DAIKIN

SiSG121917E

R-410A

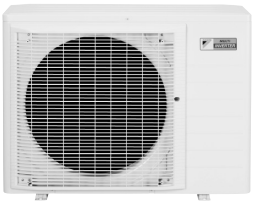
Service Manual

Multi-Split Type Air Conditioners

MKS-T, MKB-T Series








[Applied Models]

- **Inverter Multi : Cooling Only**

Introduction

1. Safety Cautions

Be sure to read the following safety cautions before conducting repair work.
After the repair work is complete, be sure to conduct a test operation to ensure that the equipment operates normally, and explain the cautions for operating the product to the customer.

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

Caution Items

The caution items are classified into ⚠**Warning** and ⚠**Caution**. The ⚠**Warning** items are especially important since death or serious injury can result if they are not followed closely. The ⚠**Caution** items can also lead to serious accidents under some conditions if they are not followed. Therefore, be sure to observe all the safety caution items described below.

Pictograms

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

1.1 Warnings and Cautions Regarding Safety of Workers

⚠ Warning	
Do not store equipment in a room with fire sources (e.g., naked flames, gas appliances, electric heaters).	
Be sure to disconnect the power cable from the socket before disassembling equipment for repair. Working on equipment that is connected to the power supply may cause an electrical shock. If it is necessary to supply power to the equipment to conduct the repair or inspect the circuits, do not touch any electrically charged sections of the equipment.	
If refrigerant gas is discharged during repair work, do not touch the discharged refrigerant gas. Refrigerant gas may cause frostbite.	
When disconnecting the suction or discharge pipe of the compressor at the welded section, evacuate the refrigerant gas completely at a well-ventilated place first. If there is gas remaining inside the compressor, the refrigerant gas or refrigerating machine oil discharges when the pipe is disconnected, and it may cause injury.	
If refrigerant gas leaks during repair work, ventilate the area. Refrigerant gas may generate toxic gases when it contacts flames.	
Be sure to discharge the capacitor completely before conducting repair work. The step-up capacitor supplies high-voltage electricity to the electrical components of the outdoor unit. A charged capacitor may cause an electrical shock.	

Warning	
Do not turn the air conditioner on or off by plugging in or unplugging the power cable. Plugging in or unplugging the power cable to operate the equipment may cause an electrical shock or fire.	
Be sure to wear a safety helmet, gloves, and a safety belt when working in a high place (more than 2 m). Insufficient safety measures may cause a fall.	
In case of R-32 / R-410A refrigerant models, be sure to use pipes, flare nuts and tools intended for the exclusive use with the R-32 / R-410A refrigerant. The use of materials for R-22 refrigerant models may cause a serious accident, such as a damage of refrigerant cycle or equipment failure.	
Do not mix air or gas other than the specified refrigerant (R-32 / R-410A / R-22) in the refrigerant system. If air enters the refrigerant system, an excessively high pressure results, causing equipment damage and injury.	

Caution	
Do not repair electrical components with wet hands. Working on the equipment with wet hands may cause an electrical shock.	
Do not clean the air conditioner with water. Washing the unit with water may cause an electrical shock.	
Be sure to provide an earth / grounding when repairing the equipment in a humid or wet place, to avoid electrical shocks.	
Be sure to turn off the power switch and unplug the power cable when cleaning the equipment. The internal fan rotates at a high speed, and may cause injury.	
Be sure to conduct repair work with appropriate tools. The use of inappropriate tools may cause injury.	
Be sure to check that the refrigerating cycle section has cooled down enough before conducting repair work. Working on the unit when the refrigerating cycle section is hot may cause burns.	
Conduct welding work in a well-ventilated place. Using the welder in an enclosed room may cause oxygen deficiency.	

1.2 Warnings and Cautions Regarding Safety of Users

Warning	
Do not store the equipment in a room with fire sources (e.g., naked flames, gas appliances, electric heaters).	
Be sure to use parts listed in the service parts list of the applicable model and appropriate tools to conduct repair work. Never attempt to modify the equipment. The use of inappropriate parts or tools may cause an electrical shock, excessive heat generation or fire.	
If the power cable and lead wires are scratched or have deteriorated, be sure to replace them. Damaged cable and wires may cause an electrical shock, excessive heat generation or fire.	
Do not use a joined power cable or extension cable, or share the same power outlet with other electrical appliances, since it may cause an electrical shock, excessive heat generation or fire.	
Be sure to use an exclusive power circuit for the equipment, and follow the local technical standards related to the electrical equipment, the internal wiring regulations, and the instruction manual for installation when conducting electrical work. Insufficient power circuit capacity and improper electrical work may cause an electrical shock or fire.	
Be sure to use the specified cable for wiring between the indoor and outdoor units. Make the connections securely and route the cable properly so that there is no force pulling the cable at the connection terminals. Improper connections may cause excessive heat generation or fire.	
When wiring between the indoor and outdoor units, make sure that the terminal cover does not lift off or dismount because of the cable. If the cover is not mounted properly, the terminal connection section may cause an electrical shock, excessive heat generation or fire.	
Do not damage or modify the power cable. Damaged or modified power cables may cause an electrical shock or fire. Placing heavy items on the power cable, or heating or pulling the power cable may damage it.	
Do not mix air or gas other than the specified refrigerant (R-32 / R-410A / R-22) in the refrigerant system. If air enters the refrigerant system, an excessively high pressure results, causing equipment damage and injury.	
If the refrigerant gas leaks, be sure to locate the leaking point and repair it before charging the refrigerant. After charging the refrigerant, make sure that there is no leak. If the leaking point cannot be located and the repair work must be stopped, be sure to pump-down, and close the service valve, to prevent refrigerant gas from leaking into the room. Refrigerant gas itself is harmless, but it may generate toxic gases when it contacts flames, such as those from fan type and other heaters, stoves and ranges.	
When relocating the equipment, make sure that the new installation site has sufficient strength to withstand the weight of the equipment. If the installation site does not have sufficient strength or the installation work is not conducted securely, the equipment may fall and cause injury.	

Warning	
Check to make sure that the power cable plug is not dirty or loose, then insert the plug into a power outlet securely. If the plug is dusty or has a loose connection, it may cause an electrical shock or fire.	
When replacing the coin battery in the remote controller, be sure to dispose of the old battery to prevent children from swallowing it. If a child swallows the coin battery, see a doctor immediately.	

Caution	
Installation of a leakage breaker is necessary in some cases depending on the conditions of the installation site, to prevent electrical shocks.	
Do not install the equipment in a place where there is a possibility of combustible gas leaks. If combustible gas leaks and remains around the unit, it may cause a fire.	
Check to see if parts and wires are mounted and connected properly, and if connections at the soldered or crimped terminals are secure. Improper installation and connections may cause excessive heat generation, fire or an electrical shock.	
If the installation platform or frame has corroded, replace it. A corroded installation platform or frame may cause the unit to fall, resulting in injury.	
Check the earth / grounding, and repair it if the equipment is not properly earthed / grounded. Improper earth / grounding may cause an electrical shock.	
Be sure to measure insulation resistance after the repair, and make sure that the resistance is 1 MΩ or higher. Faulty insulation may cause an electrical shock.	
Be sure to check the drainage of the indoor unit after the repair. Faulty drainage may cause water to enter the room and wet the furniture and floor.	
Do not tilt the unit when removing it. The water inside the unit may spill and wet the furniture and floor.	

2. Icons Used

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

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

3. Revision History

Month/Year	Version	Revised contents
09 / 2019	SiSG121917E	First edition

Part 1
General Information

1. Applicable Models

Indoor Unit

CTKS25TVMG	**CTKB25TVMG**	**FDKS25EAVMB**	**FDMR50TVMG**
CTKS35TVMG	**CTKB35TVMG**	**FDKS35EAVMB**	**FDMR60TVMG**
CTKS50TVMG	**CTKB50TVMG**	**FDKS25CAVMB**	**FDMR71TVMG**
CTKS60TVMG	**CTKB60TVMG**	**FDKS35CAVMB**	
CTKS71TVMG		**FDKS50CVMB**	
		FDKS60CVMB	

Outdoor Unit

MKS50TVMG	**MKB50TVMG**
MKS65TVMG	**MKB65TVMG**
MKS80TVMG	
MKS90TVMG	

2. Functions

2.1 Indoor Unit

Category	Functions	CTKS25/35/50TVMG	CTKS60/71TVMG	Category	Functions	CTKS25/35/50TVMG	CTKS60/71TVMG
Basic Functions	Inverter (with inverter power control)	●	●	Health & Cleanliness	Dust collection filter (PM2.5)	●	●
	Operation limit for cooling	—	—		Titanium apatite deodorizing filter (option)	●	●
	Operation limit for heating	—	—				
	PAM control	—	—		Mould proof air filter	●	●
Compressor	Oval scroll compressor	—	—		Wipe-clean flat panel	●	●
	Swing compressor	—	—		Washable grille	—	—
	Rotary compressor	—	—		Removable drain-pan	●	●
	Reluctance DC motor	—	—		Mould PROOF operation	—	—
Comfortable Airflow	Power-airflow flap	●	—		Heating dry operation	—	—
	Power-airflow dual flaps	—	●	Timer	Weekly schedule timer	●	●
	Power-airflow diffuser	—	—		24-hour on/off timer	●	●
	Wide-angle louvres	●	●		Night set mode	●	●
	Auto-swing (up and down)	●	●	Worry Free (Reliability & Durability)	Auto-restart (after power failure)	●	●
	Auto-swing (left and right)	●	●		Self-diagnosis with remo-con	●	●
	3-D airflow	●	●		Wiring error check	—	—
	Comfort airflow mode	●	●		Anti-corrosion treatment of outdoor heat exchanger	—	—
Comfort Control	Switchable fan speed	●	●				
	Auto fan speed	●	●	Flexibility	Multi-split/split type compatible indoor unit	—	—
	Indoor unit quiet operation	●	●				
	Night quiet mode (automatic)	—	—		Flexible power supply correspondence	●	●
	Outdoor unit quiet operation (manual)	●	●		Chargeless	—	—
	Intelligent eye (auto energy saving)	●	●		Either side drain (right or left)	●	●
	Quick warming function	—	—		Power selection	—	—
	Hot-start function	—	—	Remote Control	Remote control adaptor (normal open pulse contact) (option)	●	●
	Automatic defrosting	—	—				
Operation	Automatic operation	—	—		Remote control adaptor (normal open contact) (option)	●	●
	Programme dry function	●	●				
	Fan only	●	●		DIII-NET compatible (adaptor) (option)	●	●
Lifestyle Convenience	Powerful operation (non-inverter)	—	—				
	Inverter powerful operation	●	●		Wireless LAN connection (built-in)	●	●
	Priority-room setting	●	●	Remote Controller	Wireless	●	●
	Cooling/heating mode lock	—	—		Wired	—	—
	Home leave operation	—	—				
	ECONO mode	●	●				
	Indoor unit **ON/OFF** switch	●	●				
	Signal reception indicator	●	●				
	Wireless remote controller (backlight)	●	●				
	Temperature display	—	—				

Note: ● : Available
— : Not Available

Category	Functions	CTKB25/35/50TVMG	CTKB60TVMG	Category	Functions	CTKB25/35/50TVMG	CTKB60TVMG
Basic Functions	Inverter (with inverter power control)	●	●	Health & Cleanliness	Dust collection filter (PM2.5)	●	●
	Operation limit for cooling	—	—		Titanium apatite deodorizing filter (option)	●	●
	Operation limit for heating	—	—				
	PAM control	—	—		Mould proof air filter	●	●
Compressor	Oval scroll compressor	—	—		Wipe-clean flat panel	●	●
	Swing compressor	—	—		Washable grille	—	—
	Rotary compressor	—	—		Removable drain-pan	●	●
	Reluctance DC motor	—	—		Mould PROOF operation	—	—
Comfortable Airflow	Power-airflow flap	●	—		Heating dry operation	—	—
	Power-airflow dual flaps	—	●	Timer	Weekly schedule timer	●	●
	Power-airflow diffuser	—	—		24-hour on/off timer	●	●
	Wide-angle louvres	●	●		Night set mode	●	●
	Auto-swing (up and down)	●	●	Worry Free (Reliability & Durability)	Auto-restart (after power failure)	●	●
	Auto-swing (left and right)	●	●		Self-diagnosis with remo-con	●	●
	3-D airflow	●	●		Wiring error check	—	—
	Comfort airflow mode	●	●		Anti-corrosion treatment of outdoor heat exchanger	—	—
Comfort Control	Switchable fan speed	●	●				
	Auto fan speed	●	●	Flexibility	Multi-split/split type compatible indoor unit	—	—
	Indoor unit quiet operation	●	●				
	Night quiet mode (automatic)	—	—		Flexible power supply correspondence	●	●
	Outdoor unit quiet operation (manual)	●	●		Chargeless	—	—
	Intelligent eye (auto energy saving)	●	●		Either side drain (right or left)	●	●
	Quick warming function	—	—		Power selection	—	—
	Hot-start function	—	—	Remote Control	Remote control adaptor (normal open pulse contact) (option)	●	●
	Automatic defrosting	—	—				
Operation	Automatic operation	—	—		Remote control adaptor (normal open contact) (option)	●	●
	Programme dry function	●	●				
	Fan only	●	●		DIII-NET compatible (adaptor) (option)	●	●
Lifestyle Convenience	Powerful operation (non-inverter)	—	—				
	Inverter powerful operation	●	●		Wireless LAN connection (built-in) (option)	●	●
	Priority-room setting	●	●				
	Cooling/heating mode lock	—	—	Remote Controller	Wireless	●	●
	Home leave operation	—	—		Wired	—	—
	ECONO mode	●	●				
	Indoor unit **ON/OFF** switch	●	●				
	Signal reception indicator	●	●				
	Wireless remote controller (backlight)	●	●				
	Temperature display	—	—				

Note: ● : Available
— : Not Available

Category	Functions	FDKS25/35EAVMB	FDKS25/35CAVMB FDKS50/60CVMB	Category	Functions	FDKS25/35EAVMB	FDKS25/35CAVMB FDKS50/60CVMB
Basic Functions	Inverter (with inverter power control)	●	●	Health & Cleanliness	Dust collection filter (PM2.5)	—	—
	Operation limit for cooling	—	—		Titanium apatite deodorizing filter	—	—
	Operation limit for heating	—	—		Mould proof air filter	●	●
	PAM control	—	—		Wipe-clean flat panel	—	—
Compressor	Oval scroll compressor	—	—		Washable grille	—	—
	Swing compressor	—	—		Removable drain-pan	—	—
	Rotary compressor	—	—		Mould PROOF operation	—	—
	Reluctance DC motor	—	—		Heating dry operation	—	—
Comfortable Airflow	Power-airflow flap	—	—	Timer	Weekly schedule timer	—	—
	Power-airflow dual flaps	—	—		24-hour on/off timer	●	●
	Power-airflow diffuser	—	—		Night set mode	●	●
	Wide-angle louvres	—	—	Worry Free (Reliability & Durability)	Auto-restart (after power failure)	●	●
	Auto-swing (up and down)	—	—		Self-diagnosis with remo-con	●	●
	Auto-swing (left and right)	—	—		Wiring error check	—	—
	3-D airflow	—	—		Anti-corrosion treatment of outdoor heat exchanger	—	—
	Comfort airflow mode	—	—				
Comfort Control	Switchable fan speed	●	●	Flexibility	Multi-split/split type compatible indoor unit	●	●
	Auto fan speed	●	●				
	Indoor unit quiet operation	●	●		Flexible power supply correspondence	●	●
	Night quiet mode (automatic)	—	—				
	Outdoor unit quiet operation (manual)	●	●		Chargeless	—	—
					Either side drain (right or left)	—	—
	Intelligent eye (auto energy saving)	—	—		Power selection	—	—
	Quick warming function	—	—	Remote Control	Remote control adaptor (normal open pulse contact) (option)	●	●
	Hot-start function	—	—				
	Automatic defrosting	—	—		Remote control adaptor (normal open contact) (option)	●	●
Operation	Automatic operation	—	—				
	Programme dry function	●	●		DIII-NET compatible (adaptor) (option)	●	●
	Fan only	●	●				
Lifestyle Convenience	Powerful operation (non-inverter)	—	—		Wireless LAN connection	—	—
	Inverter powerful operation	●	●	Remote Controller	Wireless	●	●
	Priority-room setting	—	—		Wired	—	—
	Cooling/heating mode lock	—	—				
	Home leave operation	●	●				
	ECONO mode	—	—				
	Indoor unit **ON/OFF** switch	●	●				
	Signal reception indicator	●	●				
	Wireless remote controller (backlight)	—	—				
	Temperature display	—	—				

Note: ● : Available
— : Not Available

Category	Functions	FDMR50/60/71TVMG with wired R/C	FDMR50/60/71TVMG with wireless R/C	Category	Functions	FDMR50/60/71TVMG with wired R/C	FDMR50/60/71TVMG with wireless R/C
Basic Functions	Inverter (with inverter power control)	●	●	Health & Cleanliness	Dust collection filter (PM2.5)	—	—
	Operation limit for cooling	—	—		Titanium apatite deodorizing filter	—	—
	Operation limit for heating	—	—		Silver ion anti-bacterial drain pan	●	●
	PAM control	—	—		Longlife filter (option)	●	●
Compressor	Oval scroll compressor	—	—		Air filter	—	—
	Swing compressor	—	—		Filter sign	●	●
	Rotary compressor	—	—		Good-sleep cooling operation	—	—
	Reluctance DC motor	—	—	Timer	Setpoint auto reset	●	—
Comfortable Airflow	Power-airflow flap	—	—		Setpoint range set	●	—
	Power-airflow dual flaps	—	—		Weekly schedule timer	●	—
	Power-airflow diffuser	—	—		24-hour on/off timer	●	—
	Wide-angle louvres	—	—		72-hour on/off timer	—	●
	Auto-swing (up and down)	—	—		Count up/down ON/OFF timer	—	●
	Auto-swing (left and right)	—	—		Off timer (programmed)	●	—
	3-D airflow	—	—	Worry Free (Reliability & Durability)	Auto-restart (after power failure)	●	●
	Comfort airflow mode	—	—		Self-diagnosis wit remo-con	●	●
Comfort Control	Switchable fan speed (3 steps)	●	●		Wiring error check	—	—
	Auto fan speed	●	●		Anti-corrosion treatment of outdoor heat exchanger	—	—
	Indoor unit quiet operation	—	—				
	Night quiet mode (automatic)	—	—	Flexibility	Multi-split/split type compatible indoor unit	—	—
	Outdoor unit quiet operation (manual)	—	—		Flexible power supply correspondence	●	●
	Two selectable temperature sensors	●	—				
	Intelligent eye (auto energy saving)	—	—		High ceiling application	—	—
	Intelligent eye (comfort)	—	—		Chargeless	—	—
Operation	Programme dry function	●	●		Either side drain (right or left)	—	—
	Fan only	●	●		Drain pump mechanism	●	●
Lifestyle Convenience	Powerful operation (non-inverter)	—	—		Power selection	—	—
	Inverter powerful operation	—	—	Remote Control	Remote control adaptor (normal open pulse contact)	—	—
	Priority-room setting	—	—				
	ECONO mode	—	—		Remote control adaptor (normal open contact)	—	—
	Emergency operation switch	—	●				
	Signal reception indicator	—	●		DIII-NET compatible (adaptor) (option)	●	●
	Remote controller (backlight)	●	●				
	Temperature display	—	—		Wireless LAN connection	—	—

Note: ● : Available
— : Not Available

2.2 Outdoor Unit

Category	Functions	MKS50/65/80/90TVMG	Category	Functions	MKS50/65/80/90TVMG
Basic Functions	Inverter (with inverter power control)	●	Health & Cleanliness	Titanium apatite deodorizing filter	—
	Operation limit for cooling	Refer to P. 218		Dust collection filter (PM2.5)	—
				Mould proof air filter	—
	Operation limit for heating	—		Wipe-clean flat panel	—
	PAM control	●		Washable panel	—
	Standby electricity saving	—		Separated drain pan	—
Compressor	Oval scroll compressor	—		Mould proof operation	—
	Swing compressor	●		Odour removing	—
	Rotary compressor	—		Good-sleep cooling operation	—
	Reluctance DC motor	●	Timer	24-hour ON/OFF timer	—
Comfortable Airflow	Power-airflow flap	—		Count up-down ON/OFF timer	—
	Power-airflow dual flaps	—		Night set mode	—
	Power-airflow diffuser	—	Worry Free (Reliability & Durability)	Auto-restart (after power failure)	—
	Wide-angle louvres	—		Self-diagnosis with remo-con	●
	Auto-swing (up and down)	—		Wiring error check	●
	Auto-swing (left and right)	—		Anti-corrosion treatment of outdoor heat exchanger fins	●
	3-D airflow	—			
	Comfort airflow mode	—		Protection net	●
Comfort Control	Comfortable auto fan speed	—		Stabiliser free	—
	Auto fan speed	—		Low/high voltage shield	—
	Switchable fan speed	—	Flexibility	Multi-split/split compatible indoor unit	—
	Indoor unit quiet operation	—		Flexible power supply correspondence	●
	Night quiet mode (automatic)	●		High ceiling application	—
	Outdoor unit quiet operation (manual)	●		Chargeless	●
	Intelligent eye operation (auto energy saving)	—		Either side drain (right/left)	—
				Power selection	—
	0.5°C step room temperature setting	—	Remote Control	Remote control adaptor (normal open pulse contact)	—
	Quick warming function	—			
	Hot-start function	—		Remote control adaptor (normal open contact)	—
	Automatic defrosting	—			
Operation	Auto-cooling/heating changeover	—		DIII-NET compatible (adaptor)	—
	Programme dry function	—		Wireless LAN connection	—
	Fan only	—	Remote Controller	Wireless	—
Lifestyle Convenience	Powerful operation (non-inverter)	—		Wired	—
	Inverter powerful operation	—			
	Super powerful operation	—			
	Priority-room setting	●			
	Cooling/heating mode lock	—			
	Home leave operation	—			
	ECONO mode	—			
	Indoor unit **ON/OFF** switch	—			
	Signal reception indicator	—			
	R/C with backlight LCD	—			
	Temperature display	—			

Note: ● : Available
— : Not available

Category	Functions	MKB50/65TVMG	Category	Functions	MKB50/65TVMG
Basic Functions	Inverter (with inverter power control)	●	Health & Cleanliness	Titanium apatite deodorizing filter	—
	Operation limit for cooling	Refer to P. 218		Dust collection filter (PM2.5)	—
				Mould proof air filter	—
	Operation limit for heating	—		Wipe-clean flat panel	—
	PAM control	●		Washable panel	—
	Standby electricity saving	—		Separated drain pan	—
Compressor	Oval scroll compressor	—		Mould proof operation	—
	Swing compressor	●		Odour removing	—
	Rotary compressor	—		Good-sleep cooling operation	—
	Reluctance DC motor	●	Timer	24-hour ON/OFF timer	—
Comfortable Airflow	Power-airflow flap	—		Count up-down ON/OFF timer	—
	Power-airflow dual flaps	—		Night set mode	—
	Power-airflow diffuser	—	Worry Free (Reliability & Durability)	Auto-restart (after power failure)	—
	Wide-angle louvres	—		Self-diagnosis with remo-con	●
	Auto-swing (up and down)	—		Wiring error check	●
	Auto-swing (left and right)	—		Anti-corrosion treatment of outdoor heat exchanger fins	●
	3-D airflow	—			
	Comfort airflow mode	—		Protection net	●
Comfort Control	Comfortable auto fan speed	—		Stabiliser free	—
	Auto fan speed	—		Low/high voltage shield	—
	Switchable fan speed	—	Flexibility	Multi-split/split compatible indoor unit	—
	Indoor unit quiet operation	—		Flexible power supply correspondence	●
	Night quiet mode (automatic)	●		High ceiling application	—
	Outdoor unit quiet operation (manual)	●		Chargeless	●
	Intelligent eye operation (auto energy saving)	—		Either side drain (right/left)	—
				Power selection	—
	0.5°C step room temperature setting	—	Remote Control	Remote control adaptor (normal open pulse contact)	—
	Quick warming function	—			
	Hot-start function	—		Remote control adaptor (normal open contact)	—
	Automatic defrosting	—			
Operation	Auto-cooling/heating changeover	—		DIII-NET compatible (adaptor)	—
	Programme dry function	—		Wireless LAN connection	—
	Fan only	—	Remote Controller	Wireless	—
Lifestyle Convenience	Powerful operation (non-inverter)	—		Wired	—
	Inverter powerful operation	—			
	Super powerful operation	—			
	Priority-room setting	●			
	Cooling/heating mode lock	—			
	Home leave operation	—			
	ECONO mode	—			
	Indoor unit **ON/OFF** switch	—			
	Signal reception indicator	—			
	R/C with backlight LCD	—			
	Temperature display	—			

Note: ● : Available
— : Not available

Part 2 Specifications

1. Indoor Unit

1.1 Wall Mounted Type

50 Hz, 220 - 230 - 240 V / 60 Hz, 220 - 230 V

Model			CTKS25TVMG	CTKS35TVMG
Capacity			2.5 kW Class	3.5 kW Class
Front Panel Colour			White	White
Airflow Rates	H	m³/min (cfm)	10.8 (381)	11.8 (417)
	M		9.7 (343)	9.5 (335)
	L		7.4 (261)	7.6 (268)
	SL		5.9 (208)	6.6 (233)
Fan	Type		Cross Flow Fan	Cross Flow Fan
	Motor Output	W	—	—
	Speed	Steps	5 Steps, Quiet, Auto	5 Steps, Quiet, Auto
Air Direction Control			Right, Left, Horizontal, Downwards	Right, Left, Horizontal, Downwards
Air Filter			Removable, Washable, Mildew Proof	Removable, Washable, Mildew Proof
Running Current (Rated)		A	0.34	0.39
Power Consumption (Rated)		W	35	42
Power Factor (Rated)		%	44.8	46.8
Temperature Control			Microcomputer Control	Microcomputer Control
Dimensions (H × W × D)		mm	283 × 770 × 223	283 × 770 × 223
Packaged Dimensions (H × W × D)		mm	320 × 830 × 360	320 × 830 × 360
Weight (Mass)		kg	8	8
Gross Weight (Gross Mass)		kg	11	11
Sound Pressure Level	H / M / L / SL	dB(A)	43 / 37 / 29 / 22	46 / 38 / 32 / 27
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 16	ϕ 16
Drawing No.			3D122913	3D122914

Model			CTKS50TVMG	CTKS60TVMG
Capacity			5.0 kW Class	6.0 kW Class
Front Panel Colour			White	White
Airflow Rates	H	m³/min (cfm)	12.0 (424)	18.4 (650)
	M		10.3 (364)	15.5 (547)
	L		8.7 (307)	13.3 (470)
	SL		8.0 (283)	11.9 (420)
Fan	Type		Cross Flow Fan	Cross Flow Fan
	Motor Output	W	—	—
	Speed	Steps	5 Steps, Quiet, Auto	5 Steps, Quiet, Auto
Air Direction Control			Right, Left, Horizontal, Downwards	Right, Left, Horizontal, Downwards
Air Filter			Removable, Washable, Mildew Proof	Removable, Washable, Mildew Proof
Running Current (Rated)		A	0.38	0.48
Power Consumption (Rated)		W	37	55
Power Factor (Rated)		%	42.3	49.8
Temperature Control			Microcomputer Control	Microcomputer Control
Dimensions (H × W × D)		mm	283 × 770 × 223	295 × 990 × 263
Packaged Dimensions (H × W × D)		mm	320 × 830 × 360	386 × 1,102 × 389
Weight (Mass)		kg	9	13
Gross Weight (Gross Mass)		kg	12	18
Sound Pressure Level	H / M / L / SL	dB(A)	47 / 40 / 35 / 32	45 / 40 / 36 / 32
Heat Insulation			Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Piping Connection	Liquid	mm	ϕ 6.4	ϕ 6.4
	Gas	mm	ϕ 12.7	ϕ 12.7
	Drain	mm	ϕ 16	ϕ 16
Drawing No.			3D122915	3D122916

Notes: 1. SL: The Quiet fan level of the airflow rate setting.

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

50 Hz, 220 - 230 - 240 V / 60 Hz, 220 - 230 V

Model			CTKS71TVMG
Capacity			7.1 kW Class
Front Panel Colour			White
Airflow Rates	H	m³/min (cfm)	20.8 (734)
	M		17.3 (611)
	L		15.7 (554)
	SL		12.1 (427)
Fan	Type		Cross Flow Fan
	Motor Output	W	—
	Speed	Steps	5 Steps, Quiet, Auto
Air Direction Control			Right, Left, Horizontal, Downwards
Air Filter			Removable, Washable, Mildew Proof
Running Current (Rated)		A	0.59
Power Consumption (Rated)		W	70
Power Factor (Rated)		%	51.6
Temperature Control			Microcomputer Control
Dimensions (H × W × D)		mm	295 × 990 × 263
Packaged Dimensions (H × W × D)		mm	386 × 1,102 × 389
Weight (Mass)		kg	13
Gross Weight (Gross Mass)		kg	18
Sound Pressure Level	H / M / L / SL	dB(A)	48 / 43 / 39 / 33
Heat Insulation			Both Liquid and Gas Pipes
Piping Connection	Liquid	mm	ϕ 6.4
	Gas	mm	ϕ 15.9
	Drain	mm	ϕ 16
Drawing No.			3D122917

Notes: 1. SL: The Quiet fan level of the airflow rate setting.

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

50 Hz, 220 - 230 - 240 V / 60 Hz, 220 - 230 V

Model			CTKB25TVMG	CTKB35TVMG
Capacity			2.5 kW Class	3.5 kW Class
Front Panel Colour			White	White
Airflow Rates	H	m³/min (cfm)	10.8 (381)	11.8 (417)
	M		9.7 (343)	9.5 (335)
	L		7.4 (261)	7.6 (268)
	SL		5.9 (208)	6.6 (233)
Fan	Type		Cross Flow Fan	Cross Flow Fan
	Motor Output	W	—	—
	Speed	Steps	5 Steps, Quiet, Auto	5 Steps, Quiet, Auto
Air Direction Control			Right, Left, Horizontal, Downwards	Right, Left, Horizontal, Downwards
Air Filter			Removable, Washable, Mildew Proof	Removable, Washable, Mildew Proof
Running Current (Rated)		A	0.34	0.39
Power Consumption (Rated)		W	35	42
Power Factor (Rated)		%	44.8	46.8
Temperature Control			Microcomputer Control	Microcomputer Control
Dimensions (H × W × D)		mm	283 × 770 × 223	283 × 770 × 223
Packaged Dimensions (H × W × D)		mm	320 × 830 × 360	320 × 830 × 360
Weight (Mass)		kg	8	8
Gross Weight (Gross Mass)		kg	11	11
Sound Pressure Level	H / M / L / SL	dB(A)	43 / 37 / 29 / 22	46 / 38 / 32 / 27
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 16	ϕ 16
Drawing No.			3D122913	3D122914

Model			CTKB50TVMG	CTKB60TVMG
Capacity			5.0 kW Class	6.0 kW Class
Front Panel Colour			White	White
Airflow Rates	H	m³/min (cfm)	12.0 (424)	18.4 (650)
	M		10.3 (364)	15.5 (547)
	L		8.7 (307)	13.3 (470)
	SL		8.0 (283)	11.9 (420)
Fan	Type		Cross Flow Fan	Cross Flow Fan
	Motor Output	W	—	—
	Speed	Steps	5 Steps, Quiet, Auto	5 Steps, Quiet, Auto
Air Direction Control			Right, Left, Horizontal, Downwards	Right, Left, Horizontal, Downwards
Air Filter			Removable, Washable, Mildew Proof	Removable, Washable, Mildew Proof
Running Current (Rated)		A	0.38	0.48
Power Consumption (Rated)		W	37	55
Power Factor (Rated)		%	42.3	49.8
Temperature Control			Microcomputer Control	Microcomputer Control
Dimensions (H × W × D)		mm	283 × 770 × 223	295 × 990 × 263
Packaged Dimensions (H × W × D)		mm	320 × 830 × 360	386 × 1,102 × 389
Weight (Mass)		kg	9	13
Gross Weight (Gross Mass)		kg	12	18
Sound Pressure Level	H / M / L / SL	dB(A)	47 / 40 / 35 / 32	45 / 40 / 36 / 32
Heat Insulation			Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Piping Connection	Liquid	mm	ϕ 6.4	ϕ 6.4
	Gas	mm	ϕ 12.7	ϕ 12.7
	Drain	mm	ϕ 16	ϕ 16
Drawing No.			3D122915	3D122916

Notes: 1. SL: The Quiet fan level of the airflow rate setting.

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

1.2 LSP Duct Connected Type

50 Hz, 230V

Model			FDKS25EAVMB	FDKS35EAVMB
Rated Capacity			2.5 kW Class	3.5 kW Class
Airflow Rates	H	m³/min (cfm)	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 (Rated)		%	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 (Mass)		kg	21	21
Gross Weight (Gross Mass)		kg	29	29
Sound Pressure Level	H / M / L / SL	dB(A)	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.			C: 3D060036A	C: 3D060037A

Notes:
1. SL: The Quiet fan level of the airflow rate setting.
2. The operating sound is based on the rear side suction inlet and the external static pressure 30 Pa.
   Operating sound for bottom suction inlet : [operating sound for rear side suction inlet] +6 dB.
   However, when installation resulting in lower external static pressure becomes low is carried out,
   the operation sound may rise by more than 6 dB.

50 Hz, 230V

Model			FDKS25CAVMB	FDKS35CAVMB
Rated Capacity			2.5 kW Class	3.5 kW Class
Airflow Rates	H	m³/min (cfm)	9.5 (335)	10.0 (353)
	M		8.8 (311)	9.3 (328)
	L		8.0 (282)	8.5 (300)
	SL		6.7 (237)	7.0 (247)
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	0.47	0.47
Power Consumption (Rated)		W	100	100
Power Factor (Rated)		%	92.5	92.5
Temperature Control			Microcomputer Control	Microcomputer Control
Dimensions (H × W × D)		mm	200 × 900 × 620	200 × 900 × 620
Packaged Dimensions (H × W × D)		mm	266 × 1,106 × 751	266 × 1,106 × 751
Weight (Mass)		kg	25	25
Gross Weight (Gross Mass)		kg	31	31
Sound Pressure Level	H / M / L / SL	dB(A)	35 / 33 / 31 / 29	35 / 33 / 31 / 29
External Static Pressure		Pa	40	40
Heat Insulation			Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Piping Connection	Liquid	mm	ϕ 6.4	ϕ 6.4
	Gas	mm	ϕ 9.5	ϕ 9.5
	Drain	mm	VP20 (O.D. ϕ 26 / I.D. ϕ 20)	VP20 (O.D. ϕ 26 / I.D. ϕ 20)
Drawing No.			C: 3D060038	C: 3D060039

Notes:
1. SL: The Quiet fan level of the airflow rate setting.
2. The operating sound is based on the rear side suction inlet and the external static pressure 40 Pa.
   Operating sound for bottom suction inlet : [operating sound for rear side suction inlet] +5 dB.
   However, when installation resulting in lower external static pressure becomes low is carried out,
   the operation sound may rise by more than 5 dB.

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

50 Hz, 230 V

Model			FDKS50CVMB	FDKS60CVMB
Rated Capacity			5.0 kW Class	6.0 kW Class
Airflow Rates	H	m³/min (cfm)	12.0 (424)	16.0 (565)
	M		11.0 (388)	14.8 (523)
	L		10.0 (353)	13.5 (477)
	SL		8.4 (297)	11.2 (395)
Fan	Type		Sirocco Fan	Sirocco Fan
	Motor Output	W	130	130
	Speed	Steps	5 Steps, Quiet, Auto	5 Steps, Quiet, Auto
Air Filter			Removable, Washable, Mildew Proof	Removable, Washable, Mildew Proof
Running Current (Rated)		A	0.64	0.74
Power Consumption (Rated)		W	140	160
Power Factor (Rated)		%	95.1	94.0
Temperature Control			Microcomputer Control	Microcomputer Control
Dimensions (H × W × D)		mm	200 × 900 × 620	200 × 1,100 × 620
Packaged Dimensions (H × W × D)		mm	266 × 1,106 × 751	266 × 1,306 × 751
Weight (Mass)		kg	27	30
Gross Weight (Gross Mass)		kg	34	37
Sound Pressure Level	H / M / L / SL	dB(A)	37 / 35 / 33 / 31	38 / 36 / 34 / 32
External Static Pressure		Pa	40	40
Heat Insulation			Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Piping Connection	Liquid	mm	ϕ 6.4	ϕ 6.4
	Gas	mm	ϕ 12.7	ϕ 12.7
	Drain	mm	VP20 (O.D. ϕ 26 / I.D. ϕ 20)	VP20 (O.D. ϕ 26 / I.D. ϕ 20)
Drawing No.			C: 3D060040	C: 3D065479

Notes: 1. SL: The Quiet fan level of the airflow rate setting.

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

1.3 MSP Duct Connected Type

50 Hz, 220 - 230 - 240 V / 60 Hz, 220 - 230 V

Model			FDMR50TVMG	FDMR60TVMG
Capacity			5.0 kW Class	6.0 kW Class
Casing Colour			—	—
Coil	Type		Cross fin coil	Cross fin coil
	Row × Stages × Fin per inch		2 × 26 × 18	3 × 26 × 18
	Face area	m²	0.288	0.288
Airflow Rate	H	m³/min (cfm)	14.6 (516)	19.1 (675)
	M		12.4 (438)	16.2 (572)
	L		10.2 (360)	13.4 (473)
	SL		—	—
Fan	Type		Sirocco fan	Sirocco fan
	Motor Output	W	230	230
	External Static Pressure (Rated) ★1	Pa	50 (150 - 50)	50 (150 - 50)
Air Direction Control			—	—
Air Filter ★2			—	—
Temperature Control			—	—
Dimensions (H × W × D)		mm	245 × 1,000 × 800	245 × 1,000 × 800
Packaged Dimensions (H × W × D)		mm	—	—
Weight (Mass)		kg	35	37
Gross Weight (Gross Mass)		kg	—	—
Sound Pressure Level		dB(A)	34	35
Heat Insulation			—	—
Piping Connections	Liquid	mm	ϕ 6.4 (Flare)	ϕ 6.4 (Flare)
	Gas	mm	ϕ 12.7 (Flare)	ϕ 12.7 (Flare)
	Drain	mm	I.D. ϕ 25 / O.D. ϕ 32	I.D. ϕ 25 / O.D. ϕ 32
Drawing No.			3D123285A	3D123285A

Model			FDMR71TVMG
Capacity			7.1 kW Class
Casing Colour			—
Coil	Type		Cross fin coil
	Row × Stages × Fin per inch		3 × 26 × 18
	Face area	m²	0.288
Airflow Rate	H	m³/min (cfm)	22.6 (798)
	M		19.2 (678)
	L		15.8 (558)
	SL		—
Fan	Type		Sirocco fan
	Motor Output	W	230
	External Static Pressure (Rated) ★1	Pa	50 (150 - 50)
Air Direction Control			—
Air Filter ★2			—
Temperature Control			—
Dimensions (H × W × D)		mm	245 × 1,000 × 800
Packaged Dimensions (H × W × D)		mm	—
Weight (Mass)		kg	37
Gross Weight (Gross Mass)		kg	—
Sound Pressure Level		dB(A)	40
Heat Insulation			—
Piping Connections	Liquid	mm	ϕ 6.4 (Flare)
	Gas	mm	ϕ 15.9 (Flare)
	Drain	mm	I.D. ϕ 25 / O.D. ϕ 32
Drawing No.			3D123285A

Notes:
★1 External static pressure is changeable in 11 stages by remote controller.
★2 Air filter is not standard accessory, but please mount it in the duct system of the suction side. Select its dust collection efficiency (gravity method) 50% or more.

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

2. Outdoor Unit

50 Hz, 220 - 230 - 240 V / 60 Hz, 220 - 230 V

Model			MKS50TVMG	MKS65TVMG
Capacity		kW	—	—
Power Consumption		W	—	—
Running Current		A	—	—
Casing Colour			Ivory White	Ivory White
Heat Exchanger			WF Fin ϕ 7 Hi-XD Tube	WF Fin ϕ 7 Hi-XD Tube
Compressor	Type		Hermetically Sealed Swing Type	Hermetically Sealed Swing Type
	Model		2YC36BXD	2YC36BXD
	Motor Output	W	1,100	1,100
Refrigerant Oil	Model		FVC50K	FVC50K
	Charge	L	0.65	0.65
Refrigerant	Type		R-410A	R-410A
	Charge	kg	2.02	2.02
Airflow Rates	H	m^3/min	63.3	72.5
	M		—	—
	L		50.7	50.7
	H	cfm	2,235	2,561
	M		—	—
	L		1,790	1,790
Fan	Type		Propeller	Propeller
	Motor Output	W	—	—
	Running Current	A	H: 0.37 / M: — / L: 0.21	H: 0.51 / M: — / L: 0.19
	Power Consumption	W	H: 77 / M: — / L: 43	H: 112 / M: — / L: 43
Starting Current		A	—	—
Dimensions (H × W × D)		mm	695 × 930 × 350	695 × 930 × 350
Packaged Dimensions (H × W × D)		mm	762 × 1,004 × 475	762 × 1,004 × 475
Weight (Mass)		kg	52	52
Gross Weight (Gross Mass)		kg	58	58
Sound Pressure Level		dB(A)	54	54
Piping Connection	Liquid	mm	ϕ 6.4 × 3	ϕ 6.4 × 4
	Gas	mm	ϕ 9.5 × 1, ϕ 12.7 × 2	ϕ 9.5 × 2, ϕ 12.7 × 2
	Drain	mm	ϕ 16	ϕ 16
Heat Insulation			Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
No. of Wiring Connections			3 for Power Supply, 4 for Interunit Wiring (Including Earth Wiring)	3 for Power Supply, 4 for Interunit Wiring (Including Earth Wiring)
Max. Interunit Piping Length		m	50 (for Total of Each Room)	60 (for Total of Each Room)
		m	30 (for One Room)	30 (for One Room)
Amount of Additional Charge		g/m	Chargeless	Chargeless
Max. Installation Height Difference		m	15 (between Indoor Unit and Outdoor Unit)	15 (between Indoor Unit and Outdoor Unit)
		m	7.5 (between Indoor Units)	7.5 (between Indoor Units)
Drawing No.			3D122923	3D122986

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

Cooling	Piping Length
Indoor ; 27°CDB / 19°CWB Outdoor ; 35°CDB	5.0 m

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

50 Hz, 220 - 230 - 240 V / 60 Hz, 220 - 230 V

Model			MKS80TVMG	MKS90TVMG
Capacity		kW	—	—
Power Consumption		W	—	—
Running Current		A	—	—
Casing Colour			Ivory White	Ivory White
Heat Exchanger			WF Fin ϕ 7 Hi-XD Tube	WF Fin ϕ 8 Hi-XSL Tube
Compressor	Type		Hermetically Sealed Swing Type	Hermetically Sealed Swing Type
	Model		2YC36BXD	2YC63XXD
	Motor Output	W	1,100	1,920
Refrigerant Oil	Model		FVC50K	FVC50K
	Charge	L	0.65	0.9
Refrigerant	Type		R-410A	R-410A
	Charge	kg	2.02	3.5
Airflow Rates	H	m³/min	72.5	68.6
	M		—	66.7
	L		50.7	61.1
	H	cfm	2,561	2,423
	M		—	2,355
	L		1,790	2,158
Fan	Type		Propeller	Propeller
	Motor Output	W	—	—
	Running Current	A	H: 0.51 / M: — / L: 0.19	H: 0.47 / M: 0.44 / L: 0.36
	Power Consumption	W	H: 112 / M: — / L: 43	H: 104 / M: 97 / L: 80
Starting Current		A	—	—
Dimensions (H × W × D)		mm	695 × 930 × 350	990 × 940 × 320
Packaged Dimensions (H × W × D)		mm	762 × 1,004 × 475	1,114 × 1,003 × 425
Weight (Mass)		kg	52	83
Gross Weight (Gross Mass)		kg	58	95
Sound Pressure Level		dB(A)	54	53
Piping Connection	Liquid	mm	ϕ 6.4 × 4	ϕ 6.4 × 5
	Gas	mm	ϕ 9.5 × 1, ϕ 12.7 × 1, ϕ 15.9 × 2	ϕ 9.5 × 2, ϕ 12.7 × 1, ϕ 15.9 × 2
	Drain	mm	ϕ 16	ϕ 25
Heat Insulation			Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
No. of Wiring Connections			3 for Power Supply, 4 for Interunit Wiring (Including Earth Wiring)	3 for Power Supply, 4 for Interunit Wiring (Including Earth Wiring)
Max. Interunit Piping Length		m	60 (for Total of Each Room)	80 (for Total of Each Room)
		m	30 (for One Room)	30 (for One Room)
Amount of Additional Charge		g/m	Chargeless	Chargeless
Max. Installation Height Difference		m	15 (between Indoor Unit and Outdoor Unit)	15 (between Indoor Unit and Outdoor Unit)
		m	7.5 (between Indoor Units)	7.5 (between Indoor Units)
Drawing No.			3D122993	3D123006

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

Cooling	Piping Length
Indoor ; 27°CDB / 19°CWB Outdoor ; 35°CDB	5.0 m

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

50 Hz, 220 - 230 - 240 V / 60 Hz, 220 - 230 V

Model			MKB50TVMG	MKB65TVMG
Capacity		kW	—	—
Power Consumption		W	—	—
Running Current		A	—	—
Casing Colour			Ivory White	Ivory White
Heat Exchanger			WF Fin ϕ 7 Hi-XD Tube	WF Fin ϕ 7 Hi-XD Tube
Compressor	Type		Hermetically Sealed Swing Type	Hermetically Sealed Swing Type
	Model		2YC36BXD	2YC36BXD
	Motor Output	W	1,100	1,100
Refrigerant Oil	Model		FVC50K	FVC50K
	Charge	L	0.65	0.65
Refrigerant	Type		R-410A	R-410A
	Charge	kg	2.02	2.02
Airflow Rates	H	m³/min	63.3	72.5
	M		—	—
	L		50.7	50.7
	H	cfm	2,235	2,561
	M		—	—
	L		1,790	1,790
Fan	Type		Propeller	Propeller
	Motor Output	W	—	—
	Running Current	A	H: 0.37 / M: — / L: 0.21	H: 0.51 / M: — / L: 0.19
	Power Consumption	W	H: 77 / M: — / L: 43	H: 112 / M: — / L: 43
Starting Current		A	—	—
Dimensions (H × W × D)		mm	695 × 930 × 350	695 × 930 × 350
Packaged Dimensions (H × W × D)		mm	762 × 1,004 × 475	762 × 1,004 × 475
Weight (Mass)		kg	52	52
Gross Weight (Gross Mass)		kg	58	58
Sound Pressure Level		dB(A)	54	54
Piping Connection	Liquid	mm	ϕ 6.4 × 3	ϕ 6.4 × 4
	Gas	mm	ϕ 9.5 × 1, ϕ 12.7 × 2	ϕ 9.5 × 2, ϕ 12.7 × 2
	Drain	mm	ϕ 16	ϕ 16
Heat Insulation			Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
No. of Wiring Connections			3 for Power Supply, 4 for Interunit Wiring (Including Earth Wiring)	3 for Power Supply, 4 for Interunit Wiring (Including Earth Wiring)
Max. Interunit Piping Length		m	50 (for Total of Each Room)	60 (for Total of Each Room)
		m	30 (for One Room)	30 (for One Room)
Amount of Additional Charge		g/m	Chargeless	Chargeless
Max. Installation Height Difference		m	15 (between Indoor Unit and Outdoor Unit)	15 (between Indoor Unit and Outdoor Unit)
		m	7.5 (between Indoor Units)	7.5 (between Indoor Units)
Drawing No.			3D122923	3D122986

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

Cooling	Piping Length
Indoor ; 27°CDB / 19°CWB Outdoor ; 35°CDB	5.0 m

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

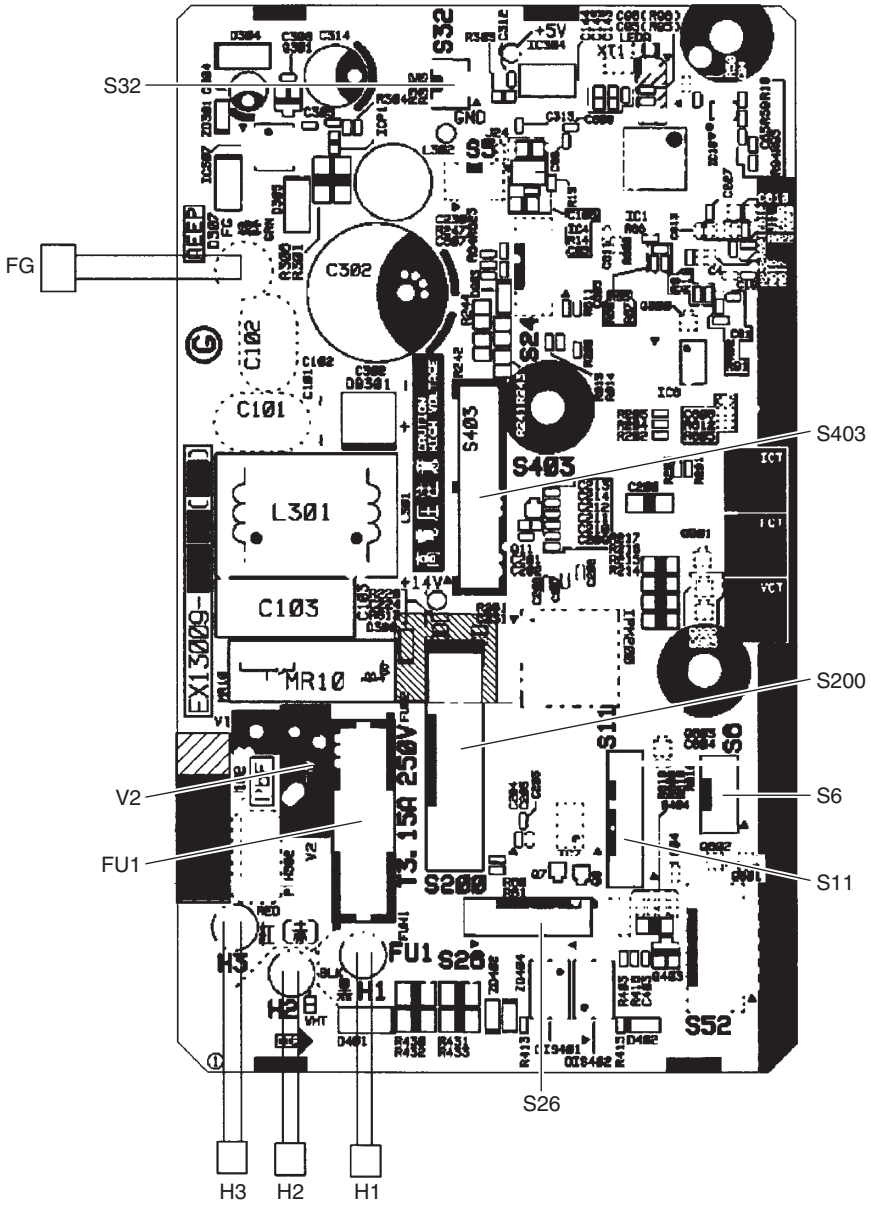
Part 3
Printed Circuit Board Connector Wiring Diagram

1. Indoor Unit

1.1 CTKS25/35/50TVMG, CTKB25/35/50TVMG

Control PCB (A1P/PCB1)

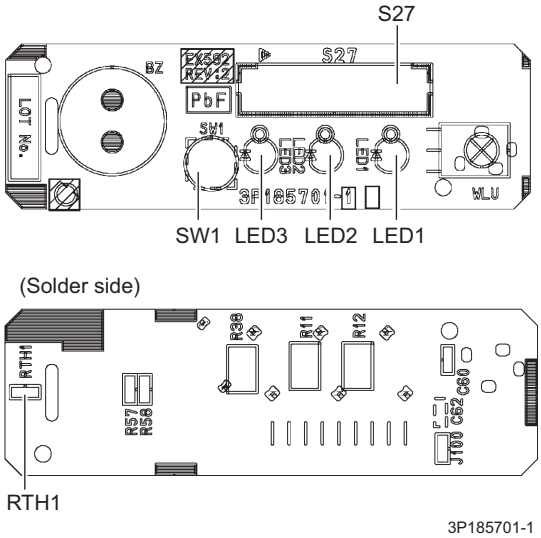
1)	S6	Connector for swing motor (horizontal blade)
2)	S11	Connector for swing motor (vertical blade)
3)	S26	Connector for display/signal receiver PCB (A2P), INTELLIGENT EYE sensor PCB (A3P)
4)	S32	Connector for indoor heat exchanger thermistor (R2T)
5)	S200	Connector for DC fan motor
6)	S403	Connector for adaptor PCB
7)	H1, H2, H3, FG	Connector for terminal strip
8)	FU1 (F1U)	Fuse (3.15 A, 250 V)
9)	V2 (R2V)	Varistor



Note The symbols in the parenthesis are the names on the appropriate wiring diagram.

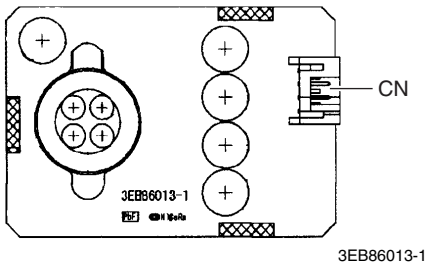
Display/Signal Receiver PCB (A2P/PCB2)

1)	S27	Connector for control PCB (A1P)
2)	SW1 (BS1/S1W)	Indoor unit **ON/OFF** switch
3)	LED1 (H1P)	LED for operation (green)
4)	LED2 (H2P)	LED for timer (yellow)
5)	LED3 (H3P)	LED for INTELLIGENT EYE (green)
6)	RTH1 (R1T)	Room temperature thermistor



INTELLIGENT EYE Sensor PCB (A3P/PCB3)

1)	CN	Connector for control PCB (A1P)

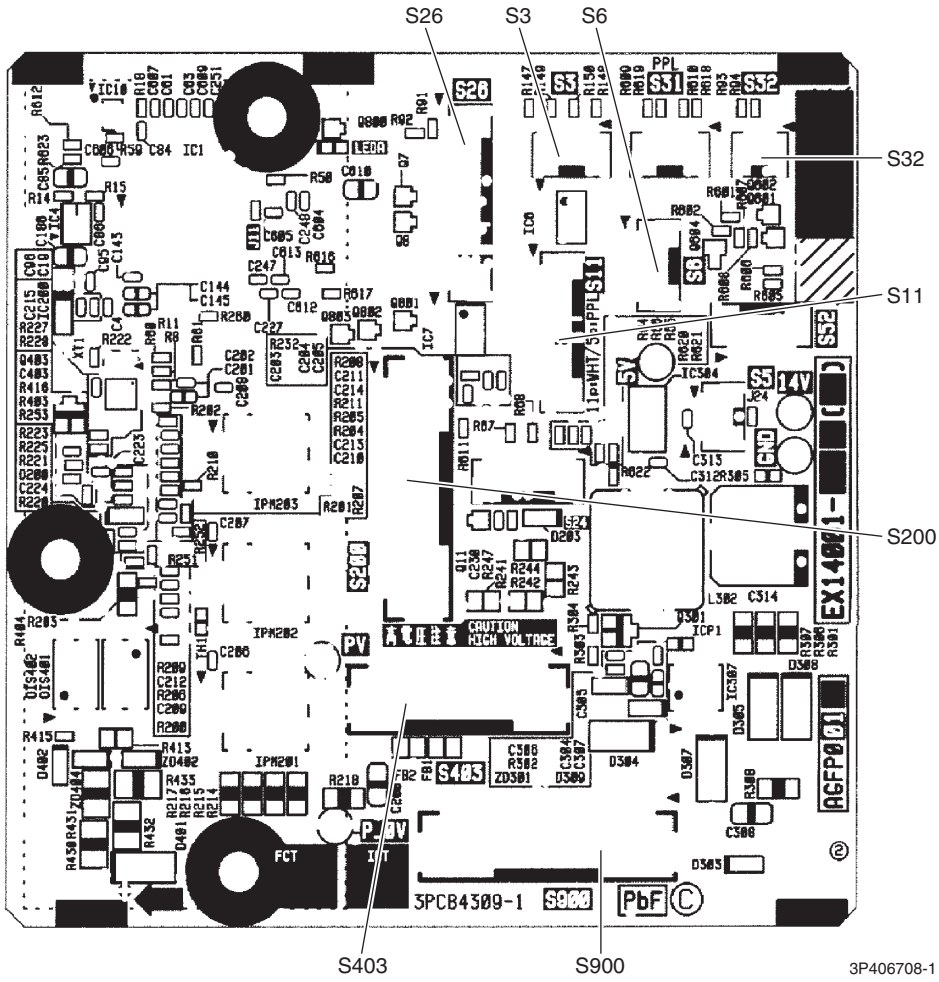


Note The symbols in the parenthesis are the names on the appropriate wiring diagram.

1.2 CTKS60/71TVMG, CTKB60TVMG

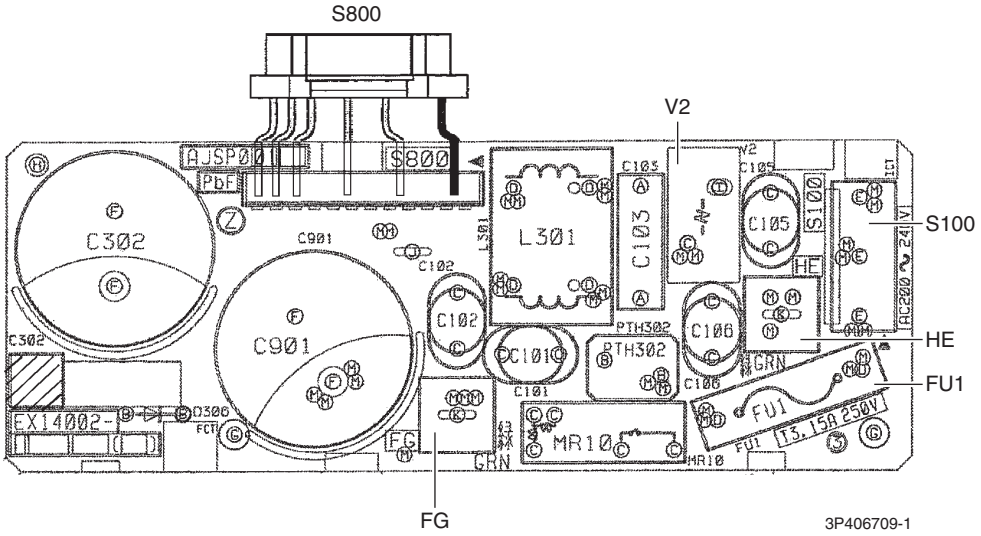
Control PCB (A2P/PCB2)

1)	S3	Connector for INTELLIGENT EYE sensor PCB (A4P)
2)	S6	Connector for swing motor (horizontal blade)
3)	S11	Connector for swing motor (vertical blade)
4)	S26	Connector for display/signal receiver PCB (A3P)
5)	S32	Connector for indoor heat exchanger thermistor
6)	S200	Connector for DC fan motor
7)	S403	Connector for adaptor PCB
8)	S900	Connector for filter PCB (A1P)



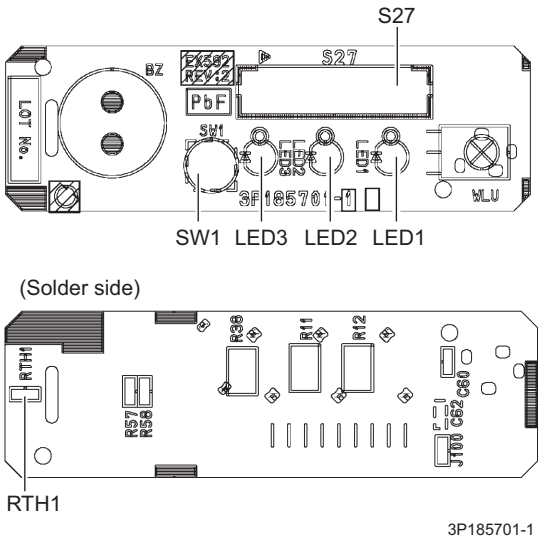
Filter PCB (A1P/PCB1)

1)	S100	Connector for terminal strip
2)	S800	Connector for control PCB (A2P)
3)	FG, HE	Connector for earth wire
4)	FU1 (F1U)	Fuse (3.15 A, 250 V)
5)	V2 (R2V)	Varistor



Display/Signal Receiver PCB (A3P/PCB3)

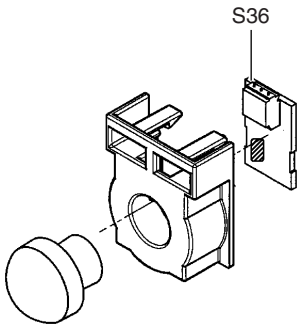
1)	S27	Connector for control PCB (A2P)
2)	SW1 (BS1/S1W)	Indoor unit **ON/OFF** switch
3)	LED1 (H1P)	LED for operation (green)
4)	LED2 (H2P)	LED for timer (yellow)
5)	LED3 (H3P)	LED for INTELLIGENT EYE (green)
6)	RTH1 (R1T)	Room temperature thermistor



Note The symbols in the parenthesis are the names on the appropriate wiring diagram.

INTELLIGENT EYE Sensor PCB (A4P/PCB4)

1)	S36	Connector for control PCB (A2P)

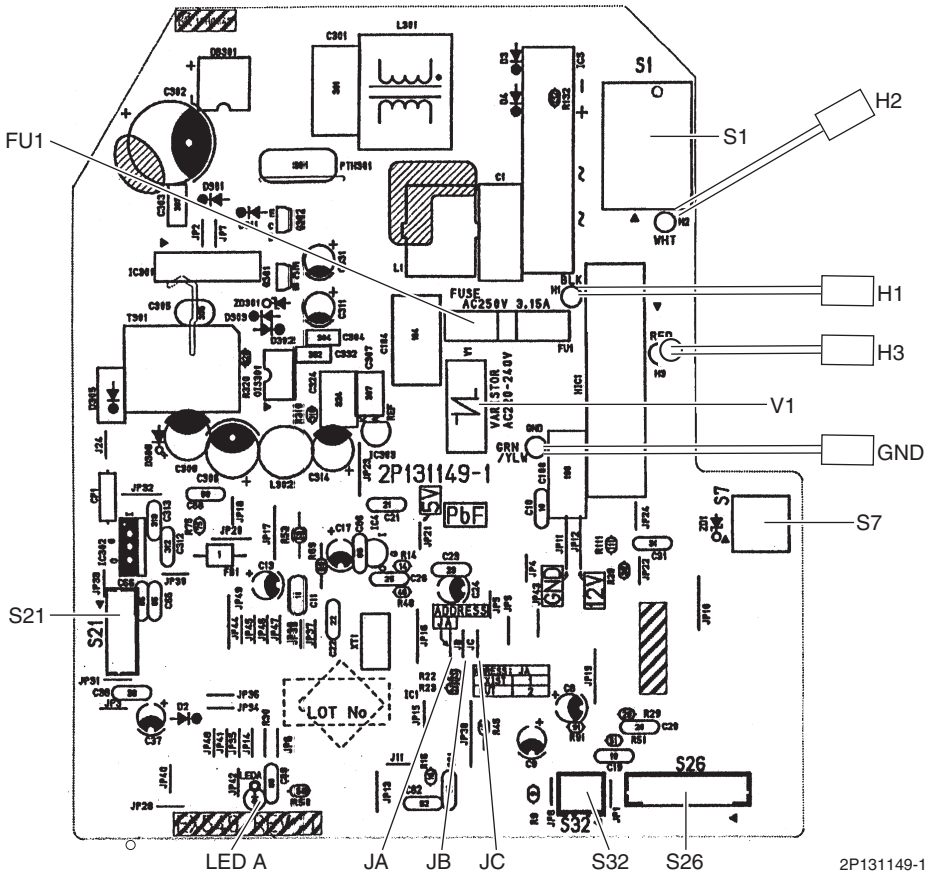


3P227885-1

1.3 FDKS25/35EAVMB, FDKS25/35CAVMB, FDKS50/60CVMB

Control PCB (PCB1)

1)	S1	Connector for AC fan motor
2)	S7	Connector for AC fan motor (Hall IC)
3)	S21	Connector for centralized control (HA)
4)	S26	Connector for display/signal receiver PCB (PCB2)
5)	S32	Connector for indoor heat exchanger thermistor (R2T)
6)	H1, H2, H3	Connector for terminal block
7)	GND	Connector for terminal block (earth)
8)	JA	Address setting jumper Refer to page 191 for details.
9)	JB	Fan speed setting when compressor stops for thermostat OFF Refer to page 192 for details.
10)	JC	Power failure recovery function (auto-restart) Refer to page 192 for details.
11)	LED A	LED for service monitor (green)
12)	FU1 (F1U)	Fuse (3.15 A, 250 V)
13)	V1	Varistor

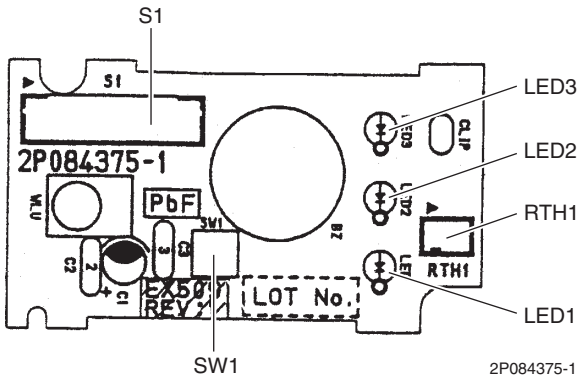


Caution **<u>Replace the PCB if you cut a jumper unintentionally.</u>**
Jumpers are necessary for electronic circuit. Improper operation may occur if you cut any of them.

Note The symbols in the parenthesis are the names on the appropriate wiring diagram.

Display/Signal Receiver PCB (PCB2)

1)	S1	Connector for control PCB (PCB1)
2)	SW1 (S1W)	Indoor unit **ON/OFF** switch
3)	LED1 (H1P)	LED for option (red)
4)	LED2 (H2P)	LED for timer (yellow)
5)	LED3 (H3P)	LED for operation (green)
6)	RTH1	Room temperature thermistor

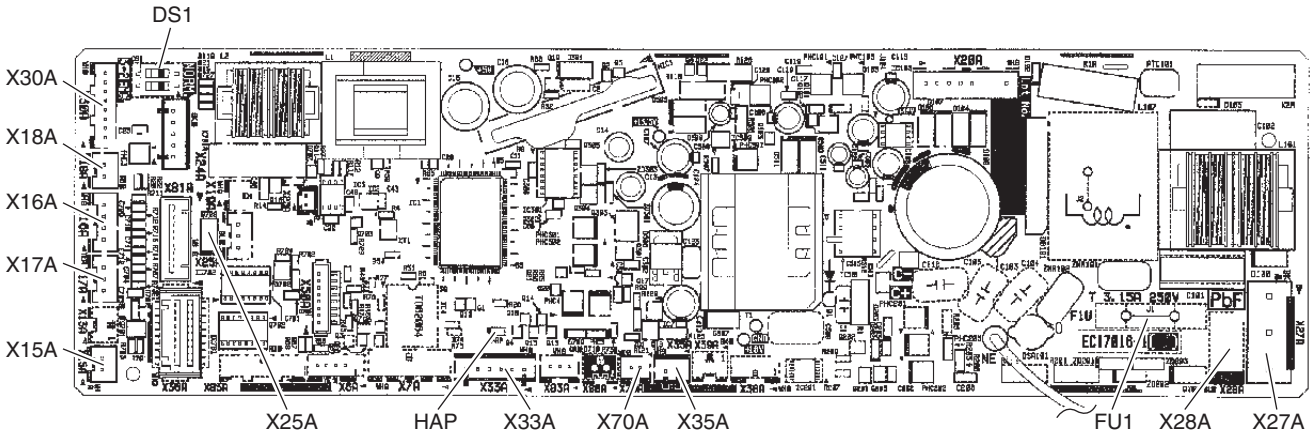


Note The symbols in the parenthesis are the names on the appropriate wiring diagram.

1.4 FDMR50/60/71TVMG

Control PCB (A1P)

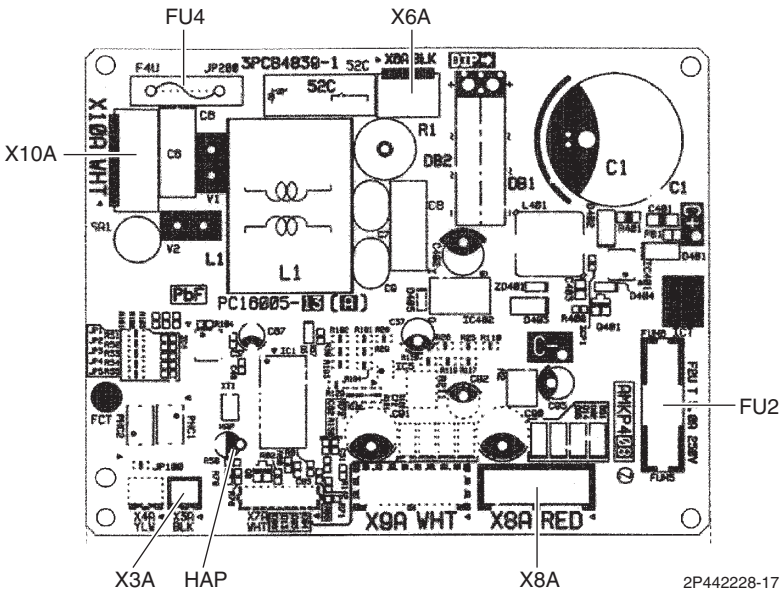
1)	X15A	Connector for float switch
2)	X16A	Connector for suction air thermistor
3)	X17A, X18A	Connector for indoor heat exchanger thermistor
4)	X25A	Connector for drain pump motor
5)	X27A	Connector for terminal block (for power supply)
6)	X28A	Connector for power supply wiring for option
7)	X30A	Connector for terminal block (for wired remote controller/remote controller receiver)
8)	X33A	Connector for wiring (option)
9)	X35A	Connector for wiring adaptor (option)
10)	X70A	Connector for indoor fan PCB (A2P)
11)	FU1 (F1U)	Fuse (3.15 A, 250 V)
12)	HAP	LED for service monitor (green)
13)	DS1	DIP switch for emergency



Note The symbols in the parenthesis are the names on the appropriate wiring diagram.

Indoor Fan PCB (A2P)

1)	X3A	Connector for control PCB (A1P)
2)	X6A	Connector for reactor
3)	X8A	Connector for indoor fan motor
4)	X10A	Connector for terminal block (for power supply)
5)	FU2 (F2U)	Fuse (5 A, 250 V)
6)	FU4 (F4U)	Fuse (6.3 A, 250 V)
7)	HAP	LED for service monitor (green)



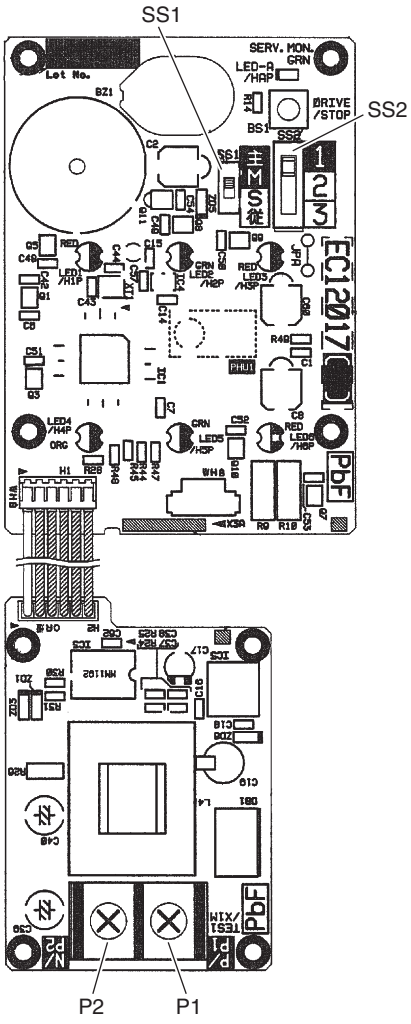
Note The symbols in the parenthesis are the names on the appropriate wiring diagram.

2. Wireless Remote Controller Receiver

2.1 BRC086A2R1 for FDMR Series

Display/Signal Receiver PCB

1)	SS1	MAIN/SUB setting switch Refer to page 198 for details.
2)	SS2	Address setting switch Refer to page 198 for details.
3)	P1, P2	Terminal for indoor unit control PCB (A1P)



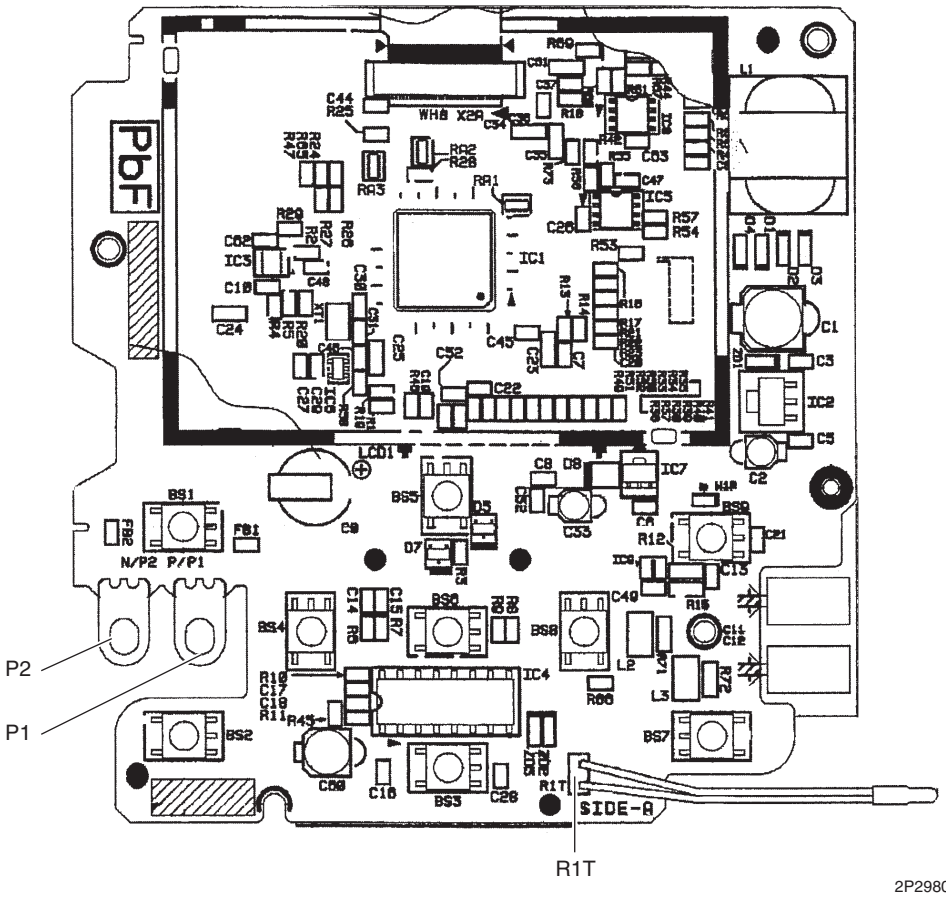
3P431101-1

3. Wired Remote Controller

3.1 BRC1E63 for FDMR Series

Wired Remote Controller PCB

1) P1, P2	Terminal for indoor unit
2) R1T	Room temperature thermistor



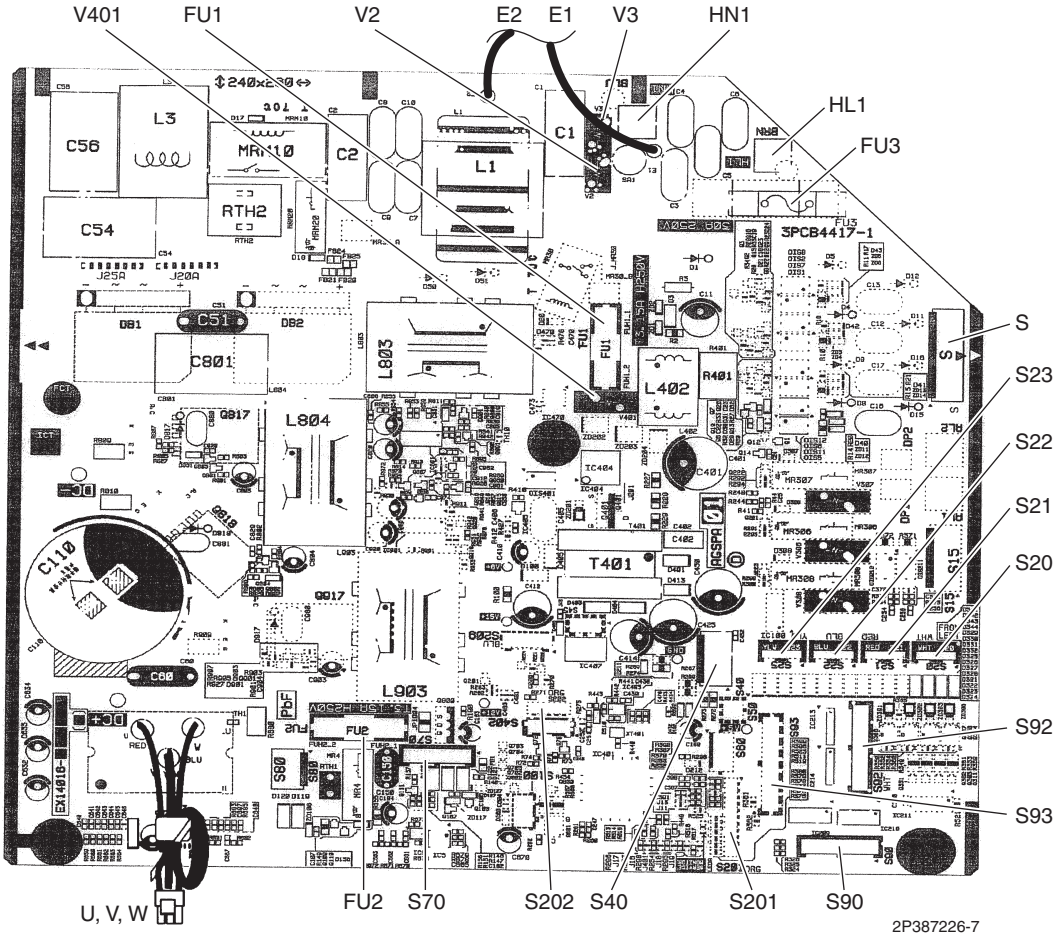
2P298037-11

4. Outdoor Unit

4.1 MKS50/65/80TVMG, MKB50/65TVMG

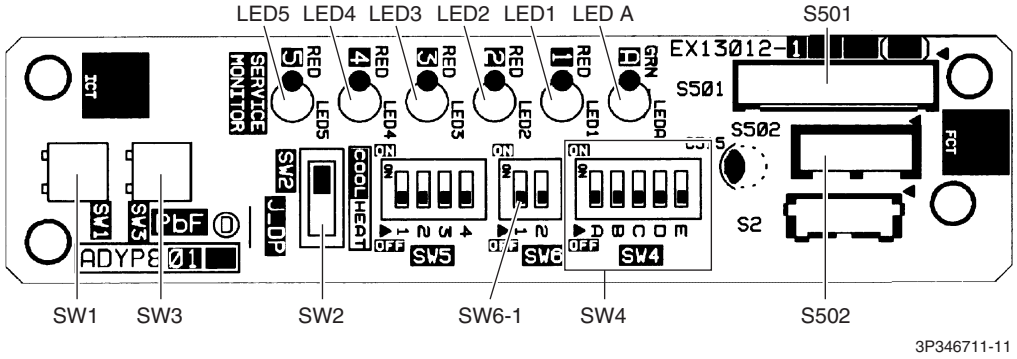
Main PCB (PCB1)

1)	S	Connector for terminal block (indoor - outdoor transmission)
2)	S20 (white)	Connector for electronic expansion valve coil A port
3)	S21 (red)	Connector for electronic expansion valve coil B port
4)	S22 (blue)	Connector for electronic expansion valve coil C port
5)	S23 (yellow)	Connector for electronic expansion valve coil D port (65/80 class only)
6)	S40	Connector for overload protector
7)	S70	Connector for outdoor fan motor
8)	S90	Connector for thermistors (outdoor temperature, outdoor heat exchanger, discharge pipe temperature)
9)	S92	Connector for gas pipe thermistor
10)	S93	Connector for liquid pipe thermistor
11)	S201, S202	Connector for service monitor PCB (PCB2)
12)	HL1, HN1	Connector for terminal strip (power supply)
13)	E1, E2	Connector for earth wire
14)	U, V, W	Connector for compressor
15)	FU1, FU2	Fuse (3.15 A, 250 V)
16)	FU3	Fuse (30 A, 250 V)
17)	V2, V3, V401	Varistor



Service Monitor PCB (PCB2)

1)	S501, S502	Connector for main PCB (PCB1)
2)	LED A	LED for service monitor (green)
3)	LED1, LED2, LED3, LED4, LED5	LED for service monitor (red)
4)	SW1	Forced cooling operation **ON/OFF** switch Refer to page 183 for details.
5)	SW2	Operation mode switch Refer to page 183 for details.
6)	SW3	Wiring error check switch Refer to page 185 for details.
7)	SW4	Priority room setting switch Refer to page 200 for details.
8)	SW6-1	NIGHT QUIET mode setting switch Refer to page 201 for details.

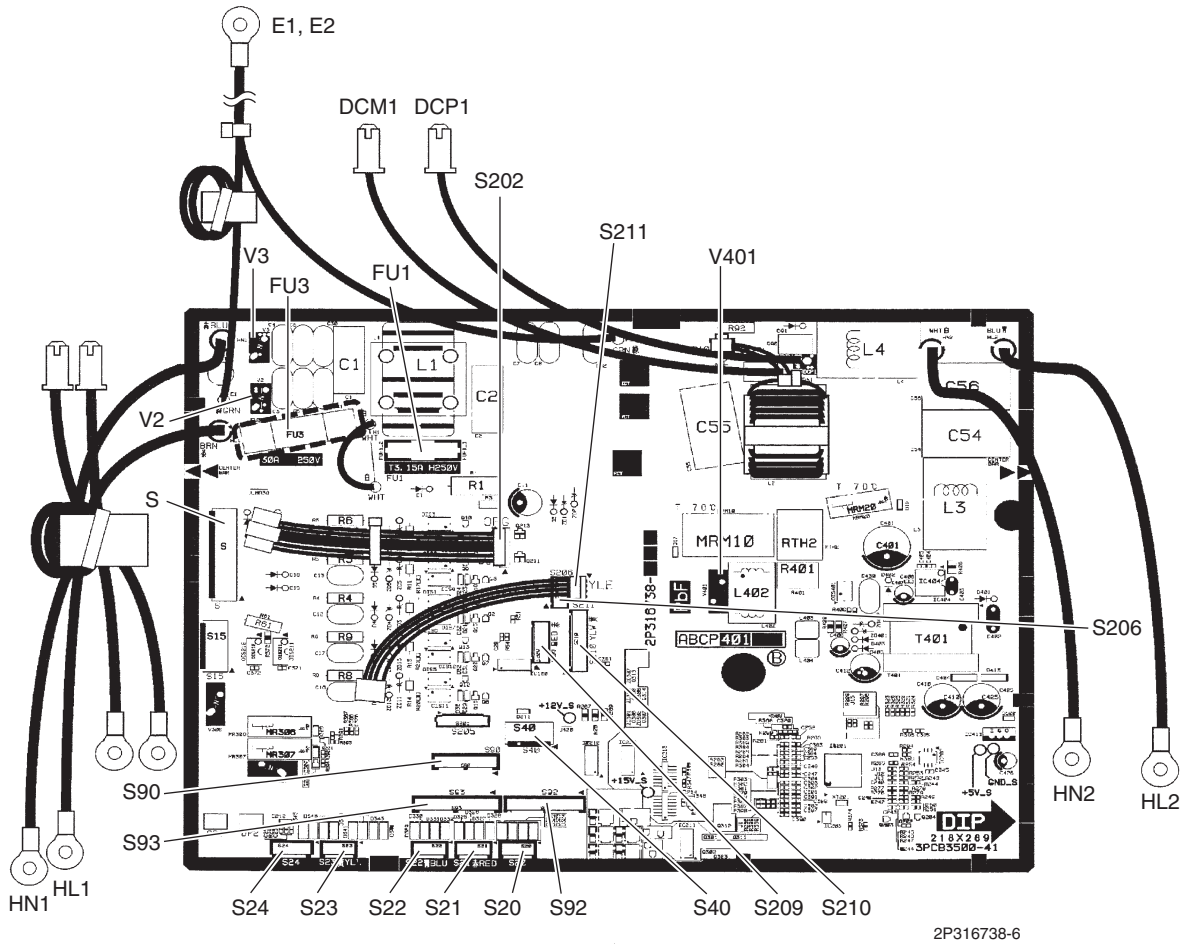


★ SW6-2 and all the switches of SW5 have no function. Keep them OFF.

4.2 MKS90TVMG

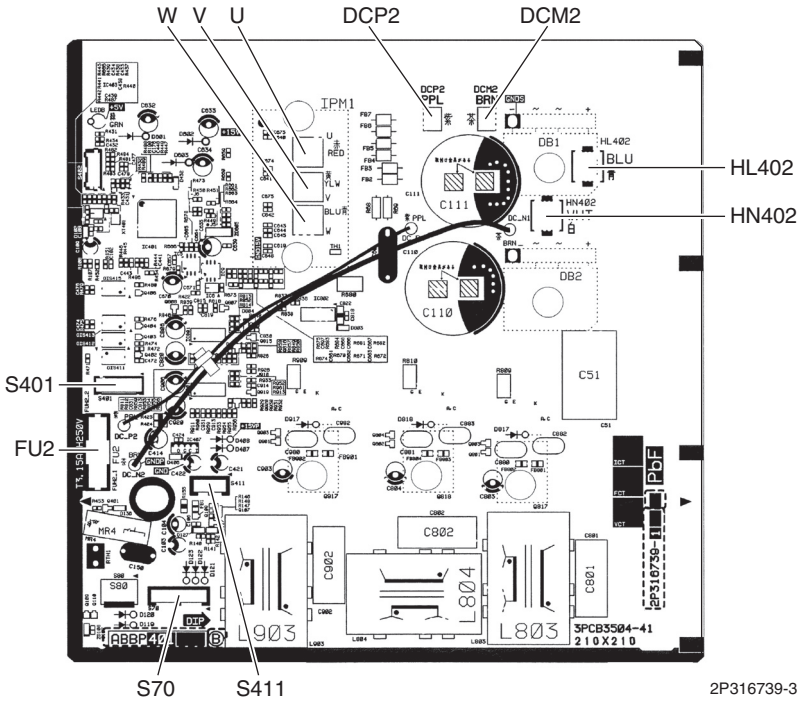
Main PCB (PCB1)

1)	S	Connector for terminal block (indoor - outdoor transmission)
2)	S20 (white)	Connector for electronic expansion valve coil A port
3)	S21 (red)	Connector for electronic expansion valve coil B port
4)	S22 (blue)	Connector for electronic expansion valve coil C port
5)	S23 (yellow)	Connector for electronic expansion valve coil D port
6)	S24 (white)	Connector for electronic expansion valve coil E port
7)	S40	Connector for overload protector
8)	S90	Connector for thermistors (outdoor temperature, outdoor heat exchanger, discharge pipe)
9)	S92	Connector for gas pipe thermistor
10)	S93	Connector for liquid pipe thermistor
11)	S202, S211	Connector for inverter PCB (PCB2)
12)	S206, S209, S210	Connector for service monitor PCB (PCB3)
13)	HL1, HN1	Connector for terminal block (power supply)
14)	HL2, HN2	Connector for inverter PCB (PCB2)
15)	DCP1, DCM1	Connector for inverter PCB (PCB2)
16)	E1, E2	Connector for earth wire
17)	FU1	Fuse (3.15 A, 250 V)
18)	FU3	Fuse (30 A, 250 V)
19)	V2, V3, V401	Varistor



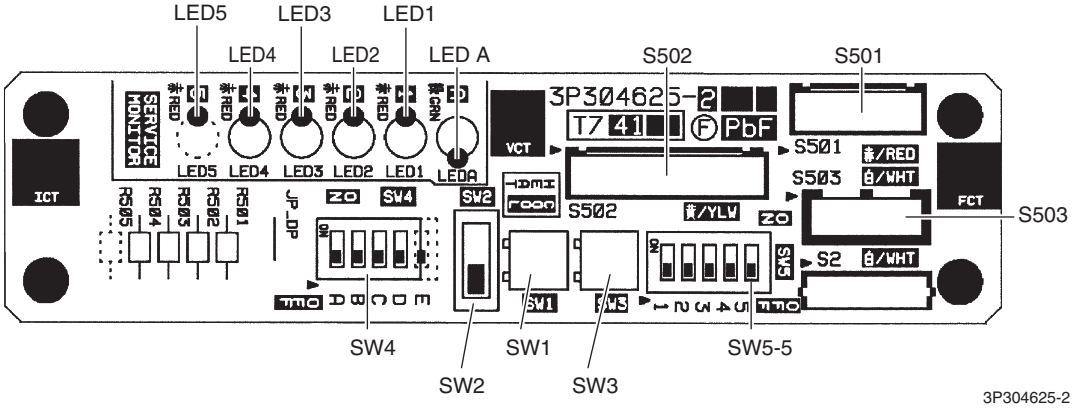
Inverter PCB (PCB2)

1)	S70	Connector for outdoor fan motor
2)	S401, S411	Connector for main PCB (PCB1)
3)	HL402, HN402	Connector for main PCB (PCB1)
4)	DCP2, DCM2	Connector for main PCB (PCB1)
5)	FU2	Fuse (3.15 A, 250 V)
6)	U, V, W	Connector for compressor



Service Monitor PCB (PCB3)

1)	S501, S502, S503	Connector for main PCB (PCB1)
2)	LED A	LED for service monitor (green)
3)	LED1, LED2, LED3, LED4, LED5	LED for service monitor (red)
4)	SW1	Forced cooling operation **ON/OFF** switch Refer to page 183 for details.
5)	SW2	Operation mode switch Refer to page 183 for details.
6)	SW3	Wiring error check switch Refer to page 185 for details.
7)	SW4	Priority room setting switch Refer to page 200 for details.
8)	SW5-5	NIGHT QUIET mode setting switch Refer to page 201 for details.



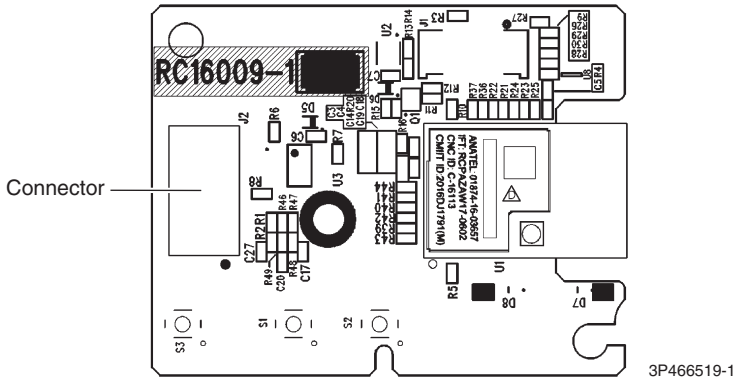
★ Keep other switches OFF on the SW5

5. Adaptor

5.1 BRP072C42 Wireless LAN Adaptor

Wireless LAN Adaptor PCB

1) Connector — Connector for adaptor PCB

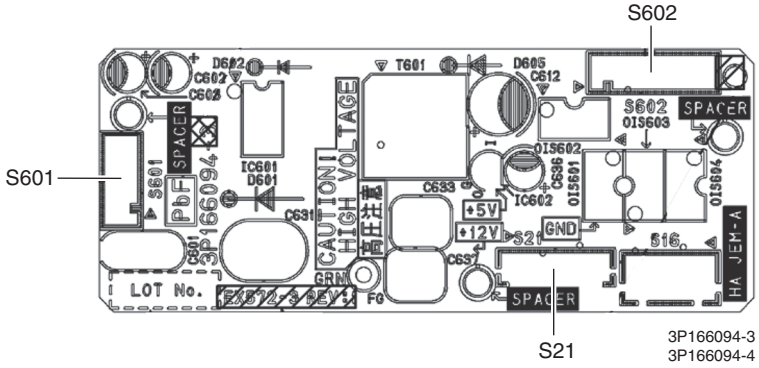


Notes Standard accessory for CTKS series, optional for CTKB series.

5.2 BRP067A42/BRP980B42 Remote Control PC-board Set

Adaptor PCB

1) S21 — Connector for wireless LAN adaptor PCB
2) S601, S602 — Connector for [S403] on indoor unit control PCB



Notes Standard accessory for CTKS series, optional for CTKB series.

Part 4
Functions and Control

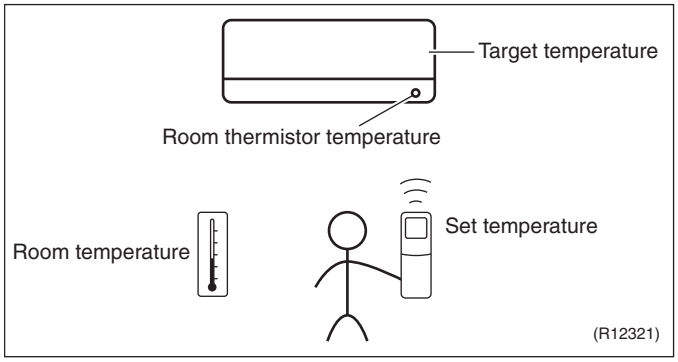
1. Wall Mounted and LSP Duct Type Functions

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 a 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. In practice, 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

Control Parameters

The frequency of the compressor is controlled by the following 2 parameters:

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

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 control the rotation speed of the compressor. The following explain the inverter principle:

Phase 1

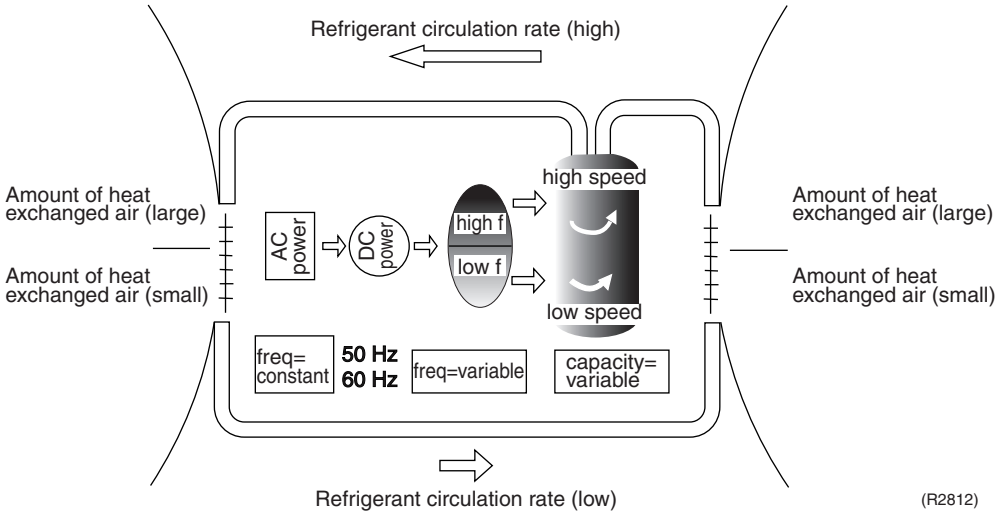
The supplied AC power source is converted into the DC power source for the present.

Phase 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 increase of refrigerant circulation. This leads to a larger amount of heat exchange per unit.
- When the frequency decreases, the rotation speed of the compressor decreases resulting in a decrease of refrigerant circulation. This leads to a smaller amount of heat exchange per unit.

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 load.
- Quick cooling
  The rotation speed of the compressor is increased when starting the cooling.
  This enables to reach the set temperature quickly.
- Comfortable air conditioning
  A fine adjustment is integrated to keep the room temperature constant.
- Energy saving cooling
  Once the set temperature is reached, the energy saving operation enables to maintain the room temperature at low power.

Frequency Limits

The following functions regulate the maximum frequency:

- Compressor protection function. Refer to page 79.
- Discharge pipe temperature control. Refer to page 80.
- Input current control. Refer to page 81.
- Freeze-up protection control. Refer to page 82.

Forced Cooling Operation

Refer to page 183 for details.

1.3 Airflow Direction Control

Applicable Models

CTKS25/35/50/60/71TVMG
CTKB25/35/50/60TVMG

Power-Airflow (Dual) Flap(s)

The large flap sends a large volume of air downward to the floor and provides an optimum control in cooling and dry operation.

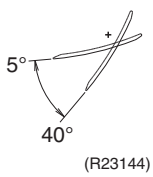
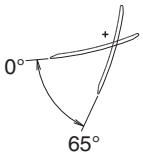
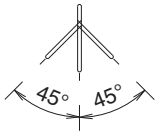
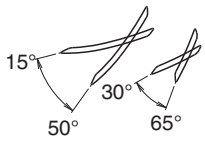
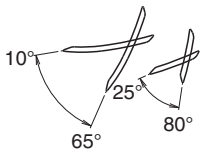
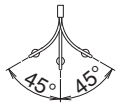
Cooling/Dry
During cooling or dry operation, the flap retracts into the indoor unit. Then, cool air can be blown far and distributed all over the room.

Wide-Angle Louvers

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

Auto-Swing

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

Series	Flap (up and down)		Louver (right and left)
	Cooling / Dry	Fan	
25/35/50 class	 (R23144)	 (R21050)	 (R24915)
60/71 class	 (R23145)	 (R21653)	 (R11404)

3-D Airflow

Alternative repetition of vertical and horizontal swing motions enables uniform air-conditioning of the entire room.

When the horizontal swing and vertical swing are both set to automatic operation, the airflow becomes 3-D airflow. The horizontal and vertical swing motions are alternated and the airflow direction changes in the order shown in the following diagram.

(1) The vertical blades (louvers) move from the right to the left.
(2) The horizontal blades (flaps) move downward.
(3) The vertical blades (louvers) move from the left to the right.
(4) The horizontal blades (flaps) move upward.

(R13554)

1.4 COMFORT AIRFLOW Operation

Applicable Models
CTKS25/35/50/60/71TVMG
CTKB25/35/50/60TVMG

Outline

The flaps are controlled not to blow the air directly at the people in the room.

The airflow will be in the upward direction while in cooling and dry operation, which will provide a comfortable wind that will not come in direct contact with people.

- The fan speed is controlled automatically.
- The latest command has the priority between COMFORT AIRFLOW and INTELLIGENT EYE operation.

1.5 Fan Speed Control for Indoor Unit

Outline

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.

Automatic Fan Speed Control

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

Step	Wall Mounted Type	LSP Duct Type
	Cooling	Cooling
LLL	⟺	⟺
LL		
L		
ML		
M		
MH		
H		
HH (POWERFUL)		

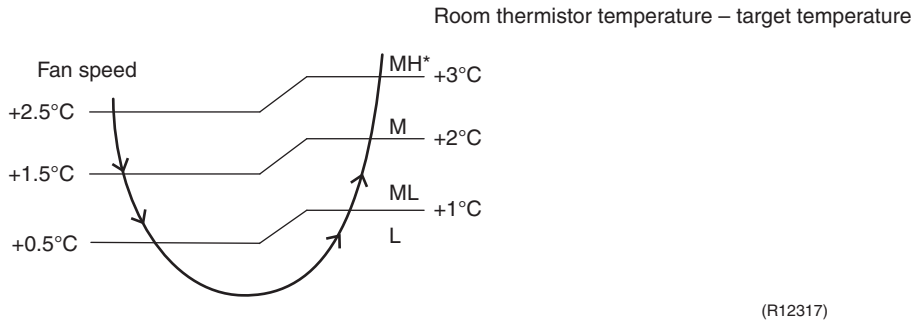
⟺ = The airflow rate is automatically controlled within this range when **FAN** button is set to automatic.

R4003616

■ **Cooling**

The following drawings explain the principle of fan speed control for cooling.

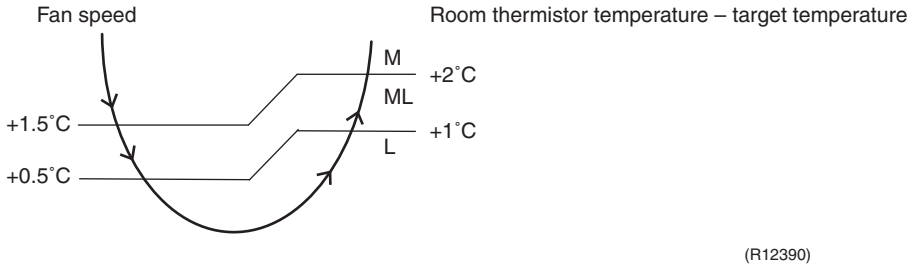
CTKS, CTKB Series



(R12317)

*The upper limit is M tap for 30 minutes from the operation start.

FDKS Series



(R12390)

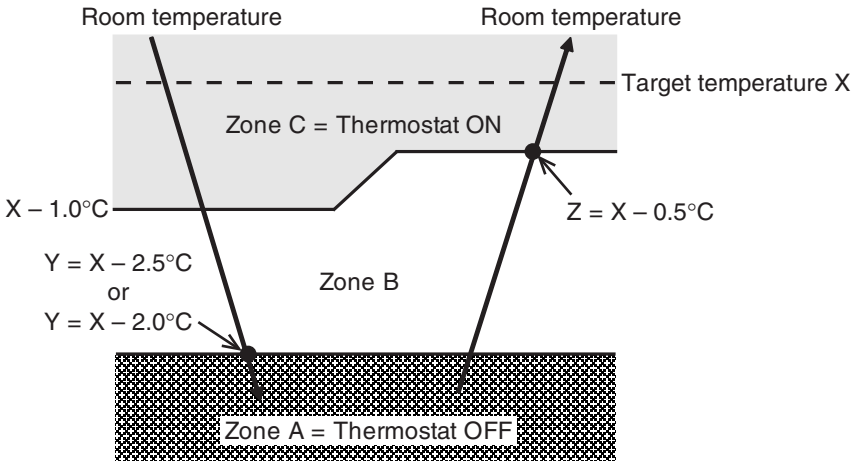
1.6 Program Dry Operation

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** setting buttons are inoperable.

Details

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 an appropriate capacity for each zone to maintain the temperature and humidity at a comfortable level.



(R22443)

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
18 ~ 23.5°C		X – 2.0°C	X – 0.5°C
17.5°C or less	18°C	X – 2.0°C = 16°C	X – 0.5°C = 17.5°C

★ Thermostat turns on also when the room temperature is in the zone B for 450 seconds.

1.7 Thermostat Control

Outline

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

Details

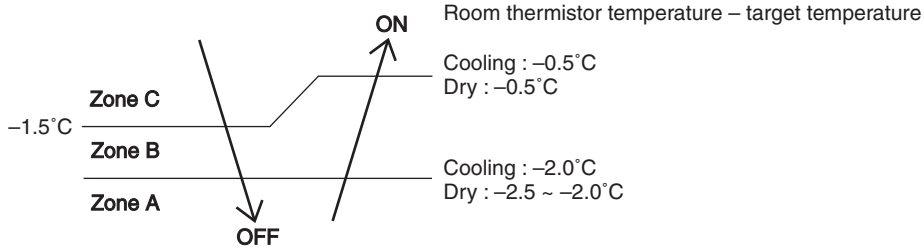
Thermostat OFF Condition

- The temperature difference is in the zone A.

Thermostat ON Conditions

- The temperature difference returns to the zone C after being in the zone A.
- The operation turns on in any zones except A.
- The temperature difference remains in zone B for the determined monitoring time. (Cooling : 10 minutes, Dry : 450 seconds)

Cooling/Dry



(R22110)

1.8 NIGHT SET Mode

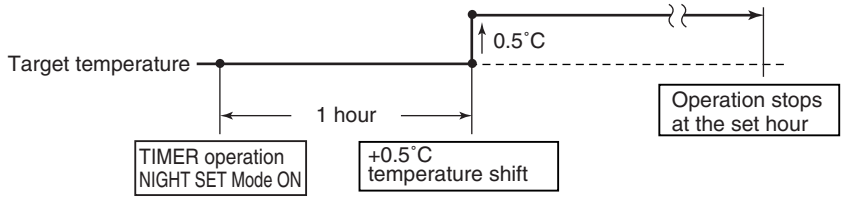
Outline

When the OFF TIMER is set, NIGHT SET mode is automatically activated. NIGHT SET mode keeps the airflow rate setting.

Details

NIGHT SET mode continues operation at the target temperature for the first one hour, then automatically raises the target temperature slightly. This prevents excessive cooling to ensure comfortable sleeping conditions, and also conserves electricity.

Cooling



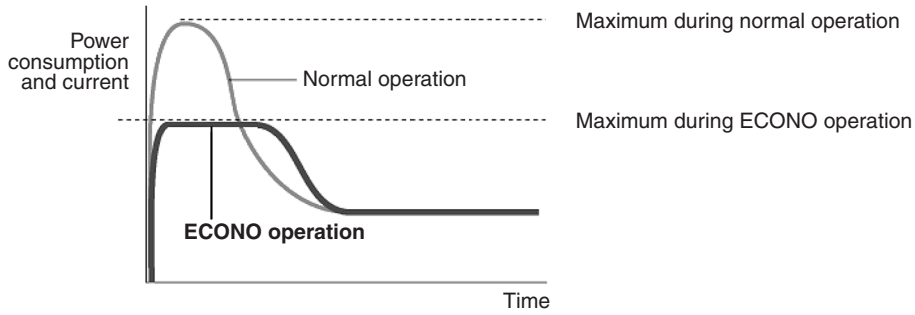
(R23826)

1.9 ECONO Operation

Applicable Models
CTKS25/35/50/60/71TVMG
CTKB25/35/50/60TVMG

Outline
ECONO operation reduces the maximum operating current and the power consumption. This operation is particularly convenient for energy-saving. It is also a major bonus when breaker capacity does not allow the use of multiple electrical devices and air conditioners. It can be easily activated by pressing **Econo/Quiet** button on the wireless remote controller.

Details
- When this function is activated, the maximum capacity also decreases.
- The remote controller can send the ECONO command when the unit is in cooling or dry operation. This function can only be set when the unit is running. To cancel the ECONO operation, press **Econo/Quiet** button several times until the ECONO symbol disappears.
- This function and POWERFUL operation cannot be used at the same time. The latest command has the priority.



(R22012)

1.10 HOME LEAVE Operation

Applicable Models
FDKS25/35EAVMB
FDKS25/35CAVMB
FDKS50/60CVMB

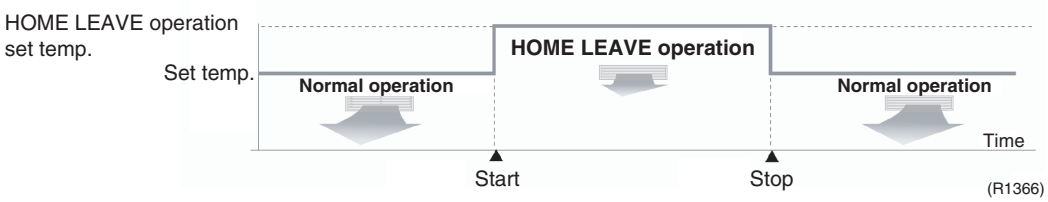
Outline
HOME LEAVE operation is a function that allows you to record your preferred set temperature and airflow rate. You can start your preferred operation mode simply by pressing **HOME LEAVE** button on the remote controller.

Details
1. Function Start
   The function starts when **HOME LEAVE** button is pressed in cooling operation (including POWERFUL operation), or while the operation is stopped. If **HOME LEAVE** button is pressed in POWERFUL operation, the POWERFUL operation is canceled and the HOME LEAVE function becomes effective.
   - **HOME LEAVE** button is ineffective in dry operation and fan operation.

2. Function Details
   A mark representing HOME LEAVE is indicated on the display of the remote controller. The indoor unit is operated according to the set temperature and airflow rate for HOME LEAVE which were recorded 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. Function End
   The function ends when **HOME LEAVE** button is pressed again during HOME LEAVE operation or when **POWERFUL** button is pressed.

Cooling



How to Set the Temperature and Airflow Rate

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

	Initial setting		Selectable range	
	Temperature	Airflow rate	Temperature	Airflow rate
Cooling	25°C	AUTO	18 ~ 32°C	5 steps, AUTO ,

1. Press **HOME LEAVE** button.
   Make sure is displayed on the remote controller display.
2. Adjust the temperature with ▲ or ▼ as you like.
3. Adjust the airflow rate with the FAN setting button as you like.

HOME LEAVE operation will run with these settings the next time you start HOME LEAVE operation. To change the recorded information, repeat steps 1 – 3.

Others

- The set temperature and airflow rate 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 airflow rate again for HOME LEAVE operation.
- The operation mode cannot be changed while HOME LEAVE operation is being used.

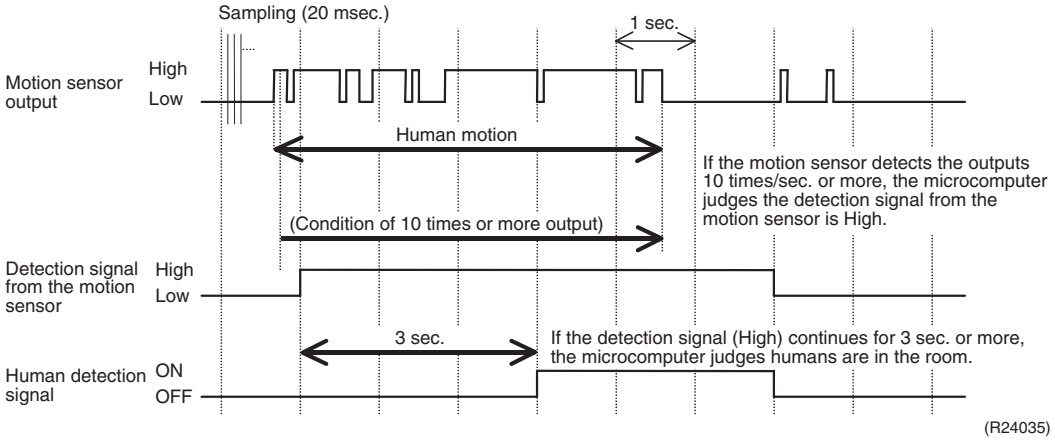
1.11 INTELLIGENT EYE Operation

Applicable Models CTKS25/35/50/60/71TVMG
CTKB50/60TVMG

Outline This function detects the presence of humans in the room with a motion sensor and changes the operation to energy saving operation when there is nobody.

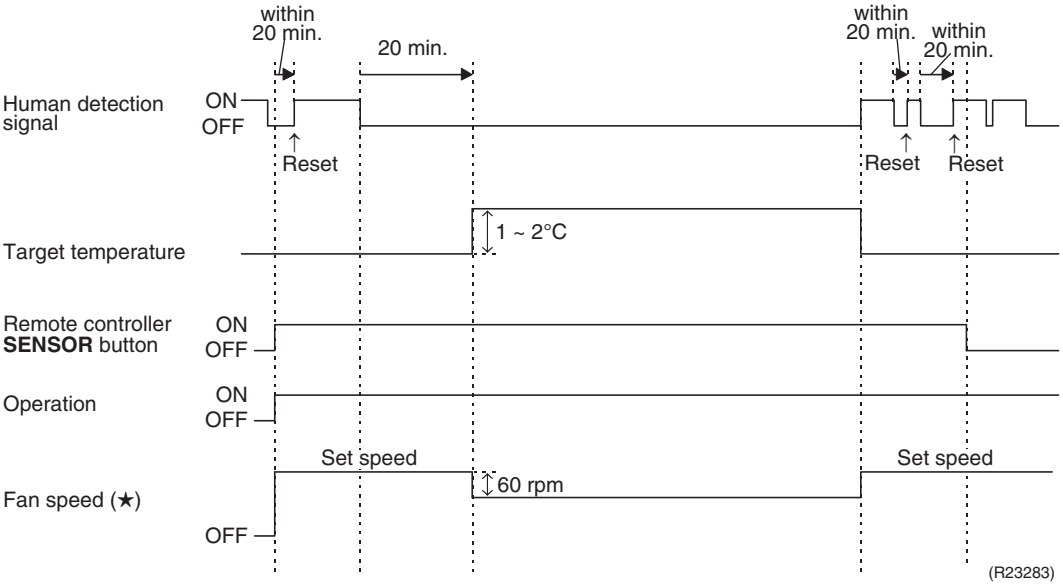
Details

1. INTELLIGENT EYE detection method



- The motion sensor detects human motion by receiving infrared rays and displays the pulse wave output.
- The microcomputer in the indoor unit carries out a sampling every 20 msec. If the motion sensor detects 10 times or more of the wave output in one second in total, and the High signal continues for 3 sec., the microcomputer judges humans are in the room as the human detection signal is ON.

2. Motions (in cooling)

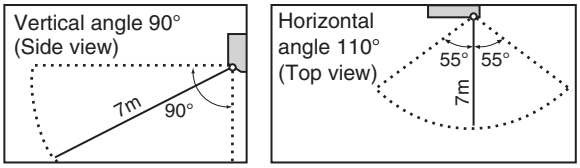


★ In FAN operation, the fan speed is reduced by 60 rpm when no one is in the area.

- When there is no signal from the motion sensor in 20 minutes, the microcomputer judges that nobody is in the room and operates the unit at a temperature shifted from the target temperature. (Cooling/Dry: 1 ~ 2°C higher)

Note(s) For dry operation, the temperature cannot be set with a remote controller, but the target temperature is shifted internally.

- Application range is as follows.



(R25176)

- The sensor may not detect moving objects further than 7 m away. (Please see the application range)
- Sensor detection sensitivity changes according to the indoor unit location, the speed of passers-by, temperature range, etc.
- The sensor could also mistakenly detect pets, sunlight, fluttering curtains and light reflected off of mirrors as passers-by.
- INTELLIGENT EYE operation will not switch on during POWERFUL operation.
- NIGHT SET mode will not switch on during use of INTELLIGENT EYE operation.

1.12 POWERFUL Operation

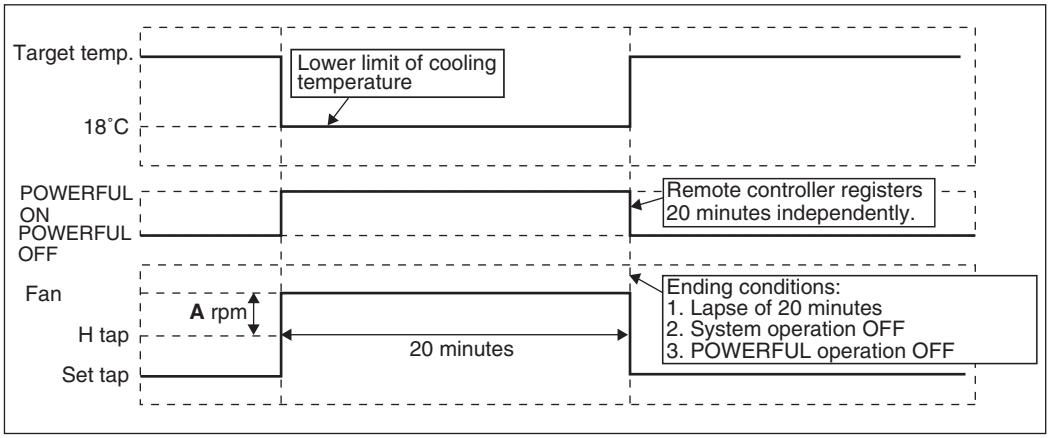
Outline

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

Details

When **POWERFUL** button is pressed, the fan speed and target temperature are converted to the following states for 20 minutes.

Ex: POWERFUL operation in cooling



(R24808)

Operation mode	Fan speed	Target temperature
COOL	H tap + **A** rpm	18°C
DRY	Dry rotating speed + **A** rpm	Lowered by 2 ~ 2.5°C
FAN	H tap + **A** rpm	—

A = 40 ~ 80 rpm (depending on the model)

Note

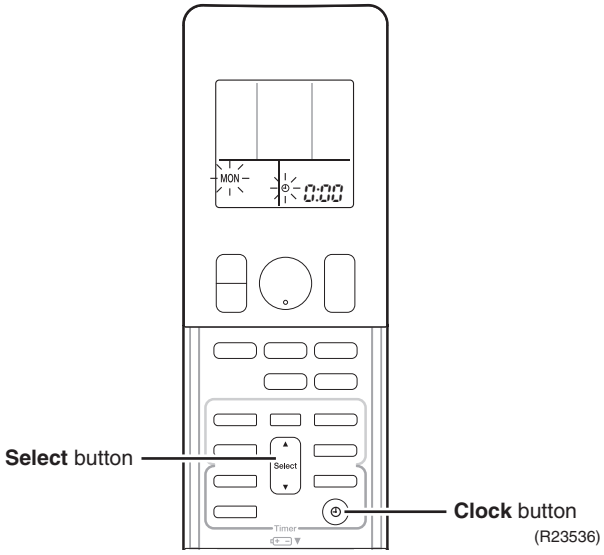
POWERFUL operation cannot be used together with ECONO, COMFORT AIRFLOW, or OUTDOOR UNIT QUIET operation.

1.13 Clock Setting

ARC466 Series

The clock can be set by taking the following steps:

1. Press **Clock** button.
   → 0:00 is displayed, then **MON** and ⏲ blink.
2. Press **Select** ▲ or **Select** ▼ button to set the clock to the current day of the week.
3. Press **Clock** button.
   → ⏲ blinks.
4. Press **Select** ▲ or **Select** ▼ button to set the clock to the present time.
   Holding down **Select** ▲ or **Select** ▼ button rapidly increases or decreases the time display.
5. Press **Clock** button to set the clock. Point the remote controller at the indoor unit when pressing the button.
   →: blinks and clock setting is completed.

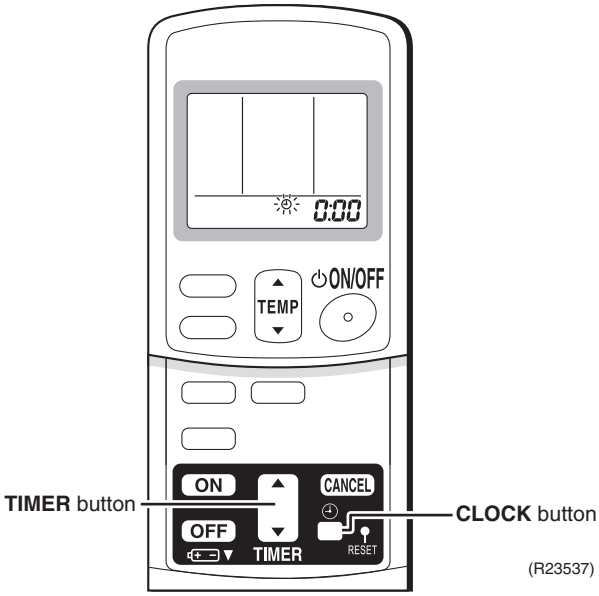


(R23536)

ARC433 Series

The clock can be set by taking the following steps:

1. Press **CLOCK** button.
   → 0:00 is displayed and ⏲ blinks.
2. Press **TIMER ▲** or **TIMER ▼** button to adjust the clock to the present time.
   Holding down **TIMER ▲** or **TIMER ▼** button rapidly increases or decreases the time display.
3. Press **CLOCK** button again.
   →: blinks and clock setting is completed.



1.14 WEEKLY TIMER Operation

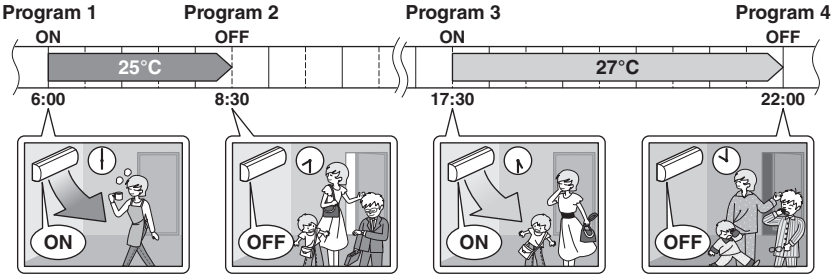
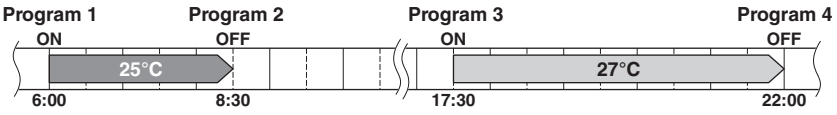
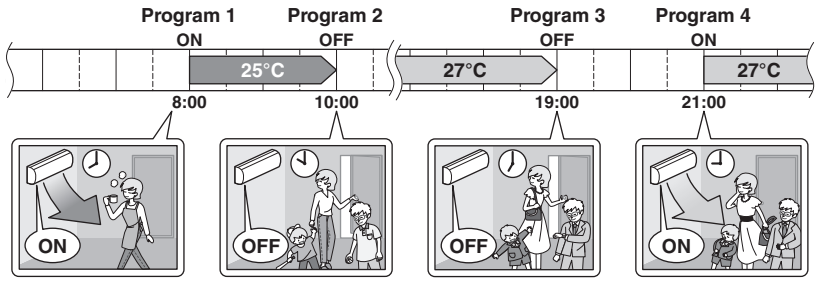
Applicable Models CTKS25/35/50/60/71TVMG
CTKB25/35/50/60TVMG

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

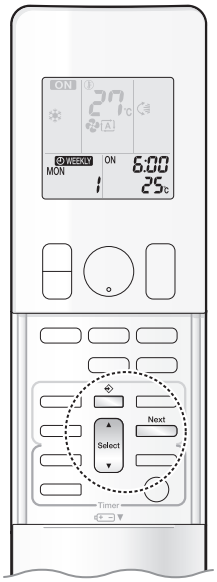
Details

■ Setting example of the WEEKLY TIMER

The same timer settings are used from Monday through Friday, while different timer settings are used for the weekend.

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

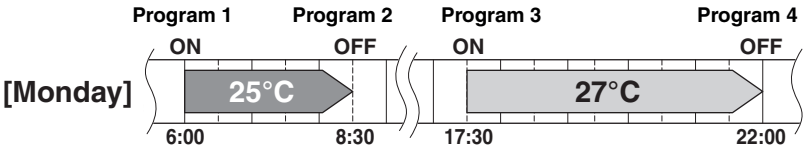
- Up to 4 reservations per day and 28 reservations per week can be set using the WEEKLY TIMER. The effective use of the copy mode simplifies timer programming.
- The use of ON-ON-ON-ON settings, for example, makes it possible to schedule operating mode and set temperature changes. Furthermore, by using 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 you forget to turn it off.



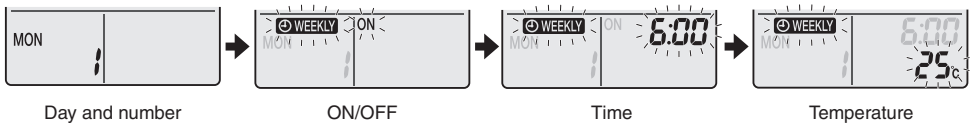
■ To use WEEKLY TIMER operation

Setting mode

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



Setting Displays



1. Press ◈ .

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

2. Press Select to select the desired day of the week and reservation number.

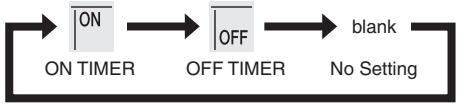
• Pressing Select changes the reservation number and the day of the week.

3. Press Next .

• The day of the week and reservation number will be set.
• " WEEKLY " and " ON " blink.

4. Press Select to select the desired mode.

• Pressing Select changes the " ON " or " OFF " setting in sequence.

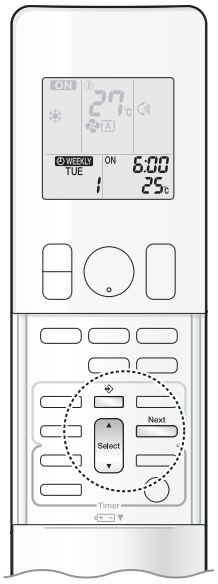


Pressing Select puts the sequence in reverse.

• In case the reservation has already been set, selecting " blank " deletes the reservation.
• Proceed to **STEP *9*** if " blank " is selected.
• To return to the day of the week and reservation number setting, press Back.

5. Press Next .

• The ON/OFF TIMER mode will be set.
• " WEEKLY " and the time blink.



6. Press Select to select the desired time.

- The time can be set between 0:00 and 23:50 in 10-minute intervals.
- To return to the ON/OFF TIMER mode setting, press Back.
- Proceed to **STEP *9*** when setting the OFF TIMER.

7. Press Next.

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

8. Press Select to select the desired temperature.

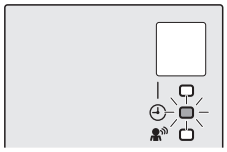
- The temperature can be set between 10°C and 32°C.
  COOL: The unit operates at 18°C even if it is set to 10 to 17°C.
- To return to the time setting, press Back.
- The set temperature is only displayed when the mode setting is on.

9. Press Next.

- The temperature will be set and go to the next reservation setting.
- The temperature is set while in ON TIMER operation, and the time is set while in OFF TIMER operation.
- The next reservation screen will appear.
- To continue further settings, repeat the procedure from **STEP *4***.

10. Press to complete the setting.

- Be sure to direct the remote controller toward the indoor unit and check for a receiving tone and blinking of the OPERATION lamp.
- " WEEKLY " appears on the LCD and WEEKLY TIMER operation is activated.
- The TIMER lamp lights orange.



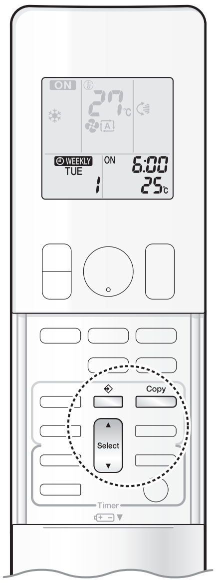
Display

- A reservation made once can be easily copied and the same settings used for another day of the week. Refer to **Copy mode**.

NOTE

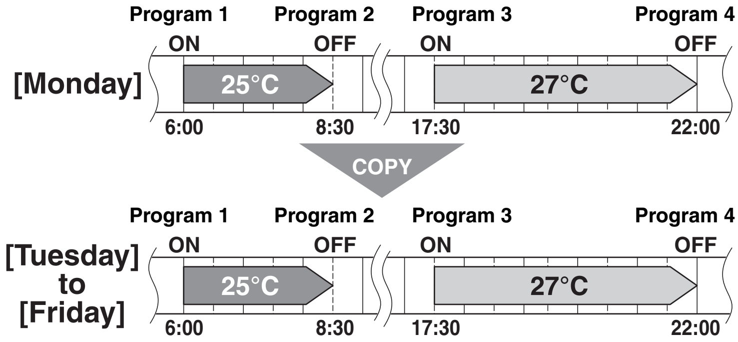
Notes on WEEKLY TIMER operation

- Do not forget to set the clock on the remote controller first.
- The day of the week, ON/OFF TIMER mode, time and set temperature (only for ON TIMER mode) can be set with the WEEKLY TIMER. Other settings for the ON TIMER are based on the settings just before the operation.
- WEEKLY TIMER and ON/OFF TIMER operation cannot be used at the same time. The ON/OFF TIMER operation has priority if it is set while WEEKLY TIMER is still active. The WEEKLY TIMER will enter the standby state, and " WEEKLY " will disappear from the LCD. When the ON/OFF TIMER is up, the WEEKLY TIMER will automatically become active.
- Only the time and set temperature with the WEEKLY TIMER are sent with the . Set the WEEKLY TIMER only after setting the operation mode, the airflow rate and the airflow direction ahead of time.
- Turning off the circuit breaker, power failure, and other similar events will render operation of the indoor unit's internal clock inaccurate. Reset the clock.
- Back can be used only for the time and temperature settings. It cannot be used to go back to the reservation number.

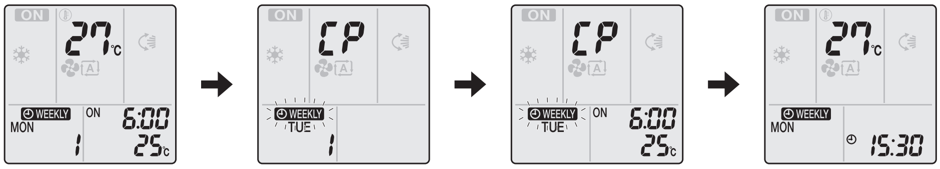


Copy mode

- A reservation made once can be copied to another day of the week. The whole reservation of the selected day of the week will be copied.



Setting Displays



Confirmation → Copy → Paste → Normal

1. **Press .**

2. **Press Select to confirm the day of the week to be copied.**

3. **Press Copy .**

- The whole reservation of the selected day of the week will be copied.

4. **Press Select to select the destination day of the week.**

5. **Press Copy .**

- 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*.

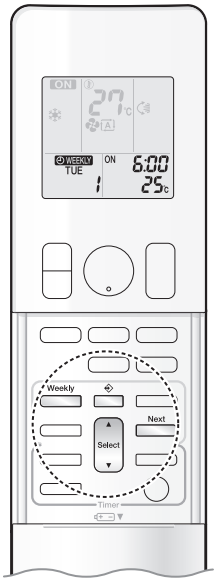
6. **Press to complete the setting.**

- " WEEKLY " appears on the LCD and WEEKLY TIMER operation is activated.

NOTE

Note on COPY MODE

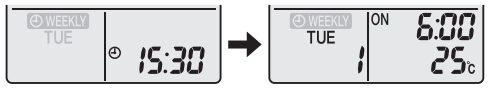
- The entire reservation of the source day of the week is copied in the copy mode.
  In the case of making a reservation change for anyday of the week individually after copying the content of weekly reservations, press and change the settings in the steps of **Setting mode** .



■ Confirming a reservation

• The reservation can be confirmed.

Setting Displays



Normal Confirmation

1. Press ◈ .

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

2. Press Select to select the day of the week and the reservation number to be confirmed.

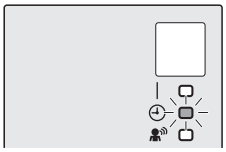
• Pressing Select displays the reservation details.

• To change the confirmed reserved settings, select the reservation number and press Next. The mode is switched to setting mode. Proceed to **Setting mode** **STEP *4***.

3. Press ◈ to exit the confirmation mode.

• " WEEKLY " appears on the LCD and WEEKLY TIMER operation is activated.

• The TIMER lamp lights orange.



Display

■ To deactivate WEEKLY TIMER operation

Press Weekly while " WEEKLY " is displayed on the LCD.

• " WEEKLY " disappears from the LCD.

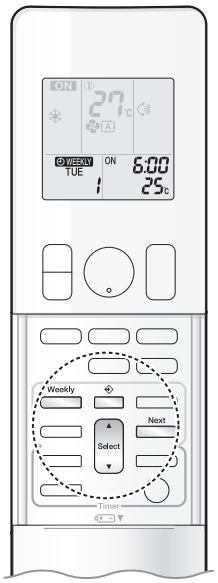
• The TIMER lamp goes off.

• To reactivate the WEEKLY TIMER operation, press Weekly again.

• If a reservation deactivated with Weekly is activated once again, the last reservation mode will be used.

NOTE

• If not all the reservation settings are reflected, deactivate the WEEKLY TIMER operation once. Then press Weekly again to reactivate the WEEKLY TIMER operation.



■ To delete a reservation

An individual reservation

1. Press ◈.

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

2. Press Select to select the day of the week and the reservation number to be deleted.

3. Press Next.

- " WEEKLY " and " ON " or " OFF " blink.

4. Press Select until no icon is displayed.

- Pressing Select changes the ON/OFF TIMER mode in sequence.
- Selecting "blank" will cancel any reservation you may have.

ON TIMER → OFF TIMER → blank (No Setting)

Pressing Select puts the sequence in reverse.

5. Press Next.

- The selected reservation will be deleted.

6. Press ◈.

- If there are still other reservations, WEEKLY TIMER operation will be activated.

Reservations for each day of the week

- This function can be used for deleting reservations for each day of the week.
- It can be used while confirming or setting reservations.

1. Press ◈.

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

2. Press Select to select the day of the week to be deleted.

3. Hold Weekly for about 5 seconds.

- The reservation of the selected day of the week will be deleted.

4. Press ◈.

- If there are still other reservations, WEEKLY TIMER operation will be activated.

All reservations

Hold Weekly for about 5 seconds with the normal display.

- Be sure to direct the remote controller toward the indoor unit and check for a receiving tone.
- This operation cannot be used for the WEEKLY TIMER setting display.
- All reservations will be deleted.

1.15 Other Functions

1.15.1 Signal Receiving Sign

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

1.15.2 Indoor Unit ON/OFF Switch

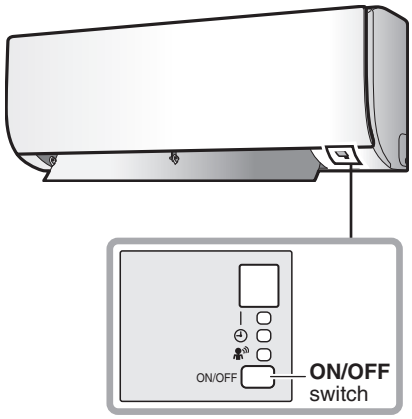
Indoor unit **ON/OFF** switch is provided on the display of the unit.

- Press **ON/OFF** switch once to start operation. Press once again to stop it.
- **ON/OFF** switch is useful when the remote controller is missing or the battery has run out.
- The operation mode refers to the following table.

Operation mode	Temperature setting	Airflow rate
COOL	22°C	Automatic

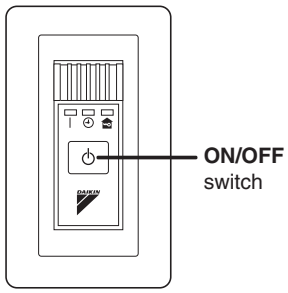
- In the case of multi system operation, there are times when the unit does not activate with **ON/OFF** switch.

CTKS, CTKB Series



R4000353

FDKS Series



R4003597

1.15.3 Auto-restart Function

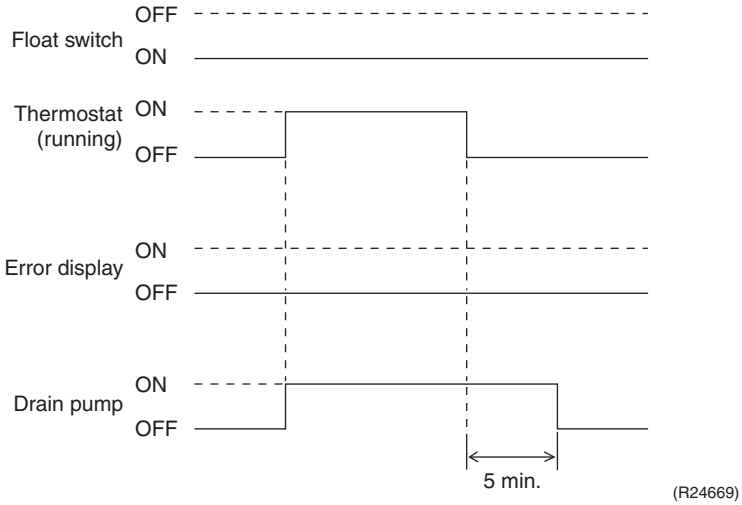
If a power failure (even a momentary one) occurs during the operation, the operation restarts automatically in the same conditions as before when the power supply is restored to the conditions prior to the power failure.

Note It takes 3 minutes to restart the operation because 3-minute standby function is activated.

2. MSP Duct Type Functions

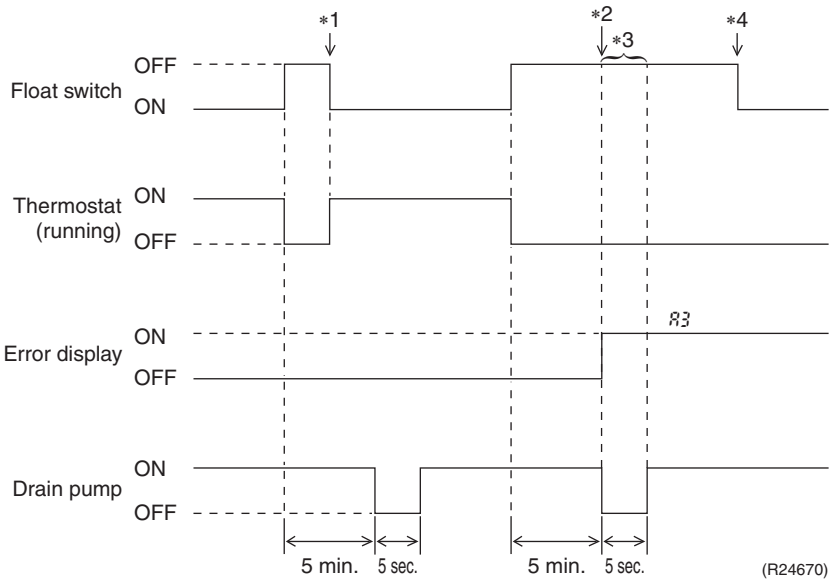
2.1 Drain Pump Control

Normal Operation



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

If Float Switch is ON with Thermostat ON in Cooling Operation

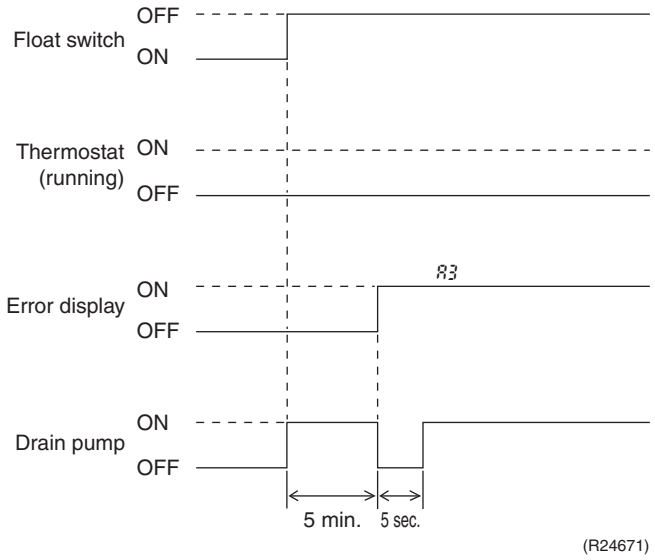


- When the float switch turns OFF, the thermostat turns OFF simultaneously.
- After the thermostat turns OFF, the drain pump continues to operate for another 5 minutes.

Notes:

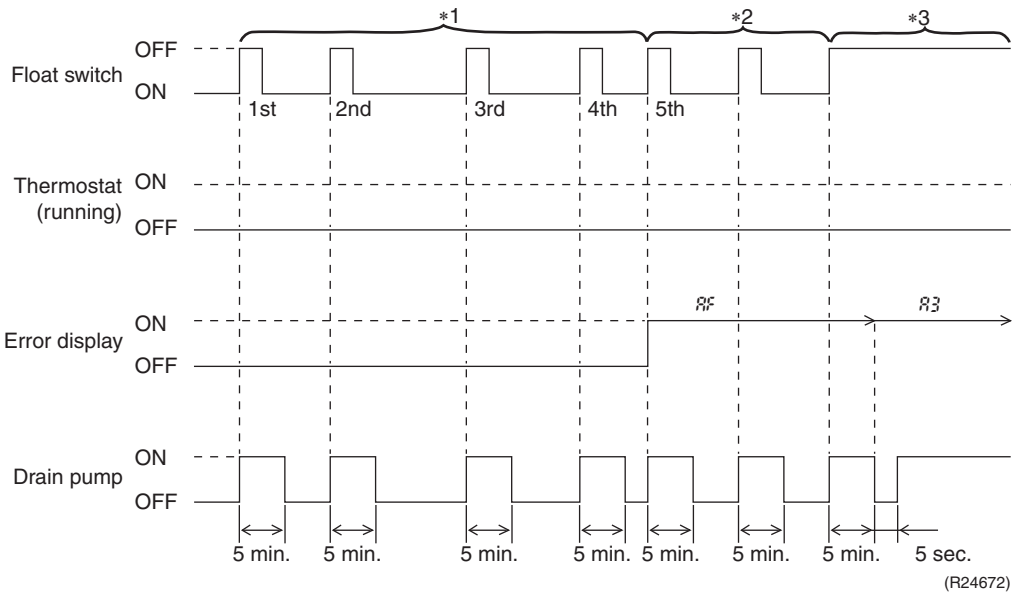
1. If the float switch turns ON again during the residual operation of the drain pump, cooling operation also turns on again (thermostat ON).
2. If the float switch remains OFF even after the residual operation of the drain pump has ended, the error code A3 is displayed on the remote controller.
3. The drain pump turns OFF once residual operation has ended, then turns ON again after 5 seconds.
4. After A3 is displayed and the unit comes to an abnormal stop, the thermostat will remain OFF even if the float switch turns ON again.

If Float Switch is ON with Thermostat OFF in Cooling Operation



- When the float switch turns OFF, the drain pump turns ON simultaneously.
- If the float switch remains OFF even after the residual operation of the drain pump has ended, the error code R3 is displayed on the remote controller.
- The drain pump turns OFF once residual operation has ended, then turns ON again after 5 seconds.

If Float Switch Turns ON and OFF Continuously, or Float Switch Turns ON While RF Displayed



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

Notes:

1. If the float switch continues to turn OFF and ON 5 times consecutively, it is judged as a drain system error and the error code RF is displayed on the remote controller.
2. The drain pump continues to turn ON/OFF in accordance with the float switch ON/OFF even after RF is displayed on the remote controller.
3. While the error code RF is displayed, if the float switch remains OFF even after the residual operation of the drain pump has ended, the error code R3 will be displayed on the remote controller.

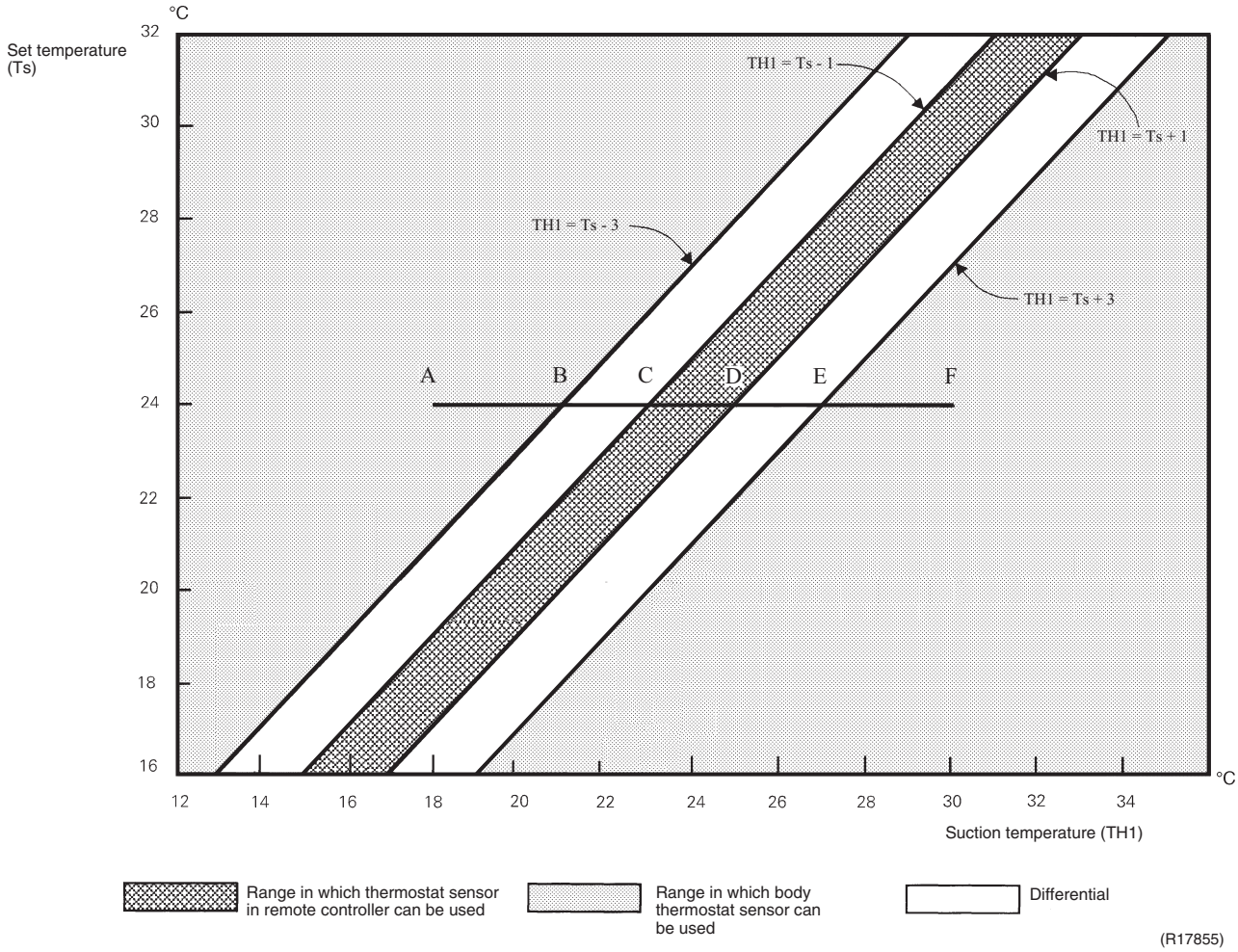
2.2 Thermostat Sensor in Wired Remote Controller

Outline

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

Cooling

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



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

(This example also assumes there are several other air conditioners, and the suction temperature changes even when the thermostat sensor is off.)
Body thermostat sensor is used for temperatures from 18°C to 23°C (A → C).
Wired remote controller thermostat sensor is used for temperatures from 23°C to 27°C (C → E).
Body thermostat sensor is used for temperatures from 27°C to 30°C (E → F).

■ **Assuming suction temperature has changed from 30°C to 18°C (F → A):**

Body thermostat sensor is used for temperatures from 30°C to 25°C (F → D).
Wired remote controller thermostat sensor is used for temperatures from 25°C to 21°C (D → B).
Body thermostat sensor is used for temperatures from 21°C to 18°C (B → A).

2.3 Freeze Prevention Control

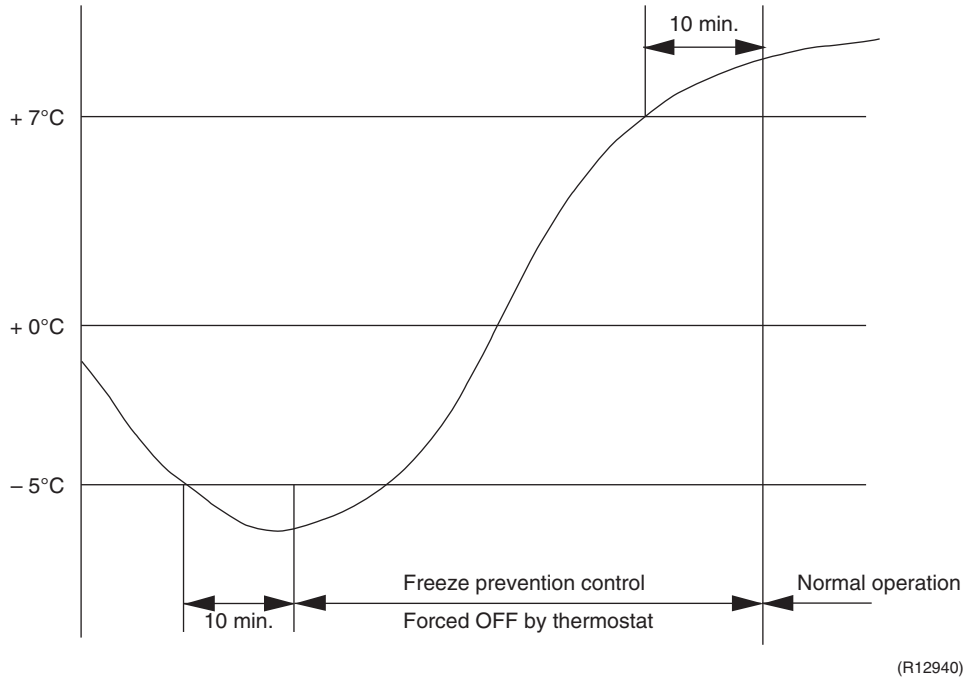
Outline

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

Details

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

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



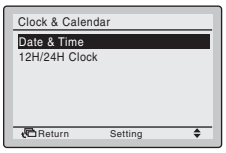
2.4 Clock and Calendar Setting

BRC1E63

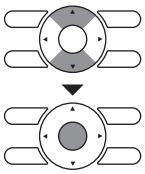
■ Date and Time Setting

Operation

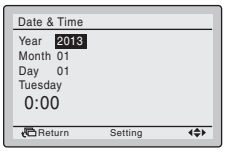
1



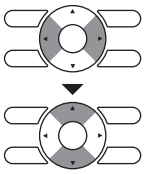
- Press the Menu/Enter button and display the Clock & Calendar screen.
- Press "▼▲" buttons to select **Date & Time**. Press Menu/Enter button to display the Date & Time screen.



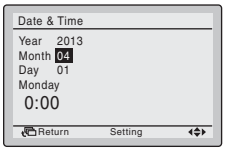
2



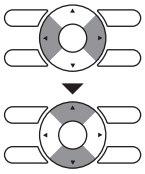
- Select "Year" with "◀▶" buttons. Change the year with "▼▲" buttons. Holding down the button causes the number to change continuously.



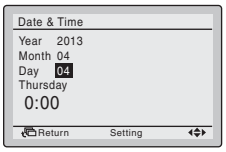
3



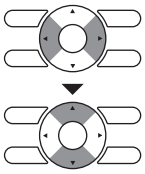
- Select "Month" with "◀▶" buttons. Change the month with "▼▲" buttons. Holding down the button causes the number to change continuously.



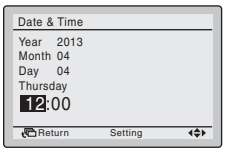
4



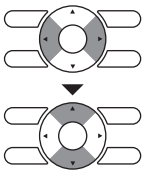
- Select "Day" with "◀▶" buttons. Change the day with "▼▲" buttons. Holding down the button causes the number to change continuously. Days of the week change automatically.



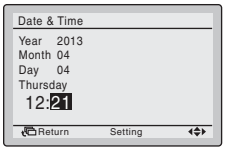
5



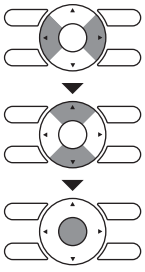
- Select "Hour" with "◀▶" buttons. Change the hour with "▼▲" buttons. Holding down the button causes the number to change continuously.



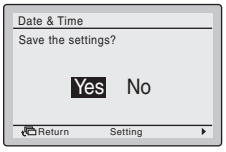
6



- Select "Minute" with "◀▶" buttons. Change the minute with "▼▲" buttons. Holding down the button causes the number to change continuously.
- Press Menu/Enter button. The confirmation screen will appear.

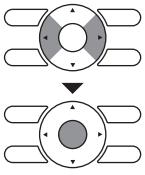


7



- Press "◀▶" button to select **Yes**. Press Menu/Enter button to confirm the clock and return to the Basic screen.

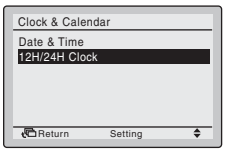
  * When setting the schedule, the display returns to the Schedule screen.



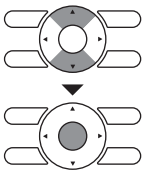
■ 12H/24H Clock Setting

Operation

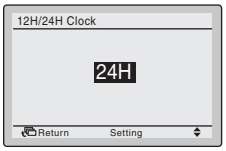
1



- Display the Clock & Calendar screen.
- Press "▼▲" buttons to select **12H/24H Clock** . Press Menu/Enter button to display the 12H/24H Clock screen.

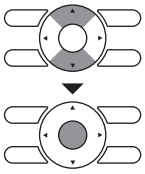


2

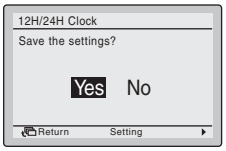


By default, the time display is set to the 24H format.

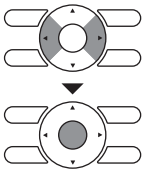
- Press "▼▲" buttons to select **12H** or **24H** .
- Press Menu/Enter button after selecting the item. The confirmation screen will appear.



3



- Press "◀▶" buttons to select **Yes**. Press the Menu/Enter button to confirm the 12H or 24H and return to the Main Menu screen.



Note(s) The items displayed on the menu screen differs depending on the indoor unit functions and wired remote controller models.

2.5 Schedule Timer Operation

Outline

With BRC1E63 Remote Controller

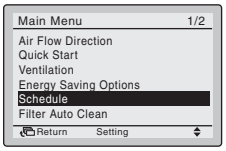
You can select when the operation starts and/or stops for each day of the week.
Up to 5 actions can be set for each day.
It is possible to program up to 3 different schedules.
The schedule timer will be disabled for days that have been set as a holiday.

Details

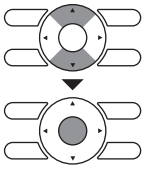
■ Display Method for Schedule Screen

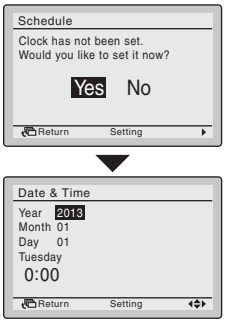
Operation The Schedule cannot be enabled when a centralized control equipment is connected.

1

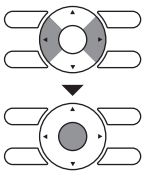


- Press the Menu/Enter button and display the Main Menu screen.
- Press "▼▲" buttons to select **Schedule** . Press Menu/Enter button to display the Schedule screen.

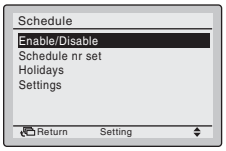




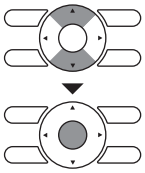
- Before setting the schedule, the clock must be set.
- If the clock has not been set, a screen like the one on the left will appear. Press "◀▶" buttons to select **Yes** and press Menu/Enter button.
- The Date & Time screen will appear.
- Set the current year, month, day, and time.



2



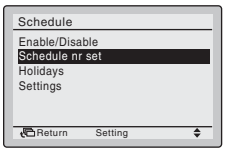
- Press "▼▲" buttons to select the desired item on the Schedule screen and press Menu/Enter button.



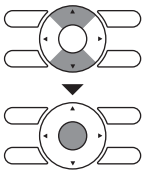
■ Schedule Number Set

Operation This function can be stored in the schedule of 3 patterns.

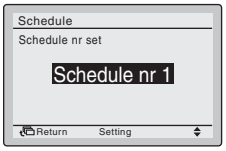
1



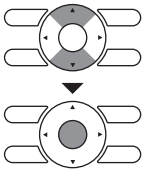
- Press the Menu/Enter button and display the Schedule screen.
- Press "▼▲" buttons to select **Schedule nr set**. Press Menu/Enter button to display the Schedule nr set screen.



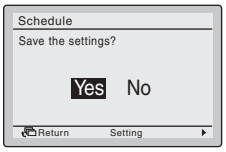
2



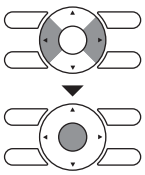
- Press "▼▲" buttons to select **Schedule nr 1**, **Schedule nr 2**, or **Schedule nr 3**.
  Press Menu/Enter button after selecting the item. The confirmation screen will appear.



3



- Press "◀▶" buttons to select **Yes**.
  Press the Menu/Enter button to confirm the daily patterns in the schedule and return to the Basic screen.

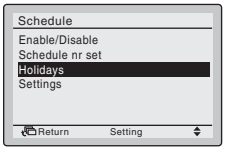


■ Holidays

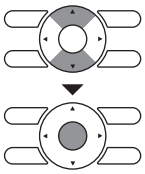
The schedule timer will be disabled for days that have been set as holiday.

Operation

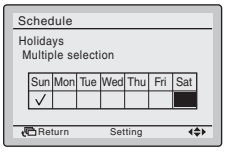
1



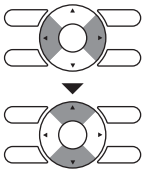
- Press the Menu/Enter button and display the Schedule screen.
- Press "▼▲" buttons to select **Holidays**.
  Press Menu/Enter button to display the Holiday setting screen.



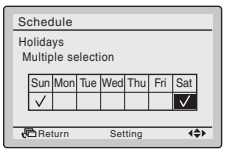
2



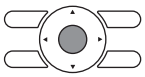
- Press "◀▶" buttons to select the desired day.
  Press "▼▲" buttons to display "✓" to make the holiday settings.
  Press "▼▲" buttons to switch the setting between set and release.
  Multiple days can be selected as holidays.
  Note: To enable the schedule timer for the day selected as a holiday, the holiday setting must be released.



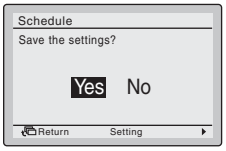
3



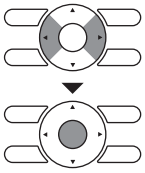
- To complete the holiday settings, press Menu/Enter button.
  The confirmation screen will appear.

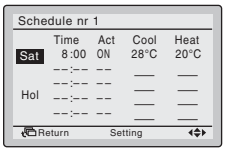


4



- Press "◀▶" button to select **Yes**.
  Press Menu/Enter button to confirm the holiday settings and return to the Basic screen.





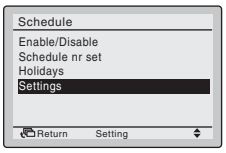
Note:

- Holidays that are set will be displayed on the Schedule screen.

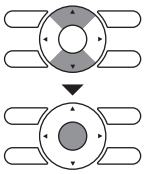
■ Schedule Settings

Operation

1

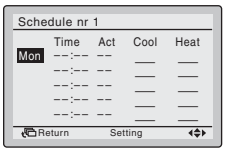


- Press the Menu/Enter button and display the Schedule screen.
- Press "▼▲" buttons to select **Settings**. Press Menu/Enter button to display the Schedule screen.

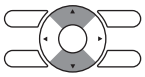


NOTE: The Schedule Settings of the selected schedule number can be changed. To change the schedule number refer to "Schedule Nr Set"

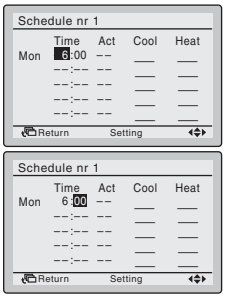
2



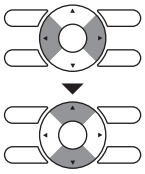
- Press "▼▲" buttons to select the day of the week to be set.



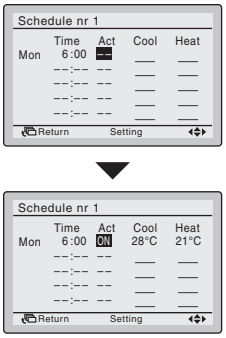
3



- Set the time for the selected day.
- Press "◀▶" buttons to move the highlighted item and press "▼▲" buttons to set the desired time. Each press of "▼▲" buttons moves the numbers by 1 hour or 1 minute.

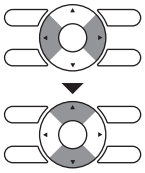


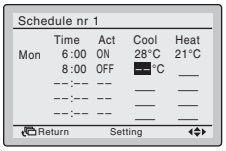
4



- Press the "◀▶" buttons to move the highlighted item and press "▼▲" buttons to configure ON/OFF/-- settings.
  --, ON, or OFF changes in sequence when "▼▲" buttons are pressed.

"Act" column:
ON : The set temperature can be configured.
OFF: The setback temperature can be configured.
– – : The set temperature and setback temperature become disabled.

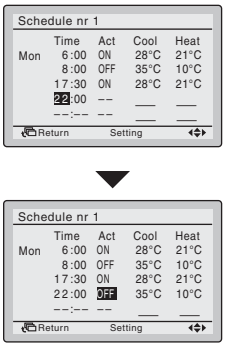




- The cooling and heating set temperature for both ON and OFF (Setback) are configured.

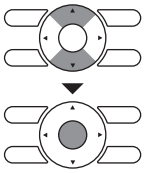
"Cool" and "Heat" column:
"__" : Indicates that the set temperature and setback temperature for this time period is not specified. The last active set temperature will be utilized.
"– –": Indicates that the setback function is disabled for this time period.

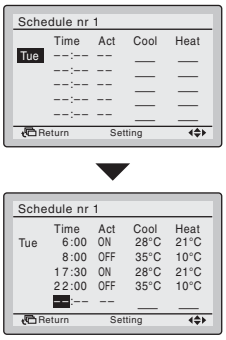
5



A maximum of 5 actions per day can be set.

- Press the Menu/Enter button when settings for each day are completed. The confirmation screen will appear.

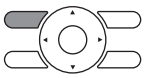




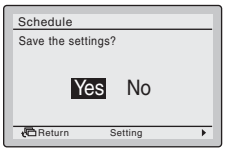
Note:

- To copy the settings for the previous day, press the Mode Selector button so that the existing settings will be copied.

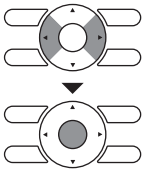
  Example: The contents for Monday are copied by pressing the Mode Selector button after selecting Tuesday.



6



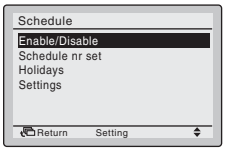
- Press "◀▶" buttons to select **Yes**.
  Press the Menu/Enter button to confirm the settings for each day and return to the Main Menu screen.



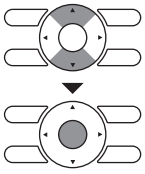
■ Enabling or Disabling the Schedule

Operation

1

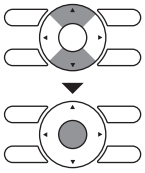


- Press the Menu/Enter button and display the Schedule screen.
- Press "▼▲" buttons to select **Enable/Disable**.
  Press Menu/Enter button to display the Enable/Disable screen.



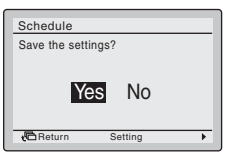
2

- Press "▼▲" buttons to select **Enable** or **Disable** on the Enable/Disable screen.
  Press Menu/Enter button after selecting the item. The confirmation screen will appear.

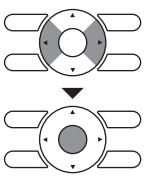


NOTE: The Schedule number selected is enabled. To change the schedule number see "Schedule Nr Set"

3



- Press "◀▶" buttons to select **Yes**.
  Press Menu/Enter button to confirm the enable/disable setting for the schedule and return to the Basic screen.



2.6 Other Functions

2.6.1 Signal Receiving Sign

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

2.6.2 Emergency Operation Switch

When the remote controller does not work due to battery failure or the absence thereof, use the emergency operation switch on the receiver of the indoor unit.

Start

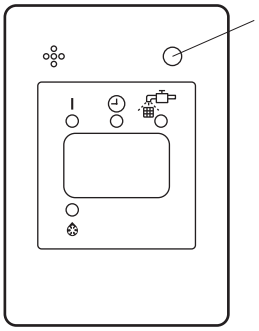
Press emergency operation switch.

- The indoor unit runs in the previous operation mode.
- The system operates with the previously set fan speed.

Stop

Press emergency operation switch again.

FDMR Series



(R24925)

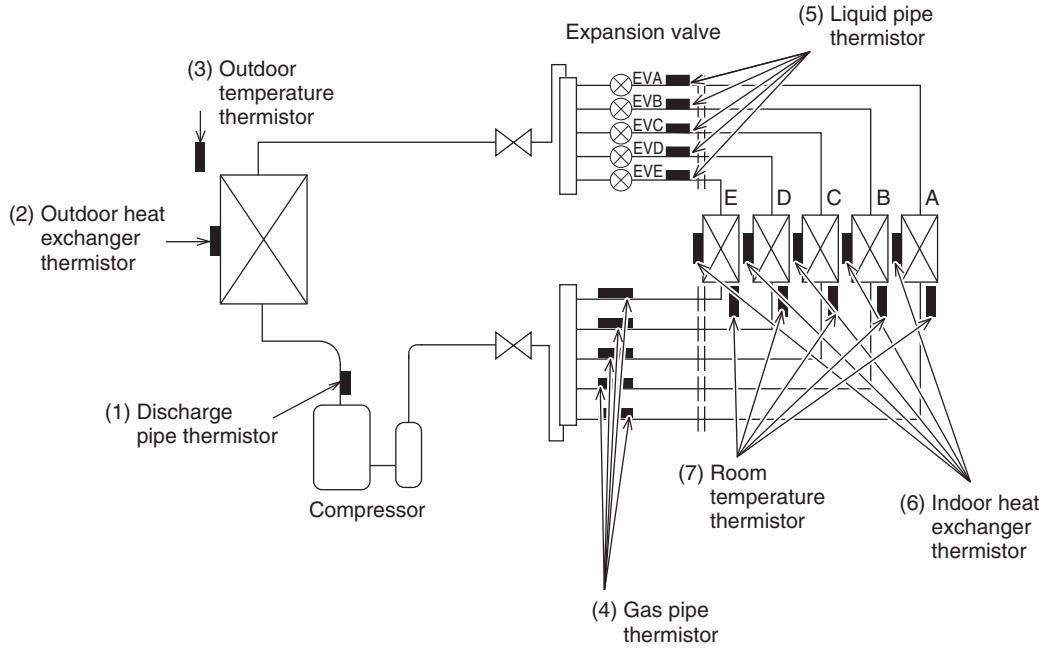
2.6.3 Auto-restart Function

If a power failure (even a momentary one) occurs during the operation, the operation restarts automatically in the same conditions as before when the power supply is restored to the conditions prior to the power failure.

Note It takes 3 minutes to restart the operation because 3-minute standby function is activated.

3. Thermistor Functions

The illustrations are for 5-room models as representative and have 5 lines (A ~ E) of indoor unit system.
The 3-room models have 3 lines (A ~ C) and the 4-room models have 4 lines (A ~ D).



(1) Discharge Pipe Thermistor

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

(2) Outdoor Heat Exchanger Thermistor

- The outdoor heat exchanger thermistor is used for controlling the target discharge pipe temperature. The system sets the 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.
- In cooling operation, the outdoor heat exchanger thermistor is used for detecting the disconnection of the discharge pipe thermistor. When the discharge pipe temperature drops below the outdoor heat exchanger temperature by more than a certain value, the discharge pipe thermistor is judged as disconnected.
- In cooling operation, the outdoor heat exchanger thermistor is used for high pressure protection.

(3) Outdoor Temperature Thermistor

- The outdoor temperature thermistor detects the outdoor air temperature and is used for refrigerant shortage detection, input current control, outdoor fan control, liquid compression protection function, and so on.

(4) Gas Pipe Thermistor

- In cooling operation, the gas pipe thermistor is used for gas pipe isothermal control. The system controls electronic expansion valve opening so that the gas pipe temperature in each room becomes equal.

(5) Liquid Pipe Thermistor

- Liquid pipe thermistor is used to protect the compressor against liquid attack during cooling operation.
- In case of low outdoor temperature operation, the system compares the indoor heat exchanger temperature with the liquid pipe temperature to detect disturbances in the refrigerant flow. If any, the system adjusts the opening of the electronic expansion valve to control the refrigerant flow.

(6) Indoor Heat Exchanger Thermistor

- The indoor heat exchanger thermistor is used for controlling the target discharge pipe temperature. The system sets the 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.
- In cooling operation, the indoor heat exchanger thermistor is used for freeze-up protection control. If the indoor heat exchanger temperature drops abnormally, the operating frequency becomes lower or the operation halts.
- In cooling operation, the indoor heat exchanger thermistor is used for anti-icing function. If any of the following conditions are met in the room where operation halts, it is assumed as icing.
  The conditions are
  $Tc \leq -1°C$
  $Ta - Tc \geq 10°C$
  where Ta is the room temperature and Tc is the indoor heat exchanger temperature.
- The indoor heat exchanger thermistor is used for detecting incorrect wiring. During wiring check operation, the indoor heat exchanger thermistor detects the heat exchanger temperature. The heat exchanger temperature is used to check the wiring and the piping.

(7) Room Temperature Thermistor

- The room temperature thermistor detects the room air temperature and is used for controlling the room air temperature.

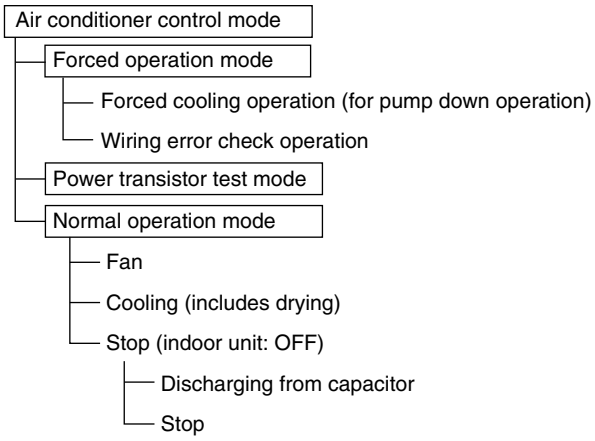
4. Control Specification

4.1 Mode Hierarchy

Outline

The air conditioner control has normal operation mode, forced operation mode, and power transistor test mode for installation and servicing.

Details



(R23672)

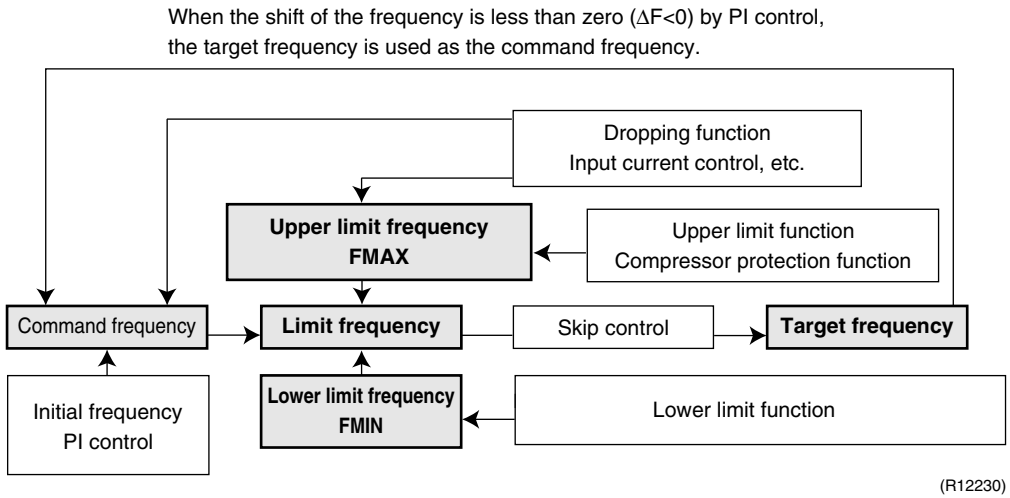
Notes

- Unless specified otherwise, dry operation command is regarded as cooling operation.
- Indoor fan operation cannot be made in multiple indoor units. A forced fan command is made during forced cooling operation.

4.2 Frequency Control

Outline

Frequency corresponding to each room's capacity is determined according to the difference between the target temperature and the temperature of each room thermistor.



(R12230)

Details

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

1. **Determine command frequency**
   Command frequency is determined in the following order of priority.
   (1) Forced cooling
   (2) Indoor frequency command

2. **Determine upper limit frequency**
   The minimum value is set as the upper limit frequency among the frequency upper limits of the following functions:
   Compressor protection, input current, discharge pipe temperature, low Hz high pressure limit, freeze-up protection.

3. **Determine lower limit frequency**
   The maximum value is set as the lower limit frequency among the frequency lower limits of the following functions:
   Draft prevention, pressure difference upkeep.

4. **Determine prohibited frequency**
   There is a certain prohibited frequency such as a power supply frequency.

Parameters

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

S value: Indoor Unit Capacity
S value is the capacity of the indoor unit, and is used for frequency command.
Ex:

Capacity	S value	Capacity	S value
2.5 kW	25	5.0 kW	50
3.5 kW	35	6.0 kW	60

∆D signal: Indoor frequency command
The difference between the room thermistor temperature and the target temperature is taken as the ∆D value and is used for ∆D signal of frequency command.

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

Values depend on the type of indoor unit.
∗ OFF = Thermostat OFF

Initial Frequency

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

PI Control

1. **P control**
   Maximum ∆D 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 does not change for more than a certain fixed time, the frequency is adjusted according to maximum ∆D value.
   When maximum ∆D is low, the frequency is lowered.
   When maximum ∆D is high, the frequency is increased.

3. **Limit of frequency increasing range**
   When the difference between the input current and the dropping value of the input current is less than 1.5 A, the frequency increasing range must be limited.

4. **Frequency control when other controls are functioning**
   - When frequency is dropping:
     Frequency control is carried out only when the frequency drops.

- For limiting lower limit:
  Frequency control 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 according to the total of S values. When the indoor unit quiet operation commands come from more than one room, or when the outdoor unit quiet operation commands come from all the rooms, the upper limit frequency is lower than the usual setting.

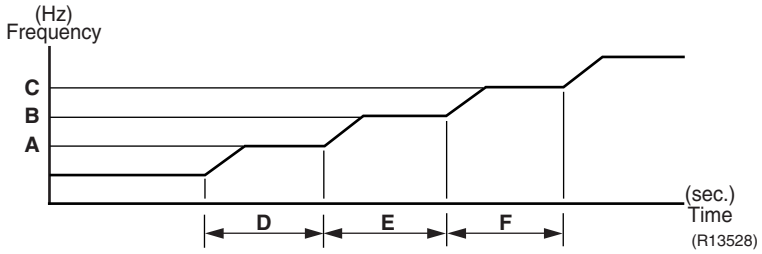
4.3 Controls at Mode Changing/Start-up

4.3.1 3-Minute Standby

Turning on the compressor is prohibited for 3 minutes after turning off.

4.3.2 Compressor Protection Function

When turning the compressor from OFF to ON, the upper limit of frequency is set as follows.



	50/65/80 class	90 class
A (Hz)	55	35
B (Hz)	70	65
C (Hz)	85	80
D (seconds)	150	100
E (seconds)	180	500
F (seconds)	300	200

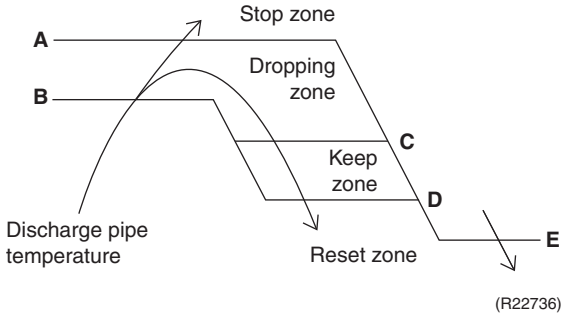
4.4 Discharge Pipe Temperature Control

Outline

The discharge pipe temperature is used as the internal temperature of the compressor. If the discharge pipe temperature rises above a certain level, the upper limit of frequency is set to keep the discharge pipe temperature from rising further.

Details

Zone	Control
Stop zone	When the temperature reaches the stop zone, the compressor stops.
Dropping zone	The upper limit of frequency decreases.
Keep zone	The upper limit of frequency is kept.
Reset zone	The upper limit of frequency is canceled.



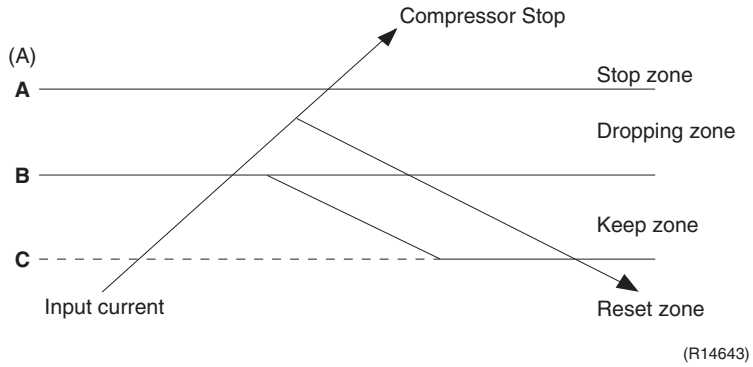
A (°C)	**B** (°C)	**C** (°C)	**D** (°C)	**E** (°C)
120	108	104	102	102

4.5 Input Current Control

Outline

An input current is detected by the CT while the compressor is running, and the frequency upper limit is set from the input current.

Details



Frequency control in each zone

Stop zone

- After the input current remains in the stop zone for 2.5 seconds, the compressor is stopped.

Dropping zone

- The upper limit of the compressor frequency is defined as operation frequency – 2 Hz.
- After this, the output frequency is lowered by 2 Hz every second until it reaches the keep zone.

Keep zone

- The present maximum frequency goes on.

Reset zone

- Limit of the frequency is canceled.

	50/65/80 class	90 class
A (A)	17	19.25
B (A)	15	18
C (A)	14	17

- **Limitation of current dropping and stop value according to the outdoor temperature**
  - The current drops when outdoor temperature becomes higher than a certain level (depending on the model).

4.6 Freeze-up Protection Control

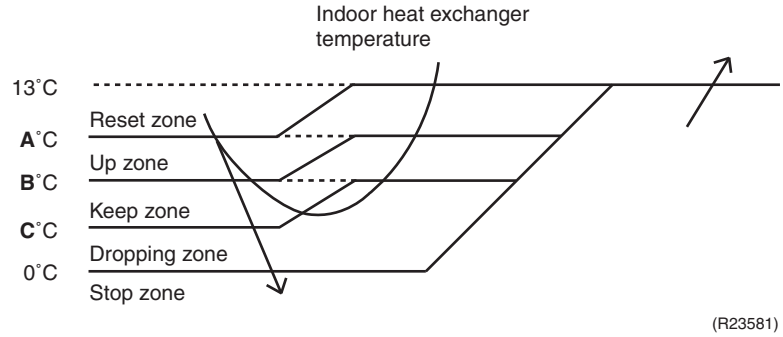
4.6.1 Freeze-up Protection Control for Wall Mounted and LSP Duct Type

Outline

During cooling operation, the signals sent from the indoor unit control the operating frequency limitation and prevent freezing of the indoor heat exchanger. The signal from the indoor unit is divided into zones.

Details

The operating frequency limitation is judged with the indoor heat exchanger temperature 2 seconds after operation starts and 30 seconds after the number of operation room is changed.



A (°C)	**B** (°C)	**C** (°C)
11	10.5	10

4.6.2 Freeze-up Protection Control for MSP Duct Type

Outline

During cooling operation, the signal sent from the indoor unit determines the frequency upper limit and prevents the indoor heat exchanger from freezing.

Details

When the freeze-up protection control starts, the compressor stops, the airflow rate is fixed to L tap, and the drain pump turns ON. Conditions for starting and ending are as below.

Starting conditions

The freeze-up protection control starts when any of the following conditions is satisfied.

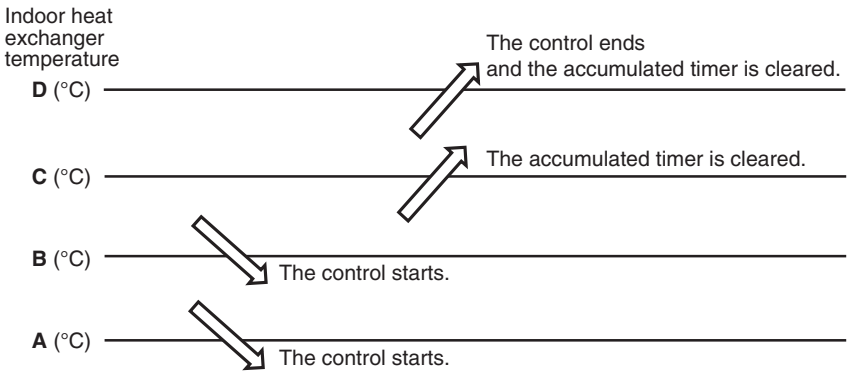
- The indoor heat exchanger temperature remains at **A** °C or lower for 1 minute.
- The accumulated time that the indoor heat exchanger temperature remains at **B** °C or lower reaches 40 minutes.

Accumulated timer clearing condition

- The indoor heat exchanger temperature remains at **C** °C or higher for 20 minutes.

Ending condition

- The indoor heat exchanger temperature remains at **D** °C or higher for 10 minutes.



A (°C)	**B** (°C)	**C** (°C)	**D** (°C)
–5	–1	4	7

4.7 Outdoor Fan Control

1. **Fan ON control to cool down the electrical box**
   The outdoor fan is turned ON when the electrical box temperature is high while the compressor is OFF.

2. **Fan OFF delay when stopped**
   The outdoor fan is turned OFF 60 - 80 seconds after the compressor stops.

3. **Fan speed control for pressure difference upkeep**
   The rotation speed of the outdoor fan is controlled for keeping the pressure difference during cooling operation with low outdoor temperature.
   - When the pressure difference is low, the rotation speed of the outdoor fan is reduced.
   - When the pressure difference is high, the rotation speed of the outdoor fan is controlled as well as normal operation.

4. **Fan speed control during forced cooling operation**
   The outdoor fan is controlled as well as normal operation during forced cooling operation.

5. **Fan speed control for POWERFUL operation**
   The rotation speed of the outdoor fan is increased during POWERFUL operation.

6. **Fan speed control during indoor/outdoor unit quiet operation**
   The rotation speed of the outdoor fan is reduced by the command of the indoor/outdoor unit quiet operation.

7. **Fan ON/OFF control when operation (cooling, dry) starts/stops**
   The outdoor fan is turned ON when the operation starts. The outdoor fan is turned OFF when the operation stops.

4.8 Liquid Compression Protection Function

Outline

In order to increase the dependability of the compressor, the compressor is stopped according to the outdoor temperature.

Details

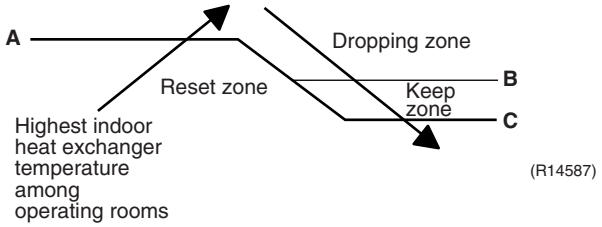
Operation stops depending on the outdoor temperature.
The compressor turns off under the conditions that the system is in cooling operation and outdoor temperature is below 0°C (for 50/65/80 class) or below –12°C (for 90 class).

4.9 Low Hz High Pressure Limit

Outline

The upper limit of high pressure in a low Hz zone is set. The upper limit of the indoor heat exchanger temperature is also set by the operating frequency. Zones are divided into three, reset zone, keep zone, and dropping zone, and the frequency control is carried out according to each zone.

Details



	A (°C)	**B** (°C)	**C** (°C)
50/65/80 class	56	55	52
90 class	57.5	56.5	53.5

Note

Dropping: The system stops 2 minutes after staying in the dropping zone.

4.10 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. Dew prevention control for indoor rotor

Open Control

1. Electronic expansion valve control when starting operation
2. Electronic expansion valve control when the frequency changes
3. Electronic expansion valve control for oil recovery
4. Electronic expansion valve control when the discharge pipe temperature is abnormally high
5. Electronic expansion valve control when the discharge pipe thermistor is disconnected
6. Electronic expansion valve control for indoor unit freeze-up protection

Feedback Control

1. Target discharge pipe temperature control

Details

The followings are the examples of the electronic expansion valve control for each operation mode.

Operation pattern	● : Available — : Not available	Gas pipe isothermal control	Control when the frequency changes	Control for abnormally high discharge pipe temperature	Oil recovery control	Indoor freeze-up protection control	Dew prevention control for indoor rotor
When the power is turned on	Fully closed when the 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	—	—	—	—	—	—

(R21729)

4.10.1 Initialization as Power Supply On

The electronic expansion valve is initialized (fully closed) when the power is turned on. Then, the valve opening position is set and the pressure is equalized.

4.10.2 Pressure Equalizing Control

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

4.10.3 Opening Limit Control

The maximum and minimum opening of the electronic expansion valve are limited.

- The maximum electronic expansion valve opening in the operating room: 450 pulses
- The minimum electronic expansion valve opening in the operating room: 64 pulses

The electronic expansion valve is fully closed in the room where cooling is stopped.

4.10.4 Starting Operation Control/Changing Operation Room

The electronic expansion valve opening is controlled when the operation starts, thus preventing superheating or liquid compression.

4.10.5 Control when the Frequency Changes

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

4.10.6 High Discharge Pipe Temperature Control

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.

4.10.7 Discharge Pipe Thermistor Disconnection Control

Outline

The disconnection of the discharge pipe thermistor is detected by comparing the discharge pipe temperature with the condensing temperature. If the discharge pipe thermistor is disconnected, the electronic expansion valve opens according to the outdoor temperature and the operation frequency, operates for a specified time, and then stops.
After 3 minutes, the operation restarts and checks if the discharge pipe thermistor is disconnected. If the discharge pipe thermistor is disconnected, the system stops after operating for a specified time.
If the disconnection is detected repeatedly, the system is shut down. When the compressor runs for 60 minutes without any error, the error counter is reset.

Details

Determining thermistor disconnection
When the starting control (30 seconds) finishes and the following condition is fulfilled, the discharge pipe thermistor disconnection is ascertained.

Discharge pipe temperature + 6°C < outdoor heat exchanger temperature

When the thermistor is disconnected
When the disconnection is ascertained, the compressor continues operation for 9 minutes and then stops.
If the compressor stops repeatedly, the system is shut down.

4.10.8 Gas Pipe Isothermal Control During Cooling

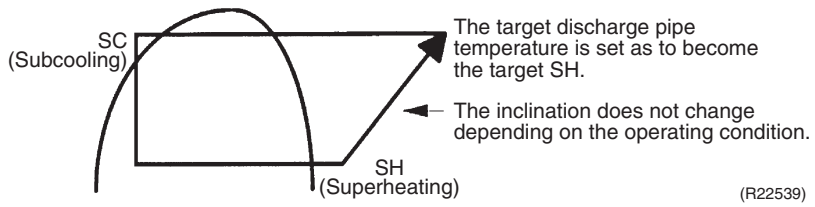
When the units are operating in multiple rooms, the gas pipe temperature is detected and the electronic expansion valve opening is adjusted so that the temperature of the gas pipe in each room becomes equal.

- When the gas pipe temperature > the average gas pipe temperature,
  → the opening degree of electronic expansion valve in the corresponding room increases.
- When the gas pipe temperature < the average gas pipe temperature,
  → the opening degree of electronic expansion valve in the corresponding room decreases.

The temperatures are monitored every 40 seconds.

4.10.9 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)



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

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

4.11 Malfunctions

4.11.1 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 temperature thermistor
6. Liquid pipe thermistor

Reference

Relating to CT Malfunction

Refer to CT or related abnormality on page 160 for details.

4.11.2 Detection of Overcurrent and Overload

Outline

In order to protect the inverter, an excessive output current is detected and the OL temperature is observed to protect the compressor.

Details

- If the inverter current exceeds 17 ~ 19.25 A (depending on the model), the system shuts down the compressor.
- If the OL (compressor head) temperature exceeds 130°C, the compressor stops.

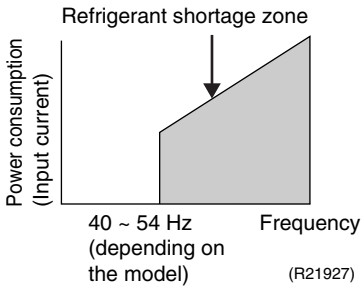
4.11.3 Refrigerant Shortage Control

Outline

Detecting by power consumption

If the power consumption is below the specified value and the frequency is higher than the specified frequency, it is regarded as refrigerant shortage.

The power consumption is low comparing with that in the normal operation when refrigerant is insufficient, and refrigerant shortage is detected by checking power consumption.



Reference

Refer to Refrigerant shortage on page 138 for detail.

4.11.4 Anti-icing Function

During cooling, if the indoor heat exchanger temperature in the room not in operation becomes below the specified temperature for the specified time, the electronic expansion valve is opened in the room not in operation as specified, and is carried out with the electronic expansion value fully closed. After this, if freezing abnormality occurs more than specified time, the system shuts down as the system abnormality.

Part 5
Remote Controller

1. Applicable Remote Controller

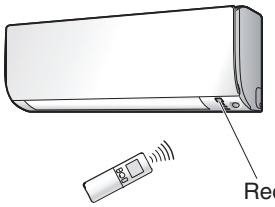
Series	Model Name	Wireless Remote Controller	Reference Page	Wired Remote Controller	Reference Page
CTKS	CTKS25TVMG	ARC466A19	90	—	—
	CTKS35TVMG				
	CTKS50TVMG				
	CTKS60TVMG				
	CTKS71TVMG				
CTKB	CTKB25TVMG				
	CTKB35TVMG				
	CTKB50TVMG				
	CTKB60TVMG				
FDKS	FDKS25EAVMB	ARC433B76	92		
	FDKS35EAVMB				
	FDKS25CAVMB				
	FDKS35CAVMB				
	FDKS50CVMB				
	FDKS60CVMB				
FDMR	FDMR50TVMG	BRC086A22	94	BRC1E63	96
	FDMR60TVMG				
	FDMR71TVMG				

Note

Refer to the operation manual of applicable model for details. You can download operation manuals from Daikin Business Portal:
Daikin Business Portal → Document Search → Item Category → Installation/Operation Manual
(URL: https://global1d.daikin.com/business_portal/login/)

2. ARC466A19

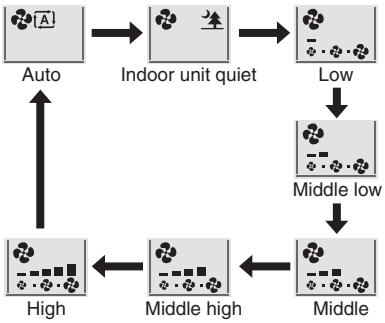
Signal transmitter



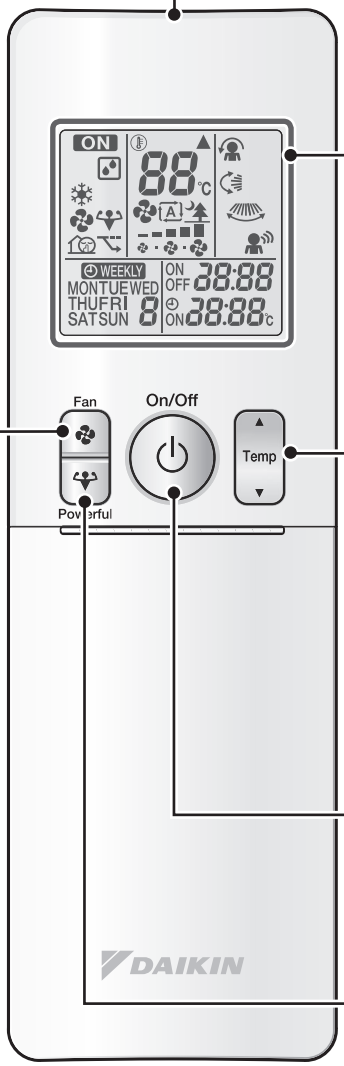
- To use the remote controller, aim the transmitter at the indoor unit. If there is anything to block signals between the unit and the remote controller, such as a curtain, the unit will not operate.
- Do not drop the remote controller. Do not get it wet.
- The maximum distance for communication is about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

Fan setting button

- Selects the airflow rate setting.



- In indoor unit quiet operation, operation sound becomes weak. (The airflow rate also decreases.)
- In DRY operation, the airflow rate setting is not available.



Display (LCD)

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

Temperature adjustment buttons

- Changes the temperature setting.

: DRY	Not available
: COOL	18 ~ 32 °C
: FAN	Not available

On/Off button

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

Powerful★1 button

- Starts POWERFUL operation.

< ARC466A19 >

(R22611)

Reference Refer to the following pages for details.

★1 POWERFUL operation P. 54

Open the Front Cover

Mode button
• Selects the operation mode.

DRY → COOL → FAN

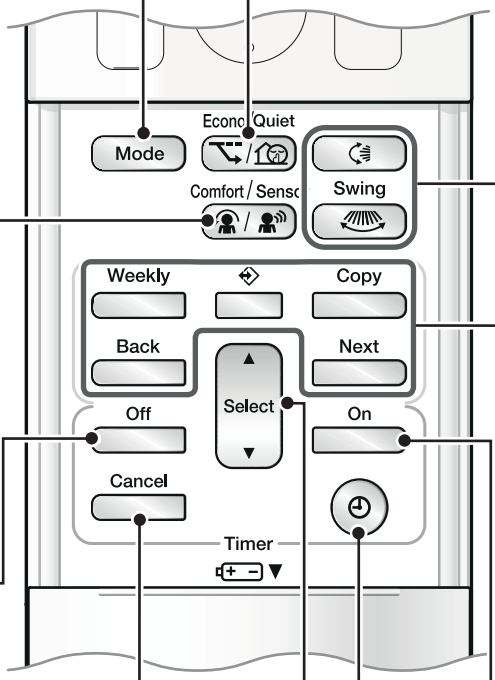
Econo*4 / Quiet button
• Every time you press **Econo/Quiet** button, the setting changes in the following order.

ECONO → OUTDOOR UNIT QUIET → Combination → Blank (No setting)

• OUTDOOR UNIT QUIET operation is not available in FAN and DRY operation.
• OUTDOOR UNIT QUIET operation and POWERFUL operation cannot be used at the same time. Priority is given to the function you pressed last.

Comfort/Sensor button (COMFORT AIRFLOW Operation*2/ INTELLIGENT EYE Operation*3)
• Every time you press **Comfort/Sensor** button, the setting changes in the following order.

COMFORT AIRFLOW → INTELLIGENT EYE → Combination → Blank (No setting)



Off timer button
• Press this button and adjust the day and time with **Select** button.
Press this button again to complete TIMER setting.

Timer cancel button
• Cancels the timer setting.
• It cannot be used for the WEEKLY TIMER operation.

Swing*5 buttons
• Adjusts the airflow direction.
• When you press **Swing** button, the flap moves up and down, or (and) the louver moves right and left. The flap (louver) stops when you press **Swing** button again.

WEEKLY TIMER*6 buttons
Weekly : **Weekly button**
: **Program button**
Copy : **Copy button**
Back : **Back button**
Next : **Next button**

Select button
• Changes the ON/OFF TIMER and WEEKLY TIMER settings.

Clock*7 button

On timer button
• Press this button and adjust the day and time with **Select** button.
Press this button again to complete TIMER setting.

(R25261)

Reference Refer to the following pages for details.

★2	COMFORT AIRFLOW operation	P. 48	★5	Auto-swing	P. 47
★3	INTELLIGENT EYE operation	P. 53	★6	WEEKLY TIMER operation	P. 57
★4	ECONO operation	P. 51	★7	Clock setting	P. 55

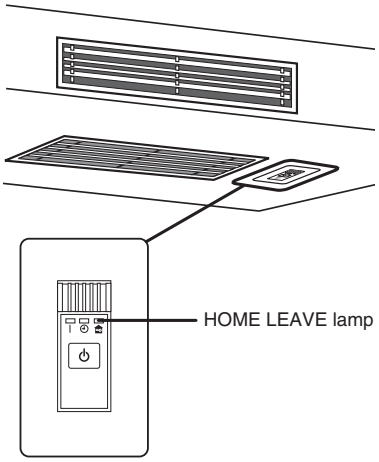
3. ARC433B76

Signal transmitter

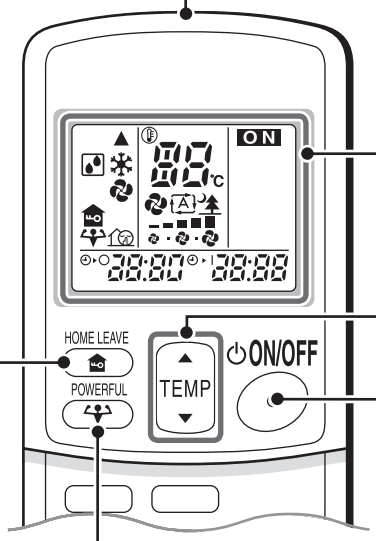
- To use the remote controller, aim the transmitter at the indoor unit. If there is anything to block signals between the unit and the remote controller, such as a curtain, the unit will not operate.
- The maximum distance for communication is about 4 m.

HOME LEAVE★1 button

- Press this button to start HOME LEAVE operation.
  The HOME LEAVE lamp lights up.



- Press the button again to cancel HOME LEAVE operation.



< ARC433B76 >

Display (LCD)

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

Temperature adjustment button

- Changes the temperature setting.

: DRY	Not available
: COOL	18 ~ 32 °C
: FAN	Not available

ON/OFF button

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

POWERFUL★2 button

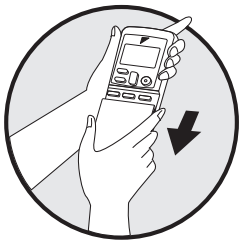
- Starts POWERFUL operation

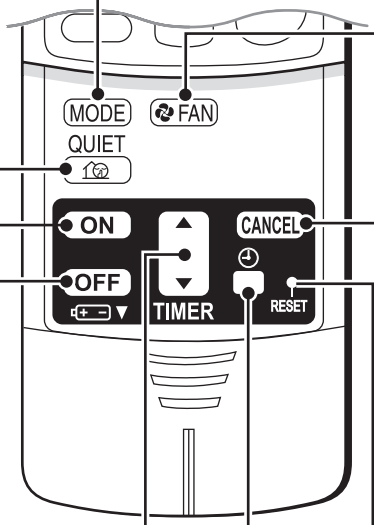
(R22747)

Reference Refer to the following pages for details.

★1 HOME LEAVE operation P. 51
★2 POWERFUL operation P. 54

Open the Front Cover





MODE button
• Selects the operation mode.

DRY → COOL → FAN

QUIET button
• OUTDOOR UNIT QUIET operation
• OUTDOOR UNIT QUIET operation is not available in FAN and DRY operation
• OUTDOOR UNIT QUIET operation and POWERFUL operation cannot be used at the same time. Priority is given to the function you pressed last.

FAN setting button
• Selects the airflow rate setting every time you press this button.

Auto → Indoor unit quiet → Low → Middle low → Middle → Middle high → High

• In indoor unit quiet operation, operation sound becomes weak. (The airflow rate also decreases.)
• In DRY operation, the airflow rate setting is not available.

ON TIMER button
• Press this button and adjust the time with **TIMER setting** button.
Press this button again to complete TIMER setting.

OFF TIMER button
• Press this button and adjust the time with **TIMER setting** button.
Press this button again to complete TIMER setting.

TIMER Setting button
• Changes the ON/OFF TIMER settings.

TIMER CANCEL button
• Cancels the timer setting.

RESET button
• Restarts the unit if it freezes.
• Use a thin object to push.

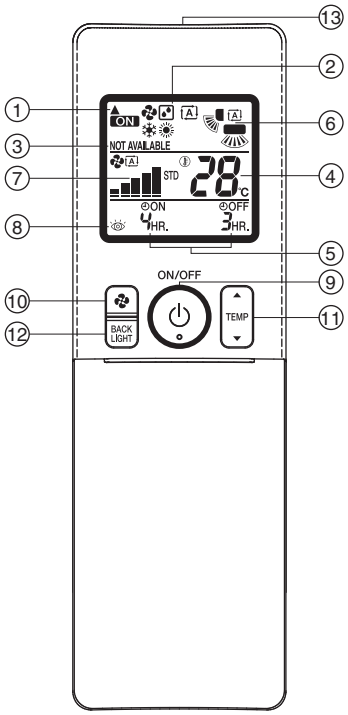
CLOCK★3 button

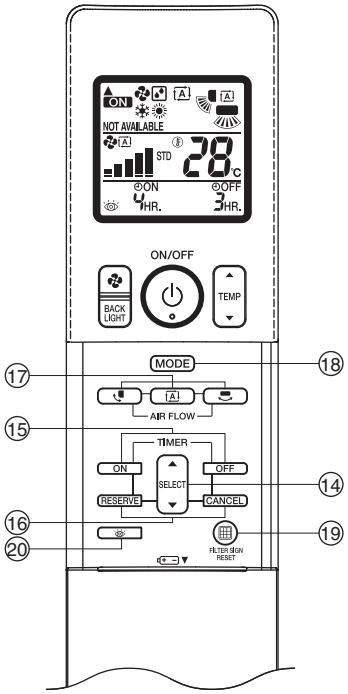
(R25263)

Reference Refer to the following pages for details.

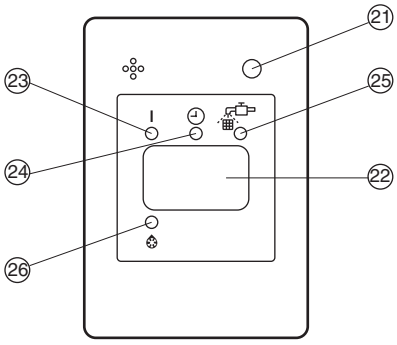
★3 Clock setting P. 55

4. BRC086A22





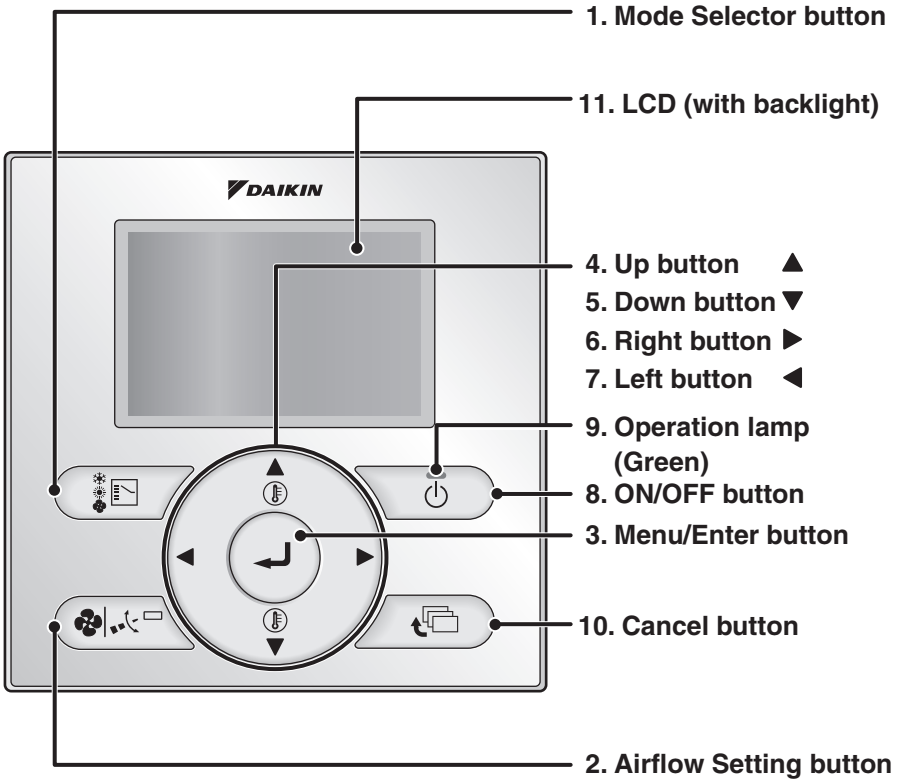
FDMR Series



1	**DISPLAY "▲" (SIGNAL TRANSMISSION)**
	This blinks when a signal is being transmitted.
2	**DISPLAY " " " " " " " " " " (OPERATION MODE)**
	This display shows the current OPERATION MODE. Operation modes supported depend on the model that is connected.
3	**DISPLAY "NOT AVAILABLE" (displayed when operation is not supported)**
	When a button for a function that is not supported on the connected model is pressed, this displays for 2 seconds.
4	**DISPLAY " 28°C " (SET TEMPERATURE)**
	This display shows the set temperature.
5	**DISPLAY " ON 4HR. OFF 3HR. " (PROGRAMMED TIME)**
	This display shows PROGRAMMED TIME of the air conditioner start or stop.
6	**DISPLAY " " (AIRFLOW BLADE)**
	Refer to operation manual.
7	**DISPLAY " " (FAN SPEED)**
	The display shows the set fan speed.
8	**DISPLAY " " (INSPECTION)**
	When the INSPECTION BUTTON is pressed, the display shows the system mode is in. Do not operate this button during normal use.
9	**ON/OFF BUTTON**
	Press the button and the air conditioner will start. Press the button again and the air conditioner will stop.
10	**FAN SPEED CONTROL BUTTON**
	Press this button to select the fan speed.
11	**TEMPERATURE SETTING BUTTON**
	Use this button for SETTING TEMPERATURE.
12	**BACKLIGHT BUTTON**
	Press this button to turn the backlight on or off.
13	**SIGNAL TRANSMITTER**
	This sends the signals to the indoor unit.

14	**PROGRAMMING TIMER BUTTON**
	Use this button for programming "START and/ or STOP" time.
15	**TIMER MODE ON/OFF BUTTON**
	Refer to operation manual.
16	**TIMER RESERVE/CANCEL BUTTON**
	Refer to operation manual.
17	**AIRFLOW DIRECTION ADJUST BUTTON**
	Refer to operation manual.
18	**OPERATION MODE SELECTOR BUTTON**
	Press this button to select OPERATION MODE. " " (COOLING), " " (HEATING), " " (AUTOMATIC), " " (FAN), " " (PROGRAMME DRY).
19	**FILTER SIGN RESET BUTTON**
	Refer to the section of MAINTENANCE in the operation manual attached to the indoor unit.
20	**INSPECTION BUTTON**
	This button is used only by qualified service persons for maintenance purposes. Do not operate this button during normal use.
21	**EMERGENCY OPERATION SWITCH**
	This switch is readily used if the remote controller does not work.
22	**RECEIVER**
	This receives the signals from the remote controller.
23	**OPERATING INDICATOR LAMP (Red)**
	This lamp stays lit while the air conditioner runs. It flashes when the air conditioner is in trouble.
24	**TIMER INDICATOR LAMP (Green)**
	This lamp stays lit while the timer is set.
25	**AIR FILTER CLEANING TIME INDICATOR LAMP (Red)**
	Lights up when it is time to clean the air filter .
26	**DEFROST OPERATION LAMP (Orange)**
	Lights up when the defrosting operation has started.

5. BRC1E63


1. Mode Selector button
11. LCD (with backlight)
4. Up button ▲
5. Down button ▼
6. Right button ▶
7. Left button ◀
9. Operation lamp (Green)
8. ON/OFF button
3. Menu/Enter button
10. Cancel button
2. Airflow Setting button

1. Mode Selector button

- Use to select the operation mode of your preference.
  * Available modes vary with the connecting model.

2. Airflow Setting button

- Used to indicate the Airflow Rate (Air Volume/Fan Speed)/Airflow Direction screen.
  * Available fan speed and airflow direction vary with the connecting model.

3. Menu/Enter button

- Used to indicate the Main Menu.
- Used to enter the setting item selected.

4. Up button "▲"

- Used to raise the set temperature.
- Use to highlight the item above the current selection.
  (The highlighted items will be scrolled continuously when the button is kept pressed.)
- Used to change the item selected.
  * Be sure to press the part with the symbol "▲"

5. Down button "▼"

- Used to lower the set temperature.
- Use to highlight the item below the current selection.
  (The highlighted items will be scrolled continuously when the button is kept pressed.)
- Used to change the item selected.
  * Be sure to press the part with the symbol "▼"

6. Right button "▶"

- Used to highlight the next items on the right-hand side.
- Display contents are changed to next screen per page.
  * Be sure to press the part with the symbol "▶"

7. Left button "◀"

- Used to highlight the next items on the left-hand side.
- Display contents are changed to previous screen per page.
  * Be sure to press the part with the symbol "◀"

8. ON/OFF button

- Press this button and system will start.
- Press this button again and system will stop.

9. Operation lamp (Green)

- This lamp lights up during operation.
- This lamp blinks if a malfunction occurs.

10. Cancel button

- Used to return to the previous screen.

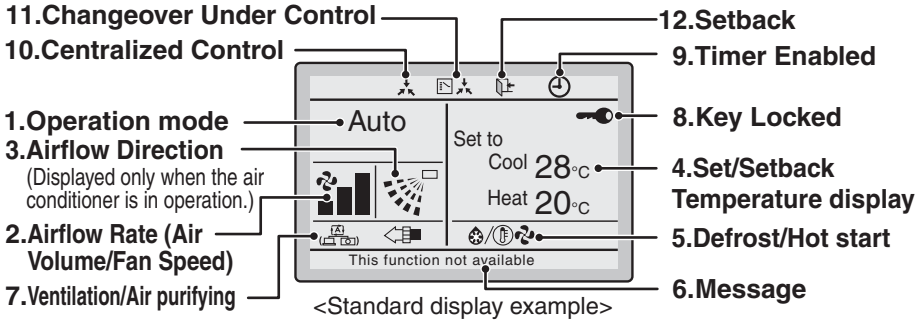
11. LCD (with backlight)

- The backlight will be lit for approximately 30 seconds by pressing any operation button. Press the button while the backlight is lit. (Excluding the ON/OFF button)
- If 2 remote controllers are used to control a single indoor unit, the backlight of the remote controller accessed first will be lit.

Basic Screen

- Basic screen are two types of Standard display screen and Detailed display screen. The Standard display screen is set by default.
- To switch to the Detailed display, select the “Detailed” in the Main Menu.
- The contents on the screen vary with the operation mode of the connecting model. (The following display will appear when the air conditioner is in Automatic operation.)

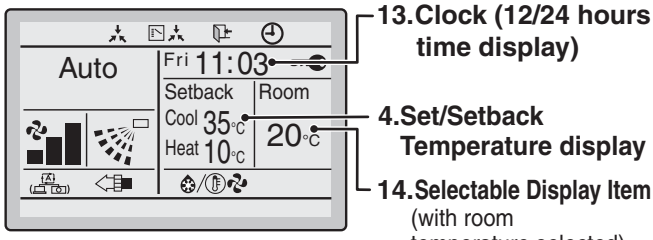
Standard display screen



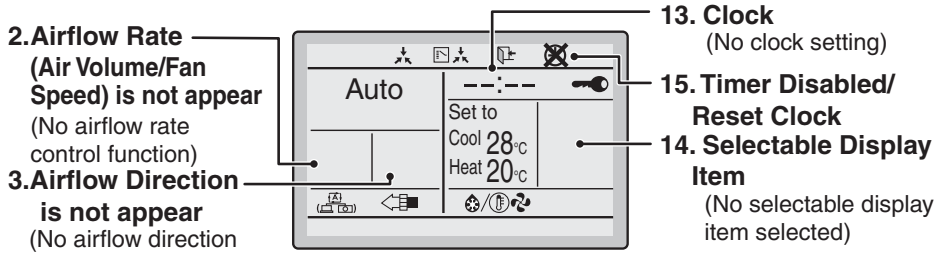
<Standard display example>

Detailed display screen

■ **The clock, and selectable display items appear on the detailed display screen in addition to the items appearing on the standard display screen.**



<Detailed display example 1>



<Detailed display example 2>

1. Operation Mode

- Displays the present operation mode, “Cool”, “Heat”, “Vent”, “Fan”, “Dry” or “Auto”.

2. Airflow Rate (Air Volume/Fan Speed)

- Displays the airflow rate that is set for the indoor unit.
- The airflow rate will not be displayed if the indoor unit does not have airflow rate control function.

3. Airflow Direction “ ”

- Displayed when the airflow direction and swing are set.
- This icon is not displayed if the indoor unit does not have a function to set airflow directions.

4. Set/Setback Temperature display

- When the air conditioner is turned on, **“Set to”** indicates the set temperatures that are set for the air conditioner.
- When the air conditioner is turned off, **“Setback”** indicates the setback temperatures that are set for the air conditioner.

5. Defrost/Hot start “ ”

Displays if the Defrost/Hot start operation is active.
If ventilating operation “ ” is displayed:

- Displayed when a Heat Reclaim Ventilator is connected.
  For details, refer to the Operation Manual of the Heat Reclaim Ventilator.

6. Message

The following messages are displayed.

“This function not available.”

- Displayed for a few seconds when an operation button is pressed and the indoor unit does not have the corresponding function.
- If a number of indoor units are in operation, the message will appear only if none of the indoor units is provided with the corresponding function, i.e., the message will not appear if at least one of the indoor units is provided with the corresponding function.

“Error: Push Menu button”
“Warning: Push Menu button”

- Displayed if an error or warning is detected**.**

“Quick Start” (Split system only)

- Displayed if the quick cooling/heating function is turned on.

“Time to clean filter”
“Time to clean element”
“Time to clean filter and element”

- Displayed when the time to clean the filter or element has come.

7. Ventilation/Air Purifying

- Displayed when a Heat Reclaim Ventilator is connected.
- **Ventilation Mode icon. “ ”**
  These icons indicate the current ventilation mode (Heat Reclaim Ventilator only) (AUTOMATIC, ENERGY RECLAIM VENTILATION, BYPASS).
- **Air purifying icon “ ”**
  This icon indicates that the Air Purifying unit (optional accessory) is in operation.

8. Key Locked “ ”

- Displayed when the key lock is set.

9. Timer Enabled “ ”

- Displayed if the Schedule timer or OFF timer is enabled.

10.Centralized Control “”

- Displayed if the system is under the management of centralized control equipment (optional accessories) and the operation of the system through the remote controller is prohibited.

11.Changeover Under Control “”

(VRV only)

- Displayed if the remote controller has no cool/heat selection eligibility.

12.Setback “”

- The setback icon blinks when the air conditioner is turned on under the setback control.

13.Clock (12/24 hours time display)

- Displayed when the clock is set.
- If the clock is not set, “ -- : -- ” will be displayed.

14.Selectable Display Item

- Displayed when the detailed display is selected.
- No detailed items are selected by default.

15.Timer Disabled/Reset Clock “”

- Displayed when the clock needs to be reset.
- The schedule timer function will not work unless the clock is reset.

Part 6
Service Diagnosis

1. General Problem Symptoms and Check Items

Symptom	Check Item	Details	Reference Page
None of the units operates.	Check the power supply.	Check if the rated voltage is supplied.	—
	Check the types of the indoor units.	Check if the indoor unit type is compatible with the outdoor unit.	—
	Check the outdoor temperature.	Cooling operation is not available when the outdoor temperature is out of the operation limit. Check the reference page for the operation limit.	218
	Diagnose with remote controller indication	—	114
	Check the remote controller addresses.	Check if address settings for the remote controller and indoor unit are correct.	191
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 temperature.	Cooling operation is not available when the outdoor temperature is out of the operation limit. Check the reference page for the operation limit.	218
	Diagnose with remote controller indication.	—	114
Some indoor units do not operate.	Check the type of the indoor units.	Check if the indoor unit type is compatible with the outdoor unit.	—
	Diagnose with remote controller indication	—	114
Units operate but do not cool.	Check for wiring and piping errors in the connection between the indoor and outdoor units.	Check the wiring and piping. Conduct the wiring error check.	—
	Check for thermistor detection errors.	Check if the thermistor is mounted securely.	—
	Check for faulty operation of the electronic expansion valve.	Set all the units to cooling operation, and compare the temperatures of the liquid pipes to see if the each electronic expansion valve works.	—
	Diagnose with remote controller indication.	—	114
	Diagnose by service port pressure and operating current.	Check for refrigerant shortage.	138
Large operating noise and vibrations	Check the output voltage of the power module.	—	179
	Check the power module.	—	—
	Check the installation condition.	Check if the required spaces for installation (specified in the installation manual) are provided.	—

2. Troubleshooting with LED

2.1 Indoor Unit

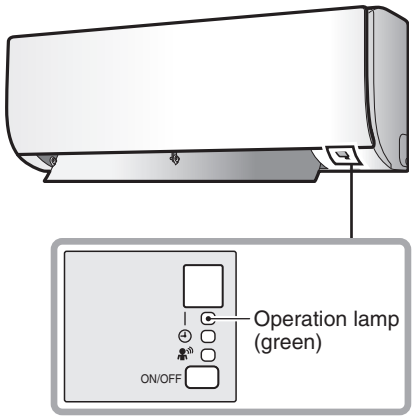
Operation Lamp

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

1. A protection device of the indoor or outdoor unit is activated, or the thermistor malfunctions.
2. A signal transmission error occurs between the indoor and outdoor units.

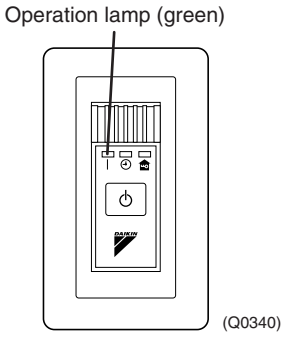
In either case, conduct the diagnostic procedure described in the following pages.

CTKS, CTKB Series



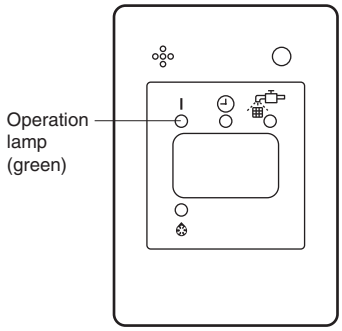
R6000635

FDKS Series



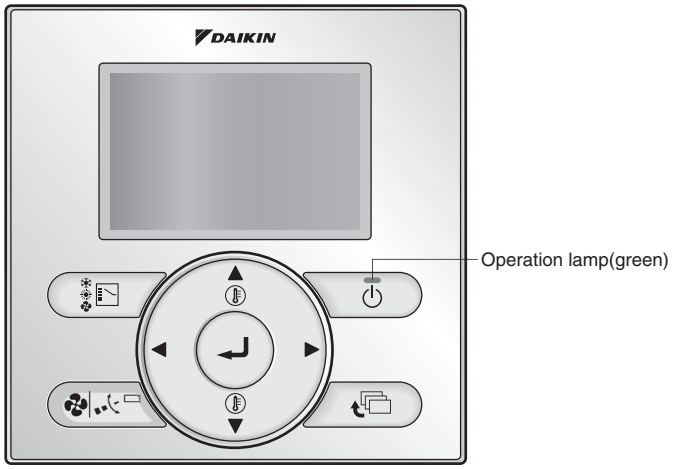
(Q0340)

FDMR Series with Wireless Remote Controller



(R24930)

Wired Remote Controller



(R25259)

Caution

When operation stops suddenly and the operation lamp blinks, it could be operation mode conflict.

1. Check if the operation modes all the same for the indoor units connected to multi system outdoor unit.
2. If not, set all the indoor units to the same operation mode and confirm that the operation lamp is not blinking.
3. Moreover, when the operation mode is automatic, set all the indoor unit operation mode as cooling or heating 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 the indoor unit that has a different operation mode set later. The first set operation mode has priority.

Service Monitor

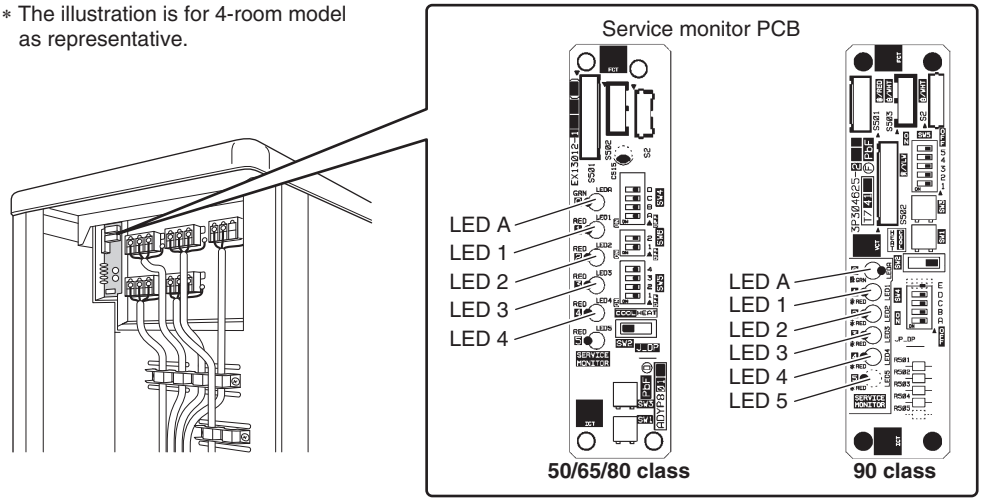
FDKS, FDMR Series

The indoor unit has one green LED (LED A/HAP) on the control PCB. When the microcomputer works in order, the LED blinks. Refer to pages 32, 34 for the location of LED.

2.2 Outdoor Unit

The outdoor unit has a green LED (LED A) and red LEDs (LED 1 ~ LED 5) on the service monitor PCB.
When the microcomputer works in order, the LED A blinks, and when the system is in normal condition, the red LEDs are OFF.
Even after the error is canceled and the unit operates in normal condition, the LED indication remains.

∗ The illustration is for 4-room model as representative.

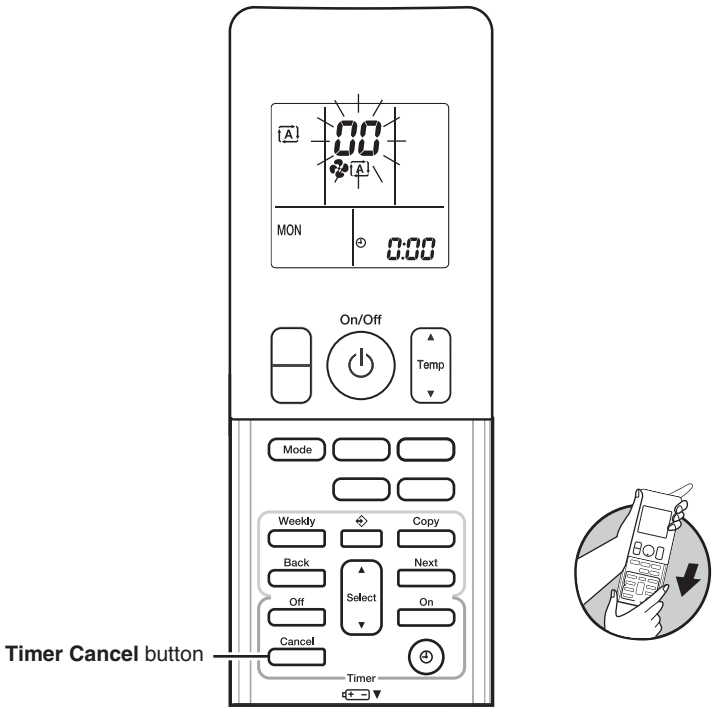


3. Service Diagnosis

3.1 ARC466 Series Wireless Remote Controller

3.1.1 Method 1

1. When **Timer cancel** button is held down for 5 seconds, 00 is displayed on the temperature display screen.
2. Press **Timer cancel** button repeatedly until a long beep sounds.



< ARC466 Series >

R6000653

■ The code indication changes in the sequence shown below.

ARC466A19

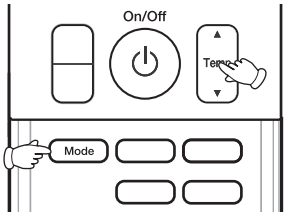
No.	Code	No.	Code	No.	Code
1	00	14	U0	27	UA
2	A5	15	C7	28	UH
3	E7	16	A3	29	P4
4	F3	17	H8	30	H7
5	F6	18	H9	31	U2
6	L3	19	C9	32	EA
7	L4	20	C4	33	AH
8	L5	21	C5	34	FA
9	U4	22	J3	35	H1
10	E6	23	J6	36	P9
11	H6	24	E5	37	E3
12	H0	25	A1	38	H3
13	A6	26	E1		

Notes

1. A short beep and two consecutive beeps indicate non-corresponding codes.
2. To return to the normal mode, hold **Timer cancel** button down for 5 seconds. When the remote controller is left untouched for 60 seconds, it also returns to the normal mode.
3. Not all the error codes are displayed. When you cannot find the error code, try method 2. Refer to page 108.

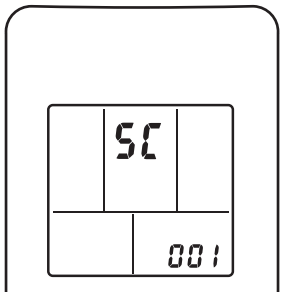
3.1.2 Method 2

1. Press the center of **Temp** button and **Mode** button at the same time.



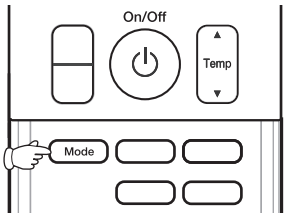
R6000648

SC is displayed on the LCD.



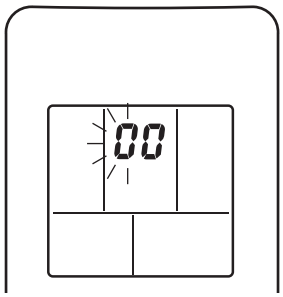
R6000109

2. Select SC (service check) with **Temp** ▲ or **Temp** ▼ button.
3. Press **Mode** button to enter the service check mode.



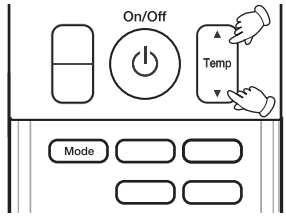
R6000649

The left-side number blinks.



R6000111

4. Press **Temp** ▲ or **Temp** ▼ button and change the number until you hear the two consecutive beeps or the long beep.

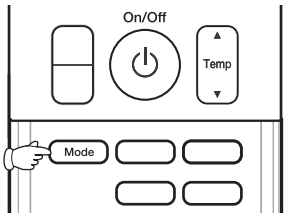


R6000650

5. Diagnose by the sound.
   - Beep: The left-side number does not correspond with the error code.
   - Two consecutive beeps: The left-side number corresponds with the error code but the right-side number does not.

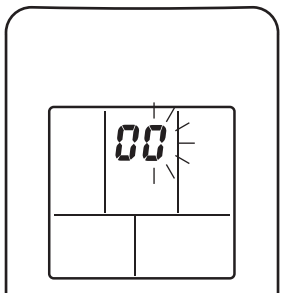
- Long beep: Both the left-side and right-side numbers correspond with the error code. The numbers indicated when you hear the long beep are the error code. Refer to page 114, 115.

6. Press **Mode** button.



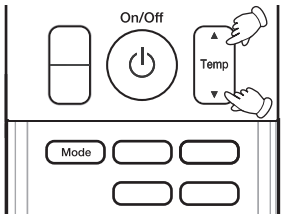
R6000649

The right-side number blinks.



R6000119

7. Press **Temp ▲** or **Temp ▼** button and change the number until you hear the long beep.

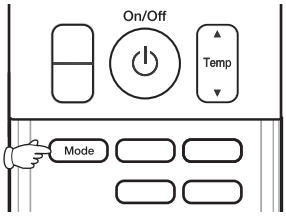


R6000650

8. Diagnose by the sound.
   - Beep: The left-side number does not correspond with the error code.
   - Two consecutive beeps: The left-side number corresponds with the error code but the right-side number does not.
   - Long beep: Both the left-side and right-side numbers correspond with the error code.

9. Determine the error code.
   The numbers indicated when you hear the long beep are the error code.
   Refer to page 114, 115.

10. Press **Mode** button for 5 seconds to exit from the service check mode.
    When the remote controller is left untouched for 60 seconds, it returns to the normal mode also.

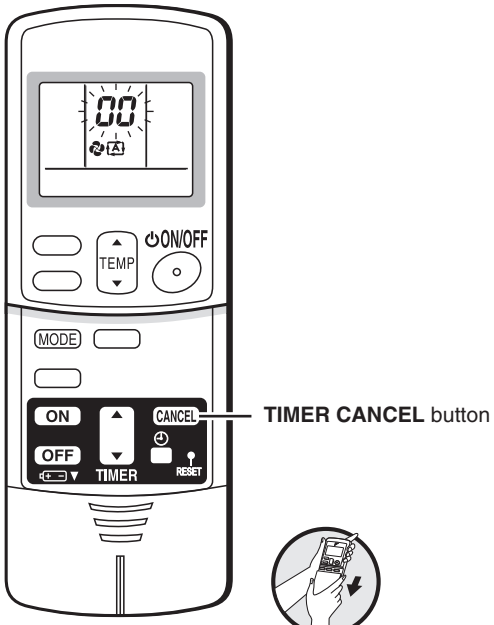


R6000649

3.2 ARC433 Series Wireless Remote Controller

3.2.1 Method 1

1. When **TIMER CANCEL** button is held down for 5 seconds, 00 is displayed on the temperature display screen.
2. Press **TIMER CANCEL** button repeatedly until a long beep sounds.



< ARC433 Series >

■ The code indication changes in the sequence shown below.

ARC433B76

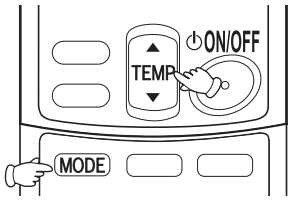
No.	Code	No.	Code	No.	Code
1	00	12	C7	23	H0
2	U4	13	H8	24	E1
3	F3	14	J3	25	P4
4	E6	15	A3	26	L3
5	L5	16	A1	27	L4
6	A6	17	C4	28	H6
7	E5	18	C5	29	H7
8	F6	19	H9	30	U2
9	C9	20	J6	31	UH
10	U0	21	UA	32	EA
11	E7	22	A5	33	AH

Notes

1. A short beep or two consecutive beeps indicate non-corresponding codes.
2. To return to the normal mode, hold **TIMER CANCEL** button down for 5 seconds. When the remote controller is left untouched for 60 seconds, it also returns to the normal mode.
3. Not all the error codes are displayed. When you cannot find the error code, try method 2. Refer to page 111.

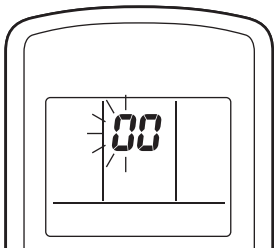
3.2.2 Method 2

1. Press the center of **TEMP** button and **MODE** button at the same time to enter the diagnosis mode.



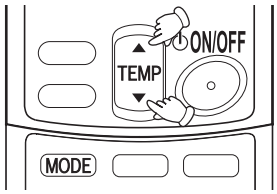
(R19114)

The left-side number blinks.



(R14967)

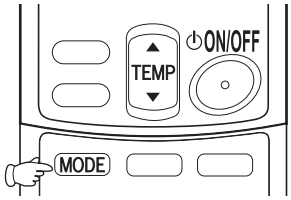
2. Press **TEMP ▲** or **TEMP ▼** button and change the number until you hear the two consecutive beeps or the long beep.



(R19115)

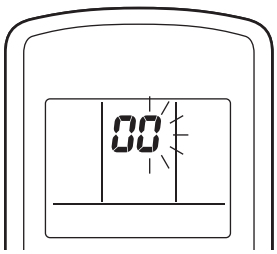
3. Diagnose by the sound.
   - Beep: The left-side number does not correspond with the error code.
   - Two consecutive beeps: The left-side number corresponds with the error code but the right-side number does not.
   - Long beep: Both the left-side and right-side number correspond with the error code. The numbers indicated when you hear the long beep are the error code. Error codes and description
     Refer to page 114, 115.

4. Press **MODE** button.



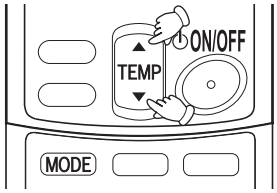
(R19116)

The right-side number blinks.



(R14968)

5. Press **TEMP ▲** or **TEMP ▼** button and change the number until you hear the long beep.

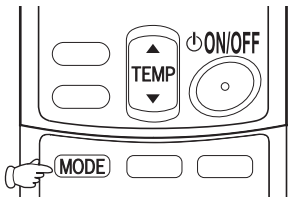


(R19115)

6. Diagnose by the sound.
   - Beep: The left-side number does not correspond with the error code.
   - Two consecutive beeps: The left-side number corresponds with the error code but the right-side number does not.
   - Long beep: Both the left-side and right-side numbers correspond with the error code.

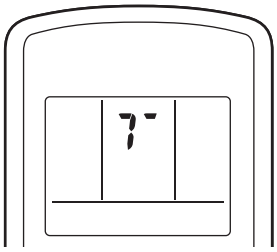
7. Determine the error code.
   The numbers indicated when you hear the long beep are the error code.
   Refer to Error codes and description on page 114, 115.

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



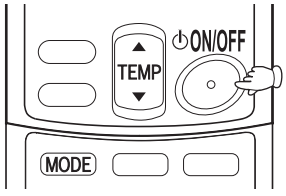
(R19116)

   The display "7" means the trial operation mode.
   Refer to page 187 for trial operation.



(R14969)

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

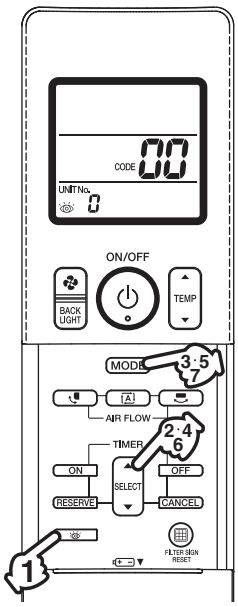


(R19117)

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

3.2.3 BRC086A22 Wireless Remote Controller

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

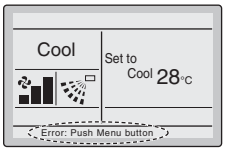


(R24923)

3.2.4 BRC1E63 Wired Remote Controller

Operation

1

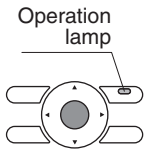


- If a malfunction occurs, either one of the following messages will appear on the Basic screen during operation.

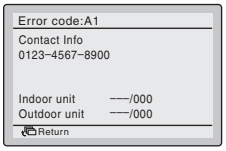
  "Error: Push Menu button."
  * The Operation lamp will blink.

  "Warning: Push Menu button."
  * The Operation lamp will not blink.

- Press Menu/Enter button.



2



- The Error code blinks and the contact address and model name will appear.
- Notify your local dealer of the Error code and Model name.

4. Code Indication on Remote Controller

4.1 Indoor Unit

Wall mounted and LSP duct type

Error Codes	Description		Reference Page
00	Normal condition		—
A1	Indoor unit PCB abnormality		116
A5	Freeze-up protection control		118
A6	Indoor fan motor or related abnormality	DC motor (CTKS, CTKB series)	119
		AC motor (FDKS series)	121
C4	Indoor heat exchanger thermistor or related abnormality		123
C9	Room temperature thermistor or related abnormality		123
U4	Signal transmission error (between indoor unit and outdoor unit)		124
U8	Unspecified voltage (between indoor unit and outdoor unit)		126

MSP duct type

Error Codes	Description		Reference Page
00	Normal condition		—
A1	Indoor unit PCB abnormality		127
A3	Drain water level control system abnormality		128
A6	Fan motor or related abnormality	DC motor (FDMR series)	129
A8	Fan PCB abnormality		131
AF★	Drain system abnormality		132
C4	Indoor heat exchanger thermistor or related abnormality		133
C5	Indoor heat exchanger thermistor or related abnormality		133
C9	Room temperature thermistor or related abnormality		133
CJ★	Remote controller thermistor abnormality		134
U5	Signal transmission error (between indoor unit and remote controller)		135
U8	Signal transmission error (between MAIN remote controller and SUB remote controller)		136
UA	Field setting abnormality		137

In general, the error codes display automatically and system stops. Inspect and repair the error.
★: “Inspection” is not displayed. The system operates, but be sure to inspect and repair the error.

4.2 Outdoor Unit

☼: ON, ●: OFF, ◑: Blinks
Green : Blinks in normal condition
Red : OFF in normal condition

Outdoor Unit LED Indication						Error Codes	Description	Reference Page
Green	Red							
A	1	2	3	4	5			
◑	●	●	●	●	●	00	Normal condition	—
						U8	Unspecified voltage (between indoor unit and outdoor unit)	144
						UX	Anti-icing function in other rooms	144
◑	●	●	☼	☼	●	(U0)	Refrigerant shortage	138
◑	☼	●	●	☼	●	U2	Low-voltage detection or over-voltage detection	140
◑	●	☼	●	●	●	U3	Wiring Error Check Unexecuted	142
◑	●	☼	☼	☼	●	U7	Signal transmission error (on outdoor unit PCB)	143
◑	☼	●	☼	☼	●	A5	Anti-icing control for indoor unit	145
◑	☼	☼	☼	●	●	E1	Outdoor unit PCB abnormality	147
◑	☼	●	☼	●	●	(E5)	OL activation (compressor overload)	148
◑	●	☼	☼	●	●	(E6)	Compressor lock	150
◑	☼	☼	☼	☼	●	E7	DC fan lock	151
◑	●	☼	●	☼	●	E8	Input overcurrent detection	152
◑	☼	●	☼	●	●	F3	Discharge pipe temperature control	153
◑	☼	●	☼	☼	●	F6	High pressure control in cooling	154
◑	●	●	☼	☼	●	F8	System shutdown due to temperature abnormality in compressor	156
◑	☼	☼	●	●	●	H0	Compressor system sensor abnormality	157
						H6	Position sensor abnormality	158
						H8	CT or related abnormality	160
						H9	Outdoor temperature thermistor or related abnormality	162
						J3	Discharge pipe thermistor or related abnormality	162
						J6	Outdoor heat exchanger thermistor or related abnormality	162
						J8	Liquid pipe thermistor or related abnormality	162
						J9	Gas pipe thermistor or related abnormality	162
						P4	Radiation fin thermistor or related abnormality	162
◑	☼	☼	●	☼	●	L3	Electrical box temperature rise	164
◑	●	●	●	☼	●	L4	Radiation fin temperature rise	165
◑	●	●	☼	●	●	L5	Output overcurrent detection	167

Notes

1. The error codes in the parenthesis ( ) are displayed only when the system is shut down.
2. When a sensor error occurs, check the remote controller display to determine which sensor is malfunctioning.
   If the remote controller does not indicate the error code, conduct the following procedure.
   ∗ Turn the power switch off and back on again. If the same LED indication appears again immediately after the power is turned on, the fault is in the thermistor.
   ∗ If the above condition does not result, the fault is in the CT.
3. The indoor unit error code may take the precedence in the remote controller display.

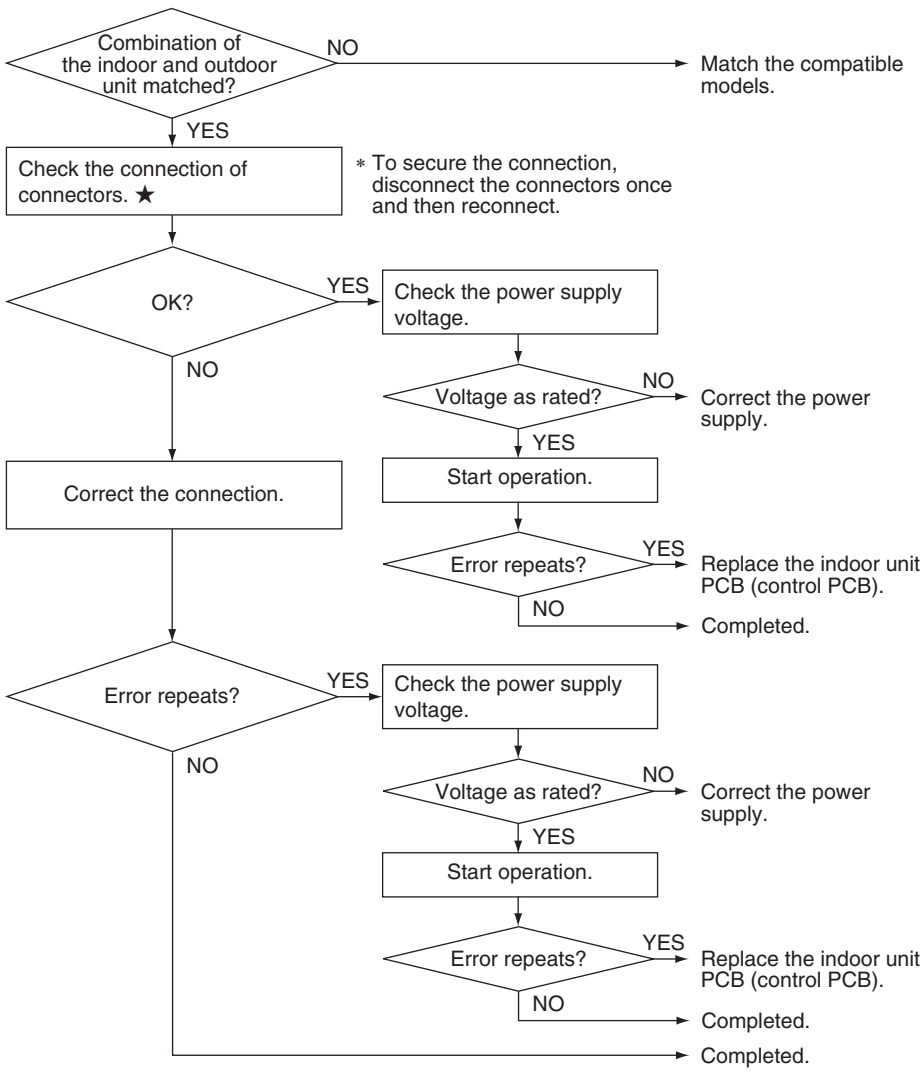
5. Troubleshooting for Wall Mounted and LSP Duct Type Indoor Unit

5.1 Indoor Unit PCB Abnormality

Error Code	A1
Method of Error Detection	The system checks if the circuit works properly within the microcomputer of the indoor unit.
Error Decision Conditions	The system cannot set the internal settings.
Supposed Causes	■ Wrong models interconnected ■ Defective indoor unit PCB ■ Disconnection of connector ■ Reduction of power supply voltage

Troubleshooting

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



R6000615

Note ★Connectors:

Wall mounted 25/35/50 class	Terminal block ~ Control PCB (H1, H2, H3)
Wall mounted 60/71 class	Terminal block ~ Filter PCB (S100) Filter PCB (S800) ~ Control PCB (S900)
LSP duct	Terminal block ~ Control PCB (H1, H2, H3)

5.2 Freeze-up Protection Control

Error Code

P5

Method of Error Detection

During cooling operation, the freeze-up protection control (operation halt) is activated according to the temperature detected by the indoor heat exchanger thermistor.

Error Decision Conditions

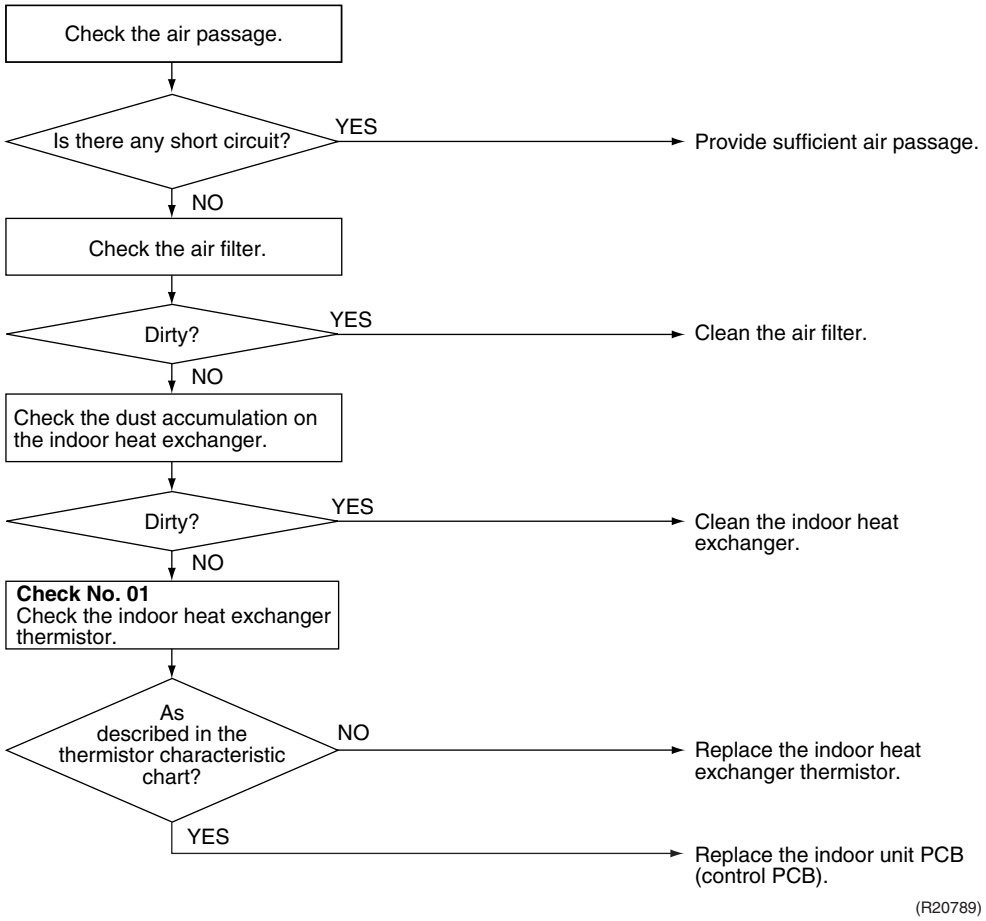
During cooling operation, the indoor heat exchanger temperature is below 0°C.

Supposed Causes

- Short-circuited air
- Clogged air filter of the indoor unit
- Dust accumulation on the indoor heat exchanger
- Defective indoor heat exchanger thermistor
- Defective indoor unit PCB

Troubleshooting

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



(R20789)

Reference **Check No.01** Refer to P.169

5.3 Indoor Fan Motor or Related Abnormality

5.3.1 DC Fan Motor or Related Abnormality

Applicable Models

CTKS25/35/50/60/71TVMG
CTKB25/35/50/60TVMG

Error Code

P5

Method of Error Detection

The rotation speed detected by the Hall IC during fan motor operation is used to determine abnormal fan motor operation.

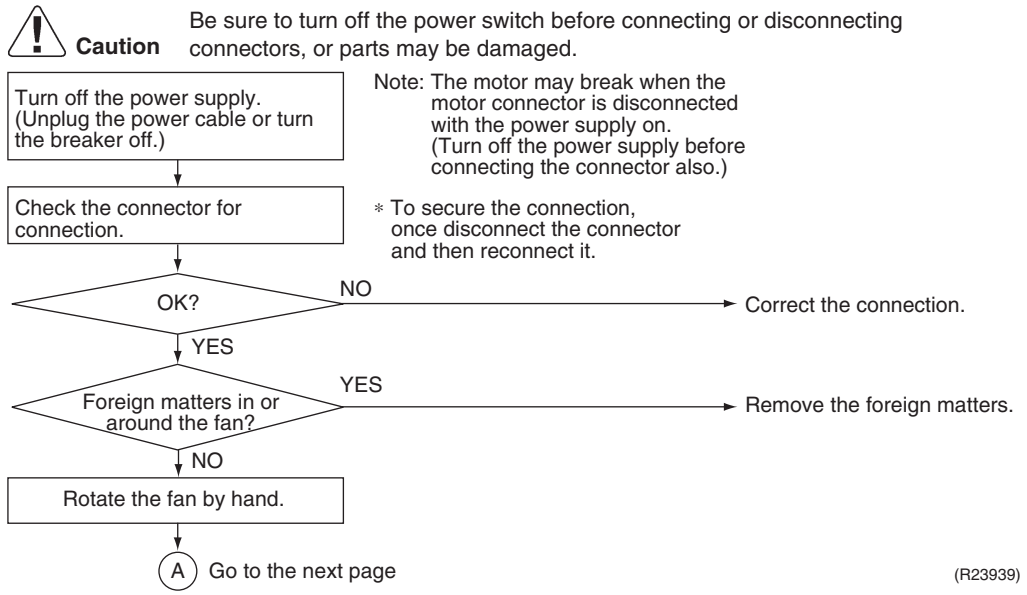
Error Decision Conditions

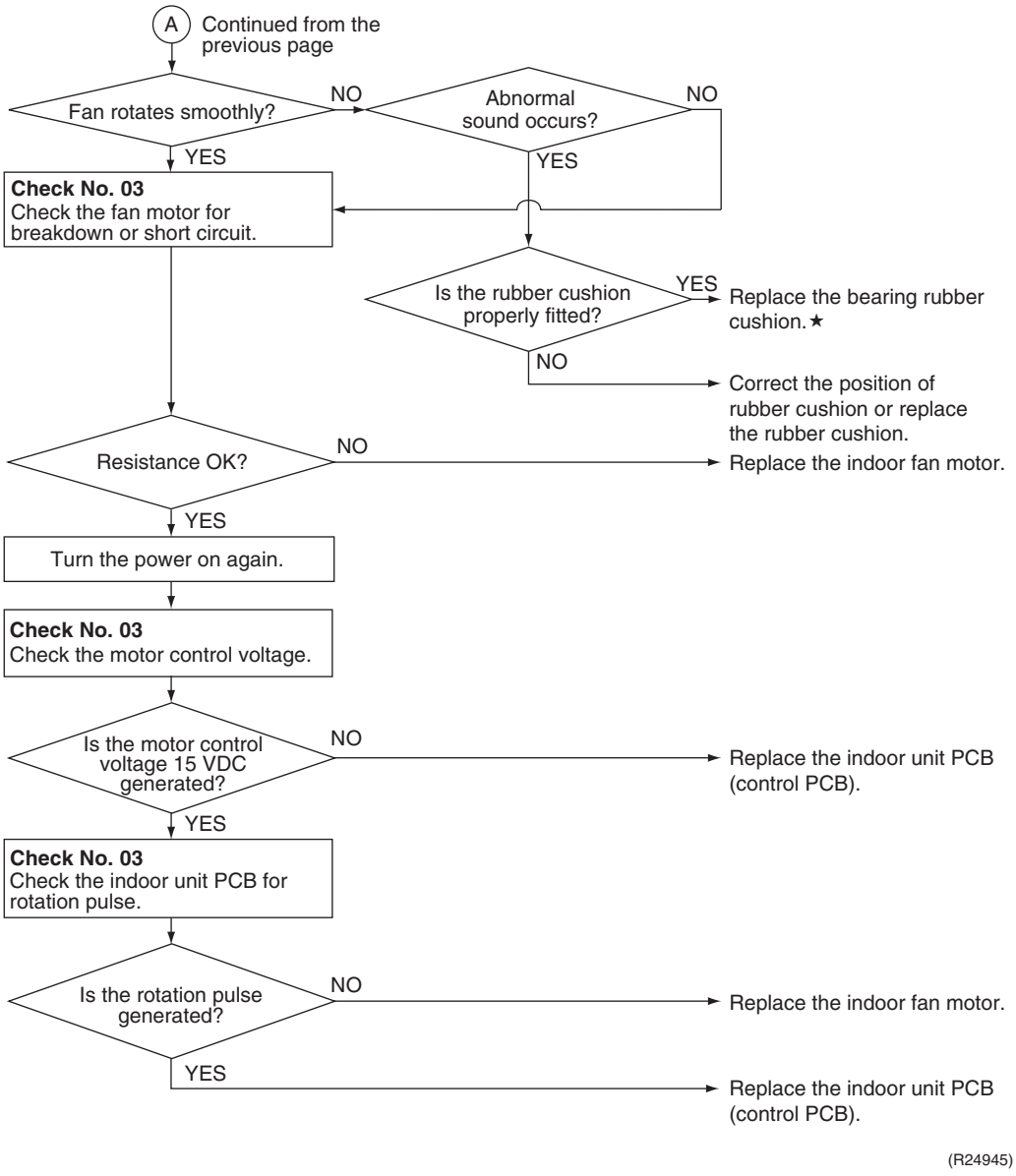
The detected rotation speed does not reach the demanded rotation speed of the target tap, and is less than 50% of the maximum fan motor rotation speed.

Supposed Causes

- Remarkable decrease in power supply voltage
- Layer short inside the fan motor winding
- Breaking of wire inside the fan motor
- Breaking of the fan motor lead wires
- Defective capacitor of the fan motor
- Defective indoor unit PCB

Troubleshooting

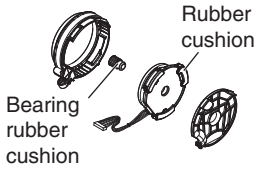




(R24945)

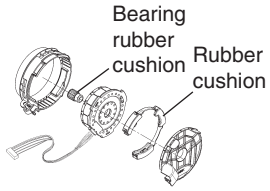
★Rubber cushion

25/35/50 class



(R25226)

60/71 class



R6000306

Note(s) The rotation pulse is the feedback signal from the indoor fan motor.

Reference **Check No.03** Refer to P.170

5.3.2 AC Fan Motor or Related Abnormality

Applicable Models

FDKS25/35EAVMB
FDKS25/35CAVMB
FDKS50/60CVMB

Error Code

Method of Error Detection

The rotation speed detected by the Hall IC during fan motor operation determines abnormal fan motor operation.

Error Decision Conditions

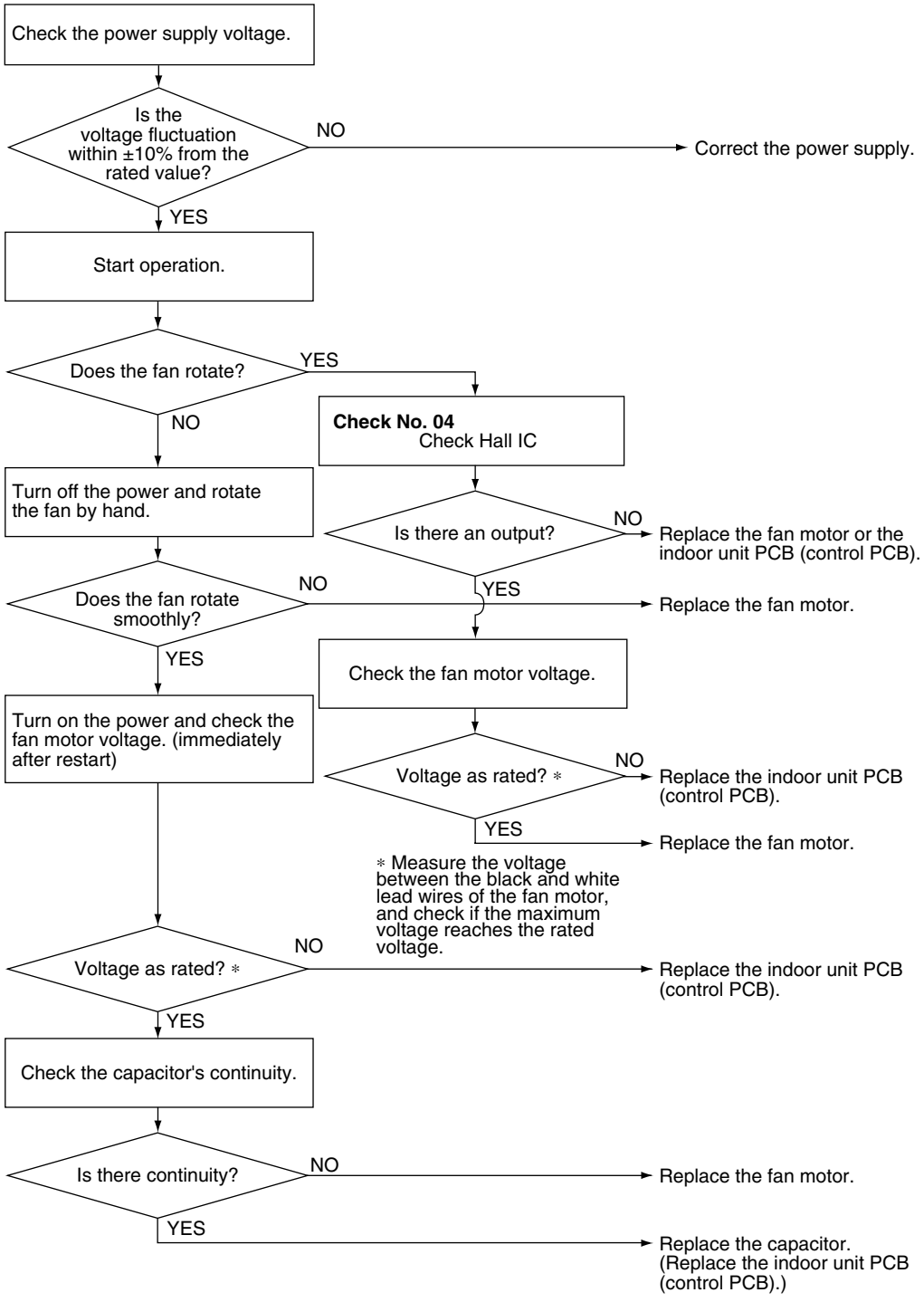
The detected rotation speed does not reach the demanded rotation speed of the target tap.

Supposed Causes

- Power supply voltage out of specification
- Layer short inside the fan motor winding
- Breaking of wire inside the fan motor
- Breaking of the fan motor lead wires
- Defective capacitor of the fan motor
- Defective indoor unit PCB

Troubleshooting

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



(R21106)

Reference **Check No.04** Refer to P.171

5.4 Thermistor or Related Abnormality (Indoor Unit)

Error Code

C4, C9

Method of Error Detection

The temperatures detected by the thermistors determine thermistor errors.

Error Decision Conditions

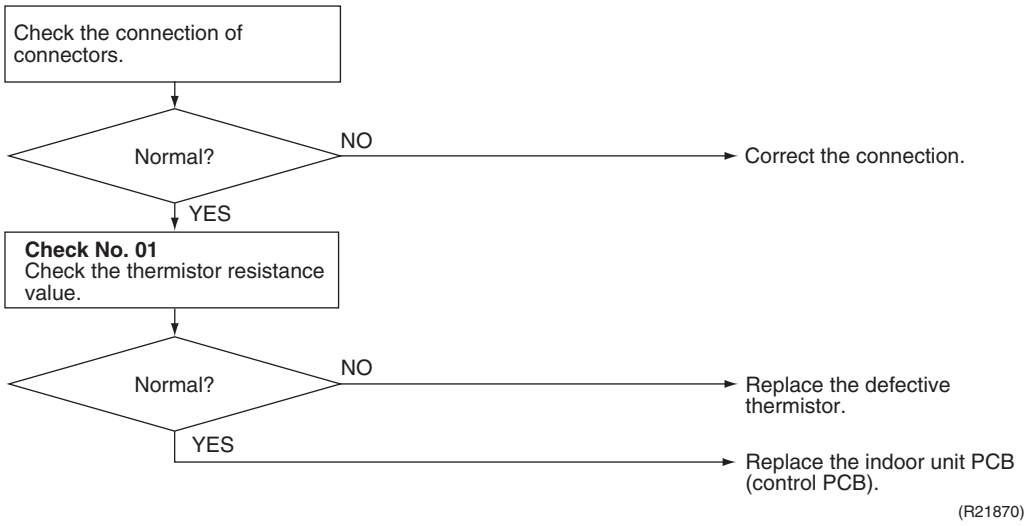
The voltage between the both ends of the thermistor is either 4.96 V or more, or 0.04 V or less with the power on.

Supposed Causes

- Disconnection of connector
- Defective thermistor(s)
- Defective indoor unit PCB

Troubleshooting

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



C4 : Indoor heat exchanger thermistor
C9 : Room temperature thermistor

Reference **Check No.01** Refer to P.169

5.5 Signal Transmission Error (Between Indoor Unit and Outdoor Unit)

Error Code

U4

Method of Error Detection

The signal transmission data received from the outdoor unit is checked whether it is normal.

Error Decision Conditions

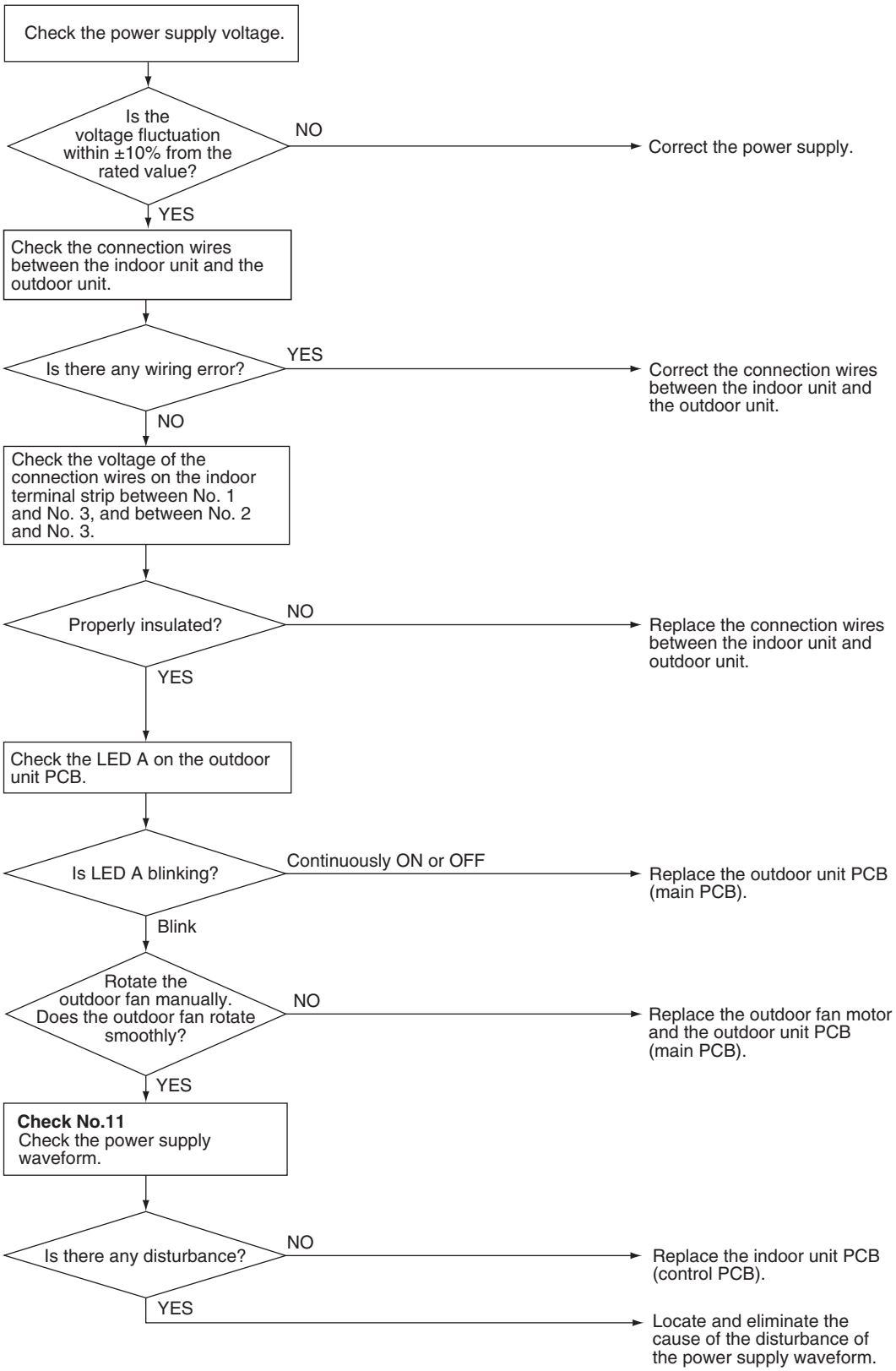
The data sent from the outdoor unit cannot be received normally, or the content of the data is abnormal.

Supposed Causes

- Power supply voltage out of specification
- Reduction of power supply voltage
- Wiring error
- Breaking of the connecting wires between the indoor and outdoor units (wire No. 3)
- Defective outdoor unit PCB
- Short circuit inside the fan motor winding
- Defective indoor unit PCB
- Disturbed power supply waveform

Troubleshooting

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



(R24742)

Reference **Check No.11** Refer to P.172

5.6 Unspecified Voltage (Between Indoor Unit and Outdoor Unit)

Error Code UP

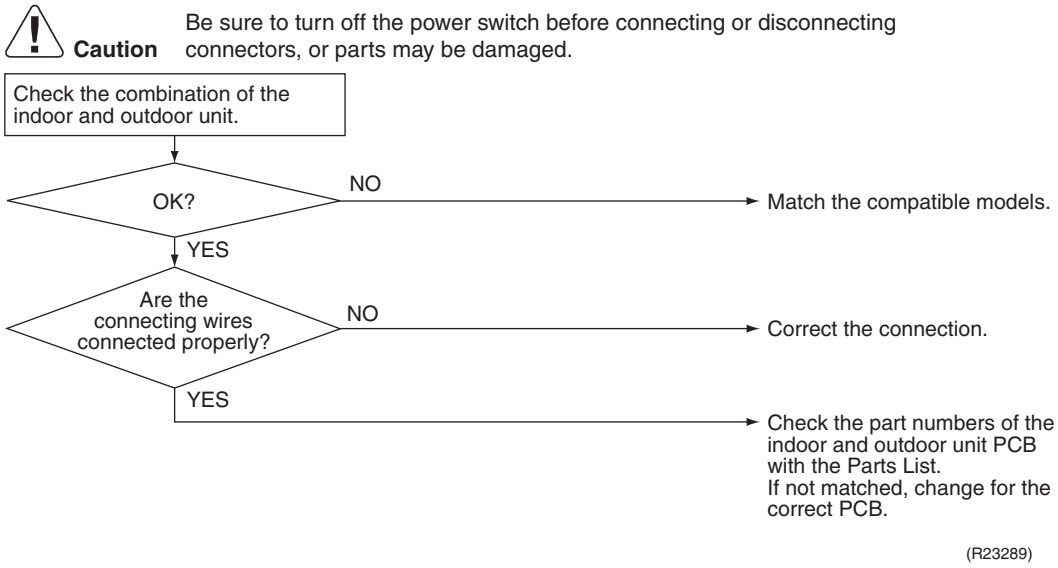
Method of Error Detection The supply power is detected for its requirements (pair type is different from multi type) by the indoor/outdoor transmission signal.

Error Decision Conditions The pair type and multi type are interconnected.

Supposed Causes

- Wrong models interconnected
- Wrong wiring of connecting wires
- Wrong indoor unit PCB or outdoor unit PCB mounted
- Defective indoor unit PCB
- Defective outdoor unit PCB

Troubleshooting



(R23289)

6. Troubleshooting for MSP Duct Type Indoor Unit

6.1 Indoor Unit PCB Abnormality

Error Code

A1

Method of Error Detection

The system checks the data from EEPROM.

Error Decision Conditions

When the data from the EEPROM is not received correctly

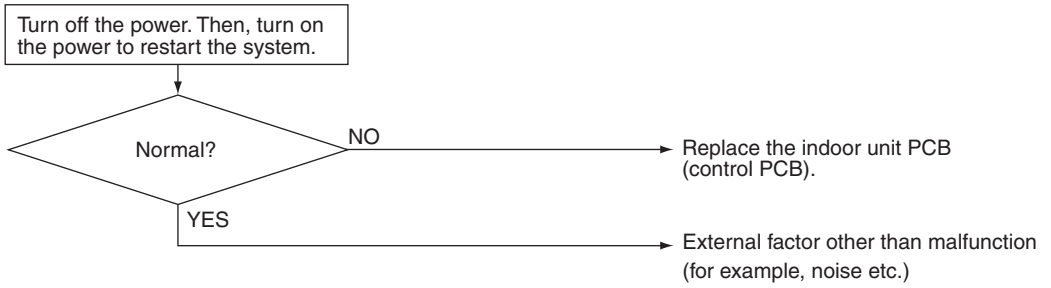
EEPROM (Electrically Erasable Programmable Read Only Memory): A memory chip that holds its content without power. It can be erased, either within the computer or externally and usually requires more voltage for erasure than the common +5 volts used in logic circuits. It functions like non-volatile RAM, but writing to EEPROM is slower than writing to RAM.

Supposed Causes

- Defective indoor unit PCB
- External factor (noise etc.)

Troubleshooting

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



(R22247)

6.2 Drain Water Level Control System Abnormality

Error Code

A3

Method of Error Detection

The float switch detects error.

Error Decision Conditions

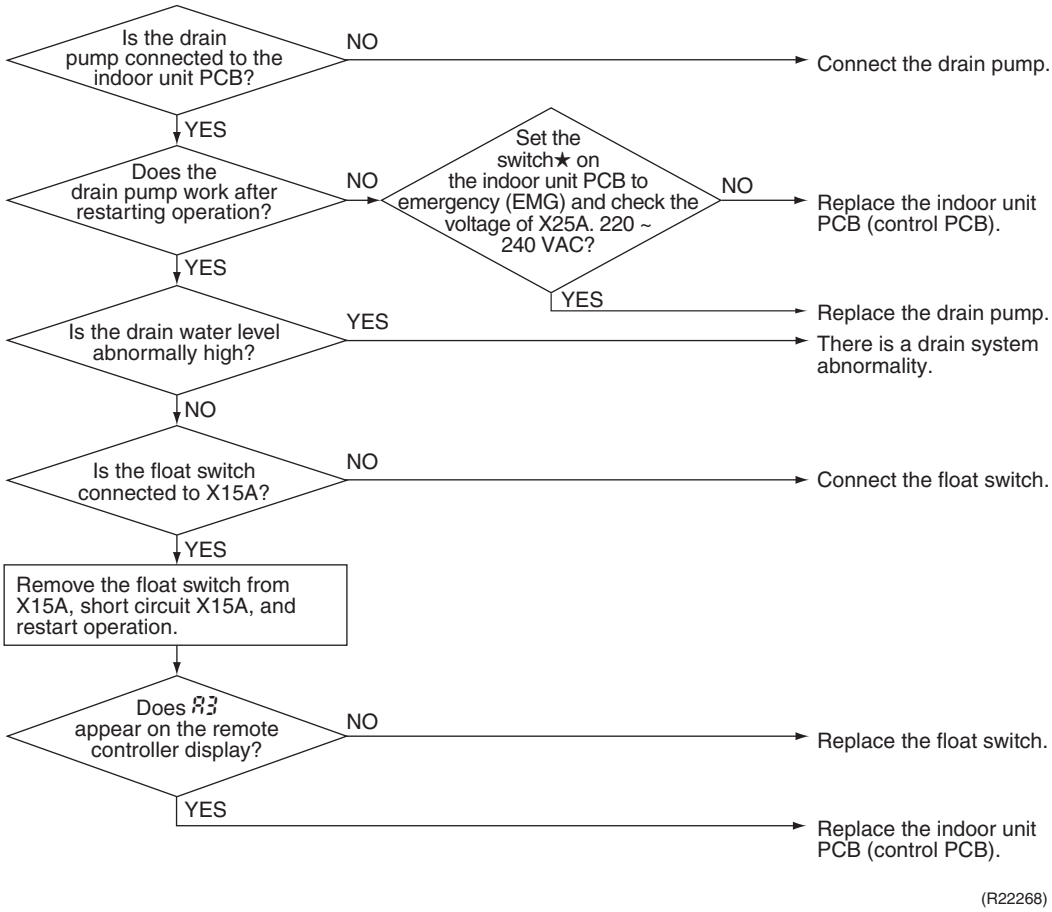
When the water level reaches its upper limit and when the float switch turns OFF

Supposed Causes

- Defective drain pump
- Improper drain piping work
- Clogged drain piping
- Defective float switch
- Defective indoor unit PCB
- Defective short circuit connector X15A on indoor unit PCB

Troubleshooting

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



(R22268)

Notes

★ Switch: DS1 on control PCB

For the location of the DIP switch, refer to page 34.

6.3 Indoor Fan Motor or Related Abnormality

Error Code

Method of Error Detection

- Detection from the current flow on the fan PCB
- Detection from the rotation speed of the fan motor in operation

Error Decision Conditions

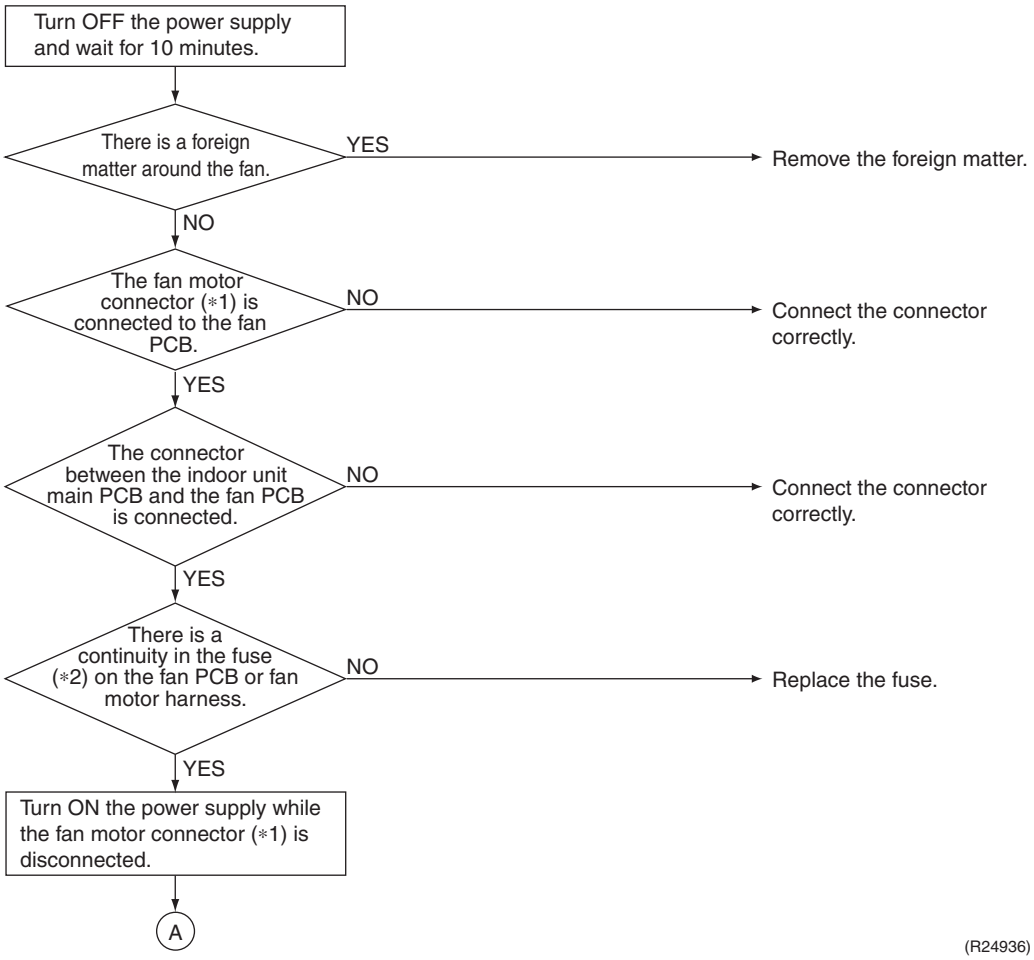
The rotation speed is less than a certain level for 6 seconds.

Supposed Causes

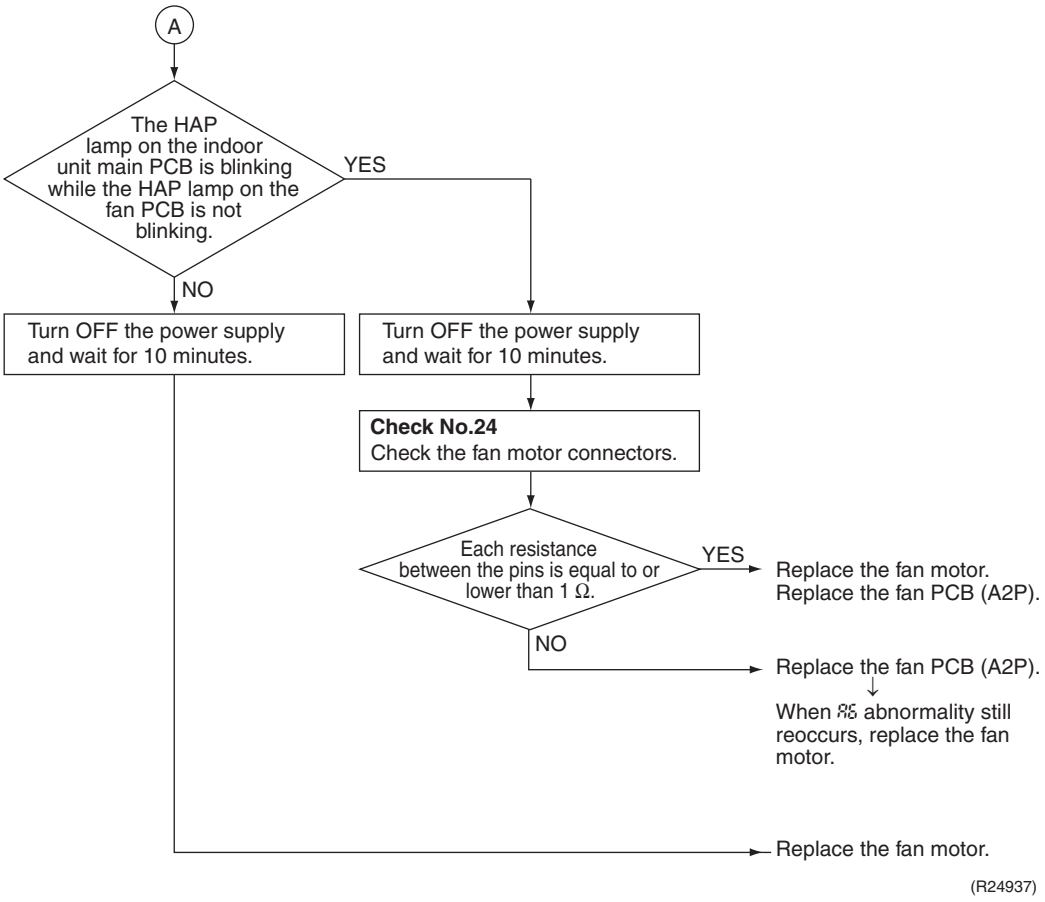
- Clogged foreign matter
- Disconnection of fan motor connectors
- Disconnection of the connector between the indoor unit PCB and the fan PCB
- Defective fan PCB
- Defective fan motor
- No fuse continuity

Trouble Shooting

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



(R24936)



Note

Connector and fuse
∗ 1 Fan motor connector: X8A
∗ 2 Fuse: F2U

Reference **Check No.24** Refer to P.170

6.4 Fan PCB Abnormality

Error Code

Method of Error Detection

Microcomputer checks the voltage state of the fan PCB.

Error Decision Conditions

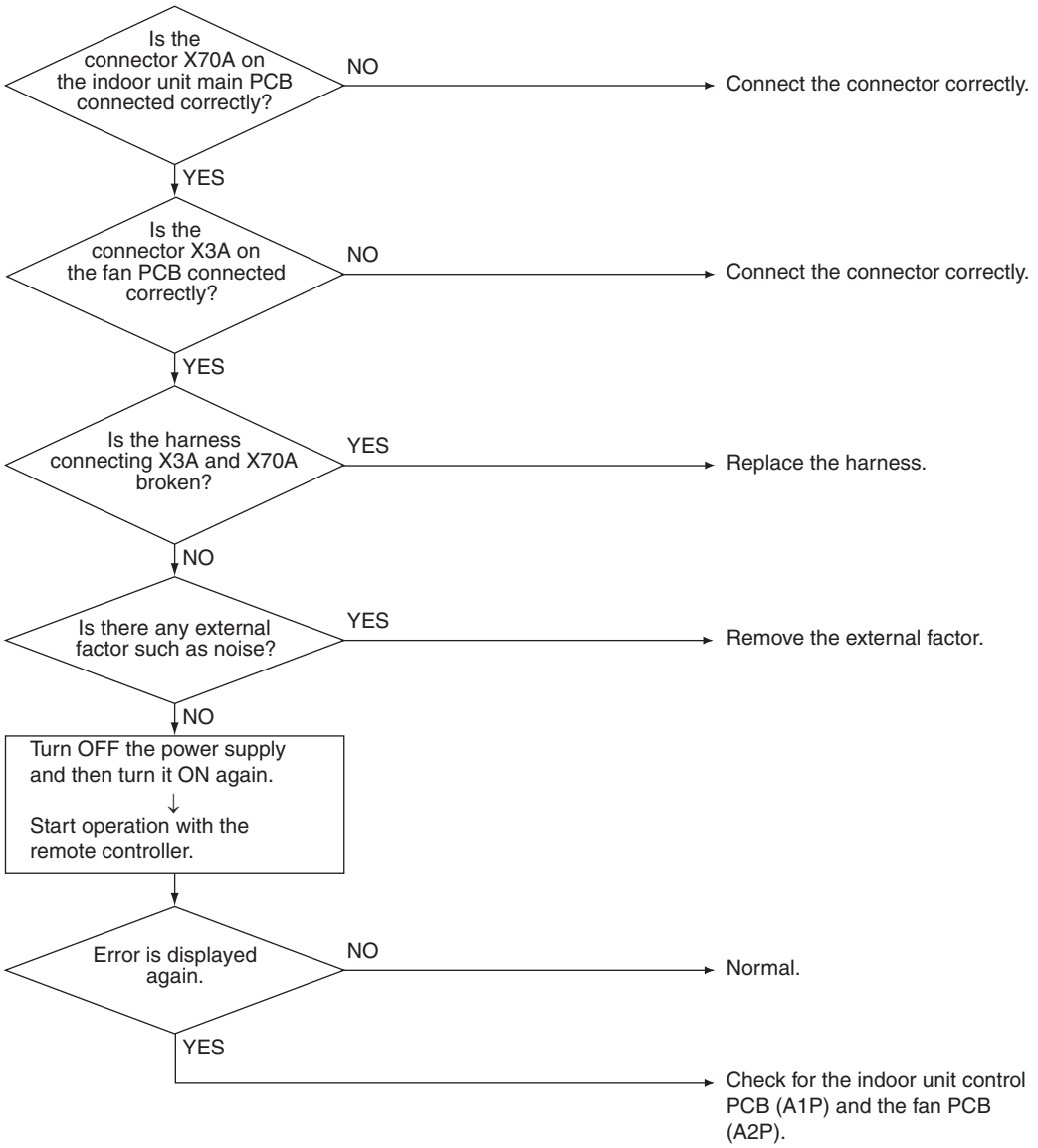
Overvoltage or voltage drop is detected on the fan PCB.

Supposed Causes

- Defective fan PCB
- External factor such as noise

Troubleshooting

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



(R24938)

6.5 Drain System Abnormality

Error Code

Method of Error Detection

Water leakage is detected based on the float switch ON/OFF changeover while the compressor is not operating.

Error Decision Conditions

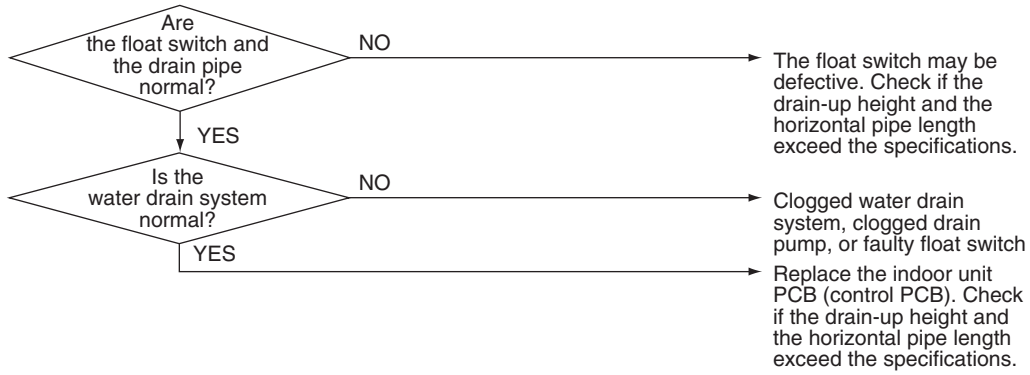
The float switch changes from ON to OFF while the compressor is OFF

Supposed Causes

- Error in the drain pipe installation
- Defective float switch
- Defective indoor unit PCB

Troubleshooting

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



(R24692)

6.6 Thermistor or Related Abnormality

Error Code

C4, C5, C9

Method of Error Detection

The temperatures detected by the thermistors determine thermistor errors.

Error Decision Conditions

The voltage between the both ends of the thermistor is either 4.96 V or more, or 0.04 V or less with the power on.

Supposed Causes

- Disconnection of connector
- Defective thermistor(s)
- Defective indoor unit PCB

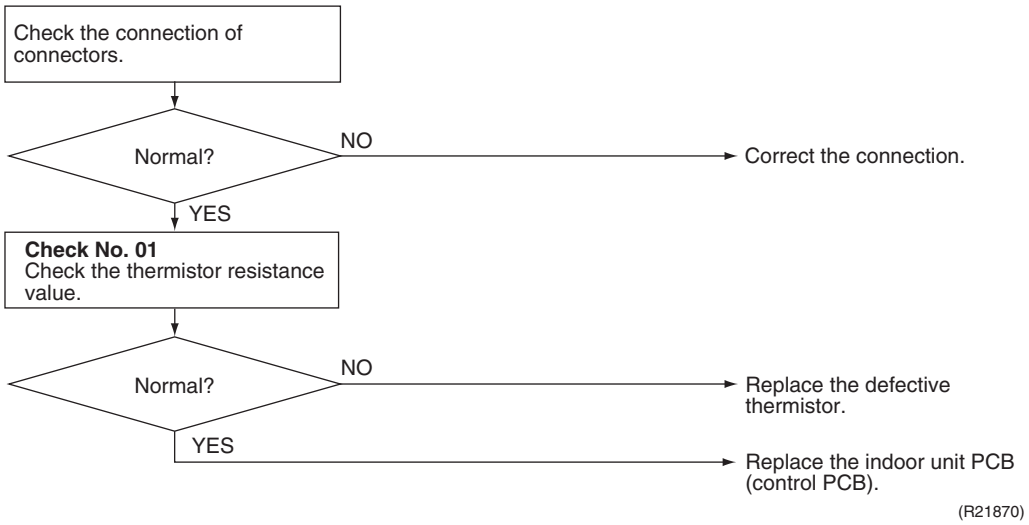
Troubleshooting

If the cause of the problem is related to the thermistors, the thermistors should be checked prior to changing the indoor unit PCB.

To check the thermistors, proceed as follows:

1. Disconnect the thermistor from the indoor unit PCB.
2. Read the temperature and the resistance value.
3. Check if the measured values correspond with the values in the table of thermistor resistance check.

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



C4: Indoor heat exchanger thermistor 1 (liquid pipe) (R2T)
C5: Indoor heat exchanger thermistor 2 (R3T)
C9: Room temperature thermistor (R1T)

Reference **Check No.01** Refer to P.169

6.7 Remote Controller Thermistor Abnormality

Error Code

C J

Method of Error Detection

Even if remote controller thermistor is faulty, system is possible to operate by system thermistor. Malfunction detection is carried out by the temperature detected by the remote controller thermistor.

Error Decision Conditions

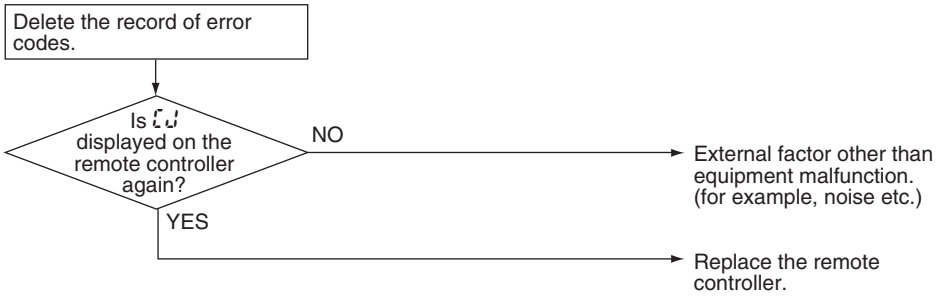
The remote controller thermistor is disconnected or shorted while the unit is running.

Supposed Causes

- Defective thermistor
- Broken wire

Troubleshooting

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



(R21111)

Note To delete the record of error codes, press **ON/OFF** button for 4 seconds or more while the error code is displayed in the inspection mode.

6.8 Signal Transmission Error (Between Indoor Unit and Remote Controller)

Error Code

U5

Method of Error Detection

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

Error Decision Conditions

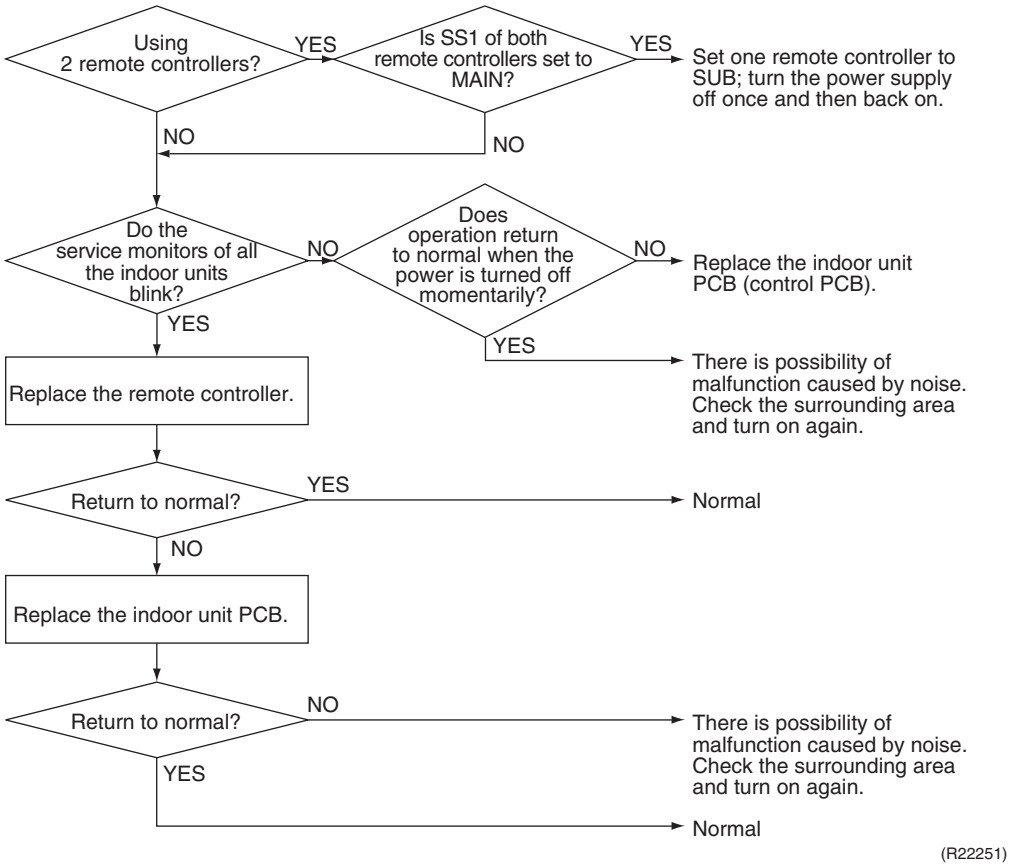
Normal transmission does not continue for specified period.

Supposed Causes

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

Troubleshooting

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



(R22251)

6.9 Signal Transmission Error (Between MAIN Remote Controller and SUB Remote Controller)

Error Code

U8

Method of Error Detection

In case of controlling with 2 remote controllers, check the system using microcomputer if signal transmission between MAIN remote controller and SUB remote controller is normal.

Error Decision Conditions

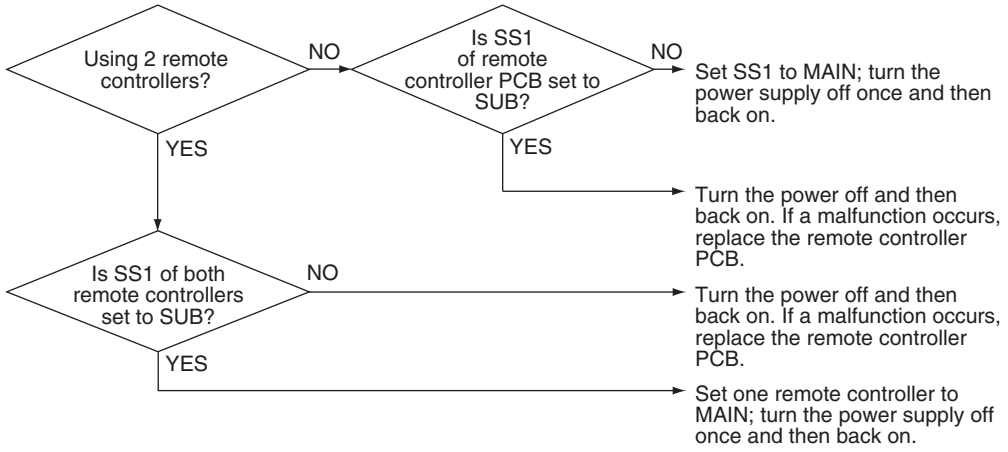
Normal transmission does not continue for specified period.

Supposed Causes

- Remote controller is set to SUB when using 1 remote controller
- Connection of 2 SUB remote controllers (when using 2 remote controllers)
- Defective remote controller PCB

Troubleshooting

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



(R21113)

6.10 Field Setting Abnormality

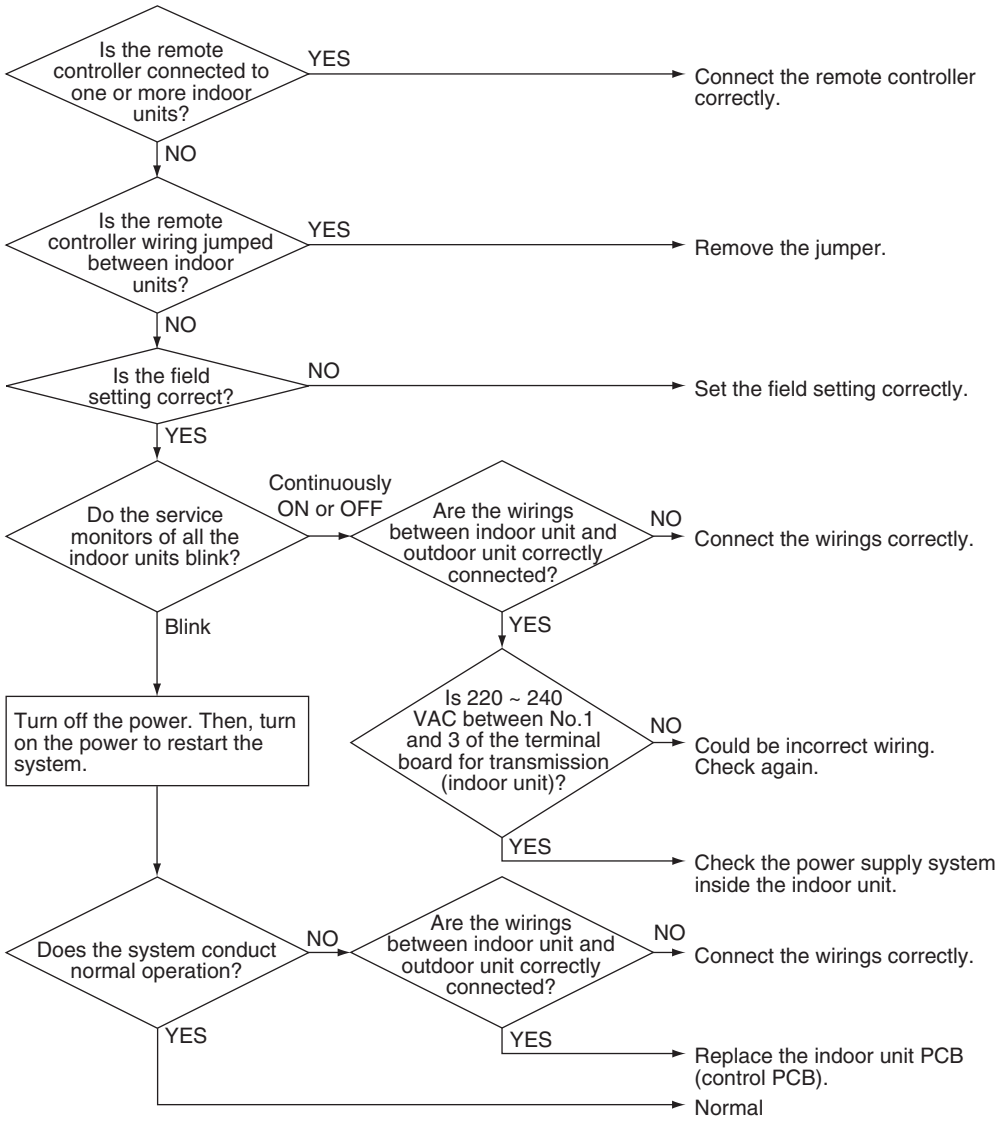
Error Code UA

Error Decision Conditions Incorrect field setting

Supposed Causes
- Defective indoor unit PCB
- Defective outdoor unit PCB
- Improper power supply
- Indoor-outdoor, indoor-indoor unit transmission wiring
- Defective remote controller wiring

Troubleshooting

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



(R22125)

7. Troubleshooting for Outdoor Unit

7.1 Refrigerant Shortage

Error Code

U0

Outdoor Unit LED Display

A ◑ 1 ● 2 ● 3 ☼ 4 ☼ 5 ●

Method of Error Detection

Refrigerant shortage is detected by checking the input current value and the compressor output frequency. If the refrigerant is short, the input current is lower than the normal value.

Error Decision Conditions

Refrigerant shortage detection:
The following conditions continue for 7 minutes.

- Input current ≤ **A** × output frequency + **B**
- Output frequency > **C**

	A (coefficient)	**B** (A)	**C** (Hz)
50/65/80 class	10/1000	0.3	54
90 class	27/1000	2	40

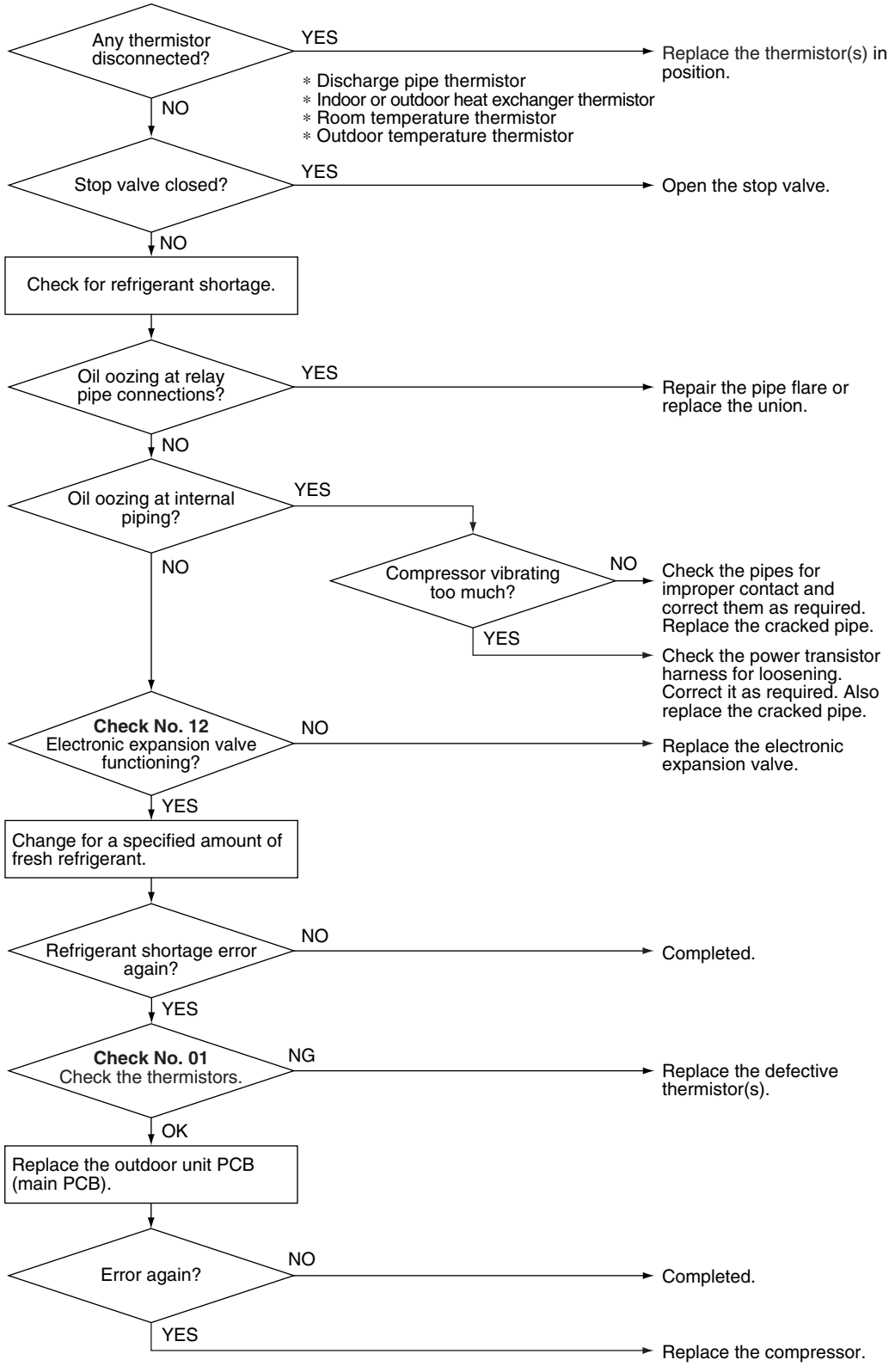
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 60 minutes without any other error

Supposed Causes

- Disconnection of the discharge pipe thermistor, indoor or outdoor heat exchanger thermistor, room or outdoor temperature thermistor
- Closed stop valve
- Refrigerant shortage (refrigerant leakage)
- Poor compression performance of compressor
- Defective electronic expansion valve

Troubleshooting

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



(R20401)

Reference **Check No.01** Refer to P.169

Reference **Check No.12** Refer to P.172

7.2 Low-voltage Detection or Over-voltage Detection

Error Code

U2

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ● 3 ● 4 ☼ 5 ●

Method of Error Detection

Low-voltage detection:
An abnormal voltage drop is detected by the DC voltage detection circuit.

Over-voltage detection:
An abnormal voltage rise is detected by the over-voltage detection circuit.

Error Decision Conditions

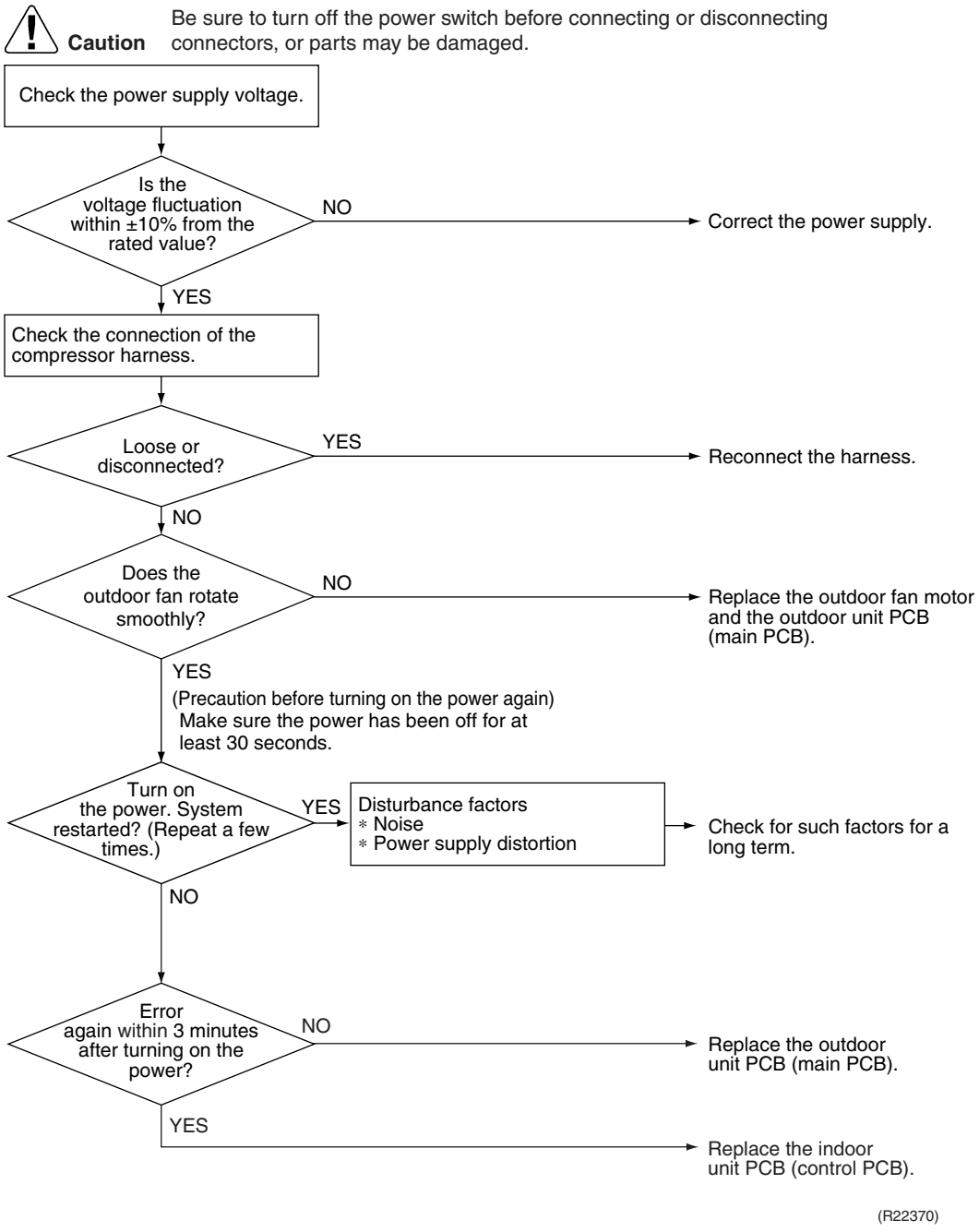
Low-voltage detection:
- The voltage detected by the DC voltage detection circuit is below 196 V for 0.1 second.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 60 minutes without any other error

Over-voltage detection:
- An over-voltage signal is fed from the over-voltage detection circuit to the microcomputer.
- The compressor stops if the error occurs, and restarts automatically after 3-minute standby.

Supposed Causes

- Power supply voltage is not as specified.
- Defective DC voltage detection circuit
- Defective over-voltage detection circuit
- Defective PAM control part
- Disconnection of compressor harness
- Short circuit inside the fan motor winding
- Noise
- Momentary drop of voltage
- Momentary power failure
- Defective outdoor unit PCB
- Defective indoor unit PCB

Troubleshooting



7.3 Wiring Error Check Unexecuted

Error Code U3

Outdoor Unit LED Display A ◑ 1 ● 2 ☼ 3 ● 4 ● 5 ●

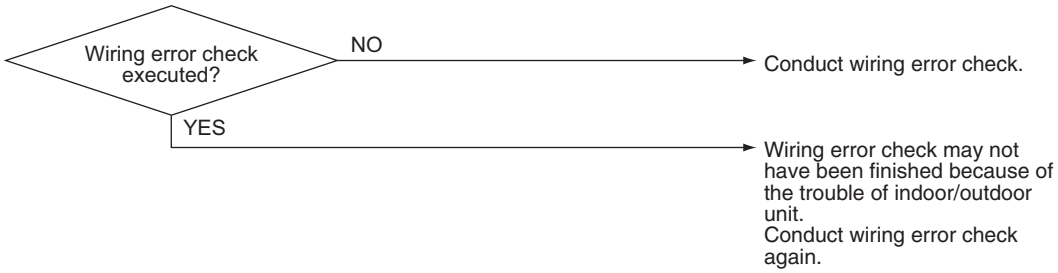
Method of Error Detection The system checks if wiring error check is executed after clearing the memory.

Error Decision Conditions An error is determined when the unit is operated by the remote controller without executing wiring error check after the memory was cleared.

Supposed Causes The wiring error switch (SW3) may have been pressed for 10 seconds or more and the memory may have been deleted. The unit cannot be operated unless wiring error check is executed.

Troubleshooting

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



Reference Refer to Wiring Error Check Function on page 185 for details.

7.4 Signal Transmission Error (on Outdoor Unit PCB)

Error Code U7

Outdoor Unit LED Display A ◑ 1 ● 2 ☼ 3 ☼ 4 ☼ 5 ●

Method of Error Detection Communication error between microcomputer mounted on the main PCB and PM1.

Error Decision Conditions

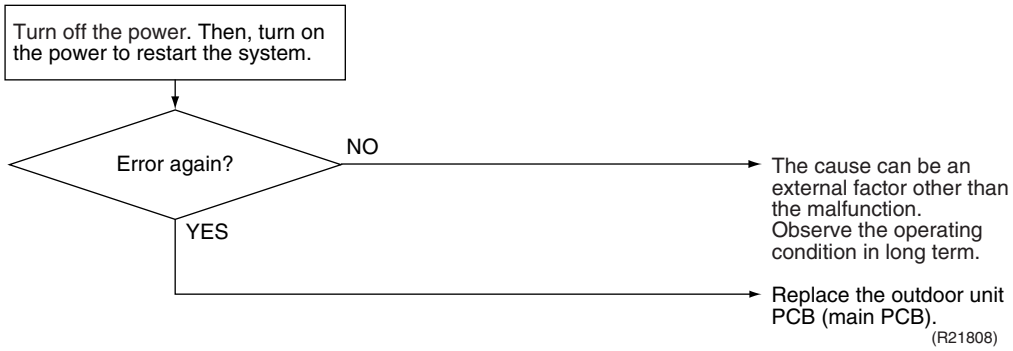
- The abnormality is determined when the data sent from the PM1 can not be received for 9 seconds.
- The error counter is reset when the data from the PM1 can be successfully received.

Supposed Causes

- Defective outdoor unit PCB

Troubleshooting

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



7.5 Unspecified Voltage (Between Indoor Unit and Outdoor Unit)/Anti-icing Function in Other Rooms

Error Code

UA, UH

Outdoor Unit LED Display

A ◑ 1 ● 2 ● 3 ● 4 ● 5 ●

Method of Error Detection

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

Error Decision Conditions

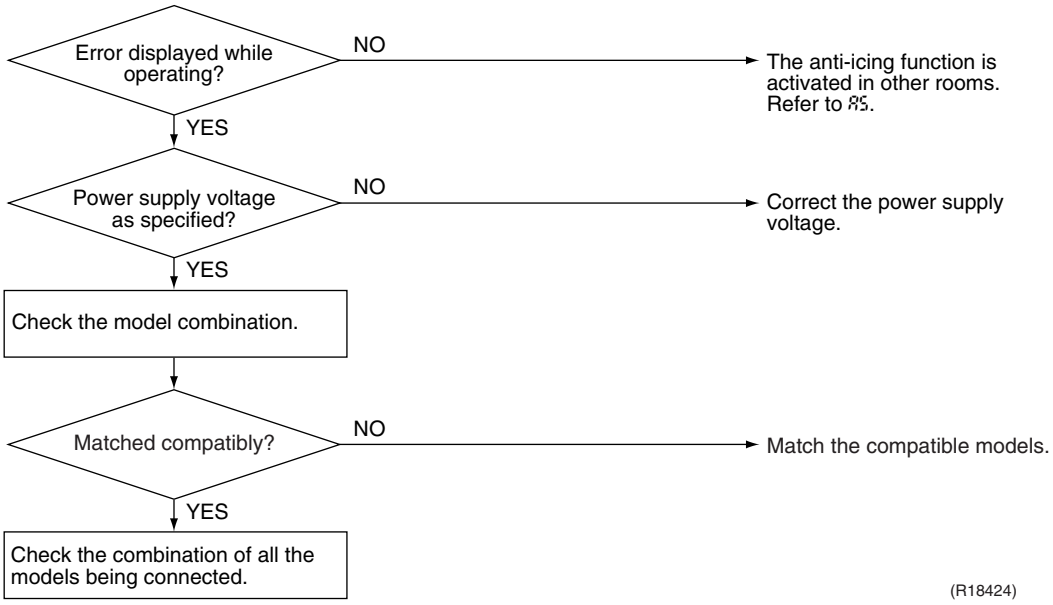
- Anti-icing function in other rooms
- Unspecified internal and/or external voltages
- Mismatching of indoor and outdoor units

Supposed Causes

- Anti-icing function in other rooms
- Power supply voltage is not as specified.
- Wrong models interconnected
- Wrong indoor unit PCB or outdoor unit PCB mounted

Troubleshooting

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



Note Refer to Anti-icing control for indoor unit on page 145 for details.

7.6 Anti-icing Control for Indoor Unit

Error Code

P5

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ● 3 ☼ 4 ☼ 5 ●

Method of Error Detection

During cooling operation, indoor unit icing is detected by checking the temperatures sensed by the indoor heat exchanger thermistor and room temperature thermistor that are located in a shut-down room.

Error Decision Conditions

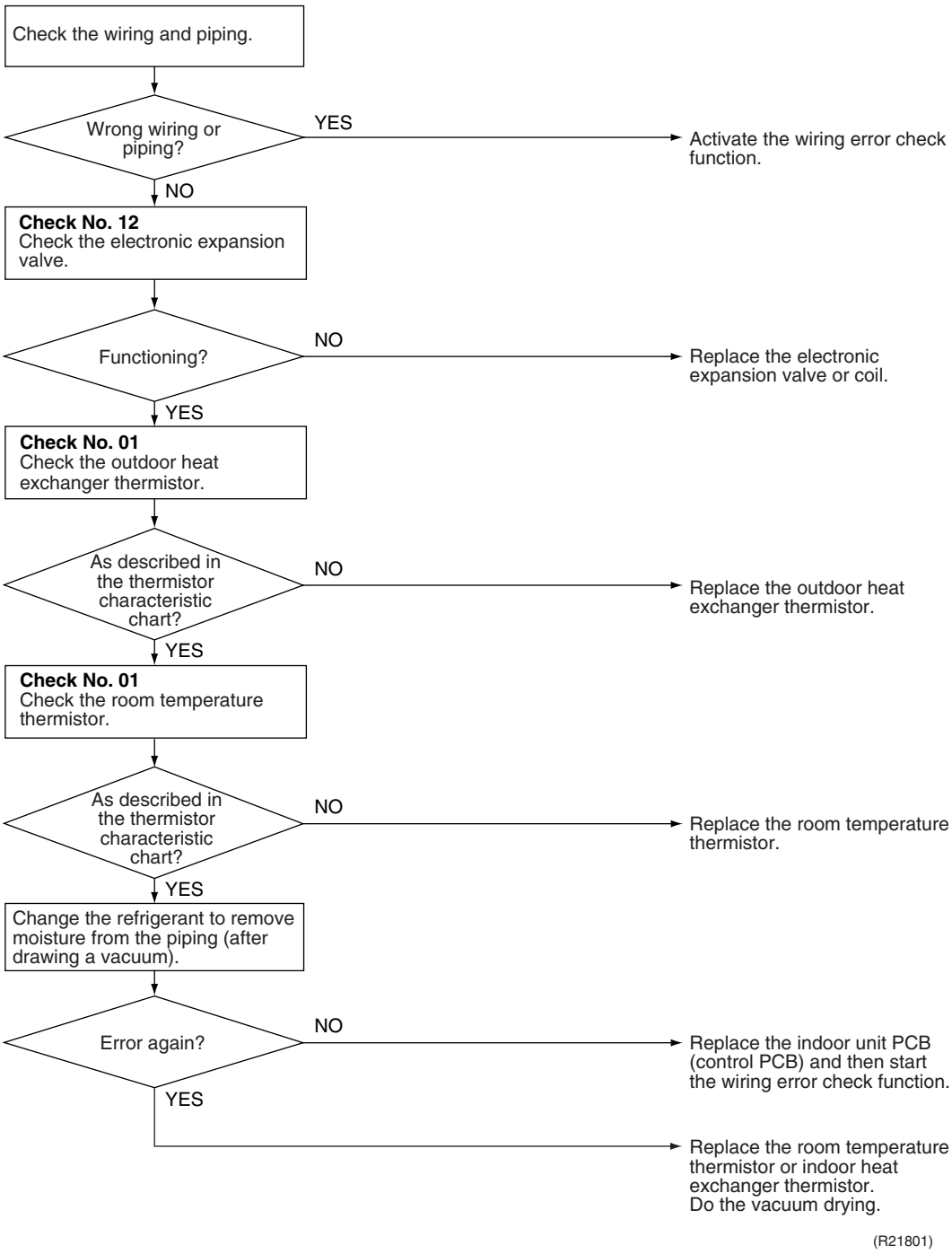
- In cooling operation, the both conditions (A) and (B) are met for 5 minutes.
  (A) Room temperature – Indoor heat exchanger temperature ≥ 10°C
  (B) Indoor heat exchanger temperature ≤ –1°C
- If the error repeats, the system is shut down.
- Reset condition: 3-minute standby is over and the indoor heat exchanger temperature is above 0°C

Supposed Causes

- Wrong wiring or piping
- Defective electronic expansion valve
- Short-circuited air
- Defective indoor heat exchanger thermistor
- Defective room temperature thermistor

Troubleshooting

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



(R21801)

Reference **Check No.01** Refer to P.169

Reference **Check No.12** Refer to P.172

7.7 Outdoor Unit PCB Abnormality

Error Code

E1

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ☼ 3 ☼ 4 ● 5 ●

Method of Error Detection

Detect within the program of the microcomputer.

Error Decision Conditions

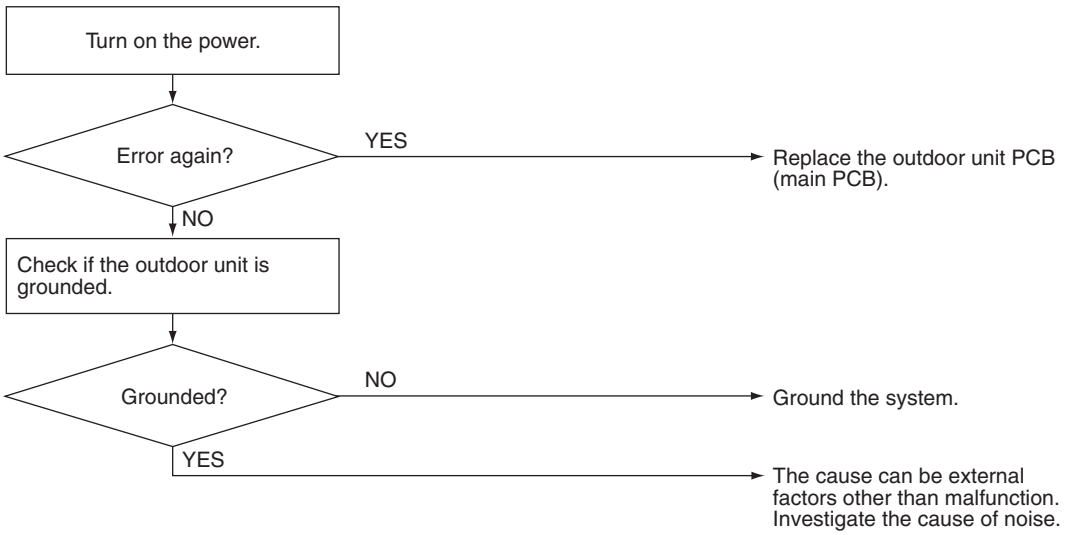
The program of the microcomputer is in abnormal running order.

Supposed Causes

- Defective outdoor unit PCB
- Noise
- Momentary drop of voltage
- Momentary power failure

Troubleshooting

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



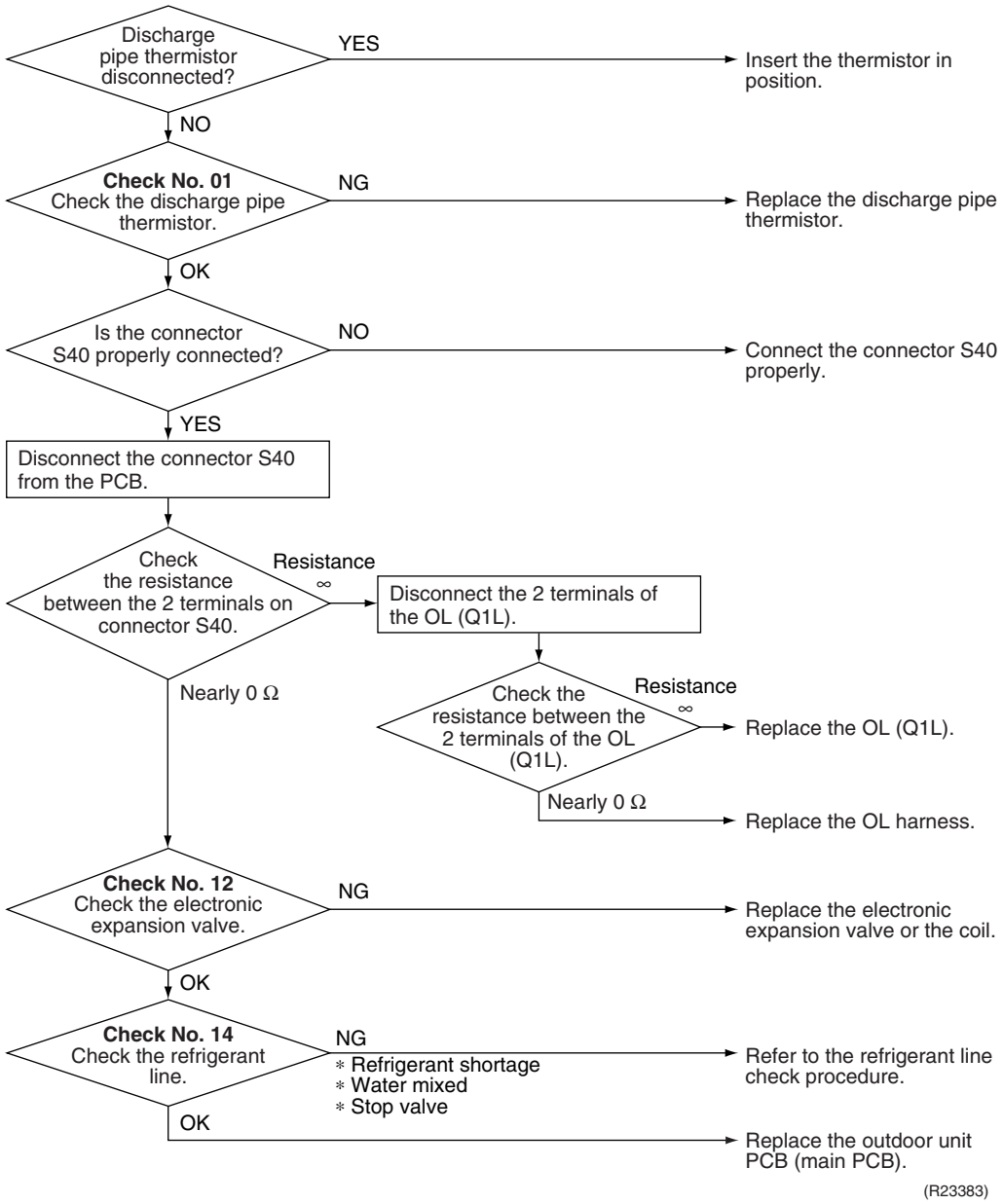
(R21809)

7.8 OL Activation (Compressor Overload)

Error Code	E5
Outdoor Unit LED Display	A ◑ 1 ☼ 2 ● 3 ☼ 4 ● 5 ●
Method of Error Detection	A compressor overload is detected through compressor OL.
Error Decision Conditions	■ If the error repeats, the system is shut down. ■ Reset condition: Continuous run for about 60 minutes without any other error
Supposed Causes	■ Disconnection of discharge pipe thermistor ■ Defective discharge pipe thermistor ■ Disconnection of connector S40 ■ Disconnection of 2 terminals of OL (Q1L) ■ Defective OL (Q1L) ■ Broken OL harness ■ Defective electronic expansion valve or coil ■ Defective outdoor unit PCB ■ Refrigerant shortage ■ Water mixed in refrigerant ■ Defective stop valve

Troubleshooting

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



Note OL (Q1L) activating temperature: 130°C
OL (Q1L) recovery temperature: 95°C

Reference **Check No.01** Refer to P.169

Reference **Check No.12** Refer to P.172

Reference **Check No.14** Refer to P.173

7.9 Compressor Lock

Error Code E6

Outdoor Unit LED Display A ◑ 1 ● 2 ☼ 3 ☼ 4 ● 5 ●

Method of Error Detection A compressor lock is detected by checking the compressor running condition through the position detection circuit.

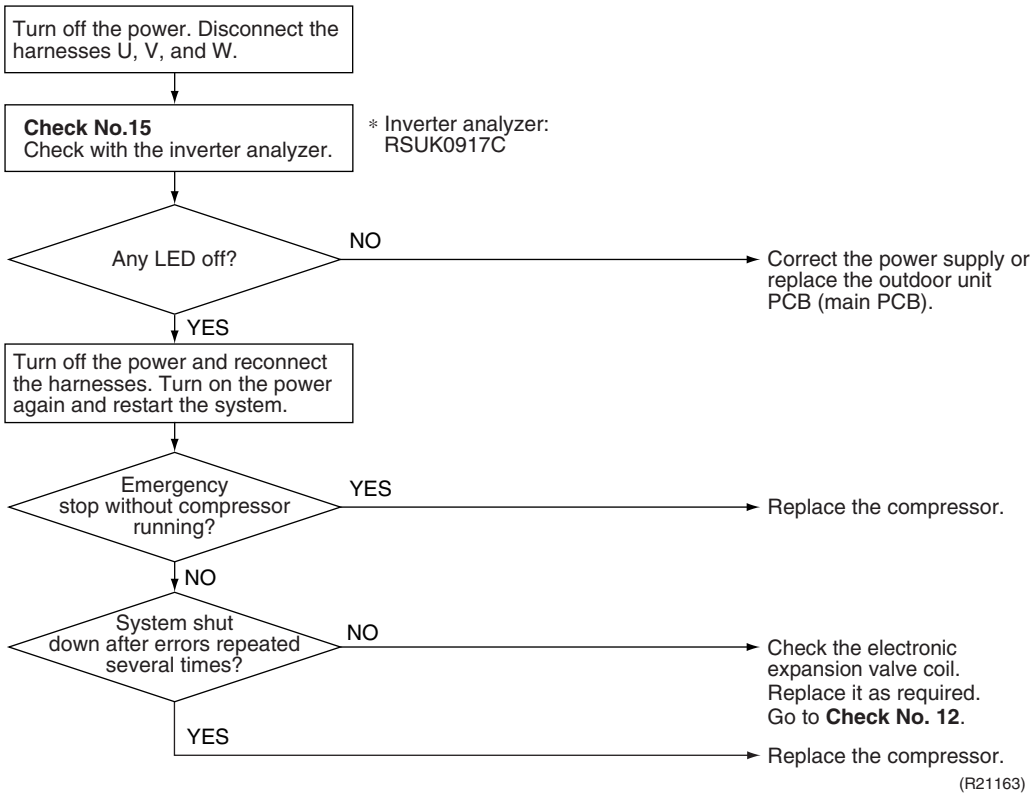
Error Decision Conditions
- Judging from the current waveform generated when high-frequency voltage is applied to the compressor.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 5 minutes without any other error

Supposed Causes
- Defective outdoor unit PCB
- Defective compressor
- Defective electronic expansion valve

Troubleshooting

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

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



Reference **Check No.12** Refer to P.172

Reference **Check No.15** Refer to P.173

7.10 DC Fan Lock

Error Code E7

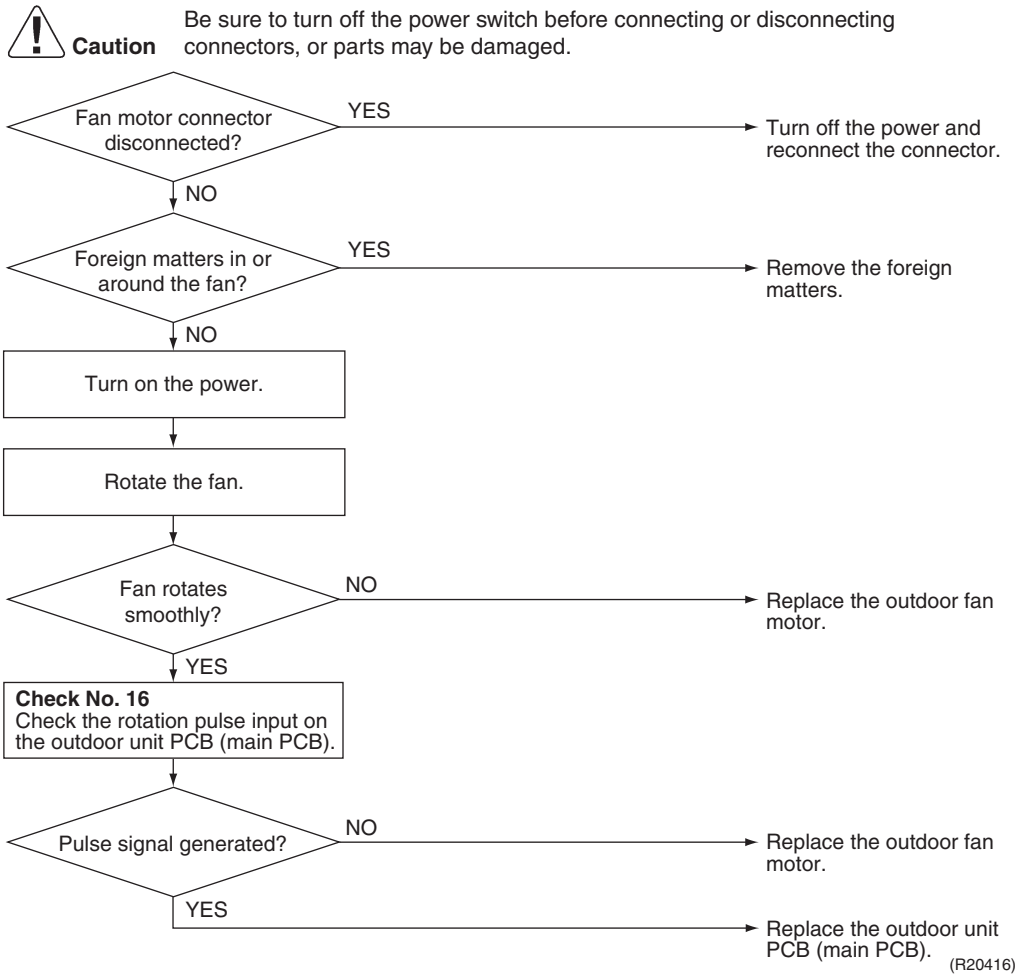
Outdoor Unit LED Display A ◑ 1 ☼ 2 ☼ 3 ☼ 4 ☼ 5 ●

Method of Error Detection An error is determined with the high-voltage fan motor rotation speed detected by the Hall IC.

Error Decision Conditions
- The fan does not start in 30 seconds even when the fan motor is running.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 5 minutes without any other error

Supposed Causes
- Disconnection of the fan motor
- Foreign matter stuck in the fan
- Defective fan motor
- Defective outdoor unit PCB

Troubleshooting



Reference **Check No.16** Refer to P.175

7.11 Input Overcurrent Detection

Error Code E8

Outdoor Unit LED Display A ◑ 1 ● 2 ☼ 3 ● 4 ☼ 5 ●

Method of Error Detection Detected by checking the input current value

Error Decision Conditions The current exceeds about 17 ~ 19.25 A (depending on the model) for 2.5 seconds with the compressor running. The upper limit of the current decreases when the outdoor temperature exceeds a certain level.

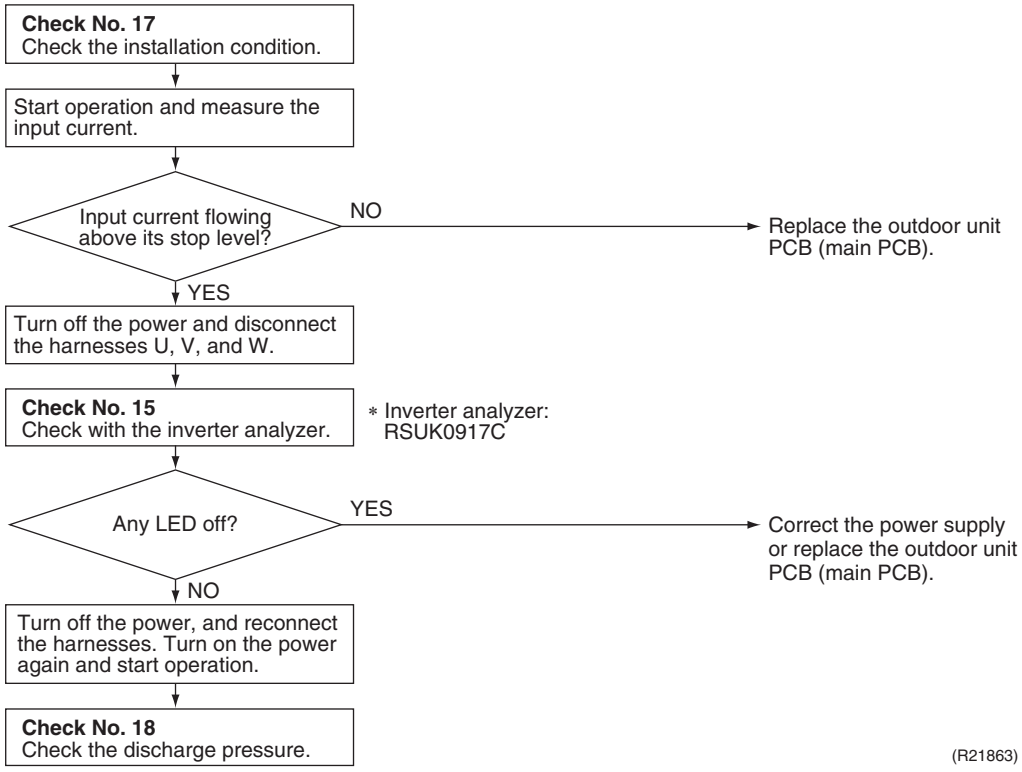
Supposed Causes

- Outdoor temperature is out of operation range.
- Defective compressor
- Defective power module
- Defective outdoor unit PCB
- Short circuit

Troubleshooting

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

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



Reference **Check No.15** Refer to P.173

Reference **Check No.17** Refer to P.176

Reference **Check No.18** Refer to P.176

7.12 Discharge Pipe Temperature Control

Error Code

F3

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ● 3 ☼ 4 ● 5 ●

Method of Error Detection

An error is determined with the temperature detected by the discharge pipe thermistor.

Error Decision Conditions

- If the temperature detected by the discharge pipe thermistor rises above **A** °C, the compressor stops.
- The error is cleared when the discharge pipe temperature is dropped below **B** °C.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 60 minutes without any other error

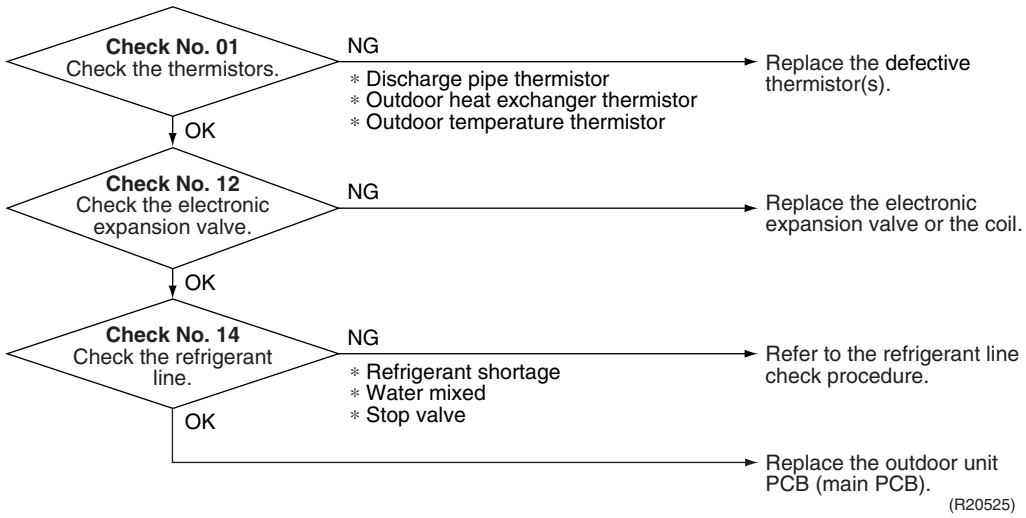
	A (°C)	**B** (°C)
50/65/80 class	120	102
90 class	120	107

Supposed Causes

- Defective discharge pipe thermistor
  (Defective outdoor heat exchanger thermistor or outdoor temperature thermistor)
- Defective electronic expansion valve or coil
- Refrigerant shortage
- Water mixed in refrigerant
- Defective stop valve
- Defective outdoor unit PCB

Troubleshooting

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



Reference **Check No.01** Refer to P.169

Reference **Check No.12** Refer to P.172

Reference **Check No.14** Refer to P.173

7.13 High Pressure Control in Cooling

Error Code

F6

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ● 3 ☼ 4 ☼ 5 ●

Method of Error Detection

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

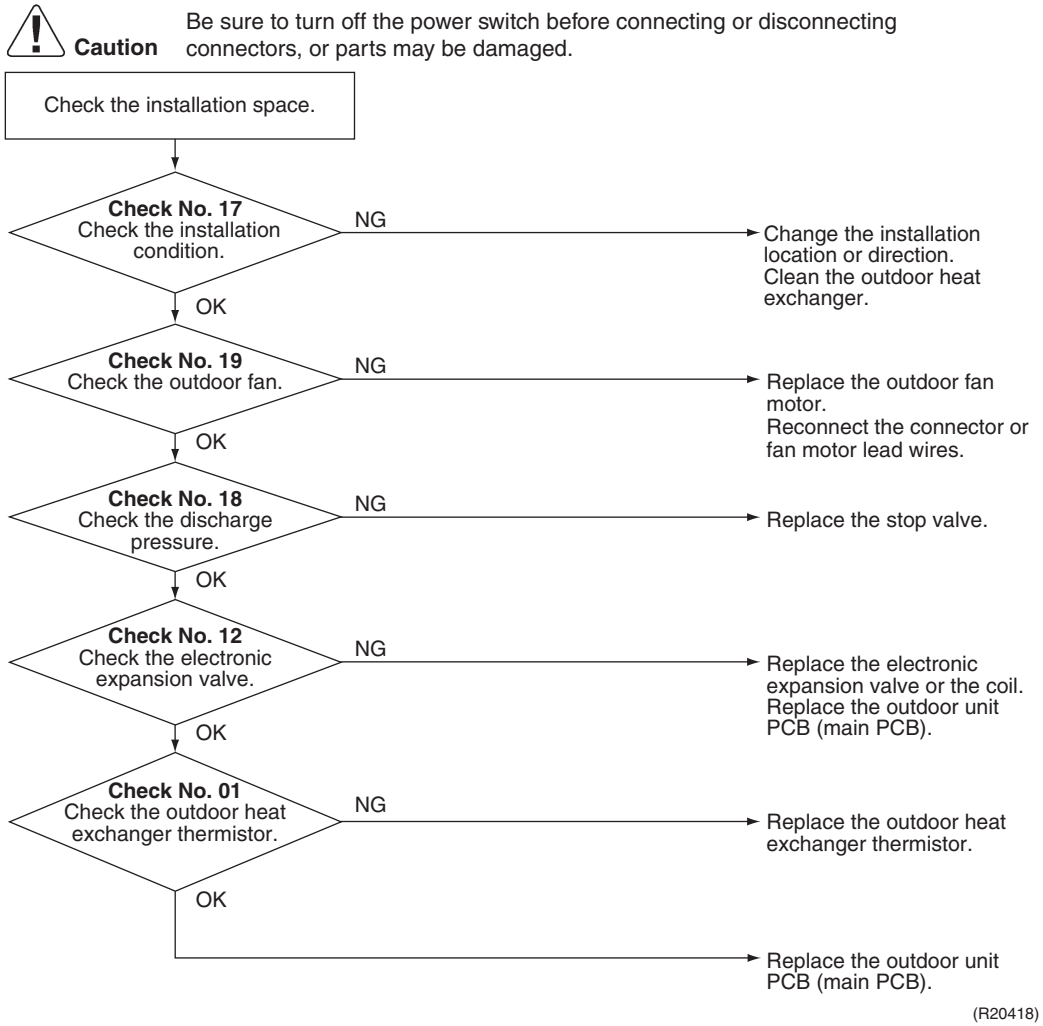
Error Decision Conditions

- The temperature sensed by the outdoor heat exchanger thermistor rises above about 65°C.
- The error is cleared when the temperature drops below about 50°C.

Supposed Causes

- Installation space not large enough
- Dirty outdoor heat exchanger
- Defective outdoor fan motor
- Defective stop valve
- Defective electronic expansion valve or coil
- Defective outdoor heat exchanger thermistor
- Defective outdoor unit PCB

Troubleshooting



Reference **Check No.01** Refer to P.169

Reference **Check No.12** Refer to P.172

Reference **Check No.17** Refer to P.176

Reference **Check No.18** Refer to P.176

Reference **Check No.19** Refer to P.177

7.14 System Shutdown due to Temperature Abnormality in Compressor

Error Code

F8

Outdoor Unit LED Display

A ◑ 1 ● 2 ● 3 ☼ 4 ☼ 5 ●

Method of Error Detection

Operation is halted when the temperature detected by the discharge pipe thermistor exceeds the determined limit.

Error Decision Conditions

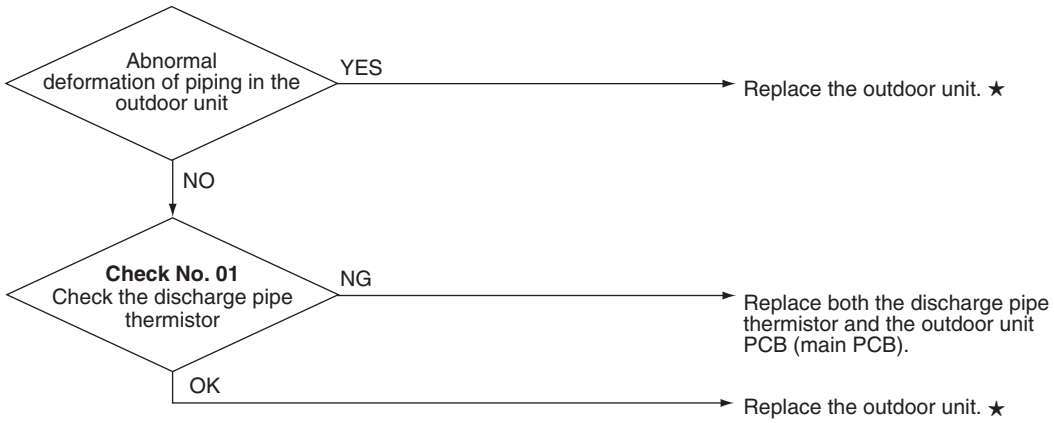
Temperature exceeds the detection threshold of 127.5°C during forced cooling operation.

Supposed Causes

- Abnormal operation due to air intrusion
- Defective discharge pipe thermistor

Troubleshooting

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



★ Replace the unit as directed in the installation manual, making sure that air does not intrude into the refrigerant pipings.

(R23655)

Reference **Check No.01** Refer to P.169

7.15 Compressor System Sensor Abnormality

Error Code

H07

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ☼ 3 ● 4 ● 5 ●

Method of Error Detection

- The system checks the power supply voltage and the DC voltage before the compressor starts.
- The system checks the compressor current right after the compressor starts.

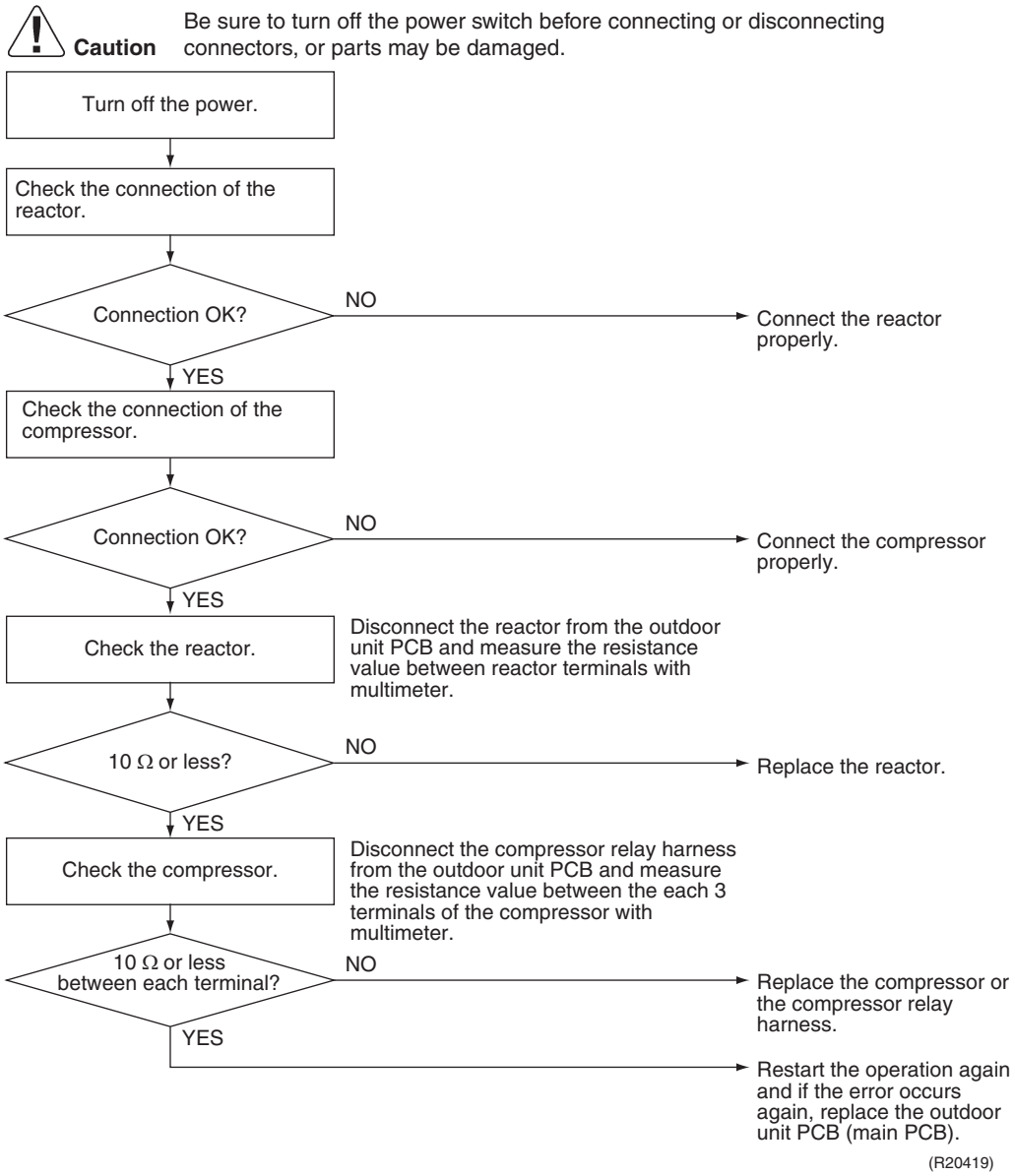
Error Decision Conditions

- The power supply voltage and the DC voltage is obviously low or high.
- The compressor current does not run when the compressor starts.

Supposed Causes

- Disconnection of reactor
- Disconnection of compressor harness
- Defective outdoor unit PCB
- Defective compressor

Troubleshooting



7.16 Position Sensor Abnormality

Error Code

H6

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ☼ 3 ● 4 ● 5 ●

Method of Error Detection

A compressor start-up failure is detected by checking the compressor running condition through the position detection circuit.

Error Decision Conditions

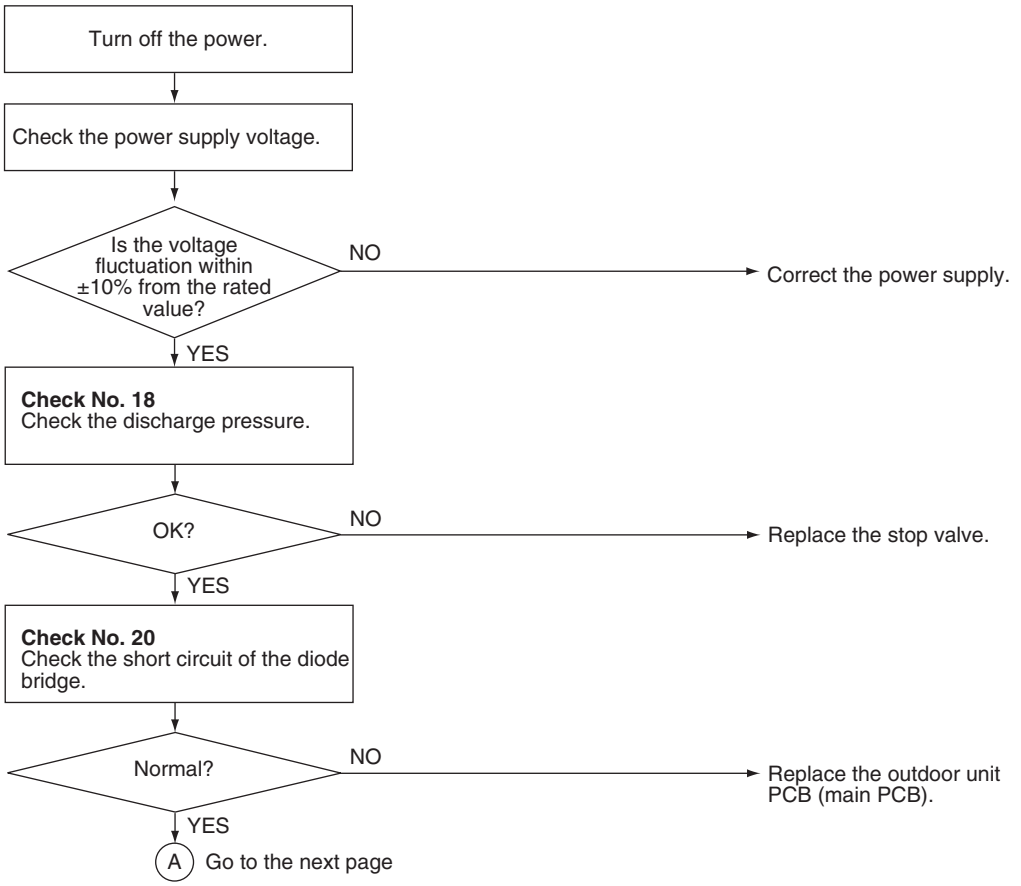
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 5 minutes without any other error

Supposed Causes

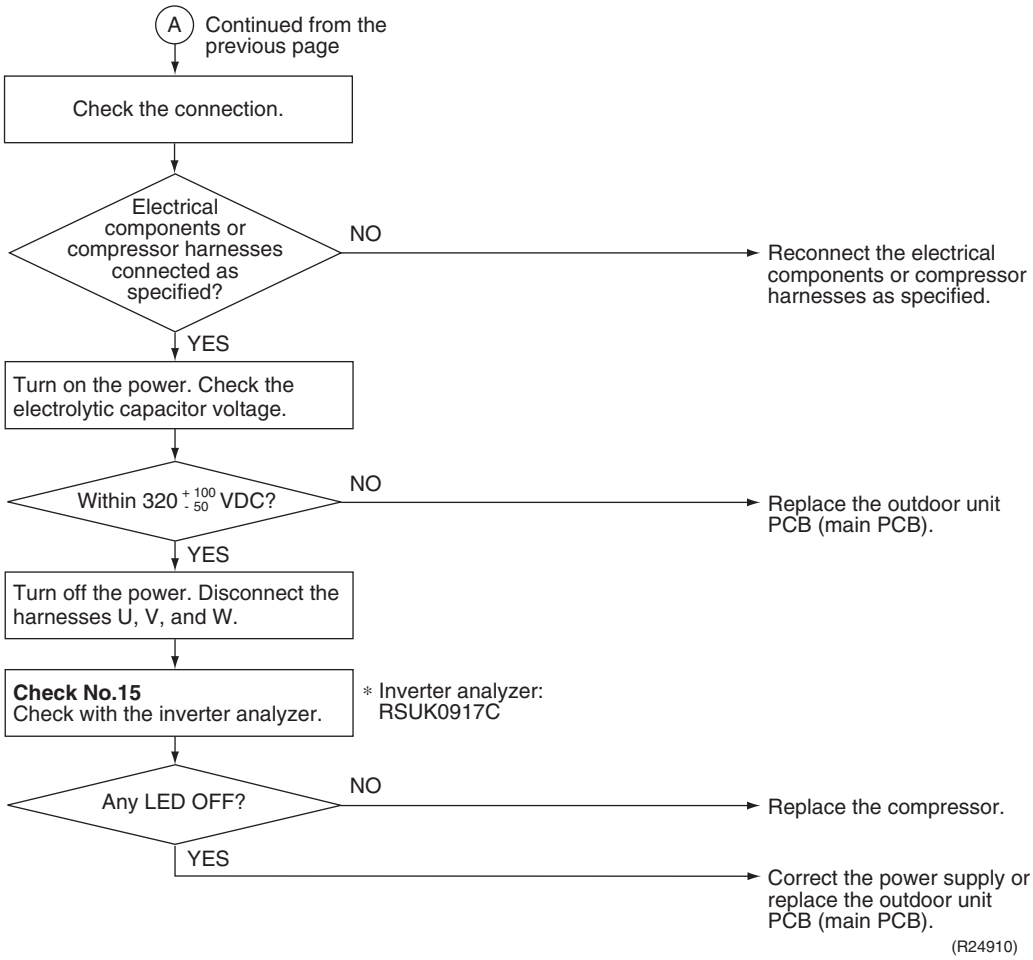
- Disconnection of the compressor relay cable
- Defective compressor
- Defective outdoor unit PCB
- Start-up failure caused by the closed stop valve
- Input voltage is outside the specified range.

Troubleshooting

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



(R24909)



Reference **Check No.15** Refer to P.173

Reference **Check No.18** Refer to P.176

Reference **Check No.20** Refer to P.177

7.17 CT or Related Abnormality

Error Code

H8

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ☼ 3 ● 4 ● 5 ●

Method of Error Detection

A CT or related error is detected by checking the compressor running frequency and CT-detected input current.

Error Decision Conditions

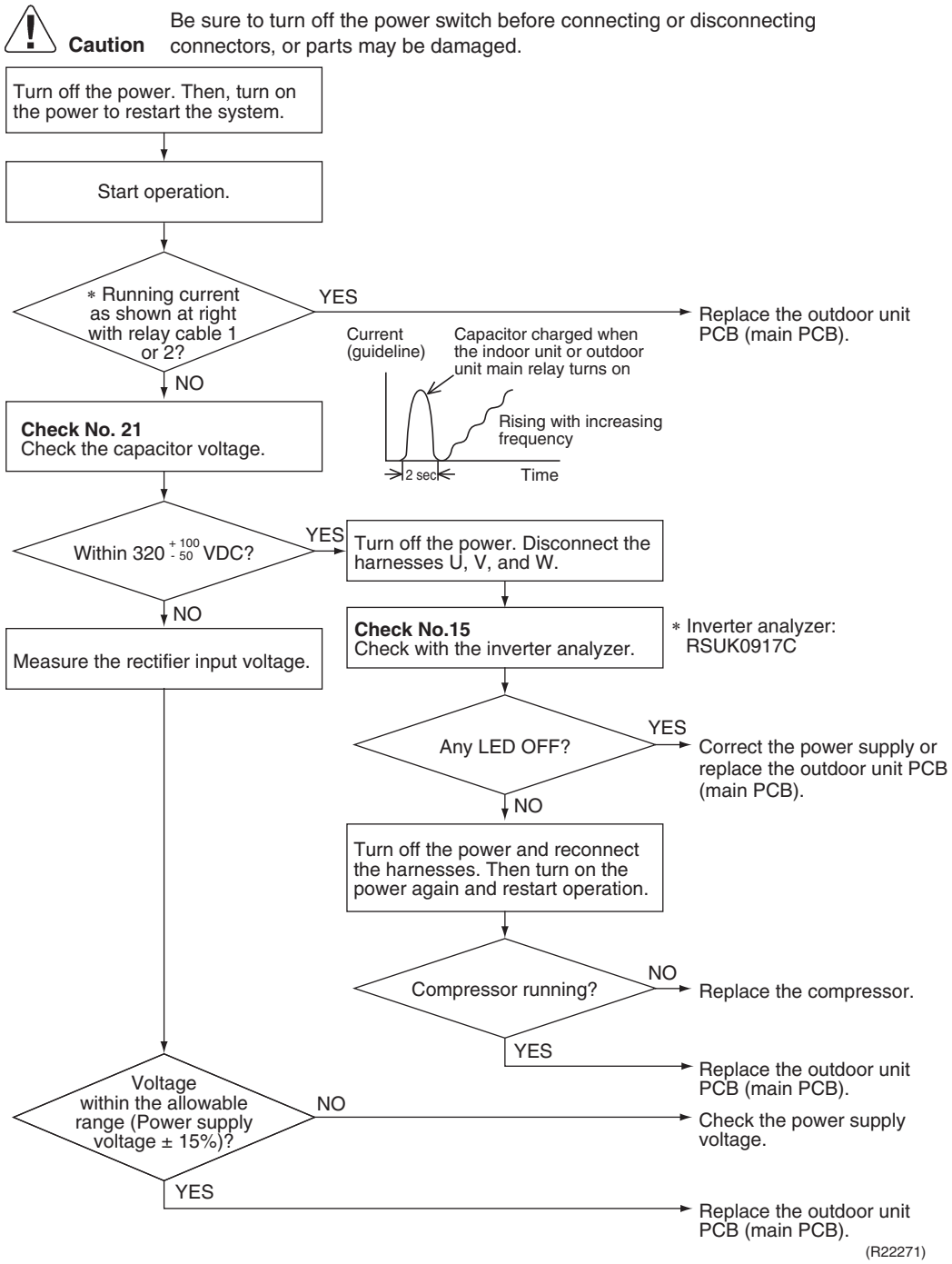
- The compressor running frequency is more than **A** Hz and input current is less than **B** A.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 60 minutes without any other error

	A (Hz)	**B** (A)
50/65/80 class	32	0.5
90 class	55	0.5

Supposed Causes

- Defective power module
- Broken or disconnected wiring
- Defective reactor
- Defective outdoor unit PCB

Troubleshooting



Reference **Check No.15** Refer to P.173

Reference **Check No.21** Refer to P.178

7.18 Thermistor or Related Abnormality (Outdoor Unit)

Error Code

H9, J3, J6, J8, J9, P4

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ☼ 3 ● 4 ● 5 ●

Method of Error Detection

This fault is identified based on the thermistor input voltage to the microcomputer.
A thermistor fault is identified based on the temperature sensed by each thermistor.

Error Decision Conditions

- The voltage between the both ends of the thermistor is above 4.96 V or below 0.04 V with the power on.
- J3 error is judged if the discharge pipe temperature is lower than the heat exchanger temperature.
- The system is shut down if all the units are judged as the J8 error.

Supposed Causes

- Disconnection of the connector for the thermistor
- Thermistor corresponding to the error code is defective.
- Defective heat exchanger thermistor in the case of J3 error
- Defective outdoor unit PCB

Troubleshooting

In case of P4

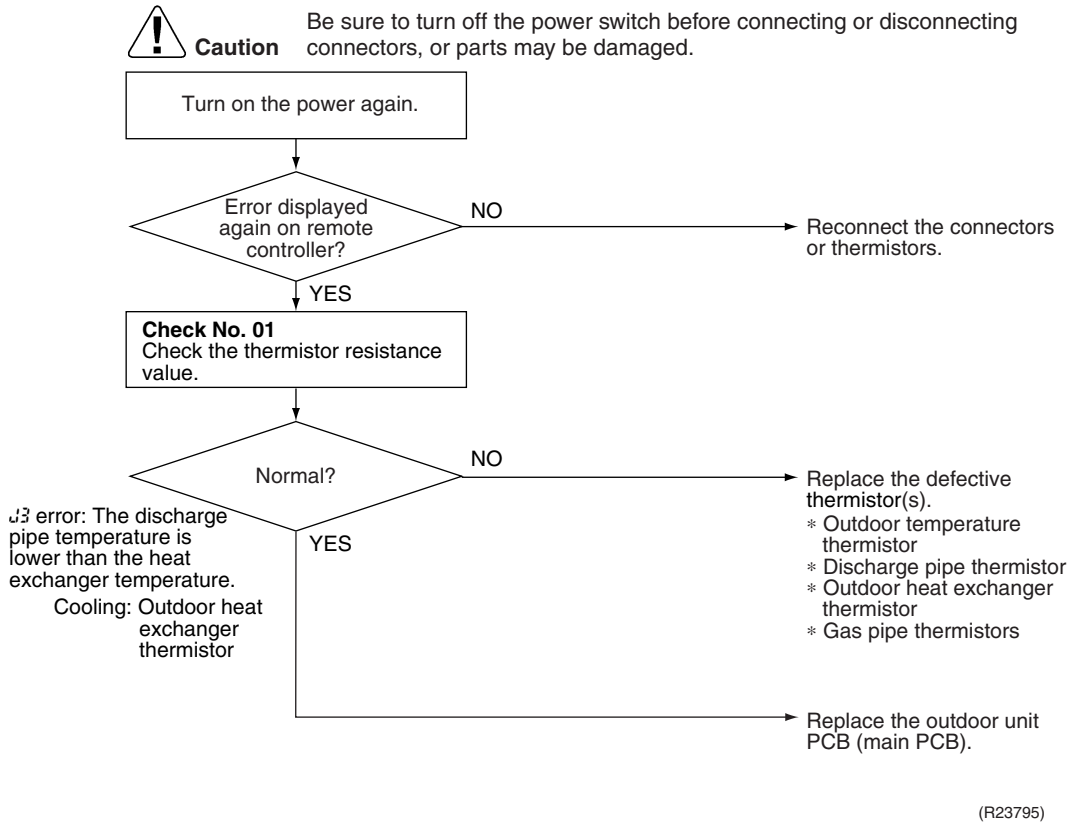
Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.

Replace the outdoor unit PCB (main PCB).

P4 : Radiation fin thermistor

Troubleshooting

In case of H9, J3, J6, J8, J9



H9 : Outdoor temperature thermistor
J3 : Discharge pipe thermistor
J6 : Outdoor heat exchanger thermistor
J8 : Liquid pipe thermistor
J9 : Gas pipe thermistor

Reference **Check No.01** Refer to P.169

7.19 Electrical Box Temperature Rise

Error Code L3

Outdoor Unit LED Display A ◑ 1 ☼ 2 ☼ 3 ● 4 ☼ 5 ●

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

Error Decision Conditions

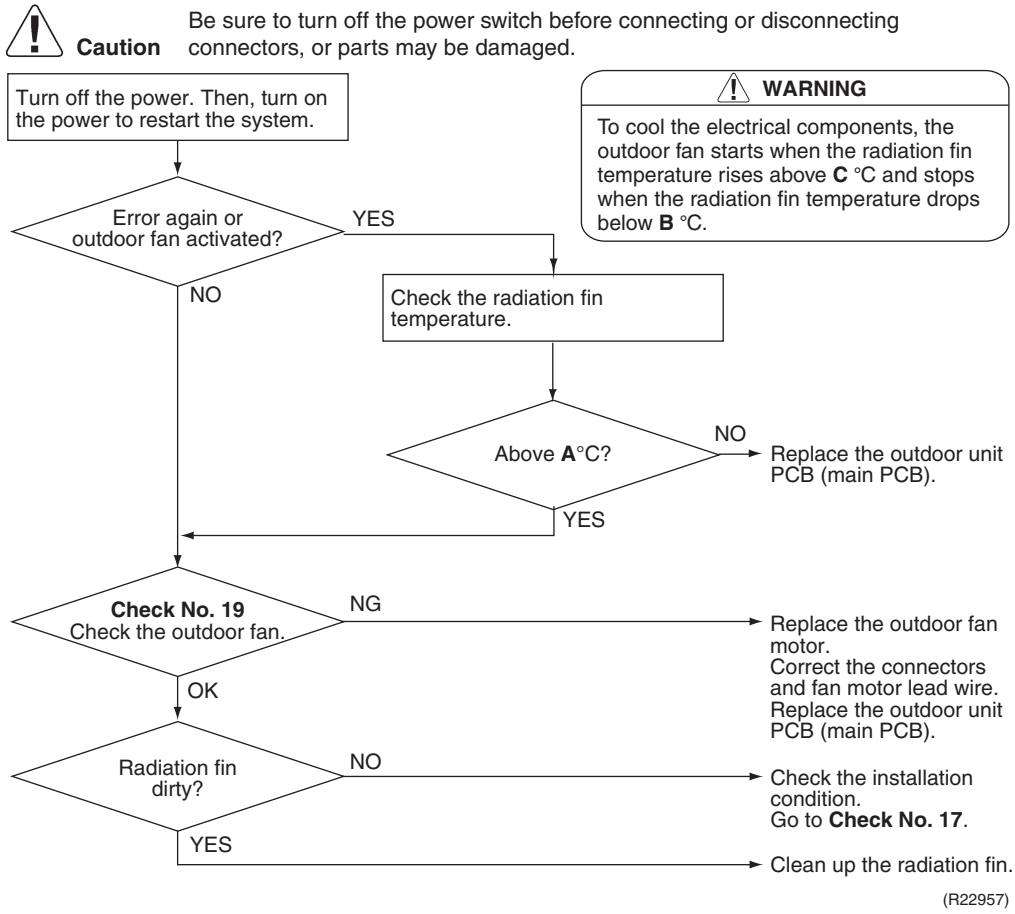
- With the compressor off, the radiation fin temperature is above **A** °C.
- The error is cleared when the radiation fin temperature drops below **B** °C.
- To cool the electrical components, the outdoor fan starts when the radiation fin temperature rises above **C** °C and stops when the radiation fin temperature drops below **B** °C.

	A (°C)	**B** (°C)	**C** (°C)
50/65/80 class	90	70	80
90 class	110	75	88

Supposed Causes

- Defective outdoor fan motor
- Short circuit
- Defective radiation fin thermistor
- Disconnection of connector
- Defective outdoor unit PCB

Troubleshooting



Reference **Check No.17** Refer to P.176

Reference **Check No.19** Refer to P.177

7.20 Radiation Fin Temperature Rise

Error Code

L4

Outdoor Unit LED Display

A ◑ 1 ● 2 ● 3 ● 4 ☼ 5 ●

Method of Error Detection

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

Error Decision Conditions

- The radiation fin temperature with the compressor on is above **A** °C.
- The error is cleared when the radiation fin temperature drops below **B** °C
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 60 minutes without any other error

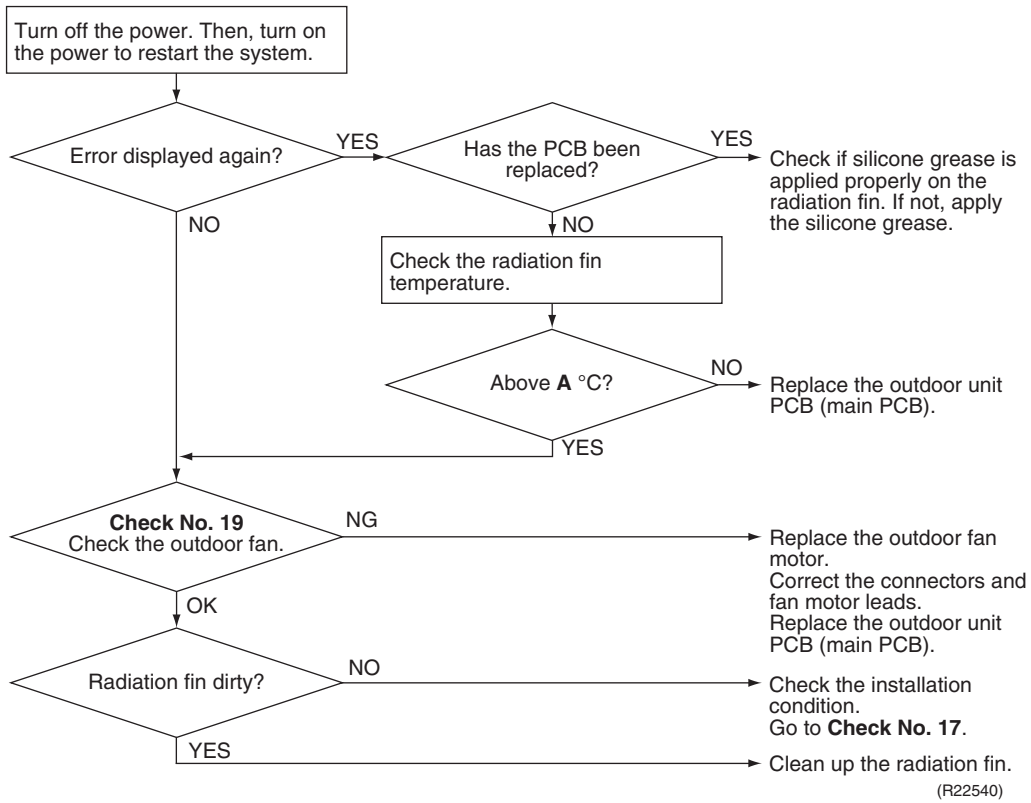
	A (°C)	**B** (°C)
50/65/80 class	90	84
90 class	100	90

Supposed Causes

- Defective outdoor fan motor
- Short circuit
- Defective radiation fin thermistor
- Disconnection of connector
- Defective outdoor unit PCB
- Silicone grease is not applied properly on the radiation fin after replacing the outdoor unit PCB.

Troubleshooting

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



Reference **Check No.17** Refer to P.176

Reference **Check No.19** Refer to P.177

Note Refer to Silicone Grease on Power Transistor/Diode Bridge on page 203 for details.

7.21 Output Overcurrent Detection

Error Code L5

Outdoor Unit LED Display A ◑ 1 ● 2 ● 3 ☼ 4 ● 5 ●

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

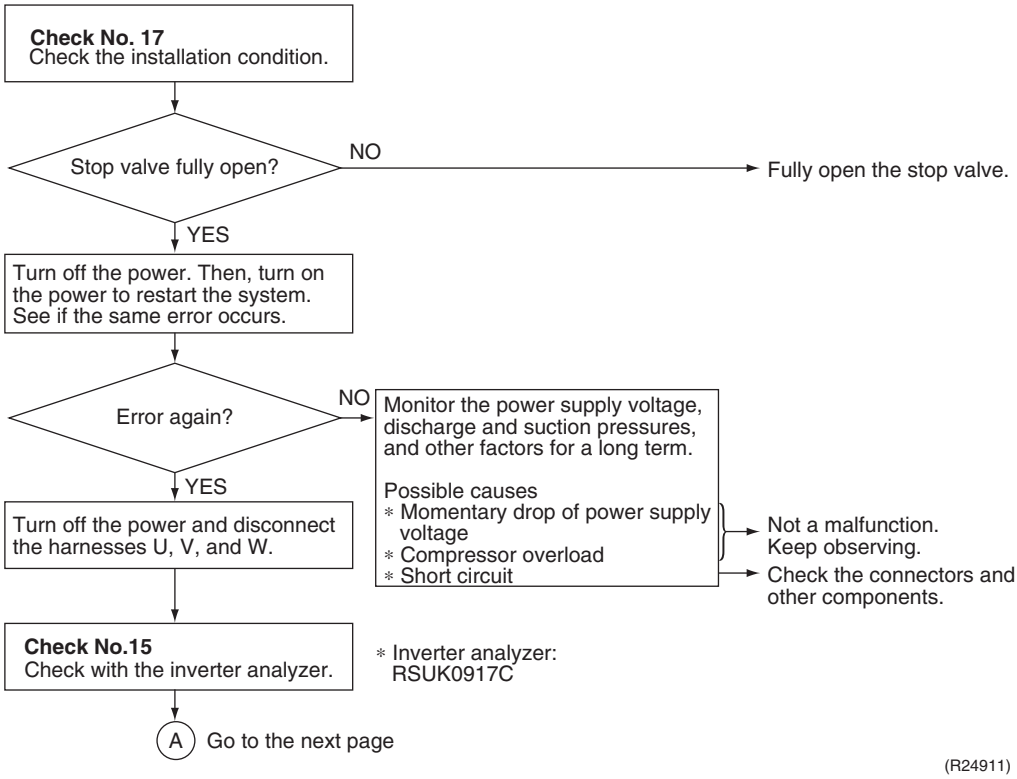
Error Decision Conditions
- A position signal error occurs while the compressor is running.
- A rotation speed error occurs while the compressor is running.
- An output overcurrent signal is fed from the output overcurrent detection circuit to the microcomputer.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 5 minutes without any other error

Supposed Causes
- Poor installation condition
- Closed stop valve
- Defective power module
- Wrong internal wiring
- Abnormal power supply voltage
- Defective outdoor unit PCB
- Defective compressor

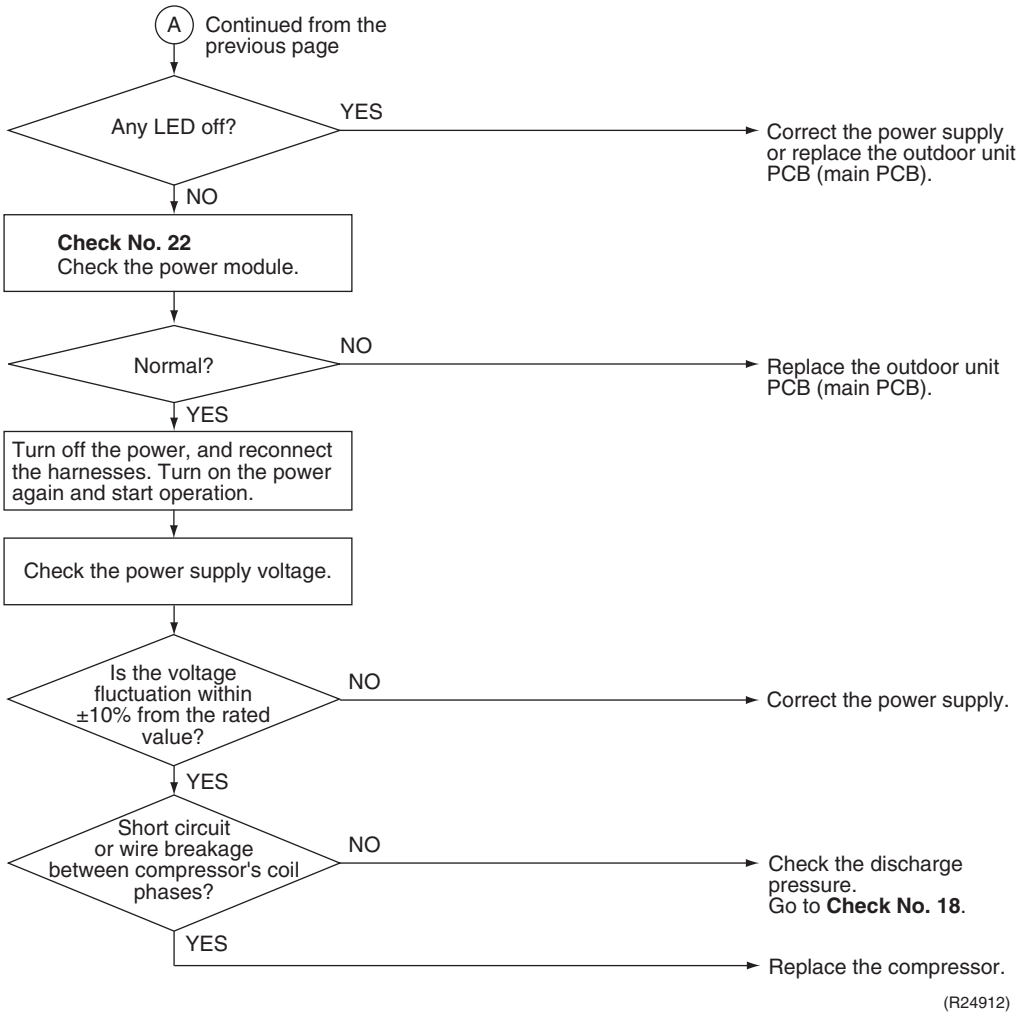
Troubleshooting

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

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



(R24911)



Reference **Check No.15** Refer to P.173

Reference **Check No.17** Refer to P.176

Reference **Check No.18** Refer to P.176

Reference **Check No.22** Refer to P.179

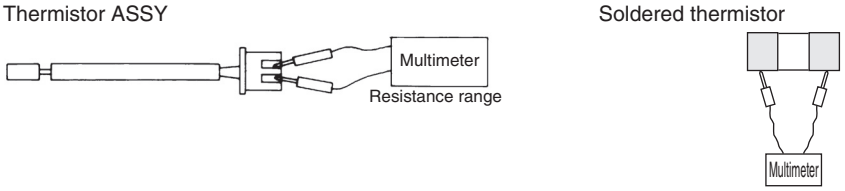
8. Check

8.1 Thermistor Resistance Check

Check No.01

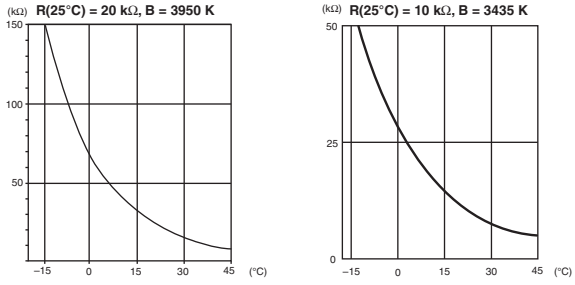
Measure the resistance of each thermistor using multimeter.
The resistance values are defined by below table.
If the measured resistance value does not match the listed value, the thermistor must be replaced.

- Disconnect the connector of thermistor ASSY from the PCB to measure the resistance between the pins using multimeter.
- To check the thermistor soldered on a PCB, disconnect the PCB from other PCB/parts, and measure the resistance between the both ends of soldered thermistor.



R6000517

Thermistor temperature (°C)	Type A R(25°C) = 20 kΩ B = 3950 K	Type B R(25°C) = 10 kΩ B = 3435 K
–20	197.8	73.4
–15	148.2	57.0
–10	112.1	44.7
–5	85.60	35.3
0	65.93	28.2
5	51.14	22.6
10	39.99	18.3
15	31.52	14.8
20	25.02	12.1
25	20.00	10.0
30	16.10	8.2
35	13.04	6.9
40	10.62	5.8
45	8.707	4.9
50	7.176	4.1



R6000518

Thermistor		Resistance Type	B value	R(25°C)
Indoor Unit	Room temperature thermistor (R1T)	B	3435 K	10 kΩ
	Indoor heat exchanger thermistor (R2T)	A	3950 K	20 kΩ
Outdoor Unit	Outdoor temperature thermistor (R1T)	A	3950 K	20 kΩ
	Outdoor heat exchanger thermistor (R2T)	A	3950 K	20 kΩ
	Discharge pipe thermistor (R3T)	A	3950 K	20 kΩ
	Liquid pipe thermistor	A	3950 K	20 kΩ
	Gas pipe thermistor	A	3950 K	20 kΩ

Note When replacing the defective thermistor(s), replace the thermistor as ASSY.

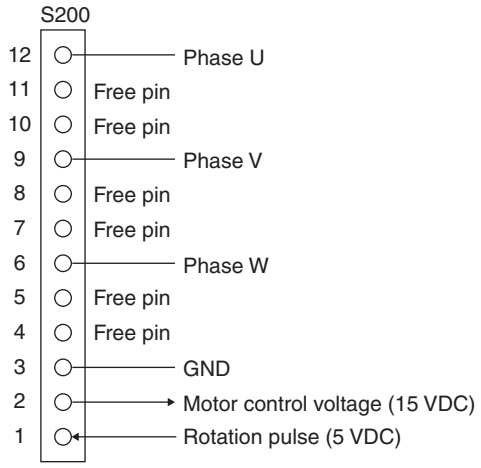
8.2 Indoor Fan Motor Connector Check

Check No.03

- Fan motor wire breakdown/short circuit check
  (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 within specified range in the table below.

- Motor control voltage check
  (1) Check the connector for connection.
  (2) Check the motor control voltage is generated (between the pins 2 - 3).

- Rotation pulse check
  (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 - 3).



R6000090

	U-V/V-W Resistance (Ω)
Wall mounted 25/35/50 class	72.7 ~ 78.8
Wall mounted 60/71 class	42.9 ~ 46.6

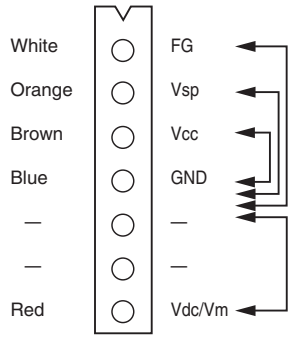
Note

A measurement error might occur in the resistance value depending on the measurement conditions and the method.

Check No.24

1. Turn the power supply OFF.
2. With the fan motor connector disconnected, measure the resistance between each pin, then make sure that the resistance is more than the value mentioned in the following table.

Measuring points	Judgement
White - Blue	1 MΩ or more
Orange - Blue	100 kΩ or more
Brown - Blue	100 Ω or more
Red - Blue	100 kΩ or more

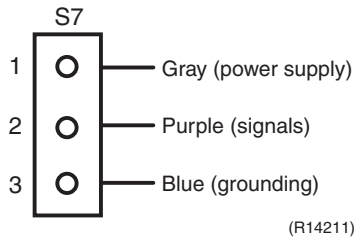


8.3 Hall IC Check

Check No.04

1. Check the connector connection.
2. With the power ON, operation OFF, and the connector connected, check the following.
   (1) Output voltage of about 5 V between pins 1 and 3.
   (2) Generation of 3 pulses between pins 2 and 3 when the fan motor is operating.

If NG in step (1) → Defective PCB → Replace the PCB (control PCB).
If NG in step (2) → Defective Hall IC → Replace the fan motor.
If OK in both steps (1) and (2) → Replace the PCB (control PCB).



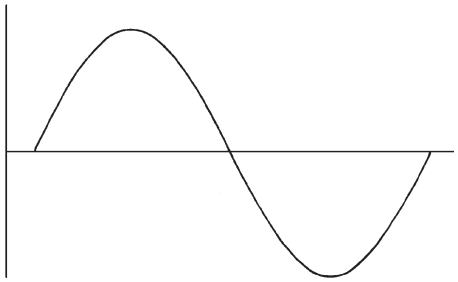
8.4 Power Supply Waveform Check

Check No.11

Measure the power supply waveform between No. 1 and No. 2 on the terminal strip, and check the waveform disturbance.

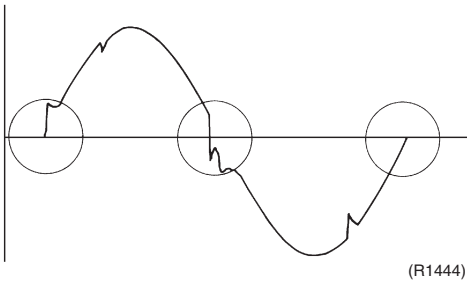
- Check if the power supply waveform is a sine wave (Fig.1).
- Check if there is waveform disturbance near the zero-cross (sections circled in Fig.2).

[Fig.1]



(R1736)

[Fig.2]



(R1444)

8.5 Electronic Expansion Valve Check

Check No.12

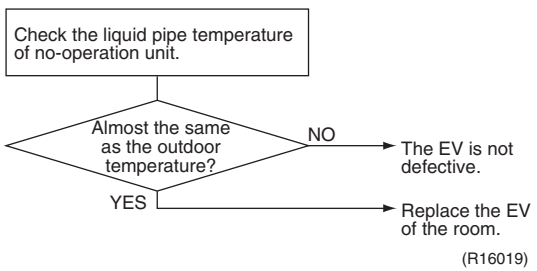
Conduct the followings to check the electronic expansion valve (EV).

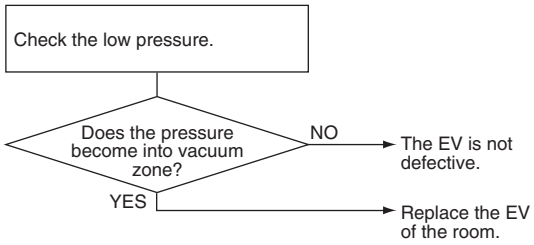
1. Check if the EV connector is correctly inserted in the PCB. Match the EV unit number and the connector number.
2. Turn the power OFF and ON again, and check if all the EVs generate latching sound.
3. If any of the EVs does not generate latching sound in the step 2 above, disconnect that connector and check the continuity using a multimeter.
   Check the continuity between the pins 1 - 6, 3 - 6, 2 - 5, 4 - 5 (between the pins 1 - 5, 2 - 5, 3 - 5, 4 - 5 for the harness 5P connectors). If there is no continuity between the pins, the EV coil is faulty.
4. If no EV generates latching sound in the step 2 above, the outdoor unit PCB is faulty.
5. If the continuity is confirmed in the step 3 above, 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.

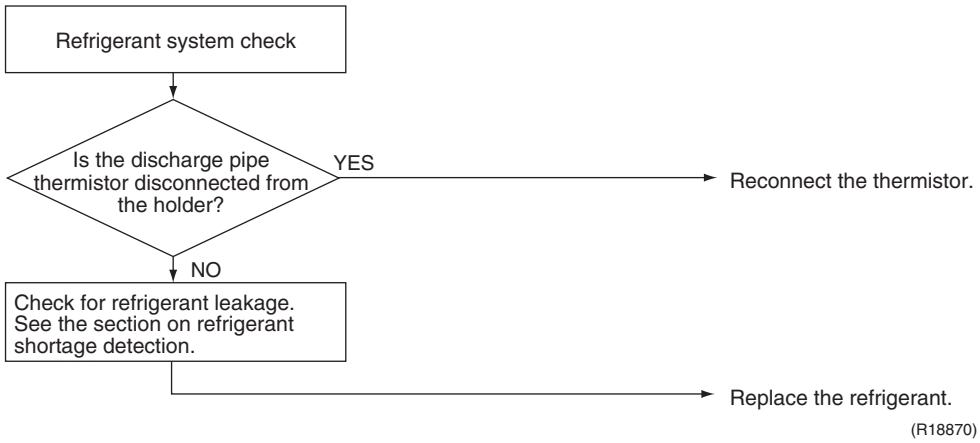
If the system keeps operating with a defective electronic expansion valve, the following problem may occur.

Valve opening position	Possible problem	Check method
Open	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	Reset power supply and conduct cooling operation unit by unit.  (R16019)

Valve opening position	Possible problem	Check method
Close	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	Reset power supply and conduct cooling operation unit by unit.  (R16020)

8.6 Inverter Unit Refrigerant System Check

Check No.14



(R18870)

8.7 Inverter Analyzer Check

Check No.15

■ **Characteristics**

Inverter analyzer: RSUK0917C

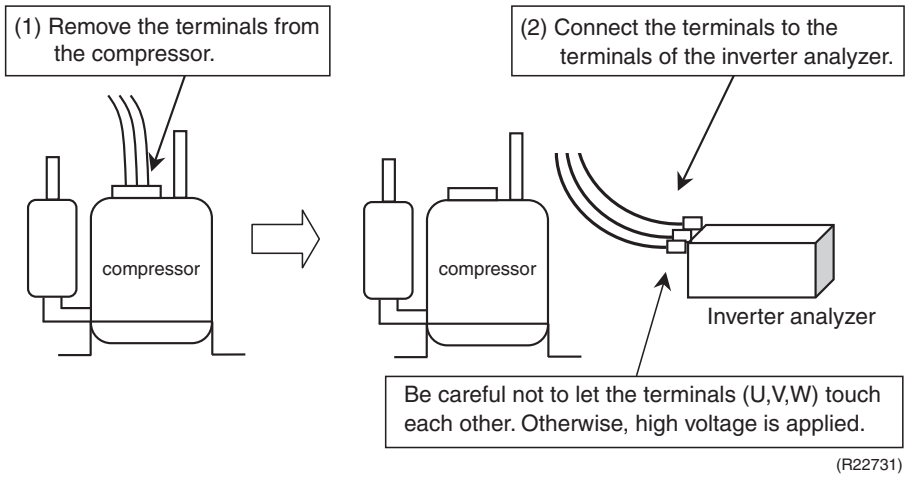
If an abnormal stop occurs due to compressor startup failure or overcurrent output when using an inverter unit, it is difficult to judge whether the stop is caused by the compressor failure or some other failure (main PCB, power module, etc.). The inverter analyzer makes it possible to judge the cause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

■ **Operation Method**

Step 1
Be sure to turn the power off.

Step 2
Install an inverter analyzer 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

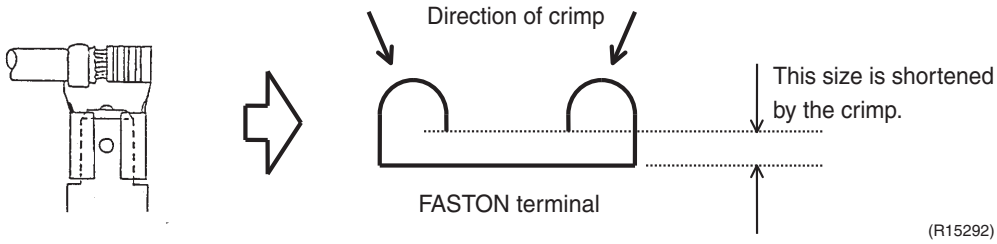
Activate the power transistor test operation from the outdoor unit.
Press the forced operation ON/OFF switch for 5 seconds.
(Refer to page 183 for the position.)
Power transistor test operation starts.

■ **Diagnose method (Diagnose according to 6 LEDs lighting status)**

1. If all the LEDs are lit uniformly, the compressor is defective.
   Replace the compressor.
2. If the LEDs are not lit uniformly, check the power module.
   Refer to **Check No.22**.
3. If NG in **Check No.22**, replace the power module.
   (Replace the main PCB. The power module is united with the main PCB.)
   If OK in **Check No.22**, 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 the inverter analyzer diagnosis, be sure to re-crimp the FASTON terminals. Otherwise, the terminals may be burned due to loosening.



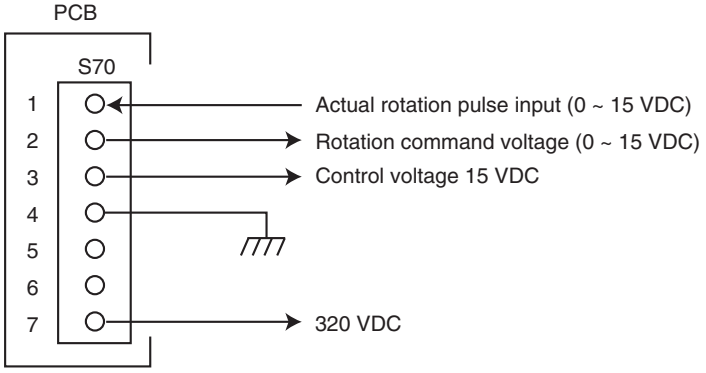
8.8 Rotation Pulse Check on the Outdoor Unit PCB

Check No.16 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 4 - 3 is 15 VDC.
4. Check that the rotation command voltage between the pins 4 - 2 is 0 ~ 15 VDC.
5. Keep operation off and power off. Connect the connector S70.
6. Check whether 4 pulses (0 ~ 15 VDC) are output at the pins 4 - 1 when the fan motor is rotated 1 turn by hand.

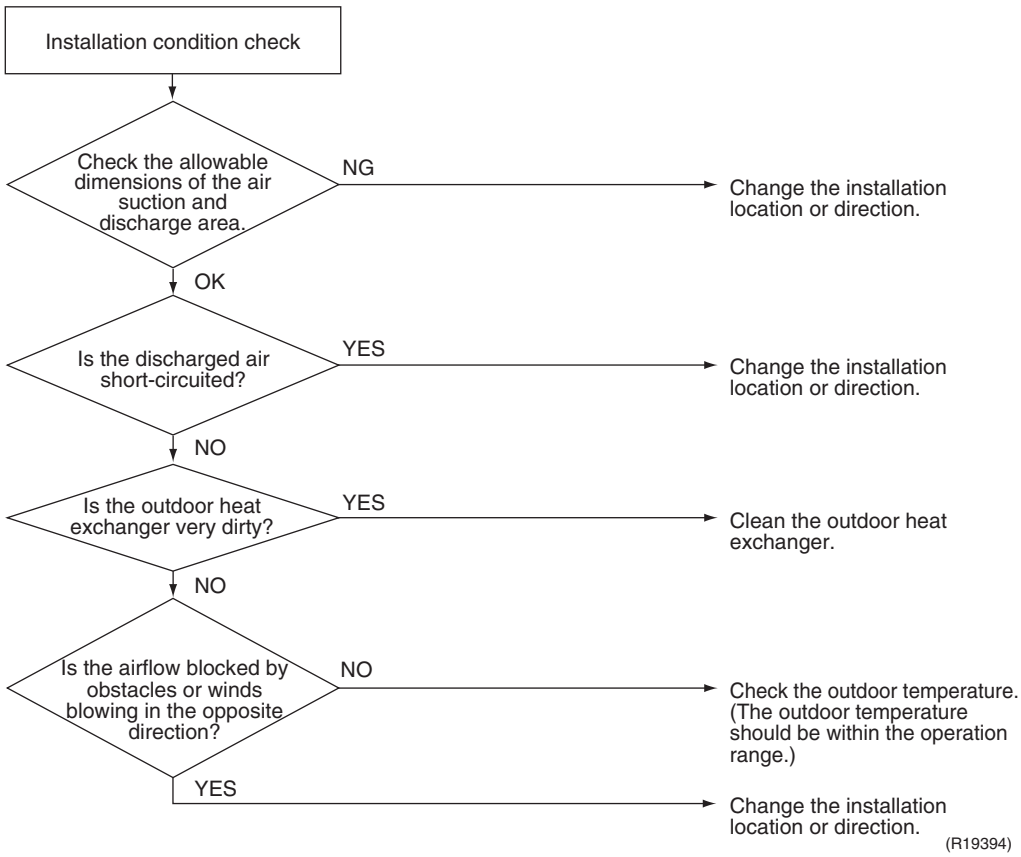
When the fuse is melted, check the outdoor fan motor for proper function.
If NG in step 2 → Defective PCB→ Replace the outdoor unit PCB (main PCB).
If NG in step 4 → Defective Hall IC→ Replace the outdoor fan motor.
If OK in both steps 2 and 4→ Replace the outdoor unit PCB (main PCB).



(R21120)

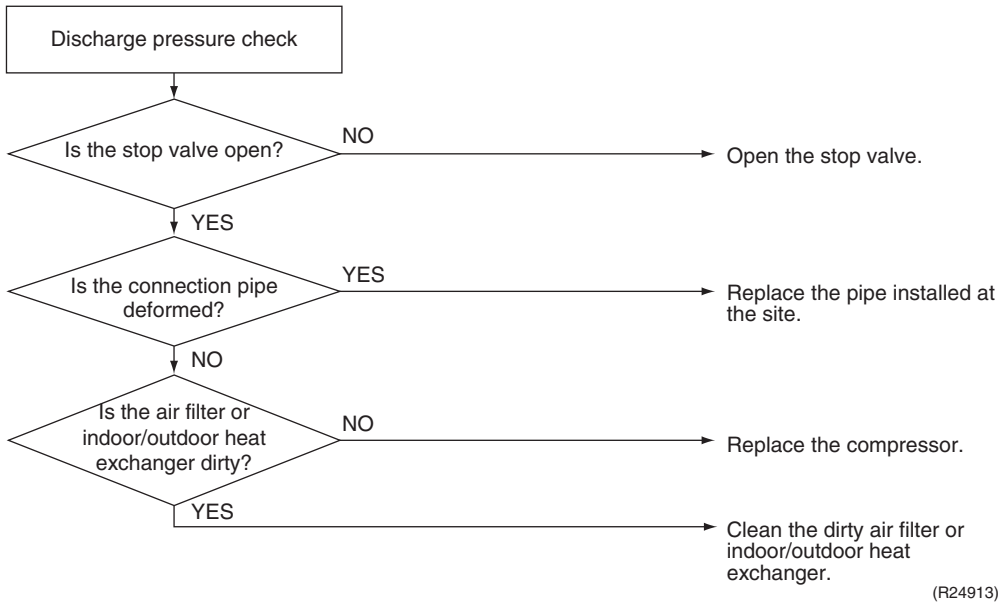
8.9 Installation Condition Check

Check No.17



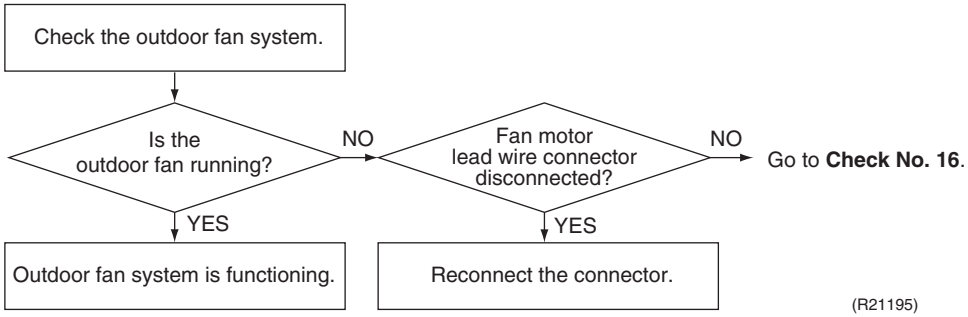
8.10 Discharge Pressure Check

Check No.18



8.11 Outdoor Fan System Check

Check No.19 **DC motor**



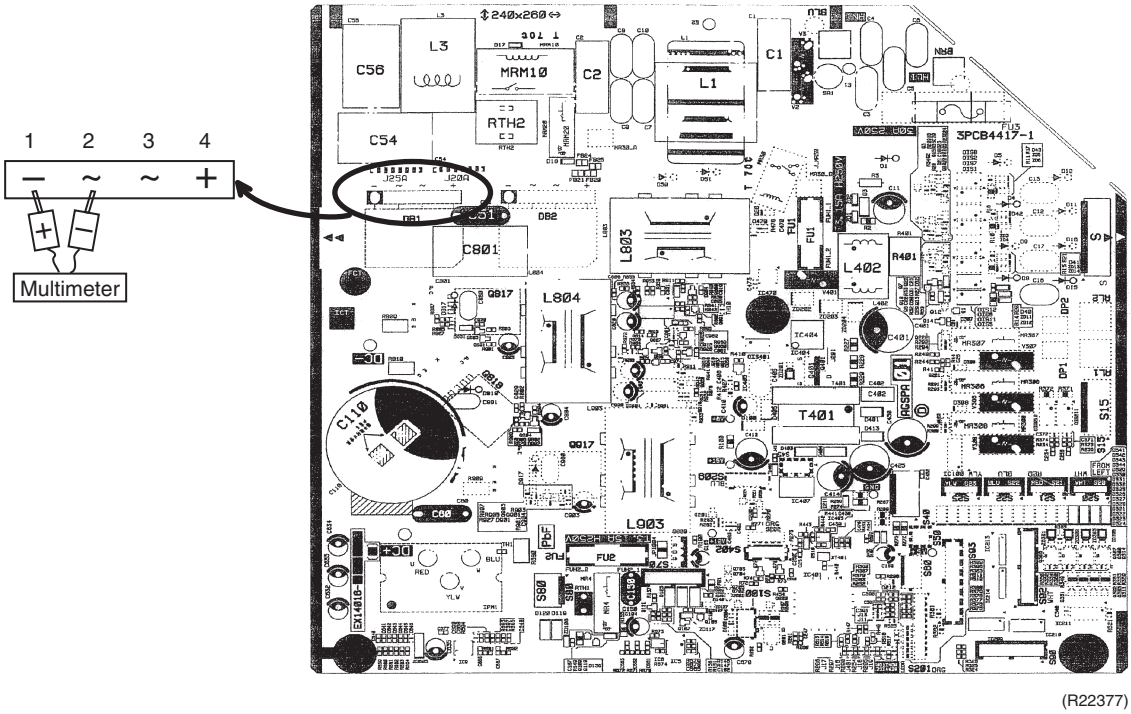
8.12 Main Circuit Short Check

Check No.20 Check to make sure that the voltage between (+) and (–) of the diode bridge (DB1) is approximately 0 V before checking.

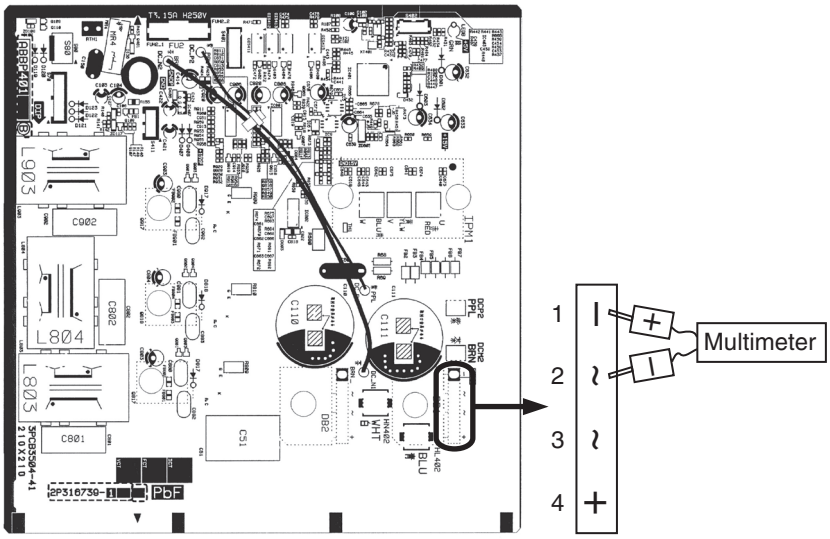
- Measure the resistance between the pins of the DB1 referring to the table below.
- If the resistance is ∞ or less than 1 kΩ, short circuit occurs on the main circuit.

Positive terminal (+) of digital multimeter	~ (2, 3)	+ (4)	~ (2, 3)	– (1)
Negative terminal (–) of digital multimeter	+ (4)	~ (2, 3)	– (1)	~ (2, 3)
Resistance is OK.	several kΩ ~ several MΩ			
Resistance is NG.	0 Ω or ∞			

■ **50/65/80 class**



■ **90 class**



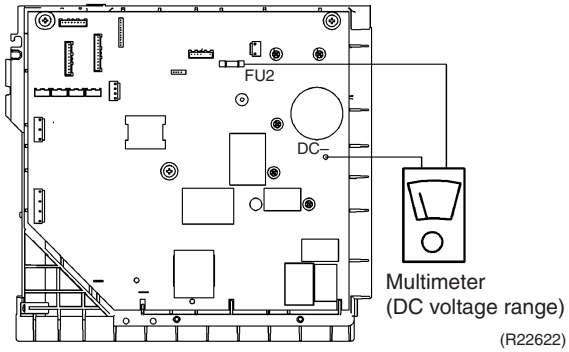
(R21123)

8.13 Capacitor Voltage Check

Check No.21

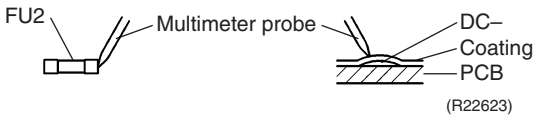
Before this check, be sure to check the main circuit for short circuit.
With the circuit breaker still on, measure the voltage according to the drawing of the model in question. Be careful never to touch any live parts.

■ **50/65/80 class**



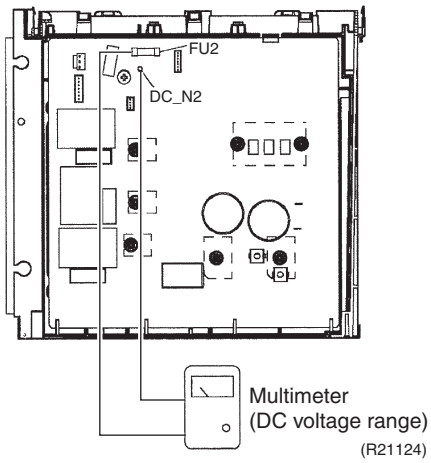
(R22622)

- To prevent electrical shock, use a multimeter to check that the voltage between P (+) and N (–) is 50 V or less.
- The surface of the test points (P, N) may be covered with the coating. Be sure to make firm contact between the multimeter probes and the test points.

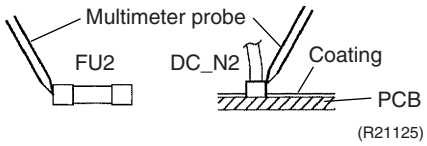


(R22623)

■ **90 class**



- To prevent electrical shock, use a multimeter to check that the voltage between FU2 and DC_N2 is 50 V or less.
- The surface of the test points (FU2, DC_N2) may be covered with the coating. Be sure to make firm contact between the multimeter probes and the test points.



8.14 Power Module Check

Check No.22

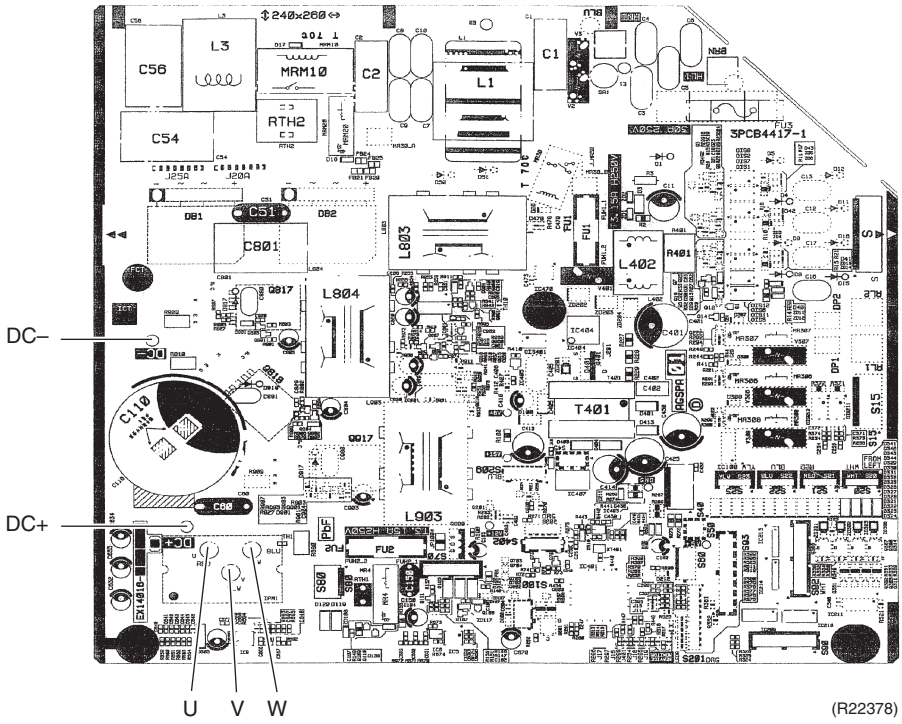
Check to make sure that the voltage between (+) and (–) of the power module is approximately 0 V before checking.

■ 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 (+) or (–) terminal of the power module and the U, V, or W terminal of the compressor with a multimeter. Evaluate the measurement results referring to the following table.

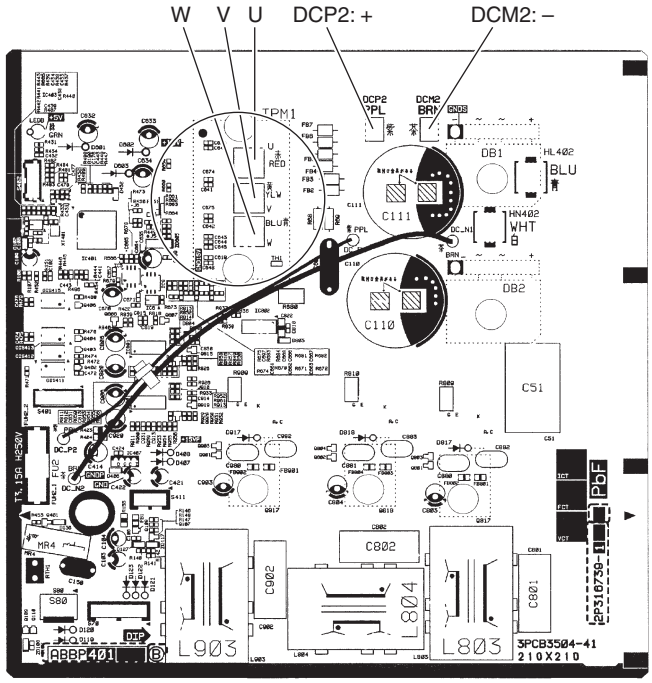
Positive terminal (+) of digital multimeter	Power module (+)	UVW	Power module (–)	UVW
Negative terminal (–) of digital multimeter	UVW	Power module (+)	UVW	Power module (–)
Resistance is OK.	several kΩ ~ several MΩ			
Resistance is NG.	0 Ω or ∞			

■ **50/65/80 class**



(R22378)

■ **90 class**



(R21130)

Part 7
Trial Operation and Field Settings

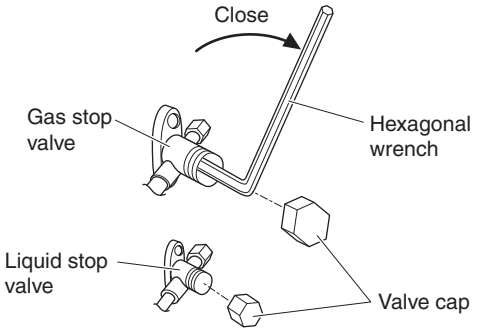
1. Pump Down Operation

Outline

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

Detail

1. Remove the valve caps from the liquid stop valve and the gas stop valve.
2. Carry out forced cooling operation.
3. After **A** minutes, close the liquid stop valve with a hexagonal wrench.
4. After **B** minutes, close the gas stop valve and stop the forced cooling operation.



R7000252

	A	B
50/65/80 class	1	5 ~ 6
90 class	3	5 ~ 6

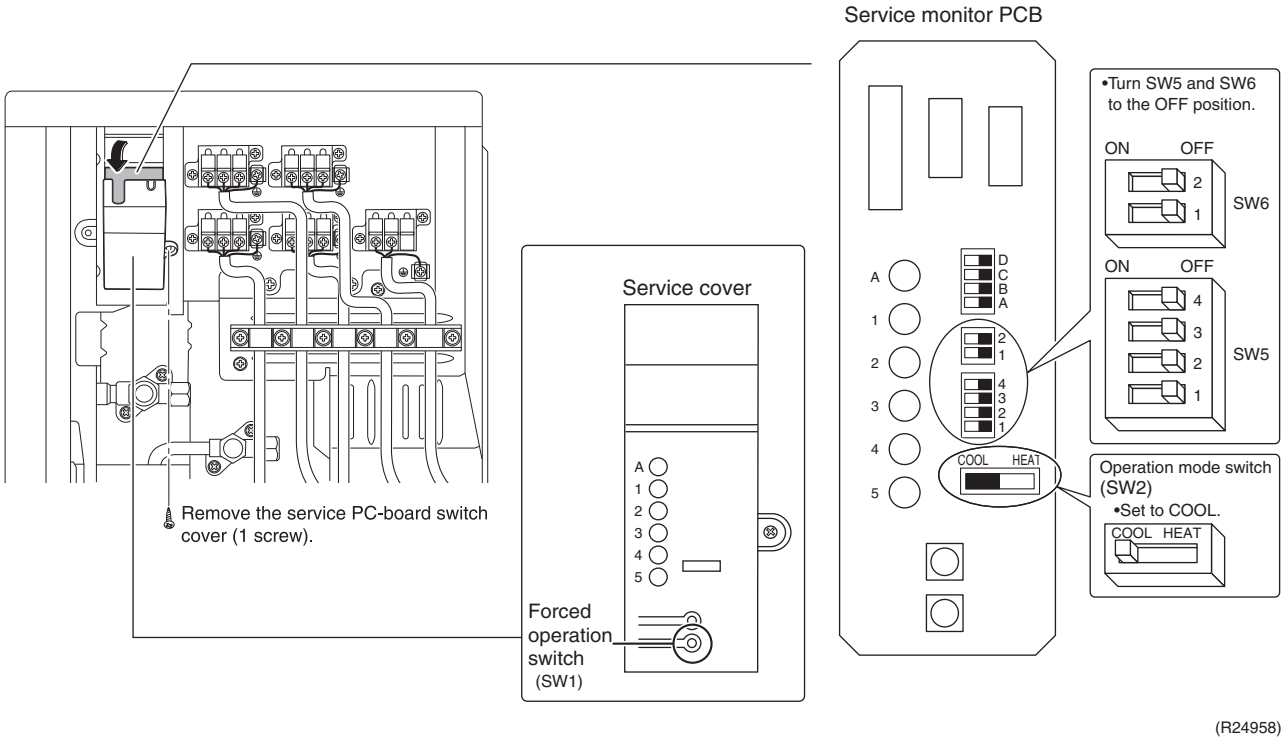
Reference Refer to page 183 for forced operation.

2. Forced Cooling Operation

Procedure

■ 50/65/80 class

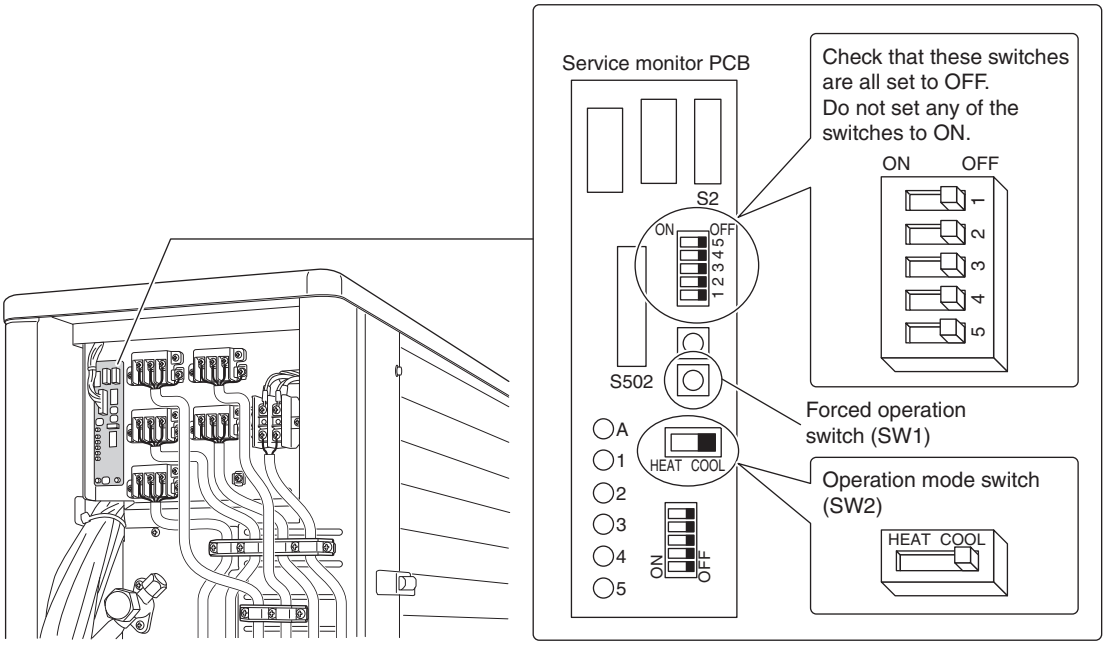
1. Turn off the power.
2. Remove the right side panel (7 screws).
3. Remove the service cover (1 screw).
4. Turn SW5 and SW6 to OFF position.
5. Turn the operation mode switch (SW2) to COOL.
6. Screw the service cover back on (1 screw).
7. Turn on the power.
8. Push the forced operation switch (SW1) above the service cover. (Start forced cooling operation.)
   Forced cooling operation will stop automatically after about 15 minutes.
   To stop forced cooling operation, push the forced operation switch (SW1) again.



(R24958)

■ **90 class**

1. Turn off the power.
2. Remove the right side panel (6 screws).
3. Turn SW5 to the OFF position.
4. Turn the operation mode switch (SW2) to COOL.
5. Turn on the power.
6. Push the forced operation switch (SW1) (Start forced cooling operation.)
   Forced cooling operation will stop automatically after about 15 minutes.
   To stop forced cooling operation, push the forced operation switch (SW1) again.



(R24959)

3. Wiring Error Check Function

Outline

Wiring error check function is designed for the microcomputer to correct wiring errors itself. If local wiring is unclear in the case of buried piping, for example, just press the wiring error check switch on the outdoor unit. Even if the connections for Room A and Room B are confused, the system may run without a hassle.
Note that this check function does not work in the following cases.

- For 3-minute standby period after the circuit breaker is turned on.
- When the outdoor temperature is below 5°C.
- If the indoor unit is in trouble (also in case of all-room transmission failure).

When the piping and wiring are perfect, there is no need to use this function.

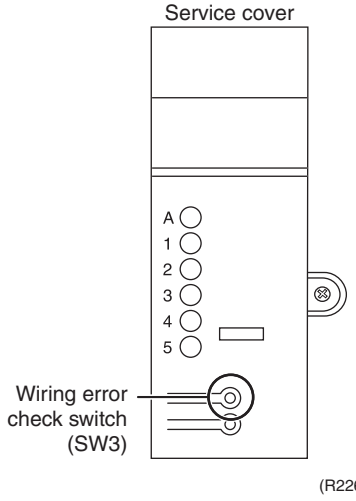
Operation

1. Press the wiring error check switch (SW3) on the service monitor PCB of the outdoor unit, and the wiring error check function is activated.
2. In about 15 ~ 20 minutes, the check finishes automatically.
3. When the check is over, the service monitor LED indicators start blinking.

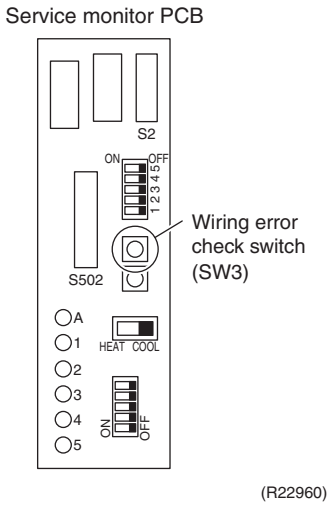
LED	1	2	3	4	5	Judgment
Status	All blinking at once					Self-correction impossible
	Blinking one after another					Self-correction complete
	One or more of LEDs 1 to 4 are ON				—	Abnormal stop

- Self-correction complete…The LED indicators 1 ~ 4 (4-room model), or 1~5 (5-room model) blink one after another.
- Self-correction impossible…The LED indicators blink all at the same time.
  - Transmission failure occurs at any of the indoor units.
  - The indoor unit heat exchanger thermistor is disconnected.
  - An indoor unit is in trouble (if a trouble occurs during the wiring error checking).
- Emergency stop…Any of the LED indicators stays on.

■ 50/65/80 class



■ 90 class



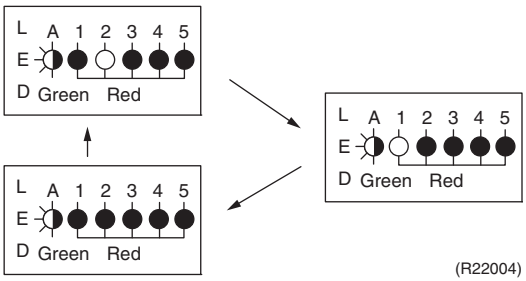
Details

- Wiring error check is realized by feeding refrigerant one by one through each piping port and detecting indoor heat exchanger temperature with the indoor heat exchanger thermistor in each room to see if the temperature changes in correct order.
- During wiring error check, freezing (cracking) noise may be heard from the indoor unit. This is not a malfunction. The noise is generated by the heat exchanger that is cooled below 0°C to make temperature change more visible.
- Indoor fan motor turns on and off during wiring error check.

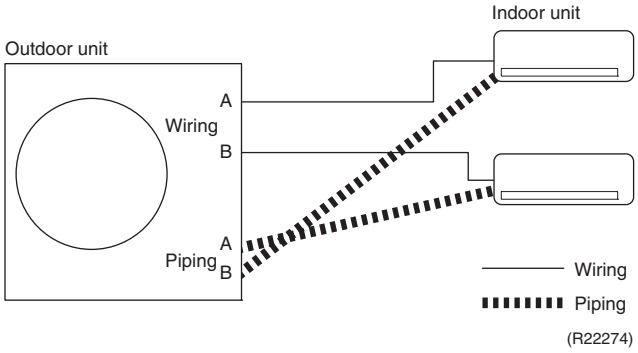
Wiring error check result is indicated using service monitor LEDs when all the checking procedures are completed. LEDs stop blinking when the system returns to the normal operation.

In a multi system with 2 ports (Port A and Port B), LED 1 and LED 2 indicate wiring to Room A and Room B respectively. The LED that blinks first and second indicate piping Port A and Port B respectively.

Suppose that the LEDs blink as illustrated below.



In this example, Port A and wiring to Room B are connected to the same room and Port B and wiring to Room A are connected to another room. Incorrect wiring is then corrected automatically.



Notes

1. Wrongly connected liquid and gas pipes cannot be self-corrected. Be sure to make the liquid pipe and the gas pipe in pairs.
2. To cancel the wiring error check procedure halfway, press the wiring error check switch again.
   In this case, the memory of the microcomputer returns to its initial status (Room A wiring → Port A piping, Room B wiring → Port B piping).
3. When replacing the outdoor unit PCB, be sure to use this function.
4. Make the priority room setting after wiring error check. If you set the priority room before wiring error check, the prioritized room may be changed after self-correction.

4. Trial Operation

4.1 Indoor Unit

Outline

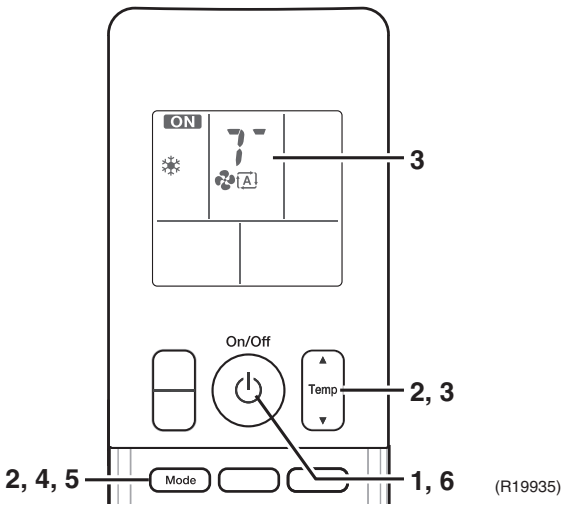
Trial operation should be carried out in cooling operation.

1. Measure the power supply voltage and make sure that it falls within the specified range.
2. Select the lowest programmable temperature (18°C).
3. Carry out the trial operation following the instructions in the operation manual to ensure that all functions and parts, such as the movement of the flaps, are working properly.
   - To protect the air conditioner, restart operation is disabled for 3 minutes after the system has been turned off.
4. After trial operation is complete, set the temperature to a normal level (26°C to 28°C).
   - When operating the air conditioner in cooling operation in winter, set it to the trial operation mode using the following method.

Procedure

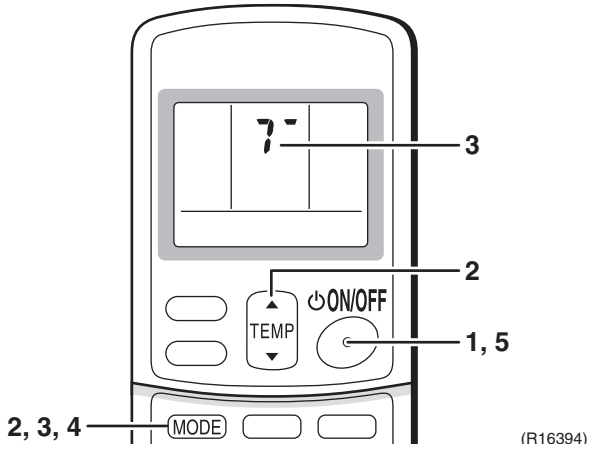
■ **With ARC466 Series Remote Controller**

1. Press **On/Off** button to turn on the system.
2. Press the center of **Temp** button and **Mode** button at the same time.
3. Select 7̇ (trial operation) with **Temp▲** or **Temp▼** button.
4. Press **Mode** button to start the trial operation.
5. Press **Mode** button and select operation mode.
6. Trial operation terminates in about 30 minutes and switches into normal mode.
   To quit trial operation, press **On/Off** button.



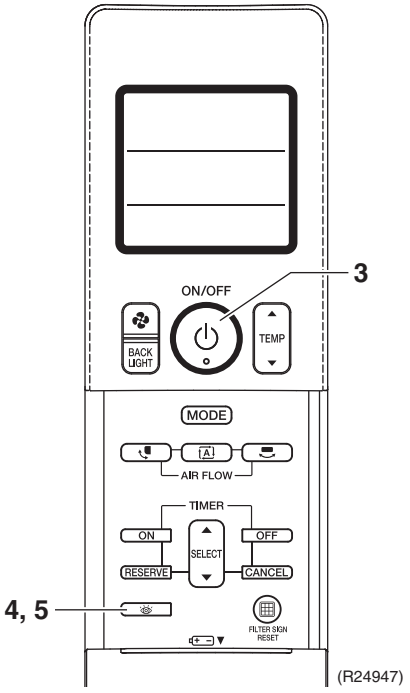
■ **With ARC433 Series Remote Controller**

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



■ **With BRC086A22 Remote Controller**

1. Completely open the stop valve on gas side.
2. Completely open the stop valve on liquid side.
3. Set to cooling or heating operation using the remote controller, and then start the operation by pressing **ON/OFF** button.
4. Press **INSPECTION** button 2 times, and let the operation continue for 3 minutes in the test operation mode.
5. Press **INSPECTION** button 1 time to return to normal operation mode.
6. Check the functions in accordance with operation manual.



Test Items

Test items	Symptoms
Indoor and outdoor units are installed securely.	Fall, vibration, noise
No refrigerant gas leaks.	Incomplete cooling/heating function
Refrigerant gas and liquid pipes and indoor drain hose extension are thermally insulated.	Water leakage
Draining line is properly installed.	Water leakage
System is properly earthed.	Electrical leakage
Only specified wires are used for all wiring, and all wires are connected correctly.	No operation or burn damage
Indoor or outdoor unit's air inlet or air outlet are unobstructed.	Incomplete cooling/heating function
Stop valves are opened.	Incomplete cooling/heating function
Indoor unit properly receives remote control commands.	No operation
Pipes and wires are connected to the corresponding terminal blocks/connection ports for the connected unit. *	No heating

* For wireless LAN connecting adapter, please check the FAQ at
http://www.daikinthai.com/product/dmobile

4.2 Outdoor Unit

- During the trial operation, first check the operation of each unit individually. After this, check the simultaneous operation of all indoor units. Check COOL operation.

- **Measure the supply voltage and make sure that it is within the specified range.**
- **In COOL operation, select the lowest programmable temperature.**
- **Carry out the trial operation following the instructions in the operation manual to ensure that all functions and parts, such as the movement of the flap, are working properly.**
  - To protect the air conditioner, restart operation is disabled for 3 minutes after the system has been turned off.
  - During COOL operation, frost may form on the gas stop valve or other parts. This is normal.
- **After running the unit for about 20 minutes, measure the temperatures at the indoor unit inlet and outlet.**
  - If the measurements are above the values shown in the table below, then they are normal.

Temperature difference between inlet and outlet	About 8°C

(When running in one room)

- **After trial operation is complete, set the temperature to a normal level (26°C to 28°C).**
  - When operating the air conditioner in COOL operation in winter, activate trial operation mode by following the instructions in the installation manual for the indoor unit.
  - The air conditioner draws a small amount of power in its standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
  - If the circuit breaker trips to shut off the power to the air conditioner, the system will restore the original operation mode when the circuit breaker is opened again.

Test Items

Test items	Symptoms
Indoor and outdoor units are installed securely.	Fall, vibration, noise
No refrigerant gas leaks.	Incomplete cooling function
Refrigerant gas and liquid pipes and indoor drain hose extension are thermally insulated.	Water leakage
Draining line is properly installed.	Water leakage
System is properly earthed.	Electrical leakage
The electric wires are connected correctly.	Incomplete cooling function
The wiring conforms with the specifications.	No operation or burn damage
Indoor or outdoor unit's air inlet or air outlet are unobstructed.	Incomplete cooling function
Stop valves are opened.	Incomplete cooling function
The wiring and piping marks for each indoor unit (room A, room B, room C, room D and room E) match.	Incomplete cooling function
The priority room setting is set for only 1 room.	The priority room setting will not function.

5. Field Settings

5.1 Wall Mounted and LSP Duct Type Indoor Unit

5.1.1 When 2 Units are Installed in 1 Room

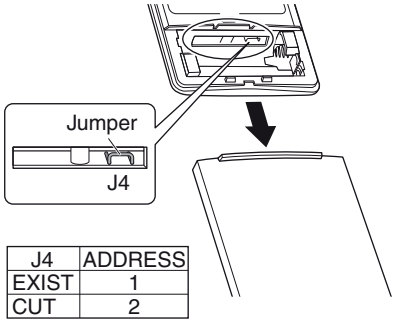
Outline

When 2 indoor units are installed in 1 room, 1 of the 2 indoor units and the corresponding wireless remote controller can be set for different address.

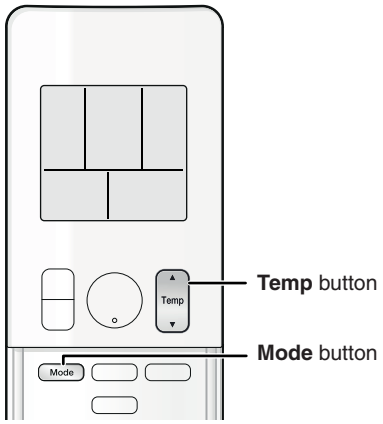
Wall Mounted Type

1. Remove the battery cover on the remote controller and cut the address jumper (J4).
2. Press the center of **Temp** button and **Mode** button at the same time.
3. Press **Temp** button, select 8, press **Mode** button.
   The indoor unit operation lamp will blink for about 1 minute.
4. Press the indoor unit **ON/OFF** switch while the operation lamp is blinking.

Wireless Remote Controller

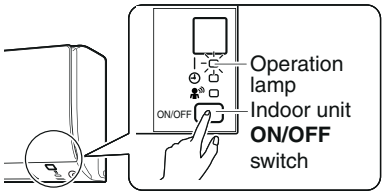


(R22634)



(R24702)

Indoor Unit



r7000041

- If setting could not be carried out completely while the operation lamp was blinking, carry out the setting process once again from the beginning.
- After setting is complete, pressing **Mode** button for about 5 seconds will cause the remote controller to return to the previous display

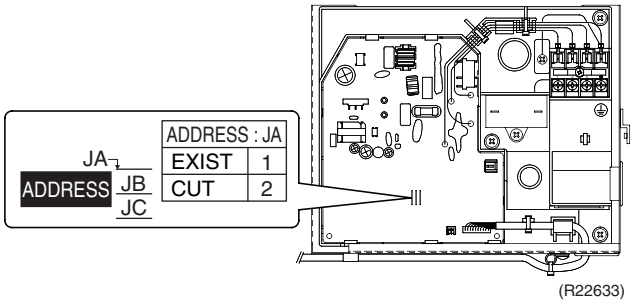
Caution

Replace the remote controller if you cut a jumper unintentionally.
Jumpers are necessary for electronic circuit. Improper operation may occur if you cut any of them.

LSP Duct Type

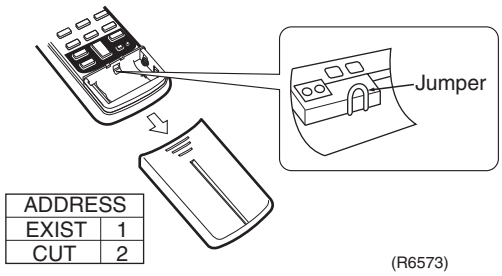
1. Cut the jumper JA on indoor unit control PCB.
2. Remove the battery cover of the remote controller and cut the address jumper (J4).

Indoor Unit



Wireless Remote Controller

1. Remove the cover.
2. Cut the address setting jumper.



Caution

Replace the PCB if you cut a jumper unintentionally.
Jumpers are necessary for electronic circuit. Improper operation may occur if you cut any of them.

Caution

Replace the remote controller if you cut a jumper unintentionally.
Jumpers are necessary for electronic circuit. Improper operation may occur if you cut any of them.

5.1.2 Jumper and Switch Settings

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

Reference

For the location of the jumpers, refer to the following pages.
FDKS Series: page 32

5.2 MSP Duct Type Indoor Unit

5.2.1 Field Settings with BRC086A22 Wireless Remote Controller

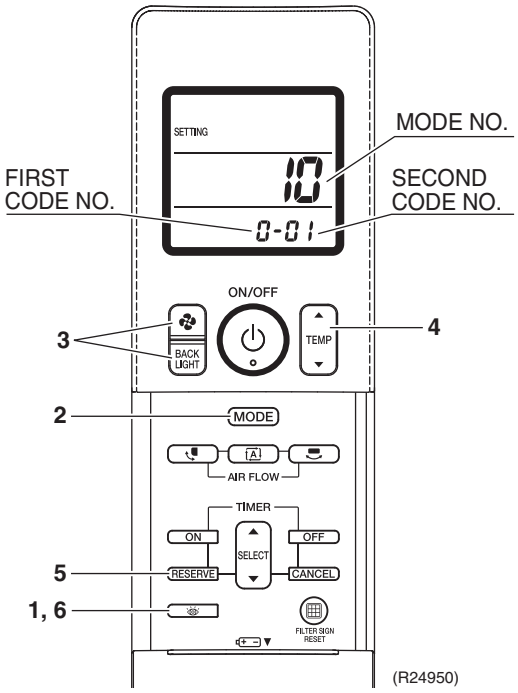
Outline

When optional accessories are mounted on the indoor unit, the indoor unit setting may have to be changed. Refer to the instruction manual for each optional accessory.

Procedure

■ **With BRC086A22 Remote Controller**

1. When in the normal mode, press **INSPECTION** button for 4 seconds or more, and the FIELD SET MODE is entered.
2. Select the desired MODE NO. with **MODE** button.
3. Press **FAN** button and **BACK LIGHT** button and select the FIRST CODE NO.
4. Press **TEMP** button and select the SECOND CODE NO.
5. Press **RESERVE** button and the present settings are SET.
6. Press **INSPECTION** button to return to the NORMAL MODE.



Overview of Setting

- If the time to clean air filter is set to "Filter Contamination-a lot", set Mode No. to 10, First Code No. to 0, and second Code No. to 02.
- Do not use any settings not listed in the table.

Mode No.	First Code No.	Description of setting	Second Code No.				
			01		02		03
10	0	Filter Contamination-a little/a lot (Setting for spacing time of display time to clean air filter) (Setting for when filter contamination is a lot, and spacing time of display time to clean air filter is to be halved)	a little (light) ★	approx. 2,500 hours	a lot (heavy)	approx. 1,250 hours	—
	3	Spacing time of display time to clean air filter count (Use “Without indication” setting when cleaning indication is not necessary such as the case of periodical cleaning being carried out.)	With indication (Display) ★		Without Indication (Do not display)		—
11	7	Air volume adjustment	OFF ★		Air volume adjustment completion		Air volume adjustment start

★ Factory Setting

External static pressure	Mode No.	First Code No.	Second Code No.
50 Pa ★	13 (23)	6	05 ★
60 Pa			06
70 Pa			07
80 Pa			08
90 Pa			09
100 Pa			10
110 Pa			11
120 Pa			12
130 Pa			13
140 Pa			14
150 Pa			15

★ Factory Setting

5.2.2 Field Settings with BRC1E63 Wired Remote Controller

Outline

When an optional accessory is installed on the indoor unit, settings of the indoor unit may be changed. Refer to the installation manual for each optional accessory.

Procedure

1 Press and hold the Cancel button for 4 seconds or longer. Service Settings menu is displayed.

2 Select **Field settings** in the Service Settings menu, and press Menu/Enter button. Field settings screen is displayed.

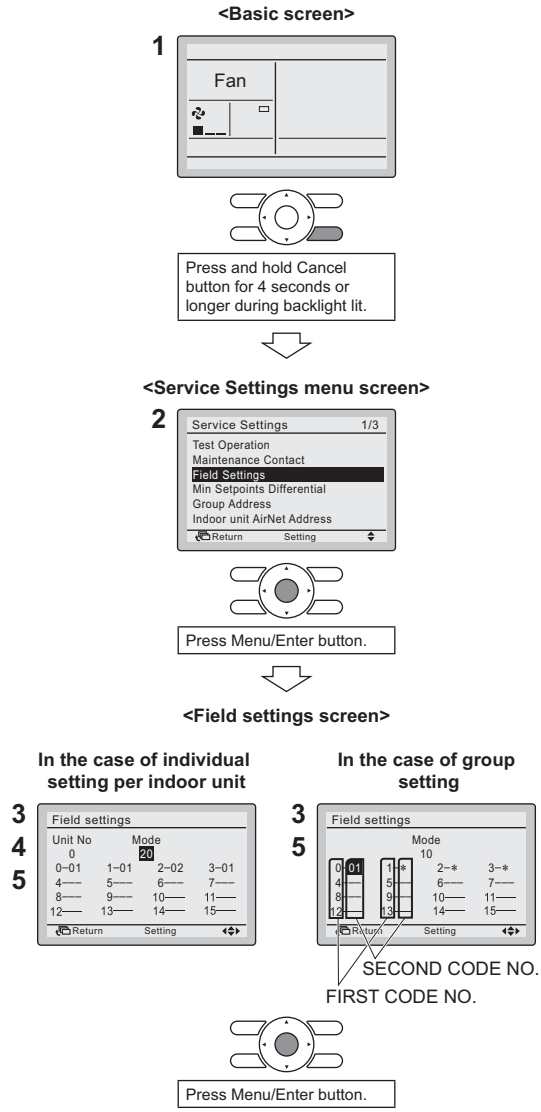
3 Highlight the Mode No., and select desired "Mode No." by using " ▼▲" (Down/Up) button.

4 In the case of setting per indoor unit during group control (When Mode No. such as **20** , **21** , **22** , **23** , **25** are selected), highlight the Unit No. and select "Indoor unit No." to be set by using " ▼▲" (Down/Up) button. (In the case of group setting, this operation is not needed.)

> In the case of individual setting per indoor unit, current settings are displayed. And, SECOND CODE NO. " - " means no function.

5 Highlight SECOND CODE NO. of the FIRST CODE NO. to be changed, and select desired "SECOND CODE NO." by using " ▼▲" (Down/Up) button. Multiple identical mode number settings are available.

> In the case of group setting, all of SECOND CODE NO. which may be set are displayed as " ∗ ". " ∗ " is changed to SECOND CODE NO. to be set. And, SECOND CODE NO. " - " means no function.



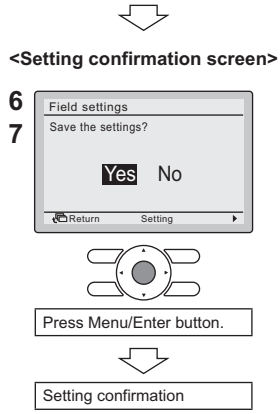
6 Press Menu/Enter button. Setting confirmation screen is displayed.

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

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

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

10 Backlight goes out, and "Checking the connection. Please stand by." is displayed during initialization. After the initialization, the Basic screen returns.



Overview of Settings

Mode No.	First Code No.	Description of setting		Second Code No.					
				01		02		03	04
10 (20)	0	Filter Contamination - Heavy/Light (Setting for spacing time of display time to clean air filter)	Ultra longlife filter	Light ★	Approx. 10,000 hrs.	Heavy	Approx. 5,000 hrs.	—	—
			Longlife filter		Approx. 2,500 hrs.		Approx. 1,250 hrs.		
			Standard filter		Approx. 200 hrs.		Approx. 100 hrs.		
	1	Long-life filter type (Setting of filter sign indication time)		Longlife filter ★		Ultra longlife filter		—	—
	2	Thermostat sensor in remote controller		Enabled		Disabled ★		—	—
	3	Spacing time of display time to clean air filter count		Display ★		No display		—	—
11 (21)	7	Air volume adjustment		OFF ★		Air volume adjustment completion		Air volume adjustment start	—
13 (23)	6	External static pressure		Refer to below table					

★: factory setting

External static pressure	Mode No.	First Code No.	Second Code No.
50 Pa ★	13 (23)	6	05 ★
60 Pa			06
70 Pa			07
80 Pa			08
90 Pa			09
100 Pa			10
110 Pa			11
120 Pa			12
130 Pa			13
140 Pa			14
150 Pa			15

★: factory setting

Note Any function that is not available on the indoor unit is not displayed.

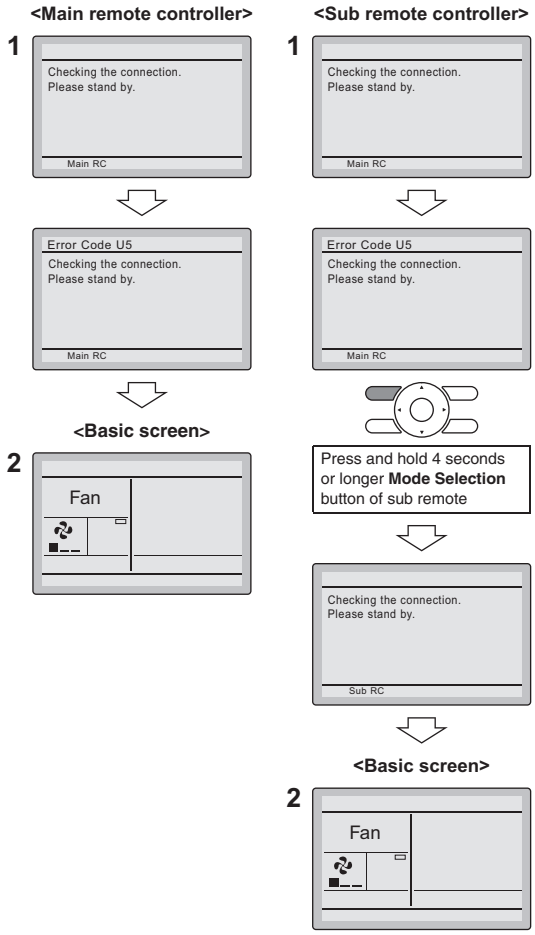
5.2.3 MAIN/SUB Setting when Using 2 Wired Remote Controllers

Outline

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

Details

1. The following message is displayed after power-on.
   Checking the connection. Please stand by.
   During above display, the backlight does not light by button operation.
   [When 1 indoor unit is controlled by 2 remote controllers:]
   Be sure to set sub remote controller during above display.
   Press and hold **Mode** button for 4 seconds or longer to set.
   When the display is changed from “Main RC” to “Sub RC” the setting is completed.
2. Basic screen is displayed.
   The remote controllers are factory set to MAIN, so you only have to change one remote controller from MAIN to SUB.



5.2.4 Address and MAIN/SUB Setting for Wireless Remote Controller

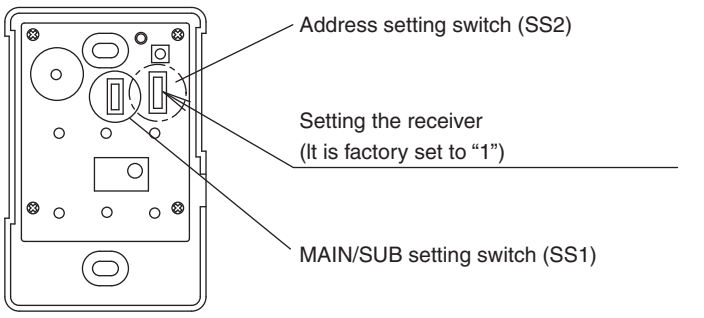
Outline

When several wireless remote controller units are used together in the same room, including the case where both group control and individual remote controller control are used together, be sure to set the addresses for the receiver and wireless remote controller.
For group control, see the attached installation manual for the indoor unit.

- If using both wired and wireless remote controller for 1 indoor unit, wired remote controller should be set to MAIN. Therefore, set MAIN/SUB switch (SS1) on the signal receiver PCB to SUB.
- If controlling with 1 remote controller, be sure to set it to MAIN.
- Set the remote controller before turning power supply on.

Signal Receiver PCB Setting

- **FDMR Series**



(R24951)

Set the MAIN/SUB setting switch (SS1) on the signal receiver PCB to SUB.

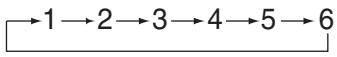
	MAIN	SUB
MAIN/SUB setting switch (SS1)	M S	M S

Set the address setting switch (SS2) on the signal receiver PCB according to the table below.

Unit No.	No.1	No.2	No.3
Address setting switch (SS2)	SS2 1 2 3	SS2 1 2 3	SS2 1 2 3

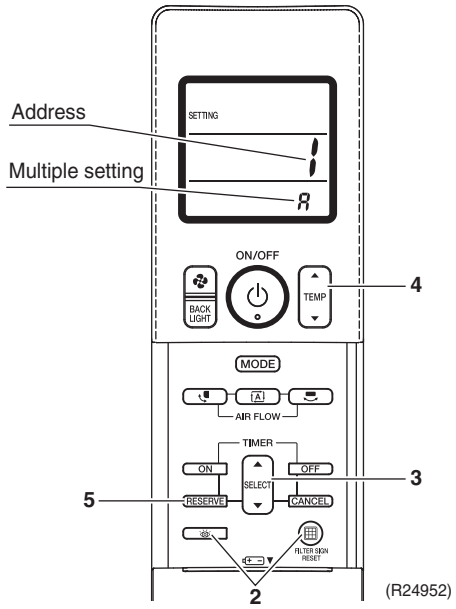
Wireless Remote Controller Setting (Factory Set is 1)

1. Open the cover on the display of the wireless remote controller.
2. Press **FILTER SIGN RESET** button and **INSPECTION** button at the same time for 4 seconds or more to go into the FIELD SETTING mode.
   The liquid crystal display on the remote controller is shown below illustration.
3. Press **SELECT** button and select the multiple setting. (A/b setting)
   Each time the button is pressed, the display changes from “A” to “b”.
4. Press **TEMP** buttons for set the address.



The address can be set from 1 to 6, but set it from 1 to 3 to correspond with the receiving part. It does not work when it is set from 4 to 6.

5. When **RESERVE** button is pressed, the setting is confirmed and the usual display returns.



Multiple Settings A/b

The command such as operation mode or temperature setting by this remote controller will be rejected when the target indoor unit operation is restricted as by an external control such as centralized control.
Since the setting acceptance is hard to discriminate with such circumstances there are 2 setting options provided to enable discriminating by a beeping sound according to the operation: “A: Standard” or “b: Multi System”.
Set the setting according to the user’s intention.

Remote Controller		Indoor Unit	
Indoor Unit	Display on remote controller	Behavior to the remote controller operation when the functions are restricted as by an external control.	Other than the left
A: Standard (factory set)	All items displayed.	Accepts the functions except restricted. Sounds one long beep or 3 short beeps. There may be a difference from the indoor unit status with remote controller display.	Accepts all items transmitted (Sounds 2 short beeps) The remote controller display agrees with the indoor unit status.
b: Multi System	Display only items transmitted for a while.	**When some restricted functions are included in the transmitted items** Accepts the functions except restricted. Sounds one long beep or 3 short beeps There may be a difference from the indoor unit status with remote controller display. **When no restricted function is included** Accepts all items transmitted (Sounds 2 short beeps) The remote controller display agrees with the indoor unit status.	

5.3 Outdoor Unit

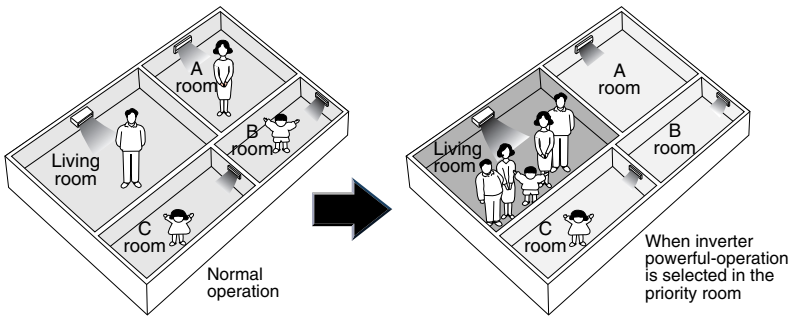
5.3.1 Priority Room Setting

Electronic expansion valves are controlled to provide more capacity to the prioritized room.

- Setting method
  Turn off the circuit breaker before changing the setting.
  Only one room can be set as the priority room (By turning on one of the SW4 on the service monitor PCB of the outdoor unit).
- The control starts when all the following conditions are met.
  - Priority room setting is made.
  - POWERFUL signal from the priority room unit is received.

Note The operation mode of the priority room unit has precedence.

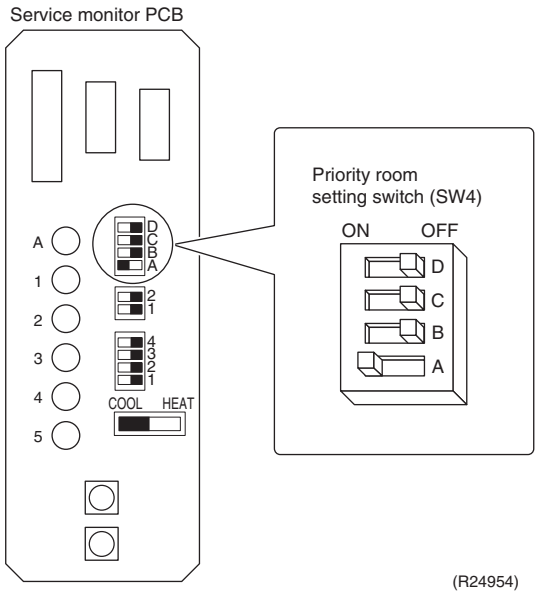
- Cancellation of control
  [Example]
  The control function is canceled when the POWERFUL operation mode is switched off or 20 minutes elapse after POWERFUL operation started.



The prioritized room will be heated/cooled much more quickly

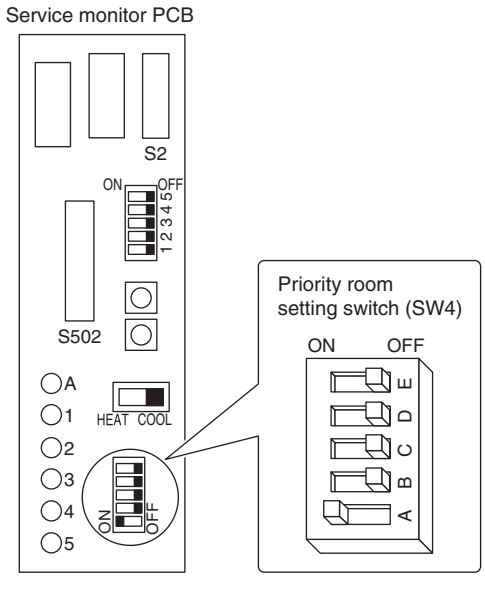
(R1396)

■ 50/65/80 class



(R24954)

■ 90 class



(R24955)

5.3.2 NIGHT QUIET Mode

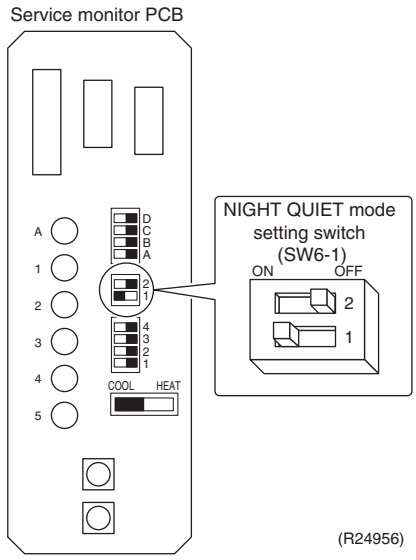
Outline

If NIGHT QUIET mode is to be used, initial settings must be made when the unit is installed. Explain the function of NIGHT QUIET mode, as described below, to the customer, and confirm whether or not the customer wants to use NIGHT QUIET mode.
NIGHT QUIET mode function reduces operating noise of the outdoor unit at nighttime. This function is useful if the customer is worried about the effects of the operating noise on the neighbors. However, if NIGHT QUIET mode is running, cooling capacity is reduced.

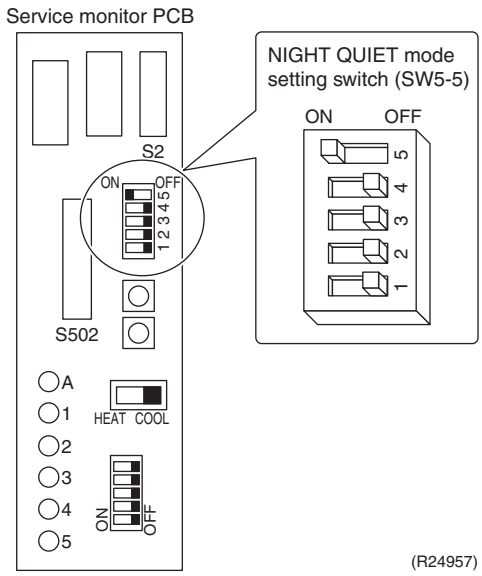
Details

Slide the SW6-1/SW5-5 to the ON side.

■ **50/65/80 class**



■ **90 class**

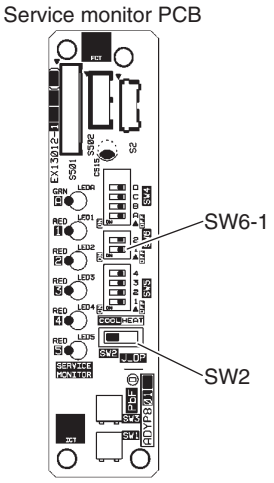


5.3.3 Limitation Setting for Input Current

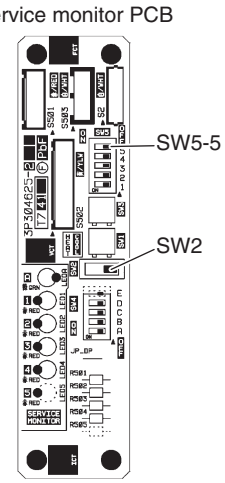
Outline

You can select an upper limit for the input current. Use the operation mode switch (SW2) and the NIGHT QUIET mode setting switch (SW6-1 or SW5-5) to set the upper limit.

■**50/65/80 class**

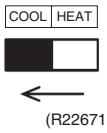
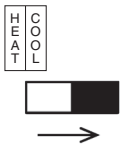
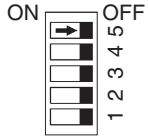
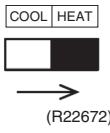
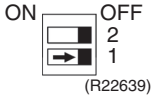
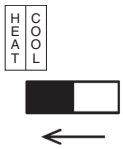
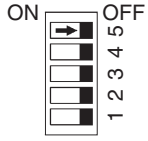
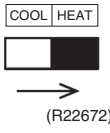
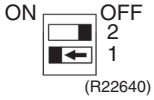
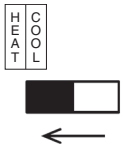
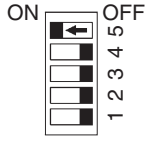


■**90 class**



Details

Set the operation mode switch (SW2) and the NIGHT QUIET mode setting switch (SW6-1 or SW5-5) as described below.

Unit limit	50/65/80 class		90 class	
	SW2	SW6-1	SW2	SW5-5
Without limit (factory set)	 (R22671)	 (R22639)	 (R22673)	 R7000259
11.0 A	 (R22672)	 (R22639)	 (R22674)	 R7000259
8.5 A	 (R22672)	 (R22640)	 (R22674)	 R7000261

5.3.4 ECONO-mode-proof Setting

Outline

You can make ECONO mode ineffective on the outdoor unit.

Operation

The ECONO mode can be switched over between effective and ineffective by pressing the forced operation ON/OFF switch (SW1) on the outdoor unit and wiring error check switch (SW3) on the outdoor unit at the same time and holding them for 5 seconds while the compressor is stopped. The LEDs are lit in turn for 15 seconds to show the ECONO mode status.
The factory setting is effective.

LED flashing order	effective → ineffective	ineffective → effective
3 or 4-room model	4 → 3 → 2 → 1	1 → 2 → 3 → 4
5-room model	5 → 4 → 3 → 2 → 1	1 → 2 → 3 → 4 → 5

6. Silicone Grease on Power Transistor/Diode Bridge

Outline

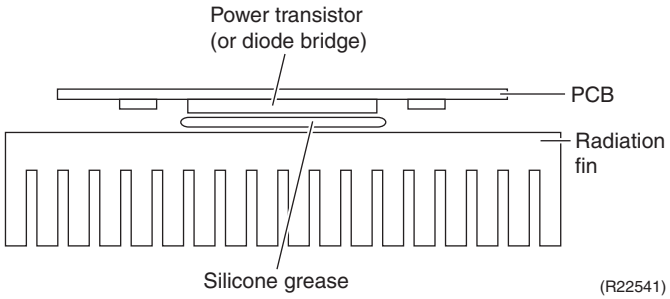
Apply the specified silicone grease to the heat radiation part of a power transistor/diode bridge when you replace an outdoor unit PCB. The silicone grease encourages the heat radiation of a power transistor/diode bridge.

Details

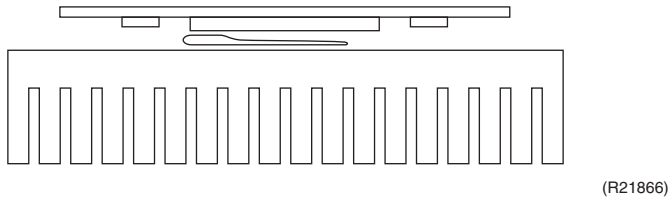
1. Wipe off the old silicone grease completely.
2. Apply the silicone grease evenly. See the illustrations below for examples of application.
3. Tighten the screws of the power transistor/diode bridge.
4. Make sure that the heat radiation parts are firmly contacted to the radiation fin.

Note: Smoke emission may be caused by bad heat radiation when the silicone grease is not appropriately applied.

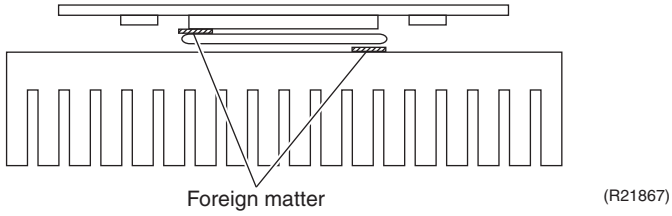
- OK: Evenly applied



- NG: Not evenly applied



- NG: Foreign matter is stuck.



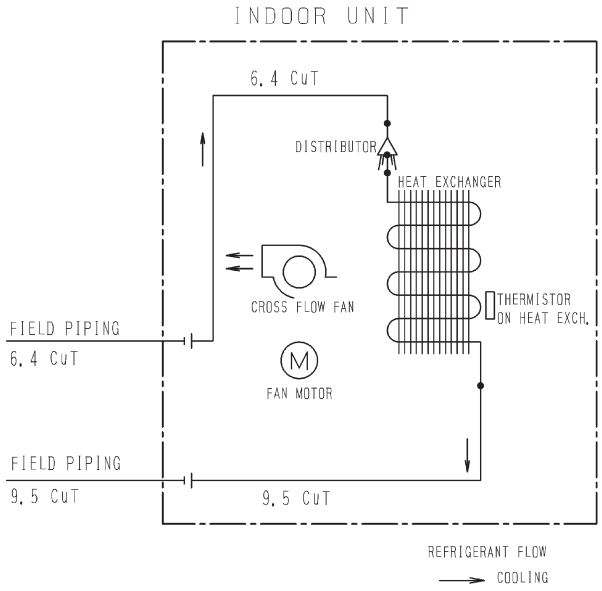
Part 8
Appendix

1. Piping Diagrams

1.1 Indoor Unit

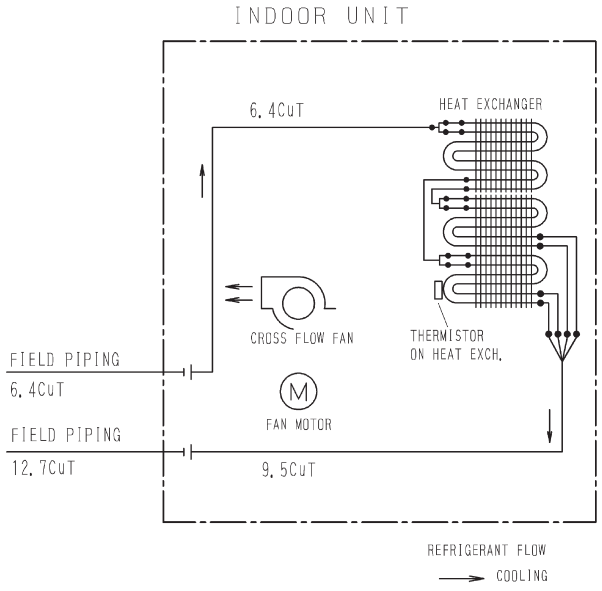
1.1.1 Wall Mounted Type

CTKS25/35TVMG, CTKB25/35TVMG



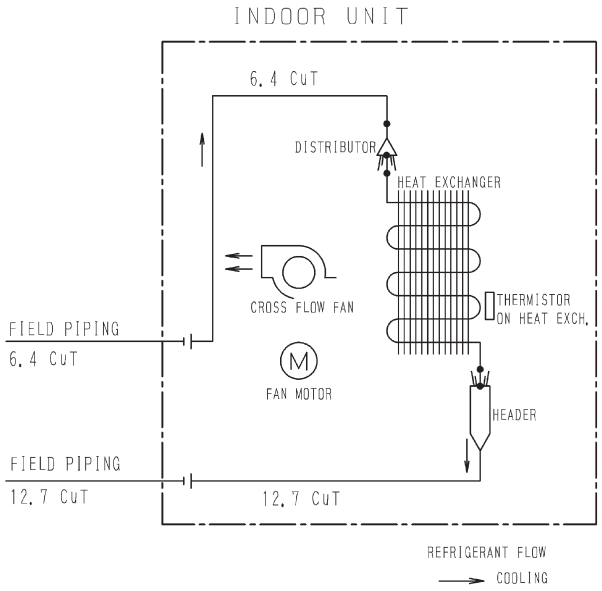
4D104482

CTKS50TVMG, CTKB50TVMG



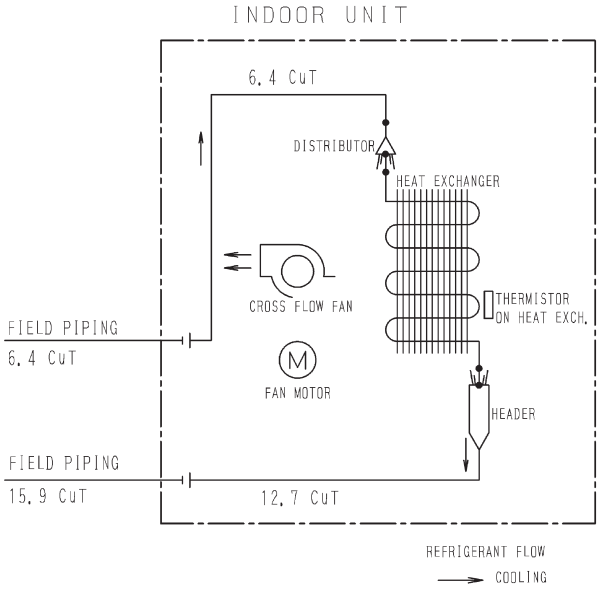
4D095915D

CTKS60TVMG, CTKB60TVMG



4D104484A

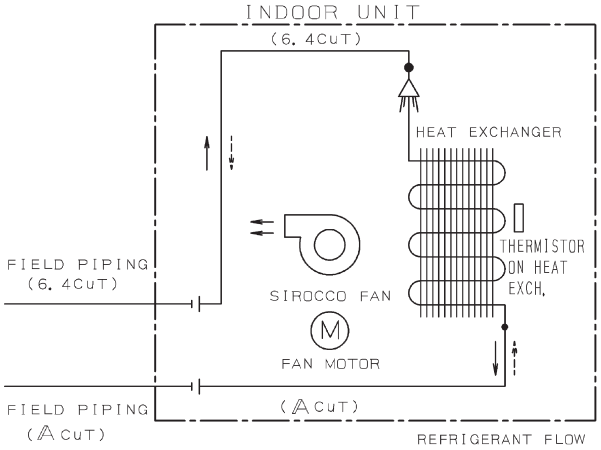
CTKS71TVMG



4D104483A

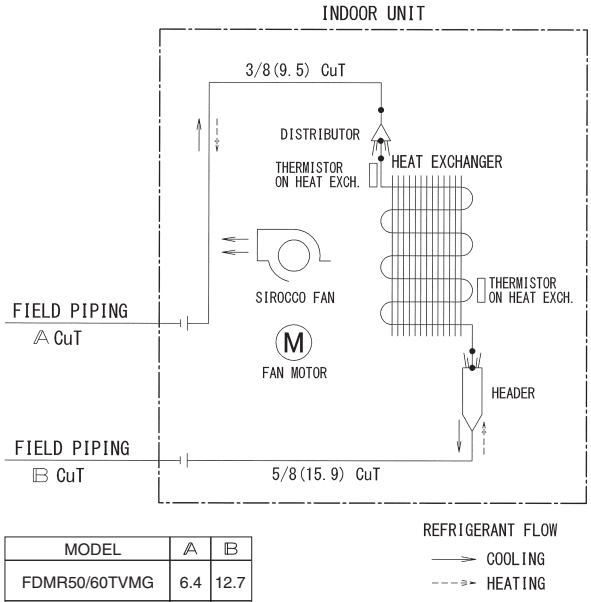
1.1.2 Duct Connected Type

FDKS25/35EAVMB, FDKS25/35CAVMB, FDKS50/60CVMB



MODEL	Ⓐ	MODEL	Ⓐ
FDKS25EAVMB FDKS35EAVMB FDKS25CAVMB FDKS35CAVMB	9.5	FDKS50CVMB FDKS60CVMB	12.7

FDMR50/60/71TVMG

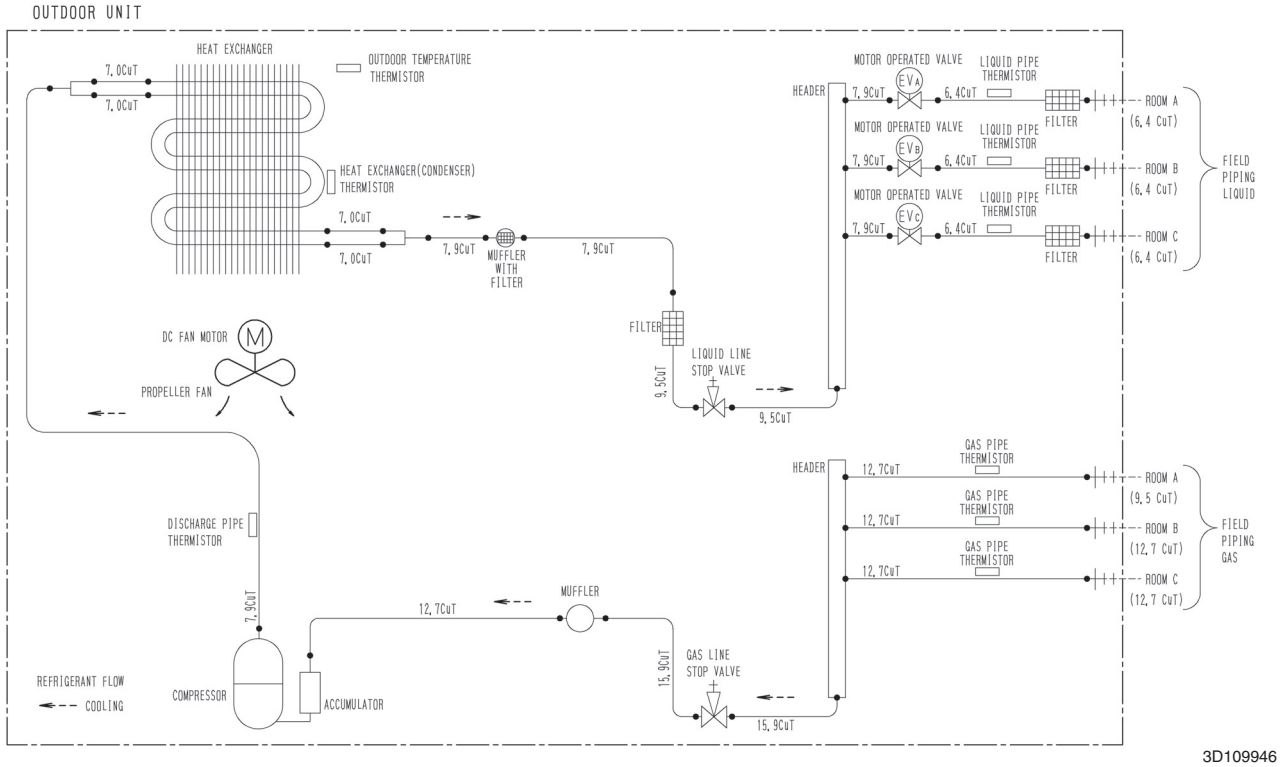


MODEL	Ⓐ	Ⓑ
FDMR50/60TVMG	6.4	12.7
FDMR71TVMG	6.4	15.9

C:4D045449X 4D112974A

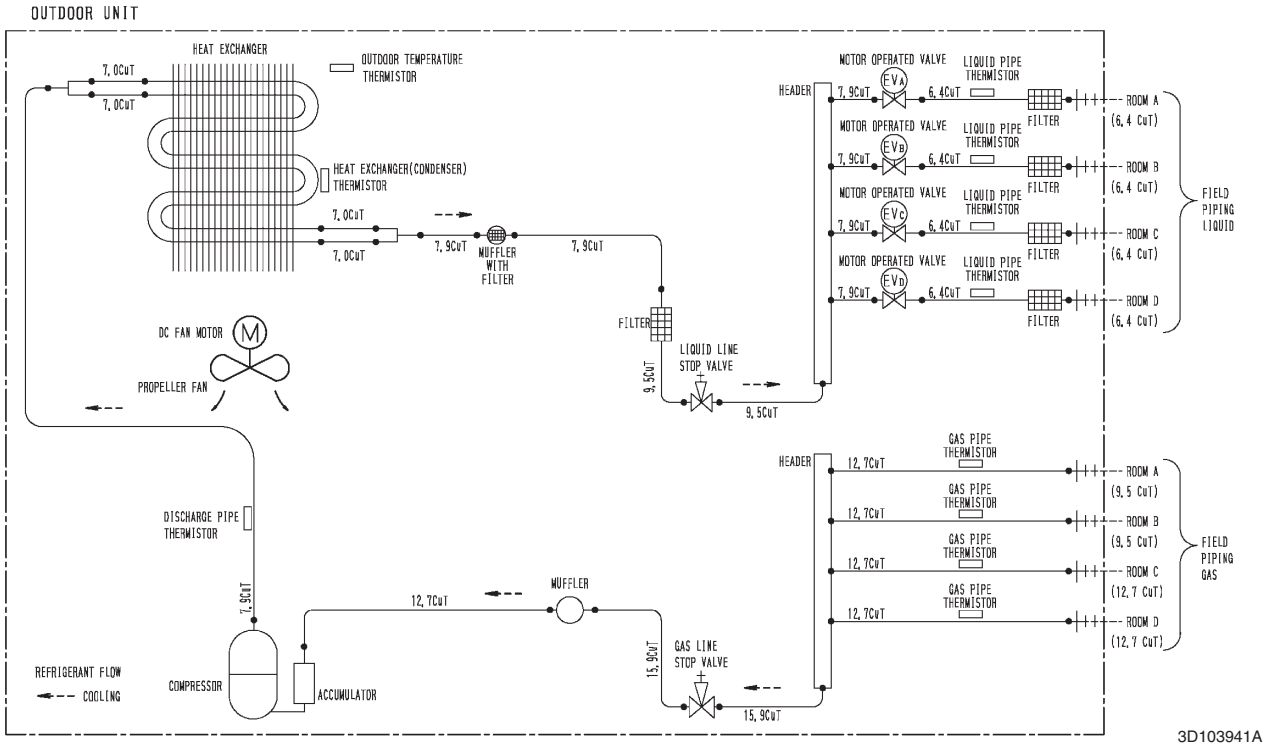
1.2 Outdoor Unit

MKS50TVMG, MKB50TVMG

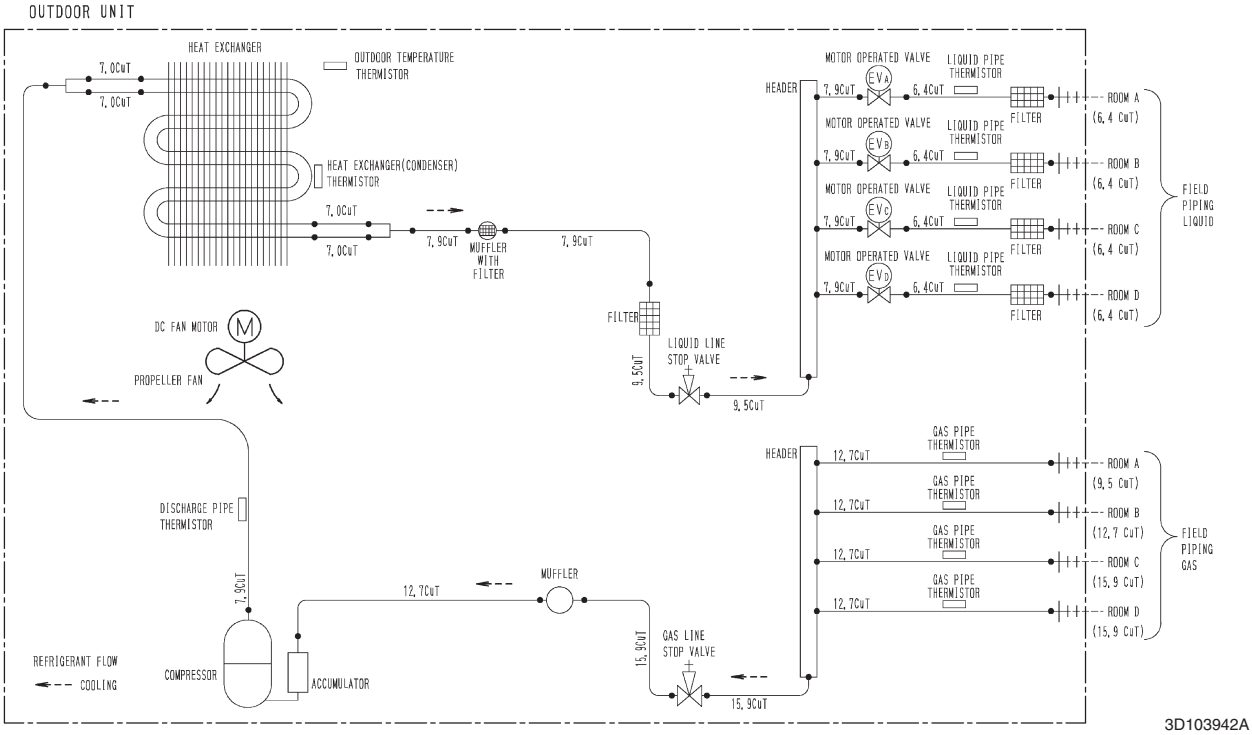


3D109946

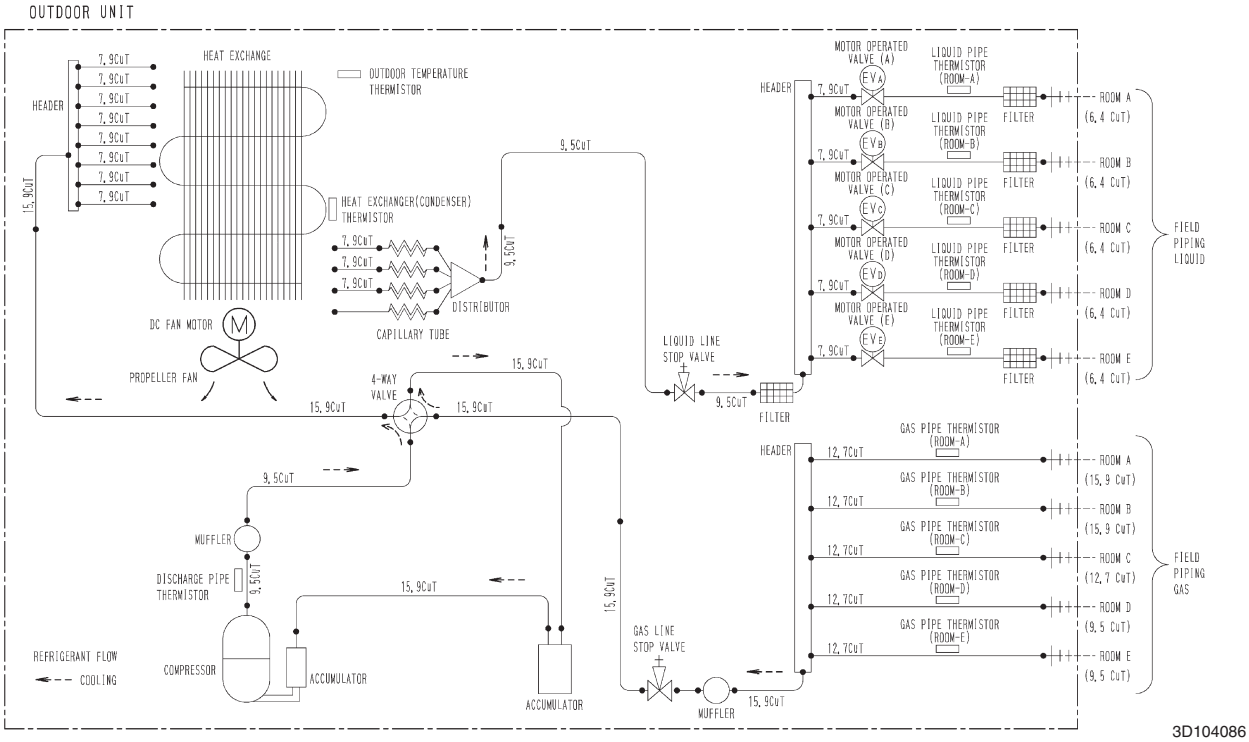
MKS65TVMG, MKB65TVMG



MKS80TVMG



MKS90TVMG

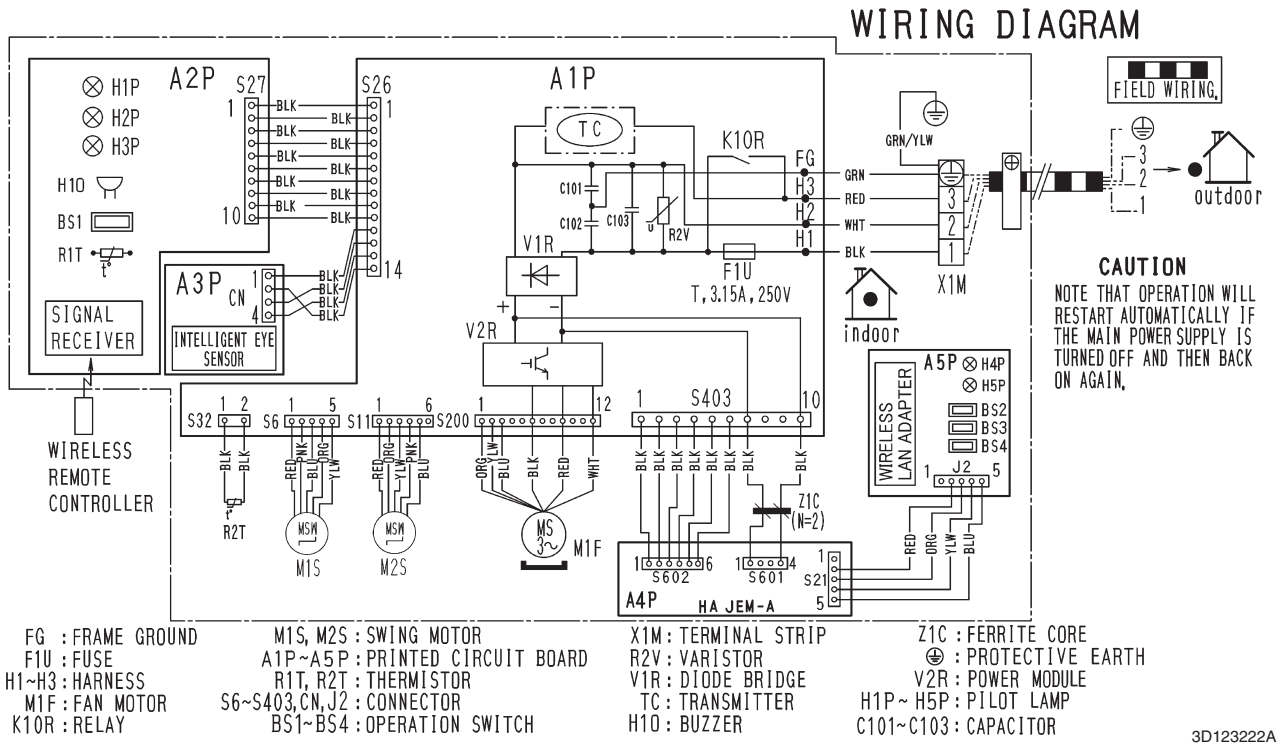

OUTDOOR UNIT
HEAT EXCHANGE
OUTDOOR TEMPERATURE THERMISTOR
HEADER
7, 9CuT
15, 9CuT
HEAT EXCHANGER(CONDENSER) THERMISTOR
DISTRIBUTOR
9, 5CuT
CAPILLARY TUBE
DC FAN MOTOR
PROPELLER FAN
4-WAY VALVE
15, 9CuT
9, 5CuT
MUFFLER
DISCHARGE PIPE THERMISTOR
COMPRESSOR
ACCUMULATOR
REFRIGERANT FLOW
COOLING
LIQUID LINE STOP VALVE
GAS LINE STOP VALVE
FILTER
MOTOR OPERATED VALVE (A)
MOTOR OPERATED VALVE (B)
MOTOR OPERATED VALVE (C)
MOTOR OPERATED VALVE (D)
MOTOR OPERATED VALVE (E)
LIQUID PIPE THERMISTOR (ROOM-A)
LIQUID PIPE THERMISTOR (ROOM-B)
LIQUID PIPE THERMISTOR (ROOM-C)
LIQUID PIPE THERMISTOR (ROOM-D)
LIQUID PIPE THERMISTOR (ROOM-E)
ROOM A (6, 4 CuT)
ROOM B (6, 4 CuT)
ROOM C (6, 4 CuT)
ROOM D (6, 4 CuT)
ROOM E (6, 4 CuT)
FIELD PIPING LIQUID
GAS PIPE THERMISTOR (ROOM-A)
GAS PIPE THERMISTOR (ROOM-B)
GAS PIPE THERMISTOR (ROOM-C)
GAS PIPE THERMISTOR (ROOM-D)
GAS PIPE THERMISTOR (ROOM-E)
12, 7CuT
ROOM A (15, 9 CuT)
ROOM B (15, 9 CuT)
ROOM C (12, 7 CuT)
ROOM D (9, 5 CuT)
ROOM E (9, 5 CuT)
FIELD PIPING GAS
3D104086

2. Wiring Diagrams

2.1 Indoor Unit

2.1.1 Wall Mounted Type

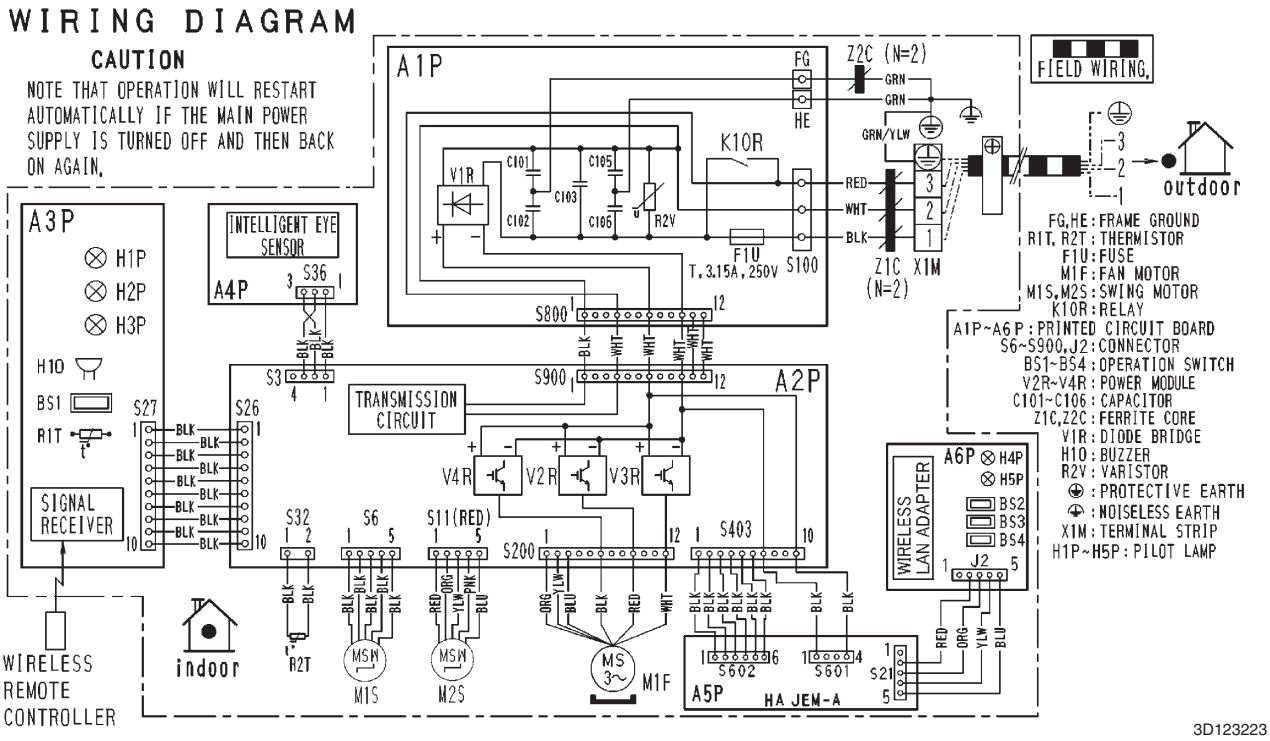
CTKS25/35/50TVMG



Note

A1P: Control PCB
A2P: Display/signal receiver PCB
A3P: INTELLIGENT EYE sensor PCB
A4P: Adaptor PCB
A5P: Wireless LAN adaptor PCB
Refer to page 27 for Printed Circuit Board Connector Wiring Diagram.

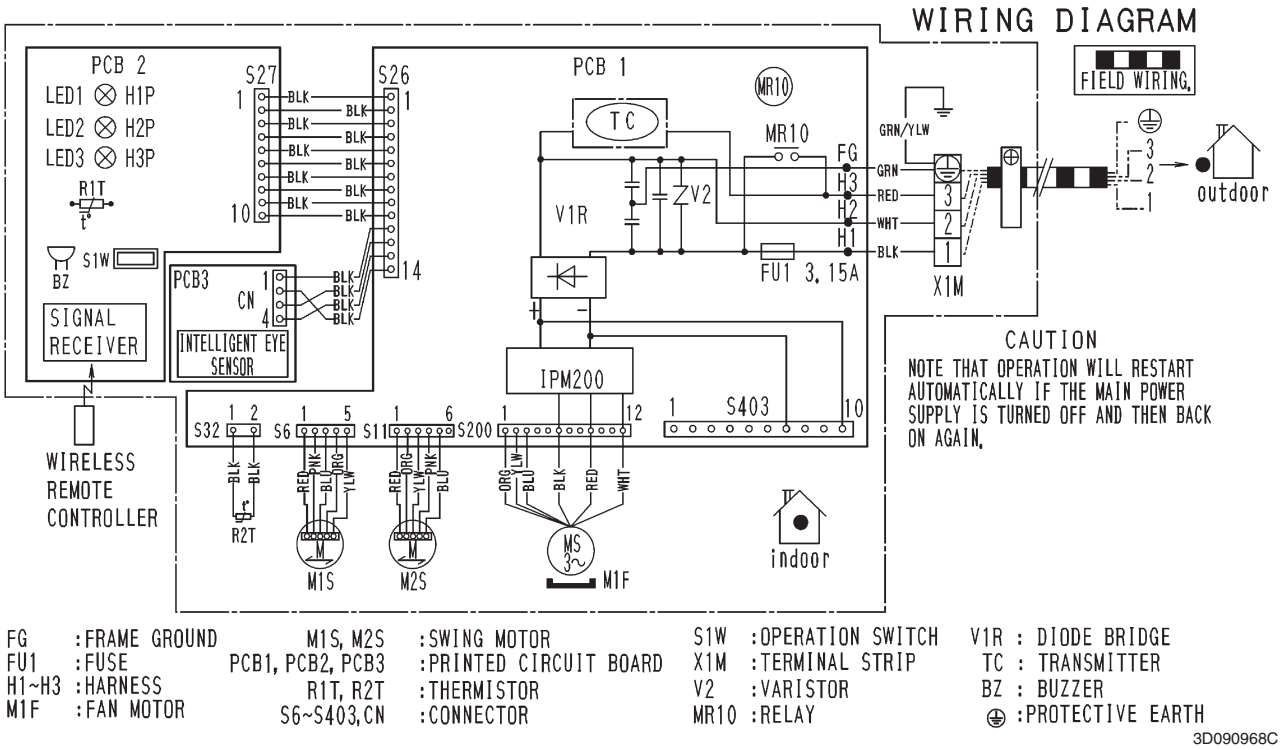
CTKS60/71TVMG



Note

A1P: Filter PCB
A2P: Control PCB
A3P: Display/signal receiver PCB
A4P: INTELLIGENT EYE sensor PCB
A5P: Adaptor PCB
A6P: Wireless LAN adaptor PCB
Refer to page 29 for Printed Circuit Board Connector Wiring Diagram.

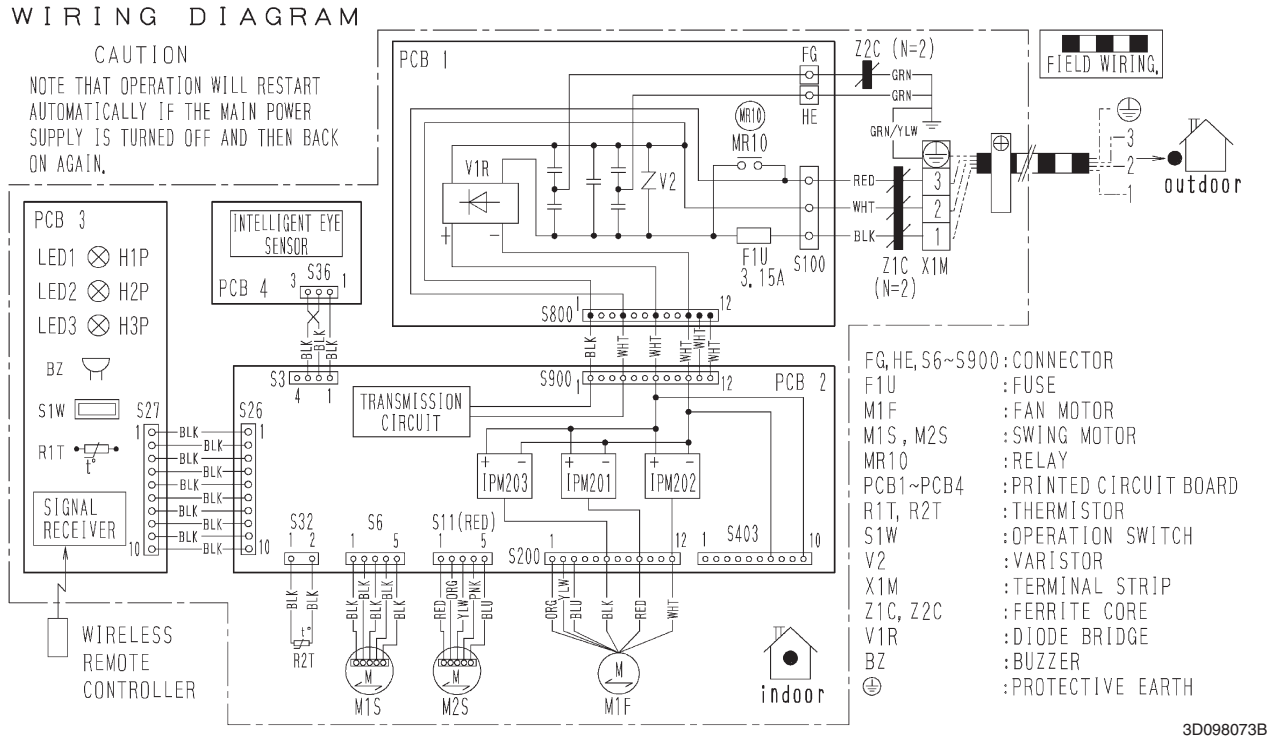
CTKB25/35/50TVMG



Note

PCB1: Control PCB
PCB2: Display/signal receiver PCB
PCB3: INTELLIGENT EYE sensor PCB
Refer to page 27 for Printed Circuit Board Connector Wiring Diagram.

CTKB60TVMG

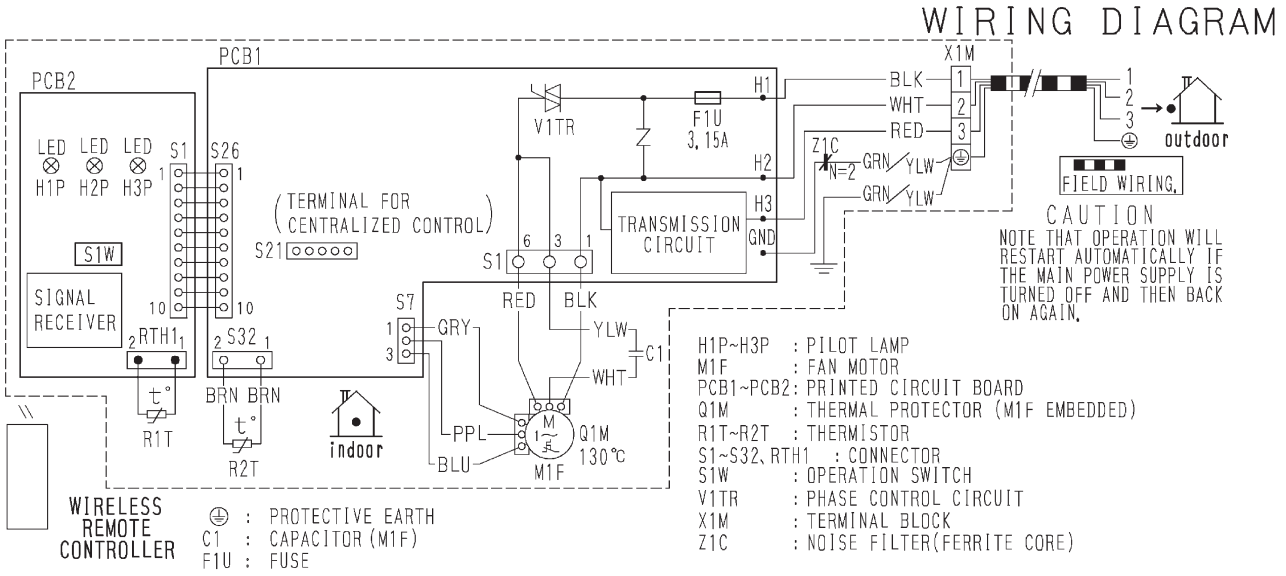


Note

PCB1: Filter PCB
PCB2: Control PCB
PCB3: Display/signal receiver PCB
PCB4: INTELLIGENT EYE sensor PCB
Refer to page 29 for Printed Circuit Board Connector Wiring Diagram.

2.1.2 LSP Duct Type

FDKS25/35EAVMB, FDKS25/35CAVMB, FDKS50/60CVMB



3D045012P

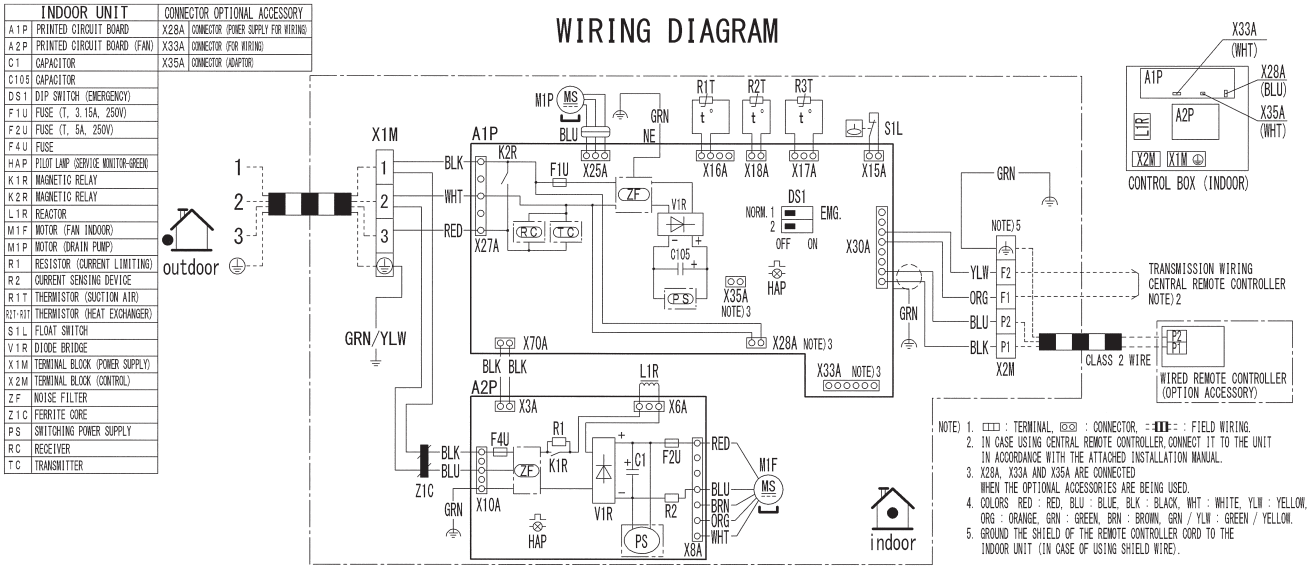
Note

PCB1: Control PCB
PCB2: Display/signal receiver PCB
Refer to page 32 for Printed Circuit Board Connector Wiring Diagram.

2.1.3 MSP Duct Type

FDMR50/60/71TVMG

INDOOR UNIT		CONNECTOR OPTIONAL ACCESSORY	
A1P	PRINTED CIRCUIT BOARD	X28A	CONNECTOR (POWER SUPPLY FOR WIRING)
A2P	PRINTED CIRCUIT BOARD (FAN)	X33A	CONNECTOR (FOR WIRING)
C1	CAPACITOR	X35A	CONNECTOR (ADAPTOR)
C105	CAPACITOR		
DS1	DIP SWITCH (EMERGENCY)		
F1U	FUSE (T, 3.15A, 250V)		
F2U	FUSE (T, 5A, 250V)		
F4U	FUSE		
HAP	PILOT LAMP (SERVICE MONITOR-GREEN)		
K1R	MAGNETIC RELAY		
K2R	MAGNETIC RELAY		
L1R	REACTOR		
M1F	MOTOR (FAN INDOOR)		
M1P	MOTOR (DRAIN PUMP)		
R1	RESISTOR (CURRENT LIMITING)		
R2	CURRENT SENSING DEVICE		
R1T	THERMISTOR (SUCTION AIR)		
R2T-R3T	THERMISTOR (HEAT EXCHANGER)		
S1L	FLOAT SWITCH		
V1R	DIODE BRIDGE		
X1M	TERMINAL BLOCK (POWER SUPPLY)		
X2M	TERMINAL BLOCK (CONTROL)		
ZF	NOISE FILTER		
Z1C	FERRITE CORE		
PS	SWITCHING POWER SUPPLY		
RC	RECEIVER		
TC	TRANSMITTER		



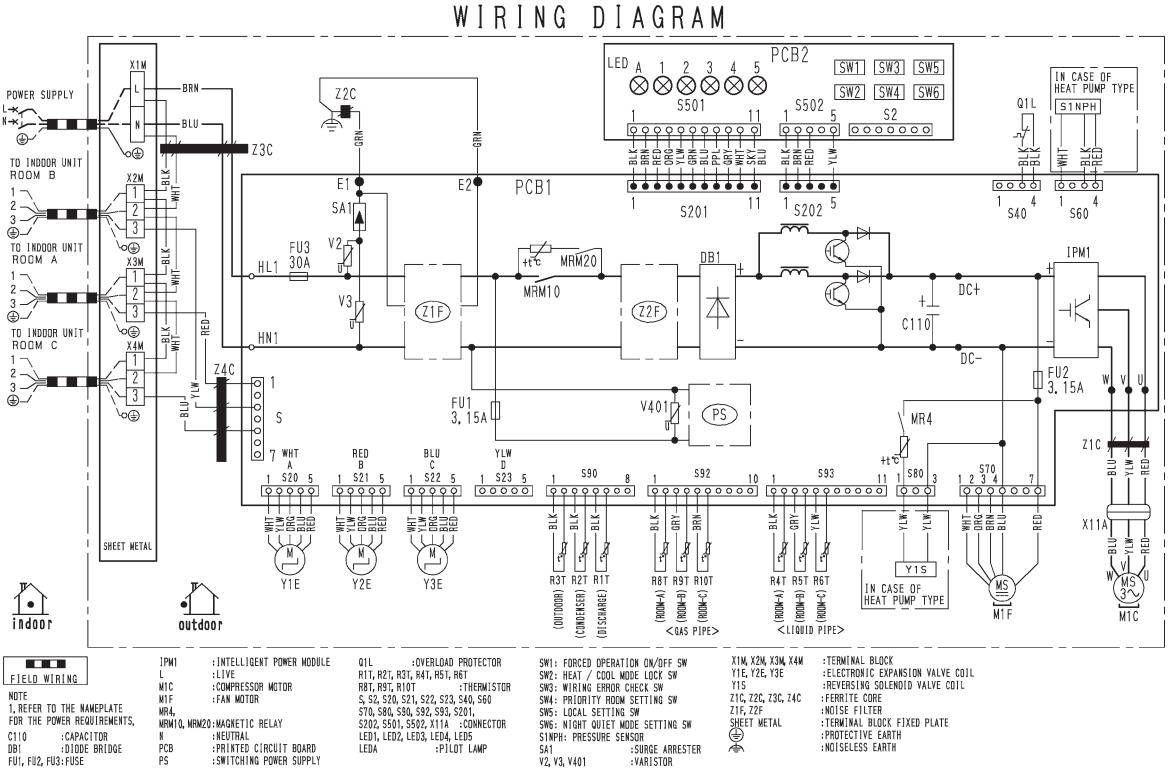
3D112629A

Note

A1P: Control PCB
A2P: Indoor fan PCB
Refer to page 34 for Printed Circuit Board Connector Wiring Diagram.

2.2 Outdoor Unit

MKS50TVMG, MKB50TVMG

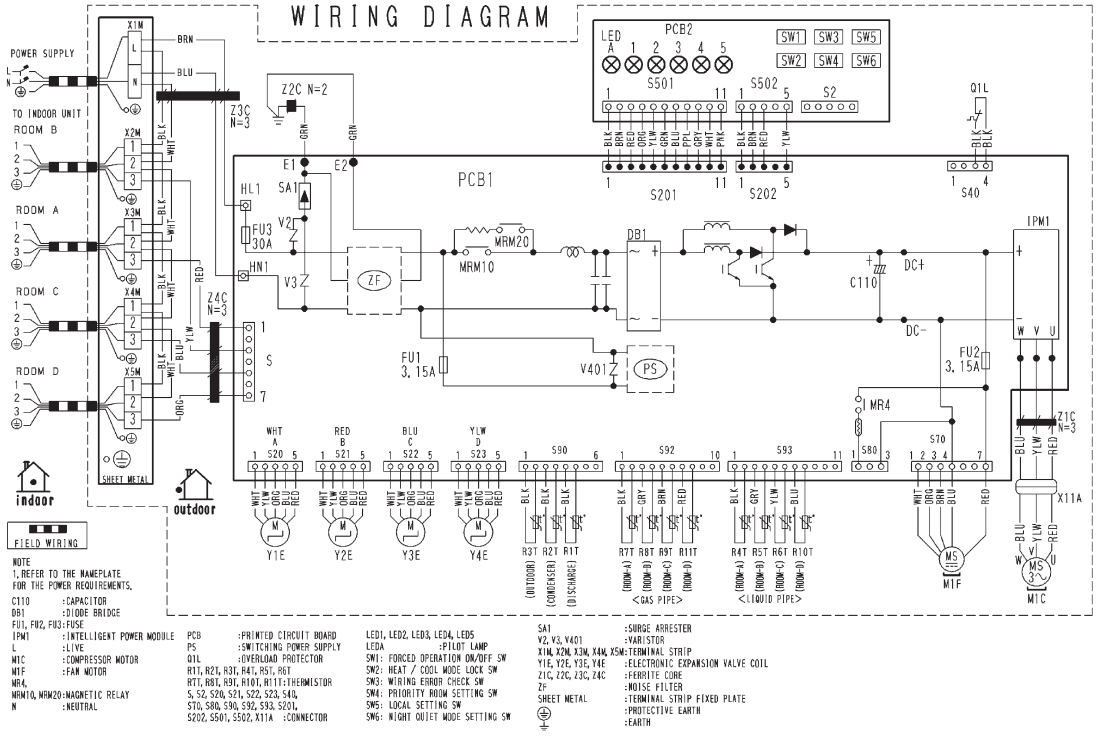


3D108779A

Note

PCB1: Main PCB
PCB2: Service monitor PCB
Refer to page 38 for Printed Circuit Board Connector Wiring Diagram.

MKS65/80TVMG, MKB65TVMG

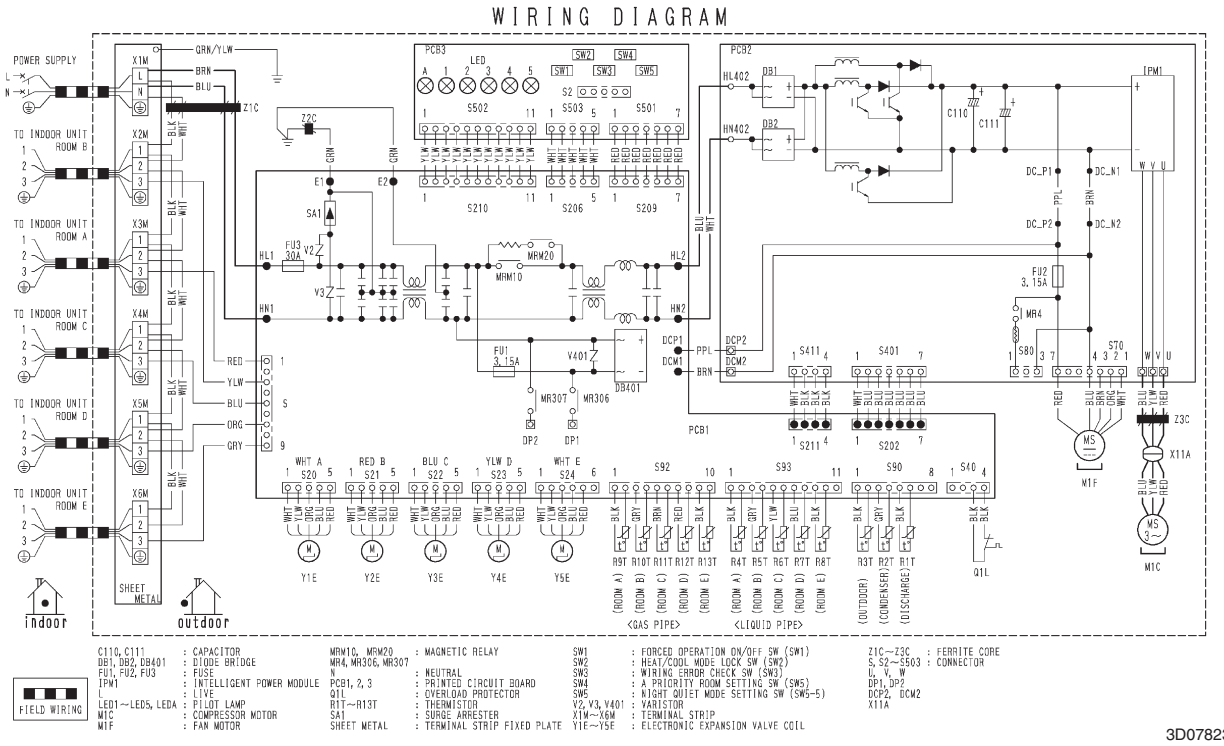


3D095876D

Note

PCB1: Main PCB
PCB2: Service monitor PCB
Refer to page 38 for Printed Circuit Board Connector Wiring Diagram.

MKS90TVMG



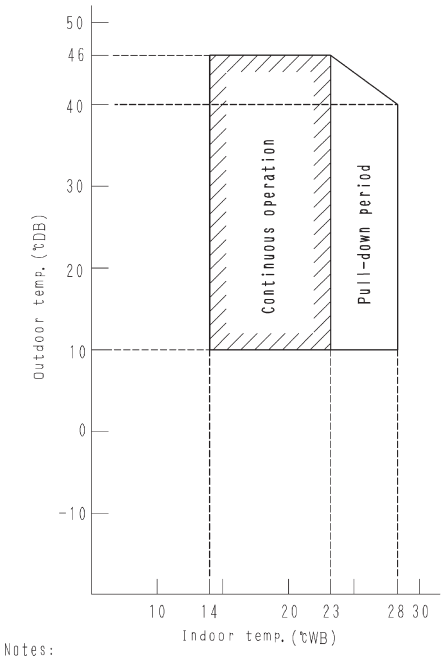
3D078236C

Note

PCB1: Main PCB
PCB2: Inverter PCB
PCB3: Service monitor PCB
Refer to page 40 for Printed Circuit Board Connector Wiring Diagram.

3. Operation Limit

MKS50/65/80/90TVMG, MKB50/65TVMG



Notes:
The graphs are based on the following conditions.
- Equivalent piping length 5m
- Level difference 0m
- Air flow rate High

4D078793B

Warning

- Daikin products are manufactured for export to numerous countries throughout the world. Prior to purchase, please 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 inquiries, please contact your local importer, distributor and/or retailer.

Cautions on product corrosion

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

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●Specifications, designs and other content appearing in this brochure are current as of September 2019 but subject to change without notice.

SiSG121917E
09/2019 AK.B