DAIKIN

SiUS281811E

R-410A

Service Manual

SkyAir

RZR-TA, RZQ-TA Series

Cooling Only 60 Hz
Heat Pump 60 Hz

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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.	

Warning	
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.	
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 (6.5 ft)). Insufficient safety measures may cause a fall.	
In case of R-410A refrigerant models, be sure to use pipes, flare nuts and tools intended for the exclusive use with the R-410A refrigerant. The use of materials for other 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-410A) 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.	

Caution	
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.	

Warning	
Do not mix air or gas other than the specified refrigerant (R-410A) 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.	
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.	

Caution	
Be sure to measure insulation resistance after the repair, and make sure that the resistance is 1 MΩ or greater. Faulty insulation may cause an electrical shock.	
Be sure to check the drainage of the indoor unit after the repair. Faulty drainage may cause water to enter the room and wet the furniture and floor.	
Do not tilt the unit when removing it. The water inside the unit may spill and wet the furniture and floor.	

2. Icons Used

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

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

3. Revision History

Month / Year	Version	Revised contents
04 / 2019	SiUS281811E	First edition

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1. Model Names and Power Supply

1.1 Cooling Only

Indoor unit		Outdoor unit	Power supply intake
Ceiling mounted cassette type (Round flow with sensing)	FCQ18TAVJU	RZR18TAVJU	Indoor unit: 1 phase, 208/230 V, 60 Hz Outdoor unit: 1 phase, 208/230 V, 60 Hz
	FCQ24TAVJU	RZR24TAVJU	
	FCQ30TAVJU	RZR30TAVJU	
	FCQ36TAVJU	RZR36TAVJU	
	FCQ42TAVJU	RZR42TAVJU	
	FCQ48TAVJU	RZR48TAVJU	
Ceiling suspended type	FHQ18PVJU	RZR18TAVJU	
	FHQ24PVJU	RZR24TAVJU	
	FHQ30PVJU	RZR30TAVJU	
	FHQ36MVJU	RZR36TAVJU	
	FHQ42MVJU	RZR42TAVJU	
Wall mounted type	FAQ18TAVJU	RZR18TAVJU	
	FAQ24TAVJU	RZR24TAVJU	
Ceiling mounted duct type (High static pressure)	FBQ18PVJU	RZR18TAVJU	
	FBQ24PVJU	RZR24TAVJU	
	FBQ30PVJU	RZR30TAVJU	
	FBQ36PVJU	RZR36TAVJU	
	FBQ42PVJU	RZR42TAVJU	
	FBQ48PVJU	RZR48TAVJU	
Multi position air handling unit	FTQ18TAVJUD	RZR18TAVJU	
	FTQ24TAVJUD	RZR24TAVJU	
	FTQ30TAVJUD	RZR30TAVJU	
	FTQ36TAVJUD	RZR36TAVJU	
	FTQ42TAVJUD	RZR42TAVJU	
	FTQ48TAVJUD	RZR48TAVJU	
	FTQ18TAVJUA	RZR18TAVJU	
	FTQ24TAVJUA	RZR24TAVJU	
	FTQ30TAVJUA	RZR30TAVJU	
	FTQ36TAVJUA	RZR36TAVJU	
	FTQ42TAVJUA	RZR42TAVJU	
	FTQ48TAVJUA	RZR48TAVJU	

Note(s)

1. Power supply intake: outdoor unit
2. VJ: 1 phase, 208/230 V, 60 Hz
U (VJU): Standard Symbol

1.2 Heat Pump

Indoor unit		Outdoor unit	Power supply intake
Ceiling mounted cassette type (Round flow with sensing)	FCQ18TAVJU	RZQ18TAVJU	Indoor unit: 1 phase, 208/230 V, 60 Hz Outdoor unit: 1 phase, 208/230 V, 60 Hz
	FCQ24TAVJU	RZQ24TAVJU	
	FCQ30TAVJU	RZQ30TAVJU	
	FCQ36TAVJU	RZQ36TAVJU	
	FCQ42TAVJU	RZQ42TAVJU	
	FCQ48TAVJU	RZQ48TAVJU	
Ceiling suspended type	FHQ18PVJU	RZQ18TAVJU	
	FHQ24PVJU	RZQ24TAVJU	
	FHQ30PVJU	RZQ30TAVJU	
	FHQ36MVJU	RZQ36TAVJU	
	FHQ42MVJU	RZQ42TAVJU	
Wall mounted type	FAQ18TAVJU	RZQ18TAVJU	
	FAQ24TAVJU	RZQ24TAVJU	
Ceiling mounted duct type (High static pressure)	FBQ18PVJU	RZQ18TAVJU	
	FBQ24PVJU	RZQ24TAVJU	
	FBQ30PVJU	RZQ30TAVJU	
	FBQ36PVJU	RZQ36TAVJU	
	FBQ42PVJU	RZQ42TAVJU	
	FBQ48PVJU	RZQ48TAVJU	
Multi position air handling unit	FTQ18TAVJUD	RZQ18TAVJU	
	FTQ24TAVJUD	RZQ24TAVJU	
	FTQ30TAVJUD	RZQ30TAVJU	
	FTQ36TAVJUD	RZQ36TAVJU	
	FTQ42TAVJUD	RZQ42TAVJU	
	FTQ48TAVJUD	RZQ48TAVJU	
	FTQ18TAVJUA	RZQ18TAVJU	
	FTQ24TAVJUA	RZQ24TAVJU	
	FTQ30TAVJUA	RZQ30TAVJU	
	FTQ36TAVJUA	RZQ36TAVJU	
	FTQ42TAVJUA	RZQ42TAVJU	
	FTQ48TAVJUA	RZQ48TAVJU	

Note(s)

1. Power supply intake: outdoor unit
2. VJ: 1 phase, 208/230 V, 60 Hz
U (VJU): Standard Symbol

2. External Appearance

2.1 Indoor Unit

Ceiling Mounted Cassette Type (Round Flow with Sensing)

FCQ18TAVJU
FCQ24TAVJU
FCQ30TAVJU
FCQ36TAVJU
FCQ42TAVJU
FCQ48TAVJU

Shown with BYCQ125B-W1

Ceiling Suspended Type

FHQ18PVJU
FHQ24PVJU
FHQ30PVJU
FHQ36MVJU
FHQ42MVJU

Wall Mounted Type

FAQ18TAVJU
FAQ24TAVJU

Ceiling Mounted Duct Type (High Static Pressure)

FBQ18PVJU
FBQ24PVJU
FBQ30PVJU
FBQ36PVJU
FBQ42PVJU
FBQ48PVJU

Multi Position Air Handling Unit

FTQ18TAVJUD, FTQ18TAVJUA
FTQ24TAVJUD, FTQ24TAVJUA
FTQ30TAVJUD, FTQ30TAVJUA
FTQ36TAVJUD, FTQ36TAVJUA
FTQ42TAVJUD, FTQ42TAVJUA
FTQ48TAVJUD, FTQ48TAVJUA

2.2 Outdoor Unit

RZR18TAVJU
RZR24TAVJU

RZQ18TAVJU
RZQ24TAVJU

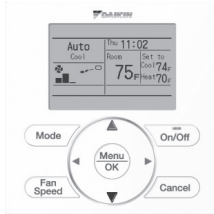
RZR30TAVJU
RZR36TAVJU
RZR42TAVJU
RZR48TAVJU

RZQ30TAVJU
RZQ36TAVJU
RZQ42TAVJU
RZQ48TAVJU

2.3 Remote Controller

Wired remote controller

BRC1E73



Wireless remote controller

BRC7E83 (FHQ)
BRC7E818 (FAQ)
BRC4C82 (FBQ (∗1), FTQ)
BRC082A43 (FBQ (∗1))

∗1. For FBQ series, the fan step control is different according to the wireless remote controller used.
BRC4C82 (Fan: 2 steps)
BRC082A43 (Fan: 3 steps)

3. Specifications

3.1 Cooling Only

3.1.1 Ceiling Mounted Cassette Type (Round Flow with Sensing)

Model name	Indoor unit		FCQ18TAVJU	FCQ24TAVJU
	Outdoor unit		RZR18TAVJU	RZR24TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★2 Cooling capacity		Btu/h (kW)	18,000 (5.3)	24,000 (7.0)
SEER (Rated)			18.6	18.5
EER (Rated)		Btu/h·W	13.0	12.0
Indoor unit			**FCQ18TAVJU**	**FCQ24TAVJU**
Casing color			Galvanized steel plate	Galvanized steel plate
Dimensions: (H×W×D)		in (mm)	10–1/16 × 33–1/16 × 33–1/16 (256 × 840 × 840)	10–1/16 × 33–1/16 × 33–1/16 (256 × 840 × 840)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		3 × (12 + 15 × 2) × (20 + 21 × 2)	3 × (12 + 15 × 2) × (20 + 21 × 2)
	Face area	ft² (m^2)	4.59 (0.427)	4.59 (0.427)
Fan	Model		QTS48C15M	QTS48C15M
	Type		Turbo fan	Turbo fan
	Motor output	W	48	48
	Airflow rate (H/M/L)	cfm (m^3/min)	742/618/477 (21.0/17.5/13.5)	777/618/477 (22.0/17.5/13.5)
	External static pressure	inH_2O (Pa)	—	—
Sound pressure level (H/M/L)		dB (A)	35.5/32.0/28.0	36.0/32.0/28.0
Air filter			—	—
Weight		lbs (kg)	63 (28.5)	63 (28.5)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))
Remote controller (option)	Wired		BRC1E73, BRC2A71	BRC1E73, BRC2A71
	Wireless		—	—
Decoration panels (option)	Model		BYCQ125B–W1 / BYCQ125BGW1	BYCQ125B–W1 / BYCQ125BGW1
	Color		Fresh white	Fresh white
	Dimensions: (H×W×D)	in (mm)	2 × 37–3/8 × 37–3/8 / 5–1/8 × 37–3/8 × 37–3/8 (50 × 950 × 950 / 130 × 950 × 950)	2 × 37–3/8 × 37–3/8 / 5–1/8 × 37–3/8 × 37–3/8 (50 × 950 × 950 / 130 × 950 × 950)
	Air filter		Resin net (with mold resistance)	Resin net (With mold resistance)
	Weight	lbs (kg)	12.2 (5.5) / 22.1 (10.0)	12.2 (5.5) / 22.1 (10.0)
Outdoor unit			**RZR18TAVJU**	**RZR24TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	39 × 37 × 12–5/8 (990 × 940 × 320)	39 × 37 × 12–5/8 (990 × 940 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 44 × 19	2 × 44 × 19
	Face area	ft² (m^2)	9.5 (0.88)	9.5 (0.88)
Compressor	Model		2YC63ABXDD	2YC63ABXDD
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	1.9	1.9
Fan	Model		P51J11F	P51J11F
	Type		Propeller fan	Propeller fan
	Motor output	W	200	200
	Airflow rate	cfm (m^3/min)	2,682 (76)	2,682 (76)
Weight		lbs (kg)	172 (78)	172 (78)
Sound pressure level		dB(A)	61	61
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	164 (50)	164 (50)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	6.4 (2.9)	6.4 (2.9)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.08	1.08
Drawing No	Specification		C: 4D115509	C: 4D115509
	Sound (indoor)		C: 4D087483B	C: 4D087474B
	Sound (outdoor)		C: 4D101948E	C: 4D101948E

Notes:
★1 Indoor temp. : 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / outdoor temp. : 95°FDB (35.0°CDB) / Equivalent piping length : 25 ft (7.6m), level difference : 0 ft (0m).
★2 Capacities are net, including a deduction for cooling for indoor fan motor heat.

Model name	Indoor unit		FCQ30TAVJU	FCQ36TAVJU
	Outdoor unit		RZR30TAVJU	RZR36TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★2 Cooling capacity		Btu/h (kW)	30,000 (8.8)	36,000 (10.6)
SEER (Rated)			17.2	17.6
EER (Rated)		Btu/h·W	9.3	11.4
Indoor unit			**FCQ30TAVJU**	**FCQ36TAVJU**
Casing color			Galvanized steel plate	Galvanized steel plate
Dimensions: (H×W×D)		in (mm)	11–23/32 × 33–1/16 × 33–1/16 (298 × 840 × 840)	11–23/32 × 33–1/16 × 33–1/16 (298 × 840 × 840)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		3 × 18 × (20 + 21 × 2)	3 × 18 × (20 + 21 × 2)
	Face area	ft² (m^2)	5.92 (0.550)	5.92 (0.550)
Fan	Model		QTS48C15M	QTS48C15M
	Type		Turbo fan	Turbo fan
	Motor output	W	106	106
	Airflow rate (H/M/L)	cfm (m^3/min)	1,112/918/671 (31.5/26.0/19.0)	1,165/918/671 (33.0/26.0/19.0)
	External static pressure	inH_2O (Pa)	—	—
Sound pressure level (H/M/L)		dB(A)	43.5/38.0/32.0	44.0/38.0/32.0
Air filter			—	—
Weight		lbs (kg)	70 (31.5)	70 (31.5)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))
Remote controller (option)	Wired		BRC1E73, BRC2A71	BRC1E73, BRC2A71
	Wireless		—	—
Decoration panels (option)	Model		BYCQ125B–W1 / BYCQ125BGW1	BYCQ125B–W1 / BYCQ125BGW1
	Color		Fresh white	Fresh white
	Dimensions: (H×W×D)	in (mm)	2 × 37–3/8 × 37–3/8 / 5–1/8 × 37–3/8 × 37–3/8 (50 × 950 × 950 / 130 × 950 × 950)	2 × 37–3/8 × 37–3/8 / 5–1/8 × 37–3/8 × 37–3/8 (50 × 950 × 950 / 130 × 950 × 950)
	Air filter		Resin net (with mold resistance)	Resin net (with mold resistance)
	Weight	lbs (kg)	12.2 (5.5) / 22.1 (10.0)	12.2 (5.5) / 22.1 (10.0)
Outdoor unit			**RZR30TAVJU**	**RZR36TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 19	2 × 60 × 19
	Face area	ft² (m^2)	12.2 (1.134)	12.2 (1.134)
Compressor	Model		2YC90GXD#D	2YC90GXD#D
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	3.5	3.5
Fan	Model		P47N	P47N
	Type		Propeller fan	Propeller fan
	Motor output	W	70 × 2	70 × 2
	Airflow rate	cfm (m^3/min)	3,741 (106)	3,741 (106)
Weight		lbs (kg)	225 (102)	225 (102)
Sound pressure level		dB(A)	59	59
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	7.9 (3.6)	7.9 (3.6)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.52	1.52
Drawing No	Specification		C: 4D115511	C: 4D115511
	Sound (indoor)		C: 4D087479B	C: 4D087475B
	Sound (outdoor)		C: 4D101950E	C: 4D101950E

Notes:
★1 Indoor temp. : 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / outdoor temp. : 95°FDB (35.0°CDB) / Equivalent piping length : 25 ft (7.6m), level difference : 0 ft (0m).
★2 Capacities are net, including a deduction for cooling for indoor fan motor heat.

Model name	Indoor unit		FCQ42TAVJU	FCQ48TAVJU
	Outdoor unit		RZR42TAVJU	RZR48TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★2 Cooling capacity		Btu/h (kW)	42,000 (12.3)	48,000 (14.1)
SEER (Rated)			17.0	17.0
EER (Rated)		Btu/h·W	10.3	9.0
Indoor unit			**FCQ42TAVJU**	**FCQ48TAVJU**
Casing color			Galvanized steel plate	Galvanized steel plate
Dimensions: (H×W×D)		in (mm)	11–23/32 × 33–1/16 × 33–1/16 (298 × 840 × 840)	11–23/32 × 33–1/16 × 33–1/16 (298 × 840 × 840)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		3 × 18 × (20 + 21 × 2)	3 × 18 × (20 + 21 × 2)
	Face area	ft² (m^2)	5.92 (0.550)	5.92 (0.550)
Fan	Model		QTS48C15M	QTS48C15M
	Type		Turbo fan	Turbo fan
	Motor output	W	106	106
	Airflow rate (H/M/L)	cfm (m^3/min)	1,218/971/742 (34.5/27.5/21.0)	1,218/971/742 (34.5/27.5/21.0)
	External static pressure	inH_2O (Pa)	—	—
Sound pressure level (H/M/L)		dB(A)	45.0/40.0/35.0	45.0/40.0/35.0
Air filter			—	—
Weight		lbs (kg)	70 (31.5)	70 (31.5)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))
Remote controller (option)	Wired		BRC1E73, BRC2A71	BRC1E73, BRC2A71
	Wireless		—	—
Decoration panels (option)	Model		BYCQ125B–W1 / BYCQ125BGW1	BYCQ125B–W1 / BYCQ125BGW1
	Color		Fresh white	Fresh white
	Dimensions: (H×W×D)	in (mm)	2 × 37–3/8 × 37–3/8 / 5–1/8 × 37–3/8 × 37–3/8 (50 × 950 × 950 / 130 × 950 × 950)	2 × 37–3/8 × 37–3/8 / 5–1/8 × 37–3/8 × 37–3/8 (50 × 950 × 950 / 130 × 950 × 950)
	Air filter		Resin net (with mold resistance)	Resin net (with mold resistance)
	Weight	lbs (kg)	12.2 (5.5) / 22.1 (10.0)	12.2 (5.5) / 22.1 (10.0)
Outdoor unit			**RZR42TAVJU**	**RZR48TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 19	2 × 60 × 19
	Face area	ft² (m^2)	12.2 (1.134)	12.2 (1.134)
Compressor	Model		2YC90GXD#D	2YC90GXD#D
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	3.5	3.5
Fan	Model		P47N	P47N
	Type		Propeller fan	Propeller fan
	Motor output	W	70 × 2	70 × 2
	Airflow rate	cfm (m^3/min)	3,741 (106)	3,741 (106)
Weight		lbs (kg)	225 (102)	225 (102)
Sound pressure level		dB(A)	59	59
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	7.9 (3.6)	7.9 (3.6)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.52	1.52
Drawing No	Specification		C: 4D115511	C: 4D115511
	Sound (indoor)		C: 4D087476B	C: 4D087476B
	Sound (outdoor)		C: 4D101950E	C: 4D101950E

Notes:
★1 Indoor temp. : 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / outdoor temp. : 95°FDB (35.0°CDB) / Equivalent piping length : 25 ft (7.6m), level difference : 0 ft (0m).
★2 Capacities are net, including a deduction for cooling for indoor fan motor heat.

3.1.2 Ceiling Suspended Type

Model name	Indoor unit		FHQ18PVJU	FHQ24PVJU
	Outdoor unit		RZR18TAVJU	RZR24TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★2 Cooling capacity		Btu/h (kW)	18,000 (5.3)	24,000 (7.0)
SEER (Rated)			16.3	16.6
EER (Rated)		Btu/h·W	12.9	11.3
Indoor unit			**FHQ18PVJU**	**FHQ24PVJU**
Casing color			White (10Y9/0.5)	White (10Y9/0.5)
Dimensions: (H×W×D)		in (mm)	7–11/16 × 62–5/8 × 26–3/4 (195 × 1,590 × 680)	7–11/16 × 62–5/8 × 26–3/4 (195 × 1,590 × 680)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 12 × 15 + 2 × 10 × 15	2 × 12 × 15 + 2 × 10 × 15
	Face area	ft² (m^2)	3.66 (0.34) + 2.95 (0.27)	3.66 (0.34) + 2.95 (0.27)
Fan	Model		—	—
	Type		Sirocco fan	Sirocco fan
	Motor output	W	130	130
	Airflow rate (H/L)	cfm (m^3/min)	790/670 (22.4/19.0)	790/670 (22.4/19.0)
	External static pressure	inH_2O (Pa)	—	—
Air filter			Resin net (with mold resistance)	Resin net (with mold resistance)
Weight		lbs (kg)	90 (19.8)	90 (19.8)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP20 (External dia. 1 (26), internal dia. 3/4 (19.1))	VP20 (External dia. 1 (26), internal dia. 3/4 (19.1))
Remote controller (option)	Wired		BRC1E73	BRC1E73
	Wireless		BRC7E83	BRC7E83
Outdoor unit			**RZR18TAVJU**	**RZR24TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	39 × 37 × 12–5/8 (990 × 940 × 320)	39 × 37 × 12–5/8 (990 × 940 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 44 × 19	2 × 44 × 19
	Face area	ft² (m^2)	9.5 (0.88)	9.5 (0.88)
Compressor	Model		2YC63ABXDD	2YC63ABXDD
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	1.9	1.9
Fan	Model		P51J11F	P51J11F
	Type		Propeller fan	Propeller fan
	Motor output	W	200	200
	Airflow rate	cfm (m^3/min)	2,682 (76)	2,682 (76)
Weight		lbs (kg)	172 (78)	172 (78)
Sound pressure level		dB(A)	61	61
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	164 (50)	164 (50)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	6.4 (2.9)	6.4 (2.9)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.08	1.08
Drawing No	Specification		C: 4D115558A	C: 4D115558A
	Sound (outdoor)		C: 4D101948E	C: 4D101948E

Notes:
★1 Indoor temp. : 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / outdoor temp. : 95°FDB (35.0°CDB) / Equivalent piping length : 25 ft (7.6m), level difference : 0 ft (0m).
★2 Capacities are net, including a deduction for cooling for indoor fan motor heat.

Model name	Indoor unit		FHQ30PVJU	FHQ36MVJU
	Outdoor unit		RZR30TAVJU	RZR36TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★2 Cooling capacity		Btu/h (kW)	30,000 (8.8)	36,000 (10.6)
SEER (Rated)			16.0	14.0
EER (Rated)		Btu/h·W	10.5	9.5
Indoor unit			**FHQ30PVJU**	**FHQ36MVJU**
Casing color			White (10Y9/0.5)	White (10Y9/0.5)
Dimensions: (H×W×D)		in (mm)	7–11/16 × 62–5/8 × 26–3/4 (195 × 1,590 × 680)	7–11/16 × 62–5/8 × 26–3/4 (195 × 1,590 × 680)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 12 × 15 + 2 × 10 × 15	2 × 12 × 15 + 2 × 10 × 15
	Face area	ft² (m^2)	3.66 (0.34) + 2.95 (0.27)	3.66 (0.34) + 2.95 (0.27)
Fan	Model		—	—
	Type		Sirocco fan	Sirocco fan
	Motor output	W	130	130
	Airflow rate (H/L)	cfm (m^3/min)	790/670 (22.4/19.0)	830/670 (23.5/19.0)
	External static pressure	inH_2O (Pa)	—	—
Air filter			Resin net (with mold resistance)	Resin net (with mold resistance)
Weight		lbs (kg)	90 (19.8)	90 (19.8)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP20 (External dia. 1 (26), internal dia. 3/4 (19.1))	VP20 (External dia. 1 (26), internal dia. 3/4 (19.1))
Remote controller (option)	Wired		BRC1E73	BRC1E73
	Wireless		BRC7E83	BRC7E83
Outdoor unit			**RZR30TAVJU**	**RZR36TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 19	2 × 60 × 19
	Face area	ft² (m^2)	12.2 (1.134)	12.2 (1.134)
Compressor	Model		2YC90GXD#D	2YC90GXD#D
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	3.5	3.5
Fan	Model		P47N	P47N
	Type		Propeller fan	Propeller fan
	Motor output	W	70 × 2	70 × 2
	Airflow rate	cfm (m^3/min)	3,741 (106)	3,741 (106)
Weight		lbs (kg)	225 (102)	225 (102)
Sound pressure level		dB(A)	59	59
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	7.9 (3.6)	7.9 (3.6)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.52	1.52
Drawing No	Specification		C: 4D115560A	C: 4D115560A
	Sound (outdoor)		C: 4D101950E	C: 4D101950E

Notes:
★1 Indoor temp. : 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / outdoor temp. : 95°FDB (35.0°CDB) / Equivalent piping length : 25 ft (7.6m), level difference : 0 ft (0m).
★2 Capacities are net, including a deduction for cooling for indoor fan motor heat.

Model name	Indoor unit		FHQ42MVJU
	Outdoor unit		RZR42TAVJU
Power supply			1 phase, 208/230 V, 60 Hz
★1 ★2 Cooling capacity		Btu/h (kW)	40,500 (11.9)
SEER (Rated)			14.0
EER (Rated)		Btu/h·W	8.8
Indoor unit			**FHQ42MVJU**
Casing color			White (10Y9/0.5)
Dimensions: (H×W×D)		in (mm)	7–11/16 × 62–5/8 × 26–3/4 (195 × 1,590 × 680)
Coil	Type		Cross fin coil
	Rows×Stages×FPI		2 × 12 × 15 + 2 × 10 × 15
	Face area	ft² (m^2)	3.66 (0.34) + 2.95 (0.27)
Fan	Model		—
	Type		Sirocco fan
	Motor output	W	130
	Airflow rate (H/L)	cfm (m^3/min)	850/700 (24.1/19.8)
	External static pressure	inH_2O (Pa)	—
Air filter			Resin net (with mold resistance)
Weight		lbs (kg)	90 (19.8)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP20 (External dia. 1 (26), internal dia. 3/4 (19.1))
Remote controller (option)	Wired		BRC1E73
	Wireless		BRC7E83
Outdoor unit			**RZR42TAVJU**
Casing color			Ivory white
Dimensions: (H×W×D)		in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)
Coil	Type		Cross fin coil
	Rows×Stages×FPI		2 × 60 × 19
	Face area	ft² (m^2)	12.2 (1.134)
Compressor	Model		2YC90GXD#D
	Type		Hermetically sealed swing type
	Motor output	kW	3.5
Fan	Model		P47N
	Type		Propeller fan
	Motor output	W	70 × 2
	Airflow rate	cfm (m^3/min)	3,741 (106)
Weight		lbs (kg)	225 (102)
Sound pressure level		dB(A)	59
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100
Refrigerant control			Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)
	Max. length	ft (m)	230 (70)
	Max. height difference	ft (m)	98 (30)
Refrigerant	Model		R-410A
	Charge	lbs (kg)	7.9 (3.6)
Ref. oil	Model		DAPHNE FVC50K
	Charge	L	1.52
Drawing No	Specification		C: 4D115560A
	Sound (outdoor)		C: 4D101950E

Notes:
★1 Indoor temp. : 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / outdoor temp. : 95°FDB (35.0°CDB) / Equivalent piping length : 25 ft (7.6m), level difference : 0 ft (0m).
★2 Capacities are net, including a deduction for cooling for indoor fan motor heat.

3.1.3 Wall Mounted Type

Model name	Indoor unit		FAQ18TAVJU	FAQ24TAVJU
	Outdoor unit		RZR18TAVJU	RZR24TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★2 Cooling capacity		Btu/h (kW)	18,000 (5.3)	24,000 (7.0)
SEER (Rated)			17.0	17.6
EER (Rated)		Btu/h·W	11.9	10.2
Indoor unit			**FAQ18TAVJU**	**FAQ24TAVJU**
Casing color			White (3.0Y8.5/0.5)	White (3.0Y8.5/0.5)
Dimensions: (H×W×D)		in (mm)	11–3/8 × 41–3/8 × 9-1/4 (290 × 1,050 × 238)	11–3/8 × 41–3/8 × 9-1/4 (290 × 1,050 × 238)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 14 × 7	2 × 14 × 7
	Face area	ft² (m^2)	1.73 (0.16)	1.73 (0.16)
Fan	Model		QCL9686M	QCL9686M
	Type		Cross flow fan	Cross flow fan
	Motor output	W	43	43
	Airflow rate (H/L)	cfm (m^3/min)	500/400 (14/11)	635/470 (18/13)
	External static pressure	inH_2O (Pa)	—	—
Sound pressure level (H/L)		dB(A)	43.0/37.0	47.0/41.0
Air filter			Resin net (washable)	Resin net (washable)
Weight		lbs (kg)	31 (14)	31 (14)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP13 (External dia. 11/16 (18), internal dia. 1/2 (13))	VP13 (External dia. 11/16 (18), internal dia. 1/2 (13))
Remote controller (option)	Wired		BRC1E73, BRC2A71	BRC1E73, BRC2A71
	Wireless		BRC7E818	BRC7E818
Outdoor unit			**RZR18TAVJU**	**RZR24TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	39 × 37 × 12–5/8 (990 × 940 × 320)	39 × 37 × 12–5/8 (990 × 940 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 44 × 19	2 × 44 × 19
	Face area	ft² (m^2)	9.5 (0.88)	9.5 (0.88)
Compressor	Model		2YC63ABXDD	2YC63ABXDD
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	1.9	1.9
Fan	Model		P51J11F	P51J11F
	Type		Propeller fan	Propeller fan
	Motor output	W	200	200
	Airflow rate	cfm (m^3/min)	2,682 (76)	2,682 (76)
Weight		lbs (kg)	172 (78)	172 (78)
Sound pressure level		dB(A)	61	61
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	164 (50)	164 (50)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	6.4 (2.9)	6.4 (2.9)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.08	1.08
Drawing No	Specification		C: 4D115552A	C: 4D115552A
	Sound (indoor)		C: 4D075583A	C: 4D075584A
	Sound (outdoor)		C: 4D101948E	C: 4D101948E

Notes:
★1 Indoor temp. : 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / outdoor temp. : 95°FDB (35.0°CDB) / Equivalent piping length : 25 ft (7.6m), level difference : 0 ft (0m).
★2 Capacities are net, including a deduction for cooling for indoor fan motor heat.

3.1.4 Ceiling Mounted Duct Type (High Static Pressure)

Model name	Indoor unit		FBQ18PVJU	FBQ24PVJU
	Outdoor unit		RZR18TAVJU	RZR24TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★2 Cooling capacity		Btu/h (kW)	18,000 (5.3)	24,000 (7.0)
SEER (Rated)			16.7	16.5
EER (Rated)		Btu/h·W	13.0	12.0
Indoor unit			**FBQ18PVJU**	**FBQ24PVJU**
Casing color			Galvanized steel plate	Galvanized steel plate
Dimensions: (H×W×D)		in (mm)	11–13/16 × 39–3/8 × 27–9/16 (300 × 1,000 × 700)	11–13/16 × 39–3/8 × 27–9/16 (300 × 1,000 × 700)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		3 × 16 × 15	3 × 16 × 15
	Face area	ft² (m^2)	2.68 (0.249)	2.68 (0.249)
Fan	Model		—	—
	Type		Sirocco fan	Sirocco fan
	Motor output	W	350	350
	Airflow rate (H/M/L)	cfm (m^3/min)	635/582/529 (18.0/16.5/15.0)	688/618/565 (19.5/17.5/16.0)
	External static pressure	inH_2O (Pa)	Standard 0.40 <0.80-0.20> (100 <200-50>) ★3	Standard 0.40 <0.80-0.20> (100 <200-50>) ★3
Sound pressure level (HH/H/L)		dB(A)	41.0/39.0/37.0	42.0/40.0/38.0
Air filter			— ★4	— ★4
Weight		lbs (kg)	80 (36)	80 (36)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))
Remote controller (option)		Wired	BRC1E73, BRC2A71	BRC1E73, BRC2A71
		Wireless	BRC4C82, BRC082A43	BRC4C82, BRC082A43
Outdoor unit			**RZR18TAVJU**	**RZR24TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	39 × 37 × 12–5/8 (990 × 940 × 320)	39 × 37 × 12–5/8 (990 × 940 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 44 × 19	2 × 44 × 19
	Face area	ft² (m^2)	9.5 (0.88)	9.5 (0.88)
Compressor	Model		2YC63ABXDD	2YC63ABXDD
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	1.9	1.9
Fan	Model		P51J11F	P51J11F
	Type		Propeller fan	Propeller fan
	Motor output	W	200	200
	Airflow rate	cfm (m^3/min)	2,682 (76)	2,682 (76)
Weight		lbs (kg)	172 (78)	172 (78)
Sound pressure level		dB(A)	61	61
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	164 (50)	164 (50)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	6.4 (2.9)	6.4 (2.9)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.08	1.08
Drawing No	Specification		C: 4D115554	C: 4D115554
	Sound (indoor)		C: 4D075278	C: 4D075279
	Sound (outdoor)		C: 4D101948E	C: 4D101948E

Notes:
★1 Indoor temp. : 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / outdoor temp. : 95°FDB (35.0°CDB) / Equivalent piping length : 25 ft (7.6m), level difference : 0 ft (0m).
★2 Capacities are net, including a deduction for cooling for indoor fan motor heat.
★3 External static pressure is changeable in 14 stages within the < > range by remote controller.
★4 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.

Model name	Indoor unit		FBQ30PVJU	FBQ36PVJU
	Outdoor unit		RZR30TAVJU	RZR36TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★2 Cooling capacity		Btu/h (kW)	30,000 (8.8)	36,000 (10.6)
SEER (Rated)			16.0	17.5
EER (Rated)		Btu/h·W	10.5	11.1
Indoor unit			**FBQ30PVJU**	**FBQ36PVJU**
Casing color			Galvanized steel plate	Galvanized steel plate
Dimensions: (H×W×D)		in (mm)	11–13/16 × 39–3/8 × 27–9/16 (300 × 1,000 × 700)	11–13/16 × 55–1/8 × 27–9/16 (300 × 1,400 × 700)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		3 × 16 × 15	3 × 16 × 15
	Face area	ft² (m^2)	2.68 (0.249)	4.12 (0.383)
Fan	Model		—	—
	Type		Sirocco fan	Sirocco fan
	Motor output	W	350	350
	Airflow rate (H/M/L)	cfm (m^3/min)	882/794/706 (25.0/22.0/20.0)	1,130/953/812 (32.0/27.0/23.0)
	External static pressure	inH_2O (Pa)	Standard 0.40 <0.80-0.20> (100 <200-50>) ★3	Standard 0.40 <0.80-0.20> (100 <200-50>) ★3
Sound pressure level (HH/H/L)		dB(A)	43.0/41.0/39.0	43.0/41.0/39.0
Air filter			— ★4	— ★4
Weight		lbs (kg)	80 (36)	102 (46)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))
Remote controller (option)	Wired		BRC1E73, BRC2A71	BRC1E73, BRC2A71
	Wireless		BRC4C82, BRC082A43	BRC4C82, BRC082A43
Outdoor unit			**RZR30TAVJU**	**RZR36TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 19	2 × 60 × 19
	Face area	ft² (m^2)	12.2 (1.134)	12.2 (1.134)
Compressor	Model		2YC90GXD#D	2YC90GXD#D
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	3.5	3.5
Fan	Model		P47N	P47N
	Type		Propeller fan	Propeller fan
	Motor output	W	70 × 2	70 × 2
	Airflow rate	cfm (m^3/min)	3,741 (106)	3,741 (106)
Weight		lbs (kg)	225 (102)	225 (102)
Sound pressure level		dB(A)	59	59
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	7.9 (3.6)	7.9 (3.6)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.52	1.52
Drawing No	Specification		C: 4D115556A	C: 4D115556A
	Sound (indoor)		C: 4D075280	C: 4D075281
	Sound (outdoor)		C: 4D101950E	C: 4D101950E

Notes:
★1 Indoor temp. : 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / outdoor temp. : 95°FDB (35.0°CDB) / Equivalent piping length : 25 ft (7.6m), level difference : 0 ft (0m).
★2 Capacities are net, including a deduction for cooling for indoor fan motor heat.
★3 External static pressure is changeable in 14 stages within the < > range by remote controller.
★4 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.

Model name	Indoor unit		FBQ42PVJU	FBQ48PVJU
	Outdoor unit		RZR42TAVJU	RZR48TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★2 Cooling capacity		Btu/h (kW)	40,500 (11.9)	48,000 (14.1)
SEER (Rated)			16.0	14.0
EER (Rated)		Btu/h·W	10.1	8.6
Indoor unit			**FBQ42PVJU**	**FBQ48PVJU**
Casing color			Galvanized steel plate	Galvanized steel plate
Dimensions: (H×W×D)		in (mm)	11–13/16 × 55–1/8 × 27–9/16 (300 × 1,400 × 700)	11–13/16 × 55–1/8 × 27–9/16 (300 × 1,400 × 700)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		3 × 16 × 15	3 × 16 × 15
	Face area	ft² (m^2)	4.12 (0.383)	4.12 (0.383)
Fan	Model		—	—
	Type		Sirocco fan	Sirocco fan
	Motor output	W	350	350
	Airflow rate (H/M/L)	cfm (m^3/min)	1,400/1,165/988 (39.6/33.0/28.0)	1,400/1,165/988 (39.6/33.0/28.0)
	External static pressure	inH_2O (Pa)	Standard 0.40 <0.80-0.20> (100 <200-50>) ★3	Standard 0.40 <0.80-0.20> (100 <200-50>) ★3
Sound pressure level (HH/H/L)		dB(A)	44.0/42.0/40.0	44.0/42.0/40.0
Air filter			— ★4	— ★4
Weight		lbs (kg)	102 (46)	102 (46)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))
Remote controller (option)	Wired		BRC1E73, BRC2A71	BRC1E73, BRC2A71
	Wireless		BRC4C82, BRC082A43	BRC4C82, BRC082A43
Outdoor unit			**RZR42TAVJU**	**RZR48TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 19	2 × 60 × 19
	Face area	ft² (m^2)	12.2 (1.134)	12.2 (1.134)
Compressor	Model		2YC90GXD#D	2YC90GXD#D
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	3.5	3.5
Fan	Model		P47N	P47N
	Type		Propeller fan	Propeller fan
	Motor output	W	70 × 2	70 × 2
	Airflow rate	cfm (m^3/min)	3,741 (106)	3,741 (106)
Weight		lbs (kg)	225 (102)	225 (102)
Sound pressure level		dB(A)	59	59
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	7.9 (3.6)	7.9 (3.6)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.52	1.52
Drawing No	Specification		C: 4D115556A	C: 4D115556A
	Sound (indoor)		C: 4D075282A	C: 4D075282A
	Sound (outdoor)		C: 4D101950E	C: 4D101950E

Notes:
★1 Indoor temp.: 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp.: 95°FDB (35.0°CDB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★2 Capacities are net, including a deduction for cooling for indoor fan motor heat.
★3 External static pressure is changeable in 14 stages within the < > range by remote controller.
★4 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.

3.1.5 Multi Position Air Handling Unit

Model name	Indoor unit		FTQ18TAVJUD, FTQ18TAVJUA	FTQ24TAVJUD, FTQ24TAVJUA
	Outdoor unit		RZR18TAVJU	RZR24TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★2 Cooling capacity		Btu/h (kW)	18,000 (5.3)	24,000 (7.0)
SEER (Rated)			15.5	15.2
EER (Rated)		Btu/h·W	12.5	10.3
Indoor unit			**FTQ18TAVJUD, FTQ18TAVJUA**	**FTQ24TAVJUD, FTQ24TAVJUA**
Casing color			Daikin Slate Gray	Daikin Slate Gray
Dimensions: (H×W×D)		in (mm)	45 × 17.5 × 21 (1,143 × 445 × 533)	45 × 17.5 × 21 (1,143 × 445 × 533)
Coil	Type		Cross fin coil	Cross fin coil
	Face area	ft² (m^2)	3.75 (35)	3.75 (35)
Fan	Type		Sirocco FC Centrifugal	Sirocco FC Centrifugal
	Motor output	HP	1/2	1/2
	Airflow rate (H/M/L)	cfm (m^3/min)	600/510/420 (17.0/14.4/11.9)	800/680/560 (22.7/19.3/15.9)
	External static pressure	in. w.g.	0.1” - 0.9”	0.1” - 0.9”
Sound pressure level (H/M/L)		dB(A)	44.6/41.3/38.4	51.6/48.2/44.0
Air filter			— ★3	— ★3
Weight		lbs (kg)	115 (52.2)	115 (52.2)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Brazing connection)	ϕ3/8 (ϕ9.5) (Brazing connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Brazing connection)	ϕ5/8 (ϕ15.9) (Brazing connection)
	Drain Pipe	in (mm)	3/4” (19.1)	3/4” (19.1)
Remote controller (option)	Wired		BRC1E73, BRC2A71	BRC1E73, BRC2A71
	Wireless		BRC4C82	BRC4C82
Outdoor unit			**RZR18TAVJU**	**RZR24TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	39 × 37 × 12–5/8 (990 × 940 × 320)	39 × 37 × 12–5/8 (990 × 940 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 44 × 19	2 × 44 × 19
	Face area	ft² (m^2)	9.5 (0.88)	9.5 (0.88)
Compressor	Model		2YC63ABXDD	2YC63ABXDD
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	1.9	1.9
Fan	Model		P51J11F	P51J11F
	Type		Propeller fan	Propeller fan
	Motor output	W	200	200
	Airflow rate	cfm (m^3/min)	2,682 (76)	2,682 (76)
Weight		lbs (kg)	172 (78)	172 (78)
Sound pressure level		dB(A)	61	61
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	164 (50)	164 (50)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	6.4 (2.9)	6.4 (2.9)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.08	1.08
Drawing No	Sound (outdoor)		C: 4D101948E	C: 4D101948E

Notes:
★1 Indoor temp. : 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp. : 95°FDB (35.0°CDB) / Equivalent piping length : 25 ft (7.6 m), level difference : 0 ft (0 m).
★2 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
★3 Air filter is not standard accessory (field supply parts), but please mount it in the duct system of the suction side.

Model name	Indoor unit		FTQ30TAVJUD, FTQ30TAVJUA	FTQ36TAVJUD, FTQ36TAVJUA
	Outdoor unit		**RZR30TAVJU**	**RZR36TAVJU**
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★2 Cooling capacity		Btu/h (kW)	30,000 (8.8)	36,000 (10.6)
SEER (Rated)			16.0	15.3
EER (Rated)		Btu/h·W	12.5	11.3
Indoor unit			**FTQ30TAVJUD, FTQ30TAVJUA**	**FTQ36TAVJUD, FTQ36TAVJUA**
Casing color			Daikin Slate Gray	Daikin Slate Gray
Dimensions: (H×W×D)		in (mm)	45 × 17.5 × 21 (1,143 × 445 × 533)	45 × 17.5 × 21 (1,143 × 445 × 533)
Coil	Type		Cross fin coil	Cross fin coil
	Face area	ft² (m²)	3.75 (35)	3.75 (35)
Fan	Type		Sirocco FC Centrifugal	Sirocco FC Centrifugal
	Motor output	HP	1/2	1/2
	Airflow rate (H/M/L)	cfm (m^3/min)	1,000/850/700 (28.3/24.1/19.8)	1,050/900/750 (29.7/25.5/21.2)
	External static pressure	in. w.g.	0.1” - 0.9”	0.1” - 0.9”
Sound pressure level (H/M/L)		dB(A)	51.6/48.2/44.0	51.6/48.2/44.0
Air filter			— ★3	— ★3
Weight		lbs (kg)	115 (52.2)	140 (63.5)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Brazing connection)	ϕ3/8 (ϕ9.5) (Brazing connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Brazing connection)	ϕ5/8 (ϕ15.9) (Brazing connection)
	Drain Pipe	in (mm)	3/4” (19.1)	3/4” (19.1)
Remote controller (option)	Wired		BRC1E73, BRC2A71	BRC1E73, BRC2A71
	Wireless		BRC4C82	BRC4C82
Outdoor unit			**RZR30TAVJU**	**RZR36TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 19	2 × 60 × 19
	Face area	ft² (m²)	12.2 (1.134)	12.2 (1.134)
Compressor	Model		2YC90GXD#D	2YC90GXD#D
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	3.5	3.5
Fan	Model		P47N	P47N
	Type		Propeller fan	Propeller fan
	Motor output	W	70 × 2	70 × 2
	Airflow rate	cfm (m^3/min)	3,741 (106)	3,741 (106)
Weight		lbs (kg)	225 (102)	225 (102)
Sound pressure level		dB(A)	59	59
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	7.9 (3.6)	7.9 (3.6)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.52	1.52
Drawing No	Sound (outdoor)		C: 4D101950E	C: 4D101950E

Notes:
★1 Indoor temp. : 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp. : 95°FDB (35.0°CDB) / Equivalent piping length : 25 ft (7.6 m), level difference : 0 ft (0 m).
★2 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
★3 Air filter is not standard accessory (field supply parts), but please mount it in the duct system of the suction side.

Model name	Indoor unit		FTQ42TAVJUD, FTQ42TAVJUA	FTQ48TAVJUD, FTQ48TAVJUA
	Outdoor unit		RZR42TAVJU	RZR48TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★2 Cooling capacity		Btu/h (kW)	42,000 (12.3)	48,000 (14.1)
SEER (Rated)			16.0	14.8
EER (Rated)		Btu/h·W	11.0	9.5
Indoor unit			**FTQ42TAVJUD, FTQ42TAVJUA**	**FTQ48TAVJUD, FTQ48TAVJUA**
Casing color			Daikin Slate Gray	Daikin Slate Gray
Dimensions: (H×W×D)		in (mm)	53.43 × 21 × 21 (1,357 × 533 × 533)	53.43 × 21 × 21 (1,357 × 533 × 533)
Coil	Type		Cross fin coil	Cross fin coil
	Face area	ft² (m²)	5.15 (48)	5.15 (48)
Fan	Type		Sirocco FC Centrifugal	Sirocco FC Centrifugal
	Motor output	HP	3/4	3/4
	Airflow rate (H/M/L)	cfm (m^3/min)	1,400/1,190/980 (39.7/33.7/27.8)	1,520/1,290/1,060 (43.1/36.5/30.0)
	External static pressure	in. w.g.	0.1” - 0.9”	0.1” - 0.9”
Sound pressure level (H/M/L)		dB(A)	53.8/50.0/45.6	53.8/50.0/45.6
Air filter			— ★3	— ★3
Weight		lbs (kg)	150 (68)	150 (68)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Brazing connection)	ϕ3/8 (ϕ9.5) (Brazing connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Brazing connection)	ϕ5/8 (ϕ15.9) (Brazing connection)
	Drain Pipe	in (mm)	3/4” (19.1)	3/4” (19.1)
Remote controller (option)	Wired		BRC1E73, BRC2A71	BRC1E73, BRC2A71
	Wireless		BRC4C82	BRC4C82
Outdoor unit			**RZR42TAVJU**	**RZR48TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 19	2 × 60 × 19
	Face area	ft² (m²)	12.2 (1.134)	12.2 (1.134)
Compressor	Model		2YC90GXD#D	2YC90GXD#D
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	3.5	3.5
Fan	Model		P47N	P47N
	Type		Propeller fan	Propeller fan
	Motor output	W	70 × 2	70 × 2
	Airflow rate	cfm (m^3/min)	3,741 (106)	3,741 (106)
Weight		lbs (kg)	225 (102)	225 (102)
Sound pressure level		dB(A)	59	59
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	7.9 (3.6)	7.9 (3.6)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.52	1.52
Drawing No	Sound (outdoor)		C: 4D101950E	C: 4D101950E

Notes:
★1 Indoor temp. : 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp. : 95°FDB (35.0°CDB) / Equivalent piping length : 25 ft (7.6 m), level difference : 0 ft (0 m).
★2 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
★3 Air filter is not standard accessory (field supply parts), but please mount it in the duct system of the suction side.

3.2 Heat Pump

3.2.1 Ceiling Mounted Cassette Type (Round Flow With Sensing)

Model name	Indoor unit		FCQ18TAVJU	FCQ24TAVJU
	Outdoor unit		RZQ18TAVJU	RZQ24TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★4 Cooling capacity		Btu/h (kW)	18,000 (5.3)	24,000 (7.0)
★2 ★4 Heating capacity		Btu/h (kW)	20,000 (5.9)	27,000 (7.9)
★3 ★4 Heating capacity		Btu/h (kW)	12,000 (3.5)	18,000 (5.3)
SEER (Rated)			18.6	18.5
EER (Rated)		Btu/h·W	13.0	12.0
HSPF (Rated)			10.1	10.2
Indoor unit			**FCQ18TAVJU**	**FCQ24TAVJU**
Casing color			Galvanized steel plate	Galvanized steel plate
Dimensions: (H×W×D)		in (mm)	10–1/16 × 33–1/16 × 33–1/16 (256 × 840 × 840)	10–1/16 × 33–1/16 × 33–1/16 (256 × 840 × 840)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		3 × (12 + 15 × 2) × (20 + 21 × 2)	3 × (12 + 15 × 2) × (20 + 21 × 2)
	Face area	ft² (m^2)	4.59 (0.427)	4.59 (0.427)
Fan	Model		QTS48C15M	QTS48C15M
	Type		Turbo fan	Turbo fan
	Motor output	W	48	48
	Airflow rate (H/M/L)	cfm (m^3/min)	742/618/477 (21.0/17.5/13.5)	777/618/477 (22.0/17.5/13.5)
	External static pressure	inH_2O (Pa)	—	—
Sound pressure level (H/M/L)		dB(A)	35.5/32.0/28.0	36.0/32.0/28.0
Air filter			—	—
Weight		lbs (kg)	63 (28.5)	63 (28.5)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))
Remote controller (option)	Wired		BRC1E73, BRC2A71	BRC1E73, BRC2A71
	Wireless		—	—
Decoration panels (option)	Model		BYCQ125B–W1 / BYCQ125BGW1	BYCQ125B–W1 / BYCQ125BGW1
	Color		Fresh white	Fresh white
	Dimensions: (H×W×D)	in (mm)	2 × 37–3/8 × 37–3/8 / 5–1/8 × 37–3/8 × 37–3/8 (50 × 950 × 950 / 130 × 950 × 950)	2 × 37–3/8 × 37–3/8 / 5–1/8 × 37–3/8 × 37–3/8 (50 × 950 × 950 / 130 × 950 × 950)
	Air filter		Resin net (with mold resistance)	Resin net (with mold resistance)
	Weight	lbs (kg)	12.2 (5.5) / 22.1 (10.0)	12.2 (5.5) / 22.1 (10.0)
Outdoor unit			**RZQ18TAVJU**	**RZQ24TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	39 × 37 × 12–5/8 (990 × 940 × 320)	39 × 37 × 12–5/8 (990 × 940 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 44 × 19	2 × 44 × 19
	Face area	ft² (m^2)	9.5 (0.88)	9.5 (0.88)
Compressor	Model		2YC63ABXDD	2YC63ABXDD
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	1.9	1.9
Fan	Model		P51J11F	P51J11F
	Type		Propeller fan	Propeller fan
	Motor output	W	200	200
	Airflow rate	cfm (m^3/min)	2,682 (76)	2,682 (76)
Weight		lbs (kg)	172 (78)	172 (78)
Sound pressure level		dB(A)	58	58
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	164 (50)	164 (50)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	6.4 (2.9)	6.4 (2.9)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.08	1.08
Drawing No	Specification		C: 4D115508	C: 4D115508
	Sound (indoor)		C: 4D087483B	C: 4D087474B
	Sound (outdoor)		C: 4D101947D	C: 4D101947D

Notes:
★1 Indoor temp.: 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp.: 95°FDB (35.0°CDB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★2 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 47°FDB (8.3°CDB), 43°FWB (6.1°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★3 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 17°FDB (−8.3°CDB), 15°FWB (−9.4°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

Model name	Indoor unit		FCQ30TAVJU	FCQ36TAVJU
	Outdoor unit		RZQ30TAVJU	RZQ36TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★4 Cooling capacity		Btu/h (kW)	30,000 (8.8)	36,000 (10.6)
★2 ★4 Heating capacity		Btu/h (kW)	34,000 (10.0)	40,000 (11.7)
★3 ★4 Heating capacity		Btu/h (kW)	22,000 (6.4)	21,000 (6.2)
SEER (Rated)			17.2	17.6
EER (Rated)		Btu/h·W	9.3	11.4
HSPF (Rated)			10.2	9.0
Indoor unit			**FCQ30TAVJU**	**FCQ36TAVJU**
Casing color			Galvanized steel plate	Galvanized steel plate
Dimensions: (H×W×D)		in (mm)	11–23/32 × 33–1/16 × 33–1/16 (298 × 840 × 840)	11–23/32 × 33–1/16 × 33–1/16 (298 × 840 × 840)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		3 × 18 × (20 + 21 × 2)	3 × 18 × (20 + 21 × 2)
	Face area	ft² (m^2)	5.92 (0.550)	5.92 (0.550)
Fan	Model		QTS48C15M	QTS48C15M
	Type		Turbo fan	Turbo fan
	Motor output	W	106	106
	Airflow rate (H/M/L)	cfm (m^3/min)	1,112/918/671 (31.5/26.0/19.0)	1,165/918/671 (33.0/26.0/19.0)
	External static pressure	inH_2O (Pa)	—	—
Sound pressure level (H/M/L)		dB(A)	43.5/38.0/32.0	44.0/38.0/32.0
Air filter			—	—
Weight		lbs (kg)	70 (31.5)	70 (31.5)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))
Remote controller (option)	Wired		BRC1E73, BRC2A71	BRC1E73, BRC2A71
	Wireless		—	—
Decoration panels (option)	Model		BYCQ125B–W1 / BYCQ125BGW1	BYCQ125B–W1 / BYCQ125BGW1
	Color		Fresh white	Fresh white
	Dimensions: (H×W×D)	in (mm)	2 × 37–3/8 × 37–3/8 / 5–1/8 × 37–3/8 × 37–3/8 (50 × 950 × 950 / 130 × 950 × 950)	2 × 37–3/8 × 37–3/8 / 5–1/8 × 37–3/8 × 37–3/8 (50 × 950 × 950 / 130 × 950 × 950)
	Air filter		Resin net (with mold resistance)	Resin net (with mold resistance)
	Weight	lbs (kg)	12.2 (5.5) / 22.1 (10.0)	12.2 (5.5) / 22.1 (10.0)
Outdoor unit			**RZQ30TAVJU**	**RZQ36TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 19	2 × 60 × 19
	Face area	ft² (m^2)	12.2 (1.134)	12.2 (1.134)
Compressor	Model		2YC90GXD#D	2YC90GXD#D
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	3.5	3.5
Fan	Model		P47N	P47N
	Type		Propeller fan	Propeller fan
	Motor output	W	70 × 2	70 × 2
	Airflow rate	cfm (m^3/min)	3,741 (106)	3,741 (106)
Weight		lbs (kg)	225 (102)	225 (102)
Sound pressure level		dB(A)	57	57
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	7.9 (3.6)	7.9 (3.6)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.52	1.52
Drawing No	Specification		C: 4D115510	C: 4D115510
	Sound (indoor)		C: 4D087479B	C: 4D087475B
	Sound (outdoor)		C: 4D101949D	C: 4D101949D

Notes:
★1 Indoor temp.: 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp.: 95°FDB (35.0°CDB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★2 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 47°FDB (8.3°CDB), 43°FWB (6.1°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★3 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 17°FDB (−8.3°CDB), 15°FWB (−9.4°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

Model name	Indoor unit		FCQ42TAVJU	FCQ48TAVJU
	Outdoor unit		RZQ42TAVJU	RZQ48TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★4 Cooling capacity		Btu/h (kW)	42,000 (12.3)	48,000 (14.1)
★2 ★4 Heating capacity		Btu/h (kW)	47,000 (13.8)	54,000 (15.8)
★3 ★4 Heating capacity		Btu/h (kW)	25,000 (7.3)	28,000 (8.2)
SEER (Rated)			17.0	17.0
EER (Rated)		Btu/h·W	10.3	9.0
HSPF (Rated)			8.6	9.3
Indoor unit			**FCQ42TAVJU**	**FCQ48TAVJU**
Casing color			Galvanized steel plate	Galvanized steel plate
Dimensions: (H×W×D)		in (mm)	11–23/32 × 33–1/16 × 33–1/16 (298 × 840 × 840)	11–23/32 × 33–1/16 × 33–1/16 (298 × 840 × 840)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		3 × 18 × (20 + 21 × 2)	3 × 18 × (20 + 21 × 2)
	Face area	ft² (m^2)	5.92 (0.550)	5.92 (0.550)
Fan	Model		QTS48C15M	QTS48C15M
	Type		Turbo fan	Turbo fan
	Motor output	W	106	106
	Airflow rate (H/M/L)	cfm (m^3/min)	1,218/971/742 (34.5/27.5/21.0)	1,218/971/742 (34.5/27.5/21.0)
	External static pressure	inH_2O (Pa)	—	—
Sound pressure level (H/M/L)		dB(A)	45.0/40.0/35.0	45.0/40.0/35.0
Air filter			—	—
Weight		lbs (kg)	70 (31.5)	70 (31.5)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))
Remote controller (option)	Wired		BRC1E73, BRC2A71	BRC1E73, BRC2A71
	Wireless		—	—
Decoration panels (option)	Model		BYCQ125B–W1 / BYCQ125BGW1	BYCQ125B–W1 / BYCQ125BGW1
	Color		Fresh white	Fresh white
	Dimensions: (H×W×D)	in (mm)	2 × 37–3/8 × 37–3/8 / 5–1/8 × 37–3/8 × 37–3/8 (50 × 950 × 950 / 130 × 950 × 950)	2 × 37–3/8 × 37–3/8 / 5–1/8 × 37–3/8 × 37–3/8 (50 × 950 × 950 / 130 × 950 × 950)
	Air filter		Resin net (with mold resistance)	Resin net (with mold resistance)
	Weight	lbs (kg)	12.2 (5.5) / 22.1 (10.0)	12.2 (5.5) / 22.1 (10.0)
Outdoor unit			**RZQ42TAVJU**	**RZQ48TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 19	2 × 60 × 19
	Face area	ft² (m^2)	12.2 (1.134)	12.2 (1.134)
Compressor	Model		2YC90GXD#D	2YC90GXD#D
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	3.5	3.5
Fan	Model		P47N	P47N
	Type		Propeller fan	Propeller fan
	Motor output	W	70 × 2	70 × 2
	Airflow rate	cfm (m^3/min)	3,741 (106)	3,741 (106)
Weight		lbs (kg)	225 (102)	225 (102)
Sound pressure level		dB(A)	57	57
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	7.9 (3.6)	7.9 (3.6)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.52	1.52
Drawing No	Specification		C: 4D115510	C: 4D115510
	Sound (indoor)		C: 4D087476B	C: 4D087476B
	Sound (outdoor)		C: 4D101949D	C: 4D101949D

Notes:
★1 Indoor temp.: 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp.: 95°FDB (35.0°CDB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★2 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 47°FDB (8.3°CDB), 43°FWB (6.1°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★3 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 17°FDB (−8.3°CDB), 15°FWB (−9.4°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

3.2.2 Ceiling Suspended Type

Model name	Indoor unit		FHQ18PVJU	FHQ24PVJU
	Outdoor unit		RZQ18TAVJU	RZQ24TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★4 Cooling capacity		Btu/h (kW)	18,000 (5.3)	24,000 (7.0)
★2 ★4 Heating capacity		Btu/h (kW)	20,000 (5.9)	27,000 (7.9)
★3 ★4 Heating capacity		Btu/h (kW)	12,000 (3.5)	18,000 (5.3)
SEER (Rated)			16.3	16.6
EER (Rated)		Btu/h·W	12.9	11.3
HSPF (Rated)			9.1	9.3
Indoor unit			**FHQ18PVJU**	**FHQ24PVJU**
Casing color			White (10Y9/0.5)	White (10Y9/0.5)
Dimensions: (H×W×D)		in (mm)	7–11/16 × 62–5/8 × 26–3/4 (195 × 1,590 × 680)	7–11/16 × 62–5/8 × 26–3/4 (195 × 1,590 × 680)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 12 × 15 + 2 × 10 × 15	2 × 12 × 15 + 2 × 10 × 15
	Face area	ft² (m^2)	3.66 (0.34) + 2.95 (0.27)	3.66 (0.34) + 2.95 (0.27)
Fan	Model		—	—
	Type		Sirocco fan	Sirocco fan
	Motor output	W	130	130
	Airflow rate (H/M/L)	cfm (m^3/min)	790/670 (22.4/19.0)	790/670 (22.4/19.0)
	External static pressure	inH_2O (Pa)	—	—
Air filter			Resin net (with mold resistance)	Resin net (with mold resistance)
Weight		lbs (kg)	90 (19.8)	90 (19.8)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP20 (External dia. 1 (26), internal dia. 3/4 (19.1))	VP20 (External dia. 1 (26), internal dia. 3/4 (19.1))
Remote controller (option)	Wired		BRC1E73	BRC1E73
	Wireless		BRC7E83	BRC7E83
Outdoor unit			**RZQ18TAVJU**	**RZQ24TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	39 × 37 × 12–5/8 (990 × 940 × 320)	39 × 37 × 12–5/8 (990 × 940 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 44 × 19	2 × 44 × 19
	Face area	ft² (m^2)	9.5 (0.88)	9.5 (0.88)
Compressor	Model		2YC63ABXDD	2YC63ABXDD
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	1.9	1.9
Fan	Model		P51J11F	P51J11F
	Type		Propeller fan	Propeller fan
	Motor output	W	200	200
	Airflow rate	cfm (m^3/min)	2,682 (76)	2,682 (76)
Weight		lbs (kg)	172 (78)	172 (78)
Sound pressure level		dB(A)	58	58
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	164 (50)	164 (50)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	6.4 (2.9)	6.4 (2.9)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.08	1.08
Drawing No	Specification		C: 4D115557A	C: 4D115557A
	Sound (outdoor)		C: 4D101947D	C: 4D101947D

Notes:
★1 Indoor temp.: 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp.: 95°FDB (35.0°CDB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★2 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 47°FDB (8.3°CDB), 43°FWB (6.1°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★3 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 17°FDB (−8.3°CDB), 15°FWB (−9.4°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

Model name	Indoor unit		FHQ30PVJU	FHQ36MVJU
	Outdoor unit		RZQ30TAVJU	RZQ36TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★4 Cooling capacity		Btu/h (kW)	30,000 (8.8)	36,000 (10.6)
★2 ★4 Heating capacity		Btu/h (kW)	34,000 (10.0)	40,000 (11.7)
★3 ★4 Heating capacity		Btu/h (kW)	24,000 (7.0)	22,000 (6.4)
SEER (Rated)			16.0	14.0
EER (Rated)		Btu/h·W	10.5	9.5
HSPF (Rated)			8.4	8.2
Indoor unit			**FHQ30PVJU**	**FHQ36MVJU**
Casing color			White (10Y9/0.5)	White (10Y9/0.5)
Dimensions: (H×W×D)		in (mm)	7–11/16 × 62–5/8 × 26–3/4 (195 × 1,590 × 680)	7–11/16 × 62–5/8 × 26–3/4 (195 × 1,590 × 680)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 12 × 15 + 2 × 10 × 15	2 × 12 × 15 + 2 × 10 × 15
	Face area	ft² (m^2)	3.66 (0.34) + 2.95 (0.27)	3.66 (0.34) + 2.95 (0.27)
Fan	Model		—	—
	Type		Sirocco fan	Sirocco fan
	Motor output	W	130	130
	Airflow rate (H/L)	cfm (m^3/min)	790/670 (22.4/19.0)	830/670 (23.5/19.0)
	External static pressure	inH_2O (Pa)	—	—
Air filter			Resin net (with mold resistance)	Resin net (with mold resistance)
Weight		lbs (kg)	90 (19.8)	90 (19.8)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP20 (External dia. 1 (26), internal dia. 3/4 (19.1))	VP20 (External dia. 1 (26), internal dia. 3/4 (19.1))
Remote controller (option)	Wired		BRC1E73	BRC1E73
	Wireless		BRC7E83	BRC7E83
Outdoor unit			**RZQ30TAVJU**	**RZQ36TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 19	2 × 60 × 19
	Face area	ft² (m^2)	12.2 (1.134)	12.2 (1.134)
Compressor	Model		2YC90GXD#D	2YC90GXD#D
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	3.5	3.5
Fan	Model		P47N	P47N
	Type		Propeller fan	Propeller fan
	Motor output	W	70 × 2	70 × 2
	Airflow rate	cfm (m^3/min)	3,741 (106)	3,741 (106)
Weight		lbs (kg)	225 (102)	225 (102)
Sound pressure level		dB(A)	57	57
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	7.9 (3.6)	7.9 (3.6)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.52	1.52
Drawing No	Specification		C: 4D115559B	C: 4D115559B
	Sound (outdoor)		C: 4D101949D	C: 4D101949D

Notes:
★1 Indoor temp.: 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp.: 95°FDB (35.0°CDB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★2 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 47°FDB (8.3°CDB), 43°FWB (6.1°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★3 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 17°FDB (−8.3°CDB), 15°FWB (−9.4°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

Model name	Indoor unit		FHQ42MVJU
	Outdoor unit		RZQ42TAVJU
Power supply			1 phase, 208/230 V, 60 Hz
★1 ★4 Cooling capacity		Btu/h (kW)	40,500 (11.9)
★2 ★4 Heating capacity		Btu/h (kW)	40,000 (11.7)
★3 ★4 Heating capacity		Btu/h (kW)	23,400 (6.9)
SEER (Rated)			14.0
EER (Rated)		Btu/h·W	8.8
HSPF (Rated)			8.2
Indoor unit			**FHQ42MVJU**
Casing color			White (10Y9/0.5)
Dimensions: (H×W×D)		in (mm)	7–11/16 × 62–5/8 × 26–3/4 (195 × 1,590 × 680)
Coil	Type		Cross fin coil
	Rows×Stages×FPI		2 × 12 × 15 + 2 × 10 × 15
	Face area	ft² (m^2)	3.66 (0.34) + 2.95 (0.27)
Fan	Model		—
	Type		Sirocco fan
	Motor output	W	130
	Airflow rate (H/L)	cfm (m^3/min)	850 / 700 (24.1 / 19.8)
	External static pressure	inH_2O (Pa)	—
Air filter			Resin net (with mold resistance)
Weight		lbs (kg)	90 (19.8)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP20 (External dia. 1 (26), internal dia. 3/4 (19.1))
Remote controller (option)	Wired		BRC1E73
	Wireless		BRC7E83
Outdoor unit			**RZQ42TAVJU**
Casing color			Ivory white
Dimensions: (H×W×D)		in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)
Coil	Type		Cross fin coil
	Rows×Stages×FPI		2 × 60 × 19
	Face area	ft² (m^2)	12.2 (1.134)
Compressor	Model		2YC90GXD#D
	Type		Hermetically sealed swing type
	Motor output	kW	3.5
Fan	Model		P47N
	Type		Propeller fan
	Motor output	W	70 × 2
	Airflow rate	cfm (m^3/min)	3,741 (106)
Weight		lbs (kg)	225 (102)
Sound pressure level		dB(A)	57
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100
Refrigerant control			Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)
	Max. length	ft (m)	230 (70)
	Max. height difference	ft (m)	98 (30)
Refrigerant	Model		R-410A
	Charge	lbs (kg)	7.9 (3.6)
Ref. oil	Model		DAPHNE FVC50K
	Charge	L	1.52
Drawing No	Specification		C: 4D115559B
	Sound (outdoor)		C: 4D101949D

Notes:
★1 Indoor temp.: 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp.: 95°FDB (35.0°CDB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m)
★2 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 47°FDB (8.3°CDB), 43°FWB (6.1°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★3 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 17°FDB (−8.3°CDB), 15°FWB (−9.4°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat

3.2.3 Wall Mounted Type

Model name	Indoor unit		FAQ18TAVJU	FAQ24TAVJU
	Outdoor unit		RZQ18TAVJU	RZQ24TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★4 Cooling capacity		Btu/h (kW)	18,000 (5.3)	24,000 (7.0)
★2 ★4 Heating capacity		Btu/h (kW)	20,000 (5.9)	27,000 (7.9)
★3 ★4 Heating capacity		Btu/h (kW)	13,000 (3.8)	20,000 (5.9)
SEER (Rated)			17.0	17.6
EER (Rated)		Btu/h·W	11.9	10.2
HSPF (Rated)			8.2	8.4
Indoor unit			**FAQ18TAVJU**	**FAQ24TAVJU**
Casing color			White (3.0Y8.5/0.5)	White (3.0Y8.5/0.5)
Dimensions: (H×W×D)		in (mm)	11–3/8 × 41–3/8 × 9–1/4 (290 × 1,050 × 238)	11–3/8 × 41–3/8 × 9–1/4 (290 × 1,050 × 238)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 14 × 7	2 × 14 × 7
	Face area	ft² (m^2)	1.73 (0.16)	1.73 (0.16)
Fan	Model		QCL9686M	QCL9686M
	Type		Cross flow fan	Cross flow fan
	Motor output	W	43	43
	Airflow rate (H/L)	cfm (m^3/min)	500/400 (14/11)	635/470 (18/13)
	External static pressure	inH_2O (Pa)	—	—
Sound pressure level (H/L)		dB(A)	43.0/37.0	47.0/41.0
Air filter			Resin net (washable)	Resin net (washable)
Weight		lbs (kg)	31 (14)	31 (14)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP13 (External dia. 11/16 (18), internal dia. 1/2 (13))	VP13 (External dia. 11/16 (18), internal dia. 1/2 (13))
Remote controller (option)	Wired		BRC1E73, BRC2A71	BRC1E73, BRC2A71
	Wireless		BRC7E818	BRC7E818
Outdoor unit			**RZQ18TAVJU**	**RZQ24TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	39 × 37 × 12–5/8 (990 × 940 × 320)	39 × 37 × 12–5/8 (990 × 940 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 44 × 19	2 × 44 × 19
	Face area	ft² (m^2)	9.5 (0.88)	9.5 (0.88)
Compressor	Model		2YC63ABXDD	2YC63ABXDD
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	1.9	1.9
Fan	Model		P51J11F	P51J11F
	Type		Propeller fan	Propeller fan
	Motor output	W	200	200
	Airflow rate	cfm (m^3/min)	2,682 (76)	2,682 (76)
Weight		lbs (kg)	172 (78)	172 (78)
Sound pressure level		dB(A)	58	58
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	164 (50)	164 (50)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	6.4 (2.9)	6.4 (2.9)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.08	1.08
Drawing No	Specification		C: 4D115551	C: 4D115551
	Sound (indoor)		C: 4D075583A	C: 4D075584A
	Sound (outdoor)		C: 4D101947D	C: 4D101947D

Notes:
★1 Indoor temp.: 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp.: 95°FDB (35.0°CDB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★2 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 47°FDB (8.3°CDB), 43°FWB (6.1°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★3 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 17°FDB (−8.3°CDB), 15°FWB (−9.4°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

3.2.4 Ceiling Mounted Duct Type (High Static Pressure)

Model name	Indoor unit		FBQ18PVJU	FBQ24PVJU
	Outdoor unit		RZQ18TAVJU	RZQ24TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★4 Cooling capacity		Btu/h (kW)	18,000 (5.3)	24,000 (7.0)
★2 ★4 Heating capacity		Btu/h (kW)	20,000 (5.9)	27,000 (7.9)
★3 ★4 Heating capacity		Btu/h (kW)	12,000 (3.5)	18,000 (5.3)
SEER (Rated)			16.7	16.5
EER (Rated)		Btu/h·W	13.0	12.0
HSPF (Rated)			9.5	9.7
Indoor unit			**FBQ18PVJU**	**FBQ24PVJU**
Casing color			Galvanized steel plate	Galvanized steel plate
Dimensions: (H×W×D)		in (mm)	11–13/16 × 39–3/8 × 27–9/16 (300 × 1,000 × 700)	11–13/16 × 39–3/8 × 27–9/16 (300 × 1,000 × 700)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		3 × 16 × 15	3 × 16 × 15
	Face area	ft² (m^2)	2.68 (0.249)	2.68 (0.249)
Fan	Model		—	—
	Type		Sirocco fan	Sirocco fan
	Motor output	W	350	350
	Airflow rate (HH/H/L)	cfm (m^3/min)	635/582/529 (18.0/16.5/15.0)	688/618/565 (19.5/17.5/16.0)
	External static pressure	inH_2O (Pa)	Standard 0.40 <0.80-0.20> (100 <200-50>) ★5	Standard 0.40 <0.80-0.20> (100 <200-50>) ★5
Sound pressure level (HH/H/L)		dB(A)	41.0/39.0/37.0	42.0/40.0/38.0
Air filter			—★6	—★6
Weight		lbs (kg)	80 (36)	80 (36)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))
Remote controller (option)	Wired		BRC1E73, BRC2A71	BRC1E73, BRC2A71
	Wireless		BRC4C82, BRC082A43	BRC4C82, BRC082A43
Outdoor unit			**RZQ18TAVJU**	**RZQ24TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	39 × 37 × 12–5/8 (990 × 940 × 320)	39 × 37 × 12–5/8 (990 × 940 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 44 × 19	2 × 44 × 19
	Face area	ft² (m^2)	9.5 (0.88)	9.5 (0.88)
Compressor	Model		2YC63ABXDD	2YC63ABXDD
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	1.9	1.9
Fan	Model		P51J11F	P51J11F
	Type		Propeller fan	Propeller fan
	Motor output	W	200	200
	Airflow rate	cfm (m^3/min)	2,682 (76)	2,682 (76)
Weight		lbs (kg)	172 (78)	172 (78)
Sound pressure level		dB(A)	58	58
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	164 (50)	164 (50)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	6.4 (2.9)	6.4 (2.9)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.08	1.08
Drawing No	Specification		C: 4D115553	C: 4D115553
	Sound (indoor)		C: 4D075278	C: 4D075279
	Sound (outdoor)		C: 4D101947D	C: 4D101947D

Notes:
★1 Indoor temp.: 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp.: 95°FDB (35.0°CDB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★2 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 47°FDB (8.3°CDB), 43°FWB (6.1°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★3 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 17°FDB (−8.3°CDB), 15°FWB (−9.4°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
★5 External static pressure is changeable in 14 stages within the < > range by remote controller.
★6 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.

Model name	Indoor unit		FBQ30PVJU	FBQ36PVJU
	Outdoor unit		RZQ30TAVJU	RZQ36TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★4 Cooling capacity		Btu/h (kW)	30,000 (8.8)	36,000 (10.6)
★2 ★4 Heating capacity		Btu/h (kW)	34,000 (10.0)	40,000 (11.7)
★3 ★4 Heating capacity		Btu/h (kW)	22,000 (6.4)	21,000 (6.2)
SEER (Rated)			16.0	17.5
EER (Rated)		Btu/h·W	10.5	11.1
HSPF (Rated)			9.2	9.1
Indoor unit			**FBQ30PVJU**	**FBQ36PVJU**
Casing color			Galvanized steel plate	Galvanized steel plate
Dimensions: (H×W×D)		in (mm)	11–13/16 × 39–3/8 × 27–9/16 (300 × 1,000 × 700)	11–13/16 × 55–1/8 × 27–9/16 (300 × 1,400 × 700)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		3 × 16 × 15	3 × 16 × 15
	Face area	ft² (m^2)	2.68 (0.249)	4.12 (0.383)
Fan	Model		—	—
	Type		Sirocco fan	Sirocco fan
	Motor output	W	350	350
	Airflow rate (HH/H/L)	cfm (m^3/min)	882/794/706 (25.0/22.0/20.0)	1,130/953/812 (32.0/27.0/23.0)
	External static pressure	inH_2O (Pa)	Standard 0.40 <0.80-0.20> (100 <200-50>) ★5	Standard 0.40 <0.80-0.20> (100 <200-50>) ★5
Sound pressure level (HH/H/L)		dB(A)	43.0/41.0/39.0	43.0/41.0/39.0
Air filter			—★6	—★6
Weight		lbs (kg)	80 (36)	102 (46)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))
Remote controller (option)	Wired		BRC1E73, BRC2A71	BRC1E73, BRC2A71
	Wireless		BRC4C82, BRC082A43	BRC4C82, BRC082A43
Outdoor unit			**RZQ30TAVJU**	**RZQ36TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 19	2 × 60 × 19
	Face area	ft² (m^2)	12.2 (1.134)	12.2 (1.134)
Compressor	Model		2YC90GXD#D	2YC90GXD#D
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	3.5	3.5
Fan	Model		P47N	P47N
	Type		Propeller fan	Propeller fan
	Motor output	W	70 × 2	70 × 2
	Airflow rate	cfm (m^3/min)	3,741 (106)	3,741 (106)
Weight		lbs (kg)	225 (102)	225 (102)
Sound pressure level		dB(A)	57	57
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	7.9 (3.6)	7.9 (3.6)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.52	1.52
Drawing No	Specification		C: 4D115555A	C: 4D115555A
	Sound (indoor)		C: 4D075280	C: 4D075281
	Sound (outdoor)		C: 4D101949D	C: 4D101949D

Notes:
★1 Indoor temp.: 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp.: 95°FDB (35.0°CDB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★2 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 47°FDB (8.3°CDB), 43°FWB (6.1°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★3 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 17°FDB (−8.3°CDB), 15°FWB (−9.4°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
★5 External static pressure is changeable in 14 stages within the < > range by remote controller.
★6 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.

Model name	Indoor unit		FBQ42PVJU	FBQ48PVJU
	Outdoor unit		RZQ42TAVJU	RZQ48TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★4 Cooling capacity		Btu/h (kW)	40,500 (11.9)	48,000 (14.1)
★2 ★4 Heating capacity		Btu/h (kW)	47,000 (13.8)	54,000 (15.8)
★3 ★4 Heating capacity		Btu/h (kW)	25,000 (7.3)	28,000 (8.2)
SEER (Rated)			16.0	14.0
EER (Rated)		Btu/h·W	10.1	8.6
HSPF (Rated)			8.8	8.4
Indoor unit			**FBQ42PVJU**	**FBQ48PVJU**
Casing color			Galvanized steel plate	Galvanized steel plate
Dimensions: (H×W×D)		in (mm)	11–13/16 × 55–1/8 × 27–9/16 (300 × 1,400 × 700)	11–13/16 × 55–1/8 × 27–9/16 (300 × 1,400 × 700)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		3 × 16 × 15	3 × 16 × 15
	Face area	ft² (m^2)	4.12 (0.383)	4.12 (0.383)
Fan	Model		—	—
	Type		Sirocco fan	Sirocco fan
	Motor output	W	350	350
	Airflow rate (HH/H/L)	cfm (m^3/min)	1,400/1,165/988 (39.6/33.0/28.0)	1,400/1,165/988 (39.6/33.0/28.0)
	External static pressure	inH_2O (Pa)	Standard 0.40 <0.80-0.20> (100 <200-50>) ★5	Standard 0.40 <0.80-0.20> (100 <200-50>) ★5
Sound pressure level (HH/H/L)		dB(A)	44.0/42.0/40.0	44.0/42.0/40.0
Air filter			—★6	—★6
Weight		lbs (kg)	102 (46)	102 (46)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))	VP25 (External dia. 1–1/4 (32), internal dia. 1 (26))
Remote controller (option)	Wired		BRC1E73, BRC2A71	BRC1E73, BRC2A71
	Wireless		BRC4C82, BRC082A43	BRC4C82, BRC082A43
Outdoor unit			**RZQ42TAVJU**	**RZQ48TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 19	2 × 60 × 19
	Face area	ft² (m^2)	12.2 (1.134)	12.2 (1.134)
Compressor	Model		2YC90GXD#D	2YC90GXD#D
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	3.5	3.5
Fan	Model		P47N	P47N
	Type		Propeller fan	Propeller fan
	Motor output	W	70 × 2	70 × 2
	Airflow rate	cfm (m^3/min)	3,741 (106)	3,741 (106)
Weight		lbs (kg)	225 (102)	225 (102)
Sound pressure level		dB(A)	57	57
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	7.9 (3.6)	7.9 (3.6)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.52	1.52
Drawing No	Specification		C: 4D115555A	C: 4D115555A
	Sound (indoor)		C: 4D075282A	C: 4D075282A
	Sound (outdoor)		C: 4D101949D	C: 4D101949D

Notes:
★1 Indoor temp.: 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp.: 95°FDB (35.0°CDB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★2 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 47°FDB (8.3°CDB), 43°FWB (6.1°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★3 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 17°FDB (−8.3°CDB), 15°FWB (−9.4°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
★5 External static pressure is changeable in 14 stages within the < > range by remote controller.
★6 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.

3.2.5 Multi Position Air Handling Unit

Model name	Indoor unit		FTQ18TAVJUD, FTQ18TAVJUA	FTQ24TAVJUD, FTQ24TAVJUA
	Outdoor unit		RZQ18TAVJU	RZQ24TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★4 Cooling capacity		Btu/h (kW)	18,000 (5.3)	24,000 (7.0)
★2 ★4 Heating capacity		Btu/h (kW)	20,000 (5.9)	27,000 (7.9)
★3 ★4 Heating capacity		Btu/h (kW)	13,000 (3.8)	18,000 (5.3)
SEER (Rated)			15.5	15.2
EER (Rated)		Btu/h·W	12.5	10.3
HSPF (Rated)			8.6	9.4
Indoor unit			**FTQ18TAVJUD, FTQ18TAVJUA**	**FTQ24TAVJUD, FTQ24TAVJUA**
Casing color			Daikin Slate Gray	Daikin Slate Gray
Dimensions: (H×W×D)		in (mm)	45 × 17.5 × 21 (1,143 × 445 × 533)	45 × 17.5 × 21 (1,143 × 445 × 533)
Coil	Type		Cross fin coil	Cross fin coil
	Face area	ft² (m²)	3.75 (35)	3.75 (35)
Fan	Type		Sirocco FC Centrifugal	Sirocco FC Centrifugal
	Motor output	HP	1/2	1/2
	Airflow rate (H/M/L)	Cfm (m³/min)	600/510/420 (17.0/14.4/11.9)	800/680/560 (22.7/19.3/15.9)
	External static pressure	in. w.g.	0.1” - 0.9”	0.1” - 0.9”
Sound pressure level (H/M/L)		dB(A)	44.6/41.3/38.4	51.6/48.2/44.0
Air filter			—★5	—★5
Weight		lbs (kg)	115 (52.2)	115 (52.2)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Brazing connection)	ϕ3/8 (ϕ9.5) (Brazing connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Brazing connection)	ϕ5/8 (ϕ15.9) (Brazing connection)
	Drain Pipe	in (mm)	3/4” (19.1)	3/4” (19.1)
Remote controller (option)	Wired		BRC1E73, BRC2A71	BRC1E73, BRC2A71
	Wireless		BRC4C82	BRC4C82
Outdoor unit			**RZQ18TAVJU**	**RZQ24TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	39 × 37 × 12–5/8 (990 × 940 × 320)	39 × 37 × 12–5/8 (990 × 940 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 44 × 19	2 × 44 × 19
	Face area	ft² (m²)	9.5 (0.88)	9.5 (0.88)
Compressor	Model		2YC63ABXDD	2YC63ABXDD
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	1.9	1.9
Fan	Model		P51J11F	P51J11F
	Type		Propeller fan	Propeller fan
	Motor output	W	200	200
	Airflow rate	cfm (m³/min)	2,682 (76)	2,682 (76)
Weight		lbs (kg)	172 (78)	172 (78)
Sound pressure level		dB(A)	58	58
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	164 (50)	164 (50)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	6.4 (2.9)	6.4 (2.9)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.08	1.08
Drawing No	Sound (outdoor)		C: 4D101947D	C: 4D101947D

Notes:
★1 Indoor temp. : 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp. : 95°FDB (35.0°CDB) / Equivalent piping length : 25 ft (7.6 m), level difference : 0 ft (0 m).
★2 Indoor temp. : 70°FDB (21.1°CDB) / Outdoor temp. : 47°FDB (8.3°CDB), 43°FWB (6.1°CWB) / Equivalent piping length : 25 ft (7.6 m), level difference : 0 ft (0 m).
★3 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 17°FDB (−8.3°CDB), 15°FWB (−9.4°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
★5 Air filter is not standard accessory (field supply parts), but please mount it in the duct system of the suction side.

Model name	Indoor unit		FTQ30TAVJUD, FTQ30TAVJUA	FTQ36TAVJUD, FTQ36TAVJUA
	Outdoor unit		RZQ30TAVJU	RZQ36TAVJU
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★4 Cooling capacity		Btu/h (kW)	30,000 (8.8)	36,000 (10.6)
★2 ★4 Heating capacity		Btu/h (kW)	34,000 (10.0)	40,000 (11.7)
★3 ★4 Heating capacity		Btu/h (kW)	22,000 (6.4)	26,000 (7.6)
SEER (Rated)			16.0	15.3
EER (Rated)		Btu/h·W	12.5	11.3
HSPF (Rated)			10.4	9.5
Indoor unit			**FTQ30TAVJUD, FTQ30TAVJUA**	**FTQ36TAVJUD, FTQ36TAVJUA**
Casing color			Daikin Slate Gray	Daikin Slate Gray
Dimensions: (H×W×D)		in (mm)	45 × 17.5 × 21 (1,143 × 445 × 533)	45 × 17.5 × 21 (1,143 × 445 × 533)
Coil	Type		Cross fin coil	Cross fin coil
	Face area	ft² (m²)	3.75 (35)	3.75 (35)
Fan	Type		Sirocco FC Centrifugal	Sirocco FC Centrifugal
	Motor output	HP	1/2	1/2
	Airflow rate (H/M/L)	cfm (m³/min)	1,000/850/700 (28.3/24.1/19.8)	1,050/900/750 (29.7/25.5/21.2)
	External static pressure	in. w.g.	0.1" - 0.9"	0.1" - 0.9"
Sound pressure level (H/M/L)		dB(A)	51.6/48.2/44.0	51.6/48.2/44.0
Air filter			—★5	—★5
Weight		lbs (kg)	115 (52.2)	140 (63.5)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Brazing connection)	ϕ3/8 (ϕ9.5) (Brazing connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Brazing connection)	ϕ5/8 (ϕ15.9) (Brazing connection)
	Drain Pipe	in (mm)	3/4" (19.1)	3/4" (19.1)
Remote controller (option)	Wired		BRC1E73, BRC2A71	BRC1E73, BRC2A71
	Wireless		BRC4C82	BRC4C82
Outdoor unit			**RZQ30TAVJU**	**RZQ36TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 19	2 × 60 × 19
	Face area	ft² (m²)	12.2 (1.134)	12.2 (1.134)
Compressor	Model		2YC90GXD#D	2YC90GXD#D
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	3.5	3.5
Fan	Model		P47N	P47N
	Type		Propeller fan	Propeller fan
	Motor output	W	70 × 2	70 × 2
	Airflow rate	cfm (m³/min)	3,741 (106)	3,741 (106)
Weight		lbs (kg)	225 (102)	225 (102)
Sound pressure level		dB(A)	57	57
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	7.9 (3.6)	7.9 (3.6)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.52	1.52
Drawing No	Sound (outdoor)		C: 4D101949D	C: 4D101949D

Notes:
★1 Indoor temp. : 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp. : 95°FDB (35.0°CDB) / Equivalent piping length : 25 ft (7.6 m), level difference : 0 ft (0 m).
★2 Indoor temp. : 70°FDB (21.1°CDB) / Outdoor temp. : 47°FDB (8.3°CDB), 43°FWB (6.1°CWB) / Equivalent piping length : 25 ft (7.6 m), level difference : 0 ft (0 m).
★3 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 17°FDB (−8.3°CDB), 15°FWB (−9.4°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
★5 Air filter is not standard accessory (field supply parts), but please mount it in the duct system of the suction side.

Model name	Indoor unit		FTQ42TAVJUD, FTQ42TAVJUA	FTQ48TAVJUD, FTQ48TAVJUA
	Outdoor unit		**RZQ42TAVJU**	**RZQ48TAVJU**
Power supply			1 phase, 208/230 V, 60 Hz	1 phase, 208/230 V, 60 Hz
★1 ★4 Cooling capacity		Btu/h (kW)	42,000 (12.3)	48,000 (14.1)
★2 ★4 Heating capacity		Btu/h (kW)	47,000 (13.8)	54,000 (15.8)
★3 ★4 Heating capacity		Btu/h (kW)	31,000 (9.1)	32,000 (9.4)
SEER (Rated)			16.0	14.8
EER (Rated)		Btu/h·W	11.0	9.5
HSPF (Rated)			9.0	9.0
Indoor unit			**FTQ42TAVJUD, FTQ42TAVJUA**	**FTQ48TAVJUD, FTQ48TAVJUA**
Casing color			Daikin Slate Gray	Daikin Slate Gray
Dimensions: (H×W×D)		in (mm)	53.43 × 21 × 21 (1,357 × 533 × 533)	53.43 × 21 × 21 (1,357 × 533 × 533)
Coil	Type		Cross fin coil	Cross fin coil
	Face area	ft² (m²)	5.15 (48)	5.15 (48)
Fan	Type		Sirocco FC Centrifugal	Sirocco FC Centrifugal
	Motor output	HP	3/4	3/4
	Airflow rate (H/M/L)	cfm (m³/min)	1,400/1,190/980 (39.7/33.7/27.8)	1,520/1,290/1,060 (43.1/36.5/30.0)
	External static pressure	in. w.g.	0.1” - 0.9”	0.1” - 0.9”
Sound pressure level (H/M/L)		dB(A)	53.8/50.0/45.6	53.8/50.0/45.6
Air filter			—★5	—★5
Weight		lbs (kg)	150 (68)	150 (68)
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Brazing connection)	ϕ3/8 (ϕ9.5) (Brazing connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Brazing connection)	ϕ5/8 (ϕ15.9) (Brazing connection)
	Drain Pipe	in (mm)	3/4” (19.1)	3/4” (19.1)
Remote controller (option)	Wired		BRC1E73, BRC2A71	BRC1E73, BRC2A71
	Wireless		BRC4C82	BRC4C82
Outdoor unit			**RZQ42TAVJU**	**RZQ48TAVJU**
Casing color			Ivory white	Ivory white
Dimensions: (H×W×D)		in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)	52–15/16 × 35–7/16 × 12–5/8 (1,345 × 900 × 320)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 19	2 × 60 × 19
	Face area	ft² (m²)	12.2 (1.134)	12.2 (1.134)
Compressor	Model		2YC90GXD#D	2YC90GXD#D
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	3.5	3.5
Fan	Model		P47N	P47N
	Type		Propeller fan	Propeller fan
	Motor output	W	70 × 2	70 × 2
	Airflow rate	cfm (m³/min)	3,741 (106)	3,741 (106)
Weight		lbs (kg)	225 (102)	225 (102)
Sound pressure level		dB(A)	57	57
Connecting Pipes	Liquid Pipe	in (mm)	ϕ3/8 (ϕ9.5) (Flare connection)	ϕ3/8 (ϕ9.5) (Flare connection)
	Gas Pipe	in (mm)	ϕ5/8 (ϕ15.9) (Flare connection)	ϕ5/8 (ϕ15.9) (Flare connection)
	Drain Pipe	in (mm)	ϕ1 (ϕ26) (Hole)	ϕ1 (ϕ26) (Hole)
Safety devices			High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse	High pressure switch, Outdoor fan driver overload protector, Inverter overload protector, Fusible plugs, Fuse
Capacity Control		%	14-100	14-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.6)	25 (7.6)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge	lbs (kg)	7.9 (3.6)	7.9 (3.6)
Ref. oil	Model		DAPHNE FVC50K	DAPHNE FVC50K
	Charge	L	1.52	1.52
Drawing No	Sound (outdoor)		C: 4D101949D	C: 4D101949D

Notes:
★1 Indoor temp. : 80°FDB (26.7°CDB), 67°FWB (19.4°CWB) / Outdoor temp. : 95°FDB (35.0°CDB) / Equivalent piping length : 25 ft (7.6 m), level difference : 0 ft (0 m).
★2 Indoor temp. : 70°FDB (21.1°CDB) / Outdoor temp. : 47°FDB (8.3°CDB), 43°FWB (6.1°CWB) / Equivalent piping length : 25 ft (7.6 m), level difference : 0 ft (0 m).
★3 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 17°FDB (−8.3°CDB), 15°FWB (−9.4°CWB) / Equivalent piping length: 25 ft (7.6 m), level difference: 0 ft (0 m).
★4 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
★5 Air filter is not standard accessory (field supply parts), but please mount it in the duct system of the suction side.

Part 2
Refrigerant Circuit

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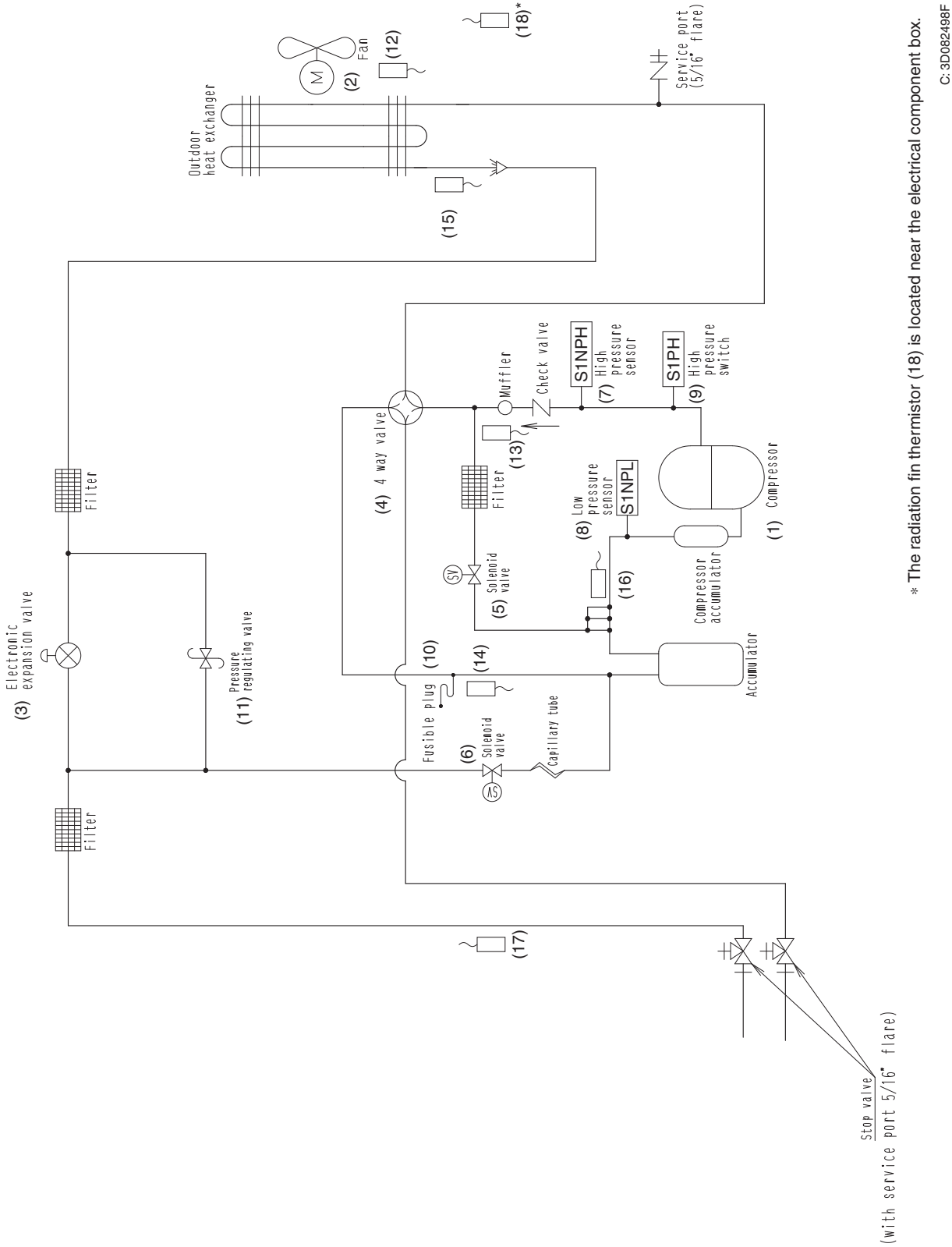
1. Refrigerant Circuit (Piping Diagrams)

1.1 RZR18/24TAVJU, RZQ18/24TAVJU

No. in piping diagram	Electric symbol	Name	Function
(1)	M1C	Inverter compressor	Compressor is operated in multi-steps according to Te and Tc.
(2)	M1F	Inverter fan	The fan rotation speed is varied by using inverter.
(3)	Y1E	Electronic expansion valve (Main)	While in heating operation, PI control is applied to keep the outlet superheated degree of air heat exchanger constant.
(4)	Y1S	Four way valve	Used to switch the operation mode between cooling and heating.
(5)	Y2S	Solenoid valve (Hot gas)	Used to prevent the low pressure from transient falling.
(6)	Y3S	Solenoid valve (Unload circuit)	Used for unloading operation of compressor.
(7)	S1NPH	High pressure sensor	Used to detect high pressure.
(8)	S1NPL	Low pressure sensor	Used to detect low pressure.
(9)	S1PH	High pressure switch (For compressor)	In order to prevent the increase of high pressure when an error occurs, this switch is activated at high pressure of 4.0 MPa (580 psi) or more to stop the compressor operation.
(10)	—	Fusible plug	In order to prevent the increase of pressure when abnormal heating is caused by fire or others, the fusible part of the plug is molten at a temperature of 70 to 75°C (158 to 167°F) to release the pressure into the atmosphere.
(11)	—	Pressure regulating valve (Receiver to discharge pipe)	This valve opens at a pressure of 4.0 MPa (580 psi) for prevention of pressure increase, thus resulting in no damage of functional parts due to the increase of pressure in transportation or storage.
(12)	R1T	Thermistor (Outdoor air: Ta)	Used to detect outdoor air temperature, correct discharge pipe temperature, and for other purposes.
(13)	R2T	Thermistor (Discharge pipe: Tdi)	Used to detect discharge pipe temperature, make the temperature protection control of compressor, and for other purposes.
(14)	R3T	Thermistor (Suction pipe 1: Ts1)	Used to detect suction pipe temperature, keep the suction superheated degree constant in heating operation, and for other purposes.
(15)	R4T	Thermistor (Heat exchanger deicer: Tb)	Used to detect liquid pipe temperature of air heat exchanger, determine defrosting operation, and for other purposes.
(16)	R5T	Thermistor (Suction pipe 2: Ts2)	Used to the calculation of an internal temperature of compressor etc.
(17)	R7T	Thermistor (Liquid pipe: Tl)	Used to detect refrigerant overcharge in check operation, and for other purposes.
(18)	R10T	Thermistor (Radiation fin)	Used for outdoor fan speed control, inverter radiation fin temperature control, pressure difference control.

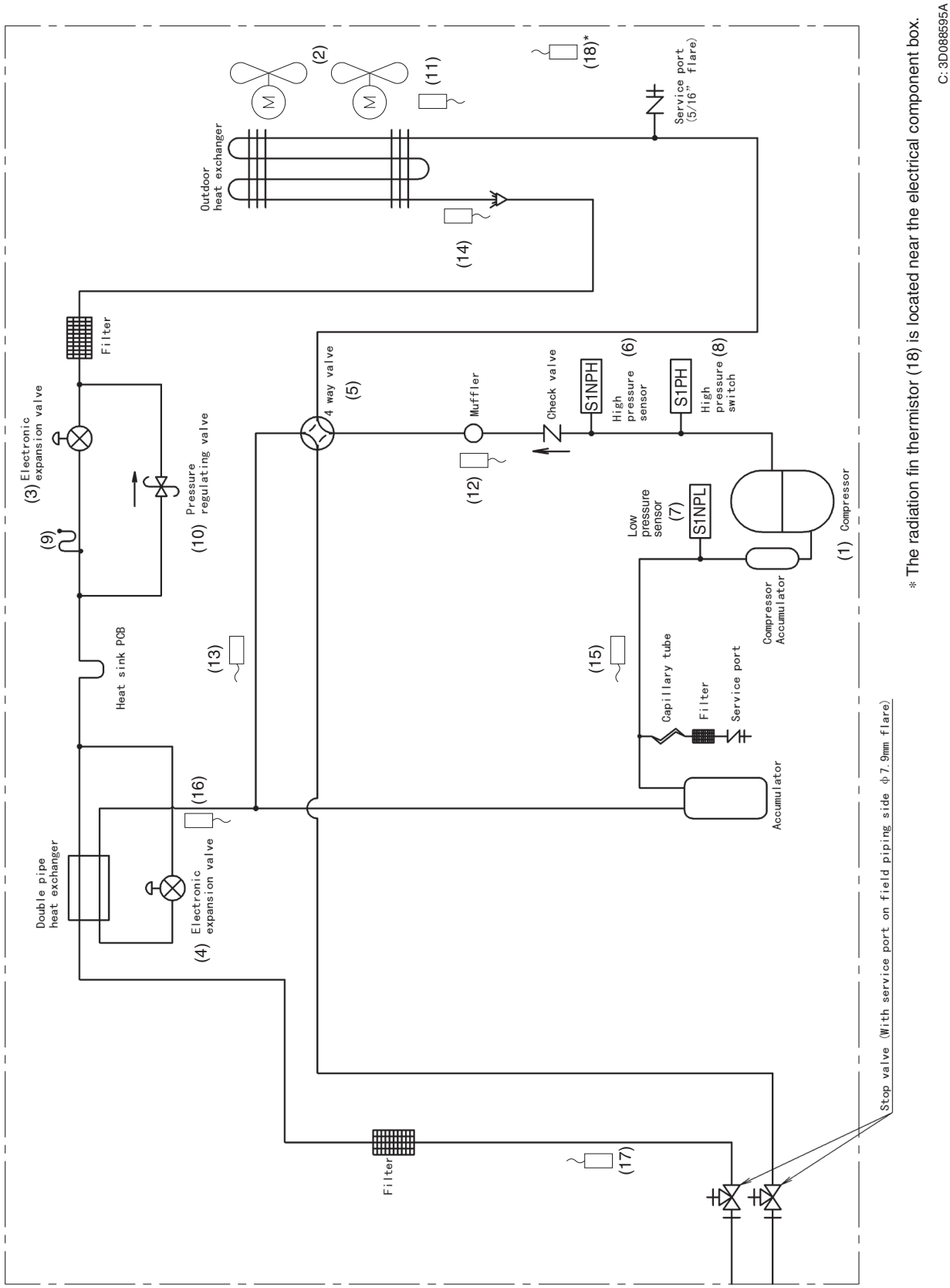


* The radiation fin thermistor (18) is located near the electrical component box.

C: 3D082498F

1.2 RZR30/36/42/48TAVJU, RZQ30/36/42/48TAVJU

No. in piping diagram	Electric symbol	Name	Function
(1)	M1C	Inverter compressor	Compressor is operated in multi-steps according to Te and Tc.
(2)	M1F M2F	Inverter fan	The fan rotation speed is varied by using inverter.
(3)	Y1E	Electronic expansion valve (Main)	While in heating operation, PI control is applied to keep the outlet superheated degree of air heat exchanger constant.
(4)	Y3E	Electronic expansion valve (Subcooling)	PI control is applied to keep the outlet superheated degree of subcooling heat exchanger constant.
(5)	Y1S	Four way valve	Used to switch the operation mode between cooling and heating.
(6)	S1NPH	High pressure sensor	Used to detect high pressure.
(7)	S1NPL	Low pressure sensor	Used to detect low pressure.
(8)	S1PH	High pressure switch (For compressor)	In order to prevent the increase of high pressure when an error occurs, this switch is activated at high pressure of 4.0 MPa (580 psi) or more to stop the compressor operation.
(9)	—	Fusible plug	In order to prevent the increase of pressure when abnormal heating is caused by fire or others, the fusible part of the plug is molten at a temperature of 70 to 75°C (158 to 167°F) to release the pressure into the atmosphere.
(10)	—	Pressure regulating valve (Receiver to discharge pipe)	This valve opens at a pressure of 4.0 MPa (580 psi) for prevention of pressure increase, thus resulting in no damage of functional parts due to the increase of pressure in transportation or storage.
(11)	R1T	Thermistor (Outdoor air: Ta)	Used to detect outdoor air temperature, correct discharge pipe temperature, and for other purposes.
(12)	R2T	Thermistor (Discharge pipe: Tdi)	Used to detect discharge pipe temperature, make the temperature protection control of compressor, and for other purposes.
(13)	R3T	Thermistor (Suction pipe1: Ts1)	Used to detect suction pipe temperature, keep the suction superheated degree constant in heating operation, and for other purposes.
(14)	R4T	Thermistor (Heat exchanger deicer: Tb)	Used to detect liquid pipe temperature of air heat exchanger, determine defrosting operation, and for other purposes.
(15)	R5T	Thermistor (Suction pipe2: Ts2)	Used to the calculation of an internal temperature of compressor etc.
(16)	R6T	Thermistor (Subcooling heat exchanger gas pipe: Tsh)	Used to control subcooling electronic expansion valve.
(17)	R7T	Thermistor (Liquid pipe: Tl)	Used to detect refrigerant overcharge in check operation, and for other purposes.
(18)	FINTH	Thermistor (Radiation fin)	Used for outdoor fan speed control, inverter radiation fin temperature control, pressure difference control.



* The radiation fin thermistor (18) is located near the electrical component box.

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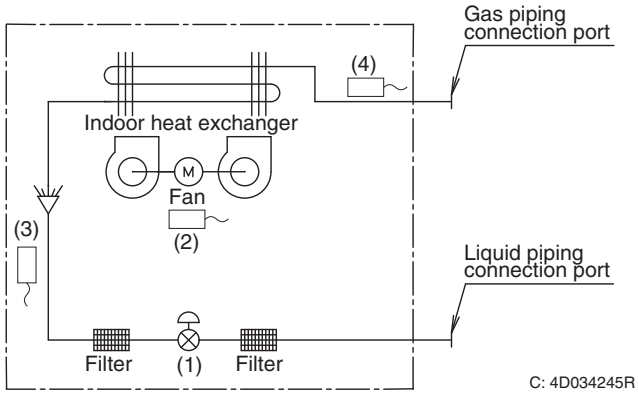
1.3 Indoor Unit

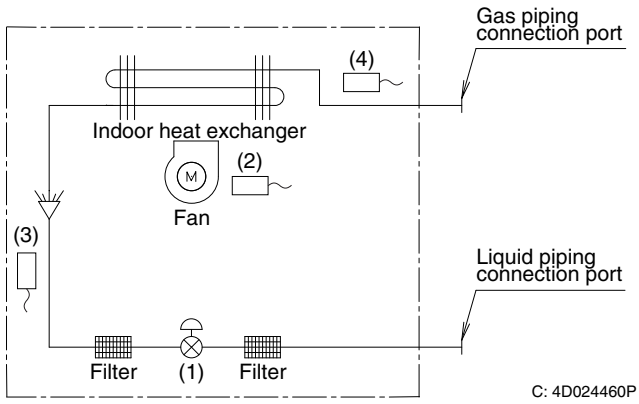
No. in piping diagram	Name	Symbol			Function
		FCQ-TA FHQ-P FHQ-M FAQ-TA	FBQ-P	FTQ-TA	
(1)	Electronic expansion valve	Y1E	Y1E	Y1E	Used for gas superheated degree control while in cooling or subcooled degree control while in heating.
(2)	Suction air thermistor	R1T	R1T	R1T(∗1)	Used for thermostat control.
(3)	Liquid pipe thermistor	R2T	R2T	R2T	Used for gas superheated degree control while in cooling or subcooled degree control while in heating.
(4)	Gas pipe thermistor	R3T	R3T	R3T	Used for gas superheated degree control while in cooling.
(5)	Discharge air thermistor	—	R4T	—	Used for discharge air temperature control.

∗1. R1T is for remote controller thermistor or optional remote sensor.

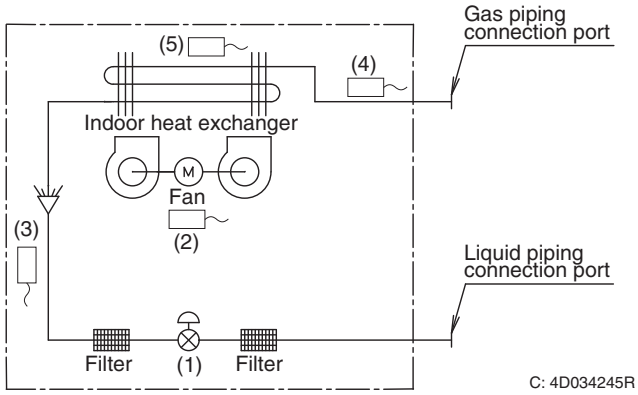
■ **FCQ-TA, FAQ-TA**



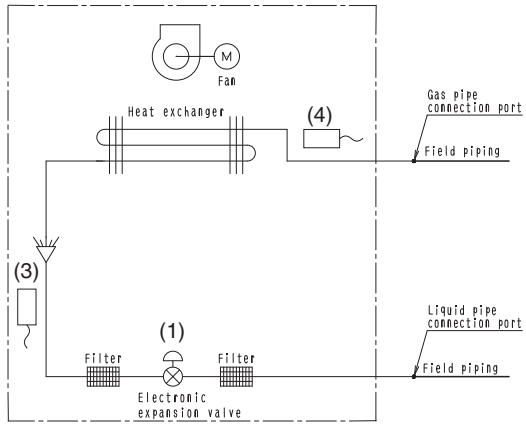
■ **FHQ-P, FHQ-M**



■ **FBQ-P**



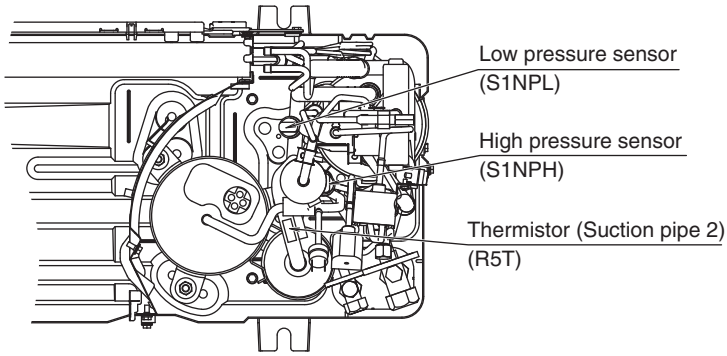
■ **FTQ-TA**



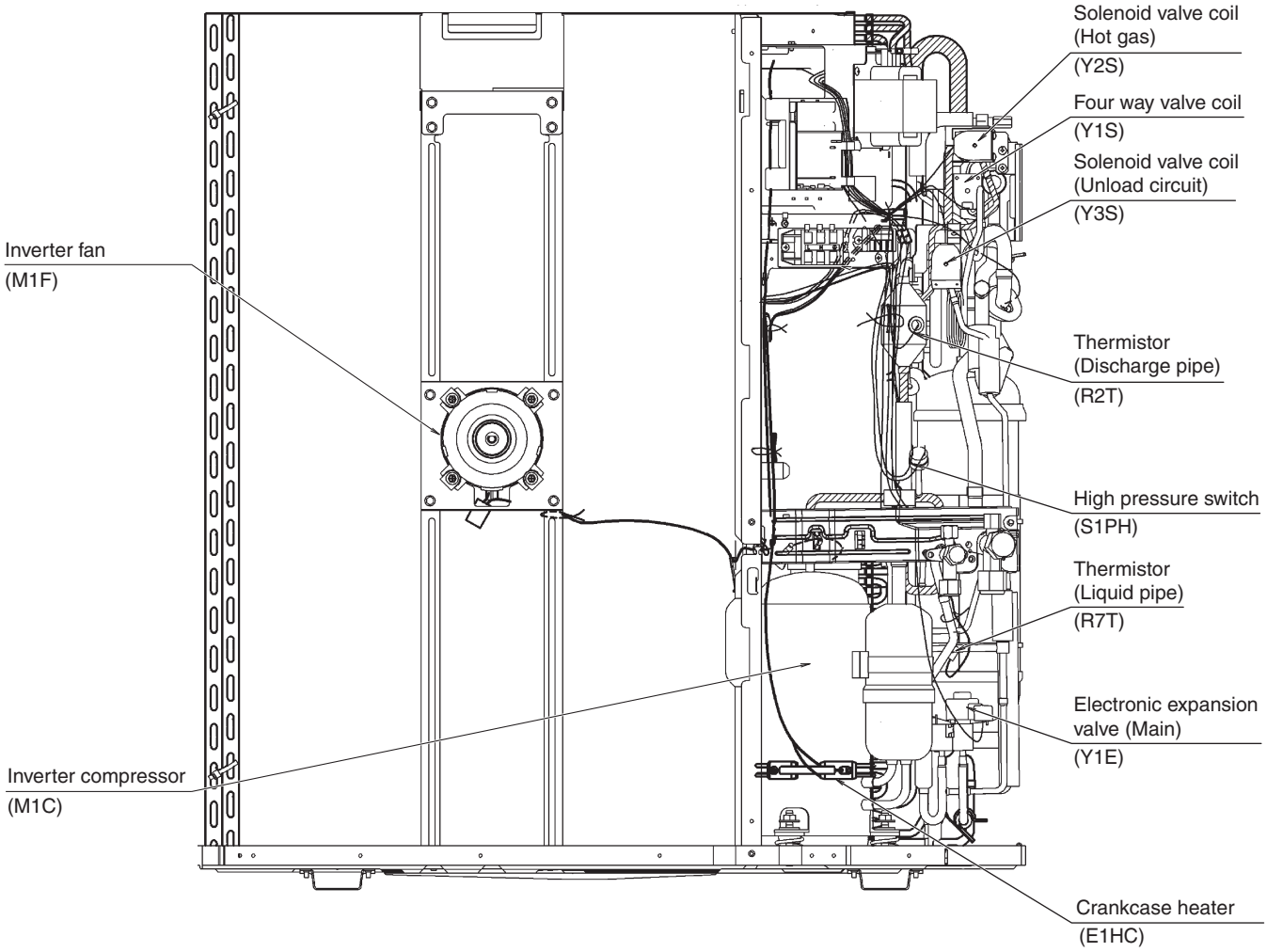
2. Functional Parts Layout

2.1 RZR18/24TAVJU, RZQ18/24TAVJU

Top view

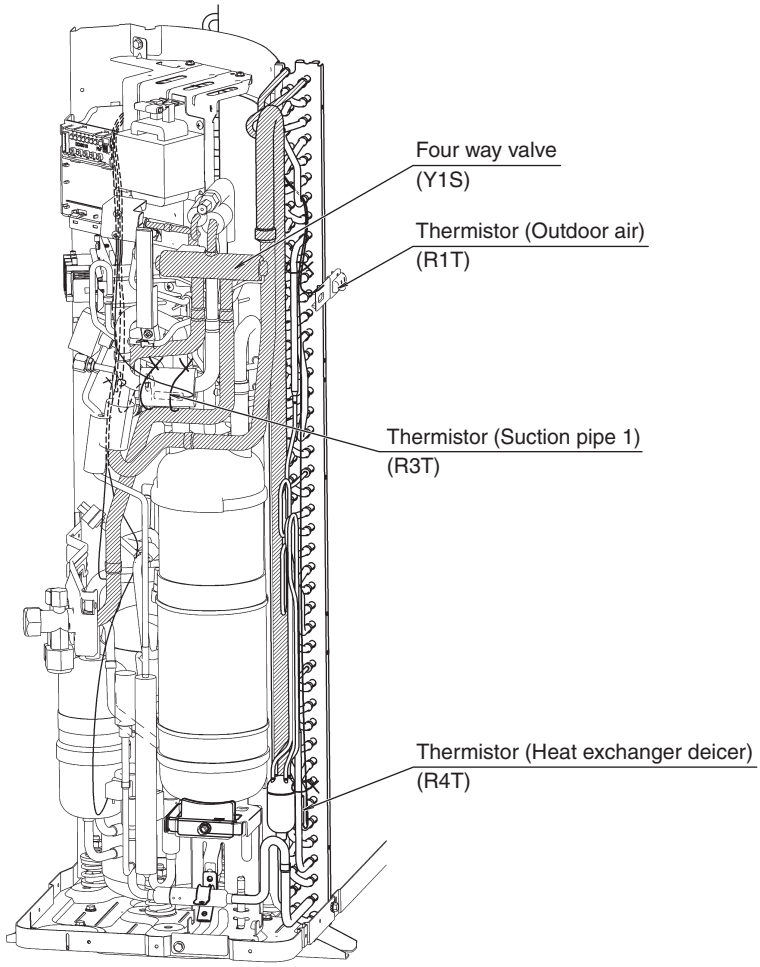


Front view



C: 1P342997N

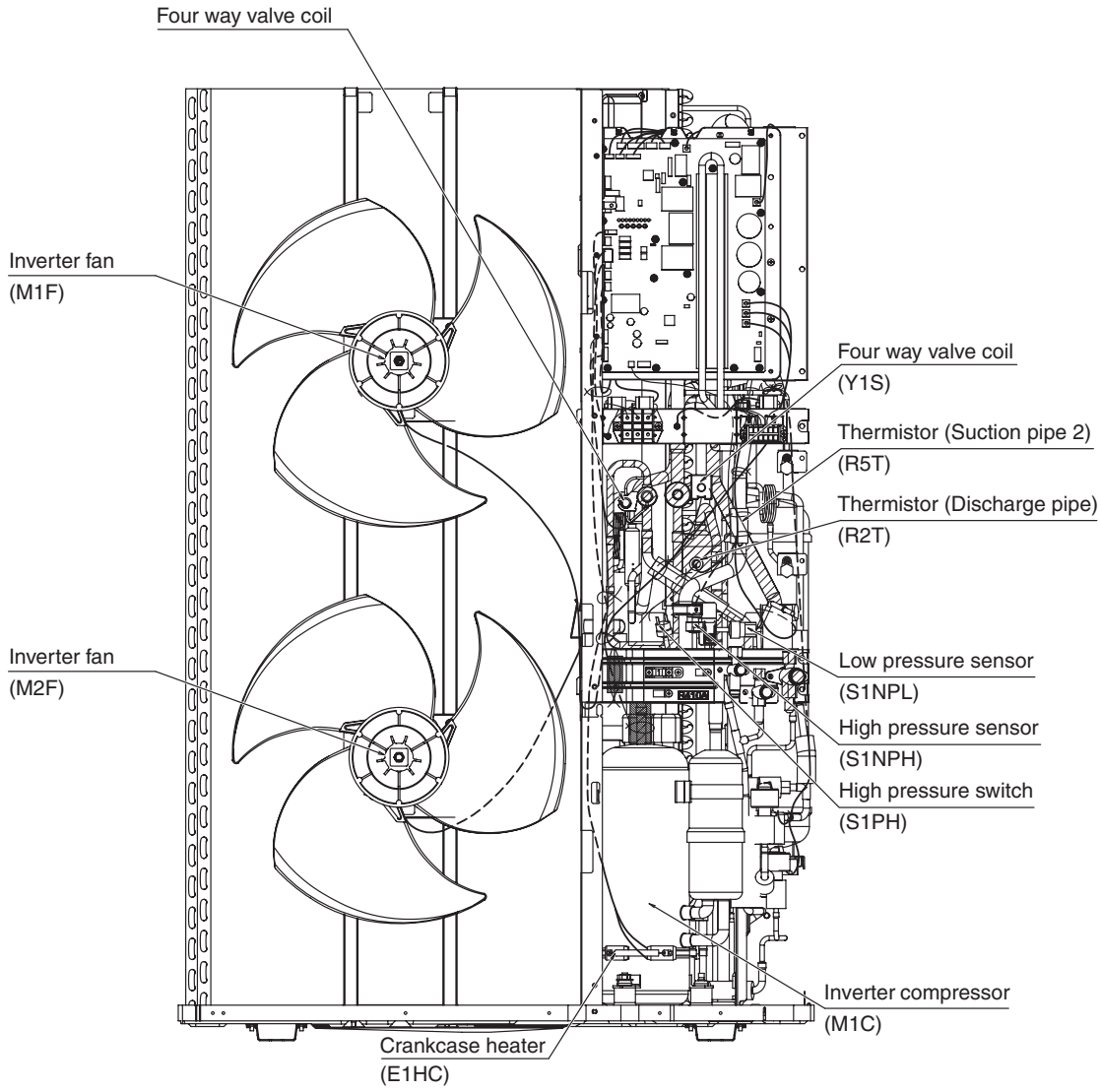
Side view



C: 1P342997N

2.2 RZR30/36/42/48TAVJU, RZQ30/36/42/48TAVJU

Front view



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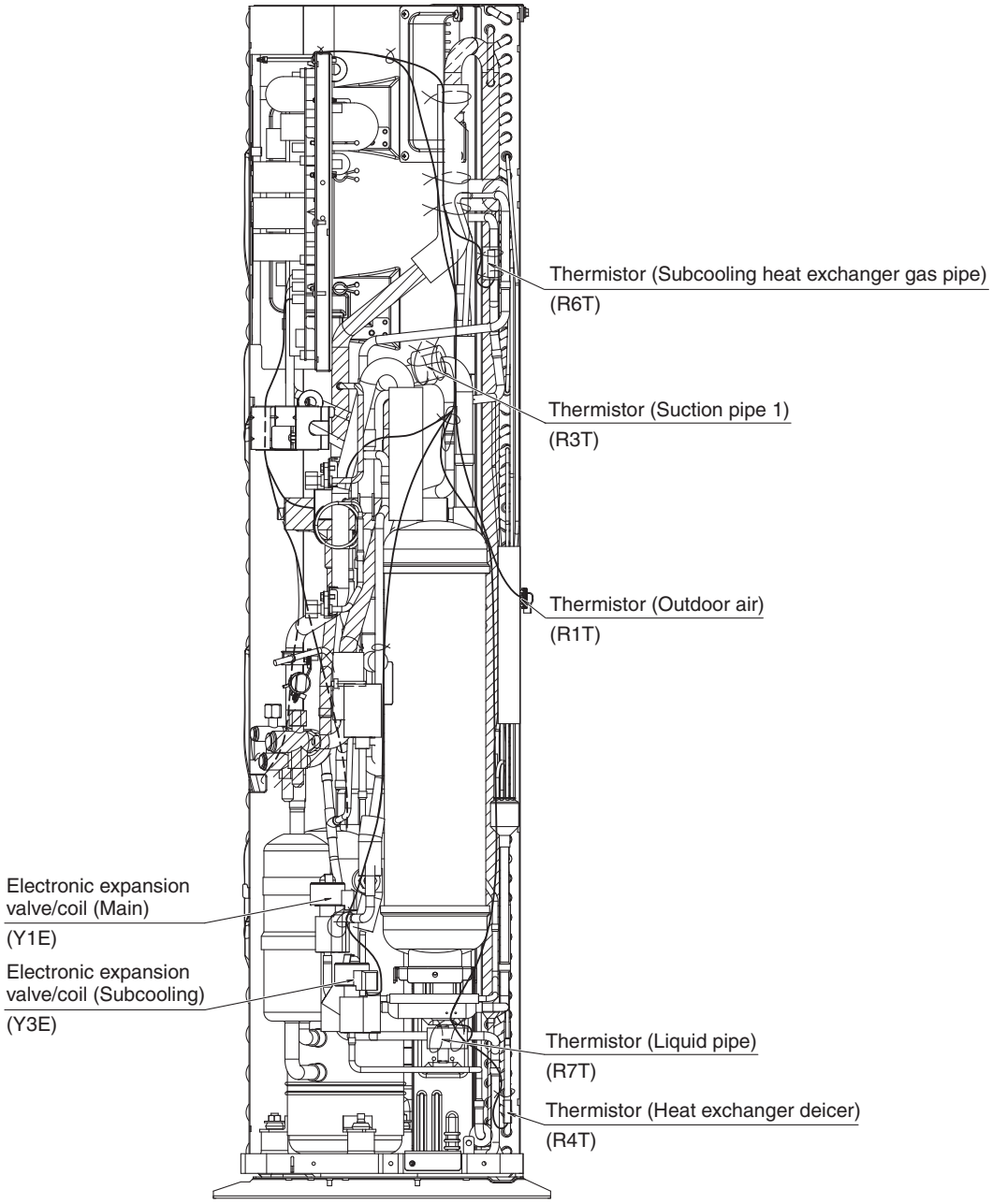
Side view



C: 1P441643J

Part 3
Remote Controller

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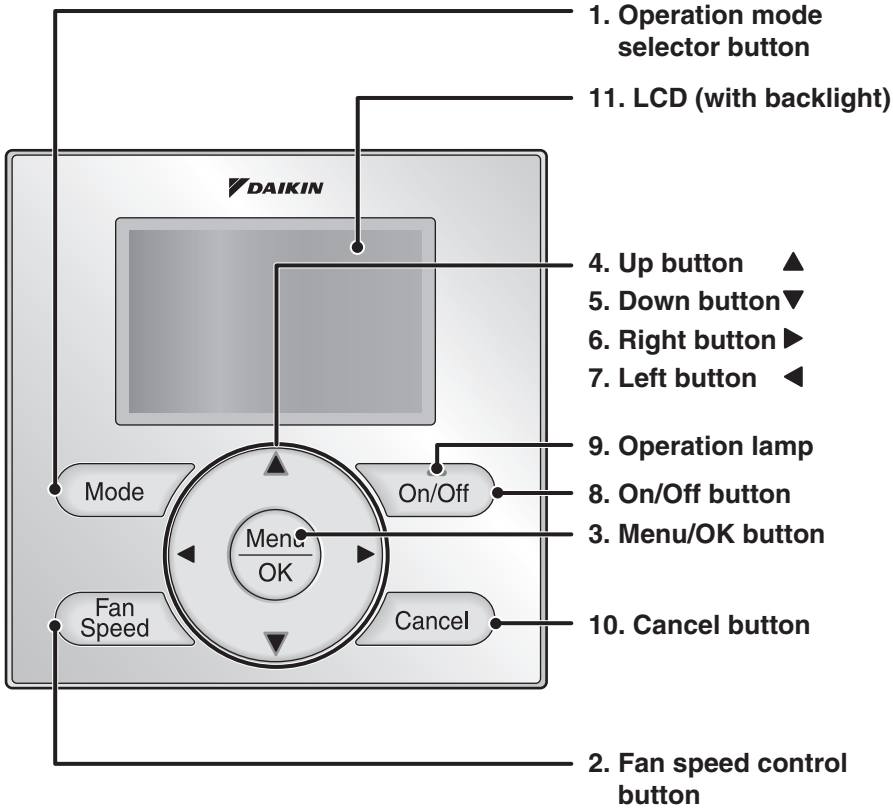
1. Applicable Models

Indoor unit		Wired remote controller	Simplified remote controller	Wireless remote controller
Ceiling mounted cassette type (round flow with sensing)	FCQ-TA	BRC1E73	BRC2A71	—
Ceiling suspended type	FHQ-P FHQ-M			BRC7E83
Wall mounted type	FAQ-TA			BRC7E818
Ceiling mounted duct type (high static pressure)	FBQ-P			BRC4C82 (Fan: 2 steps) BRC082A43 (Fan: 3 steps)
Multi position air handling unit	FTQ-TA			BRC4C82

2. Names and Functions

2.1 Wired Remote Controller



Functions other than basic operation items (i.e., On/Off, Operation Mode, Fan Speed, and Setpoint) are set from the menu screen.

Note:

- Do not install the remote controller in places exposed to direct sunlight, the LCD will be damaged.
- Do not pull or twist the remote controller cord, the remote controller may be damaged.
- Do not use objects with sharp ends to press the buttons on the remote controller damage may result.

1. Operation mode selector button

- Press this button to select the operation mode of your preference.
  ∗ Available modes vary with the indoor unit model.

2. Fan speed control button

- Press this button to select the fan speed of your preference.
  ∗ Available fan speeds vary with the indoor unit model.

3. Menu/OK button

- Used to enter the main menu.
- Used to enter the selected item.

4. Up button ▲

- Used to raise the setpoint.
- The item above the current selection will be highlighted.
  (The highlighted items will be scrolled continuously when the button is continuously pressed.)
- Used to change the selected item.

5. Down button ▼

- Used to lower the setpoint.
- The item below the current selection will be highlighted.
  (The highlighted items will be scrolled continuously when the button is continuously pressed.)
- Used to change the selected item.

6. Right button ▶

- Used to highlight the next items on the right-hand side.
- Each screen is scrolled in the right-hand direction.

7. Left button ◀

- Used to highlight the next items on the left-hand side.
- Each screen is scrolled in the left-hand direction.

8. On/Off button

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

9. Operation lamp

- This lamp illuminates solid green during normal operation.
- This lamp blinks if an error occurs.

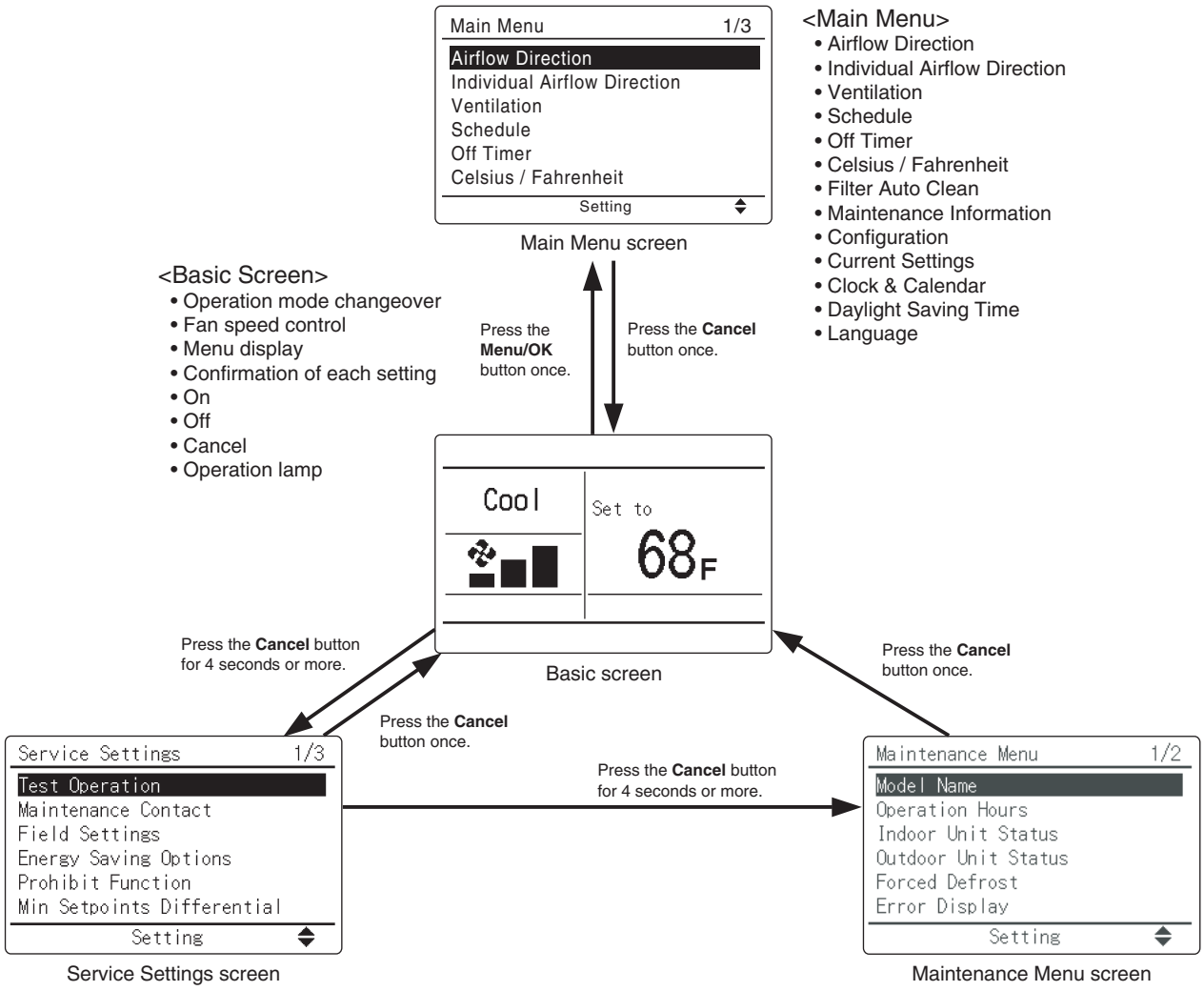
10. Cancel button

- Used to return to the previous screen.

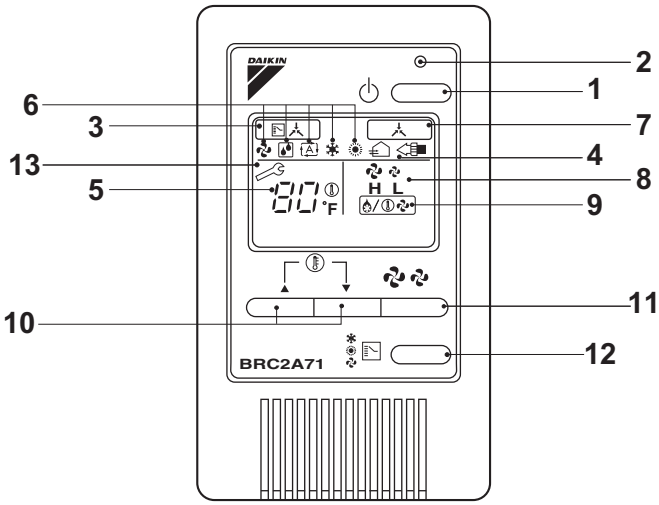
11. LCD (with backlight)

- The backlight will be illuminated for approximately 30 seconds by pressing any button.
- If two remote controllers are used to control a single indoor unit, only the controller accessed first will have backlight functionality.

Service Check Function



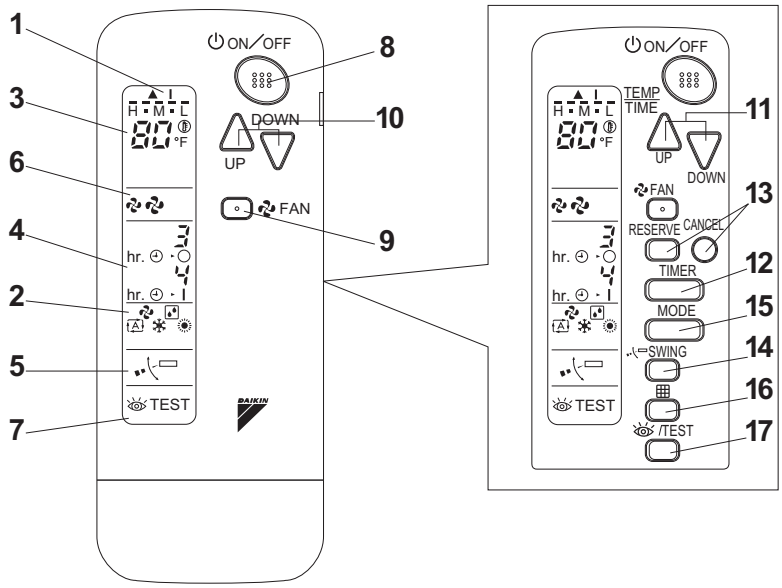
2.2 Simplified Remote Controller



1	**ON/OFF BUTTON**
	Press the button and the system will start. Press the button again and the system will stop.
2	**OPERATION LAMP (RED)**
	The lamp lights up during operation. Blinks in case of stop due to malfunction.
3	**DISPLAY " " (CHANGEOVER UNDER CONTROL)**
	It is impossible to changeover heating/cooling with the remote controller when it shows this display. (As for details, see "SETTING OF MASTER REMOTE CONTROLLER" in the installation manual attached to the indoor unit.)
4	**DISPLAY " " (VENTILATION/AIR CLEANING)**
	This display shows that the total heat exchanger and the air cleaning unit are in operation. (These are optional accessories).
5	**DISPLAY " " (SET TEMPERATURE)**
	This display shows the set temperature. Only given during a cooling or heating operation.
6	**DISPLAY " " " " " " " " " " (OPERATION MODE)**
	This display shows current OPERATION MODE. " " is not available with outdoor units specially designed for cooling only. " " is reserved only for outdoor units capable of heat recovery.

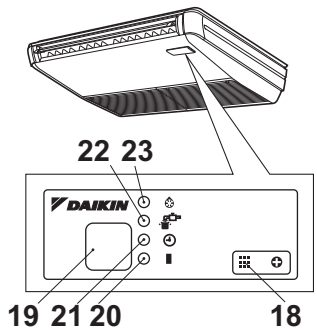
7	**DISPLAY " " (UNDER CENTRALIZED CONTROL)**
	When this display shows, the system is UNDER CENTRALIZED CONTROL. (This is not a standard specification)
8	**DISPLAY " " (FAN SPEED)**
	This display shows the fan speed: HIGH or LOW.
9	**DISPLAY " " (DEFROST / HOT START)**
	Indicates that defrost or hot start (during which the fan is stopped until the temperature of air supply rises enough at the start of a heating operation) is in progress.
10	**TEMPERATURE SETTING BUTTON**
	Use this button for SETTING TEMPERATURE of the thermostat. ▲ ; Each press raises the set temperature by 1°F. ▼ ; Each press lowers the set temperature by 1°F. The variable temperature range is between 60°F and 90°F.
11	**FAN SPEED CONTROL BUTTON**
	Press this button to select the fan speed, HIGH or LOW, of your choice.
12	**OPERATION MODE SELECTOR BUTTON**
	Press this button to select OPERATION MODE.
13	**DISPLAY " " (MALFUNCTION)**
	Indicates malfunction and blinks if the unit stops operating due to malfunction. (As for details, see "TROUBLE SHOOTING" in the operation manual attached to the outdoor unit.)

2.3 Wireless Remote Controller

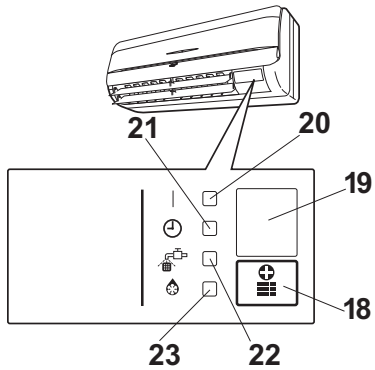


Receiver

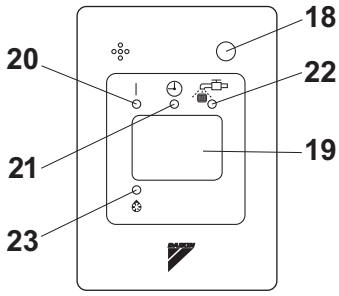
FHQ



FAQ



FBQ (separate type)



1	**DISPLAY “ ▲ ” “ I ” (SIGNAL TRANSMISSION)**
	This lights up when a signal is being transmitted.
2	**DISPLAY “ ” “ ” “ ” “ ” “ ” (OPERATION MODE)**
	This display shows the current OPERATION MODE.
3	**DISPLAY “ ” (SET TEMPERATURE)**
	This display shows the set temperature.
4	**DISPLAY “ hr. hr. ” (PROGRAMMED TIME)**
	This display shows PROGRAMMED TIME of the system start or stop.
5	**DISPLAY “ ” (AIR FLOW FLAP)**
6	**DISPLAY “ ” “ ” (FAN SPEED)**
	This display shows the set fan speed.
7	**DISPLAY “ TEST ” (INSPECTION/ TEST OPERATION)**
	When the INSPECTION/TEST OPERATION BUTTON is pressed, the display shows the system mode is in.
8	**ON/OFF BUTTON**
	Press the button and the system will start. Press the button again and the system will stop.
9	**FAN SPEED CONTROL BUTTON**
	Press this button to select the fan speed, HIGH or LOW, of your choice.
10	**TEMPERATURE SETTING BUTTON**
	Use this button for SETTING TEMPERATURE. (Operates with the front cover of the remote controller closed.)

11	**PROGRAMMING TIMER BUTTON**
	Use this button for programming “START and/or STOP” time. (Operates with the front cover of the remote controller opened.)
12	**TIMER MODE START/STOP BUTTON**
13	**TIMER RESERVE/CANCEL BUTTON**
14	**AIR FLOW DIRECTION ADJUST BUTTON**
15	**OPERATION MODE SELECTOR BUTTON**
	Press this button to select OPERATION MODE.
16	**FILTER SIGN RESET BUTTON**
	Refer to the section of MAINTENANCE in the operation manual attached to the indoor unit.
17	**INSPECTION/TEST OPERATION BUTTON**
	This button is pressed for inspection or test operation. Do not use for normal operation.
18	**EMERGENCY OPERATION SWITCH**
	This switch is readily used if the remote controller does not work.
19	**RECEIVER**
	This receives the signals from the remote controller.
20	**OPERATING INDICATOR LAMP (Red)**
	This lamp stays lit while the air conditioner runs. It flashes when the unit is in trouble.
21	**TIMER INDICATOR LAMP (Green)**
	This lamp stays lit while the timer is set.
22	**AIR FILTER CLEANING TIME INDICATOR LAMP (Red)**
	Lights up when it is time to clean the air filter.
23	**DEFROST LAMP (Orange)**
	Lights up when the defrosting operation has started. (For cooling only type this lamp does not turn on.)

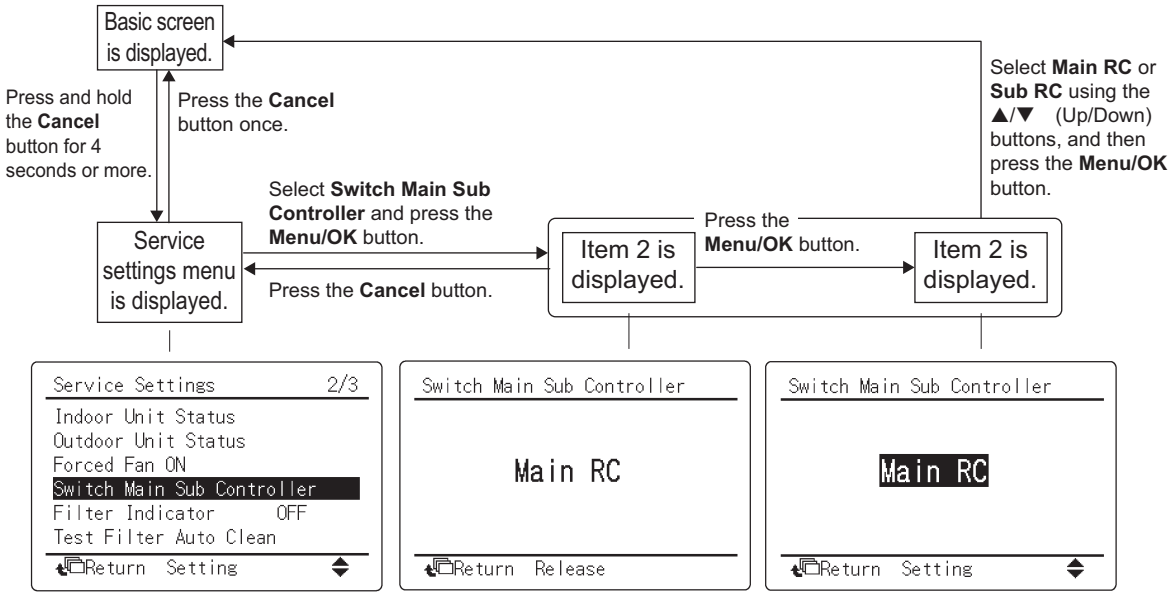
3. Main/Sub Setting

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

3.1 Wired Remote Controller (BRC1E73)

3.1.1 Field Settings

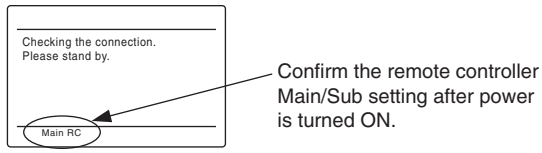
The designation of the main and sub remote controllers can be swapped. Note that this change requires turning the power OFF and then ON again.



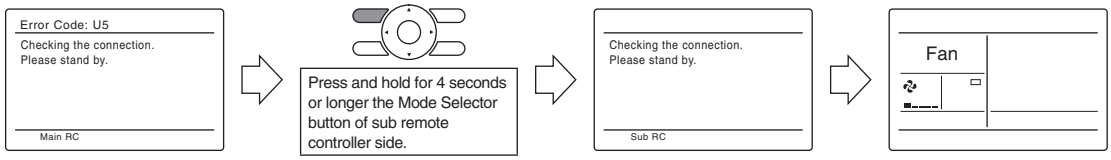
3.1.2 When an error occurred

U5: there are 2 main remote controllers when power is turned ON
→Change the setting from Main to Sub on the remote controller you want to be Sub.
U8: there are 2 sub remote controller when power is turned ON
→Change the setting from Sub to Main on the remote controller you want to be Main.

How to confirm Main/Sub setting
The Main/Sub setting of the remote controller is displayed on the bottom of the screen while **Checking the connection. Please stand by.** is displayed.



How to change Main/Sub setting
You may change the Main/Sub setting of the remote controller while **Checking the connection. Please stand by.** is displayed by pressing and holding the **Mode Selector** button for 4 seconds or longer.



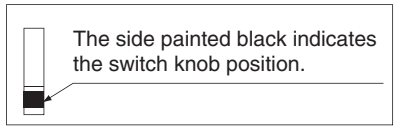
Note(s)

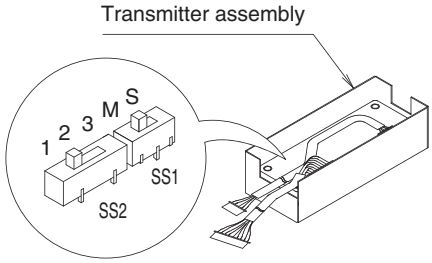
1. It is not possible to change the Main/Sub setting from Main to Sub when only one remote controller is connected.
2. When 2 remote controllers are being used, it is not possible to change the setting from Main to Sub if one of the remote controllers is already set as Main.

3.2 When Wireless Remote Controller is Used Together

When using both a wired and a wireless remote controller for 1 indoor unit, the wired controller should be set to Main. Therefore, the Main/Sub switch (SS1) of the signal receiver PCB must be set to Sub.

Main/Sub	Main	Sub
Main/Sub switch (SS1)	S M	S M





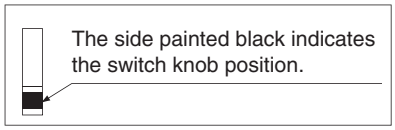
4. Address Setting for Wireless Remote Controller

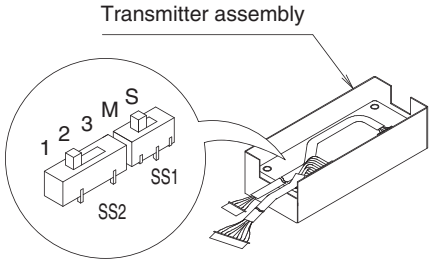
If setting multiple wireless remote controllers to operate in one room, perform address setting for the receiver and the wireless remote controller.
(This includes an individual remote controller control using the group operation.)
(For the wiring for the group operation, please refer to the installation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

Setting for Signal Receiver PCB

The address for the receiver is set to 1 at the factory. To change the setting, set the wireless address switch (SS2) on the signal receiver PCB according to the table below.

Unit No.	No. 1	No. 2	No. 3
Wireless address switch (SS2)			





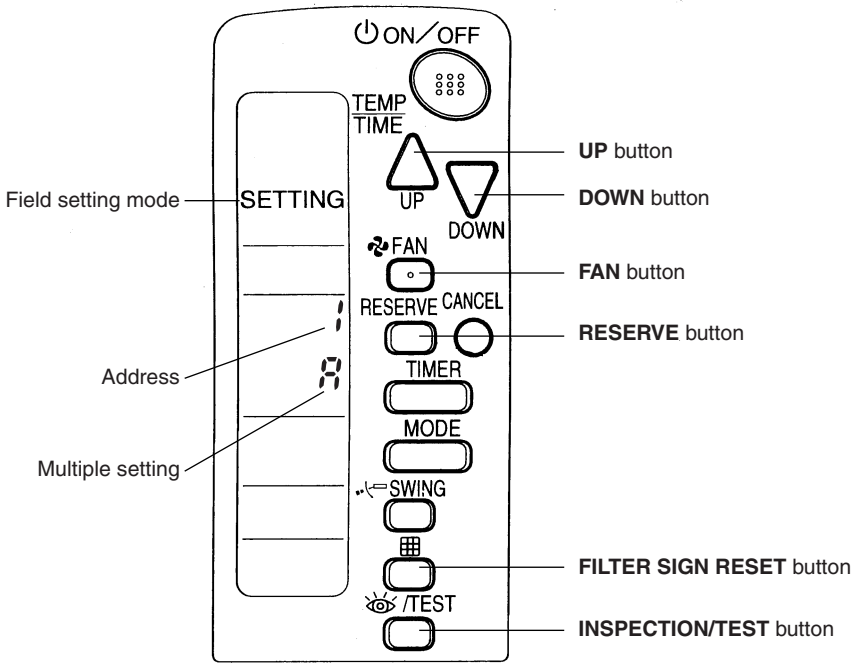
Setting for Wireless Remote Controller

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

1. Press **FILTER SIGN RESET** button and **INSPECTION/TEST** button at the same time for 4 seconds to enter field setting mode. (**SETTING** is indicated on the display.)
2. Press **FAN** button and select **A** or **b**. Each time the button is pressed, the display switches between **A** and **b**.
3. Press **UP** button or **DOWN** button to select an address from 1-3 as same as the receiver. Address can be set from 1-6, but the receiver does not work with addresses 4-6.

→1→2→3→4→5→6

4. Press **RESERVE** button to confirm the setting.
5. Press **INSPECTION/TEST** button for 1 second to return to normal mode.



Multiple Settings A/b

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

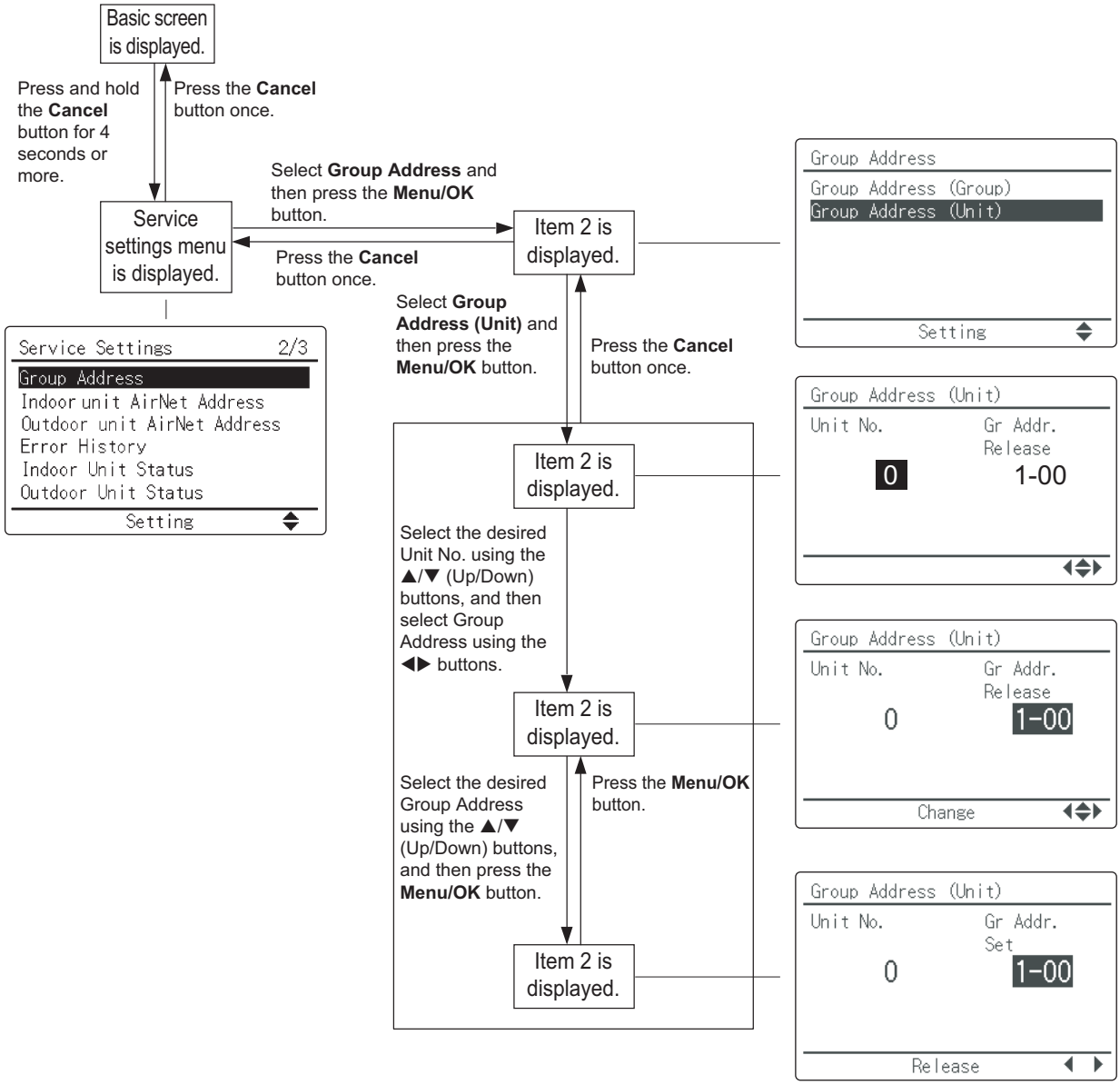
Remote Controller		Indoor Unit	
Multiple setting	Display on remote controller	Behavior to the remote controller operation when the functions are restricted as by an external control.	Other than the left
A: Standard (factory set)	All items displayed.	Accepts the functions except restricted. (Sounds one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

5. Centralized Control Group No. Setting

5.1 BRC1E73

In order to conduct the centralized remote control using the central remote controller and the unified ON/OFF controller, Group No. settings should be made by group using the operating remote controller.
Make Group No. settings for centralized remote control using the operating remote controller.

When initializing Group Address



Service settings menu	Item 2
Group Address	Group Address (Group)
	Group Address (Unit)

Description
This menu is used to make group address setting for centralized control.
It is also used to make group address setting by indoor unit.

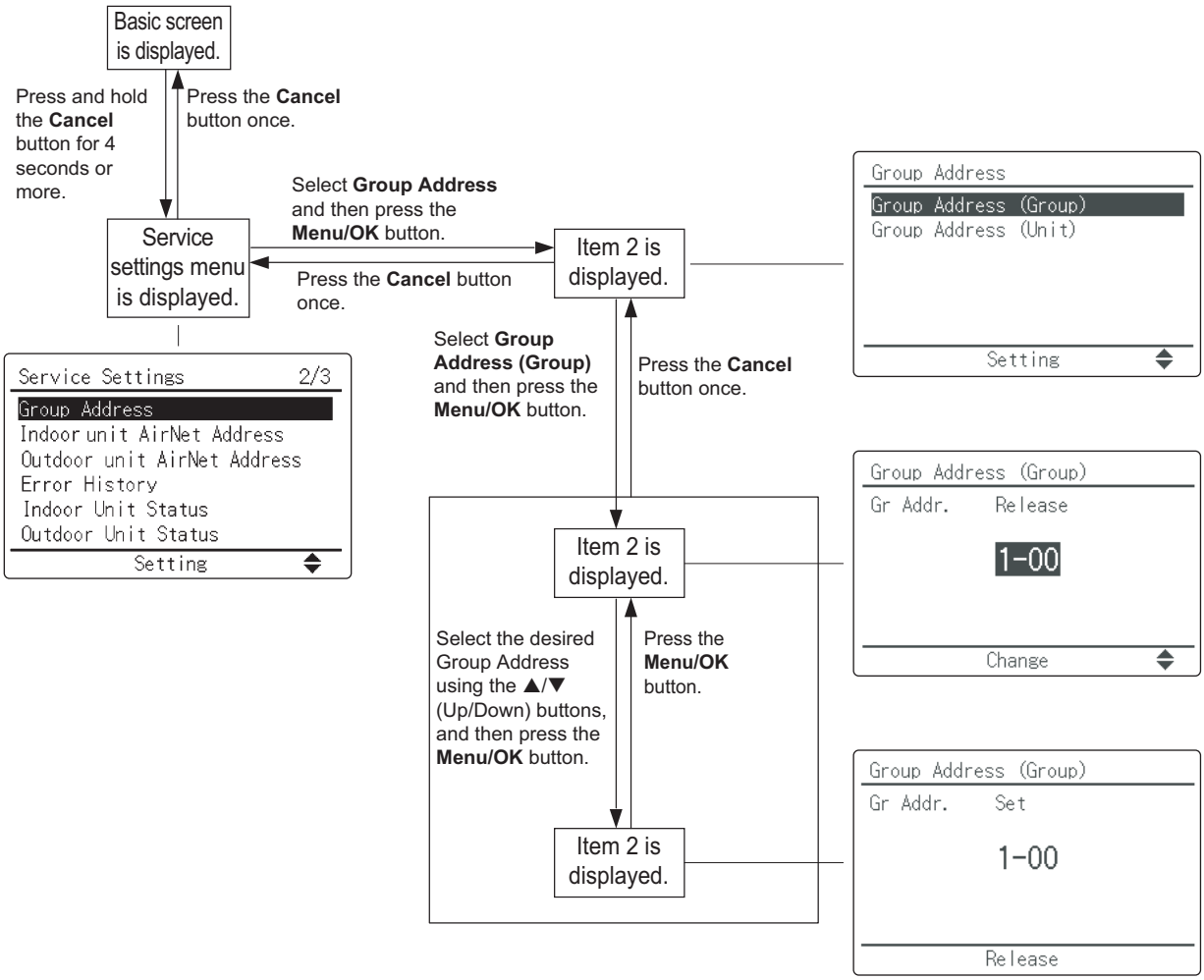
Note(s)

- For setting group No. of Energy recovery ventilator and wiring adaptor for other air conditioners, etc., refer to the instruction manual.

NOTICE

Enter the group No. and installation place of the indoor unit into the installation table. Be sure to keep the installation table with the operation manual for maintenance.

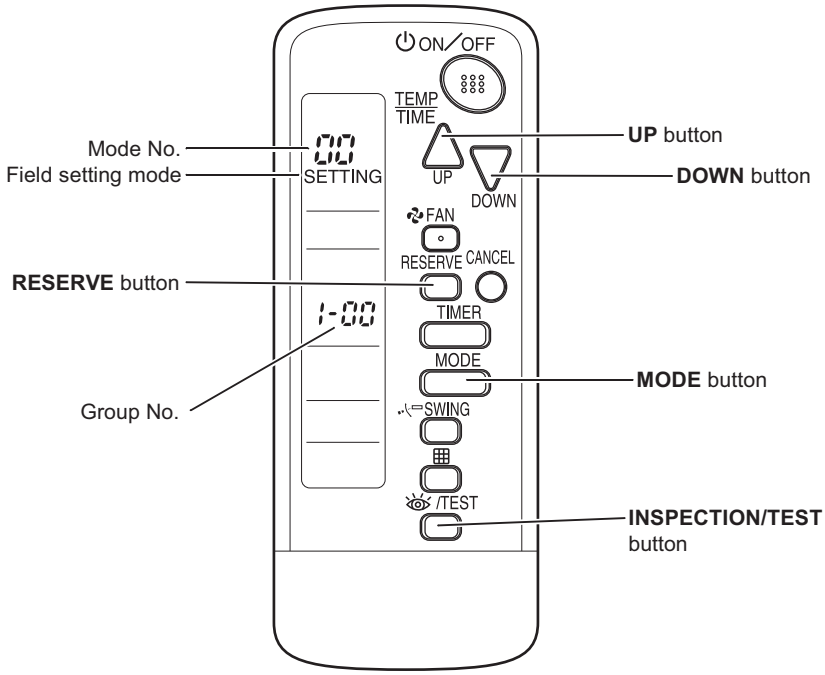
Group Address (Group)



5.2 Wireless Remote Controller

Group No. setting by wireless remote controller for centralized control

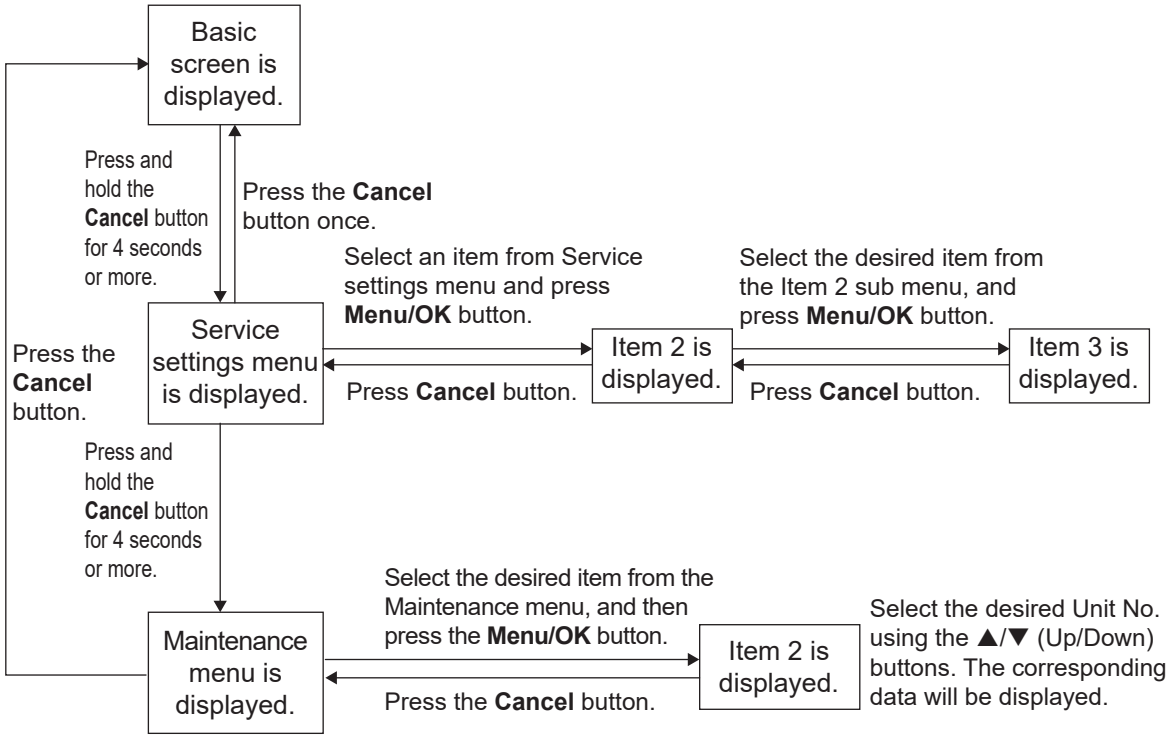
1. When in the normal mode, press **INSPECTION/TEST** button for 4 seconds or more to enter field setting mode.
2. Set mode No. 00 with **MODE** button.
3. Set the group No. for each group with **UP** button or **DOWN** button.
4. Enter the selected group numbers by pressing **RESERVE** button.
5. Press **INSPECTION/TEST** button and return to the normal mode



6. Service Settings Menu, Maintenance Menu

6.1 BRC1E73

Operating the remote controller allows service data to be acquired and various services to be set.



6.1.1 Service Settings Menu

Service settings menu	Item 2	Item 3
Test Operation	—	—
Maintenance Contact	None	—
	Maintenance Contact	—, 0 to 9 (in order)
Field Settings	Indoor Unit No.	—
	Mode No.	—
	First Code No.	—
	Second Code No.	—
Energy Saving Options	Setpoint Range Limitation	Temperature
	Setback Configuration	Recovery Differential
	Auto-setback by Sensor	Enable/Disable, Settings
	Auto-off by Sensor	Enable/Disable, Auto-off in (hours)
Prohibit Function	Prohibit Buttons	Up/Down, Left, Right, On/Off, Mode, Fan Speed
	Prohibit Mode	Fan, Cool, Heat, Auto, Dry, Vent Clean
Min Setpoints Differential	None, Single SP, 0 to 8°C	—
Group Address	Group Address (Group)	Gr Addr. Set
	Group Address (Unit)	Unit No., Gr Addr. Set
Indoor unit AirNet Address	Unit No., Address Set	—
Outdoor unit AirNet Address	Unit No., Address Set	—
Error History	RC Error History	Unit No., Error, Date, Time (Up to 10 errors received by the remote controller can be displayed.)
	Indoor unit Error History	Unit No., Error, Date, Time (Up to 5 errors from the indoor unit error record can be displayed.)
Indoor Unit Status	Unit No.	—
	Th1	Suction air thermistor
	Th2	Heat exchanger liquid pipe thermistor
	Th3	Heat exchanger gas pipe thermistor
	Th4	Discharge air thermistor
	Th5	Remote controller thermistor (FBQ, FTQ) Floor temperature thermistor (FCQ)
	Th6	Control temperature thermistor (FBQ, FCQ, FTQ)
Outdoor Unit Status	Unit No.	—
	Th1	—
	Th2	—
	Th3	—
	Th4	—
	Th5	—
	Th6	—
Forced Fan ON	Unit No.	—
Switch Main Sub Controller	—	—
Filter Indicator	—	—
Test Filter Auto Clean	—	—
Brush/Filter Ind.	—	—
Disable Filter Auto Clean	No, Yes	—

6.1.2 Maintenance Menu

Maintenance Menu	Item 2	Remarks
Model Name	Unit No.	Select the unit number you want to check.
	Indoor unit	The model names are displayed. (A model code may be displayed instead, depending on the particular model.)
	Outdoor unit	
Operation Hours	Unit No.	Select the unit number you want to check.
	Indoor unit operation hours	All of these are displayed in hours.
	Indoor fan operation hours	
	Indoor unit energized hours	
	Outdoor unit operation hours	
	Outdoor fan 1 operation hours	
	Outdoor fan 2 operation hours	
	Outdoor compressor 1 operation hours	
	Outdoor compressor 2 operation hours	
Indoor Unit Status	Unit No.	Select the unit number you want to check.
	FAN	Fan tap (∗1)
	Speed	Fan speed (rpm)
	FLAP	Swing, fixed
	EV	Degree that electronic expansion valve is open (pulse)
	MP	Drain pump ON/OFF
	EH	Electric heater ON/OFF
	Hu	Humidifier ON/OFF (∗2)
	TBF	Anti-freezing control ON/OFF
	FLOAT	Float switch OPEN/CLOSE
	T1/T2	T1/T2 external input OPEN/CLOSE
	Th1	Suction air thermistor
	Th2	Heat exchanger liquid pipe thermistor
	Th3	Heat exchanger gas pipe thermistor
	Th4	Discharge air thermistor
	Th5	Remote controller thermistor (FBQ, FTQ) Floor temperature thermistor (FCQ)
	Th6	Control temperature thermistor (FBQ, FCQ, FTQ)
Outdoor Unit Status	Unit No.	Select the Unit No. you want to check.
	FAN step	Fan tap
	COMP	Compressor power supply frequency (Hz)
	EV1	Degree that electronic expansion valve is open (pulse)
	SV1	Solenoid valve ON/OFF
	Th1	—
	Th2	—
	Th3	Te: Low pressure equivalent saturation temperature
	Th4	Tc: High pressure equivalent saturation temperature
	Th5	—
	Th6	—
Forced Defrost	Forced defrost ON	Enables the forced defrost operation.
	Forced defrost OFF	Disables the forced defrost operation.

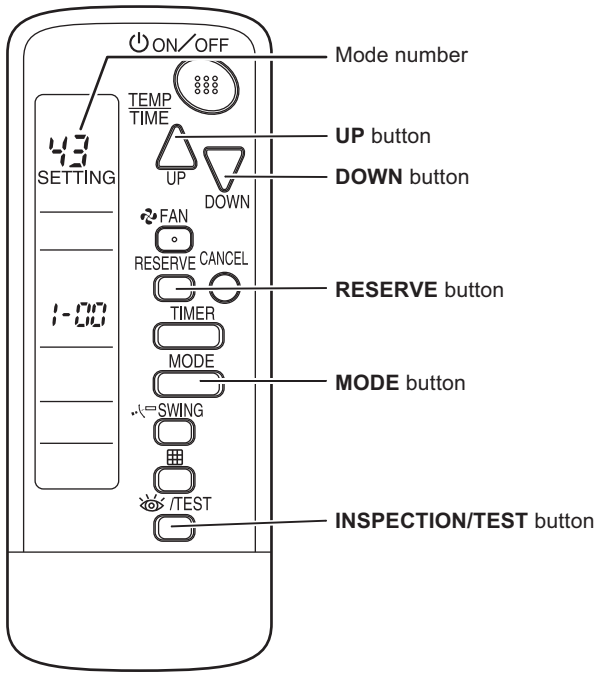
Maintenance Menu	Item 2	Remarks
Error Display	Display error ON	Displays the error on the screen.
	Display error OFF	Displays neither errors nor warnings.
	Display warning ON	Displays a warning on the screen if an error occurs.
	Display warning OFF	No warning is displayed.
Swap Unit No.	Current Unit No.	A unit No. can be transferred to another.
	Transfer Unit No.	
Addressed Sensor Value	Unit No.: 0 - 15	Select the unit number you want to check.
	Code 00: 01: 02: 03: 04: 05: 06: 07: 08: 09:	 Remote controller thermistor (°F) Suction air thermistor (°F) Heat exchanger liquid pipe thermistor (°F) Heat exchanger gas pipe thermistor (°F) Indoor unit address No. Outdoor unit address No. Branch selector unit address No. Zone control address No. Cooling/Heating batch address No. Demand/low-noise address No.
	Data	The corresponding data will be displayed, based on the unit number and Code selected.

∗1. (For FTQ-TA models)
The actual fan speed is converted into the fan tap to be displayed. Therefore, if the fan speed is changed by controls or external factors, the airflow rate set with the remote controller may differ from the fan tap display.

∗2. (For FTQ-TA models)
The ON/OFF status of the humidifier connected to HUMIDIFIER on the X1M terminal of the indoor unit PCB is not displayed. The ON/OFF status of the humidifier connected to the wiring adaptor is displayed.

6.2 Wireless Remote Controller

6.2.1 Service Setting



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

Mode No.	Function	Content and Operation Method	Example of Remote Controller Display
43	Forced Fan ON	Turns the fan ON for each unit individually.	UNIT No. 1 43 SETTING

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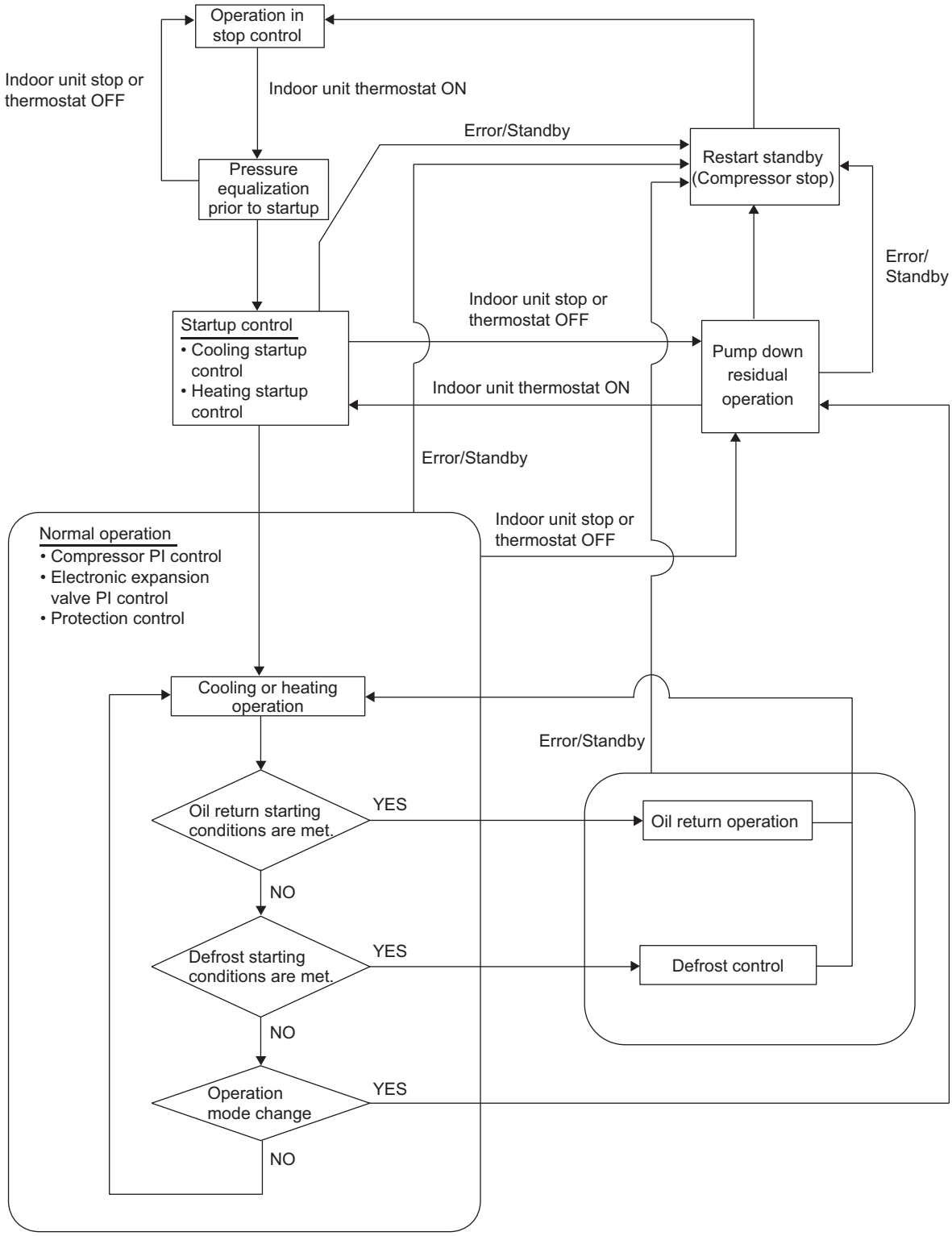
1. Operation Mode



Note(s) In the event that the indoor unit stops or the thermostat turns OFF while in oil return operation or defrost control, pump down residual operation is performed on completion of the oil return operation or defrost control.

2. Basic Control

2.1 Normal Operation

Cooling Operation

Outdoor unit actuator	Electric Symbol		Operation	Remarks
	18/24 class	30/36/42/48 class		
Compressor	M1C	M1C	Compressor PI control	Used for high pressure protection control, low pressure protection control, discharge pipe temperature protection control, and compressor operating frequency upper limit control with inverter protection control.
Outdoor fan	M1F	M1F M2F	Cooling fan control	—
Main electronic expansion valve	Y1E	Y1E	480 pulse	—
Subcooling electronic expansion valve	—	Y3E	PI control	—
Four way valve	Y1S	Y1S	OFF	—
Hot gas bypass valve	Y2S	—	OFF	This valve turns ON with low pressure protection control.

Heating Operation

Outdoor unit actuator	Electric Symbol		Operation	Remarks
	18/24 class	30/36/42/48 class		
Compressor	M1C	M1C	Compressor PI control	Used for high pressure protection control, low pressure protection control, discharge pipe temperature protection control, and compressor operating frequency upper limit control with inverter protection control.
Outdoor fan	M1F	M1F M2F	Step 7 or 8	—
Main electronic expansion valve	Y1E	Y1E	PI control	—
Subcooling electronic expansion	—	Y3E	PI control	—
Four way valve	Y1S	Y1S	ON	—
Hot gas bypass valve	Y2S	—	OFF	This valve turns ON with low pressure protection control.

∗ Heating operation is not functional at an outdoor air temperature of 24°CDB (75.2°FDB) or more.

2.2 Compressor PI Control

Te: Low pressure equivalent saturation temperature
TeS: Target Te value
(Varies depending on Te setting, operating frequency, etc.)
Tc: High pressure equivalent saturation temperature
TcS: Target Tc value
(Varies depending on Tc setting, operating frequency, etc.)

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

Cooling Operation

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

(1) VRT control (Default)

When the required capacity of all indoor units (suction air temperature – set temperature) is small, the target evaporation temperature is further increased in order to adjust capacity. From the outdoor unit side, the temperature difference for all indoor units (ΔT) is confirmed, and the target temperature is changed.

(2) Constant pressure control

The target evaporation temperature is not changed.

Te setting (Make this setting while in setting mode 2.)

Lower	Normal	VRT (Default)	Higher			
3°C (37.4°F)	6°C (42.8°F)	Variable	8°C (46.4°F)	9°C (48.2°F)	10°C (50°F)	11°C (51.8°F)

Heating Operation

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

(1) VRT control (Default)

When the required capacity of all indoor units (set temperature – suction air temperature) is small, the target condensation temperature is further decreased in order to adjust capacity. From the outdoor unit side, the temperature difference for all indoor units (ΔT) is confirmed, and the target temperature is changed.

(2) Constant pressure control

The target condensation temperature is not changed.

Tc setting (Make this setting while in setting mode 2.)

VRT (Default)	Normal	Higher
Variable	46°C (114.8°F)	52°C (125.6°F)

18/24 class

Step	Frequency (Hz)
1	48
2	52.5
3	57
4	61.5
5	67.5
6	75
7	81
8	90
9	100.5
10	105
11	111
12	114
13	118.5
14	129
15	141
16	153
17	163.5
18	174
19	181.5
20	192
21	201
22	211.5
23	222
24	228
25	243
26	253.5
27	265.5
28	277.5
29	289.5
30	301.5

30/36/42/48 class

Step	Frequency (Hz)
1	45
2	52.5
3	57
4	61.5
5	66
6	72
7	78
8	85.5
9	96
10	105
11	108
12	112.5
13	115.5
14	121.5
15	128.1
16	145.5
17	154.5
18	163.5
19	178.5
20	196.5
21	216
22	223.5
23	232.5
24	244.5
25	253.5
26	255
27	273
28	288
29	309
30	327

2.3 Electronic Expansion Valve PI Control

Main Electronic Expansion Valve Control

Carries out main electronic expansion valve (Y1E) PI control to maintain the evaporator outlet superheated degree (SH) at constant during heating operation, thus making maximum use of the outdoor heat exchanger (evaporator).

SH = Ts1 – Te

SH: Evaporator outlet superheated degree
Ts1: Suction pipe temperature detected by thermistor R3T
Te: Low pressure equivalent saturation temperature

The optimum initial value of the evaporator outlet superheated degree is 3°C (5.4°F), but varies depending on the discharge pipe superheated degree of inverter compressor.

Subcooling Electronic Expansion Valve Control

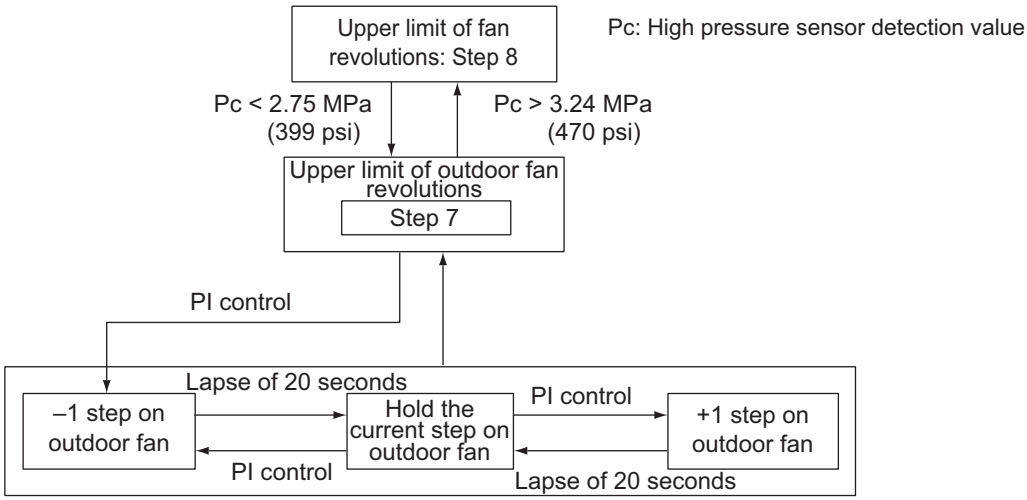
Carries out PI control of subcooling electronic expansion valve (Y3E) to keep the superheated degree (SH) of the outlet gas pipe on the evaporator side for the full use of the subcooling heat exchanger.

SH = Tsh – Te

SH: Evaporator outlet superheated degree
Tsh: Subcooling heat exchanger gas pipe temperature detected by thermistor R6T
Te: Low pressure equivalent saturation temperature

2.4 Cooling Operation Fan Control

In cooling operation with low outdoor air temperature, this control is used to provide an adequate amount of circulation air with liquid pressure secured by high pressure control from the outdoor fan. Furthermore, when outdoor temperature ≥ 20°C (68°F), the compressor will run in Step 7 or higher. When outdoor temperature ≥ 18°C (64.4°F), it will run in Step 5 or higher.
When outdoor temperature ≥ 12°C (53.6°F), it will run in Step 1 or higher.



Fan Steps

Step	Fan speed (rpm)		
	18/24 class	30/36/42/48 class	
		M1F	M2F
1	200	250	0
2	250	400	0
3	300	285	250
4	480	360	325
5	515	445	410
6	620	580	545
7	830	715	680
8	920	850	815

3. Special Control

3.1 Startup Control

This control is used to equalize the pressure in the suction and discharge sides of the compressor prior to compressor startup, thus reducing startup loads. Furthermore, the inverter is turned ON to charge the capacitor.
In addition, to avoid stresses to the compressor due to oil return, etc., after startup, the following control is made and the position of the four way valve is also determined. To position the four way valve, the master and slave units start up simultaneously.
Pc: High pressure sensor detection value
Pe: Low pressure sensor detection value
Ta: Outdoor air temperature

3.1.1 Startup Control in Cooling

Outdoor unit actuator	Electric Symbol		Pressure equalization control prior to startup	Startup control	
	18/24 class	30/36/42/48 class		STEP 1	STEP 2
Compressor	M1C	M1C	0 Hz	Minimum frequency	Increases 2 steps every 20 seconds from minimum frequency until Pc – Pe > 0.39 MPa (56.6 psi) is achieved
Outdoor fan	M1F	M1F M2F	STEP 7	Ta < 20°C (68°F): OFF Ta ≥ 20°C (68°F): STEP 4	+1 step/15 sec. (when Pc > 2.16 MPa (313 psi)) –1 step/15 sec. (when Pc < 1.77 MPa (257 psi))
Main electronic expansion valve	Y1E	Y1E	0 pulse	480 pulse (Fully open)	480 pulse (Fully open)
Subcooling electronic expansion valve	—	Y3E	0 pulse	0 pulse	0 pulse
Four way valve	Y1S	Y1S	Holds	OFF	OFF
Hot gas bypass valve	Y2S	—	OFF	OFF	OFF
Ending conditions			OR (• Pc – Pe < 0.3 MPa (43.5 psi) • A lapse of 1 to 5 min.)	A lapse of 10 sec.	OR (• A lapse of 130 sec. • Pc – Pe > 0.39 MPa (56.6 psi))

3.1.2 Startup Control in Heating

Outdoor unit actuator	Electric Symbol		Pressure equalization control prior to startup	Startup control	
	18/24 class	30/36/42/48 class		STEP 1	STEP 2
Compressor	M1C	M1C	0 Hz	Minimum frequency	Increases 2 steps every 20 seconds from minimum frequency until Pc – Pe > 0.39 MPa (56.6 psi) is achieved
Outdoor fan	M1F	M1F M2F	From starting Ta > 20°C (68°F): STEP 1 Ta ≤ 20°C (68°F): OFF	STEP 8	STEP 8
Main electronic expansion valve	Y1E	Y1E	0 pulse	0 pulse	0 pulse
Subcooling electronic expansion valve	—	Y3E	0 pulse	0 pulse	0 pulse
Four way valve	Y1S	Y1S	Holds	ON	ON
Hot gas bypass valve	Y2S	—	OFF	OFF	OFF
Ending conditions			OR • Pc – Pe < 0.3 MPa (43.5 psi) • A lapse of 1 to 5 min.	A lapse of 10 sec.	OR • A lapse of 130 sec. • Pc > 2.70 MPa (392 psi) • Pc – Pe > 0.39 MPa (56.6 psi)

3.2 Oil Return Control

In order to prevent the compressor from running out of oil, oil return control is conducted to recover oil that has flowed out from the compressor to the system side.

3.2.1 Oil Return Control in Cooling

HTdi : Compressor discharge pipe temperature (Tdi) compensated with outdoor air temperature
Pe : Low pressure sensor detection value
Tc: High pressure equivalent saturation temperature
Te: Low pressure equivalent saturation temperature
Ts1: Suction pipe temperature detected by thermistor R3T

Starting conditions

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

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

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

Outdoor unit actuator	Electric Symbol		Oil return preparation control	Oil return control	Control after oil return
	18/24 class	30/36/42/48 class			
Compressor	M1C	M1C	Take the current step as the upper limit.	Minimum frequency (→ Low pressure protection control)	Same as oil return control.
Outdoor fan	M1F	M1F M2F	Fan control (Normal cooling)	Fan control (Normal cooling)	Fan control (Normal cooling)
Main electronic expansion valve	Y1E	Y1E	480 pulse (Fully open)	480 pulse (Fully open)	480 pulse (Fully open)
Subcooling electronic expansion valve	—	Y3E	SH control	0 pulse	0 pulse
Four way valve	Y1S	Y1S	OFF	OFF	OFF
Hot gas bypass valve	Y2S	—	OFF	OFF	OFF
Ending conditions			20 seconds	OR (• 3 minutes • Ts1 – Te < 5°C (9°F))	OR (• 3 minutes • Pe < 0.6 MPa (87 psi) • HTdi > 110°C (230°F))

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

3.2.2 Oil Return Control in Heating

Pc: High pressure sensor detection value
Pe: Low pressure sensor detection value
Tc: High pressure equivalent saturation temperature
Te: Low pressure equivalent saturation temperature
Ts1: Suction pipe temperature detected by thermistor R3T
Tb : Heat exchanger temperature

Starting conditions

Referring to the set conditions for the following items, start oil return control in heating.

- Integrated amount of displaced oil
- Timer setting (After the power is turned ON, integrated operating time is two hours and subsequently every eight hours.)

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

Outdoor unit actuator	Electric Symbol		(A) Oil return preparation control	(B) Oil return control	(C) Control after oil return
	18/24 class	30/36/42/48 class			
Compressor	M1C	M1C	Upper limit control	140 Hz Full load	Increases 2 steps every 20 seconds from minimum frequency until Pc – Pe > 0.4 MPa (58 psi) is achieved.
Outdoor fan	M1F	M1F M2F	STEP 8	OFF	STEP 8
Main electronic expansion valve	Y1E	Y1E	SH control	480 pulse (Fully open)	55 pulse
Subcooling electronic expansion valve	—	Y3E	0 pulse	0 pulse	0 pulse
Four way valve	Y1S	Y1S	ON	OFF	ON
Hot gas bypass valve	Y2S	—	OFF	OFF	OFF
Ending conditions			2 minutes	OR (• 12 minutes & (•Ts1 – Te < 5°C (9°F) •Tb > 11°C (51.8°F)))	OR (• 160 seconds • Pc – Pe > 0.4 MPa (58 psi))

∗ Between (A) oil return preparation control and (B) oil return control, and between (B) oil return control and (C) control after oil return, the compressor stops for 1 minute to reduce noise on changing of the four way valve.

Indoor unit actuator		Heating oil return control
Fan	Thermostat ON unit	OFF
	Non-operating unit	OFF
	Thermostat OFF unit	OFF
Electronic expansion valve	Thermostat ON unit	416 pulse
	Non-operating unit	256 pulse
	Thermostat OFF unit	416 pulse

3.3 Defrost Control

Pc: High pressure sensor detection value
Pe: Low pressure sensor detection value
Tb: Heat exchanger deicer temperature
Tc: High pressure equivalent saturation temperature
Te: Low pressure equivalent saturation temperature
Ts1: Suction pipe temperature detected by thermistor R3T

Defrost control is performed to melt frost on the outdoor heat exchanger when heating, and thus recover heating capacity.

Starting conditions

Defrost operation is started referring to the following conditions.

- Outdoor heat exchanger heat transfer coefficiency
- Timer setting (Two hours at the minimum)

In addition, outdoor heat exchanger coefficiency is derived from Tc, Te, and compressor load.

Outdoor unit actuator	Electric Symbol		(A) Defrost preparation control	(B) Defrost control	(C) Control after defrost
	18/24 class	30/36/42/48 class			
Compressor	M1C	M1C	Upper limit control	140 Hz Full load	Increases 2 steps every 20 seconds from minimum frequency until Pc – Pe > 0.4 MPa (58 psi) is achieved.
Outdoor fan	M1F	M1F M2F	STEP 8	OFF	STEP 8
Main electronic expansion valve	Y1E	Y1E	SH control	480 pulse (Fully open)	55 pulse
Subcooling electronic expansion valve	—	Y3E	0 pulse	0 pulse	0 pulse
Four way valve	Y1S	Y1S	ON	OFF	ON
Hot gas bypass valve	Y2S	—	OFF	ON	ON
Ending conditions			2 minutes	OR (• 12 minutes & (• Tb > 11°C (51.8°F) • Ts1 – Te < 5°C (9°F))	OR (• 160 seconds • Pc – Pe > 0.4 MPa (58 psi)

∗ Between (A) defrost preparation control and (B) defrost control, and between (B) defrost control and (C) control after defrost, the compressor stops for 1 minute to reduce noise on changing of the four way valve.

Indoor unit actuator		Defrost control
Fan	Thermostat ON unit	OFF
	Non-operating unit	OFF
	Thermostat OFF unit	OFF
Electronic expansion valve	Thermostat ON unit	416 pulse
	Non-operating unit	256 pulse
	Thermostat OFF unit	416 pulse

3.4 Pump Down Residual Control

If liquid refrigerant is retained in the evaporator when the compressor is activated, the liquid refrigerant enters the compressor and dilutes oil therein resulting in a decrease of lubricity. Therefore, pump down residual control is performed to collect the refrigerant retained in the evaporator when the compressor stops.

3.4.1 Pump Down Residual Control in Cooling

Outdoor unit actuator	Electric Symbol		Pump down residual control: Step 1	Pump down residual control: Step 2
	18/24 class	30/36/42/48 class		
Compressor	M1C	M1C	124 Hz	Minimum frequency
Outdoor fan	M1F	M1F M2F	Fan control	Fan control
Main electronic expansion valve	Y1E	Y1E	480 pulse (Fully open)	240 pulse (Half open)
Subcooling electronic expansion valve	—	Y3E	0 pulse	0 pulse
Four way valve	Y1S	Y1S	OFF	OFF
Hot gas bypass valve	Y2S	—	OFF	OFF
Ending conditions			2 seconds	2 seconds

3.4.2 Pump Down Residual Control in Heating

Outdoor unit actuator	Electric Symbol		Pump down residual control
	18/24 class	30/36/42/48 class	
Compressor	M1C	M1C	124 Hz
Outdoor fan	M1F	M1F M2F	STEP 7
Main electronic expansion valve	Y1E	Y1E	0 pulse
Subcooling electronic expansion valve	—	Y3E	0 pulse
Four way valve	Y1S	Y1S	ON
Hot gas bypass valve	Y2S	—	OFF
Ending conditions			4 seconds

3.5 Restart Standby

Restart is forced into standby to prevent the power from frequently turning on and off and to equalize pressure in the refrigerant system.
Ta: Outdoor air temperature

Outdoor unit actuator	Electric Symbol		Operation
	18/24 class	30/36/42/48 class	
Compressor	M1C	M1C	OFF
Outdoor fan	M1F	M1F M2F	Ta > 30°C (86°F): STEP 4 Ta ≤ 30°C (86°F): OFF
Main electronic expansion valve	Y1E	Y1E	0 pulse
Subcooling electronic expansion valve	—	Y3E	0 pulse
Four way valve	Y1S	Y1S	Holds
Hot gas bypass valve	Y2S	—	OFF
Ending conditions			2 minutes

3.6 Stop Control

Actuator operation is cleared when the system is down.

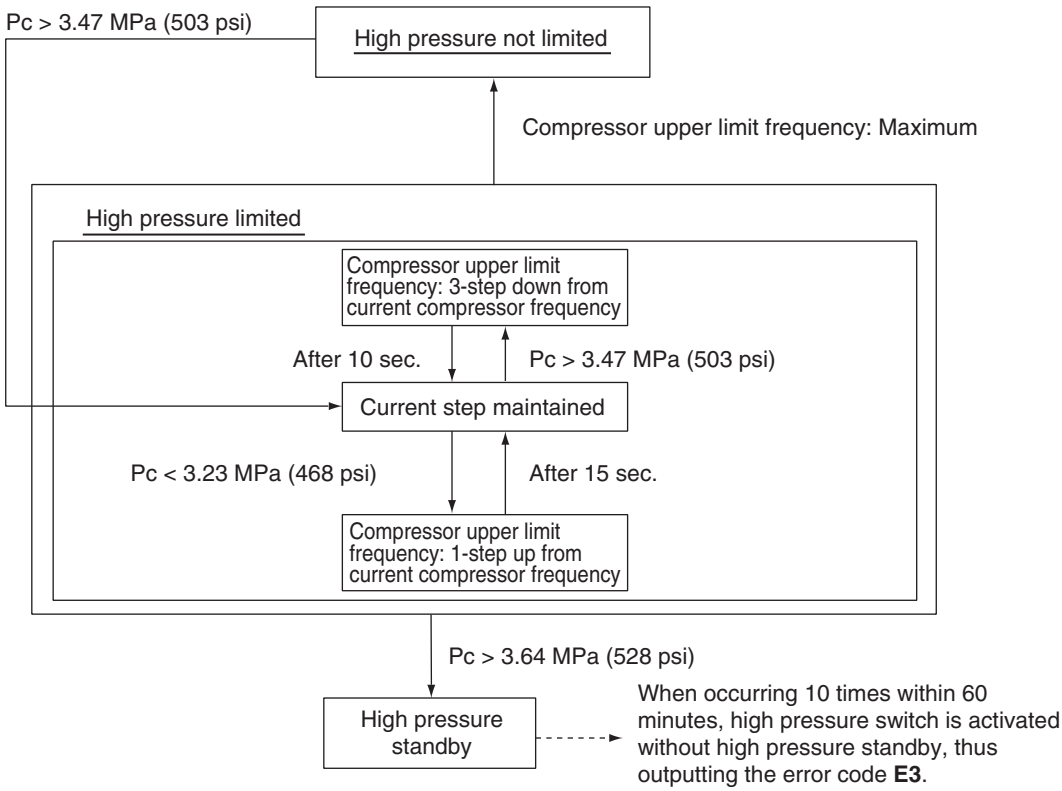
Outdoor unit actuator	Electric Symbol		Operation
	18/24 class	30/36/42/48 class	
Compressor	M1C	M1C	OFF
Outdoor fan	M1F	M1F M2F	OFF
Main electronic expansion valve	Y1E	Y1E	0 pulse
Subcooling electronic expansion valve	—	Y3E	0 pulse
Four way valve	Y1S	Y1S	Holds
Hot gas bypass valve	Y2S	—	OFF
Ending conditions			Indoor unit thermostat is turned ON.

4. Protection Control

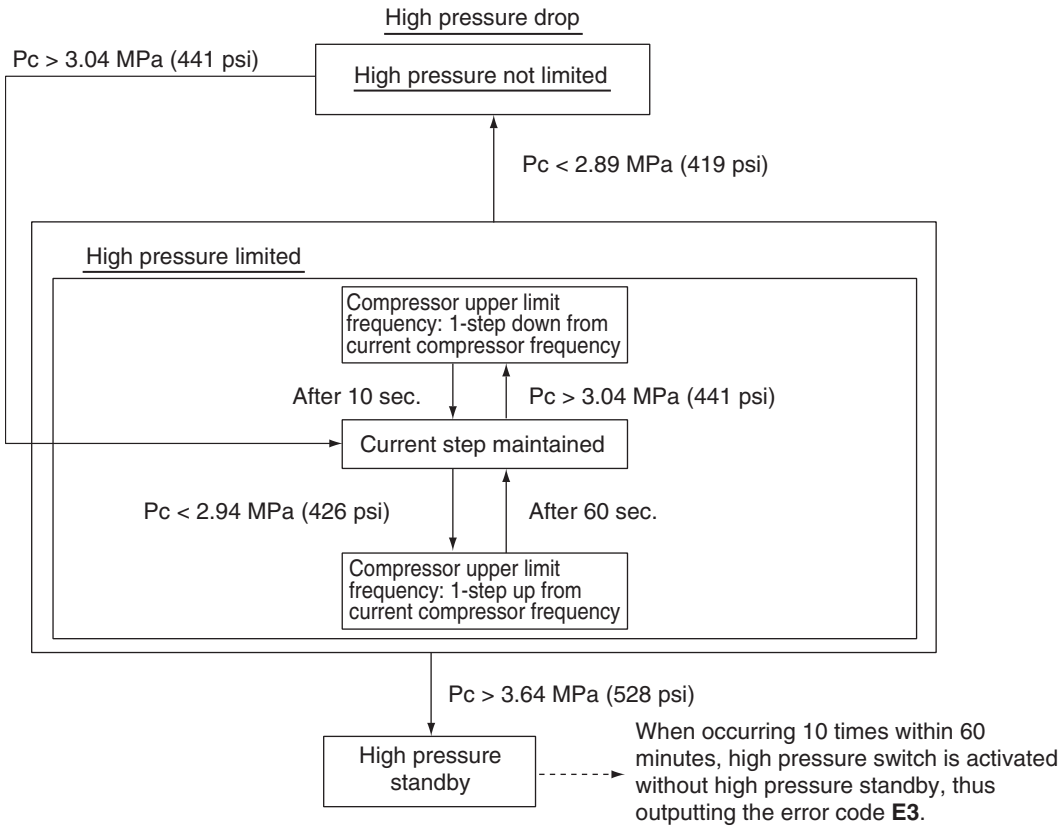
4.1 High Pressure Protection Control

This high pressure protection control is used to prevent the activation of protection devices due to an abnormal increase of high pressure and to protect compressors against the transient increase of high pressure.
Pc: High pressure sensor detection value

Cooling operation



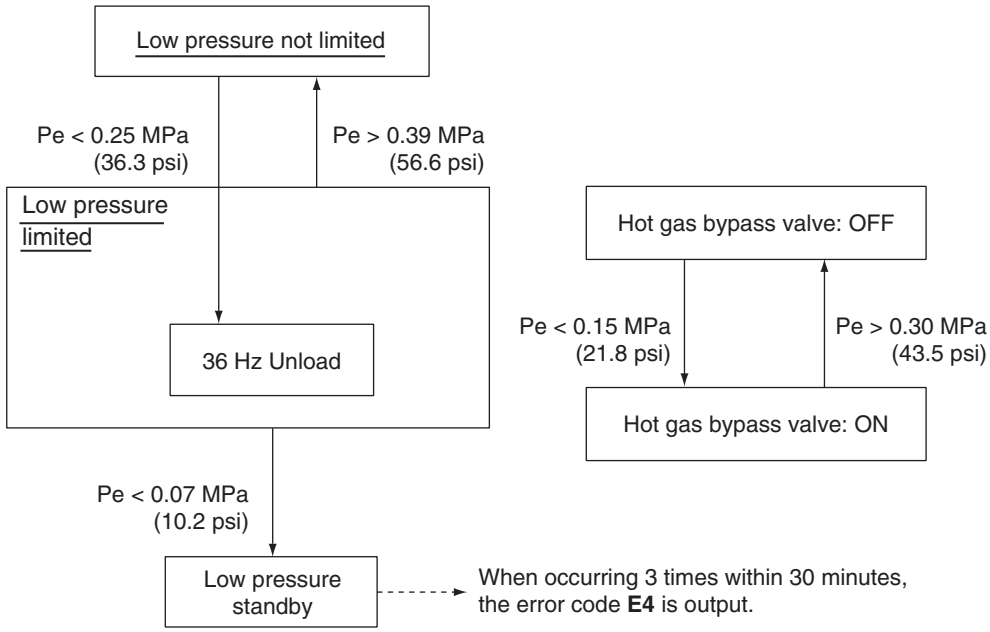
Heating operation



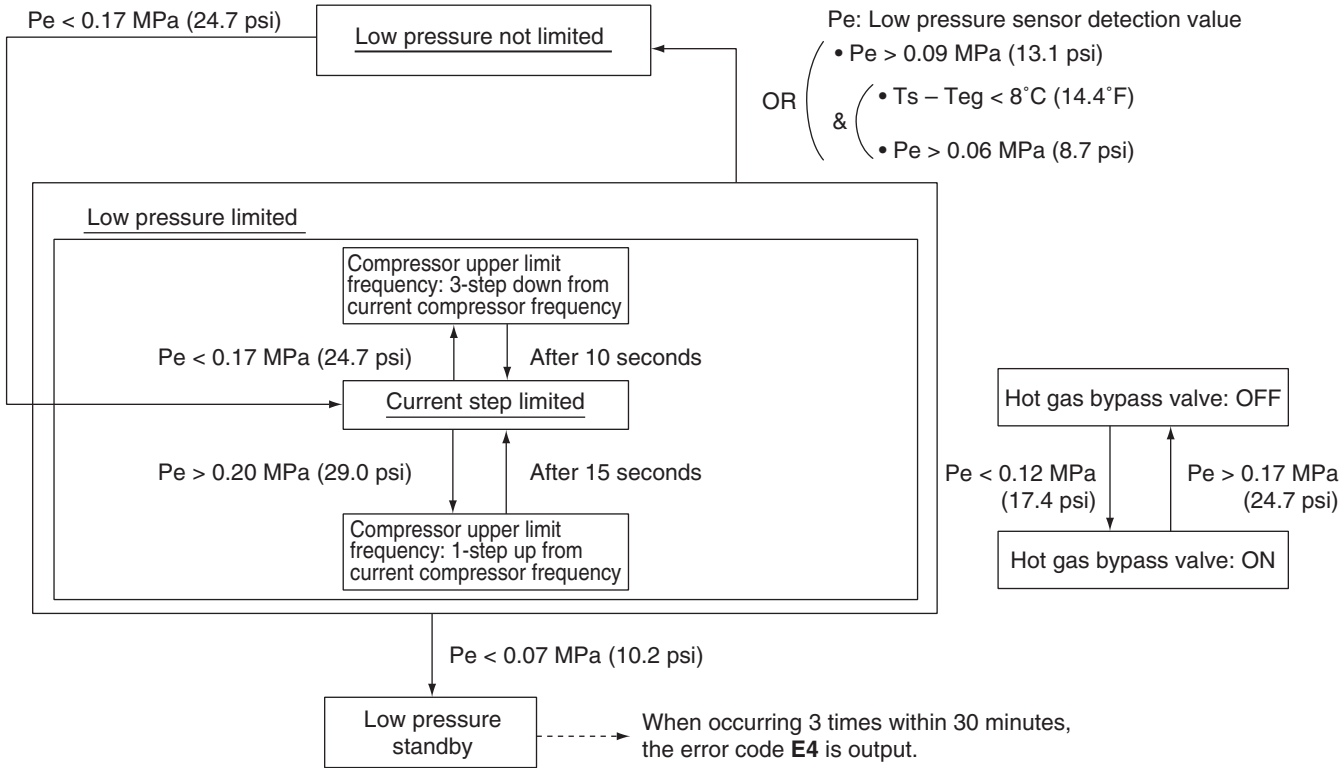
4.2 Low Pressure Protection Control

This low pressure protection control is used to protect compressors against the transient decrease of low pressure.
Pe: Low pressure sensor detection value

Cooling operation

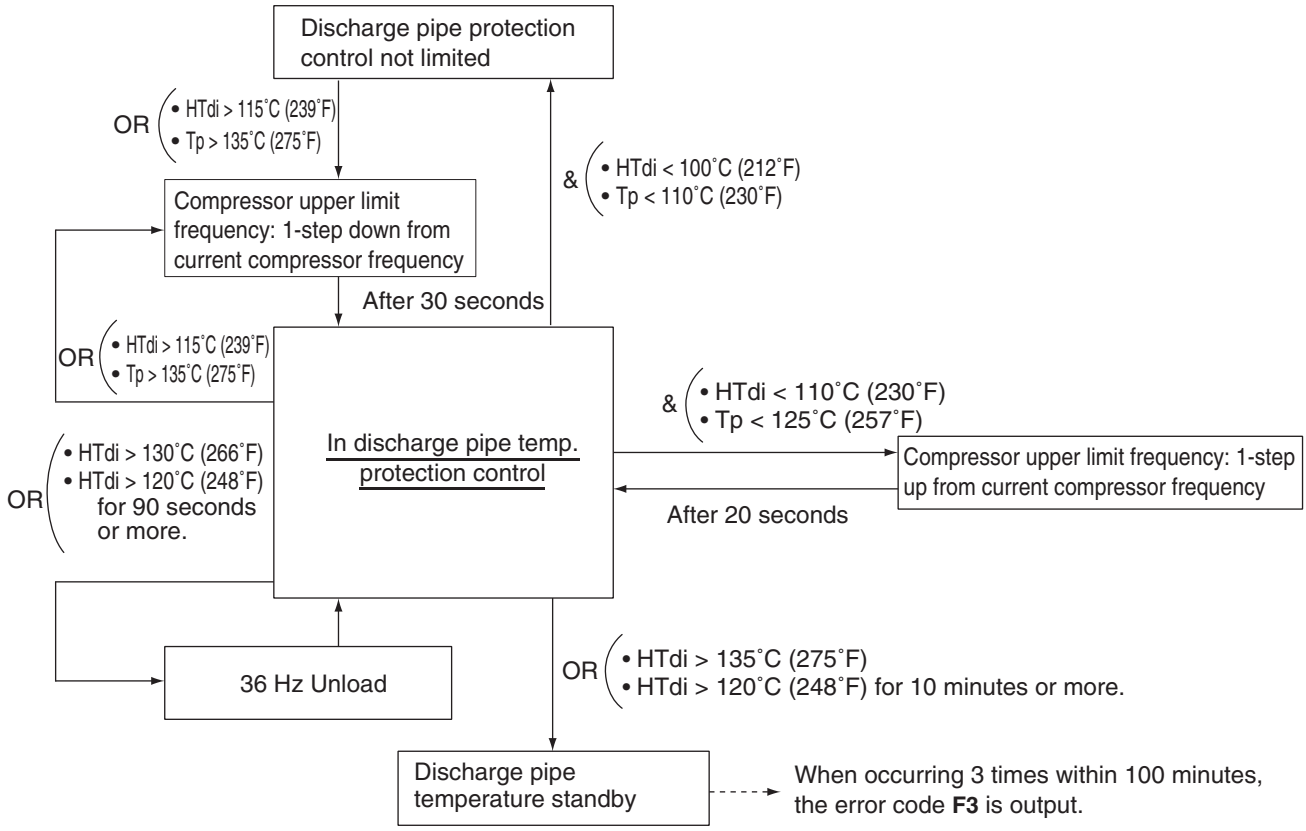


Heating operation



4.3 Discharge Pipe Temperature Protection Control

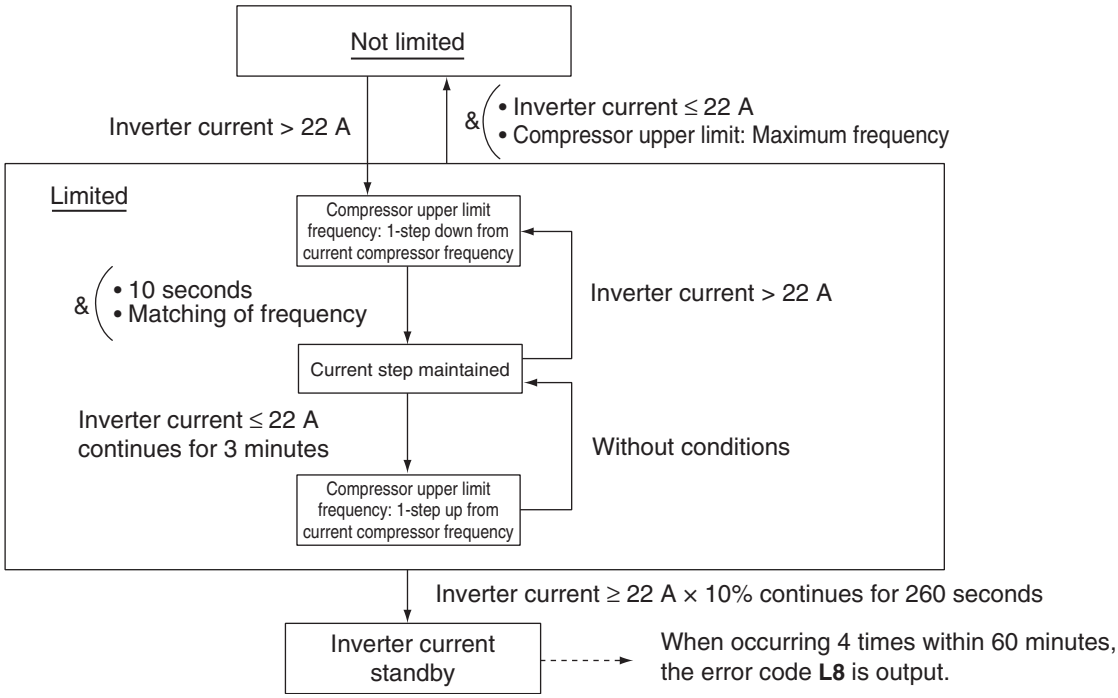
This discharge pipe temperature protection control is used to protect the compressor internal temperature against an error or transient increase of discharge pipe temperature.
HTdi: Value of inverter compressor discharge pipe temperature (Tdi) compensated with outdoor air temperature
Tp: Value of compressor port temperature calculated by Tc, Te, and suction superheated degree.



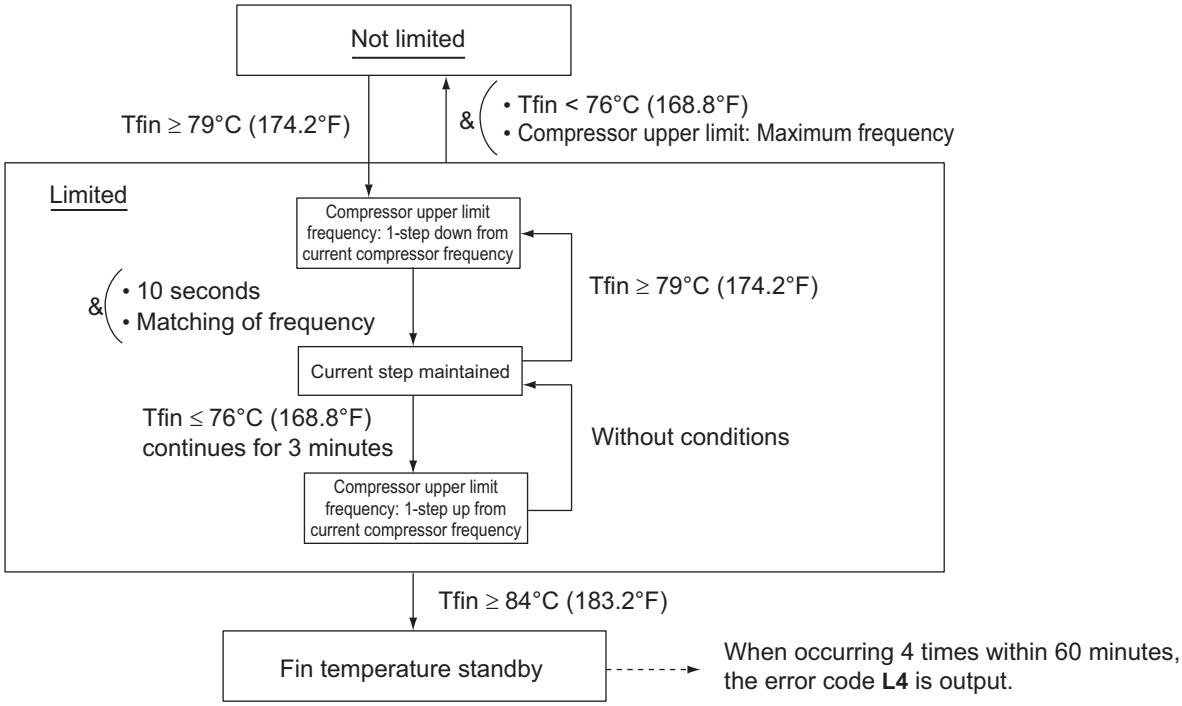
4.4 Inverter Protection Control

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

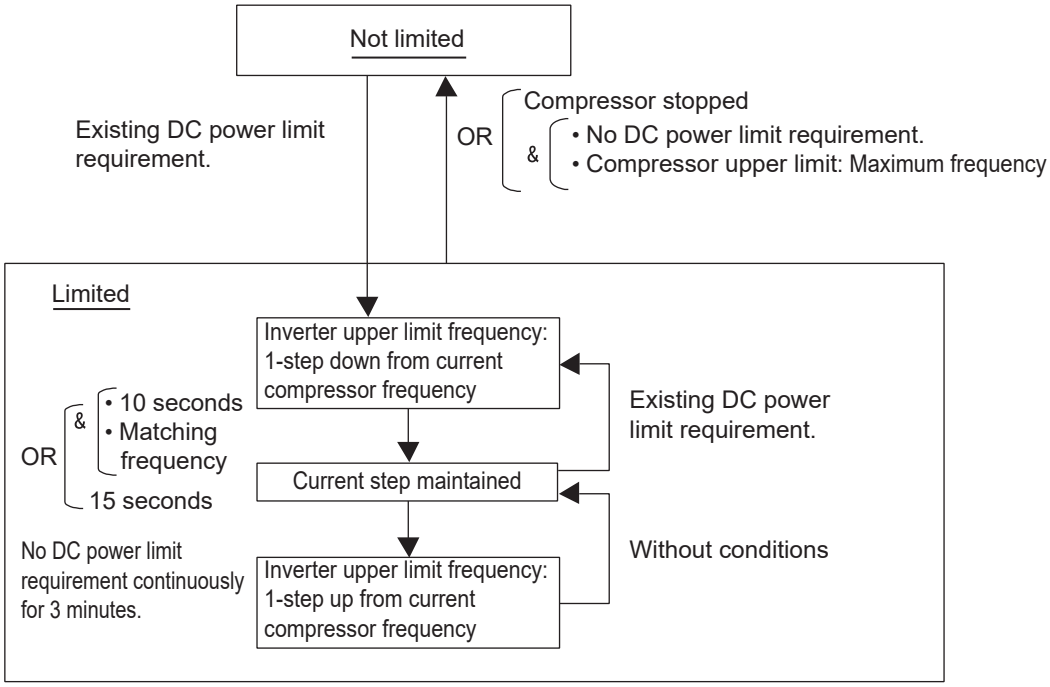
Inverter overcurrent protection control



Inverter radiation fin temperature control



According to the current limit of direct current



5. Other Control

5.1 Demand Operation

In order to reduce power consumption, the outdoor unit capacity is reduced forcibly with control by using Demand Setting 1.
To enable this operation, the additional setting of Constant Demand Setting is required.

Demand setting 1

Level	Standard for upper limit of power consumption
Level 1	Approx. 60%
Level 2 (Factory setting)	Approx. 70%
Level 3	Approx. 80%

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

5.2 Heating Operation Prohibition

Heating operation is prohibited above 24°CDB (75.2°FDB) outdoor air temperature.

6. Outline of Control (Indoor Unit)

6.1 Remote Controller Thermistor

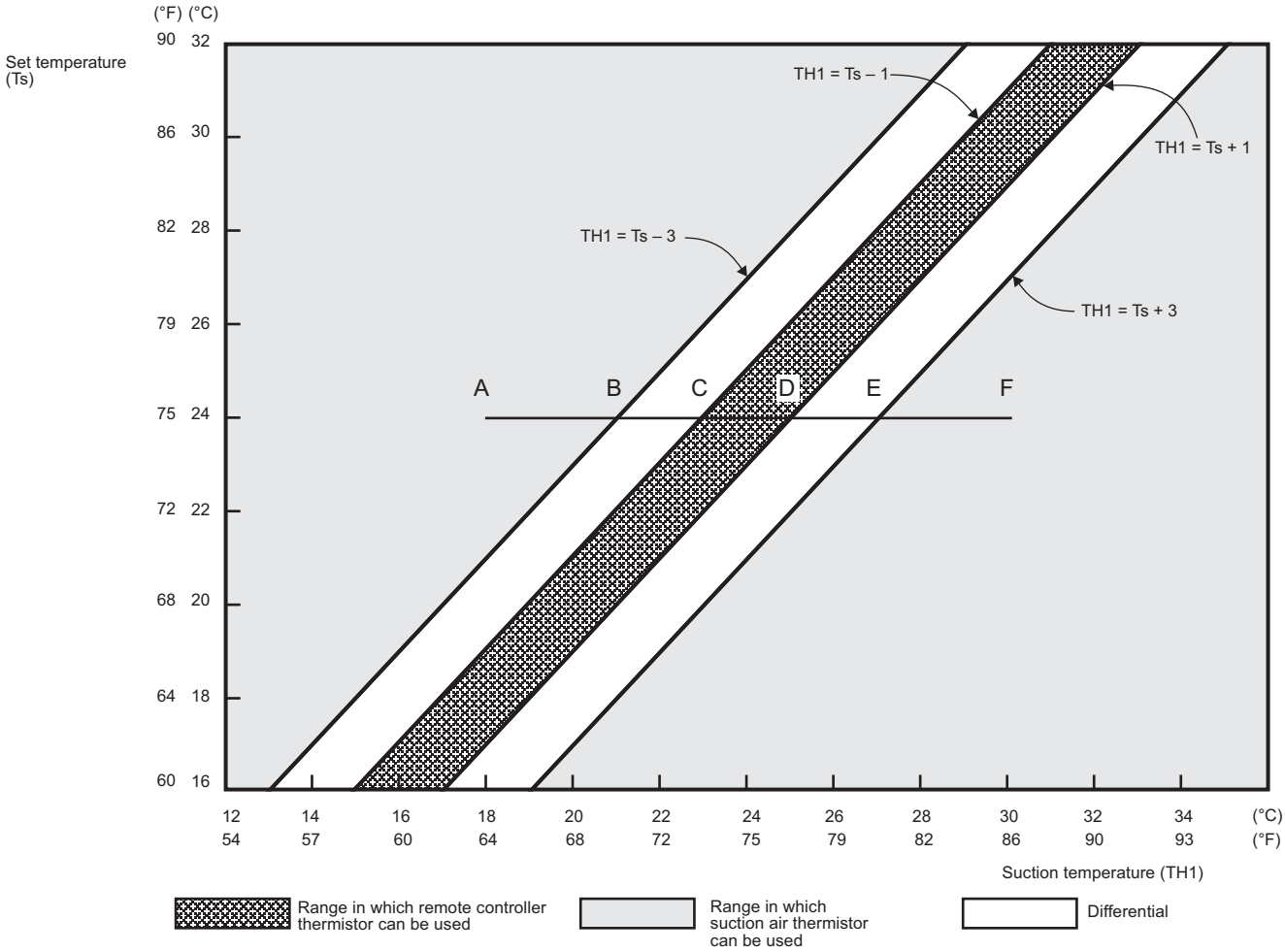
Temperature is controlled by both the remote controller thermistor and suction air thermistor (∗1) for the indoor unit. (This is however limited to when the field setting for the remote controller thermistor is set to Use.)

Note(s)

When fresh air intake kit is used, outdoor air is mixed with indoor air, and the room temperature may not reach the set temperature, since TS and TH1 do not enter the area in which remote controller thermistor can be used. In such case, install the remote sensor (optional accessory) in your room, and use it with setting not to use remote controller thermistor.
∗ FTQ-TA models do not have this control because they do not have suction air thermistor. The thermistor is selectable manually when remote sensor (optional accessory) is installed.

Cooling

If there is a significant difference in the set temperature and the suction temperature, fine adjustment control is carried out using a suction air thermistor (∗1), or using the remote controller thermistor 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 (75°F), and the suction temperature has changed from 18°C (64°F) to 30°C (86°F) (A → F):**

(This example also assumes there are several other air conditioners, and the suction temperature changes even when the thermostat is off.)
Suction air thermistor (∗1) is used for temperatures from 18°C (64°F) to 23°C (73°F) (A → C).
Remote controller thermistor is used for temperatures from 23°C (73°F) to 27°C (81°F) (C → E).

Suction air thermistor (∗1) is used for temperatures from 27°C (81°F) to 30°C (86°F) (E → F).

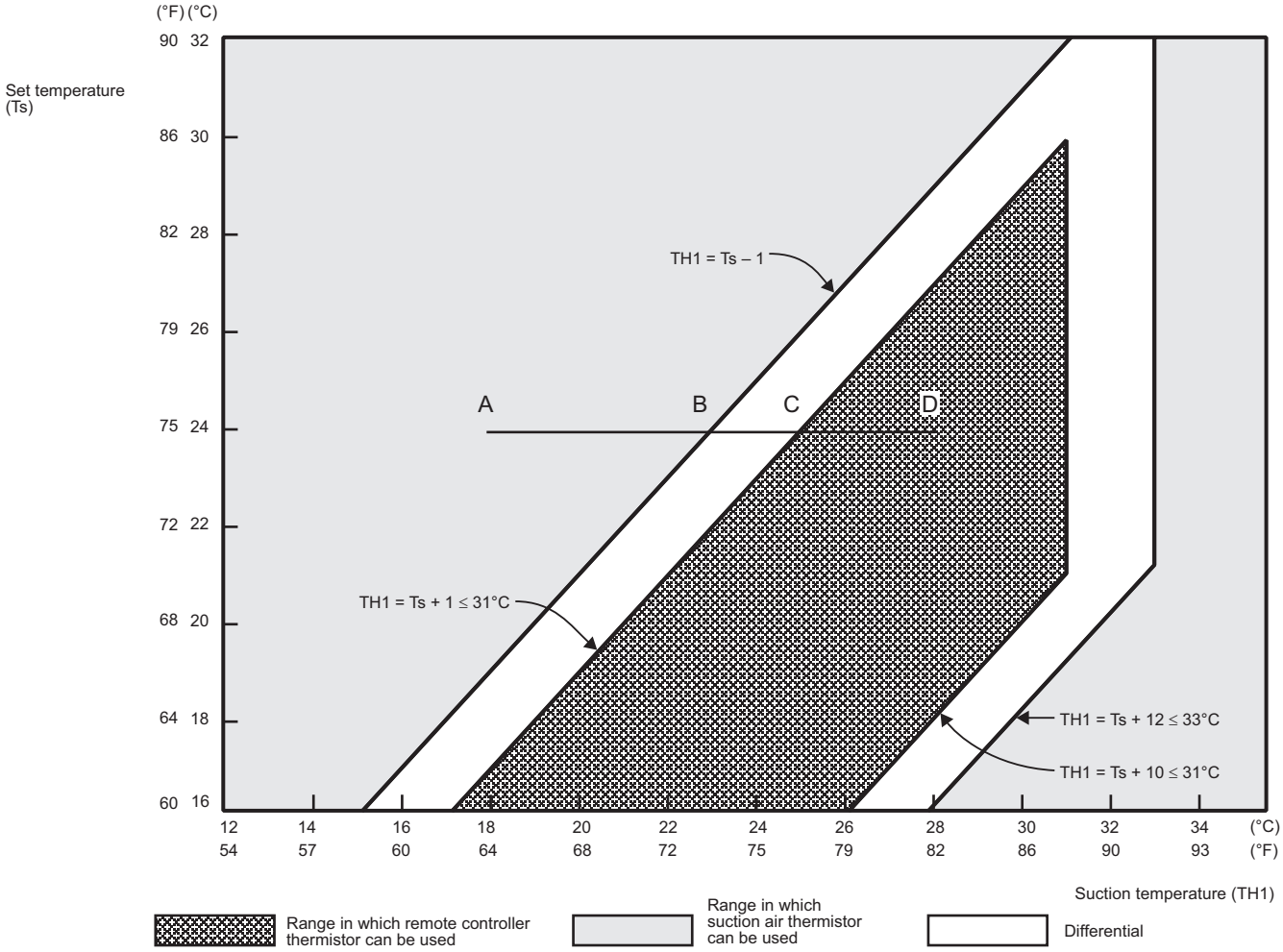
■ **Assuming suction temperature has changed from 30°C (86°F) to 18°C (64°F) (F → A):**
Suction air thermistor (∗1) is used for temperatures from 30°C (86°F) to 25°C (77°F) (F → D).
Remote controller thermistor is used for temperatures from 25°C (77°F) to 21°C (70°F) (D → B).
Suction air thermistor (∗1) is used for temperatures from 21°C (70°F) to 18°C (64°F) (B → A).

Note(s)

∗1. For FTQ: Remote sensor (Optional accessory)

Heating

When heating, the hot air rises to the top of the room, resulting in the temperature being lower near the floor where the occupants are. When controlling by suction air thermistor (∗1) only, the indoor unit may therefore be turned off by the thermostat before the lower part of the room reaches the set temperature. The temperature can be controlled so the lower part of the room where the occupants are does not become cold by widening the range in which remote controller thermistor can be used so that suction temperature is higher than the set temperature.



■ **Assuming the set temperature in the figure above is 24°C (75°F), and the suction temperature has changed from 18°C (64°F) to 28°C (82°F) (A → D):**
(This example also assumes there are several other air conditioners, and the suction temperature changes even when the thermostat sensor is off.)
Suction air thermistor (∗1) is used for temperatures from 18°C (64°F) to 25°C (77°F) (A → C).
Remote controller thermistor is used for temperatures from 25°C (77°F) to 28°C (82°F) (C → D).

■ **Assuming suction temperature has changed from 28°C (82°F) to 18°C (64°F) (D → A):**
Remote controller thermistor is used for temperatures from 28°C (82°F) to 23°C (73°F) (D → B).

Suction air thermistor (∗1) is used for temperatures from 23°C (73°F) to 18°C (64°F) (B → A).

Note(s)

∗1. For FTQ: Remote sensor (Optional accessory)

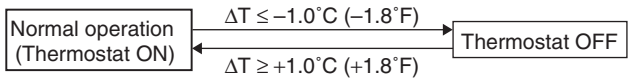
6.2 Thermostat Control

6.2.1 Without Optional Infrared Presence/Floor Sensor

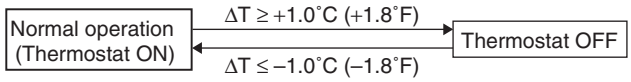
Whether the thermostat is turned ON or OFF is determined by the difference between the remote controller set temperature and the actual detected room temperature (∗1).

• Normal operation

· Cooling operation

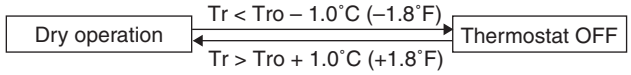


· Heating operation

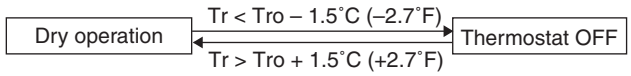


• Dry operation

· When Tro < 24.5°C (76.1°F)

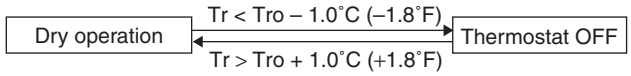


· When Tro ≥ 24.5°C (76.1°F)



• FTQ-TA only

If the field setting 14(24)-5 is set to **02**, Tro will be the same as the cooling set temperature.



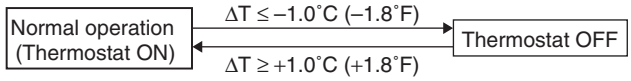
∗1: The thermistor for room temperature detection depends on the field setting 10 (20)-2.
∗2: Description of symbols
ΔT = Detected room temperature – Remote controller set temperature
Tro: Detected room temperature at the start of dry operation
Tr: Determined by the room temperature detected by the thermistor

6.2.2 With Optional Infrared Presence/Floor Sensor

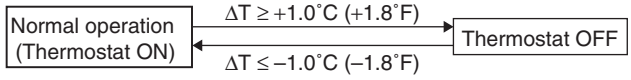
Whether the thermostat is turned ON or OFF is determined by the difference between the remote controller set temperature and the detected temperature around people.

• Normal operation

· Cooling operation

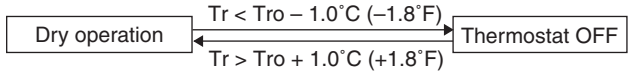


· Heating operation

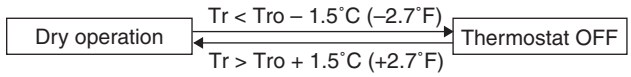


• Dry operation

· When Tro ≤ 24.5°C (76.1°F)



· When Tro > 24.5°C (76.1°F)



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

Control range of temperature around people

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

■ **Cooling operation**

- When the floor temperature is lower than suction air temperature (R1T), R1T will be treated as the control target temperature for operation.
- When the temperature around people is 15°C (59°F) or lower, R1T will be treated as the control temperature for operation.

■ **Heating operation**

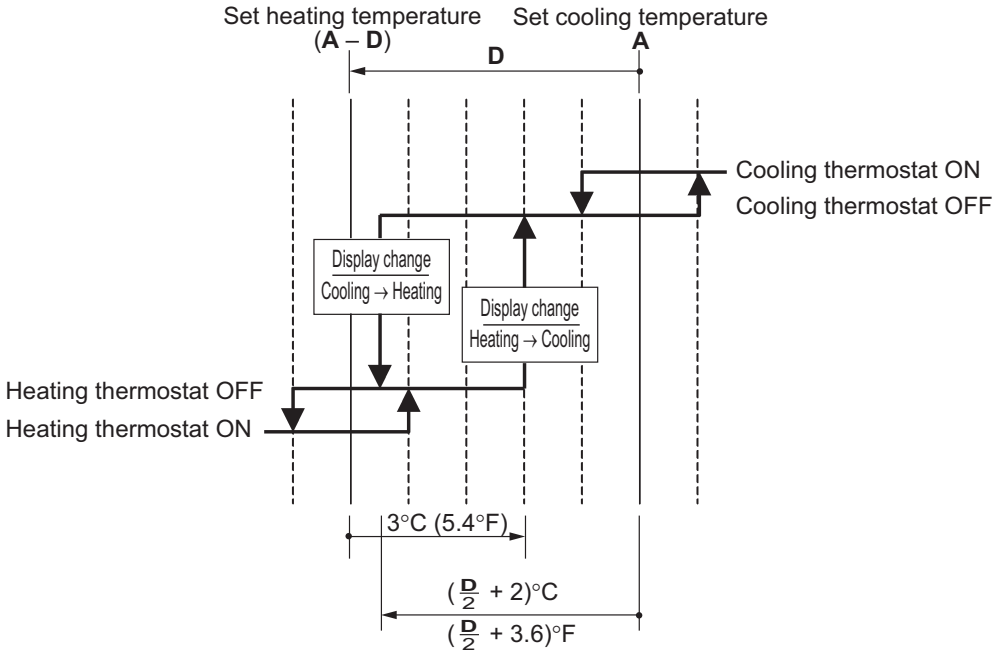
- When the floor temperature is higher than suction air temperature (R1T), R1T will be treated as the control target temperature in operation.
- When the temperature around people is 33°C (91.4°F) or higher, R1T will be treated as the control temperature for operation.

6.3 Thermostat Control with Operation Mode Set to AUTO

The system will conduct this temperature control shown below, only when the wireless remote controller or any central remote controller is connected.
Furthermore, setting changes of the differential value (**D**) can be made.

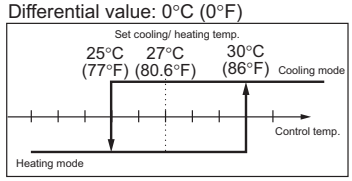
Mode No.	First code No.	Contents of setting	Second code No.							
			01★	02	03	04	05	06	07	08
12 (22)	4	Differential value while in AUTO operation mode	**0°C 0°F ★**	1°C 1.8°F	2°C 3.6°F	3°C 5.4°F	4°C 7.2°F	5°C 9.0°F	6°C 10.8°F	7°C 12.6°F

★: Factory setting

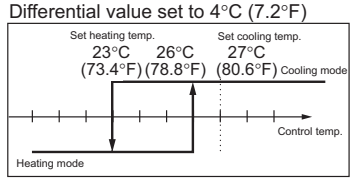


(Ex.) When automatic cooling temperature is set to 27°C (80.6°F):

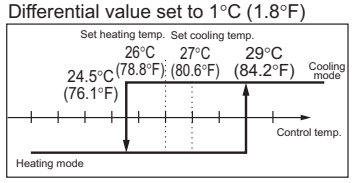
Differential value: 0°C (0°F)



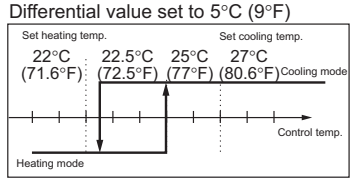
Differential value set to 4°C (7.2°F)



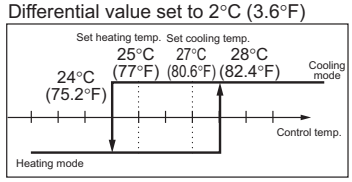
Differential value set to 1°C (1.8°F)



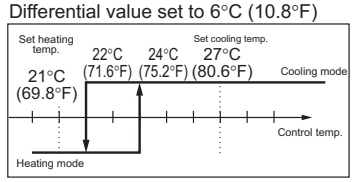
Differential value set to 5°C (9°F)



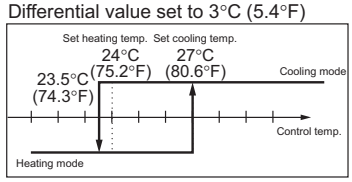
Differential value set to 2°C (3.6°F)



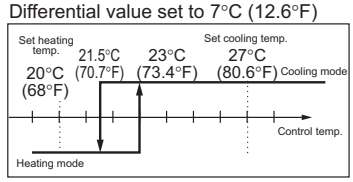
Differential value set to 6°C (10.8°F)



Differential value set to 3°C (5.4°F)



Differential value set to 7°C (12.6°F)



6.4 List of Swing Flap Operations

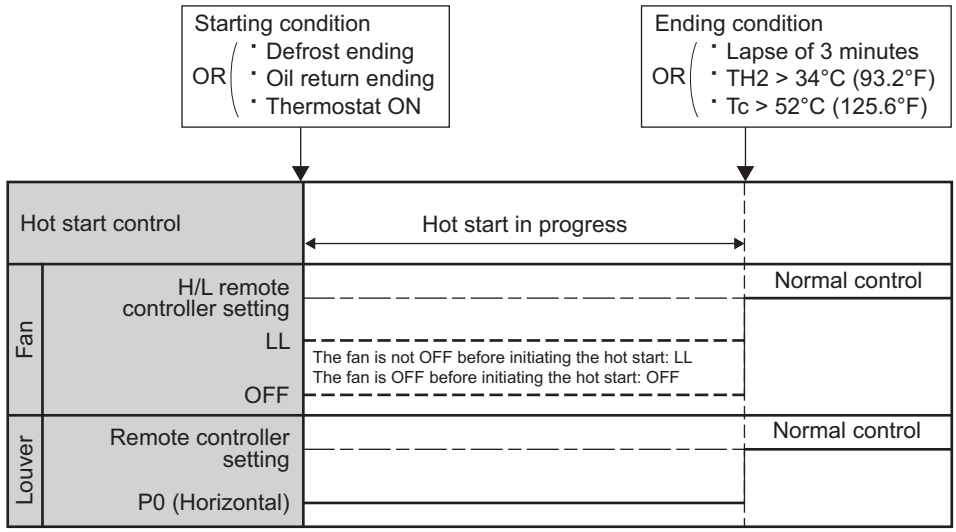
Swing flaps operate as shown in table below.

Operation mode			Fan	Flap		
				FCQ	FHQ	FAQ
Heating	Hot start from defrost operation	Swing	OFF	Horizontal	Horizontal	Horizontal
		Airflow direction set	OFF	Horizontal	Horizontal	Horizontal
	Defrost operation	Swing	OFF	Horizontal	Horizontal	Horizontal
		Airflow direction set	OFF	Horizontal	Horizontal	Horizontal
	Thermostat OFF	Swing	LL	Horizontal	Horizontal	Horizontal
		Airflow direction set	LL	Horizontal	Horizontal	Horizontal
	Hot start from thermostat OFF mode (for prevention of cold air)	Swing	LL	Horizontal	Horizontal	Horizontal
		Airflow direction set	LL	Horizontal	Horizontal	Horizontal
	Stop	Swing	OFF	Horizontal	Horizontal	Totally closed
		Airflow direction set	OFF	Horizontal	Horizontal	Totally closed
Cooling	Thermostat ON in program dry	Swing	L (∗1)	Swing	Swing	Swing
		Airflow direction set	L (∗1)	Set	Set	Set
	Thermostat OFF in program dry	Swing	OFF or L	Swing	Swing	Swing
		Airflow direction set		Set	Set	Set
	Thermostat OFF in cooling	Swing	Set	Swing	Swing	Swing
		Airflow direction set	Set	Set	Set	Set
	Stop	Swing	OFF	Horizontal	Horizontal	Totally closed
		Airflow direction set	OFF	Set	Horizontal	Totally closed
	Microcomputer control (including cooling operation)	Swing	L	Swing	Swing	Swing
		Airflow direction set	L	Set	Set	Set

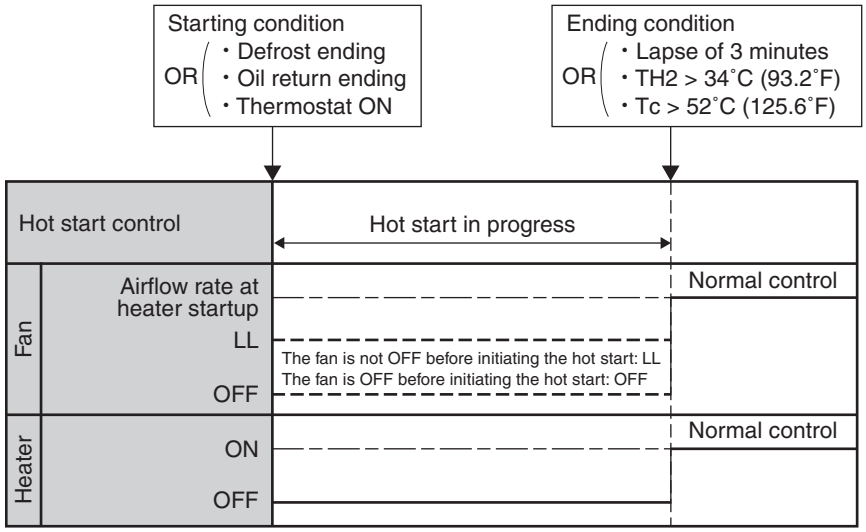
Note(s) ∗1. L or LL only on FCQ models

6.5 Hot Start Control (In Heating Operation Only)

At startup with thermostat ON or after the completion of defrosting in heating operation, the indoor fan is controlled to prevent cold air from blasting out and ensure startup capacity.
TH2 : Temperature detected with the gas thermistor
Tc : High pressure equivalent saturated temperature

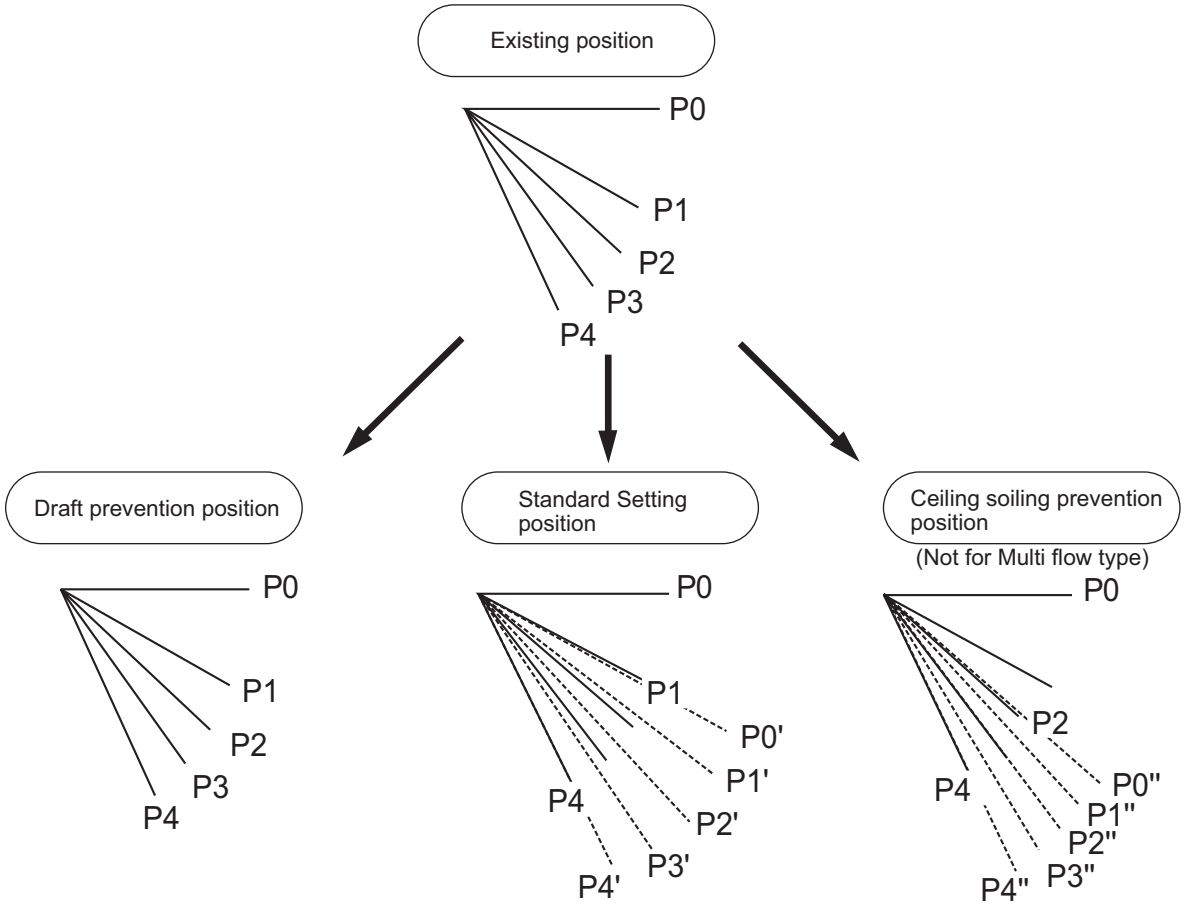


■ **FTQ-TA (when the heater is to be used)**



6.6 Louver Control for Preventing Ceiling Dirt (FCQ Models Only)

We have added a control feature that allows you to select the range of in which air direction can be adjusted in order to prevent the ceiling surrounding the air discharge outlet of ceiling mounted cassette type units from being soiled.

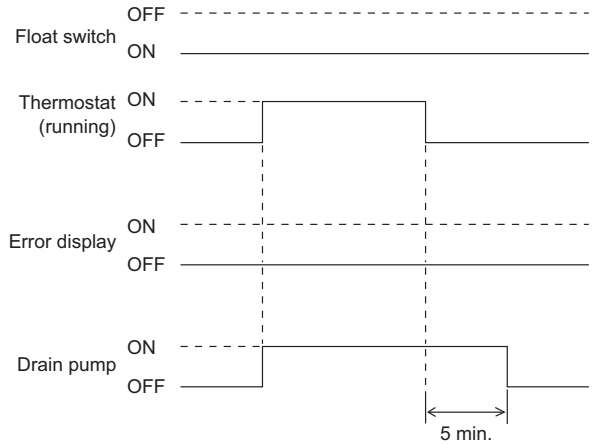


Draft prevention position	P0	P1	P2	P3	P4		Same as existing position
			Range of direction adjustment				
Standard position	Prohibited	P0'	P1'	P2'	P3'	P4'	Separated into 5 positions (P1 - 4)
			Range of direction adjustment				
Dirt prevention position	Prohibited		P0"	P1"	P2"	P3"	P4"	Separated into 5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

The factory setting position is draft prevention position.

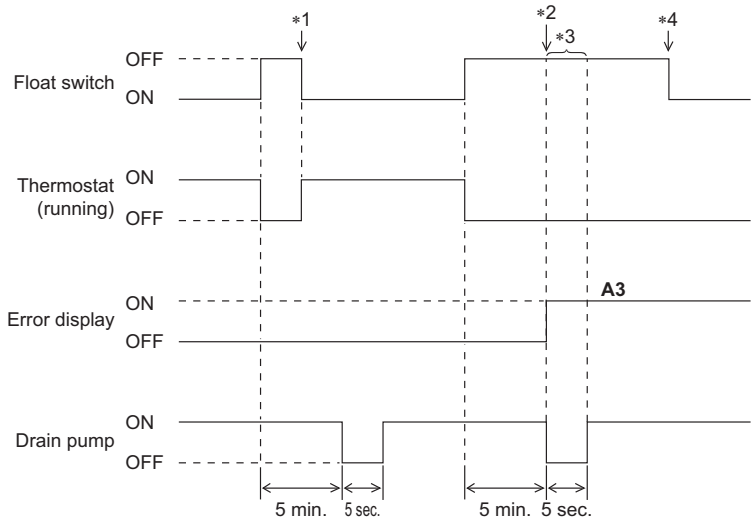
6.7 Drain Pump Control

6.7.1 Normal Operation



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

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



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

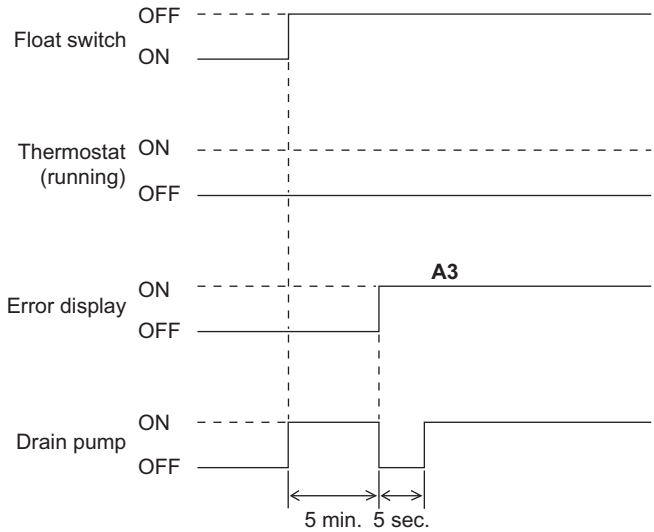
*1. If the float switch turns ON again during the residual operation of the drain pump, cooling operation also turns on again (thermostat ON).

*2. If the float switch remains OFF even after the residual operation of the drain pump has ended, the error code **A3** is displayed on the remote controller.

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

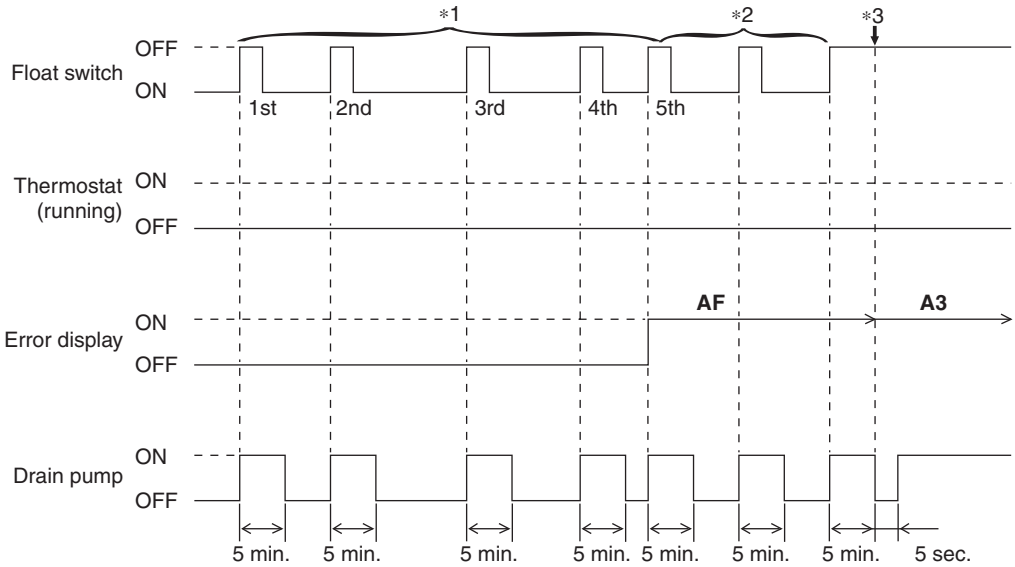
*4. After **A3** is displayed and the unit comes to an abnormal stop, the thermostat will remain OFF even if the float switch turns ON again.

6.7.3 If the Float Switch is OFF with the Thermostat OFF in Cooling Operation



- When the float switch turns OFF, the drain pump turns ON simultaneously.
- If the float switch remains OFF even after the residual operation of the drain pump has ended, the error code **A3** is displayed on the remote controller.
- The drain pump turns OFF once residual operation has ended, then turns ON again after 5 seconds.

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



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

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

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

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

6.8 Freeze-Up Prevention

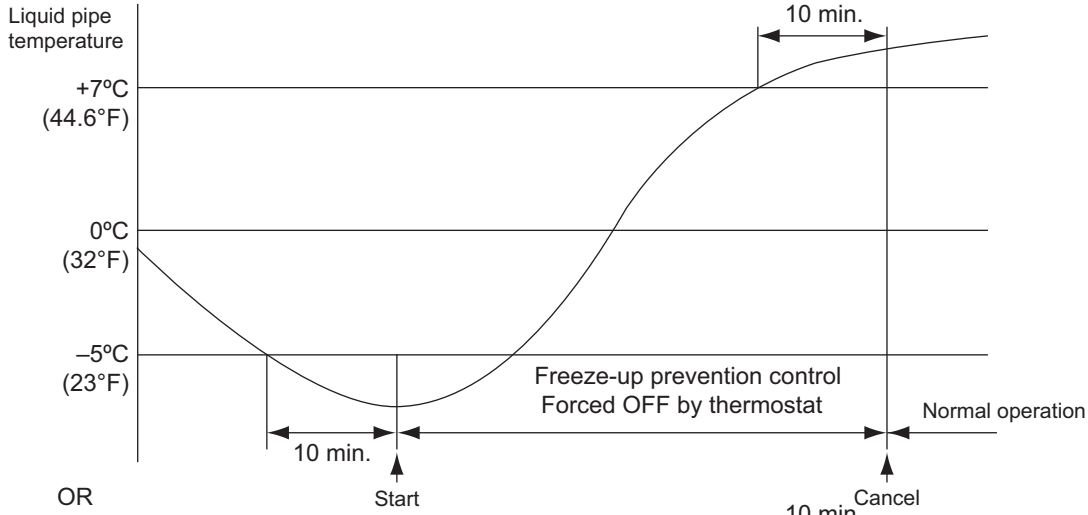
Freeze-Up Prevention by Off Cycle (Indoor Unit Individual Control)

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

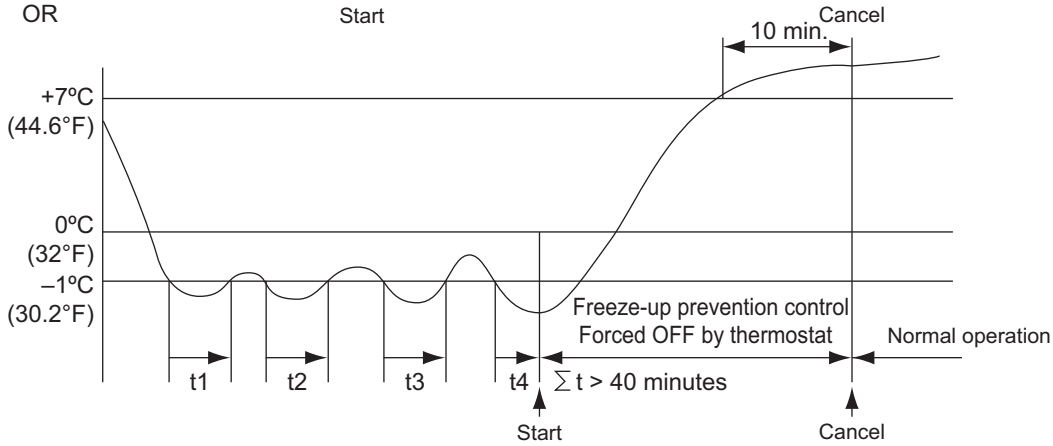
When freeze-up prevention is activated, the electronic expansion valve is closed, the drain pump turns on and the airflow rate is fixed to L tap. When the following conditions for cancelling are satisfied, it will reset.

Conditions for starting:
Liquid pipe temperature ≤ – 1°C (30.2°F) (for total of 40 minutes)
or
Liquid pipe temperature ≤ – 5°C (23°F) (for total of 10 minutes)

Condition for cancelling:
Liquid pipe temperature ≥ +7°C (44.6°F) (for 10 minutes continuously)



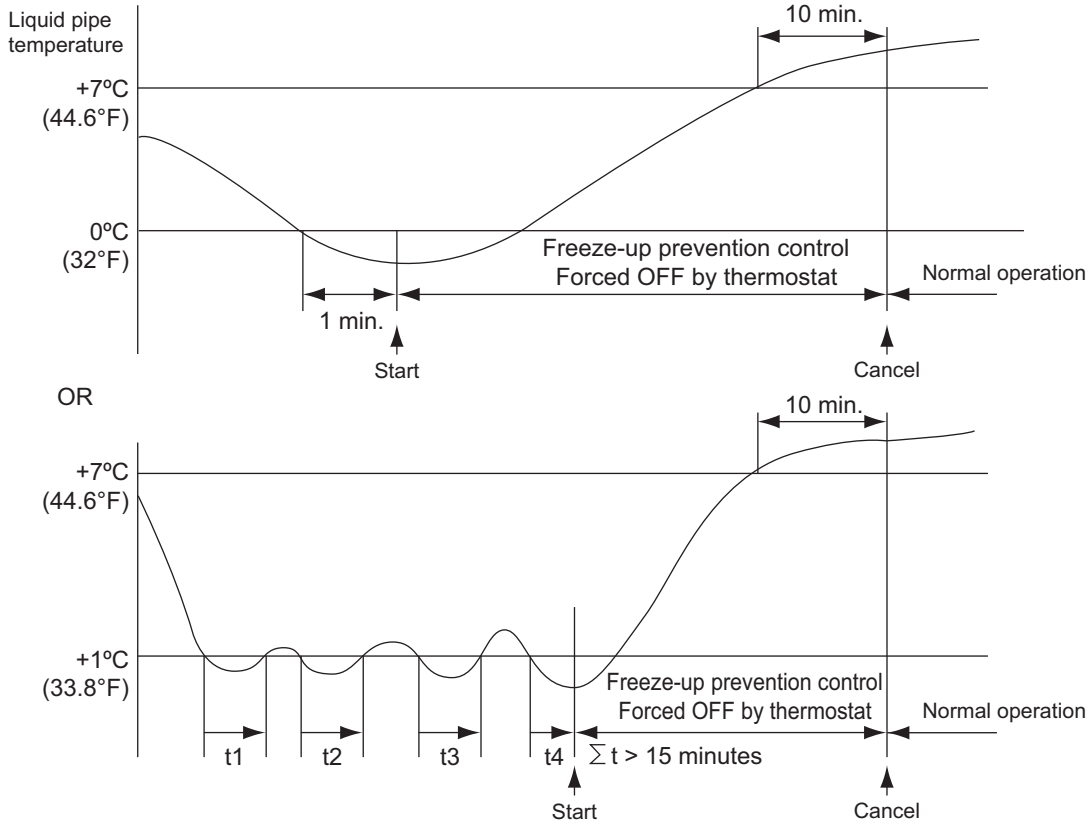
OR



The idea of freeze-up prevention control

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

Note(s) When the indoor unit is FCQ, if the air outlet is set as dual-directional or tri-directional, the starting conditions will be changed as follows.
Liquid pipe temperature ≤ 1°C (33.8°F) (for total of 15 minutes)
or
Liquid pipe temperature ≤ 0°C (32°F) (for 1 minute continuously)
During freeze-up prevention operation, the airflow rate is fixed to LL.
(The cancelling conditions are same as the standard.)



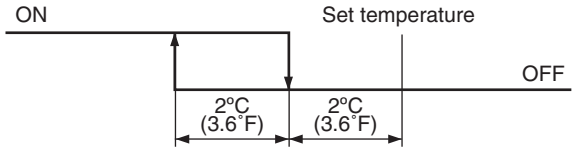
6.9 Heater Control (Except FTQ-TA Models)

Note(s) Optional PCB KRP1B... is required for heater control.

Heater control is conducted in the following manner.

Normal control

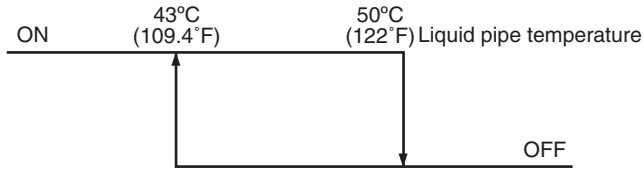
While in heating operation, heater control (ON/OFF) is conducted as shown on the right.



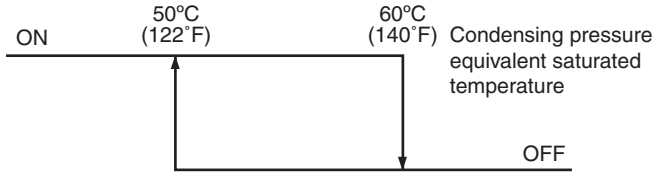
Overload control

When the system is overloaded in heating operation, the heater will be turned OFF in the following two manners.

(1) Heater control (ON/OFF) is conducted through the liquid pipe temperature (R2T) of the indoor unit.



(2) Heater control (ON/OFF) is conducted by converting the heater temperature into the condensing pressure equivalent saturated temperature (Tc) according to the temperature detection through the high pressure sensor (S1NPH) of the outdoor unit.



Fan residual operation

When the heater turns OFF, in order to prevent the activation of the thermal protector, the fan conducts residual operation for a given period of time after the heater turns OFF. (This operation is conducted regardless of whether or not a heater is equipped.)

Residual operation time: 100 seconds on ceiling suspended type or 60 seconds on other types

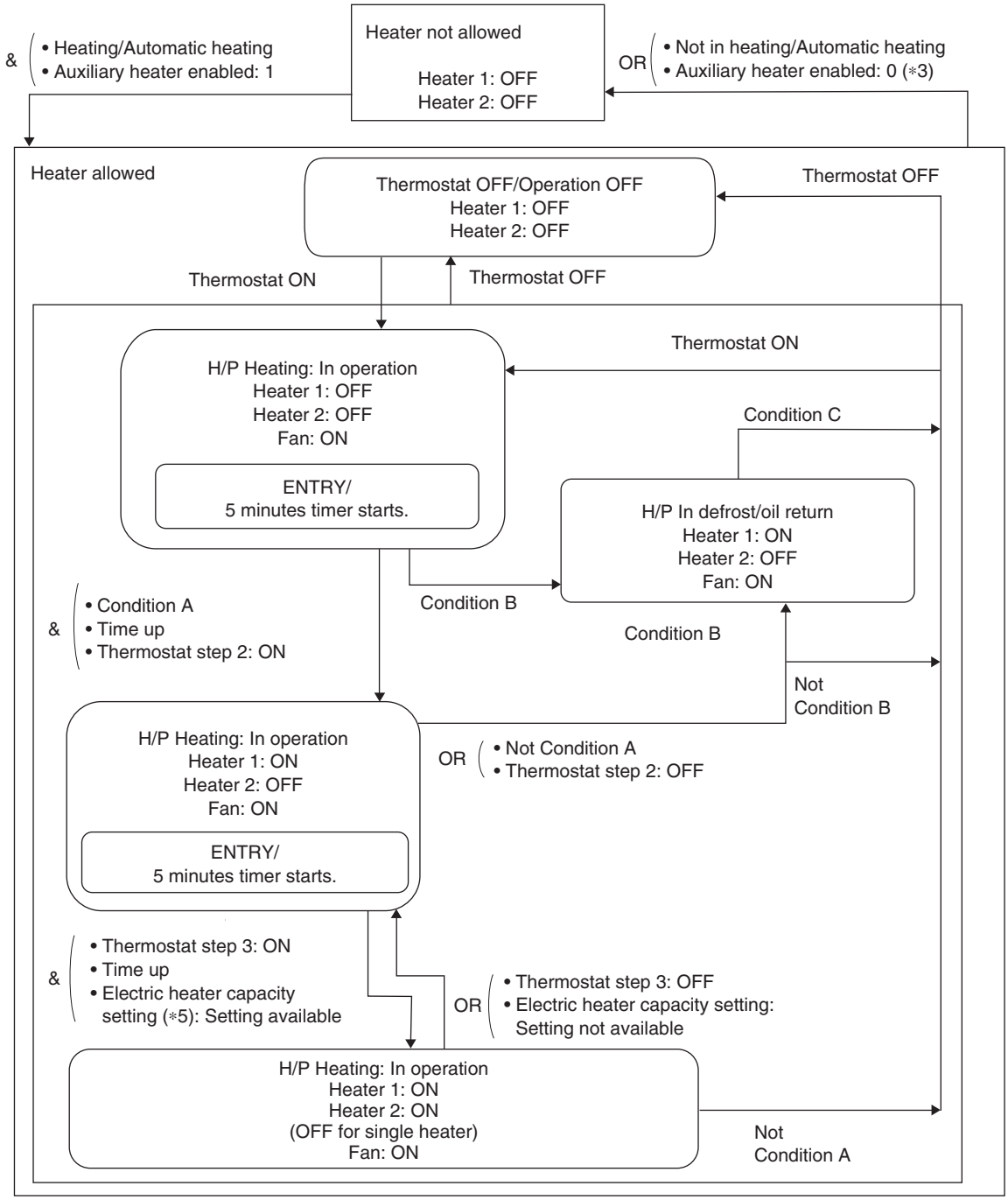
6.10 Heater Control (FTQ-TA Models)

Note(s)

Optional heater kit HKS... is required.
For FTQ-TA models, heater ON/OFF output from wiring adaptor interlocks with the operation of heater kit HKS….(When the heater 1 turns ON/OFF, heater output of wiring adaptor turns ON/OFF.)
Fan residual operation also interlocks with the fan residual operation of heater kit HKS…. The residual time will be 90 seconds. (Refer to **Fan Control (Heater Residual) (FTQ-TA Models)** on page 111.)

6.10.1 Auxiliary Electric Heater Control

If heating is insufficient in heat pump system alone, an electric heater is to be used as the auxiliary heater. The following shows the ON/OFF conditions for the electric heater.



Condition A

- & (• No fan motor system error
  - • High pressure condition: ON (∗1)
  - • Liquid pipe temperature condition: ON (∗2)
  - OR (& (• Heater ON permission (Defrost/oil Return): 0 (∗4)
    - • Not during defrost/oil return)
    - • Heater ON permission (Defrost/oil return): 1 (∗4))

Condition B

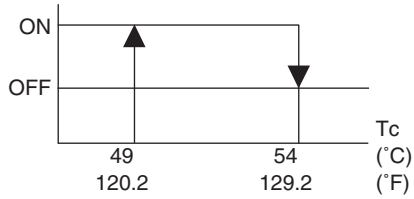
- & (• No fan motor system error
  - • During defrost/oil return
  - • Heater ON permission (Defrost/oil return): 1 (∗4))

Condition C

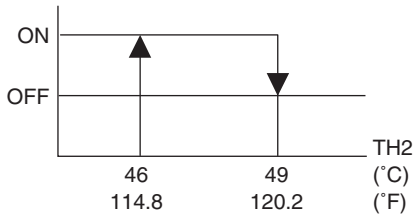
- OR (• Not during defrost/oil return
  - • Fan motor system error
  - • Heater ON permission (Defrost/oil return): 0 (∗4))

Note(s)

∗1: High pressure condition



∗2: Liquid pipe temperature condition



∗3: Auxiliary heater enabled

1: & (• Electric heater setting (Field setting 11 (21)-3): 2, 4, 6, 8, 10, 12 (∗6)
  - • Electric heater capacity setting ≠ 01)

0: Other than the above

∗4: Heater ON permission (Defrost/oil return)

1: Electric heater setting (Field setting 11 (21)-3): 8, 10, 12 (∗6)

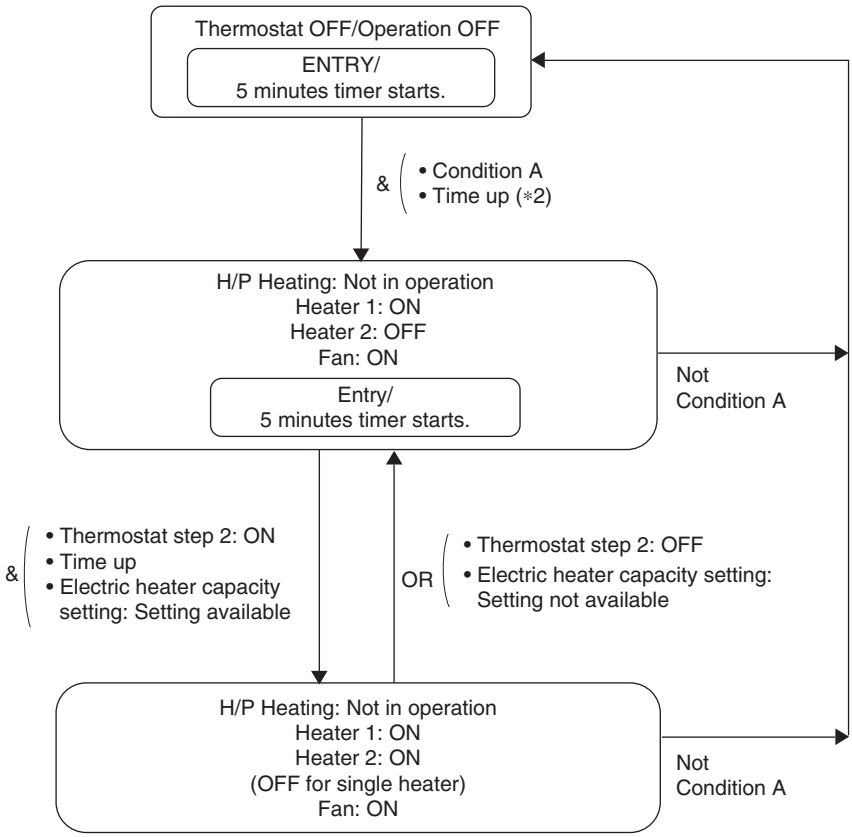
0: Electric heater setting (Field setting 11 (21)-3): 2, 4, 6 (∗6)

∗5: Field setting 11 (21)-5. Refer to page 126.

∗6: Refer to page 126.

6.10.2 Heat Pump Lockout Control

For heating operation, users can select to use electric heater. For this, signals are sent using ABC terminal of outdoor unit PCB.
When the hot-water heating signal is received from the outdoor unit PCB, heating operation is performed only with the electric heater as manual backup operation. The ON/OFF conditions for the electric heater are shown below.



Condition A

&
- Heating or automatic heating mode
- Thermostat step 1: ON
- No fan motor system error
- Hot-water heater: 1 (ON)
- Heater backup prohibiting conditions (∗1) not met (Not Condition B)

Condition B: Heater backup prohibiting conditions (∗1)

OR
- Indoor unit error (Abnormal stop)
- Indoor unit error (Remote controller thermistor error)
- Indoor unit error (Remote sensor error)
- Electric heater capacity setting: 01 (No heater kit)

Note(s)

∗1: The heater backup prohibiting conditions are prioritized. Even when the heater ON conditions are met, the heater is turned OFF when the prohibiting conditions are met.

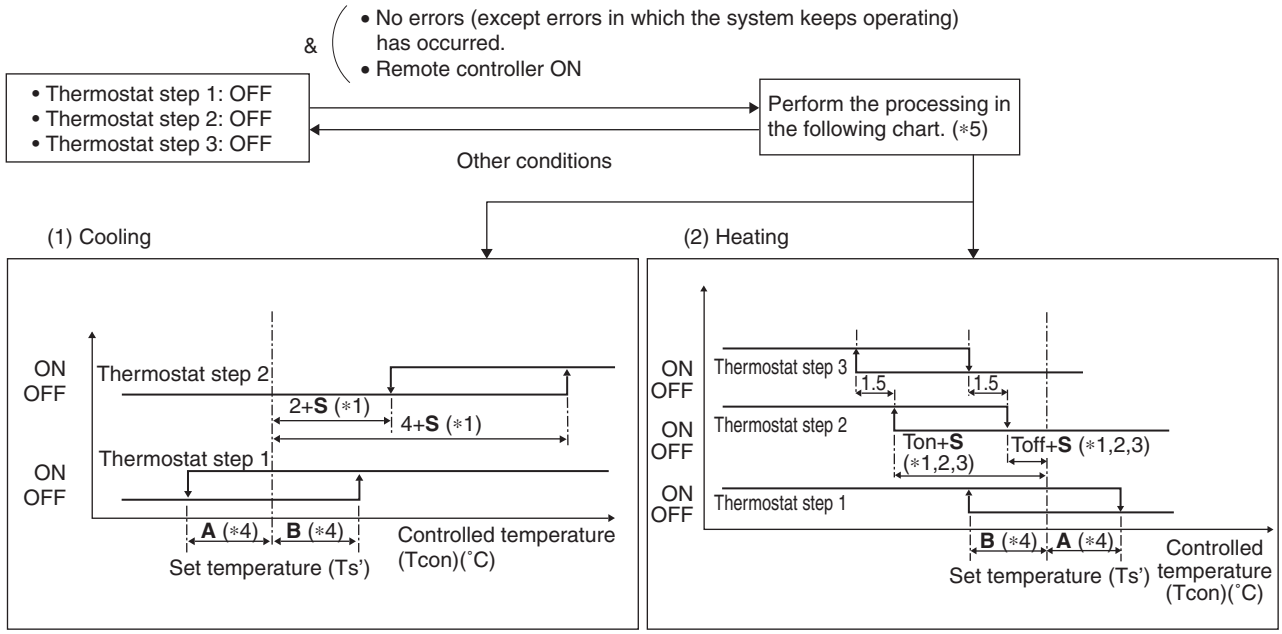
∗2: When the remote controller is ON, Time-up will be set to the initial value.

6.11 3-Step Thermostat Processing (FTQ-TA Models)

Outline

The thermostat ON/OFF for the indoor unit is controlled in accordance with Thermostat step 1.
The heater ON/OFF operation during heating is controlled as follows.
Thermostat step 2, 3: Auxiliary electric heater control
Thermostat step 1, 2: Heat pump lockout control
For more details of the heater, refer to **Heater Control (FTQ-TA Models)** on page 106.

Detail



Note(s)

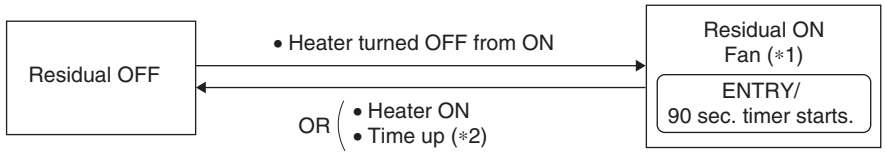
∗1. **S** value varies automatically based on the room temperature trend.
∗2. Ton + **S** > –**B** (°C), Toff + **S** < **A** (°C)
∗3. For parameters, refer to page 125.
∗4. **A** and **B** values vary automatically based on the field setting 12 (22)-2.
∗5. If, directly after a change in conditions, it is such that the thermostat could be either ON or OFF (controlled temperature is within ranges **A** and **B**), the thermostat will be switched to ON.

6.12 Fan Control (Heater Residual) (FTQ-TA Models)

Outline

If the indoor heater turned OFF from ON during heating operation, the fan will keep operating for further period of time in order to cool the heater.

Detail



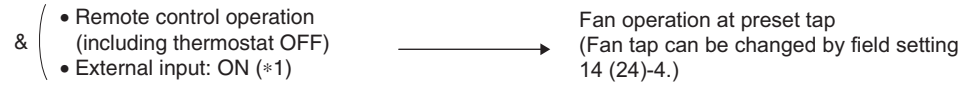
∗1. When the heater is ON, the airflow rate of the fan will be whichever is the largest between the CFM dictated by the heater's own capacity, or the fan tap CFM determined by other controls.

∗2. Fan residual operation will continue, even if the indoor unit is turned off with the remote controller operation button.

6.13 Interlocked with External Equipment (FTQ-TA Models)

6.13.1 Air Purifier (UV Lamp)

When an air purifier is connected onsite, the fan is operated with the airflow rate set of the remote controller or with the H tap.

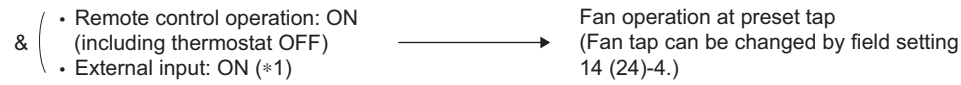


∗1. External input ON is an input signal to the X1M-AIR CLEANER terminal on the PCB.

∗2. Field setting 14 (24)-4. Refer to page 133.

6.13.2 Humidifier

When a humidifier is connected onsite, the fan operates with the airflow rate set of the remote controller or with the H tap.



∗1. External input ON is an input signal to the X1M-AIR CLEANER terminal on the PCB.

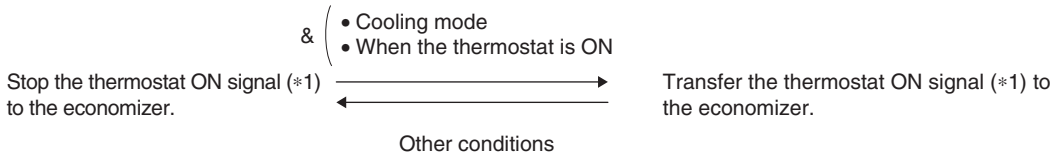
∗2. Field setting 14 (24)-4. Refer to page 133.

Note(s) This control is not applicable to the humidifier connected to the wiring adaptor, but to the humidifier connected to HUMIDIFIER on the X1M terminal of the indoor unit PCB.

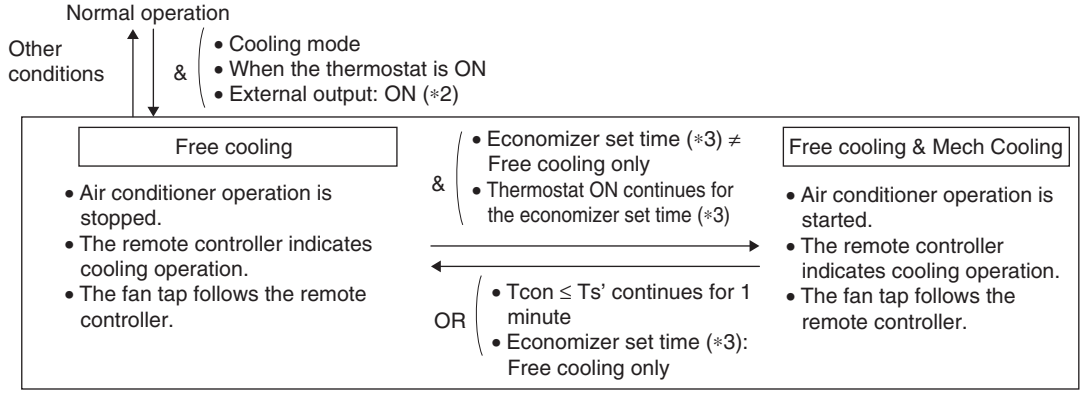
6.13.3 Economizer

When indoor and outdoor air temperatures are reversed, the compressor is stopped to let in the outdoor air to save energy.
This operation is called economizer operation, and the equipment to detect indoor and outdoor air temperatures and open and close the damper to perform this operation is called an economizer.
The economizer detects indoor and outdoor air temperatures, informs the air conditioner that the economizer operation is ready, and opens and closes the damper.
The indoor unit stops the outdoor unit when it receives a signal from the economizer and performs air supply operation.
When the indoor air temperature is cooled down sufficiently by the economizer operation, and it is no longer necessary (thermostat OFF), the indoor unit outputs a signal to the economizer to close the damper.

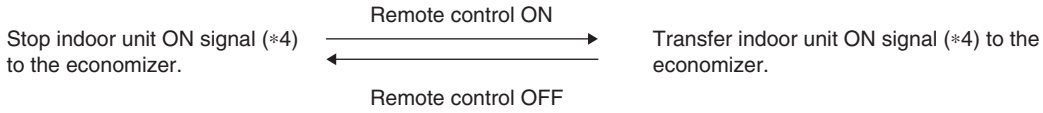
■ Thermostat ON signal



■ Operation



■ Indoor unit ON signal



∗1 Thermostat ON signal: A signal to turn ON the indoor unit thermostat and allow the economizer to open the damper.
It turns ON the relay on the X2M-ECONOMIZER2 on the PCB.

∗2 External input ON is an input signal to the X1M-ECONOMIZER1 terminal on the PCB.

∗3 Refer to Optional Kit Setting (UV lamp + Humidifier + Economizer) (for FTQ-TA models) on page 133.

∗4 Remote control ON signal: Contact output which shows the operating status of the indoor unit.
This signal turns on the relay X2M-CONTROL ON/OFF on the PCB.

Part 5
Field Settings and Test Operation

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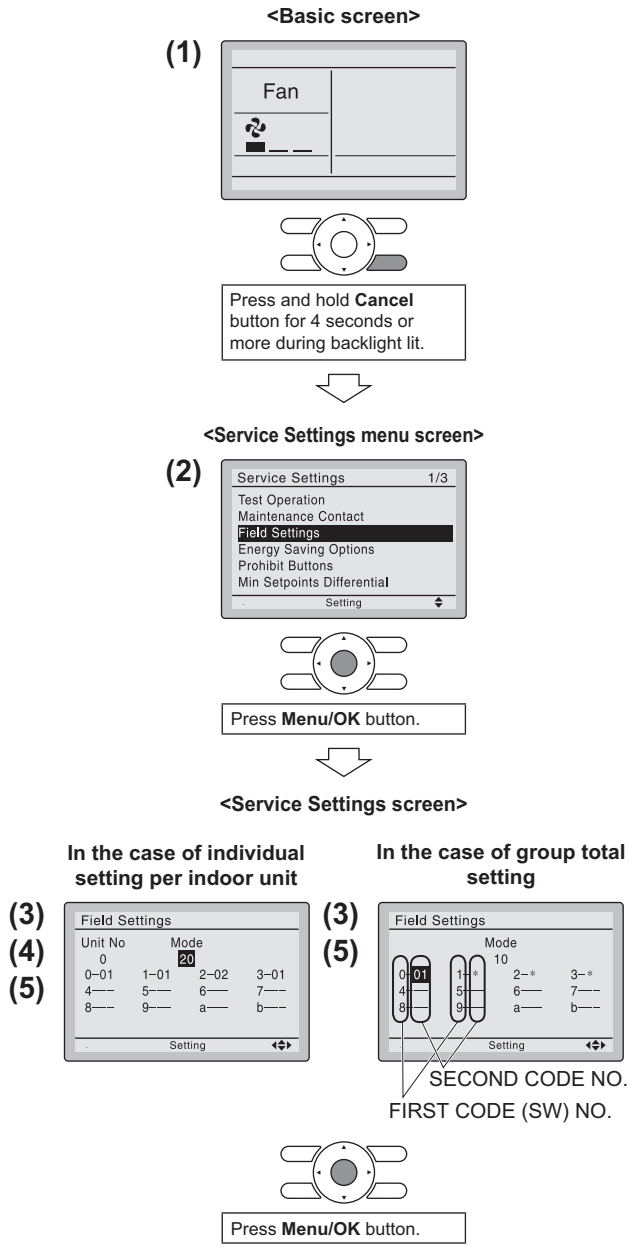
1. Field Setting from Remote Controller

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

1.1 Wired Remote Controller

1.1.1 BRC1E73



1. Press and hold **Cancel** button for 4 seconds or more.
   Service settings menu is displayed.

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

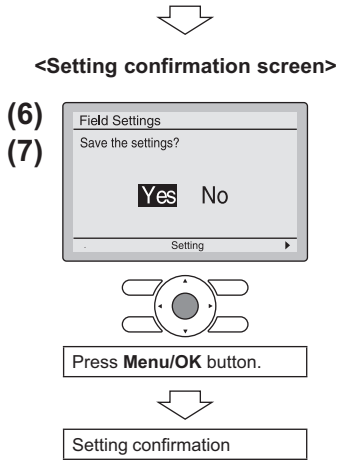
3. Highlight the mode, and select desired “Mode No.” by using **▲▼ (Up/Down)** button.

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

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

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

   In case of setting for all indoor units in the remote control group, available SECOND CODE NO. is displayed as “ ∗ ” which means it can be changed.
   When SECOND CODE NO. is displayed as “ - ”, there is no function.



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

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

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

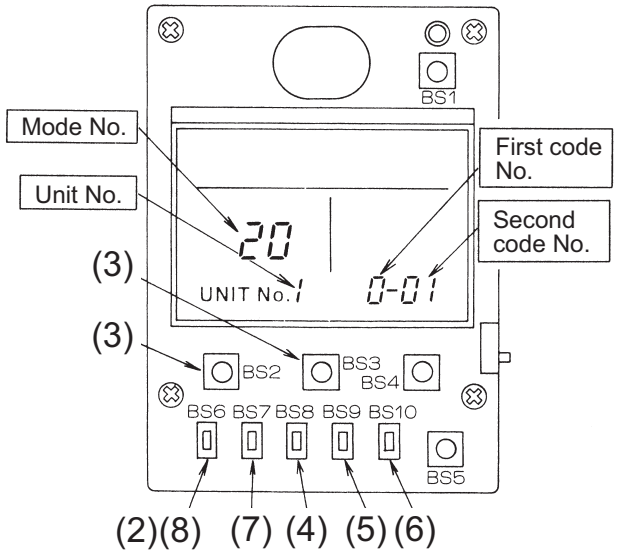
9. After all setting changes are completed, press **Cancel** button twice.

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

Note(s)

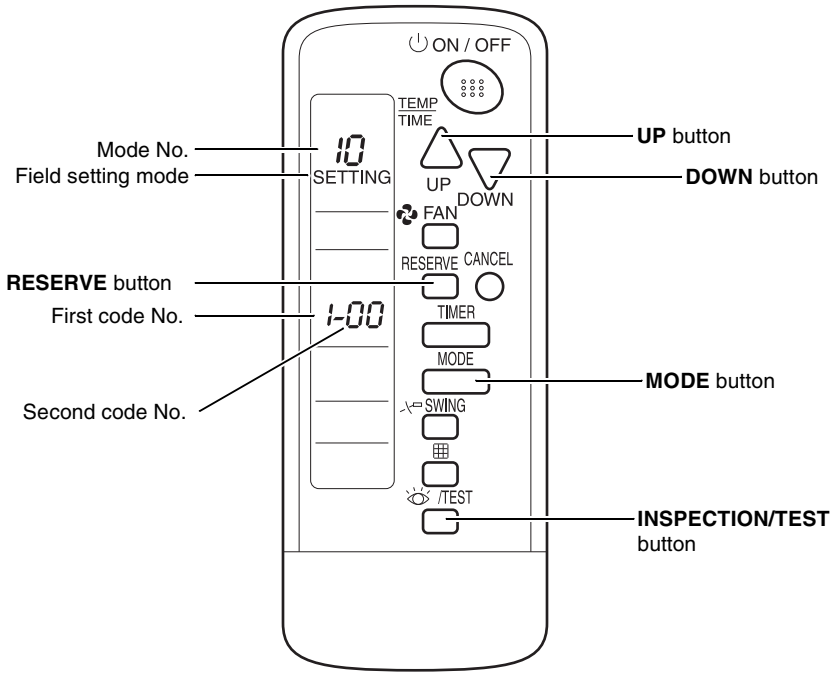
- Installation of optional accessories on the indoor unit may require changes to field settings. See the manual of the optional accessory.
- For field setting details related to the indoor unit, see installation manual shipped with the indoor unit.

1.2 Simplified Remote Controller



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

1.3 Wireless Remote Controller



Setting

To set the field settings, you have to change:

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

To change the field settings, proceed as follows:

1. Press the **INSPECTION/TEST** button for 4 seconds during normal mode to enter the field setting mode.
2. Press the **MODE** button to select the desired mode No.
3. Press the **UP** button to select the first code No.
4. Press the **DOWN** button to select the second code No.
5. Press the **RESERVE** button to confirm the setting.
6. Press the **INSPECTION/TEST** button to return to the normal mode.

1.4 List of Field Settings for Indoor Unit

★: Factory setting

Mode No. (∗2)	First Code No.	Description		Second Code No. 01		02		03	04	Page Reference
10 (20)	0	Filter cleaning sign interval	Ultra long life filter	**Light★**	**Approx. 10,000 hrs.★**	Heavy	Approx. 5,000 hrs.	—	—	122
			Long life filter		**Approx. 2,500 hrs.★**		Approx. 1,250 hrs.			
			Standard filter		**Approx. 200 hrs.★**		Approx. 100 hrs.			
	0 (∗8)	Filter sign setting		**Light★**		Heavy		—	—	122
	1	Filter type		**Long life filter★**		Ultra long life filter		—	—	122
	1 (∗8)	Filter cleaning sign interval		**Short interval★**		Long interval		—	—	122
	2	Remote controller thermistor		**Remote controller thermistor + Suction air thermistor★**		Only suction air thermistor		Only remote controller thermistor	—	122
	2 (∗8)	Remote sensor and remote controller thermistor		—		Only remote sensor thermistor		**Only remote controller thermistor★**	—	122
	3	Filter cleaning sign		**Displayed★**		Not displayed		—	—	124
	6	Remote controller thermistor control during group control		**Not permitted★**		Permitted		—	—	122
	7 (∗6)	Time for absence area detection		**30 minutes★**		60 minutes		—	—	124
11 (21)	1 (∗8)	Auxiliary electric heater ON temperature: Ton		Refer to the page on the right for details.						125
	1	Auxiliary electric heater ON/ OFF temperature: Ton/Toff								
	2 (∗8)	Auxiliary electric heater OFF temperature: Toff								
	3	Setting of airflow rate when heating		**Standard★**		Slightly increased		Increased	—	125
	3 (∗8)	Electric heater setting		Refer to the page on the right for details.						126
	5 (∗8)	Electric heater capacity setting		Refer to the page on the right for details.						126
	6 (∗6)	Setting the rate of human detection		High sensitivity		Low sensitivity		**Standard sensitivity★**	Infrared presence sensor disabled	126
	7	Automatic airflow adjustment		**OFF★**		Completion of airflow adjustment		Start of airflow adjustment	—	127
	8 (∗6)	Compensating the temperature around people		Suction air temperature only		Priority given on the suction air temperature		**Standard★**	Priority given on the floor temperature	128
	9 (∗6)	Compensating the floor temperature when heating		–4°C (–7.2°F)		–2°C (–3.6°F)		**0°C (0°F)★**	2°C (3.6°F)	128

Mode No. (*2)	First Code No.	Description	Second Code No.				Page Reference
			01	02	03	04	
12 (22)	0	Optional accessories output selection (field selection of output for adaptor for wiring)	Refer to the page on the right for details.				129
	1	External ON/OFF input (Set when ON/OFF is to be controlled from outside.)	Refer to the page on the right for details.				129
	2	Thermostat differential changeover (Set when remote sensor is to be used.)	**1°C (1.8°F)★**	0.5°C (0.9°F)	—	—	129
	3 (*7)	Airflow setting when heating thermostat is OFF	**LL tap★**	Set fan speed	OFF	—	129
	4	Automatic mode differential	Refer to the page on the right for details.				130
	5	Auto restart after power failure reset	Not equipped	**Equipped★**	—	—	130
	6 (*7)	Airflow setting when cooling thermostat is OFF	LL tap	**Set fan speed★**	OFF	—	130
13 (23)	0	Ceiling height setting/setting of normal airflow	**Standard★**	High ceiling (1)	High ceiling (2)	—	131
	1	Airflow direction setting (Set when a sealing material kit has been installed)	**F (4 directions)★**	T (3 directions)	W (2 directions)	—	131
	2 (*6)	Swing pattern settings	All direction synchronized swing	—	**Facing swing★**	—	132
	4	Airflow direction adjustment range	Draft prevention	**Standard★**	Ceiling Soiling prevention	—	132
	6	External static pressure settings	Refer to the page on the right for details.				132
14 (24)	4 (*8)	Optional kit setting (UV lamp + humidifier + economizer)	Refer to the page on the right for details.				133
	5 (*8)	Residential dry	**Set temperature: room temperature★**	Set temperature: same as cooling set temperature	—	—	133
15 (25)	0	Drain pump operation settings	—	**ON★**	OFF	—	133
	1	Humidification when heating thermostat is OFF	**Not equipped★**	Equipped	—	—	133
	2 (*5)	Direct duct connection (when the indoor unit and energy recovery ventilator are connected by duct directly.)	**Not equipped★**	Equipped	—	—	134
	3	Drain pump and humidifier interlock selection	**Not interlocked★**	Interlocked	—	—	134
	5	Individual ventilation setting	**— (Normal)★**	Individual	—	—	134
1b	4	Display of error codes on the remote controller	—	Two-digit display	—	**Four-digit display★**	134
	12	Key-lock pattern settings	**No operation allowed (Cancel procedure is displayed.) ★**	No operation allowed (Cancel procedure is not displayed.)	No menu operation is allowed (Cancel procedure is displayed.)	No menu operation is allowed any time.	135
	14	Setting restricted/permitted of airflow block	Refer to the page on the right for details.				135
1c	0	Room temperature display	Room temperature is not displayed	**Room temperature is displayed★**	—	—	135
	1	Thermistor sensor for auto changeover and setback control by the remote controller	Utilize the return air thermistor	**Utilize the remote controller thermistor★**	—	—	135
	3	Access permission level setting	**Level 2★**	Level 3	—	—	136
1e	2	Setback availability	**N/A★**	Heat only	Cool only	Cool/heat	136

Note(s)

1. Settings are made simultaneously for the entire group, however, if you select the mode No. inside parentheses, you can also set by each individual unit. Setting changes however cannot be checked except in the individual mode for those in parentheses.
∗2. The mode numbers inside parentheses cannot be used by wireless remote controllers, so they cannot be set individually. Setting changes also cannot be checked.
3. Do not make settings other than those described above. Nothing is displayed for functions the indoor unit is not equipped with.
4. **88** or **Checking the connection. Please stand by.** may be displayed to indicate the remote controller is resetting when returning to the normal mode.
∗5. If the setting mode set to Equipped, energy recovery ventilator fan conducts the fan residual operation by linking to indoor unit.
∗6. Available for setting when option with the built-in human detection and floor temperature detection functions are mounted.
∗7. If the airflow setting when thermostat is OFF is set to OFF (12 (22)-3-03, 12 (22)-6-03), the air in the indoor unit will be stagnant and suction air thermistor may not detect room temperature correctly, resulting in problems that thermostat will not be ON easily.
Use optional remote sensor in such conditions, or set the field setting 10 (20)-2 to **03** (only remote controller thermistor).
∗8. Only for FTQ-TA models.

Applicable Range of Field Settings

Mode No.	First Code No.	Description of Setting	FCQ	FHQ	FAQ	FBQ	FTQ
10 (20)	0	Filter cleaning sign interval	●	●	●	●	—
	0	Filter sign setting	—	—	—	—	●
	1	Filter type	●	—	—	—	—
	1	Filter cleaning sign interval	—	—	—	—	●
	2	Thermistor selection	●	●	●	●	●
	3	Filter sign display	●	●	●	●	●
	6	Remote controller thermistor control during group control	●	●	●	●	●
	7	Time for absence area detection	●	—	—	—	—
11 (21)	1	Auxiliary electric heater ON temperature	—	—	—	—	●
	1	Auxiliary electric heater ON/OFF temperature	●	—	—	—	—
	2	Auxiliary electric heater OFF temperature	—	—	—	—	●
	3	Setting of airflow rate when heating	●	—	—	—	—
	3	Electric heater setting	—	—	—	—	●
	5	Electric heater capacity setting	—	—	—	—	●
	6	Setting the rate of human detection	●	—	—	—	—
	7	Automatic airflow adjustment	—	—	—	●	—
	8	Compensating the temperature around people	●	—	—	—	—
	9	Compensating the floor temperature when heating	●	—	—	—	—
12 (22)	0	Optional accessories output selection	●	●	●	●	●
	1	External ON/OFF input	●	●	●	●	●
	2	Thermostat differential changeover	●	●	●	●	●
	3	Airflow setting when heating thermostat is OFF	●	●	●	●	●
	4	Automatic mode differential	●	●	●	●	●
	5	Auto restart after power failure reset	●	●	●	●	●
	6	Airflow setting when cooling thermostat is OFF	●	●	●	●	●
13 (23)	0	Ceiling height setting, setting of normal airflow	●	●	●	●	—
	1	Airflow direction setting	●	—	●	—	—
	2	Swing pattern settings	●	—	—	—	—
	4	Airflow direction adjustment range	●	—	●	—	—
	6	External static pressure settings	—	—	—	●	—
14 (24)	4	Optional kit setting (UV lamp + humidifier + economizer)	—	—	—	—	●
	5	Residential dry	—	—	—	—	●
15 (25)	0	Drain pump operation settings	—	—	—	●	—
	1	Humidification when heating thermostat is OFF	●	●	●	●	●
	2	Direct duct connection	●	—	●	—	—
	3	Drain pump and humidifier interlock selection	●	●	●	●	—
	5	Individual ventilation setting	●	●	●	●	●
1b	4	Display of error codes on the remote controller	●	●	●	●	●
	12	Key-lock pattern settings	●	●	●	●	●
	14	Setting restricted/permitted of airflow block	●	—	—	—	—
1c	0	Room temperature display	●	●	●	●	●
	1	Thermistor sensor for auto changeover and setback control by the remote controller	●	●	●	●	●
	3	Access permission level setting	●	●	●	●	●
1e	2	Setback availability	●	●	●	●	●

●: Available
—: Not available

1.5 Details of Field Settings for Indoor Unit

1.5.1 Filter Cleaning Sign Interval, Filter Type

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

★: Factory setting

Setting	10 (20)-1	**01: Long life filter★**		02: Ultra long life filter	
	Filter contamination heavy/light 10 (20)-0	**Light 01★**	Heavy 02	Light 01	Heavy 02
Model	FCQ-TA	**2,500 hrs.★**	1,250 hrs.	10,000 hrs.	5,000 hrs.
	FHQ-P				
	FHQ-M				
	FBQ-P				
	FAQ-TA	**200 hrs.★**	100 hrs.	200 hrs.	100 hrs.

★: Factory setting

Setting	10 (20)-1	**01: Short interval★**		02: Long interval	
	Filter contamination heavy/light 10 (20)-0	**Light 01★**	Heavy 02	Light 01	Heavy 02
Model	FTQ-TA	**2,500 hrs.★**	1,250 hrs.	10,000 hrs.	5,000 hrs.

1.5.2 Thermistor Selection

Select a thermistor to control the room temperature.
When the unit is not equipped with an infrared floor sensor:

★: Factory setting

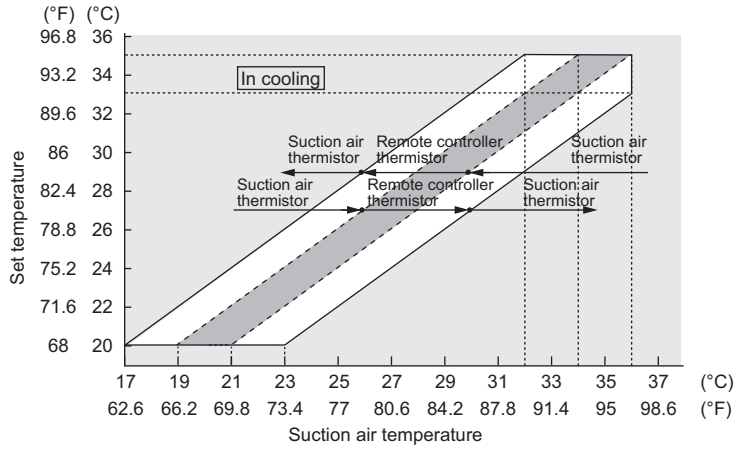
Mode No.	First Code No.	Second Code No.	Contents
10 (20)	2	**01★**	**Remote controller thermistor and suction air thermistor for indoor unit★**
		02	Suction air thermistor for indoor unit
		03	Remote controller thermistor

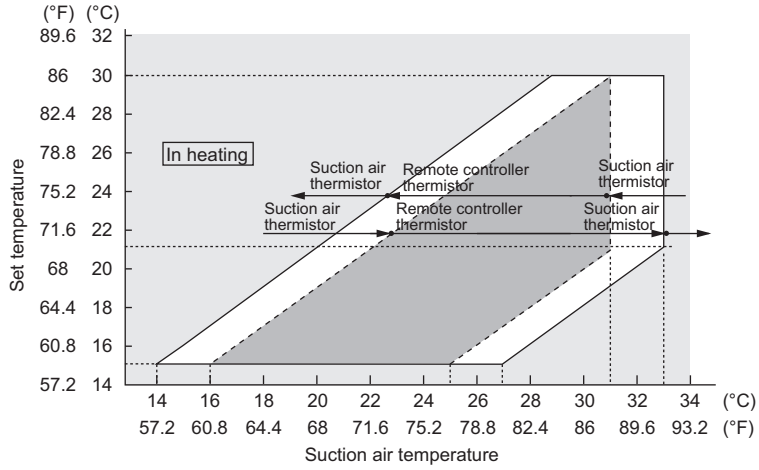
The factory setting for the Second code No. is **01** and room temperature is controlled by the suction air thermistor for indoor unit and remote controller thermistor. When the Second code No. is set to **02**, room temperature is controlled by the suction air thermistor. When the Second code No. is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

■ **FTQ-TA** ★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
10 (20)	2	01	—
		02	Remote sensor thermistor
		03★	**Remote controller thermistor★**

When the Second Code No. is set to **02**, room temperature is controlled by the remote sensor thermistor. When the Second Code No. is set to **03**, room temperature is controlled by the remote controller thermistor.





When the unit is equipped with an infrared floor sensor:

★: Factory setting

Mode No.	First Code No.	Second Code No.					
10 (20)	2	01	02	02	**02**★	02	03
11 (21)	8	01	01	02	**03**★	04	01
The thermistor to be used		↓	↓	↓	↓	↓	↓
Remote controller thermistor		●	—	—	—	—	●
Suction air thermistor		●	●	●	●	●	—
Infrared floor sensor		—	—	●	●	●	—
		The infrared floor sensor is not used	Only the suction air thermistor is used	Priority given to the suction air temperature (∗)	Standard setting (Factory setting)	Priority given to the floor temperature (∗)	Only the remote controller thermistor is used

∗Refer to **Compensating the temperature around people** on page 128.
Note that the control is automatically switched to the one performed only by the suction air thermistor for indoor unit when the Second code No. is **01** during group control.
To use the remote controller thermistor during the group control, select the Second code No. **02** in

First code No. **6**.

★: Factory setting

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

Note(s) When the 10 (20)-6 setting is changed to **02**, several indoor units are controlled by one remote controller thermistor, so note that the room temperature might be uneven.

1.5.3 Filter Cleaning Sign

Whether or not to display **Filter Cleaning** after operation of a certain duration can be selected.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
10 (20)	3	**01★**	**Displayed★**
		02	Not displayed

∗**Filter Cleaning** is not displayed when an Auto-clean Panel is connected.

1.5.4 Time for Absence Area Detection

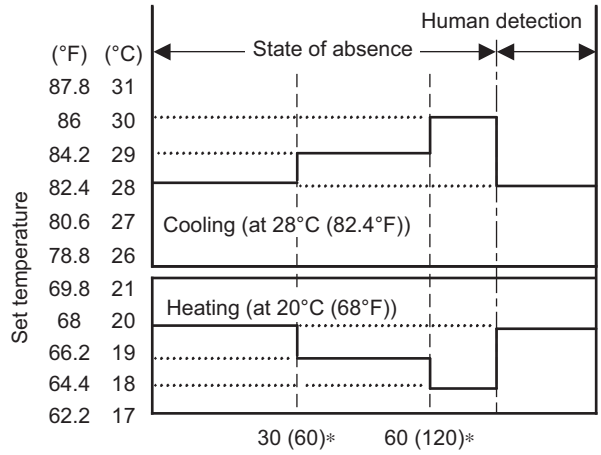
(For units with an infrared presence sensor)

By selecting the energy-saving operation mode when absent, the target temperature is shifted to the energy-saving end by 1°C (1.8°F) (maximum 2°C (3.6°F)) after the state of absence continues for a certain period of time.

Absent time defined for detection can be selected as follows:

★: Factory setting

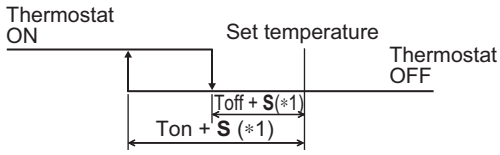
Mode No.	First Code No.	Second Code No.	Contents
10 (20)	7	**01★**	**30 minutes★**
		02	60 minutes



∗ The values in parentheses represent the time when Second code No. is **02**.

- The set temperature displayed on the remote controller remains the same even if the target temperature is shifted.
- As soon as people are detected while the temperature is shifted, this control will be cancelled (reset).

1.5.5 Auxiliary Electric Heater ON/OFF Temperature



Note(s) ∗1. **S** value varies automatically based on the room temperature trend.

■ **FCQ-TA** ★: Factory setting

Mode No.	First Code No.	Symbol	Second Code No.					
			01★	02	03	04	05	06
11 (21)	1	Ton	**-4°C (-7.2°F)★**	–3.5°C (–6.3°F)	–3°C (–5.4°F)	–2.5°C (–4.5°F)	–2°C (–3.6°F)	–1.5°C (–2.7°F)
		Toff	**-2°C (-3.6°F)★**	–1.5°C (–2.7°F)	–1°C (–1.8°F)	–0.5°C (–0.9°F)	0°C (0°F)	0.5°C (0.9°F)

■ **FTQ-TA** ★: Factory setting

Mode No.	First Code No.	Symbol	Second Code No.					
			01★	02	03	04	05	06
11 (21)	1	Ton	**-4°C (-7.2°F)★**	–3.5°C (–6.3°F)	–3°C (–5.4°F)	–2.5°C (–4.5°F)	–2°C (–3.6°F)	–1.5°C (–2.7°F)
	2	Toff	**-2°C (-3.6°F)★**	–1.5°C (–2.7°F)	–1°C (–1.8°F)	–0.5°C (–0.9°F)	0°C (0°F)	0.5°C (0.9°F)

There is a limitation of combination between Ton and Toff as below due to 2°C (3.6°F) hysteresis required for reliability.

Second Code No.			Ton					
			01	02	03	04	05	06
			–4°C (–7.2°F)	–3.5°C (–6.3°F)	–3°C (–5.4°F)	–2.5°C (–4.5°F)	–2°C (–3.6°F)	–1.5°C (–2.7°F)
Toff	06	0.5°C (0.9°F)	●	●	●	●	●	●
	05	0°C (0°F)	●	●	●	●	●	—
	04	–0.5°C (–0.9°F)	●	●	●	●	—	—
	03	–1°C (–1.8°F)	●	●	●	—	—	—
	02	–1.5°C (–2.7°F)	●	●	—	—	—	—
	01	–2°C (–3.6°F)	●	—	—	—	—	—

●: Available
—: Not available

1.5.6 Setting of Airflow Rate when Heating

The fan revolution is changed to maintain the sufficient distance for warm air to reach during the heating operation. The setting should be changed depending on the installation condition of the unit.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
11 (21)	3	**01★**	**Standard★**
		02	Slightly increased
		03	Increased

Note that this setting is effective only during the heating operation.

1.5.7 Electric Heater Setting

■ **FTQ-TA** ★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents	
			Heater operation	Electric heater run for defrost/oil return operation
11 (21)	3	**01★**	**Electric heater with heat pump not allowed★**	**Not allowed★**
		02	Electric heater with heat pump allowed	Not allowed
		07	Electric heater with heat pump not allowed	Allowed
		08	Electric heater with heat pump allowed	Allowed

1.5.8 Electric Heater Capacity Setting

■ **FTQ-TA** ★: Factory setting

Model	Mode No.	First Code No.	Second Code No.							
			01★	02	03	04	05	06	07	08
			Heater (kW)							
			No heater kit★	3	5	6	8	10	15	19
FTQ18TAVJU	11 (21)	5	●★	●	●	●	●	●	—	—
FTQ24TAVJU			●★	●	●	●	●	●	—	—
FTQ30TAVJU			●★	●	●	●	●	●	—	—
FTQ36TAVJU			●★	●	●	●	●	●	—	—
FTQ42TAVJU			●★	—	●	●	●	●	●	●
FTQ48TAVJU			●★	—	●	●	●	●	●	●

●: Available
—: Not available

1.5.9 Setting the Rate of Human Detection

(For units with an infrared presence sensor)

Set the sensitivity of the infrared presence sensor.

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

Note(s)

When the infrared presence sensor is disabled, the remote controller menu does not display some functions such as the automatic draft reduction, energy-saving operation in absence and halt in absence.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
11 (21)	6	01	High sensitivity
		02	Low sensitivity
		03★	**Standard sensitivity★**
		04	Infrared presence/floor sensor disabled

1.5.10 Automatic Airflow Adjustment

Make external static pressure setting automatically using automatic airflow adjustment, or manually using external static pressure settings.

■ **FBQ-P**

The volume of blow-off air is automatically adjusted to the rated quantity.
Make settings before performing the test operation of the outdoor unit.

Setting procedure

1. Make sure that electric wiring and duct construction have been completed.
   In particular, if the closing damper is installed on the way of the duct, make sure that it is open. In addition, make sure that a field-supplied air filter is installed within the air passageway on the suction port side.
2. If there are multiple blow-off and suction ports, adjust the throttle part so that the airflow volume ratio of each suction/blow-off port conforms to the designed airflow volume ratio. In that case, operate the unit with the operation mode "fan". When you want to change the airflow rate, adjust it by pressing the airflow rate control button to select High, Middle or Low.
3. Make settings to adjust the airflow rate automatically.
   After setting the operation mode to "fan", enter the field setting mode while operation is stopped and then select the Mode No. 11 (21), set the First Code No. to **7** and the Second Code No. to **03**.
4. After setting, return to the basic screen (to the normal mode in the case of a wireless remote controller) and press the ON/OFF button. Fan operation for automatic airflow adjustment will start with the operation lamp turned ON. Do not adjust the throttle part of the suction and blow-off ports during automatic adjustment. After operation for approximately one to fifteen minutes, airflow adjustment automatically stops with the operation lamp turned OFF.
5. After operation stopped, make sure that the Second Code No. is set to **02** as in the following table by indoor unit with the Mode No. 11 (21). If operation does not stop automatically or the Second Code No. is not set to **02**, return to the step (3) above to make settings again.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
11 (21)	7	**01**★	**OFF**★
		02	Completion of airflow adjustment
		03	Start of airflow adjustment

Note(s)

1. Make sure that the external static pressure is within the range of specifications before making settings. If it is outside the range, automatic adjustment fails, which may cause an insufficient airflow volume or leakage of water.
2. If the air passageway including duct or blow-off ports is changed after automatic adjustment, make sure to perform automatic airflow adjustment again.

1.5.11 Compensating the Temperature around People

(For units with an infrared floor sensor)

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

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

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

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
11 (21)	8	01	Suction air temperature only
		02	Priority given on the suction air temperature
		03★	**Standard★**
		04	Priority given on the floor temperature

1.5.12 Compensating the Floor Temperature when Heating

(For units with an infrared floor sensor)

Offset the detected value of the infrared floor sensor with a certain temperature. This setting should be used to have the actual floor temperature detected when, for example, the unit is installed close to a wall.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
11 (21)	9	01	–4°C (–7.2°F)
		02	–2°C (–3.6°F)
		03★	**0°C (0°C)★**
		04	2°C (3.6°F)

Actual procedure to use the setting

Although the standard setting is normally used with no problem, the setting should be changed in the following cases:

Environment	Operation Mode	Problem	Setting Value
- The unit is installed close to a wall or a window. - High thermal capacity of the floor (such as concrete, etc). - There are many heat sources including PC. - There is a non-negligible heat source such as floor heating.	Heating	Excessive heating	2°C (3.6°F)
		Insufficient heating	–2°C or –4°C (–3.6°F or –7.2°F)

1.5.13 Optional Accessories Output Selection

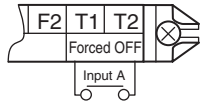
Using this setting, "operation output signal" and "abnormal output signal" can be provided. Output signal is output between terminals X1 and X2 of "adaptor for wiring", an optional accessory.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
12 (22)	0	**01★**	**Indoor unit thermostat ON/OFF signal is provided.★**
		02	—
		03	Output linked with ON/OFF of remote controller is provided.
		04	In case of Error Display appears on the remote controller, output is provided.
		05	—
		06	—
		07	Only for FBQ-P Economizer (field supply) ON/OFF signal is provided.

1.5.14 External ON/OFF Input

This input is used for "ON/OFF operation" and "Protection device input" from the outside. The input is performed from the T1-T2 terminal of the operation terminal block in the electrical component box.



★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
12 (22)	1	**01★**	**ON: Forced OFF (prohibition of using the remote controller)** **OFF: Permission of using the remote controller★**
		02	OFF → ON: Operation ON → OFF: Stop
		03	ON: Operation OFF: The system stops, then the applicable unit indicates **A0**. The other indoor units indicate **U9.**
		04	—
		05	Only for FBQ-P ON: Economizer (field supply) is connected. OFF: Not connected

1.5.15 Thermostat Differential Changeover

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

★: Factory setting

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

1.5.16 Airflow Setting when Heating Thermostat is OFF

This setting is used to set airflow when heating thermostat is OFF.

∗ When thermostat OFF airflow volume up mode is used, careful consideration is required before deciding installation location.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
12 (22)	3	**01★**	**LL tap★**
		02	Set fan speed
		03	OFF

1.5.17 Automatic Mode Differential

This setting makes it possible to change differential values for mode selection while in automatic operation mode, only when the wireless remote controller or any central remote controller is connected.

★: Factory setting

Mode No.	First Code No.	Second Code No.							
		01★	02	03	04	05	06	07	08
12 (22)	4	**0°C (0°F)★**	1°C (1.8°F)	2°C (3.6°F)	3°C (5.4°F)	4°C (7.2°F)	5°C (9°F)	6°C (10.8°F)	7°C (12.6°F)

The automatic operation mode setting is made by the use of the "Operation Mode Selector" button.

1.5.18 Auto Restart after Power Failure Reset

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
12 (22)	5	01	Not equipped
		02★	**Equipped★**

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

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

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

1.5.19 Airflow Setting when Cooling Thermostat is OFF

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

★: Factory setting

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

1.5.20 Ceiling Height Setting, Setting of Normal Airflow

Make the following setting according to the ceiling height. The second code No. is set to **01** at the factory.

■ **FCQ18/24TA** ★: Factory setting

Mode No.	First Code No.	Second Code No.	Setting	Ceiling Height			
				All round outlet	4-way Outlets	3-way Outlets	2-way Outlets
13 (23)	0	**01★**	**Standard★**	**Lower than 2.7 m★** (8-3/4 ft)	**Lower than 3.1 m (10-1/8 ft)★**	**Lower than 3.0 m (10 ft)★**	**Lower than 3.5 m (11-1/2 ft)★**
		02	High Ceiling (1)	Lower than 3.0 m (10 ft)	Lower than 3.4 m (11-1/8 ft)	Lower than 3.3 m (10-3/4 ft)	Lower than 3.8 m (12-1/2 ft)
		03	High Ceiling (2)	Lower than 3.5 m (11-1/2 ft)	Lower than 4.0 m (13-1/8 ft)	Lower than 3.5 m (11-1/2 ft)	—

■ **FCQ30/36/42/48TA** ★: Factory setting

Mode No.	First Code No.	Second Code No.	Setting	Ceiling Height			
				All round outlet	4-way Outlets	3-way Outlets	2-way Outlets
13 (23)	0	**01★**	**Standard★**	**Lower than 3.2 m (10-1/2 ft)★**	**Lower than 3.4 m (11-1/8 ft)★**	**Lower than 3.6 m (12 ft)★**	**Lower than 4.2 m (13-3/4 ft)★**
		02	High Ceiling (1)	Lower than 3.6 m (12 ft)	Lower than 3.9 m (12-3/4 ft)	Lower than 4.0 m (13-1/8 ft)	Lower than 4.2 m (13-3/4 ft)
		03	High Ceiling (2)	Lower than 4.2 m (13-3/4 ft)	Lower than 4.5 m (14-3/4 ft)	Lower than 4.2 m (13-3/4 ft)	—

Note(s)

1. The Second Code No. is factory set to Standard/All-direction airflow. For High ceiling (1) or (2), initial setting by remote controller is required.
2. A closing member kit (optional) is required for 4-, 3-, or 2-direction airflow.

■ **FAQ-TA** ★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
13 (23)	0	**01★**	**Standard★**
		02	A little increase
		03	Increase

1.5.21 Airflow Direction Setting

Set the airflow direction of indoor units as given in the table below. (Set when sealing material kit of air discharge outlet has been installed.) The second code No. is factory set to **01**.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
13 (23)	1	**01★**	**F: 4-direction airflow★**
		02	T: 3-direction airflow
		03	W: 2-direction airflow

1.5.22 Swing Pattern Settings

(For units with an infrared floor sensor)

Set the flap operation in swing mode.

With the factory swing, flaps facing each other are synchronized to operate, and flaps placed side by side are set to swing in an opposite direction to agitate airflow to reduce temperature irregularity.

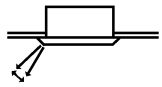
Conventional swing operation (all direction synchronized swing) can be set onsite.

★: Factory setting

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

1.5.23 Airflow Direction Adjustment Range

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



■ **FCQ-TA, FAQ-TA** ★: Factory setting

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

Note(s) When the model FCQ-TA is attached with a closing member kit, set the Second Code No. to **02** or **03**.

1.5.24 External Static Pressure Settings

Make external static pressure setting automatically using automatic airflow adjustment, or manually using external static pressure settings.

■ **FBQ-P** ★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
13 (23)	6	02	50 Pa (0.20 inWG)
		03	60 Pa (0.24 inWG)
		04	70 Pa (0.28 inWG)
		05	80 Pa (0.32 inWG)
		06	90 Pa (0.36 inWG)
		07★	**100 Pa (0.40 inWG)★**
		08	110 Pa (0.44 inWG)
		09	120 Pa (0.48 inWG)
		10	130 Pa (0.52 inWG)
		11	140 Pa (0.56 inWG)
		12	150 Pa (0.60 inWG)
		13	160 Pa (0.64 inWG)
		14	180 Pa (0.72 inWG)
		15	200 Pa (0.80 inWG)

Make sure that 11 (21)-7 (Airflow adjustment) is set to **01** (OFF).

1.5.25 Optional Kit Setting (UV lamp + Humidifier + Economizer)

■ **FTQ-TA** ★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents	
			UV lamp + humidifier fan speed	Economizer setting for Mech standby duration (minutes)
14 (24)	4	01	Refer to controller	10
		02	High	10
		03	Refer to controller	20
		04	High	20
		05	Refer to controller	30
		06	High	30
		07	Refer to controller	40
		08	High	40
		09	Refer to controller	50
		10	High	50
		11	Refer to controller	60
		12	High	60
		13	Refer to controller	Free cooling only
		14★	**High★**	**Free cooling only★**

1.5.26 Residential Dry

■ **FTQ-TA** ★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
14 (24)	5	**01★**	**Set temperature: room temperature★**
		02	Set temperature: same as cooling set temperature

1.5.27 Drain Pump Operation Settings

■ **FBQ-P**

The drain pump operation can be disabled for natural drainage by changing the following field setting.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
15 (25)	0	01	—
		02★	**ON★**
		03	OFF

1.5.28 Humidification when Heating Thermostat is OFF

Setting to **Equipped** turns ON the humidifier if suction air temperature is 20ºC (68ºF) or more and turns OFF the humidifier if suction air temperature is 18ºC (64.4ºF) or below when the heating thermostat is OFF.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
15 (25)	1	**01★**	**Not equipped★**
		02	Equipped

1.5.29 Direct Duct Connection

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

★: Factory setting

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

1.5.30 Drain Pump and Humidifier Interlock Selection

This is used to interlock the humidifier with the drain pump. When water is drained out of the unit, this setting is unnecessary.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
15 (25)	3	**01★**	**Not interlocked★**
		02	Interlocked

1.5.31 Individual Ventilation Setting

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

★: Factory setting

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

1.5.32 Display of Error Codes on the Remote Controller

For BRC1E series only

Error code (four digits) is displayed for limited products.
Select two-digit display if four-digit display is not preferred.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
1b	4	01	—
		02	Two-digit display
		03	—
		04★	**Four-digit display★**

1.5.33 Key-lock Pattern Settings

For BRC1E series only

Setting of key-lock pattern for the remote controller.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
1b	12	**01★**	**No operation allowed (Cancel procedure is displayed).★**
		02	No operation allowed (Cancel procedure is not displayed).
		03	No menu operation is allowed.
		04	No menu operation is allowed any time.

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

1.5.34 Setting Restricted/Permitted for Airflow Block

For sensing flow type only

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

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

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

★: Factory setting

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

1.5.35 Room Temperature Display

For BRC1E series only

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

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
1c	0	01	Room temperature is not displayed.
		02★	**Room temperature is displayed.★**

1.5.36 Thermistor Sensor for Auto Changeover and Setback Control by the Remote Controller

For BRC1E series only

Select a thermistor to utilize for the cool/heat mode automatic changeover and setback functions. The sensed temperature will be displayed on the remote controller as the room temperature.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
1c	1	01	Utilize the return air thermistor
		02	**Utilize the remote controller thermistor★**

1.5.37 Access Permission Level Setting

For BRC1E series only

There are 2 levels as follows:

- Level 2: The following buttons are selectable to be disable or enable.
- Level 3: No buttons are selectable and only **On/Off** button is available.

Button	Level 2	Level 3
▲▼◀▶	Selectable (Enable)	Unselectable (Disable)
On/Off	Selectable (Enable)	Unselectable (Enable)
Mode	Selectable (Enable)	Unselectable (Disable)
Fan Speed	Selectable (Disable)	Unselectable (Disable)
Menu/OK	Unselectable (Disable)	Unselectable (Disable)
Cancel	Unselectable (Disable)	Unselectable (Disable)

( ) shows the factory setting

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
1c	3	**01★**	**Level 2★**
		02	Level 3

1.5.38 Setback Availability

For BRC1E series only

Select the operation mode in which the setback function is available.

★: Factory setting

Mode No.	First Code No.	Second Code No.	Contents
1e	2	**01★**	**N/A★**
		02	Heat only
		03	Cool only
		04	Cool/heat

1.6 Operation Control Mode

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

Contents of Control Modes

20 modes consisting of combinations of the following 5 operation modes with temperature and operation mode setting by remote controller can be set and displayed by operation modes 0 through 19.

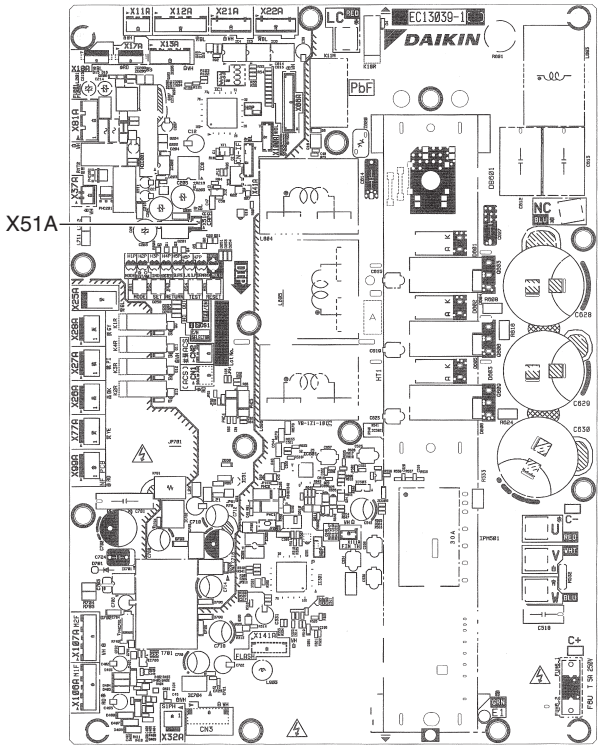
- ON/OFF control impossible by remote controller
  Used when you want to turn ON/OFF by centralized remote controller only.
  (Cannot be turned ON/OFF by remote controller.)
- OFF control only possible by remote controller
  Used when you want to turn ON by centralized remote controller only, and OFF by remote controller only.
- Centralized
  Used when you want to turn ON by centralized remote controller only, and turn ON/OFF freely by remote controller during set time.
- Individual
  Used when you want to turn ON/OFF by both centralized remote controller and remote controller.
- Timer operation possible by remote controller
  Used when you want to turn ON/OFF by remote controller during set time and you do not want to start operation by centralized remote controller when time of system start is programmed.

2. Field Settings from Outdoor Unit

2.1 Capacity Setting

Caution **Be sure to carry out capacity setting after changing the main PCB (A1P) to spare PCB. (for RZR30/36/42/48TAVJU and RZQ30/36/42/48TAVJU only)**

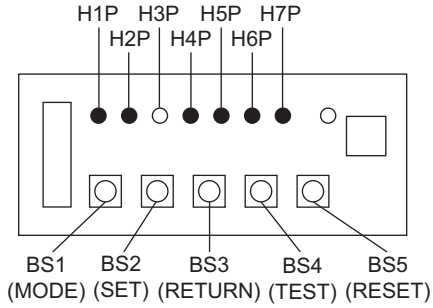
Attach the capacity setting adaptor corresponding to capacity class to connector X51A.
Capacity setting is not required for RZR18/24TAVJU and RZQ18/24TAVJU.



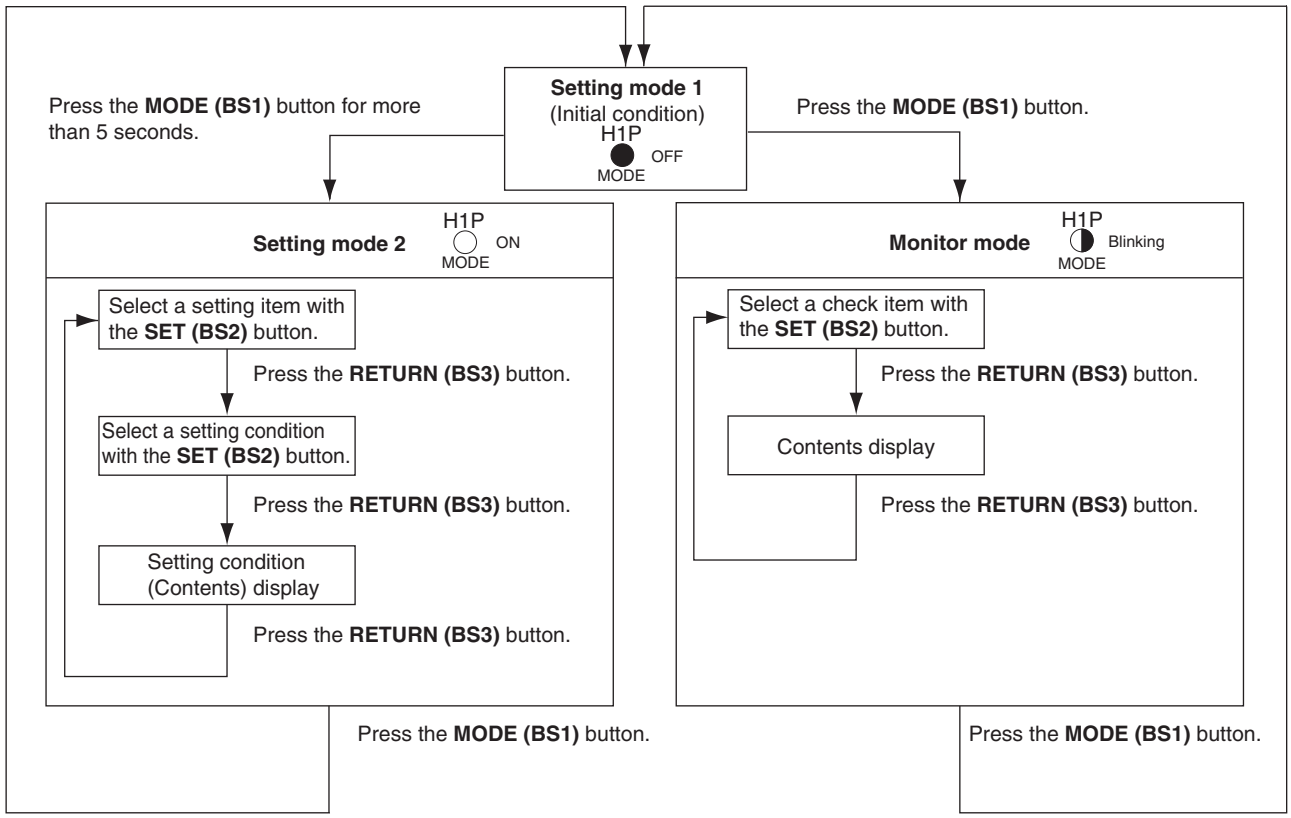
Model	Adaptor type
RZR30/36/42/48TAVJU RZQ30/36/42/48TAVJU	J56

2.2 Setting Mode and Monitor Mode

The following 3 modes can be changed over with the button switches on the PCB and you can find the present mode by the status of the H1P indicator.



(1) Setting mode 1 (H1P OFF)
Initial status (normal) : Also indicates during abnormal.
(2) Setting mode 2 (H1P ON)
Used to modify the operating status and to set program addresses, etc. Usually used in servicing the system.
(3) Monitor mode (H1P blinks)
Used to check the program made in setting mode 2.



2.3 Setting Mode 1

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

1. Set items
   In order to make COOL/HEAT selection in a batch of outdoor unit group, change the setting.

COOL/HEAT selection (IND)	Used to select COOL or HEAT by individual outdoor unit (factory setting).
COOL/HEAT selection (MASTER)	Used to select COOL or HEAT by outdoor unit group with the master unit.
COOL/HEAT selection (SLAVE)	Used to select COOL or HEAT by outdoor unit group with the slave unit.

2. Check items
   The following items can be checked.
   (1) Current operating conditions (Normal / Abnormal / In check operation)
   (2) Setting conditions of COOL/HEAT selection (Individual / Batch master / Batch slave)
   (3) Low noise operating conditions (In normal operation / In low noise operation)
   (4) Demand operating conditions (In normal operation / In demand operation)

Procedure for changing COOL/HEAT selection setting

Setting mode 1 is the initial status (normal). In case of other status, press the **MODE** (**BS1**) button one time and return to the setting mode 1.

↓

Press the **SET** (**BS2**) button to set the blinking LED according to the pattern shown on the right.

↓

Press the **RETURN** (**BS3**) button to determine the setting. → The system returns to the initial status of setting mode 1.

○ ON
● OFF
◑ Blink

Setting (displaying) item	MODE H1P	TEST H2P	COOL/HEAT select			LOW NOISE H6P	DEMAND H7P
			IND H3P	MASTER H4P	SLAVE H5P		
For selection by individual outdoor unit (factory setting)	●	●	◑	●	●	●	●
For selection in a batch of outdoor unit group with master unit	●	●	●	◑	●	●	●
For selection in a batch of outdoor unit group with slave unit	●	●	●	●	◑	●	●

Procedure for checking

Setting mode 1 is the initial status (normal). In case of other status, press the **MODE** (**BS1**) button one time and return to the setting mode 1.

↓

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

↓

Press the **RETURN** (**BS3**) button and return to the initial status of setting mode 1.

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

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

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

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

Demand operating conditions
- ● In normal operation
- ○ In demand operation

2.4 Setting Mode 2

Press the **MODE** (**BS1**) button for 5 seconds and enter the setting mode 2.

↓

Selection of setting items

Press the **SET** (**BS2**) button and select a setting item according to the LED pattern shown in the table on the right.

↓

Press the **RETURN** (**BS3**) button and decide the item. (The present setting condition is shown.)

↓

Selection of setting conditions

Press the **SET** (**BS2**) button and select to the setting condition you want.

↓

Press the **RETURN** (**BS3**) button and decide the condition.

↓

Press the **RETURN** (**BS3**) button and return to the initial status of setting mode 2.

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

No.	Setting item	Description
1	Cool / heat unified address	Sets address for cool / heat unified operation.
2	Low noise / demand address	Address for low noise / demand operation
3	Test operation settings	Used to conduct test operation without making changes to the PCB and replacing the refrigerant, after the completion of maintenance.
5	Indoor unit forced fan H	Allows forced operation of indoor fan while unit is stopped. (H tap)
6	Indoor unit forced operation	Allows forced operation of indoor unit.
8	Te setting	Target evaporation temperature for cooling
9	Tc setting	Target condensation temperature for heating
10	Defrost changeover setting	Changes the temperature condition for defrost and sets to quick defrost or slow defrost.
12	External low noise / demand setting	Reception of external low noise or demand signal
13	AIRNET address	Set address for AIRNET.
16	Setting of heat pump lockout 1	Make this setting for heat pump lockout.
19	Emergency automatic heat pump lockout	Heat pump is automatically locked out in the event of a system failure.
20	Additional refrigerant charge operation setting	Carries out additional refrigerant charge operation.
21	Refrigerant recovery / vacuuming mode setting	Sets to refrigerant recovery or vacuuming mode.
22	Night-time low noise setting	Sets automatic nighttime low noise operation in a simple way. The operating time is based on Starting Set and Ending Set.
25	Setting of low noise level	Sets low noise level when the low noise signal is received.
26	Night-time low noise operation start setting	Sets starting time of nighttime low noise operation. (Night-time low noise setting is also required.)
27	Night-time low noise operation end setting	Sets ending time of nighttime low noise operation. (Night-time low noise setting is also required.)
28	Power transistor check mode ∗Check after disconnection of compressor wires	Used for trouble diagnosis of DC compressor. Since the waveform of inverter is output without wiring to the compressor, it is convenient to probe whether the trouble comes from the compressor or PCB.
29	Capacity precedence setting	If the capacity control is required, the low noise control is automatically released by this setting during carrying out low noise operation and night-time low noise operation.
30	Demand setting 1	Changes target value of power consumption when demand control 1 is received.
32	Constant demand setting	Enables demand control 1 without external input. (Effective to prevent a problem that circuit breaker of small capacity is shut down due to large load.)
37	Setting of heat pump lockout 2	Make this setting for heat pump lockout.
41	Cooling comfort setting	Selects comfort level of VRT cooling.
42	Heating comfort setting	Selects comfort level of VRT heating.
47	Heat pump lockout release differential	Heat pump would be resumed when the outdoor air temperature is recovered by differential above the heat pump lockout temperature.
50	Auxiliary heater maximum allowable temperature	Auxiliary heater is allowed to energize when the outdoor air temperature is smaller than the auxiliary heater maximum allowable temperature.
56	Auxiliary heater maximum allowable temperature release differential	Auxiliary heater is not allowed to energize when the outdoor air temperature is recovered by differential above the auxiliary heater maximum allowable temperature.
57	Heat pump lockout temperature	Heat pump would be locked out when the outdoor air temperature is smaller than the heat pump lockout temperature. This setting is only effective when heat pump lockout mode has been set.

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

No.	Setting item display								Setting condition display								
	Setting item	MODE H1P	TEST H2P	C/H selection			Low noise H6P	Demand H7P									✻ Factory setting
				IND H3P	Master H4P	Slave H5P											
1	Cool / heat unified address	○	●	●	●	●	●	○	Address Binary number (6 digits)	0	○	●	●	●	●	●	● ✻
										1	○	●	●	●	●	●	○
										~							
										31	○	●	○	○	○	○	○
2	Low noise / demand address	○	●	●	●	●	○	●	Address Binary number (6 digits)	0	○	●	●	●	●	●	● ✻
										1	○	●	●	●	●	●	○
										~							
										31	○	●	○	○	○	○	○
3	Test operation settings	○	●	●	●	●	○	○	Test operation : OFF		○	●	●	●	●	●	○
									Test operation : ON		○	●	●	●	●	○	● ✻
5	Indoor unit forced fan H	○	●	●	●	○	●	○	Normal operation		○	●	●	●	●	●	○ ✻
									Indoor forced fan H		○	●	●	●	●	○	●
6	Indoor unit forced operation	○	●	●	●	○	○	●	Normal operation		○	●	●	●	●	●	○ ✻
									Indoor forced operation		○	●	●	●	●	○	●
8	Te setting	○	●	●	○	●	●	●	Target Te: 11°C (51.8°F)		○	●	●	●	○	○	○
									10°C (50°F)		○	●	●	●	○	○	●
									9°C (48.2°F)		○	●	●	●	○	●	○
									8°C (46.4°F)		○	●	●	●	○	●	●
									Variable (VRT)		○	●	●	●	●	○	○ ✻
									6°C (42.8°F)		○	●	●	●	●	○	●
									3°C (37.4°F)		○	●	●	●	●	●	○
9	Tc setting	○	●	●	○	●	●	○	Target Tc: 52°C (125.6°F)		○	●	●	●	○	●	●
									46°C (114.8°F)		○	●	●	●	●	○	● ✻
									Variable (VRT)		○	●	●	●	●	●	○
10	Defrost changeover setting	○	●	●	○	●	○	●	Quick defrost		○	●	●	●	○	●	●
									Normal (factory setting)		○	●	●	●	●	○	● ✻
									Slow defrost		○	●	●	●	●	●	○
12	External low noise / demand setting	○	●	●	○	○	●	●	External low noise/demand: NO		○	●	●	●	●	●	○ ✻
									External low noise/demand: YES		○	●	●	●	●	○	●
13	AIRNET address	○	●	●	○	○	●	○	Address Binary number (6 digits)	0	○	●	●	●	●	●	● ✻
										1	○	●	●	●	●	●	○
										~							
										63	○	○	○	○	○	○	○
16	Setting of heat pump lockout 1	○	●	○	●	●	●	●	OFF		○	●	●	●	●	●	○ ✻
									ON		○	●	●	●	●	○	●
19	Emergency automatic heat pump lockout	○	●	○	●	●	○	○	OFF		○	●	●	●	●	●	○
									ON		○	●	●	●	●	●	● ✻
20	Additional refrigerant charge operation setting	○	●	○	●	○	●	●	Refrigerant charging: OFF		○	●	●	●	●	●	○ ✻
									Refrigerant charging: ON		○	●	●	●	●	○	●
21	Refrigerant recovery / vacuuming mode setting	○	●	○	●	○	●	○	Refrigerant recovery / vacuuming: OFF		○	●	●	●	●	●	○ ✻
									Refrigerant recovery / vacuuming: ON		○	●	●	●	●	○	●
22	Night-time low noise setting	○	●	○	●	○	○	●	OFF		○	●	●	●	●	●	● ✻
									Level 1 (outdoor fan with 6 step or lower)		○	●	●	●	●	●	○
									Level 2 (outdoor fan with 5 step or lower)		○	●	●	●	●	○	●
									Level 3 (outdoor fan with 4 step or lower)		○	●	●	●	●	○	○

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

No.	Setting item display								Setting condition display								
	Setting item	MODE H1P	TEST H2P	C/H selection			Low noise H6P	Demand H7P									✻ Factory setting
				IND H3P	Master H4P	Slave H5P											
25	Setting of low noise level	○	●	○	○	●	●	○	Level 1 (outdoor fan with 6 step or lower)	○	●	●	●	●	●	○	
									Level 2 (outdoor fan with 5 step or lower)	○	●	●	●	●	○	●	✻
									Level 3 (outdoor fan with 4 step or lower)	○	●	●	●	○	●	●	
26	Night-time low noise operation start setting	○	●	○	○	●	○	●	About 8:00 PM	○	●	●	●	●	●	○	
									About 10:00 PM (factory setting)	○	●	●	●	●	○	●	✻
									About 12:00 AM	○	●	●	●	○	●	●	
27	Night-time low noise operation end setting	○	●	○	○	●	○	○	About 6:00 AM	○	●	●	●	●	●	○	
									About 7:00 AM	○	●	●	●	●	○	●	
									About 8:00 AM (factory setting)	○	●	●	●	○	●	●	✻
28	Power transistor check mode	○	●	○	○	○	●	●	OFF	○	●	●	●	●	●	○	✻
									ON	○	●	●	●	●	○	●	
29	Capacity precedence setting	○	●	○	○	○	●	○	OFF	○	●	●	●	●	●	○	✻
									ON	○	●	●	●	●	○	●	
30	Demand setting 1	○	●	○	○	○	○	●	60 % demand	○	●	●	●	●	●	○	
									70 % demand	○	●	●	●	●	○	●	✻
									80 % demand	○	●	●	●	○	●	●	
32	Constant demand setting	○	○	●	●	●	●	●	OFF	○	●	●	●	●	●	○	✻
									ON	○	●	●	●	●	○	●	
37	Setting of heat pump lockout 2	○	○	●	●	○	●	○	OFF	○	●	●	●	●	●	●	✻
									Mode 1	○	●	●	●	●	●	○	
									Mode 2	○	●	●	●	●	○	●	
									Mode 3	○	●	●	●	●	○	○	
									Mode 4	○	●	●	●	○	●	●	
									Mode 5	○	●	●	●	○	●	○	
									Mode 6	○	●	●	●	○	○	●	
41	Cooling comfort setting	○	○	●	○	●	●	○	Eco	○	●	●	●	●	●	●	
									Mild	○	●	●	●	●	●	○	✻
									Quick	○	●	●	●	●	○	●	
									Powerful	○	●	●	●	○	●	○	
42	Heating comfort setting	○	○	●	○	●	○	●	Eco	○	●	●	●	●	●	●	
									Mild	○	●	●	●	●	●	○	✻
									Quick	○	●	●	●	●	○	●	
									Powerful	○	●	●	●	○	●	○	
47	Heat pump lockout release differential	○	○	●	○	○	○	○	2.8°C (5°F)	○	●	●	●	●	●	●	
									5.6°C (10°F)	○	●	●	●	●	●	○	✻
									8.3°C (15°F)	○	●	●	●	●	○	●	

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

No.	Setting item display								Setting condition display							
	Setting item	MODE H1P	TEST H2P	C/H selection			Low noise H6P	Demand H7P								✻ Factory setting
				IND H3P	Master H4P	Slave H5P										
50	Auxiliary heater maximum allowable temperature	○	○	○	●	●	○	●	–17.7°C (0°F)	○	●	●	●	●	●	●	
									–15°C (5°F)	○	●	●	●	●	●	○	
									–12.2°C (10°F)	○	●	●	●	●	○	●	
									–9.4°C (15°F)	○	●	●	●	●	○	○	
									–6.6°C (20°F)	○	●	●	●	○	●	●	
									–3.8°C (25°F)	○	●	●	●	○	●	○	
									–1.1°C (30°F)	○	●	●	●	○	○	●	
									1.6°C (35°F)	○	●	●	●	○	○	○	✻
									4.4°C (40°F)	○	●	●	○	●	●	●	
									7.2°C (45°F)	○	●	●	○	●	●	○	
									10°C (50°F)	○	●	●	○	●	○	●	
									12.7°C (55°F)	○	●	●	○	●	○	○	
									15.5°C (60°F)	○	●	●	○	○	●	●	
									18.3°C (65°F)	○	●	●	○	○	●	○	
									Auxiliary heater always not allowed	○	●	●	○	○	○	●	
									Auxiliary heater always allowed	○	●	●	○	○	○	○	
56	Auxiliary heater maximum allowable temperature release differential	○	○	○	○	●	●	●	2.8°C (5°F)	○	●	●	●	●	●	●	
									5.6°C (10°F)	○	●	●	●	●	●	○	✻
									8.3°C (15°F)	○	●	●	●	●	○	●	
57	Heat pump lockout temperature	○	○	○	○	●	●	○	–26.1°C (–15°F)	○	●	●	●	●	●	●	✻
									–23.3°C (–10°F)	○	●	●	●	●	●	○	
									–20.5°C (–5°F)	○	●	●	●	●	○	●	
									–17.7°C (0°F)	○	●	●	●	●	○	○	
									–15°C (5°F)	○	●	●	●	○	●	●	
									–12.2°C (10°F)	○	●	●	●	○	●	○	
									–9.4°C (15°F)	○	●	●	●	○	○	●	
									–6.6°C (20°F)	○	●	●	●	○	○	○	
									–3.8°C (25°F)	○	●	●	○	●	●	●	
									–1.1°C (30°F)	○	●	●	○	●	●	○	
									1.6°C (35°F)	○	●	●	○	●	○	●	
									4.4°C (40°F)	○	●	●	○	●	○	○	
									7.2°C (45°F)	○	●	●	○	○	●	●	
									10°C (50°F)	○	●	●	○	○	●	○	
									Forced heat pump lockout	○	●	●	○	○	○	●	

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

2.5 Monitor Mode

Press the **MODE** (**BS1**) button and enter the monitor mode.

Selection of check item

Press the **SET** (**BS2**) button and select a check item according to the LED pattern.

Confirmation on check item

Press the **RETURN** (**BS3**) button to display different data of check item.

Press the **RETURN** (**BS3**) button and return to the initial status of monitor mode.

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

No.	Setting item	LED display							Data display
		H1P	H2P	H3P	H4P	H5P	H6P	H7P	
0	Various setting	◑	●	●	●	●	●	●	See the note below.
1	Cool / heat unified address	◑	●	●	●	●	●	○	Lower 6 digits
2	Low noise / demand address	◑	●	●	●	●	○	●	
3	Not used	◑	●	●	●	●	○	○	
4	AIRNET address	◑	●	●	●	○	●	●	
5	Number of connected indoor units	◑	●	●	●	○	●	○	
7	Number of connected zone units (excluding outdoor and BS unit)	◑	●	●	●	○	○	○	
8	Number of outdoor units	◑	●	●	○	●	●	●	
11	Number of zone units (excluding outdoor and BS unit)	◑	●	●	○	●	○	○	Lower 6 digits
12	Number of terminal blocks	◑	●	●	○	○	●	●	Lower 4 digits: upper
13	Number of terminal blocks	◑	●	●	○	○	●	○	Lower 4 digits: lower
14	Error description (the latest)	◑	●	●	○	○	○	●	Refer to the error code table on Part 6.
15	Error description (1 cycle before)	◑	●	●	○	○	○	○	
16	Error description (2 cycle before)	◑	●	○	●	●	●	●	
20	Contents of retry (the latest)	◑	●	○	●	○	●	●	
21	Contents of retry (1 cycle before)	◑	●	○	●	○	●	○	
22	Contents of retry (2 cycle before)	◑	●	○	●	○	○	●	
25	Normal judgment of outdoor units PCB	◑	●	○	○	●	●	○	Lower2 digits: ○● Abnormal ●○ Normal ●● Unjudgment

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

Note(s)

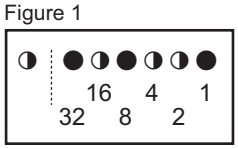
Various Settings

		H1P	H2P	H3P	H4P	H5P	H6P	H7P
Emergency operation / backup operation setting	ON	◑	●	●	○	●	●	●
	OFF	◑	●	●	●	●	●	●
Defrost select setting	Short	◑	●	●	●	○	●	●
	Medium	◑	●	●	●	◑	●	●
	Long	◑	●	●	●	●	●	●
Te setting	H	◑	●	●	●	●	○	●
	M	◑	●	●	●	●	◑	●
	L	◑	●	●	●	●	●	●
Tc setting	H	◑	●	●	●	●	●	○
	M	◑	●	●	●	●	●	◑
	L	◑	●	●	●	●	●	●

Press the **SET (BS2)** button and match with the LEDs No. 1 - 15, push the **RETURN (BS3)** button, and confirm the data for each setting.

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

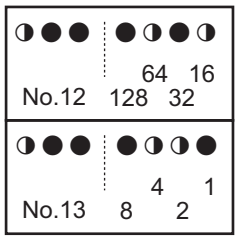
Figure 1



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

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

Figure 2



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

∗Refer to the preceding page for a list of data, etc. for No. 0 - 25.

2.6 Setting of Low Noise Operation and Demand Operation

Setting of Low Noise Operation

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

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

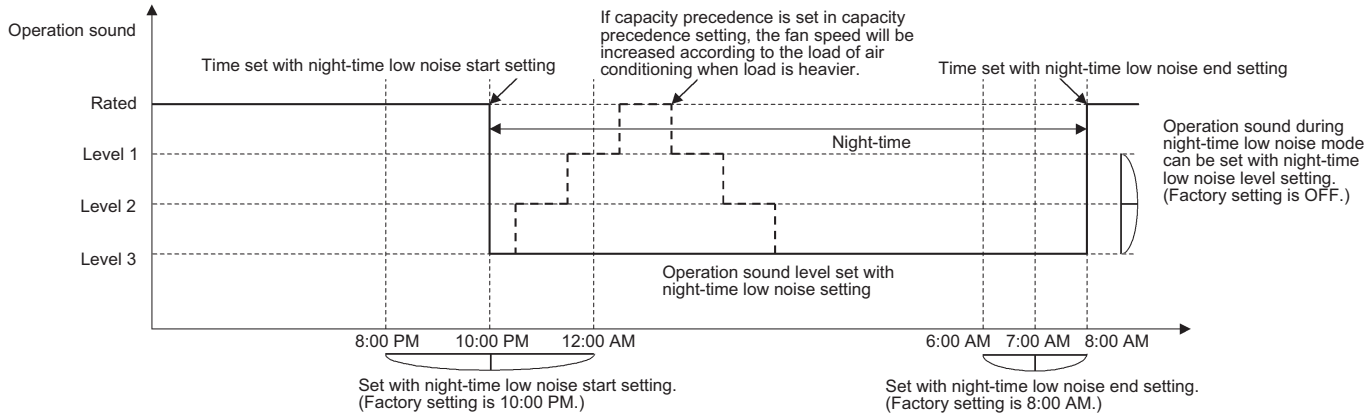
1. While in setting mode 2, select the setting condition (i.e., Mode 1, Mode 2, or Mode 3) for set item No. 22 (Setting of night-time low noise level).

2. If necessary, while in setting mode 2, select the setting condition (i.e., 8:00 PM, 10:00 PM, or 12:00 AM) for set item No. 26 (Setting of start time of night-time low noise operation).
   (Use the start time as a guide since it is estimated according to outdoor temperatures.)

3. If necessary, while in setting mode 2, select the setting condition (i.e., 06:00 AM, 07:00 AM, or 08:00 AM) for set item No. 27 (Setting of end time of night-time low noise operation).
   (Use the end time as a guide since it is estimated according to outdoor temperatures.)

4. If necessary, while in setting mode 2, set the setting condition for set item No. 29 (Setting of capacity precedence) to ON.
   (If the condition is set to ON, when the air-conditioning load reaches a high level, the system enters to normal operation mode even during night-time.)

Image of operation



Setting of Demand Operation

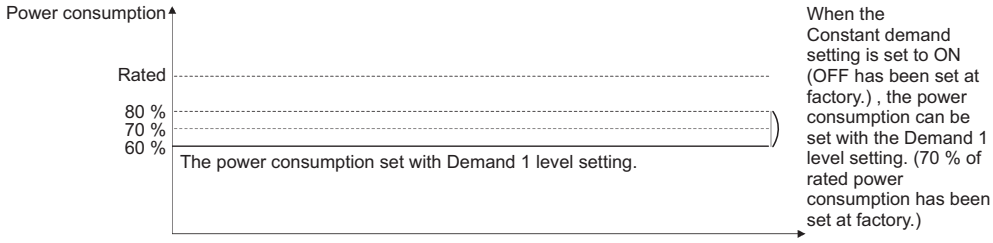
By connecting the external contact input to the demand input of the external control adaptor for outdoor unit (optional), the power consumption of unit operation can be saved suppressing the compressor operating condition.

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

When the constant demand operation is carried out. (Use of the external control adaptor for outdoor unit is not required.)

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

Image of operation



Detailed Setting Procedure of Low Noise Operation and Demand Control

1. **Setting mode 1 (H1P OFF)**

In setting mode 2, push the **MODE (BS1)** button one time. → The system enters setting mode 1 and the H1P goes off.
In setting mode 1, the H6P (In low noise operation) and the H7P (In demand control) keep lighting.

2. **Setting mode 2 (H1P ON)**

(1) In setting mode 1, push and hold the **MODE (BS1)** button for more than 5 seconds.
→ The system enters setting mode 2 and the H1P lights up.
(2) Push the **SET (BS2)** button several times and match the LED display with the Setting No. you want.
(3) Push the **RETURN (BS3)** button one time, and the present setting content is displayed.
→ Push the **SET (BS2)** button several times and match the LED display with the setting content (as shown on next page) you want.
(4) Push the **RETURN (BS3)** button two times. → The system returns to (1).
(5) Push the **MODE (BS1)** button one time. → The system returns to setting mode 1 and the H1P goes OFF.

○: ON ●: OFF ◑: Blink

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

Setting mode indication section — Setting No. indication section — Set contents indication section

2.7 Setting of Refrigerant Recovery Mode

When carrying out the refrigerant collection on site, fully open the respective electronic expansion valve of indoor and outdoor units
All indoor and outdoor unit's operation are prohibited.

Operation procedure

(1) In setting mode 2 with units in stop mode, set the item No.21 (refrigerant recovery / vacuuming mode) to ON. The respective expansion valve of indoor and outdoor units are fully opened. **Test Operation** and **Under Centralized Control** are displayed on the remote controller, and the indoor / outdoor unit operation is prohibited. After setting, do not cancel setting mode 2 until completion of refrigerant recovery operation.

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

(3) Press the **MODE (BS1)** button once and return to setting mode 2.

2.8 Setting of Vacuuming Mode

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

Operating procedure

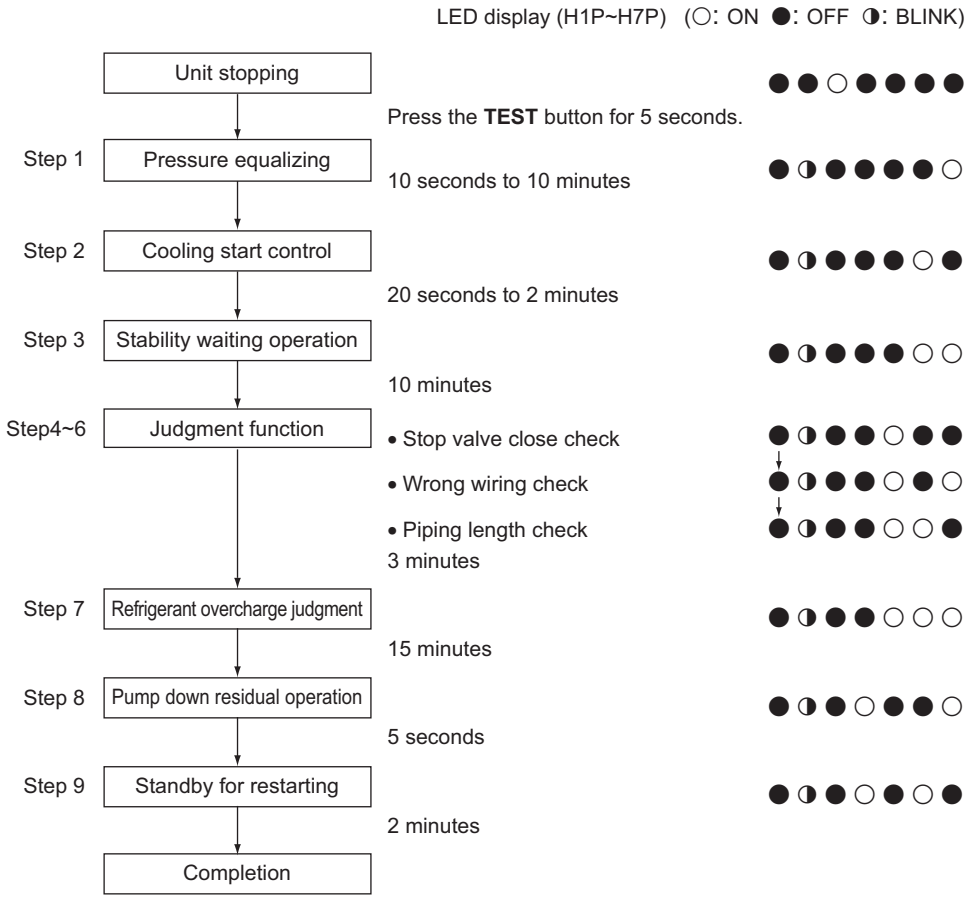
(1) In setting mode 2 with units in stop mode, set the item No.21 (refrigerant recovery / vacuuming mode) to ON. The respective expansion valve of indoor and outdoor units are fully opened. **Test Operation** and **Under Centralized Control** are displayed on the remote controller, and the indoor / outdoor unit operation is prohibited.
After setting, do not cancel setting mode 2 until completion of Vacuuming operation.

(2) Use the vacuum pump to perform vacuuming operation.

(3) Press the **MODE (BS1)** button once and reset setting mode 2.

2.9 Check Operation

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



2.10 Setting of Auxiliary Heater Control

To improve efficiency and lower install cost the auxiliary heater can be lockout based on outdoor temperature.

Auxiliary heater maximum allowable temperature

Auxiliary heater is allowed to energize when the outdoor air temperature is smaller than the auxiliary heater maximum allowable temperature.

No.	Setting item display								Setting condition display							
	Setting item	MODE H1P	TEST H2P	C/H selection			Low noise H6P	Demand H7P								
				IND H3P	Master H4P	Slave H5P										⁎ Factory setting
50	Auxiliary heater maximum allowable temperature	○	○	○	●	●	○	●	–17.7°C (0°F)	○	●	●	●	●	●	●	
									–15°C (5°F)	○	●	●	●	●	●	○	
									–12.2°C (10°F)	○	●	●	●	●	○	●	
									–9.4°C (15°F)	○	●	●	●	●	○	○	
									–6.6°C (20°F)	○	●	●	●	○	●	●	
									–3.8°C (25°F)	○	●	●	●	○	●	○	
									–1.1°C (30°F)	○	●	●	●	○	○	●	
									1.6°C (35°F)	○	●	●	●	○	○	○	⁎
									4.4°C (40°F)	○	●	●	○	●	●	●	
									7.2°C (45°F)	○	●	●	○	●	●	○	
									10°C (50°F)	○	●	●	○	●	○	●	
									12.7°C (55°F)	○	●	●	○	●	○	○	
									15.5°C (60°F)	○	●	●	○	○	●	●	
									18.3°C (65°F)	○	●	●	○	○	●	○	
									Auxiliary heater always not allowed	○	●	●	○	○	○	●	
									Auxiliary heater always allowed	○	●	●	○	○	○	○	

Auxiliary heater maximum allowable temperature release differential

Auxiliary heater is not allowed to energize when the outdoor air temperature is recovered by differential above the auxiliary heater maximum allowable temperature.

No.	Setting item display								Setting condition display							
	Setting item	MODE H1P	TEST H2P	C/H selection			Low noise H6P	Demand H7P								
				IND H3P	Master H4P	Slave H5P										⁎ Factory setting
56	Auxiliary heater maximum allowable temperature release differential	○	○	○	○	●	●	●	2.8°C (5°F)	○	●	●	●	●	●	●	
									5.6°C (10°F)	○	●	●	●	●	●	○	⁎
									8.3°C (15°F)	○	●	●	●	●	○	●	

2.11 Setting of Heat Pump Lockout and Emergency Heat Mode

Heat pump is locked out when the setting below and/or external input to ABC terminal has been made.

No.	Setting item display								Setting condition display							
	Setting item	MODE H1P	TEST H2P	C/H selection			Low noise H6P	Demand H7P								
				IND H3P	Master H4P	Slave H5P										∗ Factory setting
16	Setting of heat pump lockout 1	○	●	○	●	●	●	●	OFF	○	●	●	●	●	●	○ ∗
									ON	○	●	●	●	●	○	●
37	Setting of heat pump lockout 2	○	○	●	●	○	●	○	OFF	○	●	●	●	●	●	● ∗
									Mode 1	○	●	●	●	●	●	○
									Mode 2	○	●	●	●	●	○	●
									Mode 3	○	●	●	●	●	○	○
									Mode 4	○	●	●	●	○	●	●
									Mode 5	○	●	●	●	○	●	○
									Mode 6	○	●	●	●	○	○	●

Type		Description	Actions					
			Field setting	Shorted between	Heating Thermo-on		Heating Thermo-off	
					Heater	Fan	Heater	Fan
I	–	Heat-pump heating is always locked out	2-16: ON	–	ON	ON (H/L)	OFF	LL
II	Mode 1	Lockout is controlled by ABC terminals	2-37: Mode 1	A-C	ON	ON (H/L)	OFF	LL
				B-C				OFF
	Mode 2 (for a heater which does not need airflow)		2-37: Mode 2	A-C		LL		LL
				B-C		OFF		OFF
	Mode 3	Lockout is controlled by the outdoor air temperature and setpoint which is configured by the field setting 2-57 and 2-47	2-37: Mode 3	Same as 2-37: Mode 1, A-C shorted				
	Mode 4		2-37: Mode 4	Same as 2-37: Mode 1, B-C shorted				
	Mode 5		2-37: Mode 5	Same as 2-37: Mode 2, A-C shorted				
	Mode 6		2-37: Mode 6	Same as 2-37: Mode 2, B-C shorted				

Heat pump lockout temperature

Heat pump would be locked out when the outdoor air temperature is smaller than the heat pump lockout temperature. This setting is only effective when heat pump lockout mode has been set.

No.	Setting item display								Setting condition display							
	Setting item	MODE H1P	TEST H2P	C/H selection			Low noise H6P	Demand H7P								
				IND H3P	Master H4P	Slave H5P										⁎ Factory setting
57	Heat pump lockout temperature	○	○	○	○	●	●	○	–26.1°C (–15°F)	○	●	●	●	●	●	● ⁎
									–23.3°C (–10°F)	○	●	●	●	●	●	○
									–20.5°C (–5°F)	○	●	●	●	●	○	●
									–17.7°C (0°F)	○	●	●	●	●	○	○
									–15°C (5°F)	○	●	●	●	○	●	●
									–12.2°C (10°F)	○	●	●	●	○	●	○
									–9.4°C (15°F)	○	●	●	●	○	○	●
									–6.6°C (20°F)	○	●	●	●	○	○	○
									–3.8°C (25°F)	○	●	●	○	●	●	●
									–1.1°C (30°F)	○	●	●	○	●	●	○
									1.6°C (35°F)	○	●	●	○	●	○	●
									4.4°C (40°F)	○	●	●	○	●	○	○
									7.2°C (45°F)	○	●	●	○	○	●	●
									10°C (50°F)	○	●	●	○	○	●	○
									Forced heat pump lockout	○	●	●	○	○	○	●

Heat pump lockout release differential

Heat pump would be resumed when the outdoor air temperature is recovered by differential above the heat pump lockout temperature.

No.	Setting item display								Setting condition display							
	Setting item	MODE H1P	TEST H2P	C/H selection			Low noise H6P	Demand H7P								
				IND H3P	Master H4P	Slave H5P										⁎ Factory setting
47	Heat pump lockout release differential	○	○	●	○	○	○	○	2.8°C (5°F)	○	●	●	●	●	●	●
									5.6°C (10°F)	○	●	●	●	●	●	○ ⁎
									8.3°C (15°F)	○	●	●	●	●	○	●

Automatic lockout

When heat pump lockout mode has been set, the auto backup function will automatically be set. This will allow the auxiliary or secondary heat source to be automatically energized in the event of a system failure related to outdoor units.

3. Test Operation

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

3.1 Check Work Prior to Turning Power Supply ON

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

- Is the power supply appropriate?
- Have you finished a ductwork to drain?
- Have you detach transport fitting?
- Is the wiring performed as specified?
- Are the designated wires used?
- Is the grounding work completed?
  Use a 500 V Megger tester to measure the insulation.
  Do not use a Megger tester for low voltage circuits.
- Are the setscrews of wiring not loose?
- Is the electrical component box covered with an insulation cover completely?

⇩

Check on refrigerant piping / insulation material

- Is pipe size proper? (The design pressure of this product is 4.0 MPa (580 psi).)
- Are pipe insulation materials installed securely?
  Liquid and gas pipes need to be insulated. (Otherwise causes water leak.)
- Are respective stop valves on liquid and gas line securely open?

⇩

Check on amount of refrigerant charge

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

3.2 Turn Power ON

Turn outdoor unit power ON.

- Be sure to turn the power ON 6 hours before starting operation to protect compressors.
- Close outside panels of the outdoor unit.

⇩

Turn indoor unit power ON.

⇩

Carry out field setting on outdoor PCB

3.3 Test Operation

To start smoothly, a crankcase heater is equipped to the unit. To power up the crankcase heater in advance, be sure to turn on the power supply 6 hours before operation.

Warning

Be sure to inform other installers or attach the front panel well before leaving with the power supply turned on for the outdoor unit.

Before powering on

- Protect the electronic components with insulating tape in accordance with the "Service Precautions" label attached to the front panel.
- All indoor units connected with the outdoor unit will operate automatically after powering on. To ensure safety, ensure that the indoor unit installation has been completed.

1. Powering on ~ test operation

- Make sure to perform a test run first after installation (If the unit is operated with the indoor unit remote controller but without performing a test operation, the error code **U3** will be indicated on the display of the remote controller and the unit will not operate normally).
- After turning on the power supply, do not touch any switches excluding button switches and changeover switches when setting the outdoor unit PCB (A2P).
  (For positions of the button switches (BS1~5) and changeover switches (DS1-1, 2) on the PCB, refer to the "Service Precautions" label)
- Check the state of the outdoor units and fault wiring with this operation.

(1)
- Attach the front panel of the outdoor unit.
- Turn on the power supply of the outdoor and indoor units.

Caution

To power up the crankcase heater in advance, be sure to turn on the power supply 6 hours before operation.

(2)
- Remove the front panel of the outdoor unit.
- Check LED display of the outdoor unit PCB (A1P, A2P), to observe whether data transmission is normal.

Outdoor unit PCB	A1P	A2P						
LED display (Factory setting)	SERVICE MONITORING LAMP	MODE	READY / ABNORMAL	C/H CHANGEOVER			LOW NOISE	DEMAND
				IND	MASTER	SUB		
	HAP	H1P	H2P	H3P	H4P	H5P	H6P	H7P
	◑	●	●	○	●	●	●	●

LED display ● Light OFF ○ Light ON ◑ Blinking

Caution

Don't touch the switches other than button switches and changeover switches of the PCB (A2P) during setting. Doing so may result in electric shock.

(3)
- If customer wishes to perform LOW NOISE operation or DEMAND operation, perform setting with the push buttons (BS1 ~ 5) on outdoor unit PCB (A2P).
- Operate the push buttons from the opening of the insulating cover. (See Protective range of the "Service Precautions" label for details)

Caution

Power supply has been turned on for outdoor unit, be careful to avoid electric shock.

- Set the push buttons (BS1 ~ 5) after making sure the service monitoring lamp has been ON.

- For setting method, see the "Service Precautions" label attached to the front panel of the outdoor unit. (Be sure to keep a record of the setting items to the "Service Precautions" label.)
- Don't touch the changeover switches (DS1-1) while setting them. Doing so may result in malfunction.

(4) ● Check whether the gas side and liquid side stop valves have been opened. Open them if they are closed.

Caution Operation with the stop valve closed may result in compressor malfunction.

(5) Press **TEST (BS4)** button for 5 seconds or more to perform test operation. See About test operation on the "Service Precautions" label for details.

- Ask other installers to perform test operation or attach the front panel before having to leave the outdoor unit working alone.
- Test operation is automatically stopped after about 30 minutes (maximum 1 hour) operation. (Perform checks of fault wiring, closed stop valves & refrigerant charging and auto determination of piping length)
- After test operation is completed, if there is no error code on the display of the remote controller, the unit can perform normal operation 3 minutes later.
- The display of the remote controller indicates symbol of test operation during this operation.

(6) Be sure to attach the front panel of the outdoor unit after test operation is completed.

About test operation

- If the system is started about 12 minutes after the indoor and outdoor units are opened or later, the compressor will not operate and H2P will light up.
  Before operating, always check whether the symbols indicated on the LED display are those in the table under “1. Powering on ~ test operation (2)”.
- In order to ensure uniform refrigerant distribution, it may take up to around 10 minutes for the compressor to start up after the unit starting operation. This is not a malfunction.
- The operation check is not for checking individual indoor units. After completing the operation check, operate the system normally with the remote controller.
- Test operation can't be performed when the unit is in other modes such as refrigerant recycling mode.
- Never perform test operation with discharge pipe thermistor (R2T), suction pipe thermistor (R3T) and pressure sensor (S1NPH, S1NPL) removed. Failure to do so will result in compressor damage.

2. For normal operation

Set the master unit (the indoor unit with cooling and heating option rights)

For wired remote controller

- After test operation is completed, the symbol **MASTER CONTROLLED** blinks on all connected remote controllers.
- Set the master unit as per customer's request.
  (It is recommended to set the indoor unit with highest frequency of use as the master unit.)
- Press the operation mode changeover button on the remote controller of the master unit.
- Conduct cool/heat changeover with this remote controller and the symbol **MASTER CONTROLLED** vanishes.
- For other remoter controllers excluding the above, the symbol **MASTER CONTROLLED** lights up.

For wireless remote controller

- After test operation is completed, timer lamps blink on all connected indoor units.
- Set the master unit as per customer's request.
- (It is recommended to set the indoor unit with highest frequency of use as the master unit.)
- Press the operation mode changeover button on the remote controller of the master unit. Then a sound of beeps can be heard and the timer lamps on all indoor units go out.
- The indoor unit has the option rights to change between cooling/heating operation.

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

- After test operation is completed, operate the unit normally.
  (Heating is not possible if the outdoor temperature is 24°C (75.2°F) or higher. Refer to the operation manual.)

(1) Check the indoor and outdoor units are in normal operation.
(If a knocking sound produced by liquid compression of the compressor can be heard, stop the unit immediately.)

(2) Operate each indoor unit one by one and check the corresponding outdoor unit is also in operation.

(3) Check to see if cold (or hot) air is coming out from the indoor unit.

(4) Press the fan direction and strength buttons of the indoor unit to see if they operate properly.

About normal operation check

- The compressor will not restart in about 5 minutes even if the **ON/OFF** button of the remote controller is pressed.
- When system operation is stopped by the remote controller, the outdoor unit may continue operating for further 1 minute at maximum.
- If any check operation was not performed through test operation on first installation, the error code **U3** will be displayed. In this case, perform check operation in accordance with “1. Powering on ~ test operation”.

3.4 Error Codes and Corresponding Measures

Please check the remote controller connected to the indoor unit for verification.

Error code		Description	Solution
Primary code	Sub code		
E3	01	High pressure switch activated (S1PH)	Check the stop valve or (field) piping abnormality or the airflow on the air cooling heat exchanger.
	02	• Too much refrigerant charged • Stop valve closed	• Check the amount of refrigerant and recharge the unit. • Open the stop valve.
	13	Stop valve closed (liquid).	Open the liquid stop valve.
	18	• Too much refrigerant charged • Stop valve closed	• Check the amount of refrigerant and recharge the unit. • Open the stop valve.
E4	01	Defective low pressure: • Stop valve closed • Refrigerant undercharged • Defective indoor unit	• Open the stop valve. • Check the amount of refrigerant and recharge the unit. • Check the user interface display. • Check the transmission wiring between the indoor and outdoor units.
E9	01	Defective electronic expansion valve (Subcooling) (30/36/42/48 class: Y3E)	Check the connection of the PCB or the actuator.
	04	Defective electronic expansion valve (Main) (Y1E)	Check the connection of the PCB or the actuator.
F3	01	Discharge pipe temperature too high: • Stop valve closed • Refrigerant undercharged	• Open the stop valve. • Check the amount of refrigerant and recharge the unit.
F6	02	• Too much refrigerant charged • Stop valve closed	• Open the stop valve. • Check the amount of refrigerant and recharge the unit.
H9	01	Defective outdoor air thermistor (R1T)	Check the connection of the PCB or the actuator.
J3	16	Defective discharge pipe thermistor (R2T): Tripping	Check the connection of the PCB or the actuator.
	17	Defective discharge pipe thermistor (R2T): Short circuit	Check the connection of the PCB or the actuator.
J5	01	Defective suction pipe thermistor (R3T and R5T): Tripping	Check the connection of the PCB or the actuator.
J6	01	Defective outdoor heat exchanger deicer thermistor (R4T)	Check the connection of the PCB or the actuator.
J7	01	Defective heat exchanger liquid pipe thermistor (R7T)	Check the connection of the PCB or the actuator.
J9	01	Defective subcooling heat exchanger gas pipe thermistor (R6T: 30/36/42/48 class only)	Check the connection of the PCB or the actuator.
JA	06	Defective high pressure sensor (S1NPH): Tripping	Check the connection of the PCB or the actuator.
	07	Defective high pressure sensor (S1NPH): Short circuit	Check the connection of the PCB or the actuator.
JC	06	Defective low pressure sensor (S1NPL): Tripping	Check the connection of the PCB or the actuator.
	07	Defective low pressure sensor (S1NPL): Short circuit	Check the connection of the PCB or the actuator.
P1	01	Inverter unbalanced power supply voltage	Check if the power supply meets the specifications.
U2	01	Inverter insufficient voltage	Check if the power supply meets the specifications.
	02	Inverter power supply phase missing	Check if the power supply meets the specifications.
U3	03	System test operation not yet executed (Test operation cannot be executed.)	Execute system test operation.

Error code		Description	Solution
Primary code	Sub code		
U4	01	Q1/Q2 or indoor-outdoor units wiring error	Check (Q1/Q2) wiring.
	03	Q1/Q2 or indoor-outdoor units wiring error	Check (Q1/Q2) wiring.
	04	System test operation ends abnormally.	Re-execute the test operation.
U9	01	System mismatch Mismatched indoor unit models used (R-410A, R-407C, RA, Hydrobox, etc.). Defective indoor unit	Check if there are any other defective indoor units and verify if the indoor unit combination meets requirements.
UA	03	Defective indoor unit connection or mismatched models (R-410A, R-407C, RA, Hydrobox, etc.).	Check if there are any other defective indoor units and verify if the indoor unit combination meets requirements.
	18	Defective indoor unit connection or mismatched models (R-410A, R-407C, RA, Hydrobox, etc.).	Check if there are any other defective indoor units and verify if the indoor unit combination meets requirements.
	31	Wrong combination of units (multi-unit system)	Check the compatibility of unit types.
	49	Wrong combination of units (multi-unit system)	Check the compatibility of unit types.
UF	01	Defective automatic addressing (inconsistency)	Check if the quantity of connected units is below the maximum number of units that can be connected (through monitor mode) or if initiation is complete.
	05	Stop valve closed or defective (During system test operation)	Open the stop valve.
UH	01	Defective automatic addressing (inconsistency)	Check if the quantity of connected units is below the maximum number of units that can be connected (through monitor mode) or if initiation is complete.
A0	01	External protection device abnormality	Check if 24 VAC power has been supplied to R and C terminals. Check if TB4 and TB5 terminals have not been opened. Check F1U fuse.

No display on the remote controller

- Error in connection/communication among indoor unit remote controllers. Check if there is any disconnection or loosening of connectors.

Caution

For the plumber

For the electrician

Before giving the air conditioner back to the customer after a test operation, please make sure that the casing is securely in place and the screws are well fastened.

3.5 When Turning ON Power First Time

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

Status

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

3.6 When Turning ON Power the Second Time and Subsequent

Tap the **RESET (BS5)** button on the outdoor unit PCB. Operation becomes possible for about 2 minutes. If you do not push the **RESET (BS5)** button, the unit cannot be run for up to 10 minutes to automatically set master power.

Status

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

3.7 When an Indoor Unit or Outdoor Unit has been Added, or Indoor or Outdoor Unit PCB has been Changed

Be sure to push and hold the **RESET (BS5)** button for 5 seconds. If not, the addition cannot be recognized. In this case, the unit cannot be run for up to 12 minutes to automatically set the address (indoor-outdoor address, etc.)

Status

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

Part 6
Service Diagnosis

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1. Servicing Items to be Confirmed

1.1 Troubleshooting

(1) Initial verification and troubleshooting

1. Properly understand the end user's needs and issues.
2. Check the cause of errors according to the description provided by the end user.
3. Check if the remote controller displays any error codes.
   (Or use the outdoor unit monitoring mode to check for errors).
4. If there is no display of error codes, refer to **Symptom-based Troubleshooting** on page 169 for diagnosis.
   If an error code is displayed, refer to troubleshooting flowchart for diagnosis.

(2) Take appropriate measures.

1. Repair the defect or replace the parts according to the troubleshooting results.
2. Turn off the power supply for 10 minutes before disassembling.
3. The refrigerant has to be collected before refrigerant system components are replaced.

(3) Verification after taking appropriate measures

1. Run the unit after repairing the defect to confirm normal unit operation.
2. Record the check results and inform the client.

1.2 Precautions for Maintenance

Pay attention to the following matters in servicing.

(1) Precaution for maintenance

Touch the paint-free metal part of the product (electrical box lid of the standard model; tap bolts of electrical box of anti-corrosion and heavy anti-corrosion models) to release static electricity before starting work.

(2) Precautions for maintaining the service cover

After maintenance, make sure to close the service cover.
(Otherwise, leakage of water or contamination by foreign matter may cause defects)

(3) Precautions for maintaining the electrical box

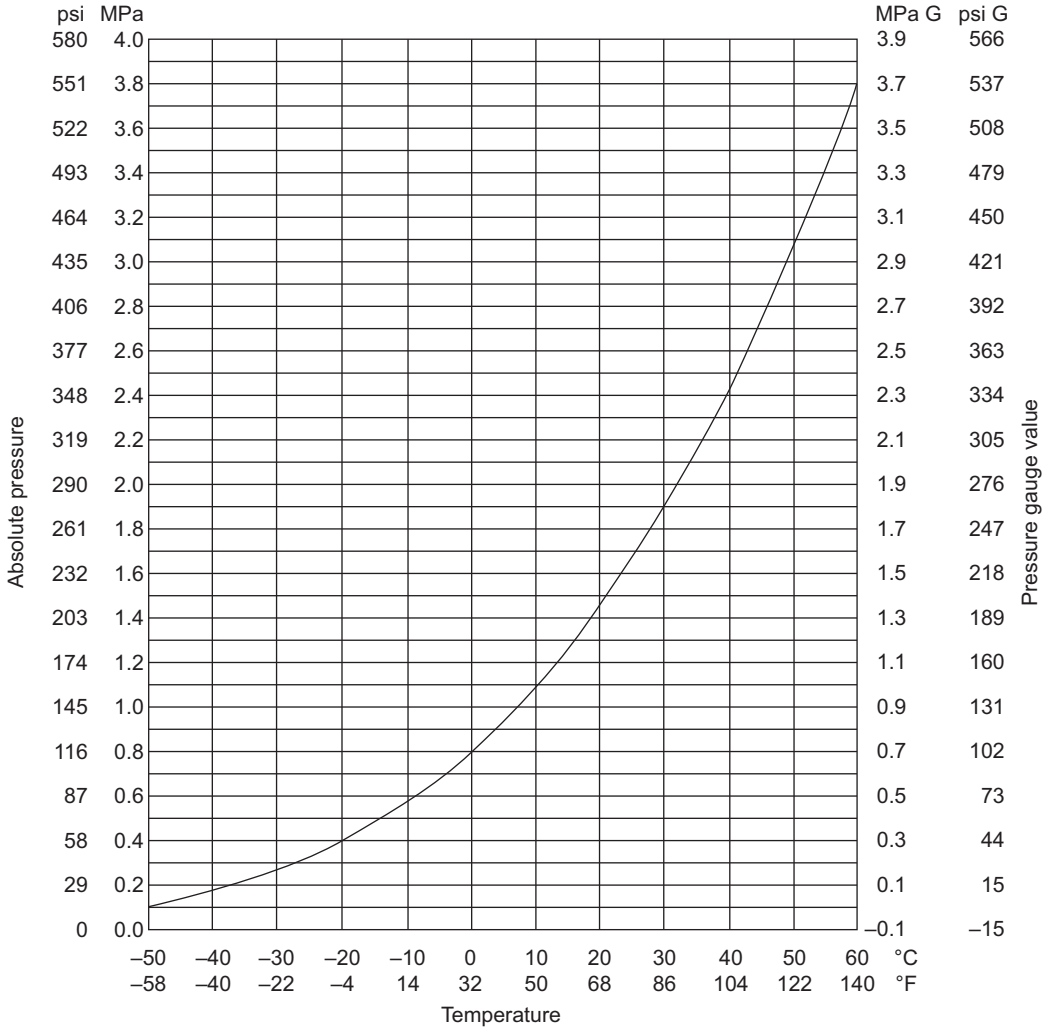
1. Turn off the power for 10 minutes before opening the cover of the electrical box.
2. After opening the cover, use the tester to measure the terminal voltage of the power supply terminal to make sure that the power has been cut.
   Then check if the circuit capacitor voltage is under 50 VDC.
3. To avoid PCB defects, touch the earth terminal of the electrical box with your hand when unplugging the connector to release static electricity.
4. Unplug the connectors X106A and X107A (30/36/42/48 class models only), of the outdoor fan motor.
   When unplugging the connectors, do not touch the live parts.
   (When the outdoor fan is rotating because of strong wind, there is a risk of electric shock due to main circuit board capacitor power storage.)
5. After maintenance, reconnect the connectors of the outdoor fan in their original positions.
   - Otherwise, the remote controller will display error code **E7**, preventing normal operation.

(4) Precautions for piping work and refrigerant charging:
This unit uses R-410A refrigerant. Pay attention to the following conditions.

1. The charging pipe and the manifold tube use R-410A products for pressure maintenance and avoiding contamination by impurities (SUNISO oil, etc.).
2. Be sure to purge with nitrogen when brazing.
   - Properly perform airtightness test and vacuum drying. (Airtight test pressure: 4.0 MPa (580 psi))
   - Charge refrigerant in liquid state.

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

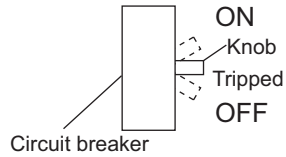
1.3 Refrigerant Properties (R-410A)



Temperature		Absolute Pressure		Temperature		Absolute Pressure		Temperature		Absolute Pressure		Temperature		Absolute Pressure	
°C	°F	MPa	psi	°C	°F	MPa	psi	°C	°F	MPa	psi	°C	°F	MPa	psi
–50	–58	0.11	16.0	–20	–4	0.40	58.0	10	50.0	1.09	158	40	104.0	2.42	351
–48	–54.4	0.12	17.4	–18	–0.4	0.43	62.4	12	53.6	1.15	167	42	107.6	2.54	368
–46	–50.8	0.13	18.9	–16	3.2	0.46	66.7	14	57.2	1.22	177	44	111.2	2.67	387
–44	–47.2	0.15	21.8	–14	6.8	0.50	72.5	16	60.8	1.29	187	46	114.8	2.80	406
–42	–43.6	0.16	23.2	–12	10.4	0.54	78.3	18	64.4	1.37	199	48	118.4	2.93	425
–40	–40	0.18	26.1	–10	14	0.57	82.7	20	68.0	1.45	210	50	122.0	3.07	445
–38	–36.4	0.19	27.6	–8	17.6	0.61	88.5	22	71.6	1.53	222	52	125.6	3.21	466
–36	–32.8	0.21	30.5	–6	21.2	0.66	95.7	24	75.2	1.61	234	54	129.2	3.36	487
–34	–29.2	0.23	33.4	–4	24.8	0.70	102	26	78.8	1.70	247	56	132.8	3.51	509
–32	–25.6	0.25	36.3	–2	28.4	0.75	109	28	82.4	1.79	260	58	136.4	3.64	528
–30	–22	0.27	39.2	0	32	0.80	116	30	86.0	1.89	274	60	140.0	3.83	555
–28	–18.4	0.29	42.1	2	35.6	0.85	123	32	89.6	1.99	289	62	143.6	4.00	580
–26	–14.8	0.32	46.4	4	39.2	0.91	132	34	93.2	2.09	303	64	147.2	4.17	605
–24	–11.2	0.34	49.3	6	42.8	0.96	139	36	96.8	2.20	319	—	—	—	—
–22	–7.6	0.37	53.7	8	46.4	1.02	148	38	100.4	2.31	335	—	—	—	—

2. Symptom-based Troubleshooting

2.1 Indoor Unit Overall

	Symptom	Supposed Cause	Countermeasure
1	The system does not start operation at all.	Blowout of fuse(s)	Turn OFF the power supply and then replace the fuse(s).
		Cutout of breaker(s)	• If the knob of any breaker is in its OFF position, turn ON the power supply. • If the knob of any circuit breaker is in its tripped position, do not turn ON the power supply. 
		Power failure	After the power failure is reset, restart the system.
		The connector loose or not fully plugged in	Turn off the power supply to verify the connection of the connector.
2	The system starts operation but makes an immediate stop.	Blocked air inlet or outlet of indoor or outdoor unit	Remove obstacle(s).
		Clogged air filter(s)	Clean the air filter(s).
3	The system does not cool or heat air well.	Blocked air inlet or outlet of indoor or outdoor unit	Remove obstacle(s).
		Clogged air filter(s)	Clean the air filter(s).
		Enclosed outdoor unit(s)	Remove the enclosure.
		Improper set temperature	Set the temperature to a proper degree.
		Airflow rate set to LOW	Set it to a proper airflow rate.
		Improper direction of air diffusion	Set it to a proper direction.
		Open window(s) or door(s)	Shut it tightly.
		In cooling Direct sunlight received	Hang curtains or shades on windows.
		In cooling Too many persons staying in a room	The model must be selected to match the air conditioning load.
		In cooling Too many heat sources (e.g. OA equipment) located in a room	

	Symptom		Supposed Cause	Countermeasure
4	The system does not operate.	The system stops and immediately restarts operation.	If the operation lamp on the remote controller turns ON, the system will be normal. These symptoms indicate that the system is controlled so as not to put unreasonable loads on the system.	Normal operation. The system will automatically start operation after a lapse of five minutes.
		Pressing the temperature setting button immediately resets the system.		
		The remote controller displays **UNDER CENTRALIZED CONTROL**, which blinks for a period of several seconds when the **OPERATION** button is depressed.	The system is controlled with centralized controller. Blinking display indicates that the system cannot be operated using the remote controller.	Operate the system using the COOL/HEAT centralized remote controller.
		The system stops immediately after turning ON the power supply.	The system is in preparation mode of microcomputer operation.	Wait for a period of approximately one minute.
5	The system makes intermittent stops.	The remote controller displays error codes **U4** or **U5**, and the system stops but restarts after a lapse of several minutes.	The system stops due to an interruption in communication between units caused by electrical noises coming from equipment other than air conditioners.	Remove causes of electrical noises. If these causes are removed, the system will automatically restart operation.
6	COOL/HEAT selection is disabled.	The remote controller displays **UNDER CENTRALIZED CONTROL.**	This remote controller has no option to select cooling operation.	Use a remote controller with option to select cooling operation.
		The remote controller displays **UNDER CENTRALIZED CONTROL,** and the COOL/ HEAT selection remote controller is provided.	COOL/HEAT selection is made using the COOL/HEAT selection remote controller.	Use the COOL/HEAT selection remote controller to select cool or heat.
7	The system conducts fan operation but not cooling or heating operation.	This symptom occurs immediately after turning ON the power supply.	The system is in preparation mode of operation.	Wait for a period of approximately 10 minutes.
8	The airflow rate is not reproduced according to the setting.	Even pressing the airflow rate setting button makes no changes in the airflow rate.	In heating operation, when the room temperature reaches the set degree, the outdoor unit will stop while the indoor unit is brought to fan LL operation so that no one gets cold air. Furthermore, if fan operation mode is selected when other indoor unit is in heating operation, the system will be brought to fan LL operation.	Normal operation.
9	The airflow direction is not reproduced according to the setting.	The airflow direction is not corresponding to that displayed on the remote controller. The flap does not swing.	Automatic control	Normal operation.

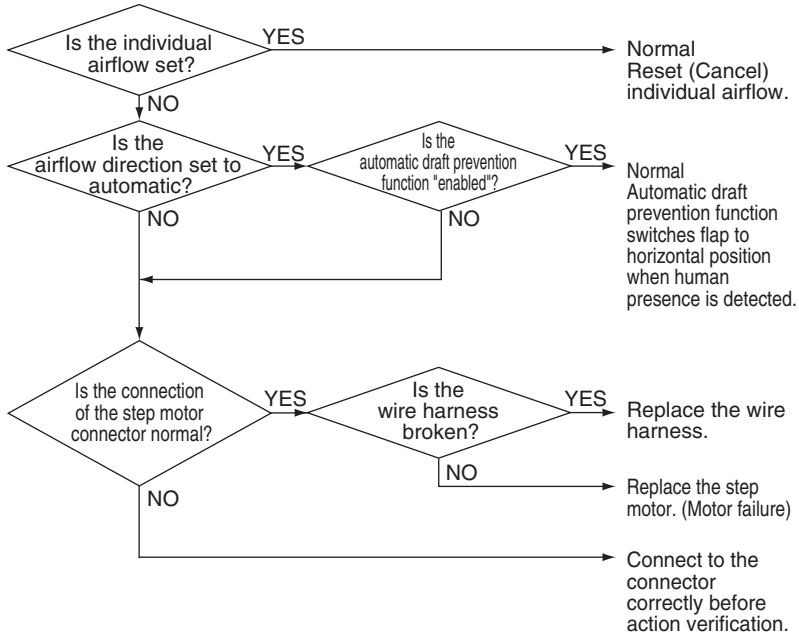
	Symptom		Supposed Cause	Countermeasure
10	A white mist comes out from the system.	**Indoor unit** In cooling operation, the ambient humidity is high. (This indoor unit is installed in a place with much oil or dust.)	Uneven temperature distribution due to heavy stain of the inside of the indoor unit	Clean the inside of the indoor unit.
		Indoor unit Immediately after cooling operation stopping, the ambient temperature and humidity are low.	Hot gas (refrigerant) that has flowed in the indoor unit results to be vapor from the unit.	Normal operation.
		Indoor and outdoor units After the completion of defrost operation, the system is switched to heating operation.	Defrosted moisture turns to be vapor and comes out from the units.	Normal operation.
11	The system produces sounds.	**Indoor unit** Immediately after turning ON the power supply, indoor unit produces ringing sounds.	These are operating sounds of the electronic expansion valve of the indoor unit.	Normal operation. This sound becomes low after a lapse of approximately one minute.
		Indoor and outdoor units Hissing sounds are continuously produced while in cooling or defrost operation.	These sounds are produced from gas (refrigerant) flowing respectively through the indoor and outdoor units.	Normal operation.
		Indoor and outdoor units Hissing sounds are produced immediately after the startup or stop of the system, or the startup or stop of defrost operation.	These sounds are produced when the gas (refrigerant) stops or changes flowing.	Normal operation.
		Indoor unit Faint sounds are continuously produced while in cooling operation or after stopping the operation.	These sounds are produced from the drain discharge device in operation.	Normal operation.
		Indoor unit Creaking sounds are produced while in heating operation or after stopping the operation.	These sounds are produced from resin parts expanding and contracting with temperature changes.	Normal operation.
		Outdoor unit Pitch of operating sounds changes.	The reason is that the compressor changes the operating frequency.	Normal operation.
12	Dust comes out from the system.	Dust comes out from the system when it restarts after the stop for an extended period of time.	Dust, which has deposited on the inside of indoor unit, is blown out from the system.	Normal operation.
13	Odors come out from the system.	In operation	Odors of room, cigarettes or else adsorbed to the inside of indoor unit are blown out.	The inside of the indoor unit should be cleaned.
14	Outdoor fan does not rotate.	In operation	The reason is that fan revolutions are controlled to put the operation to the optimum state.	Normal operation.
15	LCD display **88** appears on the remote controller.	Immediately after turning ON the power supply	The reason is that the system is checking to be sure the remote controller is normal.	Normal operation. This code is displayed for a period of approximately one minute at maximum.
16	The outdoor unit compressor or the outdoor fan does not stop.	After stopping operation	It stops in order to prevent oil or refrigerant from dwelling.	Normal operation. It stops after a lapse of approximately 5 to 10 minutes.

	Symptom		Supposed Cause	Countermeasure
17	The outdoor unit gets hot.	While stopping operation	The reason is that the compressor is warmed up to provide smooth startup of the system.	Normal operation.
18	The system does not cool air well.	The system is in dry operation.	The reason is that the dry operation serves not to reduce the room temperature where possible.	Change the system to cooling operation.

2.2 With Optional Infrared Presence/Floor Sensor

	Problem	Measure
1	"Louver operation different from setting" or "No downward airflow in heating operation"	Refer to the flowchart below.
2	Individual airflow direction setting different from the actual airflow direction	· Check the "Louver operation different from setting" error diagnosis.
3	When in stop mode, the louver does not close completely.	Turn off the circuit breaker and then turn it on again.
4	The remote controller menu does not display energy saving operating mode for when people are not present.	Please check "Infrared presence/infrared floor sensor error (CE)" in troubleshooting.
	The remote controller menu does not display the stop function for when people are not present.	
	The remote controller menu does not display the automatic draft prevention function.	
5	The menu does not display the eco-friendly display function.	No defect. Set the clock.
6	During cooling and dry operation, the louver automatically switches from horizontal (P0) to one-level downward (P1).	No defect. When relative ambient humidity is higher, automatic louver control will be activated.
7	During heating operation, the use of an airflow block will not cause other louvers to turn downward (P4).	No defect. In heating operation, if an airflow block is set, then the air outlet control outside the airflow block will be within the range P0-P3.
8	When using airflow block, the airflow block will be routinely lifted (become horizontal) during heating operation.	No defect. Set louver to horizontal (P0) during thermostat OFF.
9	Although people are not present, the infrared presence sensor detects human presence.	Check if there are any objects that generate temperature change when moving. For example: · An electric heater with swing function · Doors, curtains, blind switches · Output of paper from a fax machine or a printer · Turning on/off of incandescent lights · Moving objects
10	Although people are present, the infrared presence sensor fails to determine their presence.	Check for the following conditions. · Lack of movement · Facing away from the sensor · Little skin exposed · Slight movement in a place far from the sensor
11	Large difference between floor temperature and actual temperature	Check for the following conditions. · Sensor detection zone affected by solar radiation · High or low temperature objects in the sensor detection zone · Large difference between floor temperature and temperature of the living space · Sensors installed near walls may be affected by wall temperature.

Error diagnosis of "Louver operation different from setting"

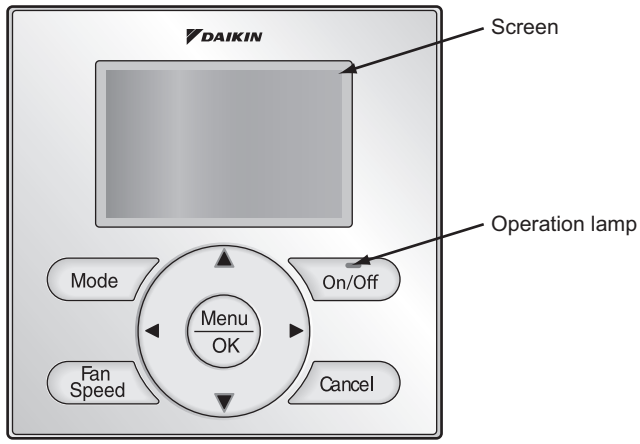


3. Troubleshooting with Remote Controller

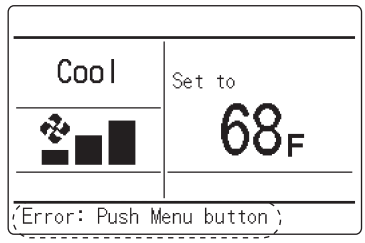
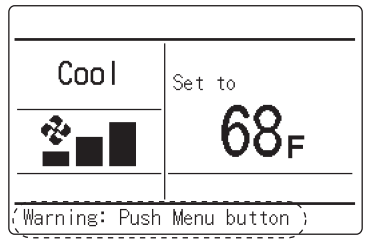
3.1 Wired Remote Controller

3.1.1 BRC1E73

The following will be displayed on the screen when an error (or a warning) occurs during operation. Check the error code and take the corrective action specified for the particular model.



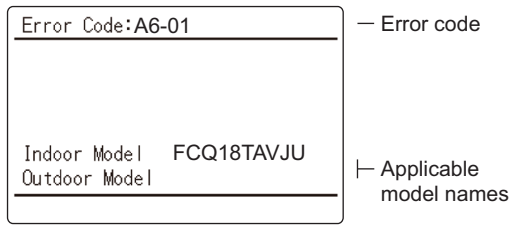
(1) Check if it is an error or warning.

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

(2) Taking corrective action.

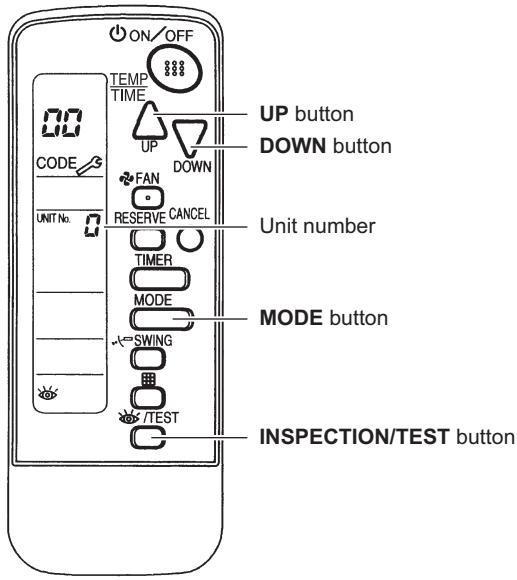
Press the **Menu/OK** button to check the error code.

Take the corrective action specific to the model.



3.2 Wireless Remote Controller

If unit stops due to an error, the operation indicating LED on the signal receiving part of indoor unit blinks.
The error code can be determined by following the procedure described below. (The error code is displayed when an operation error has occurred. In normal condition, the error code of the last problem is displayed.)



1. Press **INSPECTION/TEST** button to enter inspection mode. Then the figure 0 blinks on the unit number display.
2. Press **UP** button or **DOWN** button and change the unit number until the receiver of the remote controller starts to beep.
   3 short beeps : Follow all steps below.
   1 short beep : Follow steps 3 and 4. Continue the operation in step 4 until you hear a continuous beep. This continuous beep indicates that the error code is confirmed.
   Continuous beep : There is no abnormality.
3. Press **MODE** button. The left 0 (upper digit) indication of the error code blinks.
4. Press **UP** button or **DOWN** button to change the error code upper digit until the receiver of the indoor unit starts to beep.

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

⇨ **"UP" button** ⬅ **"DOWN" button**

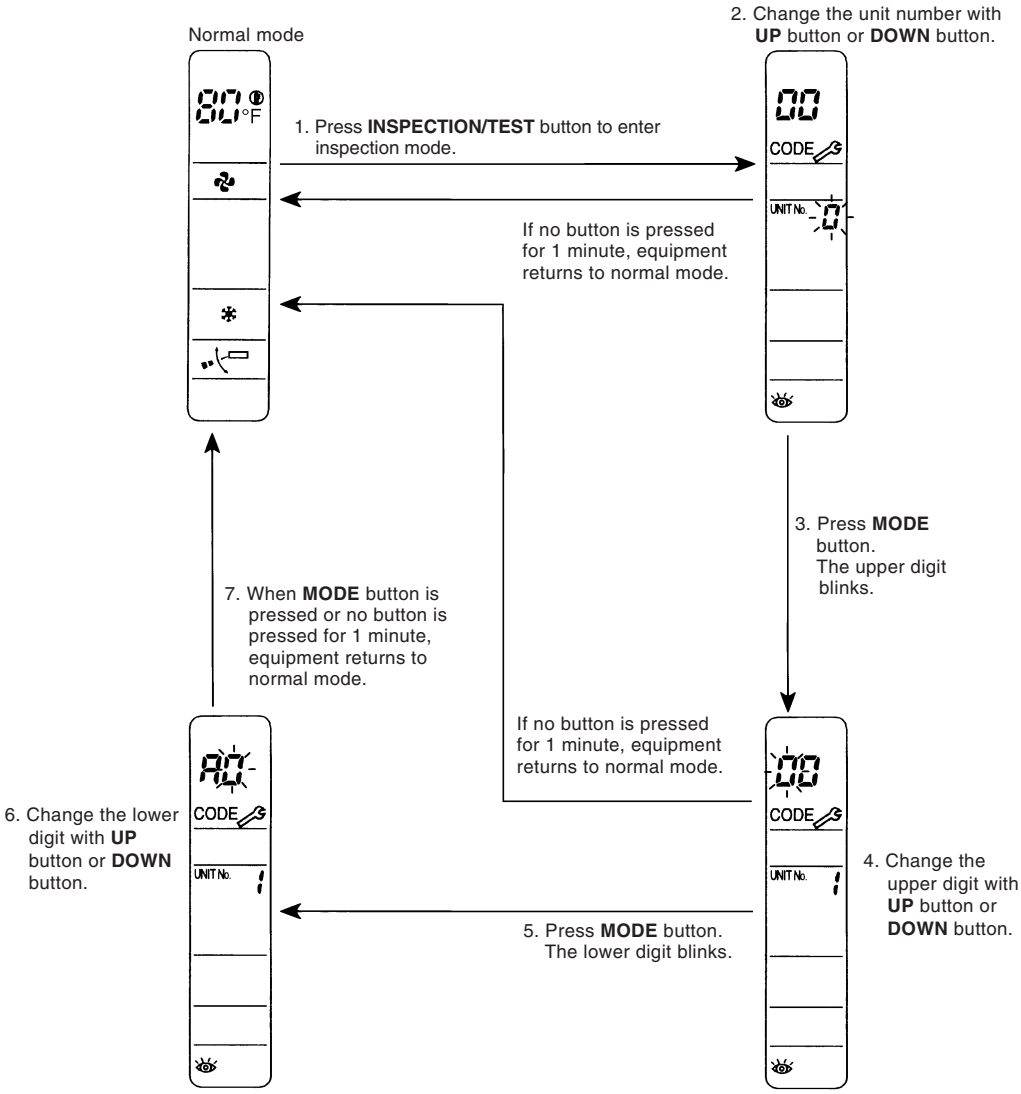
   Continuous beep : Both upper and lower digits match. (Error code is confirmed.)
   2 short beeps : The upper digit matches but the lower digit does not.
   1 short beep : The upper digit does not match.
5. Press **MODE** button. The right 0 (lower digit) indication of the error code blinks.
6. Press **UP** button or **DOWN** button and change the error code lower digit until the receiver of the indoor unit generates a continuous beep.

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

⇨ **"UP" button** ⬅ **"DOWN" button**

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

7. Press MODE button to return to the normal mode. If you do not press any button for 1 minute, the remote controller automatically returns to the normal mode.



4. Troubleshooting by Error Codes

4.1 Error Codes and Description

○: ON ●: OFF◑ : Blink

	Error code	Operation lamp	Description	Reference Page
Indoor Unit	A0	◑	External protection device abnormality	185
			External protection device abnormality (FTQ-TA only)	186
	A1	◑	Indoor unit PCB abnormality	187
	A3	◑	Drain level control system (S1L) abnormality	188
	A6	◑	Indoor fan motor (M1F) lock, overload	190
			Indoor fan motor abnormality	192
			Blower motor not running (FTQ-TA only)	196
			Indoor fan motor status abnormality (FTQ-TA only)	197
			Low indoor airflow (FTQ-TA only)	198
	A7★	○	Swing flap motor abnormality	199
	A8	◑	Power supply voltage abnormality	201
			Blower motor stops for over/under voltage (FTQ-TA only)	202
	A9	◑	Electronic expansion valve coil abnormality, Dust clogging	203
	AF★	○	Drain level above limit	205
	AJ	◑	Capacity determination device abnormality	206
	C1	◑	Transmission abnormality (between indoor unit PCB and fan PCB)	207
			Blower motor communication error (FTQ-TA only)	209
	C4	◑	Heat exchanger liquid pipe thermistor abnormality	210
	C5	◑	Heat exchanger gas pipe thermistor abnormality	210
	C6	◑	Combination abnormality (between indoor unit PCB and fan PCB)	211
			Blower motor HP mismatch (FTQ-TA only)	212
			Indoor blower does not have required parameters to function (FTQ-TA only)	213
	C9	◑	Suction air thermistor (R1T) abnormality	210
			Remote sensor abnormality	214
	CA	○	Discharge air thermistor abnormality	210
	CE★	○	Infrared presence/floor sensor error	215
	CJ(∗1)	○	Remote controller thermistor abnormality	220

	Error code	Operation lamp	Description	Reference Page
Outdoor Unit	E1	◑	Outdoor main PCB abnormality	221
	E3	◑	Activation of high pressure switch	222
	E4	◑	Activation of low pressure sensor	224
	E5	◑	Inverter compressor motor lock	226
	E7	◑	Outdoor fan motor abnormality	228
	E9	◑	Electronic expansion valve coil abnormality	230
	F3	◑	Discharge pipe temperature abnormality	231
	F6	◑	Refrigerant overcharged	232
	H9	◑	Outdoor air thermistor abnormality	233
	J3	◑	Discharge pipe thermistor abnormality	233
	J5	◑	Suction pipe thermistor abnormality	233
	J6	◑	Outdoor heat exchanger deicer thermistor abnormality	233
	J7	◑	Outdoor heat exchanger liquid pipe thermistor abnormality	233
	J9	◑	Subcooling heat exchanger gas pipe thermistor abnormality	233
	JA	◑	High pressure sensor abnormality	234
	JC	◑	Low pressure sensor abnormality	235
	L1	◑	PCB (for inverter compressor) abnormality	236
	L4	◑	Radiation fin temperature rise abnormality	237
	L5	◑	Inverter compressor instantaneous overcurrent	238
	L8	◑	Inverter compressor overcurrent	239
	L9	◑	Inverter compressor startup abnormality	240
	LC	◑	Transmission error (between microcomputers on the outdoor main PCB)	241
	P1	◑	Inverter circuit capacitor high voltage	242
	P4★	○	Radiation fin thermistor abnormality	243
System	U0★	○	Refrigerant shortage	244
	U2	◑	Power supply insufficient or instantaneous abnormality	246
	U3	◑	Check operation not executed	248
	U4	◑	Transmission error between indoor units and outdoor units	249
	U5	◑	Transmission error between remote controller and indoor unit	251
	U8	◑	Transmission error between main and sub remote controllers	252
	U9	◑	Transmission error between indoor and outdoor units in the same system	253
	UA	◑	Improper combination of indoor and outdoor units, indoor units and remote controller	254
			Incorrect electric heater capacity setting (FTQ-TA only)	256
	UC★	○	Address duplication of centralized controller	257
	UE	◑	Transmission error between centralized controller and indoor unit	258
	UF	◑	System not set	259
	UH	◑	System abnormality, refrigerant system address undefined	260

★: In the case of error codes identified, system operation continues, however, be sure to check and repair.

Note(s) ∗1. The system may not continue operation depending on the conditions.

4.2 Error Codes - Sub Codes

If an error code like the one shown below is displayed when the navigation remote controller (BRC1E series) is in use, make a detailed diagnosis.

4.2.1 Indoor Unit

Error code	Troubleshooting	
	Description of error	Description of diagnosis
A0 - 01	External protection device abnormality	Refer to page 186.
A6 - 01	Fan motor locked	A locked fan motor current has been detected. Turn the fan by hand to check for the connection of connectors.
A6 - 10	Fan overcurrent error	A fan motor overcurrent has been detected. Check for the connection of the connector between the fan motor and the fan PCB. If the connection is normal, replace the fan motor. If this still cannot solve the error, replace the fan PCB.
A6 - 11	Fan position detection error	An error in the detection of position of the fan motor. Check for the connection of the connector between the fan motor and the fan PCB. If the connection is normal, replace the fan motor. If this still cannot solve the error, replace the fan PCB.
A6 - 20	Indoor fan motor status abnormality	Refer to page 197.
A6 - 21	Low indoor airflow	Refer to page 198.
A8 - 01	Power supply voltage error	Check for the input voltage of the fan motor.
A9 - 01	Electronic expansion valve error	There is an error in the electronic expansion valve coil or a connector disconnected.
A9 - 02	Refrigerant leakage detection error	Refrigerant leaks even if the electronic expansion valve is closed. Replace the electronic expansion valve.
AH - 03	Transmission error (between the self-cleaning decoration panel and the indoor unit) (when the self-cleaning decoration panel is mounted)	Check for the connection of the harness connector between the panel PCB and the indoor unit PCB.
AH - 04	Dust detection sensor error (when the self-cleaning decoration panel is mounted)	Check for the connections of the connector X12A on the panel PCB and the connectors X18A and X19A on the sensor PCB.
AH - 05	Dust collection sign error (when the self-cleaning decoration panel is mounted)	Check for clogging with dust at the dust collection port as well as in the brush unit, S-shaped pipe, and dust box. Furthermore, check for any stains of the light receiving and emitting parts of the infrared unit.
AH - 06	Air filter rotation error (when the self-cleaning decoration panel is mounted)	Check for anything getting in the way of rotating the filter (e.g. the filter comes off or the drive gear is clogged with foreign matter).
AH - 07	Damper rotation error (when the self-cleaning decoration panel is mounted)	The damper does not rotate normally. Check for any foreign matter around the damper and for the operation of the gear and limit switch.
AH - 08	Filter self-cleaning operation error (when the self-cleaning decoration panel is mounted)	The unit has not yet completed the filter self-cleaning operation even after the lapse of specified period of time. Check for any external noise, etc.
AH - 09	Filter self-cleaning operation start disabled error (when the self-cleaning decoration panel is mounted)	The unit has been put into a state in which the filter self-cleaning operation is disabled. Check the unit for the operating conditions.
AJ - 01	Capacity setting error	There is an error in the capacity setting of the indoor unit PCB.
AJ - 02	Electronic expansion valve setting error	There is a fault in the setting of the gear type electronic expansion valve/direct acting type electronic expansion valve.
C1 - 01	Transmission abnormality between indoor unit PCB and fan PCB	Check for the conditions of transmission between the indoor unit PCB and the fan PCB.
C1 - 07	Blower motor communication error	Refer to page 209.
C6 - 01	Defective combination of indoor unit PCB and the fan PCB	A combination of indoor unit PCB and the fan PCB is defective. Check whether the capacity setting adaptor is correct and the type of the fan PCB is correct.
	Blower motor HP mismatch	Refer to page 212.
C6 - 02	Indoor blower does not have required parameters to function	Refer to page 213.

Error code	Troubleshooting	
	Description of error	Description of diagnosis
U4 - 01	Indoor-outdoor transmission error	Refer to the **U4** flowchart.
UA - 13	Refrigerant type error	The type of refrigerant used for the indoor unit is different from that used for the outdoor unit.
UA - 15	Not applicable for self-cleaning decoration panel [when the self-cleaning decoration panel is mounted]	An outdoor unit is not applicable for the self-cleaning decoration panel is connected.
UA - 17	Incorrect electric heater capacity setting	Refer to page 256.

4.3 Error Code Indication by Outdoor Unit PCB

Monitor mode

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

Selection of setting item

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

Confirmation of error 1

Press the **RETURN (BS3)** button once to display "First digit" of error code.

Confirmation of error 2

Press the **SET (BS2)** button once to display "Second digit" of error code.

Confirmation of error 3

Press the **SET (BS2)** button once to display "error location".

Confirmation of error 4

Press the **SET (BS2)** button once to display "master or slave 1 or slave 2" and "error location".

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

∗ Press the **MODE (BS1)** button and return to “Setting mode 1”.

Detailed description on next page.

Error Description		Error Code
PCB abnormality		E1
Abnormal high pressure switch	High pressure switch activated	E3
Abnormal low pressure switch	Low pressure switch activated	E4
Compressor lock	Detection of inverter compressor lock	E5
Overload, overcurrent, abnormal lock of outdoor fan motor	Detection of DC fan 1 motor lock	E7
	Detection of DC fan 2 motor lock	
Electronic expansion valve abnormality	Main	E9
	Subcooling	
Abnormal discharge pipe temperature	Abnormal Tdi	F3
Abnormal heat exchanger temperature	Refrigerant overcharge	F6
Defective thermistor of outdoor air temperature	Defective Ta sensor (short)	H9
Defective discharge pipe thermistor	Defective Tdi sensor (short)	J3
Defective suction pipe thermistor	Defective Ts1 sensor (short)	J5
	Defective Ts2 sensor (short)	
Defective outdoor heat exchanger deicer thermistor	Defective Tb sensor (short)	J6
Defective outdoor heat exchanger liquid pipe thermistor	Defective Tl sensor (short)	J7
Defective subcooling heat exchanger gas pipe thermistor	Defective Tsh sensor (short)	J9
Defective sensor of high pressure	Defective Pc sensor (short)	JA
Defective sensor of low pressure	Defective Pe sensor (short)	JC
Defective PCB (for inverter compressor)	Defective IPM	L1
	Abnormal current sensor offset	
	Abnormal IGBT	
	Defective current sensor	
	Abnormal SP-PAM overvoltage	
	Abnormal Interleave	
	Abnormal inverter jumper setting	
	Abnormal EEPROM	
Inverter radiation fin temperature rising	Overheating of inverter radiation fin temperature	L4
DC output overcurrent	Inverter instantaneous overcurrent	L5
Electronic thermal	Electronic thermal switch 1	L8
	Electronic thermal switch 2	
	Out-of-step	
	Speed down after startup	
	Lightening detection	
Stall prevention (Limit time)	Stall prevention (Current increasing)	L9
	Stall prevention (Defective start up)	
	Abnormal wave form in startup	
	Out-of-step	
Transmission error (Between microcomputers on the outdoor main PCB)		LC

○: ON ●: OFF ◑: Blink

Error Code	Confirmation of Error 1							Confirmation of Error 2							Confirmation of Error 3							Confirmation of Error 4						
	H1P	H2P	H3P	H4P	H5P	H6P	H7P	H1P	H2P	H3P	H4P	H5P	H6P	H7P	H1P	H2P	H3P	H4P	H5P	H6P	H7P	H1P	H2P	H3P	H4P	H5P	H6P	H7P
E1	◑	◑	●	●	●	◑	◑	◑	●	○	●	●	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●	◑	◑
E3								◑	●	○	●	●	◑	◑	◑	○	●	●	●	●	●	◑	○	○	●	●		
E4								◑	●	○	●	◑	●	●	◑	○	●	●	●	●	●	◑	○	○	●	●		
E5								◑	●	○	●	◑	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●		
E7								◑	●	○	●	◑	◑	◑	◑	○	●	●	●	●	●	◑	○	○	●	◑	*1	
															◑	○	●	●	●	●	◑	◑	○	○	●	◑		
E9								◑	●	○	◑	●	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●		
																						◑	○	○	◑	●		
F3	◑	◑	●	●	◑	●	◑	◑	●	○	●	●	◑	◑	◑	○	●	●	●	●	●	◑	○	○	●	●	*1	
F6								◑	●	○	●	◑	◑	●	◑	○	●	●	●	●	●	◑	○	○	●	●	◑	◑
H9	◑	◑	●	●	◑	●	●	◑	●	○	◑	●	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●	*1	
J3	◑	◑	●	●	◑	◑	●	◑	●	○	●	●	◑	◑	◑	○	●	●	●	●	●	◑	○	○	●	●		
J5								◑	●	○	●	◑	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●		
																						◑	○	○	●	◑		
J6								◑	●	○	●	◑	◑	●	◑	○	●	●	●	●	●	◑	○	○	●	●	*1	
J7								◑	●	○	●	◑	◑	◑	◑	○	●	●	●	●	●	◑	○	○	●	●		
J9								◑	●	○	◑	●	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●		
JA								◑	●	○	◑	●	◑	●	◑	○	●	●	●	●	●	◑	○	○	●	●		
JC								◑	●	○	◑	◑	●	●	◑	○	●	●	●	●	●	◑	○	○	●	●		
L1	◑	◑	●	●	◑	◑	◑	◑	●	○	●	●	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●	●	●
																						◑	○	○	●	●	●	◑
																						◑	○	○	●	●	◑	●
																						◑	○	○	●	●	◑	◑
																						◑	○	○	●	◑	●	●
																						◑	○	○	●	◑	◑	◑
																						◑	○	○	●	◑	●	◑
																						◑	○	○	◑	●	●	●
L4								◑	●	○	●	◑	●	●	◑	○	●	●	●	●	●	◑	○	○	●	●		
L5								◑	●	○	●	◑	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●		
L8								◑	●	○	◑	●	●	●	◑	○	●	●	●	●	●	◑	○	○	●	●	*1	
L9								◑	●	○	◑	●	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●		
LC								◑	●	○	◑	◑	●	●	◑	○	●	●	●	●	●	◑	○	○	●	◑		

Display of error description (first digit) — Display of error description (second digit) — Display 1 of error in detail — Display 2 of error in detail

*1	●	●	Master
	●	◑	Slave1
	◑	●	Slave2
	◑	◑	System

Monitor mode

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

Selection of setting item

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

Confirmation of error 1

Press the **RETURN (BS3)** button once to display "First digit" of error code.

Confirmation of error 2

Press the **SET (BS2)** button once to display "Second digit" of error code.

Confirmation of error 3

Press the **SET (BS2)** button once to display "error location".

Detailed description on next page.

Confirmation of error 4

Press the **SET (BS2)** button once to display "master or slave 1 or slave 2" and "error location".

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

∗ Press the **MODE (BS1)** button and return to “Setting mode 1”.

Error Description		Error Code
Inverter circuit capacitor high voltage	Imbalance of inverter power supply voltage	P1
Defective temperature sensor of inverter radiation fin	Defective thermistor of inverter fin	P4
Refrigerant shortage	Refrigerant shortage alarm	U0
	Liquid pipe temperature abnormality	
Abnormal power supply voltage	Insufficient Inverter voltage	U2
	Open phase in inverter (Phase T)	
	Error due to SP-PAM overvoltage	
	Error due to P-N short circuit	
No implementation of test-run		U3
Transmission error between indoor and outdoor unit	I/O transmission error	U4
	Indoor unit system error	
Transmission error of other system	Indoor unit system abnormal in other system or other indoor unit system abnormal in own system	U9
Erroneous field setting	System transmission error	UA
	Overconnection error of indoor units	
	Error of field setting	
	Refrigerant abnormal	
	Connection error (BP unit)	
Conflict in wiring and piping, no setting for system	Conflict in wiring and piping	UF
Defective system	Wiring error (Auto-address error)	UH

○: ON ●: OFF ◑: Blink

Error Code	Confirmation of Error 1							Confirmation of Error 2							Confirmation of Error 3							Confirmation of Error 4						
	H1P	H2P	H3P	H4P	H5P	H6P	H7P	H1P	H2P	H3P	H4P	H5P	H6P	H7P	H1P	H2P	H3P	H4P	H5P	H6P	H7P	H1P	H2P	H3P	H4P	H5P	H6P	H7P
P1	◑	◑	●	◑	●	●	●	◑	●	○	●	●	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●	*1	
P4								◑	●	○	●	◑	●	●	◑	○	●	●	●	●	●	◑	○	○	●	●		
U0	◑	◑	●	◑	●	●	◑	◑	●	○	●	●	●	●	◑	○	●	●	●	●	●	◑	○	○	●	●	◑	◑
																						◑	○	○	●	◑	●	●
U2								◑	●	○	●	●	◑	●	◑	○	●	●	●	●	●	◑	○	○	●	●	●	●
																							○	○	●	◑	●	●
																						◑	○	○	●	●	◑	●
																						◑	○	○	●	●	●	◑
U3								◑	●	○	●	●	◑	◑	◑	○	●	●	●	●	●	◑	○	○	●	●	◑	◑
U4								◑	●	○	●	◑	●	●	◑	○	●	●	●	●	●	◑	○	○	●	●	◑	◑
																						◑	○	○	●	◑	◑	◑
U9								◑	●	○	◑	●	●	◑	◑	○	●	●	●	●	●	◑	○	○	●	●	◑	◑
UA								◑	●	○	◑	●	◑	●	◑	○	●	●	●	●	●	◑	○	○	●	●	◑	◑
															◑	○	●	●	●	●	●	◑	○	○	●	◑	◑	◑
															◑	○	●	●	●	●	●	◑	○	○	◑	●	◑	◑
															◑	○	●	●	●	●	◑	◑	○	○	●	●	◑	◑
															◑	○	●	●	●	◑	●	◑	○	○	●	◑	◑	◑
UF								◑	●	○	◑	◑	◑	◑	◑	○	●	●	●	●	●	◑	○	○	●	●	◑	◑
UH								◑	●	○	◑	●	◑	◑	◑	○	●	●	●	●	●	◑	○	○	●	●	◑	◑

Display of error description (first digit) | Display of error description (second digit) | Display 1 of error in detail | Display 2 of error in detail

*1			
	●	●	Master
	●	◑	Slave1
	◑	●	Slave2
	◑	◑	System

4.4 External Protection Device Abnormality (Except FTQ-TA)

Error Code **A0**

Applicable Models All indoor models (except FTQ-TA)

Method of Error Detection Detect open or short circuit between external input terminals in indoor unit.

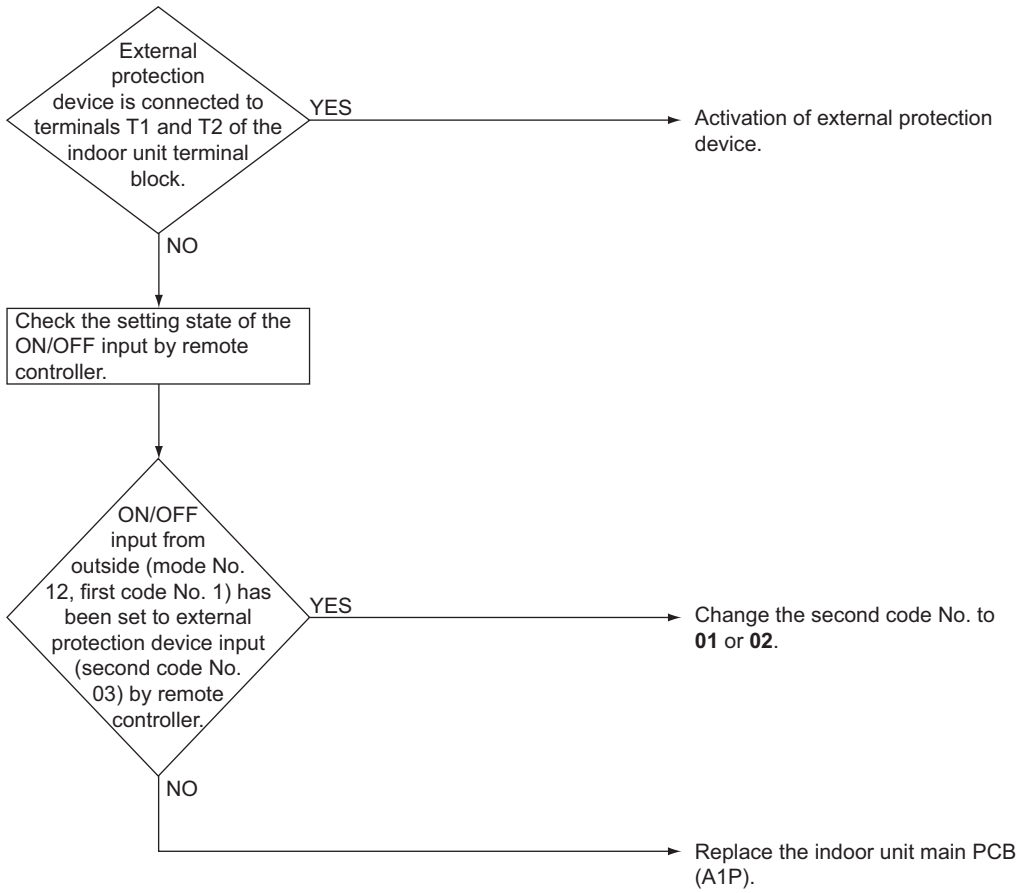
Error Decision Conditions When an open circuit occurs between external input terminals with the remote controller set for external ON/OFF terminal.

Supposed Causes

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

Troubleshooting

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



4.5 External Protection Device Abnormality (FTQ-TA Only)

Error Code **A0-01**

Applicable Models FTQ-TA

Method of Error Detection Detect open or short circuit between external input terminals in indoor unit.

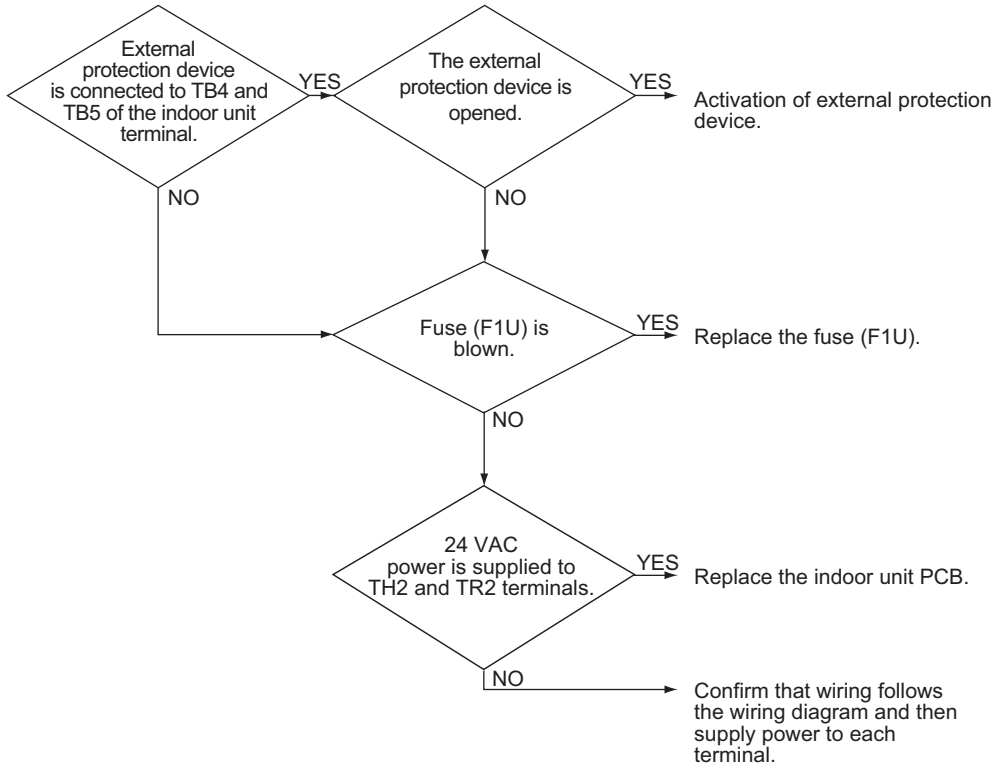
Error Decision Conditions When an open circuit occurs between external input terminals.

Supposed Causes

- Activation of external protection device
- Defective indoor unit PCB
- Indoor unit fuse blown
- 24 VAC power is not supplied to TH2 and TR2 terminals on the indoor unit PCB.

Troubleshooting

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



4.6 Indoor Unit PCB Abnormality

Error Code **A1**

Applicable Models All indoor models

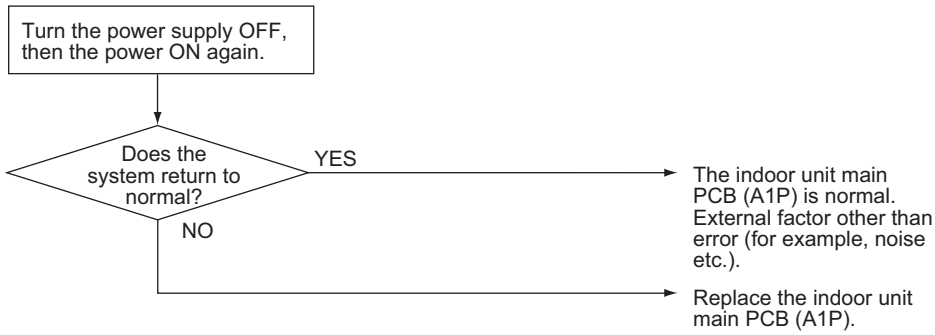
Method of Error Detection Data from EEPROM is checked.

Error Decision Conditions When data cannot be correctly received from the EEPROM
EEPROM: Type of nonvolatile memory. Maintains memory contents even when the power supply is turned OFF.

Supposed Causes
- Defective indoor unit 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.

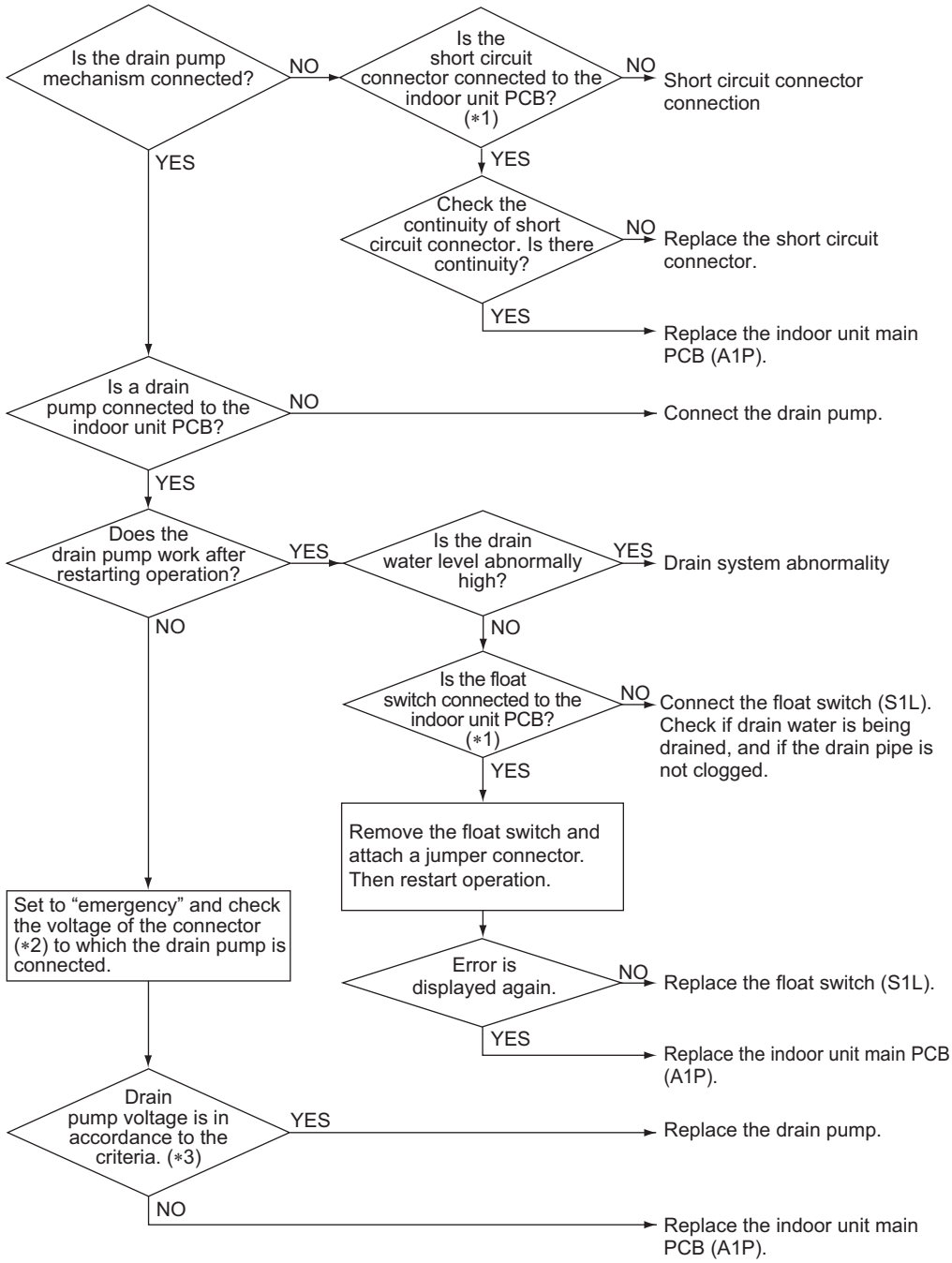


4.7 Drain Level Control System (S1L) Abnormality

Error Code	**A3**
Applicable Models	FCQ-TA, FBQ-P
Method of Error Detection	By float switch OFF detection
Error Decision Conditions	When the float switch goes OFF when conditions for rise of water level are not met
Supposed Causes	■ Defective drain pump ■ Improper drain piping work ■ Drain piping clogging ■ Defective float switch ■ Defective indoor unit PCB ■ Defective short circuit connector on PCB

Troubleshooting

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



Note(s)

Model	∗1: Float switch (S1L) / short circuit connector	∗2: Drain pump (M1P) connector	∗3: Drain pump (M1P) voltage
FCQ-TA	X15A	X10A	13 VDC
FBQ-P	X15A	X25A	220-240 VAC

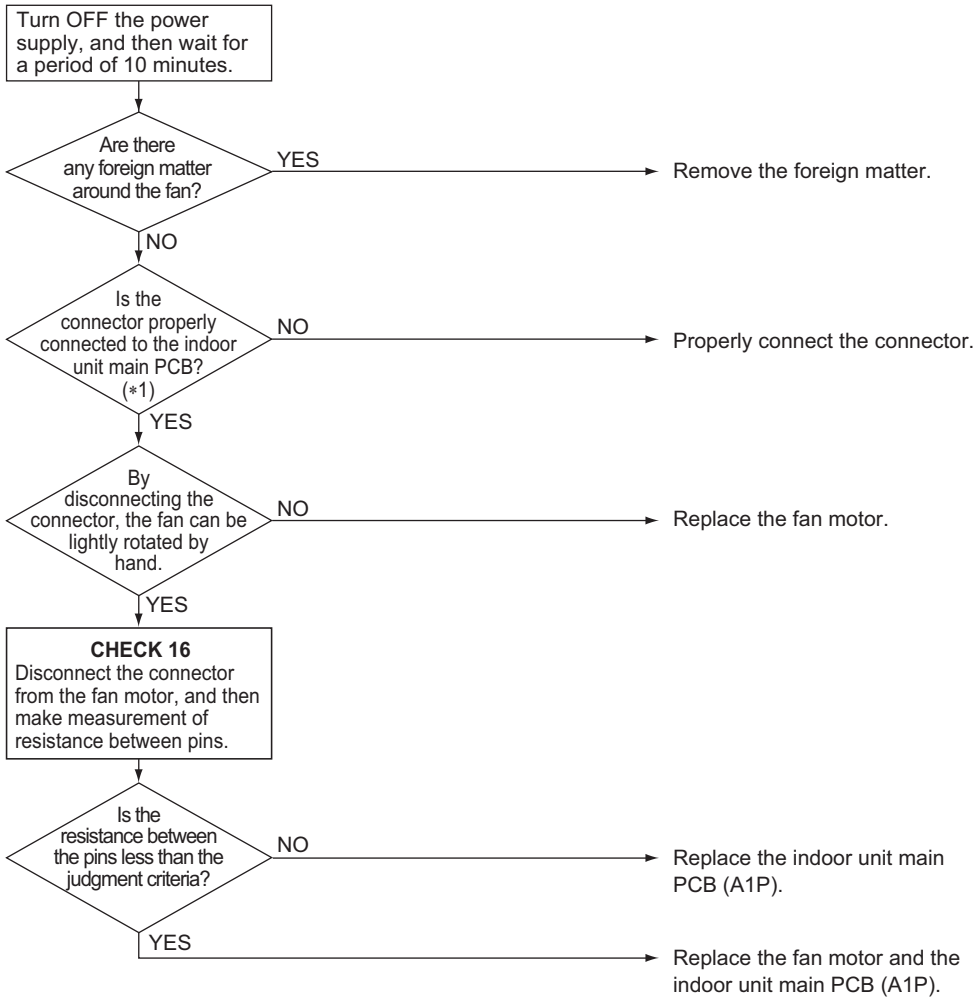
Note: If a PCB that does not have X15A connector detects **A3** error code, the PCB is defective.

4.8 Indoor Fan Motor (M1F) Lock, Overload

Error Code	**A6**
Applicable Models	FCQ-TA, FAQ-TA
Method of Error Detection	Abnormal fan revolutions are detected by signal output from the fan motor.
Error Decision Conditions	When the fan revolutions do not increase
Supposed Causes	■ Broken wires in, short circuit of, or disconnection of connectors from the fan motor harness ■ Defective fan motor (Broken wires or defective insulation) ■ Abnormal signal output from the fan motor (defective circuit) ■ Defective indoor unit main PCB ■ Instantaneous disturbance in the power supply voltage ■ Fan motor lock (Due to motor or external causes) ■ The fan does not rotate due to foreign matter blocking the fan.

Troubleshooting

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



Note(s) ∗1. Check the following connectors.

Model	Connector
FCQ-TA	X20A, Relay connector
FAQ-TA	X20A

Reference **CHECK 16** Refer to page 275.

4.9 Indoor Fan Motor Abnormality

4.9.1 Indoor Fan Motor Abnormality (FHQ-P, FHQ-M Models)

Error Code **A6**

Applicable Models FHQ-P, FHQ-M

Method of Error Detection This error is detected if there is no revolution detection signal output from the fan motor.

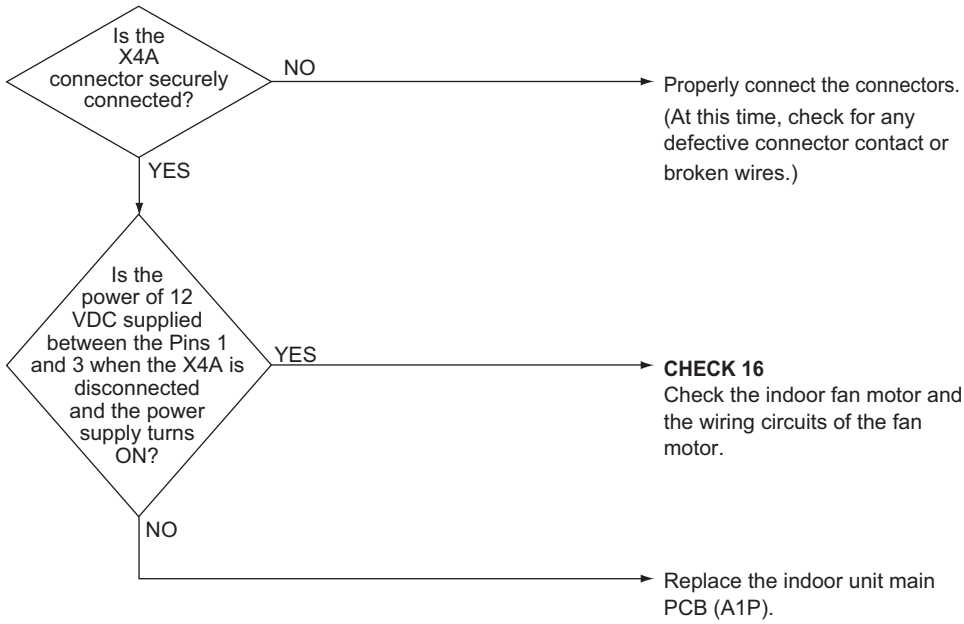
Error Decision Conditions When no revolutions can be detected even at the maximum output voltage to the fan

Supposed Causes

- Defective indoor fan motor
- Broken wires
- Defective contact.

Troubleshooting

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



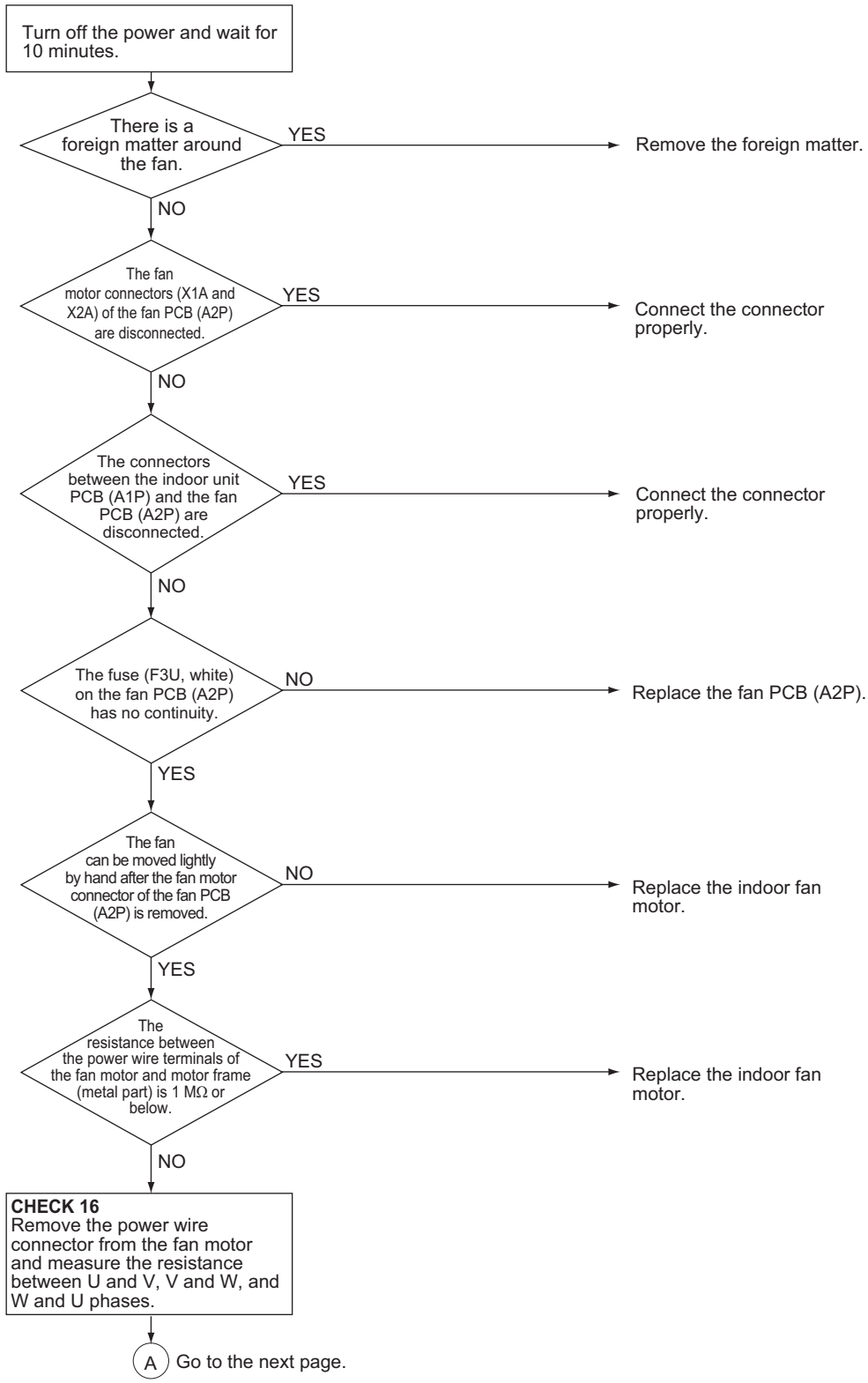
Reference **CHECK 16** Refer to page 275.

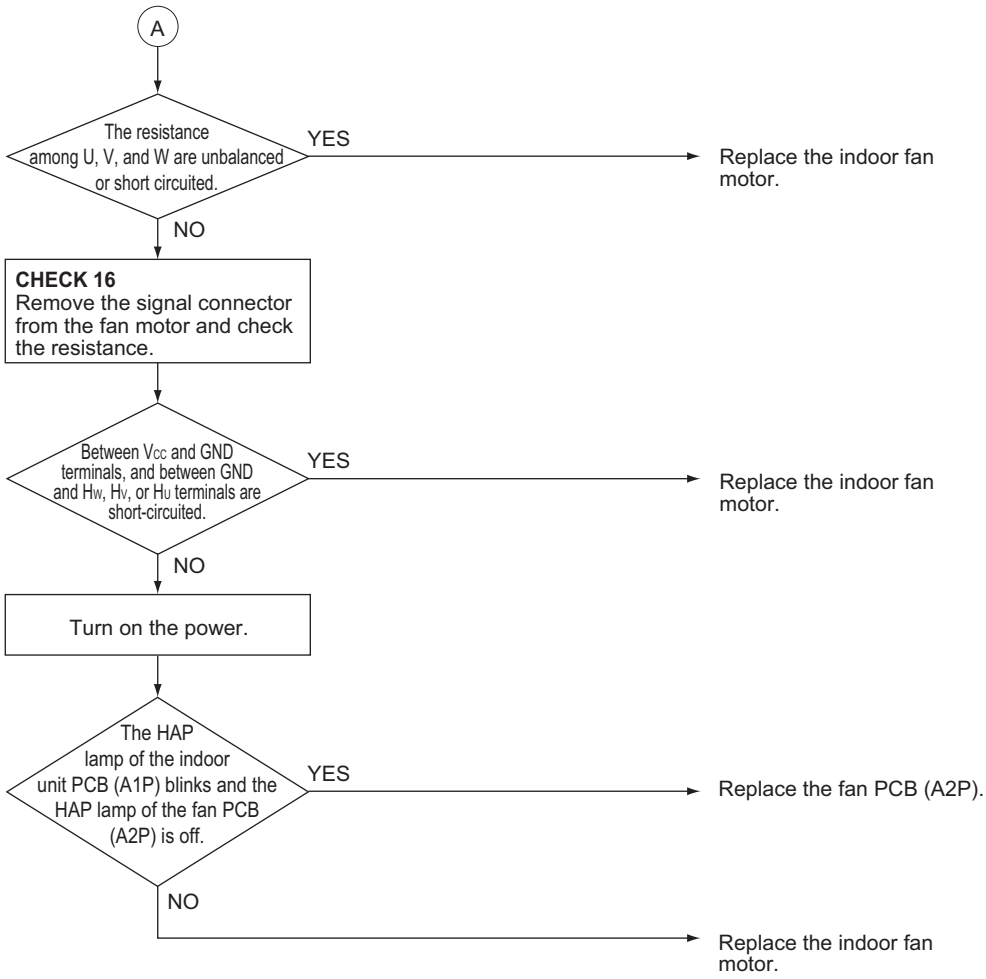
4.9.2 Indoor Fan Motor Abnormality (FBQ-P Models)

Error Code	**A6**
Applicable Models	FBQ-P
Method of Error Detection	Error from the current flow on the fan PCB Error from the rotation speed of the fan motor in operation Error from the position signal of the fan motor Error from the current flow on the fan PCB when the fan motor starting operation
Error Decision Conditions	■ An overcurrent flows. ■ The rotation speed is less than a certain level for 6 seconds. ■ A position error in the fan rotor continues for 5 seconds or more.
Supposed Causes	■ Clogging of a foreign matter ■ Disconnection of the fan motor connectors (X1A and X2A) ■ Disconnection of the connectors between the indoor unit main PCB (A1P) and fan PCB (A2P) ■ Defective fan PCB (A2P) ■ Defective fan motor

Troubleshooting

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





Reference **CHECK 16** Refer to page 275.

4.10 Blower Motor Not Running

Error Code	**A6**
Applicable Models	FTQ-TA
Outline	Error is issued if the indoor unit determines that the indoor fan motor cannot rotate.
Error Decision Conditions	■ Determining successive abnormalities Checks the rotation speed at 5-second intervals using the feedback of the fan motor. If that figure falls below 50 rpm 5 times successively, it is deemed abnormal operation. If, during operation, the rotation command is stopped, the 5-second interval check is halted and the counted number will be cleared. ■ Determining long-term abnormalities Checks the rotation speed at 5-second intervals using the feedback of the fan motor. Performs rotation sampling 720 times (takes approx. one hour), and if the rotation speed falls below 50 rpm over 100 times, it is deemed abnormal operation. When the sampling reaches 720 times, the counted number will be cleared and the 720 times sampling restarts. If, during this, the rotation command is stopped, the 5-second interval check is halted, but the counted number will be kept. When the rotation command is restarted, the checks will resume.
Error Reset Conditions	Reset by remote controller
Supposed Causes	■ Fan or motor obstruction ■ Power interruption (low voltage) ■ Incorrect or loose wiring
Corrective Actions	■ Check for obstruction on the fan or motor. ■ Verify the input voltage at the motor. ■ Check wiring or tighten wiring connections if needed. ■ Replace the indoor unit PCB or motor.
Reference	**CHECK 19** Refer to page 280.

4.11 Indoor Fan Motor Status Abnormality

Error Code	**A6-20**
Applicable Models	FTQ-TA
Outline	The indoor unit periodically receives control status information from the fan motor. Error is issued when the information shows abnormality.
Error Decision Conditions	If the information shows Power Limit or Temp Limit status, it will be deemed a MOTOR LIMIT abnormal operation. (The system can keep operating.) If the information shows Motor Lost Control or Current Trip status, it will be deemed a MOTOR TRIP abnormal operation. (The system stops operating.)
Error Reset Conditions	If the indoor unit stops receiving abnormal information, the error will be cleared.
Supposed Causes	■ Fan or motor obstruction ■ Blocked filters ■ Power interruption (low voltage) ■ Incorrect wiring ■ Blockage in the airflow (ductwork) or ductwork undersized ■ High loading conditions
Corrective Actions	■ Check for obstruction on the fan, motor, or ductwork. ■ Clean filters. ■ Check filters, grille, duct system, heat exchanger air inlet/outlet for blockages. ■ Verify the input voltage at the motor. ■ Check wiring. ■ Replace motor.
Reference	**CHECK 19** Refer to page 280.

4.12 Low Indoor Airflow

Error Code **A6-21**

Applicable Models FTQ-TA

Outline Error is issued if the indoor unit determines that the indoor fan motor rotation is insufficient, regardless of the rotation command from indoor unit.

Error Decision Conditions

- Determining successive abnormalities
  Checks the rotation speed at 5-second intervals using the feedback of the fan motor.
  If that figure exceeds 50 rpm and falls below 150 rpm 10 times successively, it is deemed abnormal operation.
  If, during operation, the rotation command is stopped, the 5-second interval check is halted and the counted number will be cleared.
- Determining long-term abnormalities
  Checks the rotation speed at 5-second intervals using the feedback of the fan motor.
  Performs rotation sampling 720 times (takes approx. one hour), and if the rotation speed exceeds 50 rpm and falls below 150 rpm over 360 times, it is deemed abnormal operation.
  When the counter reaches 720 times, the counted number will be cleared and the 720 times sampling restarts.
  If, during this, the rotation command is stopped, the 5-second interval check is halted, but the counted number will be kept.
  When the rotation command is restarted, the checks will resume.

Error Reset Conditions

- Determining successive abnormalities
  Checks the rotation speed at 5-second intervals using the feedback of the fan motor.
  If that figure exceeds 150 rpm even once, the error will be cleared.
- Determining long-term abnormalities
  Checks the rotation speed at 5-second intervals using the feedback of the fan motor.
  If that figure exceeds 150 rpm 36 times successively, the error will be cleared.
  At that point, the counted number and sampling number will be cleared, and the 720 times sampling starts again from the beginning.

Supposed Causes

- Fan or motor obstruction
- Blocked filters
- Restrictive ductwork or ductwork undersized
- Wiring disconnected
- Wrong outdoor and indoor combination
- Indoor fan motor failure

Corrective Actions

- Check for obstruction on the fan or motor.
- Check ductwork and filter for blockage.
- Clean filters.
- Remove obstruction. Verify all registers are fully open.
- Check the connections and the rotation of the motor.
- Verify the input voltage at the motor.
- Verify ductwork is appropriately sized for system. Resize or replace ductwork if needed.
- Replace motor.

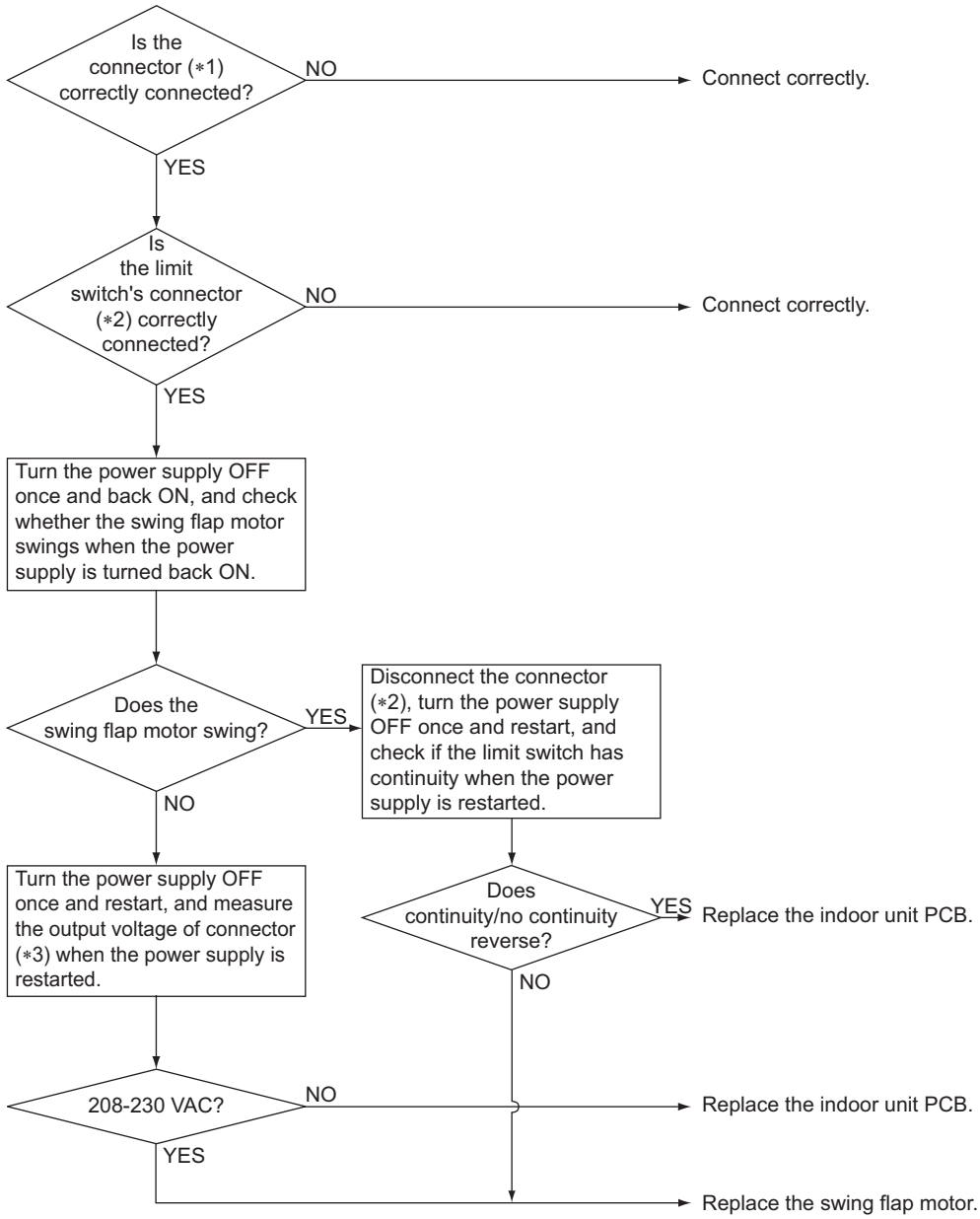
Reference **CHECK 19** Refer to page 280.

4.13 Swing Flap Motor Abnormality

Error Code	**A7**
Applicable Models	FHQ-P, FHQ-M
Method of Error Detection	Utilizes ON/OFF of the limit switch when the motor turns.
Error Decision Conditions	When ON/OFF of the micro-switch for positioning cannot be reversed even though the swing flap motor is energized for a specified amount of time (about 30 seconds). ∗ Error code is displayed but the system operates continuously.
Supposed Causes	■ Defective swing motor ■ Defective connection cable (power supply and limit switch) ■ Defective micro-switch ■ Defective indoor unit main PCB

Troubleshooting

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



Note(s)

∗1. Connector and indoor unit PCB

Model	Connector for swing flap motor			PCB
	∗1	∗2	∗3	
FHQ	X6A, X9A	X9A	X6A	A1P

4.14 Power Supply Voltage Abnormality

Error Code **A8**

Applicable Models FBQ-P

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

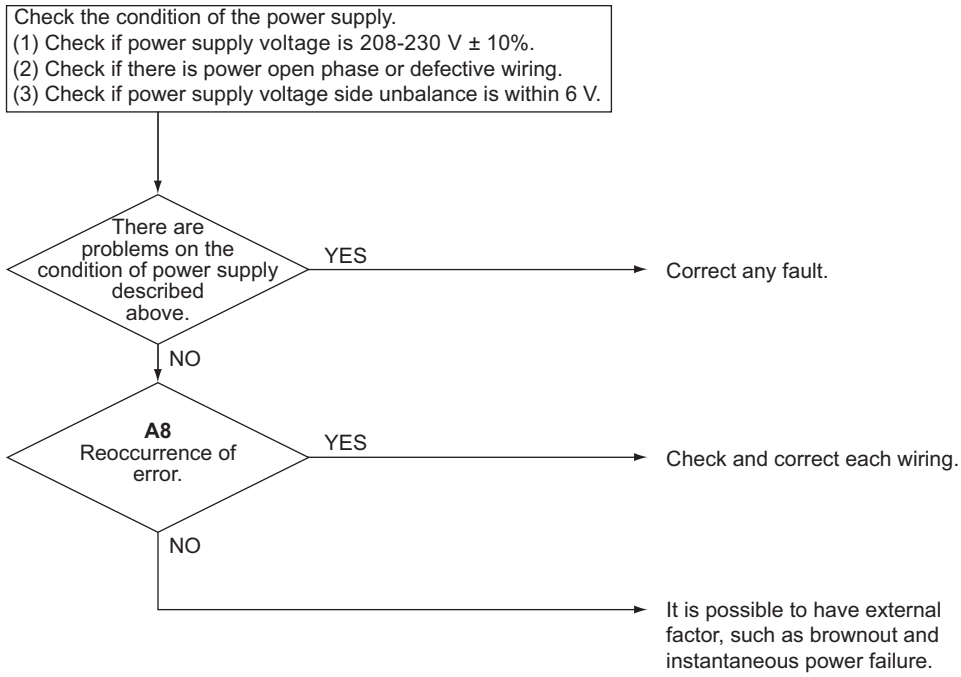
Error Decision Conditions When the input voltage of fan motor is 150 V or less, or 386 V or more.

Supposed Causes

- Defective power supply voltage
- Defective connection on signal line
- Defective wiring
- Instantaneous power failure, others

Troubleshooting

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



4.15 Blower Motor Stops for Over/Under Voltage

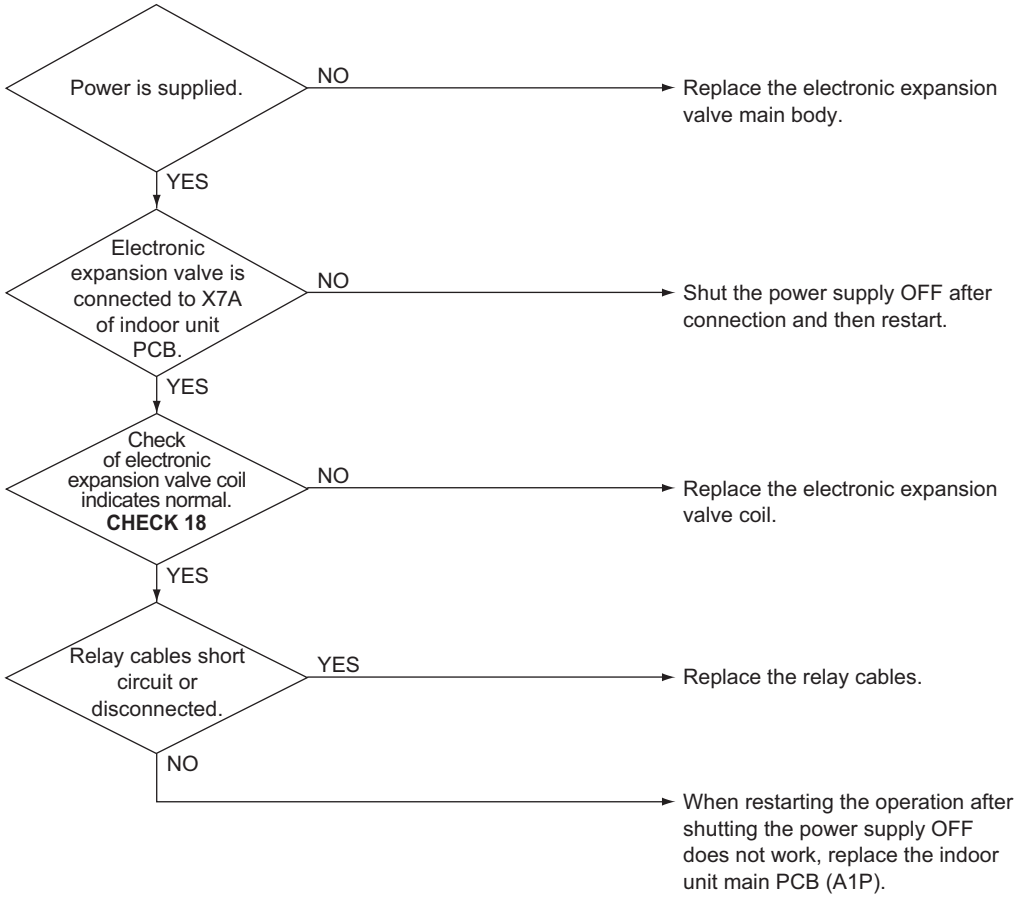
Error Code	**A8**
Applicable Models	FTQ-TA
Outline	The indoor unit periodically receives control status information from the fan motor. Error is issued when the information shows abnormality.
Error Decision Conditions	If the information shows Over/Under Voltage status, it will be deemed a MOTOR VOLTS abnormal operation.
Error Reset Conditions	If the information is normal, the error will be cleared.
Supposed Causes	■ High AC line voltage to indoor blower motor ■ Low AC line voltage to indoor blower motor ■ Incorrect wiring
Corrective Actions	■ Verify line voltage to indoor blower motor is within the range specified on the ID blower rating plate. ■ Check power to indoor blower motor. ■ Check wiring. ■ Replace motor.

4.16 Electronic Expansion Valve Coil Abnormality, Dust Clogging

Error Code	**A9**
Applicable Models	All indoor models
Method of Error Detection	Electronic expansion valve coil conditions are checked via microcomputer. The electronic expansion valve main body is checked for dust clogging via microcomputer.
Error Decision Conditions	Pin input for electronic expansion valve coil is abnormal when initializing microcomputer. Either of the following conditions is seen/caused/occurs while the unit stops operation. ● R1T – R2T > 8°C (14.4°F) ● R2T shows fixed degrees or below. R1T: temperature of suction air R2T: temperature of liquid pipe of heat exchanger.
Supposed Causes	■ Defective electronic expansion valve coil ■ Defective indoor unit main PCB ■ Defective relay cables

Troubleshooting

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



Reference **CHECK 18** Refer to page 277.

4.17 Drain Level Above Limit

Error Code **AF**

Applicable Models FCQ-TA, FBQ-P

Method of Error Detection Water leakage is detected based on float switch ON/OFF operation while the compressor is not in operation.

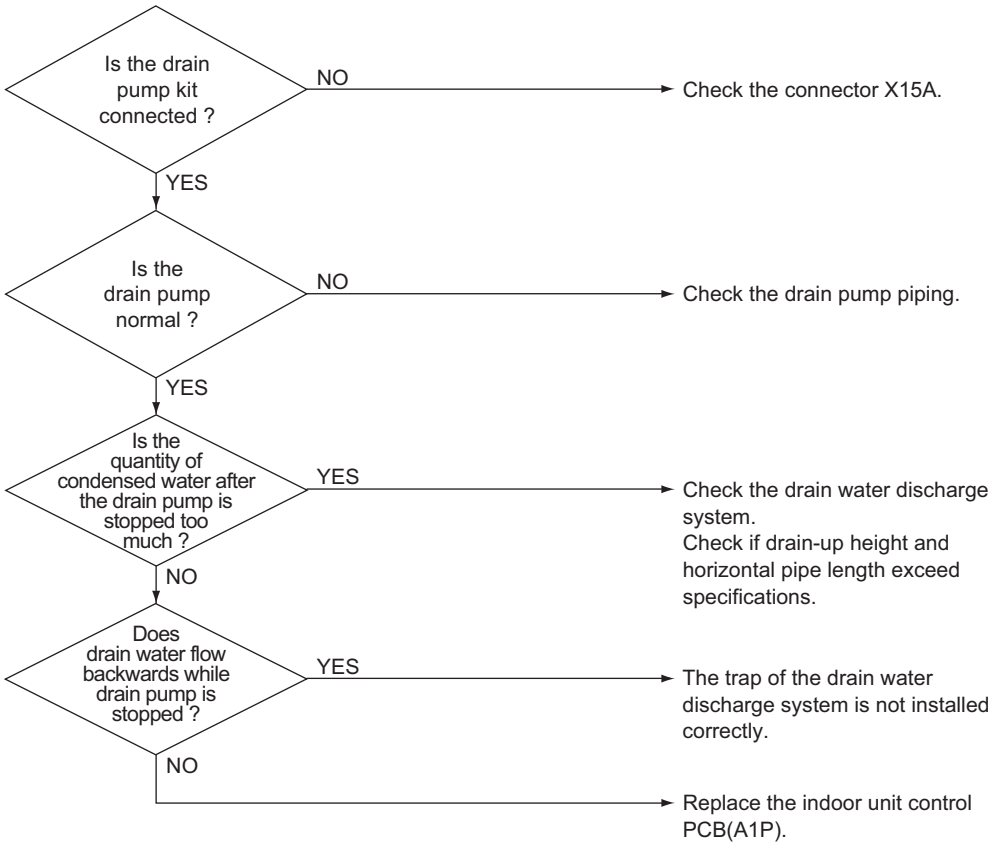
Error Decision Conditions When The float switch changes from ON to OFF while the compressor is not in operation.
∗Error code is displayed but the system operates continuously.

Supposed Causes

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

Troubleshooting

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



4.18 Capacity Determination Device Abnormality

Error Code

AJ

Applicable Models

All indoor models

Method of Error Detection

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

Error Decision Conditions

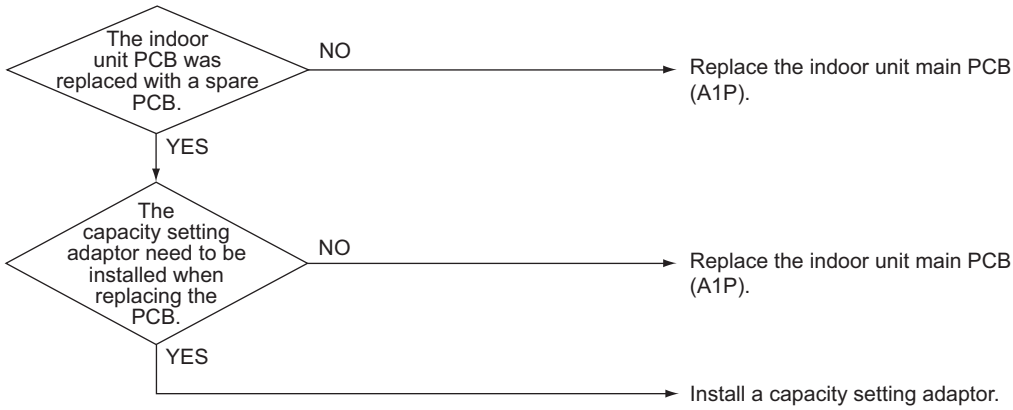
When the capacity code is not contained in the PCB memory, and the capacity setting adaptor is not connected.
When a capacity that does not exist for that unit is set.

Supposed Causes

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

Troubleshooting

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



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

Error Code **C1**

Applicable Models FBQ-P

Method of Error Detection Transmission conditions between the indoor unit main PCB (A1P) and fan PCB (A2P) are checked via microcomputer.

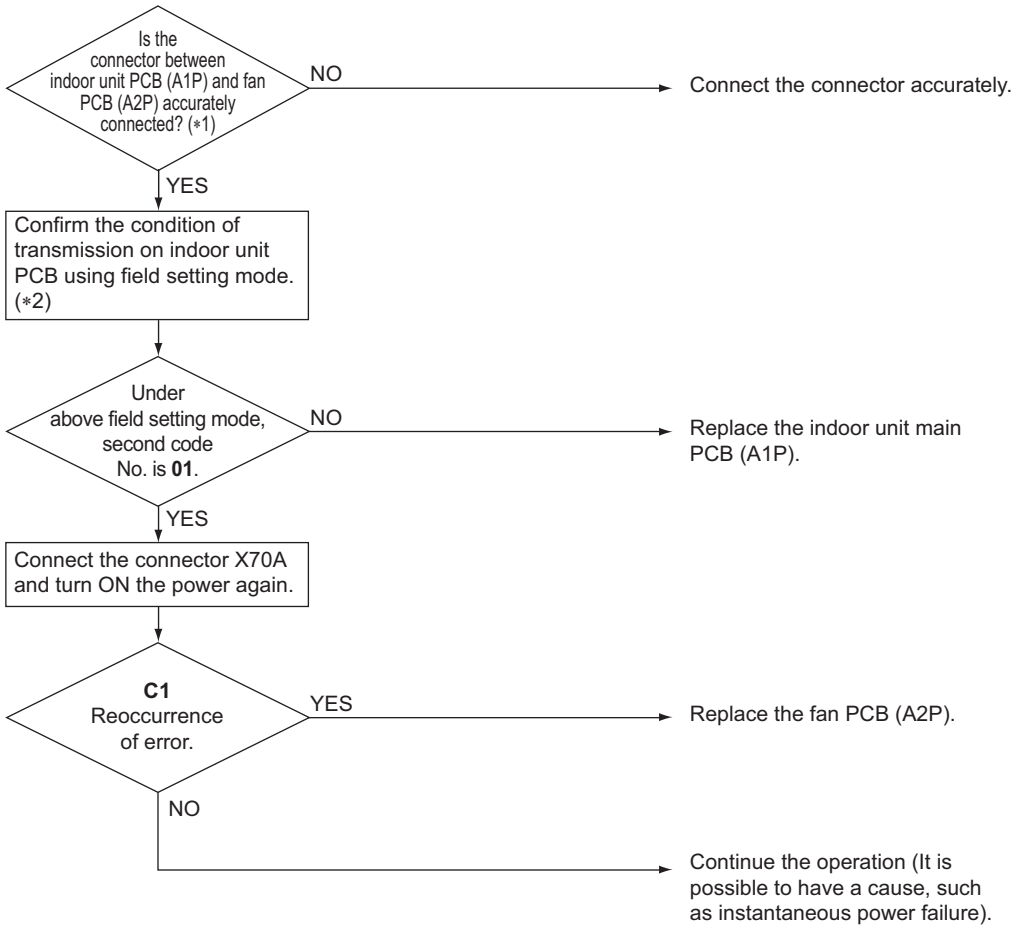
Error Decision Conditions Normal transmission is not carried out for a certain duration.

Supposed Causes

- Defective connection of the connector between indoor unit main PCB (A1P) and fan PCB (A2P)
- Defective indoor unit main PCB (A1P)
- Defective fan PCB (A2P)
- External factor, such as instantaneous power failure

Troubleshooting

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



Note(s)

∗1. Pull out and insert the connector once and check it is absolutely connected.

∗2. Method to check transmission part of indoor unit main PCB.

(1) Turn OFF the power and remove the connector X70A of indoor unit main PCB (A1P).

(2) Short circuit X70A.

(3) After turning ON the power, check below numbers under field setting from remote controller.
(Confirmation: Second code No. at the condition of first code No. 21 on mode No. 41)

Determination	01: Normal
	Other than 01: Transmission error on indoor unit main PCB

∗ After confirmation, turn OFF the power, take off the short circuit and connect X70A back to original condition.

4.20 Blower Motor Communication Error

Error Code	**C1-07**
Applicable Models	FTQ-TA
Outline	Error is issued if transmission abnormalities occur between indoor unit and fan motor.
Error Decision Conditions	If the response message from the fan motor is an abnormal message, and determined as such by the indoor unit, the indoor unit will execute a retry. If everything fails for 5 seconds, it is deemed to be a transmission abnormality.
Error Reset Conditions	If the indoor unit receives even a single normal response message from the fan motor, the error will be cleared.
Supposed Causes	■ Incorrect or loose wiring ■ Power interruption (low voltage)
Corrective Actions	■ Check wiring or tighten wiring connections if needed. ■ Verify the input voltage at the motor. ■ Replace the indoor unit PCB or motor.

4.21 Thermistor Abnormality

Error Code **C4, C5, C9, CA**

Applicable Models
C4, C5: All indoor units
C9: except FTQ-TA models
CA: FBQ-P models only

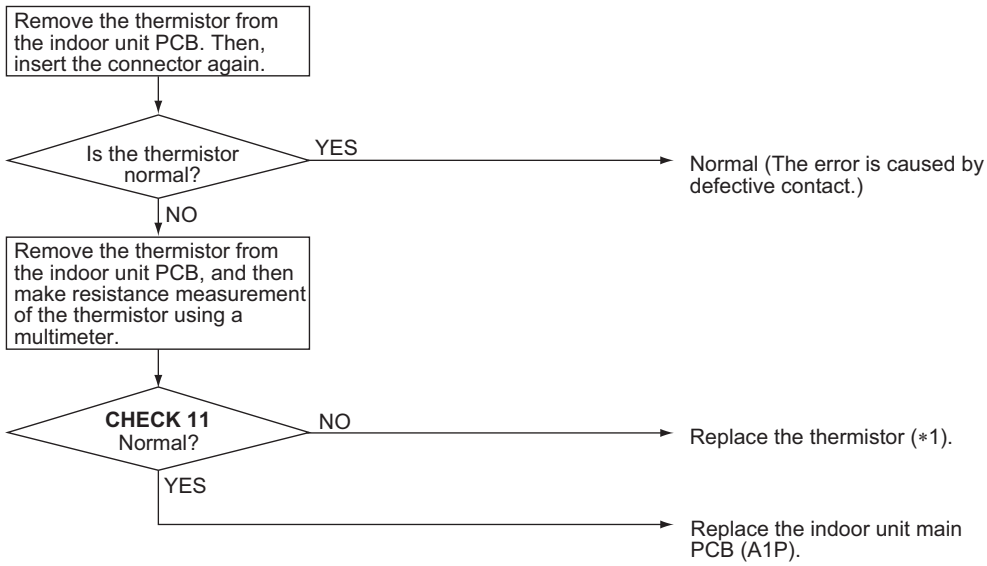
Method of Error Detection The error is determined by the temperature detected by the thermistor.

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

Supposed Causes
- Defective thermistor
- Defective indoor unit PCB
- Defective connector connection
- Broken or disconnected wire

Troubleshooting

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



Note(s)

∗1. Error code and thermistor

Error Code	Thermistor	FCQ-TA FHQ-P FHQ-M FAQ-TA	FBQ-P	FTQ-TA
C4	Heat exchanger liquid pipe thermistor	R2T	R2T	R2T
C5	Heat exchanger gas pipe thermistor	R3T	R3T	R3T
C9	Suction air thermistor	R1T	R1T	∗2
CA	Discharge air thermistor	—	R4T	—

∗2. Refer to page 214 for **C9** for FTQ-TA models.

Reference **CHECK 11** Refer to page 270.

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

Error Code **C6**

Applicable Models FBQ-P

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

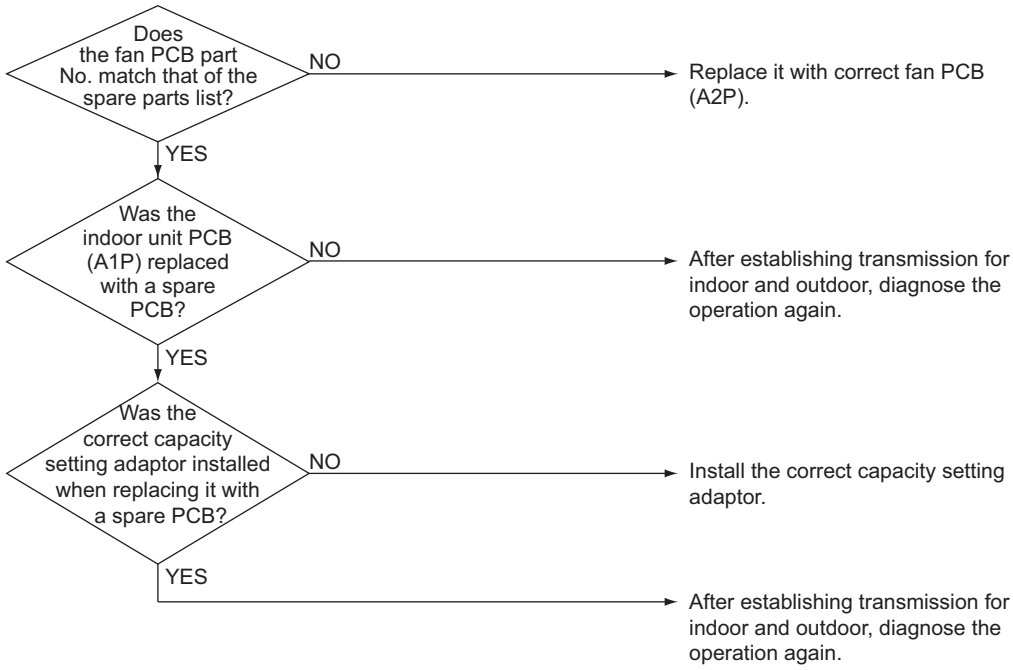
Error Decision Conditions Communication data of fan PCB (A2P) is determined as incorrect.

Supposed Causes

- Defective fan PCB (A2P).
- Defective connection of capacity setting adaptor
- Defective setting error

Troubleshooting

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



4.23 Blower Motor HP Mismatch

Error Code	**C6-01**
Applicable Models	FTQ-TA
Outline	Error is issued if the manufacturer ID and output of the connected fan motor do not match those recognized by the indoor unit.
Error Decision Conditions	Gathers information on the manufacturer ID and output of the fan motor when initializing the fan motor. If those figures are not the values recognized by the indoor unit, it will be deemed abnormal operation. If deemed abnormal operation, it will keep retrying until the figures match.
Error Reset Conditions	If the manufacturer ID and output match, the error will be cleared.
Supposed Causes	■ Incorrect size motor ■ Indoor unit capacity setting error
Corrective Actions	■ Correct motor installation. ■ Correct the indoor unit capacity setting.

4.24 Indoor Blower Does Not Have Required Parameters to Function

Error Code	**C6-02**
Applicable Models	FTQ-TA
Outline	Indoor units perform required settings for control on the fan motor, but if the minimum required settings are not made then information indicating as such will be included among the periodic control status information. Error is issued when the information shows abnormality.
Error Decision Conditions	If the parameter information shows abnormality, it will be deemed abnormal operation. At that point, parameter settings when initializing the fan motor will be implemented from the beginning.
Error Reset Conditions	If the parameter information is normal, the error will be cleared.
Supposed Causes	■ Locked motor rotor condition
Corrective Actions	■ Check for locked rotor condition. ■ Replace the indoor unit PCB or motor.

4.25 Remote Sensor Abnormality

Error Code **C9**

Applicable Models FTQ-TA

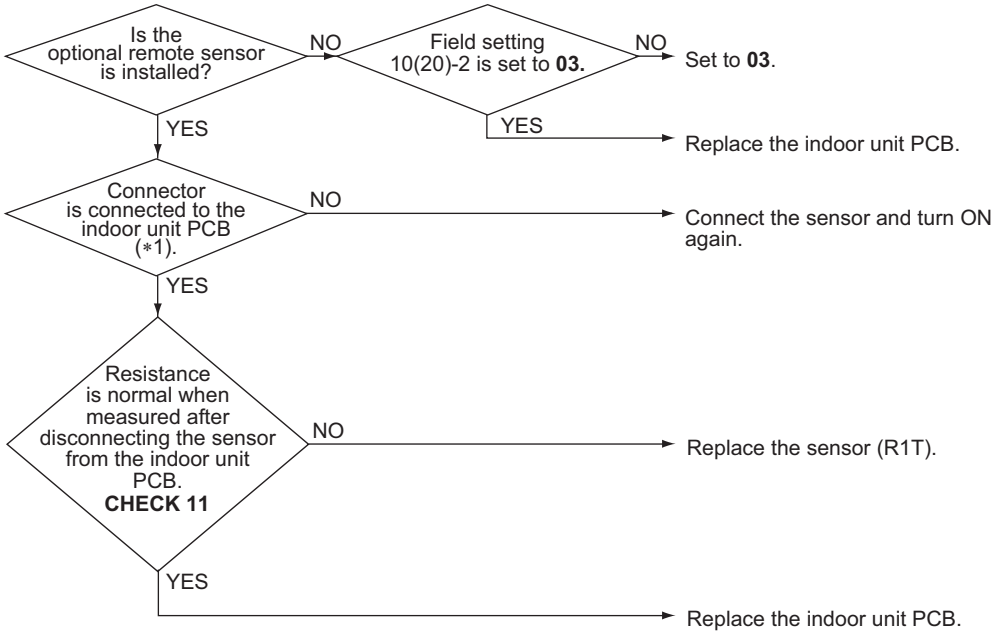
Method of Error Detection The error is detected by remote sensor temperature.

Error Decision Conditions When the remote sensor becomes disconnected or shorted while the unit is running.

Supposed Causes
- Defective indoor unit thermistor (R1T) for room temperature
- Defective indoor unit PCB

Troubleshooting

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



Note(s)

*1. Connector and indoor unit PCB

Model	Connector for remote sensor	PCB
FTQ-TA	X4A	A1P

Reference

CHECK 11 Refer to page 270.

4.26 Infrared Presence/Floor Sensor Error

Error Code

CE

Applicable Models

FCQ-TA

Method of Error Detection

The contents of a failure vary with the detailed error code. Check the code and proceed with the flowchart.

Error Decision Conditions

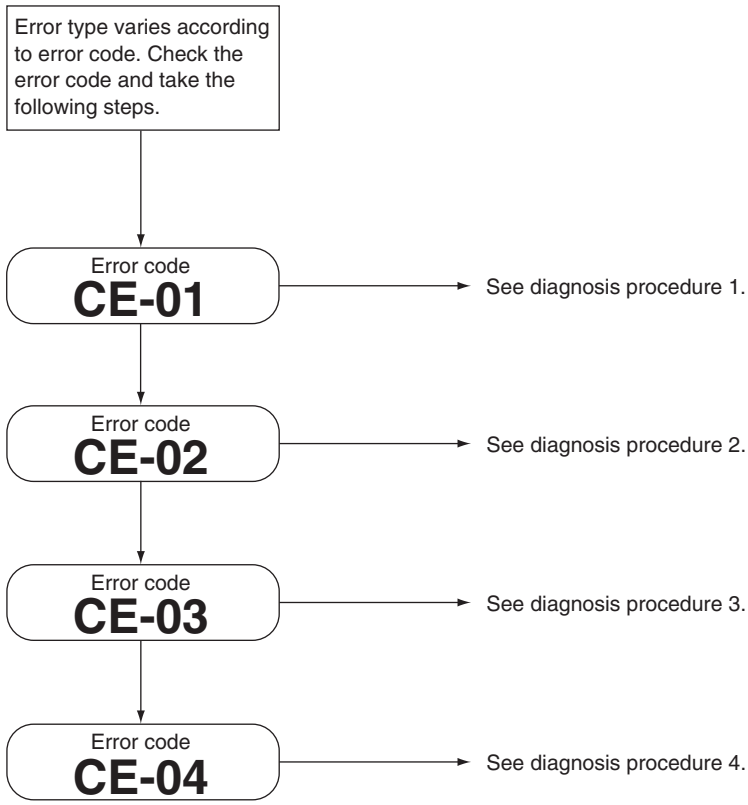
Error is detected based on sensor output signals

Supposed Causes

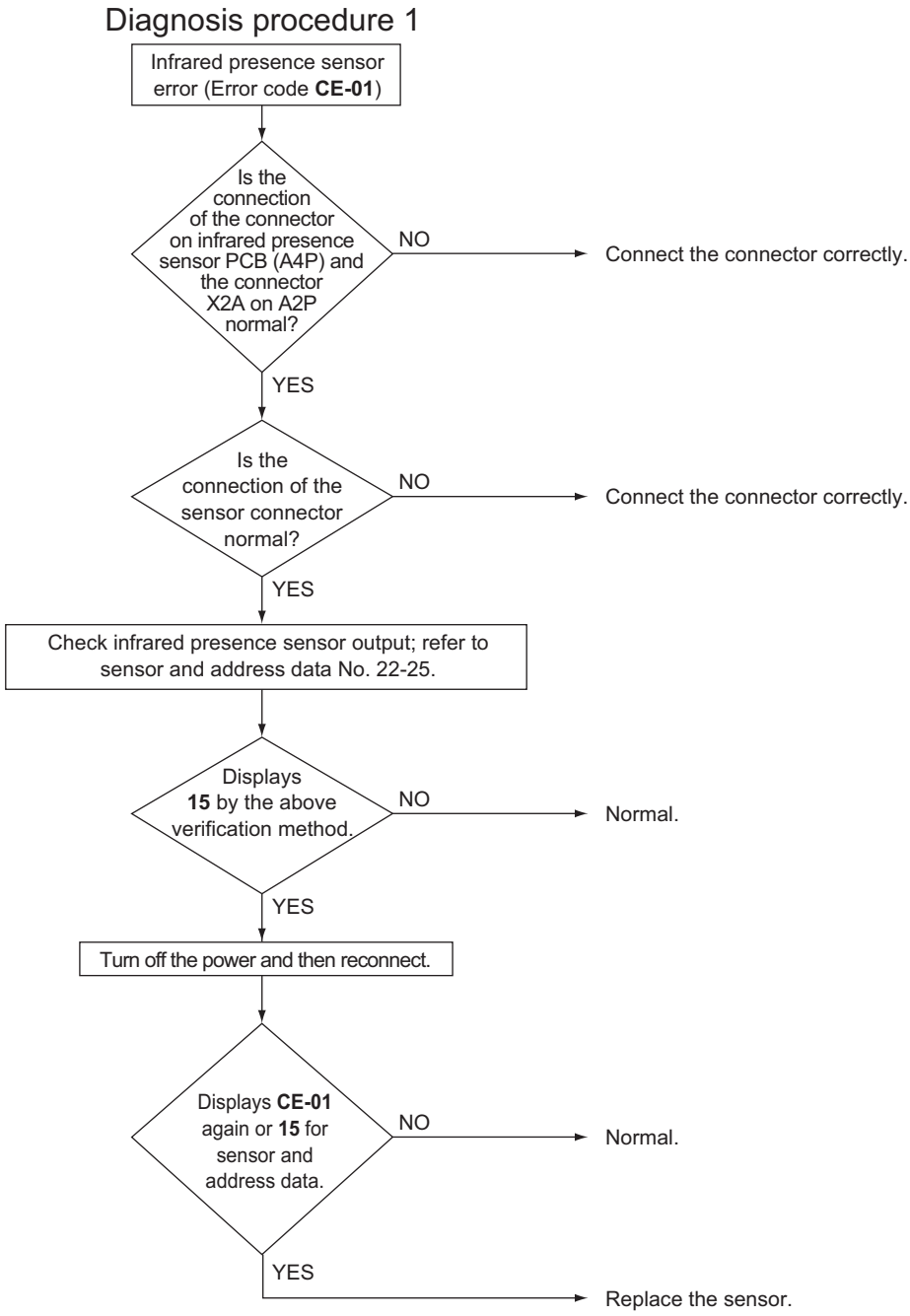
- Defective or disconnected infrared presence sensor connector: **CE-01**
- Defective infrared floor sensor (Temperature compensation circuit disconnection): **CE-02**
- Defective infrared floor sensor (Temperature compensation short circuit): **CE-03**
- Defective infrared floor sensor element: **CE-04**

Troubleshooting

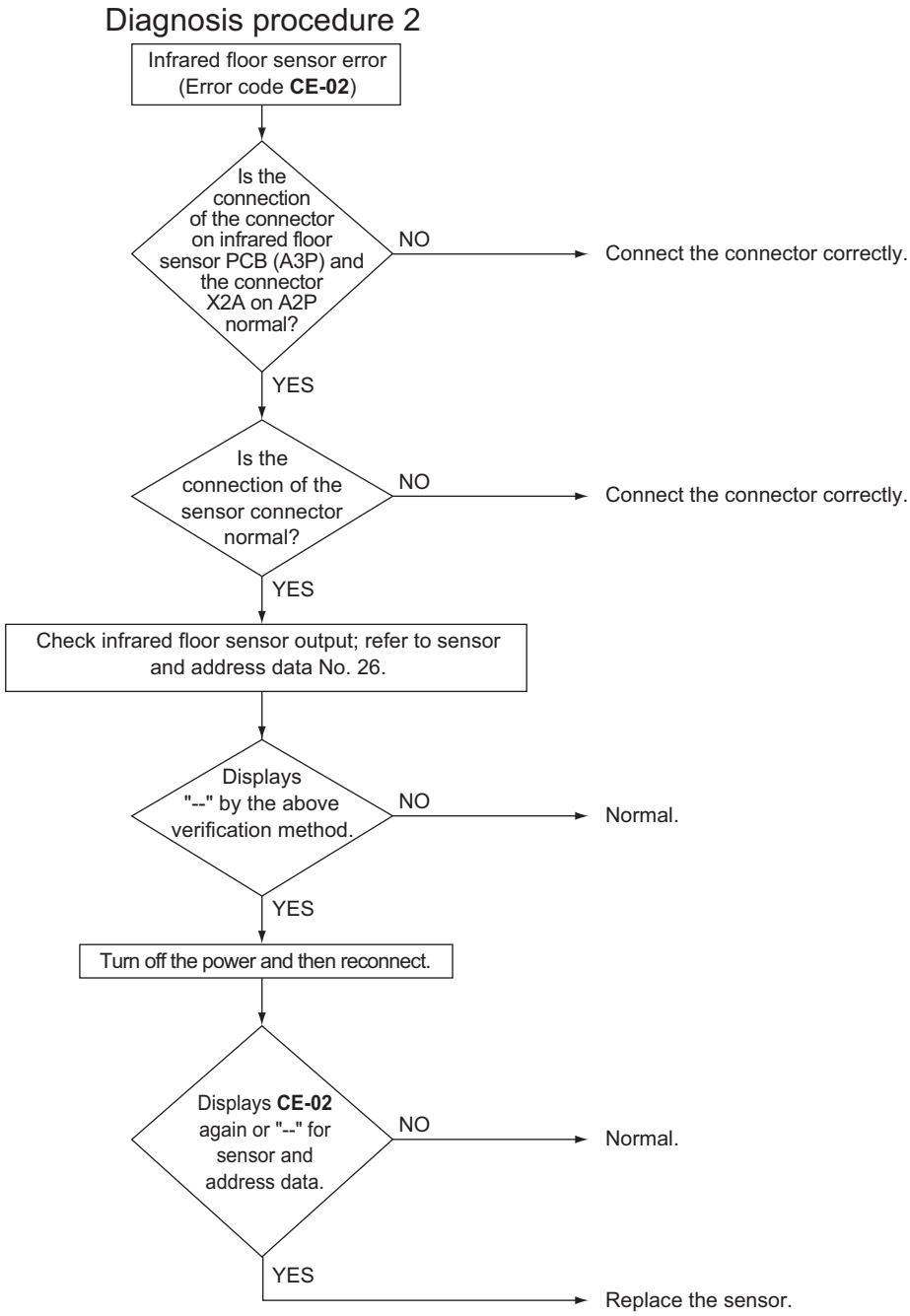
Caution Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



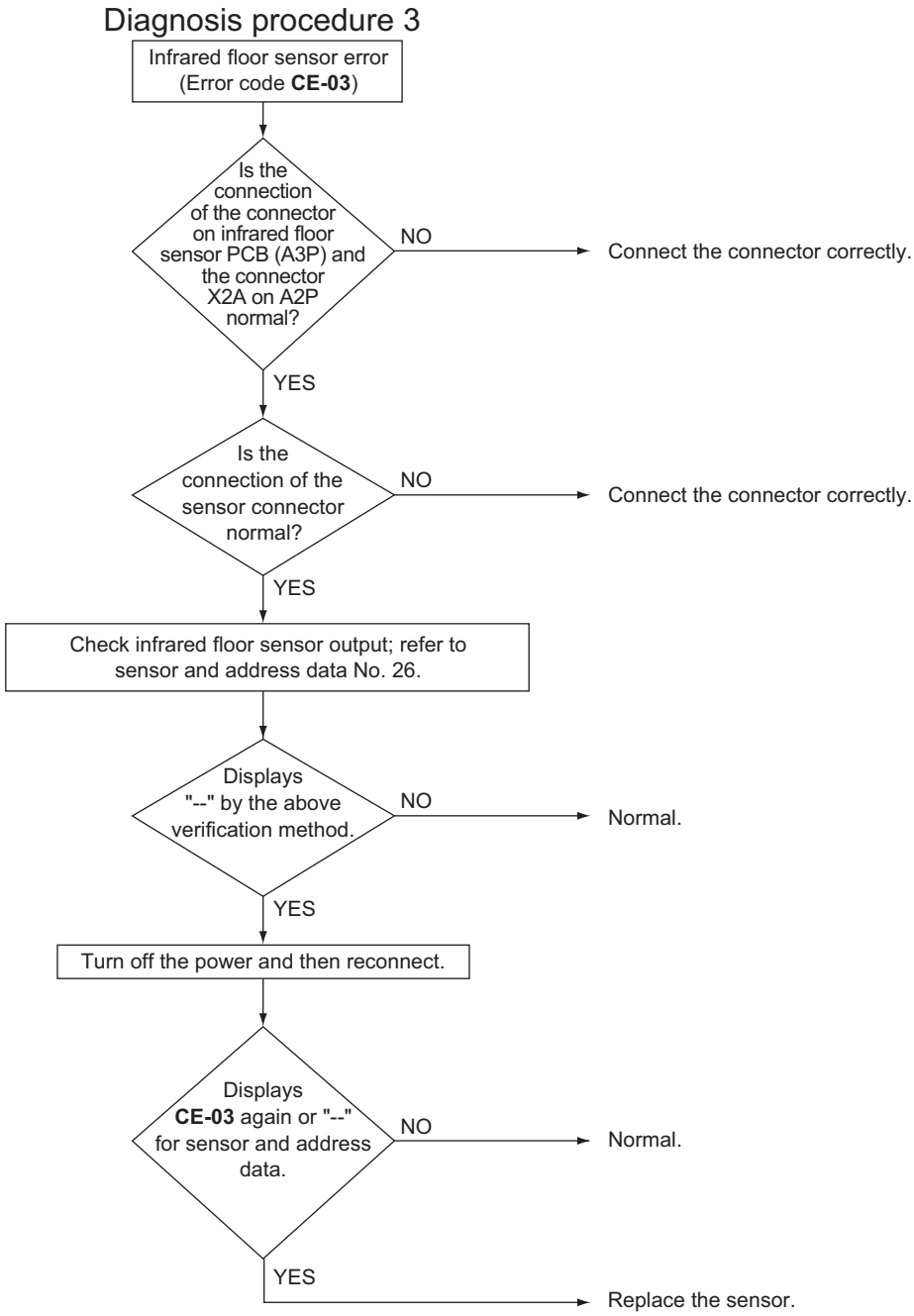
Troubleshooting



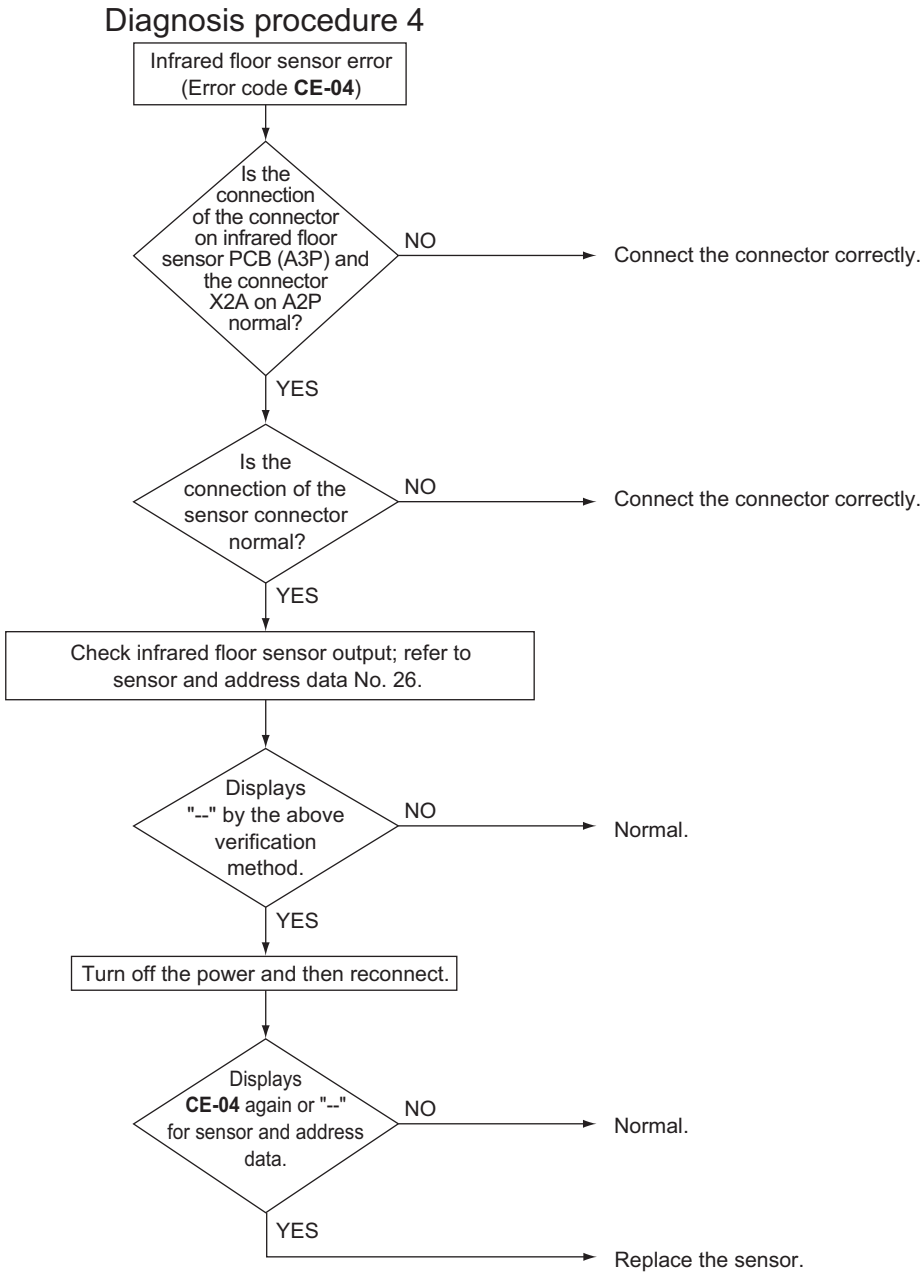
Troubleshooting



Troubleshooting



Troubleshooting



4.27 Remote Controller Thermistor Abnormality

Error Code **CJ**

Applicable Models All indoor models

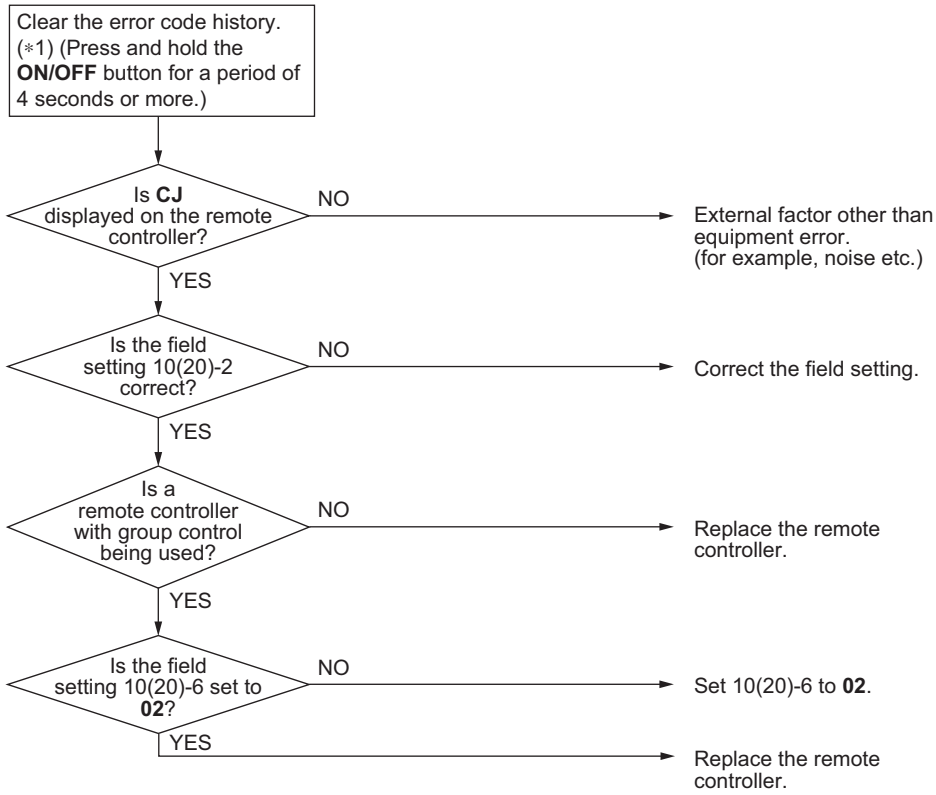
Method of Error Detection Error detection is carried out by the temperature detected by remote controller thermistor.

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

Supposed Causes
- Defective remote controller thermistor
- Defective remote controller PCB
- External factor (Noise, etc.)

Troubleshooting

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



Note(s)

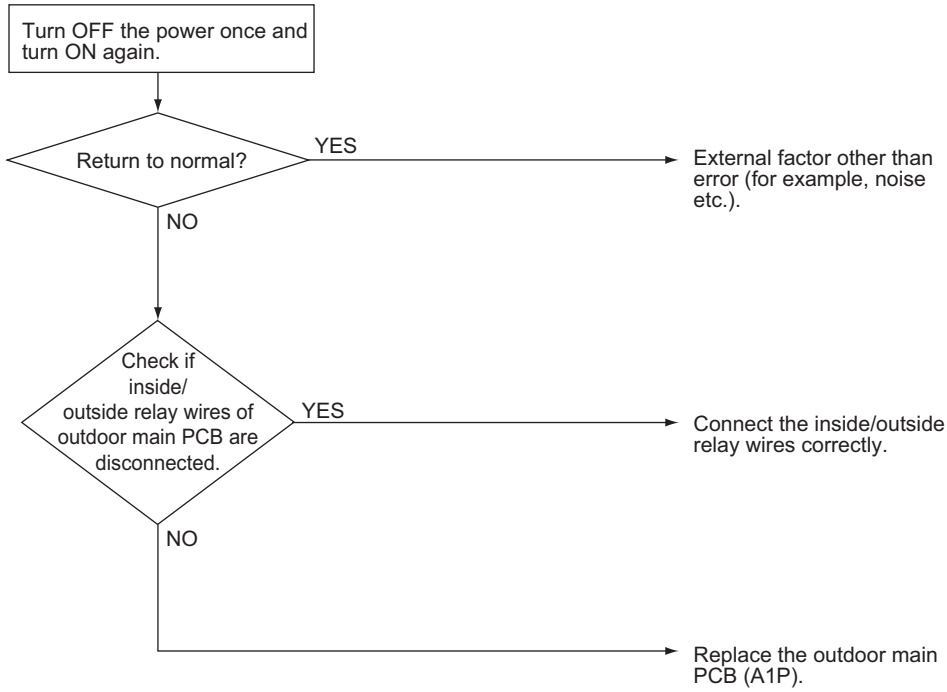
∗1. How to delete the history of error codes.
Press the **ON/OFF** button for 4 seconds and more while the error code is displayed.

4.28 Outdoor Main PCB Abnormality

Error Code	**E1**
Applicable Models	All outdoor units
Method of Error Detection	Abnormality is detected under the communication conditions in the hardware section between the indoor unit and outdoor unit.
Error Decision Conditions	When the communication conditions in the hardware section between the indoor unit and the outdoor unit are not normal.
Supposed Causes	■ Defective outdoor main PCB (A1P) ■ Disconnection of the inside/outside relay wires

Troubleshooting

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

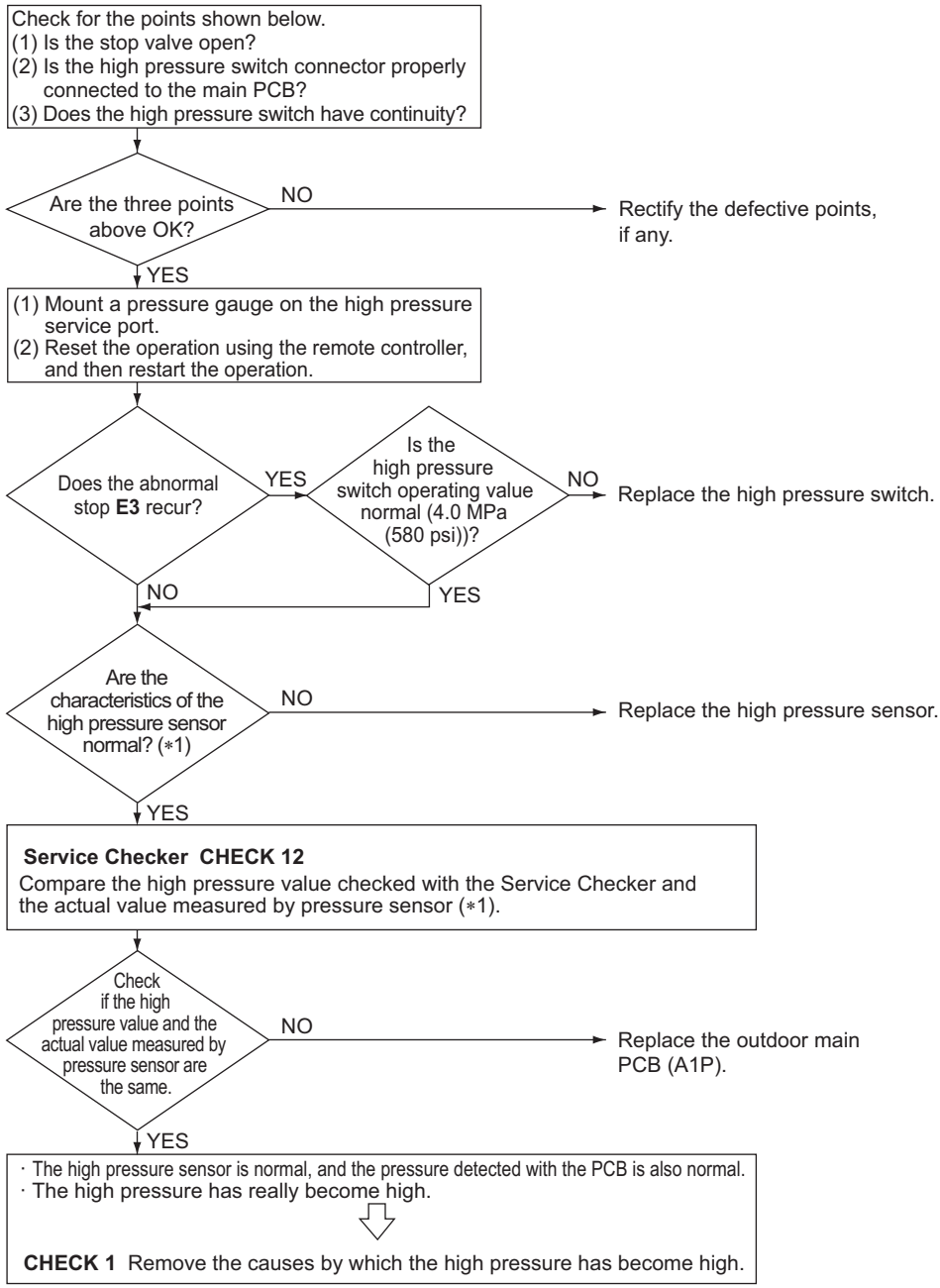


4.29 Activation of High Pressure Switch

Error Code	**E3**
Applicable Models	All outdoor units
Method of Error Detection	Abnormality is detected when the contact of the high pressure switch opens. Use the protection device circuit to test high pressure switch conduction.
Error Decision Conditions	Part of the protection device has an open circuit. Error is generated when the high pressure switch activation count reaches the number specific to the operation mode. **Reference** Operating pressure: 4.0 MPa (580 psi) Reset pressure: 3.0 MPa (435 psi)
Supposed Causes	■ Activation of outdoor unit high pressure switch ■ Defective high pressure switch ■ Defective outdoor main PCB ■ Instantaneous power failure ■ Defective high pressure sensor

Troubleshooting

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



Note(s)

∗1: Make a comparison between the voltage of the pressure sensor and that read by the pressure gauge.
(As to the voltage of the pressure sensor, make measurement of voltage at the connector, and then convert it to pressure. **CHECK 12**)

Reference **CHECK 1** Refer to page 261.

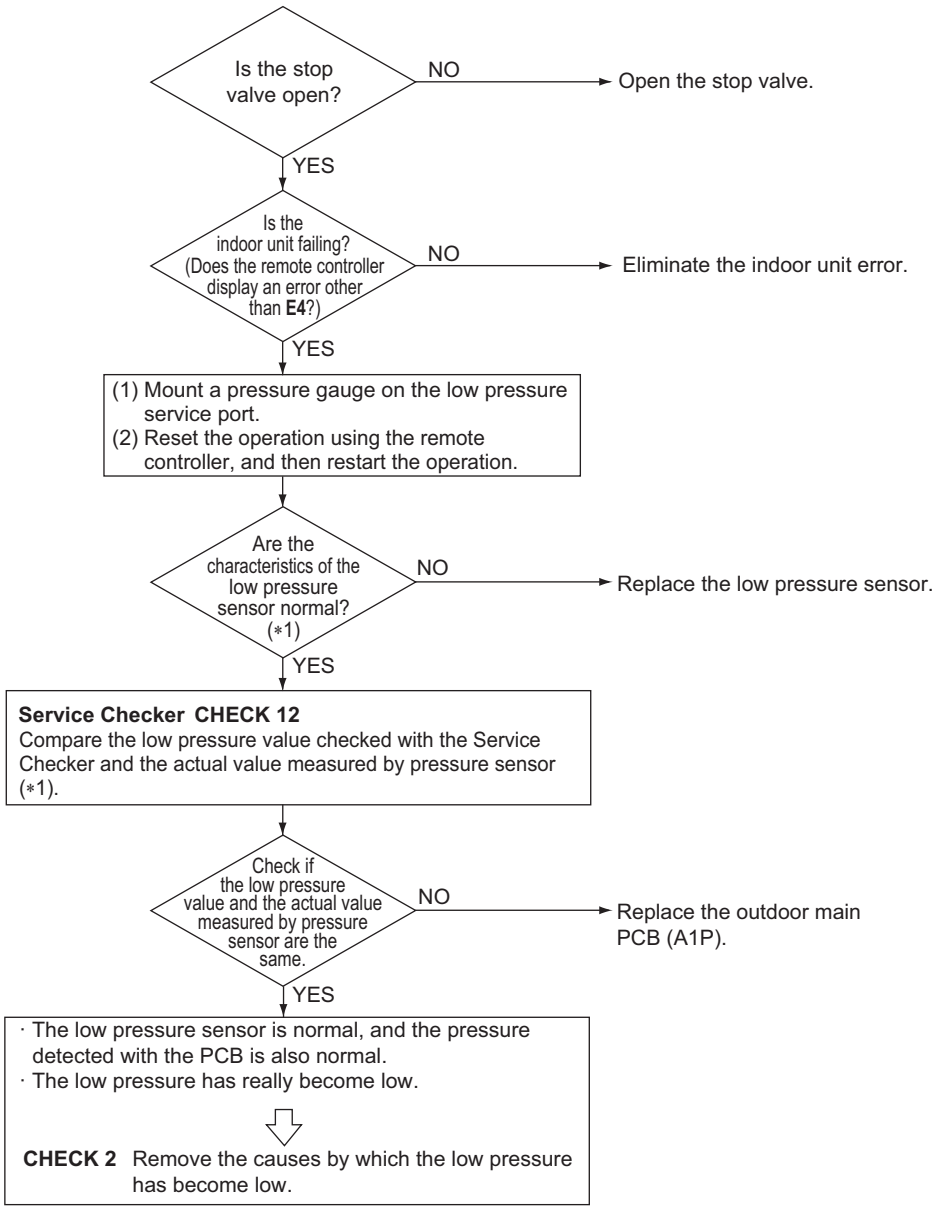
Reference **CHECK 12** Refer to page 273.

4.30 Activation of Low Pressure Sensor

Error Code	**E4**
Applicable Models	All outdoor units
Method of Error Detection	Abnormality is detected by the pressure value with the low pressure sensor. Use the outdoor main PCB to determine the low pressure sensor pressure test value.
Error Decision Conditions	Error is generated when the low pressure drops below a specific pressure level. Low pressure drops after compressor activation. Operating pressure: 0.07 MPa (10.2 psi)
Supposed Causes	■ Abnormal drop of low pressure ■ Defective low pressure sensor ■ Defective outdoor main PCB ■ Stop valve is not opened

Troubleshooting

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



Note(s)

∗1: Make a comparison between the voltage of the pressure sensor and that read by the pressure gauge.
(As to the voltage of the pressure sensor, make measurement of voltage at the connector, and then convert it to pressure. **CHECK 12**)

Reference **CHECK 2** Refer to page 262.

Reference **CHECK 12** Refer to page 273.

4.31 Inverter Compressor Motor Lock

Error Code **E5**

Applicable Models All outdoor units

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

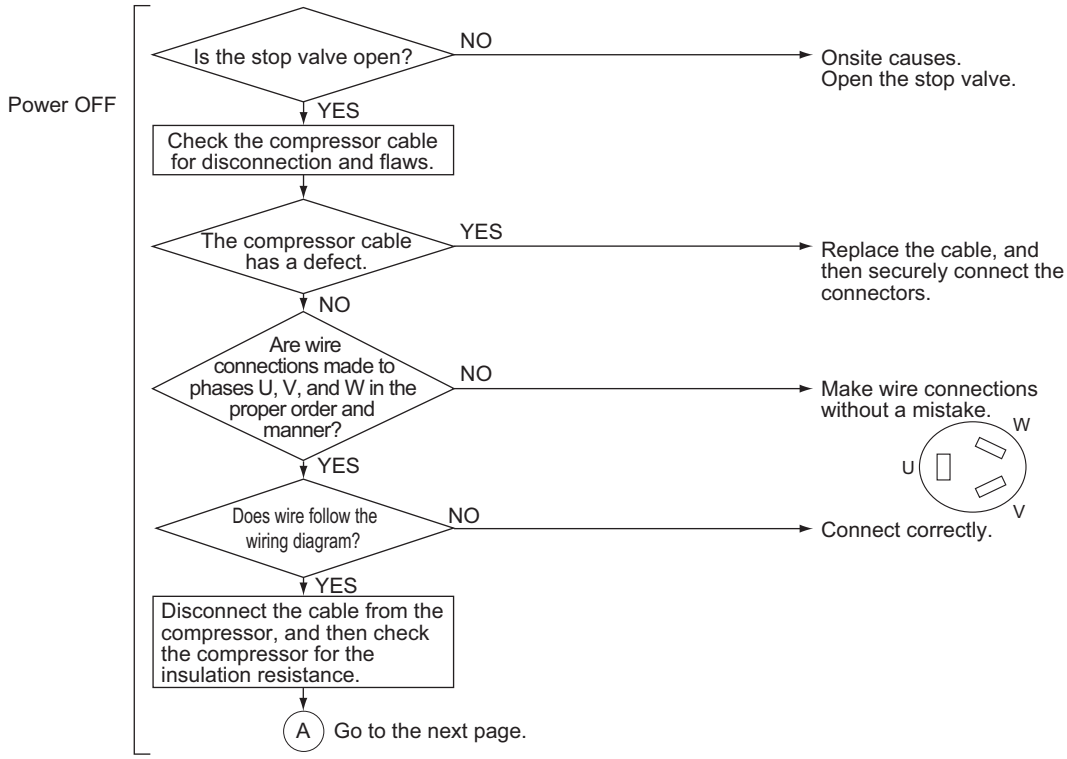
Error Decision Conditions This error will be output when the inverter compressor motor does not start up even in forced startup mode.

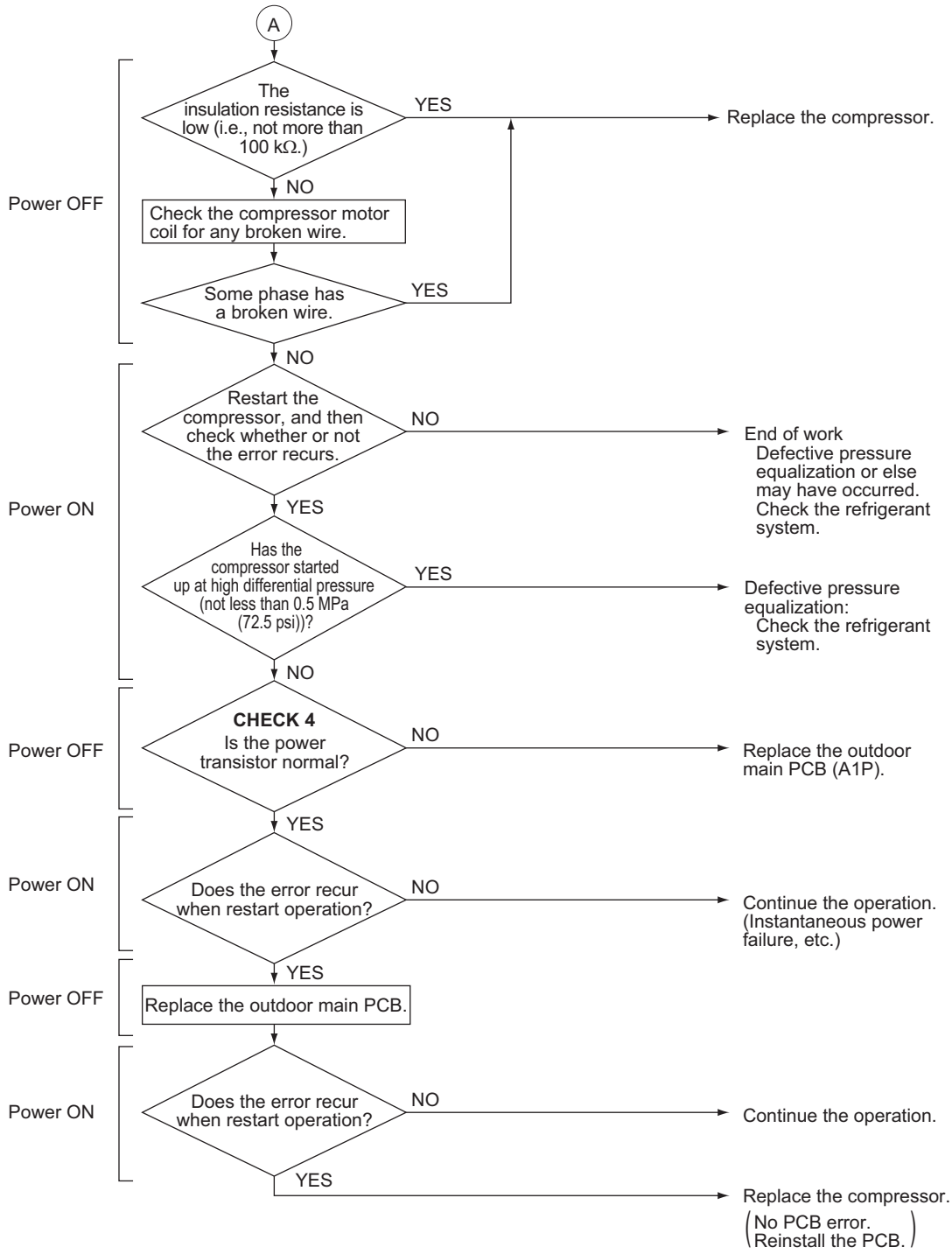
Supposed Causes

- Inverter compressor lock
- High differential pressure (0.5 MPa (72.5 psi) and above)
- Incorrect UVW wiring
- Defective PCB
- Stop valve is not opened

Troubleshooting

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





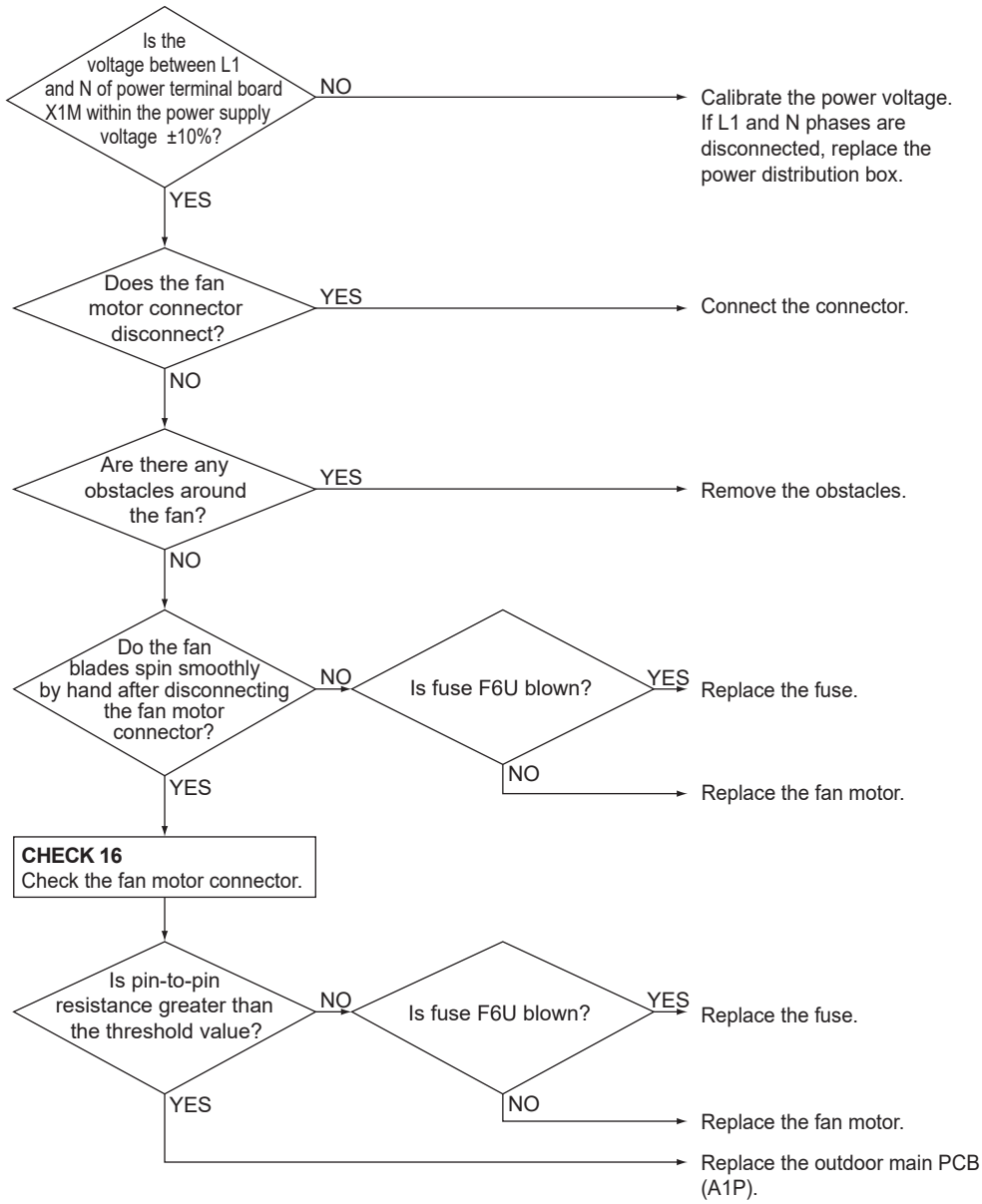
Reference **CHECK 4** Refer to page 264.

4.32 Outdoor Fan Motor Abnormality

Error Code	**E7**
Applicable Models	All outdoor units
Method of Error Detection	The fan motor circuit error is detected based on the rotation frequency detected by Hall IC during the fan motor operation.
Error Decision Conditions	In the condition of fan motor rotation, the number of rotation is below the fixed number for more than 6 seconds. (System down is caused by 4 times of detection.)
Supposed Causes	■ Defective fan motor ■ Defect or connection error of the connectors/ harness between the fan motor and PCB ■ The fan can not rotate due to obstruction of foreign matter. ■ Clear condition: Continue normal operation for 5 minutes ■ Missing phase L1 and missing phase N

Troubleshooting

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



Reference **CHECK 16** Refer to page 275.

4.33 Electronic Expansion Valve Coil Abnormality

Error Code **E9**

Applicable Models All outdoor units

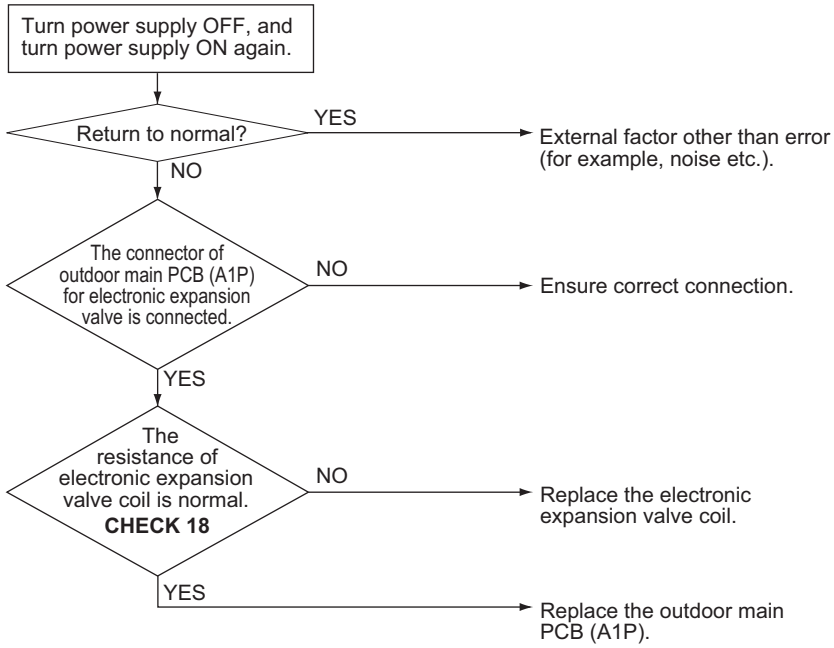
Method of Error Detection Check continuity of electronic expansion valve coil.

Error Decision Conditions No current is detected in the common (COM [+]) when power supply is ON.

Supposed Causes
- Defective electronic expansion valve coil
- Defective outdoor main PCB
- Disconnection of connectors for electronic expansion valve

Troubleshooting

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



Reference **CHECK 18** Refer to page 277.

4.34 Discharge Pipe Temperature Abnormality

Error Code **F3**

Applicable Models All outdoor units

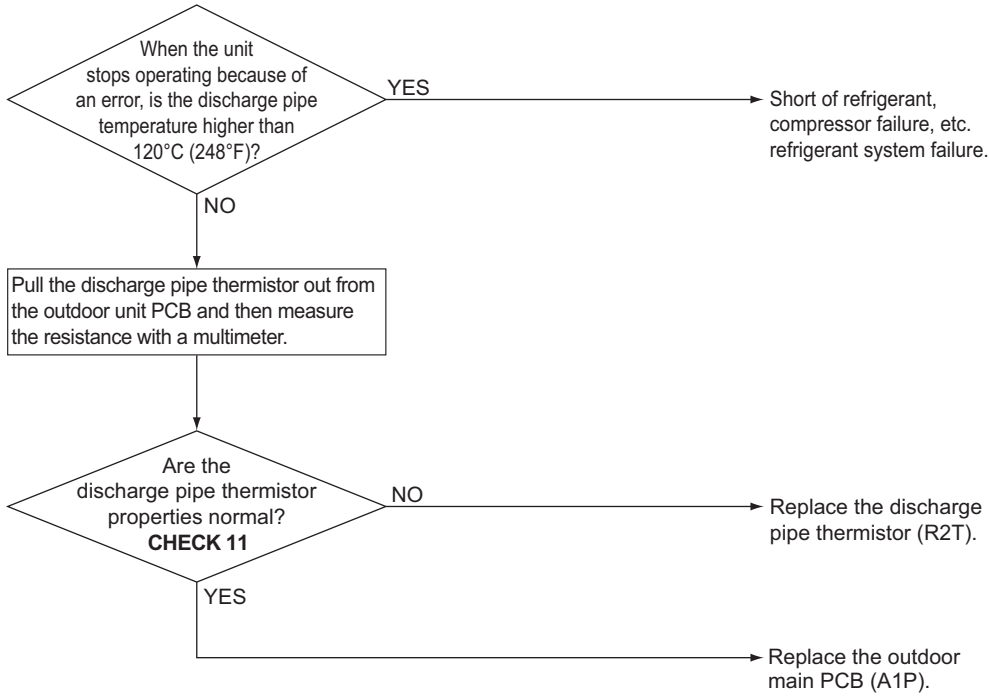
Method of Error Detection Abnormality is detected according to the temperature detected by the discharge pipe thermistor.

Error Decision Conditions The discharge pipe temperature rises to an abnormally high level.
The discharge pipe temperature rises suddenly.

Supposed Causes
- Defective discharge pipe thermistor (R2T)
- Disconnection of discharge pipe thermistor (R2T)
- 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 11** Refer to page 270.

4.35 Refrigerant Overcharged

Error Code **F6**

Applicable Models All outdoor units

Method of Error Detection Excessive charging of refrigerant is detected by using the outdoor air temperature, heat exchanger deicer temperature and liquid pipe temperature during a check operation.

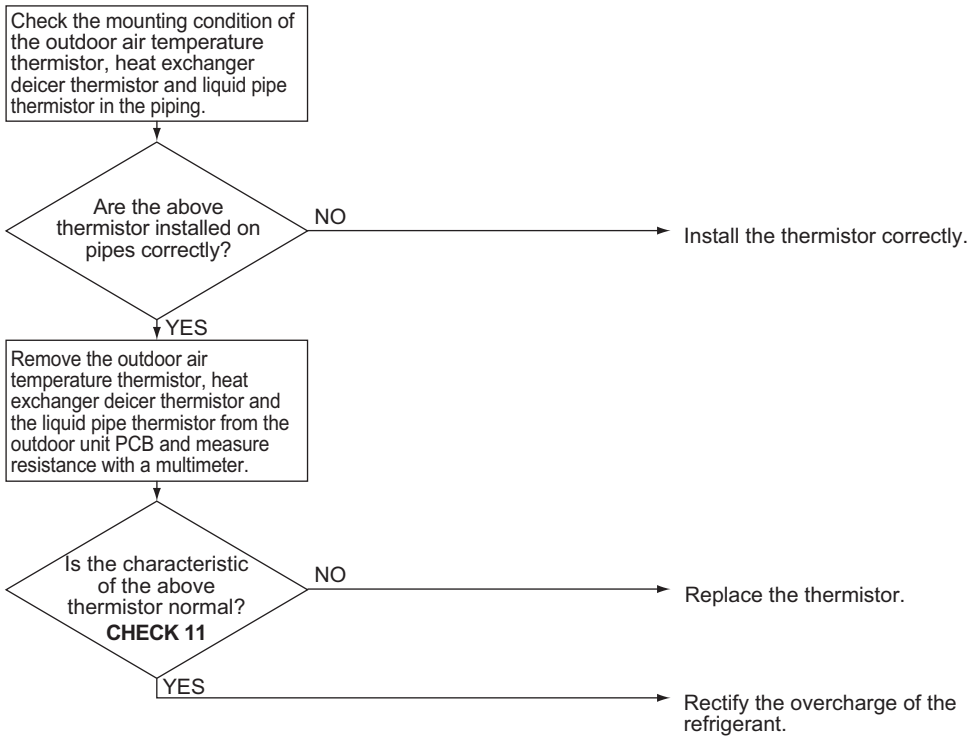
Error Decision Conditions During a check operation, the amount of refrigerant will be calculated based on the outdoor temperature, the heat exchanger deicer temperature, and the liquid pipe temperature. If the calculated amount exceeds the normal amount by 30%, too much refrigerant has been added. (Adding only slightly more than the normal amount of refrigerant may also cause **F6** to be displayed)

Supposed Causes

- Refrigerant overcharge
- Disconnection of outdoor air thermistor, heat exchanger deicer thermistor, liquid pipe thermistor
- Defective outdoor air thermistor, heat exchanger deicer thermistor, liquid pipe thermistor

Troubleshooting

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



Reference **CHECK 11** Refer to page 270.

4.36 Thermistor Abnormality

Error Code **H9, J3, J5, J6, J7, J9**

Applicable Models All outdoor units

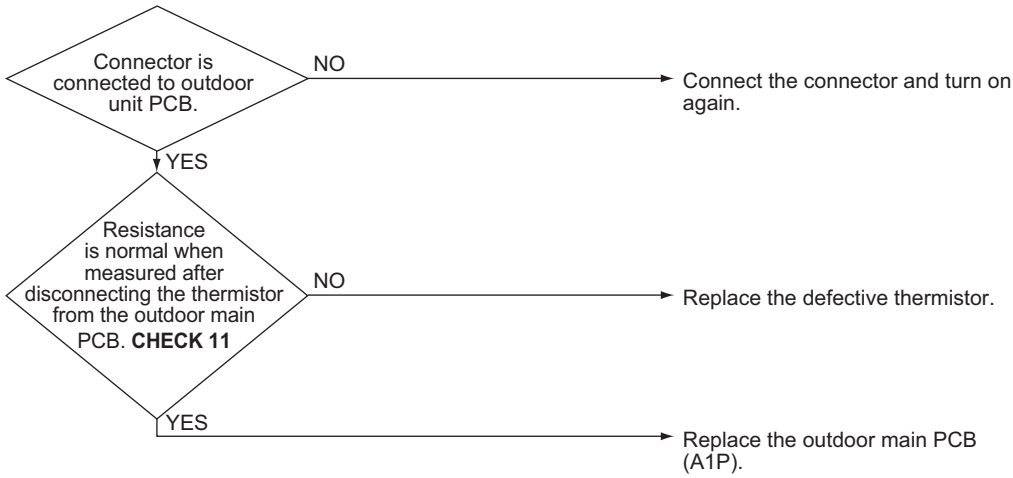
Method of Error Detection Error is detected from the temperature detected by the thermistor (∗1).

Error Decision Conditions The thermistor has short circuit or open circuit.

Supposed Causes
- Defective thermistor
- Defective outdoor main PCB
- Disconnection of thermistor.

Troubleshooting

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



Reference **CHECK 11** Refer to page 270.

Error code	Thermistor	18/24 class		30/36/42/48 class	
		Symbol	Connector	Symbol	Connector
H9	Outdoor air thermistor	R1T	X11A	R1T	X11A
J3	Discharge pipe thermistor	R2T	X12A	R2T	X12A
J5	Suction pipe thermistor	R3T		R3T	
		R5T		R5T	
J6	Outdoor heat exchanger deicer thermistor	R4T		R4T	
J7	Outdoor heat exchanger liquid pipe thermistor	R7T	X13A	R7T	X13A
J9	Subcooling heat exchanger gas pipe	—	—	R6T	

4.37 High Pressure Sensor Abnormality

Error Code **JA**

Applicable Models All outdoor units

Method of Error Detection Error is detected from the pressure detected by the high pressure sensor.

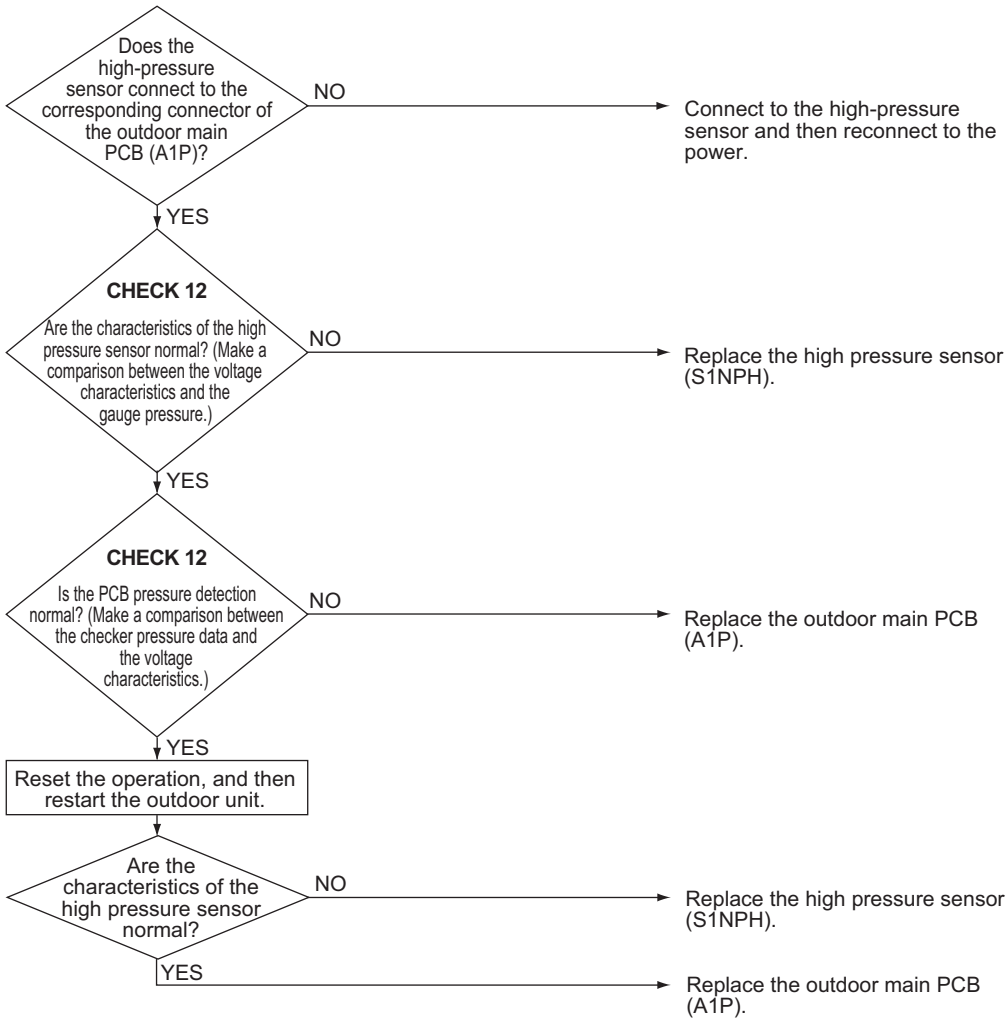
Error Decision Conditions The high pressure sensor is short circuit or open circuit.
Pressure range: 0-4.3 MPa (0-624 psi)

Supposed Causes

- Defective high pressure sensor
- Connection of low pressure sensor with wrong connection
- Defective outdoor main PCB
- Disconnection of high pressure sensor

Troubleshooting

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



Reference **CHECK 12** Refer to page 273.

4.38 Low Pressure Sensor Abnormality

Error Code **JC**

Applicable Models All outdoor units

Method of Error Detection Error is detected from pressure detected by low pressure sensor.

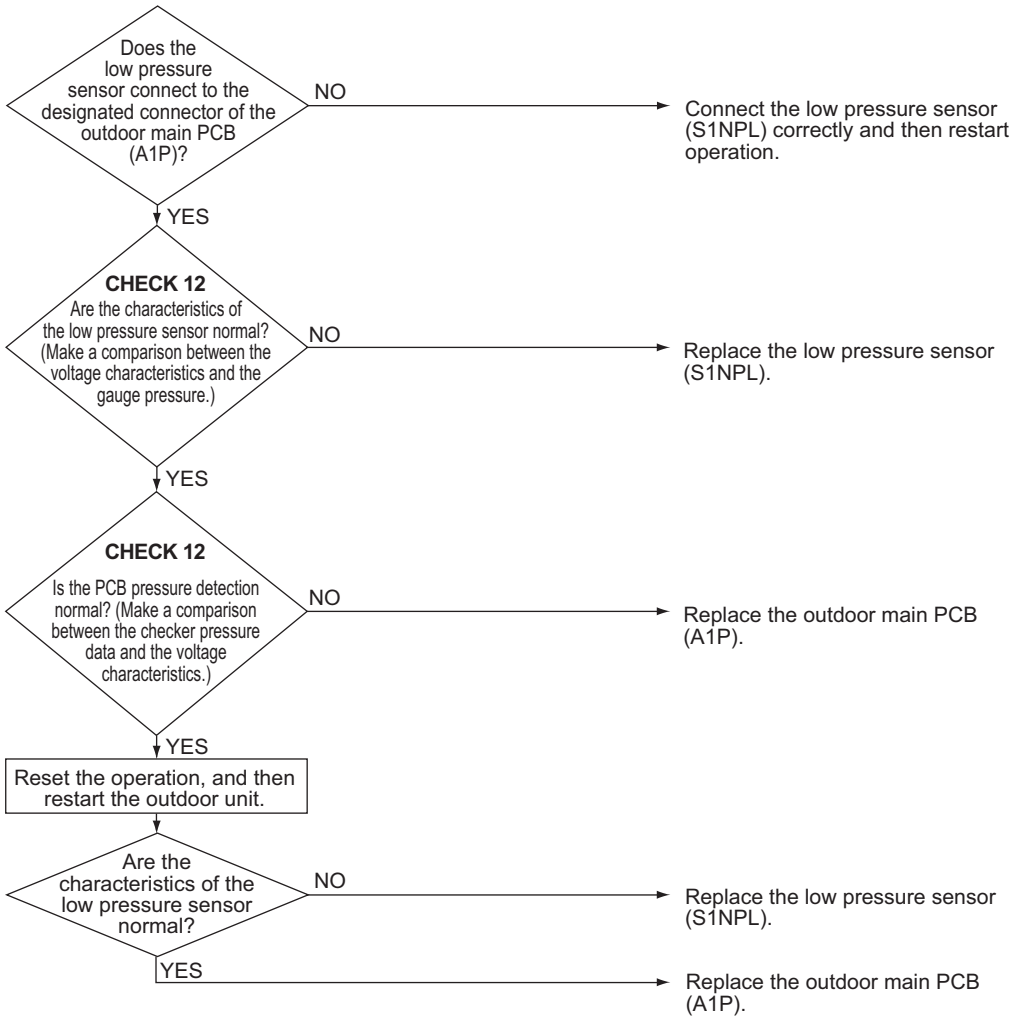
Error Decision Conditions The low pressure sensor is short circuit or open circuit.
Pressure range: 0-1.7 MPa (0-247 psi)

Supposed Causes

- Defective low pressure sensor
- Connection of high pressure sensor with wrong connection
- Defective outdoor main PCB
- Disconnection of low pressure sensor

Troubleshooting

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



Reference **CHECK 12** Refer to page 273.

4.39 PCB (for Inverter Compressor) Abnormality

Error Code

L1

Applicable Models

All outdoor units

Method of Error Detection

- Error is detected based on the current value during waveform output before starting compressor.
- Error is detected based on the value from current sensor during synchronous operation when starting the unit.

Error Decision Conditions

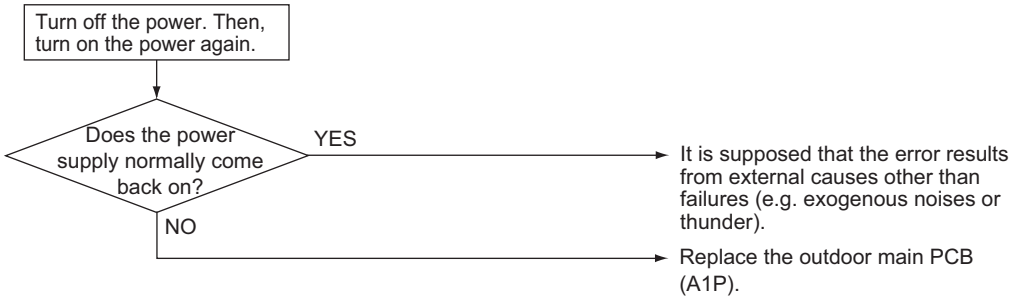
- Overcurrent (OCP) flows during waveform output.
- Error of current sensor during synchronous operation.
- IPM failure.

Supposed Causes

- IPM failure
- Current sensor failure
- Drive circuit failure

Troubleshooting

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



4.40 Radiation Fin Temperature Rise Abnormality

Error Code

L4

Applicable Models

All outdoor units

Method of Error Detection

The radiation fin temperature is detected by the radiation fin thermistor.

Error Decision Conditions

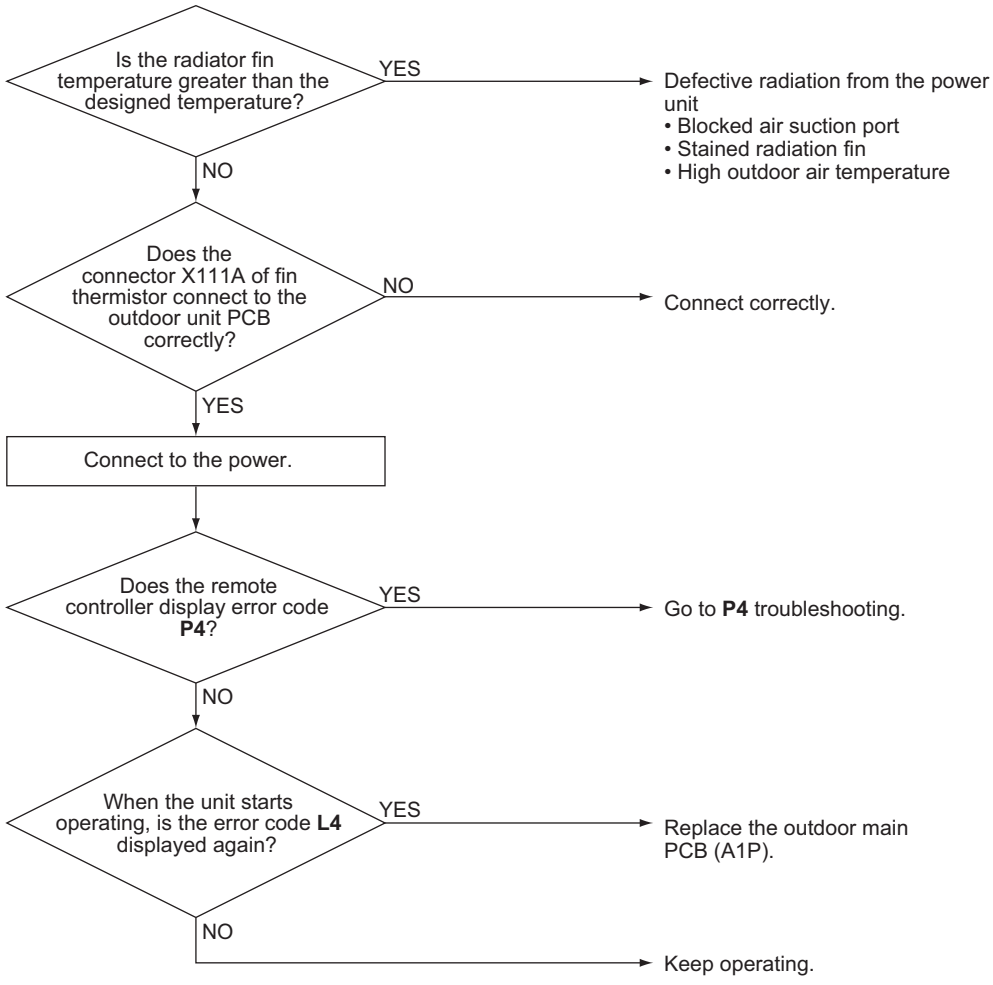
The radiation fin temperature exceeds a certain temperature.

Supposed Causes

- Activation of radiation fin thermistor
- Defective outdoor main PCB
- Defective radiation fin thermistor

Troubleshooting

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



4.41 Inverter Compressor Instantaneous Overcurrent

Error Code **L5**

Applicable Models All outdoor units

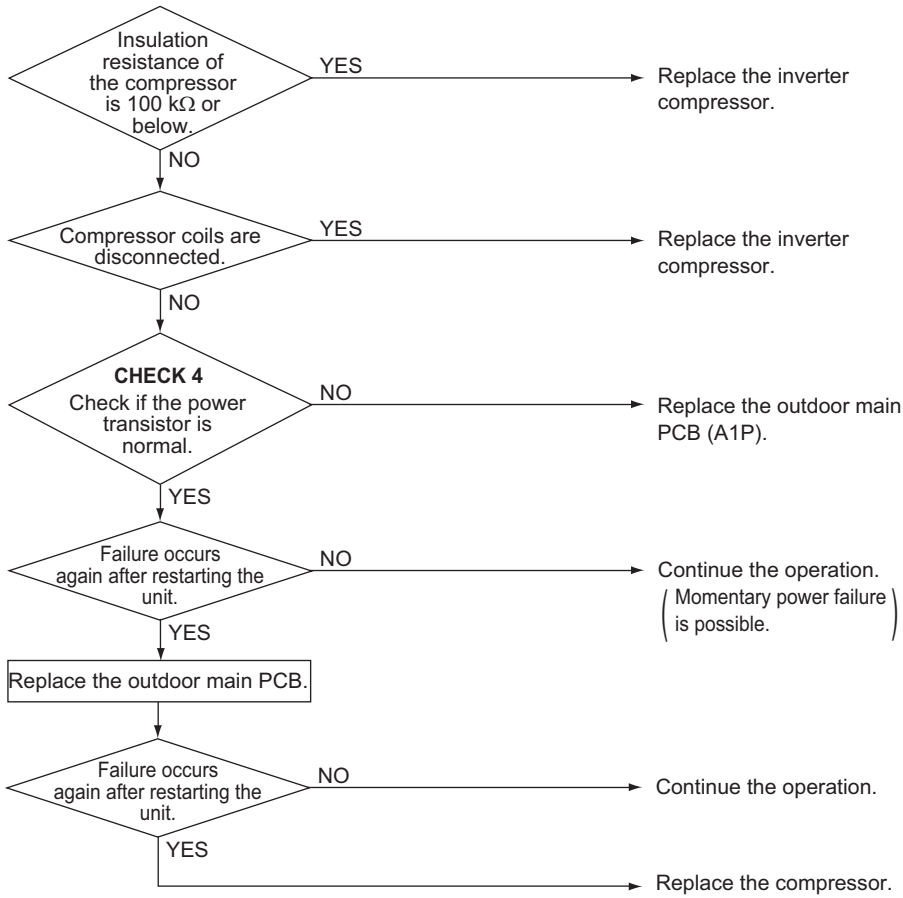
Method of Error Detection Error is detected from current flowing in the power transistor.

Error Decision Conditions An excessive current flows in the power transistor.

Supposed Causes
- Defective compressor coil (disconnected, defective insulation)
- Defective compressor startup (mechanical lock)
- Defective PCB

Troubleshooting

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



Reference **CHECK 4** Refer to page 264.

4.42 Inverter Compressor Overcurrent

Error Code **L8**

Applicable Models All outdoor units

Method of Error Detection Error is detected by current flowing in the power transistor.

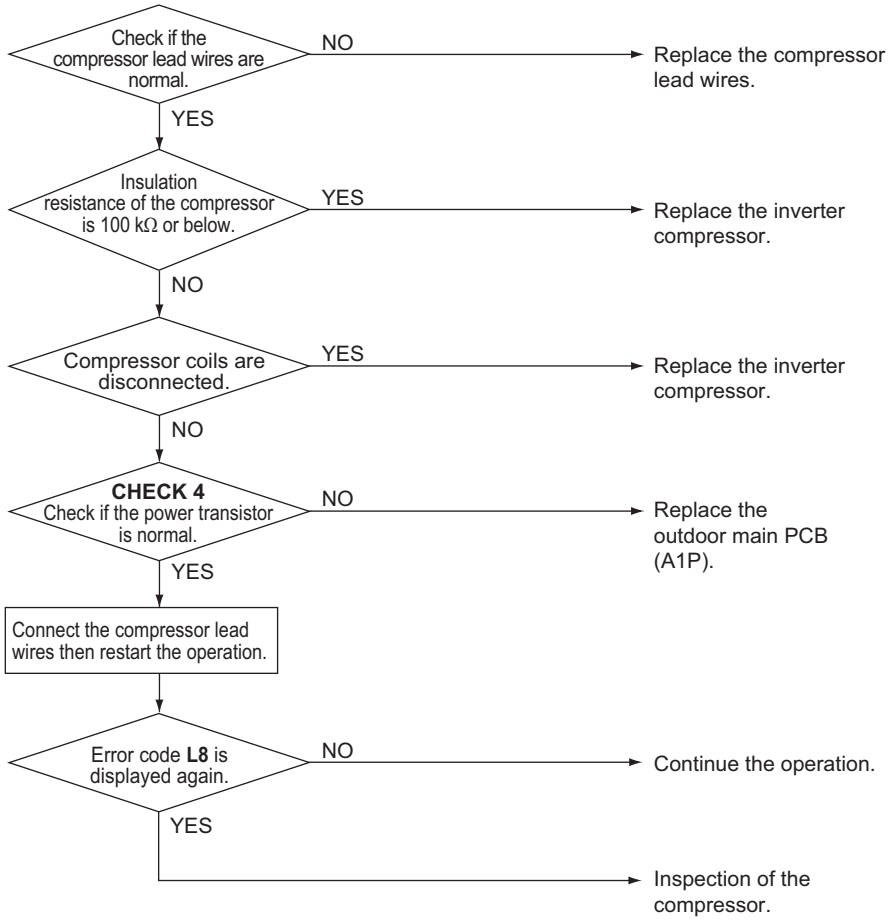
Error Decision Conditions Overload in the compressor is detected.

Supposed Causes

- Compressor overload
- Broken wire inside compressor
- Defective PCB
- Disconnection of compressor

Troubleshooting

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



Reference **CHECK 4** Refer to page 264.

4.43 Inverter Compressor Startup Abnormality

Error Code **L9**

Applicable Models All outdoor units

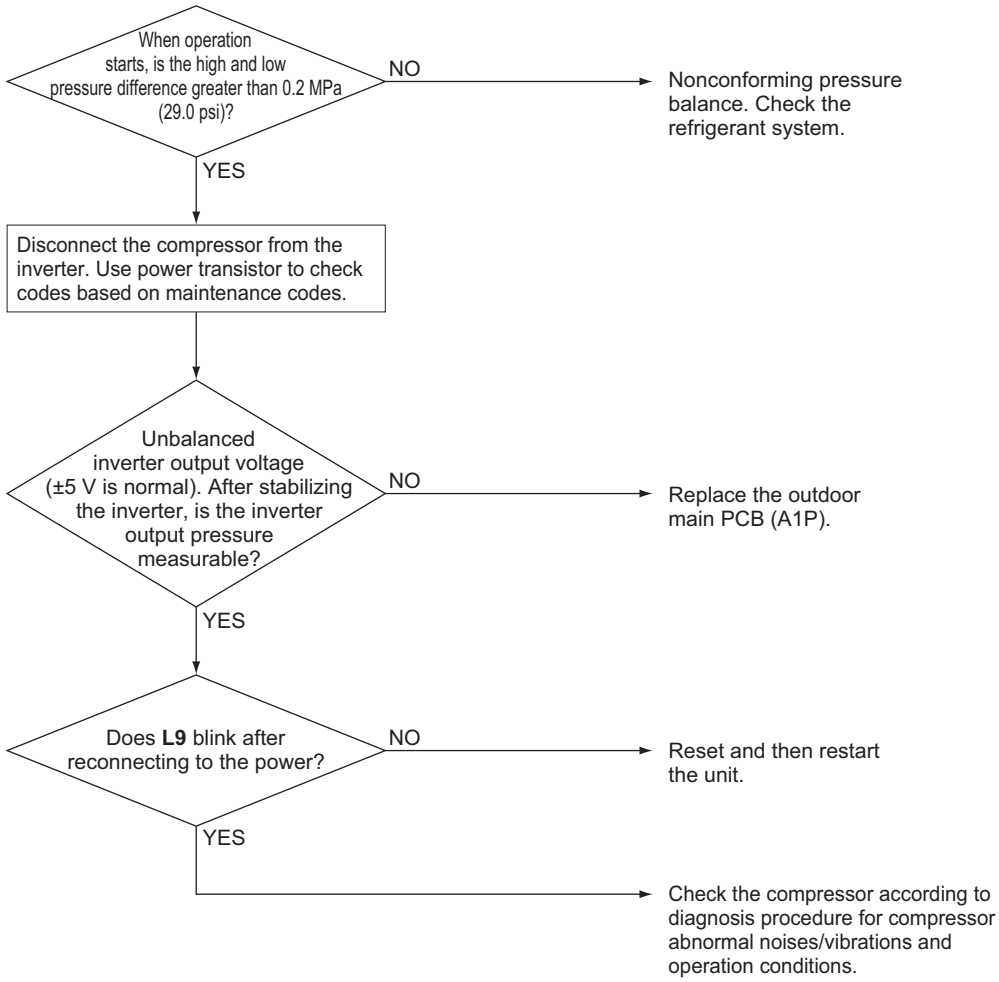
Method of Error Detection Error is detected by the power transistor current

Error Decision Conditions Compressor overload during activation

Supposed Causes
- Defective compressor
- Large pressure difference before starting the compressor
- Defective PCB

Troubleshooting

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



4.44 Transmission Error (Between Microcomputers on the Outdoor Main PCB)

Error Code

LC

Applicable Models

All outdoor units

Method of Error Detection

Transmission conditions between microcomputers on the outdoor main PCB are tested via microcomputer.

Error Decision Conditions

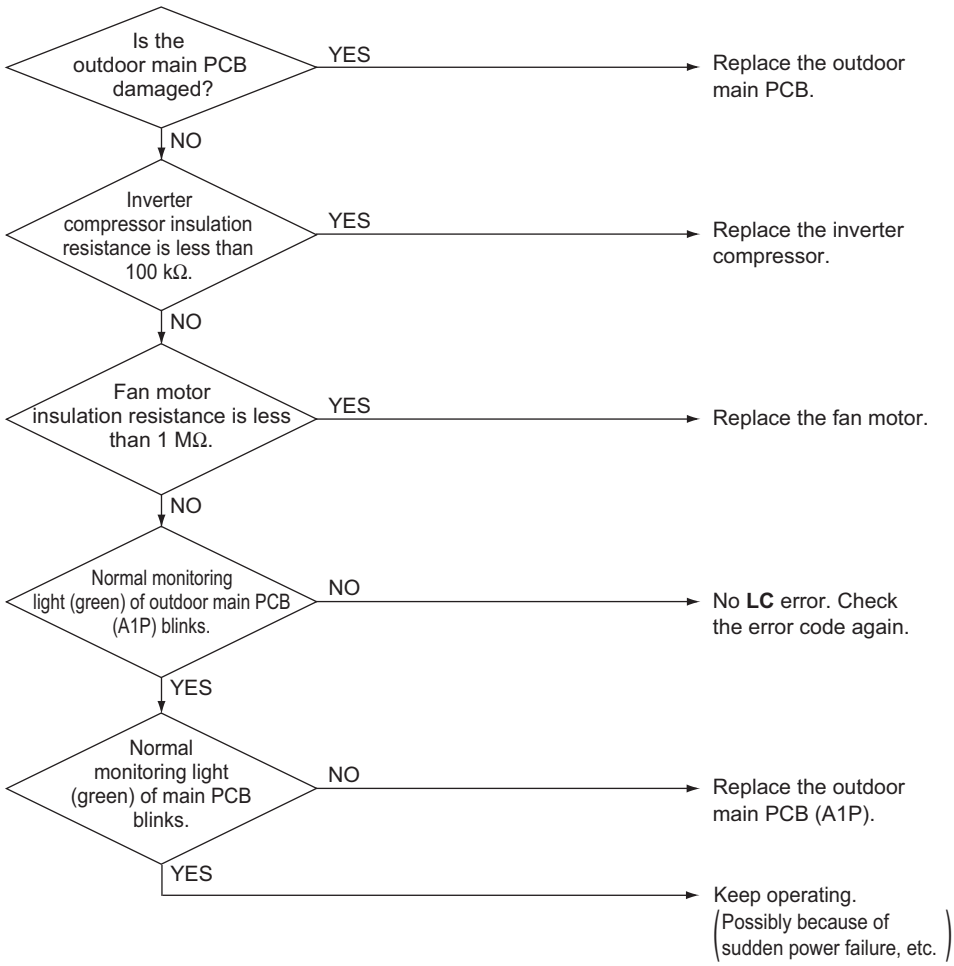
No normal transmission after a certain period of time

Supposed Causes

- Connection error between microcomputers on the outdoor main PCB
- Defective outdoor main PCB (Transmission part)
- Defective noise filter
- External factors (Noise, etc.)
- Defective inverter compressor
- Defective fan motor

Troubleshooting

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



4.45 Inverter Circuit Capacitor High Voltage

Error Code

P1

Applicable Models

All outdoor units

Method of Error Detection

The voltage waveform of the main circuit capacitor of the inverter is used to check for errors.

Error Decision Conditions

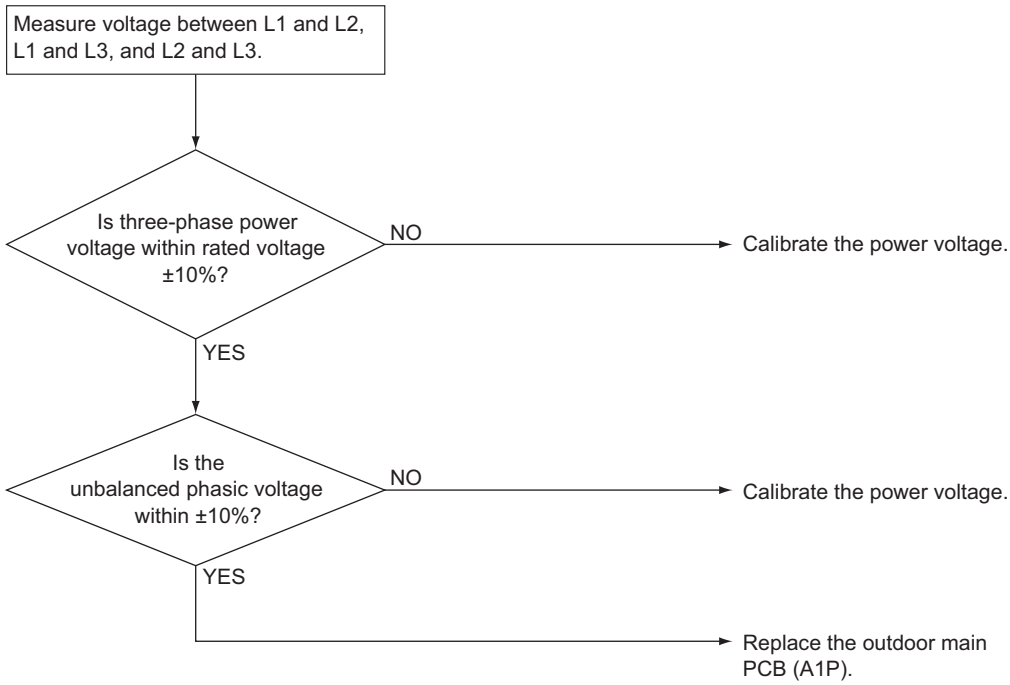
The above-mentioned voltage waveform looks like the waveform of the power supply with a missing phase

Supposed Causes

- Defective main circuit capacitor
- Incorrect main circuit wiring
- Defective outdoor unit PCB
- Unbalanced voltage between phases
- Missing phase

Troubleshooting

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



4.46 Radiation Fin Thermistor Abnormality

Error Code **P4**

Applicable Models All outdoor units

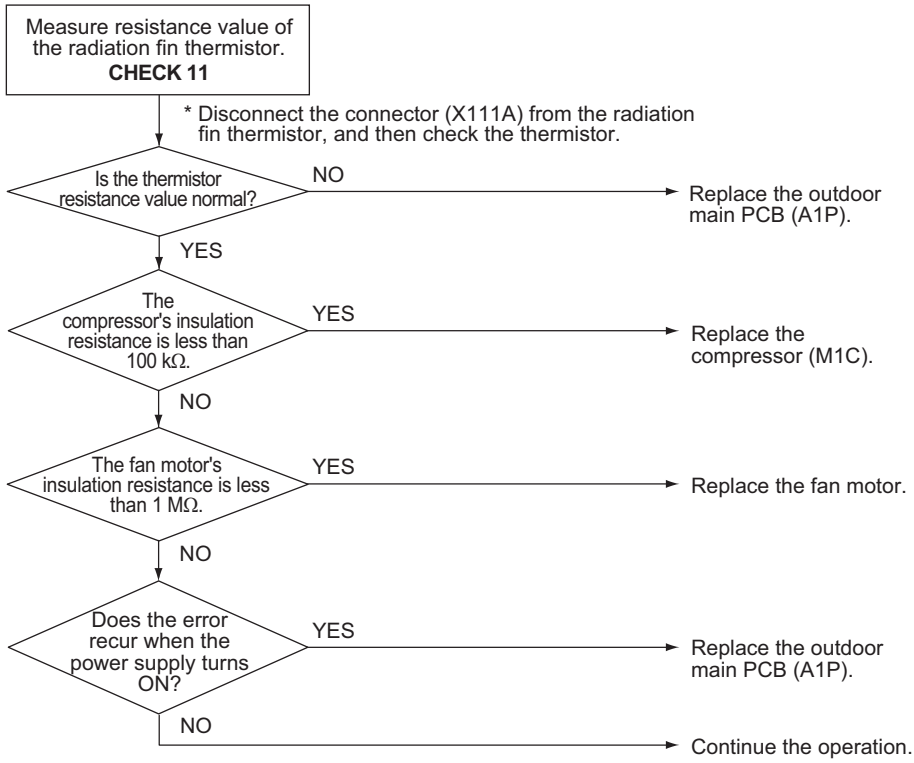
Method of Error Detection Resistance of the following thermistor is detected when the compressor is not operating.
(1) Radiation fin thermistor
(2) PCB circuit thermistor

Error Decision Conditions When the resistance value of thermistor becomes a value equivalent to open circuited or short circuited status
∗ Error is not decided while the unit operation is continued.
P4 will be displayed by pressing the inspection button.

Supposed Causes
- Defective radiation fin temperature thermistor
- Defective PCB
- Defective inverter compressor
- Defective fan motor

Troubleshooting

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



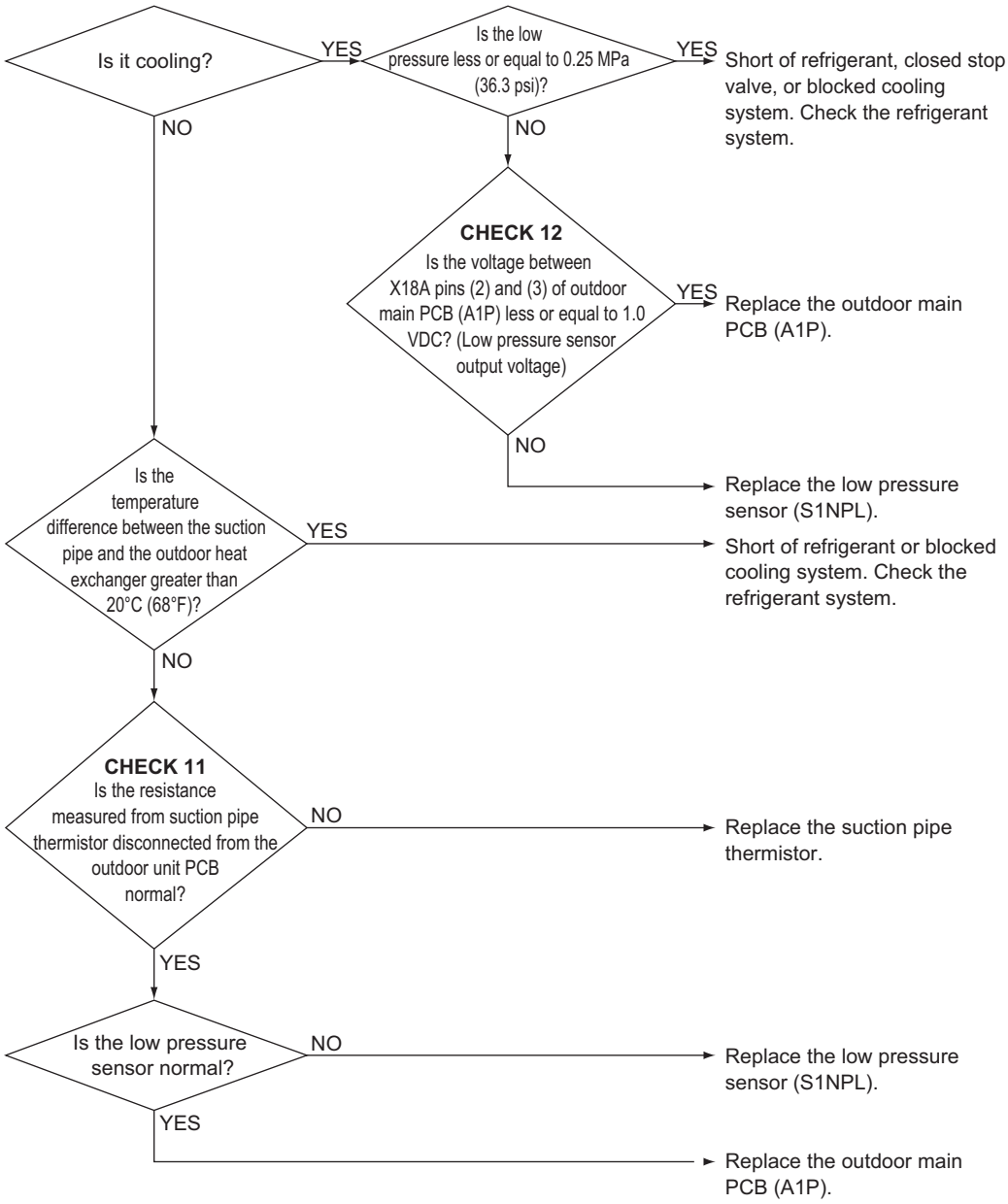
Reference **CHECK 11** Refer to page 270.

4.47 Refrigerant Shortage

Error Code	**U0**
Applicable Models	All outdoor units
Method of Error Detection	Refrigerant shortage check is conducted based on the discharge pipe thermistor temperature and the low-pressure saturated temperature.
Error Decision Conditions	Microcomputer is used to determine and check for system refrigerant shortage. ∗The unit can keep operating but there is an unconfirmed error.
Supposed Causes	■ Refrigerant shortage or refrigerant clogging (piping error) ■ Defective suction pipe thermistor ■ Defective pressure sensor ■ Defective outdoor main PCB (A1P)

Troubleshooting

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



Reference **CHECK 11** Refer to page 270.

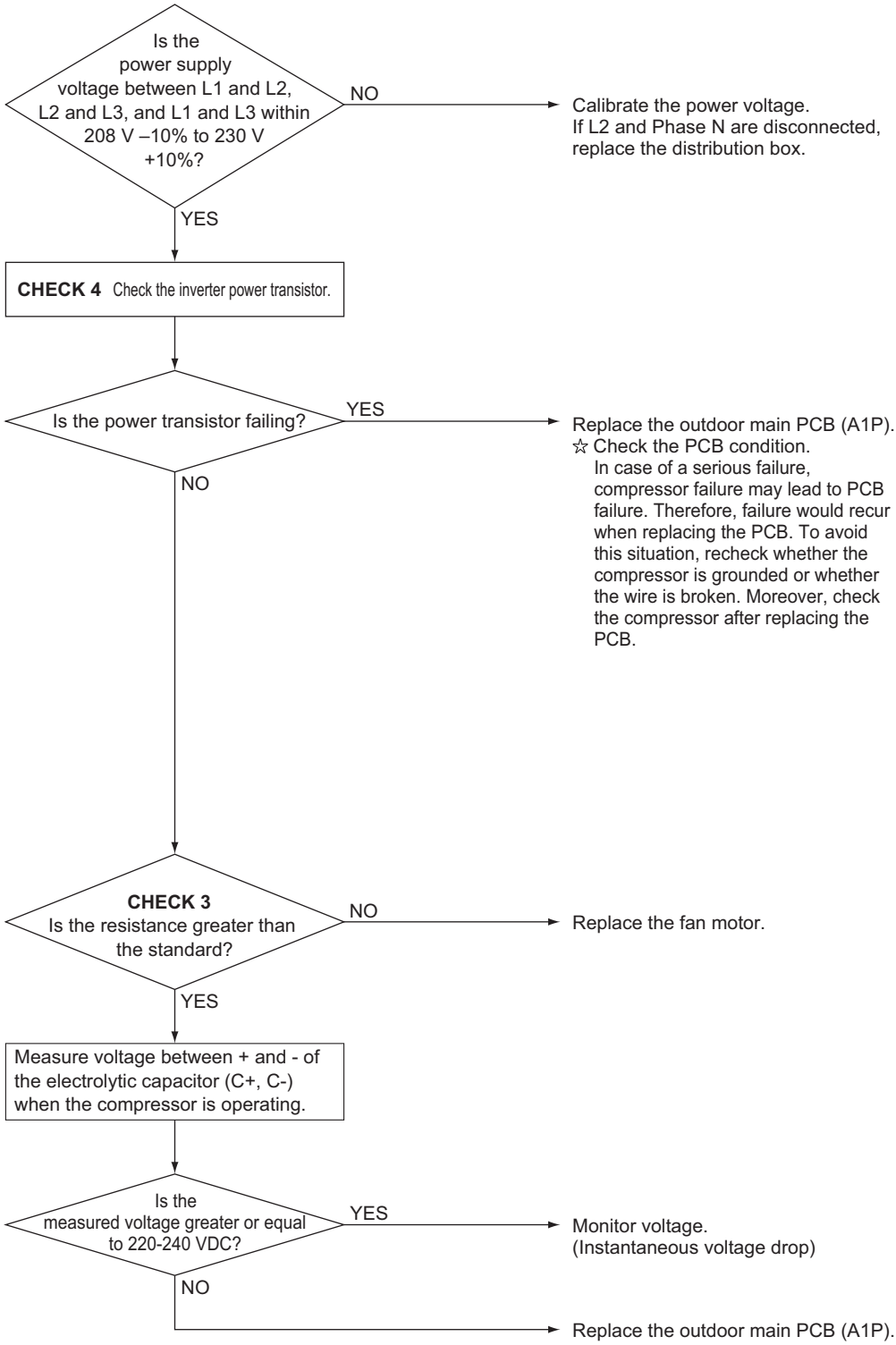
Reference **CHECK 12** Refer to page 273.

4.48 Power Supply Insufficient or Instantaneous Abnormality

Error Code	**U2**
Applicable Models	All outdoor units
Method of Error Detection	The main circuit capacitor voltage of the inverter and the power supply voltage is checked.
Error Decision Conditions	The main circuit capacitor of the tested inverter has abnormal voltage or the power supply voltage is abnormal.
Supposed Causes	■ Insufficient power supply ■ Instantaneous power failure ■ Defective outdoor fan motor ■ 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 3** Refer to page 263.

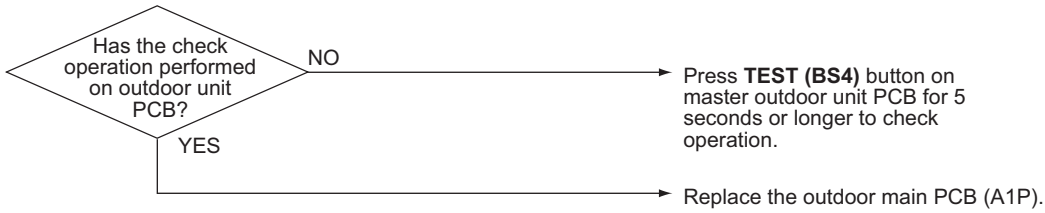
Reference **CHECK 4** Refer to page 264.

4.49 Check Operation Not Executed

Error Code	**U3**
Applicable Models	All outdoor units
Method of Error Detection	Determined based on whether check operation is executed or not
Error Decision Conditions	Error is decided when the unit starts operation without check operation.
Supposed Causes	Check operation not executed

Troubleshooting

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



4.50 Transmission Error between Indoor Units and Outdoor Units

Error Code **U4**

Applicable Models All indoor and outdoor units

Method of Error Detection Microcomputer checks if transmission between indoor and outdoor units is normal.

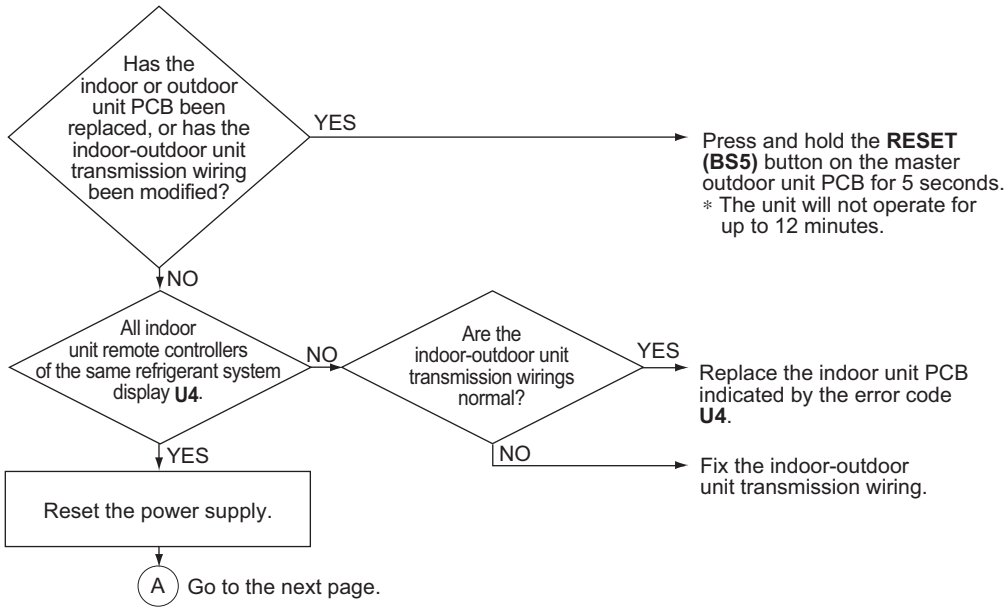
Error Decision Conditions When transmission is not carried out normally for a certain amount of time

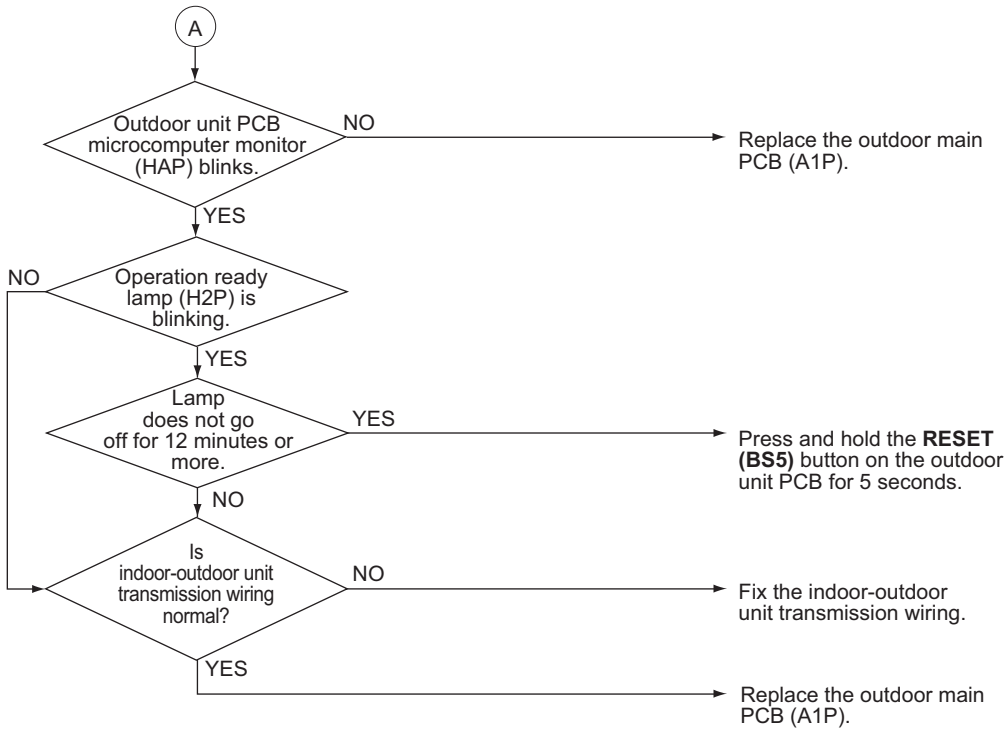
Supposed Causes

- Indoor to outdoor transmission wiring F1, F2 disconnection, short circuit or wrong wiring
- Outdoor unit power supply is OFF
- System address does not match
- Defective indoor unit PCB
- Defective outdoor main PCB

Troubleshooting

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




A
Outdoor unit PCB microcomputer monitor (HAP) blinks.
NO
Replace the outdoor main PCB (A1P).
YES
Operation ready lamp (H2P) is blinking.
NO
YES
Lamp does not go off for 12 minutes or more.
YES
Press and hold the RESET (BS5) button on the outdoor unit PCB for 5 seconds.
NO
Is indoor-outdoor unit transmission wiring normal?
NO
Fix the indoor-outdoor unit transmission wiring.
YES
Replace the outdoor main PCB (A1P).

4.51 Transmission Error between Remote Controller and Indoor Unit

Error Code

U5

Applicable Models

All indoor units

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

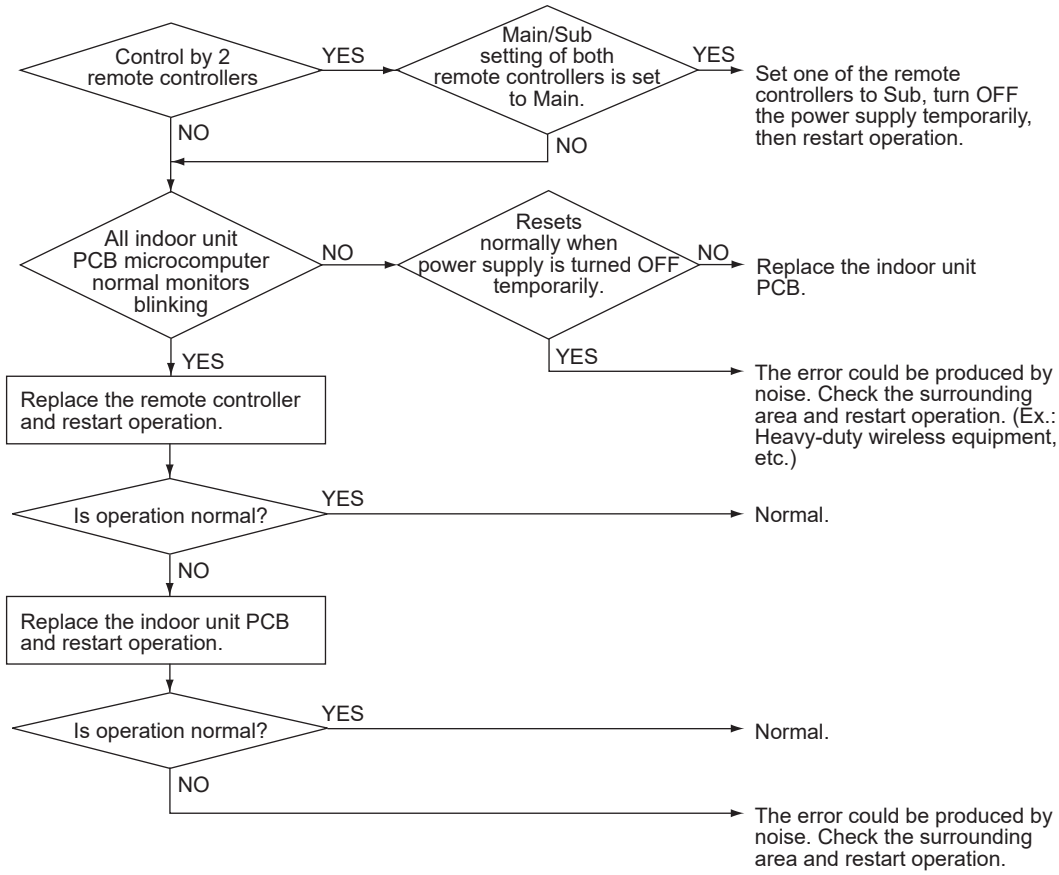
Normal transmission does not continue for specified period.

Supposed Causes

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

Troubleshooting

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



Reference Refer to page 59 for Main/Sub setting.

4.52 Transmission Error between Main and Sub Remote Controllers

Error Code **U8**

Applicable Models All indoor units

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.

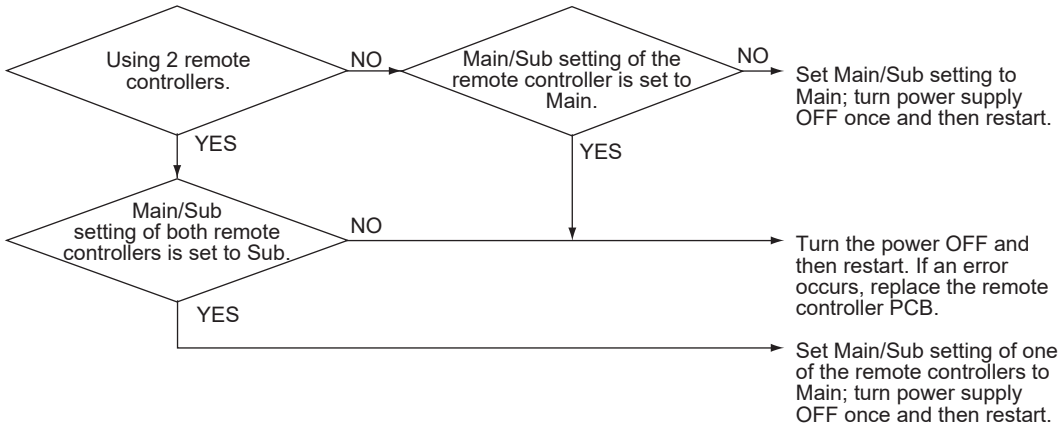
Error Decision Conditions Normal transmission does not continue for specified period.

Supposed Causes

- Transmission error between main and sub remote controller
- Connection between sub remote controllers
- Defective remote controller PCB

Troubleshooting

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



Reference Refer to page 59 for Main/Sub setting.

4.53 Transmission Error between Indoor and Outdoor Units in the Same System

Error Code

U9

Applicable Models

All indoor units
All outdoor units

Method of Error Detection

Error signal for the other indoor units is detected within the system by outdoor unit PCB.

Error Decision Conditions

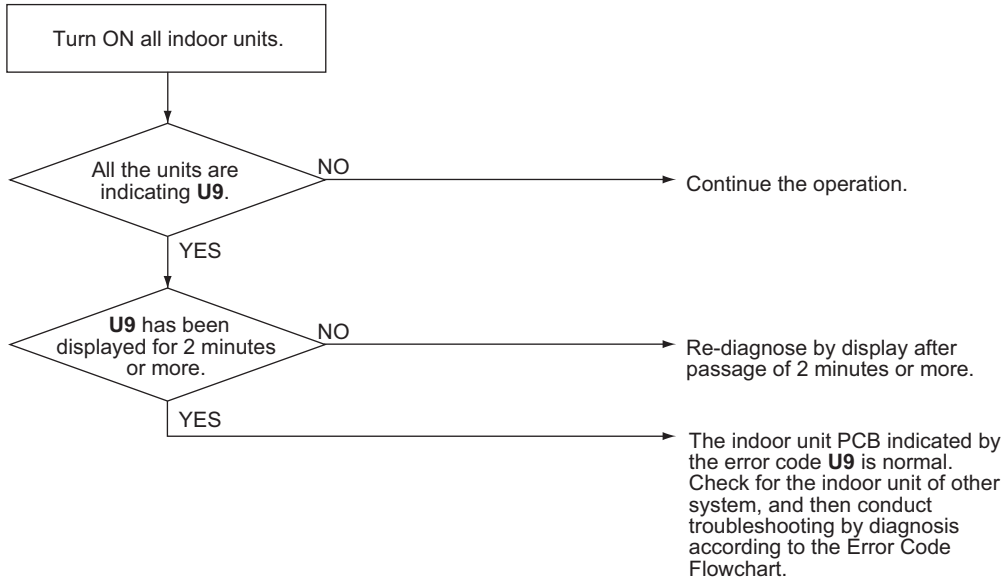
The error decision is made on any other indoor unit within the system concerned.

Supposed Causes

- Transmission error within or outside of other system
- Defective electronic expansion valve in indoor unit of other system
- Defective PCB of indoor unit in other system
- Improper connection of transmission wiring between indoor and outdoor unit

Troubleshooting

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

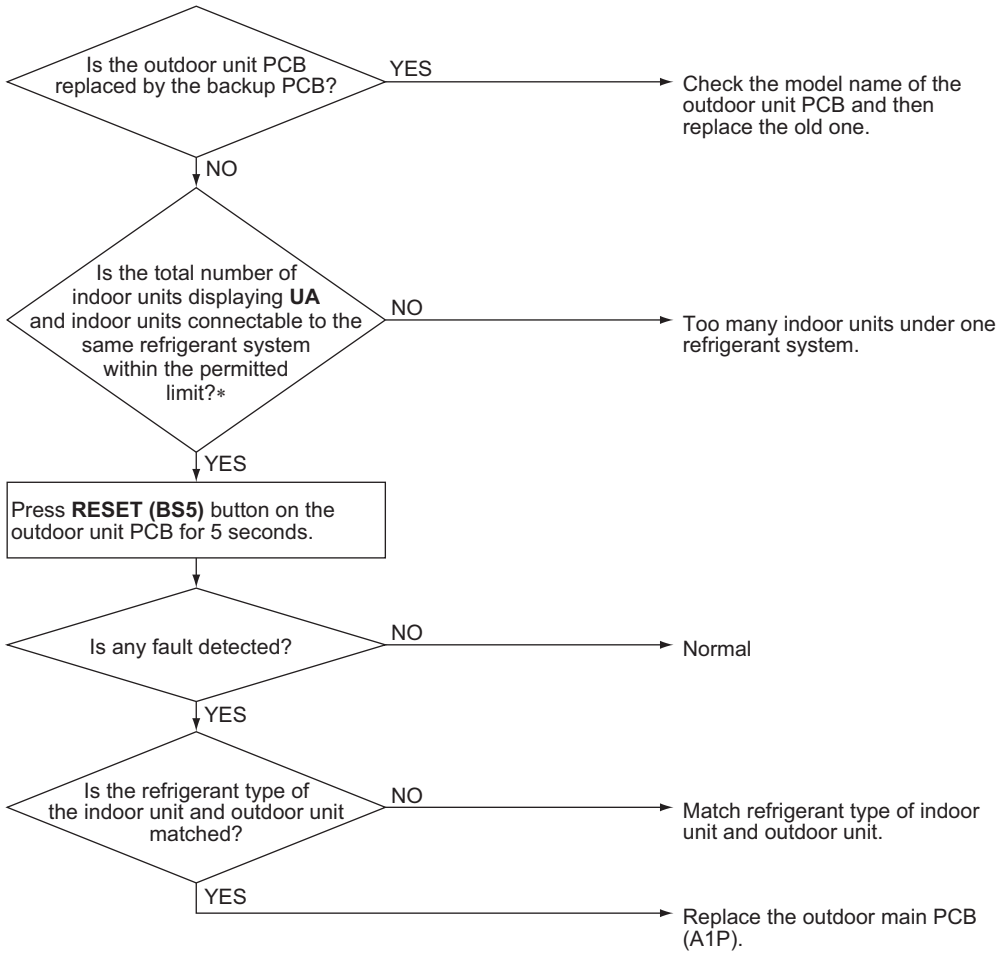


4.54 Improper Combination of Indoor and Outdoor Units, Indoor Units and Remote Controller

Error Code	**UA**
Applicable Models	All indoor units All outdoor units
Method of Error Detection	A difference occurs in data by the type of refrigerant between indoor and outdoor units. The number of indoor units is out of the allowable range.
Error Decision Conditions	The error decision is made as soon as either of the abnormalities aforementioned is detected.
Supposed Causes	■ Excess of connected indoor units ■ Defective outdoor main PCB ■ Mismatching of the refrigerant type of indoor and outdoor unit. ■ Setting of outdoor main PCB was not conducted after replacing to spare PCB.

Troubleshooting

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



∗ The number of indoor units that may be connected to an individual outdoor unit system is determined by the model of the outdoor unit.

4.55 Incorrect Electric Heater Capacity Setting

Error Code

UA-17

Applicable Models

FTQ-TA

Outline

After attaching optional electric heater, if the electric heater capacity setting (11 (21)-5) is made mistakenly for heaters not featured in the lineup, heating via unintended levels of airflow will be prevented.
However, the electric heater will be operable for convenience.

Error Decision Conditions

Checks when the capacity setting (11 (21)-5) of the electric heater has been set to a non-applicable value.

Operation After Error Codes Decided

- The error code **UA-17** is displayed on the remote controller.
- Indoor units can operate continuously.
- Incorrect setting is kept.
- Even if the ON condition for electric heater 2 is established, only electric heater 1 will be set to ON.
  (Electric heater 1 set to ON, electric heater 2 set to OFF)
  (In order to deliver in terms of user-friendliness and safety, the electric heater can operate at the lowest possible power levels.)
- The airflow of the fan during operation of the electric heater will be set to the largest value within the CFM dictated by the capacity of each of the electric heaters (electric heater 1, electric heater 2 both set to ON).
- All other operations are the same as during normal operation.

4.56 Address Duplication of Centralized Controller

Error Code

UC

Applicable Models

All indoor units

Method of Error Detection

The principal indoor unit detects the same address as that of its own on any other indoor unit.

Error Decision Conditions

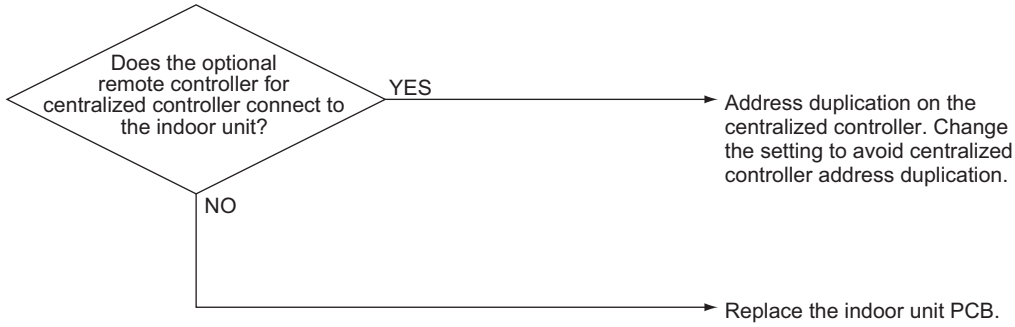
The error decision is made as soon as the abnormality aforementioned is detected.

Supposed Causes

- Address duplication of centralized controller
- Defective indoor unit PCB

Troubleshooting

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



4.57 Transmission Error between Centralized Controller and Indoor Unit

Error Code **UE**

Applicable Models
All indoor units
Centralized controller

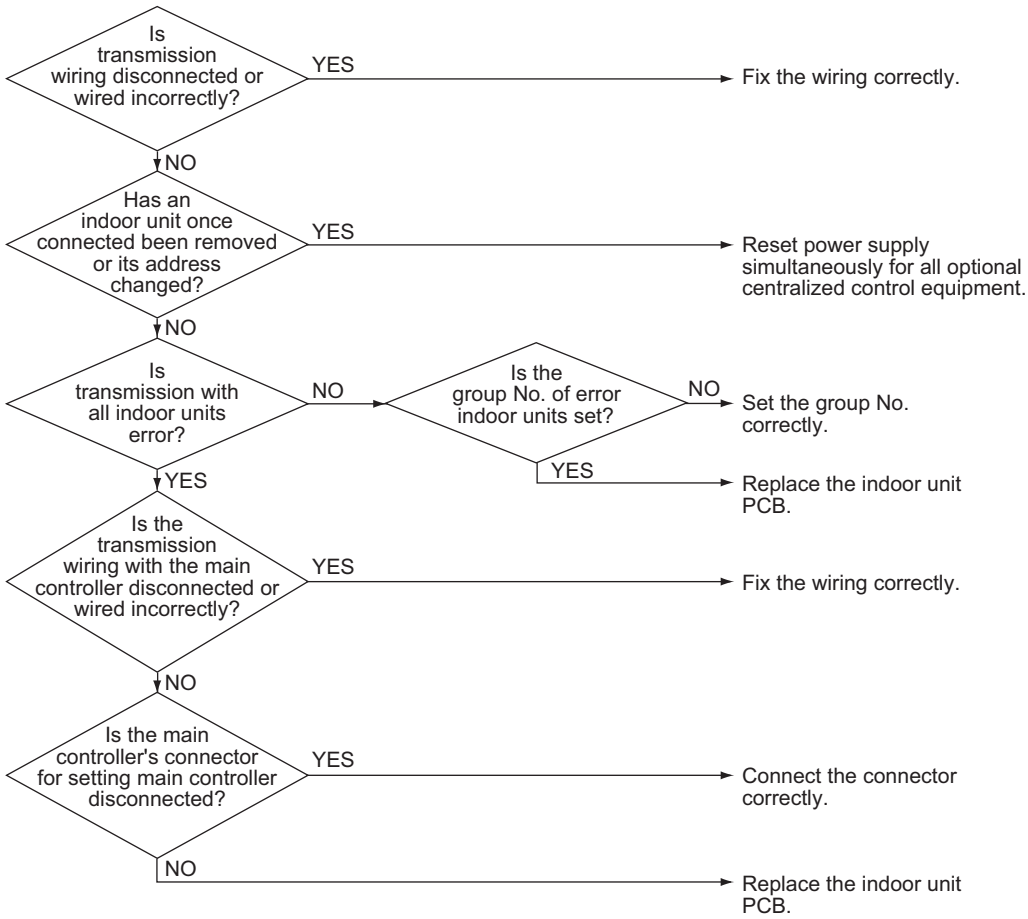
Method of Error Detection
Microcomputer checks if transmission between indoor unit and centralized controller is normal.

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

Supposed Causes
- Disconnection or error of transmission wiring
- Defective setting of group No. or address
- Transmission error between optional controllers for centralized control and indoor unit
- Defective PCB for centralized controller
- Defective indoor unit PCB

Troubleshooting

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



Reference **CHECK 15** Refer to page 274.

4.58 System Not Set

Error Code

UF

Applicable Models

All indoor units
All outdoor units

Method of Error Detection

On check operation, the number of indoor units in terms of transmission is not corresponding to that of indoor units that have made changes in temperature.

Error Decision Conditions

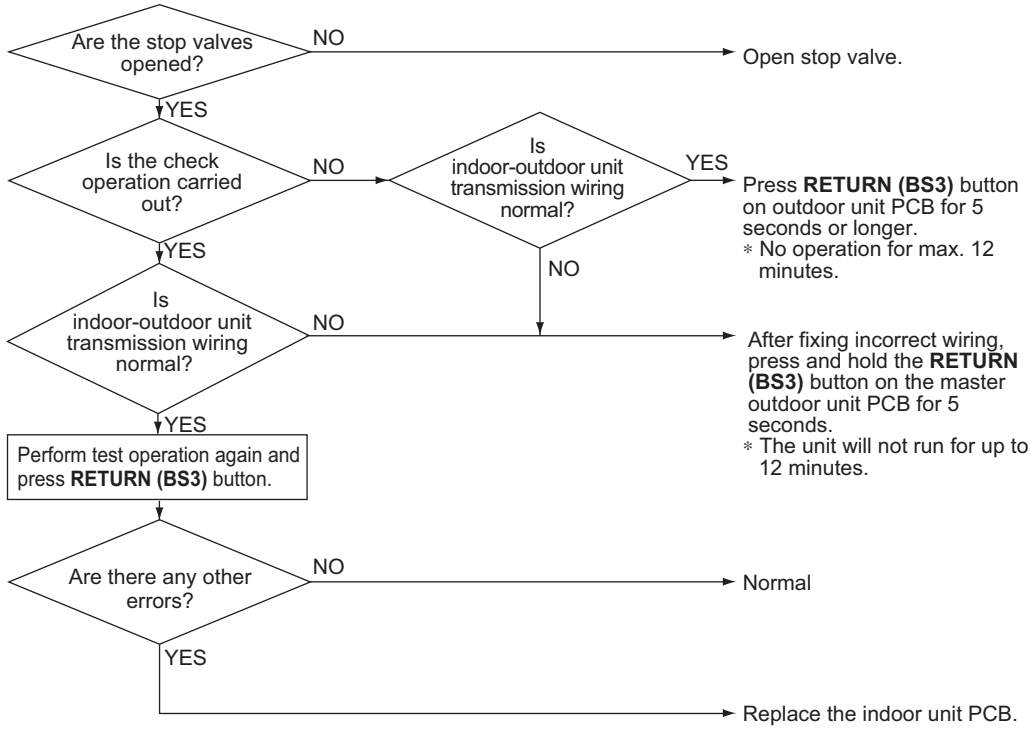
The error is determined as soon as the abnormality aforementioned is detected through checking the system for any erroneous connection of units on the check operation.

Supposed Causes

- Improper connection of transmission wiring between indoor-outdoor units
- Failure to execute check operation
- Defective indoor unit PCB
- Stop valve is not opened

Troubleshooting

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



4.59 System Abnormality, Refrigerant System Address Undefined

Error Code **UH**

Applicable Models
All indoor units
All outdoor units

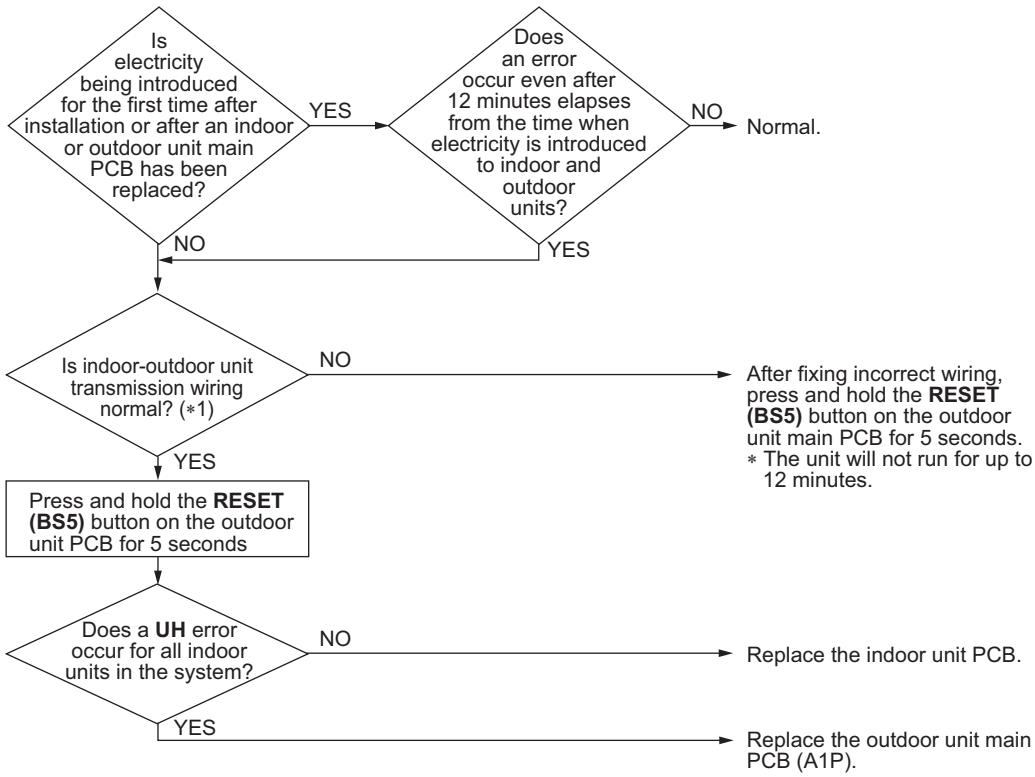
Method of Error Detection
System detects an indoor unit whose address is not defined by automatic address function.
∗Automatic address refers to the automatic designated address of indoor unit and outdoor unit when connected to the power after installation or wiring replacement (with the **RESET (BS5)** button pressed for more than 5 seconds).

Error Decision Conditions
The error decision is made as soon as the abnormality aforementioned is detected.

Supposed Causes
- Improper connection of transmission wiring between indoor-outdoor units
- Defective indoor unit PCB
- Defective outdoor unit main PCB (A1P)

Troubleshooting

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

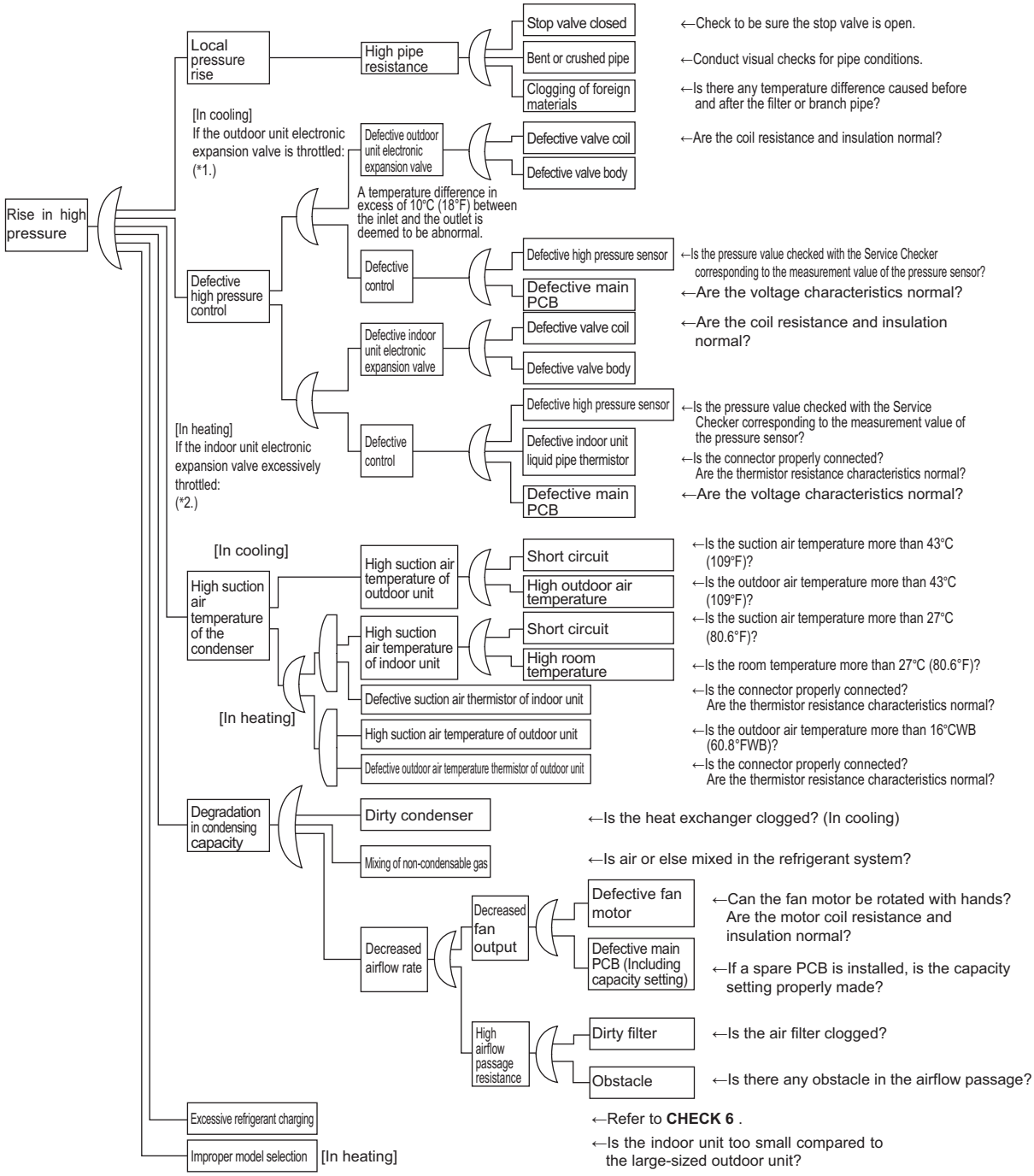


Note(s) ∗1. Refer to installation manual for correct "indoor unit and outdoor unit connection wiring".

5. Check

5.1 High Pressure Check

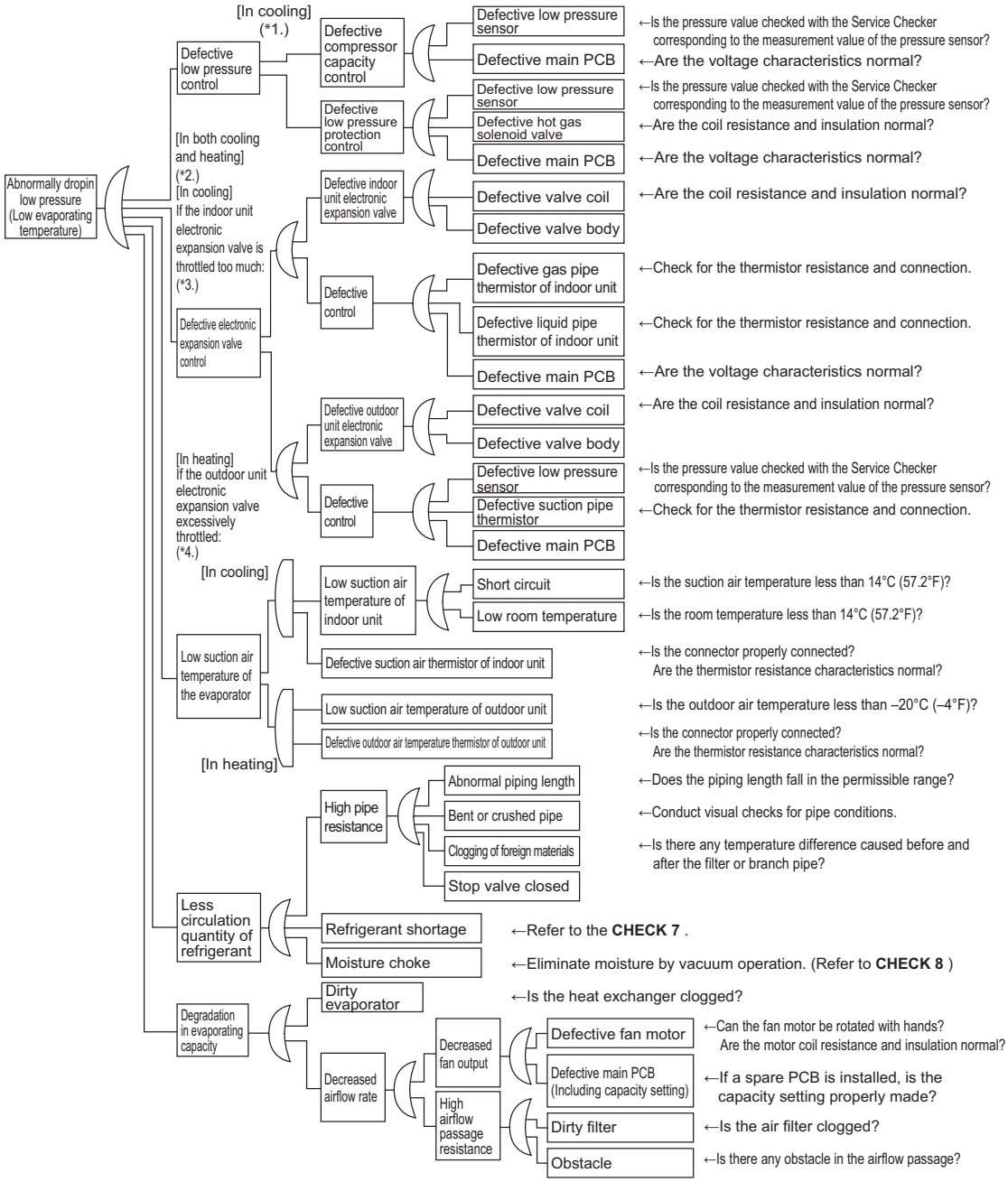
CHECK 1 **Referring to the Fault Tree Analysis (FTA) shown below, probe the defective points.**



∗1: In cooling, it is normal if the outdoor unit electronic expansion valve is fully open.
∗2: In heating, the indoor unit electronic expansion valve is used for subcooling degree control.

5.2 Low Pressure Check

CHECK 2 Referring to the Fault Tree Analysis (FTA) shown below, probe the defective points.



Note(s)

∗1: For details of compressor capacity control while in cooling, refer to Compressor PI control on page 75.

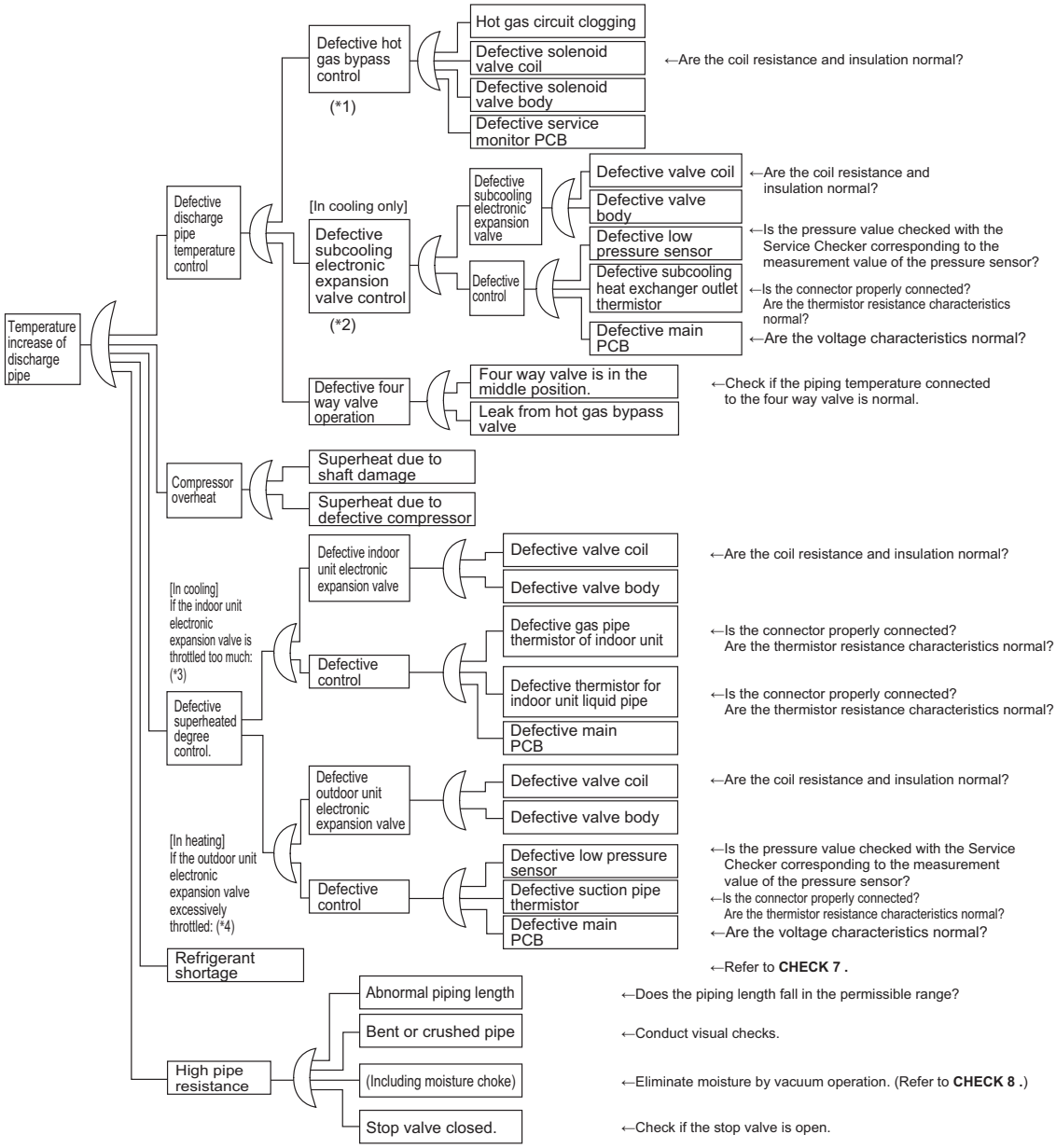
∗2: The low pressure protection control includes low pressure protection control and hot gas bypass control.

∗3: In cooling, the indoor unit electronic expansion valve is used for superheated degree control.

∗4: In heating, the outdoor unit electronic expansion valve is used for superheated degree control of outdoor heat exchanger.

5.3 Superheat Operation Check

CHECK 3 Referring to the Fault Tree Analysis (FTA) shown below, probe the defective points.



Note(s)

∗1: Refer to Low pressure protection control on page 87.

∗2: Refer to Subcooling electronic expansion valve control on page 77.

∗3: Superheating temperature control in cooling is conducted by indoor unit electronic expansion valve.

∗4: Superheating temperature control in heating is conducted by outdoor unit electronic expansion valve.

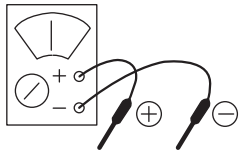
∗5: Judgment criteria of superheat operation: (1) Suction gas superheated degree: 10°C (18°F) and over. (2) Discharge gas superheated degree: 45°C (81°F) and over, except immediately after compressor starts up or is running under dropping control.
(Use the above values as a guide. Depending on the other conditions, the unit may be normal despite the values within the above range.)

5.4 Power Transistor Check

CHECK 4

Perform the following procedures prior to check.
(1) Power OFF.
(2) Remove all the wiring connected to the PCB where power transistors are mounted on.

[Preparation]
· Multimeter



∗ Preparing a multimeter in the analog system is recommended.
A multimeter in the digital system with diode check function will be usable.

[Point of Measurement and Judgment Criteria]
· Measure the resistance value using a tester at each point of measurement below, 10 minutes later after power OFF.
To use analog multimeter:
Measurement in the resistance value mode in the range of multiplying 1 kΩ.

No.	Point of Measurement		Judgment Criteria	Remarks
	+	–		
1	P2	U	2 ~ 15 kΩ	—
2	P2	V		
3	P2	W		
4	U	P2	15 kΩ and above (including ∞)	Due to condenser charge and so on, resistance measurement may require some time.
5	V	P2		
6	W	P2		
7	N3	U		
8	N3	V		
9	N3	W		
10	U	N3	2 ~ 15 kΩ	—
11	V	N3		
12	W	N3		

To use digital multimeter:
Measurement is executed in the diode check mode.(→|–)

No.	Point of Measurement		Judgment Criteria	Remarks
	+	–		
1	P2	U	1.2 V and over	Due to condenser charge and so on, resistance measurement may require some time.
2	P2	V		
3	P2	W		
4	U	P2	0.3 ~ 0.7 V	—
5	V	P2		
6	W	P2		
7	N3	U		
8	N3	V		
9	N3	W		
10	U	N3	1.2 V and over	Due to condenser charge and so on, resistance measurement may require some time.
11	V	N3		
12	W	N3		

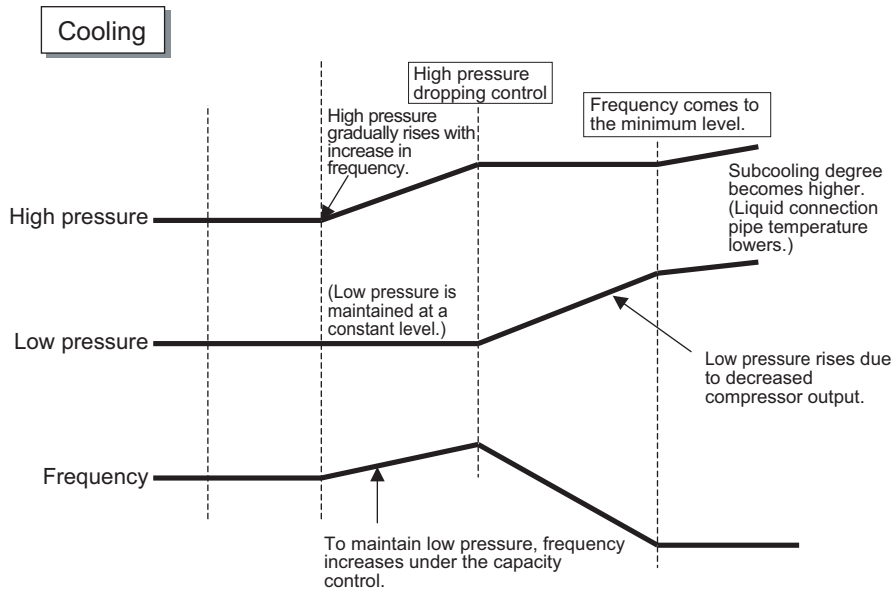
5.5 Refrigerant Overcharge Check

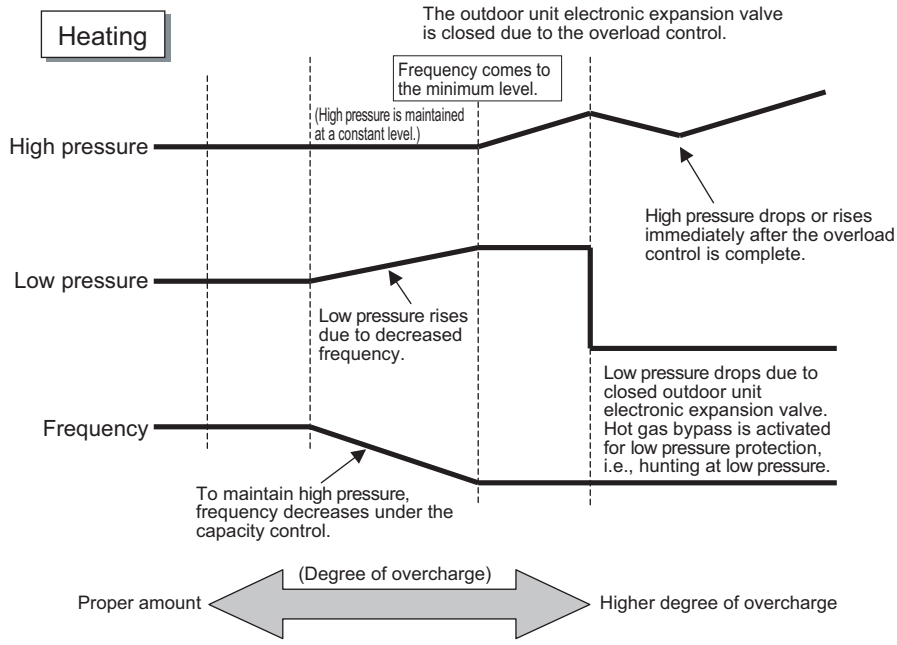
CHECK 6

The only way to judge as the overcharge of refrigerant is with operating conditions due to the relationship to pressure control and electronic expansion valve control.
As information for making a judgment, refer to the information below.

Diagnosis of overcharge of refrigerant

1. High pressure rises. Consequently, overload control is conducted to cause insufficient cooling capacity.
2. The superheated degree of suction gas lowers (or the wet operation is performed). Consequently, the compressor becomes lower in discharge pipe temperature despite of pressure loads.
3. The subcooled degree of condensate rises. Consequently, in heating, the temperature of discharge air through the subcooled section becomes lower





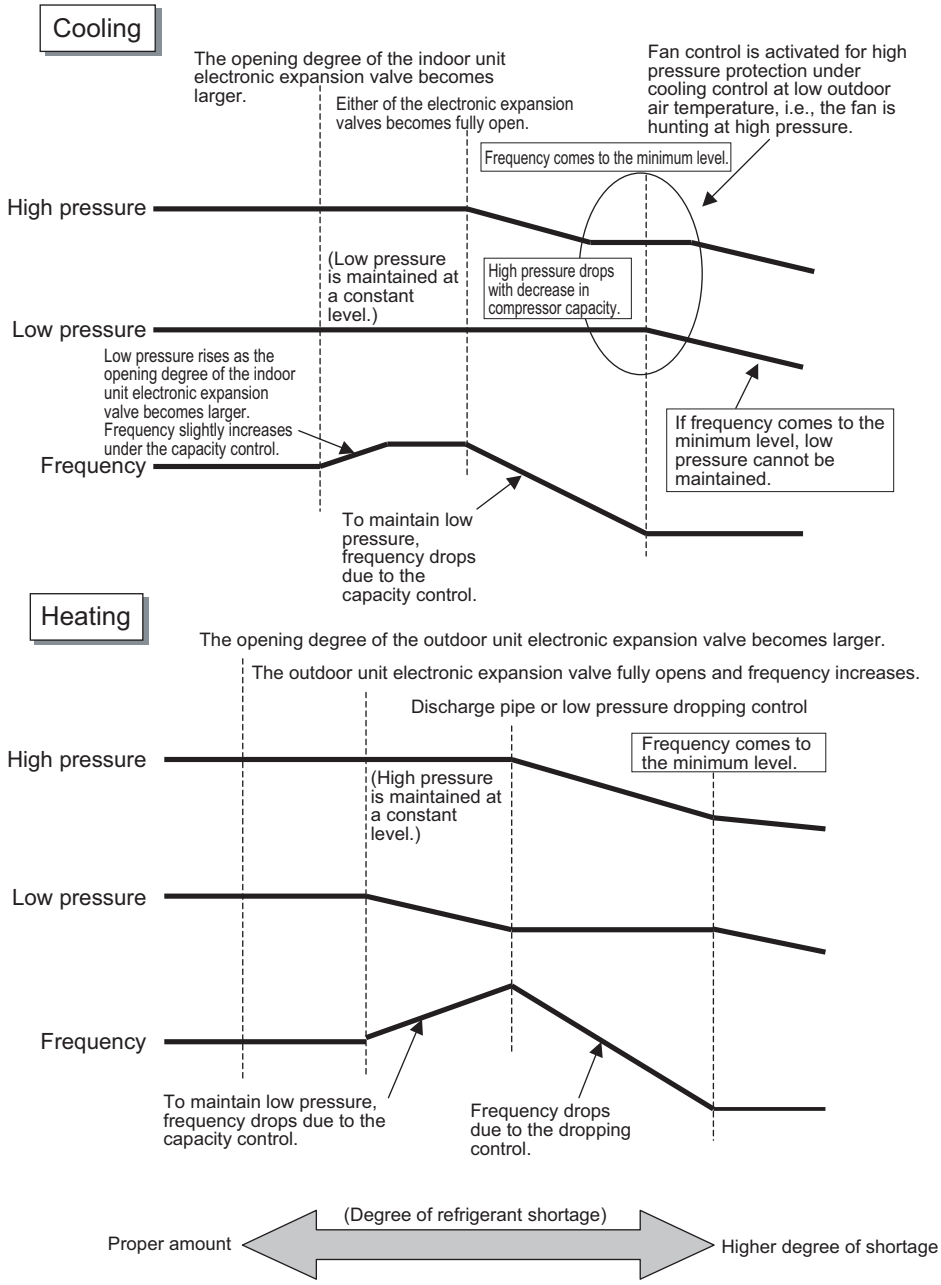
5.6 Refrigerant Shortage Check

CHECK 7

The only way to judge as the shortage of refrigerant is with operating conditions due to the relationship to pressure control and electronic expansion valve control.
As information for making a judgment, refer to the information below.

Diagnosis of shortage of refrigerant

1. The superheated degree of suction gas rises. Consequently, the compressor discharge gas temperature becomes higher.
2. The superheated degree of suction gas rises. Consequently, the electronic expansion valve turns open.
3. Low pressure drops to cause the unit not to demonstrate cooling capacity (heating capacity).



5.7 Vacuuming and Dehydration Procedure

CHECK 8

Conduct vacuuming and dehydration in the piping system following the procedure for Normal vacuuming and dehydration described below.
Furthermore, if moisture may get mixed in the piping system, follow the procedure for Special vacuuming and dehydration described below.

Normal vacuuming and dehydration

1. Vacuuming and dehydration
   - Use a vacuum pump that enables vacuuming up to –100.7 kPa (–14.6 psi).
   - Connect manifold gauges to the service ports of liquid pipe and gas pipe and run the vacuum pump for a period of two or more hours to conduct evacuation to –100.7 kPa (–14.6 psi) or less.
   - If the degree of vacuum does not reach –100.7 kPa (–14.6 psi) or less even though evacuation is conducted for a period of two hours, moisture will have entered the system or refrigerant leakage will have been caused. In this case, conduct evacuation for a period of another one hour.
   - If the degree of vacuum does not reach –100.7 kPa (–14.6 psi) or less even though evacuation is conducted for a period of three hours, conduct the leak tests.
2. Leaving in vacuum state
   - Leave the compressor at the degree of vacuum of –100.7 kPa (–14.6 psi) or less for a period of one hour or more, and then check to be sure that the vacuum gauge reading does not rise. (If the reading rises, moisture may have remained in the system or refrigerant leakage may have been caused.)
3. Additional refrigerant charge
   - Purge air from the manifold gauge connection hoses, and then charge a necessary amount of refrigerant.

Special vacuuming and dehydration

Use this procedure if moisture may get into the piping, such as construction during the rainy season (dew condensation may occur, or rainwater may enter the piping during construction work).

1. Vacuuming and dehydration
   - Follow the same procedure as that for Normal vacuuming and dehydration described above.
2. Vacuum break
   - Pressurize with nitrogen gas up to 0.05 MPa (7.3 psi).
3. Vacuuming and dehydration
   - Conduct vacuuming and dehydration for a period of one hour or more. If the degree of vacuum does not reach –100.7 kPa (–14.6 psi) or less even though evacuation is conducted for a period of two hours or more, repeat vacuum break - vacuuming and dehydration.
4. Leaving in vacuum state
   - Leave the compressor at the degree of vacuum of –100.7 kPa (–14.6 psi) or less for a period of one hour or more, and then check to be sure that the vacuum gauge reading does not rise.
5. Additional refrigerant charge
   - Purge air from the manifold gauge connection hoses, and then charge a necessary amount of refrigerant.

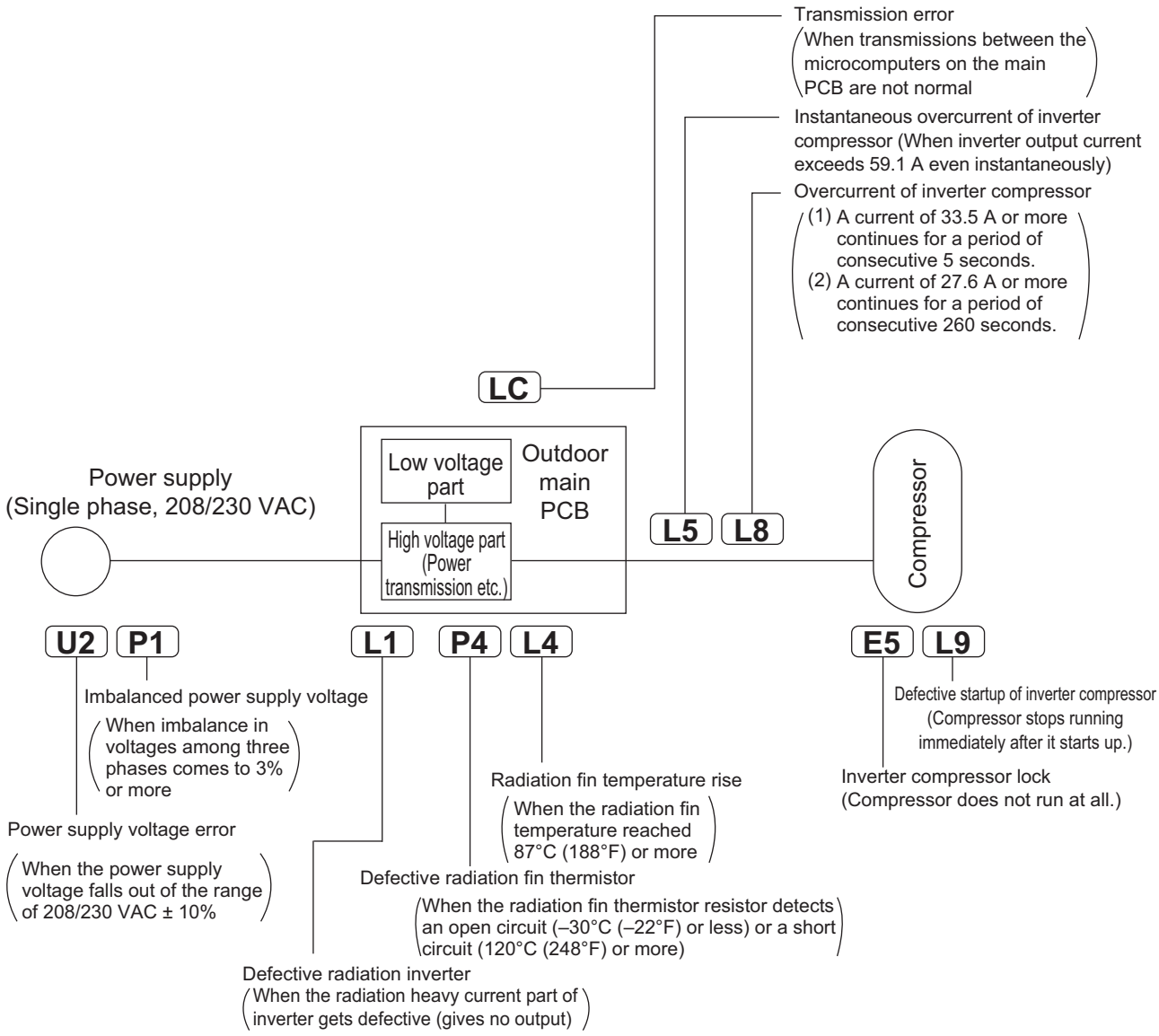
5.8 List of Inverter-Related Error Codes

CHECK 9

	Code	Name	Condition for determining error	Major cause
Compressor current	**L5**	Instantaneous overcurrent of inverter compressor	• Inverter output current exceeds 59.1 A even instantaneously.	• Liquid sealing • Defective compressor • Defective inverter PCB
	L8	Overcurrent of inverter compressor (Electronic superheating protection sensor)	• Compressor overload running A current of 33.5 A or more continues for a period of consecutive 5 seconds or that of 27.6 A or more continues for a period of consecutive 260 seconds. • The inverter loses synchronization.	• Back-flow of compressor liquid • Sudden changes in loads • Disconnected compressor wiring • Defective PCB
Protection device and others	**E5**	Inverter compressor lock	• The compressor is in the locked status (does not rotate).	• Defective compressor
	L1	Defective PCB (for inverter compressor)	• No output is given.	• Defective heavy current part of compressor
	L4	Radiation fin temperature rise	• The radiation fin temperature reaches 87°C (188°F) or more (while in operation).	• Defective fan • Running in overload for an extended period of time • Defective PCB
	L9	Defective startup of inverter compressor	• The compressor motor fails to start up.	• Liquid sealing or defective compressor • Excessive oil or refrigerant • Defective PCB
	LC	Transmission error (between microcomputers on the outdoor main PCB)	• No communications are carried out across the microcomputers on the outdoor main PCB.	• Defective outdoor main PCB
	P1	Imbalanced power supply	• Power supply voltages get significantly imbalanced among three phases.	• Power supply error (imbalanced voltages of 2% or more) • Defective PCB • Dead PCB
	P4	Defective radiation fin thermistor	• The radiation fin thermistor gets short circuited or open.	• Defective radiation fin thermistor
	U2	Power supply voltage error	• The inverter power supply voltage is high or low.	• Power supply error • Defective PCB

5.9 Concept of Inverter-Related Error Codes

CHECK 10



5.10 Thermistor Check

CHECK 11 Thermistor type of indoor units

<table>
<tr><th rowspan="2">Model</th><th>Suction air thermistor</th><th>Indoor heat exchanger (liquid) thermistor</th><th>Indoor heat exchanger (gas) thermistor</th><th>Discharge air thermistor</th></tr>
<tr><th>R1T</th><th>R2T</th><th>R3T</th><th>R4T</th></tr>
<tr><td>FCQ-TA</td><td>Type C</td><td rowspan="6">Type A</td><td rowspan="5">Type J</td><td>–</td></tr>
<tr><td>FHQ-P</td><td rowspan="4">Type B</td><td>–</td></tr>
<tr><td>FHQ-M</td><td>–</td></tr>
<tr><td>FAQ-TA</td><td>–</td></tr>
<tr><td>FBQ-P</td><td>Type J</td></tr>
<tr><td>FTQ-TA</td><td>–</td><td>Type A</td><td>–</td></tr>
</table>

Thermistor type of outdoor units

Model	Thermistor		Type
RZR18/24TAVJU RZQ18/24TAVJU	R1T	Outdoor air	E
	R2T	Discharge pipe	G
	R3T	Suction pipe 1	A
	R4T	Heat exchanger deicer	A
	R5T	Suction pipe 2	A
	R7T	Liquid pipe	A
	R10T	Radiation fin	K
RZR30/36/42/48TAVJU RZQ30/36/42/48TAVJU	R1T	Outdoor air	E
	R2T	Discharge pipe	G
	R3T	Suction pipe 1	A
	R4T	Heat exchanger deicer	A
	R5T	Suction pipe 2	A
	R6T	Subcooling heat exchanger gas pipe	A
	R7T	Liquid pipe	A
	FINTH	Radiation fin	F

Thermistor temperature		Resistance (kΩ)			
(°C)	(°F)	Type A	Type B	Type C	Type E
–30	–22	363.8	361.7719	–	362.4862
–25	–13	266.8	265.4704	–	265.9943
–20	–4	197.8	196.9198	–	197.3083
–15	5	148.2	147.5687	–	147.8597
–10	14	112.0	111.6578	111.8	111.8780
–5	23	85.52	85.2610	85.42	85.4291
0	32	65.84	65.6705	65.80	65.8000
5	41	51.05	50.9947	51.07	51.0954
10	50	39.91	39.9149	39.97	39.9938
15	59	31.44	31.4796	31.51	31.5417
20	68	24.95	25.0060	25.02	25.0554
25	77	19.94	20.0000	20.00	20.0395
30	86	16.04	16.1008	16.10	16.1326
35	95	12.99	13.0426	13.04	13.0683
40	104	10.58	10.6281	10.63	10.6490
45	113	8.669	8.7097	8.711	8.7269
50	122	7.143	7.1764	7.179	7.1905
55	131	5.918	5.9407	–	5.9524
60	140	4.928	4.9439	–	4.9536
65	149	4.123	4.1352	–	4.1434
70	158	3.467	3.4757	–	3.4825
75	167	–	2.9349	–	2.9407
80	176	–	2.4894	–	2.4943
85	185	–	2.1205	–	2.1247
90	194	–	1.8138	–	1.8173
95	203	–	1.5575	–	1.5605
100	212	1.339	1.3425	–	1.3451
105	221	–	1.1614	–	1.1636
Drawing No.		3SA48002 3SA48004 3SA48018 3SA48019 (AD94A045)	3SA48001 (AD87A001)	3SA48016 (AD100008)	3PA50504 (AD87A001)

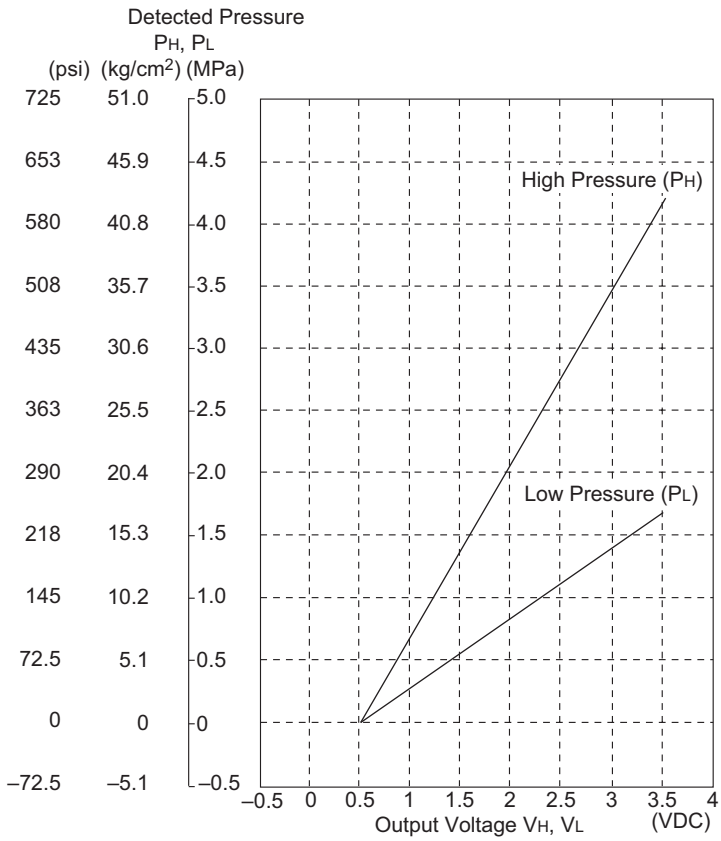
∗The data is for reference purpose only.

Thermistor temperature		Resistance (kΩ)			
(°C)	(°F)	Type F	Type G	Type J	Type K
–30	–22	354.1	4759	359.8518	350.6
–25	–13	259.7	3454	265.0699	257.4
–20	–4	192.6	2534	197.1476	191.0
–15	5	144.2	1877	147.7348	143.2
–10	14	109.1	1404	111.7984	108.4
–5	23	83.25	1059	85.3927	82.83
0	32	64.10	806.5	65.8000	63.80
5	41	49.70	618.9	51.1273	49.53
10	50	38.85	478.8	40.0423	38.75
15	59	30.61	373.1	31.5974	30.56
20	68	24.29	292.9	25.1125	24.26
25	77	19.41	231.4	20.0949	19.40
30	86	15.61	184.1	16.1860	15.62
35	95	12.64	147.4	13.1222	12.65
40	104	10.30	118.7	10.7042	10.31
45	113	8.439	96.13	8.7834	8.447
50	122	6.954	78.29	7.2479	6.962
55	131	5.761	64.10	6.0131	5.769
60	140	4.797	52.76	5.0144	4.805
65	149	4.014	43.63	4.2021	4.021
70	158	3.375	36.26	3.5381	3.381
75	167	2.851	30.27	2.9925	2.856
80	176	2.418	25.38	2.5420	2.422
85	185	2.060	21.37	2.1671	2.063
90	194	1.762	18.06	1.8554	1.764
95	203	1.513	15.33	1.5949	1.515
100	212	1.304	13.06	1.3764	1.305
105	221	1.128	11.17	1.1923	1.128
110	230	0.9790	9.585	1.0365	0.9781
115	239	0.8527	8.254	0.9042	0.8506
120	248	0.7450	7.131	0.7914	0.7420
125	257	0.6530	6.181	0.6950	0.6495
130	266	0.5741	5.374	0.6121	0.5700
135	275	–	4.686	0.5408	–
140	284	–	4.098	0.4791	–
145	293	–	3.594	0.4257	–
150	302	–	3.161	0.3792	–
Drawing No.		3PA61998 (AD92A057)	3SA48009 (AD970175)	3SA48005 (AD87A001)	3P204139-3 (AD070077)

∗The data is for reference purpose only.

5.11 Pressure Sensor Check

CHECK 12



$$P_H\ (\text{MPa}) = \frac{4.15}{3.0} \times V_H - \frac{4.15}{3.0} \times 0.5$$

$$P_L\ (\text{MPa}) = \frac{1.7}{3.0} \times V_L - \frac{1.7}{3.0} \times 0.5$$

1 MPa = 145 psi

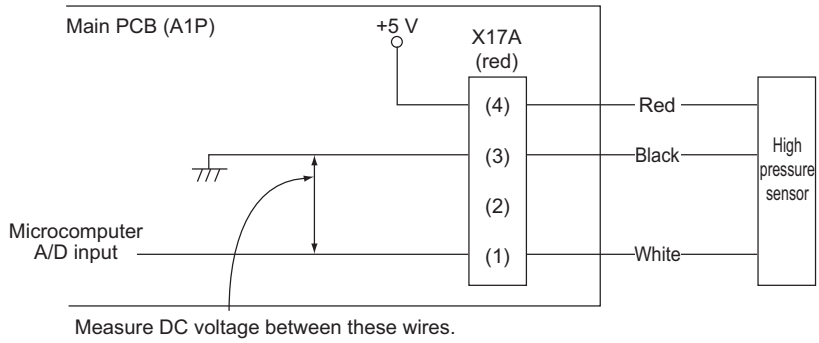
P_H : High pressure (MPa)

P_L : Low pressure (MPa)

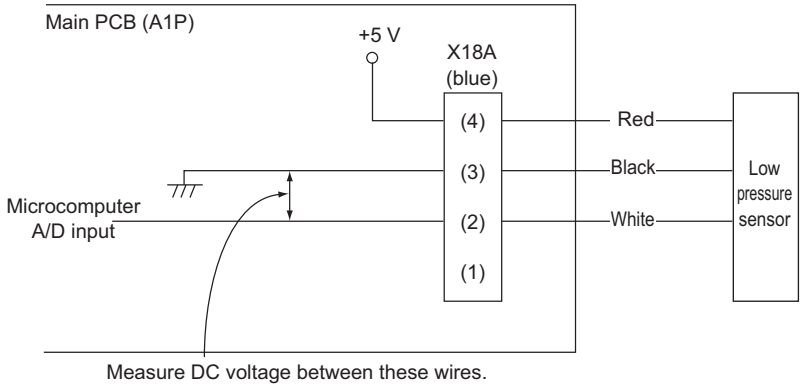
V_H : Output Voltage (High Side) (VDC)

V_L : Output Voltage (Low Side) (VDC)

Voltage Measurement Point of the High Pressure Sensor



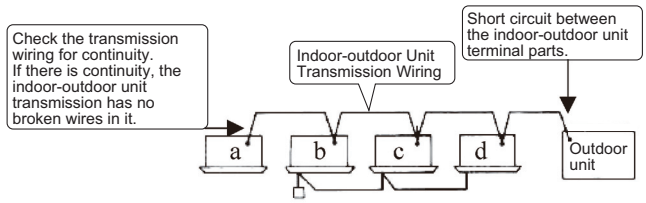
Voltage Measurement Point of the Low Pressure Sensor



5.12 Broken Wire Check of the Relay Wires

CHECK 15

Procedure for checking indoor-outdoor unit transmission wiring for broken wires (for checking the indoor-outdoor unit transmission wiring of the outdoor unit for broken wires).
Turn OFF the power supply to all equipment, short circuit between the indoor-outdoor unit terminal F1 and F2 in the outdoor unit, and then conduct continuity checks between the transmission wirings F1 and F2 of the "Indoor Unit a" that is farthest from the outdoor unit using a multimeter. If there is continuity between the said transmission wirings, the indoor-outdoor unit transmission wiring has no broken wires in it.
If there is no continuity, the transmission wiring may have broken wires. With the indoor-outdoor unit terminal of the outdoor unit short circuited, identify the place with continuity in the transmission wiring of the "Indoor Unit b", transmission wiring of the "Indoor Unit c", and transmission wiring of the "Indoor Unit d" in the order described.
If the place with continuity can be identified, there may be broken wires in places before the said place with continuity.

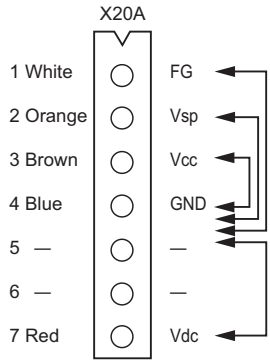


5.13 Fan Motor Connector Check

CHECK 16

FCQ-TA, FAQ-TA

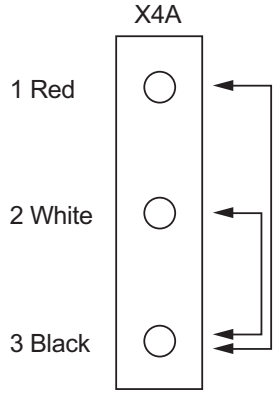
Resistance measuring points and judgment criteria.



Measuring points	Judgment criteria
1 - 4	1 Ω
2 - 4	
3 - 4	
7 - 4	

FHQ-P, FHQ-M

Resistance measuring points and judgment criteria.

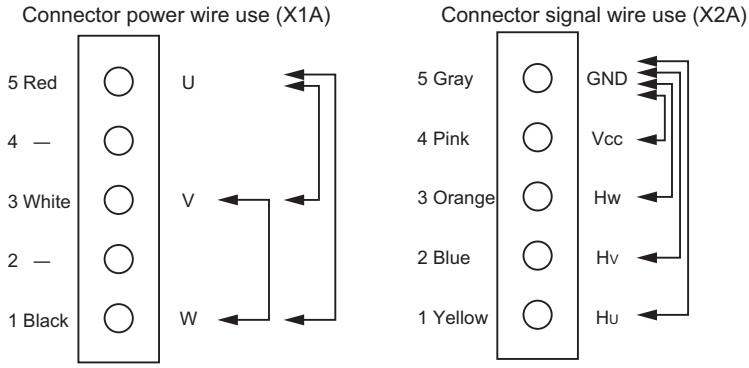


Measuring points	Judgment criteria
1 - 3	53.5 Ω ± 10%
2 - 3	31.6 Ω ± 10%

FBQ-P

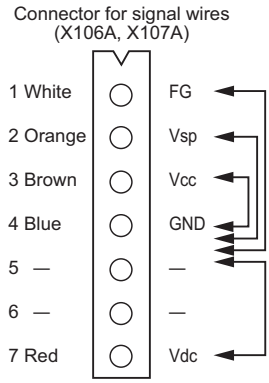
(1) Measurement of power wire connector.
Remove the X1A connector from the fan PCB (A2P) and measure the resistance between the U and V, V and W, and W and U phases of the motor connector (with five conductors) and check that each phase are balanced (within a permissible dispersion range of ±20%).

(2) Measurement of signal wire connector.
Remove the X2A connector and measure the resistance between GND and Vcc, Hw, Hv, or Hu terminals of the motor connector (with five conductors).



Outdoor Unit

(1) Turn OFF the power supply.
(2) Remove the connector (X106A, X107A) on the PCB to measure the resistance value.
Judgment criteria: resistance value between each phase is within ±20%

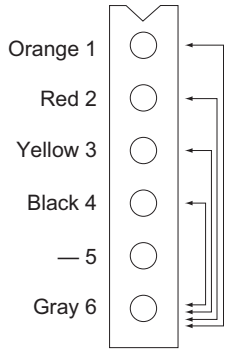


5.14 Electronic Expansion Valve Coil Check

CHECK 18

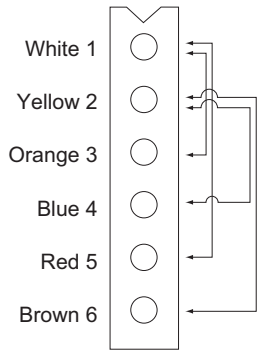
Measure the connector pin-to-pin resistance and make sure that the resistance value is within the range listed in the table below.

FCQ-TA, FTQ-TA



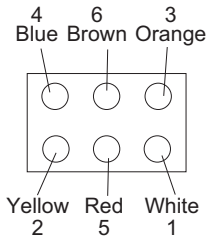
Measuring points	Judgment criteria
1 - 6	35-55 Ω
2 - 6	
3 - 6	
4 - 6	

FBQ-P, FAQ-TA



Measuring points	Judgment criteria
1 - 3	300 Ω
1 - 5	150 Ω
2 - 4	300 Ω
2 - 6	150 Ω

FHQ-P, FHQ-M

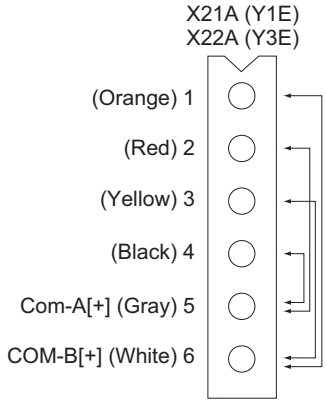


Measuring points	Judgment criteria
1 - 3	300 Ω
1 - 5	150 Ω
2 - 4	300 Ω
2 - 6	150 Ω

RZR18/24TAVJU
RZQ18/24TAVJU

Measuring points	Judgment criteria
1 - 6	35-55 Ω
2 - 6	
3 - 6	
4 - 6	

RZR30/36/42/48TAVJU
RZQ30/36/42/48TAVJU



Measuring points	Judgment criteria
1 - 6	35-55 Ω
2 - 5	
3 - 6	
4 - 5	

5.15 Fan Motor Connector Check for FTQ-TA

CHECK 19

CHECKING EMERSON ULTRATECH™ ECM MOTORS

The FTQ-TA models utilize an Emerson, 4-wire variable speed ECM blower motor. The ECM blower motor provides constant CFM.

The motor is a serially communicating variable speed motor. Only four wires are required to control the motor: +Vdc, Common, Receive, and Transmit.

The +Vdc and Common wires provide power to the motor's low voltage control circuits.

General Checks / Considerations

1. Check power supply to the air handler or modular blower. Ensure power supply is within the range specified on rating plate.
2. Check motor power harness. Ensure wires are continuous and make good contact when seated in the connectors. Repair or replace as needed.
3. Check motor control harness. Ensure wires are continuous and make good contact when seated in the connectors. Repair or replace as needed.
4. Check blower wheel. Confirm wheel is properly seated on motor shaft. Set screw must be on shaft flat and torqued to 165 in-lbs minimum. Confirm wheel has no broken or loose blades. Repair or replace as needed.
5. Ensure motor and wheel turn freely. Check for interference between wheel and housing or wheel and motor. Repair or replace as needed.
6. Check housing for cracks and/or corrosion. Repair or replace as needed.
7. Check motor mounting bracket. Ensure mounting bracket is tightly secured to the housing. Ensure bracket is not cracked or broken.

Emerson UltraCheck-EZ™ Diagnostic Tool

The Emerson UltraCheck-EZ™ diagnostic tool may be used to diagnose the ECM motor.

Warning

HIGH VOLTAGE!

Disconnect ALL power before servicing or installing. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.

To use the diagnostic tool, perform the following steps:

1. Disconnect power to the air handler.
2. Disconnect the 4-circuit control harness from the motor.
3. Plug the 4-circuit connector from the diagnostic tool into the motor control connector.
4. Connect one alligator clip from the diagnostic tool to a ground source.
5. Connect the other alligator clip to a 24VAC source.
   NOTE: The alligator clips are NOT polarized.
   NOTE: The UltraCheck-EZ™ diagnostic tool is equipped with a nonreplaceable fuse. Connecting the tool to a source other than 24VAC could damage the tool and cause the fuse to open. Doing so will render the diagnostic tool inoperable.
6. Turn on power to air handler or modular blower.

Warning

Line Voltage now present.

7. Depress the orange power button on the diagnostic tool to send a run signal to the motor. Allow up to 5 seconds for the motor to start.

NOTE: If the orange power button does not illuminate when depressed, the tool either has an open fuse or is not properly connected to a 24VAC source.

8. The green LED on the diagnostic tool will blink indicating communications between the tool and motor. See table below for indications of tool indicators and motor actions. Replace or repair as needed.

Power Button	Green LED	Motor Action	Indication(s)
OFF	OFF	Not Rotating	Confirm 24VAC to UltraCheck-EZ™ tool. If 24VAC is confirmed, diagnostic tool is inoperable.
ON	Blinking	Rotating	Motor and control/end bell are functioning properly.
ON	OFF	Rotating	Replace motor control/end bell.
ON	Blinking	Not Rotating	Check motor (refer to Motor Checks on page 283).
ON	OFF	Not Rotating	Replace motor control/end bell; verify motor (refer to Motor Checks on page 283).

9. Depress the orange power button to turn off motor.
10. Disconnect power. Disconnect diagnostic tool.
11. Reconnect the 4-wire harness from control board to motor.

Electrical Checks - High Voltage Power Circuits

Warning

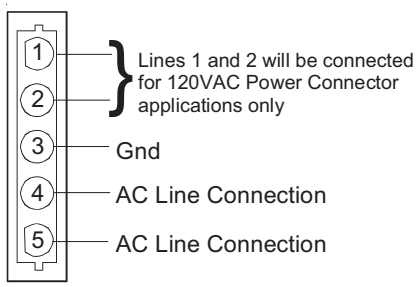
HIGH VOLTAGE!
Disconnect ALL power before servicing or installing. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.

1. Disconnect power to air handler or modular blower.
2. Disconnect the 5-circuit power connector to the ECM motor.
3. Turn on power to air handler or modular.

Warning

Line Voltage now present.

4. Measure voltage between pins 4 and 5 on the 5-circuit connector. Measured voltage should be the same as the supply voltage to the air handler or modular.



5. Measure voltage between pins 4 and 3. Voltage should be approximately half of the voltage measured in step 4.
6. Measure voltage between pins 5 and 3. Voltage should be approximately half of the voltage measured in step 4.
7. If no voltage is present, check supply voltage to air handler or modular blower.
8. Disconnect power to air handler or modular blower. Reconnect the 5-circuit power harness disconnected in step 2.

Electrical Checks - Low Voltage Control Circuits

1. Turn on power to air handler or modular.

Warning

Line Voltage now present.

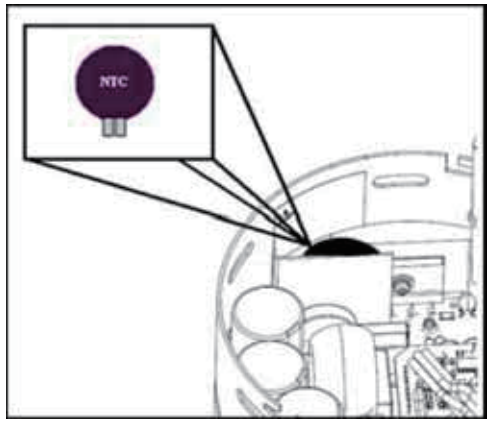
2. Check voltage between pins on the 4-wire motor control harness between the motor and control board.
3. Voltage on pins should read:
Pins 1 to 4 = 3.3vdc
Pins 1 to 2 = 3.3vdc
Pins 3 to 4 = 15vdc

Motor Control/End Bell Checks

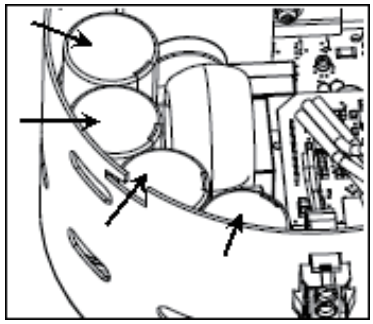
Warning

HIGH VOLTAGE!
Disconnect ALL power before servicing or installing. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.

1. Disconnect power to air handler or modular blower.
   NOTE: Motor contains capacitors that can hold a charge for several minutes after disconnecting power. Wait 5 minutes after removing power to allow capacitors to discharge.
2. Disconnect the motor control harness and motor power harness.
3. Remove the blower assembly from the air handler or modular blower.
4. Remove the (3) screws securing the control/end bell to the motor. Separate the control/end bell. Disconnect the 3-circuit harness from the control/end bell to remove the control/end bell from the motor.
5. Inspect the NTC thermistor inside the control/end bell. Replace control/end bell if thermistor is cracked or broken.



6. Inspect the large capacitors inside the control/end bell. Replace the control/end bell if any of the capacitors are bulging or swollen.



7. Locate the 3-circuit connector in the control/end bell. Using an ohmmeter, check the resistance between each terminal in the connector. If the resistance is 100 Ω or greater, the control/end bell is functioning properly. Replace the control/end bell if the resistance is lower than 100 Ω.
8. Reassemble motor and control/end bell in reverse of disassembly. Replace blower assembly into air handler or modular blower.

Motor Checks

Warning

HIGH VOLTAGE!
Disconnect ALL power before servicing or installing. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.

1. Disconnect power to air handler or modular blower.
   NOTE: Motor contains capacitors that can hold a charge for several minutes after disconnecting power. Wait 5 minutes after removing power to allow capacitors to discharge.
2. Disassemble motor as described in steps 2 through 4 above.
3. Locate the 3-circuit harness from the motor. Using an ohmmeter, measure the resistance between each motor phase winding. The resistance levels should be equal. Replace the motor if the resistance levels are unequal, open circuited or short circuited.
4. Measure the resistance between each motor phase winding and the motor shell. Replace the motor if any phase winding is short circuited to the motor shell.
5. Reassemble motor and control/end bell in reverse of disassembly. Replace blower assembly into air handler or modular blower.

Part 7
Appendix

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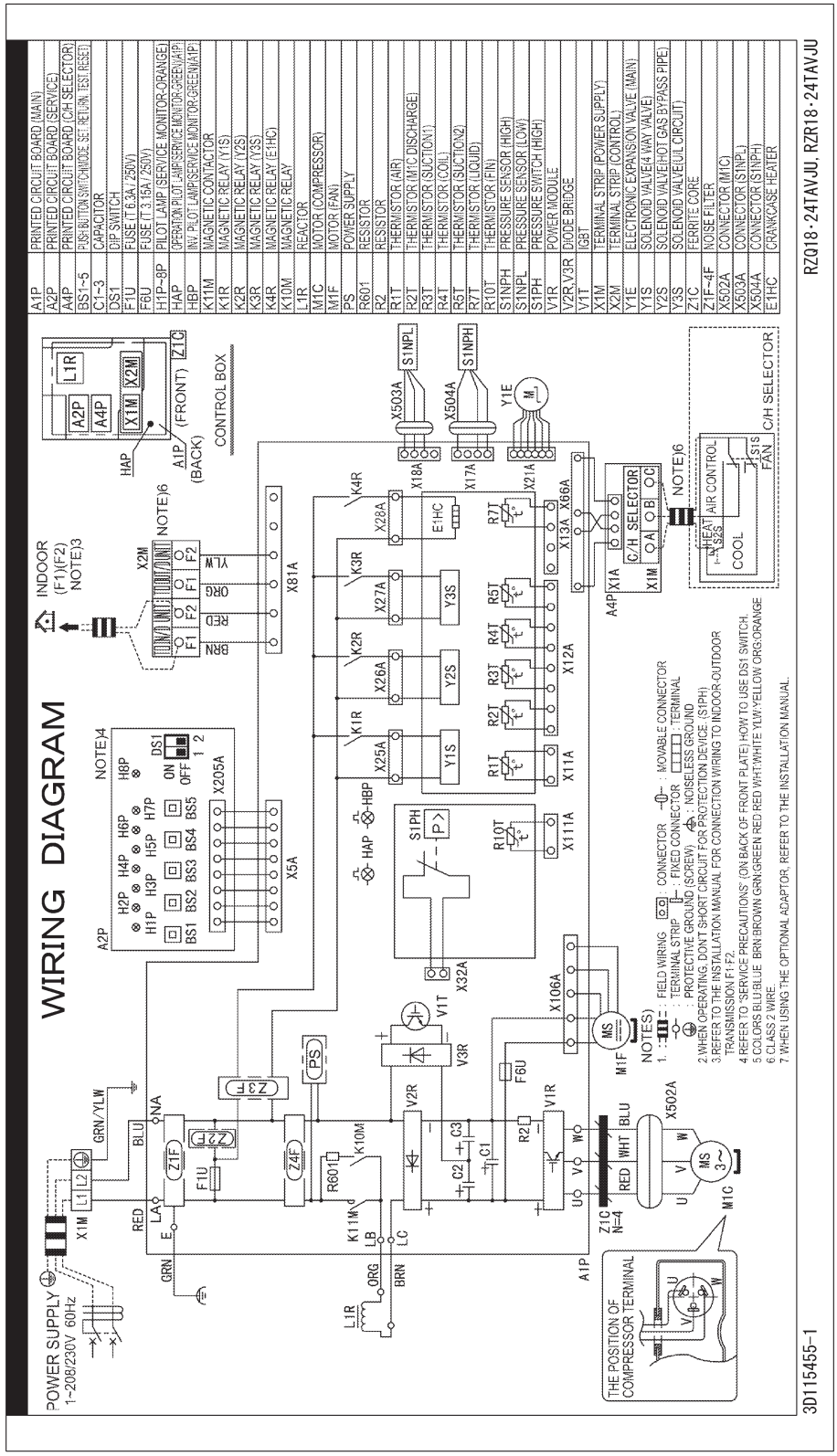
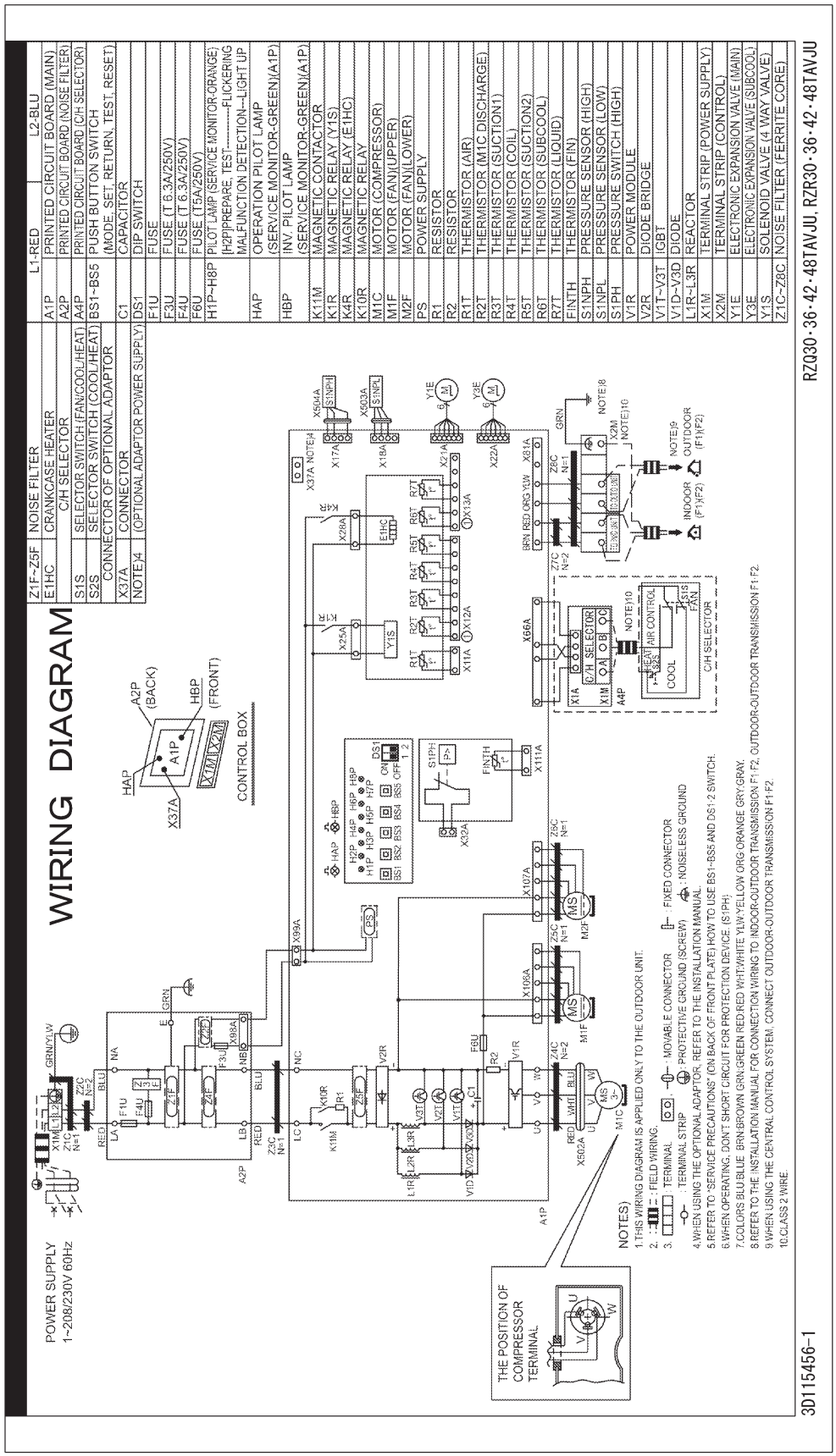
1. Wiring Diagrams

1.1 Outdoor Unit

RZR18/24TAVJU, RZQ18/24TAVJU

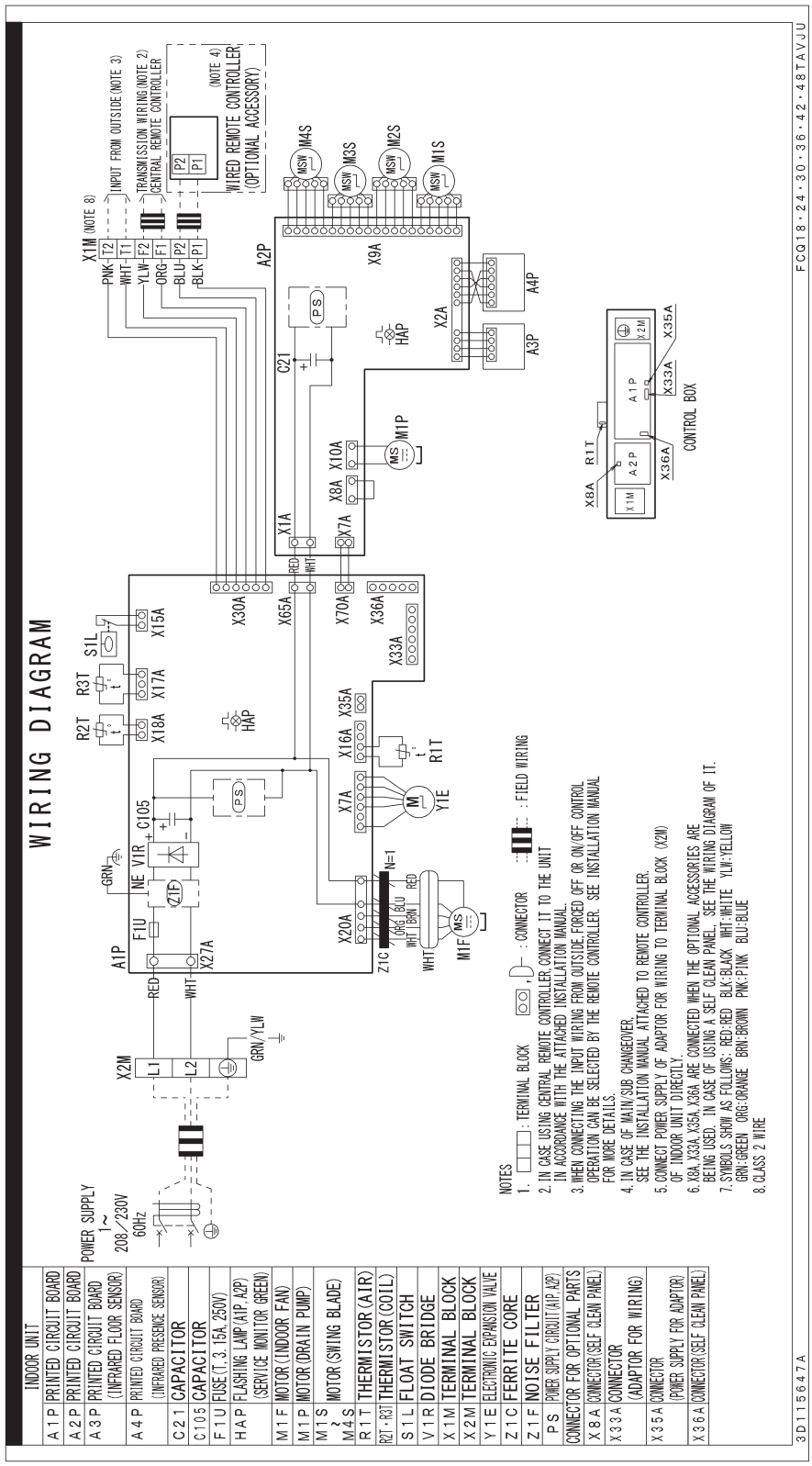


RZR30/36/42/48TAVJU, RZQ30/36/42/48TAVJU



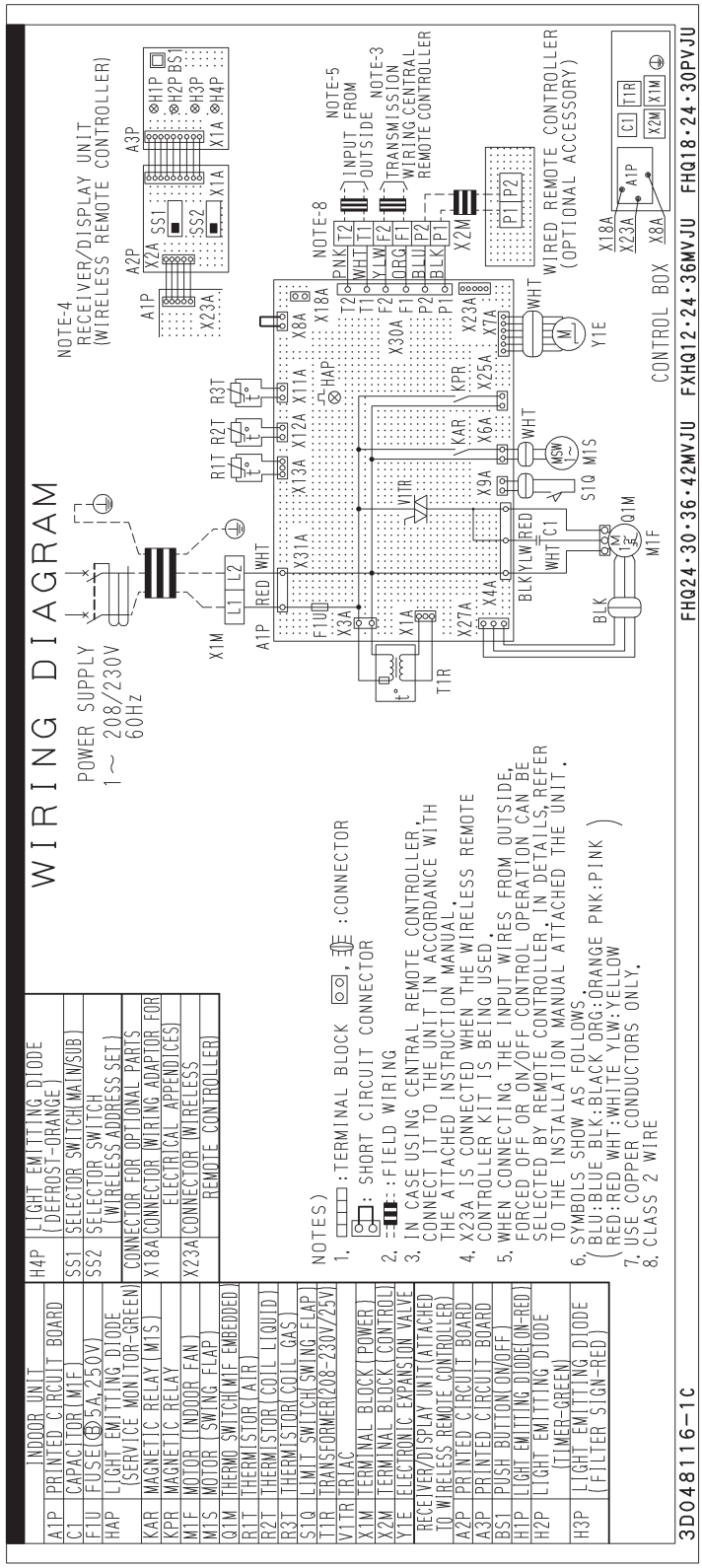
1.2 Indoor Unit

FCQ18/24/30/36/42/48TAVJU

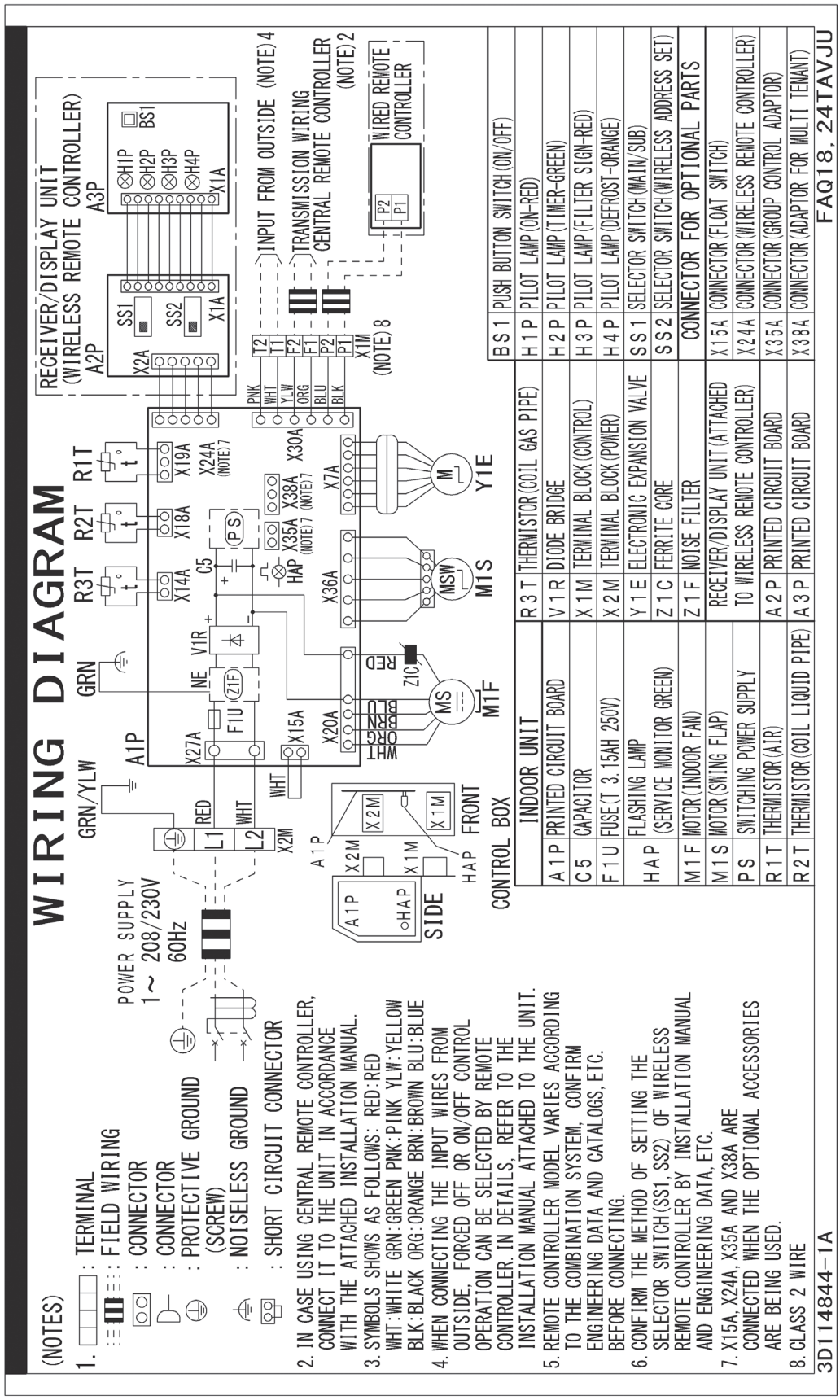


3D115647A

FHQ18/24/30PVJU, FHQ36/42MVJU

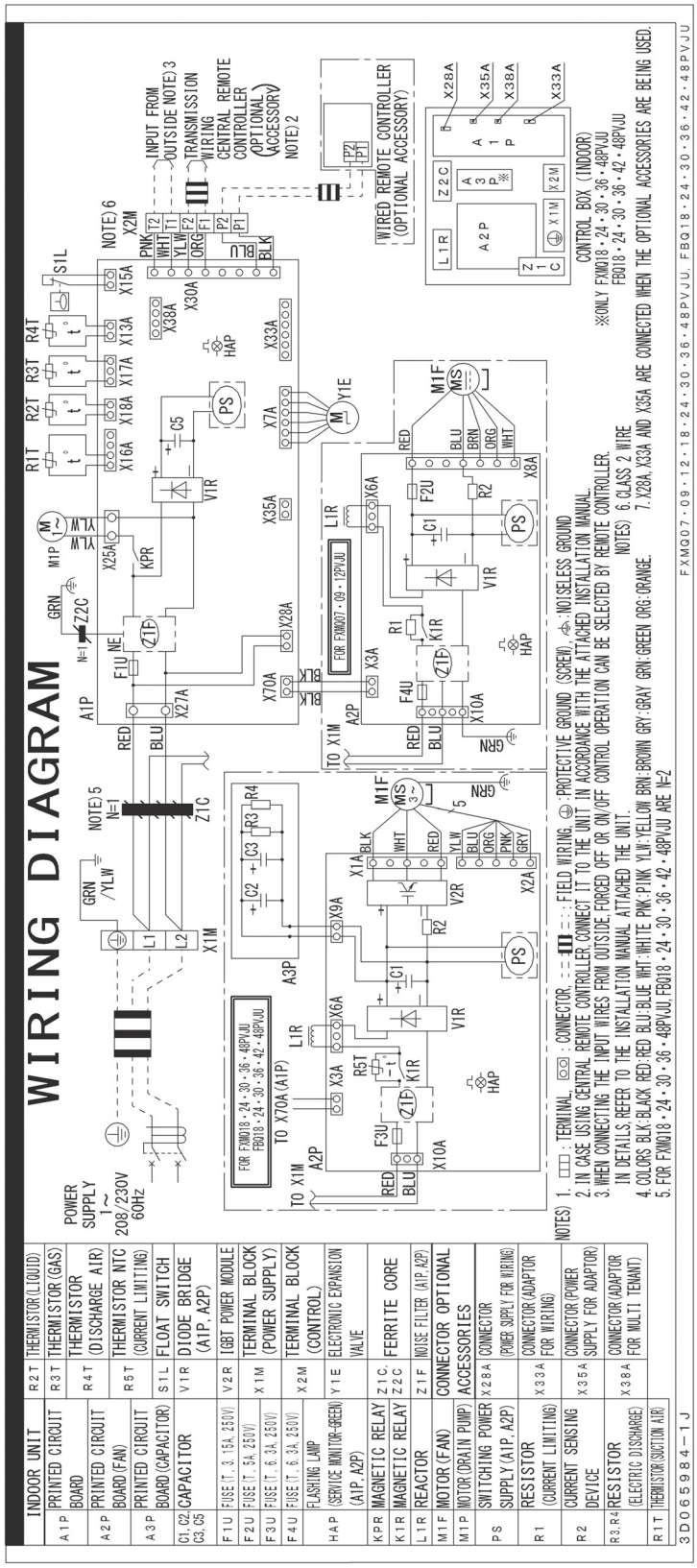


FAQ18/24TAVJU

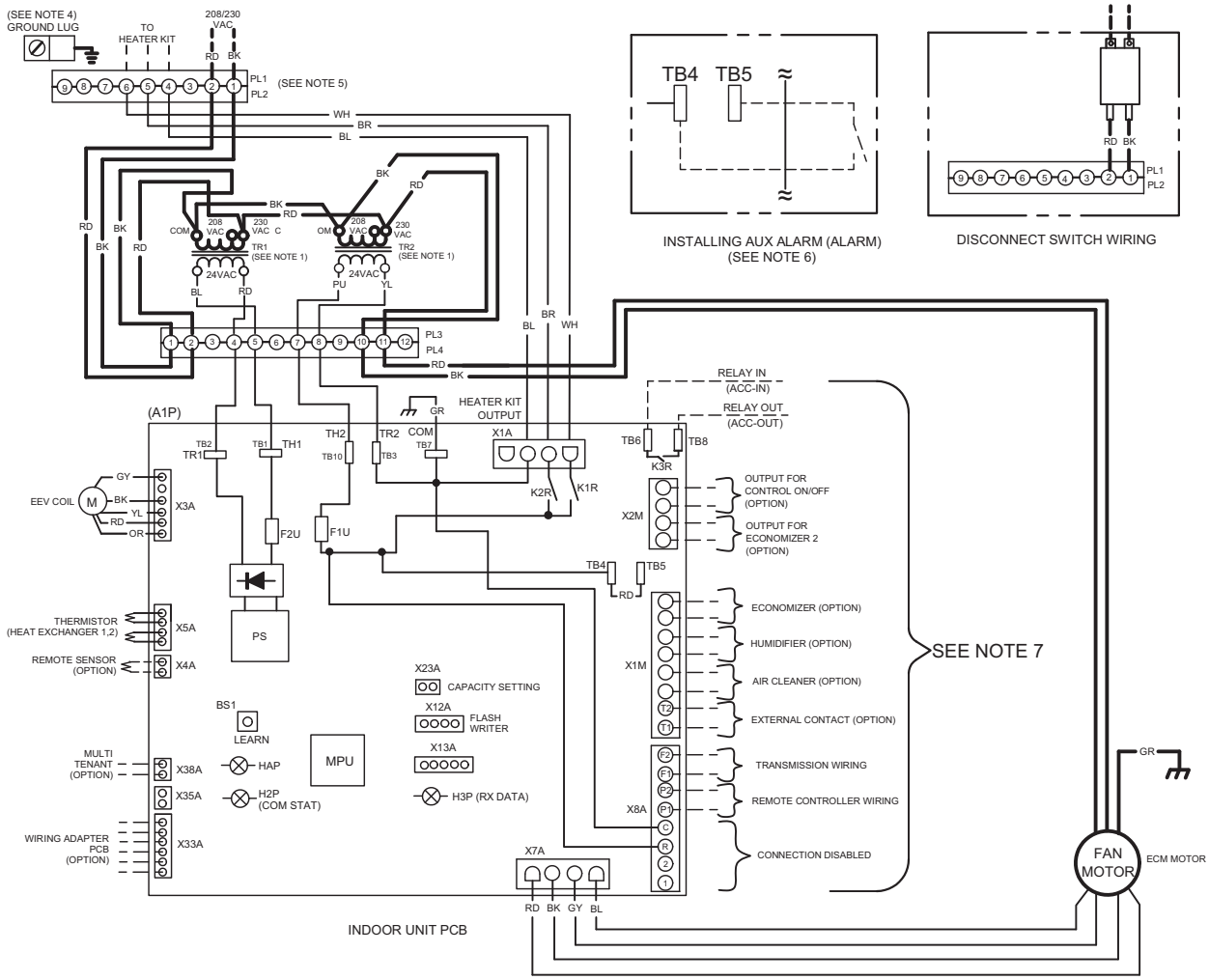


3D114844B

FBQ18/24/30/36/42/48PVJU



FTQ18/24/30/36/42/48TAVJUD, FTQ18/24/30/36/42/48TAVJUA



NOTES:
1. PLACE RED WIRES ON 208 V TERMINAL OF 2-TRANSFORMER (TR1/TR2) FOR 208 VAC OPERATION.
2. MANUFACTURER'S SPECIFIED REPLACEMENT PARTS MUST BE USED WHEN SERVICING.
3. IF ANY OF THE ORIGINAL WIRES AS SUPPLIED WITH THIS UNIT MUST BE REPLACED, IT MUST BE REPLACED WITH WIRING MATERIAL HAVING A TEMPERATURE RATING OF AT LEAST 105˚C. USE COPPER CONDUCTORS ONLY.
4. UNIT MUST BE PERMANENTLY GROUNDED AND CONFIRM TO N.E.C AND LOCAL CODES.
5. DISCARD CONNECTOR PL1 WHEN INSTALLING OPTIONAL HEAT KIT.
6. REMOVE SHORT RED CIRCUITING WIRE AND PUT AUX ALARM SWITCH WHEN INSTALLING AUX ALARM SWITCH.
7. USE N.E.C CLASS 2 WIRE.

INTEGRATED CONTROL:
- LOW VOLTAGE
- LOW VOLTAGE FIELD
- HIGH VOLTAGE
- HIGH VOLTAGE FIELD
- JUNCTION
- TERMINAL
- PLUG CONNECTION
- EQUIPMENT GND
- FIELD GROUND

COLOR CODES:
- BL - BLUE
- RD - RED
- YL - YELLOW
- OR - ORANGE
- BK - BLACK
- GY - GREY
- BR - BROWN
- GR - GREEN
- WH - WHITE
- PU - PURPLE

COMPONENT CODES:
- PL1, PL2 — POWER/HEATER KIT/ DISCONNECT SWITCH CONNECTOR
- TR1, TR2 — TRANSFORMER
- F1U, F2U — FUSE LINK
- PL3, PL4 — TRANSFORMER CONNECTOR

C: 0140A00500A

Warning

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

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

Cautions on product corrosion

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

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