode on the display.

The display flashes.

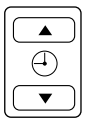
For setting the timer stop .... " ◷ ▸ ○ "

For setting the timer start .... " ◷ ▸ \| "



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 " ◷ ▸ ○ or ◷ ▸ \| " 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 6hours 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.

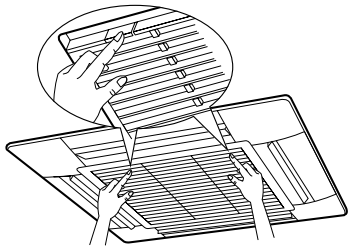
HOW TO CLEAN THE AIR FILTER

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)

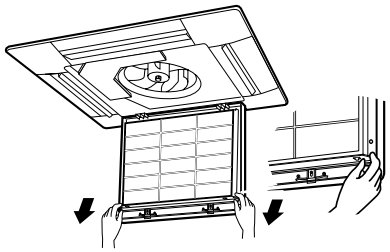
1. Open the suction grille.
Push it downward slowly while pressing horizontally the buttons provided on two spots. (Follow the same procedure for closing).

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 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.

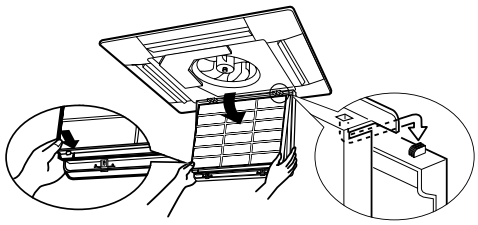
Remove water and dry in the shade.

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

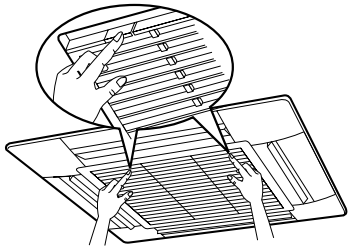
- Clean with soft cloth.
- When it is difficult to remove stains, use water or neutral detergent.

NOTE

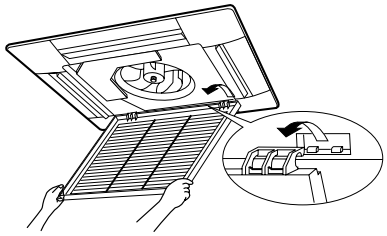
- Do not use gasoline, benzene, thinner, polishing powder, liquid insecticide. It may cause discoloring or warping.
- Do not let the indoor unit get wet. It may cause an electric shock or a fire.
- Do not use water or air of 50°C or higher for cleaning air filters and outside panels.

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 throughly.

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 controller 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 a half 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 controller 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 "[人] " (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 controller.
- **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 temprerature has reached the set temprerature. The indoor unit switches to fan operation.

II. The display shows "[人] " (UNDER CENTRALIZED CONTROL) and the unit operates in a mode different to what is shown on the remote controller 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 contoller.**
- **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 systems 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 CONTROLLER SHOW "88"

• **It happens immediately after the main power supply switch is turned on.**
This shows that the remote controller is in normal condition.
This continues temporary.

10. TROUBLE SHOOTING

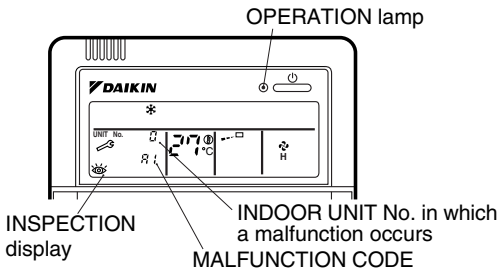
I. If one of the following malfunctions occurs, take the measures shown below and contact your Daikin dealer.

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 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.

3P083810-4M

Part 6
Service Diagnosis

1. Caution for Diagnosis

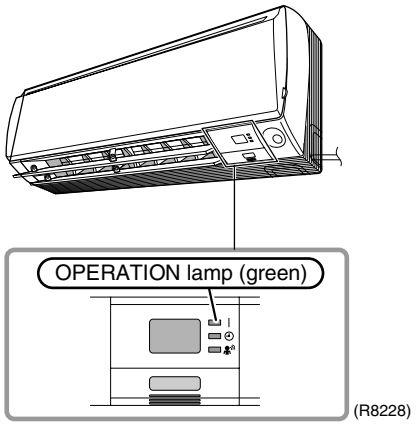
The operation lamp flashes when any of the following errors is detected.

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.

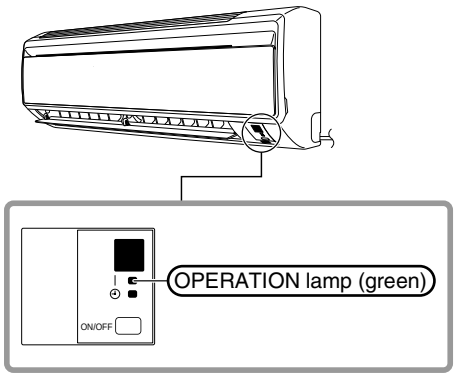
Location of Operation Lamp

In case of
F(A)TXS 20-50 G Series



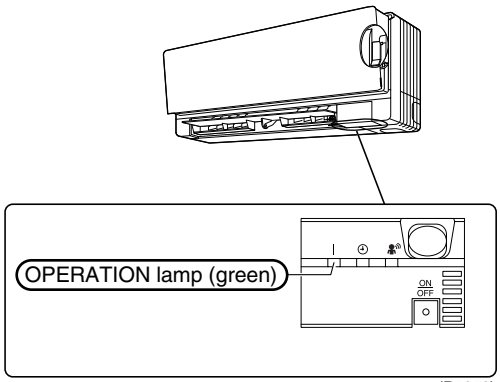
(R8228)

In case of
ATX 20-35 G Series



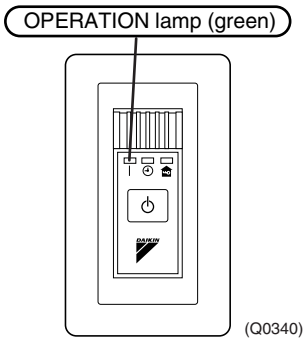
(R9302)

In case of
F(C)(A)TXG 25-50 E Series



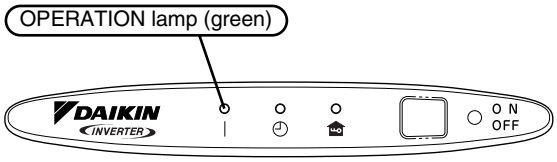
(R5072)

In case of
duct connected type



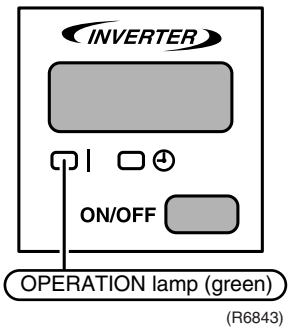
(Q0340)

In case of
floor / ceiling suspended dual type



(Q0341)

In case of
floor standing type



(R6843)

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.)

Troubleshooting with the LED Indication

Outdoor Unit

There is a green LED on the PCB. The flashing green LED indicates normal equipment condition. (Troubleshooting with the green LED)
The LED A 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.

2. Problem Symptoms and Measures

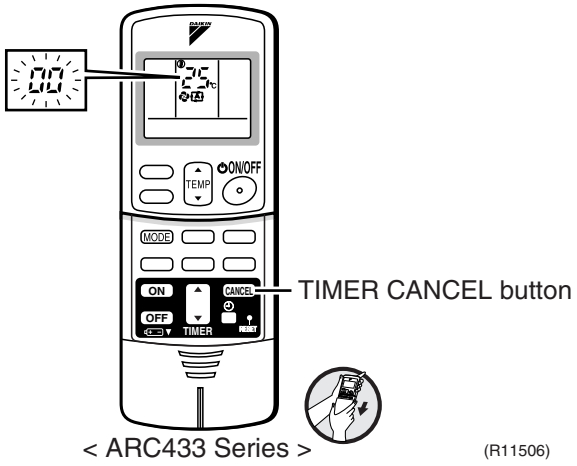
Symptom	Check Item	Details of Measure	Reference Page
None of the units operates.	Check the power supply.	Check to make sure that the rated voltage is supplied.	—
	Check the type of the indoor units.	Check to make sure that the indoor unit type is compatible with the outdoor unit.	—
	Check the outdoor air temperature.	Heating operation cannot be used when the outdoor air temperature is 24°C or higher (only for heat pump model), and cooling operation cannot be used when the outdoor air temperature is below 10°C.	—
	Diagnosis with remote controller indication	—	173
	Check the remote controller addresses.	Check to make sure that address settings for the remote controller and indoor unit are correct.	—
Operation sometimes stops.	Check the power supply.	A power failure of 2 to 10 cycles can stop air conditioner operation. (Operation lamp OFF)	—
	Check the outdoor air temperature.	Heating operation cannot be used when the outdoor air temperature is 24°C or higher (only for heat pump model), and cooling operation cannot be used when the outdoor air temperature is below 10°C.	—
	Diagnosis with remote controller indication	—	173
Equipment operates but does not cool, or does not heat (only for heat pump model).	Check for wiring and piping errors in the indoor and outdoor units connection wires and pipes.	Conduct the wiring/piping error check described on the product diagnosis nameplate.	—
	Check for thermistor detection errors.	Check to make sure that the main unit's thermistor has not dismounted from the pipe holder.	—
	Check for faulty operation of the electronic expansion valve.	Set the units to cooling operation, and compare the temperatures of the liquid side connection pipes of the connection section among rooms to check the opening and closing operation of the electronic expansion valves of the individual units.	—
	Diagnosis with remote controller indication	—	173
	Diagnosis by service port pressure and operating current	Check for refrigerant shortage.	218
Large operating noise and vibrations	Check the output voltage of the power transistor.	—	218
	Check the power transistor.	—	—
	Check the installation condition.	Check to make sure that the required spaces for installation (specified in the Engineering Data Book Guide, etc.) are provided.	—

3. Service Check Function

3.1 ARC433 Series

Check Method 1

1. When the timer cancel button is held down for 5 seconds, "00" indication appears on the temperature display section.



< ARC433 Series > (R11506)

2. Press the timer cancel button repeatedly until a long beep sounds.

■ The code indication changes in the sequence shown below.

<ARC433B41>

No.	Code	No.	Code	No.	Code
1	00	12	F6	23	A1
2	U4	13	C7	24	E1
3	L5	14	A3	25	UA
4	E6	15	H8	26	UH
5	H6	16	H9	27	P4
6	H0	17	C9	28	L3
7	A6	18	C4	29	L4
8	E7	19	C5	30	H7
9	U0	20	J3	31	U2
10	F3	21	J6	32	EA
11	A5	22	E5	33	AH

<ARC433B67, B68, B69, B76>

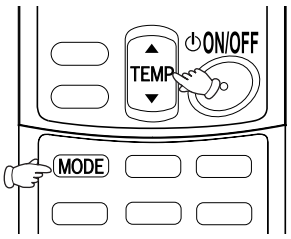
No.	Code	No.	Code	No.	Code
1	00	12	C7	23	H0
2	U4	13	H8	24	E1
3	F3	14	J3	25	P4
4	E6	15	A3	26	L3
5	L5	16	A1	27	L4
6	A6	17	C4	28	H6
7	E5	18	C5	29	H7
8	F6	19	H9	30	U2
9	C9	20	J6	31	UH
10	U0	21	UA	32	EA
11	E7	22	A5	33	AH

Note:

1. A short beep "pi" and two consecutive beeps "pi pi" indicate non-corresponding codes.
2. To return to the normal mode, hold the timer cancel button down for 5 seconds. When the remote controller is left untouched for 60 seconds, it also returns to the normal mode.

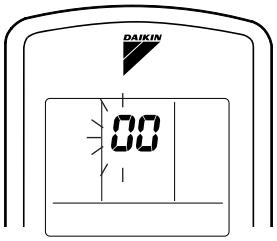
Check Method 2

1. Press the center of the TEMP button and the MODE button simultaneously to enter the diagnosis mode.



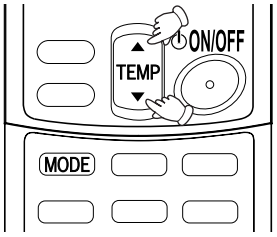
(R4272)

The figure of the ten's place blinks.



(R4273)

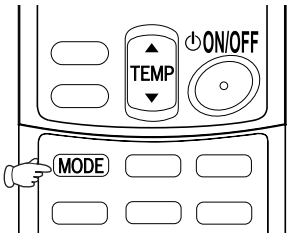
2. Press the TEMP▲ or ▼ button and change the figure until you hear the sound of "beep" or "pi pi".



(R4274)

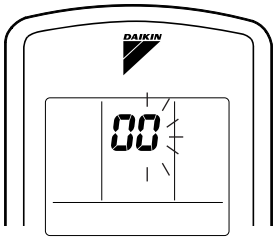
3. Diagnose by the sound.
   ★"pi" : The figure of the ten's place does not accord with the error code.
   ★"pi pi" : The figure of the ten's place accords with the error code but the one's not.
   ★"beep" : The both figures of the ten's and one's place accord with the error code.
   (The figures indicated when you hear the "beep" sound are error code.
   → Refer to page 173.)

4. Press the MODE button.



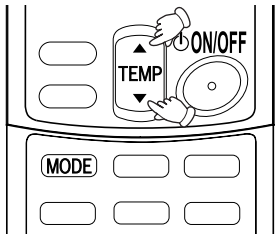
(R4275)

The figure of the one's place blinks.



(R4276)

5. Press the TEMP▲ or ▼ button and change the figure until you hear the sound of “beep”.

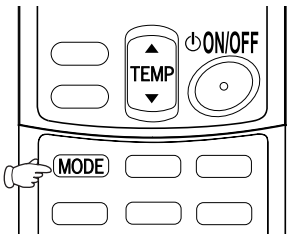


(R4277)

6. Diagnose by the sound.
   ★“pi” : The figure of the ten’s place does not accord with the error code.
   ★“pi pi” : The figure of the ten’s place accords with the error code but the one’s not.
   ★“beep” : The both figures of the ten’s and one’s place accord with the error code.

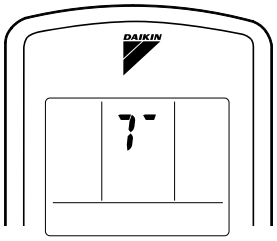
7. Determine the error code.
   The figures indicated when you hear the “beep” sound are error code.
   (Error codes and description → Refer to page 173.)

8. Press the MODE button to exit from the diagnosis mode.



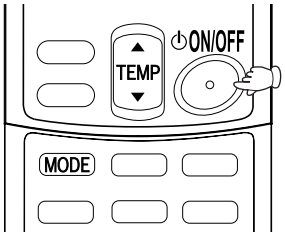
(R4278)

   The display “ ｱﾄﾞ ” means the trial operation mode.
   (Refer to page 252 for trial operation.)



(R9669)

9. Press the ON/OFF button twice to return to the normal mode.



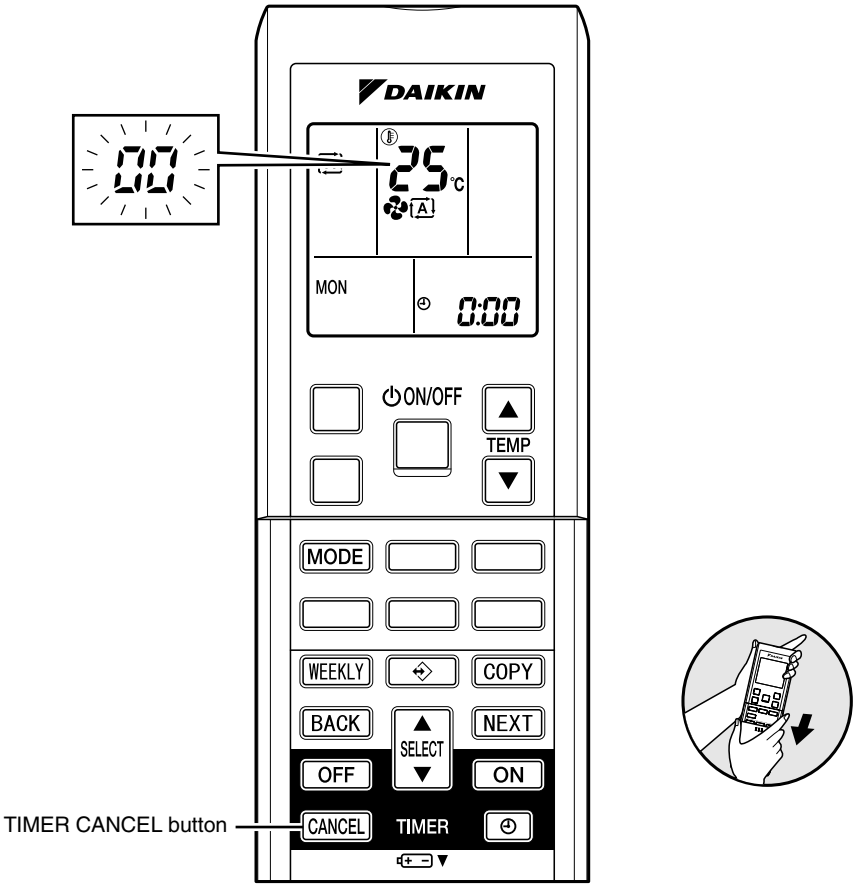
(R9670)

Note: When the remote controller is left untouched for 60 seconds, it returns to the normal mode.

3.2 ARC452 Series

Check Method 1

1. When the timer cancel button is held down for 5 seconds, "00" indication appears on the temperature display section.



< ARC452 Series >

(R11385)

2. Press the timer cancel button repeatedly until a long beep sounds.

■ The code indication changes in the sequence shown below.

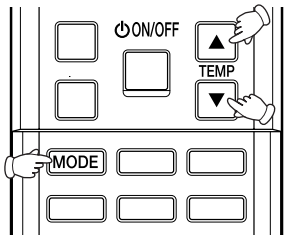
No.	Code	No.	Code	No.	Code
1	00	13	C7	25	U8
2	U4	14	A3	26	UK
3	L5	15	H8	27	P4
4	E6	16	H9	28	L3
5	H6	17	C9	29	L4
6	H0	18	C4	30	H7
7	A6	19	C5	31	U2
8	E7	20	J3	32	EA
9	U0	21	J6	33	AH
10	F3	22	E5	34	FA
11	A5	23	A1		
12	F6	24	E1		

Note:

1. A short beep "pi" and two consecutive beeps "pi pi" indicate non-corresponding codes.
2. To return to the normal mode, hold the timer cancel button down for 5 seconds. When the remote controller is left untouched for 60 seconds, it also returns to the normal mode.

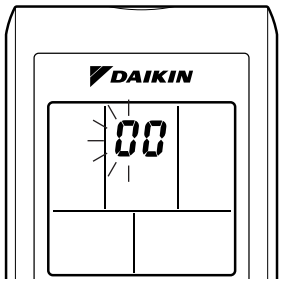
Check Method 2

1. Press the 3 buttons (TEMP▲, TEMP▼, MODE) simultaneously to enter the diagnosis mode.



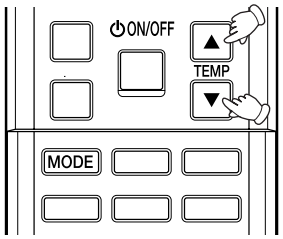
(R8381)

The figure of the ten's place blinks.



(R8382)

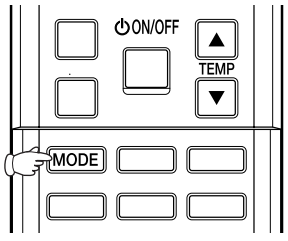
2. Press the TEMP▲ or ▼ button and change the figure until you hear the sound of "beep" or "pi pi".



(R8383)

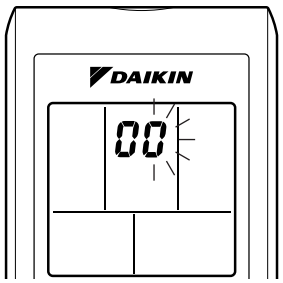
3. Diagnose by the sound.
   ★"pi" : The figure of the ten's place does not accord with the error code.
   ★"pi pi" : The figure of the ten's place accords with the error code but the one's not.
   ★"beep" : The both figures of the ten's and one's place accord with the error code.
   (The figures indicated when you hear the "beep" sound are error code.
   → Refer to page 173.)

4. Press the MODE button.



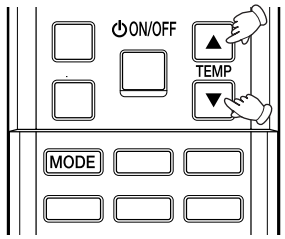
(R8384)

The figure of the one's place blinks.



(R8385)

5. Press the TEMP▲ or ▼ button and change the figure until you hear the sound of “beep”.

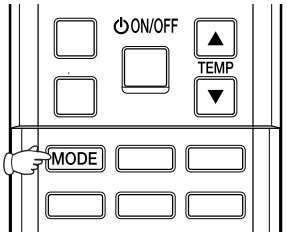


(R8383)

6. Diagnose by the sound.
   ★“pi” : The figure of the ten’s place does not accord with the error code.
   ★“pi pi” : The figure of the ten’s place accords with the error code but the one’s not.
   ★“beep” : The both figures of the ten’s and one’s place accord with the error code.

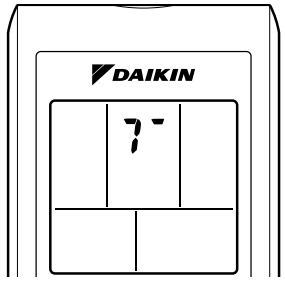
7. Determine the error code.
   The figures indicated when you hear the “beep” sound are error code.
   (Error codes and description → Refer to page 173.)

8. Press the MODE button to exit from the diagnosis mode.



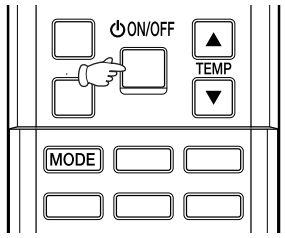
(R8384)

   The display “ ｱｰ ” means the trial operation mode.
   (Refer to page 252 for trial operation.)



(R9659)

9. Press the ON/OFF button twice to return to the normal mode.



(R9660)

Note: When the remote controller is left untouched for 60 seconds, it returns to the normal mode.

4. Troubleshooting

4.1 Error Codes and Description

	Code Indication	Description		Reference Page
System	00	Normal		—
	U0★	Refrigerant shortage		205
	U2	Over-voltage detection / low-voltage detection		207
	U4	Outdoor unit PCB abnormality or signal transmission circuit abnormality		209
	UA	Unspecified voltage (between indoor and outdoor units)		208
	UH	Anti-icing function in other rooms		208
Indoor Unit	A1	Indoor unit PCB abnormality		174
	A5	Freeze-up protection control or high pressure control		175
	A6	Fan motor or related abnormality	AC motor (Duct, Floor / Ceiling)	177
			DC motor (Wall, Floor)	178
	C4	Heat exchanger temperature thermistor abnormality		181
	C7	Front Panel Open / Close Fault		182
	C9	Room temperature thermistor abnormality		181
Outdoor Unit	E5	Freeze-up protection control		183
	E5★	OL activation (compressor overload)		185
	E6★	Compressor lock		186
	E7	DC fan lock		187
	E8	Input overcurrent detection		188
	F3	Discharge pipe temperature control		190
	F6	High pressure control in cooling		191
	H0	Compressor sensor system abnormality		193
	H6	Position sensor abnormality		194
	H8	DC voltage / DC current sensor abnormality		196
	H9	Outdoor air thermistor or related abnormality		197
	J3	Discharge pipe temperature thermistor or related abnormality		197
	J6	Heat exchanger temperature thermistor or related abnormality		197
	J8	Liquid pipe temperature thermistor or related abnormality		197
	J9	Gas pipe temperature thermistor or related abnormality		197
	L3	Electrical box temperature rise		199
	L4	Radiation fin temperature rise		201
	L5	Output overcurrent detection		203
	P4	Radiation fin thermistor or related abnormality		197

★: Displayed only when system-down occurs.

4.2 Indoor Unit PCB Abnormality

Remote Controller Display

A1

Method of Malfunction Detection

Evaluation of zero-cross detection of power supply by indoor unit.

Malfunction Decision Conditions

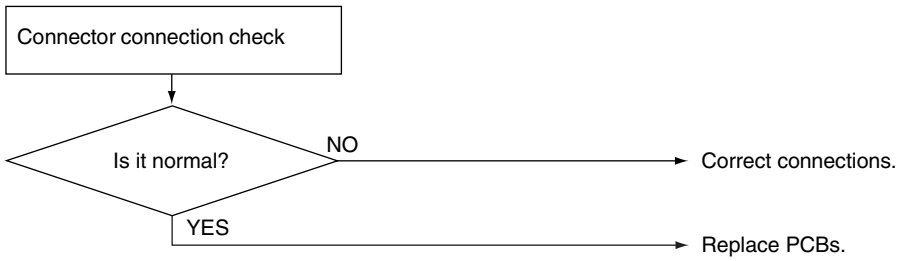
When there is no zero-cross detection in approximately 10 continuous seconds.

Supposed Causes

- Faulty indoor unit PCB
- Faulty connector connection

Troubleshooting

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



(R7130)

Note: Connector Nos. vary depending on models.

Model Type	Connector
Wall Mounted Type	Terminal strip~Control PCB
Duct Connected Type	Terminal strip~Control PCB
Floor / Ceiling Suspended Dual Type	S37
Floor Standing Type	Terminal strip~Control PCB

4.3 Freeze-up Protection Control or High Pressure Control

Remote Controller 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 (61°C for ATX20-35G).
- Freeze-up protection
  When the indoor unit heat exchanger temperature is below 0°C during cooling operation.

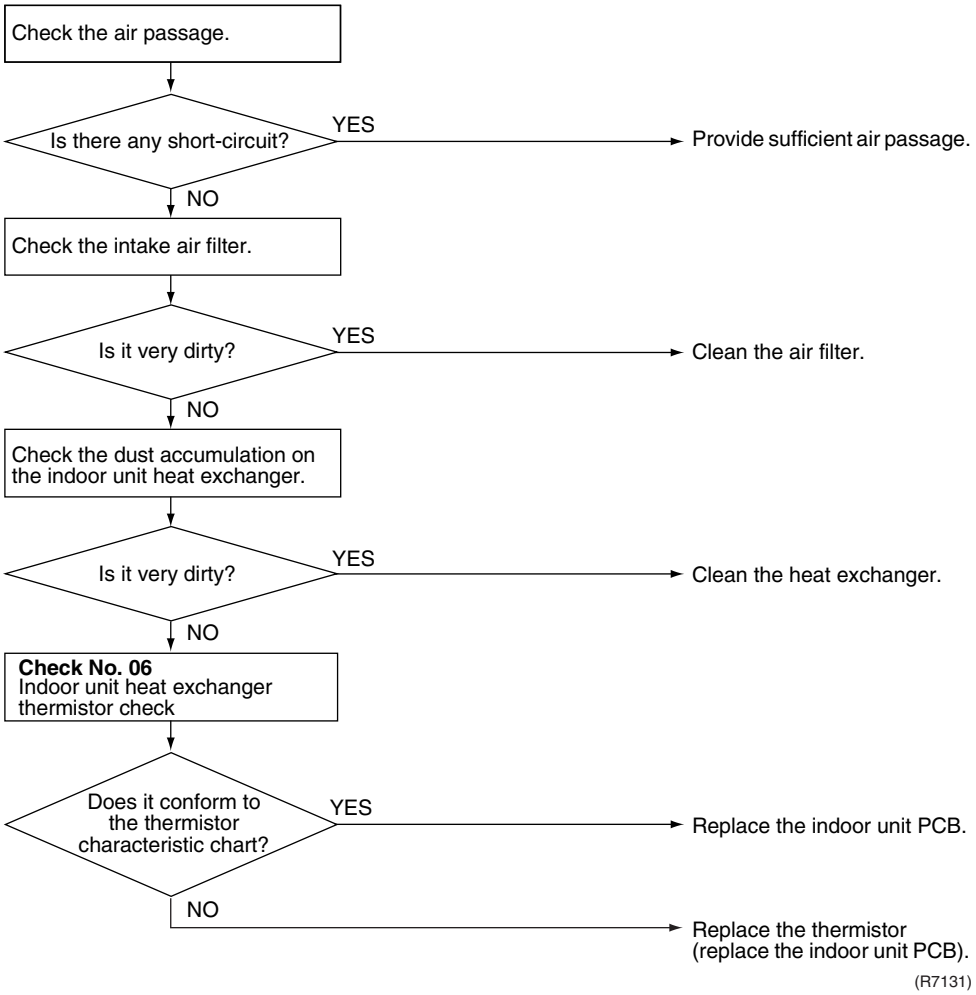
Supposed Causes

- 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.215

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



(R7131)

4.4 Fan Motor or Related Abnormality

4.4.1 AC Motor

Remote Controller Display

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

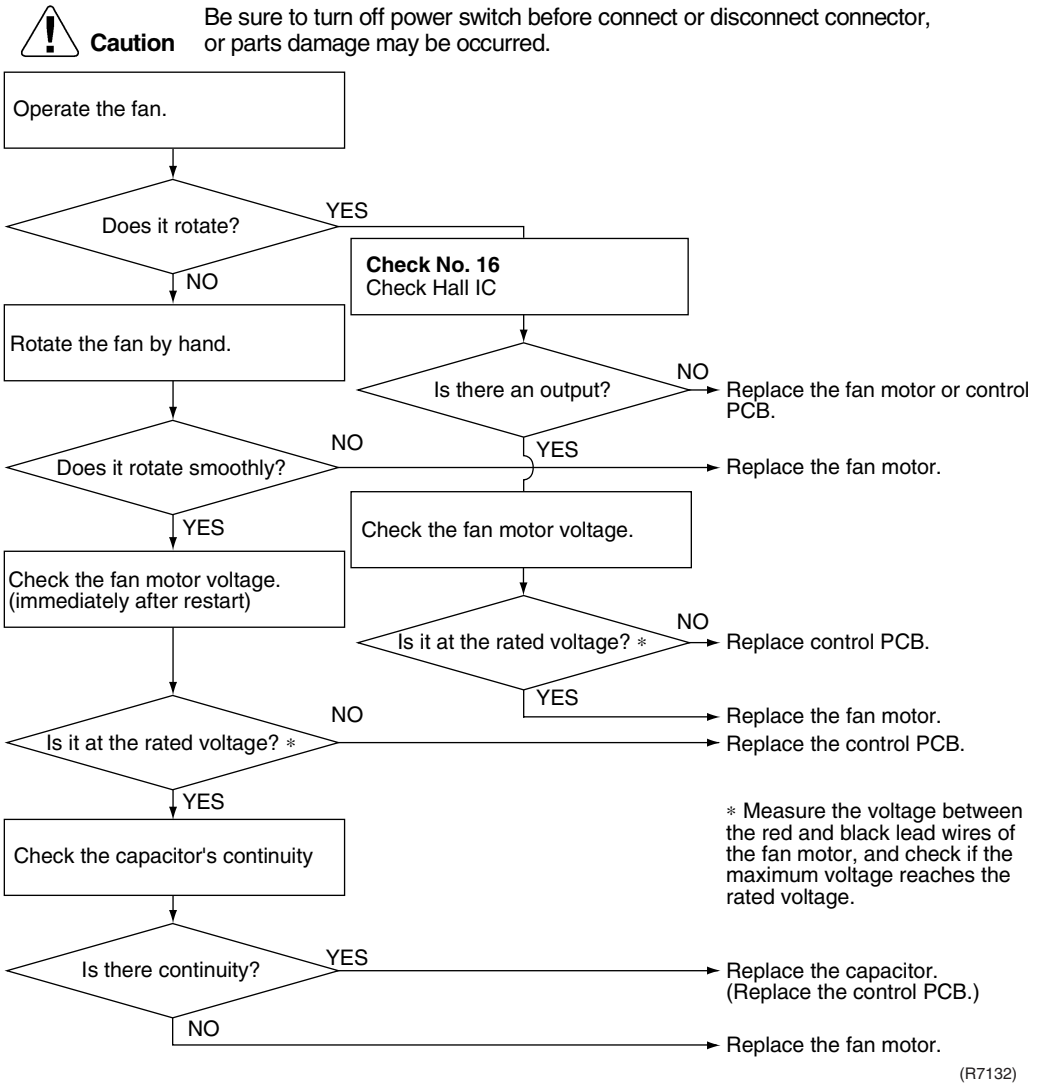
When the detected rotation speed does not reach the demanded rotation speed of the target tap, and is less than 50% of the maximum fan motor rotation speed.

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.221



4.4.2 DC Motor

Remote Controller Display

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 does not reach the demanded rotation speed of the target tap, and is less than 50% of the maximum fan motor rotation speed.

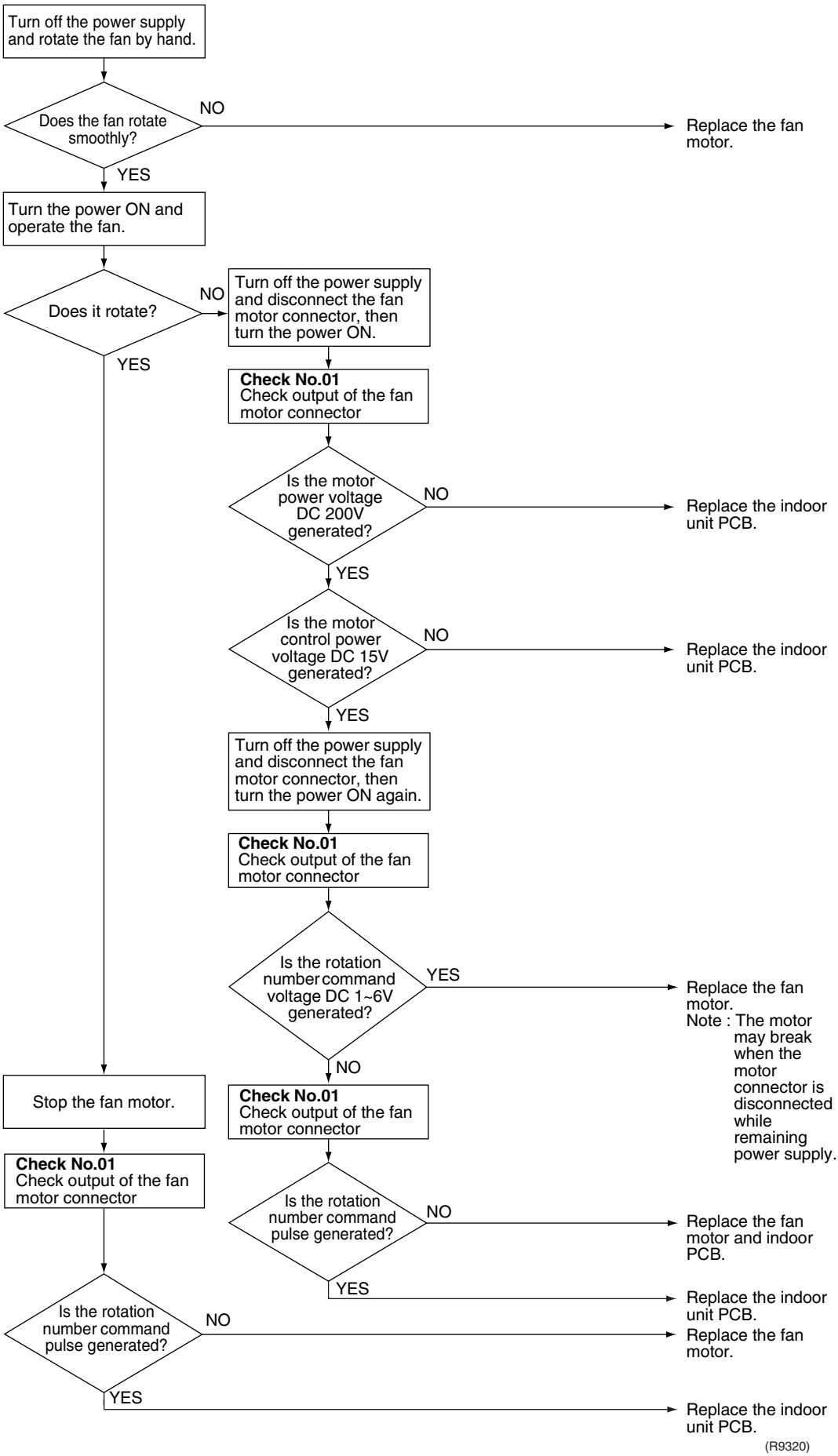
Supposed Causes

- 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.

Troubleshooting

F(A)TXS20-50G, F(C)(A)TXG25-50E, FVXS25-50F

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



(R9320)

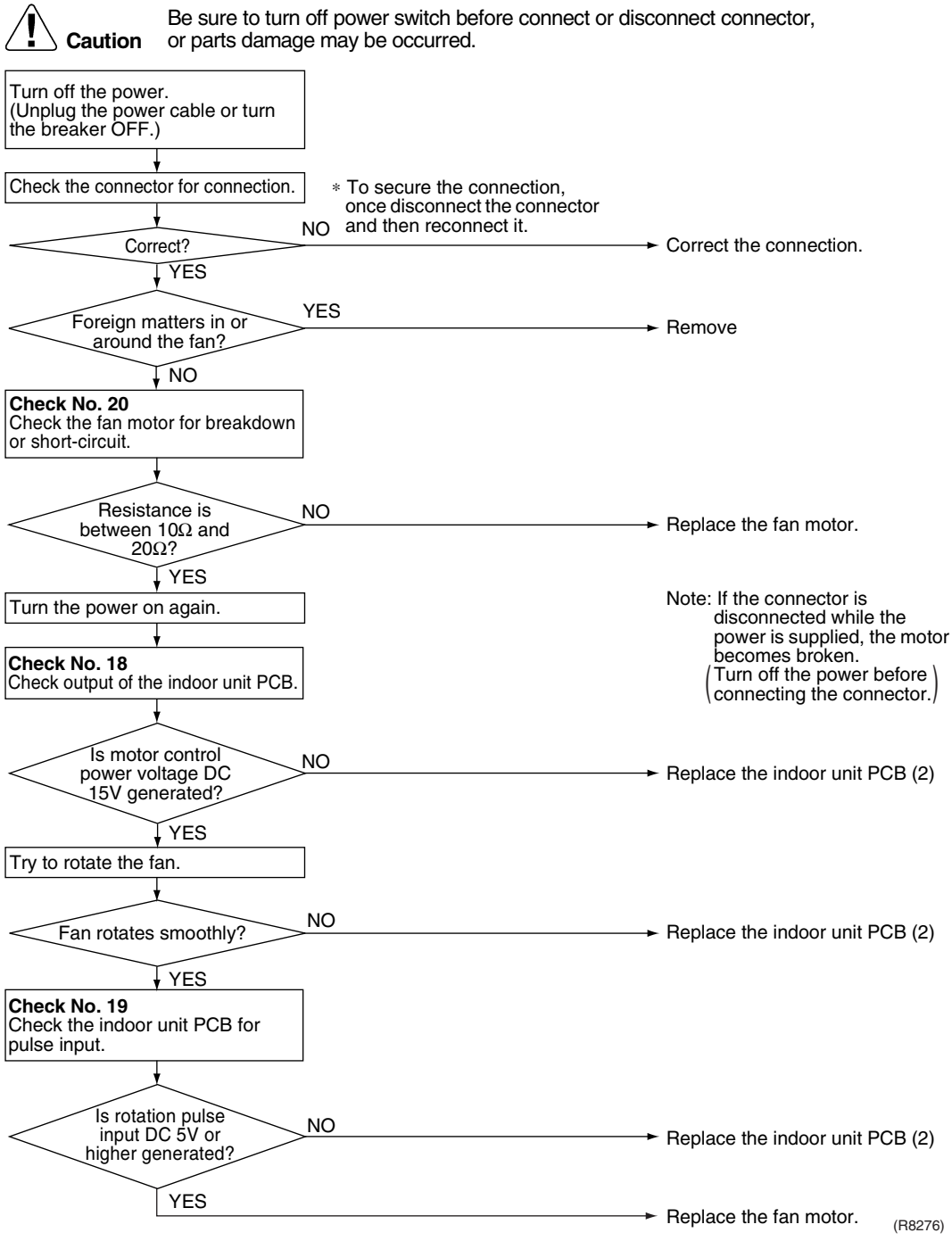
Check No.01
Refer to P.212

ATX20-35G

Check No.18
Refer to P.222

Check No.19
Refer to P.223

Check No.20
Refer to P.224



4.5 Thermistor or Related Abnormality (Indoor Unit)

Remote Controller Display

C4, C9

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)

F(A)TXS20-50G, F(C)(A)TXG25-50E, FDK(X)S25/35EA, FDK(X)S50C, FLK(X)S25-50BA, FVXS25-50F

When above about 212°C (less than 120 Ω) or below about –50°C (more than 1,860 kΩ).

ATX20-35G

When above about 105°C (less than C4: 1,070 Ω/C9: 829 Ω) or below about –30°C (more than C4: 331 Ω/C9: 88 kΩ).

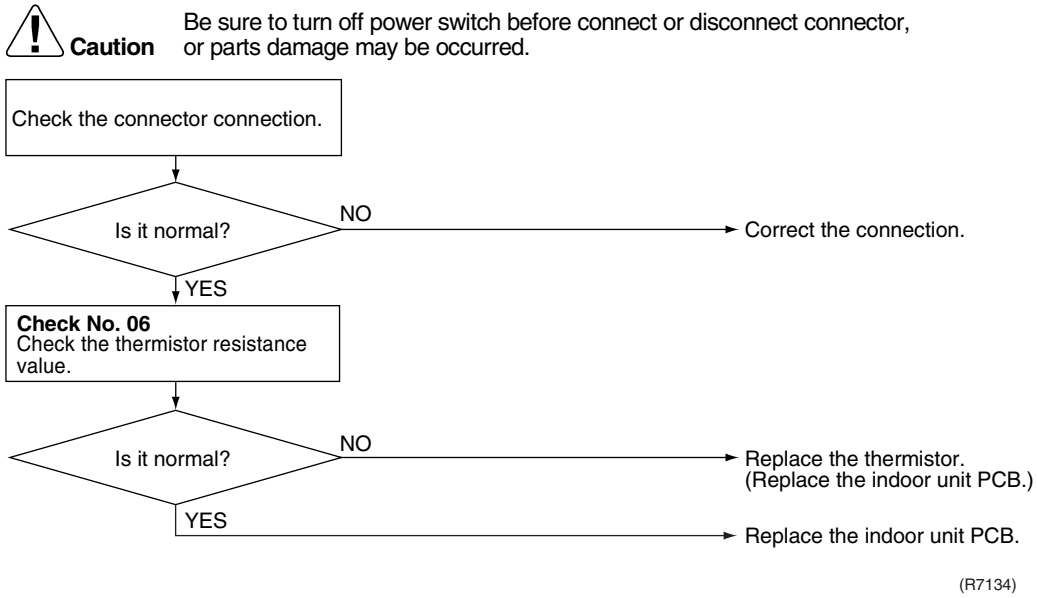
Note: The values vary slightly in some models.

Supposed Causes

- Faulty connector connection
- Faulty thermistor
- Faulty PCB

Troubleshooting

Check No.06
Refer to P.215



C4 : Heat exchanger temperature thermistor
C9 : Room temperature thermistor

4.6 Front Panel Open / Close Fault

Remote Controller Display

C7

Method of Malfunction Detection

Malfunction Decision Conditions

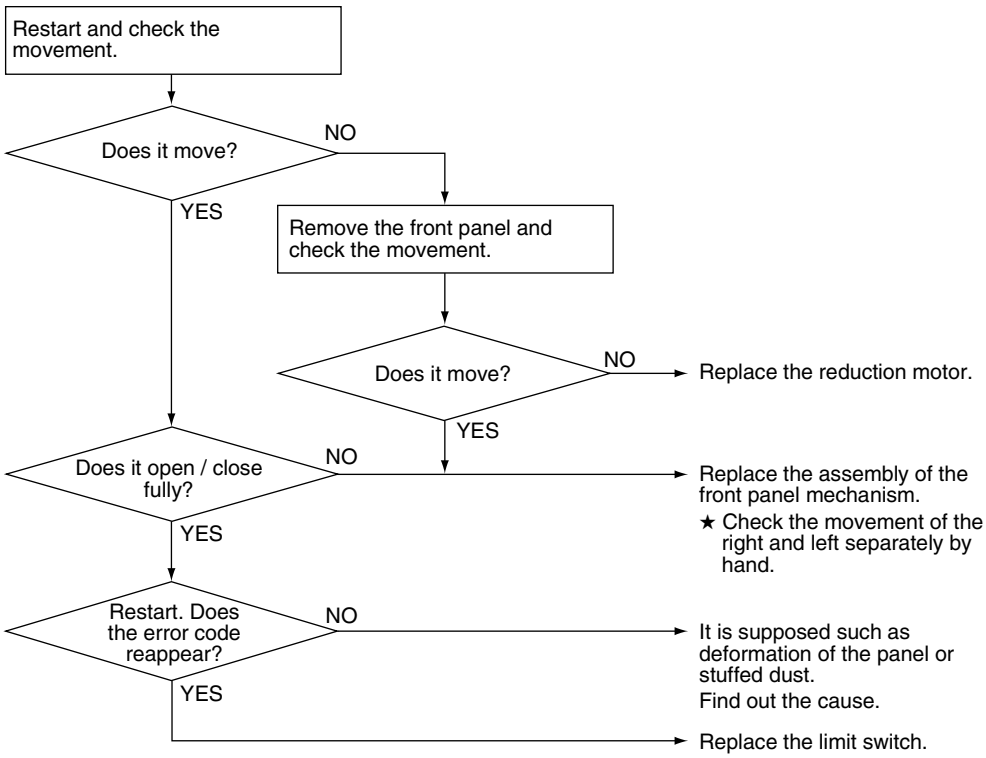
- The system is shut down when the error occurs twice.

Supposed Causes

- Malfunction of the reduction motor
- Malfunction or deterioration of the front panel mechanism
- Malfunction of the limit switch

Troubleshooting

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



(R7135)

Note: You cannot operate the unit by the remote controller when the front panel mechanism breaks down.

<To the dealers: temporary measure before repair>

1. Pull the plug out or turn the breaker off.
2. Remove the decorative plate.
3. Remove the slot-in panel.
4. Put the plug in or turn the breaker on.
   (Wait until the initialization finishes.)
5. Operate the unit by the indoor unit ON/OFF switch.

4.7 Freeze-up Protection Control

Remote Controller Display

A5

Method of Malfunction Detection

Indoor unit icing, during cooling operation, is detected by checking the temperatures sensed by the indoor unit heat exchanger thermistor and room temperature thermistor that are located in a shut-down room.
At another room (the indoor unit is normal), "UA" is displayed on the remote controller.

Malfunction Decision Conditions

In the cooling mode, the following conditions (A) and (B) are kept together for 5 minutes.
(A) Indoor unit heat exchanger temperature ≤ –1°C
(B) Indoor unit heat exchanger temperature ≤ Room temperature –10°C

If the freeze-up protection control is activated 4 times continuously, the system is shut down.
(The 4-time counter is reset if any of the following errors does not occur for 60 minutes.
: OL, radiation fin temperature rise, refrigerant shortage, and compressor lock.)

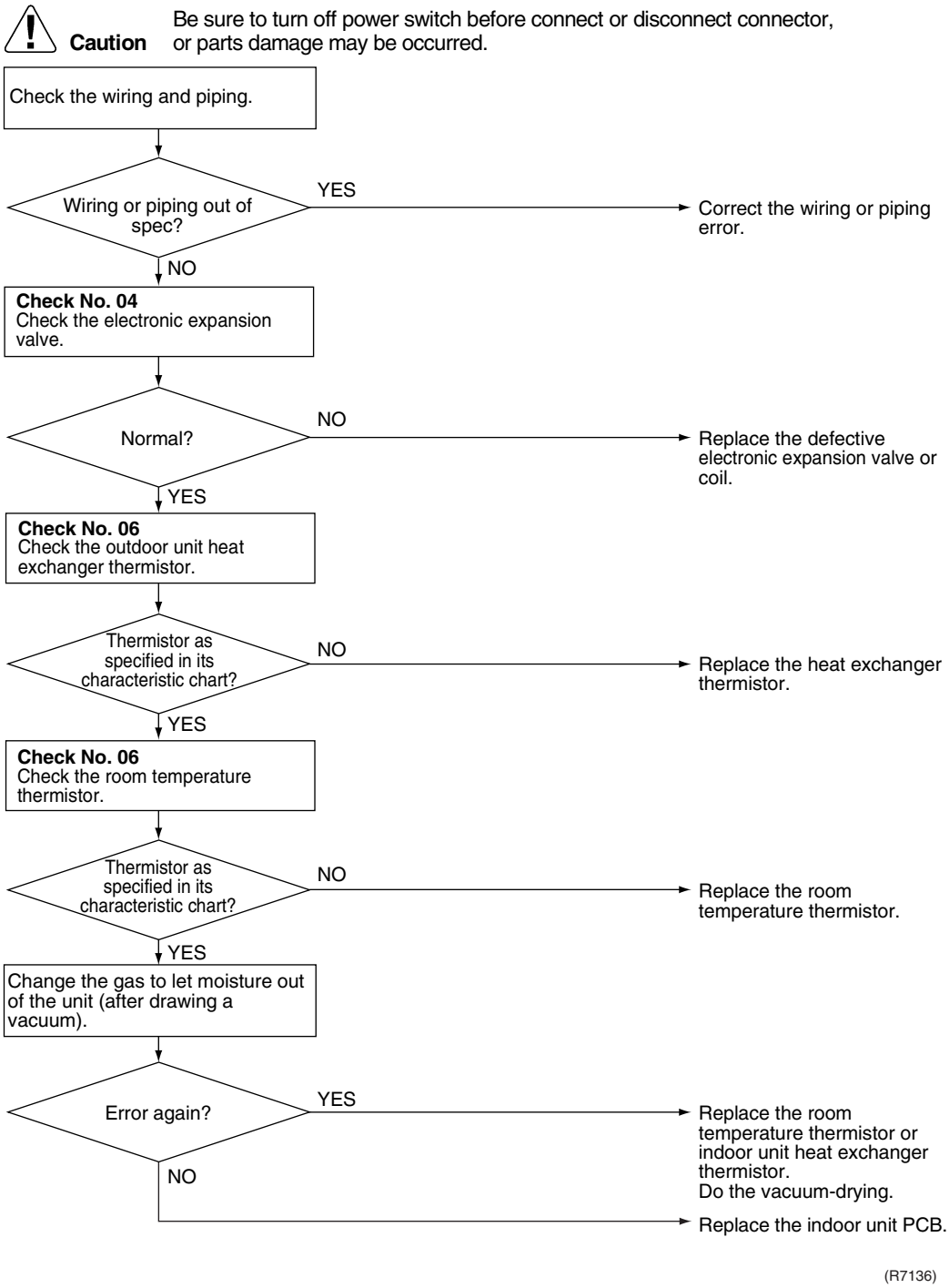
Supposed Causes

- Wrong wiring or piping
- Electronic expansion valve malfunctioning in each room
- Short-circuit
- Indoor unit heat exchanger thermistor abnormality
- Room temperature thermistor abnormality

Troubleshooting

Check No.04
Refer to P.213

Check No.06
Refer to P.215



(R7136)

4.8 OL Activation (Compressor Overload)

Remote Controller Display

E5

Method of Malfunction Detection

A compressor overload is detected through compressor OL.

Malfunction Decision Conditions

- If the compressor OL is activated twice, the system is shut down.
- The error counter is reset if this or any other error does not occur during the following 60-minute compressor running time (total time).

* The operating temperature condition is not specified.

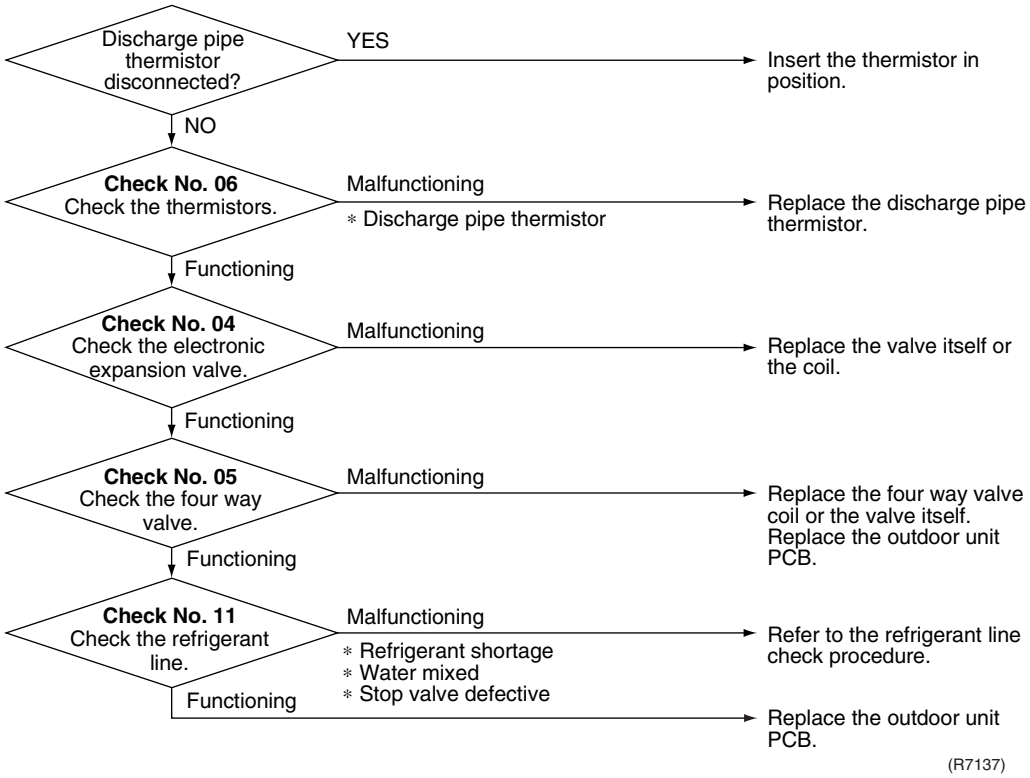
Supposed Causes

- Refrigerant shortage
- Four way valve malfunctioning
- Outdoor unit PCB defective
- Water mixed in the local piping
- Electronic expansion valve defective
- Stop valve defective

Troubleshooting

Check No.04 Refer to P.213
Check No.05 Refer to P.214
Check No.06 Refer to P.215
Check No.11 Refer to P.218

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



(R7137)

4.9 Compressor Lock

Remote Controller Display

E6

Method of Malfunction Detection

Judging from current waveform generated when high-frequency voltage is applied to the compressor.

Malfunction Decision Conditions

- The system is shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 11 minutes (normal)

Supposed Causes

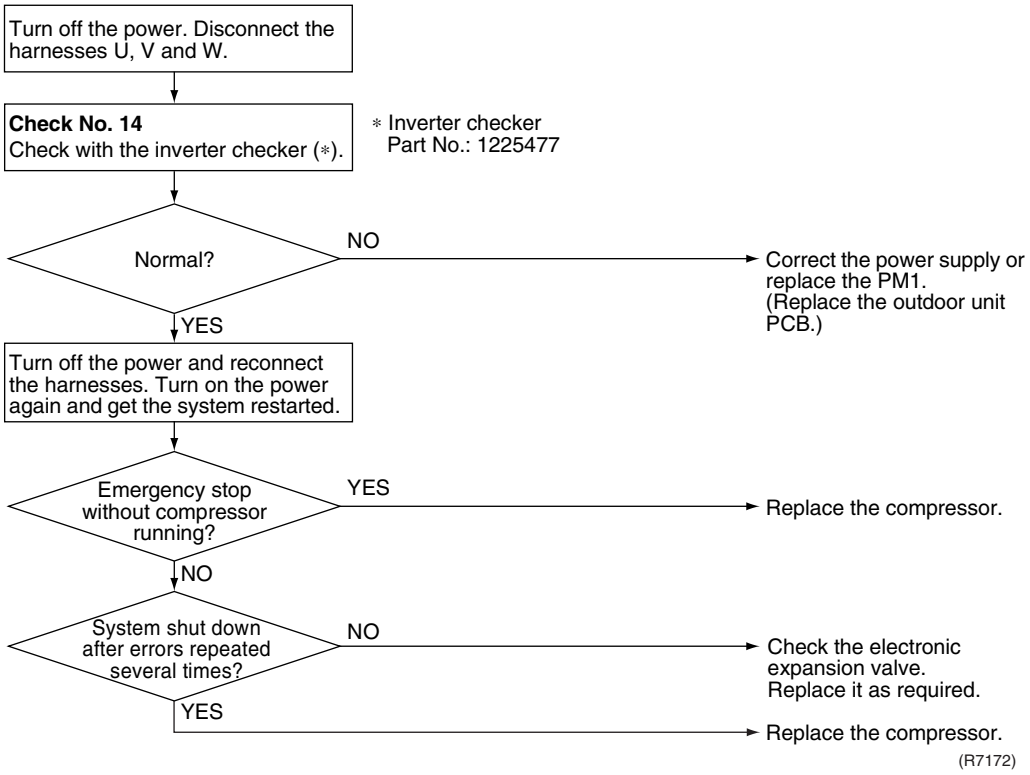
- Compressor locked
- Disconnection of compressor harness

Troubleshooting

Check No.14
Refer to P.219

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

(Precaution before turning on the power again)
Make sure the power has been off for at least 30 seconds.



(R7172)

4.10 DC Fan Lock

Remote Controller Display

E7

Method of Malfunction Detection

A fan motor or related error is detected by checking the high-voltage fan motor rpm being detected by the Hall IC.

Malfunction Decision Conditions

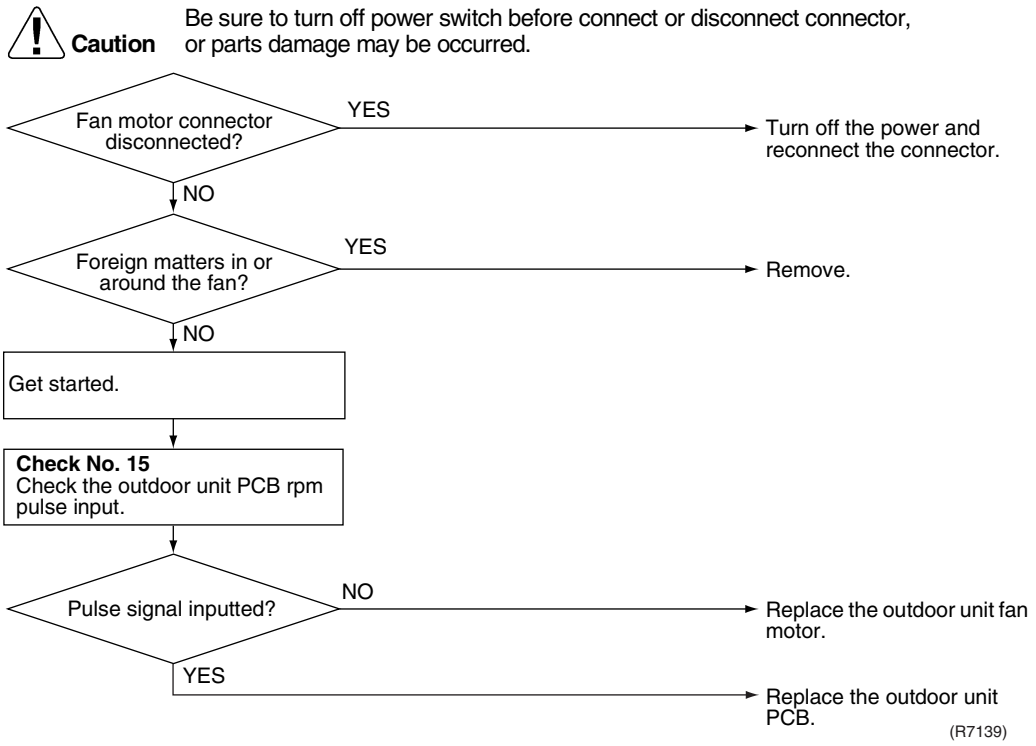
- The fan does not start in 60 seconds even when the fan motor is running.
- The system is shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 11 minutes (normal)

Supposed Causes

- Fan motor breakdown
- Harness or connector disconnected between fan motor and PCB or in poor contact
- Foreign matters stuck in the fan

Troubleshooting

Check No.15
Refer to P.221



4.11 Input Overcurrent Detection

Remote Controller Display

E8

Method of Malfunction Detection

An input overcurrent is detected by checking the power consumption value of outdoor unit with the compressor running.

Malfunction Decision Conditions

- The following input value (calculated from power consumption of outdoor unit) with the compressor running continues for 2.5 seconds.
  Input value : Above 15 A

Supposed Causes

- Overcurrent due to compressor failure
- Overcurrent due to defective power transistor
- Overcurrent due to defective inverter main circuit electrolytic capacitor
- Overcurrent due to defective outdoor unit PCB
- Error detection due to outdoor unit PCB
- Overcurrent due to short-circuit

Troubleshooting

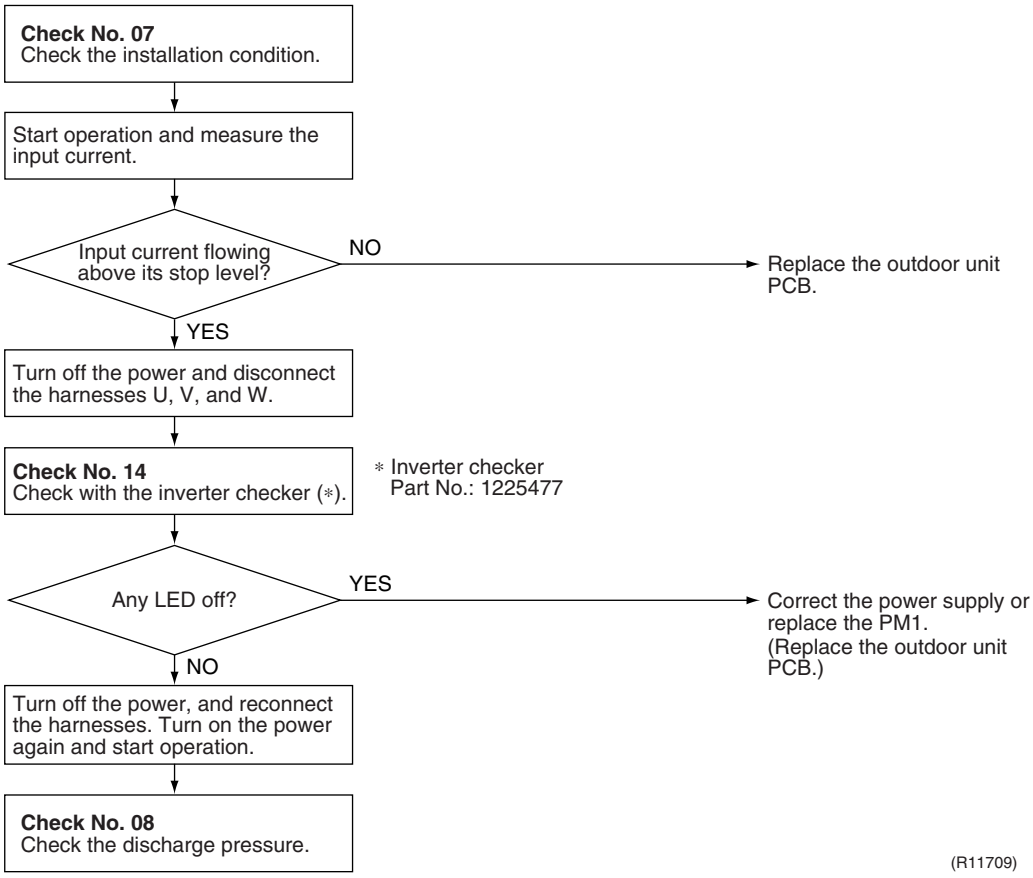
Check No.07
Refer to P.216

Check No.08
Refer to P.217

Check No.14
Refer to P.219

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

* An input overcurrent may result from wrong internal wiring. If the wires have been disconnected and reconnected for part replacement, for example, and the system is interrupted by an input overcurrent, check the wires again.



(R11709)

4.12 Discharge Pipe Temperature Control

Remote Controller Display

F3

Method of Malfunction Detection

The discharge pipe temperature control (stop, frequency drooping, etc.) is checked with the temperature being detected by the discharge pipe thermistor.

Malfunction Decision Conditions

If the temperature being detected by the discharge pipe thermistor rises, the compressor stops. The temperature at which the compressor halts varies according to the frequency.
(1) 110°C when the frequency is above 30Hz on ascending or above 25Hz on descending.
(2) 108°C when the frequency is below 30Hz on ascending or below 25Hz on descending.

- The error is cleared when the temperature has dropped below 95°C.
- If the compressor stops 6 times successively due to abnormal discharge pipe temperature, the system is shut down.
- The error counter is reset if this or any other error does not occur during the following 60-minute compressor running time (total time).

Supposed Causes

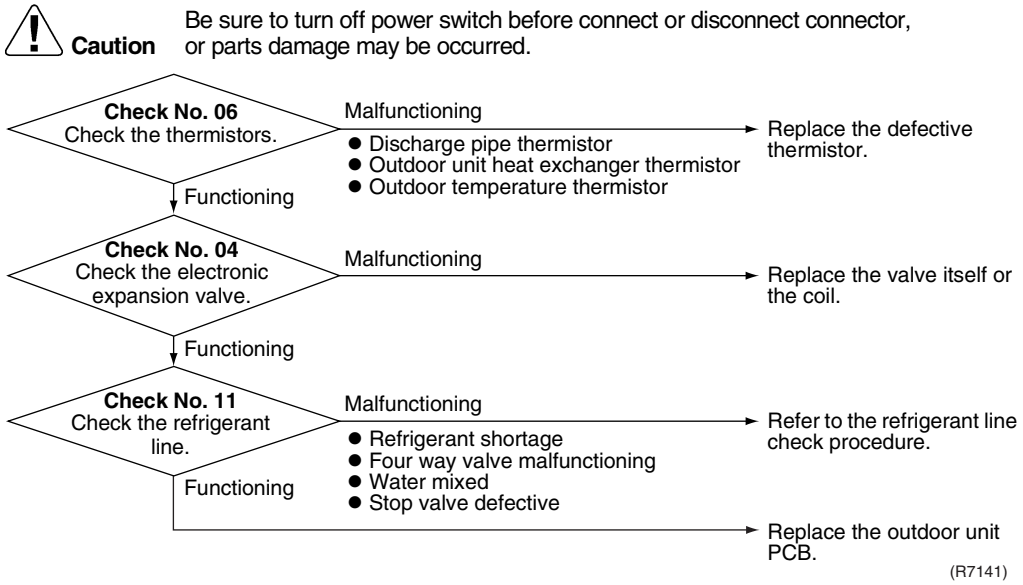
- Refrigerant shortage
- Four way valve malfunctioning
- Discharge pipe thermistor defective
  (heat exchanger or outdoor temperature thermistor defective)
- Outdoor unit PCB defective
- Water mixed in the local piping
- Electronic expansion valve defective
- Stop valve defective

Troubleshooting

Check No.04
Refer to P.213

Check No.06
Refer to P.215

Check No.11
Refer to P.218



4.13 High Pressure Control in Cooling

Remote Controller Display

F6

Method of Malfunction Detection

High-pressure control (stop, frequency drop, etc.) is activated in the cooling mode if the temperature being sensed by the heat exchanger thermistor exceeds the limit.

Malfunction Decision Conditions

- Activated when the temperature being sensed by the heat exchanger thermistor rises above 65°C.
- Deactivated when the temperature drops below 53°C.

Supposed Causes

- The installation space is not large enough.
- Faulty outdoor unit fan
- Faulty electronic expansion valve
- Faulty outdoor unit heat exchanger thermistor
- Faulty outdoor unit PCB
- Faulty stop valve
- Dirty heat exchanger

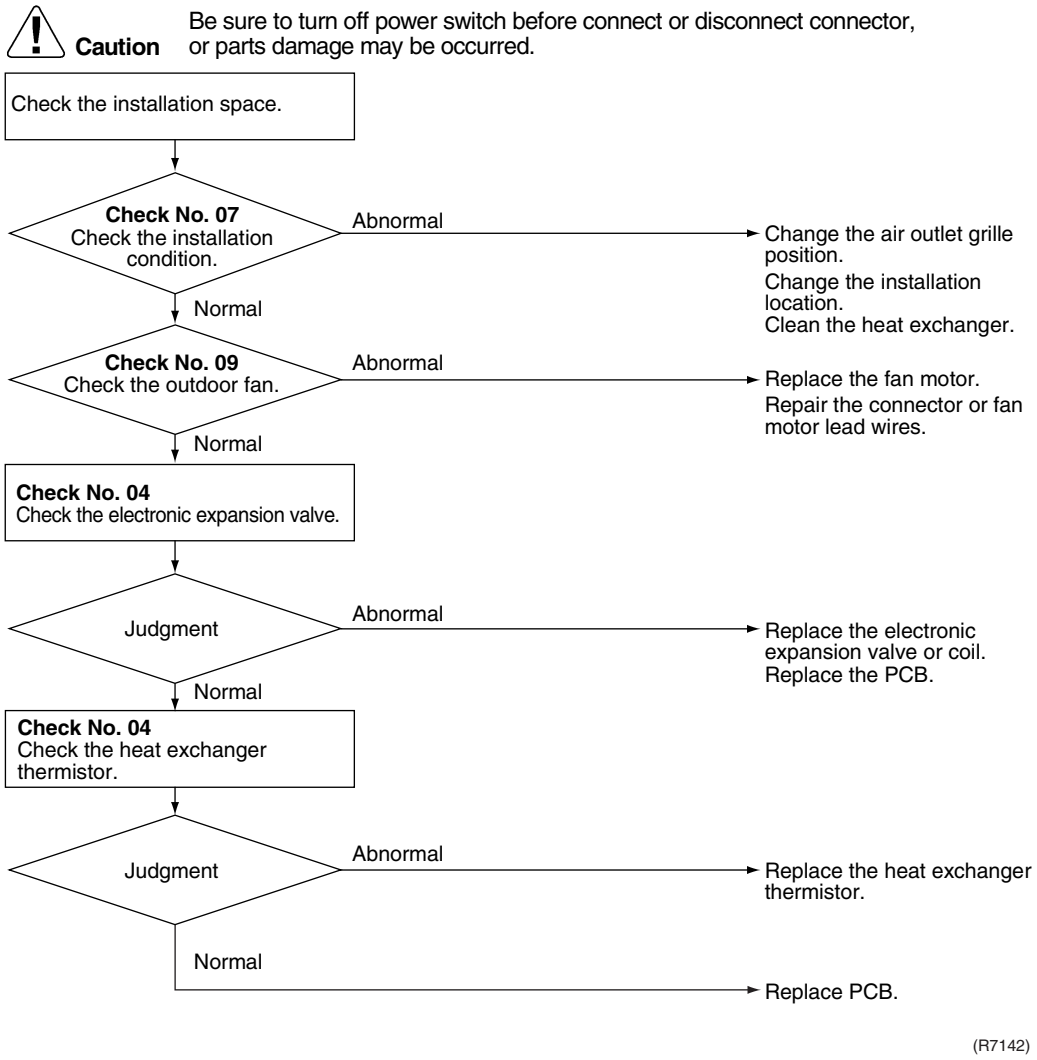
Troubleshooting

Check No.04
Refer to P.213

Check No.06
Refer to P.215

Check No.07
Refer to P.216

Check No.09
Refer to P.217



(R7142)

4.14 Compressor Sensor System Abnormality

Remote Controller Display

H07

Method of Malfunction Detection

Fault condition is identified by DC current which is detected before compressor startup.

Malfunction Decision Conditions

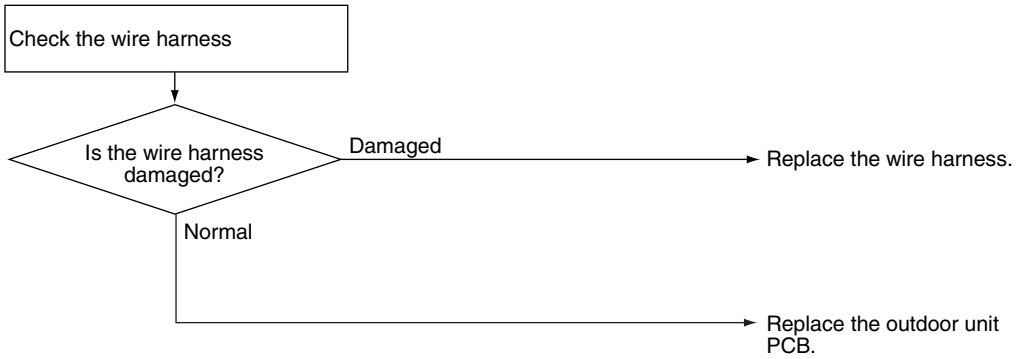
- When the DC current before compressor startup is other than 0.5 to 4.5 V (detected by converting the sensor output to voltage), or the DC voltage is 50 V or less.

Supposed Causes

- Defective PCB
- Harness disconnection / defective connection

Troubleshooting

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



(R7143)

4.15 Position Sensor Abnormality

Remote Controller Display

H6

Method of Malfunction Detection

A compressor startup failure is detected by checking the compressor running condition through the position detection circuit.

Malfunction Decision Conditions

- The compressor is not running in about 15 seconds after the compressor run command signal is sent.
- Clearing condition: Continuous run for about 11 minutes (normal)
- The system is shut down if the error occurs 16 times.

Supposed Causes

- Compressor relay cable disconnected
- Compressor itself defective
- Outdoor unit PCB defective
- Stop valve closed
- Input voltage out of specification

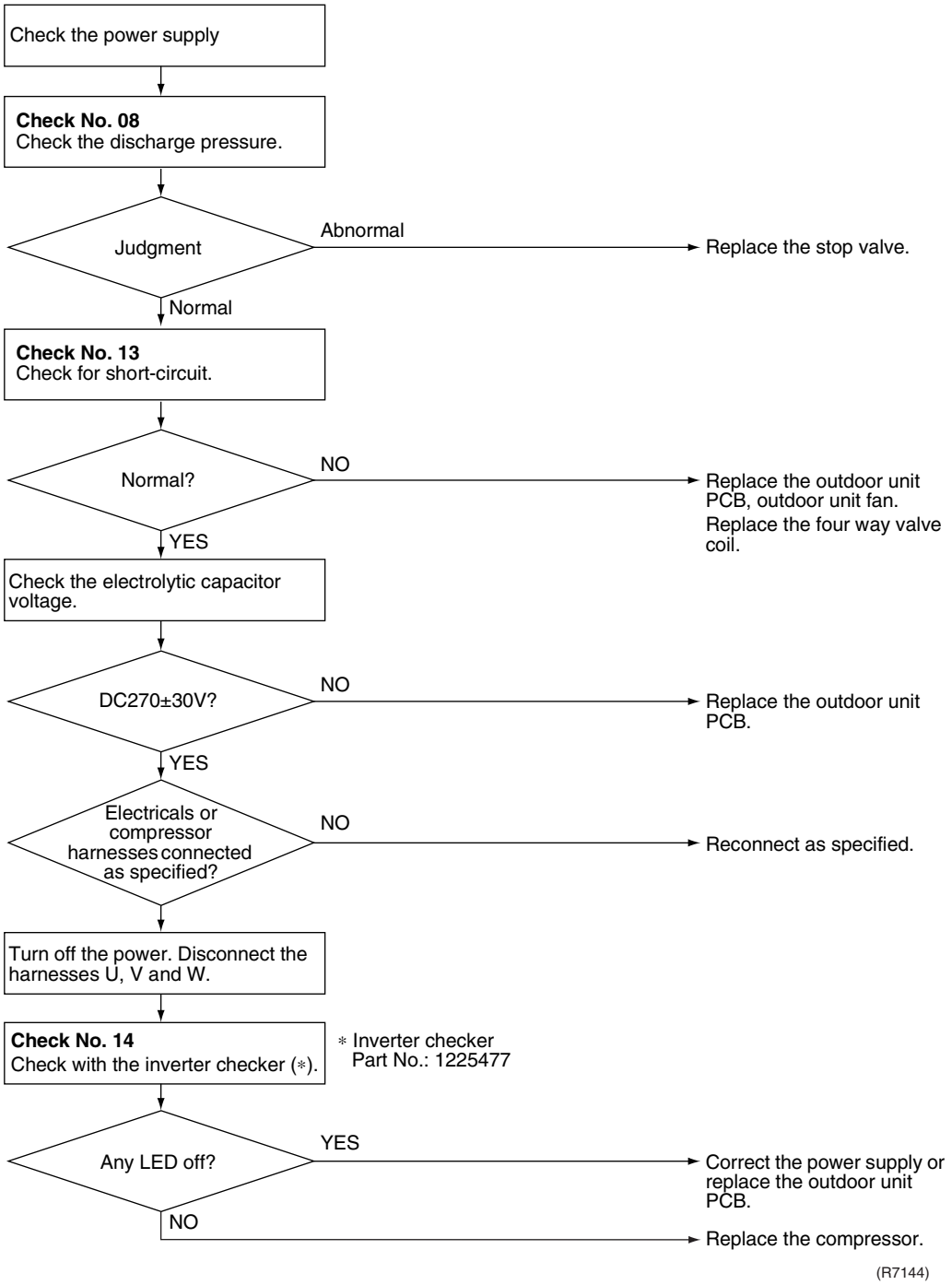
Troubleshooting

Check No.08
Refer to P.217

Check No.13
Refer to P.218

Check No.14
Refer to P.219

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



(R7144)

4.16 DC Voltage / DC Current Sensor Abnormality

Remote Controller Display

H8

Method of Malfunction Detection

DC voltage or DC current sensor system fault is identified based on the compressor operation frequency and the input current detected by the product of DC current and DC voltage.

Malfunction Decision Conditions

When the compressor operation frequency is more than 52 Hz
and when the DC current is less than 0.3 A or DC voltage is less than 50V.

- If this error repeats 4 times, the system is shut down.
- The error counter is reset if this or any other error does not occur during the following 60-minute compressor running time (total time).

Supposed Causes

- Power transistor defective
- Internal wiring broken or in poor contact
- Reactor defective
- Outdoor unit PCB defective
- Refrigerant shortage

Troubleshooting

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

Replace the outdoor unit PCB.

4.17 Thermistor or Related Abnormality (Outdoor Unit)

Remote Controller Display

P4, J3, J6, J8, J9, H9

Method of Malfunction Detection

This type of error is detected by checking the thermistor input voltage to the microcomputer.
[A thermistor error is detected by checking the temperature.]

Malfunction Decision Conditions

The thermistor input is above 4.98 V or below 0.02 V with the power on for 5 seconds.
Error J3 is judged if the discharge pipe thermistor temperature is smaller than the heat exchanger thermistor temperature.
In case of J8 or J9, the system is shut down when the error is detected at all of operating units.

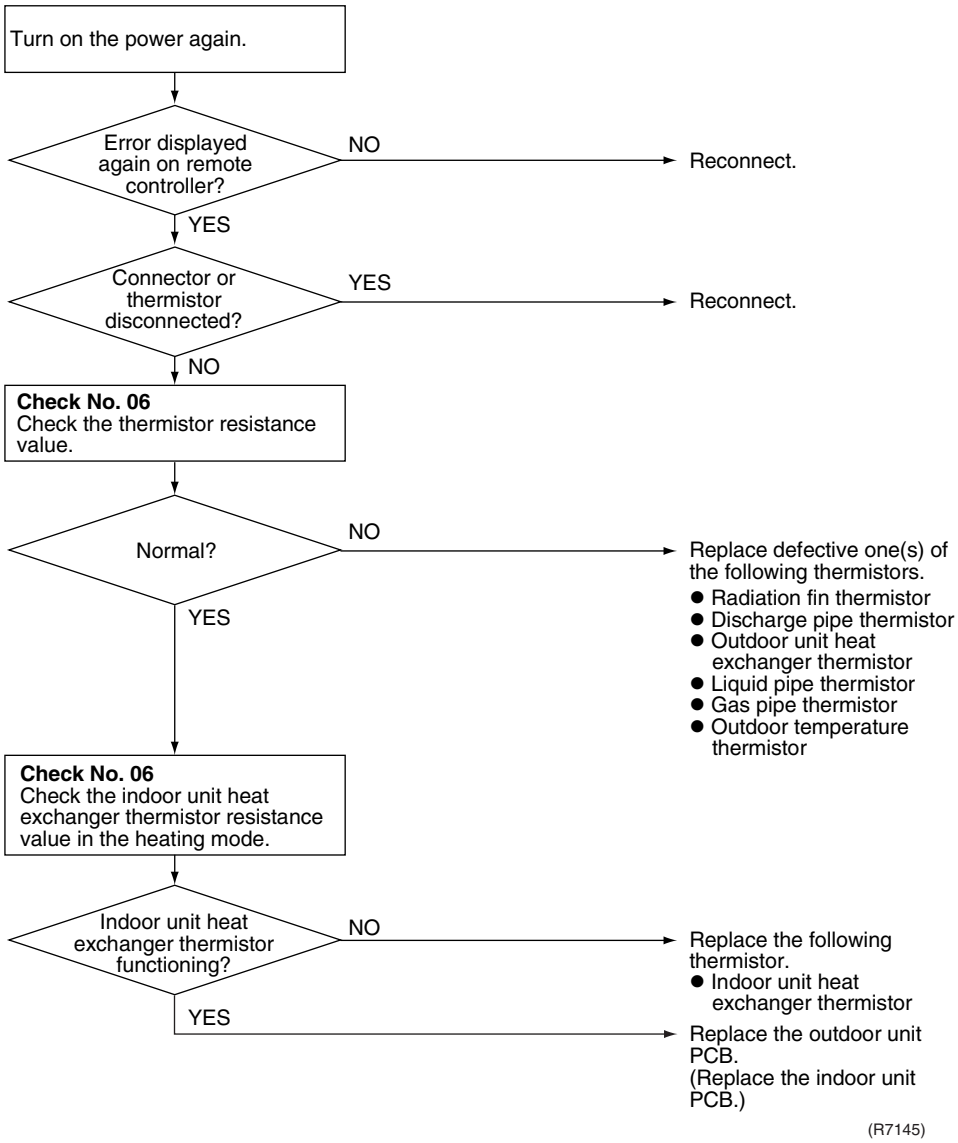
Supposed Causes

- Connector in poor contact
- Thermistor defective
- Outdoor unit PCB defective
- Indoor unit PCB defective
- Heat exchanger thermistor defective in the case of J3 error (outdoor unit heat exchanger thermistor in the cooling mode, or indoor unit heat exchanger thermistor in the heating mode)

Troubleshooting

Check No.06
Refer to P.215

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



P4 : Radiation fin thermistor
J3 : Discharge pipe thermistor
J6 : Outdoor unit heat exchanger thermistor
J8 : Liquid pipe thermistor
J9 : Gas pipe thermistor
H9 : Outdoor temperature thermistor

4.18 Electrical Box Temperature Rise

Remote Controller Display

L3

Method of Malfunction Detection

An electrical box temperature rise is detected by checking the radiation fin thermistor with the compressor off.

Malfunction Decision Conditions

- With the compressor off, the radiation fin temperature is above 80°C.
- The error is cleared when the temperature drops below 70°C.

Supposed Causes

- Radiation fin temperature rise due to defective outdoor unit fan
- Radiation fin temperature rise due to short-circuit
- Radiation fin thermistor defective
- Connector in poor contact
- Outdoor unit PCB defective

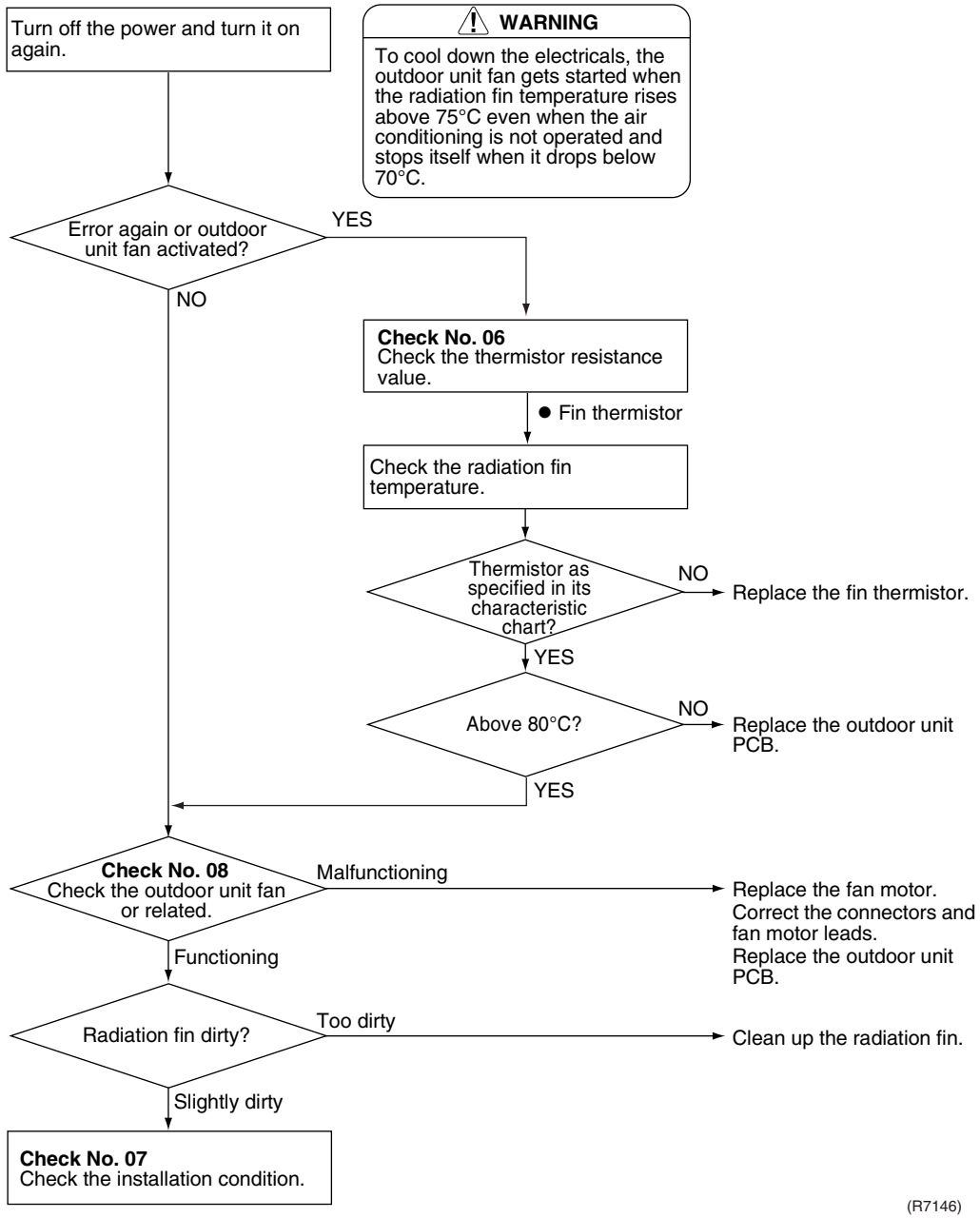
Troubleshooting

Check No.06
Refer to P.215

Check No.07
Refer to P.216

Check No.09
Refer to P.217

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.
(Precaution before turning on the power again)
Make sure the power has been off for at least 30 seconds.



(R7146)

4.19 Radiation Fin Temperature Rise

Remote Controller Display

L4

Method of Malfunction Detection

A radiation fin temperature rise is detected by checking the radiation fin thermistor with the compressor on.

Malfunction Decision Conditions

If the radiation fin temperature with the compressor on is above 93°C,

- If a radiation fin temperature rise takes place 255 times successively, the system is shut down.
- The error counter is reset if this or any other error does not occur during the following 60-minute compressor running time (total time).

Supposed Causes

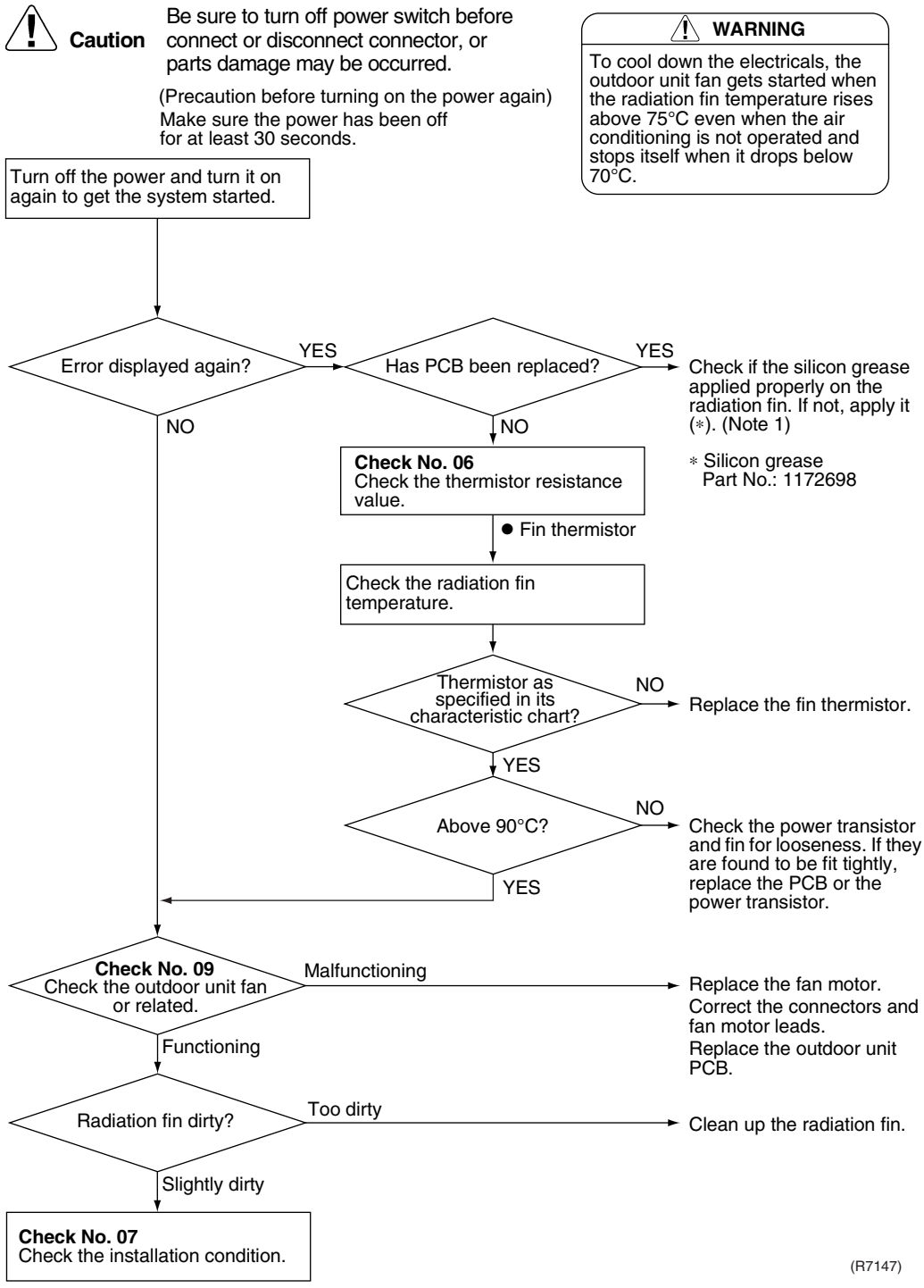
- Radiation fin temperature rise due to defective outdoor unit fan
- Radiation fin temperature rise due to short-circuit
- Radiation fin thermistor defective
- Connector in poor contact
- Outdoor unit PCB defective
- Silicon grease is not applied properly on the heat radiation fin after replacing outdoor unit PCB

Troubleshooting

Check No.06
Refer to P.215

Check No.07
Refer to P.216

Check No.09
Refer to P.217



Note: Refer to “Application of Silicon grease to a power transistor and a diode bridge” on P.264.

4.20 Output Overcurrent Detection

Remote Controller Display

L5

Method of Malfunction Detection

An output overcurrent is detected by checking the current that flows in the inverter DC section.

Malfunction Decision Conditions

- A position signal error occurs while the compressor is running.
- A speed error occurs while the compressor is running.
- An output overcurrent input is fed from the output overcurrent detection circuit to the microcomputer.
- The system is shut down if the error occurs 8 times.
- Clearing condition: Continuous run for about 11 minutes (normal)

Supposed Causes

- Overcurrent due to defective power transistor
- Overcurrent due to wrong internal wiring
- Overcurrent due to abnormal supply voltage
- Overcurrent due to defective PCB
- Error detection due to defective PCB
- Overcurrent due to closed stop valve
- Overcurrent due to compressor failure
- Overcurrent due to poor installation condition

Troubleshooting

Check No.07
Refer to P.216

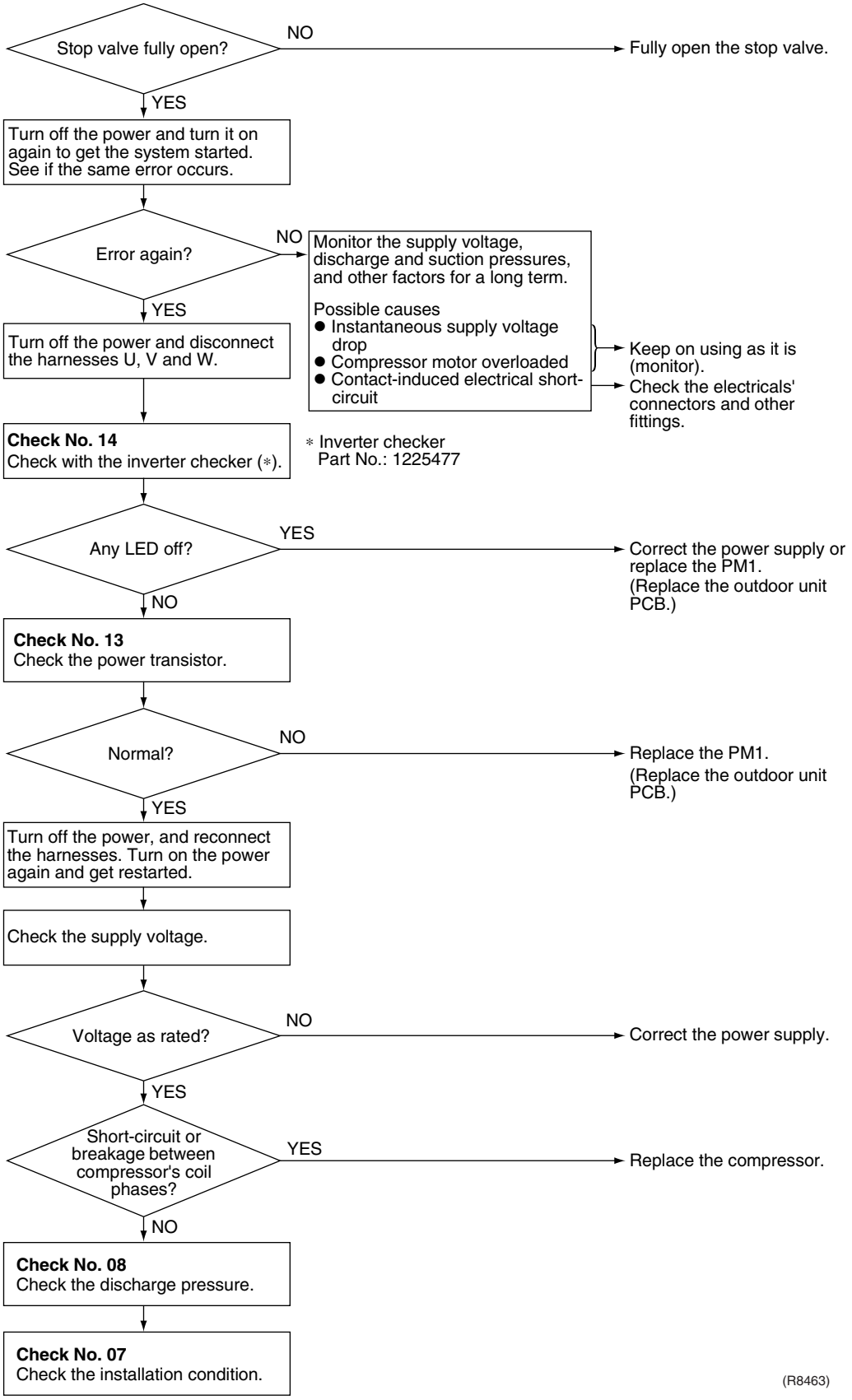
Check No.08
Refer to P.217

Check No.13
Refer to P.218

Check No.14
Refer to P.219

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

* An input overcurrent may result from wrong internal wiring. If the wires have been disconnected and reconnected for part replacement, for example, and the system is interrupted by an input overcurrent, check the wires again.



4.21 Refrigerant Shortage

Remote Controller Display

U0

Method of Malfunction Detection

Refrigerant shortage detection I :
Refrigerant shortage is detected by checking the power consumption value and the compressor running frequency.

Malfunction Decision Conditions

Refrigerant shortage detection I :
Power consumption < 4578 / 256 (W/Hz) × Compressor running frequency – 638 (W)
However, when the status of running frequency > 48 (Hz) is kept on for a certain time.

If a refrigerant shortage error takes place 4 times successively, the system is shut down. The error counter is reset if this or any other error does not occur during the following 60-minute compressor running time (total time).

Supposed Causes

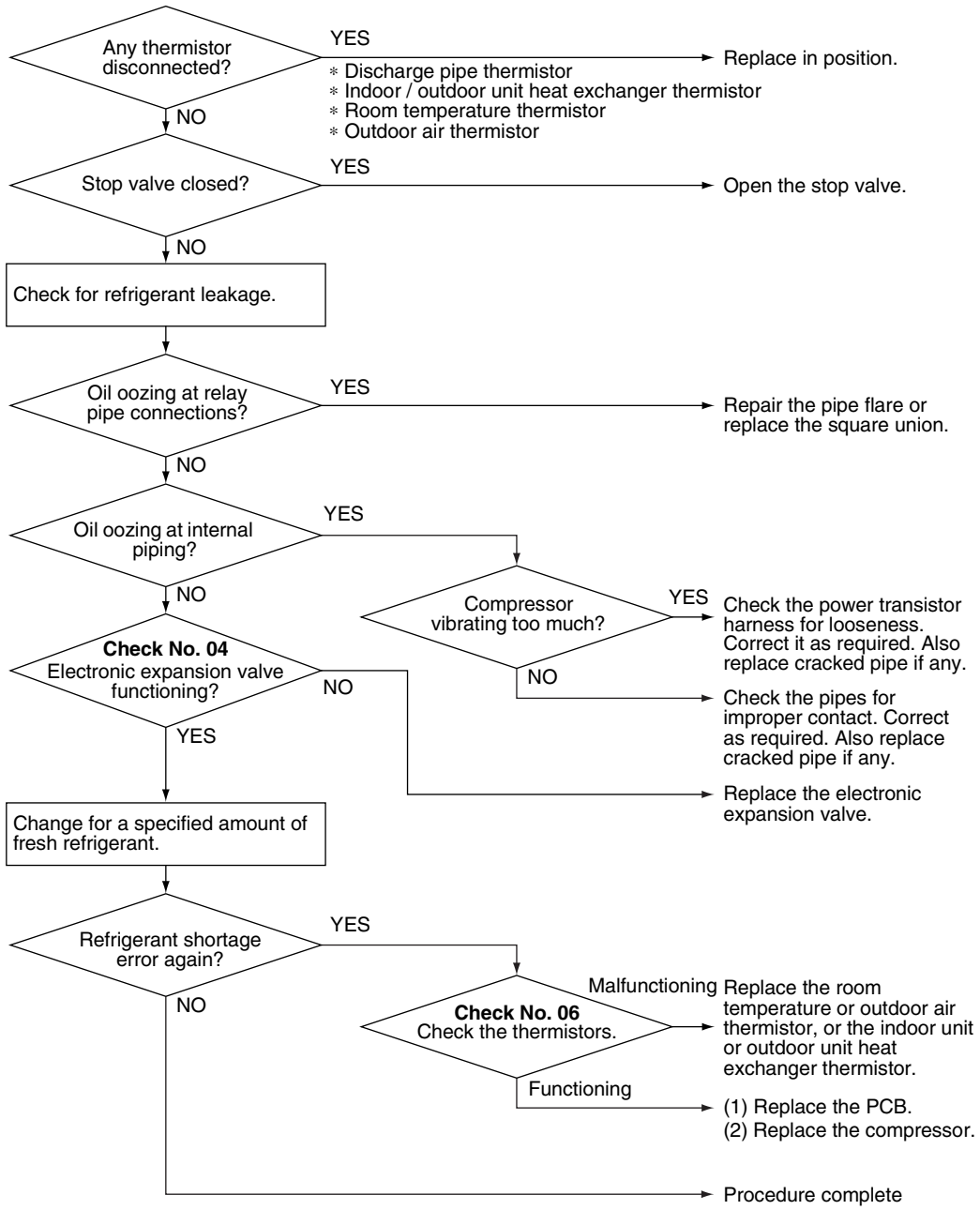
- Refrigerant shortage (refrigerant leakage)
- Poor compression performance of compressor
- Stop valve closed
- Electronic expansion valve defective

Troubleshooting

Check No.04
Refer to P.213

Check No.06
Refer to P.215

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



(R7149)

4.22 Over-voltage Detection / Low-voltage Detection

Remote Controller Display

U2

Method of Malfunction Detection

An abnormal voltage rise (or drop) is detected by checking the over-voltage detection circuit or DC voltage detection circuit.

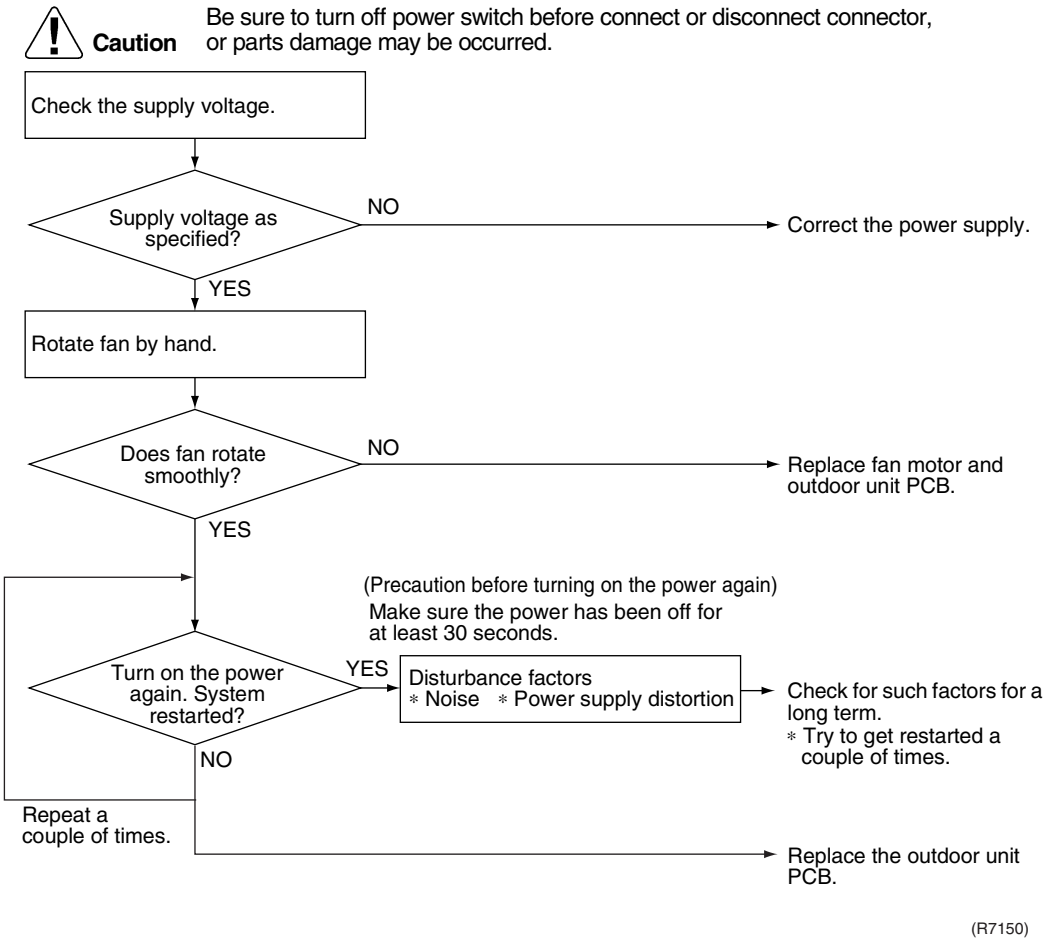
Malfunction Decision Conditions

- An over-voltage signal is fed from the over-voltage detection circuit to the microcomputer, or the voltage being detected by the DC voltage detection circuit is judged to be below 150V for 0.1 second.
- The system is shut down if the error occurs 255 times.
- Clearing condition: Continuous run for about 60 minutes (normal)

Supposed Causes

- Supply voltage not as specified
- Over-voltage detector or DC voltage detection circuit defective
- PAM control part(s) defective
- Short circuit inside the fan motor winding.

Troubleshooting



(R7150)

4.23 Anti-icing Function in Other Rooms / Unspecified Voltage (between Indoor and Outdoor Units)

Remote Controller Display

UA, UH

Method of Malfunction Detection

A wrong connection is detected by checking the combination of indoor and outdoor units on the microcomputer.

Malfunction Decision Conditions

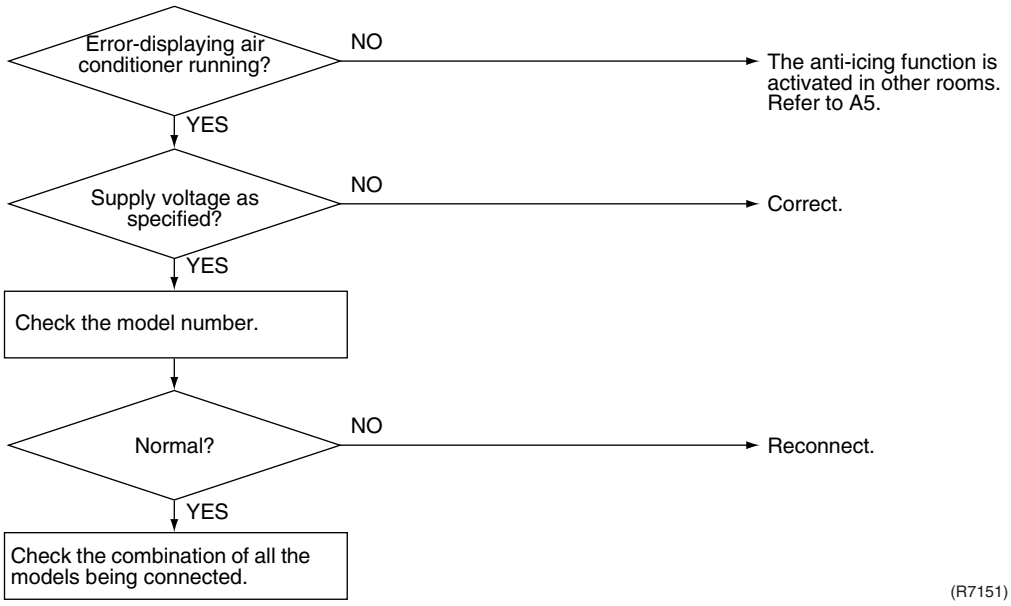
- Operation halt due to the anti-icing function in other rooms
- Operation halt due to unspecified voltage between indoor and outdoor units

Supposed Causes

- Operation halt due to the anti-icing function in other rooms
- Wrong connections at the indoor unit
- PCB wrongly connected

Troubleshooting

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



4.24 Outdoor Unit PCB Abnormality or Signal Transmission Circuit Abnormality

Remote Controller Display

U4

Method of Malfunction Detection

1. Detect within the program of the microcomputer that the program is operating normally.
2. When indoor-outdoor unit signal transmission can not be performed for more than 15 seconds.
3. Detection of the presence or absence of zero-cross signal.

Malfunction Decision Conditions

1. When the program of the microcomputer is in bad running order.
2. When indoor-outdoor unit signal transmission can not be performed for more than 15 seconds.
3. When zero-cross signal can not be detected for more than 10 seconds.

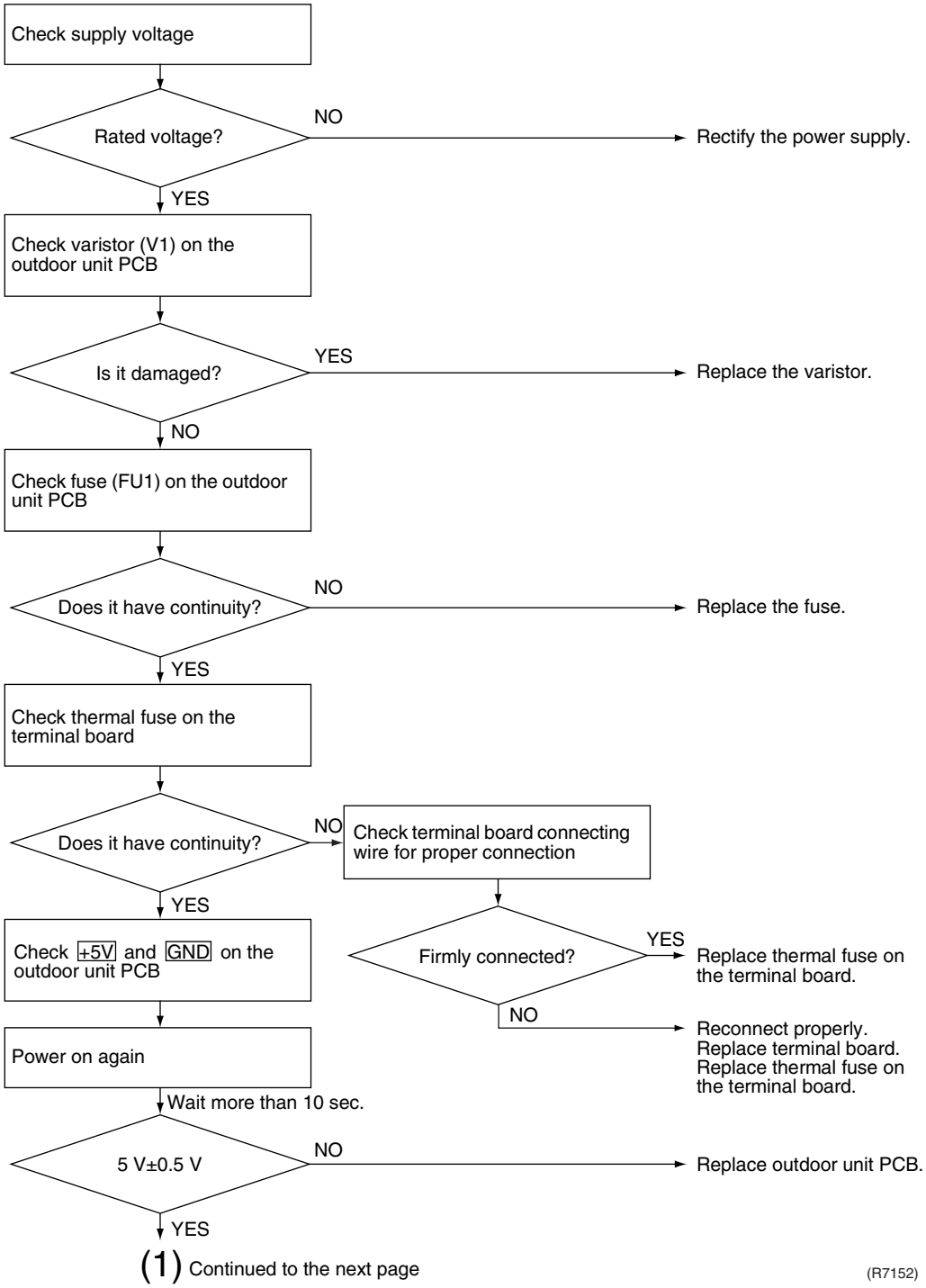
Supposed Causes

- Display disabled due to power supply fault
- Communication circuit fault in outdoor unit PCB
- Out of control of microcomputer caused by external factors
  - Noise
  - Momentary voltage drop
  - Momentary power loss
- Defective outdoor unit PCB
- Defective thermal fuse in outdoor terminal board

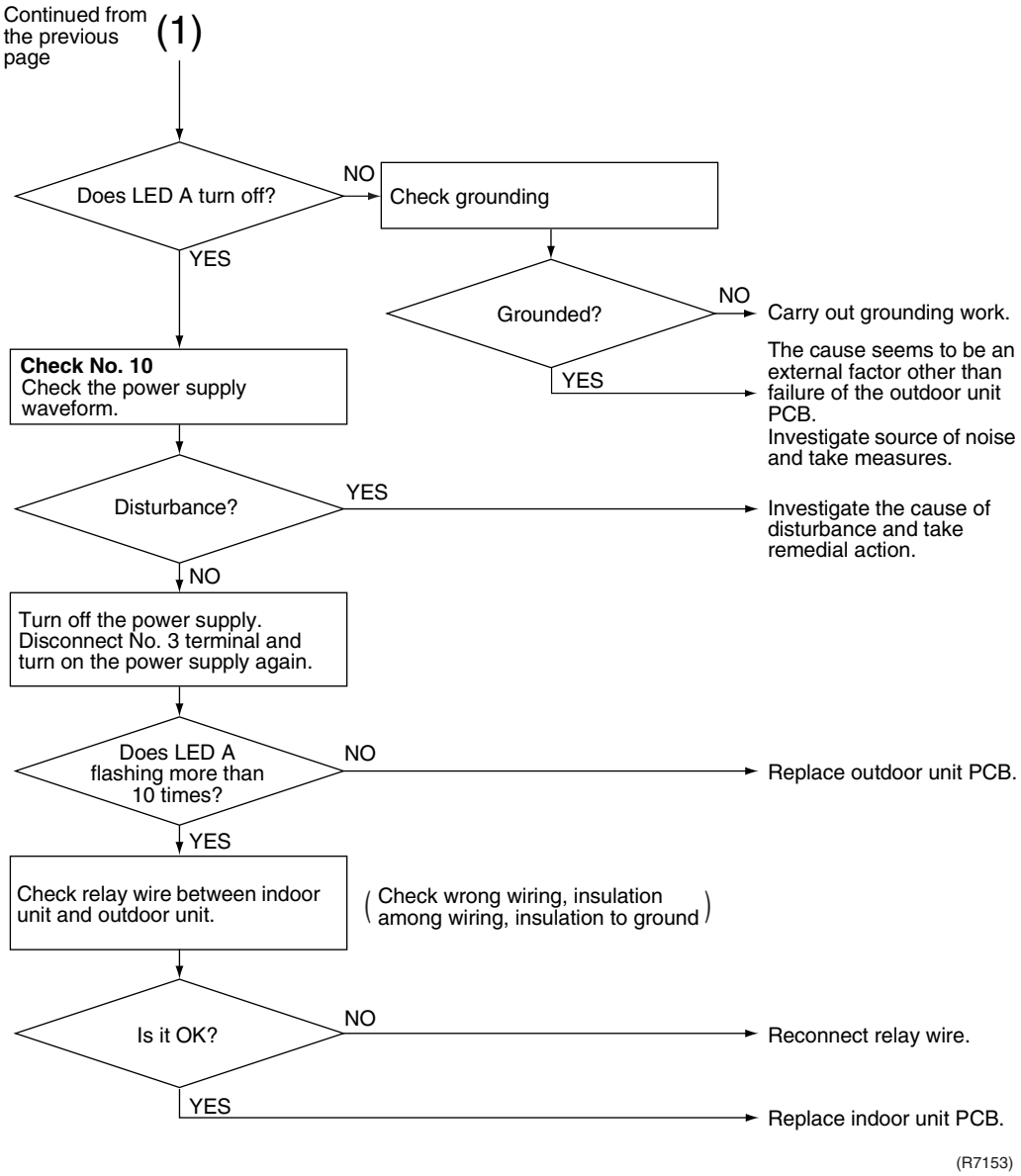
Troubleshooting

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

Check indoor unit also, because a communication circuit fault may be caused by the problem related to the indoor unit.



Check No.10
Refer to P.217



(R7153)

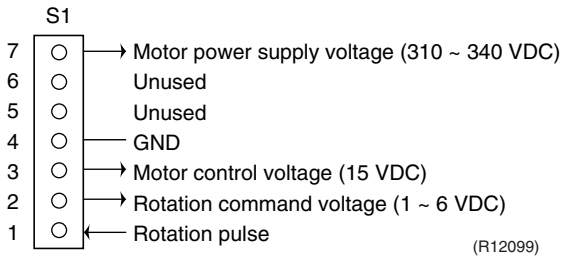
5. Check

5.1 How to Check

5.1.1 Fan Motor Connector Output Check

Check No.01

1. Check connector connection.
2. Check motor power supply voltage output (pins 4-7).
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).



5.1.2 Electronic Expansion Valve Check

Check No.04

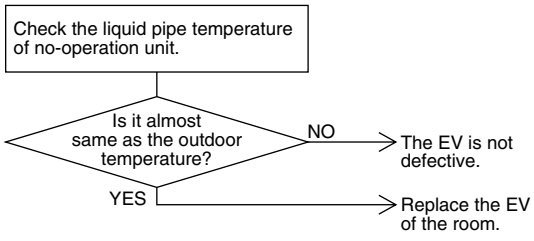
Conduct the followings to check the electronic expansion valve (EV).

1. Check to see if the EV connector is correctly inserted in the PCB. Match the EV unit number and the connector number.
2. Turn the power off and on again, and check to see if all the EVs generate latching sound.
3. If any of the EVs does not generate latching sound in the above step 2, disconnect that connector and check the continuity using a tester.
   Check the continuity between the pins 1 - 6 and 3 - 6, and between the pins 2 - 5 and 4 - 5. If there is no continuity between the pins, the EV coil is faulty.
4. If no EV generates latching sound in the above step 2, the outdoor unit PCB is faulty.
5. If the continuity is confirmed in the above step 3, mount a good coil (which generated latching sound) in the EV unit that did not generate latching sound, and check to see if that EV generates latching sound.
   ∗If latching sound is generated, the outdoor unit PCB is faulty.
   ∗If latching sound is not generated, the EV unit is faulty.

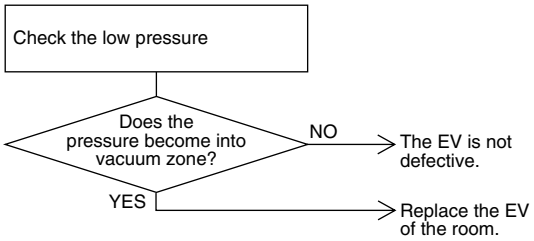
Note: Please note that the latching sound varies depending on the valve type.

If the system keeps operating with a defective electronic expansion valve, the following problem may occur.

<table>
<tr><th>Valve opening position</th><th>Possible problem</th><th>Check method</th></tr>
<tr><td>Open</td><td>Cooling:
■ Flowing noise of refrigerant in the unit which is not in operation
■ Water leakage at the unit which is not in operation
■ Operation half due to anti-icing function

Heating:
■ Flowing noise of refrigerant in the unit which is not in operation
■ The unit does not heat the room.</td><td>Reset power supply and conduct cooling operation unit by unit.
 

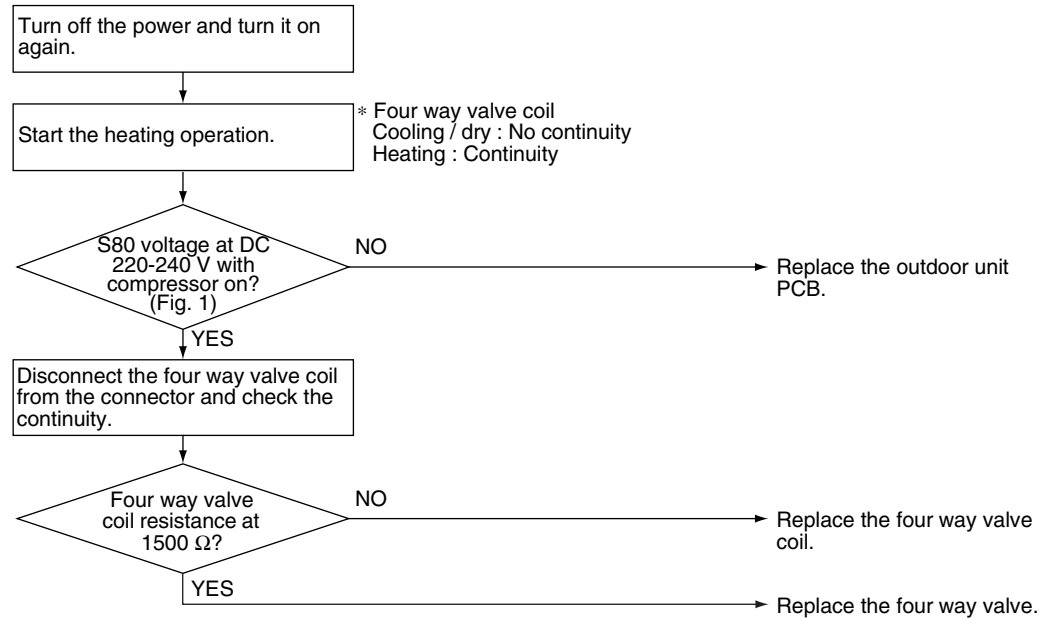
(R11266)</td></tr>
<tr><td>Close</td><td>Cooling:
■ The problem unit does not cool the room.
■ Only the problem unit is in operation, the unit starts pump down.
(The low pressure of the unit becomes vacuum.)
■ Abnormal discharge pipe temperature

Heating:
■ Refrigerant shortage due to stagnation of liquid refrigerant inside the faulty indoor unit
■ The unit does not heat the room.
■ Abnormal discharge pipe temperature</td><td>Reset power supply and conduct cooling operation unit by unit.
 

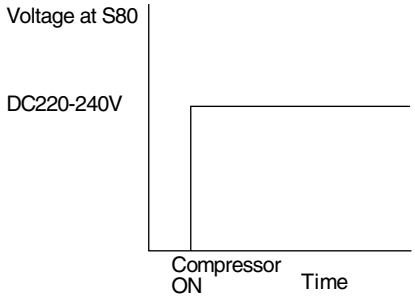
(R11267)</td></tr>
</table>

5.1.3 Four Way Valve Performance Check

Check No.05



(Fig. 1)



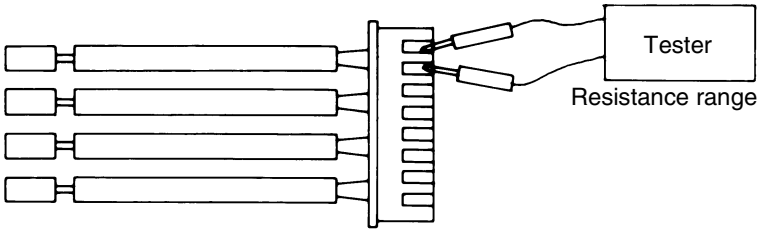
(R7156)

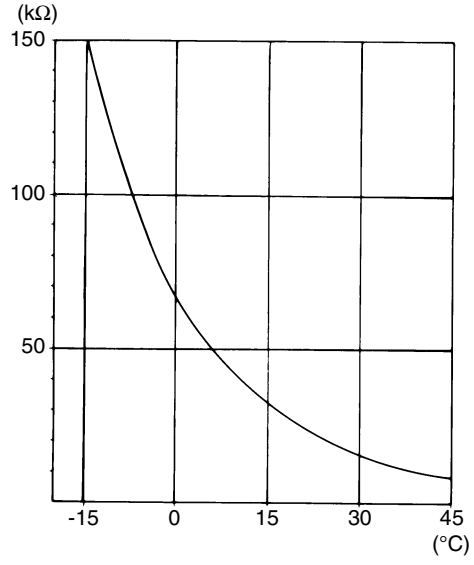
5.1.4 Thermistor Resistance Check

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)	Resistance (kΩ)
–20	211.0
–15	150.0
–10	116.5
–5	88.0
0	67.2
5	51.9
10	40.0
15	31.8
20	25.0
25	20.0
30	16.0
35	13.0
40	10.6
45	8.7
50	7.2

(R25°C = 20 kΩ, B = 3950 K)

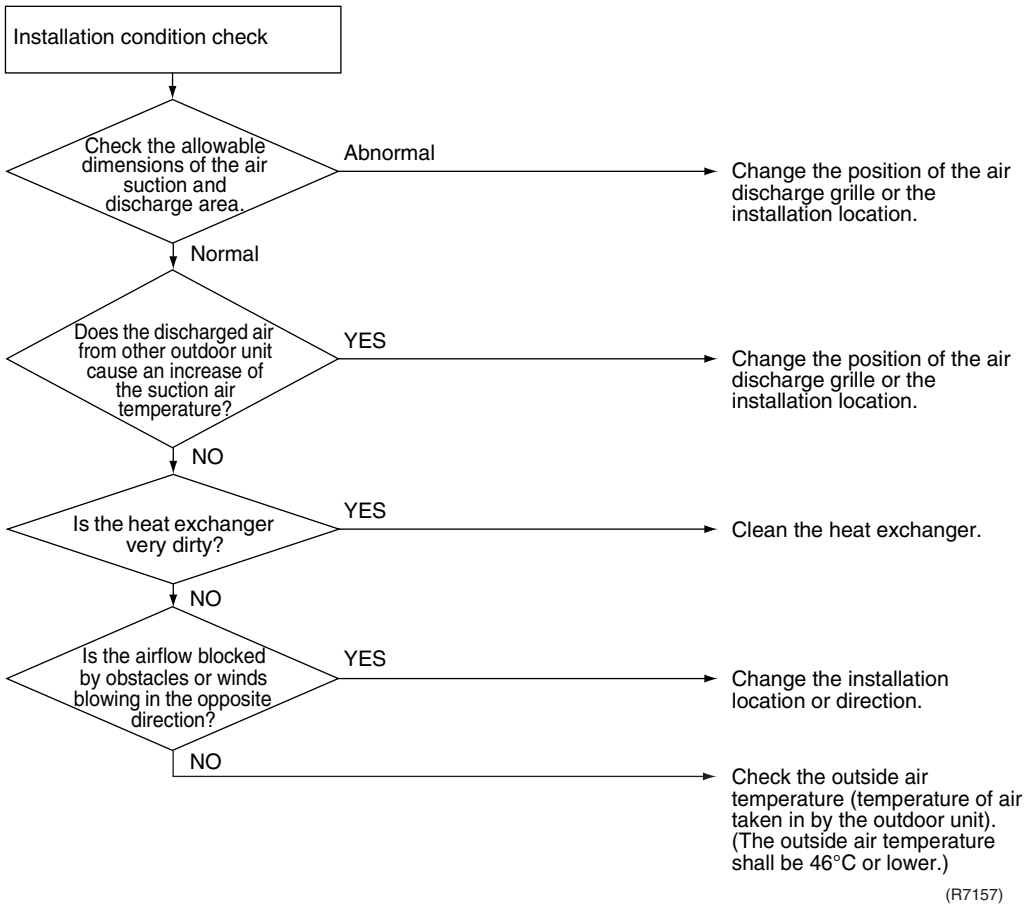




(R1437)

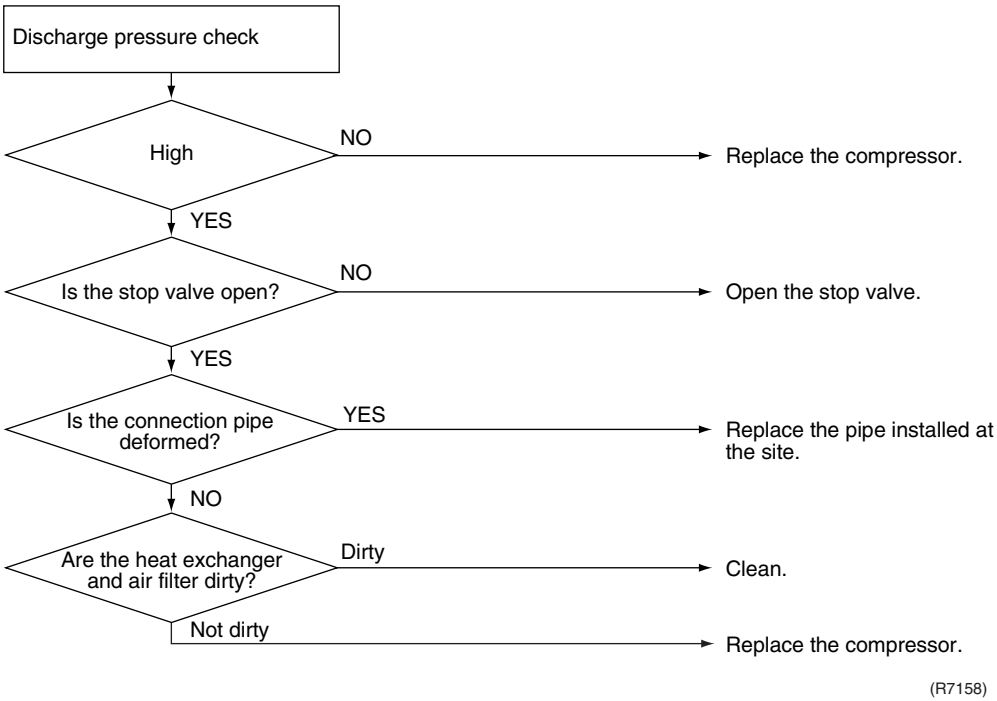
5.1.5 Installation Condition Check

Check No.07



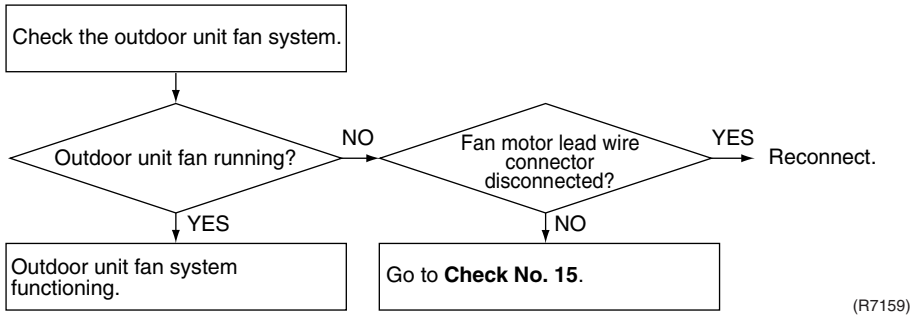
5.1.6 Discharge Pressure Check

Check No.08



5.1.7 Outdoor Unit Fan System Check (With DC Motor)

Check No.09



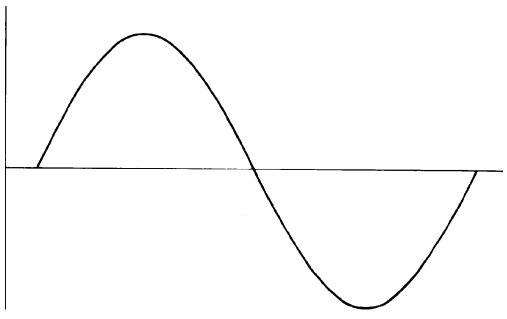
5.1.8 Power Supply Waveforms Check

Check No.10

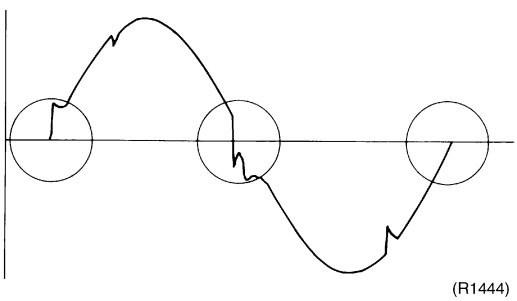
Measure the power supply waveform between pins 1 and 2 on the terminal board, and check the waveform disturbance.

- 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]

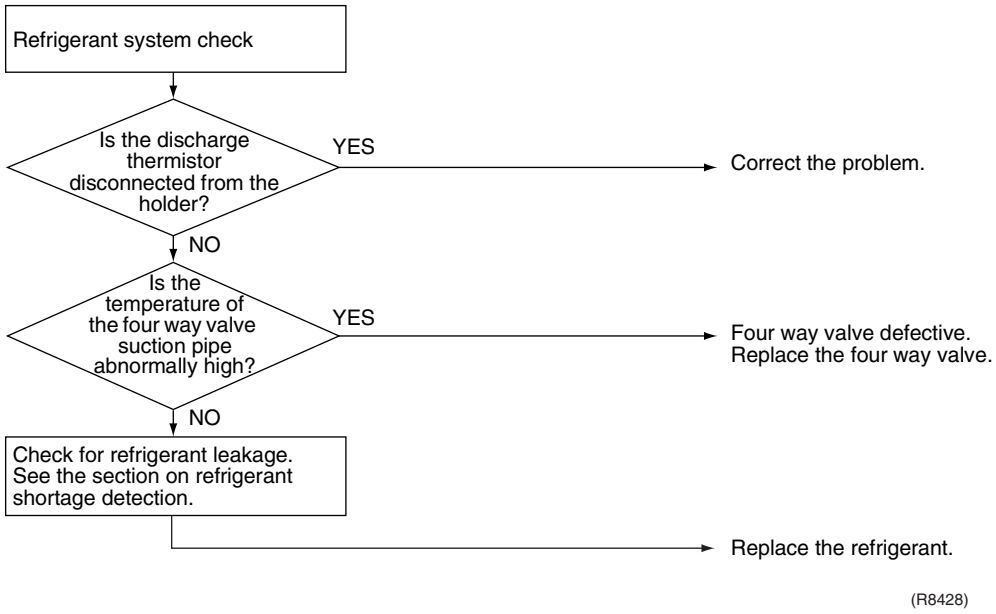


[Fig.2]



5.1.9 Inverter Units Refrigerant System Check

Check No.11



5.1.10 Power Transistor Check

Check No.13

Note: Check to make sure that the voltage between (+) and (–) of the diode bridge (DB1) is approx. 0 V before checking.

- Disconnect the compressor harness connector from the outdoor unit PCB. To disengage the connector, press the protrusion on the connector.
- Follow the procedure below to measure resistance between the terminals of the DB1 and the terminals of the compressor with a multi-tester. Evaluate the measurement results for a judgment.

Negative (–) terminal of tester (positive terminal (+) for digital tester)	DB1 (+)	UVW	DB1 (–)	UVW
Positive (+) terminal of tester (negative terminal (–) for digital tester)	UVW	DB1 (+)	UVW	DB1 (–)
Resistance in OK	several kΩ ~ several MΩ			
Resistance in NG	0 Ω or ∞			

5.1.11 “Inverter Checker” Check

Check No.14

■ **Characteristics**

If abnormal stop occurs due to compressor startup failure or overcurrent output when using inverter unit, it is difficult to judge whether it is caused by the compressor failure or other failure (control PCB, power module, etc.). The inverter checker makes it possible to judge the cause of trouble easily and securely. (Connect this checker as a quasi-compressor instead of compressor and check the output of inverter)

■ **Operation Method**

Step 1

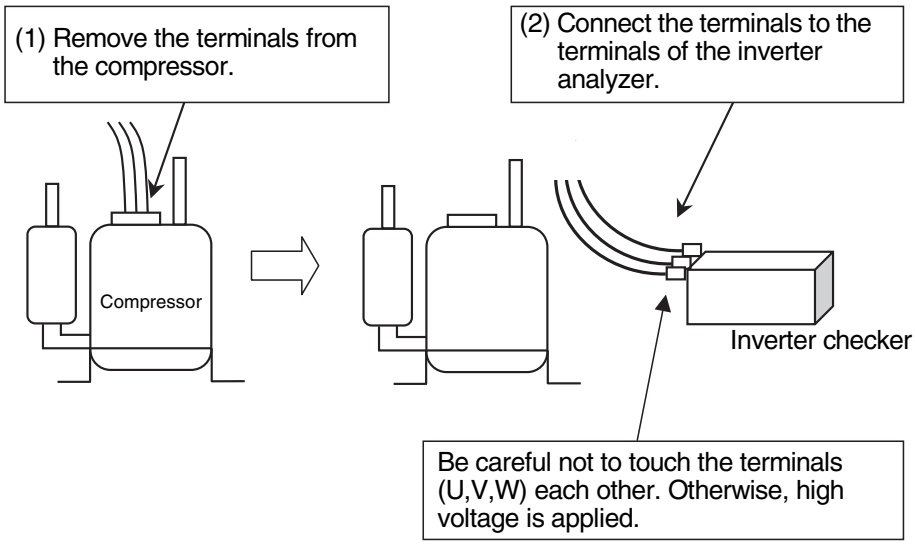
Be sure to turn the power off.

Step 2

Install the inverter checker instead of a compressor.

Note:

Make sure the charged voltage of the built-in smoothing electrolytic capacitor drops to 10 VDC or below before carrying out the service work.



Reference:

If the terminals of the compressor are not FASTON terminals (difficult to remove the wire on the terminals), it is possible to connect wires available on site to the outdoor unit from output side of PCB. (Do not connect them to the compressor at the same time, otherwise it may result in incorrect detection.)

Step 3
Activate inverter test operation from the indoor unit.

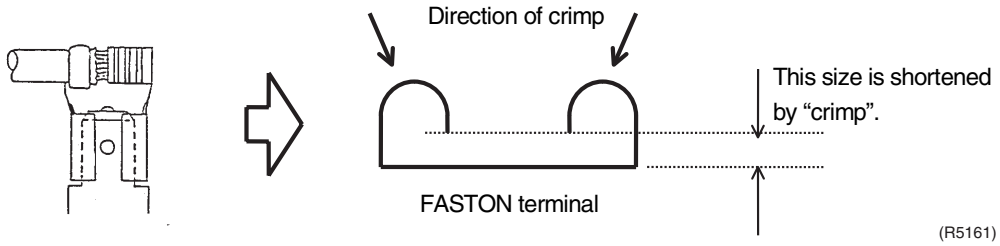
ATXS, ATX, FTXS, F(C)TXG, ATXG, FDK(X)S, FLK(X)S, FVXS models :
1) Turn the power on.
2) Select FAN operation with the [MODE] button on the remote controller.
3) Press the 3 buttons (TEMP▲, TEMP▼, MODE) simultaneously.
   -> 00 is displayed with the figure of ten's place blinking.
4) Press the [MODE] button.
   -> 00 is displayed with the figure of one's place blinking.
5) Press the [MODE] button.
   -> 7 is displayed.
6) Press the [ON/OFF] button.
   -> Inverter test operation starts.

FFQ models with wired remote controller:
1) Turn the power on.
2) Select FAN operation on the remote controller.
3) Press the [ON/OFF] button.
   -> FAN operation starts.
4) Press the [TEST] button 4 times.
   -> Inverter test operation starts.

FFQ models with wireless remote controller:
1) Turn the power on.
2) Select FAN operation on the remote controller.
3) Press the [ON/OFF] button.
   -> FAN operation starts.
4) Press the [TEST] button twice.
   -> Inverter test operation starts.

■ **Diagnose method (Diagnose according to 6 LEDs lighting status.)**
(1) When all the LEDs are lit uniformly, the compressor is defective.
   → Replace the compressor.
(2) When the LEDs are not lit uniformly, check the power module.
   → Refer to **Check No.13**.
(3) If NG in **Check No.13**, replace the power module (PCB).
   If OK in **Check No.13**, check if there is any solder cracking on the PCB.
(4) If any solder cracking is found, replace the PCB or repair the soldered section.
   If there is no solder cracking, replace the PCB.

Caution
(1) When the output frequency is low, the LEDs blink slowly. As the output frequency increases, the LEDs blink quicker. (The LEDs look like they are lit.)
(2) On completion of diagnose by the inverter checker, be sure to re-crimp the FASTON terminals. Otherwise, the terminals may be burned due to loosening.



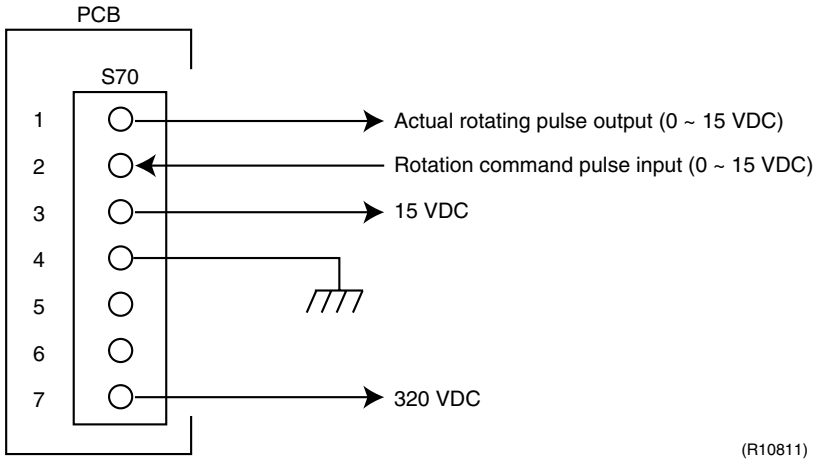
5.1.12 Rotating Pulse Input on the Outdoor Unit PCB Check

Check No.15

<Outdoor fan motor>
Make sure that the voltage of 320 ± 30 V is applied.

1. Set operation off and power off. Disconnect the connector S70.
2. Check that the voltage between the pins 4 - 7 is 320 VDC.
3. Check that the control voltage between the pins 3 - 4 is 15 VDC.
4. Check that the rotation command voltage between the pins 2 - 4 is 0 ~ 15 VDC.
5. Keep operation off and power off. Connect the connector S70.
6. Check whether 2 pulses (0 ~ 15 VDC) are output at the pins 1 - 4 when the fan motor is rotated 1 turn by hand.

When the fuse is melted, check the outdoor fan motor for proper function.
If NG in step 2 → Defective PCB → Replace the PCB.
If NG in step 4 → Defective Hall IC → Replace the outdoor fan motor.
If OK in both steps 2 and 4 → Replace the PCB.

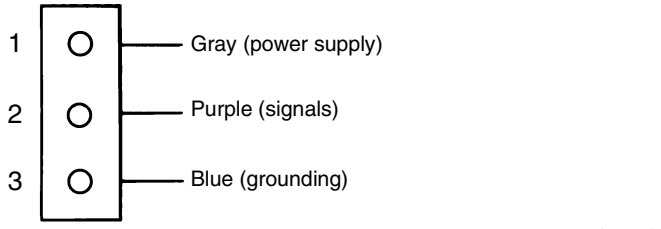


5.1.13 Hall IC Check

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.

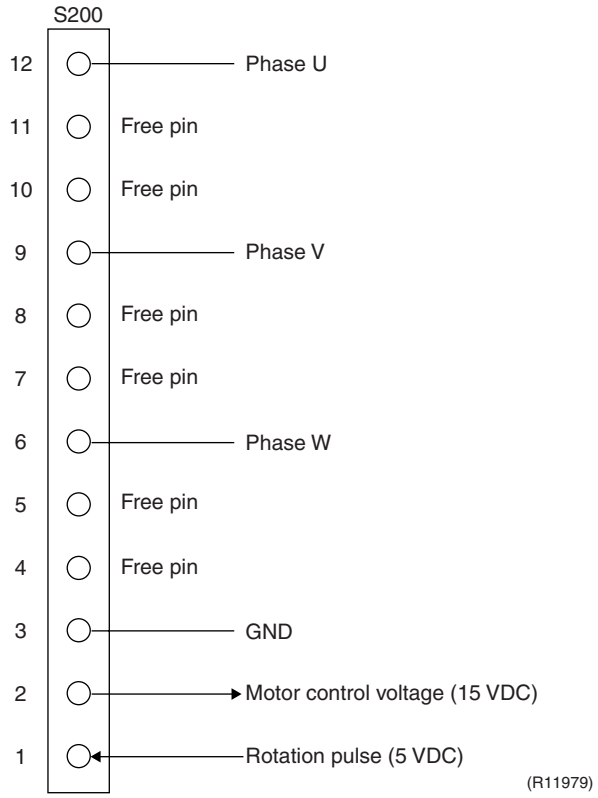
Failure of (1) → faulty PCB → Replace the PCB.
Failure of (2) → faulty Hall IC → Replace the fan motor.
OK in both (1) and (2) → Replace the PCB.



5.1.14 Indoor PCB Output Check

Check No.18

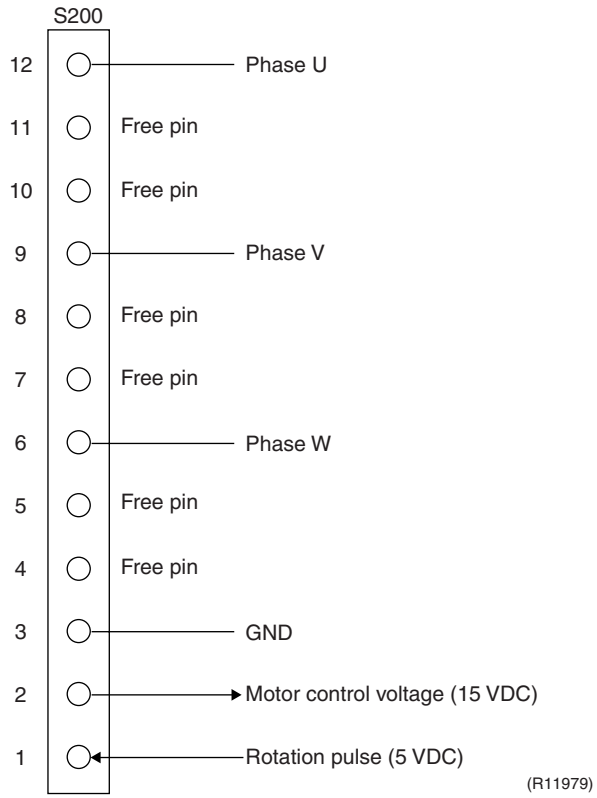
(1) Check the connector for connection.
(2) Check the motor power voltage is generated (between pins 2 and 3).



5.1.15 Turning Speed Pulse on the Indoor Unit PCB Check

Check No.19

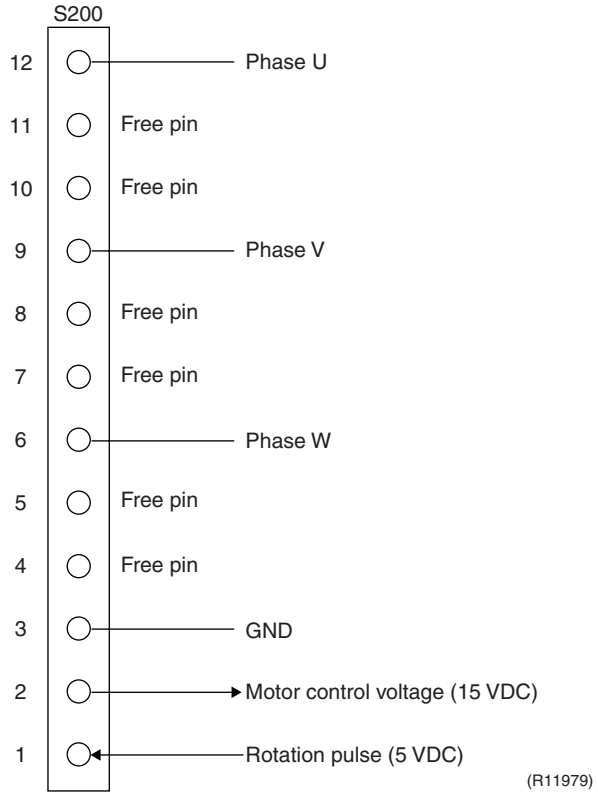
(1) Check the connector for connection.
(2) Turn the power on and stop the operation.
(3) Check if the Hall IC generates the rotation pulse 4 times when the fan motor is manually rotated once (between the pins 1 and 3).



5.1.16 Fan Motor Wire / Short Circuit Check

Check No.20

(1) Check the connector for connection.
(2) Turn the power off.
(3) Check if each resistance at the phases U - V and V - W is 10 Ω ~ 20 Ω (between the pins 12 - 9, and between 9 - 6).



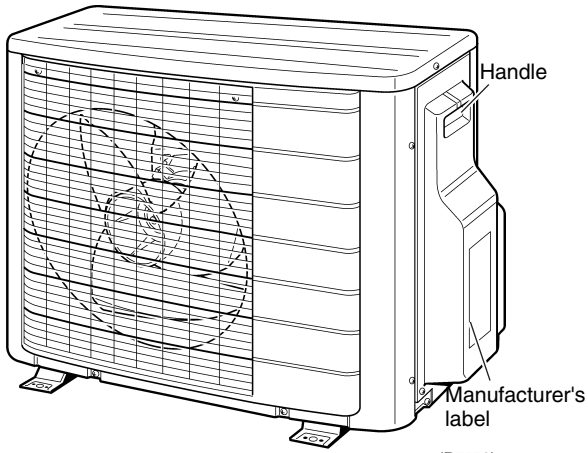
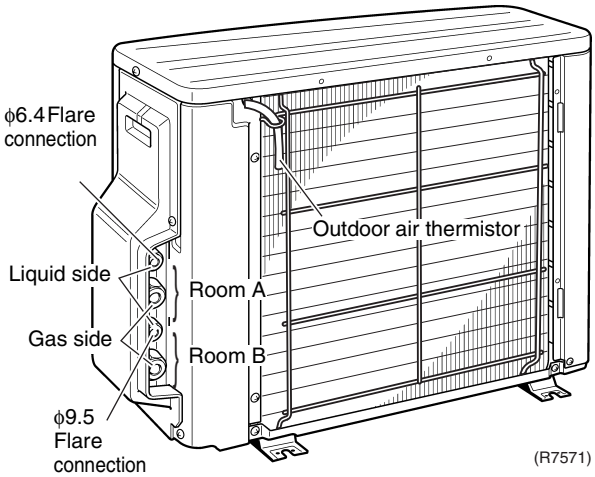
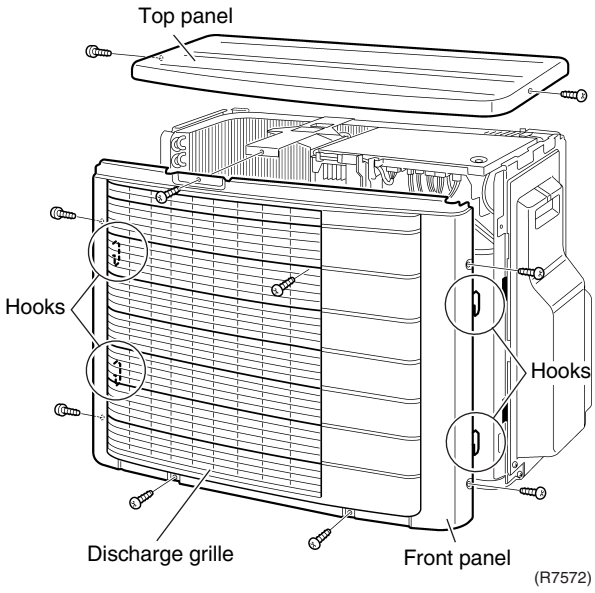
Part 7
Removal Procedure

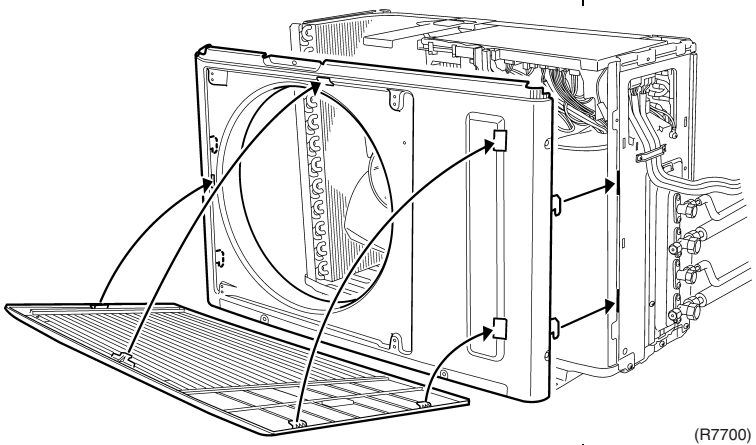
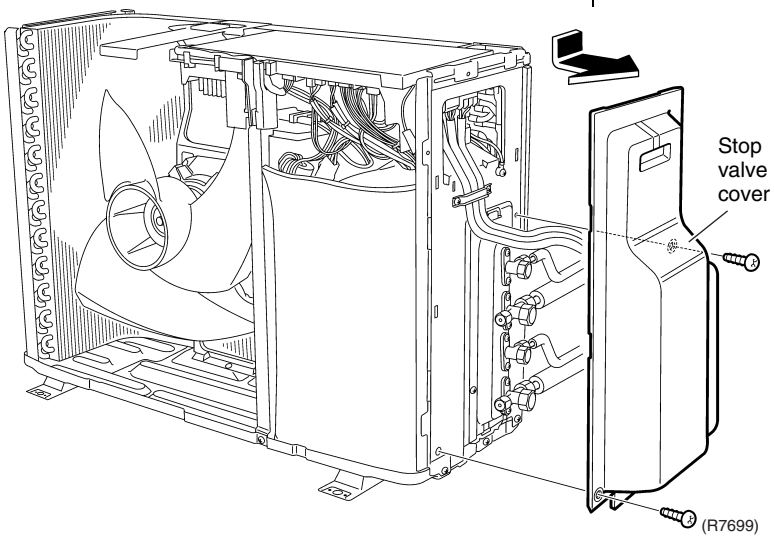
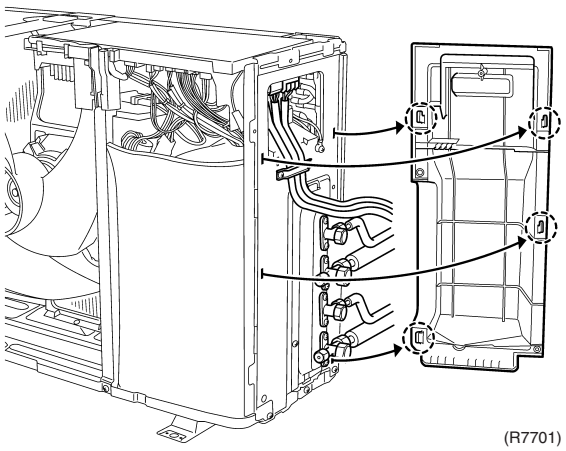
1. Outdoor Unit

1.1 Removal of the Panels and Plates

Procedure

Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

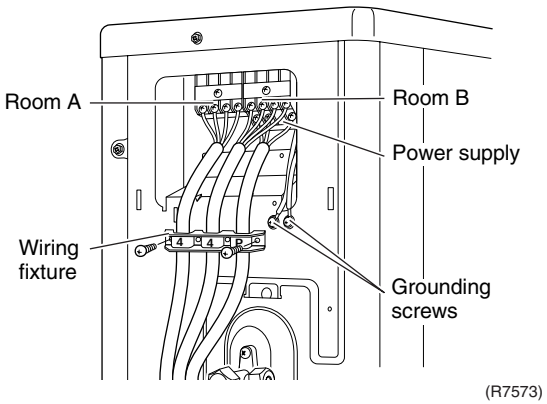
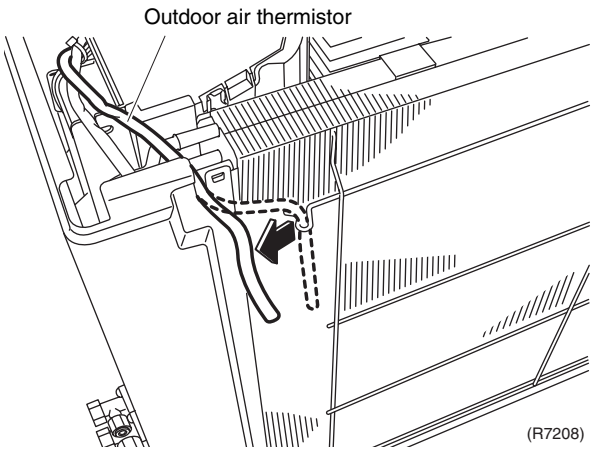
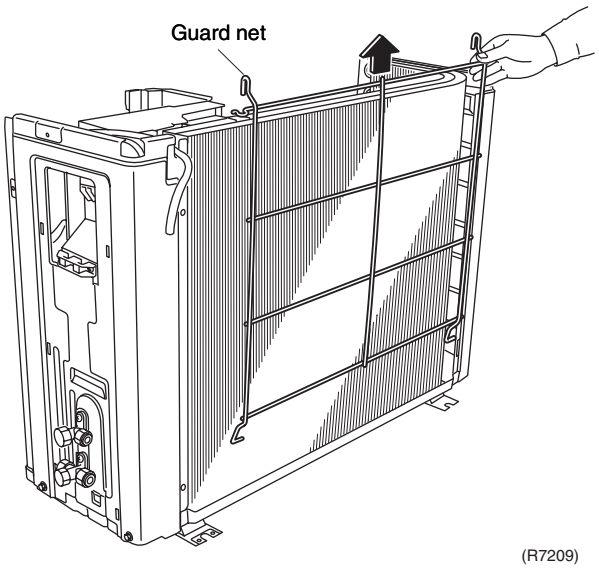
Step	Procedure		Points
1	External appearance.	 	
2	Remove the 2 screws (right, left) of the top panel, and 8 screws to remove the front panel.		■ The front panel has 4 hooks. ■ The bell mouth can not be removed.

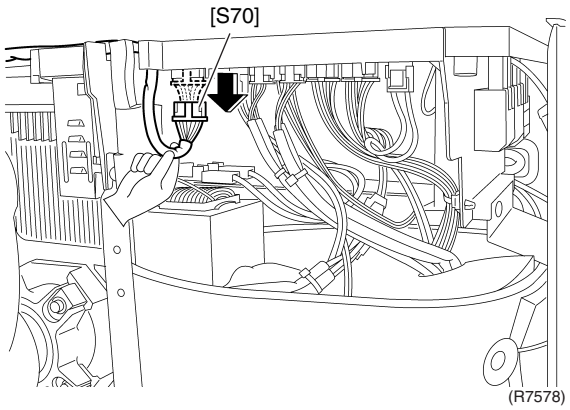
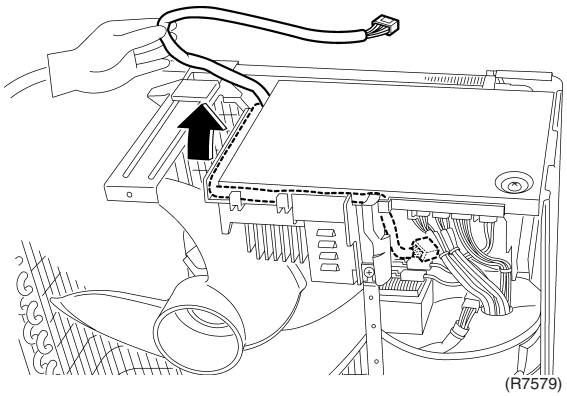
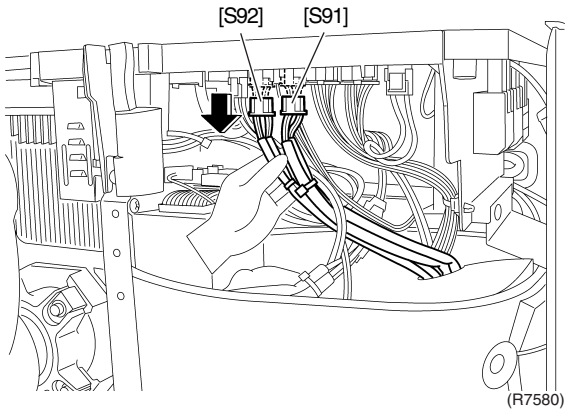
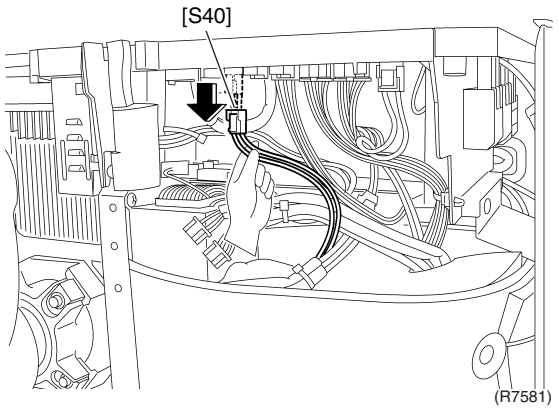
Step	Procedure		Points
3	Remove the 4 screws and remove the discharge grille.	 (R7700)	■ When reassembling, make sure to fit the 4 hooks.
4	Remove the 2 screws of the stop valve cover and remove it.	 (R7699)	■ The stop valve cover is united with the shelter.
		 (R7701)	■ When assembling the stop valve cover, make sure to fit the 4 hooks.

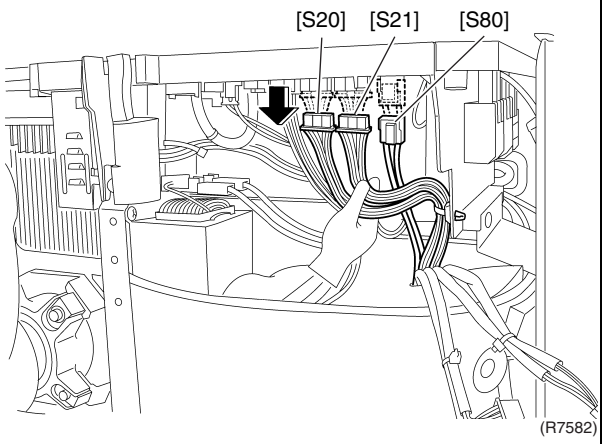
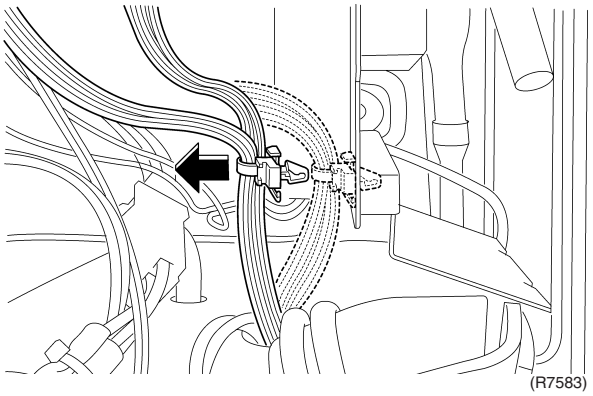
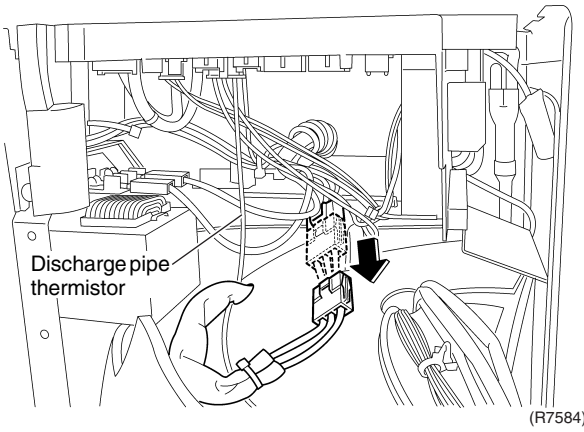
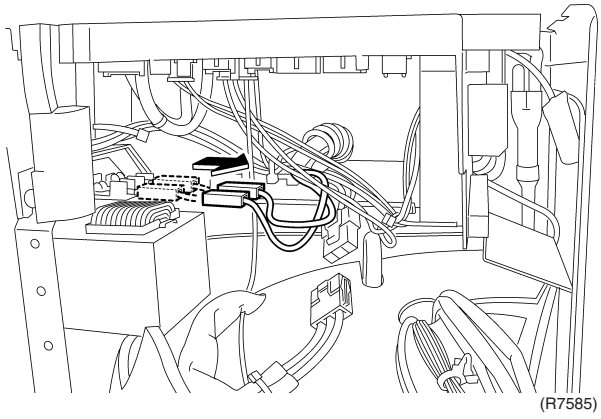
1.2 Removal of the Electrical Box

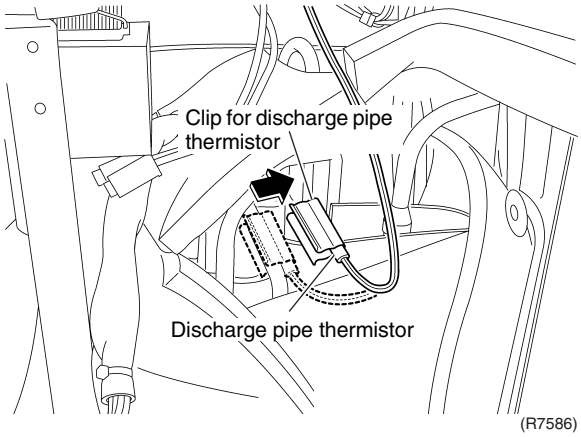
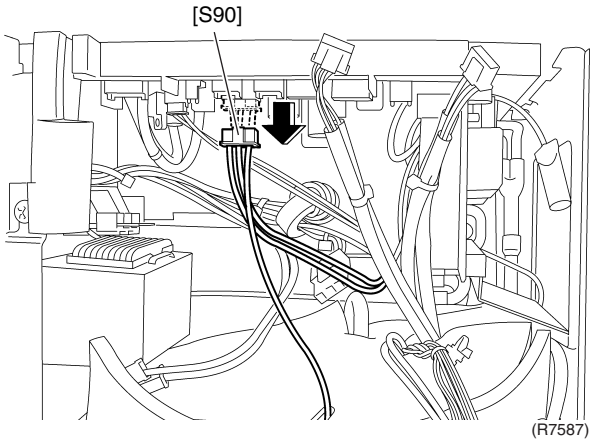
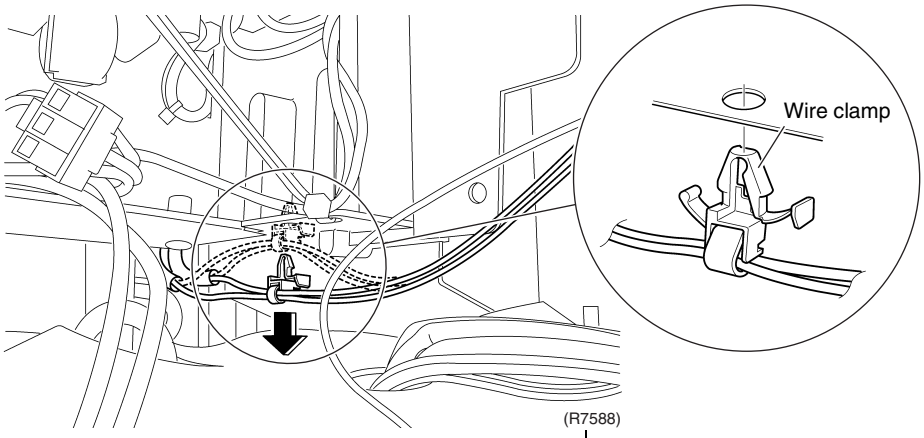
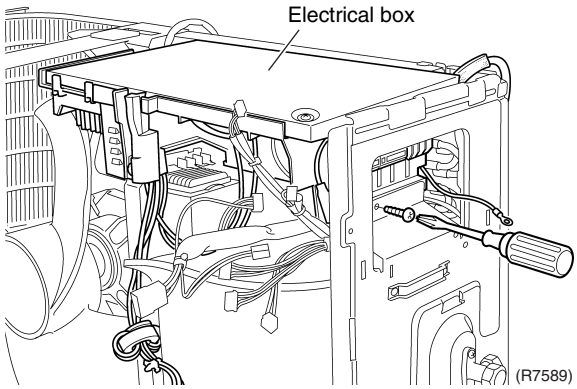
Procedure

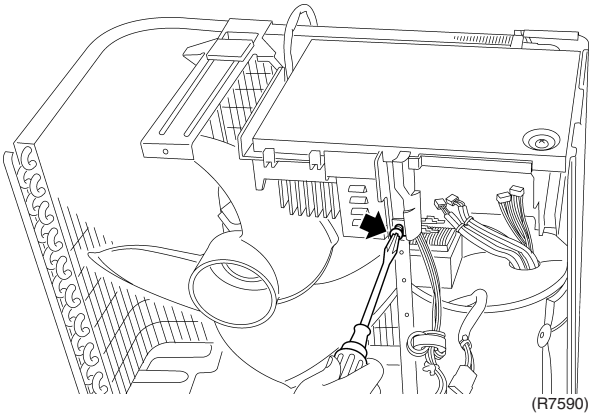
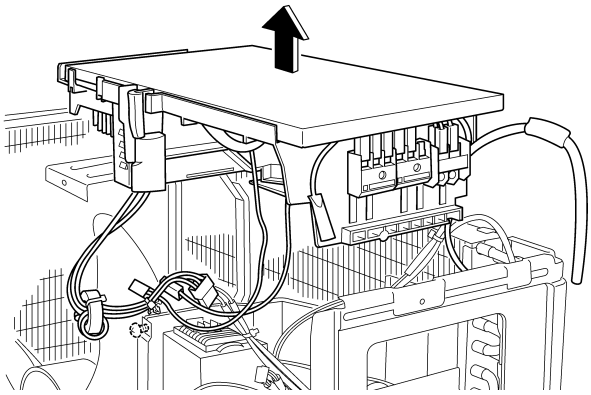
Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure		Points
1. Disconnect the connecting wires			■ Fasten the wires with screws on the terminal board. ■ The terminal board is united resin formation.
1	Remove the 2 grounding screws. Remove the 2 screws to remove the wiring fixture. Then remove the all screws for the connectors to disconnect the power supply cable and the connecting wires.		
2. Remove the electrical box			
1	Release the outdoor air thermistor from the holder.		
2	Lift up the guard net to remove.		

Step	Procedure		Points
3	Disconnect the connector for the fan motor [S70].		■ For removal procedure of the lead wire for the fan motor, refer to “Removal of the PCB”.
4	Release the lead wire for the fan motor.		
5	Disconnect the connector for the gas pipe thermistor [S91] and for the liquid pipe thermistor [S92].		[S91] : Gas pipe thermistor (white) [S92] : Liquid pipe thermistor (red)
6	Disconnect the connector for the overload protector [S40].		[S40] : Overload protector

Step	Procedure		Points
7	Disconnect the connectors [S20], [S21] and [S80].		[S20] : Electronic expansion valve EVA [S21] : Electronic expansion valve EVB [S80] : Four way valve
8	Release the wire clip from the electrical box.		■ The clip is push-mount type.
9	Disconnect the connector for the relay harness of compressor.		
10	Disconnect the 2 connectors for the reactor.		

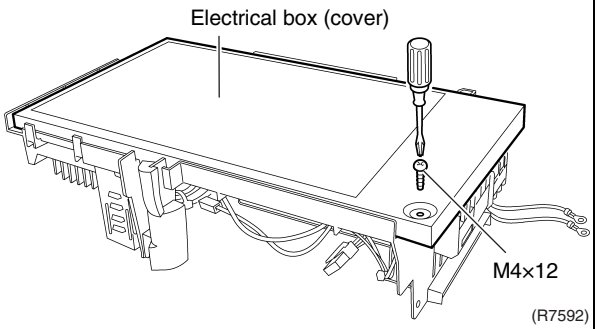
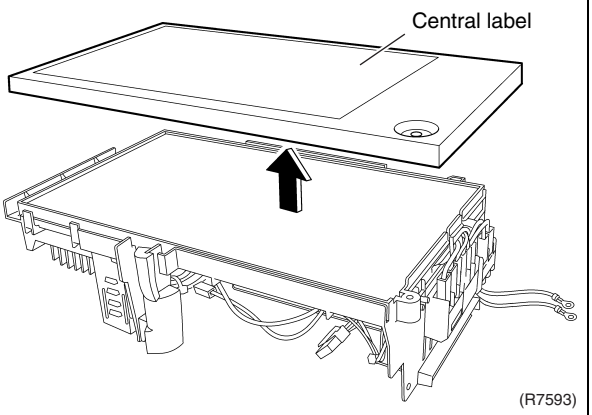
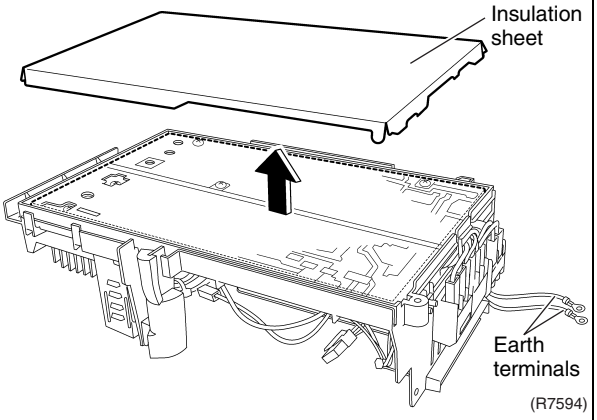
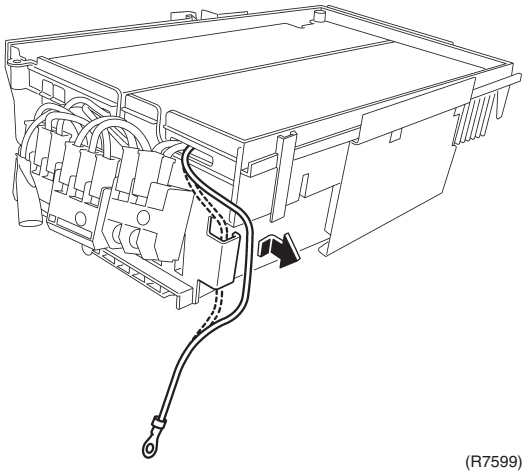
Step	Procedure		Points
11	Detach the discharge pipe thermistor.		■ Meet the edge of the thermistor and the clip. ■ Be careful not to lose the clip for the discharge pipe thermistor.
12	Disconnect the connector for the thermistor ASSY. [S90]		[S90] : Thermistor ASSY (Outdoor air, Heat exchanger, Discharge pipe)
13	Release the wire clamp for the thermistor ASSY under the electrical box.		
14	Remove the screw on the right side of the electrical box.		

Step	Procedure		Points
15	Remove the screw in front of the electrical box.	 (R7590)	
16	Lift up the electrical box to remove.	 (R7591)	

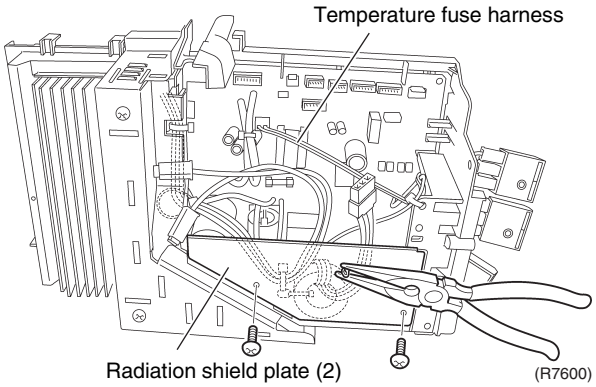
1.3 Removal of the PCB

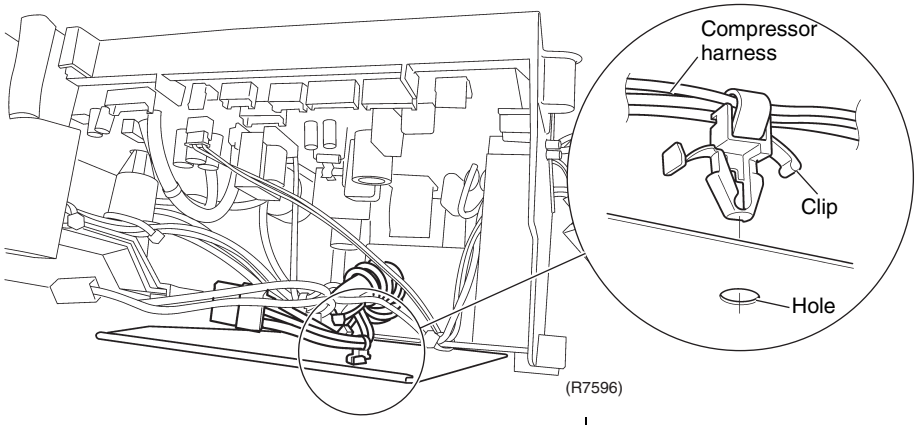
Procedure

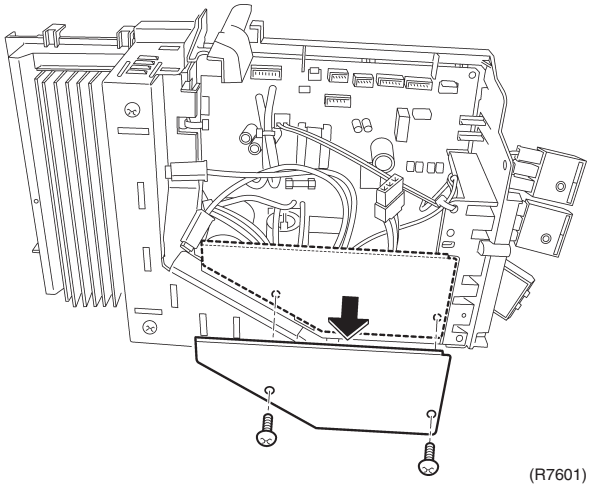
Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

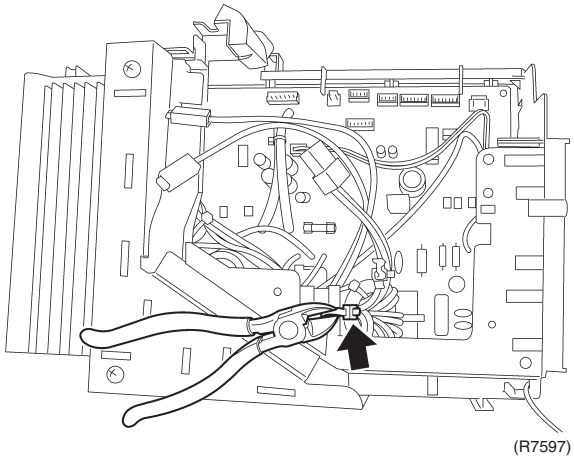
Step	Procedure	Points
■ Remove the outer panels and plates such as the top plate and the front panel.		**Preparation** ■ Remove the electrical box according to the removal procedure.
1. Remove the PCB		
1 Remove the screw of the cover of the Electrical box.		■ The control PCB is adopted upside-down. ■ The lead-free solder (PbF) is used on PCB. When exchange, use exclusive solder and soldering gun.
2 Detach the insulation sheet.		■ The trimmed part goes front.
3 Remove the 2 screws of the terminal boards to remove.		■ The terminal board is united with temperature fuse.
4 Release the earth wire from the hook.		

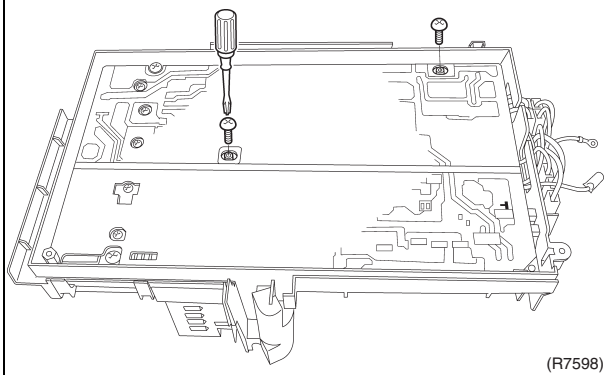
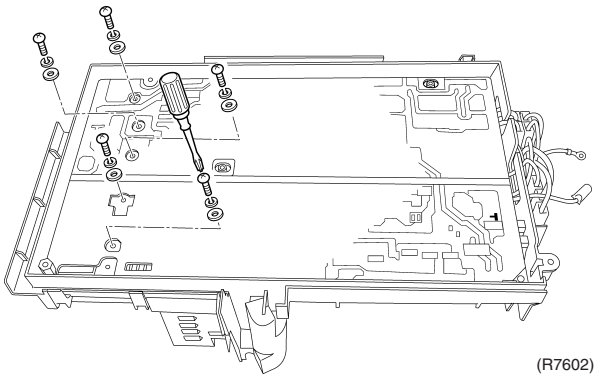
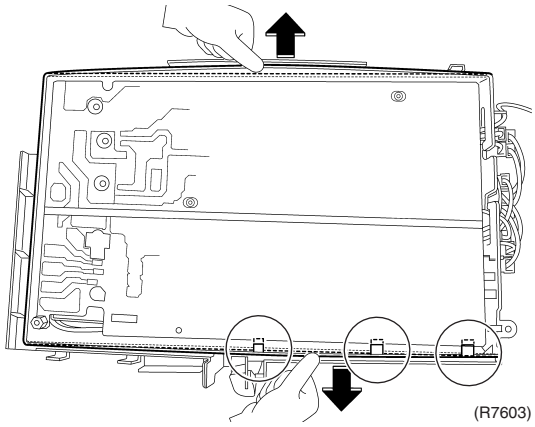
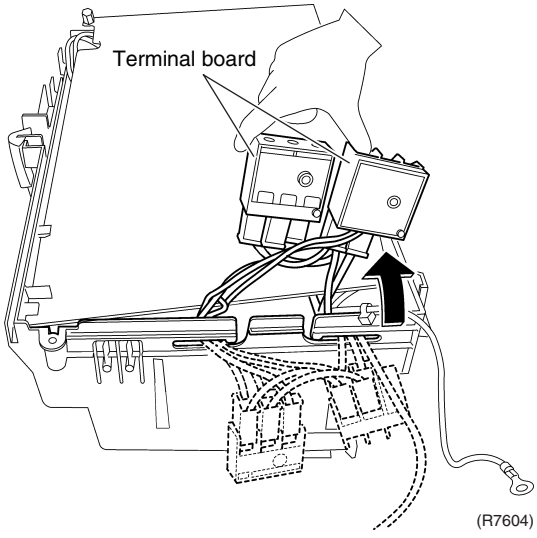
Step	Procedure	Points
5	Remove the 2 screws and release the one clip to remove the radiation shield plate.	■ The clip is push mount type.
6	Cut off the clamp and disconnect the wire harnesses.	

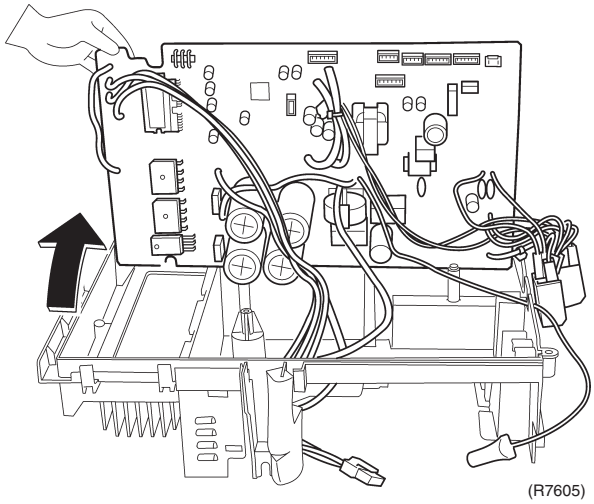
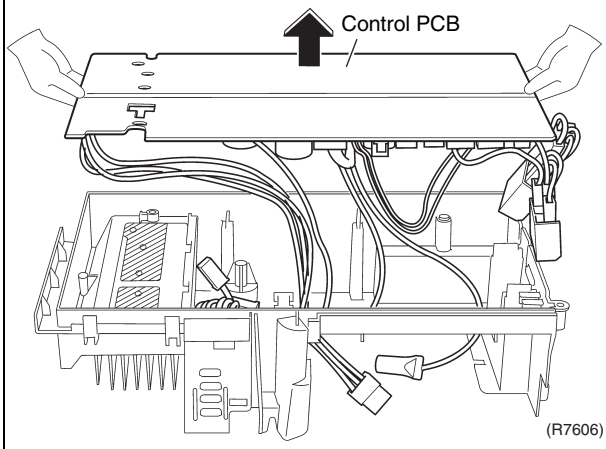
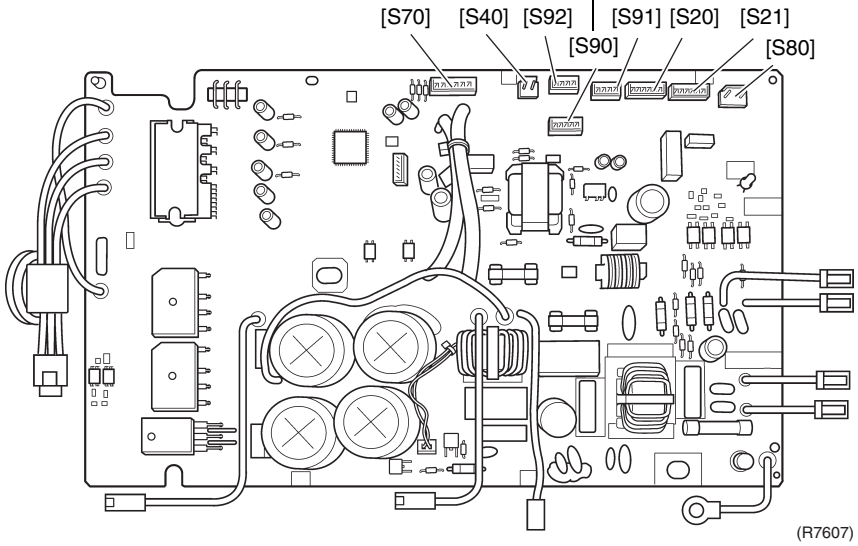


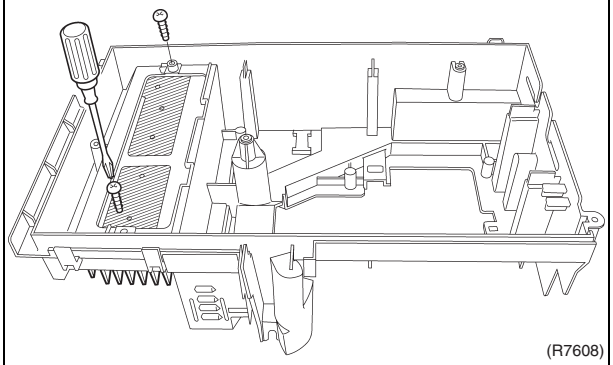
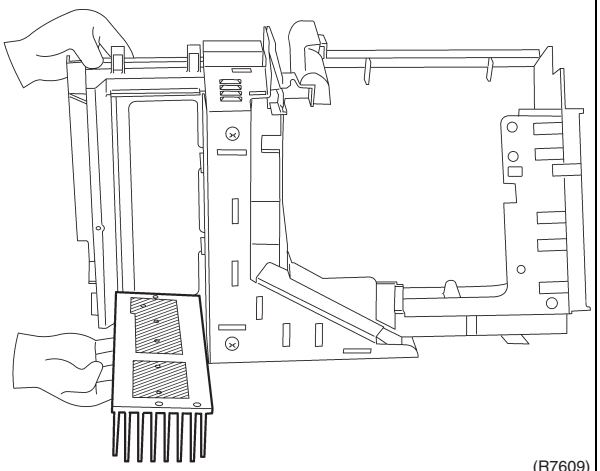






Step	Procedure		Points
7	Remove the 7 screws in total to remove the PCB.	 (R7598)	
		 (R7602)	
8	Lift up the back side slightly and undo the hooks of the front.	 (R7603)	■ Make sure that the hooks of the electrical box are placed on the PCB.
9	Undo the lead wires from the hook and remove the terminal board on the side.	 (R7604)	

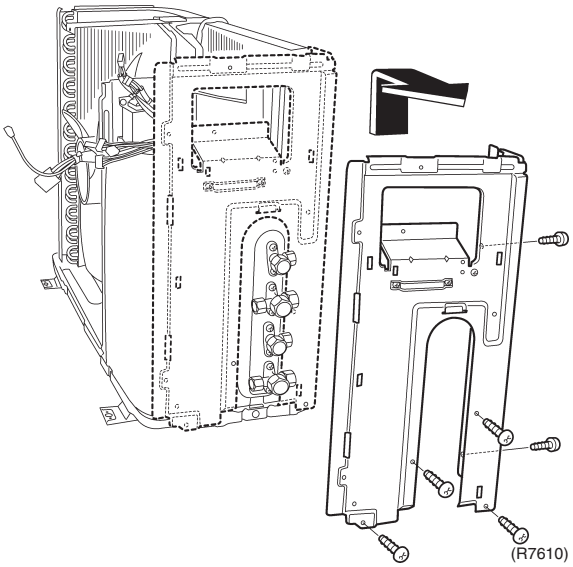
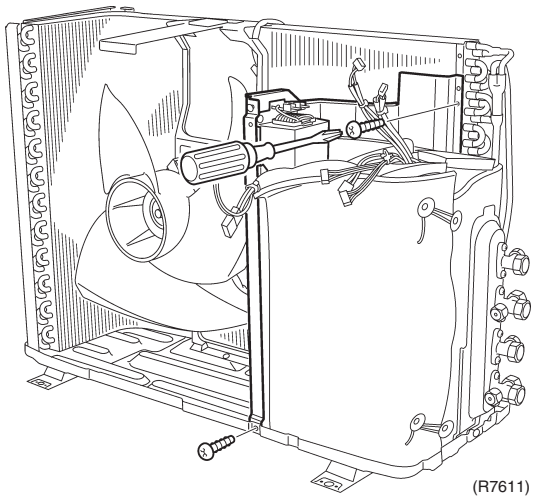
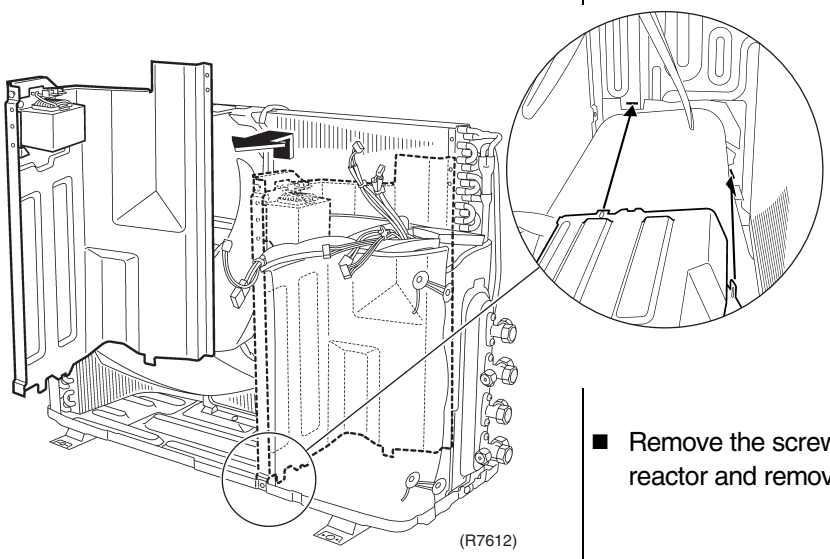
Step	Procedure		Points
10	Lift up the control PCB to remove.	 (R7605)  (R7606)	■ See page 54 for detail. [S20] : Electronic expansion valve EVA
11	Release the terminals from the temperature fuse and each terminal board.	 (R7607)	[S21] : Electronic expansion valve EVB [S40] : Overload protector [S70] : Fan motor [S80] : Four way valve [S90] : Discharge pipe / Heat exchanger / Outdoor air thermistor [S91] : Gas pipe thermistor [S92] : Liquid pipe thermistor

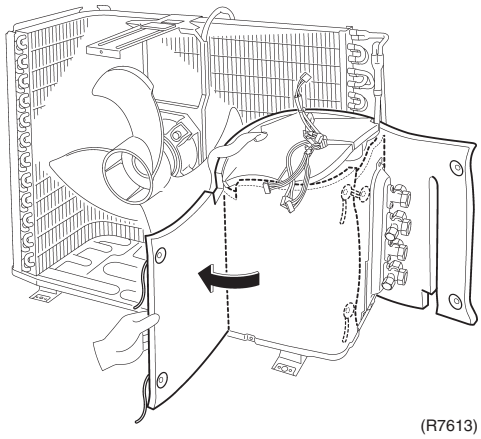
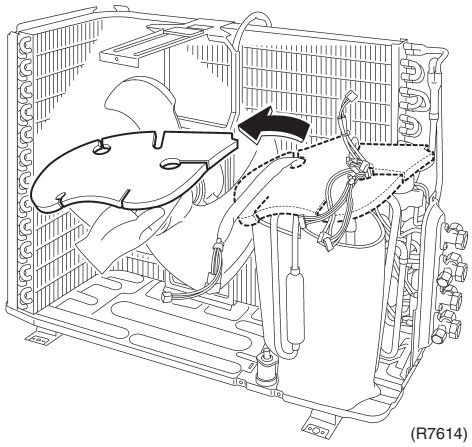
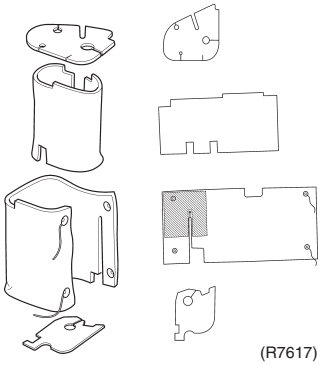
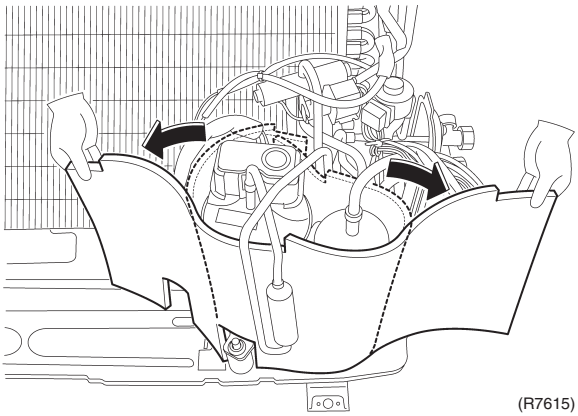
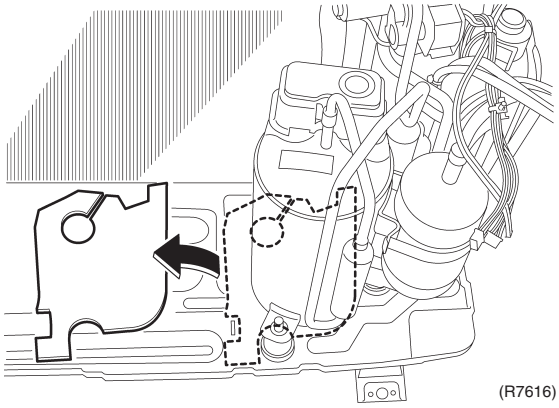
Step	Procedure		Points
12	Remove the 2 screws of the radiation fin.	 (R7608)  (R7609)	

1.4 Removal of the Sound Blanket

Procedure

Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure	Points
■ Remove the electrical box	 (R7610)	
1. Remove the right side panel		
1 Remove the 6 screws to remove the right side panel.		
2. Remove the partition plate	 (R7611)	■ When assembling, make sure to catch the lower hook of the partition plate.
1 Remove the 2 screws to remove the partition plate.		
2 Since there are hooks on the partition plate, lift up once and pull out toward yourself to remove it.	 (R7612)	■ Remove the screw of the reactor and remove it.

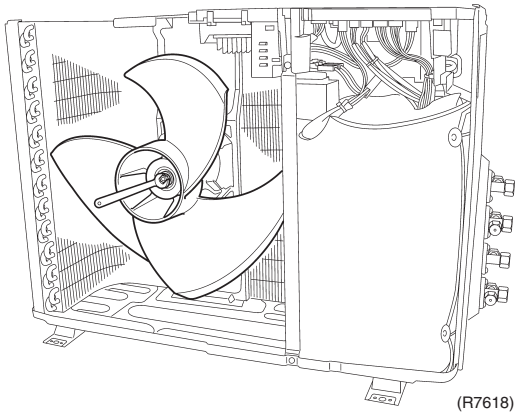
Step	Procedure	Points
3. Remove the sound blanket		
1 Release the fixing strings, open the sound blanket (body) and pull it out.	 (R7613)	
2 Lift up the sound blanket (top-upper) to remove.	 (R7614)	■ Since the piping ports are torn easily, remove the blanket carefully.  (R7617)
3 Open the sound blanket (inner) and pull it out.	 (R7615)	
4 Pull out the sound blanket (bottom).	 (R7616)	

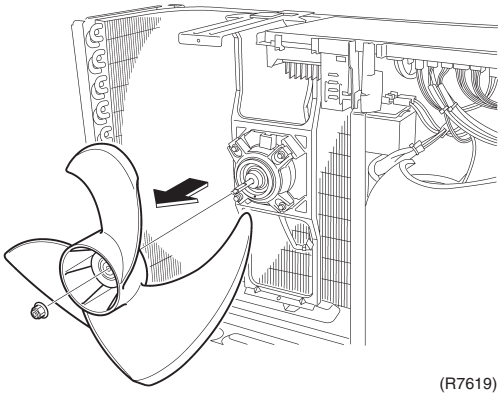
1.5 Removal of the Outdoor Fan / Fan Motor

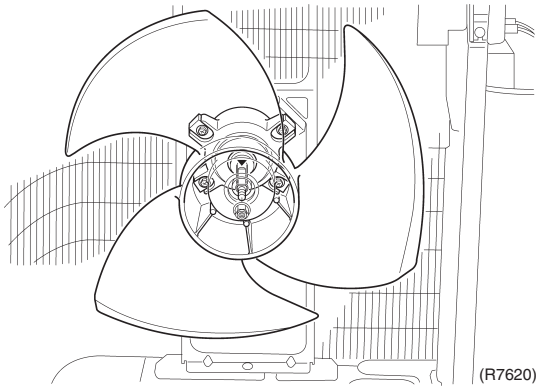
Procedure

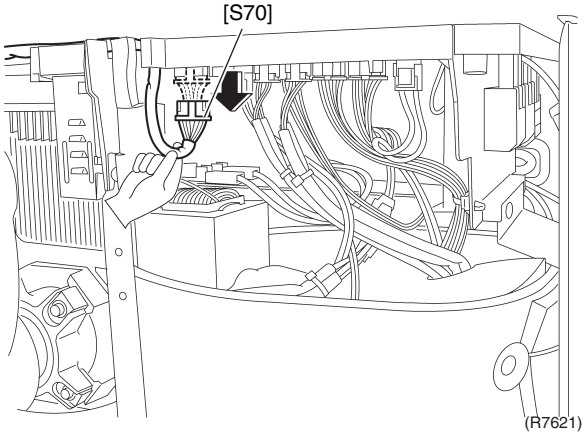
Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure	Points
1. Remove the outdoor fan		
1	Remove the washer fitted nut (M10) by an open-ended spanner to remove the outdoor fan.	■ When assembling, align ▼ mark of the outdoor fan with D-cut section of the motor shaft.
2. Remove the fan motor		
1	Disconnect the connector [S70] for the fan motor from the PCB.	

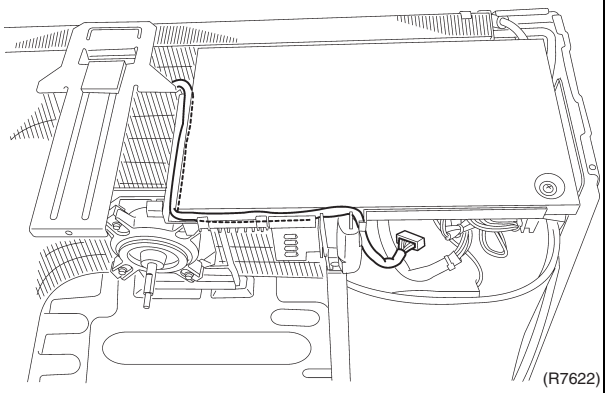
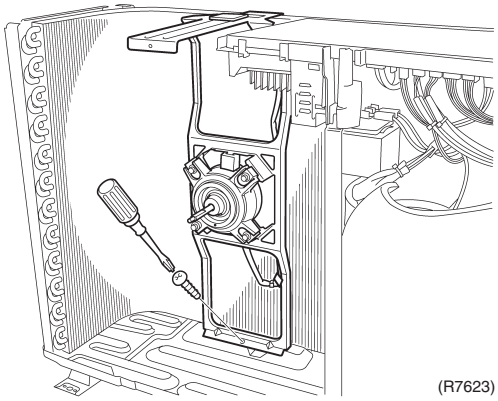
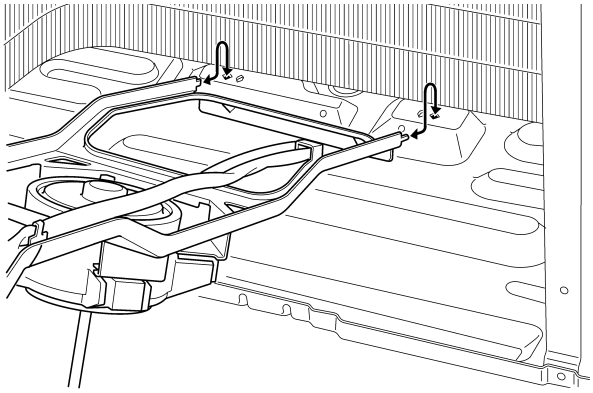
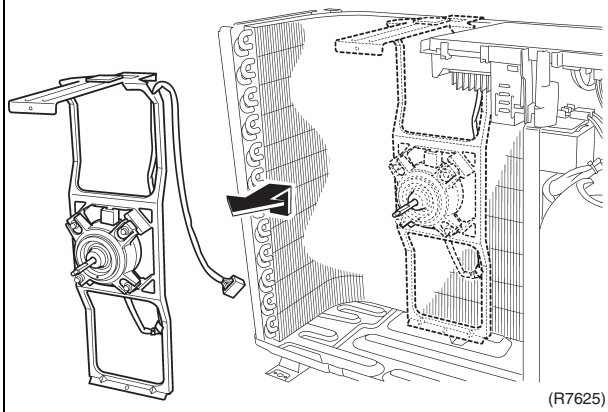

(R7618)

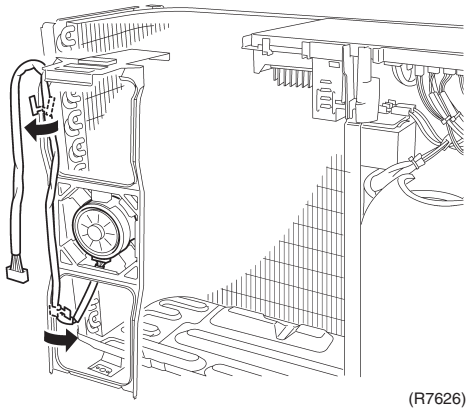
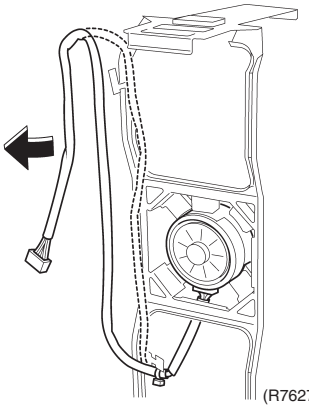
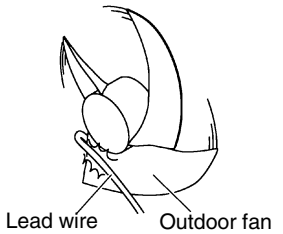
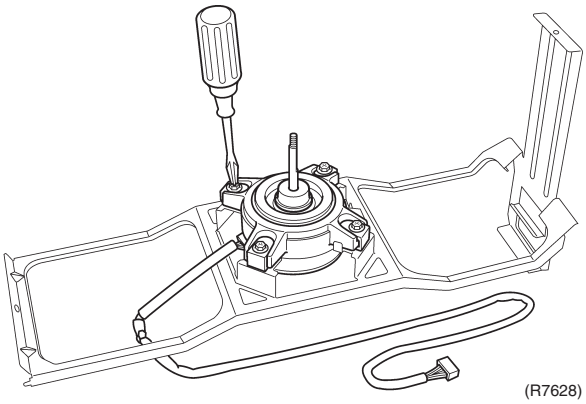
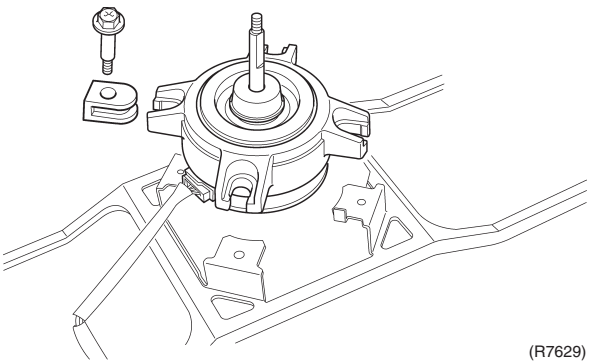

(R7619)


(R7620)



(R7621)

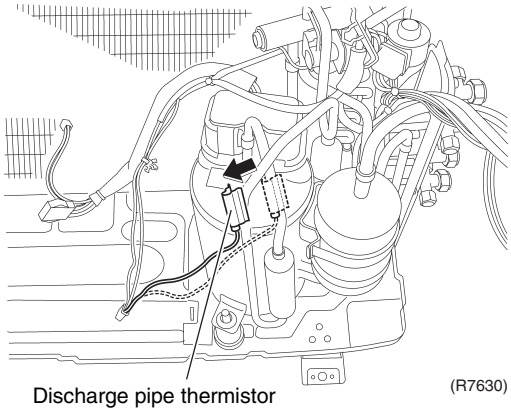
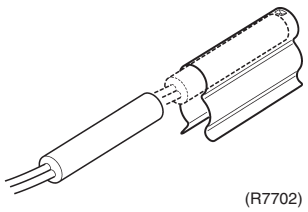
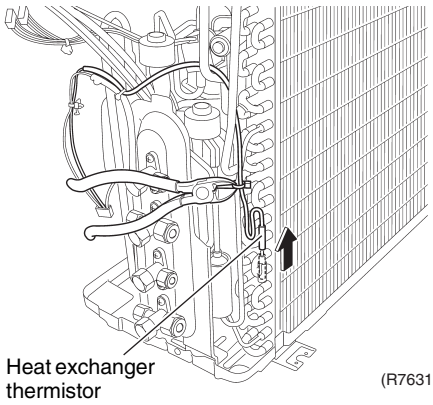
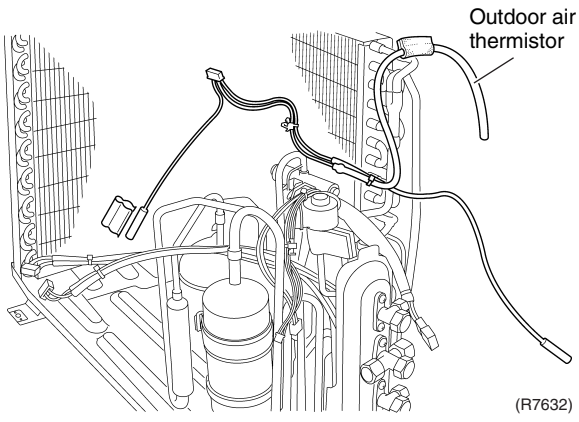
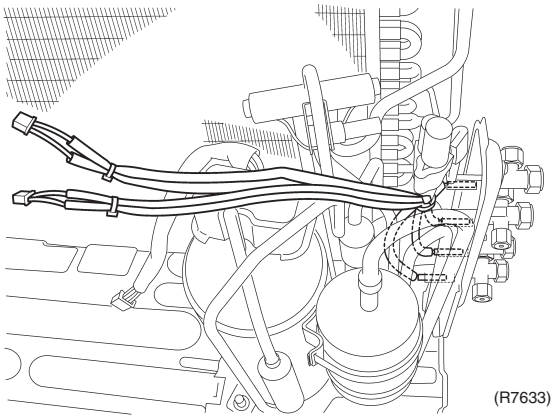
Step	Procedure		Points
2	The figure shows the arrangement of the fan motor lead wire.	 (R7622)	
3	Remove the one screw to remove the fan motor fixing plate.	 (R7623)	■ When assembling, make sure ● mark of the fan motor goes down.
		 (R7624)	
4	Take out the fan motor fixing plate toward yourself.	 (R7625)	

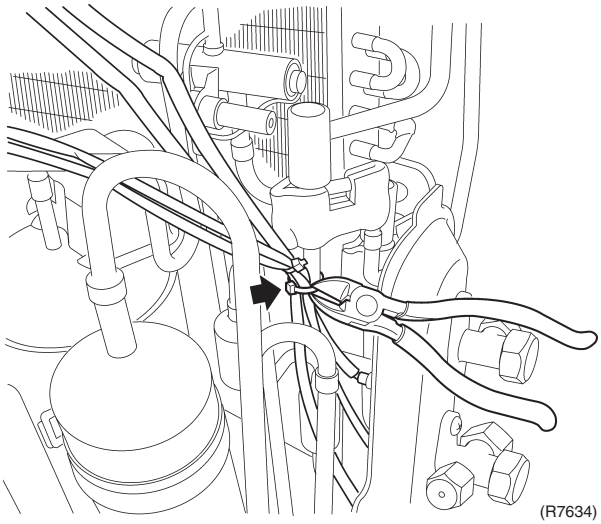
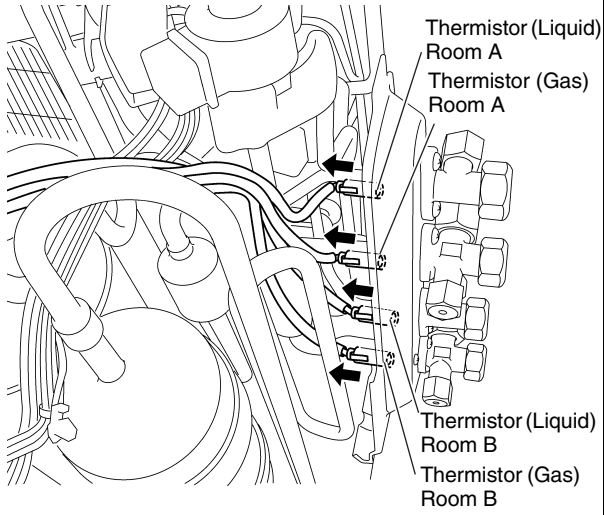
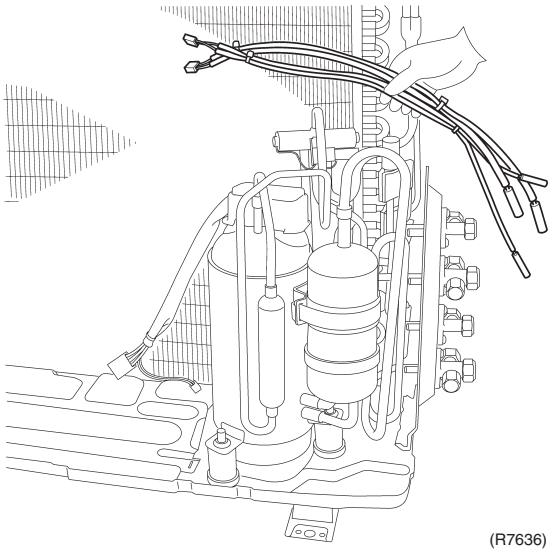
Step	Procedure		Points
5	Turn the fun motor fixing plate backward and release the 2 fixing hooks of the lead wire.	 (R7626)	
6	Release the fan motor lead wire.	 (R7627)	■ When assembling, put the lead wire through the back of the motor (so as not to be entangled with the outdoor fan).  (R3249)
7	Remove the 4 screws and 4 rubber vibration isolators to remove the fun motor.	 (R7628)  (R7629)	

1.6 Removal of the Thermistors

Procedure

Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

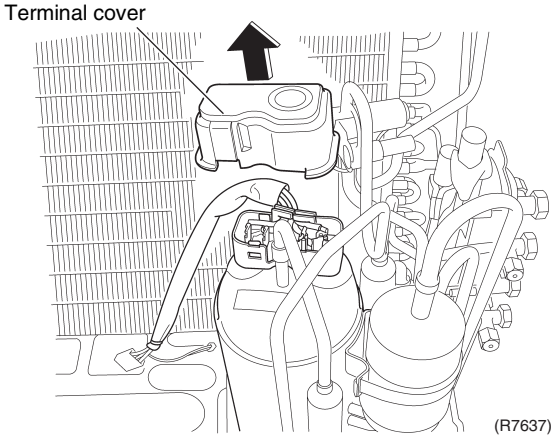
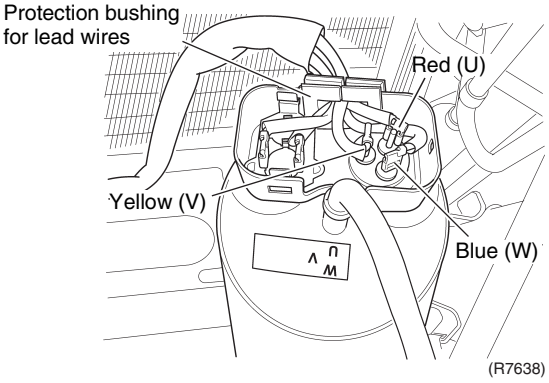
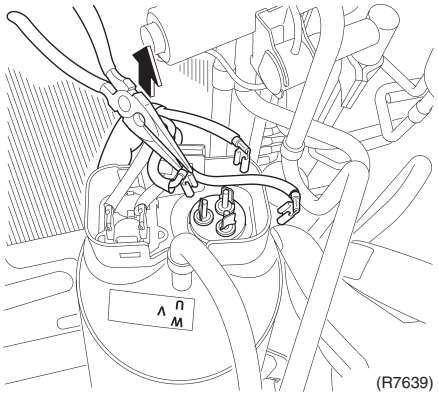
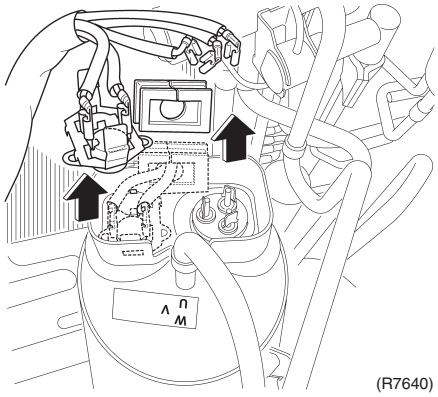
Step	Procedure	Points
1. Remove the assembly of thermistor		■ Be careful not to lose the clip for the discharge pipe thermistor. 
1 Release the clip and remove the discharge pipe thermistor.		
2 Cut off the clamp to remove the heat exchanger thermistor.		■ The clamp is always reserved. ■ Be careful not to lose the clips for each thermistor.
3 The outdoor air / discharge pipe / heat exchanger thermistors are united as one assembly.		
4 The figure shows the arrangement of the assembly of thermistor [S90].		
2. Remove the liquid / gas pipe thermistor		
1 Remove the liquid / gas pipe thermistor.		

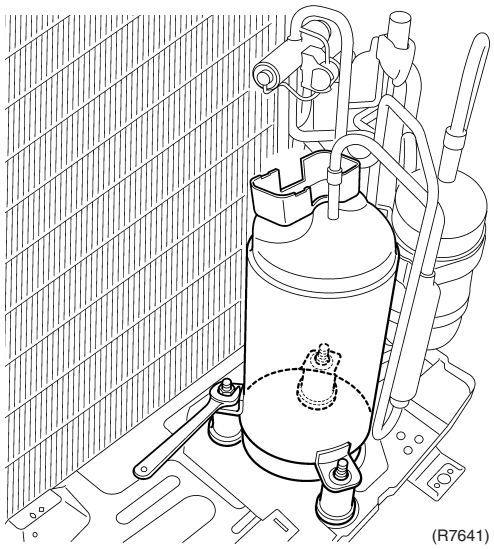
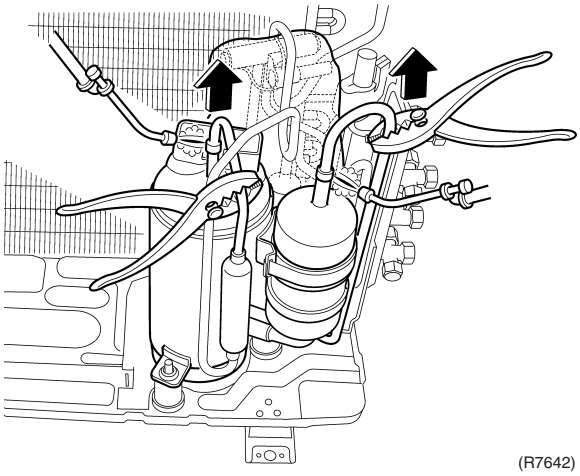
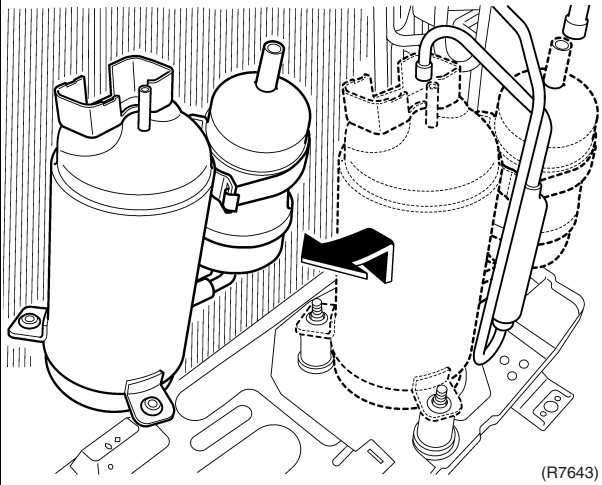
Step	Procedure		Points
2	Cut off the clamp.	 (R7634)	
3	Open the putty and remove the each thermistor. [S91] : Gas pipe thermistor Room A (Black) Room B (Gray) [S92] : Liquid pipe thermistor Room A (Black) Room B (Gray)	 (R7635)	
4	The figure shows the arrangement of the assembly of the liquid / gas thermistor.	 (R7636)	■ Meet the edge of the thermistor and the clip.

1.7 Removal of the Compressor

Procedure

Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

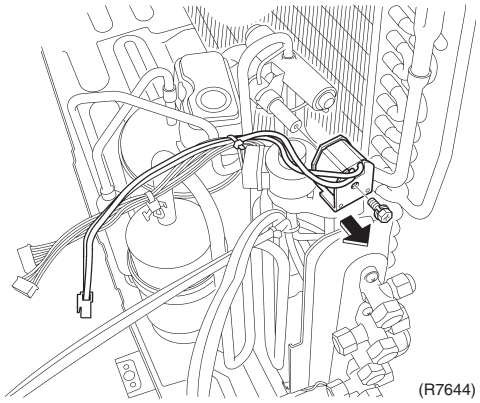
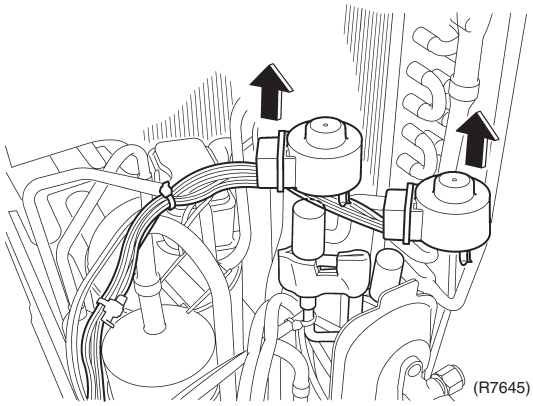
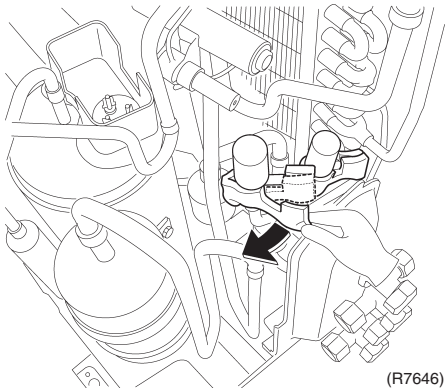
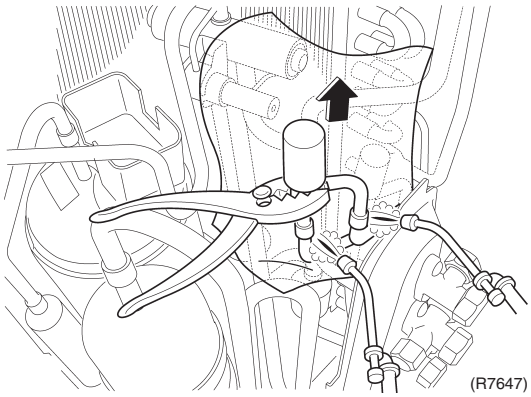
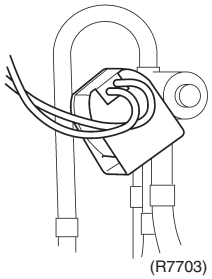
Step	Procedure		Points
1	Remove the terminal cover.		■ Be careful so as not to burn the compressor terminals or the name plate.
2	Disconnect the flag-shaped terminals.		
3	Detach the terminals by long nose pliers. Release the hooks by a flat screwdriver to remove the overload protector.		
4	Detach the overload protector.		

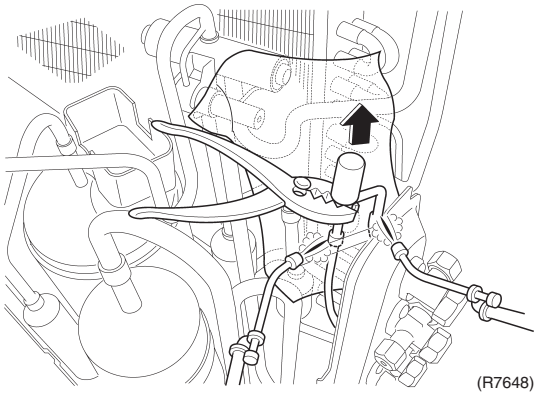
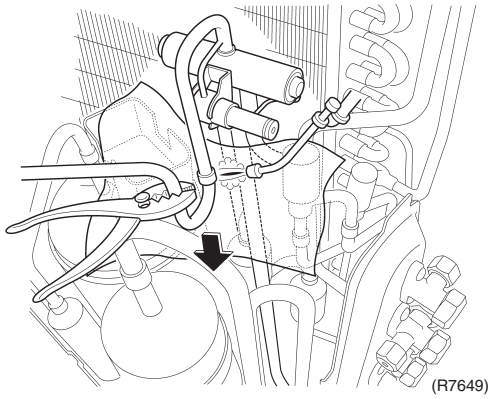
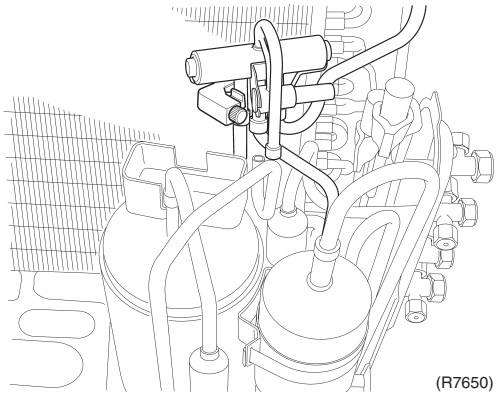
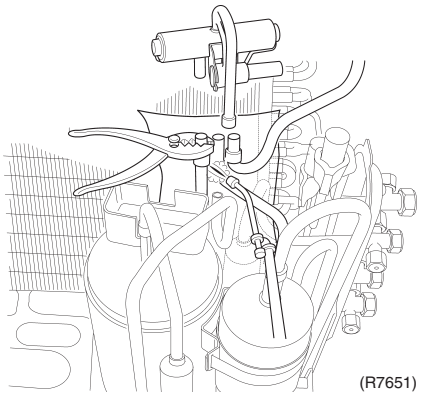
Step	Procedure		Points
5	There is a nut fixing the compressor. Remove the nut with an open-end spanner.	 (R7641)	**Warning** **Since it may happen that refrigeration oil in the compressor catches fire, prepare wet cloth so as to extinguish fire immediately.** **Warning** **Ventilate when refrigerant leaks during the work.** **(If refrigerant contacts fire, it causes to arise toxic gas.)** **Warning** **Be careful about the four way valve, pipes and so on, which were heated up by a gas brazing machine, so as not to get burnt your hands.** **Caution** **From the viewpoint of global environment protection, do not discharge the refrigerant gas in the atmosphere. Make sure to recover the refrigerant gas with the recovery system.**
■ Before working, make sure that the refrigerant is empty in the circuit. ■ Be sure to apply nitrogen replacement when heating up the brazed part.			
6	Heat up the brazed part of the discharge side and disconnect.		
7	Heat up the brazed part of the suction side and disconnect.	 (R7642)	
8	Lift the compressor up to remove.	 (R7643)	

1.8 Removal of the Four Way Valve / Electronic Expansion Valve

Procedure

Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure	Points
■ Remove the sound blanket.	 (R7644)	**Warning** **Be careful about the four way valve, pipes and so on, which were heated up by a gas brazing machine, so as not to get burnt your hands.**
1. Removed the peripheries		**Caution** **From the viewpoint of global environment protection, do not discharge the refrigerant gas in the atmosphere. Make sure to recover the refrigerant gas with the recovery system.**
	Remove: • Terminal cover of compressor • Four way valve coil • Electronic expansion valve coil not to burn them by a gas brazing machine.	
1	Lift up the electronic expansion valve coils to remove it.	 (R7645)
2	Remove the putty.	 (R7646)
3	Heat up the 2 brazed parts of the electronic expansion valve coil and remove it.	 (R7647)
		 (R7703)
		■ Release the four way valve coil and the 2 clamps, and then release the wire harnesses.

Step	Procedure	Points
■ Before working, make sure that the refrigerant is empty in the circuit. ■ Be sure to apply nitrogen replacement when heating up the brazed part.	 (R7648)	**Reassembling precautions** 1. Use non-oxidizing brazing method. If nitrogen gas is not available, braze the parts speedily. 2. Avoid deterioration of the gaskets due to carbonization of oil inside the four way valve or thermal influence. For this purpose, wrap the four way valve with wet cloth. Splash water over the cloth against becoming too hot (keep it below 120°C). ■ In pulling the pipes, be careful not to over-tighten them with pliers. The pipes may get deformed. **In case of the difficulty with a gas brazing machine** 1. Disconnect the brazed part where is easy to disconnect and restore. 2. Cut pipes on the main unit by a miniature copper tube cutter in order to make it easy to disconnect. **Note:** Do not use a metal saw for cutting pipes by all means because the sawdust come into the circuit. ■ The brazed parts are heated after being disconnected. To avoid a burn, make sure that the compressor is cooled down before removing.
4 Provide a protective sheet or a steel plate so that the brazing flame cannot influence peripheries around the four way valve. **Warning** **Since it may happen that refrigeration oil in the compressor catches fire, prepare wet cloth so as to extinguish fire immediately.** **Warning** **Ventilate when refrigerant leaks during the work. (If refrigerant contacts fire, it causes to arise toxic gas.)** **Warning** **Be careful about the four way valve, pipes and so on, which were heated up by a gas brazing machine, so as not to get burnt your hands.**	 (R7649)	
5 Cut off the brazed part with pliers and disconnect.	 (R7650)  (R7651)	

Part 8
Trial Operation and Field Settings

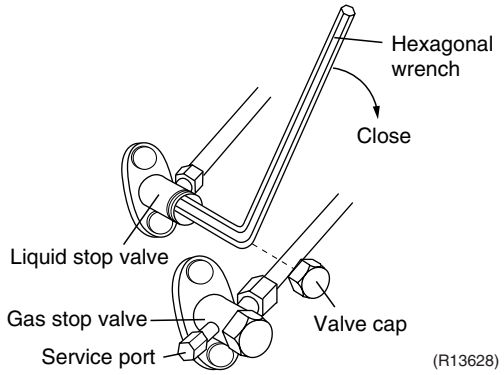
1. Pump Down Operation

Outline

In order to protect the environment, be sure to conduct pump down operation when relocating or disposing the unit.

Detail

1) Remove the valve caps from the liquid stop valve and the gas stop valve at the pipes for rooms A and room B.
2) Carry out forced cooling operation.
3) After 5 to 10 minutes, close the liquid stop valve at the pipes for rooms A and room B with a hexagonal wrench.
4) After 2 to 3 minutes, close the gas stop valve and stop the forced cooling operation as quickly as possible after the gas stop valves at the pipes for rooms A and B have been shut off.
5) Turn the power breaker off.



Refer to page 251 for forced cooling operation.

2. Forced Cooling Operation Mode

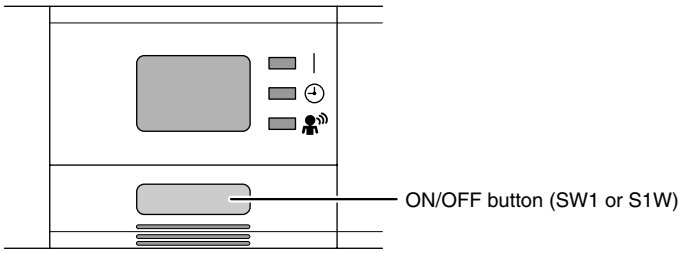
Outline

Forced operation mode includes only forced cooling.

Detail

Item	Forced Cooling
Conditions	The forced cooling operation is allowed when both the following conditions are met. 1) The outdoor unit is not abnormal and not in the 3-minute standby mode. 2) The outdoor unit is not operating.
Start	Press the forced cooling operation ON/OFF button (SW1 or S1W) on the indoor unit for 5 seconds.
Operating room	All rooms
Command frequency	40 class: 70 Hz 50 class: 47 Hz
End	The forced cooling operation ends when any of the following conditions is fulfilled. 1) The operation ends automatically after 15 minutes. 2) Press the forced cooling operation ON/OFF button (SW1 or S1W) on the indoor unit again.
Others	The protection functions are prior to all others in the forced cooling operation.

ex.Wall mounted type G-series



3. Trial Operation

3.1 Indoor Unit - ATX, ATXS, ATXG, F(C)TXG, FTXS, FDK(X)S, FLK(X)S, FVXS Series

Outline

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 trial operation in accordance with the operation manual to ensure that all functions and parts, such as flap 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 backs up the operation mode. The system then restarts operation with the previous mode when the circuit breaker is restored.

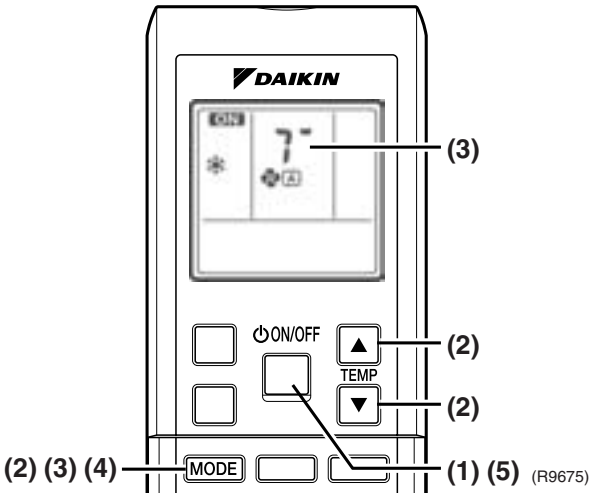
In cooling mode, select the lowest programmable temperature; in heating mode, select the highest programmable temperature.

- 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 does not start for 3 minutes after it is turned off.

Detail

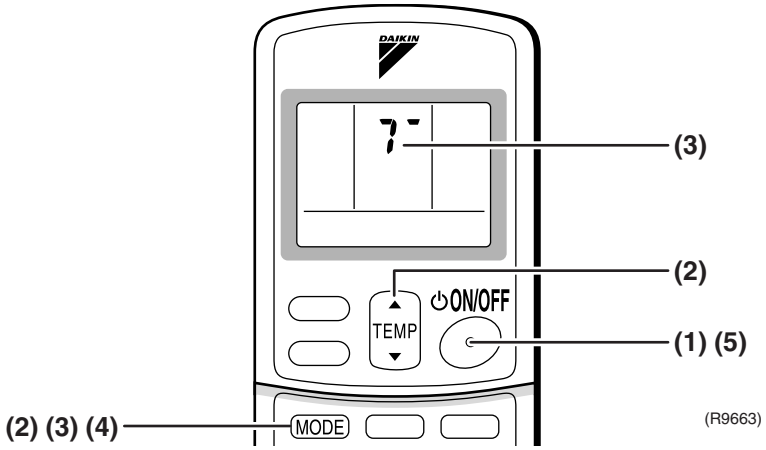
ARC452 Series

(1) Press the ON/OFF button to turn on the system.
(2) Press the both of TEMP buttons and the MODE button at the same time.
(3) Press the MODE button twice.
("ﾃｽﾄ" appears on the display to indicate that trial operation is selected.)
(4) Press the MODE button and select operation mode.
(5) Trial operation terminates in approx. 30 minutes and switches into normal mode. To quit a trial operation, press the ON/OFF button.



ARC433 Series

(1) Press the ON/OFF button to turn on the system.
(2) Press the center of the TEMP button and the MODE button at the same time.
(3) Press the MODE button twice.
("ｱﾄﾞ" appears on the display to indicate that trial operation is selected.)
(4) Press the MODE button and select operation mode.
(5) Trial operation terminates in approx. 30 minutes and switches into normal mode. To quit a trial operation, press the ON/OFF button.



3.2 Indoor Unit - FFQ Series

3.2.1 Checkpoints for Trial Operation

To carry out a trial operation, check the following:

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

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

3.2.2 Trial operation

1. Open the gas stop valve.
2. Open the liquid stop valve.
3. Electrify for 6 hours.
4. Set to cooling operation with the remote controller and start operation by pressing [ON/OFF] button (⏻).
5. Press the [Inspection / Test] button (TEST) 4 times (2 times for wireless remote controller) and operate at trial operation mode for 3 minutes.
6. Press the [Airflow Direction Adjust] button (⇔) to make sure the unit is in operation.
7. Press the [Inspection / Test] button (TEST) and operate normally.
8. Confirm all the function of unit according to the operation manual.
9. If the decoration panel has not been installed, turn off the power after the trial operation.

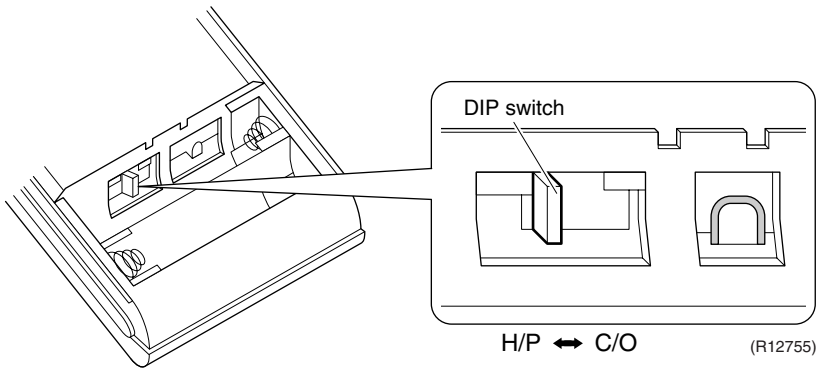
4. Field Settings

4.1 RA Indoor Unit - ATX, ATXS, ATXG, F(C)TXG, FTXS, FDK(X)S, FLK(X)S, FVXS Series

4.1.1 Model Type Setting

ARC452A1, ARC452A3

- This remote controller is common to the heat pump model and cooling only model. Use the DIP switch on the remote controller to set the heat pump model or cooling only model.
- Make the setting as shown in the illustration. (The factory set is the heat pump side.)
  - Heat pump model: Set the DIP switch to H/P.
  - Cooling only model: Set the DIP switch to C/O.



4.1.2 When 2 Units are Installed in 1 Room

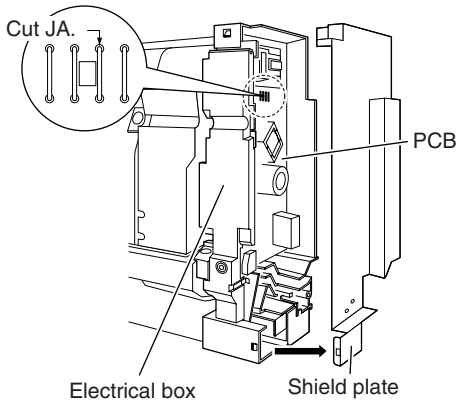
When 2 indoor units are installed in 1 room, 1 of the 2 pairs of indoor unit and wireless remote controller can be set for different address.
Both the indoor unit PCB and the wireless remote controller need alteration.

Indoor Unit PCB

<Wall Mounted Type>

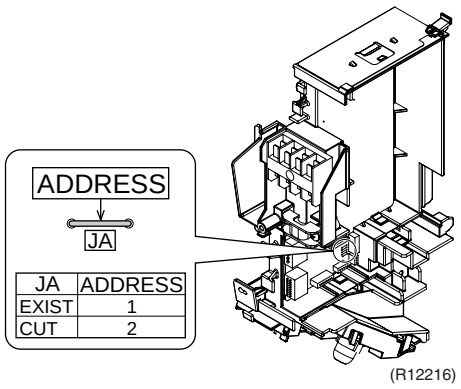
(1) Remove the front grille.
(2) Remove the electrical box.
(3) Remove the shield plate of the electrical box.
(4) Cut the address setting jumper JA on the PCB.

E-Series



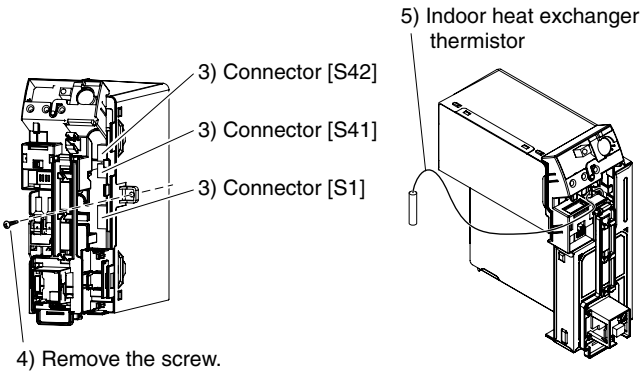
JA	ADDRESS
EXIST	1
CUT	2

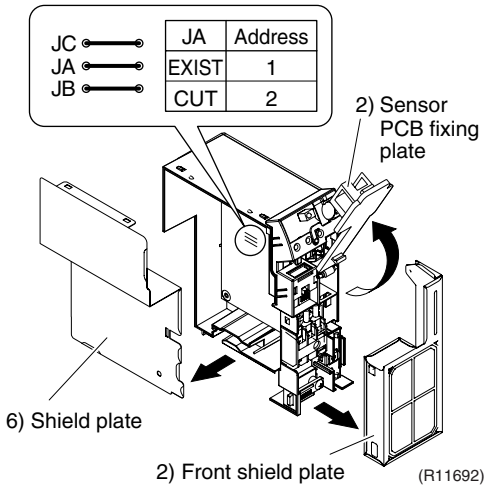
G-Series



< Floor Standing Type>

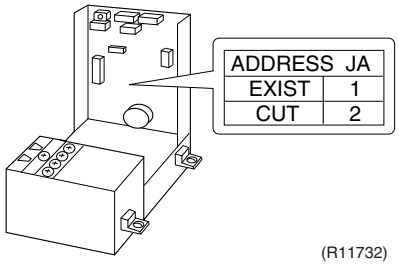
1) Remove the front grille.
2) Lift the sensor PCB fixing plate and remove the front shield plate.
3) Disconnect the connectors [S1] [S41] [S42].
4) Remove the electric box (1 screw).
5) Pull out the indoor heat exchanger thermistor.
6) Remove the shield plate (8 tabs).
7) Cut the address jumper JA on the indoor unit PCB.
8) Cut the address jumper J4 in the remote controller.
   (Refer to “Wireless remote controller”.)





< Floor / Ceiling Suspended Dual Type >

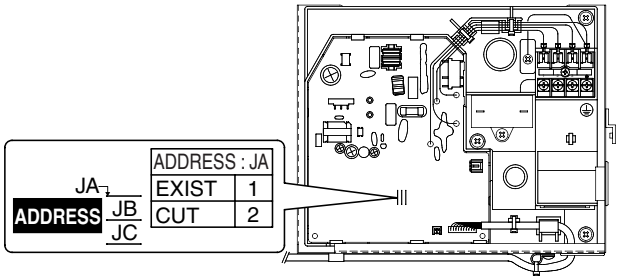
■ Cut the jumper JA on PCB.



(R11732)

< Duct Connected Type >

■ Cut the jumper JA on PCB.



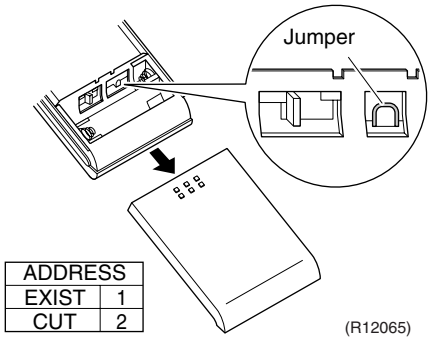
(R10276)

Wireless Remote Controller

(1) Remove the cover and take it off.

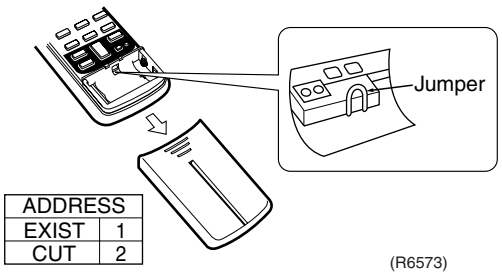
(2) Cut the address setting jumper.

<ARC452 series>



(R12065)

<ARC433 series>



(R6573)

4.1.3 Jumper and Switch Settings

Jumper (on indoor unit PCB)	Function	When connected (factory set)	When cut
JB	Fan speed setting when compressor stops for thermostat OFF. (effective only at cooling operation)	Fan speed setting ; Remote controller setting	Fan speed setting; “0” (The fan stops.)
JC	Power failure recovery function	Auto-restart	The unit does not resume operation after recovering from a power failure. Timer settings are cleared.

<Floor Standing Type>

Switch (on indoor unit PCB)	Function	OFF (factory set)	ON
SW2-4	Upward airflow limit setting	Exposed or half embedded installation	Set the switch to ON position when you install the indoor unit embedded in the wall to avoid condensation.

<Floor / Ceiling Suspended Dual Type>

Switch (on indoor unit PCB)	Function	FLOOR (factory set)	CEILING
SW2	Installation style changeover	When installed as the floor mounted type	When installed as the ceiling suspended type

For the location of the jumper and the switch, refer to the following pages.

Wall mounted type: page 37, 39, 42
Floor Standing Type: page 49
Floor / Ceiling Suspended Dual Type: page 46
Duct connected type: page 44

4.2 Indoor Unit - FFQ Series

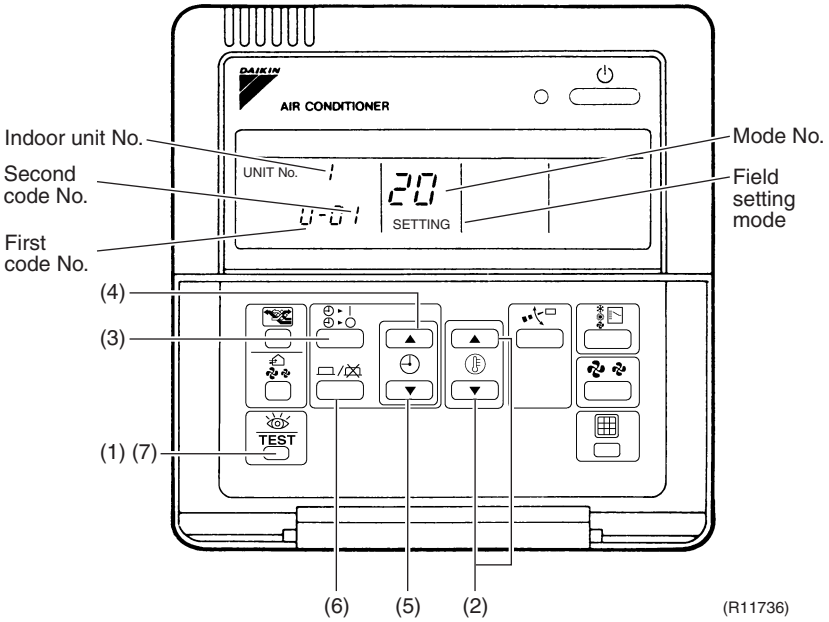
4.2.1 How to Change the Field Settings with the Wired Remote Controller

Installation conditions

The field settings have to be changed with the remote controller according to the installation conditions.

Wired remote controller

BRC1C61



To set the field settings, you have to change:

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

To change the field settings, proceed as follows:

Step	Action
1	Press the [Inspection / Test] button for 4 seconds during normal mode to enter the field setting mode.
2	Press the [Temperature Adjust] button to select the desired "Mode No.".
3	■ If the indoor unit is under group control, all settings for all the indoor units are set at the same time. Use the codes 10 to 15 to apply this group control and proceed to the next step. ■ If you want to set the indoor units of one group individually or if you want to read out the last settings, use the codes 20 to 25 which are displayed in brackets. Press the [Timer Selection] button to select the "Indoor unit No." for which you want to adjust the field settings.
4	Press the upper part of the [Clock] button to select the "First code No.".
5	Press the lower part of the [Clock] button to select the "Second code No.".
6	Press the [Reserve] button to confirm the setting.
7	Press the [Inspection / Test] button to return to normal mode.

4.2.2 How to Change the Field Settings with the Wireless Remote Controller

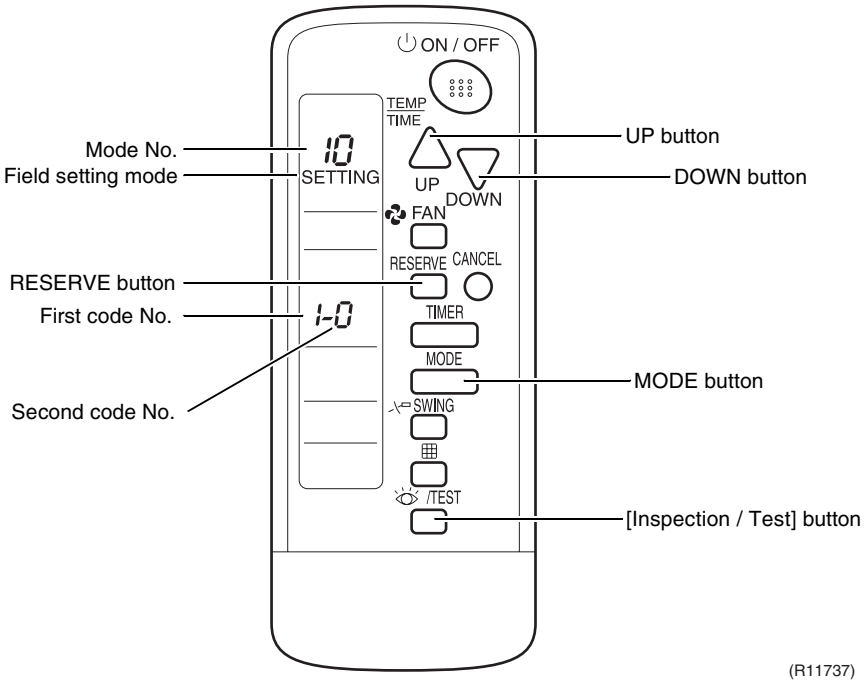
Optional accessories

If optional accessories are mounted on the indoor unit, the indoor unit setting may have to be changed.

Refer to OH06-1 or the installation manual (optional handbook) for each optional accessory.

Wireless remote controller

BRC7E531W7(C/O), BRC7E530W7(H/P)



To set the field settings, you have to change:

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

To change the field settings, proceed as follows:

Step	Action
1	Press the [Inspection / Test] button for 4 seconds during normal mode to enter the field setting mode.
2	Press the MODE button to select the desired "Mode No.".
3	Press the UP button to select the "First code No.".
4	Press the DOWN button to select the "Second code No."
5	Press the Reserve button to confirm the setting.
6	Press the [Inspection / Test] button to return to the normal mode.

4.2.3 Overview of the Field Settings

Mode No.	First code No.	Description of the setting	Second code No.		
			01	02	03
10 (20)	0	Filter cleaning sign time	Light contamination (Approx. 2,500hrs)	Heavy contamination (Approx. 1,250hrs)	—

: factory setting

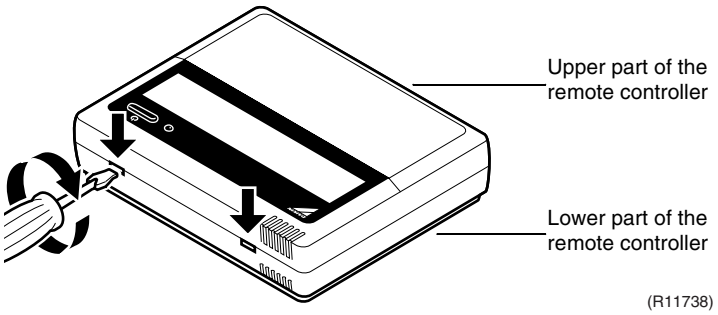
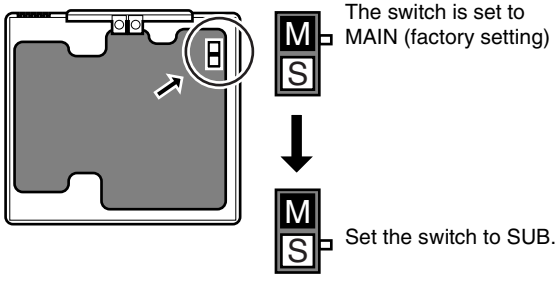
4.2.4 MAIN / SUB Setting when Using Two Remote Controllers

Situation

The MAIN / SUB setting is necessary when one indoor unit is controlled by two remote controllers. When you use two remote controllers (control panel and separate remote controller), set one to MAIN and the other to SUB. You can do this by setting the switch on the remote controller's PCB.

Setting

The remote controllers are factory set to MAIN, so you only have to change one remote controller from MAIN to SUB. To change a remote controller from MAIN to SUB, proceed as follows:

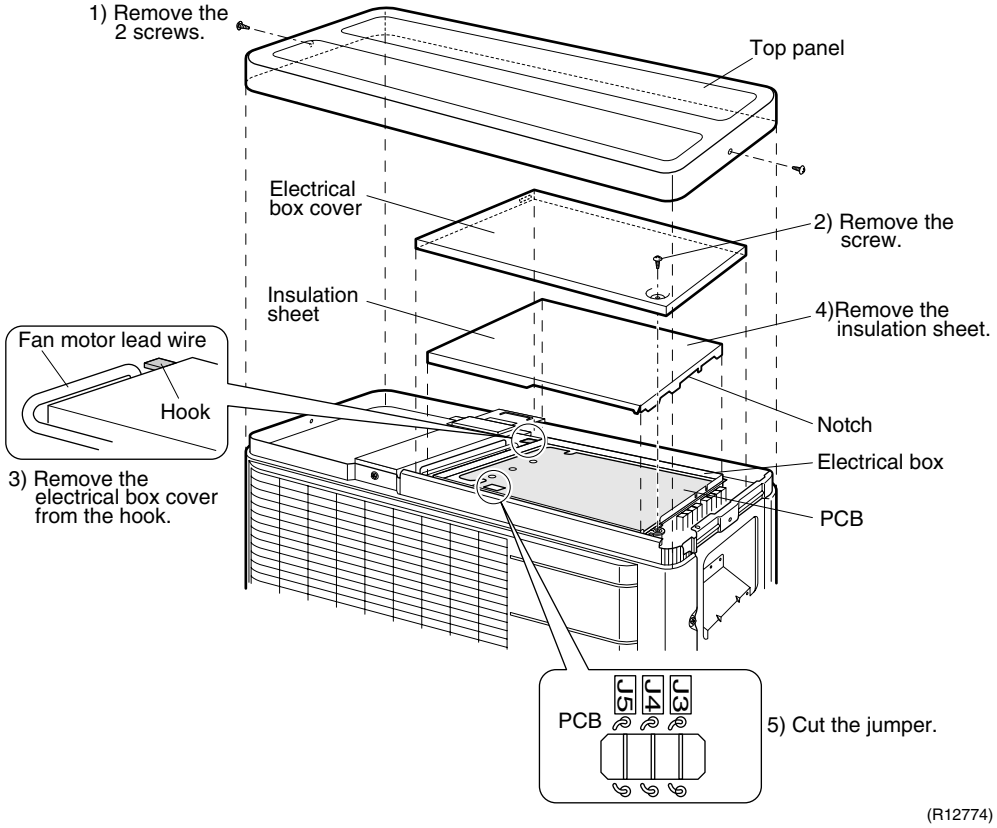
Step	Action
1	Insert a flat screwdriver into the groove between the upper and lower part of the remote controller, as shown in the illustration below. Gently pry off the upper part of the controller, working from the two possible positions.  (R11738)
2	Set the [MAIN / SUB changeover] switch on the PCB to "S".  (R11739)

4.3 Outdoor Unit

4.3.1 Jumper Settings

Jumper (on outdoor unit PCB)	Function	When connected (factory set)	When cut
J3	ECONO mode prohibition setting	ECONO operation is available.	ECONO operation is disabled.
J4	Maximum power input limitation setting	Standard control	The power input is limited to 1700 W. It is recommended for the areas with circuit breakers of low-capacity.
J5	Improvement of defrost performance	Standard control	Reinforced control (ex. The frequency increases, the duration time of defrost lengthens.)

Location of the jumpers

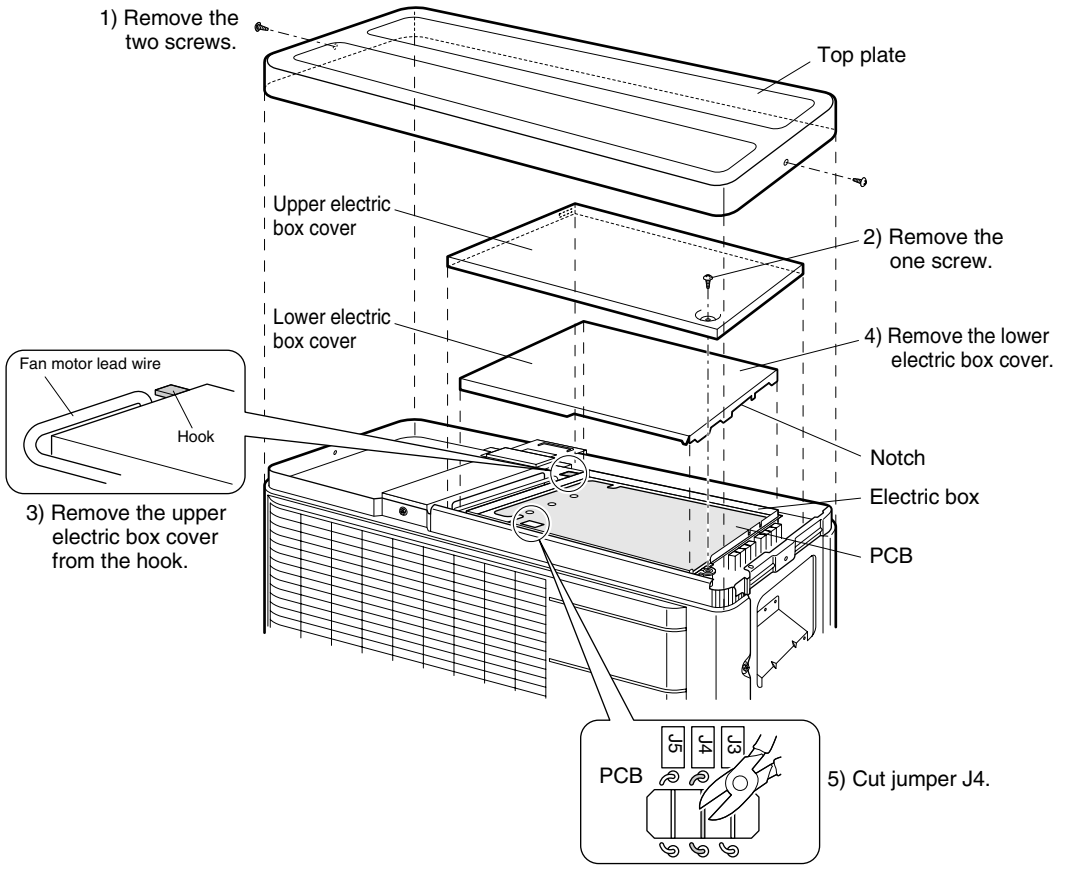


4.4 Maximum Power Input Limitation Setting

Outline

- The Maximum Power Input Limitation needs to be set when the unit is installed.
- This function limits the power input of the unit to 1700W.
- This function is recommended for areas with circuit breakers of low-capacity.

Detail



5. Application of Silicon Grease to a Power Transistor and a Diode Bridge

Applicable Models

All outdoor units using inverter type compressor for room air conditioner.

When the printed circuit board (PCB) of an outdoor unit is replaced, it is required that silicon grease (*1) is certainly applied to the heat radiation part (the contact point to the radiation fin) of the power transistor and diode bridge.

*1: Parts number of the silicon grease – 1172698 (Drawing number 3FB03758-1)

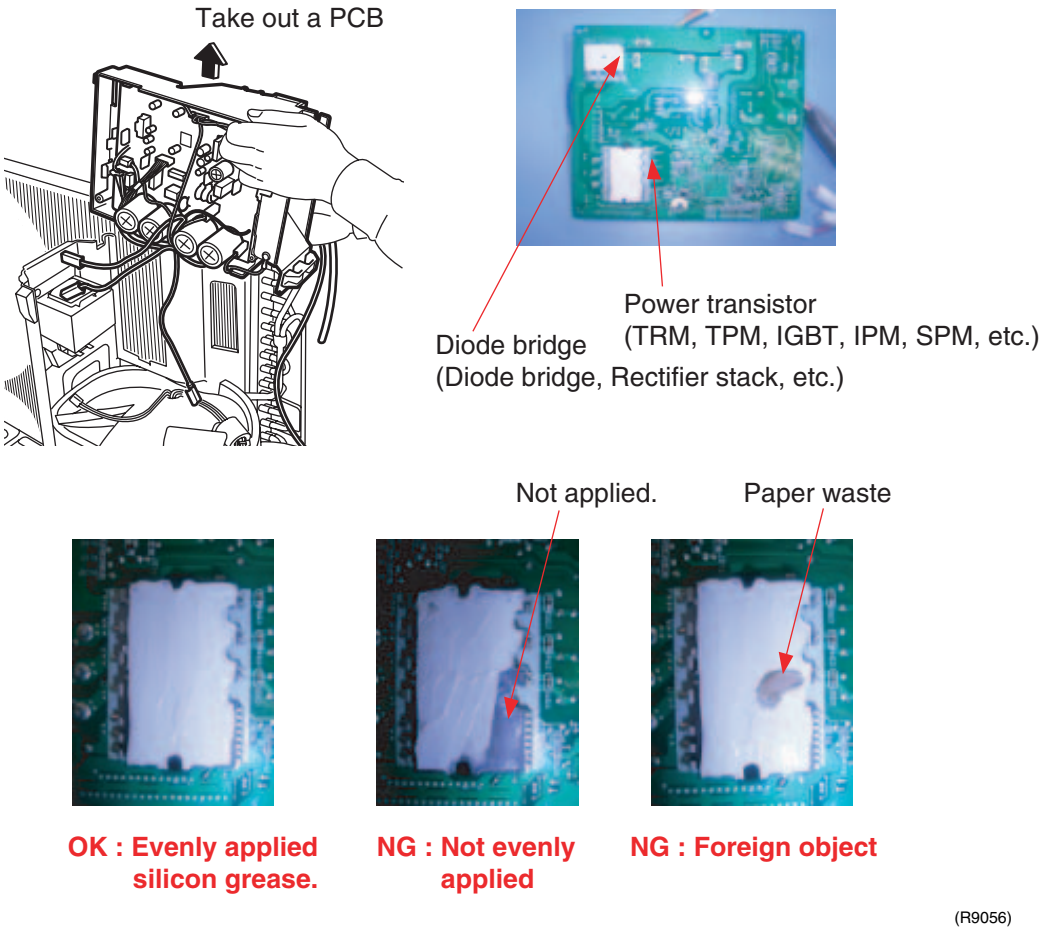
Details

The silicon grease is an essential article for encouraging the heat radiation of the power transistor and the diode bridge. Applying the paste should be implemented in accordance with the following instruction.

Remark: There is the possibility of failure with smoke in case of bad heat radiation.

- Wipe off the old silicon grease completely on a radiation fin.
- Apply the silicon grease evenly to the whole.
- Do not leave any foreign object such as solder or paper waste between the power transistor and the radiation fin, and also the diode bridge, and the radiation fin.
- Tighten the screws of the power transistor and the diode bridge, and contact to the radiation fin without any gap.

<Example>



(R9056)

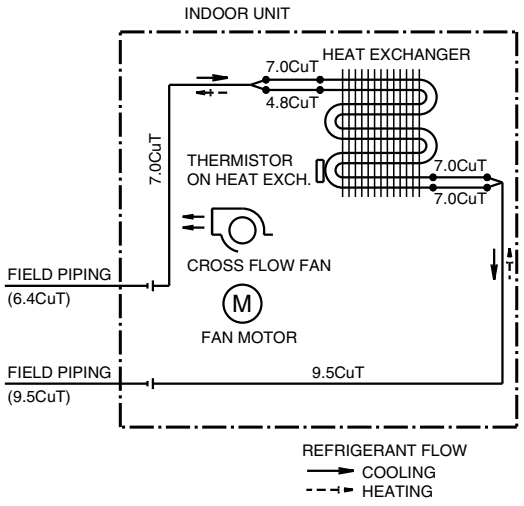
Part 9
Appendix

1. Piping Diagrams

1.1 Indoor Units

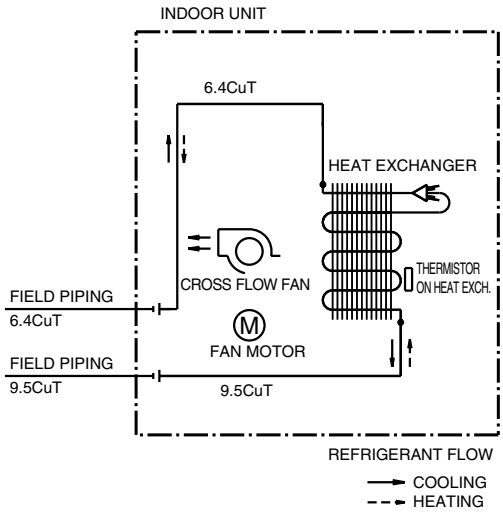
1.1.1 Wall Mounted Type

ATX20/25/35GV1B



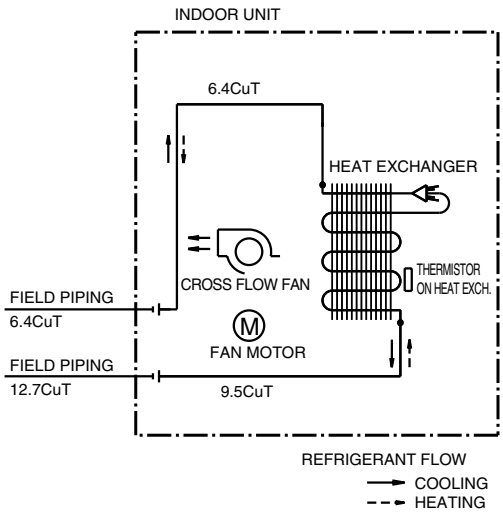
4D058926A

FTXS20/25/35/42G2V1B, ATXS20/25/35/42G2V1B



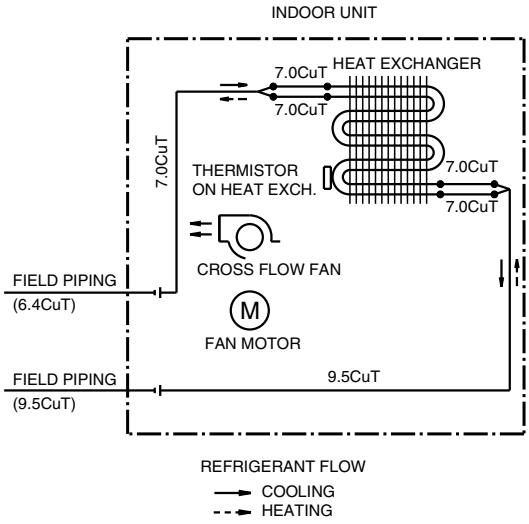
4D058897A

FTXS50G2V1B, ATXS50G2V1B



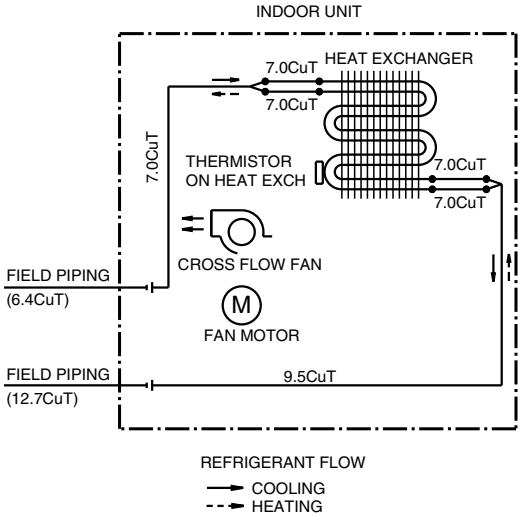
4D058898A

FTXG25/35EV1BW(S), ATXG25/35EV1B



4D045301C

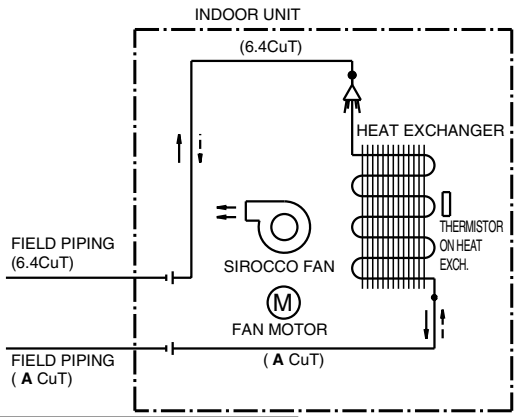
CTXG50EV1BW(S), ATXG50EV1B



4D050924

1.1.2 Duct Connected Type

FDKS50CVMB, FDKS25EAVMB, FDKS35EAVMB
FDXS50CVMB, FDXS25EAVMB, FDXS35EAVMB

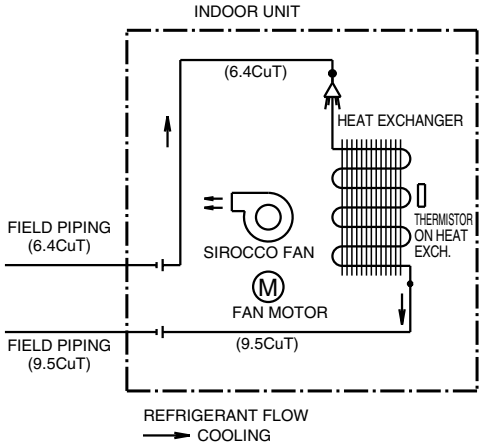


	A		A
FDXS25EAVMB FDXS35EAVMB FDKS25EAVMB FDKS35EAVMB	9.5	FDXS50CVMB FDKS50CVMB	12.7

C: 4D045449K

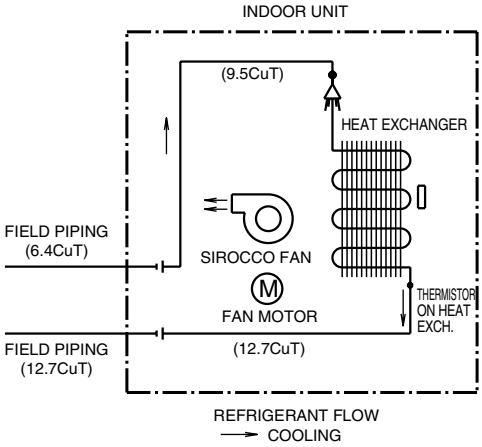
1.1.3 Floor / Ceiling Suspended Dual Type

FLKS25BAVMB, FLKS35BAVMB



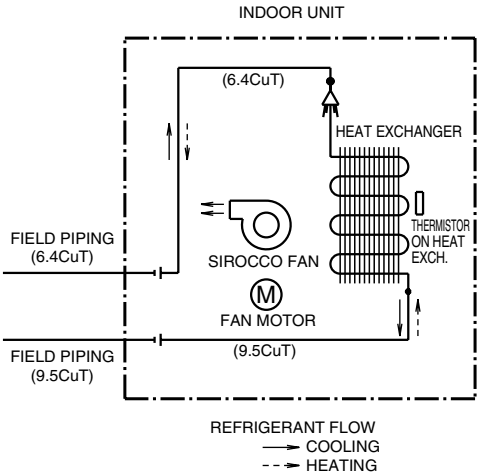
4D034012E

FLKS50BAVMB



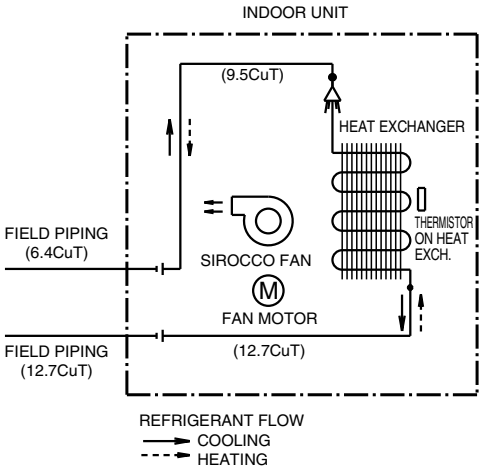
4D048723A

FLXS25BAVMB, FLXS35BAVMB



4D048722B

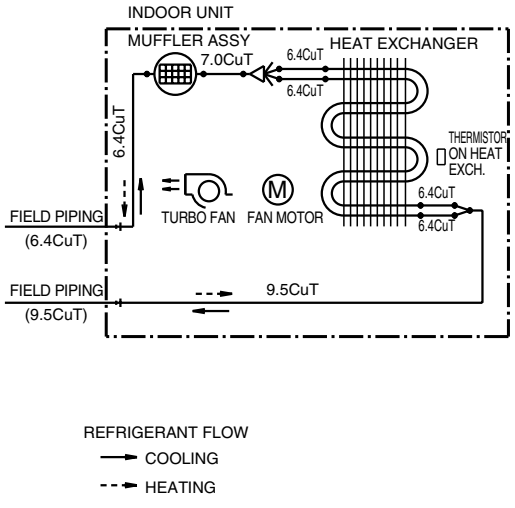
FLXS50BAVMB



4D048724B

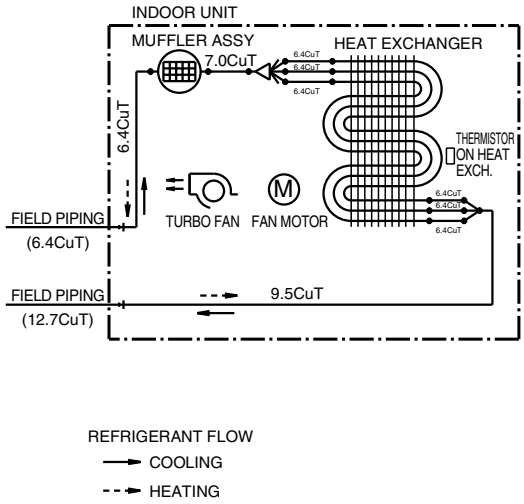
1.1.4 Floor Standing Type

FVXS25FV1B, FVXS35FV1B



4D056137A

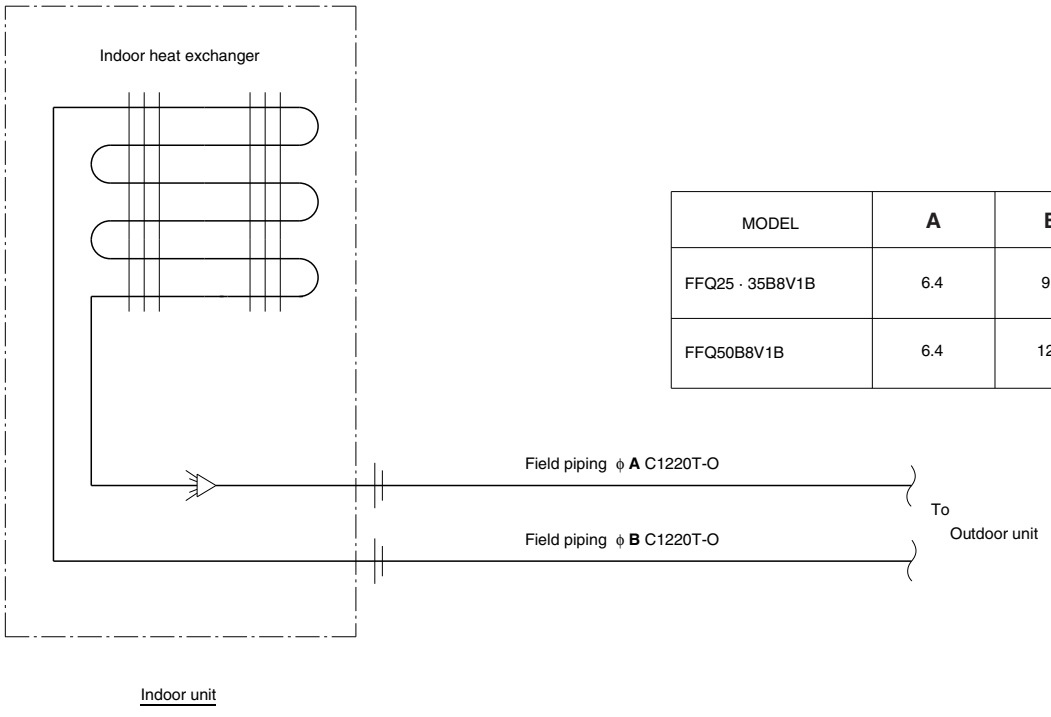
FVXS50FV1B



4D056138A

1.1.5 Ceiling Mounted Cassette Type

FFQ25B8V1B, FFQ35B8V1B, FFQ50B8V1B



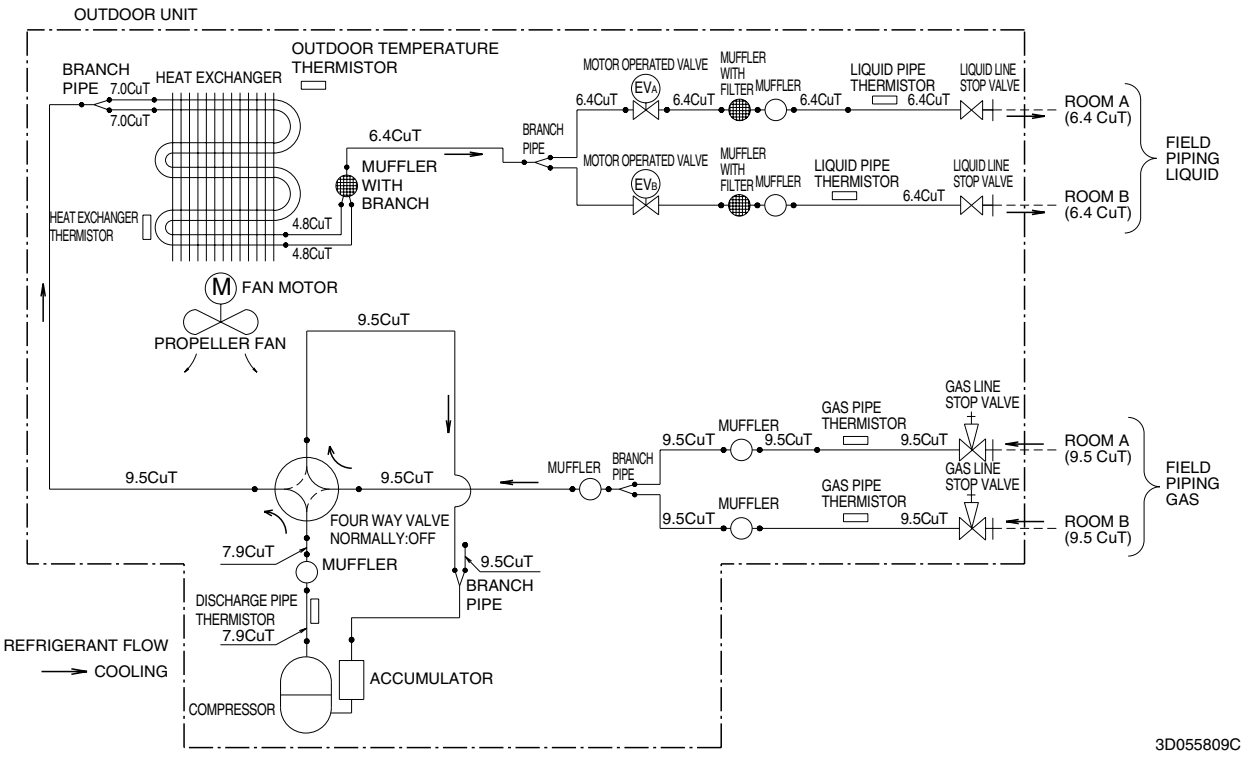
MODEL	A	B
FFQ25 · 35B8V1B	6.4	9.5
FFQ50B8V1B	6.4	12.7

C : 4D039335

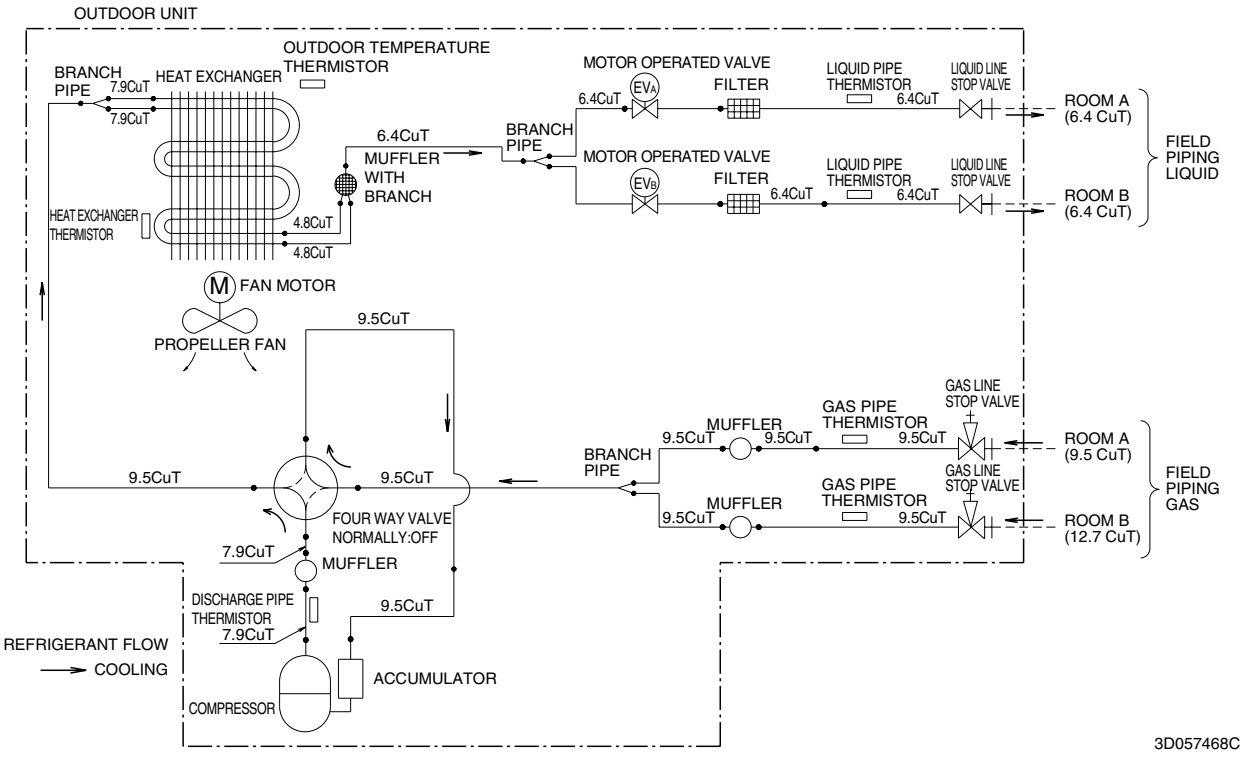
1.2 Outdoor Units

1.2.1 Cooling Only

2MKS40H2V1B

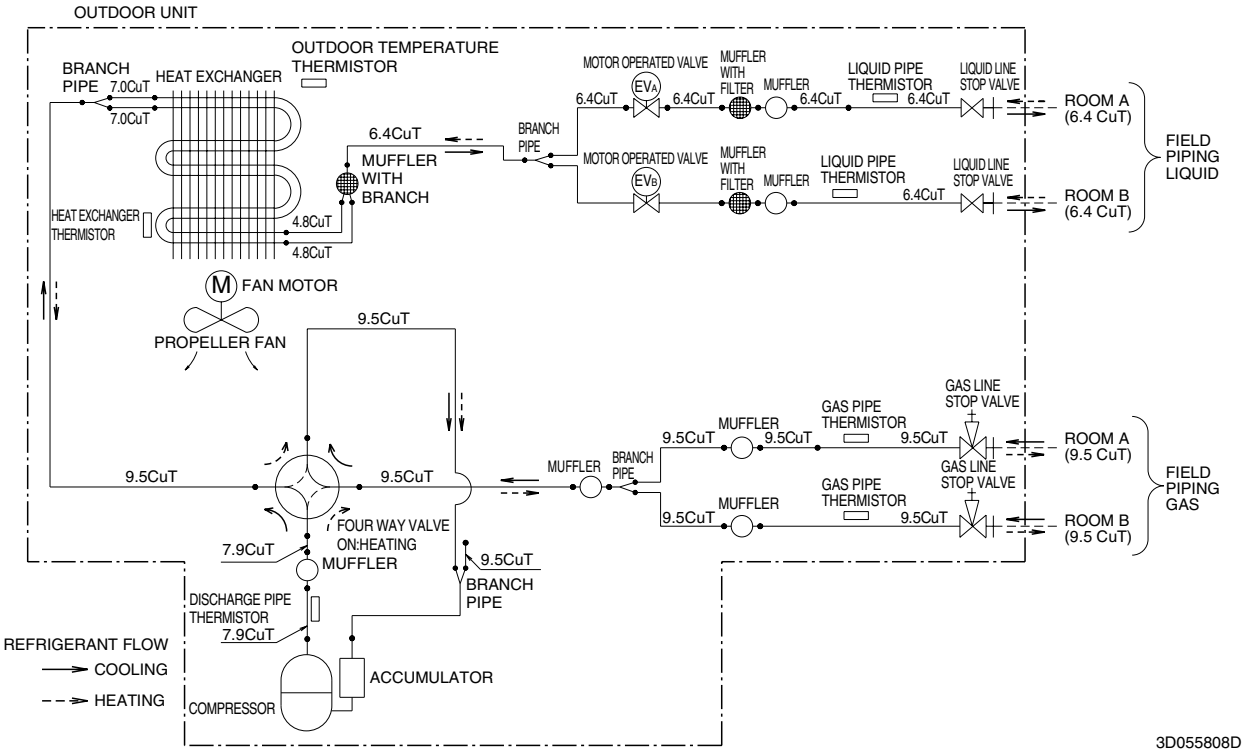


2MKS50H2V1B

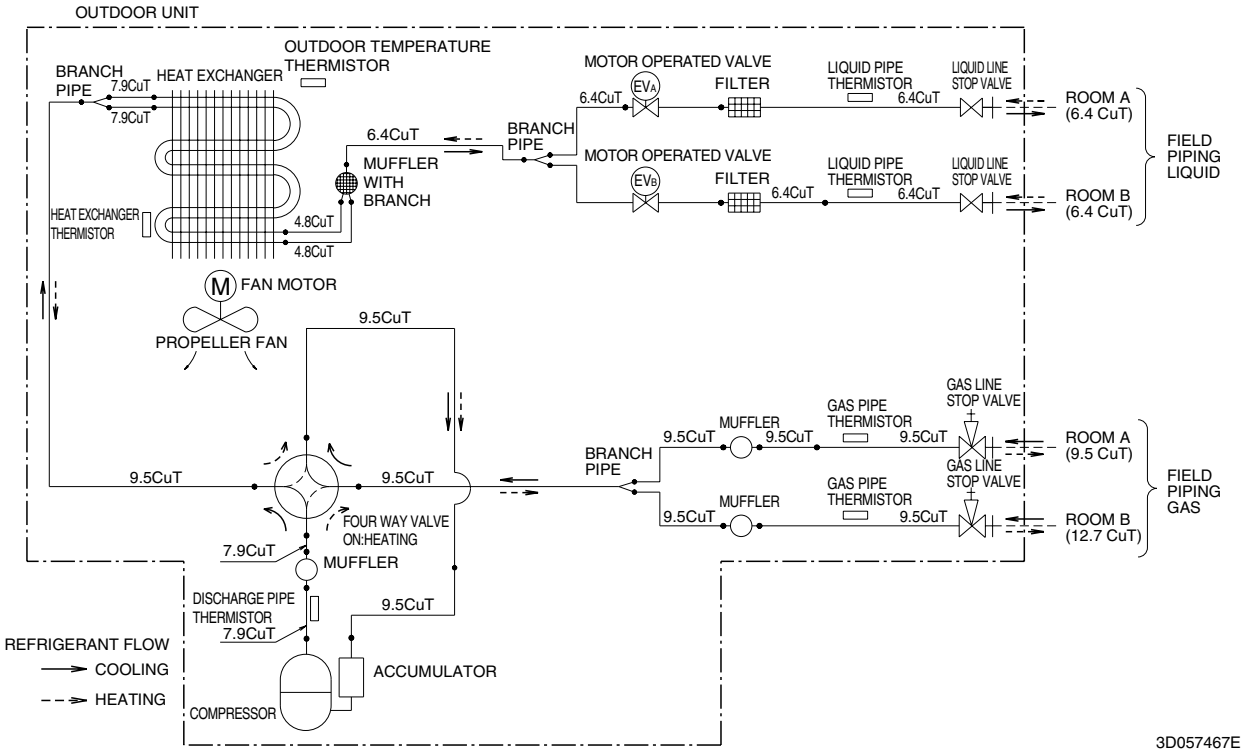


1.2.2 Heat Pump

2AMX40G2V1B, 2MXS40H2V1B



2AMX50G2V1B, 2MXS50H2V1B

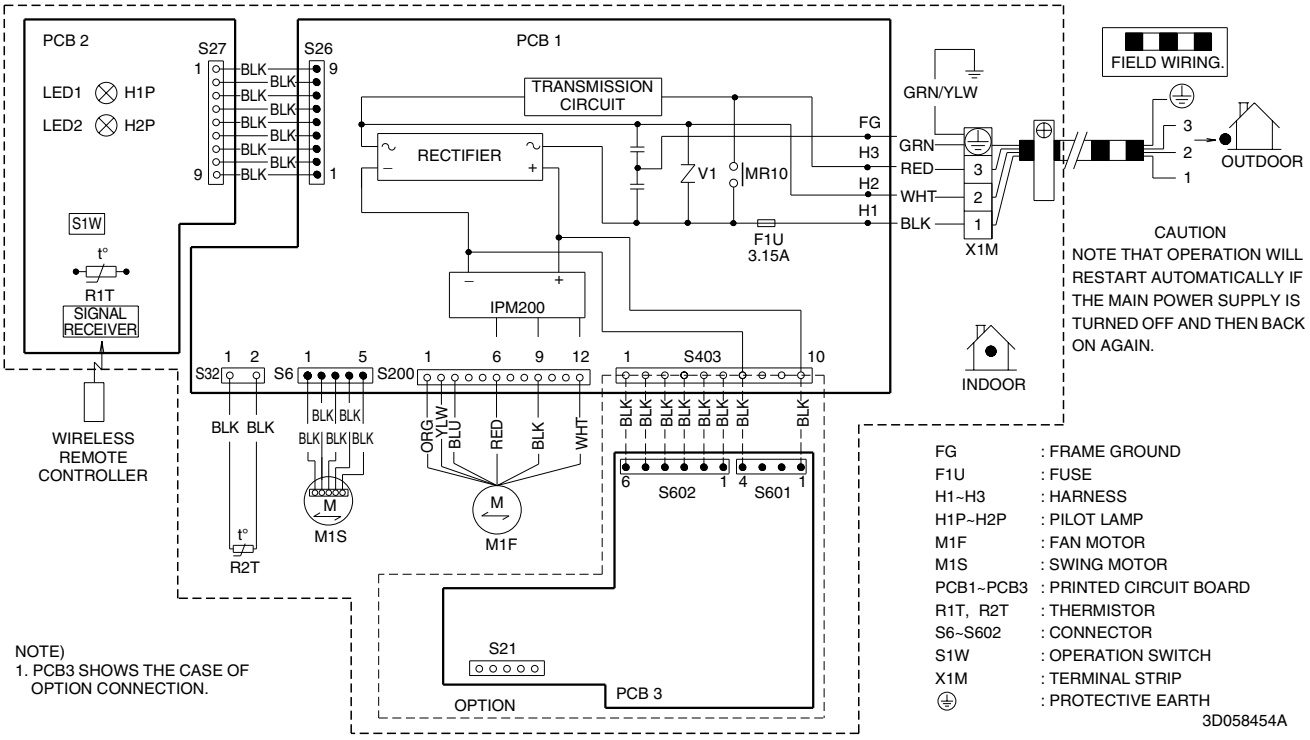


2. Wiring Diagrams

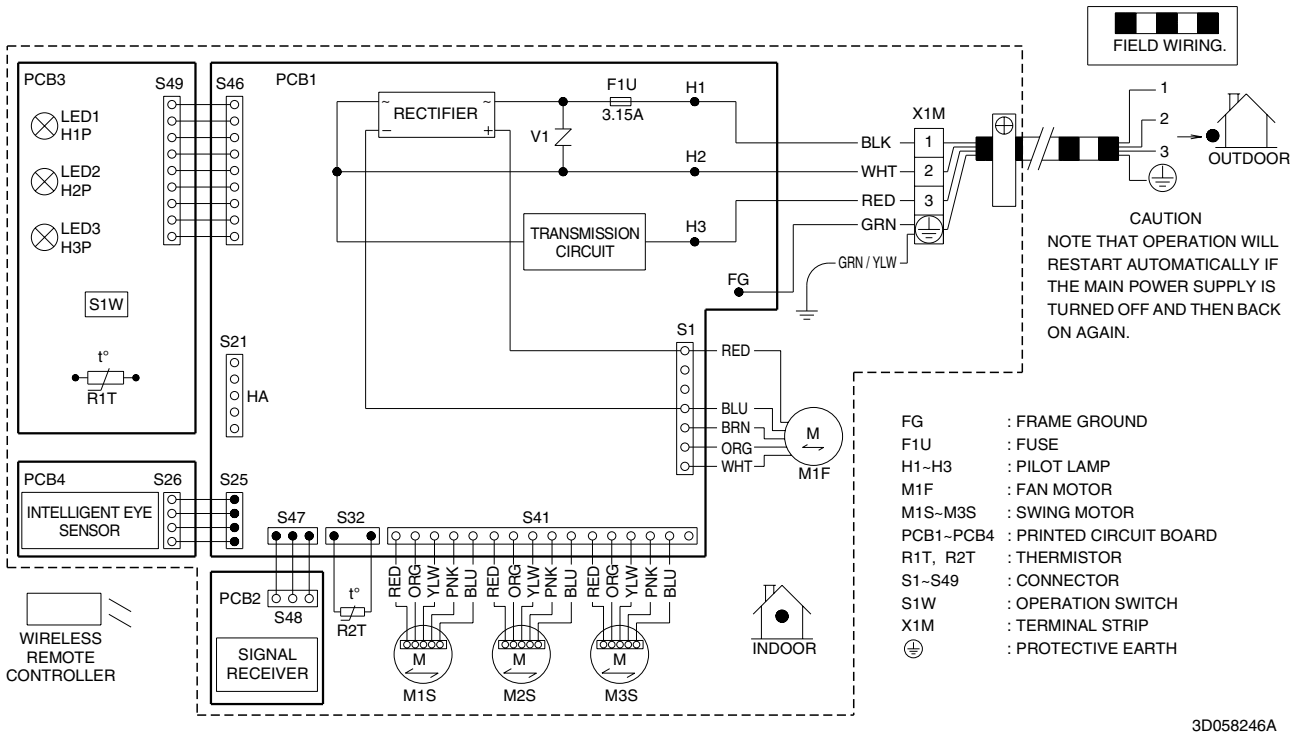
2.1 Indoor Units

2.1.1 Wall Mounted Type

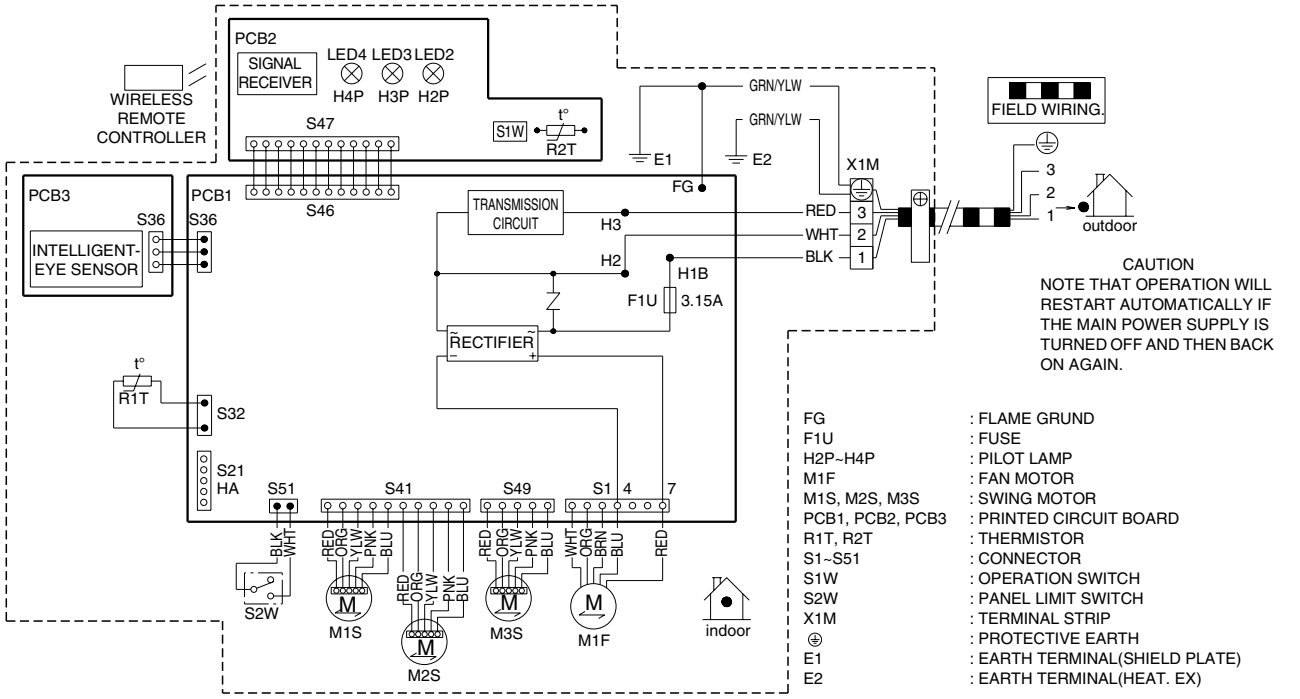
ATX20/25/35GV1B



FTXS20/25/35/42/50G2V1B, ATXS20/25/35/42/50G2V1B



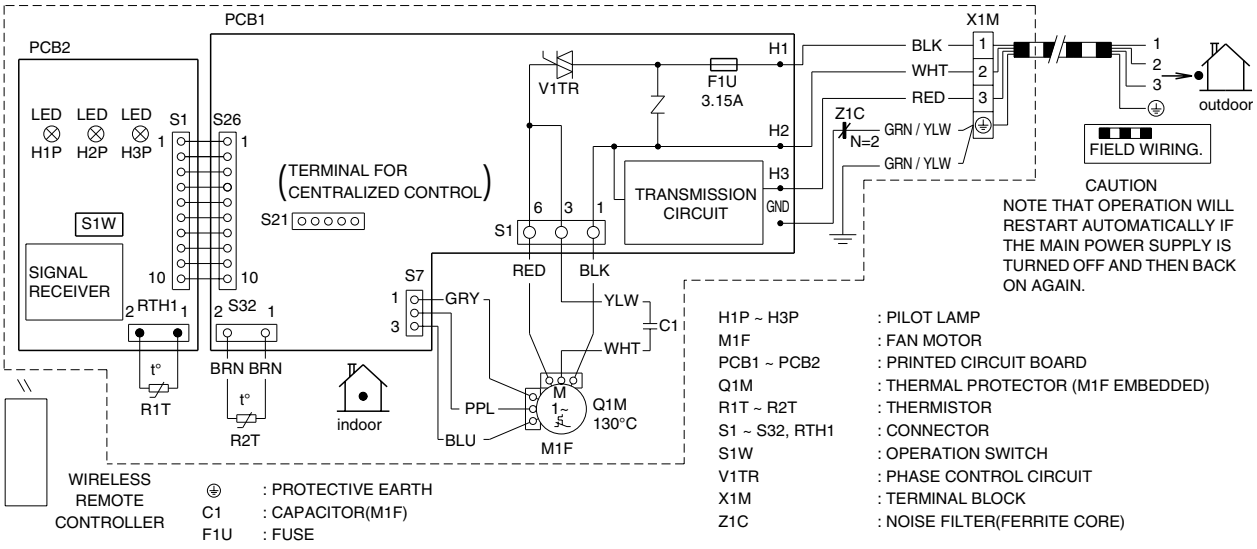
FTXG25/35EV1BW(S), CTXG50EV1BW(S), ATXG25/35/50EV1B



3D050493B

2.1.2 Duct Connected Type

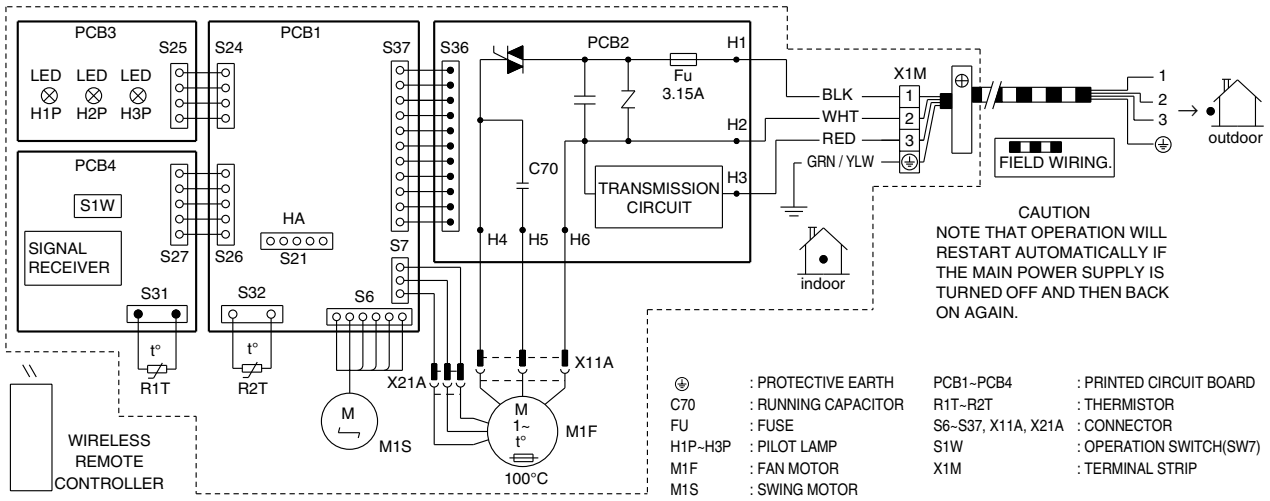
FDKS50CVMB, FDKS25EAVMB, FDKS35EAVMB
FDXS50CVMB, FDXS25EAVMB, FDXS35EAVMB



3D045012K

2.1.3 Floor / Ceiling Suspended Dual Type

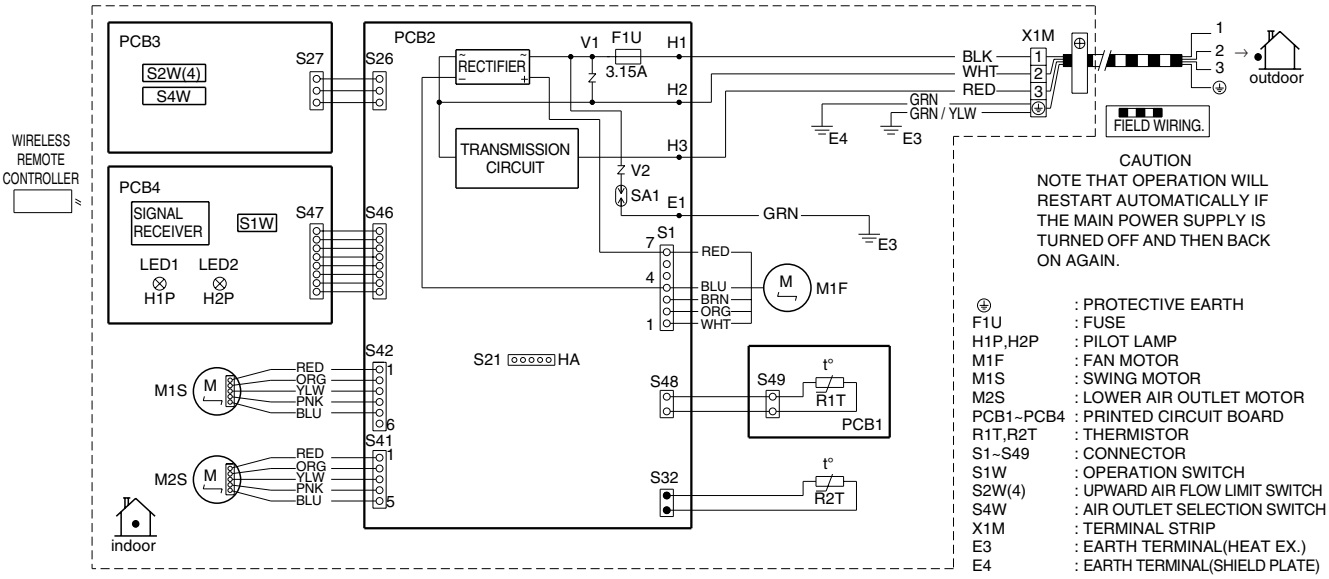
FLKS25BAVMB, FLKS35BAVMB, FLKS50BAVMB
FLXS25BAVMB, FLXS35BAVMB, FLXS50BAVMB



3D033909F

2.1.4 Floor Standing Type

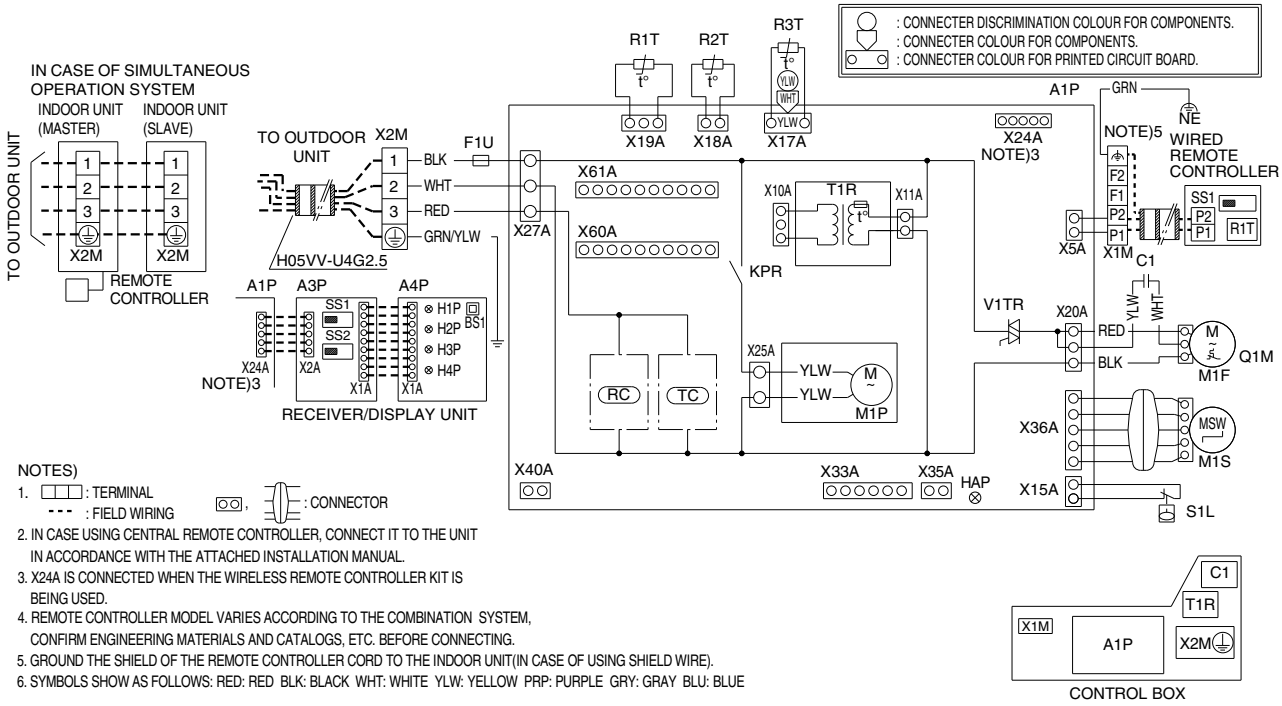
FVXS25FV1B, FVXS35FV1B, FVXS50FV1B



3D055953A

2.1.5 Ceiling Mounted Cassette Type

FFQ25B8V1B, FFQ35B8V1B, FFQ50B8V1B



A1P	PRINTED CIRCUIT BOARD	BS1	PUSH BUTTON(ON/OFF)
C1	CAPACITOR(M1F)	H1P	LIGHT EMITTING DIODE (ON-RED)
F1U	FUSE(F5A 250V)		
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR GREEN)	H2P	LIGHT EMITTING DIODE (TIMER-GREEN)
KPR	MAGNETIC RELAY(M1P)	H3P	LIGHT EMITTING DIODE (FILTER SIGN-RED)
M1F	MOTOR(INDOOR FAN)		
M1P	MOTOR(DRAIN PUMP)	H4P	LIGHT EMITTING DIODE (DEFROST-ORANGE)
M1S	MOTOR(SWING FLAP)		
Q1M	THERMO SWITCH(M1F EMBEDDED)	SS1	SELECTOR SWITCH (MAIN/SUB)
R1T	THERMISTOR(AIR)		
R2T	THERMISTOR(COIL-1)	SS2	SELECTOR SWITCH (WIRELESS ADDRESS SET)
R3T	THERMISTOR(COIL-2)		
S1L	FLOAT SWITCH	CONNECTOR FOR OPTIONAL PARTS	
T1R	TRANSFORMER(220-240V/22V)	X33A	CONNECTOR (ADAPTOR FOR WIRING)
V1TR	PHASE CONTROL CIRCUIT		
X1M	TERMINAL STRIP	X35A	CONNECTOR (GROUP CONTROL ADAPTOR)
X2M	TERMINAL STRIP		
(RC)	SIGNAL RECEIVER CIRCUIT	X40A	CONNECTOR (ON/OFF INPUT FROM OUTSIDE)
(TC)	SIGNAL TRANSMISSION CIRCUIT		
WIRED REMOTE CONTROLLER		X60A	CONNECTOR (INTERFACE ADAPTOR FOR SKYAIR SERIES)
R1T	THERMISTOR(AIR)	X61A	
SS1	SELECTOR SWITCH(MAIN/SUB)		
WIRELESS REMOTE CONTROLLER (RECEIVER/DISPLAY UNIT)			
A3P	PRINTED CIRCUIT BOARD		
A4P	PRINTED CIRCUIT BOARD		

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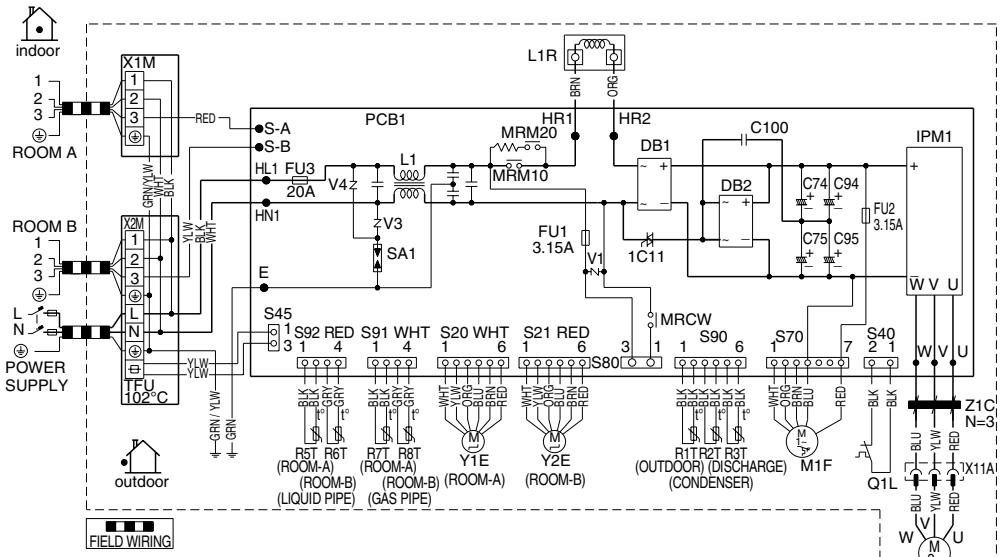
2.2 Outdoor Units

2.2.1 Cooling Only

2MKS40H2V1B



C74, C75, C94		M1F	: FAN MOTOR	V1,V3,V4	: VARISTOR		
C95, C100	: CAPACITOR	MRCW, MRM10,		X1M, X2M	: TERMINAL STRIP	BLK	: BLACK
DB1, DB2	: DIODE BRIDGE	MRM20	: MAGNETIC RELAY	Y1E, Y2E	: ELECTRONIC EXPANSION VALVE COIL	BLU	: BLUE
FU1, FU2, FU3	: FUSE	N	: NEUTRAL	Z1C	: FERRITE CORE	BRN	: BROWN
IC11	: TRIAC	PCB1	: PRINTED CIRCUIT BOARD	⏚	: PROTECTIVE EARTH	GRY	: GREY
IPM1	: INTELLIGENT POWER MODULE	Q1L	: OVERLOAD PROTECTOR	S20, S21, S40,		ORG	: ORANGE
L	: LIVE	R1T~R8T	: THERMISTOR	S70, S80, S45,		RED	: RED
L1	: COIL	SA1	: SURGE ARRESTER	S90, S91, S92,		WHT	: WHITE
L1R	: REACTOR	TFU	: THERMAL FUSE	X11A	: CONNECTOR	YLW	: YELLOW
M1C	: COMPRESSOR MOTOR					GRN	: GREEN

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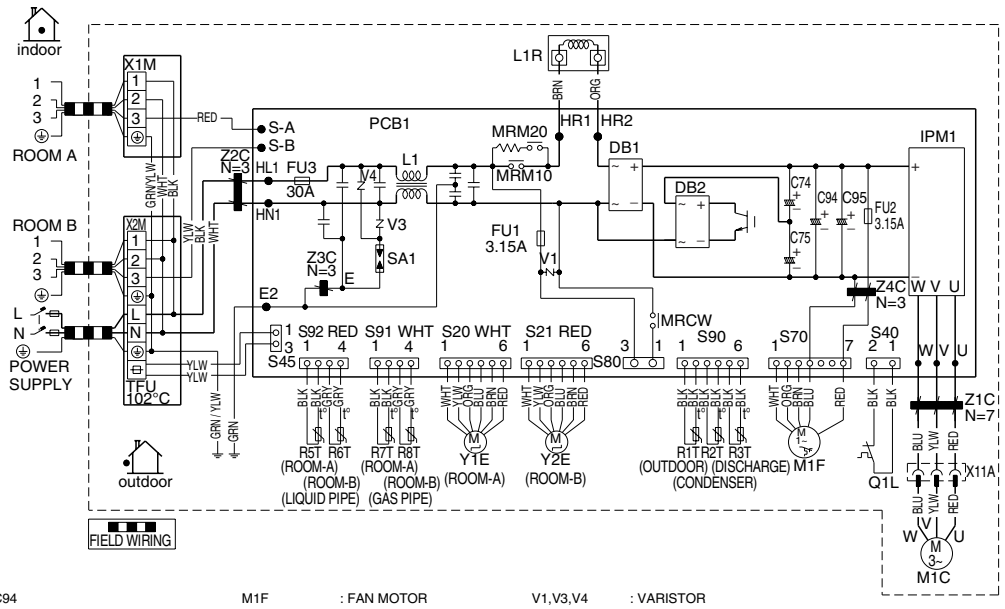
2MKS50H2V1B



C74, C75, C94		M1F	: FAN MOTOR	V1,V3,V4	: VARISTOR		
C95	: CAPACITOR	MRCW, MRM10,		X1M, X2M	: TERMINAL STRIP	BLK	: BLACK
DB1, DB2	: DIODE BRIDGE	MRM20	: MAGNETIC RELAY	Y1E, Y2E	: ELECTRONIC EXPANSION VALVE COIL	BLU	: BLUE
FU1, FU2, FU3	: FUSE	N	: NEUTRAL	Z1C, Z2C, Z3C		BRN	: BROWN
IPM1	: INTELLIGENT POWER MODULE	PCB1	: PRINTED CIRCUIT BOARD	Z4C	: FERRITE CORE	GRY	: GREY
L	: LIVE	Q1L	: OVERLOAD PROTECTOR	⏚	: PROTECTIVE EARTH	ORG	: ORANGE
L1	: COIL	R1T~R8T	: THERMISTOR	S20, S21, S40,		RED	: RED
L1R	: REACTOR	SA1	: SURGE ARRESTER	S70, S80, S45,		WHT	: WHITE
M1C	: COMPRESSOR MOTOR	TFU	: THERMAL FUSE	S90, S91, S92,		YLW	: YELLOW
				X11A	: CONNECTOR	GRN	: GREEN

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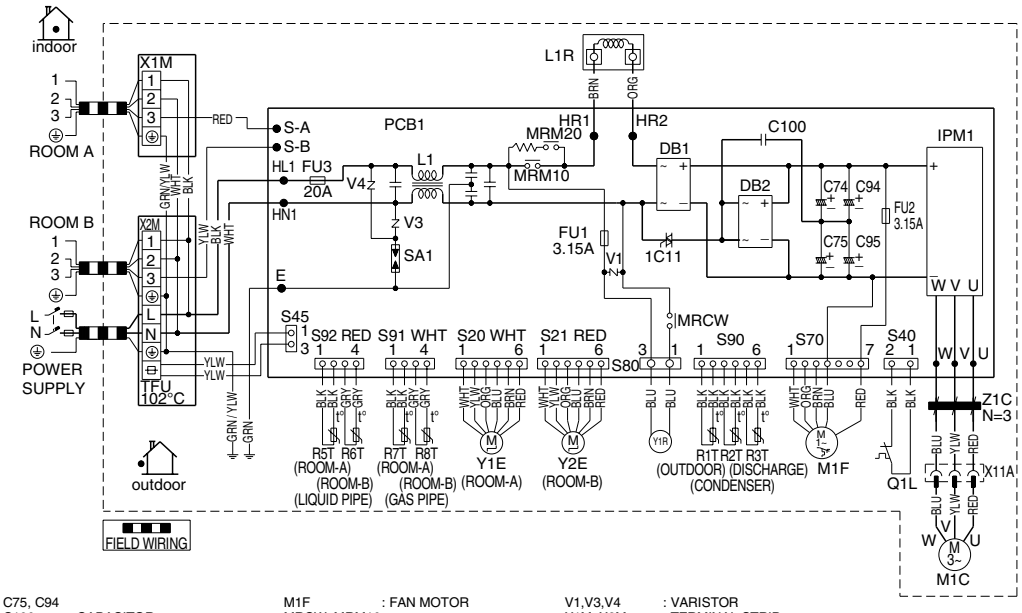
2.2.2 Heat Pump

2AMX40G2V1B, 2MXS40H2V1B



C74, C75, C94		M1F	: FAN MOTOR	V1,V3,V4	: VARISTOR		
C95, C100	: CAPACITOR	MRCW, MRM10,		X1M, X2M	: TERMINAL STRIP	BLK	: BLACK
DB1, DB2	: DIODE BRIDGE	MRM20	: MAGNETIC RELAY	Y1E, Y2E	: ELECTRONIC EXPANSION VALVE COIL	BLU	: BLUE
FU1, FU2, FU3	: FUSE	N	: NEUTRAL	Y1R	: REVERSING SOLENOIDE VALVE COIL	BRN	: BROWN
IC11	: TRIAC	PCB1	: PRINTED CIRCUIT BOARD	Z1C	: FERRITE CORE	GRY	: GREY
IPM1	: INTELLIGENT POWER MODULE	Q1L	: OVERLOAD PROTECTOR	⏚	: PROTECTIVE EARTH	ORG	: ORANGE
L	: LIVE	R1T~R8T	: THERMISTOR	S20, S21, S40,		RED	: RED
L1	: COIL	SA1	: SURGE ARRESTER	S70, S80, S45,		WHT	: WHITE
L1R	: REACTOR	TFU	: THERMAL FUSE	S90, S91, S92,		YLW	: YELLOW
M1C	: COMPRESSOR MOTOR			X11A	: CONNECTOR	GRN	: GREEN

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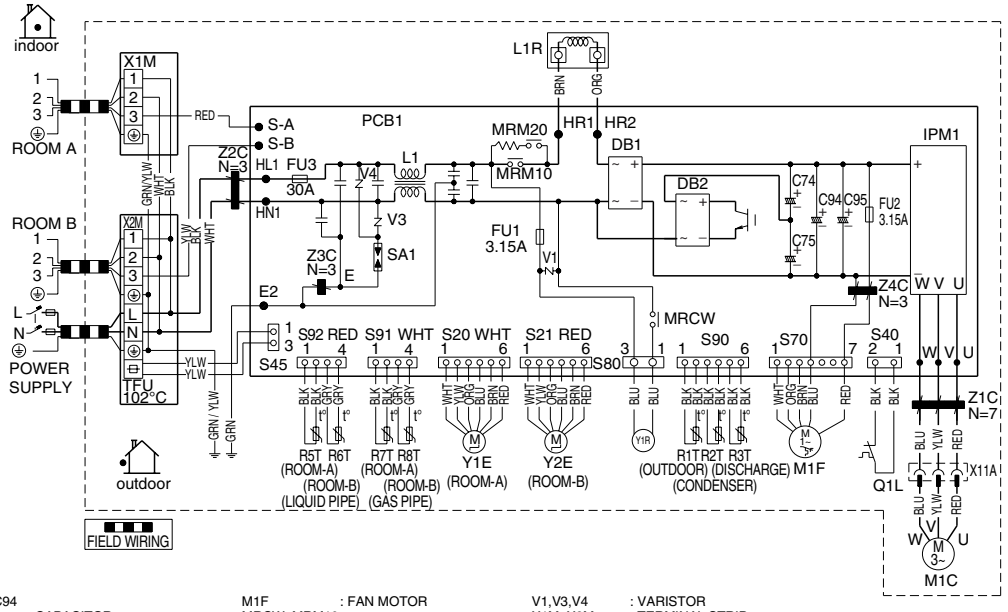
2AMX50G2V1B, 2MXS50H2V1B



C74, C75, C94		M1F	: FAN MOTOR	V1,V3,V4	: VARISTOR		
C95	: CAPACITOR	MRCW, MRM10,		X1M, X2M	: TERMINAL STRIP	BLK	: BLACK
DB1, DB2	: DIODE BRIDGE	MRM20	: MAGNETIC RELAY	Y1E, Y2E	: ELECTRONIC EXPANSION VALVE COIL	BLU	: BLUE
FU1, FU2, FU3	: FUSE	N	: NEUTRAL	Y1R	: REVERSING SOLENOIDE VALVE COIL	BRN	: BROWN
IPM1	: INTELLIGENT POWER MODULE	PCB1	: PRINTED CIRCUIT BOARD	Z1C, Z2C, Z3C		GRY	: GREY
L	: LIVE	Q1L	: OVERLOAD PROTECTOR	Z4C	: FERRITE CORE	ORG	: ORANGE
L1	: COIL	R1T~R8T	: THERMISTOR	⏚	: PROTECTIVE EARTH	RED	: RED
L1R	: REACTOR	SA1	: SURGE ARRESTER	S20, S21, S40,		WHT	: WHITE
M1C	: COMPRESSOR MOTOR	TFU	: THERMAL FUSE	S70, S80, S45,		YLW	: YELLOW
				S90, S91, S92,		GRN	: GREEN
				X11A	: CONNECTOR		

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Warning

- Daikin Industries, Ltd.'s products are manufactured for export to numerous countries throughout the world. Daikin Industries, Ltd. does not have control over which products are exported to and used in a particular country. Prior to purchase, please therefore confirm with your local authorised importer, distributor and/or retailer whether this product conforms to the applicable standards, and is suitable for use, in the region where the product will be used. This statement does not purport to exclude, restrict or modify the application of any local legislation.
- Ask a qualified installer or contractor to install this product. Do not try to install the product yourself. Improper installation can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Use only those parts and accessories supplied or specified by Daikin. Ask a qualified installer or contractor to install those parts and accessories. Use of unauthorised parts and accessories or improper installation of parts and accessories can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Read the User's Manual carefully before using this product. The User's Manual provides important safety instructions and warnings. Be sure to follow these instructions and warnings.

If you have any enquiries, please contact your local importer, distributor and/or retailer.

Cautions on product corrosion

1. Air conditioners should not be installed in areas where corrosive gases, such as acid gas or alkaline gas, are produced.
2. If the outdoor unit is to be installed close to the sea shore, direct exposure to the sea breeze should be avoided. If you need to install the outdoor unit close to the sea shore, contact your local distributor.

JMI-0107

Organization:
DAIKIN INDUSTRIES, LTD.
AIR CONDITIONING MANUFACTURING DIVISION

Scope of Registration:
THE DESIGN/DEVELOPMENT AND MANUFACTURE OF COMMERCIAL AIR CONDITIONING, HEATING, COOLING, REFRIGERATING EQUIPMENT, COMMERCIAL HEATING EQUIPMENT, RESIDENTIAL AIR CONDITIONING EQUIPMENT, HEAT RECLAIM VENTILATION, AIR CLEANING EQUIPMENT, MARINE TYPE CONTAINER REFRIGERATION UNITS, COMPRESSORS AND VALVES.

JQA-1452

Organization:
DAIKIN INDUSTRIES (THAILAND) LTD.

Scope of Registration:
THE DESIGN/DEVELOPMENT AND MANUFACTURE OF AIR CONDITIONERS AND THE COMPONENTS INCLUDING COMPRESSORS USED FOR THEM

EC99J2044

All of the Daikin Group's business facilities and subsidiaries in Japan are certified under the ISO 14001 international standard for environment management.

Dealer

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