

R-410A

Service Manual

Inverter Pair Ceiling Mounted Cassette Type FFQ-Q Series









[Applied Models]

● Inverter Pair : Heat Pump

Inverter Pair Ceiling Mounted Cassette Type FFQ-Q Series

Heat Pump

Indoor Unit FFQ09Q2VJU FFQ12Q2VJU FFQ15Q2VJU FFQ18Q2VJU

Outdoor Unit RX09QMVJU RX12QMVJU RX15QMVJU RX18QMVJU

RX09RMVJU RX09RMVJU9 RX12RMVJU9 RX12RMVJU9 RX15RMVJU RX15RMVJUA RX18RMVJU9 RX18RMVJU9 RX18RMVJU9A

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Safety Cautions SiUS091628EC

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 \(\bigvee \) Warning and \(\bigvee \) Caution. The \(\bigvee \) Warning items are especially important since death or serious injury can result if they are not followed closely. The \(\bigvee \) 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

- riangle 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

<u> </u>	
Do not store equipment in a room with fire sources (e.g., naked flames, gas appliances, electric heaters).	\bigcirc
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.	9.5
If refrigerant gas is discharged during repair work, do not touch the discharged refrigerant gas. Refrigerant gas may cause frostbite.	\bigcirc
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.	0
If refrigerant gas leaks during repair work, ventilate the area. Refrigerant gas may generate toxic gases when it contacts flames.	0

SiUS091628EC Safety Cautions

<u> </u>	
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.	A
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.	\Diamond
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.	\Diamond
In case of R-32 / R-410A refrigerant models, be sure to use pipes, flare nuts and tools intended for the exclusive use with the R-32 / R-410A refrigerant. The use of materials for R-22 refrigerant models may cause a serious accident, such as a damage of refrigerant cycle or equipment failure.	
Do not mix air or gas other than the specified refrigerant (R-32 / R-410A / R-22) in the refrigerant system. If air enters the refrigerant system, an excessively high pressure results, causing equipment damage and injury.	

<u> </u>	
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.	8-5

Safety Cautions SiUS091628EC

(Caution	
Be sure to conduct repair work with appropriate tools. The use of inappropriate tools may cause injury.	0
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.	0
Conduct welding work in a well-ventilated place. Using a welder in an enclosed room may cause oxygen deficiency.	0

1.2 Warnings and Cautions Regarding Safety of Users

<u> </u>	
Do not store the equipment in a room with fire sources (e.g., naked flames, gas appliances, electric heaters).	\bigcirc
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.	0
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.	0
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.	\bigcirc
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.	0

SiUS091628EC Safety Cautions

/ Warning	
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.	0
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.	0
Do not damage or modify the power cable. Damaged or modified power cables may cause an electrical shock or fire. Placing heavy items on the power cable, or heating or pulling the power cable may damage it.	
Do not mix air or gas other than the specified refrigerant (R-32 / R-410A / R-22) in the refrigerant system. If air enters the refrigerant system, an excessively high pressure results, causing equipment damage and injury.	
If the refrigerant gas leaks, be sure to locate the leaking point and repair it before charging the refrigerant. After charging the refrigerant, make sure that there is no leak. If the leaking point cannot be located and the repair work must be stopped, be sure to pump-down, and close the service valve, to prevent refrigerant gas from leaking into the room. Refrigerant gas itself is harmless, but it may generate toxic gases when it contacts flames, such as those from fan type and other heaters, stoves and ranges.	0
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.	0
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.	0
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.	0

Safety Cautions SiUS091628EC

(I) Caution	
Installation of a leakage breaker is necessary in some cases depending on the conditions of the installation site, to prevent electrical shocks.	0
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.	\bigcirc
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.	0
Check the earth / grounding, and repair it if the equipment is not properly earthed / grounded. Improper earth / grounding may cause an electrical shock.	
Be sure to measure insulation resistance after the repair, and make sure that the resistance is 1 M Ω or higher. Faulty insulation may cause an electrical shock.	0
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.	0
Do not tilt the unit when removing it. The water inside the unit may spill and wet the furniture and floor.	

SiUS091628EC Icons Used

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

Part 1 List of Functions

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Functions	٠,
1.0000000	_

1 List of Functions

SiUS091628EC **Functions**

1. Functions

Category	Functions	FFQ09/12/15/18Q2VJL RX09/12/15/18QMVJU with BYFQ60B3W1	FFQ09/12/15/18Q2VJU RX09/12/15/18QMVJU with BYFQ60C2W1W(S)	Category	Functions	FFQ09/12/15/18Q2VJU RX09/12/15/18QMVJU with BYFQ60B3W1	FFQ09/12/15/18Q2VJU RX09/12/15/18QMVJU with BYFQ60C2W1W(S
Functions	Inverter (with inverter power control)	•	•	Health & Cleanliness	Auto cleaning filter	_	_
Functions	Operation limit for cooling		er to	Cleariniess	Air-purifying filter	_	_
Ļ	Operation limit for heating	Ρ.	142		Titanium apatite deodorizing filter		_
_	PAM control	•	•		Longlife filter (option)	•	•
	Standby electricity saving	_	_		Air filter	_	_
Compressor	Oval scroll compressor		_		Filter cleaning indicator	•	•
Ļ	Swing compressor	•	•		Wipe-clean flat panel		_
Ļ	Rotary compressor		_		Washable grille	•	•
	Reluctance DC motor	•	•		MOLD PROOF operation	_	_
Comfortable Airflow	Power-airflow flap (horizontal blade)		_		Good-sleep cooling operation		_
	Power-airflow dual flaps	l _	_	Timer	Schedule TIMER operation	●★1	●★1
Ļ	(horizontal blade)				72-hour ON/OFF TIMER	●★2	●★2
	Power-airflow diffuser		_		NIGHT SET mode	_	_
-	Wide-angle louvers (vertical blades)		_		Off Timer (turns unit off after set time)	●★1	●★1
F	Auto-swing (up and down)	•	•	Worry Free (Reliability &	Auto-restart (after power failure)	•	•
	Auto-swing (right and left)		_	Durability)	Self-diagnosis (R/C, LED)	•	•
-	Individual flap control		●★1		Wiring error check function		_
-	3-D airflow COMFORT AIRFLOW operation	<u> </u>	_	•	Anti-corrosion treatment of outdoor heat exchanger	•	•
Comfort Control	Switchable fan speed	(3 steps)	(3 steps)	Flexibility	Multi-split/split type compatible indoor unit	•	•
	Auto fan speed	●★1	●★1		H/P, C/O compatible indoor unit	_	_
	Indoor unit quiet operation	_	_		Flexible power supply correspondence	_	_
	NIGHT QUIET mode (automatic)	_	_		Chargeless	32.8 ft	32.8 ft
	OUTDOOR UNIT QUIET operation (manual)	_	_		Either side drain (right or left)	(10 m) —	(10 m) —
Ī	Presence and floor sensor (option)	_	●★1		Drain pump	•	•
Ī	Hot-start function	•	•		Power selection	_	_
Ī	Draft prevention with sensor	•	•		Low outdoor temperature cooling		- 10
Ī	Automatic defrosting		•		operation (-20°C) (-4°F)	•★3	● ★3
Operation	Program dry function	•	•		°F/°C changeover R/C temperature		- 1 1
	Fan only	•	•		display (factory setting: °F)	●★1	●★1
	Setback function	●★1	●★1	Remote	Remote control adaptor		
	POWERFUL operation (non-inverter)	<u> </u>	_	Control	(normal open pulse contact) (option)	_	_
Convenience	POWERFUL operation (inverter)	T —	_		Remote control adaptor		
ļ	Priority-room setting		_		(normal open contact) (option)	-	-
Ţ	COOL/HEAT mode lock	_	_		DIII-NET compatible (adaptor) (option)	•	•
	HOME LEAVE operation	_	_	Remote	Wireless (option)	•	•
l I	ECONO operation	<u> </u>	_	Controller	Wired (option)	•	•
-		1		Ì		1	1
	Emergency operation switch	● ★2	●★ 2				
	Emergency operation switch Signal receiving sign	● ★ 2 ● ★ 2 ★ 4	● ★ 2 ● ★ 2 ★ 4				

Note: ●: Available

-: Not available

★1: With wired remote controller

★2: With wireless remote controller
★3: With air direction adjustment grille (option)
★4: Receiving sound only

Functions SiUS091628EC

Comfort Control Auto-saving (up and down)	Category	Functions	FFQ09/12/15/18Q2VJU RX09/12/15/18RMVJU(9)(A) with BYFQ60B3W1	FFQ09/12/15/18Q2VJU RX09/12/15/18RMVJU(9)(A) with BYFQ60C2W1W(S)	Category	Functions	FFQ09/12/15/18Q2VJU RX09/12/15/18RMVJU(9)(A) with BYFQ60B3W1	FFQ09/12/15/18Q2VJU RX09/12/15/18RMVJU(9)(A) with BYFQ60C2W1W(S)
Operation imit for localing P. 142 PAM control Standby electricity saving Oval scroll compressor Rotary compressor Rotary compressor Rotary compressor Rotary compressor Airfow Power-airflow flag (florizontal blade) Airflow Power-airflow dual flaps (horizontal blade) Airflow Power-airflow dual flaps (horizontal blade) Airflow Rote-and local blade) Power-airflow diffuser Rote-and florizontal blade) Airflow Rote-and local blade) Airflow Rote-and local blade) Airflow Rote-and local blade) Airflow Rote-and local blade) Auto-swing (up and down) Auto-swing (inght and left) Individual flap control 3-D airflow COMFORT AIRFLOW operation COMFORT AIRFLOW operation Rotary and local blade (manual) Presence and floor sensor (option) Fan only Setback function Program dry function Fan only Setback function Program dry function Fan only POWERFUL operation (non-inverter) ProwerFul Departation Rote (CONFORT Leave for the function of the		Inverter (with inverter power control)	•	•		Auto cleaning filter	_	_
PAM control	Functions	Operation limit for cooling			Cleanliness	Air-purifying filter	_	_
Standby electricity saving		Operation limit for heating	Р.	142		Titanium apatite deodorizing filter	_	_
Compressor Swing compressor Rotary compressor Rotary compressor Rotary compressor Reluctance DC motor Rower-airflow flap (horizontal blade) Power-airflow dual flaps (horizontal blade) Power-airflow dual flaps (horizontal blade) Rower-airflow dual flaps (horizontal blade) Rower-airflow diffuser Wide-angle louvers (vertical blades) Auto-swing (up and down) Auto-swing (up and down) Auto-swing (inght and left) Individual flap control 3-D airflow COMFORT AIRFLOW operation Control Romer Auto flan speed Auto fla		PAM control	•	•		Longlife filter (option)	•	•
Swing compressor		Standby electricity saving	_	_		Air filter	_	_
Rotary compressor	Compressor	Oval scroll compressor	_	_		Filter cleaning indicator	•	•
Reluctance DC motor		Swing compressor	•	•		Wipe-clean flat panel	_	_
Comfortable		Rotary compressor	_	_		Washable grille	•	•
Airflow Power-airflow dual flaps (horizontal blade)		Reluctance DC motor	•	•		MOLD PROOF operation	_	_
Power-airflow diffuser		Power-airflow flap (horizontal blade)	_	_		Good-sleep cooling operation	_	_
Power-airflow diffuser	Airtiow	Power-airflow dual flaps	<u> </u>		Timer	Schedule TIMER operation	●★1	●★1
Wide-angle louvers (vertical blades)		(horizontal blade)				72-hour ON/OFF TIMER	●★2	●★2
Auto-swing (up and down)		Power-airflow diffuser	_	_			_	_
Auto-swing (right and left)		Wide-angle louvers (vertical blades)	_	_		Off Timer (turns unit off after set time)	●★1	●★1
Individual flap control 3-D airflow COMFORT AIRFLOW operation COMFORT AIRFLOW		Auto-swing (up and down)	•	•		Auto-restart (after power failure)	•	•
Individual hap control 3-D airflow		Auto-swing (right and left)	_	_		Self-diagnosis (R/C, LED)	•	•
Comfort Control Switchable fan speed Auto fan speed Indoor unit quiet operation NIGHT QUIET mode (automatic) OUTDOOR UNIT QUIET operation (manual) Hot-start function Draft prevention with sensor Automatic defrosting Program dry function Fan only Setback function Lifestyle Convenience Convenience POWERFUL operation (inverter) Priority-room setting COOL/HEAT mode lock HOME LEAVE operation switch Example 1 Remote Controller Cont		Individual flap control	_	●★1	Durability)	Wiring error check function	_	_
Control Auto fan speed			<u> </u>				•	•
Indoor unit quiet operation — — — NIGHT QUIET mode (automatic) — — — OUTDOOR UNIT QUIET operation (manual) — — — — Presence and floor sensor (option) — — • *1 Hot-start function — — — Automatic defrosting — — — Automatic defrosting — — — Program dry function — • • • • • • • • • • • • • • • • • •		Switchable fan speed			Flexibility		•	•
NIGHT QUIET mode (automatic)		Auto fan speed	●★1	●★1	•	H/P, C/O compatible indoor unit	_	_
OUTDOOR UNIT QUIET operation (manual) Presence and floor sensor (option) Hot-start function Draft prevention with sensor Automatic defrosting Operation Program dry function Fan only Setback function POWERFUL operation (inverter) POWERFUL operation (inverter) Priority-room setting COOL/HEAT mode lock HOME LEAVE operation Econvo operation Emergency operation switch Signal receiving sign Outdoor sensor (option) - ** - ** - ** ** ** ** **		Indoor unit quiet operation	_	_	•	Flexible power supply correspondence	_	_
Convenience		, ,	-	_		Chargeless		32.8 ft (10 m)
Hot-start function Draft prevention with sensor Automatic defrosting Program dry function Fan only Setback function POWERFUL operation (non-inverter) Priority-room setting COOL/HEAT mode lock HOME LEAVE operation ECONO operation ECONO operation ECONO operation ECONO operation Emergency operation switch Signal receiving sign Power selection Low outdoor temperature cooling operation (-20°C) (-4°F) New outdoor temperature display (factory setting: °F) Nemote Control adaptor (normal open pulse contact) (option) Nemote Control adaptor (normal open conta			_	_		Either side drain (right or left)	_	_
Draft prevention with sensor Automatic defrosting Program dry function Fan only Setback function POWERFUL operation (inverter) Priority-room setting COOL/HEAT mode lock HOME LEAVE operation ECONO operation ECONO operation ECONO operation Emergency operation switch Draft prevention with sensor Automatic defrosting Program dry function Program dry factory setting: Program dry function Program dry function Pro		Presence and floor sensor (option)	_	●★1		Drain pump	•	•
Automatic defrosting Program dry function Fan only Setback function POWERFUL operation (inverter) Priority-room setting COOL/HEAT mode lock HOME LEAVE operation ECONO operation ECONO operation ECONO operation ECONO operation Emergency operation switch Signal receiving sign Automatic defrosting Program dry function **3 ** ** ** ** ** ** ** **		Hot-start function	•	•		Power selection	_	_
Automatic defrosting Operation Program dry function Fan only Setback function POWERFUL operation (inverter) Priority-room setting COOL/HEAT mode lock HOME LEAVE operation ECONO operation ECONO operation Automatic defrosting Program dry function • • • • • • • • • • • • • • • • • • •		Draft prevention with sensor	•	•		Low outdoor temperature cooling	• 4.0	- 10
Fan only Setback function POWERFUL operation (non-inverter) Priority-room setting COOL/HEAT mode lock HOME LEAVE operation ECONO operation ECONO operation ECONO operation ECONO operation Emergency operation switch Signal receiving sign At the display (factory setting: °F) At the display		Automatic defrosting	•	•			● ★3	● ★3
Fan only Setback function POWERFUL operation (inverter) Priority-room setting COOL/HEAT mode lock HOME LEAVE operation ECONO operation ECONO operation Emergency operation switch Fan only Setback function **1 *** **1 *** *** *** *** Remote Control Remote control adaptor (normal open pulse contact) (option) Remote control adaptor (normal open contact) (option) DIII-NET compatible (adaptor) (option) **OWERFUL operation open contact) (option) Emergency operation **OND operation open contact) (option) **OND open contact) **Ontrol **Outline **Ontrol **Outline **Ontrol **Outline **Ontrol **Outline **Ontrol **Outline **Ontrol **Outline **Ou	Operation	Program dry function	•	•		°F/°C changeover R/C temperature	- 1 1	- 1 1
Lifestyle Convenience POWERFUL operation (inverter) — — — Priority-room setting — — — Remote Controller — — Power ation — — Priority-room setting — — — Priority-room setting — — — Remote Controller — — Remote Controller — — Remote Controller — — Priority-room setting — — — Remote Controller — — Remote Controller — — Priority-room setting — — Remote Controller — — Remote Controller — — Priority-room setting — — Remote Controller — — Remote Controller — — Priority-room setting — — — Remote Controller — — Priority-room setting — — — Priority-room setting — — — Priority-room setting — — — Remote Controller — — Priority-room setting — — — — Priority-room setting — — — — Priority-room setting — — — — Priority-room setting — — — — — Priority-room setting — — — — — — — — — — — — — — — — — — —		Fan only	•	•		display (factory setting: °F)	•*1	■ ★1
Convenience POWERFUL operation (inverter) — — — — — — — — — — — — — — — — — — —		Setback function	●★1	●★1				
Priority-room setting — — Remote control adaptor (normal open contact) (option) — — DIII-NET compatible (adaptor) (option) — ● HOME LEAVE operation — — Remote Controller		POWERFUL operation (non-inverter)	_	_	Control	(normal open pulse contact) (option)	-	
Priority-room setting — — (normal open contact) (option) — COOL/HEAT mode lock — — DIII-NET compatible (adaptor) (option) ● HOME LEAVE operation — — Remote Controller Wireless (option) ● ECONO operation — — Wired (option) ● Emergency operation switch ●★2 ●★2 Signal receiving sign ●★2 ★4	Convenience	POWERFUL operation (inverter)	_	_				
HOME LEAVE operation		Priority-room setting	_	_	•		_	-
ECONO operation — Controller Wired (option) ● ● Emergency operation switch ●★2 ●★2 Signal receiving sign ●★2 ★4 ★4		COOL/HEAT mode lock		_		DIII-NET compatible (adaptor) (option)	•	•
Emergency operation — — Wired (option) Emergency operation switch Signal receiving sign **2 **4 **4 **4		HOME LEAVE operation	_	_		Wireless (option)	•	•
Signal receiving sign		ECONO operation		_	Controller	Wired (option)	•	•
Signal receiving sign ★4 ★4		Emergency operation switch	●★2	•★2				
B/C with back light		Signal receiving sign						
		R/C with back light	●★1	●★1				

Note: ●: Available

— : Not available

★1: With wired remote controller ★2: With wireless remote controller ★3: With air direction adjustment grille (option)

★4: Receiving sound only

Part 2 Specifications

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Specifications SiUS091628EC

1. Specifications

60 Hz, 208 - 230V

Indoor Unit			FFQ09		FFQ12	Q2VJU
Model	Outdoor Unit		RX09G		DLAWÖ	
	Outdoor Offic		Cooling	Heating	Cooling	Heating
Capacity Rated (Min. ~ Max.)		Btu/h	9,100 (4,600 ~ 11,000)	10,000 (4,600 ~ 14,000)	10,800 (4,600 ~ 13,300)	13,500 (4,600 ~ 16,800)
Running Current (Rate	:d)	Α	3.64 - 3.29	3.43 - 3.10	4.61 - 4.17	4.96 - 4.49
Power Consumption Rated (Min. ~ Max.)		W	700 (280 ~ 1,050)	641 (250 ~ 1,150)	864 (280 ~ 1,410)	985 (250 ~ 1,450)
Power Factor (Rated)		%	92.5 - 92.5	89.8 - 89.9	90.1 - 90.1	95.5 - 95.4
SEER / HSPF			20.90	11.70	20.20	11.20
COP (Rated)		W/W	_	4.58	_	4.02
EER (Rated)		Btu/W⋅h	13.00		12.50	_
, ,	Liquid	in. (mm)	ф 1/4 ((ф 6.4)	φ 1/4	(\phi 6.4)
Piping Connections	Gas	in. (mm)	ф 3/8 ((\$\phi\$ 9.5)	φ 3/8	(\(\phi \) 9.5)
	Drain	in. (mm)	VP20 (O.D. ф	1-1/32 (ф 26))	VP20 (O.D. ф	1-1/32 (ф 26))
Heat Insulation	•		Both Liquid a	nd Gas Pipes	Both Liquid a	nd Gas Pipes
Max. Interunit Piping L	ength	ft (m)	65-5/8			8 (20)
Max. Interunit Height D	Difference	ft (m)	49-1/4	4 (15)	49-1/-	4 (15)
Chargeless		ft (m)	32-13/	16 (10)	32-13/	16 (10)
Amount of Additional C Refrigerant	harge of	oz/ft (g/m)	0.21	(20)	0.21	(20)
Indoor Unit		(3')	FFQ09	Q2VJU	FFQ12	Q2VJU
	Model		BYFQ6		BYFQ6	
	Color		Wh			nite
Decoration Panel (1)	Dimensions (H	\times W \times D)	2-3/16 × 27-9/16 × 27-			-9/16 (55 × 700 × 700)
	Weight (Mass)	Lbs (kg)	6 (2			2.7)
	Model	(3/	BYFQ60C2W1W	,	1	/ BYFQ60C2W1S
	Color		White /		White / Silver	
Decoration Panel (2)	Dimensions (H	\times W \times D)	1-13/16 × 24-7/16 × 24			1-7/16 (46 × 620 × 620)
	Weight (Mass)	Lbs (kg)	6.2 ((2.8)		(2.8)
	Н	, ,	378 (10.7)	399 (11.3)	406 (11.5)	427 (12.1)
Airflow Rate	М	cfm (m³/min)	339 (9.6)	357 (10.1)	353 (10.0)	371 (10.5)
	L	(1119/111111)	268 (7.6)	282 (8.0)	268 (7.6)	282 (8.0)
Fan	Туре		Turbo Fan		Turbo Fan	
raii	Speed	Steps	3 Steps		3 Steps	
Running Current (Rate	:d)	Α	0.23 - 0.21	0.23 - 0.21	0.27 - 0.24	0.27 - 0.24
Power Consumption (F	Rated)	W	23	23	27	27
Power Factor (Rated)		%	48.1 - 47.6	48.1 - 47.6	48.1 - 48.9	48.1 - 48.9
Temperature Control			Microcomputer Control		Microcomputer Control	
Dimensions (H \times W \times I	,	in. (mm)	10-1/4 × 22-5/8 × 22-5/8 (260 × 575 × 575)		10-1/4 × 22-5/8 × 22-5/8 (260 × 575 × 575)	
Packaged Dimensions	$(H \times W \times D)$	in. (mm)	11 × 27 × 23-1/2 (280 × 686 × 597)		11 × 27 × 23-1/2 (280 × 686 × 597)	
Weight		Lbs (kg)	36 (16)		36 (16)	
Gross Weight	T	Lbs (kg)	40 (\	40	\
Sound Pressure Level	IH/M/L	dB(A)	38 / 35 / 29	38 / 35 / 29	39 / 36 / 30	39 / 36 / 30
Outdoor Unit			RX09C		RX12QMVJU Ivory White	
Casing Color	Time		lvory '		,	
Compressor	Type		Hermetically Sealed Swing Type 1YC23AUXD		Hermetically Sealed Swing Type 1YC23AUXD	
Compressor	Motor Output	W	1YC23AUXD 790			
	Type	_ vv	FVC		790 FVC50K	
Refrigerant Oil	Charge	oz (L)	12.68 (
	Type	02 (L)	R-4		12.68 (0.375) R-410A	
Refrigerant	Charge	Lbs (kg)	2.09 ((0.95)
Airflow Rate	H	cfm	985 (27.9)	992 (28.1)	1,104 (31.27)	992 (28.1)
Fan		(m³/min)	` ′	, ,	, , ,	, ,
Fan Type Running Current (Rated) A		9rop 3.41 - 3.08	3.20 - 2.89	4.34 - 3.93	peller 4.69 - 4.25	
Power Consumption (Rated)		W	3.41 - 3.08 677	3.20 - 2.89 618	4.34 - 3.93 837	4.69 - 4.25 958
Power Factor (Rated)	iaicu)	%	95.4 - 95.6	92.8 - 93.0	92.7 - 92.6	98.2 - 98.0
Starting Current		% A	95.4 - 95.6			.5
Dimensions (H × W × I	D)	in. (mm)	21-5/8 × 26-9/16 × 11-3			.5 3/16 (550 × 675 × 284)
Packaged Dimensions	,	in. (mm)	24-3/4 × 32-11/16 × 11-3	,		16 (629 × 830 × 407)
Weight	(11 ^ VV ^ D)	Lbs (kg)	60 (, ,		(27)
Gross Weight		Lbs (kg)	71 ((32)
Sound Pressure Level	Тн	dB(A)	46	50	49	51
Drawing No.	1	~~(/·/)	3D106			
טומשווען ואט.		35100		3D106062		

Note:

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

The data are based on the conditions shown in the table below.						
Cooling	Indoor; 80.0°FDB (26.7°CDB) / 67.0°FWB (19.4°CWB) Outdoor; 95.0°FDB (35°CDB) / 75°FWB (23.9°CWB)					
Heating	Indoor; 70.0°FDB (21.1°CDB) / 60.0°FWB (15.6°CWB) Outdoor; 47°FDB (8.33°CDB) / 43.0°FWB (6.11°CWB)					
Piping Length	25 ft (7.6 m)					

 $\begin{aligned} & \text{Conversion Formulae} \\ & \text{kcal/h} = \text{kW} \times 860 \\ & \text{Btu/h} = \text{kW} \times 3412 \\ & \text{cfm} = \text{m}^3\text{/min} \times 35.3 \end{aligned}$

SiUS091628EC Specifications

60 Hz, 208 - 230V

Indoor Unit			FFQ15	Q2VJU	FFQ18Q2VJU		
Model	Outdoor Unit	utdoor Unit RX15QMVJU			RX180	MVJU	
	Outdoor Unit		Cooling Heating		Cooling Heating		
Capacity Rated (Min. ~ Max.)		Btu/h	14,400 (5,100 ~ 16,200)	16,200 (5,200 ~ 16,300)	17,400 (5,100 ~ 18,800)	21,600 (5,400 ~ 21,800)	
Running Current (Rate	d)	Α	5.83 - 5.27	6.23 - 5.63	7.12 - 6.44	9.51 - 8.6	
Power Consumption Rated (Min. ~ Max.)	,	w	1,152 (310 ~ 1,640)	1,235 (330 ~ 1,300)	1,392 (340 ~ 1,650)	1,875 (370 ~ 1,920)	
Power Factor (Rated)		%	95.0 - 95.0	95.3 - 95.4	94 - 94	94.8 - 94.8	
SEER / HSPF			20.70	11.00	19.30	10.10	
COP (Rated)		W/W		3.86	_	3.36	
EER (Rated)		Btu/W⋅h	12.50		12.50	_	
22.1 (1.10.00)	Liquid	in. (mm)	φ 1/4 (/h 6 4)		(\$ 6.4)	
Piping Connections	Gas	in. (mm)	φ 1/2 (φ 12.7)	
r iping connections	Drain	in. (mm)	VP20 (O.D. ¢	'		1-1/32 (\$\psi 26))	
Heat Insulation	Diani	()	Both Liquid a			nd Gas Pipes	
Max. Interunit Piping L	enath	ft (m)	98-7/1			8 (30)	
Max. Interunit Height D		ft (m)	65-5/8		65-5/	_ ` /	
Chargeless	merenee	ft (m)	32-13/			16 (10)	
Amount of Additional C	hargo of	oz/ft		, ,		` /	
Refrigerant	maiye oi	(g/m)	0.21	(20)	0.21	(20)	
Indoor Unit		, /	FFQ15	Q2VJU	FFQ18	Q2VJU	
	Model		BYFQ6		BYFQ6		
	Color		Wh			nite	
Decoration Panel (1)	Dimensions (H	× W × D)	2-3/16 × 27-9/16 × 27-			-9/16 (55 × 700 × 700)	
	Weight (Mass)	Lbs (kg)	6 (2			2.7)	
	Model Model	LD3 (Rg)	BYFQ60C2W1W	,	,	/ BYFQ60C2W1S	
	Color		White				
Decoration Panel (2)	Dimensions (H	~ W ~ D)	1-13/16 × 24-7/16 × 24		White / Silver 1-13/16 × 24-7/16 × 24-7/16 (46 × 620 × 620)		
	Weight (Mass)	Lbs (kg)	6.2	, ,		(2.8)	
	H	LUS (Kg)	420 (11.9)	441 (12.5)	448 (12.7)	498 (14.1)	
Airflow Rate	M	cfm	367 (10.4)	385 (10.9)	378 (10.7)	496 (14.1)	
Allilow hate		(m³/min)	(- /	· /	(- /	\ /	
	L		293 (8.3)	307 (8.7)	275 (7.8)	307 (8.7)	
Fan	Туре	T 0:	Turbo		Turbo Fan		
	Speed	Steps	3 Steps		3 Steps		
Running Current (Rate	,	A	0.29 - 0.26	0.29 - 0.26	0.52 - 0.47	0.52 - 0.47	
Power Consumption (F	Rated)	W	28	28	51 - 51	51 - 51	
Power Factor (Rated)		%	46.4 - 46.8	46.4 - 46.8	47.2 - 47.2	47.2 - 47.2	
Temperature Control		T	Microcomputer Control		Microcomputer Control		
Dimensions (H × W × I	,	in. (mm)	10-1/4 × 22-5/8 × 22-5/8 (260 × 575 × 575)		10-1/4 × 22-5/8 × 22-5/8 (260 × 575 × 575)		
Packaged Dimensions	(H × W × D)	in. (mm)	11 × 27 × 23-1/2 (280 × 686 × 597)		11 × 27 × 23-1/2 (280 × 686 × 597)		
Weight		Lbs (kg)	36 (16)		39.0 (17.5)		
Gross Weight		Lbs (kg)	40 (,		(19.0)	
Sound Pressure Level	H/M/L	dB(A)	40 / 37 / 31	40 / 37 / 31	44 / 40 / 32	44 / 40 / 32	
Outdoor Unit			RX150			MANN	
Casing Color			lvory '		,	White	
	Туре		Hermetically Sea	0 11		aled Swing Type	
Compressor	Model		2YC36PXD		2YC36PXD		
	Motor Output	W	1,1		,	100	
Refrigerant Oil	Туре		FVC	50K	FVC	50K	
Refrigerant Oil	Charge	oz (L)	22.0	,		(0.65)	
Pofrigorant	Туре		R-4	10A	R-4	10A	
Refrigerant	Charge	Lbs (kg)	2.49	(1.13)	2.49	(1.13)	
Airflow Rate	Н	cfm (m³/min)	2,314 (65.53)	1,896 (53.7)	2,461 (69.7)	2,295 (65)	
Fan	Туре	,	Prop	eller	Proc	peller	
Running Current (Rated)		Α	5.54 - 5.01	5.94 - 5.37	6.60 - 5.97	8.99 - 8.13	
Power Consumption (Rated)		W	1,124	1,207	1,341 ~ 1,341	1,824 ~ 1,824	
Power Factor (Rated)	/	%	97.5 - 97.5	97.7 - 97.7	97.7 - 97.7	97.5 - 97.5	
Starting Current		A	8.			51	
		in. (mm)	28-15/16 × 34-1/4 × 12			2-5/8 (735 × 870 × 320)	
Packaged Dimensions		in. (mm)	31-7/8 × 41-9/16 × 18-	,		1/4 (810 × 1,056 × 464)	
Weight	(· · · · · · · · ·)	Lbs (kg)	97 ((44)	
Gross Weight		Lbs (kg)	115			(52)	
Sound Pressure Level	Tu		50		54	55	
	l u	dB(A)		51			
Drawing No.		3D106	ASOUC	3D106064			

Note:

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

Cooling	Indoor ; 80.0°FDB (26.7°CDB) / 67.0°FWB (19.4°CWB) Outdoor ; 95.0°FDB (35°CDB) / 75°FWB (23.9°CWB)
Heating	Indoor ; 70.0°FDB (21.1°CDB) / 60.0°FWB (15.6°CWB) Outdoor ; 47°FDB (8.33°CDB) / 43.0°FWB (6.11°CWB)
Piping Length	25 ft (7.6 m)

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

Specifications SiUS091628EC

60 Hz, 208 - 230V

Indoor Unit			FFQ09	Q2VJU	FFQ09Q2VJU		
Model	Outdoor Unit	Outdoor Unit RX		RMVJU	RX09R	MVJU9	
	Outdoor Offic		Cooling	Heating	Cooling	Heating	
Capacity Rated (Min. ~ Max.)		Btu/h	9,100 (4,600 ~ 11,000)	10,000 (4,600 ~ 14,000)	9,100 (4,600 ~ 11,000)	10,000 (4,600 ~ 14,000)	
Running Current (Rate	ed)	Α	3.64 - 3.29	3.43 - 3.10	3.64 - 3.29	3.43 - 3.10	
Power Consumption	α,						
Rated (Min. ~ Max.)		W	700 (280 ~ 1,050)	641 (250 ~ 1,150)	700 (280 ~ 1,050)	641 (250 ~ 1,150)	
Power Factor (Rated)		%	92.5 - 92.5	89.8 - 89.9	92.5 - 92.5	89.8 - 89.9	
SEER / HSPF			20.90	11.70	20.90	11.70	
COP (Rated)		W/W	<u> </u>	4.58	_	4.58	
EER (Rated)	T., .,	Btu/W⋅h	13.00	_	13.00	_	
Distance Commentions	Liquid	in. (mm)		(\$\phi 6.4)	φ 1/4	. ,	
Piping Connections	Gas	in. (mm)		(\$\phi 9.5)	φ 3/8	. ,	
Heat Insulation	Drain	in. (mm)	` 1	1-1/32 (ф 26)) and Gas Pipes	VP20 (O.D. φ Both Liquid a		
Max. Interunit Piping L	onath	ft (m)		8 (20)	65-5/		
Max. Interunit Height D	•	ft (m)		4 (15)	49-1/		
Chargeless	merence	ft (m)		16 (10)	32-13/		
Amount of Additional C	harge of	oz/ft		` '		` '	
Refrigerant	marge of	(g/m)	0.21	(20)	0.21	(20)	
Indoor Unit				Q2VJU	FFQ09	Q2VJU	
	Model			60B3W1	BYFQ6		
Decoration Panel (1)	Color			nite		nite	
Decoration Panel (1)	Dimensions (H	\times W \times D)	2-3/16 × 27-9/16 × 27	-9/16 (55 × 700 × 700)	2-3/16 × 27-9/16 × 27	-9/16 (55 × 700 × 700)	
	Weight (Mass)	Lbs (kg)	,	2.7)	6 (2	,	
	Model			/ BYFQ60C2W1S		/ BYFQ60C2W1S	
Decoration Panel (2)	Color			/ Silver		/ Silver	
Boooration (2)	Dimensions (H			1-7/16 (46 × 620 × 620)		-7/16 (46 × 620 × 620)	
	Weight (Mass)	Lbs (kg)	` '		6.2	'	
	Н	cfm	378 (10.7)	399 (11.3)	378 (10.7)	399 (11.3)	
Airflow Rate	M	(m³/min)	339 (9.6)	357 (10.1)	339 (9.6)	357 (10.1)	
	L		268 (7.6)	282 (8.0)	268 (7.6)	282 (8.0)	
Fan	Туре	0.	Turbo Fan			o Fan	
D	Speed	Steps	3 Steps		3 Steps		
Running Current (Rate	,	A W	0.23 - 0.21	0.23 - 0.21	0.23 - 0.21	0.23 - 0.21	
Power Consumption (F	rated)	%	23 48.1 - 47.6	23	23 48.1 - 47.6	23 48.1 - 47.6	
Power Factor (Rated) Temperature Control		%		48.1 - 47.6	Microcomputer Control		
Dimensions (H × W × I	٦١	in. (mm)	Microcomputer Control 10-1/4 × 22-5/8 × 22-5/8 (260 × 575 × 575)		10-1/4 × 22-5/8 × 22-5/8 (260 × 575 × 575)		
Packaged Dimensions	,	in. (mm)	11 × 27 × 23-1/2 (280 × 686 × 597)		11 × 27 × 23-1/2 (280 × 686 × 597)		
Weight	(II × W × D)	Lbs (kg)	36 (16)		36 (16)		
Gross Weight		Lbs (kg)		(18)	40 (18)		
Sound Pressure Level	H/M/L	dB(A)	38 / 35 / 29	38 / 35 / 29	38 / 35 / 29	38 / 35 / 29	
Outdoor Unit	117 W.7 E	uD(//)		RMVJU	RX09R		
Casing Color			lyory White		Ivory White		
	Туре		. ,	aled Swing Type	,	aled Swing Type	
Compressor	Model		-	BAUXD	1YC23	BAUXD	
	Motor Output	W	7:	90	790		
Defriessed O''	Туре	•	FVC	050K	FVC	50K	
Refrigerant Oil	Charge	oz (L)	12.68	(0.375)	12.68	(0.375)	
Defrigerent	Туре			10A	R-4		
Refrigerant	Charge	Lbs (kg)	2.09	(0.95)	2.09	(0.95)	
Airflow Rate	Н	cfm (m³/min)	985 (27.9)	1,105 (31.3)	985 (27.9)	1,130 (32.0)	
Fan	Туре	(111 /111111)	Prog	beller	Prog	peller	
Running Current (Rate		Α	3.41 - 3.08	3.20 - 2.89	3.41 - 3.08	3.20 - 2.89	
Power Consumption (Rated)		W	677	618	677	618	
Power Factor (Rated)		%	95.4 - 95.6	92.8 - 93.0	95.4 - 95.6	92.8 - 93.0	
Starting Current		Α		.5		.5	
Dimensions (H × W × D)		in. (mm)	21-5/8 × 26-9/16 × 11-	3/16 (550 × 675 × 284)	21-5/8 × 26-9/16 × 11-	3/16 (550 × 675 × 284)	
Dilliciations (LLV M V I	Packaged Dimensions (H × W × D)				21-5/8 × 26-9/16 × 11-3/16 (550 × 6/5 × 284) 24-3/4 × 32-11/16 × 16 (629 × 830 × 407)		
		in. (mm)			60 (27)		
		in. (mm) Lbs (kg)		(27)		, ,	
Packaged Dimensions			60	,	60	, ,	
Packaged Dimensions Weight	$(H \times W \times D)$	Lbs (kg)	60	(27)	60	(27)	

Note:

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

Cooling	Indoor; 80.0°FDB (26.7°CDB) / 67.0°FWB (19.4°CWB) Outdoor; 95.0°FDB (35.0°CDB) / 75.0°FWB (23.9°CWB)
Heating	Indoor; 70.0°FDB (21.1°CDB) / 60.0°FWB (15.6°CWB) Outdoor; 47.0°FDB (8.3°CDB) / 43.0°FWB (6.1°CWB)
Piping Length	25 ft (7.6 m)

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

SiUS091628EC **Specifications**

60 Hz, 208 - 230V

	Indoor Unit		FFQ12	Q2VJU	FFQ12Q2VJU		
Model	Outdoor Unit		RX12F	RMVJU	RX12RMVJU9		
	Outdoor Onit		Cooling Heating		Cooling Heating		
Capacity Rated (Min. ~ Max.)		Btu/h	10,800 (4,600 ~ 13,300)	13,500 (4,600 ~ 16,800)	10,800 (4,600 ~ 13,300)	13,500 (4,600 ~ 16,800)	
Running Current (Rate	d)	Α	4.61 - 4.17	4.96 - 4.49	4.61 - 4.17	4.96 - 4.49	
Power Consumption	- /	w	864 (280 ~ 1,410)	985 (250 ~ 1,450)	864 (280 ~ 1,410)	985 (250 ~ 1,450)	
Rated (Min. ~ Max.)			. , ,	, , ,	· , , , , , , , , , , , , , , , , , , ,		
Power Factor (Rated)		%	90.1 - 90.1	95.5 - 95.4	90.1 - 90.1	95.5 - 95.4	
SEER / HSPF		W/W	20.20	11.20	20.20	11.20	
COP (Rated)		Btu/W·h	12.50	4.02	12.50	4.02	
EER (Rated)	Liquid	in. (mm)		(\phi 6.4)	12.50 φ 1/4		
Piping Connections	Gas	in. (mm)	ψ 1/4 φ 3/8	11 /	ψ 1/4 ψ 3/8	· · · · · · · · · · · · · · · · · · ·	
r iping connections	Drain	in. (mm)		1-1/32 (\$\psi\$ 26))	VP20 (O.D. φ	· · · · · · · · · · · · · · · · · · ·	
Heat Insulation	Diani	()	, ,	and Gas Pipes	Both Liquid a	, , , , , , , , , , , , , , , , , ,	
Max. Interunit Piping L	enath	ft (m)		8 (20)	65-5/		
Max. Interunit Height D		ft (m)		4 (15)	49-1/-	, ,	
Chargeless		ft (m)	32-13/	\ /	32-13/	\ /	
Amount of Additional C	harge of	oz/ft		(20)	0.21	` '	
Refrigerant		(g/m)		Q2VJU	FFQ12	` '	
Indoor Unit	Model			Q2VJU 60B3W1	FFQ12 BYFQ6		
	Color			nite	BYFQ6 Wh		
Decoration Panel (1)	Dimensions (H	× W × D)		-9/16 (55 × 700 × 700)	2-3/16 × 27-9/16 × 27		
	Weight (Mass)	,	2-3/10 x 27-9/10 x 27	,	6 (2	, ,	
	Model Model	LD3 (Ng)	,	/ BYFQ60C2W1S	BYFQ60C2W1W	,	
	Color			/ Silver	White		
Decoration Panel (2)	Dimensions (H	× W × D)		4-7/16 (46 × 620 × 620)	1-13/16 × 24-7/16 × 24-7/16 (46 × 620 × 620)		
	Weight (Mass)	Lbs (kg)	6.2		6.2		
	Н	, 0,	406 (11.5)	427 (12.1)	406 (11.5)	427 (12.1)	
Airflow Rate	М	cfm (m³/min)	353 (10.0)	371 (10.5)	353 (10.0)	371 (10.5)	
	L	(1119/111111)	268 (7.6)	282 (8.0)	268 (7.6)	282 (8.0)	
Fan	Туре		Turb	o Fan	Turbo Fan		
	Speed	Steps	3 Steps		3 Steps		
Running Current (Rate	,	Α	0.27 - 0.24	0.27 - 0.24	0.27 - 0.24	0.27 - 0.24	
Power Consumption (F	Rated)	W	27	27	27	27	
Power Factor (Rated)		%	48.1 - 48.9	48.1 - 48.9	48.1 - 48.9	48.1 - 48.9	
Temperature Control			Microcomputer Control		Microcomputer Control 10-1/4 × 22-5/8 × 22-5/8 (260 × 575 × 575)		
Dimensions (H × W × I	,	in. (mm)		5/8 (260 × 575 × 575)		, ,	
Packaged Dimensions	(H × W × D)	in. (mm)	11 × 27 × 23-1/2 (280 × 686 × 597)		11 × 27 × 23-1/2	,	
Weight Gross Weight		Lbs (kg) Lbs (kg)	36 (16) 40 (18)		36 (16) 40 (18)		
Sound Pressure Level	I	dB(A)	39 / 36 / 30	39 / 36 / 30	39 / 36 / 30	39 / 36 / 30	
Outdoor Unit	117 W17 E	ub(A)		RMVJU	RX12R		
Casing Color				White	lvory		
outling Color	Туре			aled Swing Type	Hermetically Sea		
Compressor	Model			BAUXD	1YC23	• ,,	
	Motor Output	W	790		790		
2 (;	Туре		FVC	050K	FVC50K		
Refrigerant Oil	Charge	oz (L)	12.68	(0.375)	12.68 (0.375)		
Defrieses	Туре	. ` ` `	R-4	10A		10A	
Refrigerant	Charge	Lbs (kg)	2.09	(0.95)	2.09	(0.95)	
Airflow Rate	Н	cfm (m³/min)	1,105 (31.3)	1,105 (31.3)	1,105 (31.3)	1,130 (32.0)	
Fan	Туре	(m³/min)		peller	Prop	. , ,	
Running Current (Rate		Α	4.34 - 3.93	4.69 - 4.25	4.34 - 3.93	4.69 - 4.25	
Power Consumption (Rated)		W	837	958	837	958	
Power Factor (Rated)		%	92.7 - 92.6	98.2 - 98.0	92.7 - 92.6	98.2 - 98.0	
Starting Current		Α		.5	7		
		in. (mm)	21-5/8 × 26-9/16 × 11-	3/16 (550 × 675 × 284)	21-5/8 × 26-9/16 × 11-	3/16 (550 × 675 × 284)	
Packaged Dimensions	$(H \times W \times D)$	in. (mm)	24-3/4 × 32-11/16 ×	16 (629 × 830 × 407)	24-3/4 × 32-11/16 ×	16 (629 × 830 × 407)	
Weight		Lbs (kg)	60	(27)	60	(27)	
Gross Weight		Lbs (kg)		(32)	71	(32)	
Sound Pressure Level	Н	dB(A)	49	51	49	51	
				13015	3D12		

Notes:

- SL: The Quiet fan level of the airflow rate setting.
 The data are based on the conditions shown in the table below.

Cooling	Indoor; 80.0°FDB (26.7°CDB) / 67.0°FWB (19.4°CWB) Outdoor; 95.0°FDB (35.0°CDB) / 75.0°FWB (23.9°CWB)						
Heating	Indoor; 70.0°FDB (21.1°CDB) / 60.0°FWB (15.6°CWB) Outdoor; 47.0°FDB (8.3°CDB) / 43.0°FWB (6.1°CWB)						
Piping Length	25 ft (7.6 m)						

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

Specifications SiUS091628EC

60 Hz, 208 - 230V

	Indoor Unit		FFQ15	Q2VJU	FFQ15Q2VJU		
Model	Outdoor Unit		RX15F	RMVJU	RX15R	MVJUA	
	Outdoor Onit		Cooling	Heating	Cooling	Heating	
Capacity Rated (Min. ~ Max.)		Btu/h	14,400 (5,100 ~ 16,200)	16,200 (5,200 ~ 16,300)	14,400 (5,100 ~ 16,200)	16,200 (5,200 ~ 16,300)	
Running Current (Rate	d)	Α	5.83 - 5.27	6.23 - 5.63	5.83 - 5.27	6.23 - 5.63	
Power Consumption	-,	W	1,152 (310 ~ 1,640)	1,235 (330 ~ 1,300)	1.152 (310 ~ 1.640)	1,235 (330 ~ 1,300)	
Rated (Min. ~ Max.)				. , , , , , , , , , , , , , , , , , , ,	, - (,,	, , ,	
Power Factor (Rated)		%	95.0 - 95.0	95.3 - 95.4	95.0 - 95.0	95.3 - 95.4	
SEER / HSPF			20.70	11.00	20.70	11.00	
COP (Rated)		W/W		3.86		3.86	
EER (Rated)	Liveria	Btu/W⋅h	12.50	——————————————————————————————————————	12.50	<u> </u>	
Dining Compactions	Liquid	in. (mm)	φ 1/4 ·	· /	φ 1/4 ·	()	
Piping Connections	Gas Drain	in. (mm) in. (mm)		φ 12.7) 1-1/32 (φ 26))		φ 12.7)	
Heat Insulation	Diain	111. (111111)	, ,	nd Gas Pipes		1-1/32 (φ 26)) nd Gas Pipes	
Max. Interunit Piping Le	anath	ft (m)		2 (30)		2 (30)	
Max. Interunit Height D		ft (m)		8 (20)		8 (20)	
Chargeless	IIICICIICC	ft (m)		16 (10)		16 (10)	
Amount of Additional C	harge of	oz/ft		` '		` '	
Refrigerant	nargo or	(g/m)	0.21	(20)	0.21	(20)	
Indoor Unit				Q2VJU	FFQ15		
	Model		BYFQ6		BYFQ6		
Decoration Panel (1)	Color			nite		nite	
Decoration raner (1)	Dimensions (H	,	$2-3/16 \times 27-9/16 \times 27$, ,		-9/16 (55 × 700 × 700)	
	Weight (Mass)	Lbs (kg)	6 (2	,	,	2.7)	
	Model			/ BYFQ60C2W1S		/ BYFQ60C2W1S	
Decoration Panel (2)	Color			/ Silver		/ Silver	
	Dimensions (H		1-13/16 × 24-7/16 × 24	, ,		I-7/16 (46 × 620 × 620)	
	Weight (Mass)	Lbs (kg)	6.2	· /	6.2	` '	
	Н	cfm	420 (11.9)	441 (12.5)	420 (11.9)	441 (12.5)	
Airflow Rate	M	(m³/min)	367 (10.4)	385 (10.9)	367 (10.4)	385 (10.9)	
	L		293 (8.3)	307 (8.7)	293 (8.3)	307 (8.7)	
Fan	Type	Ctono		o Fan	Turbo Fan		
Durania a Current (Data	Speed	Steps	3 Steps		3 Steps 0.29 - 0.26 0.29 - 0.26		
Running Current (Rated Power Consumption (R	,	A W	0.29 - 0.26 28	0.29 - 0.26 28	0.29 - 0.26	0.29 - 0.26	
Power Consumption (R	ialeu)	%	46.4 - 46.8 46.4 - 46.8		46.4 - 46.8	46.4 - 46.8	
Temperature Control		/6	Microcomputer Control		Microcomputer Control		
Dimensions (H × W × D))	in. (mm)	10-1/4 × 22-5/8 × 22-5/8 (260 × 575 × 575)		10-1/4 × 22-5/8 × 22-5/8 (260 × 575 × 575)		
Packaged Dimensions	,	in. (mm)		(280 × 686 × 597)		(280 × 686 × 597)	
Weight	(Lbs (kg)	36 (16)		36 (16)		
Gross Weight		Lbs (kg)	, ,		40 (18)		
Sound Pressure Level	H/M/L	dB(A)	40 / 37 / 31	40 / 37 / 31	40 / 37 / 31	40 / 37 / 31	
Outdoor Unit		- (/		RMVJU		MVJUA	
Casing Color			Ivory White		Ivory White		
	Туре		Hermetically Sea	aled Swing Type	Hermetically Sea	aled Swing Type	
Compressor	Model		2YC36PXD		2YC36PXD		
	Motor Output	W	1,1	00	1,1	00	
Defrigerent Oil	Туре		FVC	50K	FVC50K		
Refrigerant Oil	Charge	oz (L)		(0.65)		(0.650)	
Refrigerant	Туре			10A		10A	
i ioniyeranı	Charge	Lbs (kg)	2.49	(1.13)	2.49	(1.13)	
Airflow Rate	Н	cfm (m³/min)	2,313 (65.5)	2,108 (59.7)	2,313 (65.5)	2,108 (59.7)	
Fan	Туре			peller	-1	peller	
Running Current (Rated)		A	5.54 - 5.01	5.94 - 5.37	5.54 - 5.01	5.94 - 5.37	
Power Consumption (R	lated)	W	1,124	1,207	1,124	1,207	
Power Factor (Rated)		%	97.5 - 97.5	97.7 - 97.7	97.5 - 97.5	97.7 - 97.7	
Starting Current		A :- (.0		.0	
Dimensions (H × W × D	,	in. (mm)	28-15/16 × 34-1/4 × 12	,		2-5/8 (735 × 870 × 320)	
Packaged Dimensions	(m × vv × D)	in. (mm)		1/4 (810 × 1,056 × 464)		1/4 (810 × 1,056 × 464)	
Weight Cross Weight		Lbs (kg)		(44)		(44)	
Gross Weight	Tu	Lbs (kg)		(52)		(52)	
Sound Pressure Level	Iп	dB(A)	50	51	50	51	
Drawing No.			3D11	3017	3D12	27132	

Note:

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

Cooling	Indoor; 80.0°FDB (26.7°CDB) / 67.0°FWB (19.4°CWB) Outdoor; 95.0°FDB (35.0°CDB) / 75.0°FWB (23.9°CWB)
Heating	Indoor; 70.0°FDB (21.1°CDB) / 60.0°FWB (15.6°CWB) Outdoor; 47.0°FDB (8.3°CDB) / 43.0°FWB (6.1°CWB)
Piping Length	25 ft (7.6 m)

 $\begin{aligned} & \text{Conversion Formulae} \\ & \text{kcal/h} = \text{kW} \times 860 \\ & \text{Btu/h} = \text{kW} \times 3412 \\ & \text{cfm} = \text{m}^3\text{/min} \times 35.3 \end{aligned}$

SiUS091628EC **Specifications**

60 Hz, 208 - 230V

	Indoor Unit		FFQ18Q2VJU		FFQ18Q2VJU	
Model	Outdoor Unit			RMVJU	RX18RMVJU9	
	Outdoor Offic		Cooling	Heating	Cooling	Heating
Capacity Rated (Min. ~ Max.)		Btu/h	17,400 (5,100 ~ 18,800)	21,600 (5,400 ~ 21,800)	17,400 (5,100 ~ 18,800)	21,600 (5,400 ~ 21,800)
Running Current (Rate	d)	Α	7.12 - 6.44	9.51 - 8.6	7.12 - 6.44	9.51- 8.6
Power Consumption Rated (Min. ~ Max.)	-7	w	1,392 (340 ~ 1,650)	1,875 (370 ~ 1,920)	1,392 - 1,392 (340 ~ 1,650)	1,875 - 1,875 (370 ~ 1,920
Power Factor (Rated)		%	94 - 94	94.8 - 94.8	94 - 94	94.8 - 94.8
SEER / HSPF		,,,	19.30	10.10	19.30	10.10
COP (Rated)		W/W		3.36	-	3.36
EER (Rated)		Btu/W⋅h	12.50	J.50	12.50	J.50
LLIT (Hateu)	Liquid	in. (mm)		(\phi 6.4)	φ 1/4	
Piping Connections	Gas	in. (mm)	φ 1/4 φ 1/2 (11 /	φ 1/4 (
i iping connections	Drain	in. (mm)		1-1/32 (φ 26))	Ψ 1/2 (VP20 (O.D φ	' '
Heat Insulation	Diaiii	111. (111111)	, ,	and Gas Pipes	, ,	nd Gas Pipes
Max. Interunit Piping Lo	anath	ft (m)		2 (30)	98-1/	
Max. Interunit Height D	•	ft (m)		8 (20)	65-5/	. ,
olax. Interunit Height D Chargeless	illerence	. ,		, ,		. ,
	da a una a ef	ft (m)	32-13/	16 (10)	32-13/	16 (10)
Amount of Additional C Refrigerant	narge or	oz/ft (g/m)	0.21	(20)	0.21	(20)
ndoor Unit				Q2VJU	FFQ18	
	Model		BYFQ6	60B3W1	BYFQ6	0B3W1
Description Band (4)	Color		Wi	nite	Wi	nite
Decoration Panel (1)	Dimensions (H	\times W \times D)	2-3/16 × 27-9/16 × 27	-9/16 (55 × 700 × 700)	2-3/16 × 27-9/16 × 27	·9/16 (55 × 700 × 700)
	Weight (Mass)	Lbs (kg)	6 (2	2.7)	6 (2	2.7)
	Model		BYFQ60C2W1W	/ BYFQ60C2W1S	BYFQ60C2W1W	/ BYFQ60C2W1S
D " D 1/0\	Color		White	/ Silver	White / Silver	
Decoration Panel (2)	Dimensions (H	\times W \times D)	1-13/16 × 24-7/16 × 24	1-7/16 (46 × 620 × 620)	1-13/16 × 24-7/16 × 24-7/16 (46 × 620 × 620)	
	Weight (Mass)	Lbs (kg)	6.2	(2.8)	6.2	(2.8)
	Н	, ,,	448 (12.7)	498 (14.1)	448 (12.7)	498 (14.1)
Airflow Rate	М	cfm	378 (10.7)	420 (11.9)	378 (10.7)	420 (11.9)
	L	(m³/min)	275 (7.8)	307 (8.7)	275 (7.8)	307 (8.7)
_	Туре	ı	Turb	o Fan	· ' '	Fan
Fan	Speed	Steps	3 Steps			eps
Running Current (Rate		Α	0.52 - 0.47	0.52 - 0.47	0.52 - 0.47	0.52 - 0.47
Power Consumption (F	,	W	51 - 51	51 - 51	51 - 51	51 - 51
Power Factor (Rated)	,	%	47.2 - 47.2	47.2 - 47.2	47.2 - 47.2	47.2 - 47.2
Temperature Control			Microcomp	uter Control	Microcomp	uter Control
Dimensions (H × W × I	D)	in. (mm)	10-1/4 × 22-5/8 × 22-	5/8 (260 × 575 × 575)	10-1/4 × 22-5/8 × 22-	5/8 (260 × 575 × 575)
Packaged Dimensions	,	in. (mm)		(280 × 686 × 597)	11 × 27 × 23-1/2	, ,
Weight	,	Lbs (kg)	39.0 (17.5)		39.0 (17.5)	
Gross Weight		Lbs (kg)		(19.0)		(19.0)
Sound Pressure Level	H/M/L	dB(A)	44 / 40 / 32	44 / 40 / 32	44 / 40 / 32	44 / 40 / 32
Outdoor Unit		/		RMVJU	RX18R	MVJU9
Casing Color				White	-	White
<u> </u>	Туре			aled Swing Type	,	aled Swing Type
Compressor	Model		2YC36PXD		2YC3	
	Motor Output	W	1,100		1.1	00
	Type	1	FVC50K		FVC	
Refrigerant Oil	Charge	oz (L)	21.98 (0.65)		21.98 (0.650)	
	Type	02 (L)	R-410A		R-410A	
Refrigerant	Charge	Lbs (kg)		(1.13)		(1.13)
Airflow Rate	Н	cfm	2,461 (69.7)	2,553 (72.3)	2,461 (69.7)	2,553 (72.3)
Fan	Туре	(m³/min)		peller	· ' '	eller
Running Current (Rate		Α	6.60 - 5.97	8.99 - 8.13	6.60 - 5.97	8.99 - 8.13
Power Consumption (Rated)		W	1,341 ~ 1,341	1,824 ~ 1,824	1,341 - 1,341	1,824 - 1,824
Power Factor (Rated)		%	97.7 - 97.7	97.5 - 97.5	97.7 - 97.7	97.5 - 97.5
` '		A	9.		9.	
, ,				2-5/8 (735 × 870 × 320)		2-5/8 (735 × 870 × 320)
Starting Current	, ,			,		1/4 (810 × 1,056 × 464)
Starting Current Dimensions (H × W × I	,	in (mm)	31-7/8 > 41-0/16 > 19-	1/4 (810 × 1 ()56 × 464)		
Starting Current Dimensions (H × W × E Packaged Dimensions	,	in. (mm)	31-7/8 × 41-9/16 × 18-	, ,		, , ,
Starting Current Dimensions (H × W × I Packaged Dimensions Weight	,	Lbs (kg)	97	(44)	97	(44)
Starting Current Dimensions (H × W × I Packaged Dimensions Weight Gross Weight Sound Pressure Level	$(H \times W \times D)$		97	, ,	97	, , ,

Notes:

- SL: The Quiet fan level of the airflow rate setting.
 The data are based on the conditions shown in the table below.

 | The data are based on the conditions shown in the table below.

Cooling	Indoor; 80.0°FDB (26.7°CDB) / 67.0°FWB (19.4°CWB) Outdoor; 95.0°FDB (35.0°CDB) / 75.0°FWB (23.9°CWB)
Heating	Indoor; 70.0°FDB (21.1°CDB) / 60.0°FWB (15.6°CWB) Outdoor; 47.0°FDB (8.3°CDB) / 43.0°FWB (6.1°CWB)
Piping Length	25 ft (7.6 m)

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

Specifications SiUS091628EC

60 Hz, 208 - 230V

	Indoor Unit		FFQ180	Q2VJU		
Model	Outdoor Unit		RX18RMVJU9A			
	Guidadi Gilit		Cooling	Heating		
Capacity Rated (Min. ~ Max.)		Btu/h	17,400 (5,100 ~ 18,800)	21,600 (5,400 ~ 21,800)		
Running Current (Rate	ed)	Α	7.12 - 6.44	9.51- 8.6		
Power Consumption	,,,,					
Rated (Min. ~ Max.)		W	1,392 - 1,392 (340 ~ 1,650)	1,875 - 1,875 (370 ~ 1,920)		
Power Factor (Rated)		%	94 - 94	94.8 - 94.8		
SEER / HSPF		•	19.30	10.10		
COP (Rated)		W/W	_	3.36		
EER (Rated)		Btu/W·h	12.50	<u> </u>		
	Liquid	in. (mm)	ф 1/4 (
Piping Connections	Gas	in. (mm)	ф 1/2 (ф			
	Drain	in. (mm)	VP20 (O.D ¢	(1 //		
Heat Insulation			Both Liquid ar			
Max. Interunit Piping Lo		ft (m)	98-1/2	2 (30)		
Max. Interunit Height D	Difference	ft (m)	65-5/8	3 (20)		
Chargeless		ft (m)	32-13/1	16 (10)		
Amount of Additional C	Charge of	oz/ft	0.21	(20)		
Refrigerant		(g/m)		· ·		
Indoor Unit	Madal		FFQ18			
	Model		BYFQ6			
Decoration Panel (1)	Color	W .: D)	Wh			
· ,	Dimensions (H		2-3/16 × 27-9/16 × 27-			
	Weight (Mass)	LDS (Kg)	6 (2	,		
	Model		BYFQ60C2W1W			
Decoration Panel (2)	Color	144 D)	White /			
	Dimensions (H		1-13/16 × 24-7/16 × 24			
	Weight (Mass)	Lbs (kg)	6.2 (,		
At the Date	Н	cfm	448 (12.7)	498 (14.1)		
Airflow Rate	М	(m³/min)	378 (10.7)	420 (11.9)		
	L T		275 (7.8)	307 (8.7)		
Fan	Туре	01	Turbo			
Durania a Current (Date	Speed	Steps	3 St	'		
Running Current (Rate	,	A	0.52 - 0.47	0.52 - 0.47		
Power Consumption (F Power Factor (Rated)	rated)	W	51 - 51	51 - 51		
Temperature Control		%	47.2 - 47.2 Microcompu	47.2 - 47.2		
Dimensions (H × W × I	D)	: ()	10-1/4 × 22-5/8 × 22-5			
Packaged Dimensions		in. (mm)	10-1/4 × 22-5/8 × 22-5 11 × 27 × 23-1/2 (,		
Weight	(H X W X D)	in. (mm)	39.0 (
•		Lbs (kg)	42.0 (•		
Gross Weight Sound Pressure Level	TH/M/I	Lbs (kg) dB(A)	44 / 40 / 32	19.0) 44 / 40 / 32		
Outdoor Unit	17 / IVI / L	ub(A)	44 / 40 / 32 RX18RN			
Casing Color			lvory \			
Cashing Color	Туре		Hermetically Sea	aled Swing Type		
Compressor	Model		2YC36PXD			
_ Jp. 50001	Motor Output	W	1,100			
	Type		FVC			
Refrigerant Oil	Charge	oz (L)	21.98 (0.650)			
	Туре	J_ (L)	R-4			
Refrigerant	Charge	Lbs (kg)	2.49 (
		cfm		,		
Airflow Rate	Н	(m³/min)	2,461 (69.7)	2,553 (72.3)		
Fan	Туре		Prop	eller		
Running Current (Rated)		Α	6.60 - 5.97	8.99 - 8.13		
Power Consumption (F	Rated)	W	1,341 - 1,341	1,824 - 1,824		
Power Factor (Rated)		%	97.7 - 97.7	97.5 - 97.5		
Starting Current		Α	9.51			
, ,		Α	28-15/16 × 34-1/4 × 12-5/8 (735 × 870 × 320)			
, ,	D)	in. (mm)				
Starting Current	,			-5/8 (735 × 870 × 320)		
Starting Current Dimensions (H × W × I	,	in. (mm)	28-15/16 × 34-1/4 × 12 31-7/8 × 41-9/16 × 18-1 97 (-5/8 (735 × 870 × 320) //4 (810 × 1,056 × 464) 44)		
Starting Current Dimensions (H × W × I Packaged Dimensions	,	in. (mm) in. (mm)	28-15/16 × 34-1/4 × 12 31-7/8 × 41-9/16 × 18-1	-5/8 (735 × 870 × 320) 1/4 (810 × 1,056 × 464) 44)		
Starting Current Dimensions (H × W × I Packaged Dimensions Weight	$(H \times W \times D)$	in. (mm) in. (mm) Lbs (kg)	28-15/16 × 34-1/4 × 12 31-7/8 × 41-9/16 × 18-1 97 (-5/8 (735 × 870 × 320) 1/4 (810 × 1,056 × 464) 44)		

Notes:

- SL: The Quiet fan level of the airflow rate setting.
 The data are based on the conditions shown in the table below.

Cooling	Indoor ; 80.0°FDB (26.7°CDB) / 67.0°FWB (19.4°CWB) Outdoor ; 95.0°FDB (35.0°CDB) / 75.0°FWB (23.9°CWB)
Heating	Indoor; 70.0°FDB (21.1°CDB) / 60.0°FWB (15.6°CWB) Outdoor; 47.0°FDB (8.3°CDB) / 43.0°FWB (6.1°CWB)
Piping Length	25 ft (7.6 m)

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

Part 3 Printed Circuit Board Connector Wiring Diagram

Ι.	indoor Unit	IJ
	1.1 FFQ09/12/15/18Q2VJU	13
	Wired Remote Controller	
	2.1 BRC1E73	14
3.	Wireless Remote Controller Kit	15
	3.1 BRC082A41W, BRC082A42W(S)	15
4.	Sensor Kit	16
	4.1 BRYQ60A2W(S)	16
5.	Outdoor Unit	
	5.1 RX09/12QMVJU	
	5.2 RX09/12RMVJU(9)	18
	5.3 RX15/18QMVJU, RX15RMVJU(A), RX18RMVJU(9)(A)	19

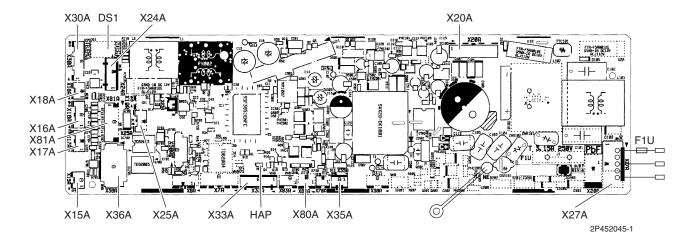
Indoor Unit SiUS091628EC

1. Indoor Unit

1.1 FFQ09/12/15/18Q2VJU

Control PCB (A1P)

1) X15A	Connector for float switch
2) X16A	Connector for room temperature thermistor (suction air thermistor)
3) X17A, X18A	Connector for indoor heat exchanger thermistor
4) X20A	Connector for DC fan motor
5) X24A	Connector for transmitter board
	(when the wireless remote controller (option) is used)
6) X25A	Connector for drain pump motor
7) X27A	Connector for terminal block (for inter-unit wiring)
8) X30A	Connector for terminal block (for wired remote controller)
9) X33A	Connector for adaptor for wiring (option)
10) X35A	Connector for wiring adaptor for electrical appendices (option)
11) X36A	Connector for swing motors on decoration panel (option)
12) X80A	Connector for decoration panel (BYFQ60B3W1) (option)
13) X81A	Connector for sensor kit (BRYQ60A2W(S)) (option)
14) HAP	LED for service monitor (green)
15) DS1	DIP switch
16) F1U	Fuse (5 A, 250 V)



SiUS091628EC Wired Remote Controller

2. Wired Remote Controller

2.1 BRC1E73

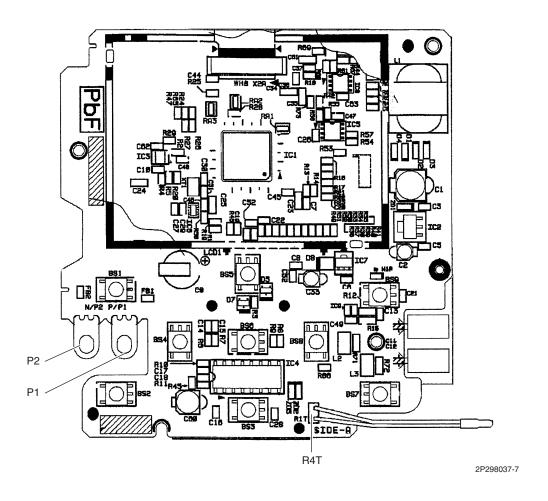
Wired Remote Controller PCB

1) P1, P2

Terminal for indoor unit

2) R4T

Room temperature thermistor



3. Wireless Remote Controller Kit

3.1 BRC082A41W, BRC082A42W(S)

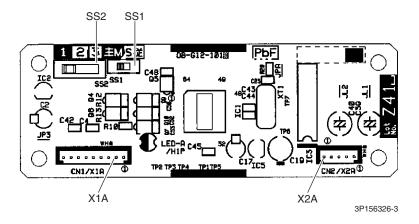
Transmitter Board (A2P)

X1A Connector for receiver (A3P)
 X2A Connector for control PCB (A1P)
 SS1 MAIN/SUB setting switch

 * Refer to page 131 for details.

4) SS2 Address setting switch

* Refer to page 131 for details.



Receiver (A3P)

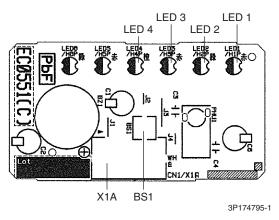
1) X1A Connector for transmitter board (A2P)

2) BS1 Emergency operation switch3) LED1 (H1P) LED for operation (red)

4) LED2 (H2P) LED for timer (green)

5) LED3 (H3P) LED for filter cleaning sign (red)

6) LED4 (H4P) LED for defrost operation (orange)



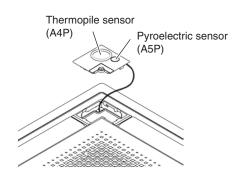
★ LED5 and LED6 do not function.

SiUS091628EC Sensor Kit

4. Sensor Kit

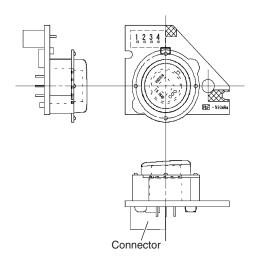
4.1 BRYQ60A2W(S)

Outline



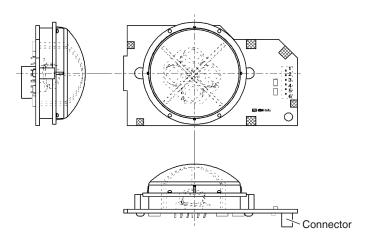
(R25074)

Thermopile Sensor (A4P)



3P262610-1

Pyroelectric Sensor (A5P)



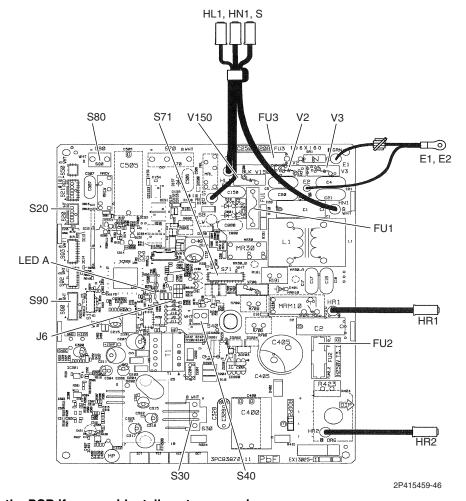
3P262611-1

Outdoor Unit SiUS091628EC

5. Outdoor Unit5.1 RX09/12QMVJU

Main PCB (PCB1)

1) S20	Connector for electronic expansion valve coil
2) S30	Connector for compressor
3) S40	Connector for overload protector
4) S71	Connector for DC fan motor
5) S80	Connector for four way valve coil
6) S90	Connector for thermistors
	(outdoor temperature, outdoor heat exchanger, discharge pipe)
7) HL1, HN1, S	Connector for terminal block
8) E1, E2	Terminal for ground wire
9) HR1, HR2	Connector for reactor
10)FU1, FU2	Fuse (3.15 A, 250 V)
11)FU3	Fuse (20 A, 250 V)
12)J6	Jumper for facility setting
	* Refer to page 133 for details.
12)LED A	LED for service monitor (green)
13) V2, V3, V150	Varistor



Caution

Replace the PCB if you accidentally cut a wrong jumper.

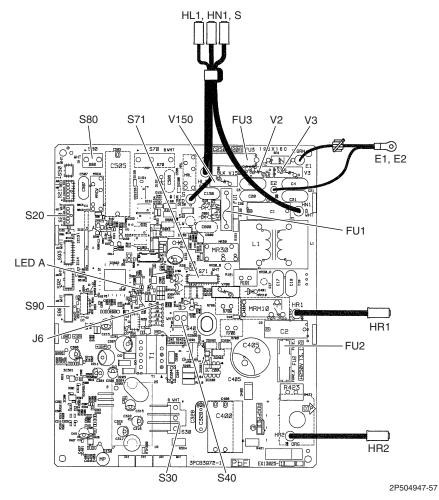
Jumpers are necessary for electronic circuit. Improper operation may occur if you cut any of them.

SiUS091628EC Outdoor Unit

5.2 RX09/12RMVJU(9)

Main PCB (PCB1)

1) S20	Connector for electronic expansion valve coil
2) S30	Connector for compressor
3) S40	Connector for overload protector
4) S71	Connector for DC fan motor
5) S80	Connector for four way valve coil
6) S90	Connector for thermistors
	(outdoor temperature, outdoor heat exchanger, discharge pipe)
7) HL1, HN1, S	Connector for terminal block
8) E1, E2	Terminal for ground wire
9) HR1, HR2	Connector for reactor
10)FU1, FU2	Fuse (3.15 A, 250 V)
11)FU3	Fuse (20 A, 250 V)
12)J6	Jumper for facility setting
	 Refer to page 133 for details.
12)LED A	LED for service monitor (green)
13) V2, V3, V150	Varistor





Replace the PCB if you accidentally cut a wrong jumper.

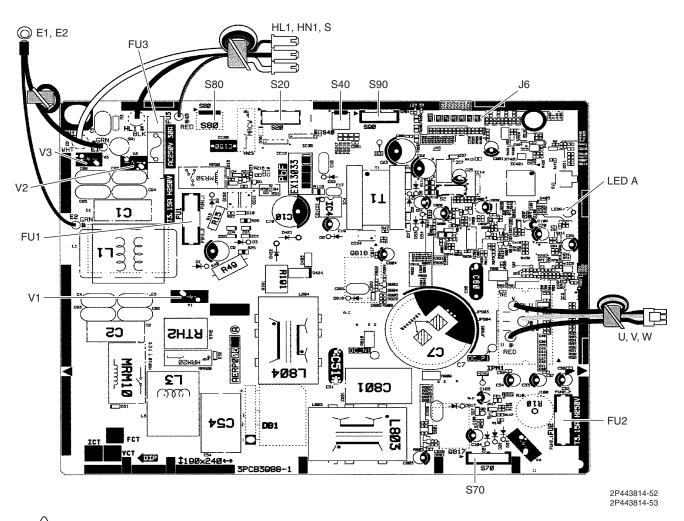
Jumpers are necessary for electronic circuit. Improper operation may occur if you cut any of them.

Outdoor Unit SiUS091628EC

5.3 RX15/18QMVJU, RX15RMVJU(A), RX18RMVJU(9)(A)

Main PCB

1) S20	Connector for electronic expansion valve coil
2) S40	Connector for overload protector
3) S70	Connector for DC fan motor
4) S80	Connector for four way valve coil
5) S90	Connector for thermistors
	(outdoor temperature, outdoor heat exchanger, discharge pipe)
6) HL1, HN1, S	Connector for terminal block
7) E1, E2	Terminal for ground
8) U, V, W	Connector for compressor
9) FU1, FU2	Fuse (3.15 A, 250 V)
10)FU3	Fuse (30 A, 250 V)
11)J6	Jumper for facility setting
	* Refer to page 133 for details.
12)LED A	LED for service monitor (green)
13)V1, V2, V3	Varistor





Replace the PCB if you accidentally cut a wrong jumper.

Jumpers are necessary for electronic circuit. Improper operation may occur if you cut any of them.

Part 4 Functions and Control

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	2 12	Molfunctions	5 1

Main Functions SiUS091628EC

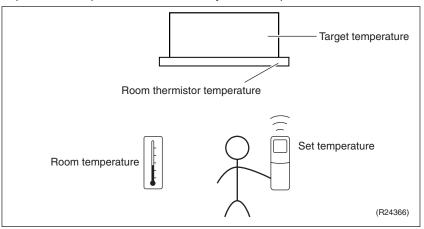
1. Main Functions

1.1 Temperature Control

Definitions of Temperatures

The definitions of temperatures are classified as following.

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



Temperature Control

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

1.2 Frequency Principle

Control Parameters

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

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

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

- Frequency restrictions
- Initial settings
- Forced cooling operation

Inverter Principle

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

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

SiUS091628EC Main Functions

Amount of heat exchanged air (large)

Amount of heat exchanged air (small)

Amount of heat exchanged air (small)

Freq= constant | 50 Hz freq=variable | Capacity=variable | Capacity=vari

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

Inverter Features

The inverter provides the following features:

■ The regulating capacity can be changed according to the changes in the outdoor temperature and cooling/heating load.

Refrigerant circulation rate (low)

(R2812)

- Quick heating and quick cooling The rotation speed of the compressor is increased when starting the heating (or cooling). This enables to reach the set temperature quickly.
- Even during extreme cold weather, high capacity is achieved. It is maintained even when the outdoor temperature is 2°C (35.6 °F).
- Comfortable air conditioning
 A fine adjustment is integrated to keep the room temperature constant.
- Energy saving heating and cooling
 Once the set temperature is reached, the energy saving operation enables to maintain the room temperature at low power.

Frequency Limits

The following functions regulate the minimum and maximum frequency:

Frequency	Functions		
Low	■ Four way valve operation compensation. Refer to page 42.		
High	 ■ Compressor protection function. Refer to page 42. ■ Discharge pipe temperature control. Refer to page 43. ■ Input current control. Refer to page 44. ■ Freeze-up protection control. Refer to page 45. ■ Heating peak-cut control. Refer to page 45. ■ Defrost control. Refer to page 47. 		

Forced Cooling Operation

Refer to page 122 for details.

Main Functions SiUS091628EC

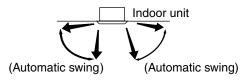
1.3 Airflow Direction Control

Outline

There are two types of airflow direction settings.

Automatic swing setting

The flaps automatically oscillate up and down.

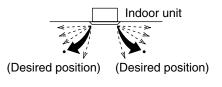


(R24069)

Airflow direction fixed setting

You can select from one of the fixed directions.

The display of the remote controller and the actual angle of the flap do not match.



(R24070)

Flaps Movement

Under the operating conditions shown below, airflow direction is controlled automatically. Actual operation may be different from what is displayed on the remote controller.

- Room temperature is higher than the remote controller's set temperature in heating operation.
- When defrosting in heating operation. The airflow discharges horizontally to avoid blowing cold air directly on the room occupants.
- Under continuous operation with the airflow discharging horizontally.

Individual Flap Control

With decoration panels BYFQ60C2W1W(S) and wired remote controller (BRC1E73), you can control each one of the four flaps individually. The following marks are beside each air outlet: \Box , $\Box\Box$, $\Box\Box\Box$, $\Box\Box\Box\Box$.

1.4 Fan Speed Control for Indoor Unit

■ With Wired Remote Controller (BRC1E73)

To change the fan speed, press **Fan Speed** button and select the fan speed from Low/Medium/High/Auto for three-speed.

- The system may change the fan speed automatically for equipment protection purposes.
- The system may turn off the fan when the room temperature is satisfied.
- It is normal for a delay to occur when changing the fan speed.
- If the Auto is selected for the fan speed, the fan speed varies automatically based on the difference between set temperature and room temperature.
- With Wireless Remote Controller (BRC082A41W, BRC082A42W(S))

 Press FAN SPEED CONTROL button to select the fan speed (LOW, MEDIUM or HIGH).

SiUS091628EC Main Functions

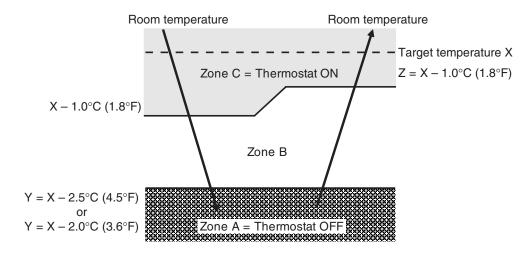
1.5 Program Dry Operation

Outline

Program dry operation removes humidity while preventing the room temperature from lowering. Since the microcomputer controls both the temperature and airflow rate, the temperature adjustment and **FAN** setting buttons are inoperable.

Details

The microcomputer automatically sets the temperature and airflow rate. The difference between the room thermistor temperature at start-up and the target temperature is divided into two zones. Then, the unit operates in an appropriate capacity for each zone to maintain the temperature and humidity at a comfortable level.



(R24367)

Room thermistor temperature at start-up	Target temperature X	Thermostat OFF point Y	Thermostat ON point Z
24.5°C or more (76.1°F or more)	Room thermistor temperature at start-up	X – 2.5°C (X – 4.5°F)	X – 1.0°C (X – 1.8°F)
16.5 ~ 24°C (61.7 ~ 75.2°F)		X – 2.0°C (X – 3.6°F)	X – 1.0°C (X – 1.8°F)
16°C or less (60.8°F or less)	16°C (60.8°F)	X – 2.0°C (X – 3.6°F)	$X - 1.0^{\circ}C = 15^{\circ}C$ $(X - 1.8^{\circ}F = 59^{\circ}F)$

Main Functions SiUS091628EC

1.6 **Clock and Calendar Setting (With Wired Remote Controller BRC1E73)**



• Press Menu/OK button to display the main menu screen.

 Press ▼▲ buttons to select Clock & Calendar on the main menu screen.

Press Menu/OK button to display the clock & calendar screen.





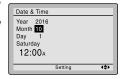
 Press ▼▲ buttons to select Date & Time on the clock & calendar screen. Press Menu/OK button to display the date & time screen.





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





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







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



(R24368)

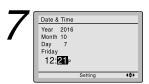
SiUS091628EC Main Functions



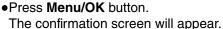
Select Hour with ◀▶ buttons.
 Change the hour with ▼▲ buttons.
 Holding down the button causes the number to change continuously.







•Select **Minute** with ◀▶ buttons. Change the minute with **▼**▲ buttons. Holding down the button causes the number to change continuously.



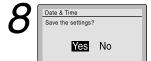




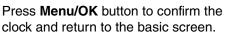


Note: -

The date can be set between January 1, 2015 and December 31, 2099.



 Press ◀▶ button to select Yes on the confirmation screen.







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

(R24072)

Main Functions SiUS091628EC

1.7 Schedule TIMER Operation (With Wired Remote Controller BRC1E73)

Outline

Day settings are selected from 4 patterns:

- 7 Days
- Weekday/Sat/Sun
- Weekday/Weekend
- Everyday

Up to 5 actions can be set for each day.

Details

Set the startup time and operation stop time.

ON: Startup time, cooling and heating temperature setpoints can be configured.

OFF: Operation stop time, cooling and heating setback temperature setpoints can be configured.

(--: Indicates that the setback function is disabled for this time period.)

__: Indicates that the temperature setpoint and setback temperature setpoint for this time period is not specified. The last active setpoint will be utilized.



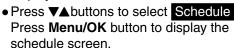
Refer to Setback function on page 31 for details of setback function.

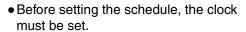
■ Setting the schedule

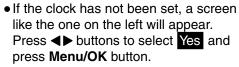


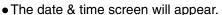
Schedule
Clock has not been set.
Would you like to set it now?



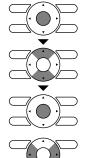








 Set the current year, month, day, and time.







Yes No

Setting



 Press ▼▲ buttons to select the desired function on the schedule screen and press Menu/OK button.



(R24369)

SiUS091628EC Main Functions

■ Daily Patterns

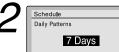


• The schedule screen will appear.

 Press ▼▲ buttons to select Daily Patterns on the schedule screen.

To the second se

The daily patterns screen will appear when **Menu/OK** button is pressed.



 Press ▼▲ buttons to select 7 Days, Weekday/Sat/Sun,
 Weekday/Weekend or Everyday on the daily patterns screen.
 The confirmation screen will appear



The confirmation screen will appear when **Menu/OK** button is pressed.



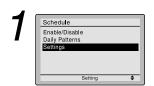
 Press ◀▶ buttons to select Yes on the confirmation screen.

Pressing **Menu/OK** button enters the daily patterns in the schedule and takes you back to the main menu screen.

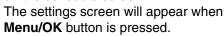


(R24074)

■ Settings



- The schedule screen will appear.
- Press ▼▲ buttons to select Settings on the schedule screen.





2



- Press ▼▲ buttons to select the day to be set.
- * It cannot be selected in the case of EVDY .









- Input the time for the selected day.
- Press ◀► buttons to move the highlighted item and press ▼▲ buttons to input the desired operation start time.
 Each press of ▼▲ buttons moves the numbers by 1 hour or 1 minute.





28

Main Functions SiUS091628EC





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



Schedule Time Act 6:00a ON 4\$> ON: The temperature setpoints can be configured. OFF: The setback temperature setpoints can be configured.

--: The temperature setpoints and setback temperature setpoints become disabled.



- The cooling and heating temperature setpoints for both ON and OFF (Setback) are configured.
 - __: Indicates that the temperature setpoint and setback temperature setpoint for this time period is not specified. The last active setpoint will be utilized.
 - -: Indicates that the setback function is disabled for this time period.





A maximum of five actions per day can be



• Press Menu/OK button when settings for each day are completed. The confirmation screen will appear.



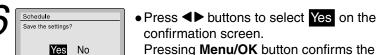
Schedule Time Act 6:00A ON 8:00A OFF Cool 75F 85F Heat 70F 50F 5:30P ON 10:00P OFF 75F 82F 70F 62F

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

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







Pressing Menu/OK button confirms the settings for each day and takes you back to the basic screen.



(R24075)

SiUS091628EC Main Functions

■ Enabling or disabling the schedule

Schedule

Enable/Olsable
Daily Patterns
Settings

Setting \$

• Display the schedule screen.

Press ▼▲ buttons to select
 Enable / Disable on the schedule screen.

Press **Menu/OK** button to display the enable/disable screen.





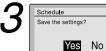


 Press ▼▲ buttons to select Enable or Disable on the enable/disable screen.

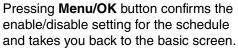
Press **Menu/OK** button after selecting the item. The confirmation screen is displayed.







 Press ◀► buttons to select Yes on the confirmation screen.







(R24076)

Main Functions SiUS091628EC

1.8 Setback Function (With Wired Remote Controller BRC1E73)

Outline

The Setback function can be used to maintain the space temperature in an assigned range for an unoccupied period.

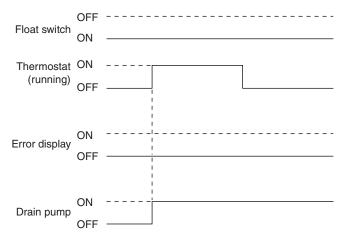
Details

The setback icon flashes on the LCD of wired remote controller when the unit is turned on by the setback control.

- When enabled, the Setback mode becomes active when the indoor unit is turned off by either the user, a schedule event or an off timer.
- Setback function is not available by default. It can be enabled by the system installer.

1.9 Drain Pump Control

1.9.1 Normal Operation

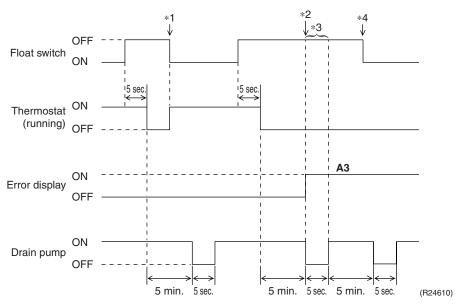


(R24037)

- 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.

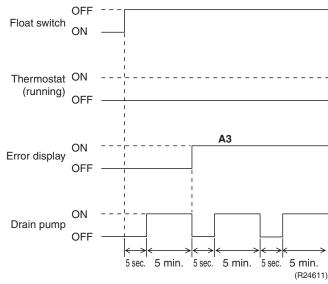
SiUS091628EC Main Functions

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



- When the float switch stays OFF for 5 sec., the thermostat turns OFF.
- 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 determined.
- *3: The drain pump turns OFF once residual operation has ended, then turns ON again after 5 seconds.
- *4: After **A3** is determined and the unit comes to an abnormal stop, the thermostat will remain OFF even if the float switch turns ON again.

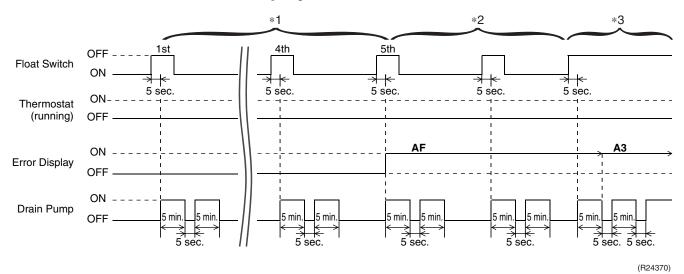
1.9.3 If the Float Switch is OFF with the Thermostat OFF in Cooling Operation



- When the float switch stays OFF for 5 sec., the drain pump turns ON.
- If the float switch remains OFF even after the residual operation of the drain pump has ended, the error code A3 is determined.
- The drain pump turns OFF once residual operation has ended, then turns ON again after 5 seconds.

Main Functions SiUS091628EC

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



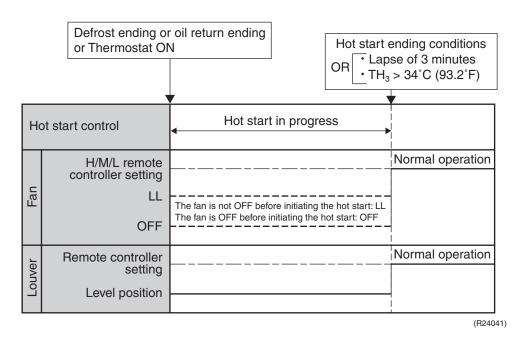
- When the float switch stays OFF for 5 sec., the drain pump turns ON.
- *1: If the float switch continues to turn OFF and ON 5 times consecutively, it is judged as a drain system error and the error code **AF** is determined.
- *2: The drain pump continues to turn ON/OFF in accordance with the float switch OFF/ON even after **AF** is determined.
- *3: While the error code **AF** is active, if the float switch remains OFF even after the residual operation of the drain pump has ended, the error code **A3** will be determined.

1.10 Hot Start Control (In Heating Operation Only)

Outline

At startup with thermostat ON or after the completion of defrosting in heating operation, the indoor unit fan is controlled to prevent cold air from blasting out and ensure startup capacity.

Details



TH₃: Temperature detected by the indoor heat exchanger thermistor (R3T)

SiUS091628EC Main Functions

1.11 Presence and Floor Sensors (Option)

Outline

With the human presence signal and the floor temperature signal from the optional sensor kit, the system provides the energy saving control, or the comfortable temperature control and airflow direction control preventing the direct draft to the human.

To use sensor related functions, a wired remote controller (BRC1E73) and optional sensor kit (BRYQ60A2W(S)) are necessary to be installed.

Details

1. Draft prevention (with presence sensor)

When the sensor detects human presence during auto-swing operation, the system sets the airflow direction parallel to the floor (position 0) to reduce unpleasant draft.

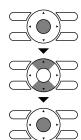
The operation returns to the normal auto-swing as the sensor detects no human in the room.

- Draft prevention is enabled only when decoration panel BYFQ60C2W1W(S), sensor kit BRYQ60A2W(S) and wired remote controller BRC1E73 are connected to the main unit and draft prevention is set to "enabled" on the wired remote controller.
- Factory setting is "disabled".
- Draft prevention cannot be activated when individual flap control is set, even if draft prevention is enabled on the wired remote controller.

Setting on the wired remote controller



- Press Menu/OK button to display the main menu screen.
- Press ▼▲ buttons to select
 Configuration and press Menu/OK button.





Press ▼▲ buttons to select
 Draft Prevention and press
 Menu/OK button.





- Press ▼▲ buttons to select Enable .
- The confirmation screen will appear when Menu/OK button is pressed.







- Press ◀► buttons to select Yes .
- Press Menu/OK button to confirm the settings and to return to the basic screen.



Main Functions SiUS091628EC

2. Auto-setback by sensor (with presence sensor)

After pre-determined time has elapsed without detection of human presence, the unit automatically shifts the target temperature gradually for energy saving.

The target temperature displayed on the remote controller remains same as the initial set value during the above change of target temperature.

The target temperature shifts within the range of the highest programmable temperature while in cooling operation and the lowest programmable temperature while in heating operation. Upon human detection, the target temperature returns to the original setting.

- Auto-setback by sensor is enabled only when decoration panel BYFQ60C2W1W(S), sensor kit BRYQ60A2W(S) and wired remote controller BRC1E73 are connected to the main unit and auto-setback by sensor is set to "enabled" on the wired remote controller.
- Factory setting is "disabled".

Setting on the remote controller



- Press Cancel button for 4 seconds on the basic screen to display Service Settings menu.
- Press ▼▲ buttons to select Energy Saving Options .
- Press Menu/OK button to display Energy Saving Options menu.







- Press ▼▲ buttons to select Auto-setback by Sensor
- Press Menu/OK button to display Auto-setback by Sensor menu.







- Press ▼▲ buttons to select Enable/ Disable
- Press Menu/OK button.







- Press ▼▲ buttons to select Enable
- Press Menu/OK button after selecting the item. Then the confirmation screen is displayed.







- Press < ▶ buttons to select Yes .
- Press Menu/OK button to confirm the settings and to return to the Service Settings menu.



SiUS091628EC Main Functions

3. Auto-off by sensor (with presence sensor)

After pre-determined time has elapsed without detection of human presence, the unit automatically stops operation.

The auto-off time can be set between 1-24 hours by the hour.

Once the unit stops operation by auto-off function, the system would not restart even if the human is detected again.

- Auto-off by sensor is enabled only when decoration panel BYFQ60C2W1W(S), sensor kit BRYQ60A2W(S) and wired remote controller BRC1E73 are connected to the main unit and auto-off by sensor is set to "enabled" on the wired remote controller.
- Factory setting is "disabled".

Setting on the remote controller



- Press Cancel button for 4 seconds on the basic screen to display Service Settings menu.
- Press ▼▲ buttons to select Energy Saving Options .
- Press Menu/OK button to display Energy Saving Options menu.







- Press ▼▲ buttons to select Auto-off by Sensor.
- Press Menu/OK button to display Auto-off by Sensor menu.





Press ▼▲ buttons to select Enable.





- Press ◀▶ buttons to go into the auto-off time setting.
- Press ▼▲ buttons to set auto-off hour(s) (1 ~ 24).
- Press Menu/OK button. Then the confirmation screen is displayed.







- Press ◀► buttons to select Yes .
- Press Menu/OK button to confirm the settings and to return to the Service Settings menu.



4. Room temperature adjustment by sensing (with floor sensor)

The system uses living space temperature calculated from temperatures detected by room temperature thermistor (suction air thermistor in the indoor unit) and floor sensor, as the target temperature.

Operation becomes more optimized by using not only suction air temperature but floor temperature.

■ This function is enabled when decoration panel BYFQ60C2WAW(S) and sensor kit BRYQ60A2W(S) is connected to the main unit.

Main Functions SiUS091628EC

1.12 Other Functions

1.12.1 Signal Receiving Sign

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

1.12.2 Auto-restart Function

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

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

1.12.3 Emergency Operation Switch (With Wireless Remote Controller BRC082A41W, BRC082A42W(S))

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

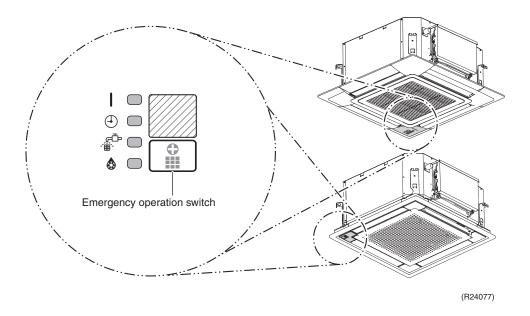
Start

Press emergency operation switch.

- The unit runs in the previous mode.
- The system operates with the previously set airflow direction.

Stop

Press emergency operation switch again.



SiUS091628EC Control Specification

2. Control Specification

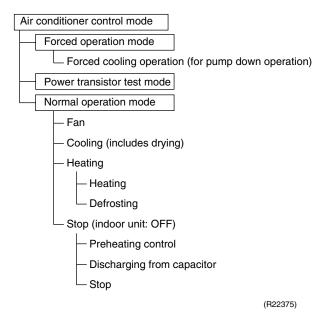
2.1 Mode Hierarchy

Outline

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

Details

Heat Pump Model



Note: Unless specified otherwise, dry operation command is regarded as cooling operation.

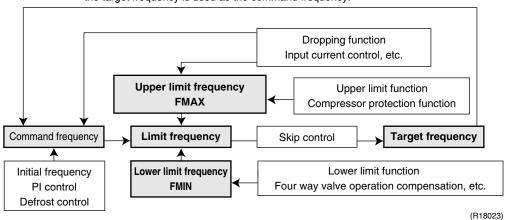
Control Specification SiUS091628EC

2.2 Frequency Control

Outline

The compressor frequency is determined according to the difference between the room thermistor temperature and the target temperature.

When the shift of the frequency is less than zero (Δ F<0) by PI control, the target frequency is used as the command frequency.



Details

1. Determine command frequency

Command frequency is determined in the following order of priority.

- 1. Limiting defrost control time
- 2. Forced cooling
- 3. Indoor frequency command

2. Determine upper limit frequency

The minimum value is set as an upper limit frequency among the frequency upper limits of the following functions:

Compressor protection, input current, discharge pipe temperature, heating peak-cut, freeze-up protection, defrost control.

3. Determine lower limit frequency

The maximum value is set as an lower limit frequency among the frequency lower limits of the following functions:

Four way valve operation compensation, draft prevention, pressure difference upkeep.

4. Determine prohibited frequency

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

SiUS091628EC Control Specification

Initial Frequency

When starting the compressor, the frequency is initialized according to the ΔD value of the indoor unit.

△D signal: Indoor frequency command

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

△D signal for cooling

Temperature difference	∆D signal	Temperature difference	∆D signal	Temperature difference	∆D signal	Temperature difference	ΔD signal
-2.0°C (-3.6°F)	*OFF	0°C (0°F)	4	2.0°C (3.6°F)	8	4.0°C (7.2°F)	12
-1.5°C (-2.7°F)	1	0.5°C (0.9°F)	5	2.5°C (4.5°F)	9	4.5°C (8.1°F)	13
-1.0°C (-1.8°F)	2	1.0°C (1.8°F)	6	3.0°C (5.4°F)	10	5.0°C (9.0°F)	14
-0.5°C (-0.9°F)	3	1.5°C (2.7°F)	7	3.5°C (6.3°F)	11	5.5°C (9.9°F)	15

^{*}OFF = Thermostat OFF

△D signal for heating

Temperature difference	∆D signal						
-1.5°C (-2.7°F)	*OFF	0.5°C (0.9°F)	4	2.5°C (4.5°F)	8	4.5°C (8.1°F)	12
-1.0°C (-1.8°F)	1	1.0°C (1.8°F)	5	3.0°C (5.4°F)	9	5.0°C (9.0°F)	13
-0.5°C (-0.9°F)	2	1.5°C (2.7°F)	6	3.5°C (6.3°F)	10	5.5°C (9.9°F)	14
0°C (0°F)	3	2.0°C (3.6°F)	7	4.0°C (7.2°F)	11	6.0°C (10.8°F)	15

^{*}OFF = Thermostat OFF

PI Control

1. P control

The ΔD value is calculated in each sampling time (20 seconds), and the frequency is adjusted according to its difference from the frequency previously calculated.

2. I control

If the operating frequency does not change for more than a certain fixed time, the frequency is adjusted according to the ΔD value.

When ΔD value is low, the frequency is lowered.

When ΔD value is high, the frequency is increased.

3. Frequency control when other controls are functioning

When frequency is dropping:

Frequency control is carried out only when the frequency drops.

For limiting lower limit:

Frequency control is carried out only when the frequency rises.

4. Upper and lower limit of frequency by PI control

The frequency upper and lower limits are set according to the command of the indoor unit. When the indoor or outdoor unit quiet operation command comes from the indoor unit, the upper limit frequency is lower than the usual setting.

Control Specification SiUS091628EC

2.3 Controls at Mode Changing/Start-up

2.3.1 Preheating Control

Outline

The inverter operation in open phase starts with the conditions of the outdoor temperature, the discharge pipe temperature, the radiation fin temperature and the preheating command from the indoor unit.

Details

Outdoor temperature \geq -2.5°C (27.5°F) \rightarrow Control A (preheating for normal state) Outdoor temperature < -2.5°C (27.5°F) \rightarrow Control B (preheating of increased capacity)

Control A

ON condition

Discharge pipe temperature < 0°C (32.0°F) Radiation fin temperature < 85°C (185°F)

OFF condition

Discharge pipe temperature > 2° C (35.6°F) Radiation fin temperature $\geq 90^{\circ}$ C (194°F)

Control B

ON condition

Discharge pipe temperature < 10°C (50.0°F) Radiation fin temperature < 85°C (185°F)

OFF condition

Discharge pipe temperature > 12° C (53.6°F) Radiation fin temperature $\geq 90^{\circ}$ C (194° F)

2.3.2 Four Way Valve Switching

Outline

The four way valve coil is energized/not energized depending on the operation mode. (Heating: ON, Cooling/Drv/Defrost: OFF)

In order to eliminate the switching sound as the four way valve coil switches from ON to OFF when the heating is stopped, the OFF delay switch of the four way valve is carried out.

Details

OFF delay switch of four way valve

The four way valve coil is energized for 160 seconds after the operation is stopped.

SiUS091628EC Control Specification

2.3.3 Four Way Valve Operation Compensation

Outline

At the beginning of operation as the four way valve is switched, the pressure difference to activate the four way valve is acquired when the output frequency is higher than a certain fixed frequency, for a certain fixed time.

Details

Starting Conditions

- 1. When the compressor starts and the four way valve switches from OFF to ON
- 2. When the four way valve switches from ON to OFF during operation
- 3. When the compressor starts after resetting
- 4. When the compressor starts after the fault of four way valve switching

The lower limit of frequency keeps **A** Hz for **B** seconds for any of the conditions above.

When the outdoor temperature is above ${\bf C}$ in heating, the frequency decreases depending on the outdoor temperature.

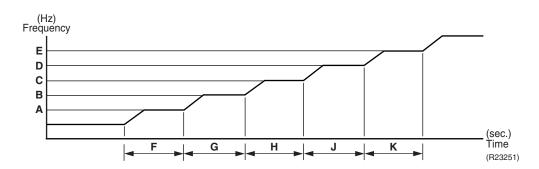
		09/12	class	15/18 class	
		Cooling	Heating	Cooling	Heating
A (Hz)		40	54	4	8
B (seconds)		60		70	
(°C)		10		15	
<u> </u>	(°F)	5	0	59	

2.3.4 3-Minute Standby

Turning on the compressor is prohibited for 3 minutes after turning it off. (The function is not activated when defrosting.)

2.3.5 Compressor Protection Function

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



	09/12 class	15/18 class
A (Hz)	40	52
B (Hz)	54	68
C (Hz)	72	80
D (Hz)	90	_
E (Hz)	_	_
F (seconds)	180	300
G (seconds)	420	200
H (seconds)	180	460
J (seconds)	120	_
K (seconds)	_	_

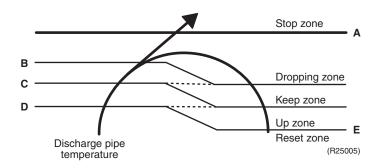
Control Specification SiUS091628EC

2.4 Discharge Pipe Temperature Control

Outline

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

Details



	09/12	class	15/18 class		
	(°C) (°F)		(°C)	(°F)	
Α	110	230.0	110	230.0	
В	103	217.4	103	217.4	
С	98	208.4	101.5	214.7	
D	93	199.4	100	212.0	
E	88	190.4	95	203.0	

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

SiUS091628EC Control Specification

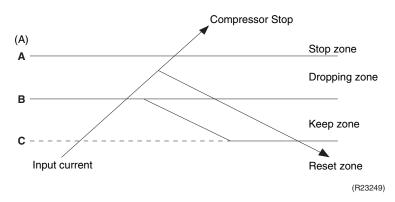
2.5 Input Current Control

Outline

The microcomputer calculates the input current while the compressor is running, and sets the frequency upper limit based on the input current.

In case of heat pump models, this control is the upper limit control of frequency and takes priority over the lower limit control of four way valve operation compensation.

Details



Frequency control in each zone

Stop zone

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

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

Keep zone

The present maximum frequency goes on.

Reset zone

• Limit of the frequency is canceled.

	09/12 class		15 class		18 class	
	Cooling	Heating	Cooling	Heating	Cooling	Heating
A (A)	12		12		12	12.5
B (A)	7 7.5		8	3	10	10.75
C (A)	6	6.5	7		9	9.75

Limitation of current dropping and stop value according to the outdoor temperature

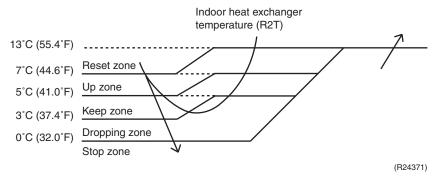
• The current drops when outdoor temperature becomes higher than a certain level (depending on the model).

Control Specification SiUS091628EC

2.6 Freeze-up Protection Control

During cooling operation, the signal sent from the indoor unit determines the frequency upper limit and prevents freezing of the indoor heat exchanger. (The signal from the indoor unit is divided into zones.)

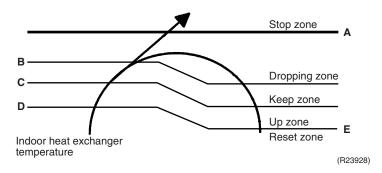
The operating frequency limitation is judged with the indoor heat exchanger temperature.



2.7 Heating Peak-cut Control

During heating operation, the indoor heat exchanger temperature determines the frequency upper limit to prevent abnormal high pressure.

The operating frequency limitation is judged with the indoor heat exchanger temperature.



	09/12 class		15 class		18 class	
	(°C)	(°F)	(°C)	(°F)	(°C)	(°F)
Α	57.5	135.5	60	140.0	60	140.0
В	55	131.0	54	129.2	55	131.0
С	52	125.6	51	123.8	52	125.6
D	50	122.0	49	120.2	50	122.0
E	45	113.0	44	111.2	45	113.0

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

SiUS091628EC Control Specification

2.8 Outdoor Fan Control

1. Fan ON control to cool down the electrical box

The outdoor fan is turned ON when the electrical box temperature is high while the compressor is OFF.

2. Fan OFF control during defrosting

The outdoor fan is turned OFF during defrosting.

3. Fan OFF delay when stopped

The outdoor fan is turned OFF 60 ~ 70 seconds after the compressor stops.

4. Fan speed control for pressure difference upkeep

The rotation speed of the outdoor fan is controlled for keeping the pressure difference during cooling operation with low outdoor temperature.

- When the pressure difference is low, the rotation speed of the outdoor fan is reduced.
- When the pressure difference is high, the rotation speed of the outdoor fan is controlled as well as normal operation.

5. Fan speed control during forced cooling operation

The outdoor fan is controlled as well as normal operation during forced cooling operation.

6. Fan ON/OFF control when operation (cooling, heating, dry) starts/stops

The outdoor fan is turned ON when the operation starts. The outdoor fan is turned OFF when the operation stops.

2.9 Liquid Compression Protection Function

Outline

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

Details

Operation stops depending on the outdoor temperature

Compressor turns off under the conditions that the system is in cooling operation and outdoor temperature is below 0°C (32°F).

Control Specification SiUS091628EC

2.10 Defrost Control

Outline

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

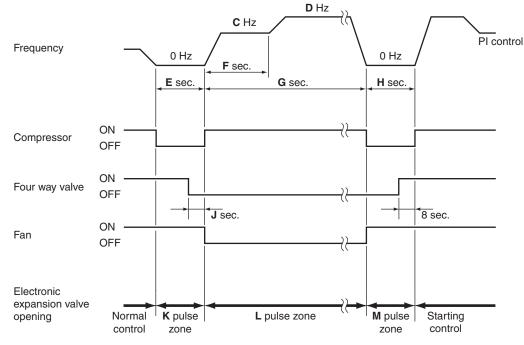
Details

Conditions for Starting Defrost

- The starting conditions are determined with the outdoor temperature and the outdoor heat exchanger temperature.
- The system is in heating operation.
- The compressor operates for 6 minutes.
- More than A minutes (depending on the duration of the previous defrost control) of accumulated time have passed since the start of the operation, or ending the previous defrosting.

Conditions for Canceling Defrost

The judgment is made with the outdoor heat exchanger temperature (**B**).



(R21661)

		RX09/12QMVJU RX09/12RMVJU(9)	RX15/18QMVJU	RX15RMVJU(A) RX18RMVJU(9)(A)
A (minu	ute)	20 ~ 25	25	44
В	(°C)	2 ~ 20	6 ~ 30	12
В	(°F)	35.6 ~ 68.0	42.8 ~ 86.0	42.8 ~ 53.6
C (Hz)		64	48	48
D (Hz)		64	42	70
E (seco	nds)	40	60	60
F (seco	nds)	60	60	60
G (seco	onds)	120 ~ 630	120 ~ 460	120 ~ 460
H (seco	onds)	50	60	60
J (seco	nds)	8	5	5
K (puls	e)	400	450	450
L (pulse	oulse) 300		300 ~ 450	300 ~ 450
M (puls	e)	350	300	300

SiUS091628EC Control Specification

2.11 Electronic Expansion Valve Control

Outline

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

Electronic expansion valve is fully closed

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

Open Control

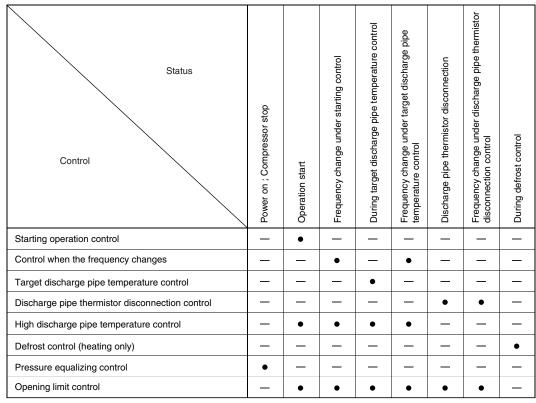
- 1. Electronic expansion valve control when starting operation
- 2. Electronic expansion valve control when the frequency changes
- 3. Electronic expansion valve control for defrosting
- 4. Electronic expansion valve control when the discharge pipe temperature is abnormally high
- 5. Electronic expansion valve control when the discharge pipe thermistor is disconnected

Feedback Control

Target discharge pipe temperature control

Details

The following are the examples of electronic expansion valve control which function in each operation mode.



: Available— : Not available

Control Specification SiUS091628EC

2.11.1 Initialization as Power Supply On

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

2.11.2 Pressure Equalizing Control

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

2.11.3 Opening Limit Control

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

	09/12 class	15/18 class
Maximum opening (pulse)	470	480
Minimum opening (pulse)	32	52

The electronic expansion valve is fully closed when cooling operation stops, and is opened at a fixed degree during defrosting.

2.11.4 Starting Operation Control

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

2.11.5 Control when the frequency changes

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

2.11.6 High Discharge Pipe Temperature Control

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

2.11.7 Discharge Pipe Thermistor Disconnection Control

Outline

The disconnection of the discharge pipe thermistor is detected by comparing the discharge pipe temperature with the condensation temperature. If the discharge pipe thermistor is disconnected, the electronic expansion valve opens according to the outdoor temperature and the operation frequency, operates for a specified time, and then stops.

After 3 minutes, the operation restarts and checks if the discharge pipe thermistor is disconnected. If the discharge pipe thermistor is disconnected, the system stops after operating for a specified time.

If the disconnection is detected repeatedly, the system is shut down. When the compressor runs for 60 minutes without any error, the error counter is reset.

Details

Determining thermistor disconnection

When the starting control finishes, the detection timer for disconnection of the discharge pipe thermistor (**A** seconds) starts. When the timer is over, the following adjustment is made.

1. When the operation mode is cooling

When the following condition is fulfilled, the discharge pipe thermistor disconnection is ascertained.

Discharge pipe temperature +6°C (+10.8°F) < outdoor heat exchanger temperature

SiUS091628EC Control Specification

2. When the operation mode is heating

When the following condition is fulfilled, the discharge pipe thermistor disconnection is ascertained.

Discharge pipe temperature +6°C (+10.8°F) < indoor heat exchanger temperature

	09/12 class	15/18 class
A (seconds)	720	540

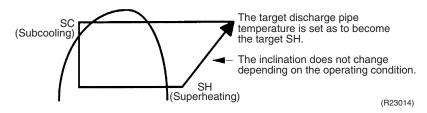
When the thermistor is disconnected

When the disconnection is ascertained, the compressor continues operation for 9 minutes and then stops.

If the compressor stops repeatedly, the system is shut down.

2.11.8 Target Discharge Pipe Temperature Control

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



The electronic expansion valve opening and the target discharge pipe temperature are adjusted every $\bf A$ seconds. The opening degree of the electronic expansion valve is adjusted by the following.

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

	All outdoor units
A (seconds)	10 ~ 30 ★

 \bigstar The time depends on the opening of the electronic expansion valve.

Control Specification SiUS091628EC

2.12 Malfunctions

2.12.1 Sensor Malfunction Detection

Sensor malfunction can be detected in the following thermistor:

- 1. Outdoor heat exchanger thermistor
- 2. Discharge pipe thermistor
- 3. Radiation fin thermistor
- 4. Outdoor temperature thermistor

2.12.2 Detection of Overcurrent and Overload

Outline

An excessive output current is detected and the OL temperature is observed to protect the compressor.

Details

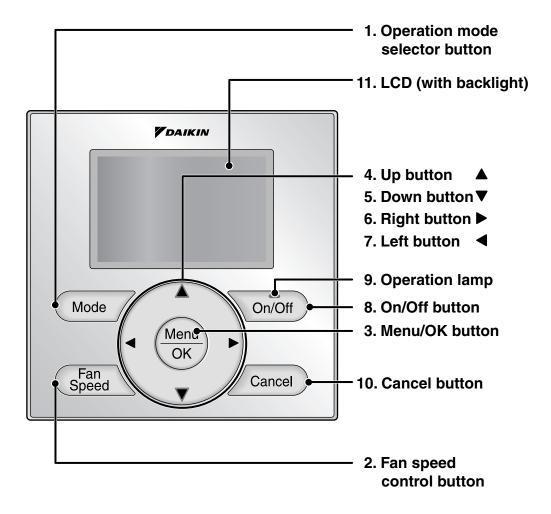
- If the OL (compressor head) temperature exceeds 130°C (266°F), the system shuts down the compressor.
- If the inverter current exceeds 12.0 ~ 12.5 A, the system shuts down the compressor.

 The upper limit of the current decreases when the outdoor temperature exceeds a certain level.

Part 5 Remote Controller

1.	Wired Remote Controller (BRC1E73)	53
2.	Wireless Remote Controller (BRC082A41W, BRC082A42W(S))	59

1. Wired Remote Controller (BRC1E73)



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.

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 flashes if an error occurs.

10. Cancel button

• Used to return to the previous screen.

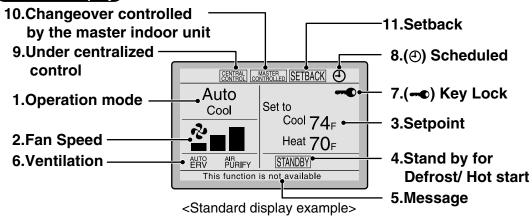
11. LCD (with backlight)

- 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.

Liquid Crystal Display

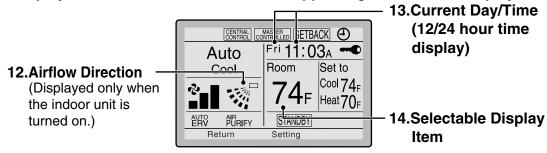
- Three types of display mode (Standard, Detailed and Simple) are available.
- Standard display is set by default.
- Detailed and Simple displays can be selected in the main menu.

Standard display

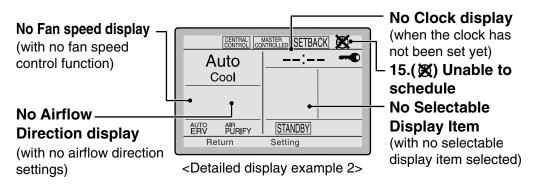


Detailed display

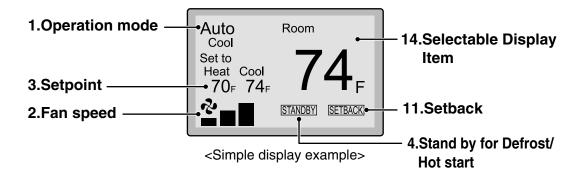
■ The airflow direction, clock, and selectable item appear on Detailed display screen in addition to the items appearing on Standard display.



<Detailed display example 1>



Simple display



Note for all display modes

• Depending on the field settings, while the indoor unit is stopped, OFF may be displayed instead of the operation mode and/or the setpoint may not be displayed.

1. Operation mode

- Used to display the current operation mode: Cool, Heat, Vent, Fan, Dry or Auto.
- In Auto mode, the actual operation mode (Cool or Heat) will be also displayed.
- Operation mode cannot be changed when OFF is displayed. Operation mode can be changed after starting operation.

2. Fan Speed

- Used to display the fan speed that is set for the indoor unit.
- The fan speed will not be displayed if the connected model does not have fan speed control functionality.

3. Setpoint

- Used to display the setpoint for the indoor
- Use the Celsius/Fahrenheit item in the main menu to select the temperature unit (Celsius or Fahrenheit).

4. Stand by for Defrost/Hot start

" STANDBY "

If ventilation icon is displayed in this field:

 Indicates that an energy recovery ventilator (ERV) is connected.

For details, refer to the Operation Manual of the ERV.

5. Message

The following messages may be displayed.

"This function is not available"

- Displayed for a few seconds when an Operation button is pressed and the indoor unit does not provide the corresponding function.
- In a remote control group, the message will not appear if at least one of the indoor units provides the corresponding function.

- "Error: Push Menu button"
- "Warning: Push Menu button"
- Displayed if an error or warning is detected.
- "Time to clean filter"
- "Time to clean element"
- "Time to clean filter & element"
- Displayed as a reminder when it is time to clean the filter and/or element.

6. Ventilation

- · Displayed when an energy recovery ventilator is connected.
- Ventilation Mode icon." AUTO ERV BYPASS " These icons indicate the current ventilation mode (ERV only) (AUTO, ERV, BYPASS).
- Air Purify ICON " PURIFY" This icon indicates that the air purifying unit (Optional) is in operation.

7. Key Lock

• Displayed when the key lock is set.

8. Scheduled

• Displayed if the Schedule or Off timer is enabled.

9. Under Centralized control "CENTRAL "

 Displayed if the system is under the management of a multi-zone controller (Optional) and the operation of the system through the remote controller is limited.

10. Changeover controlled by the master indoor unit " CONTROLLED " (VRV only)

• Displayed when another indoor unit on the system has the authority to change the operation mode between cool and heat.

11. Setback "SETBACK"

• The setback icon flashes when the unit is turned on by the setback control.

12. Airflow Direction "."

- Displayed when the airflow direction and swing are set.
- If the connected indoor unit model does not include oscillating louvers this item will not be displayed.

13. Current Day/Time (12/24 hour time display)

- Displayed if the clock is set.
- If the clock is not set, "--: -- " will be displayed.
- 12 hour time format is displayed by default.
- Select 12/24 hour time display option in the main menu under "Clock & Calendar".

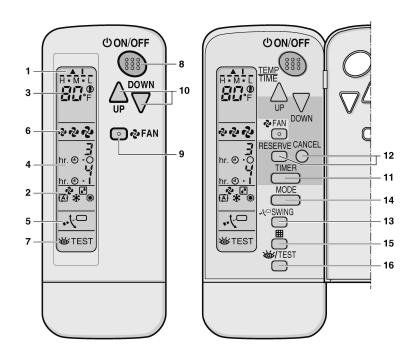
14. Selectable Display Item

- Room temperature is selected by default.
- For other choices see the operation manual.

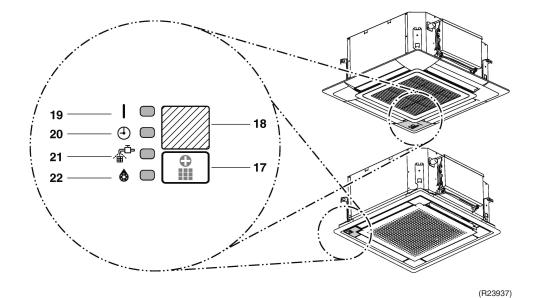
15. XUnable to schedule

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

2. Wireless Remote Controller (BRC082A41W, BRC082A42W(S))



(R23936)



1	DISPLAY ▲ (SIGNAL TRANSMISSION)	
'	This lights up when a signal is being transmitted.	
2	DISPLAY ♣, ♠, ♠, ♠ (OPERATION MODE)	
	This display shows the current OPERATION MODE.	
3	DISPLAY H·M·L, 叧叧O・F (SET TEMPERATURE)	
	This display shows the set temperature.	
_	DISPLAY hr. o o i (PROGRAMMED TIME)	
4	This display shows PROGRAMMED TIME of the system start or stop.	
5	DISPLAY , (SWING FLAP)	
6	DISPLAY ở ở 야 (FAN SPEED)	
	The display shows the set fan speed.	
	DISPLAY //TEST (INSPECTION/TEST OPERATION)	
7	When the INSPECTION/TEST OPERATION button is pressed, the display shows the system mode is in.	
	ON/OFF BUTTON	
8	Press the button and the system will start. Press the button again and the system will stop.	
	FAN SPEED CONTROL BUTTON	
9	Press this button to select the fan speed, LOW, MEDIUM or HIGH, of your choice.	
10	TEMPERATURE SETTING BUTTON	
10	Use this button for setting temperature.	

11	TIMER MODE START/STOP BUTTON
12	TIMER RESERVE/CANCEL BUTTON
13	AIRFLOW DIRECTION ADJUST BUTTON
14	OPERATION MODE SELECTOR BUTTON
14	Press this button to select OPERATION MODE.
15	FILTER SIGN RESET BUTTON
	INSPECTION/TEST OPERATION BUTTON
16	This button is used only by qualified service persons for maintenance purposes.
	EMERGENCY OPERATION SWITCH
17	This switch is readily used if the remote controller does
	not work.
18	RECEIVER
10	This receives the signals from the remote controller.
	OPERATION LAMP (Red)
19	This lamp stays lit while the air conditioner runs. It
	blinks when the unit is in trouble.
20	TIMER LAMP (Green)
20	This lamp stays lit while the timer is set.
	AIR FILTER CLEANING TIME INDICATOR LAMP
21	(Red)
21	Lights up when it is time to clean the air filter.
	,
21	Lights up when it is time to clean the air filter.

Part 6 Service Diagnosis

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1. General Problem Symptoms and Check Items

Symptom	Check Item	Details	Reference Page	
The unit does not operate.	Check the power supply.	Check if the rated voltage is supplied.	_	
	Check the type of the indoor unit.	Check if the indoor unit type is compatible with the outdoor unit.	_	
	Check the outdoor temperature.	Heating/cooling operations are not available when the outdoor temperature is out of the operation limit. Check the reference page for the operation limit.	142	
	Diagnose with remote controller indication.	_	71	
	Check the wireless remote controller address.	Check if address settings for the wireless remote controller and indoor unit are correct.	80, 81	
	If using 2 remote controllers for 1 indoor unit, check MAIN/SUB setting.	Check if the MAIN/SUB setting is correct.	80, 81	
Operation sometimes stops.	Check the power supply.	power supply. A power failure of 2 to 10 cycles stops air conditioner operation. (Operation lamp OFF)		
	Heating/cooling operations are not available when the outdoor temperature is out of the operation limit. Check the reference page for the operation limit.		142	
	Diagnose with remote controller indication.	_	71	
The unit operates but does not cool, or does not heat.	Check for wiring and piping errors in the connection between the indoor unit and outdoor unit.	_	_	
	Check for thermistor detection errors.	Check if the thermistor is mounted securely.	_	
	Check for faulty operation of the electronic expansion valve.	Set the unit to cooling operation, and check the temperature of the liquid pipe to see if the electronic expansion valve works.	_	
	Diagnose with remote controller indication.	_	71	
	Diagnose by service port pressure and operating current.	Check for refrigerant shortage.	_	
Large operating noise and vibrations	Check the output voltage of the power module.	_	118	
	Check the power module.	_		
	Check the installation condition.	Check if the required spaces for installation (specified in the installation manual) are provided.	_	

2. Troubleshooting with LED

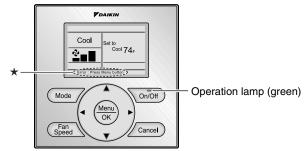
2.1 Indoor Unit

Operation Lamp

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

- When a protection device of the indoor or outdoor unit is activated, or when the thermistor malfunctions.
- 2. When a signal transmission error occurs between the indoor and outdoor units. In either case, conduct the diagnostic procedure described in the following pages.

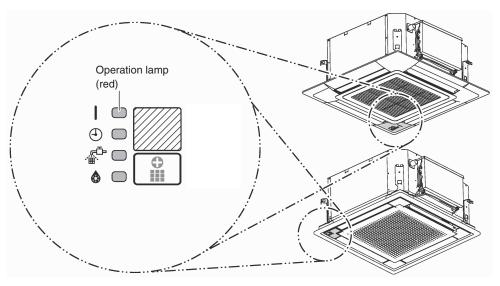
With wired remote controller (BRC1E73)



★The error or warning message also blinks on the basic screen. (R23942

With wireless remote controller (BRC082A41W, BRC082A42W(S))

In case of wireless remote controller, a transmitter board (A2P) and a receiver (A3P) are installed on indoor unit. When the error occurs, the operation lamp on the receiver (A3P) blinks.



(R24044)

2.2 Outdoor Unit

The outdoor unit has one green LED (LED A) on the PCB. When the microcomputer works in order, the LED A blinks. (Refer to pages 17, 18, 19 for the location of LED A.)

Service Diagnosis SiUS091628EC

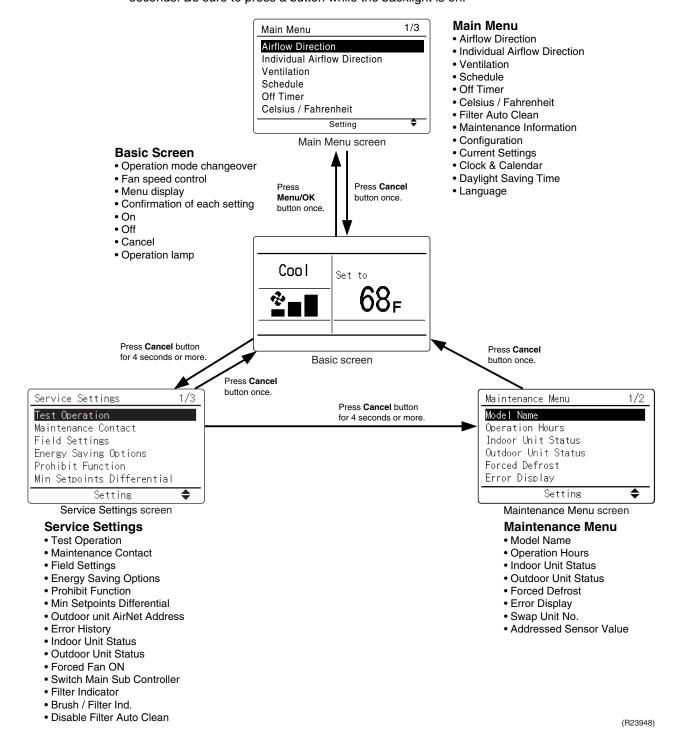
3. Service Diagnosis

3.1 Wired Remote Controller (BRC1E73)

Relations Between Modes

On power-up, the message "Checking the connection. Please standby." will be displayed on the remote controller screen temporarily and then the basic screen will be displayed. To access a mode from the basic screen, refer to the figure below.

When any of the operation buttons is pressed, the backlight will come on and remain lit for about 30 seconds. Be sure to press a button while the backlight is on.



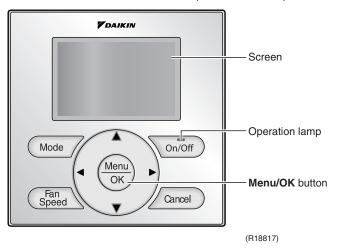
★ The items shown on the remote controller menu are different depending on the connected indoor unit model.

SiUS091628EC Service Diagnosis

Service Diagnosis

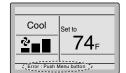
The following message is displayed on the screen when an error (or a warning) occurs during operation.

Check the error code and take the corrective action specified for the particular model.



Operation

1



• If an error occurs, either one of the following items will flash in the basic screen.

Error: Push Menu button

- * The Operation lamp will flash.
- For Simple display, the message is not displayed, and only the Operation lamp flashes.

Warning: Push Menu button

- * The Operation lamp will not flash.
- * For Simple display, the message is not displayed, and the Operation lamp does not flash, either.



• Press Menu/OK button.



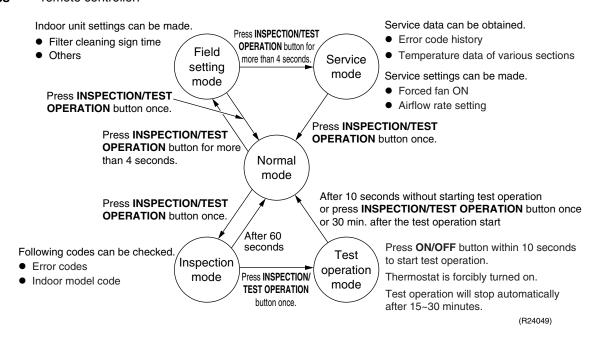
- The error code will flash and the service contact and model name or code may be displayed.
- Notify your Daikin dealer of the Error code and model name or code.

Service Diagnosis SiUS091628EC

3.2 Wireless Remote Controller (BRC082A41W, BRC082A42W(S))

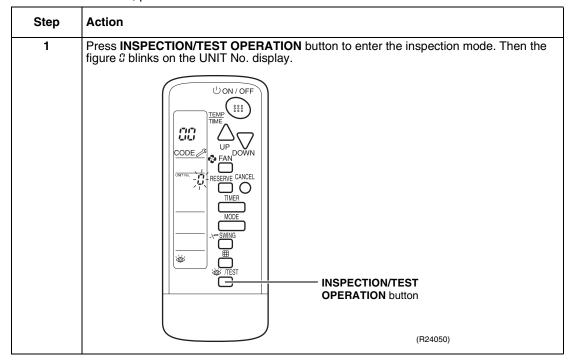
Relations Between Modes

The following modes can be selected by using **INSPECTION/TEST OPERATION** button on the remote controller.

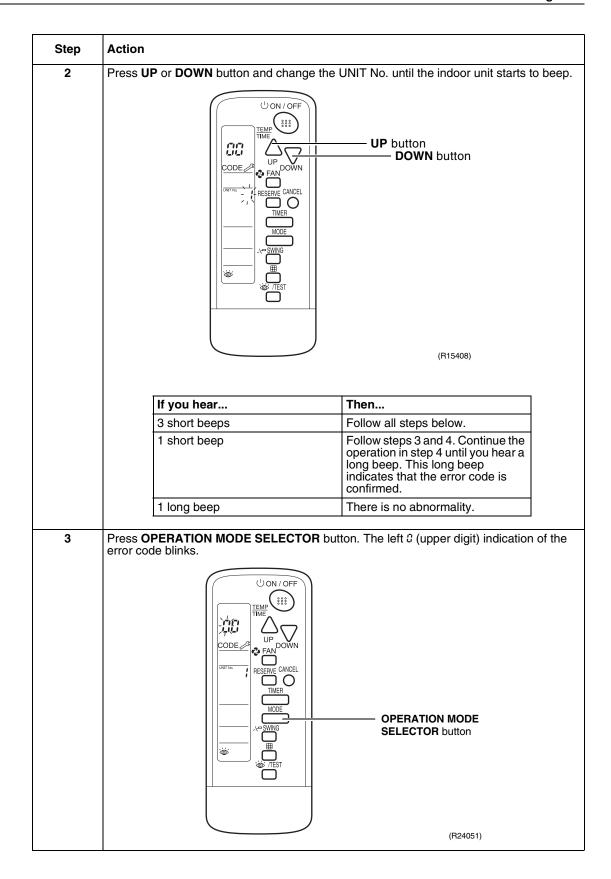


Service Diagnosis

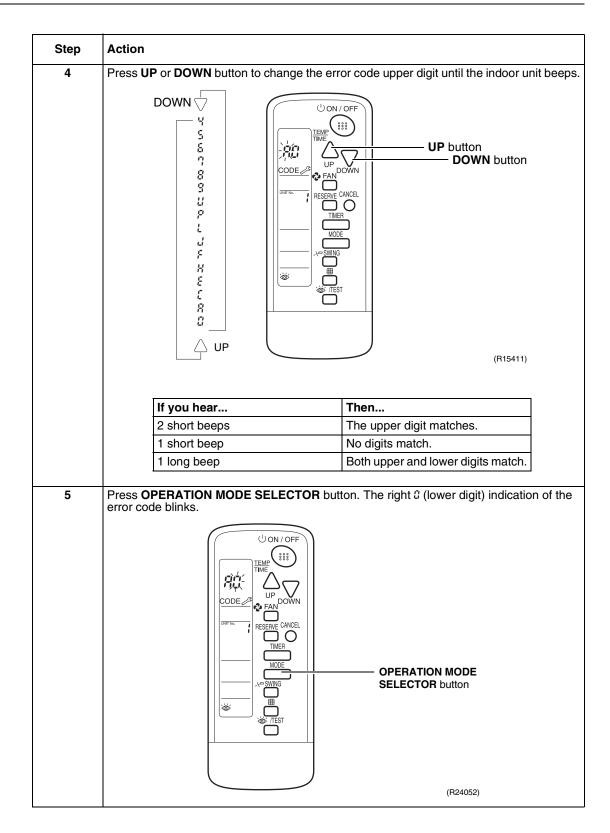
To find the error code, proceed as follows:



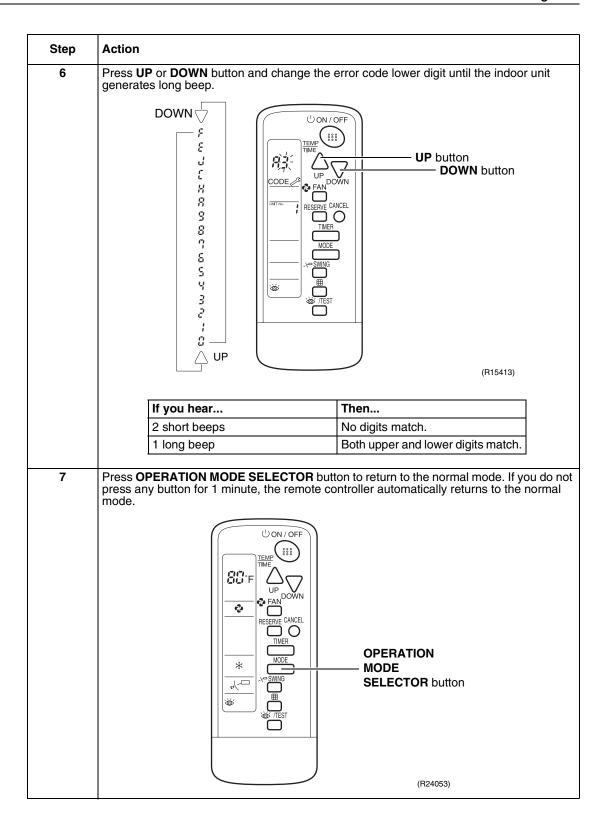
SiUS091628EC Service Diagnosis



Service Diagnosis SiUS091628EC



SiUS091628EC Service Diagnosis



4. Troubleshooting

4.1 Error Codes and Description

	Error Codes	Description	Reference Page	
System	00	Normal		
	U2	Low-voltage detection or over-voltage detection		
	U4	Signal transmission error (between indoor unit and outdoor unit)	84	
	UA	Mismatching of indoor unit and outdoor unit		
Indoor	A1	Indoor unit PCB abnormality	72	
Indoor Unit	A3	Drain level control system abnormality	73	
	A6	Indoor fan motor (DC motor) or related abnormality	74	
	AF	Humidifier or Related abnormality	76	
	C4	ndoor heat exchanger thermistor 1 or related abnormality		
	C5	Indoor heat exchanger thermistor 2 or related abnormality		
	C9	Room temperature thermistor or related abnormality	77	
	CE	Presence sensor or floor sensor abnormality	78	
	CJ	Remote controller thermistor abnormality	79	
	U5	Signal transmission error (between indoor unit and remote controller)		
	U8	Signal transmission error (between MAIN remote controller and SUB remote controller)		
Outdoor Unit	E1	Outdoor unit PCB abnormality	87	
OTIL	E5★	OL activation (compressor overload)		
	U2 Low-voltage detection or over-voltage detection U4 Signal transmission error (between indoor unit and outdoor unit) UA Mismatching of indoor unit and outdoor unit A1 Indoor unit PCB abnormality A3 Drain level control system abnormality A6 Indoor fan motor (DC motor) or related abnormality AF Humidifier or Related abnormality C4 Indoor heat exchanger thermistor 1 or related abnormality C5 Indoor heat exchanger thermistor 2 or related abnormality C9 Room temperature thermistor or related abnormality CE Presence sensor or floor sensor abnormality CJ Remote controller thermistor abnormality U5 Signal transmission error (between indoor unit and remote controller) U8 Signal transmission error (between MAIN remote controller and SUB remote controller)	90		
		91		
	E8	Input overcurrent detection		
	EA	Four way valve abnormality		
	F3	Discharge pipe temperature control		
	F6	High pressure control in cooling		
	F8			
	Н0	Compressor system sensor abnormality	99	
	H6	Position sensor abnormality	100	
	H9	Outdoor temperature thermistor or related abnormality	102	
	J3★	Discharge pipe thermistor or related abnormality		
	J6	Outdoor heat exchanger thermistor or related abnormality	102	
	L3	Electrical box temperature rise	104	
	L4	Radiation fin temperature rise	105	
	L5★	Output overcurrent detection	106	
	P4	Radiation fin thermistor or related abnormality	102	

★: Displayed only when system-down occurs.

4.2 Indoor Unit PCB Abnormality

Error Code

A1

Method of Error Detection

The system checks the data from EEPROM.

Error Decision Conditions

The data from the EEPROM is not received correctly.

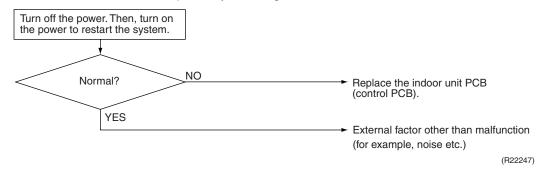
EEPROM (Electrically Erasable Programmable Read Only Memory): A memory chip that holds its content without power. It can be erased, either within the computer or externally and usually requires more voltage for erasure than the common +5 volts used in logic circuits. It functions like non-volatile RAM,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

Supposed Causes

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

Troubleshooting

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



4.3 Drain Level Control System Abnormality

Error Code

A3

Method of Error Detection

The float switch detects error.

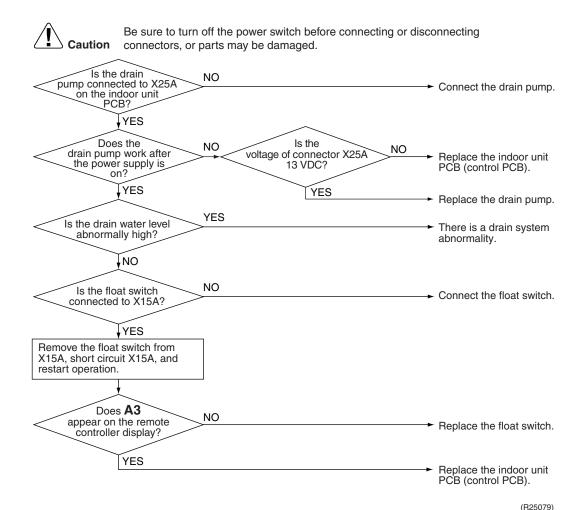
Error Decision Conditions

The water level reaches its upper limit and the float switch turns OFF.

Supposed Causes

- Defective drain pump
- Improper drain piping work
- Clogged drain piping
- Defective float switch
- Defective indoor unit PCB
- Defective connector X15A, X25A on indoor unit PCB

Troubleshooting



4.4 Indoor Fan Motor (DC Motor) or Related Abnormality

Error Code A6

Method of Error Detection The rotation speed detected by the Hall IC during fan motor operation determines abnormal fan motor operation.

Error Decision Conditions

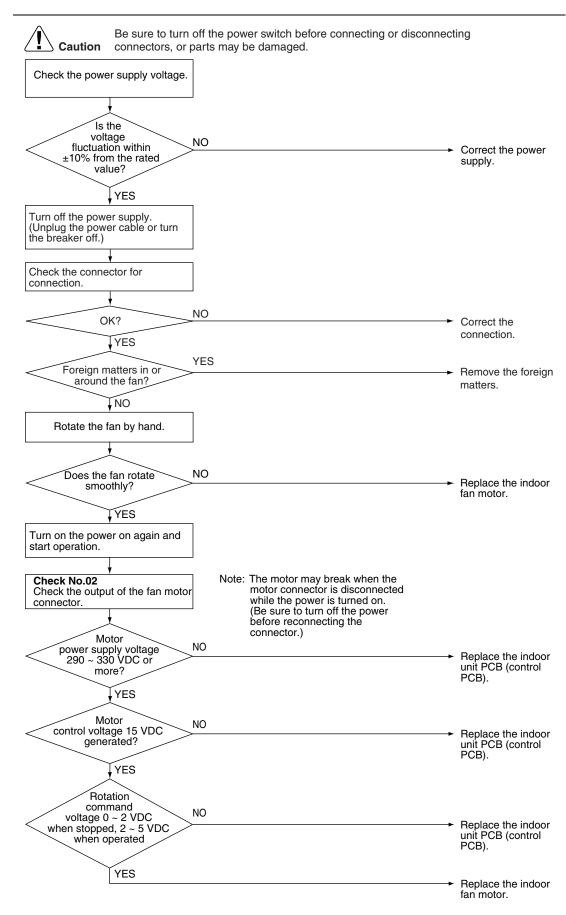
The fan motor is not revved up.

Supposed Causes

- Layer short inside the fan motor winding
- Breaking of wire inside the fan motor
- Breaking of the fan motor lead wires
- Defective indoor unit PCB

Troubleshooting





(R24054)

4.5 Humidifier or Related Abnormality

Error Code

AF

Method of Error Detection

Water leakage from humidifier(s) is detected based on the float switch ON/OFF changeover while the system is not operating.

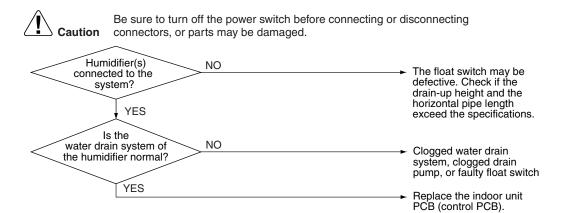
Error Decision Conditions

The float switch changes from ON to OFF while the system is OFF.

Supposed Causes

- Defective float switch
- Error in water drain system of humidifier(s)
- Clogged electric expansion value in humidifier(s)
- Defective indoor unit PCB

Troubleshooting



(R24055)



The system continues to operate with the thermostat OFF even while the error code is displayed.

4.6 Thermistor or Related Abnormality

Error Code

C4, C5, C9

Method of Error Detection

The temperatures detected by the thermistors determine thermistor errors.

Error Decision Conditions

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

Supposed Causes

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

Troubleshooting



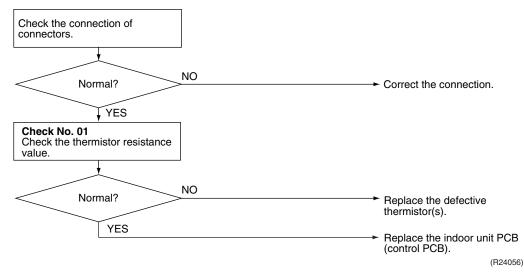
Check No.01 Refer to P.108 If the cause of the problem is related to the thermistors, the thermistors should be checked prior to changing the indoor unit PCB.

To check the thermistors, proceed as follows:

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



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



C4 : Indoor heat exchanger thermistor 1 (liquid pipe) (R2T)

C5 : Indoor heat exchanger thermistor 2 (R3T)C9 : Room temperature thermistor (R1T)

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

4.7 Presence Sensor or Floor Sensor Abnormality

Error Code

CE

Method of Error Detection

The system detects abnormality by the output signal from the sensor(s).

Error Decision Conditions

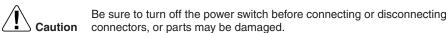
The sensor is disconnected or shorted while the unit is running.

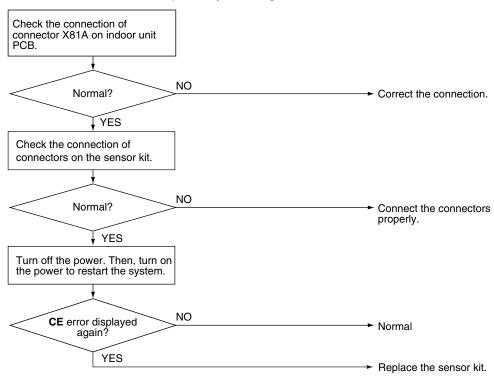
Supposed Causes

- Disconnection of connector
- Breaking of wires
- Defective sensor(s)
- Defective sensor kit PCB

Troubleshooting

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





(R24577)

Note

When replacing the defective sensor(s), replace the sensor kit as ASSY.

4.8 Remote Controller Thermistor Abnormality

Error Code

CJ

Method of Error Detection

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

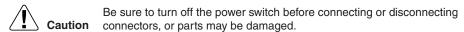
Error Decision Conditions

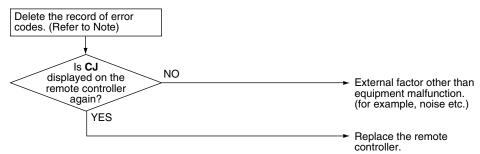
The remote controller thermistor is disconnected or shorted while the unit is running.

Supposed Causes

- Defective room temperature thermistor in the wired remote controller
- Defective wired remote controller PCB
- External factor such as noise

Troubleshooting





(R23951)



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

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

Error Code

U5

Method of Error Detection

In case of controlling 1 indoor unit with 2 remote controllers, check the system using microcomputer if signal transmission between indoor unit and remote controller (main and sub) is normal.

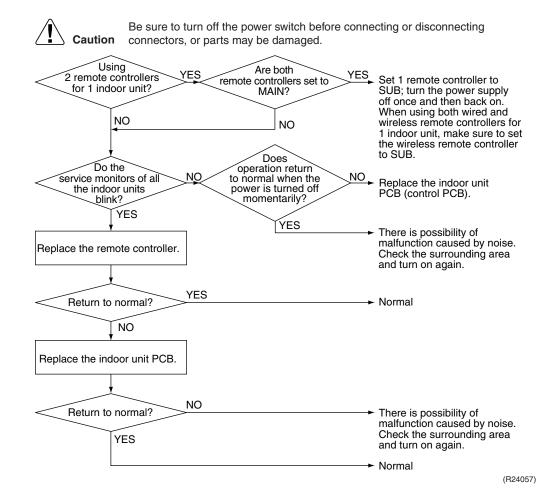
Error Decision Conditions

Normal transmission does not continue for specified period.

Supposed Causes

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

Troubleshooting



Note: For the way to change MAIN/SUB setting of remote controllers, refer to pages 130 and 131.

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

Error Code

U8

Method of Error Detection

In case of controlling 1 indoor unit with 2 remote controllers, check the system using microcomputer if signal transmission between MAIN remote controller and SUB remote controller is normal.

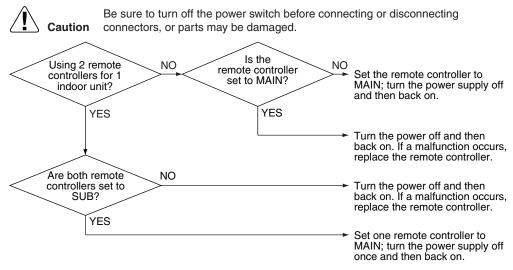
Error Decision Conditions

Normal transmission does not continue for specified period.

Supposed Causes

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

Troubleshooting



(R24058)

A

For the way to change MAIN/SUB setting of remote controllers, refer to pages 130 and 131.

4.11 Low-voltage Detection or Over-voltage Detection

Error Code

U2

Method of Error Detection

Low-voltage detection:

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

Over-voltage detection:

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

Error Decision Conditions

Low-voltage detection:

- The voltage detected by the DC voltage detection circuit is below 180 ~ 196 V (depending on the model).
- The compressor stops if the error occurs, and restarts automatically after 3-minute standby.

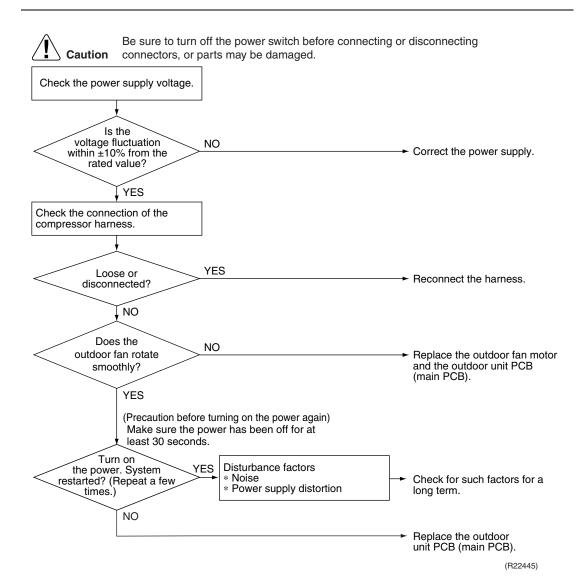
Over-voltage detection:

- An over-voltage signal is fed from the over-voltage detection circuit to the microcomputer (over 458 ~ 500 V, depending on the model).
- The compressor stops if the error occurs, and restarts automatically after 3-minute standby.

Supposed Causes

- Power supply voltage out of specification
- Defective DC voltage detection circuit
- Defective over-voltage detection circuit
- Defective PAM control part
- Disconnection of compressor harness
- Short circuit inside the fan motor winding
- Noise
- Momentary drop of voltage
- Momentary power failure
- Defective outdoor unit PCB

Troubleshooting



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

Error Code

U4

Method of Error Detection

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

Error Decision Conditions

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

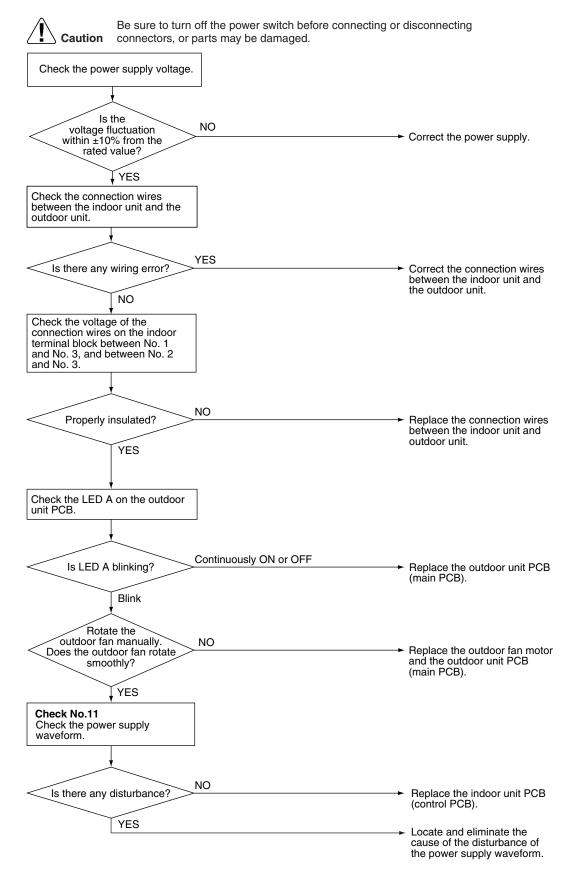
Supposed Causes

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

Troubleshooting



Check No.11 Refer to P.109



(R24612)

4.13 Mismatching of Indoor Unit and Outdoor Unit

Error Code

UA

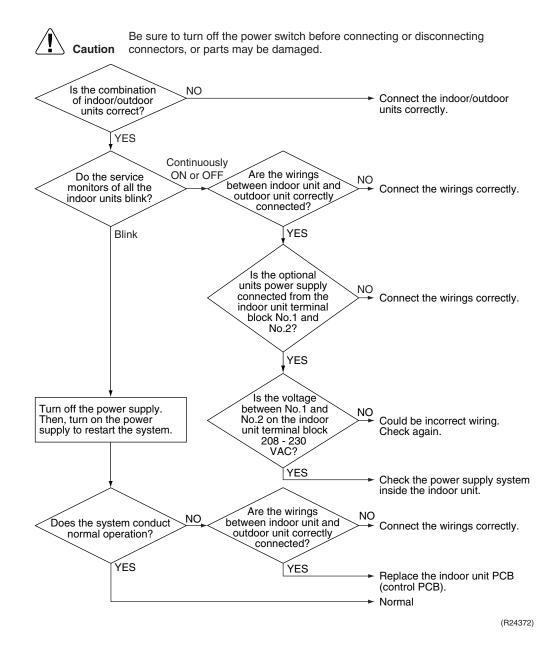
Error Decision Conditions

Improper combination of indoor and outdoor units

Supposed Causes

- Defective indoor unit PCB
- Indoor-outdoor unit transmission wiring error
- Defective optional unit(s) wirings
- Improper power supply wiring of indoor unit
- Improper wiring of connecting wires between indoor/outdoor units

Troubleshooting



4.14 Outdoor Unit PCB Abnormality

Error Code

E1

Method of Error Detection

- The system checks if the microprocessor is working in order.
- The system checks if the zero-cross signal comes in properly.

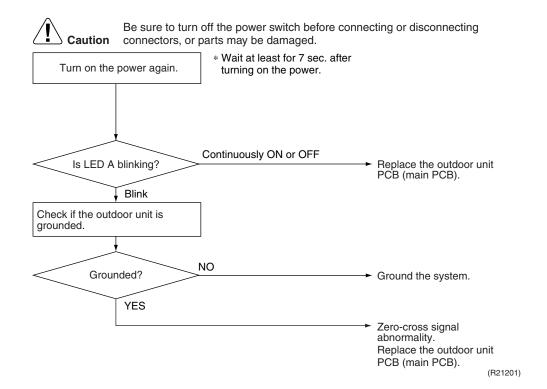
Error Decision Conditions

- The microprocessor program runs out of control.
- The zero-cross signal is not detected.

Supposed Causes

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

Troubleshooting



4.15 OL Activation (Compressor Overload)

Error Code

E5

Method of Error Detection

A compressor overload is detected through compressor OL.

Error Decision Conditions

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

Supposed Causes

- Disconnection of discharge pipe thermistor
- Defective discharge pipe thermistor
- Disconnection of connector S40
- Disconnection of 2 terminals of OL (Q1L)
- Defective OL (Q1L)
- Broken OL harness
- Defective electronic expansion valve or coil
- Defective four way valve or coil
- Defective outdoor unit PCB
- Refrigerant shortage
- Water mixed in refrigerant
- Defective stop valve

Troubleshooting



Check No.01 Refer to P.108



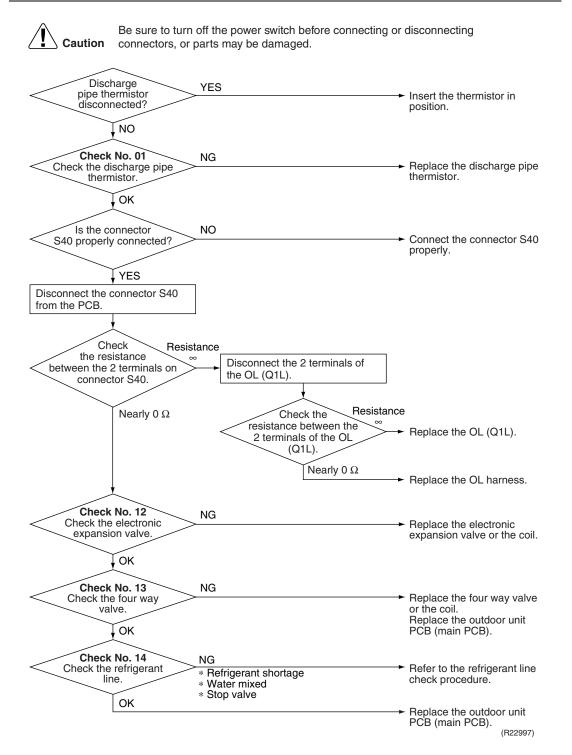
Check No.12 Refer to P.110



Check No.13 Refer to P.111



Check No.14 Refer to P.111



Note:

OL (Q1L) activating temperature: 130°C (266°F) OL (Q1L) recovery temperature: 95°C (203°F)

4.16 Compressor Lock

Error Code

E6

Method of Error Detection

A compressor lock is detected by the current waveform generated when applying high-frequency voltage to the motor.

Error Decision Conditions

- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 11 minutes without any other error

Supposed Causes

- Closed stop valve
- Compressor locked
- Disconnection of compressor harness

Troubleshooting



Check No.12 Refer to P.110



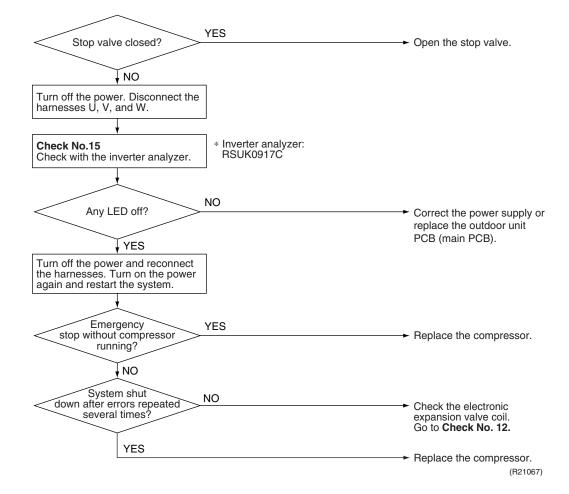
Check No.15 Refer to P.112



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

(Precaution before turning on the power again)

Make sure the power has been off for at least 30 seconds.



4.17 DC Fan Lock (Outdoor Fan Motor)

Error Code

E7

Method of Error Detection

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

Error Decision Conditions

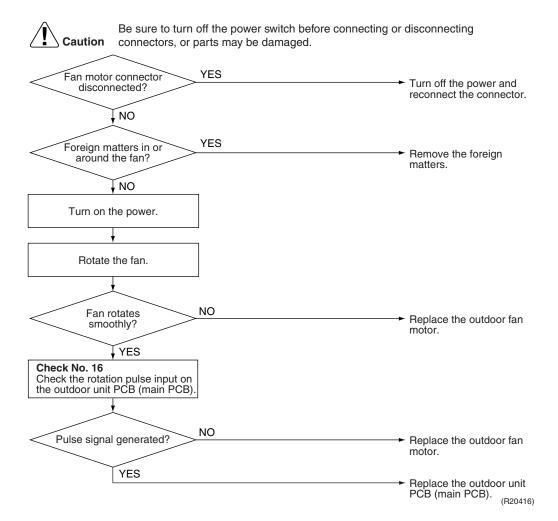
- The fan does not start in 15 ~ 30 seconds even when the fan motor is running.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 11 minutes without any other error

Supposed Causes

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

Troubleshooting





4.18 Input Overcurrent Detection

Error Code

E8

Method of Error Detection

An input overcurrent is detected by checking the input current value with the compressor running.

Error Decision Conditions

The current exceeds about 12.0 ~ 12.5 A (depending on the model) for 2.5 seconds with the compressor running.

(The upper limit of the current decreases when the outdoor temperature exceeds a certain level.)

Supposed Causes

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

Troubleshooting



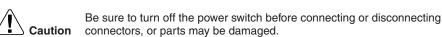
Check No.15 Refer to P.112



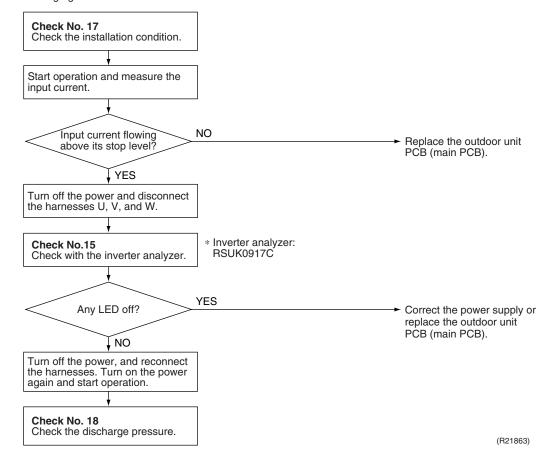
Check No.17 Refer to P.115



Check No.18 Refer to P.115



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



4.19 Four Way Valve Abnormality

Error Code

EA

Method of Error Detection

The room temperature thermistor and the indoor heat exchanger thermistor are checked if they function within their normal ranges in each operation mode.

Error Decision Conditions

The following condition continues over 10 minutes after operating for 5 minutes.

■ Cooling/Dry

$$A - B < -5^{\circ}C (A - B < -9^{\circ}F)$$

Heating

$$B - A < -5^{\circ}C (B - A < -9^{\circ}F)$$

A: Room thermistor temperature

B: Indoor heat exchanger temperature

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

Supposed Causes

- Disconnection of four way valve coil
- Defective four way valve, coil, or harness
- Defective outdoor unit PCB
- Defective thermistor
- Refrigerant shortage
- Water mixed in refrigerant
- Defective stop valve

Troubleshooting



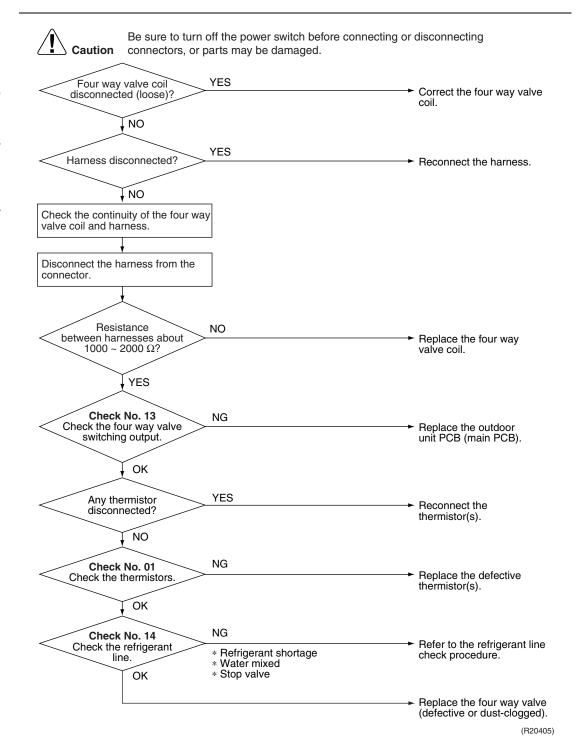
Check No.01 Refer to P.108



Check No.13 Refer to P.111



Check No.14 Refer to P.111



4.20 Discharge Pipe Temperature Control

Error Code

F3

Method of Error Detection

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

Error Decision Conditions

If the temperature detected by the discharge pipe thermistor rises above A, the compressor stops.

■ The error is cleared when the discharge pipe temperature has dropped below **B**.

	Α		В	
	°C	°F	°C	°F
09/12 class	110	230	88	190.4
15/18 class	110	230	95	203

★ If the frequency drops, the temperature is lowered in compensation.

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

Supposed Causes

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

Troubleshooting



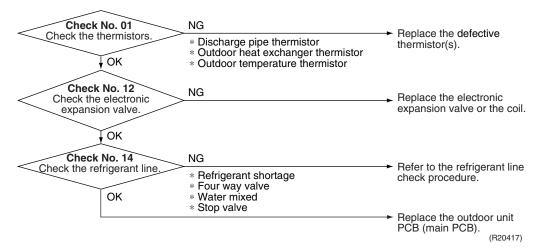
Check No.01 Refer to P.108



Check No.12 Refer to P.110



Check No.14 Refer to P.111 Be sure to turn off the power switch before connecting or disconnecting connectors, or parts may be damaged.



4.21 High Pressure Control in Cooling

Error Code

F6

Method of Error Detection

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

Error Decision Conditions

The temperature sensed by the outdoor heat exchanger thermistor rise above $57.5 \sim 61^{\circ}$ C (135.5 ~ 141.8°F) (depending on the model).

Supposed Causes

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

Troubleshooting



Check No.01 Refer to P.108



Check No.12 Refer to P.110



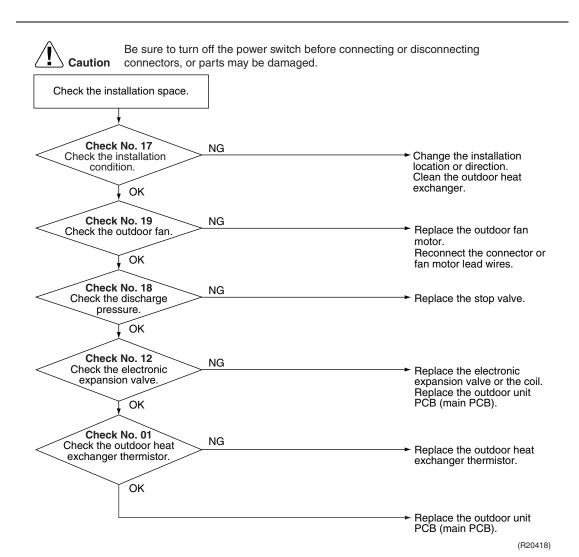
Check No.17 Refer to P.115



Check No.18 Refer to P.115



Check No.19 Refer to P.116



SiUS091628EC Troubleshooting

4.22 System Shutdown due to Compressor Internal Temperature Abnormality

Error Code

F8

Method of Error Detection

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

Error Decision Conditions

Temperature exceeds the detection threshold of 127.5°C (261.5°F) during forced cooling operation.

Supposed Causes

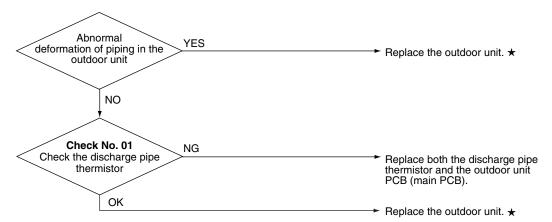
- Abnormal operation due to air intrusion
- Defective discharge pipe thermistor

Troubleshooting



Check No.01
Refer to P.108

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



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

(R23655)

Troubleshooting SiUS091628EC

4.23 Compressor System Sensor Abnormality

Error Code

H0

Method of Error Detection

The system checks the DC current before the compressor starts.

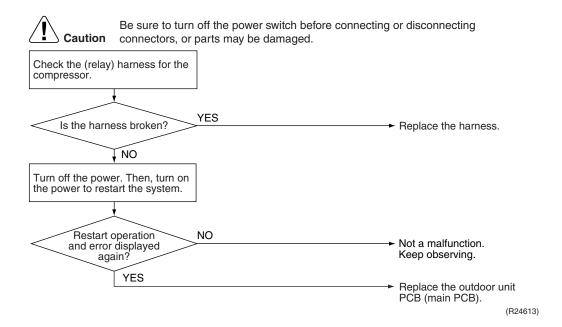
Error Decision Conditions

- The voltage converted from the DC current before compressor start-up is out of the range 0.5 ~ 4.5 V.
- The DC voltage before compressor start-up is below 50 V.

Supposed Causes

- Broken or disconnected harness
- Defective outdoor unit PCB

Troubleshooting



SiUS091628EC Troubleshooting

4.24 Position Sensor Abnormality

Error Code

H6

Method of Error Detection

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

Error Decision Conditions

- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 11 minutes without any other error

Supposed Causes

- Power supply voltage out of specification
- Disconnection of the compressor harness
- Defective compressor
- Defective outdoor unit PCB
- Start-up failure caused by the closed stop valve
- Input voltage outside the specified range

Troubleshooting SiUS091628EC

Troubleshooting



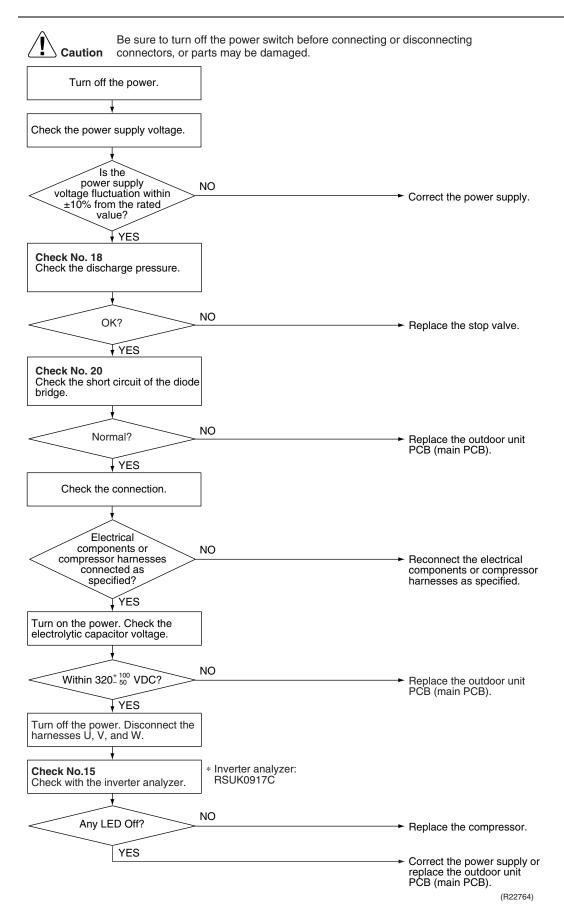
Check No.15 Refer to P.112



Check No.18 Refer to P.115



Check No.20 Refer to P.116



SiUS091628EC Troubleshooting

4.25 Thermistor or Related Abnormality (Outdoor Unit)

Error Code

H9, J3, J6, P4

Method of Error Detection

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

Error Decision Conditions

- The voltage between the both ends of the thermistor is either 4.96 V or more, or 0.04 V or less with the power on.
- **J3** error is judged if the discharge pipe temperature is lower than the heat exchanger temperature.

Supposed Causes

- Disconnection of the connector for the thermistor
- Defective thermistor(s)
- Defective heat exchanger thermistor in the case of **J3** error (outdoor heat exchanger thermistor in cooling operation, or indoor heat exchanger thermistor in heating operation)
- Defective outdoor unit PCB

Troubleshooting

In case of P4



Cautian

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

Replace the outdoor unit PCB (main PCB).

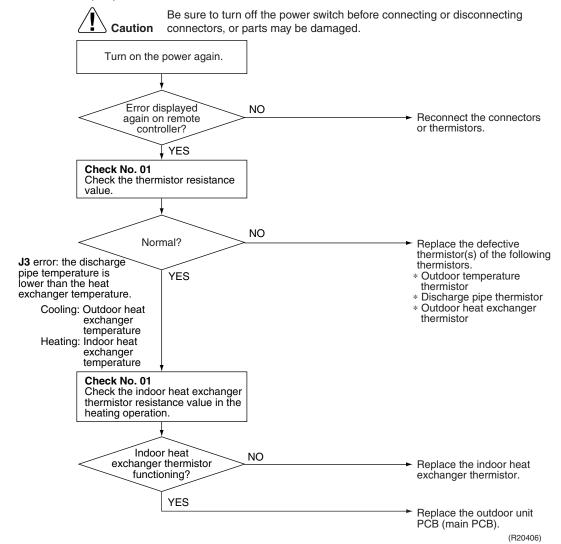
P4: Radiation fin thermistor

Troubleshooting SiUS091628EC

Troubleshooting



In case of H9, J3, J6



H9 : Outdoor temperature thermistorJ3 : Discharge pipe thermistor

J6: Outdoor heat exchanger thermistor

Note:

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

SiUS091628EC Troubleshooting

4.26 Electrical Box Temperature Rise

Error Code

L3

Method of Error Detection

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

Error Decision Conditions

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

	Α		E	3	С		
	°C	°F	°C	°F	°C	°F	
09/12 class	82	179.6	65	149	70	158	
15/18 class	90	194	64	147.2	81	177.8	

Supposed Causes

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

Troubleshooting

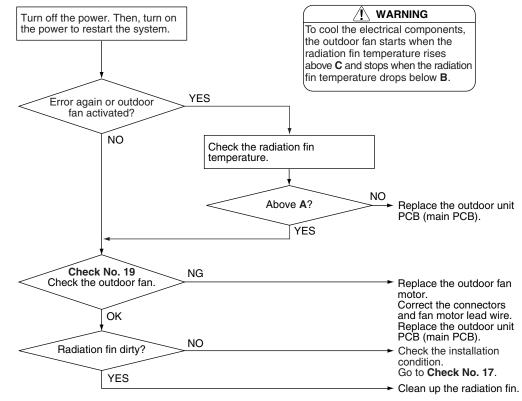


Check No.17 Refer to P.115





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



(R22998)

Troubleshooting SiUS091628EC

4.27 Radiation Fin Temperature Rise

Error Code

L4

Method of Error Detection

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

Error Decision Conditions

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

	Į.	4	В		
	°C	°F	°C	°F	
09/12 class	99	210.2	70	158	
15/18 class	100	212	57	134.6	

Supposed Causes

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

Troubleshooting

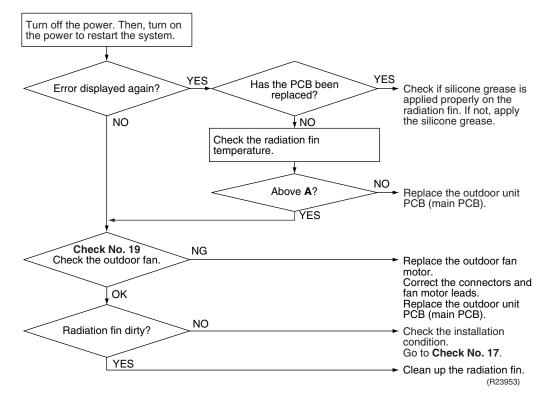


Check No.17 Refer to P.115

Check No.19 Refer to P.116



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





Note:

Refer to Silicone Grease on Power Transistor/Diode Bridge on page 134 for details.

SiUS091628EC Troubleshooting

4.28 Output Overcurrent Detection

Error Code

L₅

Method of Error Detection

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

Error Decision Conditions

- A position signal error occurs while the compressor is running.
- A rotation speed error occurs while the compressor is running.
- An output overcurrent signal is fed from the output overcurrent detection circuit to the microcomputer.
- If the error repeats, the system is shut down.
- Reset condition: Continuous run for about 11 minutes without any other error

Supposed Causes

- Poor installation condition
- Closed stop valve
- Defective power module
- Wrong internal wiring
- Abnormal power supply voltage
- Defective outdoor unit PCB
- Power supply voltage out of specification
- Defective compressor

Troubleshooting SiUS091628EC

Troubleshooting



Check No.15 Refer to P.112



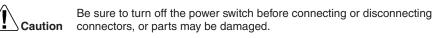
Check No.17 Refer to P.115



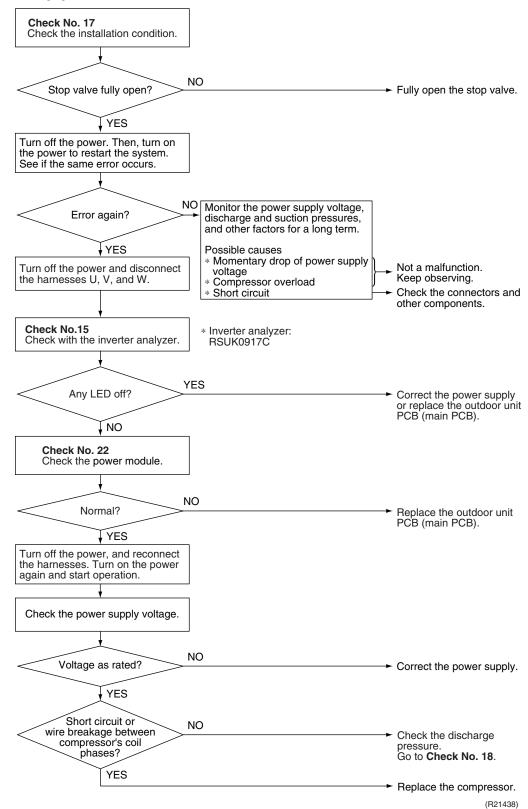
Check No.18 Refer to P.115



Check No.22 Refer to P.118



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



SiUS091628EC Check

5. Check

5.1 Thermistor Resistance Check

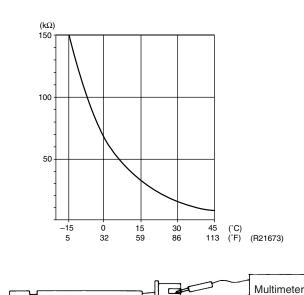
Check No.01

Disconnect the connectors of the thermistors from the PCB, and measure the resistance of each thermistor using a multimeter.

The data is for reference purpose only.

Thermistor	temperature	Resistance ($k\Omega$)		
°C	°F	riesisiance (KS2)		
-20	-4	197.8		
-15	5	148.2		
-10	14	112.1		
- 5	23	85.60		
0	32	65.93		
5	41	51.14		
10	50	39.99		
15	59	31.52		
20	68	25.02		
25	77	20.00		
30	86	16.10		
35	95	13.04		
40	104	10.62		
45	113	8.707		
50	122	7.176		

 $(R25^{\circ}C (77^{\circ}F) = 20 k\Omega, B = 3950 K)$



(R19751)

Resistance range

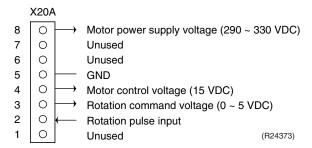
- When the room temperature thermistor is soldered on a PCB, remove the PCB from the control PCB to measure the resistance.
- When the connector of indoor heat exchanger thermistor is soldered on a PCB, remove the thermistor and measure the resistance.

Check SiUS091628EC

5.2 Indoor Fan Motor Connector Output Check

Check No.02

- 1. Check the connection of connector.
- 2. Check motor power supply voltage output (pins 5 ~ 8).
- 3. Check motor control voltage (pins 5 ~ 4).
- 4. Check rotation command voltage output (pins 5 ~ 3).



5.3 Power Supply Waveforms Check

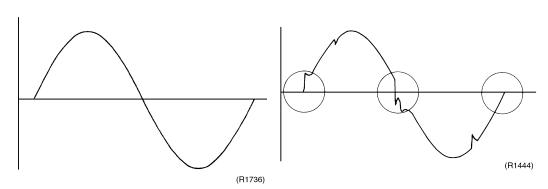
Check No.11

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

Fig.2

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

Fig.1



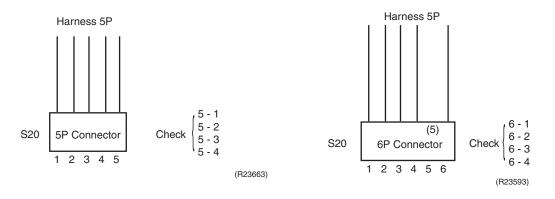
SiUS091628EC Check

5.4 Electronic Expansion Valve Check

Check No.12

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

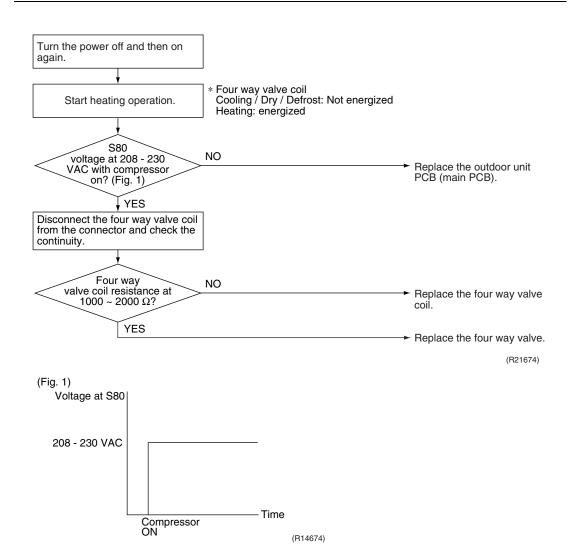
- 1. Check if the EV connector is correctly connected to the PCB.
- 2. Turn the power off and on again, and check if the EV generates a latching sound.
- 3. If the EV does not generate a latching sound in step 2, disconnect the connector and check the continuity using a multimeter.
- 4. Check the continuity between the pins 5 1, 5 2, 5 3, 5 4 (between the pins 6 1, 6 2, 6 3, and 6 4 for the 6P connector models). If there is no continuity between the pins, the EV coil is faulty.
- 5. If the continuity is confirmed in step 3, the outdoor unit PCB (main PCB) is faulty.



Check SiUS091628EC

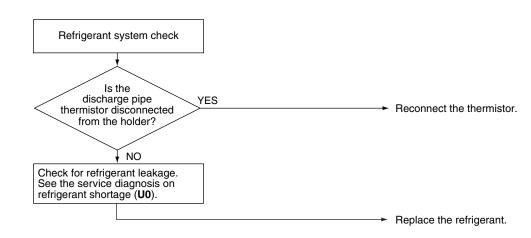
5.5 Four Way Valve Performance Check

Check No.13



5.6 Inverter Unit Refrigerant System Check

Check No.14



(R15833)

SiUS091628EC Check

5.7 Inverter Analyzer Check

Check No.15 ■ Characteristics

Inverter analyzer: RSUK0917C

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

■ Operation Method

Step 1

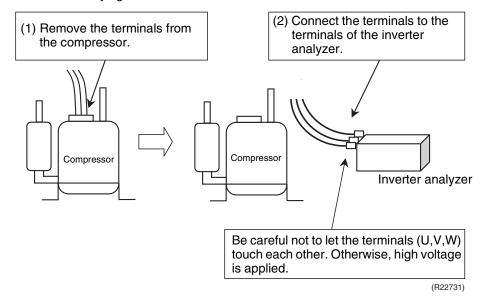
Be sure to turn off the power.

Step 2

Install an inverter analyzer instead of a compressor.

Note:

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



Reference:

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

Check SiUS091628EC

Step 3

Activate power transistor test operation from the outdoor unit.

Start method of power transistor test operation

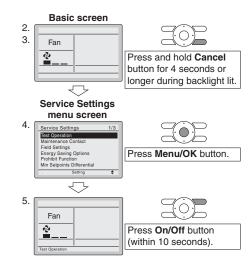


Power transistor test operation can be activated only once after turning on the power supply. If reactivation of the power supply transistor operation is needed, turn the power supply off and then on again.

With Wired Remote Controller (BRC1E73)

- 1. Turn the power on.
- 2. Set FAN operation using the remote controller.
- Press and hold Cancel button for 4 seconds or longer.
- 4. Select **Test Operation** in the service settings menu, then press **Menu/OK** button.
 - \rightarrow Basic screen returns and "Test Operation" is displayed at the bottom.
- 5. Press On/Off button within 10 seconds.
 - ightarrow 3 minutes after pressing **On/Off** button, power transistor test operation will start.
- Test operation will stop automatically after about 30 minutes.

To stop the operation, press **On/Off** button.



With Wireless Remote Controller (BRC082A41W, BRC082A42W(S))

- 1. Turn the power on.
- 2. Press and select FAN operation.
- 3. Press twice. "TEST" is displayed.
- 4. Press within 10 seconds.
 - \rightarrow 3 minutes after pressing \bigcirc , power transistor test operation will start.
- Test operation will stop automatically after about 30 minutes.

To stop the operation, press (III)

■ Diagnose method (Diagnose according to 6 LEDs lighting status of the inverter analyzer.)

- 1. If all the LEDs are lit uniformly, the compressor is defective.
 - → Replace the compressor.
- 2. If the LEDs are not lit uniformly, check the power module.
 - → Refer to Check No.22.
- 3. If NG in Check No.22, replace the power module.
 - (Replace the main PCB. The power module is united with the main PCB.)
 - If OK in Check No.22, check if there is any solder cracking on the PCB.
- 4. If any solder cracking is found, replace the PCB or repair the soldered section. If there is no solder cracking, replace the PCB.

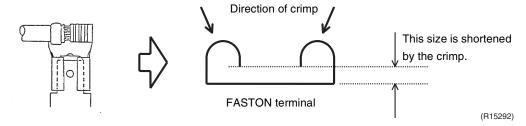
SiUS091628EC Check



Caution

1. When the output frequency is low, the LEDs blink slowly. As the output frequency increases, the LEDs blink quicker. (The LEDs look like they are lit.)

2. On completion of the inverter analyzer diagnosis, be sure to re-crimp the FASTON terminals. Otherwise, the terminals may be burned due to loosening.



5.8 Rotation Pulse Check on the Outdoor Unit PCB

Check No.16

Make sure that the voltage is within 320^{+100}_{-50} VDC.

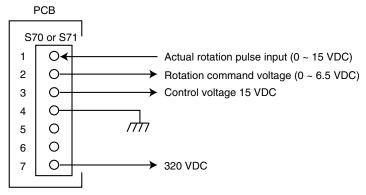
- 1. Set operation off and power off. Disconnect the connector S70 or S71.
- 2. Check that the voltage between the pins 4 7 is 320 VDC.
- 3. Check that the control voltage between the pins 4 3 is 15 VDC.
- 4. Check that the rotation command voltage between the pins 4 2 is 0 ~ 6.5 VDC.
- 5. Keep operation off and power off. Connect the connector S70 or S71.
- 6. Check whether 4 rotation pulses (0 ~ 15 VDC) are input at the pins 4 1 when the fan motor is rotated 1 turn by hand.

When the fuse is melted, check the outdoor fan motor for proper function.

If NG in step $2 \rightarrow$ Defective PCB \rightarrow Replace the outdoor unit PCB (main PCB).

If NG in step $4 \rightarrow$ Defective Hall IC \rightarrow Replace the outdoor fan motor.

If OK in both steps 2 and 4 \rightarrow Replace the outdoor unit PCB (main PCB).

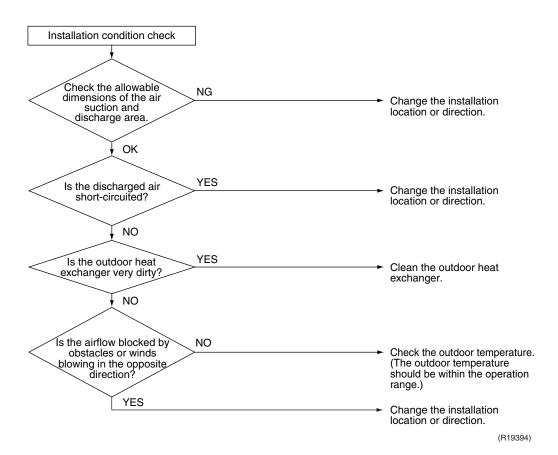


(R20507)

Check SiUS091628EC

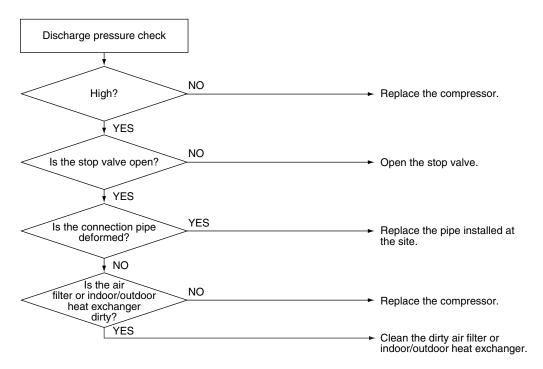
5.9 Installation Condition Check

Check No.17



5.10 Discharge Pressure Check

Check No.18

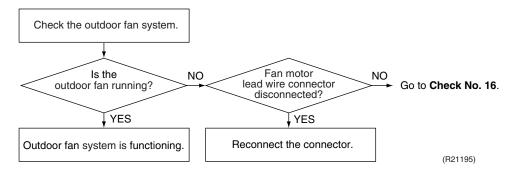


(R19385)

SiUS091628EC Check

5.11 Outdoor Fan System Check

Check No.19 DC motor



5.12 Main Circuit Short Check

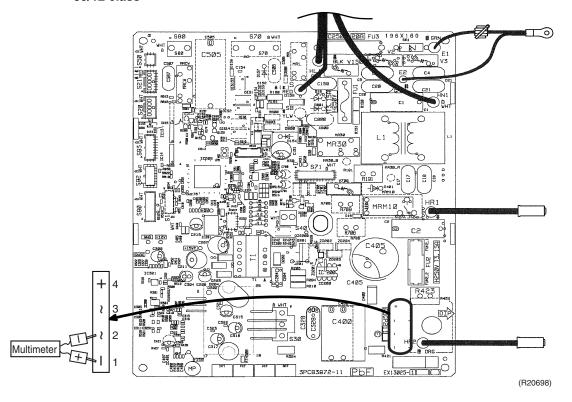
Check No.20

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

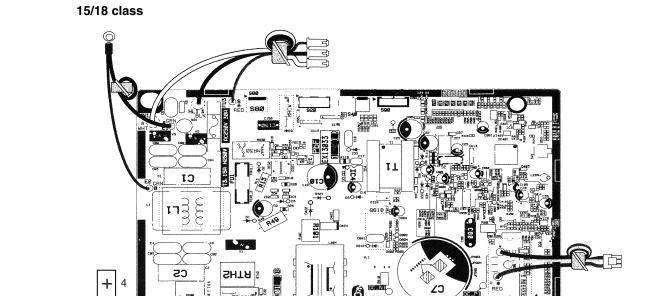
- Measure the resistance between the pins of the DB1 referring to the table below.
- If the resistance is ∞ or less than 1 k Ω , short circuit occurs on the main circuit.

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

09/12 class



Check SiUS091628EC



₽Ø87

C801

l

Multimeter

0

(R25105)

SiUS091628EC Check

5.13 Power Module Check

Check No.22

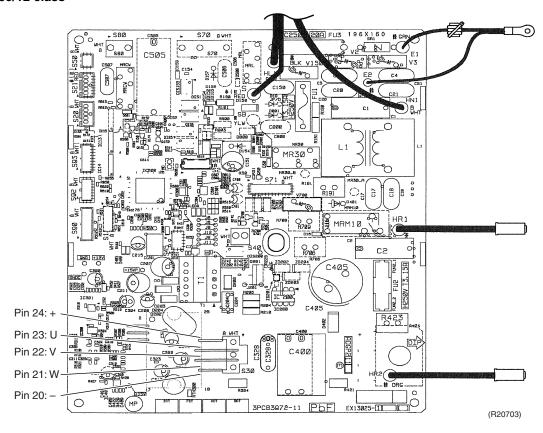
Check to make sure that the voltage between (+) and (–) of the power module is approximately 0 V before checking.

■ Disconnect the compressor harness connector from the outdoor unit PCB. To disengage the connector, press the protrusion on the connector.

■ Follow the procedure below to measure resistance between the terminals of the power module and the terminals of the compressor with a multimeter. Evaluate the measurement results referring to the following table.

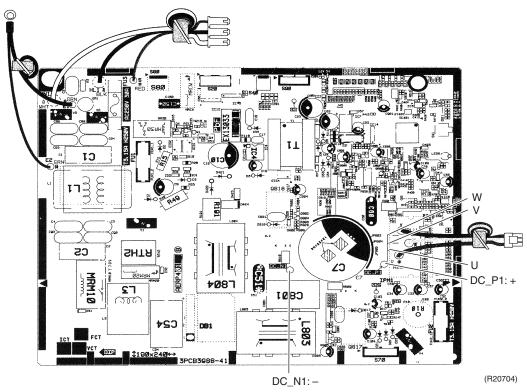
Positive terminal (+) of digital multimeter	Power module (+)	UVW	Power module (–)	UVW		
Negative terminal (–) of digital multimeter	UVW	Power module (+)	UVW	Power module (–)		
Resistance is OK.	several k Ω ~ several M Ω					
Resistance is NG.	0 Ω or ∞					

09/12 class



Check SiUS091628EC

15/18 class



Part 7 Trial Operation and Field Settings

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Pump Down Operation SiUS091628EC

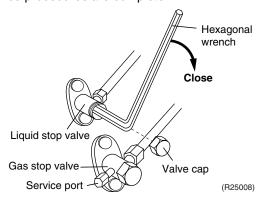
1. Pump Down Operation

Outline

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

Details

- 1. Remove the valve cap from the liquid stop valve and the gas stop valve.
- 2. Carry out forced cooling operation.
- 3. After 5 to 10 minutes, close the liquid stop valve with a hexagonal wrench.
- 4. After 2 to 3 minutes, close the gas stop valve and stop the forced cooling operation.
- 5. Attach the valve cap once procedures are complete.





Refer to Forced Cooling Operation on page 122 for details.

2. Forced Cooling Operation

Outline

The forced cooling operation is allowed when both the following conditions are met.

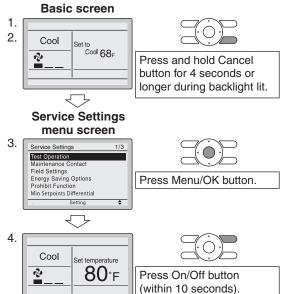
- 1. The outdoor unit is not abnormal and not in the 3-minute standby mode.
- 2. The outdoor unit is not operating.

Protection functions have priority over all other functions during forced cooling operation.

Details

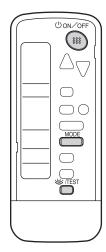
■ With Wired Remote Controller (BRC1E73)

- Set to COOL operation using the remote controller.
- Press and hold Cancel button for 4 seconds or longer. Service settings menu is displayed.
- 3. Select **Test Operation** in the service settings menu, and press **Menu/OK** button. Basic screen returns and "Test Operation" is displayed at the bottom.
- 4. Press **On/Off** button within 10 seconds, and the forced cooling operation starts.
- Forced cooling operation will stop automatically after about 15 minutes.
 To stop the operation, press On/Off button.



■ With Wireless Remote Controller (BRC082A41W, BRC082A42W(S))

- Press button and select the COOL operation.
- Press button twice. "TEST" is displayed.
- 3. Press button within 10 seconds, and the forced cooling operation starts.
- Forced cooling operation will stop automatically after about 15 minutes.
 To stop the operation, press ODE button.



Trial Operation SiUS091628EC

3. Trial Operation

Outline

■ Make sure to install the decoration panel before carrying out trial operation if the wireless remote controller is used.

- Trial operation should be carried out in either cooling or heating operation.
- 1. Measure the supply voltage and make sure that it is within the specified range.
- 2. In COOL operation, select the lowest programmable temperature; in HEAT operation, select the highest programmable temperature.
- 3. Carry out the trial operation following the instructions in the operation manual to ensure that all functions and parts, such as the movement of the louvers, are working properly.
 - To protect the air conditioner, restart operation is disabled for 3 minutes after the system has been turned off.
- 4. After trial operation is complete, set the temperature to a normal level (78°F to 82°F (26°C to 28°C) in COOL operation, 68°F to 75°F (20°C to 24°C) in HEAT operation).



When performing field settings or trial operation without attaching the decoration panel, do not touch the drain pump. This may cause electric shock.

After finishing the construction of refrigerant piping, drain piping, and electric wiring, conduct trial operation accordingly to protect the unit.

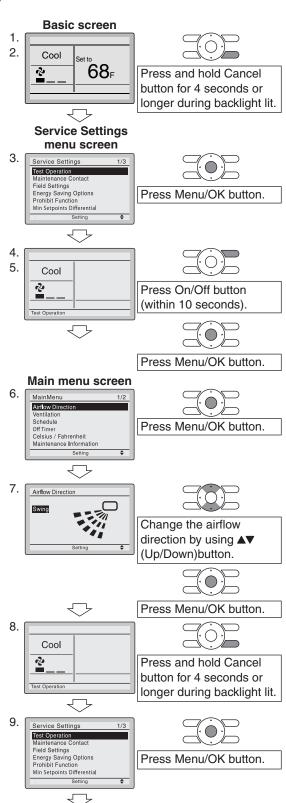
Procedure

When operating the air conditioner in COOL operation in winter, or HEAT operation in summer, set it to the trial operation mode using the following method.

SiUS091628EC Trial Operation

■ With Wired Remote Controller (BRC1E73)

- Set to COOL or HEAT operation using the remote controller.
- Press and hold Cancel button for 4 seconds or longer. Service settings menu is displayed.
- 3. Select **Test Operation** in the service settings menu, and press **Menu/OK** button. Basic screen returns and "Test Operation" is displayed at the bottom.
- Press On/Off button within 10 seconds, and the test operation starts.
 - Monitor the operation of the indoor unit for a minimum of 10 minutes. During test operation, the indoor unit will continue to cool/heat regardless of the temperature setpoint and room temperature.
 - In the case of above-mentioned procedures 3 and 4 in reverse order, test operation can start as well.
- Press Menu/OK button in the basic screen. Main menu is displayed.
- Select Airflow Direction in the main menu and press Menu/OK button. Check that airflow direction is actuated according to the setting. For operation of airflow direction setting, see the operation manual.
- After the operation of airflow direction is confirmed, press Menu/OK button.
 Basic screen returns.
- Press and hold **Cancel** button for 4 seconds or longer in the basic screen.
 Service settings menu is displayed.
- Select Test Operation in the service settings menu, and press Menu/OK button. Basic screen returns and normal operation is conducted.
 - Test operation will stop automatically after 15 ~ 30 minutes. To stop the operation, press On/Off button.
- If the decoration panel has not been installed, turn off the power after the test operation.



Basic screen

Trial Operation SiUS091628EC

■ With Wireless Remote Controller (BRC082A41W, BRC082A42W(S))

- 1. Press button and select the COOL or HEAT operation.
- 2. Press button twice. "TEST" is displayed.
- 3. Press $\stackrel{\text{\tiny OOM/OFF}}{\text{\tiny (III)}}$ button within 10 seconds, and the test operation starts.

Monitor the operation of the indoor unit for a minimum of 10 minutes. During test operation, the indoor unit will continue to cool/heat regardless of the temperature setpoint and room temperature.

- In the case of above-mentioned procedures (1) and (2) in reverse order, test operation can start as well.
- Test operation will stop automatically after 15 ~ 30 minutes. To stop the operation, press
 button.
- Some of the functions cannot be used in the test operation mode.

Test Items

Test items	Symptom
Indoor and outdoor units are installed securely.	Fall, vibration, noise
Is the outdoor unit fully installed?	No operation or burn damage
No refrigerant gas leaks.	Incomplete cooling/heating function
Refrigerant gas and liquid pipes and indoor drain hose extension are thermally insulated.	Water leakage
Draining line is properly installed.	Water leakage
Does the power supply voltage correspond to that shown on the name plate?	No operation or burn damage
Only specified wires are used for all wiring, and all wires are connected correctly.	No operation or burn damage
System is properly grounded.	Electrical leakage
Is wiring size according to specifications?	No operation or burn damage
Is something blocking the air outlet or inlet of either the indoor or outdoor units?	Incomplete cooling/heating function
Are refrigerant piping length and additional refrigerant charge noted down?	The refrigerant charge in the system is not clear
Pipes and wires are connected to the corresponding connection ports/terminal blocks for the connected unit.	No cooling/heating
Stop valves are opened.	Incomplete cooling/heating function
Check that the connector of the lead wires of the decoration panel is connected securely.	Louvers do not move
Indoor unit properly receives wireless remote control commands.	No operation

SiUS091628EC Field Settings

4. Field Settings

4.1 How to Change the Field Settings

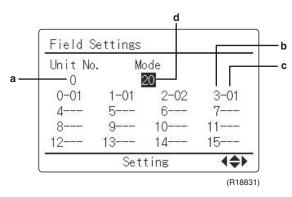
Outline

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

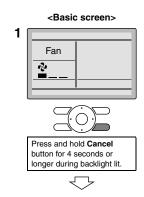


When using 2 remote controllers for 1 indoor unit, change the field settings from MAIN remote controller. Note that the field settings can not be set from SUB remote controller.

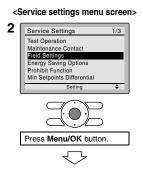
Wired Remote Controller (BRC1E73)



- a Unit No.
- **b** First code No.
- c Second code No.
- d Mode
- Press and hold **Cancel** button for 4 seconds or longer. Service settings menu is displayed.



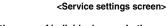
2. Select Field Settings in the Service Settings menu, and press Menu/OK button. Field settings screen is displayed.

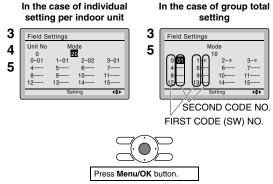


Field Settings SiUS091628EC

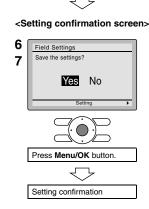
- 3. Highlight the mode, and select desired "Mode No." by using ▲ ▼ (Up/Down) button.
- 4. In the case of setting per indoor unit during group control (When Mode No. such as 20, 22, 23, 25 are selected), highlight the unit No.and select "Indoor unit No." to be set by using ▼ (Up/Down) button. (In the case of group 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 the 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.



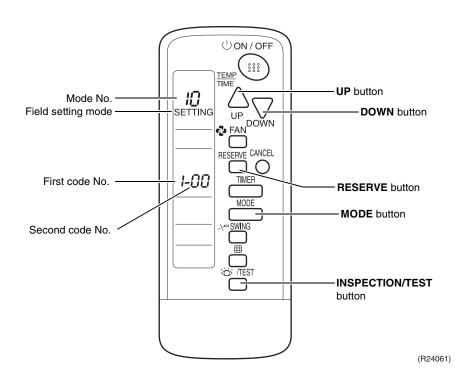


- 6. Press Menu/OK button. Setting confirmation screen is displayed.
- 7. Select Yes and press Menu/OK button. Setting details are determined and field settings screen returns.
- 8. In the case of multiple setting changes, repeat 3 to 7.
- 9. After all setting changes are completed, press Cancel button twice.
- 10. Backlight goes out, and [Checking the connection. Please stand by.] is displayed for initialization. After the initialization, the basic screen returns.



SiUS091628EC Field Settings

Wireless Remote Controller (BRC082A41W, BRC082A42W(S))



To set the field settings, you have to change:

- Mode No.
- First code No.
- Second code No.
- 1. When in normal mode, hold down 6/TEST button for at least 4 seconds to enter the Field Set mode.
- 2. Select the desired Mode No. with MODE button.
- 3. Press $\stackrel{\triangle}{=}$ button and select the First code No.
- 4. Press ∑ button and select the Second code No.
- 5. Press **RESERVE** button to confirm the settings.
- 6. Press 🍏/TEST button to quit the Field Set mode and to return to normal display again.

Field Settings SiUS091628EC

4.2 Overview of the Field Settings

Mode	First	Description of setting		Second Code No.							
No.	Code No.				01		02	03	04	05	06
10	0	0 Filter cleaning sign interval Longlife filter		Light	Approx. 2,500 hrs.	Heavy	Approx. 1,250 hrs.	_	_	_	_
(20)	2	Remote controlle	r thermistor	E	Enabled		Disabled	_	_	_	_
	3	Filter cleaning sign			Display	N	o display		_	_	_
12 (22)	0	Optional accessories output selection (field selection of output for adaptor for wiring)		Co	mpressor		_	Operation output	Error output	Outdoor air intake	Presence sensor
	0	High air outlet velocity (for high ceiling applications) Selection of airflow direction (setting for when a blocking pad kit has been installed) Airflow direction range setting		_	≤ 2.7 m (≤ 8-7/8 ft)		7 ~ 3.0 m //8~9-13/16 ft)	3.0 ~ 3.5 m (9-13/16~11-1/2 ft)	_	_	_
13 (23)	1			4-	way flow	3-	way flow	2-way flow	_	_	_
	4				Upper		Normal	Lower	_	_	_
15 (25)	3	Drain pump operation with humidifying		No	t equipped	Е	quipped	_	_	_	_

: factory setting

A

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

SiUS091628EC Field Settings

4.3 MAIN/SUB Setting when Using 2 Wired Remote Controllers

Outline

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

Details

1. The following message is displayed after power-on.

Checking the connection.

Please stand by.

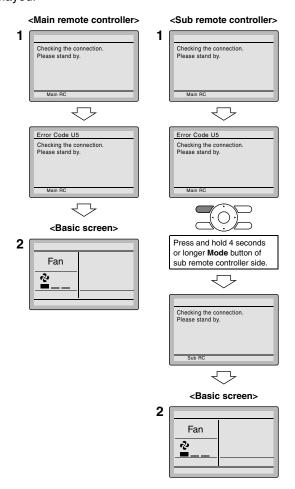
When the above message is displayed, the backlight will not be ON.

[In the case that 1 indoor unit is controlled by 2 remote controllers:]

Make sure to set the sub remote controller when the above message is displayed. Hold **Mode** button for 4 seconds or longer to set.

When the display is changed from "Main RC" to "Sub RC", the setting is completed.

2. Basic screen is displayed.



Field Settings SiUS091628EC

4.4 Address and MAIN/SUB Setting for Wireless Remote Controller

Outline

■ If setting multiple wireless remote controllers to operate in one room, perform address setting for the receiver and the wireless remote controller.

■ If using both a wired remote controller and a wireless remote controller with 1 indoor unit, change the MAIN/SUB switch of the transmitter board.

Transmitter Board

Wireless address switch

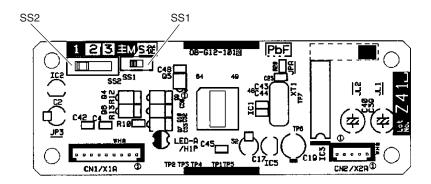
Set the wireless address setting switch (SS2) on the transmitter board according to the table below.

Unit No.	No.1	No.2	No.3
Wireless address switch (SS2)	ν ω (S1935)	□	□ □ □ N ω (S1937)

MAIN/SUB switch

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

	MAIN	SUB
MAIN/SUB switch (SS1)		



(R24374)

SiUS091628EC Field Settings

Wireless Remote Controller Address

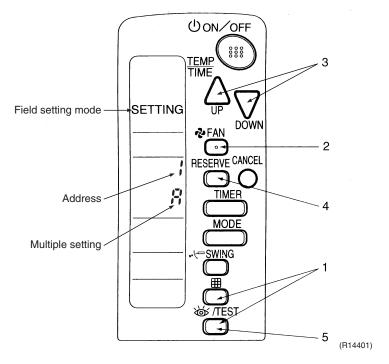
Factory set is 1. Change the wireless remote controller address setting by the following steps, if necessary.

- 1. Hold down ∰ button and o/TEST button at the same time for at least 4 seconds to enter the field setting mode. (SETTING is indicated on the display).
- 2. Press PAN button and select display setting (% or b). Each time the button is pressed, the display switches between % and b.
- 3. Press $\stackrel{\triangle}{\square}$ button and $\stackrel{\sum}{\square}$ button to set the address.

$$-1 - 2 - 3 - 4 - 5 - 6$$

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

- 4. Press **RESERVE** button to confirm the setting.
- 5. Hold down 🍏/TEST button to quit the field setting mode and return to the normal display.



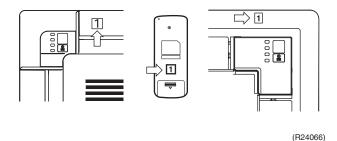
When the indoor unit is controlled by an outside controller (central remote controller, etc.), the indoor unit sometimes does not respond to ON/OFF command or temperature setting command from the wireless remote controller. Check what setting the customer needs and make the multiple setting as shown below.

Remote controller		Indoor unit		
Multiple settings	Remote controller display	To control other air conditions and units	For other than on left	
8: Standard	All items displayed.	Commands other than ON/OFF and temperature setting accepted. (1 LONG BEEP or 3 SHORT BEEPS emitted)	All commands accepted. (2 SHORT BEEPS)	
ธ: Multi System	Operations remain displayed shortly after execution	All commands accepted. (2 SHORT BEEPS)		

Field Settings SiUS091628EC

After Setting

Affix corresponding unit number labels onto both air outlet of the decoration panel and onto back of the wireless remote controller.





Note:

Set the unit No. of the receiver and the wireless remote controller to be the equal. If the settings differ, the signal from the remote controller cannot be transmitted.

4.5 Facility Setting (cooling at low outdoor temperature)

Outline

This function is limited only for facilities (the target of air conditioning is equipment such as computers). Never use it in a residence or office (the space where there is a human).

Details

- Cutting jumper 6 (J6) on the circuit board will extend the operation range to -10°C (14°F). Installing an air direction adjustment grille (sold separately) will further extend the operation range to -20°C (-4°F). In these cases, the unit will stop operating if the outdoor temperature falls below -20°C (-4°F), restarting once the temperature rises above this level.
- 1. Remove the top plate of the outdoor unit. (09/12 class: 3 screws, 15/18 class: 6 screws)
- 2. Remove the front plate. (09/12 class: 4 screws, 15/18 class: 8 screws)
- 3. Cut the jumper (J6) of the PCB inside.



For the location of the jumper, refer to pages 17, 18, 19.



Caution

Replace the PCB if you accidentally cut a wrong jumper.

Jumpers are necessary for electronic circuit. Improper operation may occur if you cut any of them.



Caution

- If the outdoor unit is installed where the heat exchanger of the unit is exposed to direct wind, provide a windbreak wall.
- Intermittent noises may be produced by the indoor unit due to the outdoor fan turning on and off when using facility settings.
- Do not place humidifiers or other items which might raise the humidity in rooms where facility settings are being used.
 - A humidifier might cause dew jumping from the indoor unit outlet vent.
- Cutting jumper 6 (J6) sets the indoor fan tap to the highest position. Notify the user about this.

5. Silicone Grease on Power Transistor/Diode Bridge

Outline

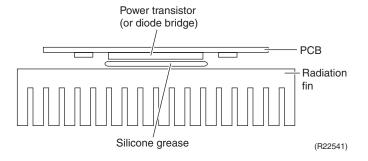
Apply the specified silicone grease to the heat radiation part of a power transistor/diode bridge when you replace an outdoor unit PCB. The silicone grease encourages the heat radiation of a power transistor/diode bridge.

Details

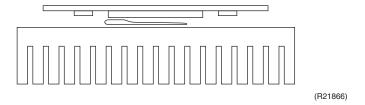
- 1. Wipe off the old silicone grease completely.
- 2. Apply the silicone grease evenly. See the illustrations below for examples of application.
- 3. Tighten the screws of the power transistor/diode bridge.
- 4. Make sure that the heat radiation parts are firmly contacted to the radiation fin.

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

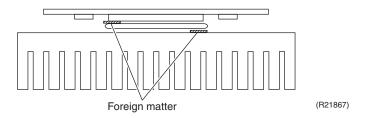
■ OK: Evenly applied



■ NG: Not evenly applied



NG: Foreign matter is stuck.



Part 8 Appendix

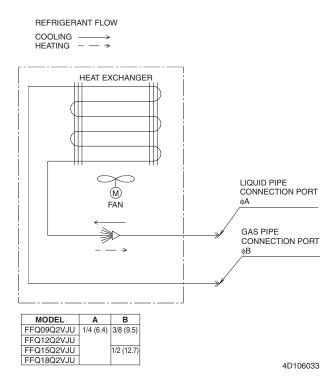
1.	Pipir	ng Diagrams	136
		Indoor Unit	
	1.2	Outdoor Unit	137
2.	Wirir	ng Diagrams	138
		Indoor Unit	
	2.2	Outdoor Unit	139
3.	Ope	ration Limit	142

SiUS091628EC Piping Diagrams

1. Piping Diagrams

1.1 Indoor Unit

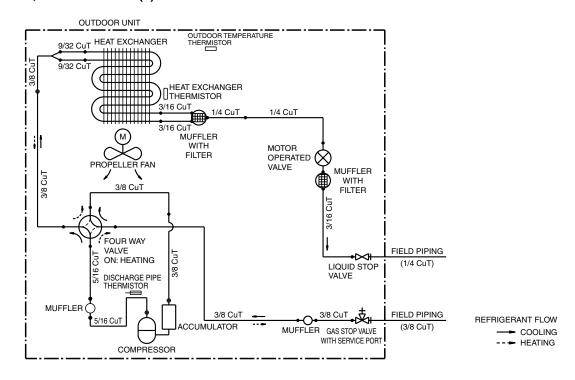
FFQ09/12/15/18Q2VJU



Piping Diagrams SiUS091628EC

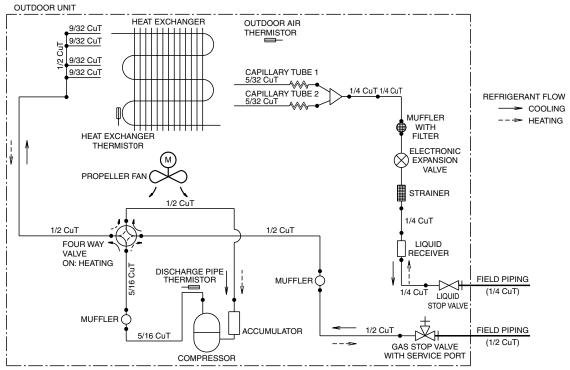
1.2 Outdoor Unit

RX09/12QMVJU, RX09/12RMVJU(9)



3D092207C

RX15/18QMVJU, RX15RMVJU(A), RX18RMVJU(9)(A)



137 Appendix

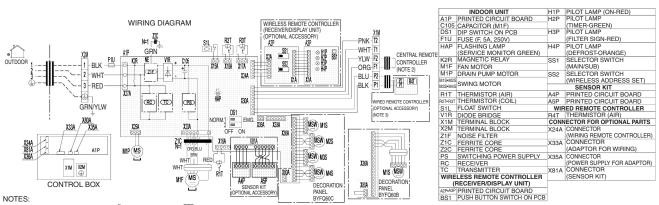
3D092220C

SiUS091628EC **Wiring Diagrams**

2. Wiring Diagrams

Indoor Unit

FFQ09/12/15/18Q2VJU



- 1. III TERMINAL BLOCK ()-: CONNECTOR IIII: FIELD WIRING
 2. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTALLATION MANUAL.
- 3. IN CASE OF MAIN/SUB CHANGEOVER, SEE THE INSTALLATION MANUAL ATTACHED TO WIRELESS REMOTE CONTROLLER.
 4. SYMBOLS SHOW AS FOLLOWS: BLK: BLACK RED: RED BLU: BLUE WHT: WHITE YLW: YELLOW GRN: GREEN ORG: ORANGE BRN: BROWN PNK: PINK.

3D106024

Note:

A1P: Control PCB

A2P: Transmitter board for wireless remote controller

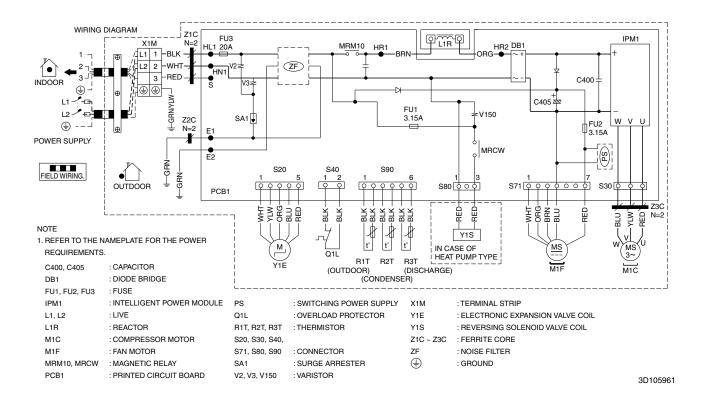
A3P: Receiver for wireless remote controller

Refer to Part 3 for Printed Circuit Board Connector Wiring Diagram.

Wiring Diagrams SiUS091628EC

2.2 Outdoor Unit

RX09/12QMVJU

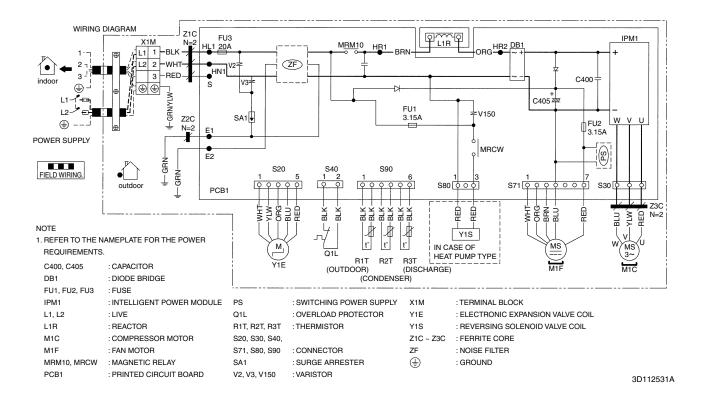


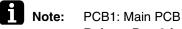


Refer to Part 3 for Printed Circuit Board Connector Wiring Diagram.

SiUS091628EC Wiring Diagrams

RX09/12RMVJU(9)

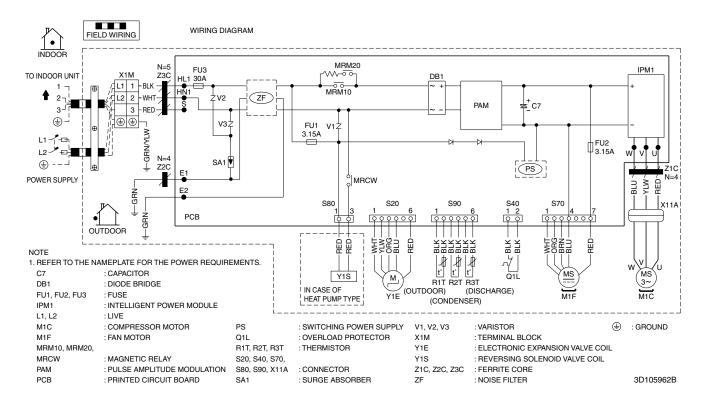




Refer to Part 3 for Printed Circuit Board Connector Wiring Diagram.

Wiring Diagrams SiUS091628EC

RX15/18QMVJU, RX15RMVJU(A), RX18RMVJU(9)(A)





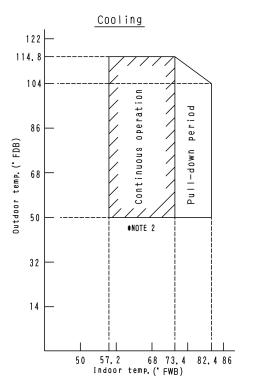
Note: PCB: Main PCB

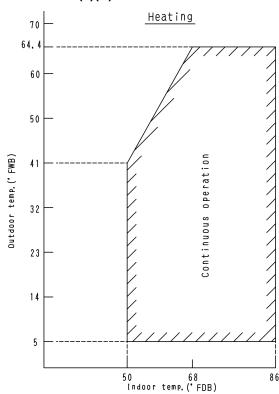
Refer to Part 3 for Printed Circuit Board Connector Wiring Diagram.

SiUS091628EC **Operation Limit**

3. Operation Limit

RX09/12/15/18QMVJU, RX09/12RMVJU(9), RX15RMVJU(A), RX18RMVJU(9)(A)





Notes)
1. The graphs are based on the following conditions.
- Equivalent piping length 25ft
- Level difference Oft

2. Facility Setting (cooling at low outdoor temperature : only for RX model)
This function is limited only for facilities (the target of air conditioning is equipment such as computer).

Never use it in a residence or office (The space where there is a human).

Indoor fan tap should be fixed to high.

- Cutting jumper 6 (J6) on the circuit board

- Installing an air direction adjustment grille (wind baffle)(sold separately) : extend the operation range to 14° F(-10°C).

3D092209E

Revision History

Month / Year	Version	Revised contents
12 / 2016	SiUS091628E	First edition
03 / 2017	SiUS091628EA	Model addition: FFQ18Q2VJU, RX18QMVJU
01 / 2018	SiUS091628EB	Model addition: RX09/12/15/18RMVJU
06 / 2020	SiUS091628EC	Model addition: RX09/12RMVJU9, RX15RMVJUA, RX18RMVJU9(A)



- 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
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 Improper installation can result in water or refrigerant leakage, electrical shock, fire or explosion.
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- 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.

7	. A	ır con	aitioner	s snoul	a no	ot de) inst	allec	ı ın areas	wnere	corrosive	e gases,	, sucn a	as acid	gas c	r aikaiine	gas	, are produced.

the outdoor unit close to the sea shore, contact your local distributor.	2. II the C	outdoor unit is t	o de installed cit	ose to the sea shore	, airect exposure	to the sea preeze	snould be avoided.	. II you need to inst	all
	the ou	tdoor unit close	to the sea shor	e, contact your loca	l distributor.				

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