

Service Manual

Inverter Multi for 2 Rooms

B-Series / D-Series



[Applied Models]

Ilnverter Multi : Cooling Only Ilnverter Multi : Heat Pump

Inverter Multi for 2 Rooms B-Series D-Series

●Cooling Only		
Outdoor Unit	Indoor Unit	
2MKS40DAVMB	FTKS20D3VMW(L)	FDKS25CAVMB
	FTKS25D3VMW(L)	FDKS35CAVMB
	FTKS35D3VMW(L)	FDKS25EAVMB
	FTKS20CAVMB	FDKS35EAVMB
	FTKS25CAVMB	FLKS25BAVMB
	FTKS35CAVMB	FLKS35BAVMB
2AMK40BAVMB	ATKS20E2V1B	ATKS20DAVMB
	ATKS25E2V1B	ATKS25DAVMB
	ATKS35E2V1B	ATKS35DAVMB
●Heat Pump		
Outdoor Unit	Indoor Unit	
2MXS40DAVMB	FTXG25EV1BW(S)	FDXS25CAVMB
	FTXG35EV1BW(S)	FDXS35CAVMB
	FTXS20D3VMW(L)	FDXS25EAVMB
	FTXS25D3VMW(L)	FDXS35EAVMB
	FTXS35D3VMW(L)	FLXS25BAVMB
	FTXS20CAVMB	FLXS35BAVMB
	FTXS25CAVMB	
	FTXS35CAVMB	
2AMX40BAVMB	ATXG25EV1B	ATXS20DAVMB
	ATXG35EV1B	ATXS25DAVMB
	ATXS20E2V1B	ATXS35DAVMB
	ATXS25E2V1B	
	ATXS35E2V1B	

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1. Introduction

1.1 Safety Cautions

Cautions and Warnings

- Be sure to read the following safety cautions before conducting repair work.
- The caution items are classified into "♠ Warning" and "♠ Caution". The "♠ Warning" items are especially important since they can lead to death or serious injury if they are not followed closely. The "♠ Caution" items can also lead to serious accidents under some conditions if they are not followed. Therefore, be sure to observe all the safety caution items described below.
- About the pictograms
- $\ \ \, \bigtriangleup$ This symbol indicates an item for which caution must be exercised.
 - The pictogram shows the item to which attention must be paid.
- This symbol indicates a prohibited action.
 - The prohibited item or action is shown inside or near the symbol.
- This symbol indicates an action that must be taken, or an instruction. The instruction is shown inside or near the symbol.
- After the repair work is complete, be sure to conduct a test operation to ensure that the equipment operates normally, and explain the cautions for operating the product to the customer.

1.1.1 Caution in Repair

	_
<u> </u>	
Be sure to disconnect the power cable plug from the plug socket before disassembling the equipment for a repair. Working on the equipment that is connected to a power supply can cause an electrical shook. If it is necessary to supply power to the equipment to conduct the repair or inspecting the circuits, do not touch any electrically charged sections of the equipment.	B C
If the refrigerant gas discharges during the repair work, do not touch the discharging refrigerant gas. The refrigerant gas can cause frostbite.	\Diamond
When disconnecting the suction or discharge pipe of the compressor at the welded section, release the refrigerant gas completely at a well-ventilated place first. If there is a gas remaining inside the compressor, the refrigerant gas or refrigerating machine oil discharges when the pipe is disconnected, and it can cause injury.	
If the refrigerant gas leaks during the repair work, ventilate the area. The refrigerant gas can generate toxic gases when it contacts flames.	0
The step-up capacitor supplies high-voltage electricity to the electrical components of the outdoor unit. Be sure to discharge the capacitor completely before conducting repair work. A charged capacitor can cause an electrical shock.	A
Do not start or stop the air conditioner operation by plugging or unplugging the power cable plug. Plugging or unplugging the power cable plug to operate the equipment can cause an electrical shock or fire.	

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<u> </u> Warning	
Do not repair the electrical components with wet hands. Working on the equipment with wet hands can cause an electrical shock.	\bigcirc
Do not clean the air conditioner by splashing water. Washing the unit with water can cause an electrical shock.	\bigcirc
Be sure to provide the grounding when repairing the equipment in a humid or wet place, to avoid electrical shocks.	•
Be sure to turn off the power switch and unplug the power cable when cleaning the equipment. The internal fan rotates at a high speed, and cause injury.	9.5
Do not tilt the unit when removing it. The water inside the unit can spill and wet the furniture and floor.	\bigcirc
Be sure to check that the refrigerating cycle section has cooled down sufficiently before conducting repair work. Working on the unit when the refrigerating cycle section is hot can cause burns.	
Use the welder in a well-ventilated place. Using the welder in an enclosed room can cause oxygen deficiency.	0

1.1.2 Cautions Regarding Products after Repair

<u> </u>	
Be sure to use parts listed in the service parts list of the applicable model and appropriate tools to conduct repair work. Never attempt to modify the equipment. The use of inappropriate parts or tools can cause an electrical shock, excessive heat generation or fire.	
When relocating the equipment, make sure that the new installation site has sufficient strength to withstand the weight of the equipment. If the installation site does not have sufficient strength and if the installation work is not conducted securely, the equipment can fall and cause injury.	
Be sure to install the product correctly by using the provided standard installation frame. Incorrect use of the installation frame and improper installation can cause the equipment to fall, resulting in injury.	For integral units only
Be sure to install the product securely in the installation frame mounted on a window frame. If the unit is not securely mounted, it can fall and cause injury.	For integral units only

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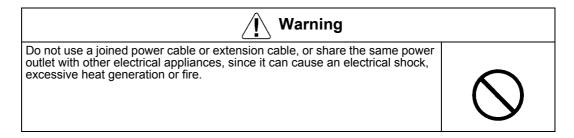
Vi Warning	
Be sure to use an exclusive power circuit for the equipment, and follow the technical standards related to the electrical equipment, the internal wiring regulations and the instruction manual for installation when conducting electrical work. Insufficient power circuit capacity and improper electrical work can cause an electrical shock or fire.	
Be sure to use the specified cable to connect between the indoor and outdoor units. Make the connections securely and route the cable properly so that there is no force pulling the cable at the connection terminals. Improper connections can cause excessive heat generation or fire.	
When connecting the cable between the indoor and outdoor units, make sure that the terminal cover does not lift off or dismount because of the cable. If the cover is not mounted properly, the terminal connection section can cause an electrical shock, excessive heat generation or fire.	
Do not damage or modify the power cable. Damaged or modified power cable can cause an electrical shock or fire. Placing heavy items on the power cable, and heating or pulling the power cable can damage the cable.	\bigcirc
Do not mix air or gas other than the specified refrigerant (R410A) in the refrigerant system. If air enters the refrigerating system, an excessively high pressure results, causing equipment damage and injury.	
If the refrigerant gas leaks, be sure to locate the leak and repair it before charging the refrigerant. After charging refrigerant, make sure that there is no refrigerant leak. If the leak cannot be located and the repair work must be stopped, be sure to perform pump-down and close the service valve, to prevent the refrigerant gas from leaking into the room. The refrigerant gas itself is harmless, but it can generate toxic gases when it contacts flames, such as fan and other heaters, stoves and ranges.	0
When replacing the coin battery in the remote control, be sure to disposed of the old battery to prevent children from swallowing it. If a child swallows the coin battery, see a doctor immediately.	

<u> Caution</u>	
Installation of a leakage breaker is necessary in some cases depending on the conditions of the installation site, to prevent electrical shocks.	
Do not install the equipment in a place where there is a possibility of combustible gas leaks. If a combustible gas leaks and remains around the unit, it can cause a fire.	\bigcirc
Be sure to install the packing and seal on the installation frame properly. If the packing and seal are not installed properly, water can enter the room and wet the furniture and floor.	For integral units only

1.1.3 Inspection after Repair

<u> </u>	
Check to make sure that the power cable plug is not dirty or loose, then insert the plug into a power outlet all the way. If the plug has dust or loose connection, it can cause an electrical shock or fire.	0
If the power cable and lead wires have scratches or deteriorated, be sure to replace them. Damaged cable and wires can cause an electrical shock, excessive heat generation or fire.	0

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(Caution	
Check to see if the parts and wires are mounted and connected properly, and if the connections at the soldered or crimped terminals are secure. Improper installation and connections can cause excessive heat generation, fire or an electrical shock.	
If the installation platform or frame has corroded, replace it. Corroded installation platform or frame can cause the unit to fall, resulting in injury.	
Check the grounding, and repair it if the equipment is not properly grounded. Improper grounding can cause an electrical shock.	
Be sure to measure the insulation resistance after the repair, and make sure that the resistance is 1 $M\Omega$ or higher. Faulty insulation can cause an electrical shock.	
Be sure to check the drainage of the indoor unit after the repair. Faulty drainage can cause the water to enter the room and wet the furniture and floor.	

1.1.4 Using Icons

Icons are used to attract the attention of the reader to specific information. The meaning of each icon is described in the table below:

1.1.5 Using Icons List

Icon	Type of Information	Description
Note:	Note	A "note" provides information that is not indispensable, but may nevertheless be valuable to the reader, such as tips and tricks.
Caution	Caution	A "caution" is used when there is danger that the reader, through incorrect manipulation, may damage equipment, loose data, get an unexpected result or has to restart (part of) a procedure.
Warning	Warning	A "warning" is used when there is danger of personal injury.
5	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

١.	Cooling Only	2
2.	Heat Pump	7

1. Cooling Only

		1		1	1		
Category	Functions	FTKS20-35D3VMW(L)	FTKS20-35CAVMB	Category	Functions	FTKS20-35D3VMW(L)	FTKS20-35CAVMB
Basic	Inverter (with Inverter Power Control)	0	0	Health &	Air Purifying Filter with Bacteriostatic,		
Function	Operation Limit for Cooling (°CDB)	_	_	Clean	Virustatic Functions	_	_
	Operation Limit for Heating (°CWB)	_	_		Photocatalytic Deodorizing Filter	_	_
	PAM Control	_	_		Air Purifying Filter with Photocatalytic Deodorizing Function	_	0
Compressor	Oval Scroll Compressor	_	_]	Titanium Apatite Photocatalytic	0	
	Swing Compressor	_	_		Air-Purifying Filter	O	
	Rotary Compressor	_	_		Mold Proof Air Filter	0	0
	Reluctance DC Motor		_		Wipe-clean Flat Panel	0	0
Comfortable	Power-Airflow Flap	-	_		Washable Grille	_	_
Airflow	Power-Airflow Dual Flaps	0	0		Mold Proof Operation	_	_
	Power-Airflow Diffuser		_	1	Heating Dry Operation	_	_
	Wide-Angle Louvers	0	0]	Good-Sleep Cooling Operation	_	_
	Vertical Auto-Swing (Up and Down)	0	0	Timer	24-Hour On/Off Timer	0	0
	Horizontal Auto-Swing (Right and Left)	_	_	1	Night Set Mode	0	0
	3-D Airflow	_	_	Worry Free	Auto-Restart (after Power Failure)	0	0
	Comfort Airflow Mode	0	_	"Reliability & Durability"	Self-Diagnosis (Digital, LED) Display	0	0
	3-Step Airflow (H/P Only)	_	_	Barasinty	Wiring Error Check	_	_
Comfort	Auto Fan Speed	0	0	1	Anticorrosion Treatment of Outdoor		
Control	Indoor Unit Quiet Operation	0	0	1	Heat Exchanger	_	_
	Night Quiet Mode (Automatic)	_	_	Flexibility	Multi-Split / Split Type Compatible		
	Outdoor Unit Quiet Operation (Manual)	_	_	1	Indoor Unit	0	0
	Intelligent Eye	0	0	1	Flexible Voltage Correspondence	0	0
	Quick Warming Function	_	_	1	High Ceiling Application	_	_
	Hot-Start Function	_	_	1	Chargeless	_	_
	Automatic Defrosting	_	_	1	Either Side Drain (Right or Left)	0	0
Operation	Automatic Operation	_	_	1	Power Selection	_	_
	Programme Dry Function	0	0	Remote Control	5-Rooms Centralized Controller (Option)	0	0
	Fan Only	0	0	1	Remote Control Adapter		
Lifestyle	New Powerful Operation (Non-Inverter)	_	_	1	(Normal Open-Pulse Contact) (Option)	0	0
Convenience	Inverter Powerful Operation	0	0	1	Remote Control Adapter		_
	Priority-Room Setting	_	_	1	(Normal Open Contact) (Option)	0	0
	Cooling / Heating Mode Lock	_	_	1	DIII-NET Compatible (Adapter) (Option)	0	0
	Home Leave Operation	_	0	Remote	Infrared	0	0
	ECONO Mode	0	_	Control	Wired	_	_
	Indoor Unit On/Off Switch	0	0				
	Signal Reception Indicator	0	0				
	Temperature Display	_	_				
	Another Room Operation	_	_				
Note:	O : Holding Functions			ı			

Note: O : Holding Functions
— : No Functions

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Category	Functions	FDKS25/35CAVMB	FDKS25/35EAVMB	Category	Functions	FDKS25/35CAVMB	FDKS25/35EAVMB
Basic Function	Inverter (with Inverter Power Control)	0	0	Health & Clean	Air Purifying Filter with Bacteriostatic & Virustatic Functions	_	_
	Operation Limit for Cooling (°CDB)	_	_		Photocatalytic Deodorizing Filter	_	_
	Operation Limit for Heating (°CWB)	_	_		Air Purifying Filter with Photocatalytic Deodorizing Function	_	_
	PAM Control	-	_		Titanium Apatite Photocatalytic Air-Purifying Filter	_	_
Compressor	Oval Scroll Compressor	_	_		Mold Proof Air Filter	0	0
	Swing Compressor	_	_		Wipe-clean Flat Panel	_	_
	Rotary Compressor	_	_		Washable Grille	_	_
	Reluctance DC Motor	_	_		Mold Proof Operation	_	_
Comfortable Airflow	Power-Airflow Flap	_	_		Heating Dry Operation	_	_
Allilow	Power-Airflow Dual Flaps	_	_		Good-Sleep Cooling Operation	_	_
	Power-Airflow Diffuser	_	_	Timer	24-Hour On/Off Timer	0	0
	Wide-Angle Louvers	_	_		Night Set Mode	0	0
	Vertical Auto-Swing (Up and Down)	_	_	Worry Free	Auto-Restart (after Power Failure)	0	0
	Horizontal Auto-Swing (Right and Left)	1	_	"Reliability & Durability"	Self-Diagnosis (Digital, LED) Display	0	0
	3-D Airflow	l	_		Wiring-Error Check	-	_
	Comfort Airflow Mode				Anticorrosion Treatment of Outdoor Heat Exchanger		_
	3-Step Airflow (H/P Only)	l	_	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	0	0
Comfort	Auto Fan Speed	0	0		Flexible Voltage Correspondence	0	0
Control	Indoor Unit Quiet Operation	0	0		High Ceiling Application	_	_
	Night Quiet Mode (Automatic)	_	_		Chargeless	_	_
	Outdoor Unit Quiet Operation (Manual)	_	_		Either Side Drain (Right or Left)	_	_
	Intelligent Eye	_	_		Power-Selection	_	_
	Quick Warming Function		_	Remote Control	5-Rooms Centralized Controller (Option)	0	0
	Hot-Start Function	_	_		Remote Control Adapter (Normal Open-Pulse Contact) (Option)	0	0
	Automatic Defrosting	-	_		Remote Control Adapter (Normal Open Contact) (Option)	0	0
Operation	Automatic Operation	_	_		DIII-NET Compatible (Adapter) (Option)	0	0
	Programme Dry Function	0	0	Remote Control	Infrared	0	0
	Fan Only	0	0	Control	Wired	_	_
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	_	_				
	Inverter Powerful Operation	0	0				
	Priority-Room Setting	_	_				
	Cooling / Heating Mode Lock	_	_				
	Home Leave Operation	0	0				
	ECONO Mode	_					
	Indoor Unit On/Off Switch	0	0				
	Signal Reception Indicator	0	0				
	Temperature Display	_					
	Another Room Operation						
Note:	O : Holding Functions						

Note: O : Holding Functions
— : No Functions

		m	1			m	
Category	Functions	FLKS25/35BAVMB	2MKS40DAVMB	Category	Functions	FLKS25/35BAVMB	2MKS40DAVMB
Basic Function	Inverter (with Inverter Power Control)	0	0	Health & Clean	Air Purifying Filter with Bacteriostatic & Virustatic Functions	0	_
	Operation Limit for Cooling (°CDB)	_	10 ~ 46		Photocatalytic Deodorizing Filter	0	_
	Operation Limit for Heating (°CWB)	_	_	1	Air Purifying Filter with Photocatalytic Deodorizing Function	_	_
	PAM Control	_	0		Titanium Apatite Photocatalytic Air-Purifying Filter	_	_
Compressor	Oval Scroll Compressor	_	_		Mold Proof Air Filter	0	_
	Swing Compressor	_	0		Wipe-clean Flat Panel	_	_
	Rotary Compressor	_	_		Washable Grille	_	_
	Reluctance DC Motor	_	0		Mold Proof Operation	_	_
Comfortable	Power-Airflow Flap	_	_	1	Heating Dry Operation	_	_
Airflow	Power-Airflow Dual Flaps	_	_	1	Good-Sleep Cooling Operation	_	_
	Power-Airflow Diffuser	_	_	Timer	24-Hour On/Off Timer	0	_
	Wide-Angle Louvers	_	_	1	Night Set Mode	0	_
	Vertical Auto-Swing (Up and Down)	0	_	Worry Free	Auto-Restart (after Power Failure)	0	_
	Horizontal Auto-Swing (Right and Left)	_	_	"Reliability & Durability"	Self-Diagnosis (Digital, LED) Display	0	0
	3-D Airflow	_	_	Durability	Wiring-Error Check	_	_
	Comfort Airflow Mode	_	_	-	Anticorrosion Treatment of Outdoor Heat Exchanger	_	0
	3-Step Airflow (H/P Only)	_	_	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	0	_
Comfort	Auto Fan Speed	0	_		Flexible Voltage Correspondence	0	0
Control	Indoor Unit Quiet Operation	0	_		High Ceiling Application	_	_
	Night Quiet Mode (Automatic)	_	_		Chargeless	_	20m
	Outdoor Unit Quiet Operation (Manual)	_	0		Either Side Drain (Right or Left)	_	_
	Intelligent Eye	_	_		Power-Selection	_	0
	Quick Warming Function	_	_	Remote Control	5-Rooms Centralized Controller (Option)	0	_
	Hot-Start Function	_	_		Remote Control Adapter (Normal Open-Pulse Contact) (Option)	0	_
	Automatic Defrosting	_	_		Remote Control Adapter (Normal Open Contact) (Option)	0	_
Operation	Automatic Operation	_	_		DIII-NET Compatible (Adapter) (Option)	0	
	Programme Dry Function	0	_	Remote	Infrared	0	_
	Fan Only	0	_	Control	Wired	_	_
Lifestyle Convenience	New Powerful Operation (Non-Inverter)		_				
	Inverter Powerful Operation	0					
	Priority-Room Setting	_	_				
	Cooling / Heating Mode Lock	_	_				
	Home Leave Operation	0					
	ECONO Mode						
	Indoor Unit On/Off Switch	0	_				
	Signal Reception Indicator	0	_				
	Temperature Display	_	_				
	Another Room Operation	_	_				
Note:	O : Holding Functions						

-- : No Functions

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			m		-		m
Category	Functions	ATKS20/25/35E2V1B	ATKS20/25/35DAVMB	Category	Functions	ATKS20/25/35E2V1B	ATKS20/25/35DAVMB
Basic	Inverter (with Inverter Power Control)	0	0	Health &	Air Purifying Filter with Bacteriostatic,		
Function	Operation Limit for Cooling (°CDB)	_	_	Clean	Virustatic Functions	_	_
	Operation Limit for Heating (°CWB)	1	_		Photocatalytic Deodorizing Filter	_	_
	PAM Control		_		Air Purifying Filter with Photocatalytic Deodorizing Function	_	0
Compressor	Oval Scroll Compressor	_	_]	Titanium Apatite Photocatalytic	0	_
	Swing Compressor	_	_		Air-Purifying Filter	O	
	Rotary Compressor	_	_		Mold Proof Air Filter	0	0
	Reluctance DC Motor	-	_		Wipe-clean Flat Panel	0	0
Comfortable	Power-Airflow Flap	_	_		Washable Grille	_	_
Airflow	Power-Airflow Dual Flaps	0	0		Mold Proof Operation	_	_
	Power-Airflow Diffuser	-	_		Heating Dry Operation	_	_
	Wide-Angle Louvers		0	1	Filter Cleaning Indicator	_	_
	Vertical Auto-Swing (Up and Down)	0	0		Good-Sleep Cooling Operation	_	_
	Horizontal Auto-Swing (Right and Left)	1	_	Timer	24-Hour On/Off Timer	0	0
	3-D Airflow	1	_		Night Set Mode	0	0
-	Comfort Airflow Mode	0		Worry Free	Auto-Restart (after Power Failure)	0	0
	3-Step Airflow (H/P Only)	-	_	"Reliability & Durability"	Self-Diagnosis (Digital, LED) Display	0	0
Comfort	Auto Fan Speed	0	0	- - -	Wiring Error Check	_	_
Control	Indoor Unit Quiet Operation	0	0		Anticorrosion Treatment of Outdoor		
	Night Quiet Mode (Automatic)		_		Heat Exchanger		
	Outdoor Unit Quiet Operation (Manual)	_	_	Flexibility	Multi-Split / Split Type Compatible	0	0
	Intelligent Eye	0	0		Indoor Unit	Ŭ	
	Quick Warming Function	_	_		Flexible Voltage Correspondence	_	0
	Hot-Start Function	_	_		High Ceiling Application	_	_
	Automatic Defrosting	_	_		Chargeless	_	_
Operation	Automatic Operation	_	_		Either Side Drain (Right or Left)	0	0
	Programme Dry Function	0	0		Power Selection	_	_
	Fan Only	0	0	Remote Control	5-Rooms Centralized Controller (Option)	0	0
Lifestyle	New Powerful Operation (Non-Inverter)	-	_	_	Remote Control Adapter	0	0
Convenience	Inverter Powerful Operation	0	0		(Normal Open-Pulse Contact) (Option)		
	Priority-Room Setting	_	_		Remote Control Adapter (Normal Open Contact) (Option)	0	0
	Cooling / Heating Mode Lock	_	_	1			
	Home Leave Operation	_	0		DIII-NET Compatible (Adapter) (Option)	0	0
	ECONO Mode	0	_	Remote	Infrared	0	0
	Indoor Unit On/Off Switch	0	0	Control	Wired	_	_
	Signal Reception Indicator	0	0				
	Temperature Display	_					
	Another Room Operation	_	_				
Matai	O : Holding Functions						

Note: O: Holding Functions

— : No Functions

Category	Functions	2AMK40BAVMB	Category	Functions	2AMK40BAVMB
Basic Function	Inverter (with Inverter Power Control)	0	Health & Clean	Air Purifying Filter with Bacteriostatic & Virustatic Functions	_
	Operation Limit for Cooling (°CDB)	10		Photocatalytic Deodorizing Filter	_
		46			
	Operation Limit for Heating (°CWB)	_		Air Purifying Filter with Photocatalytic Deodorizing Function	_
	PAM Control	0		Titanium Apatite Photocatalytic Deodorizing Function	_
Compressor	Oval Scroll Compressor	_		Mould Proof Air Filter	_
	Swing Compressor Rotary Compressor			Wipe-clean Flat Panel	_
				Washable Grille	_
	Reluctance DC Motor	0]	Mold Proof Operation	-
Comfortable	Power-Airflow Flap	_		Heating Dry Operation	_
Airflow	Power-Airflow Dual Flaps	_	1	Good-Sleep Cooling Operation	_
	Power-Airflow Diffuser	_	Timer	24-Hour On/Off Timer	_
	Wide-Angle Louvers	_	1	Night Set Mode	_
	Vertical Auto-Swing (Up and Down)	_	Worry Free	Auto-Restart (after Power Failure)	_
	Horizontal Auto-Swing (Right and Left)	_	"Reliability & Durability"	Self-Diagnosis (Digital, LED) Display	0
	3-D Airflow	_	Durability	Wiring-Error Check	_
	Comfort Airflow Mode	_		Anticorrosion Treatment of Outdoor Heat Exchanger	0
	3-Step Airflow (H/P Only)	_	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	_
Comfort	Auto Fan Speed	_	1	Flexible Voltage Correspondence	0
Control	Indoor Unit Quiet Operation	_	1	Chargeless	20m
	Night Quiet Mode (Automatic)	_	1	Either Side Drain (Right or Left)	_
	Outdoor Unit Quiet Operation (Manual)	0		Power-Selection	0
	Intelligent Eye	_	Remote	5-Rooms Centralized Controller (Option)	_
	Quick Warming Function	_	Control	Remote Control Adapter (Normal Open-Pulse Contact) (Option)	_
	Hot-Start Function	_		Remote Control Adapter (Normal Open Contact) (Option)	_
	Automatic Defrosting	_		DIII-NET Compatible (Adapter) (Option)	_
Operation	Automatic Operation	_	Remote	Infrared	l —
	Programme Dry Function	_	Control	Wired	_
	Fan Only	_			
Lifestyle Convenience	New Powerful Operation (Non-Inverter)				
	Inverter Powerful Operation	_			
	Priority-Room Setting	_			
	Cooling / Heating Mode Lock	_			
	Home Leave Operation	_			
	ECONO Mode	_			
	Indoor Unit On/Off Switch	_			
	Signal Reception Indicator	_			
	Temperature Display	_			
N. 4	O : Holding Functions		1	1	1

Note: O: Holding Functions
—: No Functions

SiENBE12-627 Heat Pump

2. Heat Pump

Category	Functions	FTXG25/35EV1BW(S)	FTXS20-35D3VMW(L)	FTXS20-35CAVMB	Category	Functions	FTXG25/35EV1BW(S)	FTXS20-35D3VMW(L)	FTXS20-35CAVMB
Basic	Inverter (with Inverter Power Control)	0	0	0	Health & Clean	Air Purifying Filter with Bacteriostatic, Virustatic Functions	_	_	_
Function	Operation Limit for Cooling (°CDB)	_	_	_	Clean	VII USTATIC FUNCTIONS			
	Operation Limit for Heating (°CWB)	_	_	_		Photocatalytic Deodorizing Filter	_	_	<u> </u>
	PAM Control	-	_	_		Air Purifying Filter with Photocatalytic Deodorizing Function	_	_	0
Compressor	Oval Scroll Compressor	_	_	_		Titanium Apatite Photocatalytic	0	0	
	Swing Compressor	_	_	_		Air-Purifying Filter		Ŭ	
	Rotary Compressor		_	_		Mold Proof Air Filter	0	0	0
	Reluctance DC Motor	_	_	_		Wipe-clean Flat Panel	0	0	0
Comfortable Airflow	Power-Airflow Flap	_	_	_		Washable Grille	_	_	_
AITIOW	Power-Airflow Dual Flaps	0	0	0		Mold Proof Operation	_	_	_
	Power-Airflow Diffuser	_	_	_		Heating Dry Operation	_	_	_
	Wide-Angle Louvers	0	0	0		Good-Sleep Cooling Operation	_	_	_
	Vertical Auto-Swing (Up and Down)	0	0	0	Timer	24-Hour On/Off Timer	0	0	0
	Horizontal Auto-Swing (Right and Left)	0	_	_		Night Set Mode	0	0	0
	3-D Airflow	0	_	_	Worry Free	Auto-Restart (after Power Failure)	0	0	0
	Comfort Airflow Mode	0	0	_	"Reliability & Durability"	Self-Diagnosis (Digital, LED) Display	0	0	0
	3-Step Airflow (H/P Only)	_	_	_		Wiring Error Check	_	_	_
Comfort	Auto Fan Speed	0	0	0	Flexibility	Anticorrosion Treatment of Outdoor Heat Exchanger		_	_
Control	Indoor Unit Quiet Operation	0	0	0		ŭ .			
	Night Quiet Mode (Automatic)	_	_	_		Multi-Split / Split Type Compatible			0
	Outdoor Unit Quiet Operation (Manual)	_	_	_		Indoor Unit			
	Intelligent Eye	0	0	0		Flexible Voltage Correspondence	_	0	0
	Quick Warming Function	_	_	_		High Ceiling Application	_	_	_
	Hot-Start Function	0	0	0		Chargeless	_	_	_
	Automatic Defrosting	_	_	_		Either Side Drain (Right or Left)	0	0	0
Operation	Automatic Operation	0	0	0		Power Selection	_	_	_
	Programme Dry Function	0	0	0	Remote Control	5-Rooms Centralized Controller (Option)	0	0	0
	Fan Only	0	0	0		Remote Control Adapter (Normal Open-Pulse Contact) (Option)	0	0	0
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	_	_	_		Remote Control Adapter (Normal Open Contact) (Option)	0	0	0
	Inverter Powerful Operation	0	0	0			L	L	L
	Priority-Room Setting	_	_	_]	DIII-NET Compatible (Adapter) (Option)	0	0	0
	Cooling / Heating Mode Lock	_	_	_	Remote	Infrared	0	0	0
	Home Leave Operation	_	_	0	Control	Wired	_	_	
	ECONO Mode	_	0	_					
	Indoor Unit On/Off Switch	0	0	0					
	Signal Reception Indicator	0	0	0					
	Temperature Display	_	_	_					
	Another Room Operation								Т

Note: O: Holding Functions
—: No Functions

Heat Pump SiENBE12-627

Category	Functions	FDXS25/35CAVMB	FDXS25/35EAVMB	Category	Functions	FDXS25/35CAVMB	FDXS25/35EAVMB
Basic Function	Inverter (with Inverter Power Control)	0	0	Health & Clean	Air Purifying Filter with Bacteriostatic & Virustatic Functions	_	_
	Operation Limit for Cooling (°CDB)	_	_		Photocatalytic Deodorizing Filter	_	_
	Operation Limit for Heating (°CWB)	_	_		Air Purifying Filter with Photocatalytic Deodorizing Function	_	_
	PAM Control	_	_		Titanium Apatite Photocatalytic Air-Purifying Filter	_	_
Compressor	Oval Scroll Compressor	_	_		Mold Proof Air Filter	0	0
	Swing Compressor	_	_		Wipe-clean Flat Panel	_	_
	Rotary Compressor	_	_		Washable Grille	_	_
	Reluctance DC Motor		_		Mold Proof Operation		_
Comfortable Airflow	Power-Airflow Flap	_	_		Heating Dry Operation	_	_
All llow	Power-Airflow Dual Flaps	_	_		Good-Sleep Cooling Operation	_	_
	Power-Airflow Diffuser	_	_	Timer	24-Hour On/Off Timer	0	0
	Wide-Angle Louvers	_	_		Night Set Mode	0	0
	Vertical Auto-Swing (Up and Down)	_	_	Worry Free	Auto-Restart (after Power Failure)	0	0
	Horizontal Auto-Swing (Right and Left)	_	_	"Reliability & Durability"	Self-Diagnosis (Digital, LED) Display	0	0
	3-D Airflow	_	_		Wiring-Error Check	_	_
	3-Step Airflow (H/P Only)	_	_		Anticorrosion Treatment of Outdoor Heat Exchanger	_	_
Comfort Control	Auto Fan Speed	0	0	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	0	0
	Indoor Unit Quiet Operation	0	0		Flexible Voltage Correspondence	0	0
	Night Quiet Mode (Automatic)	_	_		High Ceiling Application	_	_
	Outdoor Unit Quiet Operation (Manual)	_	_		Chargeless	_	_
	Intelligent Eye	_	_	_	Either Side Drain (Right or Left)	_	_
	Quick Warming Function	_	_		Power-Selection	_	_
	Hot-Start Function	0	0	Remote Control	5-Rooms Centralized Controller (Option)	0	0
	Automatic Defrosting	_	_		Remote Control Adapter (Normal Open-Pulse Contact) (Option)	0	0
Operation	Automatic Operation	0	0		Remote Control Adapter (Normal Open Contact) (Option)	0	0
	Programme Dry Function	0	0		DIII-NET Compatible (Adapter) (Option)	0	0
	Fan Only	0	0	Remote Control	Infrared	0	0
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	_	_	Control	Wired	_	_
	Inverter Powerful Operation	0	0				
	Priority-Room Setting	_					
	Cooling / Heating Mode Lock	_	_				
	Home Leave Operation	0	0				
	ECONO Mode	_	_				
	Indoor Unit On/Off Switch	0	0				
	Signal Reception Indicator	0	0				
	Temperature Display	_					
	Another Room Operation	_					
Note:	O : Holding Functions			<u> </u>			

Note: O : Holding Functions
— : No Functions

SiENBE12-627 Heat Pump

Category	Functions	FLXS25/35BAVMB	2MXS40DAVMB	Category	Functions	FLXS25/35BAVMB	2MXS40DAVMB
Basic Function	Inverter (with Inverter Power Control)	0	0	Health & Clean	Air Purifying Filter with Bacteriostatic & Virustatic Functions	0	_
	Operation Limit for Cooling (°CDB)	_	10 ~ 46		Photocatalytic Deodorizing Filter	0	_
	Operation Limit for Heating (°CWB)	_	-10 ~ 15.5		Air Purifying Filter with Photocatalytic Deodorizing Function	_	_
	PAM Control	_	0		Titanium Apatite Photocatalytic Air-Purifying Filter		_
Compressor	Oval Scroll Compressor	_	_		Mold Proof Air Filter	0	_
	Swing Compressor	_	0		Wipe-clean Flat Panel	_	
	Rotary Compressor		_]	Washable Grille		
	Reluctance DC Motor	_	0		Mold Proof Operation	_	
Comfortable	Power-Airflow Flap	_	_		Heating Dry Operation		_
Airflow	Power-Airflow Dual Flaps	_	_		Good-Sleep Cooling Operation	1	_
I	Power-Airflow Diffuser	_	_	Timer	24-Hour On/Off Timer	0	_
I	Wide-Angle Louvers	_	_		Night Set Mode	0	_
1	Vertical Auto-Swing (Up and Down)	0	_	Worry Free	Auto-Restart (after Power Failure)	0	_
	Horizontal Auto-Swing (Right and Left)	_	_	"Reliability & Durability"	Self-Diagnosis (Digital, LED) Display	0	0
I	3-D Airflow	_	_]	Wiring-Error Check	_	_
	Comfort Airflow Mode	_	_		Anticorrosion Treatment of Outdoor Heat Exchanger	_	0
	3-Step Airflow (H/P Only)	_	_	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	0	_
Comfort	Auto Fan Speed	0	_		Flexible Voltage Correspondence	0	0
Control	Indoor Unit Quiet Operation	0	_		High Ceiling Application	_	_
1	Night Quiet Mode (Automatic)	_	_		Chargeless	_	20m
1	Outdoor Unit Quiet Operation (Manual)	_	0		Either Side Drain (Right or Left)	_	_
I	Intelligent Eye	_	_		Power-Selection	_	_
	Quick Warming Function	_	0	Remote Control	5-Rooms Centralized Controller (Option)	0	_
	Hot-Start Function	0	_		Remote Control Adapter (Normal Open-Pulse Contact) (Option)	0	_
	Automatic Defrosting	_	0		Remote Control Adapter (Normal Open Contact) (Option)	0	_
Operation	Automatic Operation	0	_		DIII-NET Compatible (Adapter) (Option)	0	_
	Programme Dry Function	0	_	Remote Control	Infrared	0	_
 	Fan Only	0		- CO1101	Wired	_	
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	_	_				
	Inverter Powerful Operation	0	_				
	Priority-Room Setting	_	_				
	Cooling / Heating Mode Lock	_	_				
	Home Leave Operation	0	_				
	ECONO Mode	_	_				
İ	Indoor Unit On/Off Switch	0	—				
İ							1
	Signal Reception Indicator	0	_				
	Signal Reception Indicator Temperature Display Another Room Operation	0	_				

Note: O : Holding Functions
— : No Functions

Heat Pump SiENBE12-627

Category	Functions	ATXG25/35EV1B	ATXS20/25/35E2V1B	ATXS20/25/35DAVMB	Category	Functions	ATXG25/35EV1B	ATXS20/25/35E2V1B	ATXS20/25/35DAVMB
Basic Function	Inverter (with Inverter Power Control)	0	0	0	Health &	Air Purifying Filter with Bacteriostatic, Virustatic Functions	_	_	_
Function	Operation Limit for Cooling (°CDB)	_	_	_	Clean				
	Operation Limit for Heating (°CWB)	_	_	_		Photocatalytic Deodorizing Filter	_	_	<u> </u>
	PAM Control	_	_	_		Air Purifying Filter with Photocatalytic Deodorizing Function	_	_	0
Compressor	Oval Scroll Compressor	_	_	_		Titanium Apatite Photocatalytic Air-Purifying Filter	0	0	_
	Swing Compressor	_	_	_		All-Pullyllig Filter	Ŭ		
	Rotary Compressor	_	_	_		Mold Proof Air Filter	0	0	0
	Reluctance DC Motor	_	_	_		Wipe-clean Flat Panel	0	0	0
Comfortable Airflow	Power-Airflow Flap	0	_	_		Washable Grille	_	_	_
All llow	Power-Airflow Dual Flaps	_	0	0		Mold Proof Operation	_	_	_
	Power-Airflow Diffuser	_	_	_		Heating Dry Operation	_	_	—
	Wide-Angle Louvers	0	0	0		Filter Cleaning Indicator	_	_	_
	Vertical Auto-Swing (Up and Down)	0	0	0		Good-Sleep Cooling Operation	_	_	_
	Horizontal Auto-Swing (Right and Left)	0	_	_	Timer	24-Hour On/Off Timer	0	0	0
	3-D Airflow	0	_			Night Set Mode	0	0	0
-	Comfort Airflow Mode	0	0	_	Worry Free	Auto-Restart (after Power Failure)	0	0	0
	3-Step Airflow (H/P Only)	_	_	_	"Reliability & Durability"	Self-Diagnosis (Digital, LED) Display	0	0	0
Comfort	Auto Fan Speed	0	0	0		Wiring Error Check	1-1-	_	
Control	Indoor Unit Quiet Operation	0	0	0		Anticorrosion Treatment of Outdoor			
	Night Quiet Mode (Automatic)	_	_	_		Heat Exchanger			
	Outdoor Unit Quiet Operation (Manual)	_	_		Flexibility	Multi-Split / Split Type Compatible	0	0	0
	Intelligent Eye	0	0	0		Indoor Unit	0)	
	Quick Warming Function	_	_			Flexible Voltage Correspondence	_	I	0
	Hot-Start Function	0	0	0		High Ceiling Application	_	_	_
	Automatic Defrosting		_			Chargeless		1	_
Operation	Automatic Operation	0	0	0		Either Side Drain (Right or Left)	0	0	0
	Programme Dry Function	0	0	0		Power Selection	_	1	_
	Fan Only	0	0	0	Remote Control	5-Rooms Centralized Controller (Option)	0	0	0
Lifestyle Convenience	New Powerful Operation (Non- Inverter)	_	_	_		Remote Control Adapter (Normal Open-Pulse Contact) (Option)	0	0	0
	Inverter Powerful Operation	0	0	0			L		
	Priority-Room Setting		_	_]	Remote Control Adapter	\sim	0	
	Cooling / Heating Mode Lock	_	_	_		(Normal Open Contact) (Option)	0		0
	Home Leave Operation	_	-	0		DIII-NET Compatible (Adapter) (Option)	0	0	0
	ECONO Mode	_	0	_	Remote	Infrared	0	0	0
	Indoor Unit On/Off Switch	0	0	0	Control	Wired	_	_	<u> </u>
	Signal Reception Indicator	0	0	0					
	Temperature Display	_	_	_					
	Another Room Operation	_	_	_					
N	O : Holding Functions	•		•	1		•		

Note: O : Holding Functions

-- : No Functions

SiENBE12-627 Heat Pump

Category	Functions	2AMX40BAVMB	Category	Functions	2AMX40BAVMB
Basic Function	Inverter (with Inverter Power Control)	0	Health & Clean	Air Purifying Filter with Bacteriostatic & Virustatic Functions	
	Operation Limit for Cooling (°CDB)	10 ~ 46		Photocatalytic Deodorizing Filter	
	Operation Limit for Heating (°CWB)	-10 ~ 15.5		Air Purifying Filter with Photocatalytic Deodorizing Function	_
	PAM Control	0		Titanium Apatite Photocatalytic Deodorizing Function	
Compressor	Oval Scroll Compressor			Mould Proof Air Filter	_
	Swing Compressor	0		Wipe-clean Flat Panel	_
	Rotary Compressor	_	1	Washable Grille	_
	Reluctance DC Motor			Mold Proof Operation	_
Comfortable	Power-Airflow Flap			Heating Dry Operation	_
Airflow	Power-Airflow Dual Flaps	_		Good-Sleep Cooling Operation	_
	Power-Airflow Diffuser	_	Timer	24-Hour On/Off Timer	_
	Wide-Angle Louvers			Night Set Mode	—
	Vertical Auto-Swing (Up and Down)		Worry Free	Auto-Restart (after Power Failure)	_
	Horizontal Auto-Swing (Right and Left)		"Reliability &	Self-Diagnosis (Digital, LED) Display	0
3	3-D Airflow	_	Durability [®]	Wiring-Error Check	
	Comfort Airflow Mode	_		Anticorrosion Treatment of Outdoor Heat Exchanger	0
	3-Step Airflow (H/P Only)	_	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	_
Comfort	Auto Fan Speed	_		Flexible Voltage Correspondence	0
Control	Indoor Unit Quiet Operation	_		Chargeless	20m
	Night Quiet Mode (Automatic)	_		Either Side Drain (Right or Left)	_
	Outdoor Unit Quiet Operation (Manual)	0		Power-Selection	_
	Intelligent Eye	_	Remote	5-Rooms Centralized Controller (Option)	_
	Quick Warming Function	0	Control	Remote Control Adapter (Normal Open-Pulse Contact) (Option)	-
	Hot-Start Function	_		Remote Control Adapter (Normal Open Contact) (Option)	_
	Automatic Defrosting	0		DIII-NET Compatible (Adapter) (Option)	
Operation	Automatic Operation		Remote	Infrared	
	Programme Dry Function		Control	Wired	_
	Fan Only				
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	_			
	Inverter Powerful Operation				
	Priority-Room Setting				
	Cooling / Heating Mode Lock				
	Home Leave Operation				
	ECONO Mode				
	Indoor Unit On/Off Switch				
	Signal Reception Indicator				
	Temperature Display	<u> </u>			
Notes	O : Holding Functions				

Note: O : Holding Functions

— : No Functions

Heat Pump SiENBE12-627

Part 2 Specifications

1.	Cool	ling Only	14
	1.1	Indoor Units	14
	1.2	Outdoor Units	21
2.	Heat	t Pump	23
		Indoor Units	
	2.2	Outdoor Units	31

1. Cooling Only

1.1 Indoor Units

Wall Mounted Type

50Hz 230V

Model				FTKS20D3VMW	FTKS20D3VML
Rated Capacity				2.0kW Class	2.0kW Class
Front Panel Co	lor			White	Silver Line
Front Panel Color			Н	8.7 (307)	8.7 (307)
Air Flow Rates		mł/min	M	6.7 (237)	6.7 (237)
Air Flow Rates		(cfm)	L	4.7 (166)	4.7 (166)
			SL	3.9 (138)	3.9 (138)
	Туре			Cross Flow Fan	Cross Flow Fan
Fan	Motor Outpu	t	W	40	40
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Direction Co	ontrol			Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter				Removable-Washable-Mildew Proof	Removable-Washable-Mildew Proof
Running Currer	nt (Rated)		Α	0.16	0.16
Power Consum	ption (Rated)		W	35	35
Power Factor			%	95.1	95.1
Temperature C	ontrol			Microcomputer Control	Microcomputer Control
Dimensions (H	«W×D)) mm		283×800×195	283×800×195
Packaged Dime	ensions (H×W)	H×W×D) mm		265×855×340	265×855×340
Weight			kg	9	9
Gross Weight			kg	12	12
Operation Sound	H/L/SL		dBA	38/25/22	38/25/22
Sound Power	Н		dBA	56	56
Heat Insulation			•	Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
		.iquid	mm	ф 6.4	ф 6.4
Piping Connect	ion (Gas	mm	φ 9.5	φ 9.5
, 5		Orain	mm	ф18.0	ф18.0
Drawing No.				3D051079	3D051080

Model				FTKS25D3VMW	FTKS25D3VML
Rated Capacity	•			2.5kW Class	2.5kW Class
Front Panel Co	lor			White	Silver Line
Troncr and Gold		Н	8.7 (307)	8.7 (307)	
Air Flow Rates		mł/min	M	6.7 (237)	6.7 (237)
All Flow Rates		(cfm)	L	4.7 (166)	4.7 (166)
			SL	3.9 (138)	3.9 (138)
	Туре			Cross Flow Fan	Cross Flow Fan
Fan	Motor Outpu	ut	W	40	40
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Direction Co	ontrol			Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter				Removable-Washable-Mildew Proof	Removable-Washable-Mildew Proof
Running Curre	nt (Rated)		Α	0.16	0.16
Power Consum	ption (Rated)		W	35	35
Power Factor			%	95.1	95.1
Temperature C	ontrol			Microcomputer Control	Microcomputer Control
Dimensions (H	×W×D)		mm	283×800×195	283×800×195
Packaged Dime	ensions (H×W	×W×D) mm		265×855×340	265×855×340
Weight		kg		9	9
Gross Weight			kg	12	12
Operation Sound	H/L/SL		dBA	38/25/22	38/25/22
Sound Power H		dBA	56	56	
Heat Insulation	Heat Insulation			Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
		Liquid	mm	ф 6.4	ф 6.4
Piping Connect	ion	Gas	mm	φ 9.5	φ 9.5
		Drain	mm	ф18.0	ф18.0
Drawing No.	•			3D051081	3D051082

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

SiENBE12-627 Cooling Only

50Hz 230V

Model				FTKS35D3VMW	FTKS35D3VML
Rated Capacity				3.5kW Class	3.5kW Class
Front Panel Co	lor			White	Silver Line
FIGHT Faller Color			Н	8.9 (314)	8.9 (314)
Air Flow Rates		mł/min	M	6.9 (244)	6.9 (244)
All Flow Rates		(cfm)	L	4.8 (169)	4.8 (169)
			SL	4.0 (141)	4.0 (141)
	Туре		•	Cross Flow Fan	Cross Flow Fan
Fan	Motor Output	t	W	40	40
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Direction Co	ontrol		•	Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter				Removable-Washable-Mildew Proof	Removable-Washable-Mildew Proof
Running Currer	nt (Rated)		Α	0.18	0.18
Power Consum	ption (Rated)		W	40	40
Power Factor			%	96.6	96.6
Temperature C	ontrol			Microcomputer Control	Microcomputer Control
Dimensions (H	×W×D)	mm		283×800×195	283×800×195
Packaged Dime	ensions (H×W)	(D)	mm	265×855×340	265×855×340
Weight			kg	9	9
Gross Weight			kg	12	12
Operation Sound	H/L/SL		dBA	39/26/23	39/26/23
Sound Power	er H		dBA	57	57
Heat Insulation			•	Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
		iquid	mm	ф 6.4	ф 6.4
Piping Connect	ion G	as	mm	φ 9.5	φ 9.5
)rain	mm	ф18.0	ф18.0
Drawing No.				3D051083	3D051084

Model				FTKS20CAVMB	FTKS25CAVMB
Rated Capacity	1			2.0kW Class	2.5kW Class
Front Panel Co	lor			White	White
			Н	7.7 (272)	7.7 (272)
Air Flow Rates		mł/min	M	5.9 (208)	5.9 (208)
All Flow Rates		(cfm)	L	4.2 (148)	4.2 (148)
			SL	3.6 (127)	3.6 (127)
	Туре			Cross Flow Fan	Cross Flow Fan
Fan	Motor Outpu	ıt	W	18	18
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Direction Co	ontrol			Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter				Removable-Washable-Mildew Proof	Removable-Washable-Mildew Proof
Running Currer	nt (Rated)		Α	0.18	0.18
Power Consum	ption (Rated)		W	40	40
Power Factor			%	96.6	96.6
Temperature C	ontrol			Microcomputer Control	Microcomputer Control
Dimensions (H	×W×D)		mm	273×784×195	273×784×195
Packaged Dime	ensions (H×W	×D)	mm	258×834×325	258×834×325
Weight			kg	7.5	7.5
Gross Weight			kg	11	11
Operation Sound	H/M/L/SL		dBA	38/32/25/22	38/32/25/22
Sound Power	Power H		dBA	56	56
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Liquid		mm	ф 6.4	ф 6.4	
Piping Connect	ion (Gas	mm	φ 9.5	ф 9.5
	1	Drain	mm	ф18.0	ф18.0
Drawing No.				3D050947	3D050949

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

50Hz 230V

Model Rated Capacity			FTKS35CAVMB		
			3.5kW Class		
r			White		
		Н	7.7 (272)		
	mł/min	M	6.0 (212)		
	(cfm)	L	4.4 (155)		
		SL	3.8 (134)		
Туре			Cross Flow Fan		
Motor Outp	out	W	18		
Speed		Steps	5 Steps, Silent, Auto		
trol			Right, Left, Horizontal, Downward		
			Removable-Washable-Mildew Proof		
(Rated)		Α	0.18		
tion (Rated	l)	W	40		
		%	96.6		
ntrol			Microcomputer Control		
۷×D)		mm	273×784×195		
sions (H×V	N×D)	mm	258×834×325		
		kg	7.5		
		kg	11		
H/M/L/SL		dBA	39/33/26/23		
Sound Power H		dBA	57		
Heat Insulation			Both Liquid and Gas Pipes		
	Liquid	mm	ф 6.4		
n	Gas	mm	φ 9.5		
	Drain	mm	ф18.0		
U		•	3D050951		
	Type Motor Out; Speed trol (Rated) ion (Rated) itrol V×D) sions (H×t) H/M/L/SL	mł/min (cfm) Type Motor Output Speed trol (Rated) ion (Rated) htrol V×D) sions (H×W×D) H/M/L/SL H Liquid Gas	M M M L SL		

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

SiENBE12-627 Cooling Only

50Hz 230V

Model				ATKS20E2V1B	ATKS25E2V1B
Rated Capacity	1			2.0kW Class	2.5kW Class
Front Panel Co	lor			White	White
FIGHT Parier Color			Н	8.7 (307)	8.7 (307)
Air Flow Rates		mł/min	M	6.7 (237)	6.7 (237)
All Flow Rates		(cfm)	L	4.7 (166)	4.7 (166)
			SL	3.9 (138)	3.9 (138)
	Туре			Cross Flow Fan	Cross Flow Fan
Fan	Motor Output	t	W	40	40
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Direction C	ontrol			Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter				Removable / Washable / Mildew Proof	Removable / Washable / Mildew Proof
Running Curre	nt (Rated)		Α	0.16	0.16
Power Consum	ption (Rated)		W	35	35
Power Factor			%	95.1	95.1
Temperature C	ontrol			Microcomputer Control	Microcomputer Control
Dimensions (H	×W×D)		mm	283×800×195	283×800×195
Packaged Dim	ensions (H×W>	(D)	mm	265×855×340	265×855×340
Weight			kg	9	9
Gross Weight			kg	12	12
Operation Sound	H/M/L/SL		dBA	38/32/25/22	38/32/25/22
Sound Power	ound Power H		dBA	56	56
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
		.iquid	mm	ф 6.4	ф 6.4
Piping Connec	tion C	3as	mm	ф 9.5	φ 9.5
		Orain	mm	ф18.0	ф18.0
Drawing No.				3D051743	3D051744

Model				ATKS35E2V1B	ATKS20DAVMB
Rated Capacity				3.5kW Class	2.0kW Class
Front Panel Co	lor			White	White
FIGHT Faller Color			Н	8.9 (314)	7.7 (272)
Air Flow Rates		mł/min	M	6.9 (244)	5.9 (208)
All Flow Rates		(cfm)	L	4.8 (169)	4.2 (148)
			SL	4.0 (141)	3.6 (127)
	Туре			Cross Flow Fan	Cross Flow Fan
Fan	Motor Outpu	ut	W	40	18
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Direction Co	ntrol			Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter				Removable / Washable / Mildew Proof	Removable / Washable / Mildew Proof
Running Currer	nt (Rated)		Α	0.18	0.18
Power Consum	ption (Rated)		W	40	40
Power Factor			%	96.6	96.6
Temperature C	ontrol			Microcomputer Control	Microcomputer Control
Dimensions (H	«W×D)) mm		283×800×195	273×784×195
Packaged Dime	ensions (H×W	sions (H×W×D) mm		265×855×340	258×834×325
Weight		kg		9	7.5
Gross Weight			kg	12	11
Operation Sound	H/M/L/SL		dBA	39/33/26/23	38/32/25/22
Sound Power	ound Power H		dBA	57	56
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
		Liquid	mm	ф 6.4	ф 6.4
Piping Connect	ion	Gas	mm	φ 9.5	φ 9.5
		Drain	mm	ф18.0	ф18.0
Drawing No.				3D051745	3D050959

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

50Hz 230V

Model				ATKS25DAVMB	ATKS35DAVMB
Rated Capacity	/			2.5kW Class	3.5kW Class
Front Panel Co	olor			White	White
FIGHT Faller Color			Н	7.7 (272)	7.7 (272)
Air Flow Rates		mł/min	M	5.9 (208)	6.0 (212)
All Flow Rates		(cfm)	L	4.2 (148)	4.4 (155)
			SL	3.6 (127)	3.8 (134)
	Туре		•	Cross Flow Fan	Cross Flow Fan
Fan	Motor Outpu	ıt	W	18	18
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Direction C	ontrol		•	Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter				Removable / Washable / Mildew Proof	Removable / Washable / Mildew Proof
Running Curre	nt (Rated)		Α	0.18	0.18
Power Consum	nption (Rated)		W	40	40
Power Factor			%	96.6	96.6
Temperature C	Control		•	Microcomputer Control	Microcomputer Control
Dimensions (H	×W×D)		mm	273×784×195	273×784×195
Packaged Dim	ensions (H×W	is (H×W×D) mm		258×834×325	258×834×325
Weight			kg	7.5	7.5
Gross Weight			kg	11	11
Operation Sound	H/M/L/SL		dBA	38/32/25/22	39/33/26/23
Sound Power	nd Power H		dBA	56	57
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Liquid		Liquid	mm	ф 6.4	ф 6.4
Piping Connec	tion	Gas	mm	φ 9.5	ф 9.5
	Ī	Drain	mm	ф18.0	φ18.0
Drawing No.				3D050961	3D050963

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

SiENBE12-627 Cooling Only

Duct Connected Type

50Hz 230V

Rated Capacity 2.5kW Class 3.5kW Class	Model				FDKS25CAVMB	FDKS35CAVMB
Air Flow Rates Image: Milmin (cfm) H 9.5 (335) 10.0 (353) Air Flow Rates M 8.8 (311) 9.3 (328) Image: Motor Output (cfm) BL 8.0 (282) 8.5 (300) Fan Type Sirocco Fan Sirocco Fan Motor Output (motor Output (motor) W 62 62 Speed (motor) Steps (motor) 5 Steps, Silent, Auto 5 Steps, Silent, Auto Air Filter (motor) Removable-Washable-Mildew Proof (motor) Removable-Washable-Mildew Proof (motor) Removable-Washable-Mildew Proof (motor) Removable-Washable-Mildew Proof (motor) Running Current (Rated) A 0.47	Rated Capacity	1			2.5kW Class	3.5kW Class
Mirror M	Front Panel Co	lor				
Air Flow Rates (cfm) L 8.0 (282) 8.5 (300) Fan Type Sirocco Fan Sirocco Fan Fan Motor Output W 62 62 Speed Steps 5 Steps, Silent, Auto 5 Steps, Silent, Auto Air Filter Removable-Washable-Mildew Proof Removable-Washable-Mildew Proof Running Current (Rated) A 0.47 0.47 Power Consumption (Rated) W 100 100 Power Factor % 92.5 92.5 Temperature Control Microcomputer Control Microcomputer Control Microcomputer Control Dimensions (H×W×D) mm 200×900×620 200×900×620 Packaged Dimensions (H×W×D) mm 266×1,106×751 266×1,106×751 Weight kg 25 25 Gross Weight kg 31 31 Operation Sound H/M/L/SL dBA 35/33/31/29 35/33/31/29 External Static Pressure Pa 40 40 Moisture Removal L/h<	. Total and color			Н	9.5 (335)	10.0 (353)
Cerm L 8.0 (282) 8.5 (300)	Air Flow Pates			M	8.8 (311)	9.3 (328)
Type	All Flow Rates		(cfm)	L	8.0 (282)	8.5 (300)
Fan Motor Output W 62 62 Speed Steps 5 Steps, Silent, Auto 5 Steps, Silent, Auto Air Filter Removable-Washable-Mildew Proof Removable-Washable-Mildew Proof Running Current (Rated) A 0.47 0.47 Power Consumption (Rated) W 100 100 Power Factor % 92.5 92.5 Temperature Control Microcomputer Control Microcomputer Control Dimensions (H×W×D) mm 200×900×620 200×900×620 Packaged Dimensions (H×W×D) mm 266×1,106×751 266×1,106×751 Weight kg 25 25 Gross Weight kg 31 31 Operation Sound H/M/L/SL dBA 35/33/31/29 35/33/31/29 External Static Pressure Pa 40 40 Moisture Removal L/h 1.2 1.9 Heat Insulation Both Liquid and Gas Pipes Both Liquid and Gas Pipes Piping Connection Gas mm φ 9.5				SL	6.7 (237)	7.0 (247)
Speed Steps Steps 5 Steps Steps 5 Steps Steps		Туре			Sirocco Fan	Sirocco Fan
Air Filter Removable-Washable-Mildew Proof Removable-Washable-Mildew Proof Running Current (Rated) A 0.47 0.47 Power Consumption (Rated) W 100 100 Power Factor % 92.5 92.5 Temperature Control Microcomputer Control Microcomputer Control Dimensions (H×W×D) mm 200×900×620 200×900×620 Packaged Dimensions (H×W×D) mm 266×1,106×751 266×1,106×751 Weight kg 25 25 Gross Weight kg 31 31 Operation Sound H/M/L/SL dBA 35/33/31/29 35/33/31/29 External Static Pressure Pa 40 40 40 Moisture Removal L/h 1.2 1.9 1.9 Heat Insulation Both Liquid and Gas Pipes Both Liquid and Gas Pipes Piping Connection Gas mm \$\phi 0.4 \$\phi 0.5 \$\	Fan	Motor Outp	out	W	62	62
Running Current (Rated)		Speed		Steps		5 Steps, Silent, Auto
Power Consumption (Rated) W 100 100	Air Filter				Removable-Washable-Mildew Proof	Removable-Washable-Mildew Proof
Power Factor % 92.5 92.5	Running Currer	nt (Rated)		Α	0.47	0.47
Temperature Control Microcomputer Control Microcomputer Control Dimensions (H×W×D) mm 200×900×620 200×900×620 Packaged Dimensions (H×W×D) mm 266×1,106×751 266×1,106×751 Weight kg 25 25 Gross Weight kg 31 31 Operation Sound H/M/L/SL dBA 35/33/31/29 35/33/31/29 External Static Pressure Pa 40 40 Moisture Removal L/h 1.2 1.9 Heat Insulation Both Liquid and Gas Pipes Both Liquid and Gas Pipes Piping Connection Liquid mm φ 6.4 φ 6.4 Gas mm φ 9.5 φ 9.5 Drain Mm VP20 (O.D. φ26 / I.D. φ20) VP20 (O.D. φ26 / I.D. φ20)	Power Consum	ption (Rated)	W	100	100
Dimensions (H×W×D) mm 200×900×620 200×900×620 Packaged Dimensions (H×W×D) mm 266×1,106×751 266×1,106×751 Weight kg 25 25 Gross Weight kg 31 31 Operation Sound H/M/L/SL dBA 35/33/31/29 35/33/31/29 External Static Pressure Pa 40 40 Moisture Removal L/h 1.2 1.9 Heat Insulation Both Liquid and Gas Pipes Both Liquid and Gas Pipes Both Liquid and Gas Pipes Both Liquid and Gas Pipes Liquid mm φ 6.4 φ 6.4 Piping Connection Gas mm φ 9.5 φ 9.5 Drain mm VP20 (O.D. φ26 / I.D. φ20) VP20 (O.D. φ26 / I.D. φ20)	Power Factor			%	92.5	92.5
Packaged Dimensions (H×W×D) mm 266×1,106×751 266×1,106×751 Weight kg 25 25 Gross Weight kg 31 31 Operation Sound H/M/L/SL dBA 35/33/31/29 35/33/31/29 External Static Pressure Pa 40 40 Moisture Removal L/h 1.2 1.9 Heat Insulation Both Liquid and Gas Pipes Both Liquid and Gas Pipes Piping Connection Liquid mm φ 6.4 φ 6.4 Gas mm φ 9.5 φ 9.5 Drain mm VP20 (O.D. φ26 / I.D. φ20) VP20 (O.D. φ26 / I.D. φ20)	Temperature C	ontrol			Microcomputer Control	Microcomputer Control
Weight kg 25 25 Gross Weight kg 31 31 Operation Sound H/M/L/SL dBA 35/33/31/29 35/33/31/29 External Static Pressure Pa 40 40 Moisture Removal L/h 1.2 1.9 Heat Insulation Both Liquid and Gas Pipes Both Liquid and Gas Pipes Piping Connection Liquid mm φ 6.4 φ 6.4 Gas mm φ 9.5 φ 9.5 Drain mm VP20 (O.D. φ26 / I.D. φ20) VP20 (O.D. φ26 / I.D. φ20)	Dimensions (H	×W×D)	mm		200×900×620	200×900×620
Gross Weight kg 31 31 Operation Sound H/M/L/SL dBA 35/33/31/29 35/33/31/29 External Static Pressure Pa 40 40 Moisture Removal L/h 1.2 1.9 Heat Insulation Both Liquid and Gas Pipes Both Liquid and Gas Pipes Piping Connection Liquid mm ∮ 6.4 ∮ 6.4 Gas mm ∮ 9.5 ∮ 9.5 Drain mm VP20 (O.D. ф26 / I.D. ф20) VP20 (O.D. ф26 / I.D. ф20)	Packaged Dime	ensions (H×V	۷×D)	mm	266×1,106×751	266×1,106×751
Operation Sound H/M/L/SL dBA 35/33/31/29 35/33/31/29 External Static Pressure Pa 40 40 Moisture Removal L/h 1.2 1.9 Heat Insulation Both Liquid and Gas Pipes Both Liquid and Gas Pipes Piping Connection Liquid mm ∮ 6.4 ∮ 6.4 Gas mm ∮ 9.5 ∮ 9.5 Drain mm VP20 (O.D. ф26 / I.D. ф20) VP20 (O.D. ф26 / I.D. ф20)	Weight		kg		25	25
Sound FIMILISE GBA 35/33/31/29 35/33/31/29 External Static Pressure Pa 40 40 Moisture Removal L/h 1.2 1.9 Heat Insulation Both Liquid and Gas Pipes Both Liquid and Gas Pipes Piping Connection Liquid mm \$6.4 \$6.4 Gas mm \$9.5 \$9.5 Drain mm VP20 (O.D. \$\phi26 / I.D. \$\phi20) VP20 (O.D. \$\phi26 / I.D. \$\phi20)	Gross Weight			kg	31	31
Moisture Removal L/h 1.2 1.9 Heat Insulation Both Liquid and Gas Pipes Both Liquid and Gas Pipes Piping Connection Liquid mm		H/M/L/SL		dBA	35/33/31/29	35/33/31/29
Heat Insulation Both Liquid and Gas Pipes Both Liquid and Gas Pipes Piping Connection Liquid mm	External Static Pressure		Pa	40	40	
Liquid mm \$\phi 6.4\$ \$\phi 6.4\$ Piping Connection Gas mm \$\phi 9.5\$ \$\phi 9.5\$ Drain mm VP20 (O.D. \$\phi 26 / I.D. \$\phi 20)\$ VP20 (O.D. \$\phi 26 / I.D. \$\phi 20)\$	Moisture Removal L/h			L/h	1.2	1.9
Piping Connection Gas mm φ 9.5 φ 9.5 Drain mm VP20 (O.D. φ26 / I.D. φ20) VP20 (O.D. φ26 / I.D. φ20)	Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Drain mm VP20 (O.D. φ26 / I.D. φ20) VP20 (O.D. φ26 / I.D. φ20)			Liquid	mm	ф 6.4	ф 6.4
	Piping Connect	ion	Gas	mm	ф 9.5	ф 9.5
Drawing No. 3D048947C 3D048948C			Drain	mm	VP20 (O.D. φ26 / I.D. φ20)	VP20 (O.D. φ26 / I.D. φ20)
	Drawing No.				3D048947C	3D048948C

Model				FDKS25EAVMB	FDKS35EAVMB
Rated Capacity	1			2.5kW Class	3.5kW Class
Front Panel Co	lor			_	_
Troncr and Gold			Н	8.7 (307)	8.7 (307)
Air Flow Rates		mł/min	M	8.0 (282)	8.0 (282)
All Flow Rates		(cfm)	L	7.3 (258)	7.3 (258)
			SL	6.2 (219)	6.2 (219)
	Туре			Sirocco Fan	Sirocco Fan
Fan	Motor Outp	out	W	62	62
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Filter				Removable-Washable-Mildew Proof	Removable-Washable-Mildew Proof
Running Currer	nt (Rated)		Α	0.48	0.48
Power Consum	ption (Rated	l)	W	71	71
Power Factor			%	64.3	64.3
Temperature C				Microcomputer Control	Microcomputer Control
Dimensions (H	×W×D)		mm	200×700×620	200×700×620
Packaged Dime	ensions (H×\	ns (H×W×D) mm		274×906×751	274×906×751
Weight		kg		21	21
Gross Weight			kg	29	29
Operation Sound	H/M/L/SL	H/M/L/SL		35/33/31/29	35/33/31/29
External Static Pressure Pa			Pa	30	30
Moisture Removal L/h			L/h	1.2	1.9
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
	·	Liquid	mm	ф 6.4	ф 6.4
Piping Connect	ion	Gas	mm	φ 9.5	φ 9.5
		Drain	mm	VP20 (O.D.\phi 26 / I.D.\phi 20)	VP20 (O.D.\phi 26 / I.D.\phi 20)
Drawing No.				3D051882A	3D051884A

Note:

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

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

Floor / Ceiling Suspended Dual Type

50Hz 230V

Model				FLKS25BAVMB	FLKS35BAVMB
Rated Capacity	1			2.5kW Class	3.5kW Class
Front Panel Co	lor			Almond White	Almond White
Trent runer color			Н	7.6 (268)	8.6 (304)
Air Flow Rates		mł/min	M	6.8 (240)	7.6 (268)
All Flow Rates		(cfm)	L	6.0 (212)	6.6 (233)
			SL	5.2 (184)	5.6 (198)
	Туре			Sirocco Fan	Sirocco Fan
Fan	Motor Outpu	ıt	W	34	34
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Direction Co	ontrol			Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter				Removable-Washable-Mildew Proof	Removable-Washable-Mildew Proof
Running Curre	nt (Rated)		Α	0.34	0.36
Power Consum	ption (Rated)		W	74	78
Power Factor			%	94.6	94.2
Temperature C	ontrol			Microcomputer Control	Microcomputer Control
Dimensions (H	×W×D))) mm		490×1,050×200	490×1,050×200
Packaged Dime	ensions (H×W	ns (H×W×D) mm		566×1,100×280	566×1,100×280
Weight		kg		16	16
Gross Weight			kg	22	22
Operation Sound	H/M/L/SL		dBA	37/34/31/28	38/35/32/29
Sound Power	Sound Power H		dBA	53	54
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Liquid		Liquid	mm	ф 6.4	ф 6.4
Piping Connect	tion	Gas	mm	ф 9.5	ф 9.5
	Ī	Drain	mm	ф18.0	ф18.0
Drawing No.	Drawing No.			3D050862	3D050864

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

SiENBE12-627 Cooling Only

1.2 Outdoor Units

50Hz 230V

Model			2MKS40DAVMB				
Cooling Capa	city		kW	_			
Power Consumption W		W	_				
Running Curre	Running Current A		Α	-			
Casing Color		•	Ivory White				
	Туре			Hermetically Sealed Swing Type			
Compressor	Model			1YC23GXD			
	Motor Outpu	ıt	W	600			
Refrigerant Oil	Model			FVC50K			
Oil	Charge		L	0.40			
Refrigerant	Туре			R-410A			
Reiligerani	Charge		kg	0.98			
			HH	39			
	r	mł/min	Н	35			
Air Flow Rate			L	30			
All Flow Rate			HH	1377			
cfm		Н	1236				
			L	1059			
Fan	Туре			Propeller			
гап	Motor Outpu	ıt	W	50			
Starting Curre	ent		Α	5.6			
Dimension (H	×W×D)		mm	640×685×285			
Packaged Din	nension (H×W	×D)	mm	676×800×366			
Weight			kg	39			
Gross Weight			kg	42			
Operation Sound	Sound press	sure	dBA	47			
Sound	Silent Mode		dBA	43			
Sound Power			dBA	62			
D	Liquid		mm	φ 6.4×2			
Piping Connection	Gas		mm	φ 9.5×2			
Commodium	Drain		mm	φ 18			
Heat Insulatio	n			Both Liquid & Gas Pipes			
No. of Wiring	Connection			3 for Power Supply, 4 for Interunit Wiring			
May Pining I	m		m	30 (for Total of Each Room)			
Max. Piping Length			20 (for One Room)				
Min. Piping Length m		m	1.5 (for One Room)				
Amount of Ad	ditional Charge	e	g/m	20 (20m or more)			
May Installati	ion Height Diffe	oronoo	m	15 (between Indoor Unit and Outdoor Unit)			
iviax. Ilistallati		erence	1	15 (between Indoor Units)			
Drawing No.				3D050838#1			

Note:

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

Cooling	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB	7.5m

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

50Hz 230V

Model			2AMK40BAVMB		
Cooling Capacity		kW	_		
	wer Consumption		W	_	
Running Current			Α	_	
Casing Color				Ivory White	
	Type			Hermetically Sealed Swing Type	
Compressor	Model			1YC23GXD	
i I	Motor Outp	ut	W	600	
Refrigerant Oil	Model			FVC50K	
Kenigerani On	Charge		L	0.40	
Refrigerant	Type			R-410A	
Itemgerani	Charge		kg	0.98	
1			HH	39	
I		mł/min	Н	35	
Air Flow Rates			L	30	
All I low Itales			HH	1,126	
I	cfm		Н	1,010	
<u> </u>			L	866	
Fan	Туре			Propeller	
raii	Motor Outp	ut	W	50	
Starting Current			Α	5.6	
Dimensions (H×			mm	640×685×285	
Packaged Dime	nsions (H×V	V×D)	mm	676×800×366	
Weight			kg	39	
Gross Weight			kg	42	
Operation	(Sound Pre	ssure)	dBA	47	
Sound	(Silent Mod	le)	dBA	43	
Sound Power			dBA	62	
		Liquid	mm	φ 6.4×2	
Piping Connection	on	Gas	mm	φ 9.5×2	
I	•	Drain	mm	ф18.0	
Heat Insulation				Both Liquid and Gas Pipes	
No. of Wiring Co	onnection			3 for Power Supply, 4 for Interunit Wiring	
May Interunit D	No. of Wiring Connection		m	30 (for Total of Each Room)	
Max. Interunit Pi	Max. Interunit Piping Length		m	20 (for One Room)	
		m	1.5 (for One Room)		
Amount of Addit	tional Charge	е	g/m	20 (20m or more)	
May Installation	Loight Diff	ronco	m	15 (between Indoor Unit and Outdoor Unit)	
Max. Installation	i neigni Diffe	erence	m	15 (between Indoor Units)	
1				15 (between Indoor Units) 3D050883#1	

Note:

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

Cooling	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB	7.5m

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

SiENBE12-627 Heat Pump

2. Heat Pump

2.1 Indoor Units

Wall Mounted Type

50Hz 230V

Model				FTXG25	EV1BW	FTXG2	EV1BS	
Wodel				Cooling	Heating	Cooling	Heating	
Rated Capacity				2.5kW	Class	2.5kW	Class	
Front Panel Co	lor			Mat Crys	tal White	Mat Crys	tal Silver	
			Н	7.7 (271)	9.0 (317)	7.7 (271)	9.0 (317)	
Air Flow Rates		mł/min	M	6.1 (215)	7.9 (278)	6.1 (215)	7.9 (278)	
All Flow Rates		(cfm)	L	4.7 (165)	6.7 (236)	4.7 (165)	6.7 (236)	
			SL	3.8 (134)	5.4 (190)	3.8 (134)	5.4 (190)	
	Туре			Cross F	low Fan	Cross F	low Fan	
Fan	Motor Outp	out	W	4	0	4	0	
	Speed		Steps	5 Steps, S	ilent, Auto	5 Steps, S	silent, Auto	
Air Direction Co	ntrol			Right, Left, Horiz	ontal, Downward	Right, Left, Horizontal, Downward		
Air Filter				Removable / Washable / Mildew Proof		Removable / Washable / Mildew Proof		
Running Currer	nt (Rated)		Α	0.15-0.14-0.13	0.15-0.14-0.13	0.15-0.14-0.13	0.15-0.14-0.13	
Power Consum	ption (Rated)	W	30-30-30	30-30-30	30-30-30	30-30-30	
Power Factor			%	90.9-93.2-96.2	90.9-93.2-96.2	90.9-93.2-96.2	90.9-93.2-96.2	
Temperature C	ontrol			Microcomputer Control		Microcomputer Control		
Dimensions (H	·W×D)		mm	275×840×150		275×840×150		
Packaged Dime	ensions (H×V	V×D)	mm	222×894×345		222×894×345		
Weight			kg	9		9		
Gross Weight			kg	13		13		
Operation Sound	H/M/L/SL		dBA	38/32/25/22	38/33/28/25	38/32/25/22 38/33/28/25		
Sound Power H dBA		56	56	56	56			
Heat Insulation		Both Liquid and Gas Pipes		Both Liquid a	nd Gas Pipes			
Liquid mm		mm	ф	6.4	ф	6.4		
Piping Connection Gas		mm	φ 9	9.5	ф	9.5		
		Drain	mm	ф1	8.0	ф1	8.0	
Drawing No.	•			3D05	1101	3D05	1102	

Model				FTXG35	EV1BW	FTXG3	5EV1BS							
Model				Cooling	Heating	Cooling	Heating							
Rated Capacity				3.5kW	Class	5.0kW	Class							
Front Panel C	olor			Mat Crys	tal White	Mat Crys	stal Silver							
										Н	8.1 (285)	9.6 (338)	8.1 (285)	9.6 (338)
Air Flow Rate		mł/min	M	6.5 (229)	8.2 (289)	6.5 (229)	8.2 (289)							
All Flow Rate	5	(cfm)	L	4.9 (173)	6.7 (236)	4.9 (173)	6.7 (236)							
			SL	4.1 (144)	5.9 (208)	4.1 (144)	5.9 (208)							
	Type			Cross F	low Fan	Cross F	low Fan							
Fan	Motor Outp	ut	W	4	0	4	-0							
	Speed		Steps	5 Steps, S	ilent, Auto	5 Steps, S	Silent, Auto							
Air Direction (Control			Right, Left, Horiz	ontal, Downward	Right, Left, Horizontal, Downward								
Air Filter				Removable / Wash	able / Mildew Proof	Removable / Washable / Mildew Proof								
Running Curre	ent (Rated)		Α	0.15-0.14-0.13	0.15-0.14-0.13	0.15-0.14-0.13	0.15-0.14-0.13							
Power Consu	mption (Rated))	W	30-30-30	30-30-30	30-30-30	30-30-30							
Power Factor			%	90.9-93.2-96.2	90.9-93.2-96.2	90.9-93.2-96.2	90.9-93.2-96.2							
Temperature	Control			Microcomputer Control		Microcomputer Control								
Dimensions (I	H×W×D)		mm	275×840×150		275×840×150								
Packaged Din	nensions (H×V	V×D)	mm	222×894×345		222×894×345								
Weight			kg	9		9								
Gross Weight			kg	13		13								
Operation Sound	H/M/L/SL		dBA	39/33/26/23	39/34/29/26	39/33/26/23 39/34/29/26								
Sound Power	Н		dBA	57	57	57 57								
Heat Insulation			Both Liquid a	nd Gas Pipes	Both Liquid a	nd Gas Pipes								
Liquid r		mm	ф	6.4	ф	6.4								
Piping Connection Gas		mm	φ 9	9.5	ф1	2.7								
		Drain	mm	ф1	8.0	ф1	8.0							
Drawing No.	•			3D05	1103	3D05	51104							

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

Heat Pump SiENBE12-627

50Hz 230V

Model				FTXS20	D3VMW	FTXS2	0D3VML			
Model				Cooling	Heating	Cooling	Heating			
Rated Capacity	,			2.0kW	/ Class	2.0kW Class				
Front Panel Co	lor			W	hite	Silve	r Line			
						Н	8.7 (307)	9.4 (332)	8.7 (307)	9.4 (332)
Air Flow Rates		mł/min	M	6.7 (237)	7.6 (268)	6.7 (237)	7.6 (268)			
All Flow Rates		(cfm)	L	4.7 (166)	5.8 (205)	4.7 (166)	5.8 (205)			
			SL	3.9 (138)	5.0 (177)	3.9 (138)	5.0 (177)			
	Туре			Cross F	low Fan	Cross F	Flow Fan			
Fan	Motor Outpu	t	W	4	10	4	10			
	Speed		Steps	5 Steps, S	Silent, Auto	5 Steps, S	Silent, Auto			
Air Direction Co	ontrol			Right, Left, Horiz	zontal, Downward	Right, Left, Horizontal, Downward				
Air Filter				Removable-Wash	nable-Mildew Proof	Removable-Washable-Mildew Proof				
Running Curre	nt (Rated)		Α	0.16	0.16	0.16	0.16			
Power Consum	ption (Rated)		W	35	35	35	35			
Power Factor			%	95.1	95.1	95.1	95.1			
Temperature C	ontrol			Microcomputer Control		Microcomputer Control				
Dimensions (H	×W×D)		mm	283×800×195		283×800×195				
Packaged Dime	ensions (H×W	×D)	mm	265×8	55×340	265×855×340				
Weight			kg	9		9				
Gross Weight			kg	12		12				
Operation Sound	H/L/SL		dBA	38/25/22	38/28/25	38/25/22 38/28/25				
Sound Power	Н	dBA		56	56	56	56			
Heat Insulation		Both Liquid a	and Gas Pipes	Both Liquid a	and Gas Pipes					
Liquid mr		mm	ф	6.4	ф	6.4				
Piping Connect	ion (Gas	mm	ф	9.5	ф	9.5			
	[Orain	mm	φ1	8.0	φ1	8.0			
Drawing No.				3D05	51085	3D0	51086			

Model				FTXS25	D3VMW	FTXS25D3VML		
				Cooling	Heating	Cooling	Heating	
Rated Capacity				2.5kW	/ Class	2.5kW Class		
Front Panel Co	lor			WI	hite	Silve	r Line	
			Н	8.7 (307)	9.4 (332)	8.7 (307)	9.4 (332)	
Air Flow Rates		mł/min	M	6.7 (237)	7.6 (268)	6.7 (237)	7.6 (268)	
All I low Itales		(cfm)	L	4.7 (166)	5.8 (205)	4.7 (166)	5.8 (205)	
			SL	3.9 (138)	5.0 (177)	3.9 (138)	5.0 (177)	
	Type			Cross F	Flow Fan	Cross F	Flow Fan	
Fan	Motor Outp	ut	W	4	10	4	10	
	Speed		Steps	5 Steps, S	Silent, Auto	5 Steps, S	Silent, Auto	
Air Direction Co	ontrol			Right, Left, Horiz	zontal, Downward	Right, Left, Horiz	zontal, Downward	
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof		
Running Currer	nt (Rated)		Α	0.16	0.16	0.16	0.16	
Power Consum	ption (Rated))	W	35	35	35	35	
Power Factor			%	95.1	95.1	95.1	95.1	
Temperature C	ontrol			Microcomputer Control		Microcomputer Control		
Dimensions (H	×W×D)		mm	283×800×195		283×800×195		
Packaged Dime	ensions (H×V	V×D)	mm	265×8	55×340	265×855×340		
Weight			kg	9		9		
Gross Weight			kg	1	12	12		
Operation Sound	H/L/SL		dBA	38/25/22	38/28/25	38/25/22	38/28/25	
Sound Power	Н		dBA	56	56	56 56		
Heat Insulation		Both Liquid a	and Gas Pipes	Both Liquid a	and Gas Pipes			
Liquid		mm	ф	6.4	ф	6.4		
Piping Connect	Piping Connection Gas		mm	ф	9.5	ф	9.5	
		Drain	mm	φ1	8.0	φ1	8.0	
Drawing No.				3D05	51087	3D0:	51088	

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

SiENBE12-627 Heat Pump

50Hz 230V

Model				FTXS35	D3VMW	FTXS3	5D3VML						
Model				Cooling	Heating	Cooling	Heating						
Rated Capacity				3.5kW	Class	3.5kW	Class						
Front Panel C	olor			Wh	ite	Silve	r Line						
									Н	8.9 (314)	9.7 (342)	8.9 (314)	9.7 (342)
Air Flow Rates		mł/min	M	6.9 (244)	7.9 (279)	6.9 (244)	7.9 (279)						
All Flow Rates		(cfm)	L	4.8 (169)	6.0 (212)	4.8 (169)	6.0 (212)						
			SL	4.0 (141)	5.2 (184)	4.0 (141)	5.2 (184)						
	Туре			Cross FI	low Fan	Cross F	low Fan						
Fan	Motor Outp	ut	W	40	0	4	10						
	Speed		Steps	5 Steps, S	ilent, Auto	5 Steps, S	Silent, Auto						
Air Direction C	Control			Right, Left, Horizo	ontal, Downward	Right, Left, Horiz	ontal, Downward						
Air Filter				Removable-Washa	able-Mildew Proof	Removable-Washable-Mildew Proof							
Running Curre	ent (Rated)		Α	0.18	0.18	0.18	0.18						
Power Consur	nption (Rated))	W	40	40	40	40						
Power Factor			%	96.6	96.6	96.6	96.6						
Temperature (Control			Microcomputer Control		Microcomputer Control							
Dimensions (H	ł×W×D)		mm	283×80	00×195	283×800×195							
Packaged Dim	Dimensions (H×W×D) mm		265×85	55×340	265×8	55×340							
Weight			kg	9)		9						
Gross Weight			kg	1:	2	12							
Operation Sound	H/L/SL		dBA	39/26/23	39/29/26	39/26/23	39/29/26						
Sound Power	ound Power H dBA		dBA	57	57	57	57						
Heat Insulation				Both Liquid ar	nd Gas Pipes	Both Liquid a	ind Gas Pipes						
1		mm	φ6	5.4	ф	6.4							
		mm	φ9	9.5	ф	9.5							
		Drain	mm	φ18	3.0	φ1	8.0						
Drawing No.	•	•	_	3D05	1089	3D05	51090						

Model				FTXS20	CAVMB	FTXS29	FTXS25CAVMB		
				Cooling	Heating	Cooling	Heating		
Rated Capacity				2.5kW	Class	2.5kV	V Class		
Front Panel Co	lor			Wi	nite	W	hite		
			Н	7.7 (272)	7.8 (275)	7.7 (272)	7.8 (275)		
Air Flow Rates		mł/min	M	5.9 (208)	6.5 (230)	5.9 (208)	6.5 (230)		
All I low Itales		(cfm)	L	4.2 (148)	5.3 (187)	4.2 (148)	5.3 (187)		
			SL	3.6 (127)	4.6 (162)	3.6 (127)	4.6 (162)		
	Туре			Cross F	low Fan	Cross F	Flow Fan		
Fan	Motor Outp	out	W	1	8		18		
	Speed		Steps	5 Steps, S	Silent, Auto	5 Steps, S	Silent, Auto		
Air Direction Co	ontrol			Right, Left, Horiz	contal, Downward	Right, Left, Horiz	zontal, Downward		
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof			
Running Currer	nt (Rated)		Α	0.18	0.18	0.18	0.18		
Power Consum	ption (Rated)	W	40	40	40	40		
Power Factor			%	96.6	96.6	96.6	96.6		
Temperature C	ontrol			Microcomputer Control		Microcomputer Control			
Dimensions (H	×W×D)		mm	273×784×195		273×784×195			
Packaged Dime	ensions (H×V	V×D)	mm	258×83	34×325	258×8	34×325		
Weight			kg	7.5		7.5			
Gross Weight			kg	1	1	11			
Operation Sound	H/M/L/SL		dBA	38/32/25/22	38/33/28/25	38/32/25/22 38/33/28/25			
Sound Power	Н		dBA	56	56	56	56		
Heat Insulation		Both Liquid a	nd Gas Pipes	Both Liquid a	and Gas Pipes				
Liquid		mm	ф	6.4	ф	6.4			
Piping Connect	Piping Connection Gas		mm	φ 9	9.5	ф	9.5		
		Drain	mm	ф1	8.0	φ1	18.0		
Drawing No.				3D05	50941	3D0:	50943		

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

Heat Pump SiENBE12-627

50Hz 230V

Model				F1	TXS35CAVMB		
				Cooling	Heating		
Rated Capacity				3.5kW Class			
Front Panel Co	lor				White		
			Н	7.7 (272)	8.1 (286)		
Air Flow Rates		mł/min	M	6.0 (212)	6.7 (237)		
All I low Itales		(cfm)	L	4.4 (155)	5.3 (187)		
			SL	3.8 (134)	4.6 (162)		
	Туре			C	ross Flow Fan		
Fan	Motor Output	t	W		18		
	Speed		Steps		teps, Silent, Auto		
Air Direction Co	ontrol				, Horizontal, Downward		
Air Filter				Removable-Washable-Mildew Proof			
Running Currer			Α	0.18	0.18		
Power Consum	ption (Rated)		W	40 40			
Power Factor			%	96.6 96.6			
Temperature C	ontrol			Microcomputer Control			
Dimensions (H	×W×D)		mm	273×784×195			
Packaged Dime	ensions (H×W)	×D)	mm	258×834×325			
Weight			kg		7.5		
Gross Weight			kg		11		
Operation Sound	H/M/L/SL		dBA	39/33/26/23	39/34/29/26		
Sound Power H		dBA	57	57			
Heat Insulation			Both Lie	quid and Gas Pipes			
Liquid		mm	φ 6.4				
Piping Connect	ion C	Gas	mm		φ 9.5		
		Orain	mm		ф18.0		
Drawing No.	•				3D050945		

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

SiENBE12-627 Heat Pump

50Hz 230V

Model				ATXG25	SEV1B	ATXG35EV1B		
				Cooling	Heating	Cooling	Heating	
Rated Capacity	/			2.5kW	Class	3.5kW	Class	
Front Panel Co	lor			Mat Cryst	al White	Mat Crys	stal White	
			Н	7.7 (271)	9.0 (317)	8.1 (285)	9.6 (338)	
Air Flow Rates		mł/min	M	6.1 (215)	7.9 (278)	6.5 (229)	8.2 (289)	
All Flow Rates		(cfm)	L	4.7 (165)	6.7 (236)	4.9 (173)	6.7 (236)	
			SL	3.8 (134)	5.4 (190)	4.1 (144)	5.9 (208)	
	Туре			Cross Flo	ow Fan	Cross F	low Fan	
Fan	Motor Outp	ut	W	40)	4	.0	
	Speed		Steps	5 Steps, Sil	lent, Auto	5 Steps, S	Silent, Auto	
Air Direction C	ontrol			Right, Left, Horizo	ontal, Downward	Right, Left, Horizontal, Downward		
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof		
Running Curre	nt (Rated)		Α	0.14	0.14	0.14	0.14	
Power Consun	nption (Rated)		W	30	30	30	30	
Power Factor			%	93.2	93.2	93.2	93.2	
Temperature C	ontrol			Microcompu	ter Control	Microcomputer Control		
Dimensions (H	×W×D)		mm	275×840	0×150	275×840×150		
Packaged Dim	ensions (H×W	/×D)	mm	222×894	4×345	222×89	94×345	
Weight			kg	9		9		
Gross Weight			kg	13	3	1	3	
Operation Sound	H/M/L/SL		dBA	38/32/25/22	38/33/28/25	39/33/26/23	39/34/29/26	
Sound Power H dBA		dBA	56	56	57	57		
Heat Insulation				Both Liquid an	d Gas Pipes	Both Liquid a	nd Gas Pipes	
_ 11 1		mm	ф 6	.4	ф	6.4		
		mm	ф 9	.5	φ:	9.5		
		Drain	mm	ф18	.0	φ1	8.0	
Drawing No.				3D051	1107	3D05	51108	

Model				ATXS20E2V1B		ATXS25E2V1B	
				Cooling	Heating	Cooling	Heating
Rated Capacity				2.0kW Class		2.5kW Class	
Front Panel Color				White		White	
Air Flow Rates ml/min (cfm)			Н	8.7 (307)	9.4 (332)	8.7 (307)	9.4 (332)
			M	6.7 (237)	7.6 (268)	6.7 (237)	7.6 (268)
			L	4.7 (166)	5.8 (205)	4.7 (166)	5.8 (205)
			SL	3.9 (138)	5.0 (177)	3.9 (138)	5.0 (177)
Fan	Туре			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	40		40	
	Speed		Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control				Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter				Removable / Washable / Mildew Proof		Removable / Washable / Mildew Proof	
Running Current (Rated)			Α	0.16	0.16	0.16	0.16
Power Consumption (Rated)			W	35	35	35	35
Power Factor			%	95.1	95.1	95.1	95.1
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (H×W×D) mm			mm	283×800×195		283×800×195	
Packaged Dimensions (H×W×D) mm			mm	265×855×340		265×855×340	
Weight kg			kg	9		9	
Gross Weight		kg	12		12		
Operation Sound	H/M/L/SL		dBA	38/32/25/22	38/33/28/25	38/32/25/22	38/33/28/25
Sound Power	Н		dBA	56	56	56	56
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection Gas		Liquid	mm	ф 6.4		ф 6.4	
		Gas	mm	ф 9.5		ф 9.5	
		Drain	mm	ф18.0		ф18.0	
Drawing No.				3D051746		3D051747	

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

Heat Pump SiENBE12-627

50Hz 230V

Model				ATXS35E2V1B		ATXS20DAVMB		
Model				Cooling	Heating	Cooling	Heating	
Rated Capacity	1			3.5kW	/ Class	2.0kV	/ Class	
Front Panel Co	lor			W	hite	W	hite	
			Н	8.9 (314)	9.7 (342)	7.7 (272)	7.8 (275)	
Air Flow Rates		mł/min	М	6.9 (244)	7.9 (279)	5.9 (208)	6.5 (230)	
All Flow Rates		(cfm)	L	4.8 (169)	6.0 (212)	4.2 (148)	5.3 (187)	
			SL	4.0 (141)	5.2 (184)	3.6 (127)	4.6 (162)	
	Туре			Cross F	low Fan	Cross F	low Fan	
Fan	Motor Outpu	ıt	W	4	10		18	
	Speed		Steps	5 Steps, S	Silent, Auto	5 Steps, S	Silent, Auto	
Air Direction Co	ontrol			Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward		
Air Filter				Removable / Washable / Mildew Proof		Removable / Washable / Mildew Proof		
Running Curre	nt (Rated)		Α	0.18	0.18	0.18	0.18	
Power Consum	ption (Rated)		W	40	40	40	40	
Power Factor			%	96.6	96.6	96.6	96.6	
Temperature C	ontrol			Microcomputer Control		Microcomputer Control		
Dimensions (H	×W×D)		mm	283×800×195		273×784×195		
Packaged Dim	ensions (H×W	×D)	mm	265×855×340		258×834×325		
Weight			kg	9		7.5		
Gross Weight			kg	12		11		
Operation Sound	H/M/L/SL		dBA	39/33/26/23	39/34/29/26	38 / 32 / 25 / 22	38 / 33 / 28 / 25	
Sound Power	Н		dBA	57	57	56	56	
Heat Insulation			Both Liquid a	and Gas Pipes	Both Liquid a	and Gas Pipes		
Liquid		mm	ф	6.4	ф	6.4		
Piping Connec	tion	Gas	mm	ф	9.5	ф	9.5	
Drain		mm	φ1	8.0	φ1	8.0		
Drawing No.				3D05	51748	3D050953		

Model			ATXS25DAVMB		ATXS35DAVMB		
		Cooling	Heating	Cooling	Heating		
Rated Capacity				2.5kW	/ Class	3.5kW	/ Class
Front Panel Co	lor			WI	hite	W	hite
			Н	7.7 (272)	7.8 (275)	7.7 (272)	8.1 (286)
Air Flow Rates		mł/min	M	5.9 (208)	6.5 (230)	6.0 (212)	6.7 (237)
All Flow Rates		(cfm)	L	4.2 (148)	5.3 (187)	4.4 (155)	5.3 (187)
			SL	3.6 (127)	4.6 (162)	3.8 (134)	4.6 (162)
	Туре			Cross F	low Fan	Cross F	low Fan
Fan	Motor Outp	out	W	1	18	1	18
	Speed		Steps	5 Steps, S	Silent, Auto	5 Steps, S	Silent, Auto
Air Direction Co	ntrol			Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter				Removable / Washable / Mildew Proof		Removable / Washable / Mildew Proof	
Running Currer	nt (Rated)		Α	0.18	0.18	0.18	0.18
Power Consum	ption (Rated)	W	40	40	40	40
Power Factor			%	96.6	96.6	96.6	96.6
Temperature C	ontrol			Microcomputer Control		Microcomputer Control	
Dimensions (H	·W×D)		mm	273×784×195		273×784×195	
Packaged Dime	ensions (H×V	V×D)	mm	258×834×325		258×834×325	
Weight			kg	7.5		7.5	
Gross Weight			kg	1	11	11	
Operation Sound	H/M/L/SL		dBA	38 / 32 / 25 / 22	38 / 33 / 28 / 25	39 / 33 / 26 / 23	39 / 34 / 29 / 26
Sound Power	Н		dBA	56	56	57	57
Heat Insulation			Both Liquid a	and Gas Pipes	Both Liquid a	and Gas Pipes	
Liquid		mm	ф	6.4	ф	6.4	
Piping Connect	ion	Gas	mm	ф	9.5	ф	9.5
		Drain	mm	ф1	8.0	φ1	8.0
Drawing No.				3D05	50955	3D05	50957

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

SiENBE12-627 Heat Pump

Duct Connected Type

50Hz 230V

Model -				FDXS2	5CAVMB	FDXS35CAVMB		
				Cooling	Heating	Cooling	Heating	
Rated Capacity	1			2.5kV	V Class	3.5kW	Class	
Front Panel Co	lor			-	_	-	_	
			Н	9.5 (335)	9.5 (335)	10.0 (353)	10.0 (353)	
Air Flow Rates		mł/min	M	8.8 (311)	8.8 (311)	9.3 (328)	9.3 (328)	
All Flow Rates		(cfm)	L	8.0 (282)	8.0 (282)	8.5 (300)	8.5 (300)	
			SL	6.7 (237)	6.7 (237)	7.0 (247)	7.0 (247)	
	Туре			Siroc	co Fan	Siroco	co Fan	
Fan	Motor Out	put	W	6	62	6	2	
	Speed		Steps	5 Steps, S	Silent, Auto	5 Steps, S	silent, Auto	
Air Filter				Removable / Washable / Mildew Proof		Removable / Washable / Mildew Proof		
Running Curre	nt (Rated)		Α	0.47	0.47	0.47	0.47	
Power Consum	ption (Rated	d)	W	100	100	100	100	
Power Factor			%	92.5	92.5	92.5	92.5	
Temperature C	ontrol			Microcomputer Control		Microcomputer Control		
Dimensions (H	×W×D)		mm	200×900×620		200×900×620		
Packaged Dim	ensions (H×	W×D)	mm	266×1,106×751		266×1,106×751		
Weight			kg	25		25		
Gross Weight			kg	3	31	31		
Operation Sound	H/M/L/SL		dBA	35/33/31/29	35/33/31/29	35/33/31/29	35/33/31/29	
External Static Pressure Pa		Pa	40		40			
Heat Insulation			Both Liquid a	and Gas Pipes	Both Liquid a	nd Gas Pipes		
Liquid		mm	ф	6.4	ф	6.4		
Piping Connec	tion	Gas	mm	ф	9.5	φ:	9.5	
		Drain	mm	VP20 (O.D. ¢	26 / I.D. φ 20)	VP20 (O.D. φ	26 / I.D. ф 20)	
Drawing No.				3D04	8945C	3D048	3946C	

Model Rated Capacity				FDXS2	5EAVMB	FDXS35EAVMB		
				Cooling	Heating	Cooling	Heating	
				2.5kW	/ Class	3.5kW	Class	
Front Panel C	olor			_	_	_	_	
			Н	8.7 (307)	8.7 (307)	8.7 (307)	8.7 (307)	
Air Flow Rates		mł/min	M	8.0 (282)	8.0 (282)	8.0 (282)	8.0 (282)	
All Flow Rates	5	(cfm)	L	7.3 (258)	7.3 (258)	7.3 (258)	7.3 (258)	
			SL	6.2 (219)	6.2 (219)	6.2 (219)	6.2 (219)	
	Туре			Siroc	co Fan	Siroco	o Fan	
Fan	Motor Outp	ut	W	(52	6	62	
	Speed		Steps	5 Steps, S	Silent, Auto	5 Steps, S	Silent, Auto	
Air Filter				Removable / Washable / Mildew Proof		Removable / Washable / Mildew Proof		
Running Curre	ent (Rated)		Α	0.48	0.48	0.48	0.48	
Power Consu	mption (Rated)		W	71	71	71	71	
Power Factor			%	64.3	64.3	64.3	64.3	
Temperature (Control			Microcomputer Control		Microcomputer Control		
Dimensions (F	H×W×D)		mm	200×700×620		200×700×620		
Packaged Din	nensions (H×W	/×D)	mm	274×906×751		274×906×751		
Weight			kg	21		21		
Gross Weight			kg	2	29	2	9	
Operation Sound	H/M/L/SL		dBA	35/33/31/29	35/33/31/29	35/33/31/29	35/33/31/29	
External Static Pressure Pa		Pa	30		30			
Heat Insulation			Both Liquid a	ind Gas Pipes	Both Liquid a	nd Gas Pipes		
Liquid		mm	φ	6.4	ф	6.4		
Piping Connec	ction	Gas	mm	φ	9.5	φ.	9.5	
		Drain	mm	VP20 (O.D. ф	26 / I.D. ф 20)	VP20 (O.D. φ	26 / I.D. ф 20)	
Drawing No.				3D05	1881A	3D05	1883A	

Note:

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

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

Heat Pump SiENBE12-627

Floor / Ceiling Suspended Dual Type

50Hz 230V

Model			FLXS25	BAVMB	FLXS35BAVMB		
Model				Cooling	Heating	Cooling	Heating
Rated Capacity	/			2.5kW	Class	3.5kV	Class
Front Panel Co	olor			Almono	d White	Almon	d White
			Н	7.6 (268)	9.2 (325)	8.6 (304)	9.8 (346)
Air Flow Rates		mł/min	M	6.8 (240)	8.3 (293)	7.6 (268)	8.9 (314)
All Flow Rates		(cfm)	L	6.0 (212)	7.4 (261)	6.6 (233)	8.0 (282)
			SL	5.2 (184)	6.6 (233)	5.6 (198)	7.2 (254)
	Type			Siroco	co Fan	Siroc	co Fan
Fan	Motor Outp	out	W	3	4	:	34
	Speed		Steps	5 Steps, S	Silent, Auto	5 Steps, S	Silent, Auto
Air Direction Co	ontrol			Right, Left, Horiz	ontal, Downward	Right, Left, Horizontal, Downward	
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Curre	nt (Rated)		Α	0.32	0.34	0.36	0.36
Power Consum	nption (Rated)	W	70	74	78	78
Power Factor			%	95.1	94.6	94.2	94.2
Temperature C	ontrol			Microcomputer Control		Microcomputer Control	
Dimensions (H	×W×D)		mm	490×1,050×200		490×1,050×200	
Packaged Dim	ensions (H×V	۷×D)	mm	566×1,100×280		566×1,100×280	
Weight			kg	16		16	
Gross Weight			kg	22		22	
Operation Sound	H/M/L/SL		dBA	37/34/31/28	37/34/31/29	38/35/32/29	39/36/33/30
Sound Power	Н		dBA	53	_	54	_
Heat Insulation			Both Liquid a	nd Gas Pipes	Both Liquid a	nd Gas Pipes	
Liquid		mm	ф	6.4	ф	6.4	
Piping Connec	tion	Gas	mm	φ 9	9.5	ф	9.5
		Drain	mm	φ1	8.0	φ1	8.0
Drawing No.				3D05	0866	3D050868	

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

SiENBE12-627 Heat Pump

2.2 Outdoor Units

50Hz 230V

Model			2MXS40DAVMB					
			Cooling	Heating				
Cooling Capacity		kW		_				
Power Consu			W		_			
Running Curr	ent		Α		_			
Casing Color					vory White			
	Type				ly Sealed Swing Type			
Compressor	Model			1YC23GXD				
	Motor Output	t	W	600				
Refrigerant	Model				FVC50K			
Oil	Charge		L		0.40			
Refrigerant	Туре				R-410A			
Reingerani	Charge		kg		1.20			
			HH	39	35			
	n	nł/min	Н	35	32			
Air Flow Rate			L	30	27			
Air Flow Rate	'		HH	1377	1236			
	c	fm	Н	1236	1130			
			L	1059	953			
Fan	Туре		•	Propeller				
ran	Motor Output	t	W	50				
Starting Curre	ent		Α	6.2				
Dimension (H	l×W×D)		mm	640×685×285				
Packaged Dir	mension (H×W×	(D)	mm	676×800×366				
Weight			kg	39				
Gross Weight	l		kg		42			
Operation	Sound Press	ure	dBA	47	48			
Sound	Silent Mode		dBA	43	44			
Sound Power	•		dBA	62	_			
	Liquid		mm		φ 6.4×2			
Piping Connection	Gas		mm		φ 9.5×2			
Connection	Drain		mm		φ18			
Heat Insulation	Heat Insulation			Both Liquid & Gas Pipes				
No. of Wiring	Connection			3 for Power Su	pply, 4 for Interunit Wiring			
May Dining I				30 (for T	otal of Each Room)			
Max. Piping Length		m	20 (1	for One Room)				
Min. Piping Length m		m	1.5 (for One Room)					
	Iditional Charge)	g/m	20 (20m or more)				
May Installed	iam I laimht Diffi		T	15 (between Ind	oor Unit and Outdoor Unit)			
iviax. Installati	ion Height Diffe	rence	m	7.5 (bet	ween Indoor Units)			
Drawing No.				3D050839#1				

Note:

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

Cooling	Heating	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB	Indoor ; 20°CDB Outdoor ; 7°CDB/6°CWB	7.5m

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

Heat Pump SiENBE12-627

50Hz 230V

Model				2AMX40BAVMB			
wodei				Cooling	Heating		
Cooling Capacity		kW		_			
Power Consum	ption		W		_		
Running Currer	nt		Α		_		
Casing Color					vory White		
	Туре			Hermeticall	y Sealed Swing Type		
Compressor	Model			1	YC23GXD		
	Motor Outp	ut	W		600		
Refrigerant Oil	Model				FVC50K		
Reingerant On	Charge		L		0.40		
Refrigerant	Туре				R-410A		
Reingerant	Charge		kg		1.2		
			HH	39	35		
		mł/min	Н	35	32		
Air Flow Rates			L	30	27		
All I low Rates			HH	1,126	1,010		
		cfm	Н	1,010	924		
			L	886	779		
Fan	Туре			Propeller			
-	Motor Outp	ut	W	50			
Starting Current	t		Α	6.2			
Dimensions (H)			mm	640×685×285			
Packaged Dime	ensions (H×V	V×D)	mm	676×800×366			
Weight			kg	39			
Gross Weight			kg		42		
Operation	(Sound Pre		dBA	47	48		
Sound	(Silent Mode)		dBA	43	44		
Sound Power			dBA	62	_		
		Liquid	mm		φ 6.4×2		
Piping Connect	ion	Gas	mm		φ 9.5×2		
		Drain	mm		ф18.0		
Heat Insulation				uid and Gas Pipes			
No. of Wiring Connection				pply, 4 for Interunit Wiring			
May Interunit P	ining Length		m		otal of Each Room)		
Max. Interunit Piping Length		m	20 (for One Room)				
Min. Interunit Piping Length m			1.5 (for One Room)				
Amount of Additional Charge g/m		g/m	20 (20m or more)				
Max. Installation	. Height Diff	erence	m	,	oor Unit and Outdoor Unit)		
	i i icigiit Dilli	UI CI IUC	m		veen Indoor Units)		
Drawing No.				3	D050884#1		

Note:

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

Cooling	Heating	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB	Indoor ; 20°CDB Outdoor ; 7°CDB/6°CWB	7.5m

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

Part 3 Printed Circuit Board Connector Wiring Diagram

1.	Print	ed Circuit Board Connector Wiring Diagram	34
		Wall Mounted Type	
		Duct Connected Type	
		Floor / Ceiling Suspended Dual Type	
		Outdoor Unit	

1. Printed Circuit Board Connector Wiring Diagram

Wall Mounted Type

1.1.1 FTK(X)S 20/25/35 D, ATK(X)S 20/25/35 E

Connectors

PCB(1) (Control PCB)

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

PCB(2) (Signal Receiver PCB)

1) S29 Connector for control PCB

PCB(3) (Display PCB)

1) S27 Connector for control PCB

PCB(4) (INTELLIGENT EYE sensor PCB)

1) S36 Connector for control PCB

Note:

Other designations PCB(1) (Control PCB)

1) V1	Varistor
1 <i>)</i> V I	varistoi

2) JA Address setting jumper

Fan speed setting when compressor is OFF on thermostat JΒ

JC Power failure recovery function (auto-restart)

* Refer to page 229 for detail.

3) LED A LED for service monitor (green)

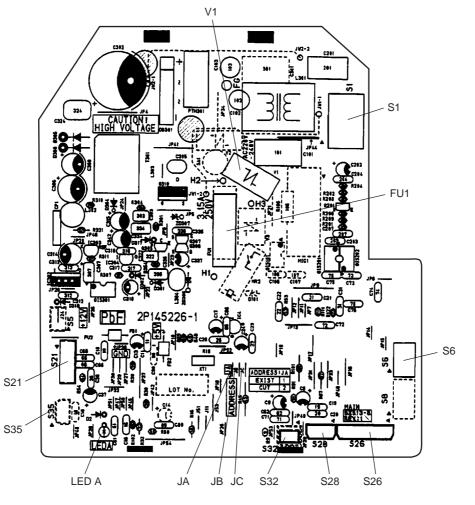
4) FU1 Fuse (3.15A)

PCB(3) (Display PCB)

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

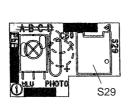
PCB Detail

PCB(1): Control PCB

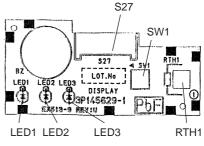


(R4288)

PCB(2): Signal Receiver PCB



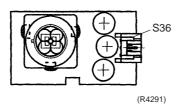
PCB(3): Display PCB



(R4290)

PCB(4): INTELLIGENT EYE sensor PCB

(R4289)



1.1.2 FTK(X)S 20/25/35 C, ATK(X)S 20/25/35 D

Connectors

PCB(1) (Control PCB)

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

PCB(2) (Signal Receiver PCB)

1) S27 Connector for control PCB

PCB(3) (INTELLIGENT EYE Sensor PCB)

1) S36 Connector for control PCB



Other designations

PCB(1) (Control PCB)

1)	V1	Varistor
٠,		

2) JA Address setting jumper

JB Fan speed setting when compressor is OFF on thermostat

JC Power failure recovery function

* Refer to page 229 for more detail.

3) LED A LED for service monitor (green)

4) FU1 Fuse (3.15A)

PCB(2) (Signal Receiver PCB)

1) SW7 (S1W) Forced operation ON/OFF switch

2) LED1 LED for operation (green)3) LED2 LED for timer (yellow)

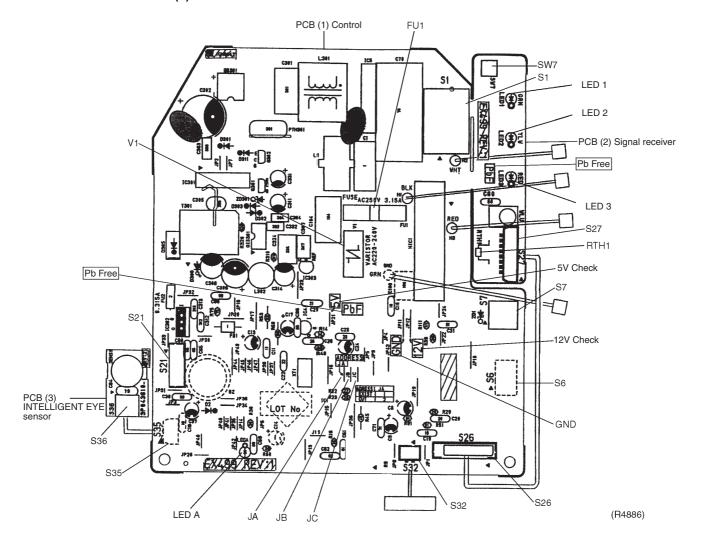
4) LED3 LED for HOME LEAVE operation (red)

5) RTH1 (R1T) Room temperature thermistor

PCB Detail PCB(1): Control PCB

PCB(2): Signal Receiver PCB

PCB(3): INTELLIGENT EYE Sensor PCB



1.1.3 FTXG 25/35 E, ATXG 25/35 E

Connectors

PCB(1) (Control PCB)

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

PCB(2) (Signal Receiver PCB)

1) S47 Connector for control PCB

PCB(3) (INTELLIGENT EYE sensor PCB)

1) S36 Connector for control PCB

Note:

te: Other designations

PCB(1) (Control PCB)

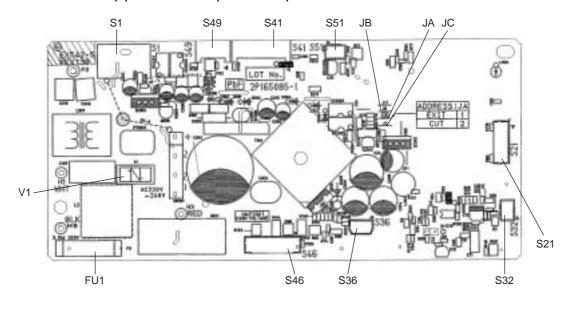
1) V1	Varistor
2) JA	Address setting jumper
JB	Fan speed setting when compressor is OFF on thermostat
JC	Power failure recovery function (auto-restart)
	* Refer to page 229 for detail.
3) FU1	Fuse (3.15A)

PCB(2) (Signal Receiver PCB)

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

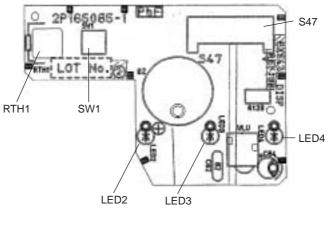
PCB Detail

PCB(1): Control PCB (indoor unit)



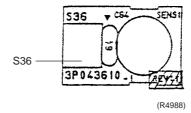
(R4991)

PCB(2): Signal Receiver PCB



(R4992)

PCB(3): INTELLIGENT EYE sensor PCB



1.2 Duct Connected Type

Connectors

PCB(1) (Control PCB)

S1 Connector for AC fan motor
 S7 Connector for AC fan motor
 S21 Connector for centralized control to 5 rooms

4) S26 Connector for display PCB

5) S32 Connector for heat exchanger thermistor

PCB(2) (Display PCB)

1) S1 Connector for control PCB

Note:

Other designations

PCB(1) (Control PCB)

1) V1 Varistor

2) JA Address setting jumper

JB Fan speed setting when compressor is OFF on thermostat

JC Power failure recovery function

* Refer to page 229 for more detail.

3) LED A LED for service monitor (green)

4) FU1 Fuse (3.15A)

PCB(2) (Display PCB)

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

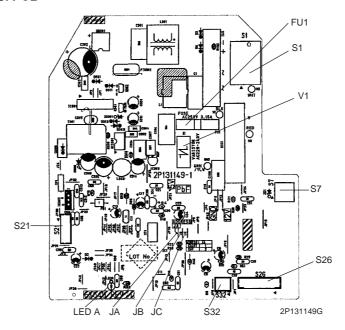
2) LED1 LED for operation (green)3) LED2 LED for timer (yellow)

4) LED3 LED for HOME LEAVE operation (red)

5) RTH1 (R1T) Room temperature thermistor

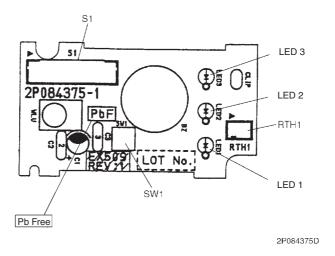
PCB Detail

PCB (1): Control PCB



PCB Detail

PCB (2): Display PCB



1.3 Floor / Ceiling Suspended Dual Type

Connectors

PCB(1) (Control PCB)

1) S6	Connector	for	swing mo	tor (horizo	ntal swing)

2) S7 Connector for fan motor

3) S21 Connector for centralized control4) S24 Connector for display PCB

5) S26 Connector for signal receiver PCB6) S32 Connector for heat exchanger thermistor

7) S37 Connector for power supply PCB

PCB(2) (Power Supply PCB)

1) S36 Connector for control PCB

PCB(3) (Display PCB)

1) S25 Connector for control PCB

PCB(4) (Signal Receiver PCB)

1) S27 Connector for control PCB

1) S31 Connector for room temperature thermistor

Note:

: Other designations

PCB(1) (Control PCB)

1) JA Address setting jumper

JB Fan speed setting when compressor is OFF on thermostat

JC Power failure recovery function

* Refer to page 229 for detail.

2) SW2 Select switch ceiling or floor3) LED A LED for service monitor (green)

PCB(2) (Power Supply PCB)

V1 Varistor
 FU1 Fuse (3.15A)

PCB(3) (Display PCB)

1) LED1 LED for operation (green)2) LED2 LED for timer (yellow)

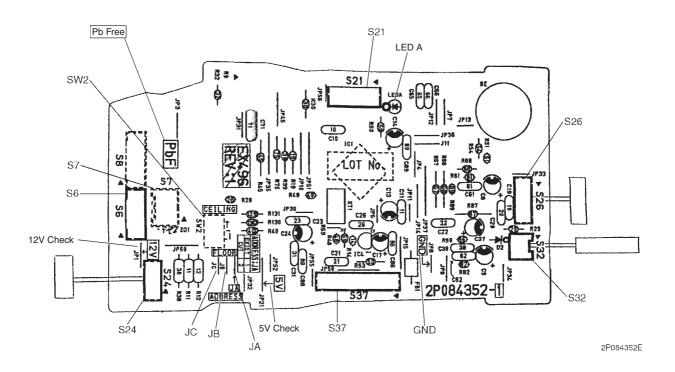
3) LED3 LED for HOME LEAVE operation (red)

PCB(4) (Signal Receiver PCB)

1) SW1 Forced operation ON/OFF switch

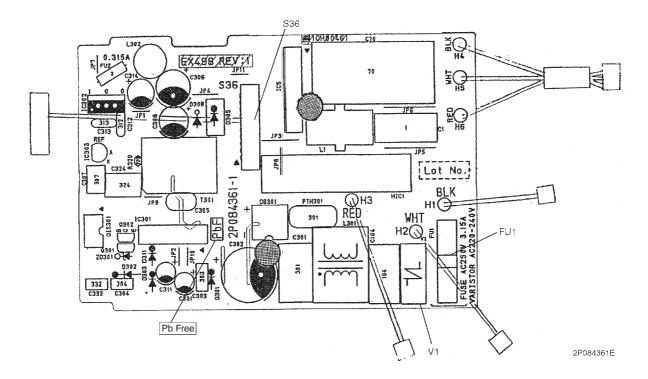
PCB Detail

PCB (1): Control PCB

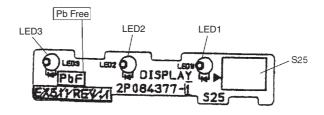


PCB Detail

PCB (2): Power Supply PCB

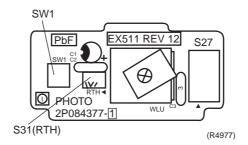


PCB (3): Display PCB



2P084377C

PCB (4): Signal Receiver PCB



1.4 Outdoor Unit

Connectors

PCB (1) (Filter PCB)

1) S10, AC1, AC2 Connector for terminal strip
2) S11, HL1, HN1 Connector for control PCB

PCB (2) (Control PCB)

` ' `	•
1) S45	Connector for terminal strip
2) S12, HL2, HN2	Connector for filter PCB
3) S20	Connector for electronic expansion valve coil A port
4) S21	Connector for electronic expansion valve coil B port
5) S30	Connector for compressor
6) S40	Connector for overload protector
7) S70	Connector for fan motor
8) S80	Connector for four way valve coil
9) S90	Connector for thermistor
	(outdoor air, heat exchanger, and discharge pipe)
10)S91	Connector for thermistor (gas pipe and liquid pipe)
11)S92	Connector for fin thermistor
12)HC3, HC4	Connector for capacitor
13)HR3, HR4	Connector for reactor

Note:

Other Designations PCB (1) (Filter PCB)

1) FU3 Fuse (20A/250V)

PCB (2) (Control PCB)

1) LED A Service Monitor LED (Green)

2) FU1, FU2 Fuse (3.15A/250V)3) DB1 Diode bridge

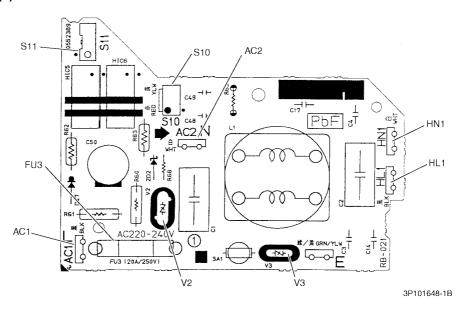
4) J9 Jumper for maximum power input limitation

(Refer to installation manual)

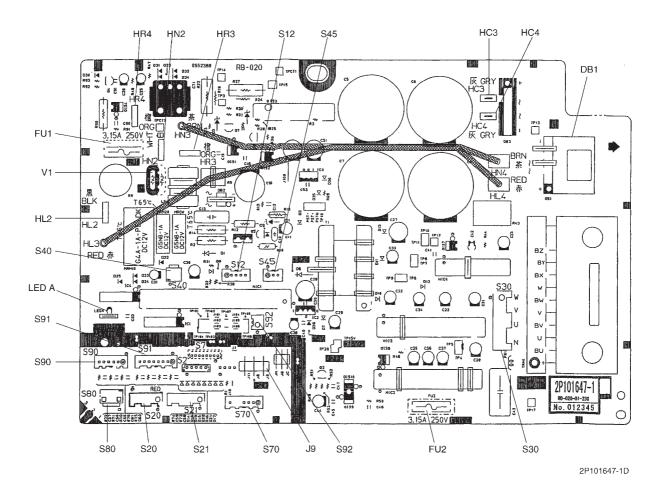
5) V1, V2, V3 Varistor

PCB Detail

PCB (1): Filter PCB



PCB (2): Control PCB



Part 4 Function and Control

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Main Functions SiENBE12-627

1. Main Functions

A

ote: See the list of functions for the functions applicable to different models.

1.1 Frequency Principle

Main Control Parameters

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

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

Additional Control Parameters

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

- Frequency restrictions
- Initial settings
- Forced cooling operation

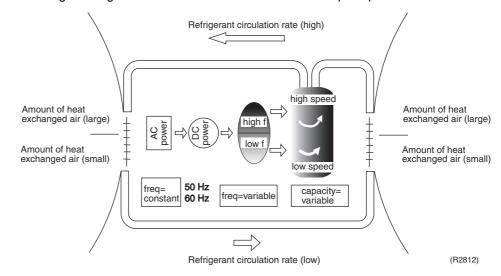
Inverter Principle

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

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

Drawing of Inverter

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

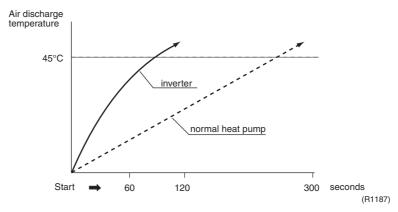


Inverter Features

The inverter provides the following features:

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

Quick heating and quick cooling The compressor rotational speed is increased when starting the heating (or cooling). This enables a quick set temperature.



- Even during extreme cold weather, the high capacity is achieved. It is maintained even when the outdoor air temperature is 2°C.
- Comfortable air conditioning
 A detailed adjustment is integrated to ensure a fixed room temperature. It is possible to air condition with a small room temperature variation.
- Energy saving heating and cooling Once the set temperature is reached, the energy saving operation enables to maintain the room temperature at low power.

Frequency Limits

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

Frequency limits	Limited during the activation of following functions
Low	■ Four way valve operation compensation. Refer to page 72.
High	 Input current control. Refer to page 73. Compressor protection function. Refer to page 72. Heating peak-cut control. Refer to page 74. Freeze-up protection control. Refer to page 74. Defrost control. Refer to page 76.

Forced Cooling Operation

For more information, refer to "Forced operation mode" on page 82.

Main Functions SiENBE12-627

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

Power-airflow Dual Flaps

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

Heating Mode

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

Cooling Mode

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

Wide-Angle Louvers

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

Auto-Swing

In case of FTK(X)S20-35D, ATK(X)S20-35E

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

Ve	Horizontal Swing (right and left: manual)		
Cooling / Dry	Heating	Fan	(right and left: manual)
10° J 50° (R4281)	30° 65° (R4282)	5°	(R4284)

COMFORT AIRFLOW Mode

FTK(X)S20-35D, ATK(X)S20-35E

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

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

Heating	Cooling	
	5°	
7 ['] 0° (R4303)	(R4302)	

FTXG25/35E, ATXG25/35E

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

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

Heating	Cooling, Dry	
80°/	5°	
(R3297)	(R3298)	

3-D Airflow

FTXG25/35E, ATXG25/35E

■ Alternative repetition of vertical and horizontal swing motions enables uniform airconditioning of the entire room. This function is effective for starting the air conditioner.

■ When the horizontal swing and vertical swing are both set to auto mode, the airflow become 3-D airflow and the horizontal swing and vertical swing motions are alternated. The order of swing motion is such that it turns counterclockwise, starting from the right upper point as viewed to the front side of the indoor unit.



Main Functions SiENBE12-627

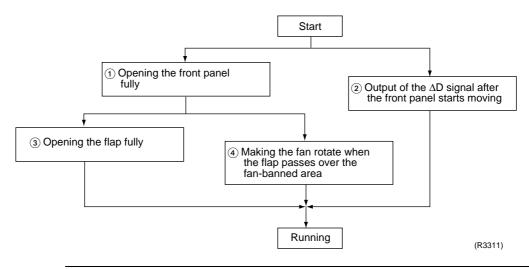
1.3 Operation Starting Control

FTXG25-35E, FTXG25-35E

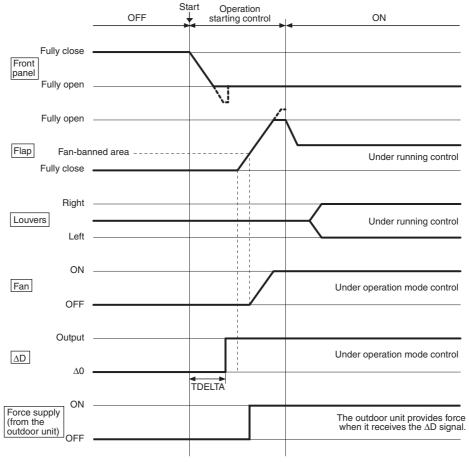
The system carries out the following control at the beginning to conduct every functional parts properly.

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

Control Flow



Timing Chart



(R3312)

1.4 Fan Speed Control for Indoor Units

Control Mode

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



For more information about Hall IC, refer to the troubleshooting for fan motor on page 162.

Phase Steps

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

	FTXG25/35E ATXG25/35E		FTK(X)S20-50D ATK(X)S20-35E FTK(X)S20-35CA ATK(X)SS20-35DA FDK(X)S25-35EA FDK(X)S25-35CA FLK(X)S25-50BA	
Step	Cooling	Heating	Cooling	Heating
LLL SL L				
M MH H	(R6035)	(R6036)	(R6037)	(R6036)
HH (Powerful)	H+70	H+50	H+50	H+50

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



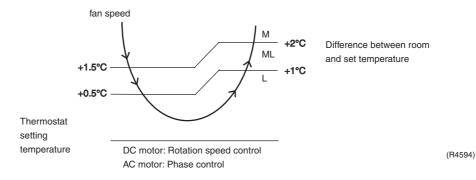
- 1. Fan stops during defrost operation.
- 2. In time of thermostat OFF, the fan rotates at the following speed.

Cooling: The fan keeps rotating at the set tap.

Heating: The fan stops.

Automatic Air Flow Control for Heating On heating mode, the indoor fan speed will be regulated according to the indoor heat exchanger temperature and the difference between the room temperature and the required set point.

Automatic Air Flow Control for Cooling The following drawing explains the principle of fan speed control for cooling:



Main Functions SiENBE12-627

1.5 Programme Dry Function

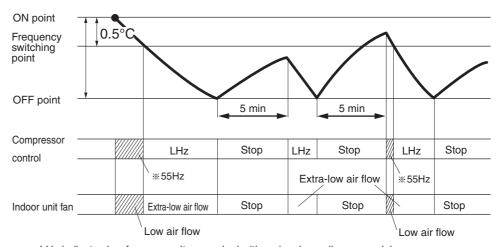
Programme dry function removes humidity while preventing the room temperature from lowering.

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

In Case of Inverter Units

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

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



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

(R1359)

1.6 Automatic Operation

Automatic Cooling / Heating Function (Heat Pump Only)

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

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

Detailed Explanation of the Function

- 1. Remote control setting temperature is set as automatic cooling / heating setting temperature (18 to 30°C).
- 2. Main unit setting temperature equals remote control setting temperature plus correction value (correction value / cooling: 0 deg, heating: 2 deg.).
- 3. Operation ON / OFF point and mode switching point are as follows.
 - ① Heating → Cooling switching point:

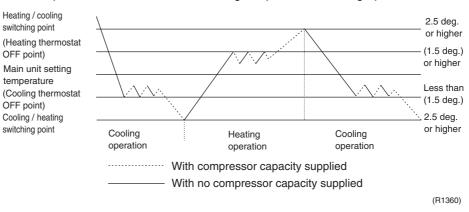
Room temperature ≥ Main unit setting temperature +2.5 deg.

(2) Cooling → Heating switching point:

Room temperature < Main unit setting temperature -2.5 deg.

- ③ Thermostat ON / OFF point is the same as the ON / OFF point of cooling or heating operation.
- 4. During initial operation

Room temperature ≥ Remote control setting temperature: Cooling operation Room temperature < Remote control setting temperature: Heating operation



Main Functions SIENBE12-627

Thermostat Control 1.7

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

Thermostat OFF Condition

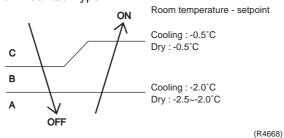
• The temperature difference is in the zone A.

Thermostat ON Condition

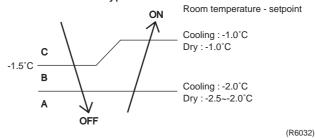
- The temperature difference is above the zone C after being in the zone A.
- The system resumes from defrost control in any zones except A.
- The operation turns on in any zones except A.
- The monitoring time has passed while the temperature difference is in the zone B. (Cooling / Dry: 10 minutes,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

Cooling / Dry

Wall Mounted Type

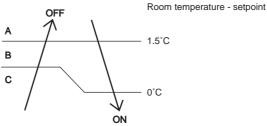


- Floor standing Type
- Floor/Ceiling suspended Type
- Duct Connected Type



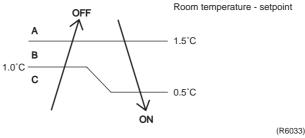
Heating

Wall Mounted Type



(R4669)

- Floor standing Type
- Floor/Ceiling suspended Type
- **Duct Connected Type**



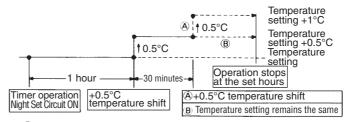
1.8 Night Set Mode

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

The Night Set Circuit

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

Cooling Operation

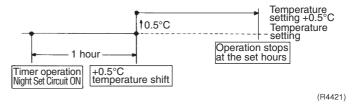


When outside temperature is normal and room temperature is at set temperature.

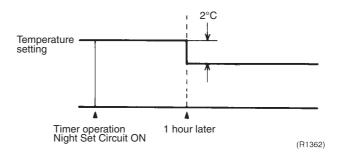
■ : When outside temperature is high (27°C or higher).

(R1361)

In case of FTK(X)S20-35D, ATK(X)S20-35E, FTXG25-35E, ATXG25-35E, the temperature rises once.



Heating Operation



Main Functions SiENBE12-627

1.9 ECONO Mode

Outline

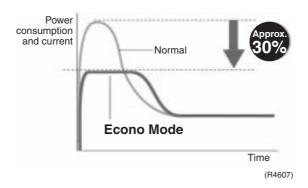
FTK(X)S20-35D

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

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

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

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



Details

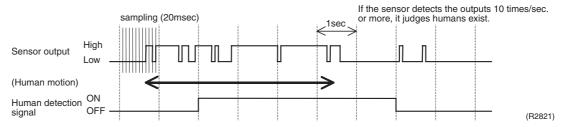
- ECONO mode can be activated while the unit is running. The remote control can send the ECONO command when the unit is in COOL, HEAT, DRY, or AUTO operation.
- When the ECONO command is valid, the upper limit of frequency is restricted.

1.10 INTELLIGENT EYE

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

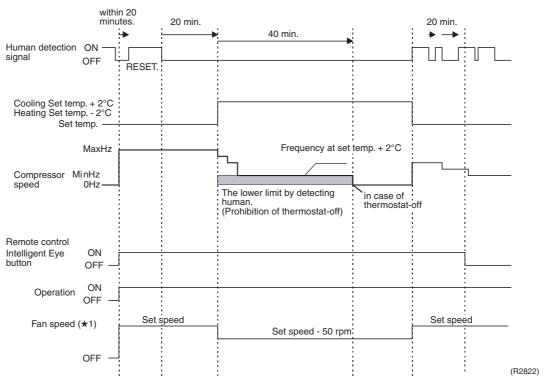
Processing

1. Detection method by Intelligent Eye



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

2. The motions (for example: in cooling)



- When a microcomputer doesn't have a signal from the sensor in 20 minutes, it judges that nobody is in the room and operating the unit in temperature shifted 2°C from the set temperature. (Cooling: 2°C higher, Dry: 1°C higher and Auto: according to the operation mode at that time.)
- ★1 In case of Fan mode, the fan speed reduces by 50 rpm.

Main Functions SiENBE12-627

■ Since the set temperature is shifted by 2°C higher for 40 minutes, compressor speed becomes low and can realize energy saving operation. But as thermostat is prone to be off by the fact that the set temperature has been shifted, the thermostat-off action is prohibited in 40 minutes so as to prevent this phenomena.

After this 40 minutes, the prohibition of the thermostat-off is cancelled and it can realize the conditions to conduct thermostat-off depending on the room temperature. In or after this forty minutes, if the sensor detects human motion detection signal, it let the set temperature and the fan speed return to the original set point, keeping a normal operation.

Others

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

1.11 HOME LEAVE Operation

Outline

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

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

Detail of the Control

1. Start of Function

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

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

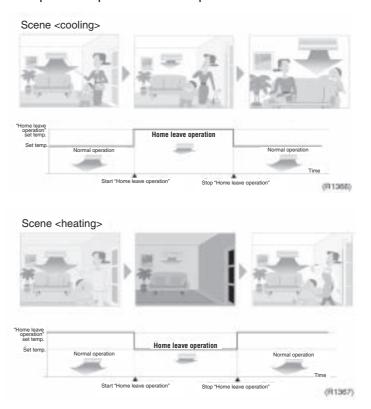
2. Details of Function

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

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

3. End of Function

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



Others

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

Main Functions SiENBE12-627

1.12 Inverter POWERFUL Operation

Outline

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

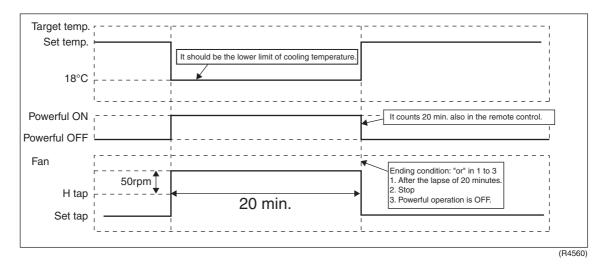
Details of the Control

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

In case of FTK(X)S20-50D, ATXS20-50E

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

Ex.): Powerful operation in cooling mode.



Refer to "Fan Speed control" on page 53 for detail.

1.13 Other Functions

1.13.1 Hot Start Function

Heat Pump Only

In order to prevent the cold air blast that normally comes when heating is started, the temperature of the heat exchanger of the indoor unit is detected, and either the air flow is stopped or is made very weak thereby carrying out comfortable heating of the room. *The cold air blast is also prevented using a similar control when the defrosting operation is started or when the thermostat gets turned ON.

1.13.2 Signal Receiving Sign

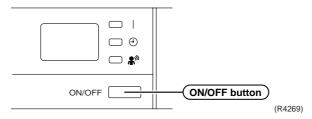
When the indoor unit receives a signal from the remote control, the unit emits a signal receiving sound.

1.13.3 ON/OFF Button on Indoor Unit

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

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

In case of FTK(X)S20-35D



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

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

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

1.13.4 Titanium Apatite Photocatalytic Air-Purifying Filter

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

1.13.5 Photocatalytic Deodorizing Filter

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

1.13.6 Air-Purifying Filter

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

Main Functions SiENBE12-627

1.13.7 Air Purifying Filter with Photocatalytic Deodorizing Function

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

1.13.8 Mold Proof Air Filter

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

1.13.9 Self-Diagnosis Digital Display

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

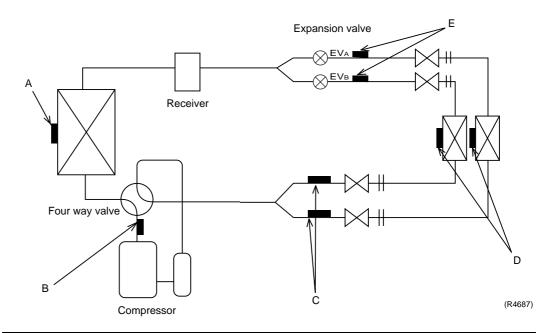
1.13.10Auto-restart Function

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

SiENBE12-627 Main Functions

1.14 Function of Thermistor

1.14.1 Heat Pump Model



A Outdoor Heat Exchanger Thermistor (DCB)

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

B Discharge Pipe Thermistor (DOT)

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

C Gas Pipe Thermistor (DGN)

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

Main Functions SiENBE12-627

D Indoor Heat Exchanger Thermistor (DCN)

- The indoor heat exchanger thermistors are used for controlling target discharge temperature.
 The system sets a target discharge pipe temperature according to the outdoor and indoor heat exchanger temperature, and controls the electronic expansion valve opening so that the target discharge temperature can be obtained.
- The indoor heat exchanger thermistor is used to prevent freezing.
 During the cooling operation, if the temperature drops abnormally, the operating frequency becomes lower, then the operation halts.
- 3. The indoor heat exchanger thermistor is used for anti-icing control.

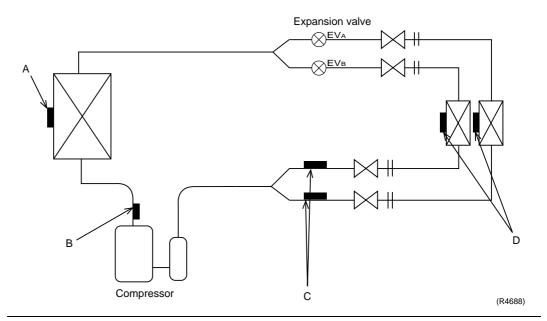
 During the cooling operation, if the heat exchanger temperature in the room where operation is halted becomes -1°C, or if the room temperature heat exchanger temperature in the room where operation is halted becomes ≥10°C, it is assumed as icing.
- 4. During heating: the indoor heat exchanger thermistors are used for detecting disconnection of the discharge pipe thermistor.
 - When the discharge pipe temperature become lower than an indoor heat exchanger temperature, a disconnected discharge pipe thermistor can be detected.
- 5. When only one indoor unit is operating, the indoor heat exchanger thermistor is used for sub-cooling control.
 - The actual sub-cooling is calculated from the liquid pipe temperature and the heat exchanger temperature. The system controls the electronic expansion valve opening to reach the target sub-cooling.

E Liquid Pipe Thermistor (DLN)

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

SiENBE12-627 Main Functions

1.14.2 Cooling Only Model



A Outdoor Heat Exchanger Thermistor (DCB)

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

B Discharge Pipe Thermistor (DOT)

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

C Gas Pipe Thermistor (DGN)

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

D Indoor Heat Exchanger Thermistor (DCN)

- The indoor heat exchanger thermistor is used for controlling target discharge temperature.
 The system sets a target discharge pipe temperature according to the outdoor and indoor heat exchanger temperature, and controls the electronic expansion valve opening so that the target discharge temperature can be obtained.
- The indoor heat exchanger thermistors are used to prevent freezing.
 During the cooling operation, if the temperature drops abnormally, the operating frequency becomes lower, then the operation halts.
- 3. The indoor heat exchanger thermistor is used for anti-icing control.

 During the cooling operation, if the heat exchanger temperature in the room where operation is halted becomes -1°C, or if the room temperature heat exchanger in the room where operation is halted becomes ≥10°C, it is assumed as icing.

2. Control Specification

2.1 Mode Hierarchy

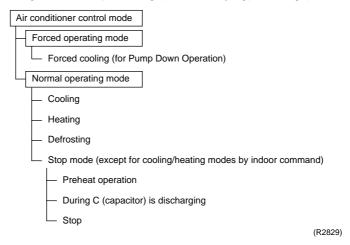
Outline

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

Detail

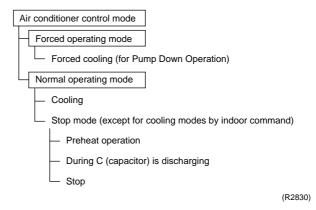
1. For heat pump model

There are following modes; stop, cooling (includes drying), heating (include defrosting)



2. For cooling only model

There are following models; stop and cooling (including drying).





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

Determine Operating Mode

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

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

- The system will follow the mode determined first. (First-push, first-set)
- For the rooms set with different mode, select stand-by mode. (Operation lamp flashes)

Command of the first set room	Command of the second set room	Operation of the first set room	Operation of the second set room
Cooling	Heating	Cooling	Stand-by
Cooling	Fan	Cooling	Fan
Heating	Cooling	Cooling	Stand-by
Heating	Fan	Fan	Stand-by
Fan	Cooling	Cooling	Cooling
Fan	Heating	Stand-by	Heating

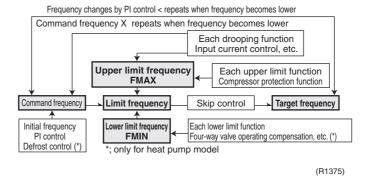
2.2 Frequency Control

Outline

Frequency that corresponds to each room's capacity will be determined according to the difference in the temperature of each room and the temperature that is set by the remote control.

The function is explained as follows.

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



Detail

How to Determine Frequency

The compressor's frequency will finally be determined by taking the following steps.

For Heat Pump Model

1. Determine command frequency

- Command frequency will be determined in the following order of priority.
- 1.1 Limiting frequency by drooping function
- Input current, discharge pipes, low Hz high pressure limit, peak cutting, freeze prevention, dew prevention, fin thermistor temperature.
- 1.2 Limiting defrost control time
- 1.3 Forced cooling
- 1.4 Indoor frequency command

2. Determine upper limit frequency

• Set a minimum value as an upper limit frequency among the frequency upper limits of the following functions:

Compressor protection, input current, discharge pipes, Low Hz high pressure, peak cutting, freeze prevention, defrost.

3. Determine lower limit frequency

 Set a maximum value as an lower limit frequency among the frequency lower limits of the following functions:

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

4. Determine prohibited frequency

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

For Cooling Only Model

1. Determine command frequency

- Command frequency will be determined in the following order of priority.
- 1.1 Limiting frequency by drooping function
- Input current, discharge pipes, freeze prevention, dew prevention, fin thermistor temperature.
- 1.2 Indoor frequency command

2. Determine upper limit frequency

• Set a minimum value as an upper limit frequency among the frequency upper limits of the following functions:

Compressor protection, input current, discharge pipes, freeze prevention, dew prevention, fin thermistor temperature.

3. Determine lower limit frequency

 Set a maximum value as an lower limit frequency among the frequency lower limits of the following functions:

Pressure difference upkeep.

4. Determine prohibited frequency

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

Indoor Frequency Command (△D signal)

The difference between a room temperature and the temperature set by the remote control will be taken as the " ΔD signal" and is used for frequency command.

Temperature difference	∆D signal	Temperature difference	∆D signal	Temperature difference	∆D signal	Temperature difference	∆D signal
0	*Th OFF	2.0	4	4.0	8	6.0	С
0.5	1	2.5	5	4.5	9	6.5	D
1.0	2	3.0	6	5.0	Α	7.0	Е
1.5	3	3.5	7	5.5	В	7.5	F

^{*}Th OFF = Thermostat OFF

Indoor Unit Capacity (S value)

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

ex.)	Capacity	S value
	2.5 kW	25
	3.5 kW	35

Frequency Initial Setting

< Outline >

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

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

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

1. P control

Calculate a total of the ΔD value in each sampling time (20 seconds), and adjust the frequency according to its difference from the frequency previously calculated.

2. I control

If the operating frequency is not change more than a certain fixed time, adjust the frequency up and down according to the $\Sigma\Delta D$ value, obtaining the fixed $\Sigma\Delta D$ value.

When the $\Sigma\Delta D$ value is small...lower the frequency.

When the $\Sigma\Delta D$ value is large...increase the frequency.

3. Limit of frequency variation width

When the difference between input current and input current drooping value is less than 1.5 A, the frequency increase width must be limited.

4. Frequency management when other controls are functioning

When each frequency is drooping;

Frequency management is carried out only when the frequency droops.

• For limiting lower limit

Frequency management is carried out only when the frequency rises.

5. Upper and lower limit of frequency by PI control

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

2.3 Controls at Mode Changing / Start-up

2.3.1 Preheating Operation

Outline

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

Detail

Preheating ON Condition

When outdoor air temperature is below 10.5

\$\times C\$ and discharge pipe temperature is below 10.5

\$\times C\$, inverter in open phase operation starts.

OFF Condition

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

2.3.2 Four Way Valve Switching

Outline of

Heat Pump Only

Heating Operation

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

Detail

The OFF delay of four way valve

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

2.3.3 Four Way Valve Operation Compensation

Outline

Heat Pump Only

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

Detail

Staring Conditions

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

Set the lower limit frequency to 68 (model by model) Hz for 70 seconds with any conditions with 1 through 5 above.

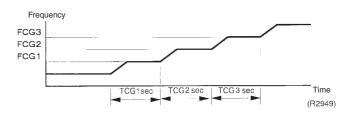
2.3.4 3 Minutes Stand-by

Prohibit to turn ON the compressor for 3 minutes after turning it off. (Except when defrosting. (Only for Heat Pump Model).)

2.3.5 Compressor Protection Function

When turning the compressor from OFF to ON, the upper limit of frequency must be set as follows. (The function must not be used when defrosting (only for heat pump model).)

FCG 3	90
FCG 2	72
FCG 1	62
TCG 1	110
TCG 2	660
TCG 3	90



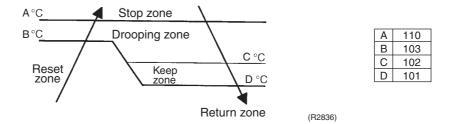
2.4 Discharge Pipe Control

Outline

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

Detail

Divide the Zone



Management within the Zones

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

2.5 Input Current Control

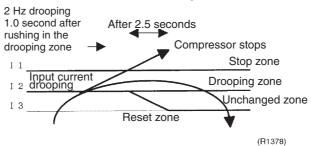
Outline

Detect an input current by the CT during the compressor is running, and set the frequency upper limit from such input current.

In case of heat pump model, this control is the upper limit control function of the frequency which takes priority of the lower limit of four way valve activating compensation.

Detail

The frequency control will be made within the following zones.



When a "stop current" continues for 2.5 seconds after rushing on the stop zone, the compressor operation stops.

If a "drooping current" is continues for 1.0 second after rushing on the drooping zone, the frequency will be 2 Hz drooping.

Repeating the above drooping continues until the current rushes on the drooping zone without change.

In the unchanged zone, the frequency limit will remain.

In the return / reset zone, the frequency limit will be cancelled.

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

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

2.6 Freeze-up Protection Control

Outline

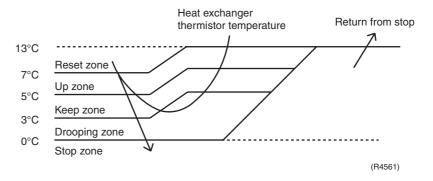
During cooling operation, the signals being sent from the indoor unit allow the operating frequency limitation and then prevent freezing of the indoor heat exchanger. (The signal from the indoor unit must be divided into the zones as the followings.

Detail

Conditions for Start Controlling

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

Control in Each Zone



2.7 Heating Peak-cut Control

Outline

Heat Pump Only

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

Detail

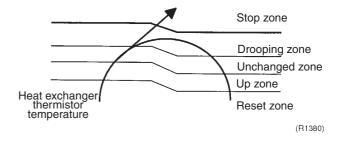
Conditions for Start Controlling

Judge the controlling start with the indoor heat exchanger temperature after 2 min from operation start and \triangle sec from changing number of operation room.

Control in Each Zone

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

	A
When increase	30
When decrease	2



2.8 Fan Control

Outline

Fan control is carried out according to the following priority.

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

Detail

Fan OFF Control when Stopped

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

Tap Control in Indoor / Outdoor Unit Silent Operation

- 1. When Cooling Operation
 - When the outdoor air temperature is $18 \sim 37^{\circ}$ C, the fan tap must be set to M. When the outdoor air temperature is lower than 18° C, the fan tap must be set to L.
- When Heating Operation
 When the outdoor air temperature is higher than 4°C, the fan tap must be turned to L (only for heat pump model).

2.9 Liquid Compression Protection Function 2

Outline

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

Detail

Heat Pump Model

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

Cooling Only Model

Operation stops depending on the outdoor air temperature.

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

2.10 Defrost Control

Outline

Heat Pump Only

Defrosting is carried out by the cooling cycle (reverse cycle). The defrosting time or outdoor heat exchanger temperature must be more than its fixed value when finishing.

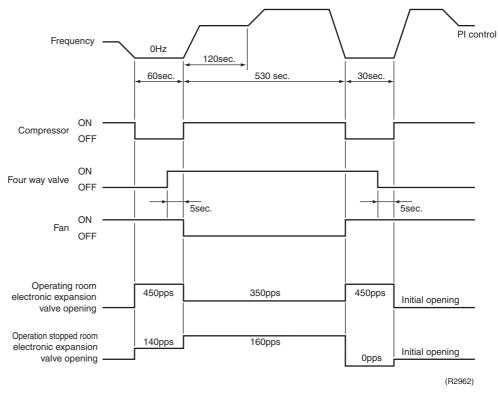
Detail

Conditions for Starting Defrost

The starting conditions must be made with the outdoor air temperature and heat exchanger temperature. Under the conditions that the system is in heating operation, 6 minutes after the compressor is started and more than 30 minutes of accumulated fine pass since the start of the operation or ending the defrosting.

Conditions for Canceling Defrost

The judgment must be made with heat exchanger temperature. (4°C~12°C)



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

Room Distribution Control

- 1. Gas pipe isothermal control
- 2. SC control (Only for Heat Pump Model)

Open Control

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

Feedback Control

1. Discharge pipe temperature control

Distribution control for each room

- Liquid pipe temperature control (with all ports connected and all rooms being airconditioned)
- 2. Dew prevention function for indoor rotor

Detail

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

Operation pattern	Outstand	Gas pipe isothermal control	SC control (only for heat pump model)	Control when frequency changed	Control for abnormally high discharge pipe temperature	Oil recovery control	Indoor freeze prevention control	Liquid pipe temperature control	Dew buildup prevention control for indoor rotor
When power is turned ON	O : function × : not function	Gas pi	SC control (only for he	Contro	Contro pipe te	Oil rec	Indoor	Liquid	Dew buildup indoor rotor
	Fully closed when power is turned ON	×	×	×	×	×	×	×	×
Cooling, 1 room operation	Open control when starting	×	×	×	0	0	0	×	×
\	(Control of target discharge pipe temperature)	×	×	0	0	0	0	×	0
Cooling, 2 rooms operation	Control when the operating room is changed	×	×	×	0	0	0	×	0
	(Control of target discharge pipe temperature)	0	×	0	0	0	0	×	0
Stop	Pressure equalizing control	×	×	×	×	×	×	×	×
Heating, 1 room operation (only for heat pump model)	Open control when starting	×	0	×	0	×	×	×	×
\	(Control of target discharge pipe temperature)	×	×	0	0	×	×	×	×
Heating, 2 rooms operation (only for heat pump model)	Control when the operating room is changed	×	×	×	0	×	×	×	×
panip messiy	(Control of target discharge pipe temperature)	×	×	0	0	×	×	0	×
	(Defrost control FD=1) (only for heat pump model)	×	×	×	×	×	×	×	×
Stop	Pressure equalizing control	×	×	×	×	×	×	×	×
Heating, 1 room operation (only for heat pump model)	Open control when starting	×	0	×	0	×	×	×	×
Control of discharge pipe thermistor disconnection	∳ Continue	×	×	×	×	×	×	×	×
Stop	Pressure equalizing control	×	×	×	×	×	×	×	×

(R3036)

2.11.1 Fully Closing with Power On

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

2.11.2 Pressure Equalization Control

When the compressor is stopped, open and close the electronic expansion valve and develop pressure equalization.

2.11.3 Opening Limit

Outline

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

Detail

- A maximum electronic expansion valve opening in the operating room: 450 pulses
- A minimum electronic expansion valve opening in the operating room : 60 pulses The electronic expansion valve is fully closed in the room where cooling is stopped and is opened with fixed opening during defrosting.

2.11.4 Gas Pipe Isothermal Control During Cooling

When the units are operating in multiple rooms, detect the gas piping temperature and correct the electronic expansion valve opening so that the temperature of the gas pipe in each room becomes identical.

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

2.11.5 SC Control

Outline

Heat Pump Only

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

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

Detail

Start Functioning Conditions

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

Determine Electronic Expansion Valve Opening

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

2.11.6 Starting Operation / Changing Operating Room Control

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

2.11.7 Disconnection of the Discharge Pipe Thermistor

Outline

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

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

Detail

Detect Disconnection

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

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

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

Adjustment when the thermistor is disconnected

When compressor stop repeats specified time, the system should be down.

2.11.8 Control when frequency is changed

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

2.11.9 High Temperature of the Discharge Pipe

When the compressor is operating, if the discharge pipe temperature exceeds a certain value, open the electronic expansion valve and remove the refrigerant to the low pressure side and lower discharge temperature.

2.11.10 Oil Recovery Function

Outline

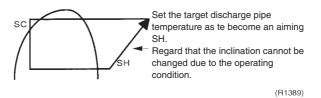
The electronic expansion valve opening in the cooling stopped room must be set as to open for a certain time at a specified interval so that the oil in the cooling stopped room may not be accumulated.

Detail

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

2.11.11 Target Discharge Pipe Temperature Control

Obtain the target discharge pipe temperature from the indoor and outdoor heat exchange temperature, and adjust the electronic expansion valve opening so that the actual discharge pipe temperature become close to that temperature. (Indirect SH control using the discharge pipe temperature)



Determine a correction value of the electronic expansion valve compensation and drive it according to the deflection of the target discharge temperature and actual discharge temperature, and the discharge temperature variation by the 20 sec.

2.12 Malfunctions

2.12.1 Sensor Malfunction Detection

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

Relating to Thermistor Malfunction

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

Relating to CT Malfunction

When the output frequency is more than 68 Hz and the input current is less than 1.25A, carry out abnormal adjustment.

2.12.2 Detection of Overload and Over Current

Outline

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

Detail

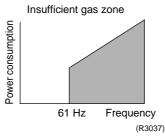
- If the OL (compressor head) temperature exceeds 120~130°C (depending on the model), the compressor gets interrupted.
- If the inverter current exceeds 22 A, the compressor gets interrupted too.

2.12.3 Insufficient Gas Control

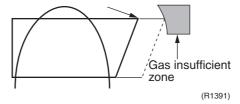
Outline

If a power consumption is below the specified value in which the frequency is higher than the specified frequency, it must be regarded as gas insufficient.

In addition to such conventional function, if the discharge temperature is higher than the target discharge pipe temperature, and the electronic expansion valve is fully open (450 pulses) more than the specified time, it is considered as an insufficient gas.



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



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

Detail

Judgment by Input Current

When an output frequency is exceeds 61 Hz and the input current is less than specified value, the adjustment is made for insufficient gas.

Judgment by Discharge Pipe Temperature

When discharge pipe temperature is 20°C higher than target value and the electronic expansion value opening is 450 plus (max.), the adjustment is made for insufficient gas.

2.12.4 Preventing Indoor Freezing

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

2.13 Forced Operation Mode

Outline

Forced operating mode includes only forced cooling.

Detail Forced Cooling

Item	Forced Cooling
Forced operation allowing conditions	1) The indoor unit is not abnormal, but the indoor unit which is not in the freezing prohibiting zone is present in more than 1 room.
	2) The outdoor unit is not abnormal and not in the 3-minute stand-by mode.
	The forced operation is allowed when the above "and" conditions are met.
Starting/adjustment	When the indoor unit on/off button is pressed for continuous 5 second as the above conditions are met.
1) Determine operating room	All rooms must operate.
2) Command frequency	70Hz
3) Electronic expansion valve opening	It depends on the capacity of the operating indoor unit.
4) Outdoor unit adjustment	Compressor is in operation.
5) Indoor unit adjustment	The command of forced cooling operation is transmitted to all indoor units.
End	1) When the indoor units on/off button (of the unit which sent the command) is pressed again.
	2) The operation is to end automatically after 15 min.
Others	The protect functions are prior to all others in the forced operation.

2.14 Additional Function

2.14.1 POWERFUL Operation Mode

Compressor operating frequency and outdoor unit airflow rate are increased.

2.14.2 Voltage Detection Function

Power supply voltage is detected each time equipment operation starts.

2.14.3 Maximum Power Input Limitation Setting



Always shut off the power supply breaker before starting.

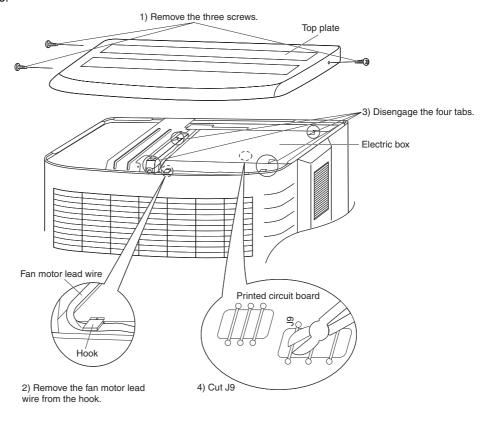
Outline

2MKS40DVMB only

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

Details

- · Set as follows.
- 1) Remove the three screws on the side and remove the top of the outdoor unit.
- 2) Remove the fan motor lead wire from the hook and loosen it.
- 3) Disengage the four tabs marked with a triangle and remove the electrical cabinet.
- 4) Cut the jumper (J9) of the Printed circuit board inside.
- 5) Go back through step 3) \rightarrow 2) \rightarrow 1). Make sure all components are well secured when doing this.



Part 5 System Configuration

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System Configuration SiENBE12-627

1. System Configuration

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

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

SiENBE12-627 Instruction

2. Instruction

2.1 Manual Contents and Reference Page

	Wall Mounted Type				
Model Series	FTK(X)S20/25/35D ATK(X)S20/25/35E	FTK(X)S20/25/35C ATK(X)S20/25/35D	FTXG25/35E ATXG25/35E		
Read before Operation					
Safety Precautions	88	88	88		
Names of Parts	90	93	96		
Preparation before Operation ★1	105	105	105		
Operation					
AUTO, DRY, COOL, HEAT, FAN Operation ★1	108	108	108		
Adjusting the Air Flow Direction	110 ★2	112 ★1	114		
POWERFUL Operation ★1	118	118	118		
OUTDOOR UNIT SILENT Operation ★1	119	119	119		
ECONO Operation	120	_	_		
HOME LEAVE Operation ★1	_	121	_		
INTELLIGENT EYE Operation	123 ★2	125 ★1	127		
TIMER Operation ★1	129	129	129		
Note for Multi System	131	131	131		
Care					
Care and Cleaning	132 ★2	135	138		
Trouble Shooting					
Trouble Shooting	146	146	146		
Drawing No.	3P142629-1C 3P166453-3	3P119293-2L 3P147101-1C	3P166453-1B 3P166453-2B		

Model Series	Duct Connected Type	Floor/Ceiling Suspended Dual Type
	FDK(X)S25/35C, FDK(X)S25/35E	FLK(X)S25/35B
Read before Operation		
Safety Precautions	88	88
Names of Parts	99	102
Preparation before Operation ★1	105	105
Operation		
AUTO, DRY, COOL, HEAT, FAN Operation ★1	108	108
Adjusting the Air Flow Direction	_	116
POWERFUL Operation ★1	118	118
OUTDOOR UNIT SILENT Operation ★1	119	119
ECONO Operation	_	_
HOME LEAVE Operation ★1	121	121
INTELLIGENT EYE Operation	_	-
TIMER Operation ★1	129	129
Note for Multi System	131	131
Care		
Care and Cleaning	141	143
Trouble Shooting		
Trouble Shooting	146	146
Drawing No.	3P131999-2L 3P131999-3K	3P098587-2N

 $[\]bigstar 1$: Illustrations are for wall mounted type FTXS20/25/35C as representative.

^{★2 :} Illustrations are for wall mounted type FTXS20/25/35D as representative.

Instruction **SiENBE12-627**

2.2 **Safety Precautions**

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



WARNING



If you do not follow these instructions exactly, the unit may cause property damage, personal injury or loss of life.

Never touch the air conditioner (including the

If you do not follow these instructions exactly, the unit may cause minor or moderate property damage or personal injury.

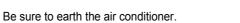


Never do.

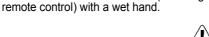


WARNING

Be sure to follow the instructions.



Never cause the air conditioner (including the remote control) to get wet.



In order to avoid fire, explosion or injury, do not operate the unit when harmful, among which flammable or corrosive gases, are detected near the unit.



- It is not good for health to expose your body to the air flow for a long time.
- Do not put a finger, a rod or other objects into the air outlet or inlet. As the fan is rotating at a high speed, it will cause injury.
- Do not attempt to repair, relocate, modify or reinstall the air conditioner by yourself. Incorrect work will cause electric shocks, fire etc.
 - For repairs and reinstallation, consult your Daikin dealer for advice and information.
- The refrigerant used in the air conditioner is safe. Although leaks should not occur, if for some reason any refrigerant happens to leak into the room, make sure it does not come in contact with any flame as of gas heaters, kerosene heaters or gas range.



- If the air conditioner is not cooling (heating) properly, the refrigerant may be leaking, so call your dealer. When carrying out repairs accompanying adding refrigerant, check the content of the repairs with our service staff.
- Do not attempt to install the air conditioner by your self. Incorrect work will result in water leakage, electric shocks or fire. For installation, consult the dealer or a qualified technician.
- In order to avoid electric shock, fire or injury, if you detect any abnormally such as smell of fire, stop the operation and turn off the breaker. And call your dealer for instructions.

CAUTION

The air conditioner must be earthed. Incomplete earthing may result in electric shocks. Do not connect the earth line to a gas pipe, water pipe, lightening rod, or a telephone earth line.



In order to avoid any quality deterioration, do not use the unit for cooling precision instruments, food, plants, animals or works of art.



- Never expose little children, plants or animals directly to the air flow.
- Do not place appliances which produce open fire in places exposed to the air flow from the unit or under the indoor unit. It may cause incomplete combustion or deformation of the unit due to the
- Do not block air inlets nor outlets. Impaired air flow may result in insufficient performance or trouble.
- Do not stand or sit on the outdoor unit. Do not place any object on the unit to avoid injury, do not remove the fan guard.
- Do not place anything under the indoor or outdoor unit that must be kept away from moisture. In certain conditions, moisture in the air may condense and drip.
- After a long use, check the unit stand and fittings for damage.
- Do not touch the air inlet and aluminum fins of outdoor unit. It may cause injury.
- The appliance is not intended for use by young children or infirm persons without supervision.
- Young children shuld be supervised to ensure that they do not play with the appliance.

SiENBE12-627 Instruction

• To avoid oxygen deficiency, ventilate the room sufficiently if equipment with burner is used together with the air conditioner.



- Before cleaning, be sure to stop the operation, turn the breaker off or pull out the supply cord.
- Do not connect the air conditioner to a power supply different from the one as specified. It may cause trouble or fire.
- Depending on the environment, an earth leakage breaker must be installed. Lack of an earth leakage breaker may result in electric shocks.
- Arrange the drain hose to ensure smooth drainage. Incomplete draining may cause wetting of the building, furniture etc.
- - Leaves are a hotbed for small animals which can enter the unit. Once in the unit, such animals can cause malfunc-tions, smoke or fire when making contact with electrical parts.
- Do not operate the air conditioner with wet hands.



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



Installation site

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

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

Consider nuisance to your neighbours from noises

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

Electrical work

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

System relocation

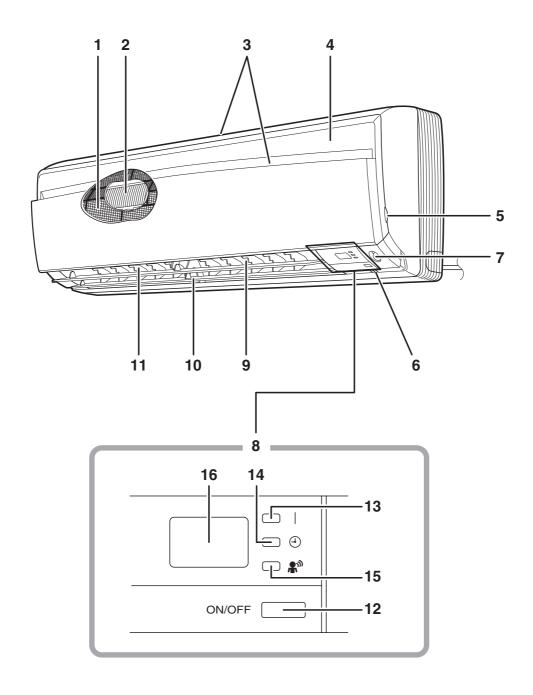
 Relocating the air conditioner requires specialized knowledge and skills. Please consult the dealer if relocation is necessary for moving or remodeling.

Instruction SiENBE12-627

2.3 Names of Parts

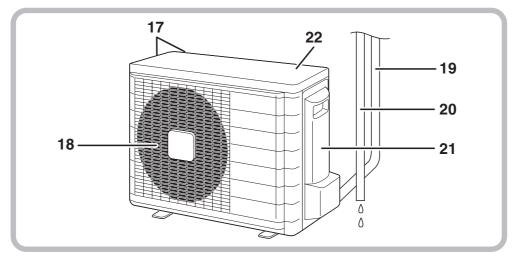
FTK(X)S 20/25/35 D, ATK(X)S 20/25/35 E

■ Indoor Unit



SiENBE12-627 Instruction

Outdoor Unit



■ Indoor Unit

- 1. Air filter
- 2. Titanium Apatite Photocatalytic Air-Purifying Filter
 - These filters are attached to the inside of the air filters.
- 3. Air inlet
- 4. Front panel
- 5. Panel tab
- 6. Room temperature sensor:
 - It senses the air temperature around the unit

7. INTELLIGENT EYE sensor:

- It detects the movements of people and automatically switches between normal operation and energy saving operation.
- 8. Display
- 9. Air outlet
- 10. Flaps (horizontal blades)
- 11. louvers (vertical blades):
 - · The louvers are inside of the air outlet.

12. Indoor Unit ON/OFF switch:

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

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

- This switch is useful when the remote control is missing.
- 13. Operation lamp (green)
- 14. TIMER lamp (Yellow)
- 15. HOME LEAVE lamp (red)
- 16. Signal receiver:
 - It receives signals from the remote control.
 - When the unit receives a signal, you will hear a short beep.
 - Operation startbeep-beep
 - Settings changed.....beep
 - Operation stopbeeeeep

■ Outdoor Unit

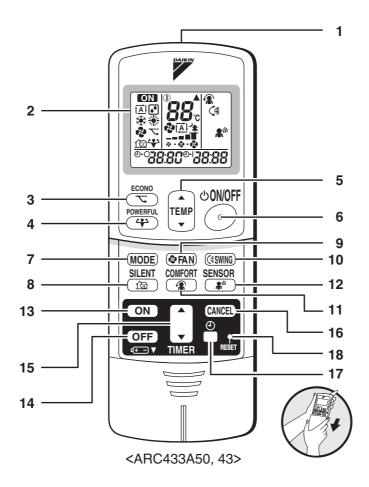
- 17. Air inlet: (Back and side)
- 18. Air outlet
- 19. Refrigerant piping and inter-unit cable
- 20. Drain hose

- 21. Earth terminal:
 - · It is inside of this cover.
- 22. Outside air temperature sensor:
 - It senses the ambient temperature around the unit

Appearance of the outdoor unit may differ from some models.

Instruction SiENBE12-627

Remote control



1. Signal transmitter:

· It sends signals to the indoor unit.

2. Display:

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

3. ECONO button:

ECONO operation

4. POWERFUL button:

POWERFUL operation

5. TEMPERATURE adjustment buttons:

· It changes the temperature setting.

6. ON/OFF button:

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

7. MODE selector button:

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

8. SILENT button: OUTDOOR UNIT

SILENToperation

9. FAN setting button:

• It selects the air flow rate setting.

10. SWING button:

· Adjusting the Air Flow Direction.

11. COMFORT AIRFLOW button: COMFORT AIRFLOW operation

12. SENSOR button: INTELLIGENT EYE operation

13. ON TIMER button

14. OFF TIMER button

15. TIMER Setting button:

· It changes the time setting.

16. TIMER CANCEL button:

It cancels the timer setting.

17. CLOCK button

18. RESET button:

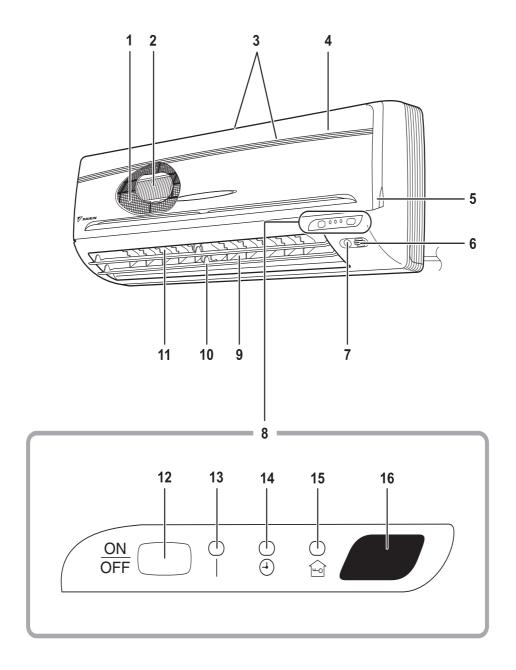
Restart the unit if it freezes.

Use a thin object to push.

SiENBE12-627 Instruction

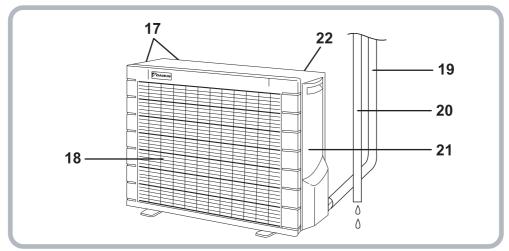
FTK(X)S 20/25/35 C, ATK(X)S 20/25/35 D

■ Indoor Unit



Instruction SiENBE12-627

Outdoor Unit



■ Indoor Unit

- 1. Air filter
- 2. Air purifying filter with photocatalytic deodorizing function:
 - These filters are attached to the inside of the air filters.
- 3. Air inlet
- 4. Front panel
- 5. Panel tab
- 6. Room temperature sensor:
 - It senses the air temperature around the unit.

7. INTELLIGENT EYE sensor:

- It detects the movements of people and auto-matically switches between normal operation and energy saving operation.
- 8. Display
- 9. Air outlet
- 10. Flaps (horizontal blades)
- 11. Louvers (vertical blades):
 - The louvers are inside of the air outlet.

12. Indoor Unit ON/OFF switch:

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

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

- 13. Operation lamp (green)
- 14. TIMER lamp (yellow)
- 15. HOME LEAVE lamp (red)
- 16. Signal receiver:
 - · It receives signals from the remote control.
 - When the unit receives a signal, you will hear a short beep.
 - Operation startbeep-beep
 - Settings changed.....beep
 - Operation stop.....beeeeep

Outdoor Unit

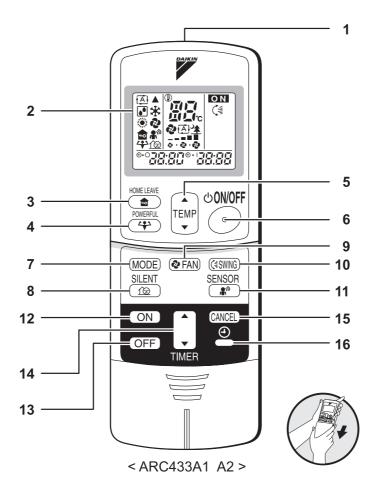
- 17. Air inlet: (Back and side)
- 18. Air outlet
- 19. Refrigerant piping and inter-unit cable
- 20. Drain hose

- 21. Earth terminal:
 - · It is inside of this cover.
- 22. Outside air temperature sensor: (Back side)
 - It senses the ambient temperature around the unit.

Appearance of the outdoor unit may differ from some models.

SiENBE12-627 Instruction

Remote control



- 1. Signal transmitter:
 - It sends signals to the indoor unit.
- 2. Display:
 - It displays the current settings. (In this illustration, each section is shown with all its displays ON for the purpose of explanation.)
- 3. HOME LEAVE button:

HOME LEAVE operation

4. POWERFUL button:

POWERFUL operation

- 5. TEMPERATURE adjustment buttons:
 - It changes the temperature setting.
- 6. ON/OFF button:
 - Press this button once to start operation.
 Press once again to stop it.
- 7. MODE selector button:

- It selects the operation mode. (AUTO/DRY/COOL/HEAT/FAN)
- **8. SILENT button:** OUTDOOR UNIT SILENT operation
- 9. FAN setting button:
 - It selects the air flow rate setting.
- 10. SWING button
- 11. SENSOR button:

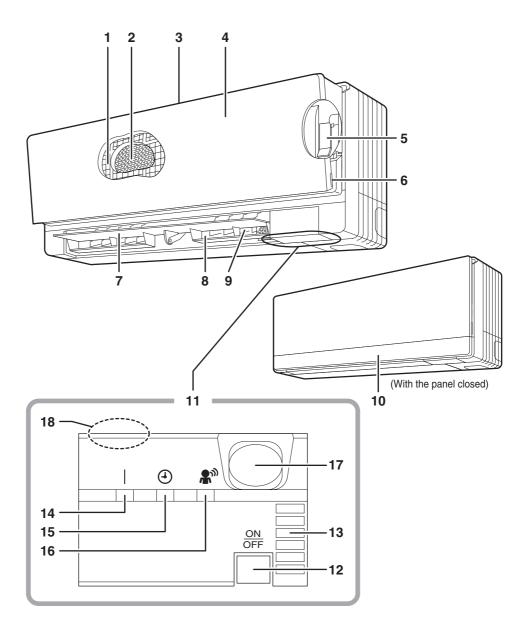
INTELLIGENT EYE operation

- 12. ON TIMER button
- 13.OFF TIMER button
- 14. TIMER Setting button:
 - · It changes the time setting.
- 15. TIMER CANCEL button:
 - · It cancels the timer setting.
- 16. CLOCK button

Instruction SiENBE12-627

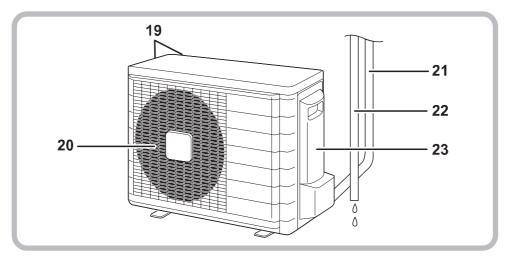
FTXG 25/35 E, ATXG 25/35 E

■ Indoor Unit



SiENBE12-627 Instruction

Outdoor Unit



■ Indoor Unit

- 1. Air filter
- 2. Titanium Apatite Photocatalytic Air-Purifying Filter:
 - These filters are attached to the inside othe air filters.
- 3. Air inlet
- 4. Front panel
- 5. Supporting plate:
 - The supporting plate is used to support front panel during maintenance.
- 6. Panel tab
- 7. Flap (horizontal blade)
- 8. Air outlet
- 9. Louvers (vertical blades):
 - The louvers are inside of the air outlet.
- 10. Outlet vent panel
- 11. Display
- 12. Indoor Unit ON/OFF switch:
 - Push this switch once to start operation.
 Push once again to stop it.

The operation mode refers to the following table.

	Mode	Temperature setting	Air flow rate
F(C)TXG	AUTO	25°C	AUTO

 This switch is useful when the remote control is missing.

13. Room temperature sensor:

- It senses the air temperature around the unit.
- 14. Operation lamp (green)
- 15. TIMER lamp (yellow)
- 16. INTELLIGENT EYE lamp (green)
- 17. INTELLIGENT EYE sensor:
 - It detects the movements of people and auto-matically switches between normal operation and energy saving operation.

18. Signal receiver:

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

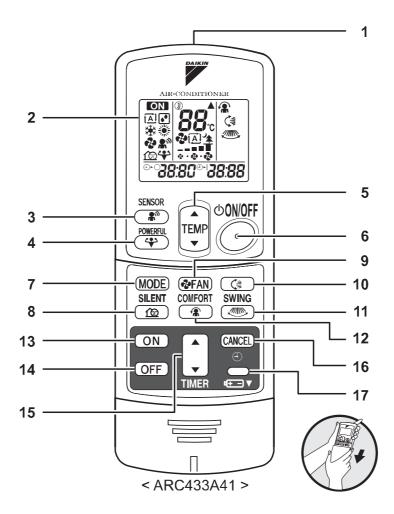
■ Outdoor Unit

- 19. Air inlet: (Back and side)
- 20. Air outlet
- 21. Refrigerant piping and inter-unit cable
- 22. Drain hose
- 23. Earth terminal:
 - · It is inside of this cover.

Appearance of the outdoor unit may differ from some models.

Instruction **SIENBE12-627**

Remote control



1. Signal transmitter:

· It sends signals to the indoor unit.

2. Display:

- It displays the current settings. (In this illustration, each section is shown with all its 10. SWING button: displays ON for the purpose of explanation.)
- 3. SENSOR button: INTELLIGENT EYE operation
- 4. POWERFUL button:

POWERFUL operation

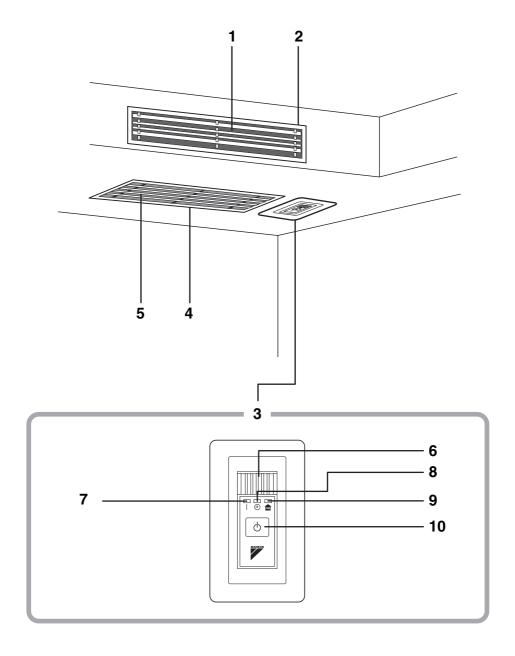
- 5. TEMPERATURE adjustment buttons:
 - It changes the temperature setting.
- 6. ON/OFF button:
 - Press this button once to start operation. Press once again to stop it.
- 7. MODE selector button:
 - It selects the operation mode. (AUTO/DRY/COOL/HEAT/FAN)

- 8. SILENT button: OUTDOOR UNIT SILENT operation
- 9. FAN setting button:
 - It selects the air flow rate setting.
- - Flap (Horizontal blade)
- 11. SWING button:
 - · Louvers (Vertical blades)
- 12. COMFORT AIRFLOW mode button:
- 13. ON TIMER button
- 14. OFF TIMER button
- 15. TIMER Setting button:
 - · It changes the time setting.
- 16. TIMER CANCEL button:
 - · It cancels the timer setting.
- 17. CLOCK button

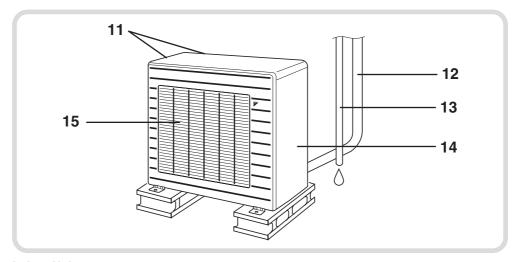
SiENBE12-627 Instruction

FDK(X)S 25/35 C, FDK(X)S 25/35 E

■ Indoor Unit



Outdoor Unit



■ Indoor Unit

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

10. Indoor Unit ON/OFF switch

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

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

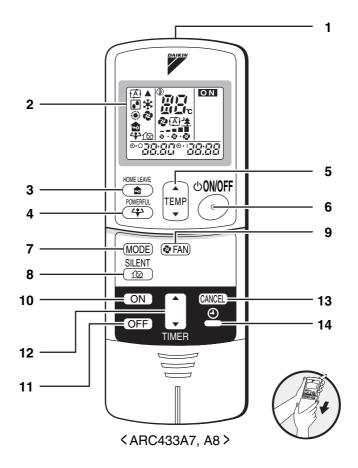
■ Outdoor Unit

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

- 14. Earth terminal:
 - · It is inside of this cover.
- 15. Air outlet

Appearance of the outdoor unit may differ from some models.

Remote Control



1. Signal transmitter:

• It sends signals to the indoor unit.

2. Display:

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

3. HOME LEAVE button:

for HOME LEAVE operation

4. POWERFUL button:

for POWERFUL operation

5. TEMPERATURE adjustment buttons:

• It changes the temperature setting.

6. ON/OFF button:

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

7. MODE selector button:

- It selects the operation mode. (AUTO/DRY/COOL/HEAT/FAN)
- **8. SILENT button:** for OUTDOOR UNITSILENT operation
- 9. FAN setting button:
 - It selects the air flow rate setting.
- 10. ON TIMER button
- 11. OFF TIMER button
- 12. TIMER Setting button:
 - · It changes the time setting.

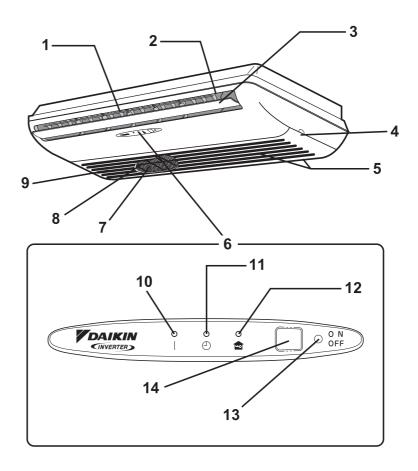
13. TIMER CANCEL button:

- · It cancels the timer setting.
- 14. CLOCK button.

FLK(X)S 25/35 B

■ Indoor Unit

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



Opening the front panel

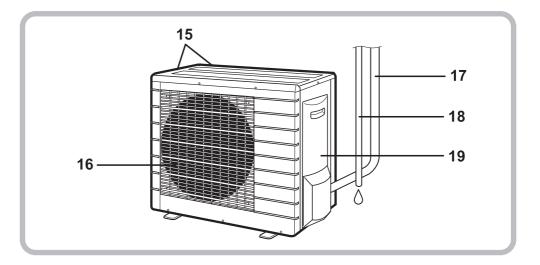
How to open the front panel



CAUTION

• Before opening the front panel, be sure to stop the operation and turn the breaker OFF.

■ Indoor Unit



■ Indoor Unit

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

Lights up when you use HOME LEAVE Operation.

13. Indoor unit ON/OFF switch:

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

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

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

14. Signal receiver:

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

■ Outdoor Unit

15. Air inlet: (Back and side)

16. Air outlet

17. Refrigerant piping and inter-unit cable

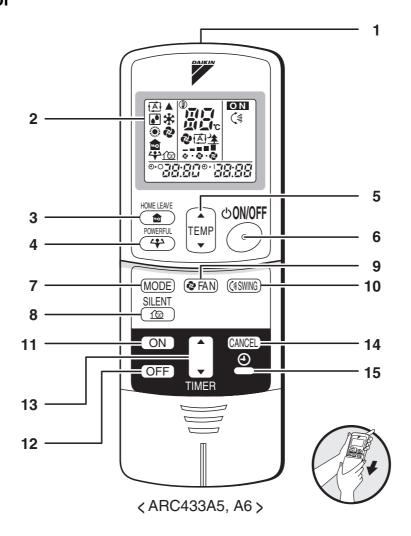
18. Drain hose:

19. Earth terminal:

It is inside of this cover.

Appearance of the outdoor unit may differ from some models.

Remote Control



1. Signal transmitter:

· It sends signals to the indoor unit.

2. Display:

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

3. HOME LEAVE button:

HOME LEAVE operation

4. POWERFUL button:

POWERFUL operation

5. TEMPERATURE adjustment buttons:

• It changes the temperature setting.

6. ON/OFF button:

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

7. MODE selector button:

- It selects the operation mode. (AUTO/DRY/COOL/HEAT/FAN)
- 8. OUTDOOR UNIT SILENT button
- 9. FAN setting button:
 - It selects the air flow rate setting.
- 10. SWING button
- 11. ON TIMER button
- 12. OFF TIMER button
- 13. TIMER Setting button:
 - · It changes the time setting.

14. TIMER CANCEL button:

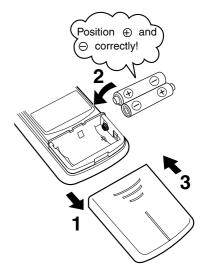
· It cancels the timer setting.

15. CLOCK button

2.4 Preparation Before Operation

■ To set the batteries

- 1. Press with a finger and slide the front cover to take it off.
- 2. Set two dry batteries (AAA).
- 3. Set the front cover as before.



ATTENTION

■ About batteries

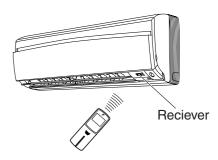
- When replacing the batteries, use batteries of the same type, and replace the two old batteries together.
- When the system is not used for a long time, take the batteries out.
- We recommend replacing once a year, although if the remote control display begins to fade or if reception deteriorates,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

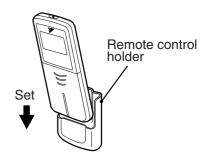
■ To operate the remote control

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

To fix the remote control holder on the wall

- 1. Choose a place from where the signals reach the unit.
- 2. Fix the holder to a wall, a pillar, or similar location with the screws procured locally.
- 3. Place the remote control in the remote control holder.





• To remove, pull it upwards.

ATTENTION

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

■ To set the clock

1. Press "CLOCK button".

0:00 is displayed.

blinks.

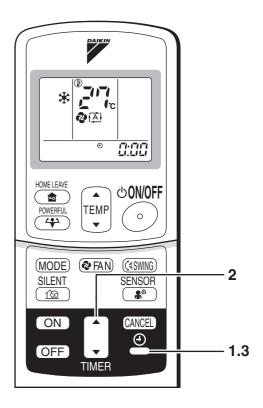
2. Press "TIMER setting button" to set the clock to the present time.

Holding down " ▲ " or " ▼ " button rapidly increases or decreases the time display.

3. Press "CLOCK button". :blinks.

■ Turn the breaker ON

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



NOTE

■ Tips for saving energy

• Be careful not to cool (heat) the room too much. Keeping the temperature setting at a moderate level helps save energy.

Recommended temperature setting

For cooling:26°C – 28°C

For heating:20°C – 24°C

 Cover windows with a blind or a curtain. Blocking sunlight and air from outdoors increases the cooling (heating) effect.

• Clogged air filters cause inefficient operation and waste energy. Clean them once in about every two weeks.

■ Please note

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

Mode	Operating conditions	If operation is continued out of this range
COOL	Outdoor temperature: [2MK(X)S40] 10 to 46°C [2MXS52] –10 to 46°C [3/4/5MK(X)S] –10 to 46°C [RK(X)S –10] to 46°C [RK(X)S –10] to 46°C Indoor temperature: 18 to 32°C Indoor humidity: 80% max.	 A safety device may work to stop the operation.(In multi system, it may work to stop the operation of the outdoor unit only.) Condensation may occur on the indoor unit and drip.
HEAT	Outdoor temperature: [2MXS40] –10 to 15.5°C [2MXS52] –15 to 15.5°C [3/4/5MXS] –15 to 15.5°C [3/4/5MXS] –15 to 15.5°C [RXS20/25/35] –15 to 20°C [RXS50] –15 to 18°C Indoor temperature: 10 to 30°C	A safety device may work to stop the operation.
DRY	Outdoor temperature: [2MK(X)S40] 10 to 46°C [2MXS52] –10 to 46°C [3/4/5MK(X)S] –10 to 46°C [RK(X)S] –10 to 46°C [RK(X)S] –10 to 46°C Indoor temperature: 18 to 32°C Indoor humidity: 80% max.	A safety device may work to stop the operation. Condensation may occur on the indoor unit and drip.

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

2.5 Auto Dry Cool Heat Fan Operation

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

To start operation

- 1. Press "MODE selector button" and select a operation mode.
- Each pressing of the button advances the mode setting in sequence.

⚠ : AUTO : DRY

* : COOL

: HEAT

😍 : FAN



- 2. Press "ON/OFF button".
 - The OPERATION lamp lights up.



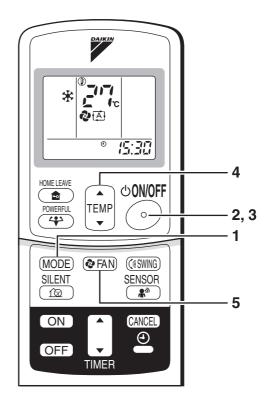
■ To stop operation

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

To change the temperature setting

4. Press "TEMPERATURE adjustment button".

DRY or FAN mode	AUTO or COOL or HEAT mode	
The temperature setting is not variable.	Press " \blacktriangle " to raise the temperature and press to lower the temperature.	
	Set to the temperature you like	



■ To change the air flow rate setting

5. Press "FAN setting button".

DRY mode	AUTO or COOL or HEAT or FAN mode
The air flow rate setting is not variable	Five levels of air flow rate setting from " a " to " a "
	plus " 🖪 " " 🏝 " are available.

· Indoor unit quiet operation

When the air flow is set to " $\stackrel{*}{\triangleq}$ ", the noise from the indoor unit will become quieter. Use this when making the noise quieter.

The unit might lose capacity when the air flow rate is set to a weak level.

NOTE

■ Note on heat operation

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

■ Note on COOL operation

- This air conditioner cools the room by blowing the hot air in the room outside, so if the outside temperature is high, performance drops.
- · Note on DRY operation
- The computer chip works to rid the room of humidity while maintaining the temperature as much as possible. It automatically controls temperature and fan strength, so manual adjustment of these functions is unavailable.

■ Note on AUTO operation

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

■ Note on air flow rate setting

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

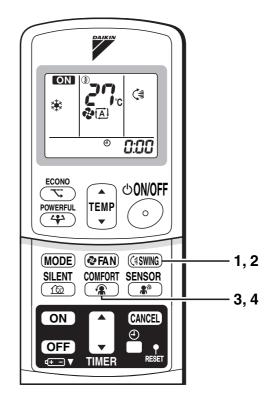
2.6 Adjusting the Air Flow Direction FTK(X)S 20/25/35 D, ATK(X)S 20/25/35 E

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

■ To adjust the horizontal blades (flaps)

- 1. Press "SWING button".
 - The display on the LCD and the flaps will begin to swing.
- 2. When the flaps have reached the desired position, press "SWING button" once more.

The display will go blank. The flaps will stop moving.

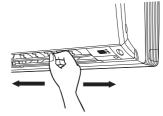


■ To adjust the vertical blades (louvres)

Hold the knob and move the louvers.

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

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



To start COMLFORT AIRFLOW operation

- 3. Press "COMFORT AIRFLOW button".
 - The flap position will change, preventing air from blowing directly on the occupants of the room.
 - " is displayed on the LCD.
 - · [COOL/DRY] The flap will go up.
 - [HEAT] The flap will go down.

To cancel COMFORT AIRFLOW operation

- 4. Press "COMFORT AIRFLOW button" again.
- The flaps will return to the memory position from before COMFORT AIRFLOW mode.
- " a disappears from the LCD.

Notes on COMFORT AIRFLOW operation

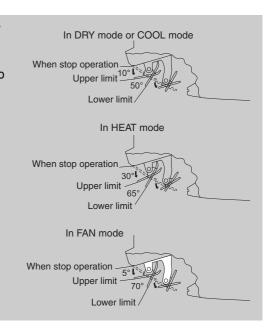
• POWERFUL operation and COMFORT AIRFLOW operation cannot be used at the same time. Priority is given to POWERFUL operation.

Notes on flaps and louvres angles

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

■ ATTENTION

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

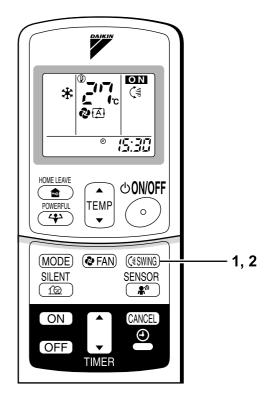


FTK(X)S 20/25/35 C, ATK(X)S 20/25/35 D

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

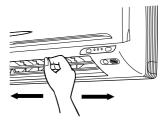
To adjust the horizontal blades (flaps)

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



■ To adjust the vertical blades (louvers)

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

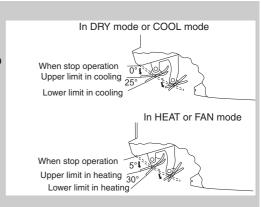


Notes on flaps and louvers angles.

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

■ ATTENTION

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

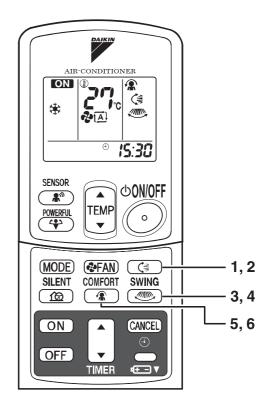


FTXG 25/35 E, ATXG 25/35 E

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

To adjust the horizontal blade (flap)

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



To adjust the vertical blades (louvers)

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

■ To 3-D Airflow

1. 3. Press the "SWING button $\$ ": the " $\$ " and " $\$ " display will light up and the flap and louvers will move in turn.

■ To cancel 3-D Airflow

2. 4. Press either the "SWING button $\ensuremath{\bigcirc}$ " or the "SWING button $\ensuremath{\bigcirc}$ ".

To start COMLFORT AIRFLOW operation

- 5. Press "COMFORT AIRFLOW button".
 - The flap position will change, preventing air from blowing directly on the occupants of the room.
 - " is displayed on the LCD.
 - · [COOL/DRY] The flap will go up.
 - [HEAT] The flap will go down.

■ To cancel COMFORT AIRFLOW operation

- 6. Press "COMFORT AIRFLOW button" again.
 - The flaps will return to the memory position from before COMFORT AIRFLOW mode.
 - " a disappears from the LCD.

Note

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

Three-Dimensional (3-D) Airflow

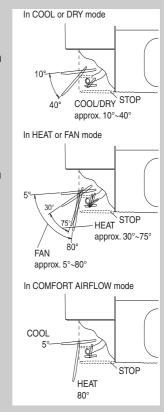
Using three-dimensional airflow circulates cold air, which tends to collected at the bottom
of the room, and hot air which tends to collect near the ceiling, throughout the room,
preventing areas of cold and hot developing.

Comfort Airflow

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

■ ATTENTION

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

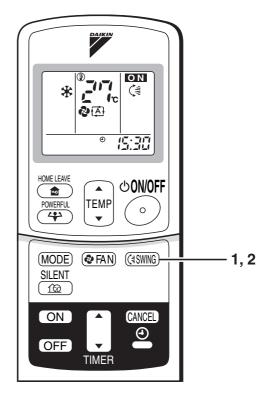


FLK(X)S 25/35 B

Adjusting the Air Flow Direction

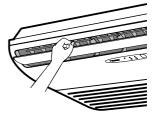
You can adjust the air flow direction to increase your comfort.

- To adjust the horizontal blade (flap)
 - 7. Press "SWING button".
 - " is displayed on the LCD and the flaps will begin to swing.
 - 8. When the flaps have reached the desired position, press "SWING button" once more.
 - · The flap will stop moving.
 - " disappears from the LCD.



■ To adjust the vertical blades (louvers)

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

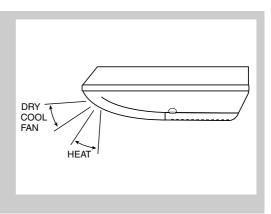


Notes on flap and louvers angles.

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

■ ATTENTION

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



2.7 POWERFUL Operation

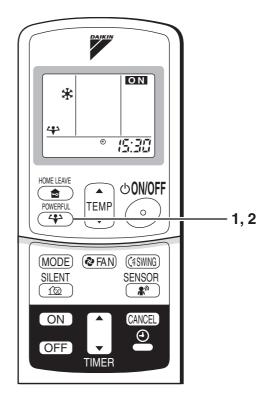
POWERFUL operation quickly maximizes the cooling (heating) effect in any operation mode. You can get the maximum capacity.

■ To start POWERFUL operation

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

■ To cancel POWERFUL operation

2. Press "POWERFUL button" again.



NOTE

■ Notes on POWERFUL operation

• In COOL and HEAT mode

To maximize the cooling (heating) effect, the capacity of outdoor unit must be increased and the air flow rate be fixed to the maximum setting. The temperature and air flow settings are not variable.

In DRY mode

The temperature setting is lowered by 2.5°C and the air flow rate is slightly increased.

In FAN mode

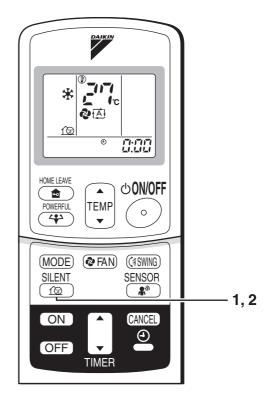
The air flow rate is fixed to the maximum setting.

 When using priority-room setting See "Note for multi system".

2.8 OUTDOOR UNIT SILENT Operation

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

- To start OUTDOOR UNIT SILENT operation
 - 1. Press "SILENT button".
- To cancel OUTDOOR UNIT SILENT operation
 - 2. Press "SILENT button" again.



NOTE

■ Note on OUTDOOR UNIT SILENT operation

- If using a multi system, this function will work only when the OUTDOOR UNIT SILENT operation is set on all operated indoor units.
 - However, if using priority-room setting, see "Note for multi system".
- $\bullet\ \ \,$ This function is available in COOL, HEAT, and AUTO modes.
 - (This is not available in FAN and DRY mode.)
- POWERFUL operation and OUTDOOR UNIT SILENT operation cannot be used at the same time.
- Priority is given to POWERFUL operation.
- This function does not work when connected to the RX(K)H20, 25, or 35CVMB.

2.9 ECONO Operation

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

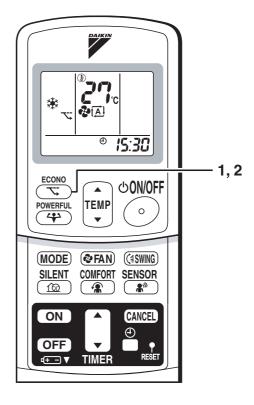
■ To start ECONO operation

1. Press "ECONO button".

• " ு " is displayed on the LCD.

■ To cancel ECONO operation

2. Press "ECONO button" again.



NOTE

- ECONO Operation can only be set when the unit is running.

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

2.10 HOME LEAVE Operation

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

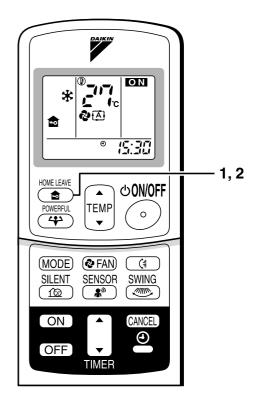
■ To start HOME LEAVE operation

- 1. Press "HOME LEAVE button".
 - The HOME LEAVE lamp lights up.



To cancel HOME LEAVE operation

- 2. Press "HOME LEAVE button" again.
 - · The HOME LEAVE lamp goes off.



Before using HOME LEAVE operation.

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

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

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

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

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

■ What's the HOME LEAVE operation

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

Useful in these cases.

1. Use as an energy-saving mode

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

· Every day before you leave the house...



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



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



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

Before bed...



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



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



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

2. Use as a favorite mode

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

NOTE

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

2.11 INTELLIGENT EYE Operation FTK(X)S 20/25/35 D, ATK(X)S 20/25/35 E

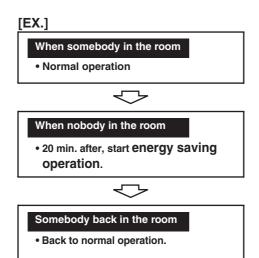
"INTELLIGENT EYE" is the infrared sensor which detects the human movement.

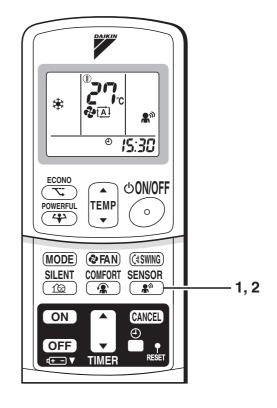
■ To start INTELLIGENT EYE operation

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

■ To cancel the INTELLIGENT EYE operation

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



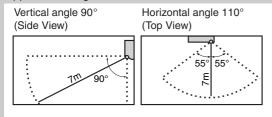


"INTELLIGENT EYE" is useful for Energy Saving

- Energy saving operation
 - Change the temperature –2°C in heating / +2°C in cooling / +2°C in dry mode from set temperature.
 - Decrease the air flow rate slightly in fan operation. (In FAN mode only)

Notes on "INTELLIGENT EYE"

· Application range is as follows.



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



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

FTK(X)S 20/25/35 C, ATK(X)S 20/25/35 D

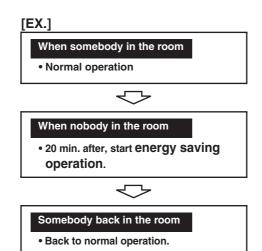
"INTELLIGENT EYE" is the infrared sensor which detects the human movement.

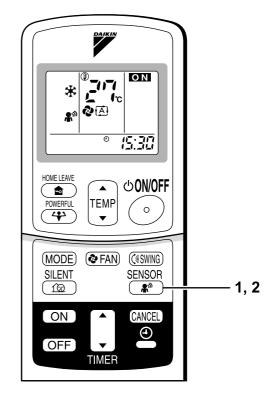
To start INTELLIGENT EYE operation

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

To cancel the INTELLIGENT EYE operation

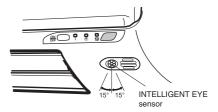
- 2. Press "SENSOR button" again.
 - " and a disappears from the LCD.





To adjust the angle of the INTELLIGENT EYE sensor

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



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





Moving the sensor to the left

ne left Moving the sensor to the right

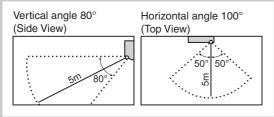
"INTELLIGENT EYE" is useful for Energy Saving.

Energy saving operation

- Change the temperature –2°C in heating / +2°C in cooling / +1°C in dry mode from set temperature.
- · Decrease the air flow rate slightly in fan operation. (In FAN mode only)

Notes on "INTELLIGENT EYE"

· Application range is as follows.



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

CAUTION

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

FTXG 25/35 E, ATXG 25/35 E

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

■ To start INTELLIGENT EYE operation

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

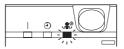
■ To cancel the INTELLIGENT EYE operation

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

[EX.]

When somebody in the room

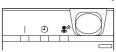
- · Normal operation.
- The INTELLIGENT EYE lamp lights up.





When somebody in the room

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

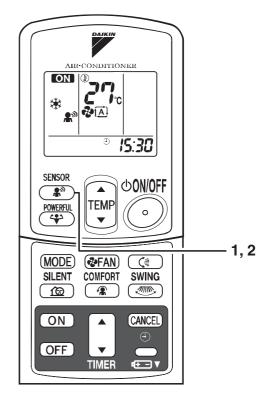




Somebody back in the room

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



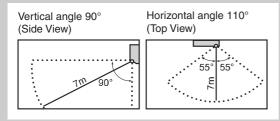


"INTELLIGENT EYE" is useful for Energy Saving

- Energy saving operation
 - Change the temperature –2°C in heating / +2°C in cooling / +2°C in dry mode from set temperature.
 - Decrease the air flow rate slightly in fan operation. (In FAN mode only)

Notes on "INTELLIGENT EYE"

· Application range is as follows.



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



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

2.12 TIMER Operation

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

■ To use OFF TIMER operation

- Check that the clock is correct.If not, set the clock to the present time.
- 1. Press "OFF TIMER button". 0:00 is displayed.

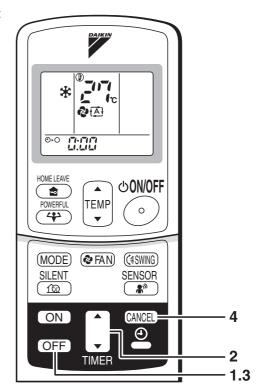
⊕ blinks.

- 2. Press "TIMER Setting button" until the time setting reaches the point you like.
 - Every pressing of either button increases or decreases the time setting by 10 minutes.
 Holding down either button changes the setting rapidly.
- 3. Press "OFF TIMER button" again.
 - · The TIMER lamp lights up.



To cancel the OFF TIMER operation

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



NOTE

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

■ NIGHT SET MODE

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

■ To use ON TIMER operation

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



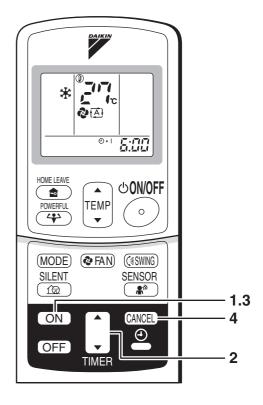
■ To cancel the ON TIMER operation

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

■ To combine ON TIMER and OFF TIMER

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





ATTENTION

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

2.13 Note for Multi

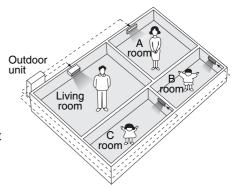
<< What is a "Multi System"? >>

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

Selecting the Operation Mode

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

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



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

(*1)

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

<CAUTION>

Normally, the operation mode in the room where the unit is first run is given priority, but the following situations are exceptions, so please keep this in mind. If the operation mode of the first room is **FAN Mode**, then using **Heating Mode** in any room after this will give priority to **heating**. In this situation, the air conditioner running in **FAN Mode** will go on standby, and the operation lamp will flash.

OUTDOOR UNIT SILENT Operation

When using the OUTDOOR UNIT SILENT operation feature with the Multi system, set all indoor units to OUTDOOR UNIT SILENT operation using their remote controls. When clearing OUTDOOR UNIT SILENT operation, clear one of the operating indoor units using their remote control. However OUTDOOR UNIT SILENT operation display remains on the remote control for other rooms. We recommend you release all rooms using their remote controls.

■ Maximum Power Input Limitation

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

Note

· Cooling capacity will drop if the Maximum Power Input Limitation is used.

2.14 Care and cleaning

FTK(X)S 20/25/35 D, ATK(X)S 20/25/35 E

A CAUTION

Before cleaning, be sure to stop the operation and turn the breaker OFF.

UNITS

Indoor unit, Outdoor unit and Remote control

1. Wipe them with dry soft cloth.

Front panel

1. Open the front panel.

· Hold the panel by the tabs on the two sides and lift it until it stops with a click.

2. Remove the front panel.

Lift the front panel up, slide it slightly to the right, and remove it from the horizontal axle.

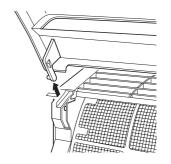
3. Clean the front panel.

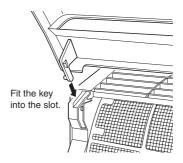
- Wipe it with a soft cloth soaked in water.
- Only neutral detergent may be used.
- In case of washing the panel with water, dry it with cloth, dry it up in the shade after washing.

4. Attach the front panel.

- Set the 2 keys of the front panel into the slots and push them in all the way.
- · Close the front panel slowly and push the panel at the 3 points. (1 on each side and 1 in the middle.)









${ m !} ackslash$ CAUTION

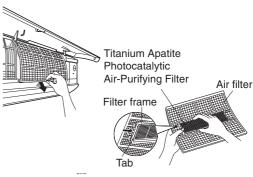
- Don't touch the metal parts of the indoor unit. If you touch those parts, this may cause an injury.
- When removing or attaching the front panel, use a robust and stable stool and watch your steps carefully.
- When removing or attaching the front panel, support the panel securely with hand to prevent it from falling.
- For cleaning, do not use hot water above 40 °C, benzine, gasoline, thinner, nor other volatile oils, polishing compound, scrubbing brushes, nor other hand stuff.
- After cleaning, make sure that the front panel is securely fixed.

FILTERS

- 1. Open the front panel.
- 2. Pull out the air filters.
 - Push a little upwards the tab at the center of each air filter, then pull it down.



- 3. Take off the Titanium Apatite Photocatalytic **Air-Purifying Filter**
 - · Hold the recessed parts of the frame and unhook four claws.
- 4. Clean or replace each filter.
 - · See figure.



- 5. Set the air filter and Titanium Apatite Photocatalytic Air-Purifying Filter as they were and close the front panel.
 - Insert claws of the filters into slots of the front panel. Close the front panel slowly and push the panel at the 3 points. (1 on each side and 1 in the middle.)



Air Filter

- 1. Wash the air filters with water or clean them with vacuum cleaner.
 - If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water, then dry them up in the shade.
 - It is recommended to clean the air filters every two weeks.



Titanium Apatite Photocatalytic Air-Purifying Filter.

The Titanium Apatite Photocatalytic Air-Purifying Filter can be renewed by washing it with water once every 6 months. We recommend replacing it once every 3 years.



[Maintenance]

- 1. Remove dust with a vacuum cleaner and wash lightly with water.
- 2. If it is very dirty, soak it for 10 to 15 minutes in water mixed with a neutral cleaning agent.
- 3. Do not remove filter from frame when washing with water.
- 4. After washing, shake off remaining water and dry in the shade.
- 5. Since the material is made out of paper, do not wring out the filter when removing water from it.

[Replacement]

- 1. Remove the tabs on the filter frame and replace with a new filter.
 - Dispose of the old filter as flammable waste.

NOTE

· Operation with dirty filters:

(1) cannot deodorize the air.(2) cannot clean the air.(3) results in poor heating or cooling.(4) may cause odour.

 To order Titanium Apatite Photocatalytic Air-Purifying Filter contact to the service shop there you bought the air conditioner.

· Dispose of old filters as burnable waste.

Item	Part No.
Titanium Apatite Photocatalytic Air-Purifying Filter. (without frame) 1 set	KAF970A46

Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.

Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.

Check that the drain comes smoothly out of the drain hose during COOL or DRY operation.

• If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.

■ Before a long idle period

- 1. Operate the "FAN only" for several hours on a fine day to dry out the inside.
 - Press "MODE selector button" and select "FAN" operation.
 - Press "ON/OFF button" and start operation.
- 2. Clean the air filters and set them again.
- 3. Take out batteries from the remote control.
- 4. Turn OFF the breaker for the room air conditioner.
 - When a multi outdoor unit is connected, make sure the heating operation is not used at the other room before you use the fan operation.



A CAUTION

Before cleaning, be sure to stop the operation and turn the breaker OFF.

UNITS

Indoor unit, Outdoor unit and Remote control

1. Wipe them with dry soft cloth.

Front panel

1. Open the front panel.

· Hold the panel by the tabs on the two sides and lift it until it stops with a click.

2. Remove the front panel.

- · Supporting the front panel with one hand, release the lock by sliding down the knob with the other hand.
- · To remove the front panel, pull it toward yourself with both hands.

3. Clean the front panel.

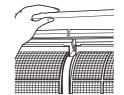
- Wipe it with a soft cloth soaked in water.
- Only neutral detergent may be used.
- In case of washing the panel with water, dry it with cloth, dry it up in the shade after washing.

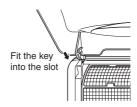
4. Attach the front panel.

- Set the 3 keys of the front panel into the slots and push them in all the way.
- · Close the front panel slowly and push the panel at the 3 points. (1 on each side and 1 in the middle).

Check to see if the rotating axis in the upper center section is moving.









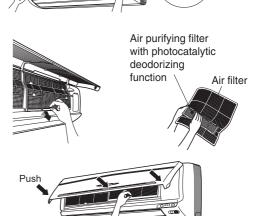
✓!\ CAUTION

- Don't touch the metal parts of the indoor unit. If you touch those parts, this may cause an injury.
- When removing or attaching the front panel, use a robust and stable stool and watch your steps carefully.
- When removing or attaching the front panel, support the panel securely with hand to prevent it from falling.
- For cleaning, do not use hot water above 40 °C, benzine, gasoline, thinner, nor other volatile oils, polishing compound, scrubbing brushes, nor other hand stuff.
- After cleaning, make sure that the front panel is securely fixed.

Instruction **SiENBE12-627**

FILTERS

- 1. Open the front panel.
- 2. Pull out the air filters.
 - Push a little upwards the tab at the center of each air filter, then pull it down.
- 3. Take off the air purifying filter with photocatalytic deodorizing function.
 - Hold the recessed parts of the frame and unhook the four claws.
- 4. Clean or replace each filter.
 - See figure.
- 5. Set the air filter and the air purifying filter with photocalytic deodorizing function as they were and close the front panel.
 - Insert claws of the filters into slots of the front panel. Close the front panel slowly and push the panel at the 3 points. (1 on each side and 1 in the middle)



Air Filter

- 1. Wash the air filters with water or clean them with vacuum cleaner.
 - If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water, then dry them up in the shade.
 - It is recommended to clean the air filters every two weeks.



The Air purifying filter with photocatalytic deodorizing function can be renewed by washing it with water once every 6 months. We recommend replacing it once every 3 years.

[[Maintenance]

- 1. Remove dust with a vacuum cleaner and wash lightly with water.
- 2. If it is very dirty, soak it for 10 to 15 minutes in water mixed with a neutral cleaning agent.
- 3. Do not remove filter from frame when washing with water.
- 4. After washing, shake off remaining water and dry in the shade.
- 5. Since the material is made out of paper, do not wring out the filter when removing water from it.

[Replacement]

- 1. Remove the tabs on the filter frame and replace with a new filter.
 - Dispose of the old filter as flammable waste.

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SIENBE12-627 Instruction

Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.

Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.

Check that the drain comes smoothly out of the drain hose during COOL or DRY operation
• If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.

Before a long idle period

- 1. Operate the "FAN only" for several hours on a fine day to dry out the inside.
 - Press "MODE button" and select "FAN" operation.
 - Press "ON/OFF button" and start operation.
- 2. After operation stops, turn off the breaker for the room air conditioner.
- 3. Clean the air filters and set them again.
- 4. Take out batteries from the remote control.
 - When a multi outdoor unit is connected, make sure the heating operation is not used at the other room before you use the fan operation.

NOTE

- Operation with dirty filters:
 - (1) cannot deodorize the air.
- (2) cannot clean the air.
- (3) results in poor heating or cooling.
- (4) may cause odour.
- To order air purifying filter with photocatalytic deodorizing function contact to the service shop there you bought the air conditioner.
- Dispose of old filters as burnable waste.

Item	Part No.
Air purifying filter with photocatalytic deodorizing function. (with frame) 1 set	KAF918A43
Alr purifying filter with photocatalytic deodorizing function. (without frame) 1 set	KAF918A44

Instruction SiENBE12-627

FTXG 25/35 E, ATXG 25/35 E



• Before cleaning, be sure to stop the operation and turn the breaker OFF.

 Always shut down the unit (and close the panel) before doing any work. Opening the panel during operation may cause the panel to fall off.

UNITS

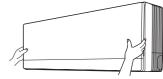
Indoor unit, Outdoor unit and Remote control

1. Wipe them with dry soft cloth.

■ Front panel

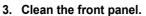
1. Open the front panel.

 Open the front panel by placing a finger on the panel tab on either side of the front panel.

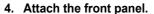


2. Remove the front panel.

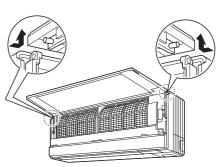
 With the front panel open so that it is almost horizontal, slide it to the right.
 The revolving axis on the left will come off.
 The revolving axis on the right can be removed by sliding the front panel to the left.

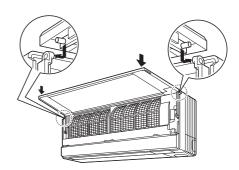


- · Wipe it with a soft cloth soaked in water.
- · Only neutral detergent may be used.
- In case of washing the panel with water, dry it with cloth, dry it up in the shade after washing.



 Place the revolving axes on either side of the front panel into the holes and slowly close. (Press either side of the panel.)





<u>/i</u>\

$^{!}\setminus$ CAUTION

- Don't touch the metal parts of the indoor unit. If you touch those parts, this may cause an injury.
- When removing or attaching the front panel, use a robust and stable stool and watch your steps carefully.
- · When removing or attaching the front panel, support the panel securely with hand to prevent it from falling.
- For cleaning, do not use hot water above 40°C, benzine, gasoline, thinner, nor other volatile oils, polishing compound, scrubbing brushes, nor other hand stuff.
- After cleaning, make sure that the front panel is securely fixed.

SiENBE12-627 Instruction

FILTERS

1. Open the front panel.

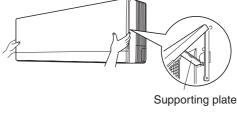
 Open the front panel by placing a finger on the panel tab on either side of the front panel and then secure it using the supporting plate on the right.

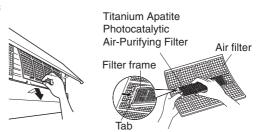
2. Pull out the air filters.

 Push a little upwards the tab at the center of each air filter, then pull it down.

3. Take off the Titanium Apatite Photocatalytic Air-Purifying Filter

- Hold the recessed parts of the frame and unhook the four claws.
- **4.** Clean or replace each filter. See figure.





5. Set the air filter and Titanium Apatite Photocatalytic Air-Purifying Filter as they were and close the front panel.

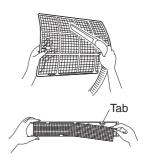
- · Be sure to insert the two tabs below.
- Return the supporting plate to its previous position.
- Press either side of the front panel.



■ Air Filter

1. Wash the air filters with water or clean them with vacuum cleaner.

- If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water, then dry them up in the shade.
- It is recommended to clean the air filters every two weeks.



Titanium Apatite Photocatalytic Air-Purifying Filter (gray)

The Titanium Apatite Photocatalytic Air-Purifying Filter can be renewed by washing it with water once every 6 months. We recommend replacing it once every 3 years.

[Maintenance]

- 1. Remove dust with a vacuum cleaner and wash lightly with water.
- 2. If it is very dirty, soak it for 10 to 15 minutes in water mixed with a neutral cleaning agent.
- 3. Do not remove filter from frame when washing with water.
- 4. After washing, shake off remaining water and dry in the shade.
- 5. Since the material is made out of paper, do not wring out the filter when removing water from it.

[Replacement]

- 1. Remove the tabs on the filter frame and replace with a new filter.
 - · Dispose of the old filter as flammable waste.

Instruction SiENBE12-627

NOTE

- Operation with dirty filters:
 - (1) cannot deodorize the air. (2) cannot clean the air.
 - (3) results in poor heating or cooling. (4) may cause odour.
- To order Titanium Apatite Photocatalytic Air-Purifying Filter contact to the service shop there you bought the air conditioner.
- Dispose of old filters as burnable waste.

Item	Part No.
Titanium Apatite Photocatalytic Air-Purifying Filter. (with frame) 1 set	KAF952B41
Titanium Apatite Photocatalytic Air-Purifying Filter. (without frame) 1 set	KAF952B42

Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.

Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.

Check that the drain comes smoothly out of the drain hose during COOL or DRY operation

If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.

Before a long idle period

- 1. Operate the "FAN only" for several hours on a fine day to dry out the inside.
 - Press "MODE" button and select "FAN" operation.
 - Press "ON/OFF" button and start operation.
- 2. After operation stops, turn off the breaker for the room air conditioner.
- 3. Clean the air filters and set them again.
- 4. Take out batteries from the remote control.
 - When a multi outdoor unit is connected, make sure the heating operation is not used at the other room before you use the fan operation.

SiENBE12-627 Instruction

FDK(X)S 25/35 C, FDK(X)S 25/35 E



- Only a qualified service person is allowed to perform maintenance.
- Before cleaning, be sure to stop the operation and turn the breaker OFF.

Cleaning the air filter

1.Removing the air filter.

Rear suction

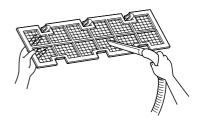
Pull the bottom side of the air filter backwards, over the bends. (2 bends for 25/35 type, 3 bends for 50/60 type)

· Bottom suction

Pull the filter over the bends (2 bends for 25/35 type, 3 bends for 50/60 type) situated at the backside of the unit.

2.Cleaning the air filter.

 Remove dust from the air filter using a vacuum cleaner and gently rinse them in cool water. Do not use detergent or hot water to avoid filter shrinking or deformation. After cleaning dry them in the shade.



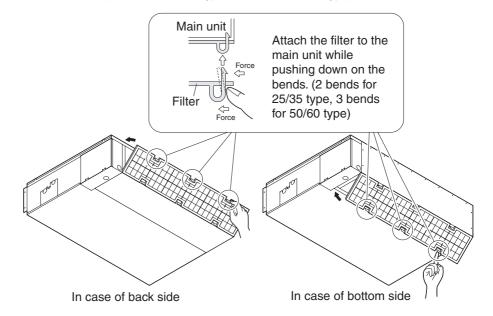
3. Replacing the air filter.

· Rear suction

Hook the filter behind the flap situated at the top of the unit and push the other side gently over the bends. (2 bends for 25/35 type, 3 bends for 50/60 type)

Bottom suction

Hook the filter behind the flap situated at the middle of the unit and push the other side gently over the bends. (2 bends for 25/35 type, 3 bends for 50/60 type)



Instruction SiENBE12-627

Cleaning the drain pan

Clean the drain pan periodically, or drain piping may be clogged with dust and may result in water leakage. Ask your DAIKIN dealer to clean them.

Prepare a cover locally to prevent any dust in the air around the indoor unit from getting in the drain pan, if there is a great deal of dust present.

∠!\ CAUTION

- Do not operate the air conditioner without filters, this to avoid dust accummulation inside the unit.
- Do not remove the air filter except when cleaning. Unnecessary handling may damage the filter.
- Do not use gasoline, benzene, thinner, polishing powder, liquid insecticide, It may cause discoloring or warping.
- Do not let the indoor unit get wet. It may cause an electric shock or a fire.
- Operation with dusty air filters lowers the cooling and heating capacity and wastes energy.
- The suction grille is option.
- Do not use water or air of 50°C or higher for cleaning air filters and outside panels.
- Ask your DAIKIN dealer how to clean it.

Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.

Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.

Check that the drain comes smoothly out of the drain hose during COOL or DRY operation

If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.

Before a long idle period

- 1. Operate the "FAN only" for several hours on a fine day to dry out the inside.
 - Press "MODE selector button" and select "FAN" operation.
 - Press "ON/OFF button" and start operation.
- 2. Clean the air filters and set them again.
- 3. Take out batteries from the remote control.
- 4. Turn OFF the breaker for the room air conditioner.
 - When a multi outdoor unit is connected, make sure the heating operation is not used at the other room before you use the fan operation.

SIENBE12-627 Instruction

FLK(X)S 25/35/50/60 B



! CAUTION

Before cleaning, be sure to stop the operation and turn the breaker OFF.

UNITS

Indoor unit, Outdoor unit and Remote control

1. Wipe them with dry soft cloth.

Front panel ·

1. Open the front panel.

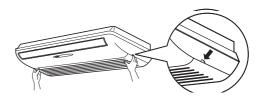
Hold the panel by the tabs on the two sides and lift it unitl it stops.

2.Clean the front panel.

- Wipe it with a soft cloth soaked in water.
- Only neutral detergent may be used.
- In case of washing the panel with water, dry it with cloth, dry it up in the shade after washing

3.Close the front panel.

- Push the panel at the 5 points indicated by \spadesuit .
- Operation without air filters may result in troubles as dust will accumulate inside the indoor unit.





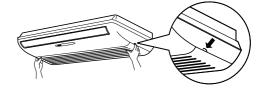
$^{\prime !}ackslash$ Caution

- Don't touch the metal parts of the indoor unit. If you touch those parts, this may cause an injury.
- When removing or attaching the front panel, use a robust and stable stool and watch your steps carefully.
- When removing or attaching the front panel, support the panel securely with hand to prevent it from falling.
- For cleaning, do not use hot water above 40°C, benzine, gasoline, thinner, nor other volatile oils, polishing compound, scrubbing brushes, nor other hand stuff.
- After cleaning, make sure that the front panel is securely fixed.

Instruction SiENBE12-627

FILTERS

- 1. Open the front panel.
- 2. Pull out the air filters.
 - Push upwards the tab at the center of each air filter, then pull it down.



- 3. Take off the air purifying filter, photocatalytic deodorizing filter.
 - Hold the recessed parts of the frame and unhook the four claws.



- 4. Clean or replace each filter.
 - · See figure.



- 5. Set the air filter, air purifying filter and photocatalytic deodorizing filter as they were and close the front panel.
 - Insert claws of the filters into slots of the front panel.
 - Push the panel at the 5 points.



■ Air Filter

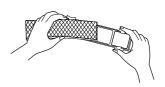
- Wash the air filters with water or clean them with vacuum cleaner.
 - If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water, then dry them up in the shade.
 - It is recommended to clean the air filters every two weeks.



Air Purifying Filter (green)

(Replace approximately once every 3 months.)

- Detach the filter element and attach a new one.
 - Insert with the green side up.
 - It is recommended to replace the air purifying filter every three months.



■ Photocatalytic Deodorizing Filter (gray) [Maintenance]

- 1. Dry the photocatalytic deodorizing filter in the sun.
 - After removing the dust with a vacuum cleaner, place the filter in the sun for approximately 6
 hours. By drying the photocatalytic deodorizing filter in the sun, its deodorizing and antibacterial
 capabilities are regenerated.
 - Because the filter material is paper, it can not be cleaned with water.
 - · It is recommended dry the filter once every 6 months.

[Replacement]

1. Detach the filter element and attach a new one.

SIENBE12-627 Instruction

Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.

Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.

Check that the drain comes smoothly out of the drain hose during COOL or DRY operation
• If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.

Before a long idle period

- 1. Operate the "FAN only" for several hours on a fine day to dry out the inside.
 - Press "MODE" button and select "FAN" operation.
 - Press "ON/OFF" button and start operation.
- 2. After operation stops, turn off the breaker for the room air conditioner.
- 3. Clean the air filters and set them again.
- 4. Take out batteries from the remote control.
 - When a multi outdoor unit is connected, make sure the heating operation is not used at the other room before you use the fan operation.

NOTE

- Operation with dirty filters:
 - (1) cannot deodorize the air. (2) cannot clean the air.
 - (3) results in poor heating or cooling. (4) may cause odour.
- The air purifying filter and Photocatalytic deodorizing filter cannot be reused, even if washed.
- In principle, there is no need to replace the photocatalytic deodorizing filter. Remove the dust periodically with a vacuum cleaner. However, it is recommended to replace the filter in the following cases.
 - (1) The paper material is torn or broken during cleaning.
 - (2) The filter has become extremely dirty after long use.
- To order air purifying filter or Photocatalytic deodorizing filter, contact to the service shop where you bought the air conditioner.
- Dispose of old air filters as non-burnable waste and Photocatalytic deodorizing filters as burnable waste.

Item	Part No.
Photocatalytic deodorizing filter (with frame)	KAZ917B41
Photocatalytic deodorizing filter (without frame)	KAZ917B42
Air purifying filter (with frame)	KAF925B41
Air purifying filter (without frame)	KAF925B42

Instruction SiENBE12-627

2.15 Troubleshooting

These cases are not troubles

The following cases are not air conditioner troubles but have some reasons. You may just continue using it.

Case	Explanation
Operation does not start soon. When ON/OFF button was pressed soon after operation was stopped. When the mode was reselected.	This is to protect the air conditioner. You should wait for about 3 minutes.
Hot air does not flow out soon after the start of heating operation.	The air conditioner is warming up. You should wait for 1 to 4 minutes.(The system is designed to start discharging air only after it has reached a certain temperature.)
The heating operation stops suddenly and a flowing sound is heard.	The system is taking away the frost on the outdoor unit. You should wait for about 3 to 8 minutes.
The outdoor unit emits water or steam.	 In HEAT mode The frost on the outdoor unit melts into water or steam when the air conditioner is in defrost operation. In COOL or DRY mode Moisture in the air condenses into water on the cool surface of outdoor unit piping and drips.
Mists come out of the indoor unit.	■ This happens when the air in the room is cooled into mist by the cold air flow during cooling operation.
The indoor unit gives out odour	■ This happens when smells of the room, furniture, or cigarettes are absorbed into the unit and discharged with the air flow. (If this happens, we recommend you to have the indoor unit washed by a technician. Consult the service shop where you bought the air conditioner.)
The outdoor fan rotates while the air conditioner is not in operation.	 After operation is stopped: The outdoor fan continues rotating for another 60 seconds for system protection. While the air conditioner is not in operation: When the outdoor temperature is very high, the out door fan starts rotating for system protection.
The operation stopped suddenly.(OPERATION lamp is on)	■ For system protection, the air conditioner may stop operating on a sudden large voltage fluctuation. It automatically resumes operation in about 3 minutes.

SiENBE12-627 Instruction

Check again

Please check again before calling a repair person.

Case	Check
The air conditioner does not operate. (OPERATION lamp is off)	 Hasn't a breaker turned OFF or a fuse blown? Isn't it a power failure? Are batteries set in the remote control? Is the timer setting correct?
Cooling (Heating) effect is poor.	 Are the air filters clean? Is there anything to block the air inlet or the outlet of the indoor and the outdoor units? Is the temperature setting appropriate? Are the windows and doors closed? Are the air flow rate and the air direction set appropriately? Is the unit set to the INTELLIGENT EYE mode?
Operation stops suddenly. (OPERATION lamp flashes.)	 Are the air filters clean? Is there anything to block the air inlet or the outlet of the indoor and the outdoor units? Clean the air filters or take all obstacles away and turn the breaker OFF. Then turn it ON again and try operating the air conditioner with the remote control. If the lamp still flashes, call the service shop where you bought the air conditioner. Are operation modes all the same for indoor units connected to outdoor units in the multi system? If not, set all indoor units to the same operation mode and confirm that the lamps flash. Moreover, when the operation mode is in "AUTO", set all indoor unit operation modes to "COOL" or "HEAT" for a moment and check again that the lamps are normal. If the lamps stop flashing after the above steps, there is no malfunction.
An abnormal functioning happens during operation.	The air conditioner may malfunction with lightning or radio waves. Turn the breaker OFF, turn it ON again and try operating the air conditioner with the remote control.

Instruction SiENBE12-627

Call the service shop immediately.



WARNING

When an abnormality (such as a burning smell) occurs, stop operation and turn the breaker OFF. Continued operation in an abnormal condition may result in troubles, electric shocks or fire. Consult the service shop where you bought the air conditioner.

■ Do not attempt to repair or modify the air conditioner by yourself. Incorrect work may result in electric shocks or fire.

Consult the service shop where you bought the air conditioner.

If one of the following symptoms takes place, call the service shop immediately.

- The power cord is abnormally hot or damaged.
- An abnormal sound is heard during operation.
- The safety breaker, a fuse, or the earth leakage breaker cuts off the operation frequently.
- A switch or a button often fails to work properly.
- There is a burning smell.
- Water leaks from the indoor unit.



Turn the breaker OFF and call the service shop.

After a power failure The air conditioner automatically resumes operation in about 3 minutes. You should just wait for a while.

Lightning

If lightning may strike the neighbouring area, stop operation and turn the breaker OFF for system protection.

Disposal requirements



Your air conditioning product is marked with this symbol. This means that electrical and electronic products shall not be mixed with unsorted household waste.

Do not try to dismantle the system yourself: the dismantling of the air conditioning system, treatment of the refrigerant, of oil and of other parts must be done by a qualified installer in accordance with relevant local and national legislation.

Air conditioners must be treated at a specialized treatment facility for re-use, recycling and recovery. By ensuring this product is disposed of correctly, you will help to prevent potential negative consequences for the environment and human health. Please contact the installer or local authority for more information.

Batteries must be removed from the remote control and disposed of separately in accordance with relevant local and national legislation.

We recommend periodical maintenance

In certain operating conditions, the inside of the air conditioner may get foul after several seasons of use, resulting in poor performance. It is recommended to have periodical maintenance by a specialist aside from regular cleaning by the user. For specialist maintenance, contact the service shop where you bought the air conditioner

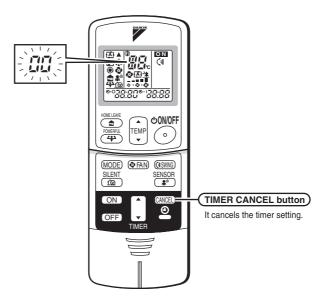
The maintenance cost must be born by the user.

SiENBE12-627 Instruction

FAULT DIAGNOSIS BY REMOTE CONTROL.

In the ARC433A series, the temperature display sections on the main unit indicate corresponding codes.

1. When the TIMER CANCEL button is held down for 5 seconds, a "@@" indication flashes on the temperature display section.



2. Press the TIMER CANCEL button repeatedly until a continuous beep is produced.

· The code indication changes as shown below, and notifies with a long beep.

	CODE	MEANING
SYSTEM	00	NORMAL
	U0	REFRIGERANT SHOTAGE
	U2	DROP VOLTAGE OR MAIN CIRCUIT OVERVOLTAGE
	U4	FAILURE OF TRANSMISSION (BETWEEN INDOOR UNIT AND OUTDOOR UNIT)
INDOOR UNIT	A1	INDOOR PCB DEFECTIVENESS
	A5	HIGH PRESSURE CONTROL OR FREEZE-UP PROTECTOR
	A6	FAN MOTOR FAULT
	C4	FAULTY HEAT EXCHANGER TEMPERATURE SENSOR
	C9	FAULTY SUCTION AIR TEMPERATURE SENSOR
OUTDOOR UNIT	EA	COOLING-HEATING SWITCHING ERROR
	E5	OL STARTED
	E6	FAULTY COMPRESSOR START UP
	E7	DC FAN MOTOR FAULT
	E8	OPERATION HALT DUE TO DETECTION OF INPUT OVER CURRENT
	F3	HIGH TEMPERATURE DISCHARGE PIPE CONTROL
	F6	HIGH PRESSURE CONTROL (IN COOLING)
	H6	OPERATION HALT DUE TO FAULTY POSITION DETECTION SENSOR
	H8	CT ABNORMALITY
	H9	FAULTY SUCTION AIR TEMPERATURE SENSOR
	J3	FAULTY DISCHARGE PIPE TEMPERATURE SENSOR
	J6	FAULTY HEAT EXCHANGER TEMPERATURE SENSOR
	L4	HIGH TEMPERATURE AT INVERTER CIRCUIT HEATSINK
	L5	OUTPUT OVERCURRENT
	P4	FAULTY INVERTER CIRCUIT HEATSINK TEMPERATURE SENSOR

NOTE

- 1. A short beep and two consecutive beeps indicate non-corresponding codes.
- 2. To cancel the code display, hold the TIMER CANCEL button down for 5 seconds. The code display also cancel itself if the button is not pressed for 1 minute.

Instruction SiENBE12-627

LED ON OUTDOOR UNIT PCB 3MXS, 3MKS, 4MXS, 4MKS series

GREEN RED					
MICROCOMPUTER NORMAL	MALFUNCTION DETECTION		١		
LED_A	LED1	LED2	LED3	LED4	DIAGNOSIS
*	•	•	•	•	NORMAL→CHECK INDOOR UNIT
⋫	≎	•	♡	≎	HIGH PRESSURE PROTECTOR WORKED OR FREEZE-UP IN OPERATING UNIT OR STAND-BY UNIT
*	≎	•	≎	•	* OVERLOAD RELAY WORKED OR HIGH DISCHARGE PIPE TEMPERATURE
*	•	₽	₽	•	FAULTY COMPRESSOR START
(•	≎	•	\Diamond	INPUT OVERCURRENT
(\Diamond	≎	•	•	* THERMISTOR OR CT ABNORMALITY
﴾	≎	₽	•	≎	HIGH TEMPERATURE SWITCHBOX
﴾	•	•	•	¢	HIGH TEMPERATURE AT INVERTER CIRCUIT HEATSINK
﴾	•	•	\Diamond	•	* OUTPUT OVERCURRENT
﴾	•	•	\Diamond	¢	* REFRIGERANT SHORTAGE
﴾	¢	•	•	¢	LOW VOLTAGE TO MAIN CIRCUIT OR MOMENTARY VOLTAGE LOSS
*	≎	•	•	•	REVERSING SOLENOID VALVE SWITCHING FAILURE
⋫	♦	♡	♦	♦	FAN MOTOR FAULT
≎	_	_	_	_	[NOTE 1]
•	_	_	_	-	POWER SUPPLY FAULT OR [NOTE 2]

GREEN	NORMALLY FLASHING
RED	NORMALLY OFF
¢	ON
⋪	FLASHING
•	OFF
-	IRRELEVANT

LED ON OUTDOOR UNIT PCB 2MXS, 2MKS serie

GREEN		
MICROCOMPUTER NORMAL		
LED_A	DIAGNOSIS	
﴾	NORMAL→CHECK INDOOR UNIT	
♦	[NOTE 1]	
•	POWER SUPPLY FAULT OR [NOTE 2]	

GREEN	NORMALLY FLASHING
≎	ON
•	FLASHING
•	OFF
_	

NOTES

- 1. Turn the power off and then on again. If the LED display recurs, the outdoor unit PCB is faulty.
- 2. Diagnosis marked*Do not apply to some cases. For details, refer to the service guide.

Part 6 Service Diagnosis

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Caution for Diagnosis SiENBE12-627

1. Caution for Diagnosis

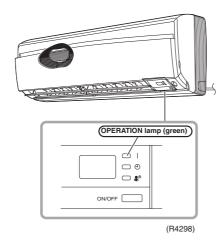
The operation lamp flashes when any of the following errors is detected.

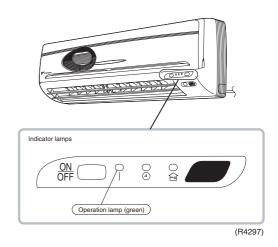
- 1. When a protection device of the indoor or outdoor unit is activated or when the thermistor malfunctions, disabling equipment operation.
- 2. When a signal transmission error occurs between the indoor and outdoor units. In either case, conduct the diagnostic procedure described in the following pages.

Location of Operation Lamp

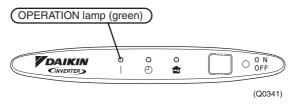
In case of FTK(X)S 20/25/35 D Series

In case of FTK(X)S 20/25/35 C Series ATK(X)S 20/25/35 D Series

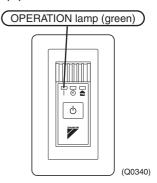




In case of FLK(X)S 25/35 B Series

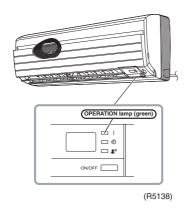


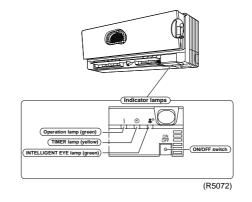
In case of FDK(X)S 25/35 C Series FDK(X)S 25/35 E Series



In case of ATK(X)S 20/25/35 E Series

In case of FTXG 25/35 E Series ATXG 25/35 E Series





SiENBE12-627 Caution for Diagnosis



Caution:

Operation stops suddenly. (Operation lamp blinks.)

Cause of above trouble could be "Operation mode butting".

Check followings;

Are the operation modes all the same for indoor units connected to Multi system outdoor unit? If not set all indoor units to the same operation mode and confirm that the operation lamp is not blinking.

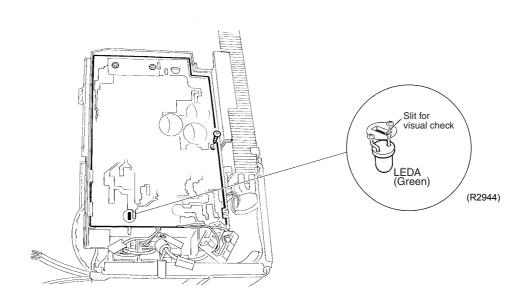
Moreover, when the operation mode is in "Auto", set all indoor unit operation mode to "Cool" or "Heat" and check again if the operation lamp is normal.

If the lamp stops blinking after the above steps, there is no malfunction.

★Operation stops and operation lamp blinks only for indoor unit which the different operation mode is set later. (The first set operation mode has priority.)

Troubleshooting with the LED Indication

Outdoor Unit



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

The LED A of the outdoor unit indicate microcomputer operation condition.

Even after the error is cancelled and the equipment operates in normal condition, the LED indication remains.

2. Problem Symptoms and Measures

Symptom	Check Item	Details of Measure	Reference Page
None of the Units Operates.	Check the power supply.	Check to make sure that the rated voltage is supplied.	_
	Check the type of the indoor units.	Check to make sure that the indoor unit type is compatible with the outdoor unit.	_
	Check the outdoor air temperature.	Heating operation cannot be used when the outdoor air temperature is 21°C or higher (only for heat pump model), and cooling operation cannot be used when the outdoor air temperature is below 10°C.	_
	Diagnosis with remote control indication	_	158
	Check the remote control addresses.	Check to make sure that address settings for the remote control and indoor unit are correct.	_
Operation Sometimes Stops.	Check the power supply.	A power failure of 2 to 10 cycles can stop air conditioner operation. (Operation lamp OFF)	_
	Check the outdoor air temperature.	Heating operation cannot be used when the outdoor air temperature is 21°C or higher (only for heat pump model), and cooling operation cannot be used when the outdoor air temperature is below 10°C.	_
	Diagnosis with remote control indication	_	158
Equipment operates but does not cool, or does not heat (only for heat pump	Check for wiring and piping errors in the indoor and outdoor units connection wires and pipes.	Conduct the wiring/piping error check described on the product diagnosis nameplate.	_
model).	Check for thermistor detection errors.	Check to make sure that the main unit's thermistor has not dismounted from the pipe holder.	_
	Check for faulty operation of the electronic expansion valve.	Set the units to cooling operation, and compare the temperatures of the liquid side connection pipes of the connection section among rooms to check the opening and closing operation of the electronic expansion valves of the individual units.	_
	Diagnosis with remote control indication	_	158
	Diagnosis by service port pressure and operating current	Check for insufficient gas.	189
Large Operating Noise and Vibrations	Check the output voltage of the power transistor.	_	201
	Check the power transistor.	_	_
	Check the installation condition.	Check to make sure that the required spaces for installation (specified in the Engineering Data book Guide, etc.) are provided.	_

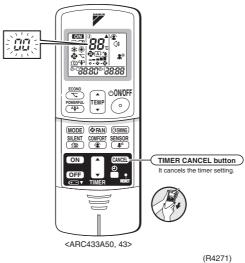
SiENBE12-627 Service Check Function

3. Service Check Function

In the ARC433A series remote control, the temperature display sections on the main unit indicate corresponding codes.

Check Method 1

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



- 2. Press the timer cancel button repeatedly until a continuous beep is produced.
- The code indication changes in the sequence shown below, and notifies with a long beep.

No.	Code	No.	Code	No.	Code
1	00	12	<i>C</i> 7	23	НО
2	UЧ	13	H8	24	ΕΊ
3	F3	14	J3	25	PЧ
4	E6	15	R3	26	L3
5	L5	16	Al	27	LY
6	<i>R</i> 6	17	СЧ	28	Н6
7	E5	18	<i>C</i> 5	29	HТ
8	F6	19	H9	30	U2
9	C9	20	J6	31	UH
10	UO .	21	UR	32	ER
11	ЕТ	22	R5	33	RH

<In case of ARC433A41, 43, 50, 61, 62>

No.	Code	No.	Code	No.	Code
1	00	12	F6	23	A1
2	υч	13	בד	24	ΕΊ
3	L5	14	R3	25	UR
4	E6	15	Н8	26	UH
5	Н6	16	Н9	27	PЧ
6	HO	17	<i>C</i> 9	28	L3
7	<i>R</i> 6	18	СЧ	29	LЧ
8	ЕΊ	19	<i>C</i> 5	30	нт
9	UO	20	J3	31	U2
10	F3	21	J6	32	ER
11	R5	22	E5	33	RH

Note:

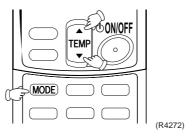
- 1. A short beep and two consecutive beeps indicate non-corresponding codes.
- 2. To cancel the code display, hold the timer cancel button down for 5 seconds. The code display also cancels itself if the button is not pressed for 1 minute.

Service Check Function SiENBE12-627

Check Method 2

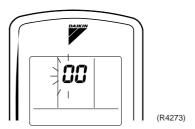
1. Enter the diagnosis mode.

Press the 3 buttons (TEMP \blacktriangle ,TEMP \blacktriangledown , MODE) simultaneously.



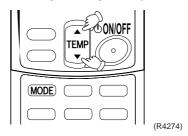
The digit of the number of tens blinks.

★Try again from the start when the digit does not blink.



2. Press the TEMP button.

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



3. Diagnose by the sound.

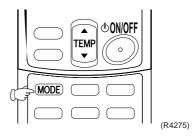
★"pi": The number of tens does not accord with the error code.

★"pi pi": The number of tens accords with the error code.

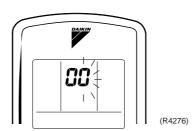
★"beep": The both numbers of tens and units accord with the error code. (→See 7.)

4. Enter the diagnosis mode again.

Press the MODE button.



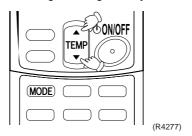
The digit of the number of units blinks.



SiENBE12-627 Service Check Function

5. Press the TEMP button.

Press TEMP▲ or TEMP▼ and change the digit until you hear the sound of "beep".



6. Diagnose by the sound.

 \star "pi": The both numbers of tens and units do not accord with the error code.

★"pi pi": The number of tens accords with the error code.

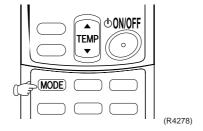
 \star "beep": The both numbers of tens and units accord with the error code.

7. Determine the error code.

The digits indicated when you hear the "beep" sound are error code. (Error codes and description \rightarrow Refer to page 158.)

8. Exit from the diagnosis mode.

Press the MODE button.



Troubleshooting SiENBE12-627

4. Troubleshooting

4.1 Error Codes and Description

	Code Indication	Description		Reference Page
System	00	Normal		_
	UO★	Insufficient gas		
	U2	Over-voltage detection		191
	UЧ	Outdoor unit PCB abnormality or signal transmission circuit abnormality		193
	UR	Unspecified voltage (between indoor and outdoor units)		192
	UH	Anti-icing function in other rooms		
Indoor Unit	R1	Indoor unit PCB abnormality		159
Offic	<i>R</i> 5	Freeze-up protection control or high pressure control		160
	<i>R</i> 6	Fan motor or related abnormality	AC motor (Wall : FTK(X)S-C, ATK(X)S-D series, Duct, Floor / Ceiling)	162
			DC motor (Wall : FTK(X)S-D, ATK(X)S-E series, FTXG-E, ATXG-E series)	
	ΕЧ	Heat exchanger temperature thermistor abnormality		165
	<u>C9</u>	Room temperature thermistor abnormality		165
Outdoor Unit	<i>R</i> 5	Anti-icing function		166
	E5 ★	OL activation (compressor overload)		168
	<i>E6</i> ★	Compressor lock		169
	E7	DC fan lock		170
	E8	Input over current detection		171
	ER	Four way valve abnormality		173
	F3	Discharge pipe temperature control		175
	F6	High pressure control in cooling		176
	H6	Position sensor abnormality		178
	Н8	CT or related abnormality		
	H9	Outdoor air thermistor or related abnormality		181
	J3	Discharge pipe temperature thermistor or related abnormality		181
	J6	Heat exchanger temperature thermistor or related abnormality		181
	J8	Liquid pipe temperature thermistor or related abnormality		181
	J9	Gas pipe temperature thermistor or related abnormality		181
	L3	Electrical box temperature rise		183
	LY	Radiation fin temperature rise		
	L5	Output over current detection		
	PY	Radiation fin thermistor or related abnormality		

^{★:} Displayed only when system-down occurs.

SiENBE12-627 Troubleshooting

4.2 Indoor Unit PCB Abnormality

Remote control Display

81

Method of Malfunction Detection

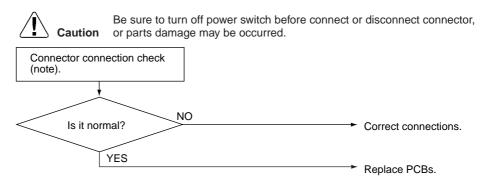
Evaluation of zero-cross detection of power supply by indoor unit.

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

Supposed Causes

- Faulty indoor unit PCB
- Faulty connector connection

Troubleshooting



(R1400)

Note:

Connector Nos. vary depending on models.

Model Type	Connector No.	
Wall Mounted Type	Terminal strip~Control PCB	
Duct Connected Type	Terminal strip~Control PCB	
Floor / Ceiling Suspended Dual Type	S37	

Troubleshooting SiENBE12-627

4.3 Freeze-up Protection Control or High Pressure Control

Remote Control Display

*R*5

Method of Malfunction Detection

- High pressure control (heat pump model only)
 During heating operations, the temperature detected by the indoor heat exchanger thermistor is used for the high pressure control (stop, outdoor fan stop, etc.)
- The freeze-up protection control (operation halt) is activated during cooling operation according to the temperature detected by the indoor unit heat exchanger thermistor.

Malfunction Decision Conditions

- High pressure control

 During heating operations, the temperature detected by the indoor heat exchanger thermistor is above 65°C
- Freeze-up protection

When the indoor unit heat exchanger temperature is below 0°C during cooling operation.

Supposed Causes

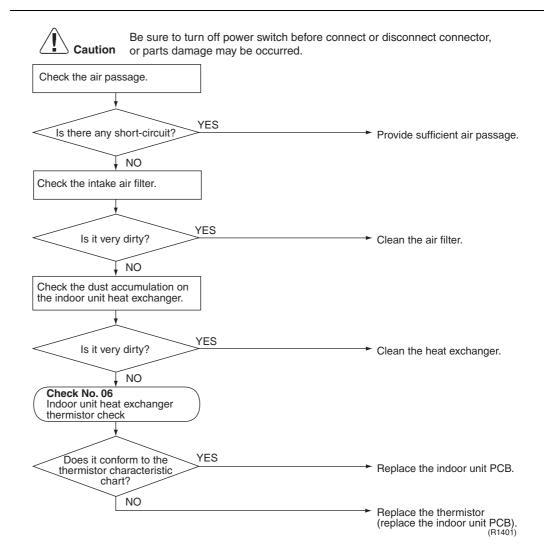
- Operation halt due to clogged air filter of the indoor unit.
- Operation halt due to dust accumulation on the indoor unit heat exchanger.
- Operation halt due to short-circuit.
- Detection error due to faulty indoor unit heat exchanger thermistor.
- Detection error due to faulty indoor unit PCB.

SiENBE12-627 Troubleshooting

Troubleshooting



Check No.06 Refer to P.197



Troubleshooting SiENBE12-627

Fan Motor or Related Abnormality 4.4

4.4.1 **AC Motor**

Remote Control Display

88

Method of Malfunction **Detection**

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

Malfunction **Decision Conditions**

When the detected rotation speed is less than 50% of the HH tap under maximum fan motor rotation demand.

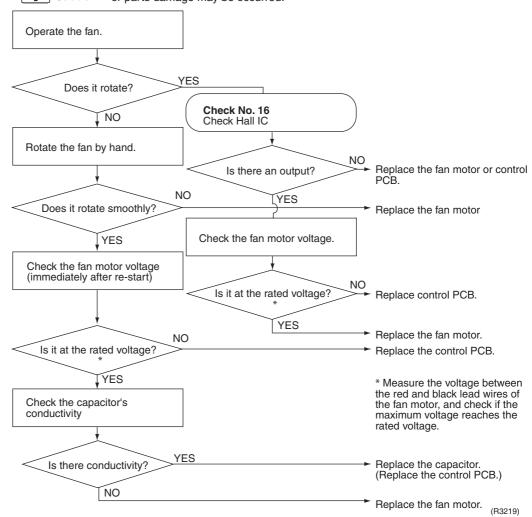
Supposed Causes

- Operation halt due to short circuit inside the fan motor winding.
- Operation halt due to breaking of wire inside the fan motor.
- Operation halt due to breaking of the fan motor lead wires.
- Operation halt due to faulty capacitor of the fan motor.
- Detection error due to faulty control PCB.

Troubleshooting



Check No.16 Refer to P.202 Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



SiENBE12-627 Troubleshooting

4.4.2 DC Motor

Remote Control Display

88

Method of Malfunction Detection

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

Malfunction Decision Conditions

When the detected rotation speed is less than 50% of the H tap under maximum fan motor rotation demand.

Supposed Causes

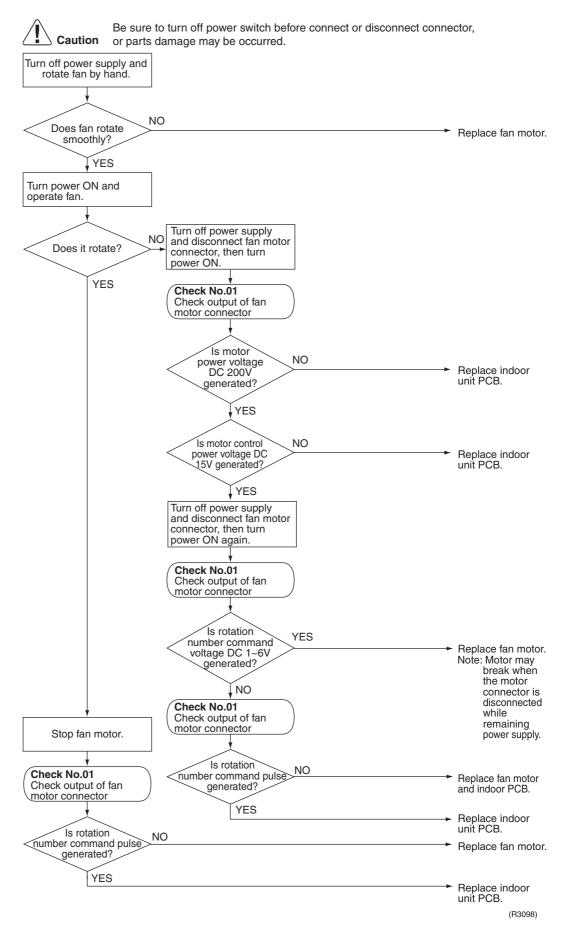
- Operation halt due to short circuit inside the fan motor winding.
- Operation halt due to breaking of wire inside the fan motor.
- Operation halt due to breaking of the fan motor lead wires.
- Operation halt due to faulty capacitor of the fan motor.
- Detection error due to faulty indoor unit PCB.

Troubleshooting SiENBE12-627

Troubleshooting



Check No.01 Refer to P.194



SiENBE12-627 Troubleshooting

4.5 Thermistor or Related Abnormality (Indoor Unit)

Remote Control Display

£4,£9

Method of Malfunction Detection

The temperatures detected by the thermistors are used to determine thermistor errors.

Malfunction Decision Conditions When the thermistor input is more than 4.96 V or less than 0.04 V during compressor operation*.

* (reference)

When above about 212°C (less than 120 ohms) or below about -50°C (more than 1,860 kohms).



Note:

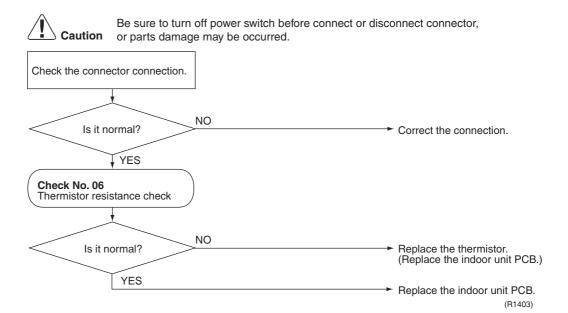
The values vary slightly in some models.

Supposed Causes

- Faulty connector connection
- Faulty thermistor
- Faulty PCB

Troubleshooting





Troubleshooting SiENBE12-627

4.6 Freeze-up Protection Control

Remote Control Display

85

Method of Malfunction Detection

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

At another room (the indoor unit is normal), "UH" is displayed on the remote control.

Malfunction Decision Conditions

In the cooling mode, the following conditions (A) and (B) are kept together for 5 minutes.

- (A) Indoor unit heat exchanger temperature ≤ −1°C
- (B) Indoor unit heat exchanger temperature ≤ Room temperature −10°C

If the freeze-up protection control is activated 4 times continuously, the system will be shut down.

(The 4-time counter will reset itself if any of the following errors does not occur for 60 minutes. : OL, radiation fin temperature rise, insufficient gas, and compressor lock.)

Supposed Causes

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

SiENBE12-627 Troubleshooting

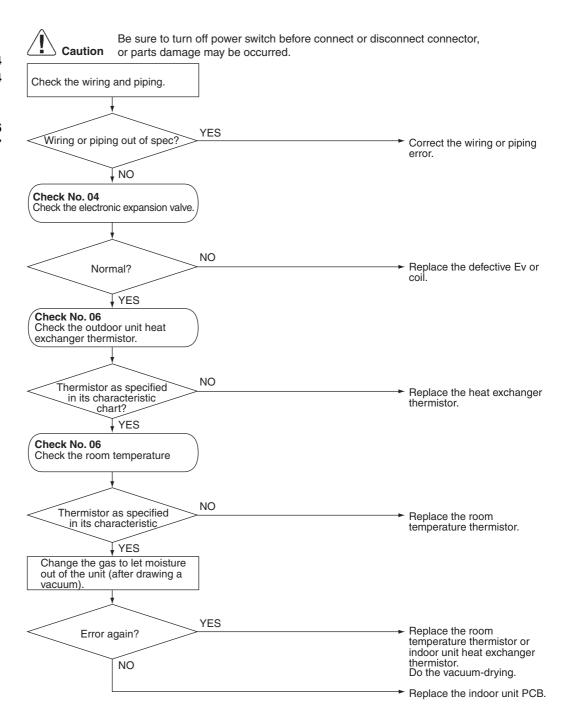
Troubleshooting



Check No.04 Refer to P.194



Check No.06 Refer to P.197



(R3039)

Troubleshooting SiENBE12-627

4.7 OL Activation (Compressor Overload)

Remote Control Display

E5

Method of Malfunction Detection

A compressor overload is detected through compressor OL.

Malfunction Decision Conditions

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

Supposed Causes

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

Troubleshooting



Check No.04 Refer to P.194



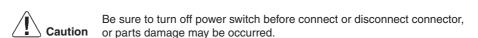
Check No.05 Refer to P.196

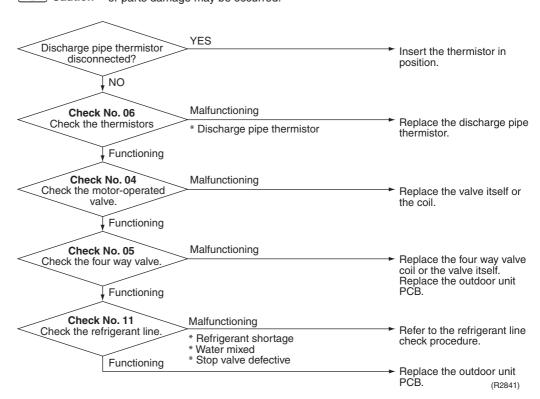


Check No.06 Refer to P.197



Check No.11 Refer to P.200





SiENBE12-627 Troubleshooting

4.8 Compressor Lock

Remote Control Display

*E*8

Method of Malfunction Detection

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

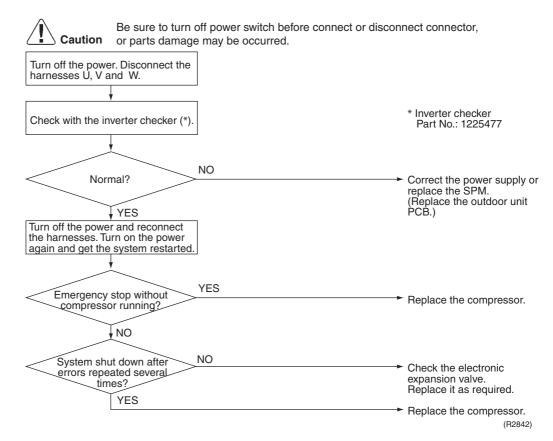
Malfunction Decision Conditions

- The position detection circuit detects a compressor frequency of below 5 Hz for several tens of seconds.
- The system will be shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 5 minutes (normal)

Supposed Causes

■ Compressor locked

Troubleshooting



Note: If the model doesn't have SPM, replace the outdoor unit PCB.

Troubleshooting SiENBE12-627

4.9 DC Fan Lock

Remote Control Display

E7

Method of Malfunction Detection

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

Malfunction Decision Conditions

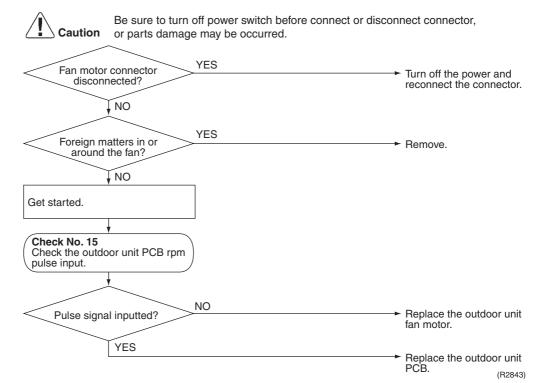
- The fan does not start in 30 seconds even when the fan motor is running.
- The system will be shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 5 minutes (normal)

Supposed Causes

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

Troubleshooting





SiENBE12-627 Troubleshooting

4.10 Input Over Current Detection

Remote Control Display

E8

Method of Malfunction Detection

An input over-current is detected by checking the input current value being detected by CT with the compressor running.

Malfunction Decision Conditions

- The following CT input with the compressor running continues for 2.5 seconds. CT input: Above 11 A
- The system will be shut down if the error occurs 16 times.
- Clearing condition : Continuous run for about 5 minutes (normal)

Supposed Causes

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

Troubleshooting



Check No.07 Refer to P.198



Check No.08 Refer to P.199

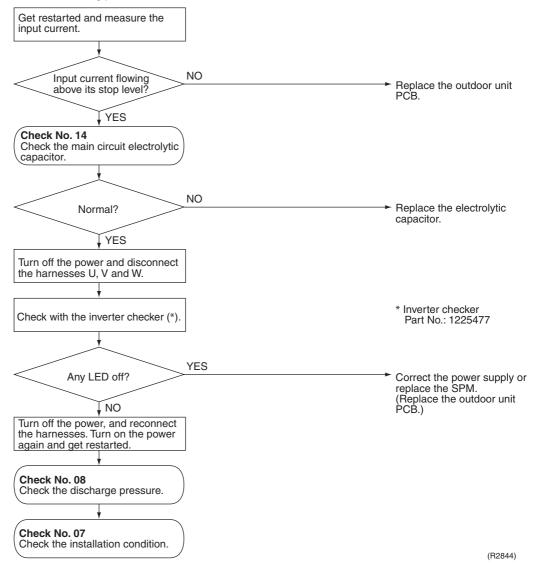


Check No.14 Refer to P.201



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

* An input over-current may result from wrong internal wiring. If the wires have been disconnected and reconnected for part replacement, for example, and the system is interrupted by an input over-current, take the following procedure.



Note:

If the model doesn't have SPM, replace the outdoor unit PCB.

4.11 Four Way Valve Abnormality

Remote Control Display

ER

Method of Malfunction Detection

The liquid pipe temperature thermistor, the outdoor air temperature thermistor and the outdoor unit heat exchanger thermistor are checked to see if they function within their normal ranges in the operating mode.

Malfunction Decision Conditions

A following condition occurs after 3 minutes of the compressor start.

- Cooling / dry operation (outdoor unit heat exchanger temp. liquid pipe temp.) < –5°C
- Heating (liquid pipe temp. outdoor unit heat exchanger temp.) < 0°C

Supposed Causes

- Connector in poor contact
- Thermistor defective
- Outdoor unit PCB defective
- Four way valve coil or harness defective
- Four way valve defective
- Foreign substance mixed in refrigerant
- Insufficient gas

Troubleshooting



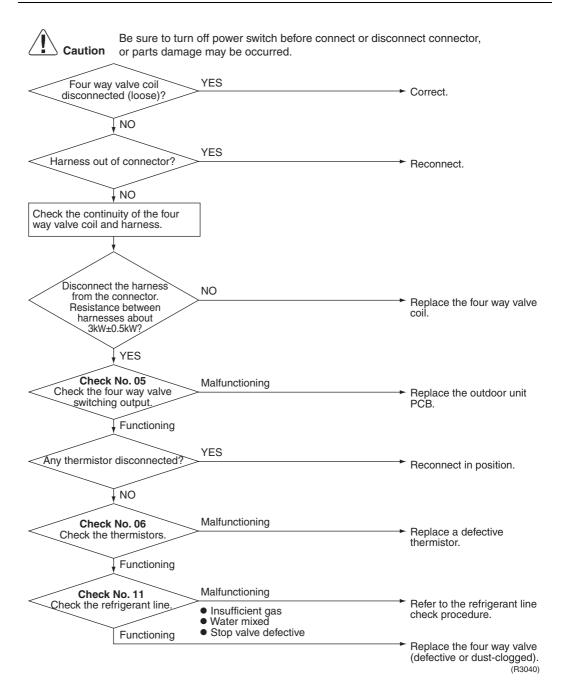
Check No.05 Refer to P.196



Check No.06 Refer to P.197



Check No.11 Refer to P.200



4.12 Discharge Pipe Temperature Control

Remote Control Display

F3

Method of Malfunction Detection

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

Malfunction Decision Conditions

If the temperature being detected by the discharge pipe thermistor rises, the compressor will stop. The temperature at which the compressor halts varies according to the frequency.

- (1) 110°C when the frequency is above 45Hz on ascending or above 40Hz on descending.
- (2) 102°C when the frequency is between 30Hz and 45Hz on ascending or between 40Hz and 25Hz on descending.
- (3) 98°C when the frequency is below 30Hz on ascending or below 25Hz on descending.
- The error is cleared when the temperature has dropped below 97°C.
- If the compressor stops 6 times successively due to abnormal discharge pipe temperature, the system will be shut down.
- The error counter will reset itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

Supposed Causes

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

Troubleshooting



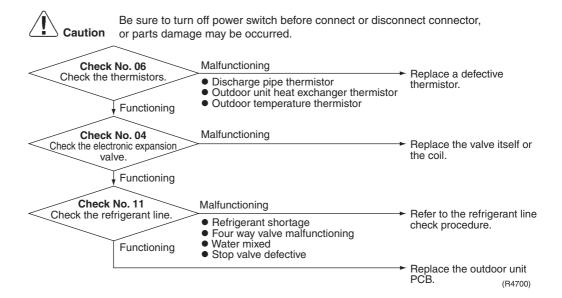
Check No.04 Refer to P.194



Check No.06 Refer to P.197



Check No.11 Refer to P.200



4.13 High Pressure Control in Cooling

Remote Control Display

FS

Method of Malfunction Detection

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

Malfunction Decision Conditions

- Activated when the temperature being sensed by the heat exchanger thermistor rises above 54°C.
- Deactivated when the temperature drops below 52°C.

Supposed Causes

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

Troubleshooting



Check No.04 Refer to P.194



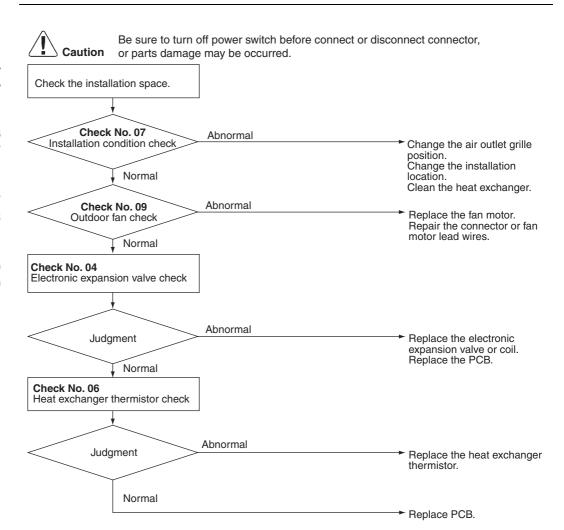
Check No.06 Refer to P.197



Check No.07 Refer to P.198



Check No.09 Refer to P.199



(R2855)

4.14 Position Sensor Abnormality

Remote Control Display

H8

Method of Malfunction Detection

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

Malfunction Decision Conditions

- The compressor is not running in about 15 seconds after the compressor run command signal is sent.
- Clearing condition: Continuous run for about 5 minutes (normal)
- The system will be shut down if the error occurs 8 times.

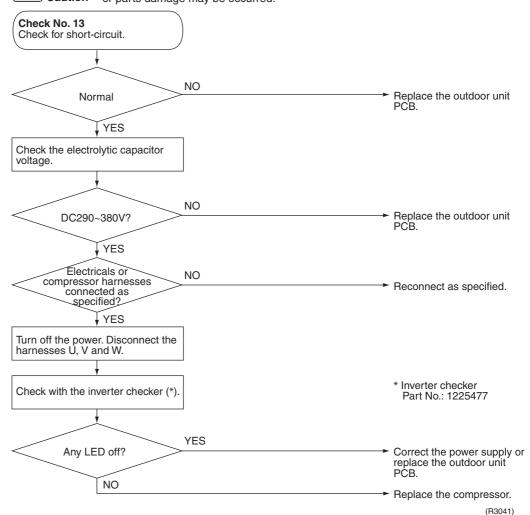
Supposed Causes

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

Troubleshooting



Check No.13 Refer to P.201 Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



4.15 CT or Related Abnormality

Remote Control Display

X8

Method of Malfunction Detection

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

Malfunction Decision Conditions

The compressor running frequency is above 68 Hz and the CT input is below 0.1 V. (The input current is also below 1.25 A.)

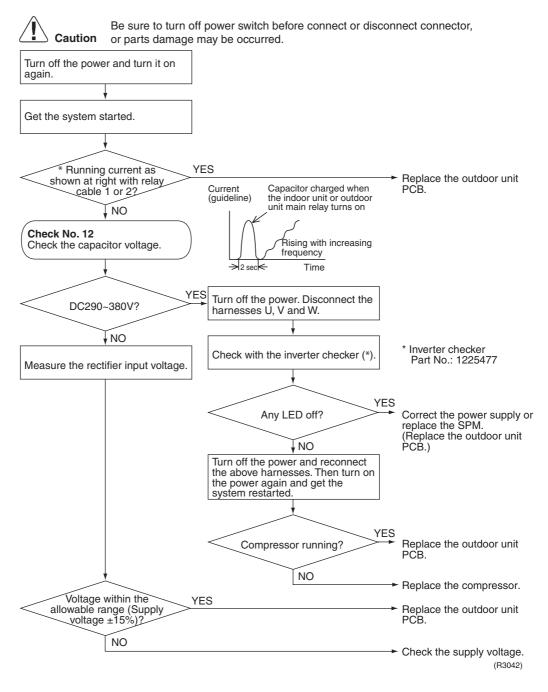
- If this error repeats 4 times, the system will be shut down.
- The error counter will reset itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

Supposed Causes

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

Troubleshooting





Note: If the model doesn't have SPM, replace the outdoor unit PCB.

4.16 Thermistor or Related Abnormality (Outdoor Unit)

Remote Control Display

P4.J3.J6.J8.J9.H9

Method of Malfunction Detection

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

Malfunction Decision Conditions

The thermistor input is above 4.96 V or below 0.04 V with the power on.

Error J3 is judged if the discharge pipe thermistor temperature is smaller than the condenser thermistor temperature.

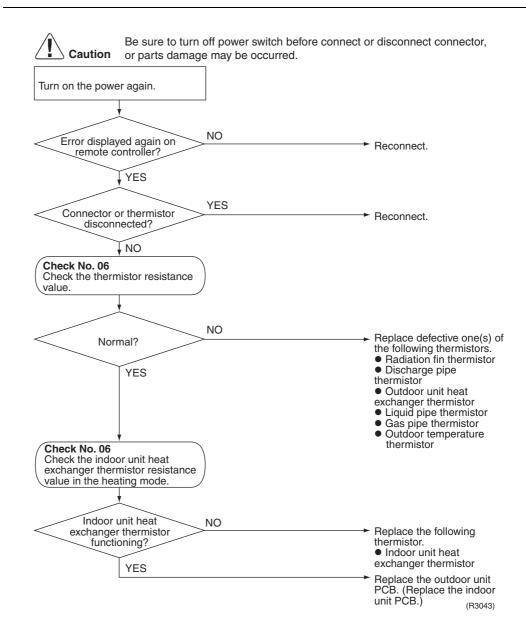
In case of JB or JB, the system will be shut down when the error is detected at all of operating units.

Supposed Causes

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

Troubleshooting





4.17 Electrical Box Temperature Rise

Remote Control Display

<u>L3</u>

Method of Malfunction Detection

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

Malfunction Decision Conditions

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

Supposed Causes

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

Troubleshooting



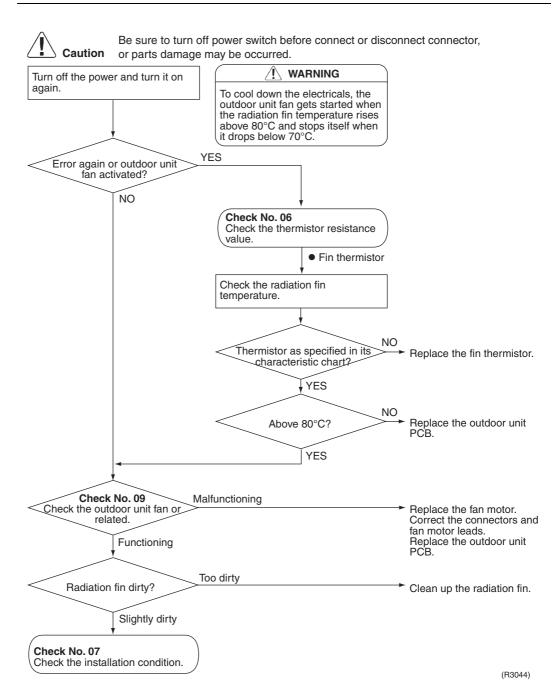
Check No.06 Refer to P.197



Check No.07 Refer to P.198



Check No.09 Refer to P.199



4.18 Radiation Fin Temperature Rise

Remote Control Display

LY

Method of Malfunction Detection

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

Malfunction Decision Conditions

If the radiation fin temperature with the compressor on is above 90°C,

- If a radiation fin temperature rise takes place 4 times successively, the system will be shut down.
- The error counter will reset itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

Supposed Causes

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

Troubleshooting



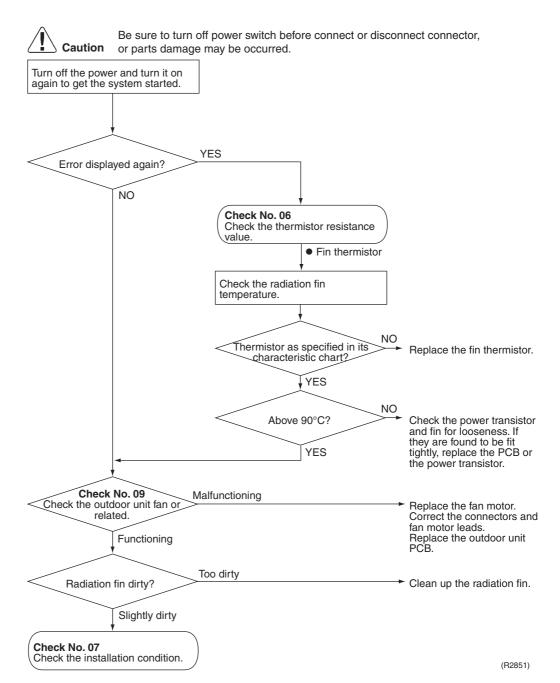
Check No.06 Refer to P.197



Check No.07 Refer to P.198



Check No.09 Refer to P.199



4.19 Output Over Current Detection

Remote Control Display

15

Method of Malfunction Detection

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

Malfunction Decision Conditions

- A position signal error occurs while the compressor is running.
- A speed error occurs while the compressor is running.
- An output over-current input is fed from the output over-current detection circuit to the microcomputer.
- The system will be shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 5 minutes (normal)

Supposed Causes

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

Troubleshooting



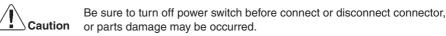
Check No.07 Refer to P.198



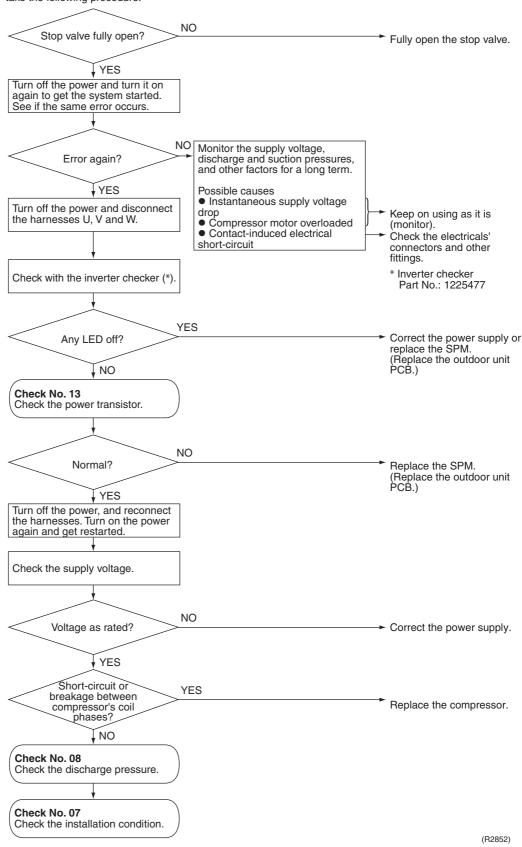
Check No.08 Refer to P.199



Check No.13 Refer to P.201



* An output over-current may result from wrong internal wiring. If the wires have been disconnected and reconnected for part replacement, for example, and the system is interrupted by an output over-current, take the following procedure.



A

ote: If the model doesn't have SPM, replace the outdoor unit PCB.

4.20 Insufficient Gas

Remote Control Display

ШΩ

Method of Malfunction Detection

Gas shortage detection I:

A gas shortage is detected by checking the power consumption value and the compressor running frequency.

Gas shortage detection II:

A gas shortage is detected by checking the difference between indoor unit heat exchanger temperature and room temperature as well as the difference between outdoor unit heat exchanger temperature and room temperature.

Malfunction Decision Conditions

Gas shortage detection I:

Power consumption < 1862 / 256 (A/Hz) × Compressor running frequency + (-18) However, when the status of running frequency > 61 (Hz) is kept on for a certain time. Note: The values are different from model to model.

Gas shortage detection II:

When the condition of the following 1-3 continued for a certain time.

- 1. During discharge pipe temperature control
- 2. Discharge pipe temp. > (255 / 256) × target discharge pipe temp. +20
- 3. Electronic expansion valve opening (the biggest value among operating units) ≥ 450

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

Supposed Causes

- Refrigerant shortage (refrigerant leakage)
- Poor compression performance of compressor
- Discharge pipe thermistor disconnected, or indoor unit or outdoor unit heat exchanger thermistor disconnected, room or outdoor air temperature thermistor disconnected
- Stop valve closed
- Electronic expansion valve defective

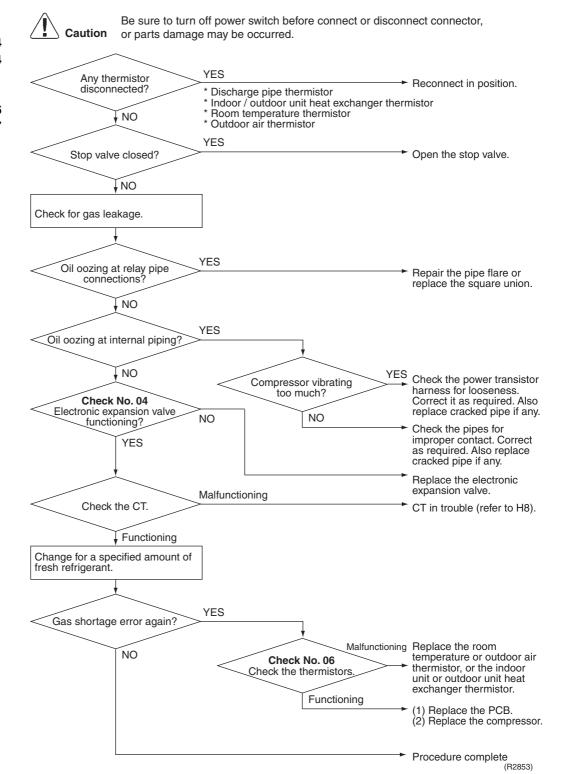
Troubleshooting



Check No.04 Refer to P.194



Check No.06 Refer to P.197



4.21 Over-voltage Detection

Remote Control Display

U2

Method of Malfunction Detection

An abnormal voltage rise is detected by checking the detection circuit or DC voltage detection circuit.

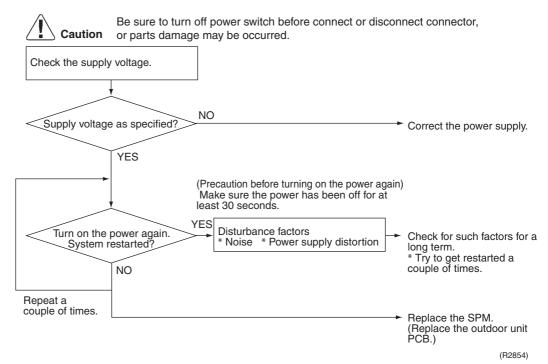
Malfunction Decision Conditions

- An over-voltage signal is fed from the over-voltage detection circuit to the microcomputer, or more than 430 V occurred the voltage detected by the DC voltage detection circuit.
- The system will be shut down if the error occurs 4 times.
- Clearing condition: Continuous run for about 60 minutes (normal)

Supposed Causes

- Supply voltage not as specified
- Over-voltage detector or DC voltage detection circuit defective
- PAM control part(s) defective

Troubleshooting



Note: If the model doesn't have SPM, replace the outdoor unit PCB.

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

Remote Control Display

UR.UH

Method of Malfunction Detection

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

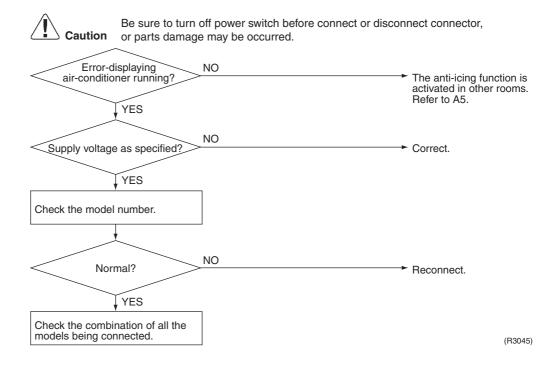
Malfunction Decision Conditions

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

Supposed Causes

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

Troubleshooting



4.23 Outdoor Unit PCB Abnormality or Signal Transmission Circuit Abnormality

Remote Control Display

ЦЧ

Method of Malfunction Detection

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

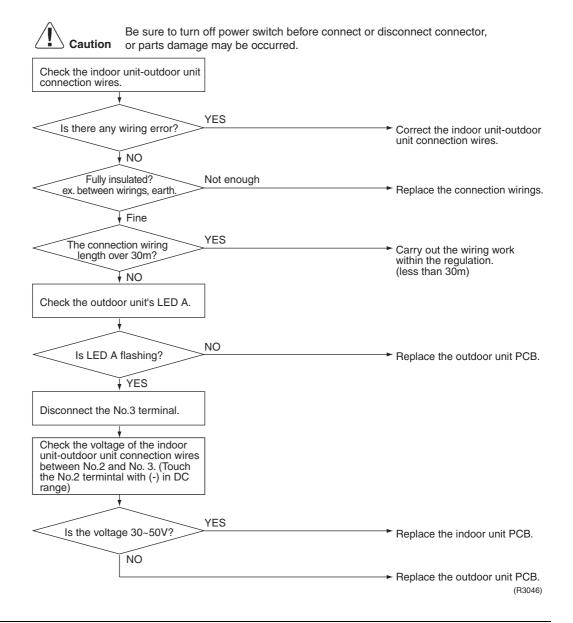
Malfunction Decision Conditions When the data sent from the outdoor unit cannot be received normally, or when the content of the data is abnormal.

If the indoor unit cannot communicate with the outdoor unit for 15 seconds, the system will be shut down.

Supposed Causes

- Faulty outdoor unit PCB.
- Faulty indoor unit PCB.
- Indoor unit-outdoor unit signal transmission error due to wiring error.
- Indoor unit-outdoor unit signal transmission error due to breaking of wire in the connection wires between the indoor and outdoor units (the transmission wire).

Troubleshooting



Check SiENBE12-627

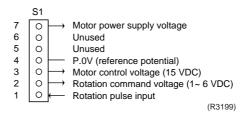
5. Check

5.1 How to Check

5.1.1 Fan Motor Connector Output Check

Check No.01

- 1. Check connector connection.
- 2. Check motor power supply voltage output (pins 4-7).
- 3. Check motor control voltage (pins 4-3).
- 4. Check rotation command voltage output (pins 4-2).
- 5. Check rotation pulse input (pins 4-1).



5.1.2 Electronic Expansion Valve Check

Check No.04

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

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

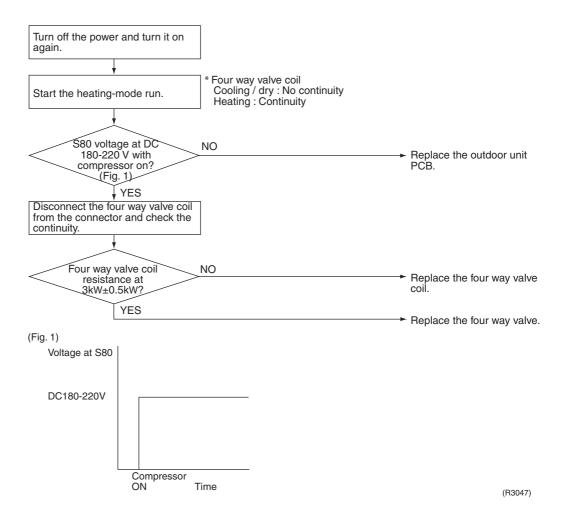
SiENBE12-627 Check

Valve Body Condition (Symptom) Check Method / Measure (1) Valve body catches at fully opened or half Reset power supply and conduct cooling opened position. operation unit by unit. (Symptom) Cooling: Check the liquid pipe temperature of no-operation unit. ■Water leakage at the no-operation unit ■Flow noise of refrigerant in the no-operation unit ■Operation halt due to anti-icing function s it almost same as Heating: > NO the outside air ■The unit does not heat temperature? ■Refrigerant flow rate vary by unit YES (Discharge air temperaturés are different by room) Replace the EVn of the room. (R1431) ■Peák cut (2) Valve body catches at complete close Reset power supply and conduct cooling position. operation unit by unit. (Symptom) Cooling: Check the low pressure ■The only unit having problem does not cool the ■When the only faulty unit is in operation, the unit makes pump down. (The low pressure of the unit becomes vacuum) Does the pressure become into NO ■IT is activated. vacuum zone? ■Abnormal discharge pipe temperature YES Heating: Replace the EVn of the room (R1432) Insufficient gas due to liquid refrigerant stagnation inside the faulty indoor unit (Only for heat pump model) ■The unit does not heat the room. OL is activated. ■Abnormal discharge pipe temperature (3) Valve does not open fully. Check the number of rotation of shaft if it is 5 and half from full open to complete close using manual coil for electronic expansion valve. When (Symptom) ■The unit does not cool nor heat (only for heat the number of rotation of shaft is less than the pump model.) ■OL is actuated. above value, the valve may catch anywhere of ■Abnormal discharge pipe temperature the body.

Check SiENBE12-627

5.1.3 Four Way Valve Performance Check

Check No.05



SiENBE12-627 Check

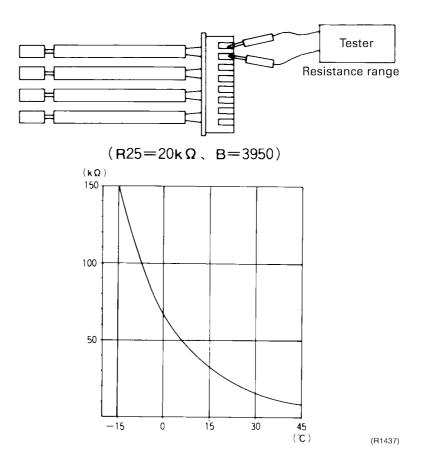
5.1.4 Thermistor Resistance Check

Check No.06

Remove the connectors of the thermistors on the PCB, and measure the resistance of each thermistor using tester.

The relationship between normal temperature and resistance is shown in the graph and the table below.

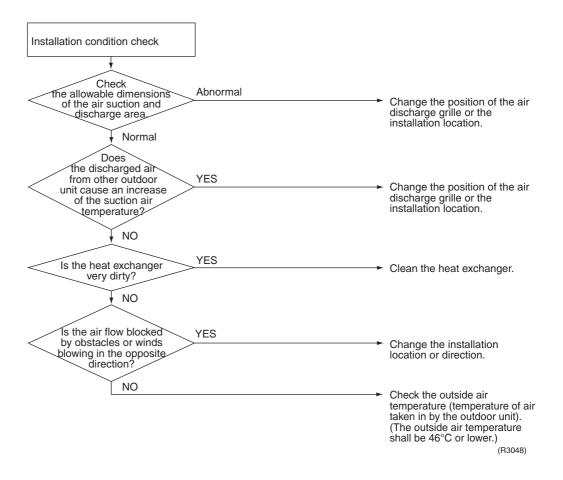
Thermistor	R25°C=20kΩ B=3950
Temperature (°C)	
-20	211.0 (kΩ)
-15	150
-10	116.5
-5	88
0	67.2
5	51.9
10	40
15	31.8
20	25
25	20
30	16
35	13
40	10.6
45	8.7
50	7.2



Check SiENBE12-627

5.1.5 Installation Condition Check

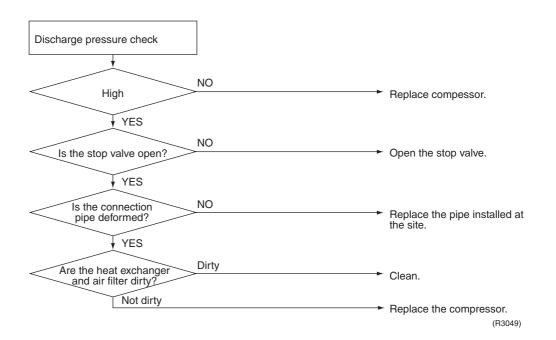
Check No.07



SiENBE12-627 Check

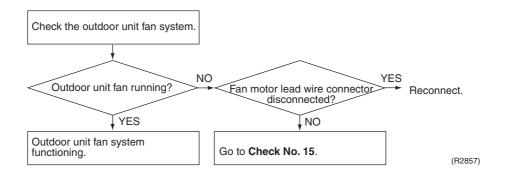
5.1.6 Discharge Pressure Check

Check No.08



5.1.7 Outdoor Unit Fan System Check (With DC Motor)

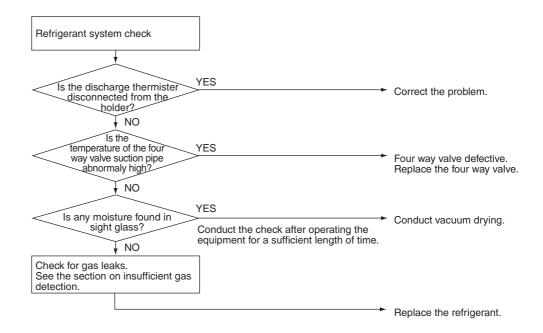
Check No.09



Check SiENBE12-627

5.1.8 Inverter Units Refrigerant System Check

Check No.11



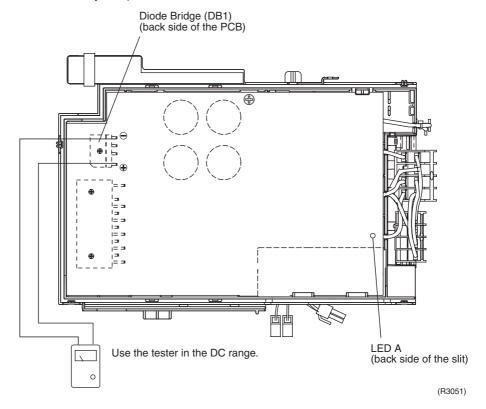
(R3050)

5.1.9 Capacitor Voltage Check

Check No.12

Before this checking, be sure to check the main circuit for short-circuit.

- Checking the capacitor voltage
- With the circuit breaker still on, measure the voltage according to the drawing. Be careful never to touch any live parts.



SiENBE12-627 Check

5.1.10 Power Transistor Check

Check No.13

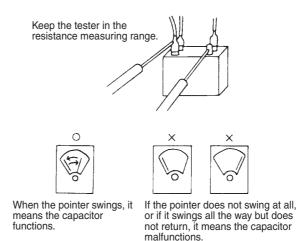
- Checking the power transistor
- Never touch any live parts for at least 10 minutes after turning off the circuit breaker.
- If unavoidably necessary to touch a live part, make sure the power transistor's supply voltage is below 50 V using the tester.
- For the UVW, make measurements at the Faston terminal on the PCB or the relay connector.

Tester's negative terminal	Power transistor (+)	UVW	Power transistor (–)	UVW	
Tester's positive terminal	UVW	Power transistor (+)	UVW	Power transistor (–)	
Normal resistance	Several kohms to several Mohms				
Abnormal resistance	0 or ∞				

5.1.11 Main Circuit Electrolytic Capacitor Check

Check No.14

- Checking the main circuit electrolytic capacitor
- Never touch any live parts for at least 10 minutes after turning off the circuit breaker.
- If unavoidably necessary to touch a live part, make sure there is no DC voltage using the tester.
- Check the continuity with the tester. Reverse the pins and make sure there is continuity.



(Q0367)

Check SiENBE12-627

5.1.12 Turning Speed Pulse Input on the Outdoor Unit PCB Check

Check No.15

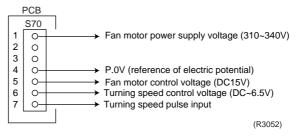
<Propeller fan motor>

Make sure the voltage of 290~380V is being applied.

- (1) Stop the operation first and then the power off, and disconnect the connector S70.
- (2) Make sure there is about DC 280 V between pins 4 and 7.
- (3) With the system and the power still off, reconnect the connector S70.
- (4) Make a turn of the fan motor with a hand, and make sure the pulse (0-15 V) appears twice at pins 1 and 4.

If the fuse is blown out, the outdoor-unit fan may also be in trouble. Check the fan too. If the voltage in Step (2) is not applied, it means the PCB is defective. Replace the PCB. If the pulse in Step (4) is not available, it means the Hall IC is defective. Replace the DC fan motor.

If there are both the voltage (2) and the pulse (4), replace the PCB.



* Propeller fan motor: S70

5.1.13 Hall IC Check

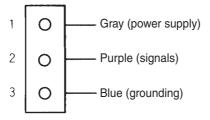
Check No.16

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

Failure of (1) \rightarrow faulty PCB \rightarrow Replace the PCB.

Failure of (2) \rightarrow faulty Hall IC \rightarrow Replace the fan motor.

Both (1) and (2) result → Replace the PCB.



(R1968)

Part 7 Removal Procedure

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		Removal of the Electronic Expansion Valve	
		Removal of the Compressor	

Outdoor Unit SiENBE12-627

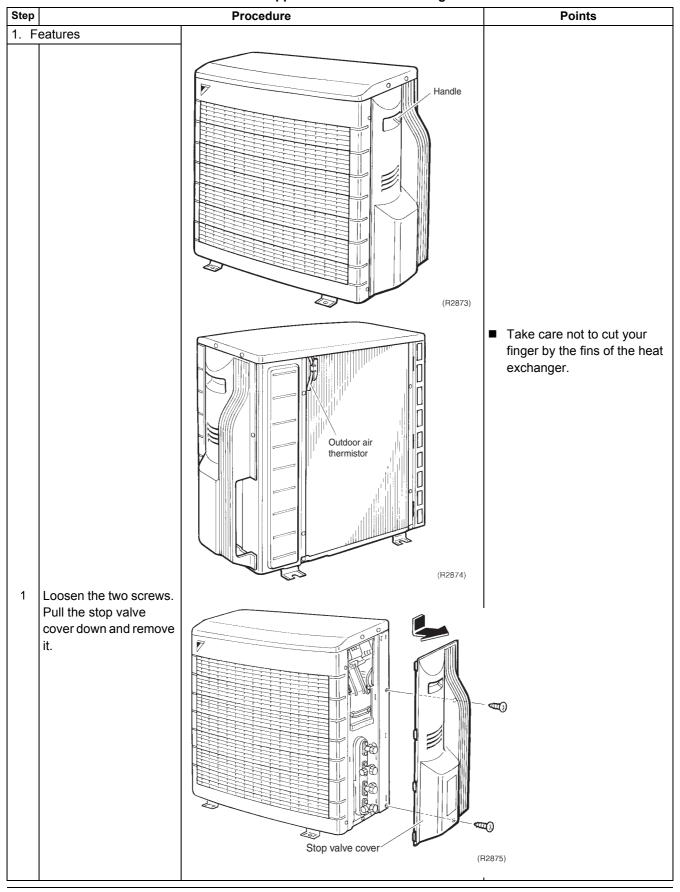
1. Outdoor Unit

1.1 Removal of the Panels / Fan Motor

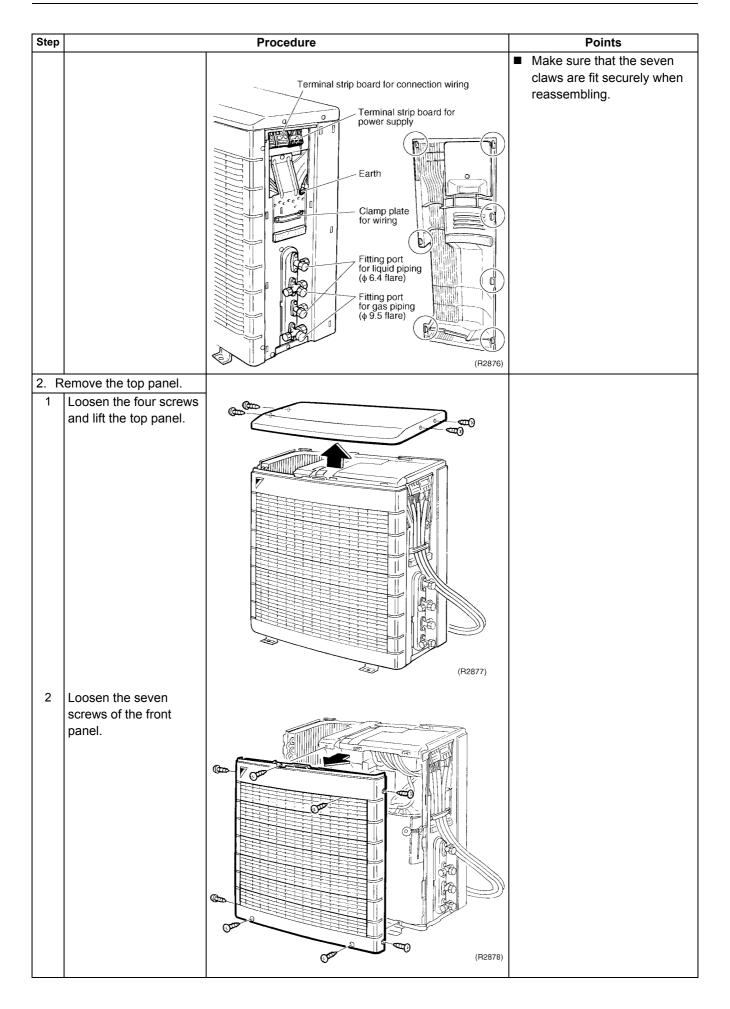
Procedure



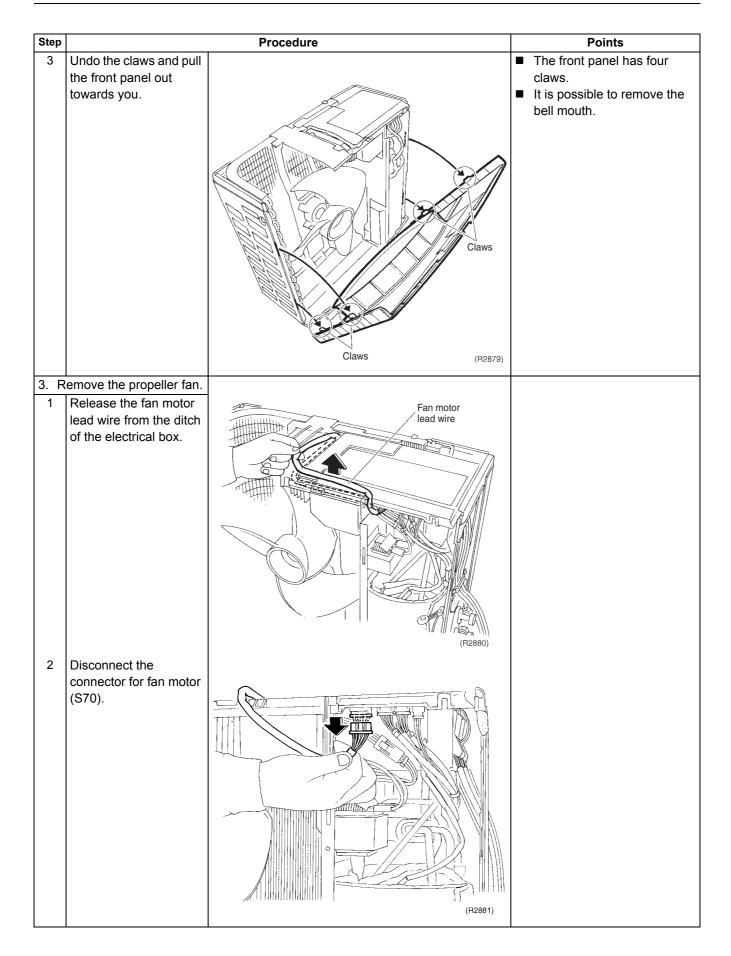
Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.



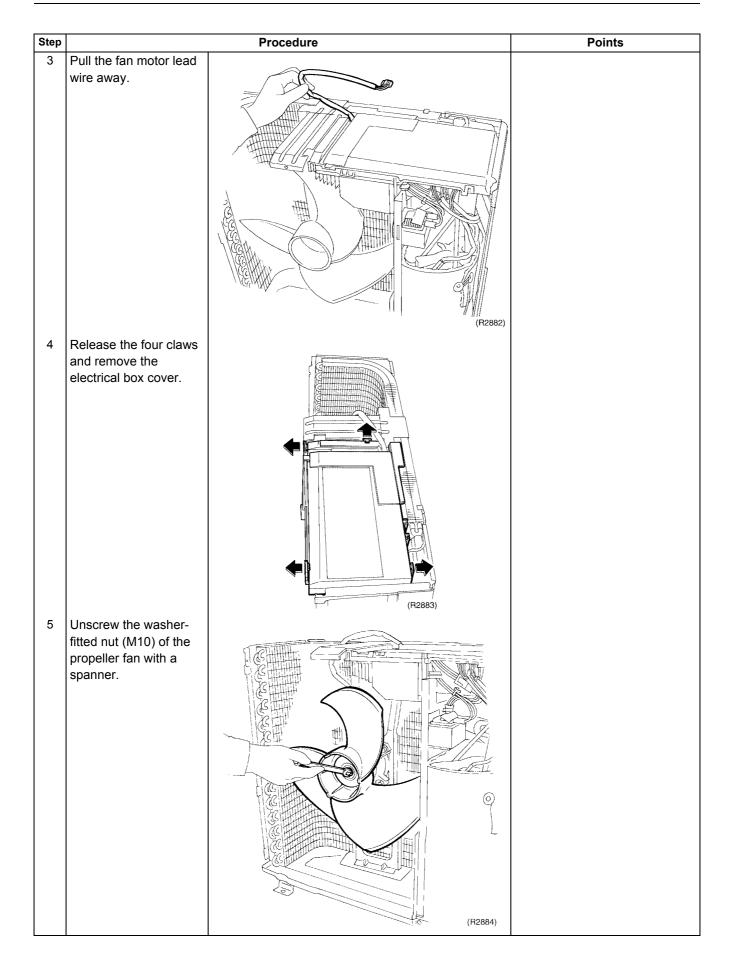
SiENBE12-627 Outdoor Unit

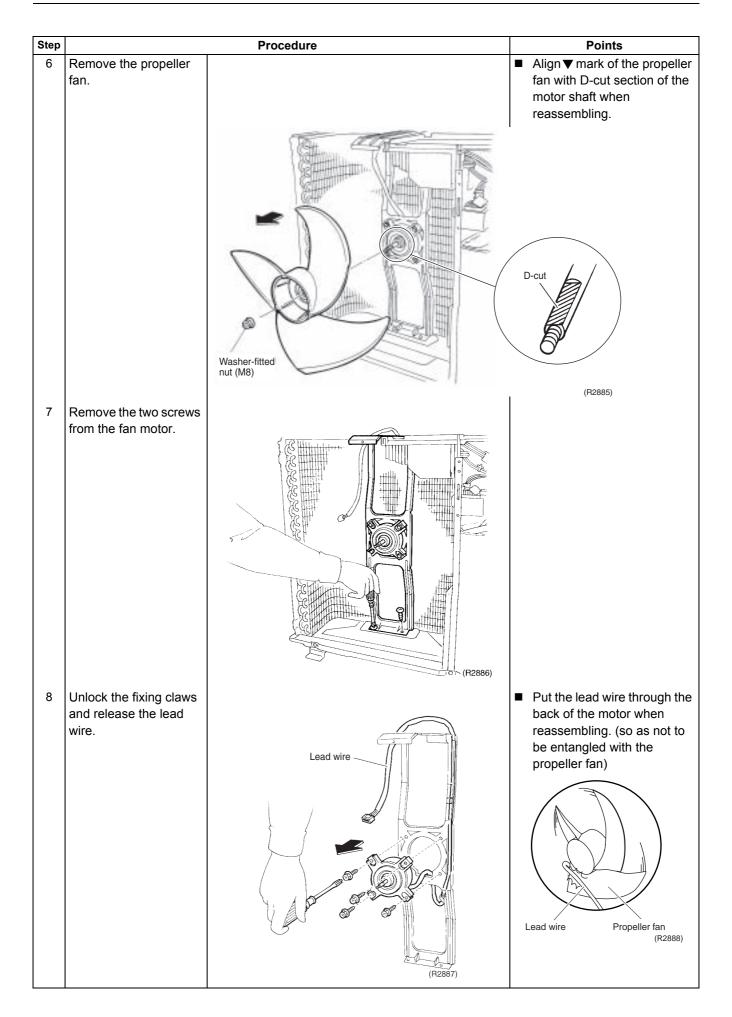


Outdoor Unit SiENBE12-627



SiENBE12-627 Outdoor Unit



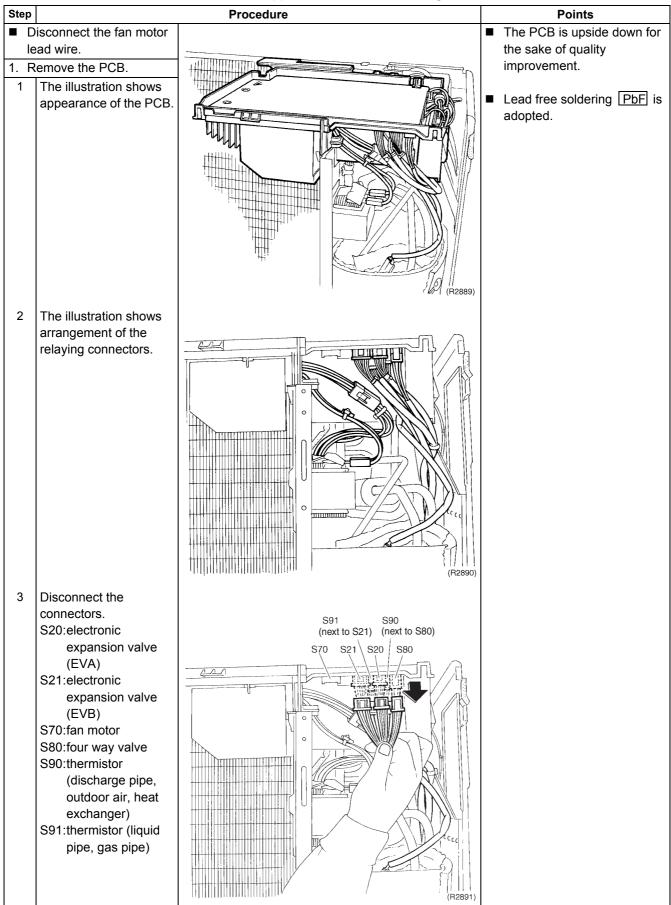


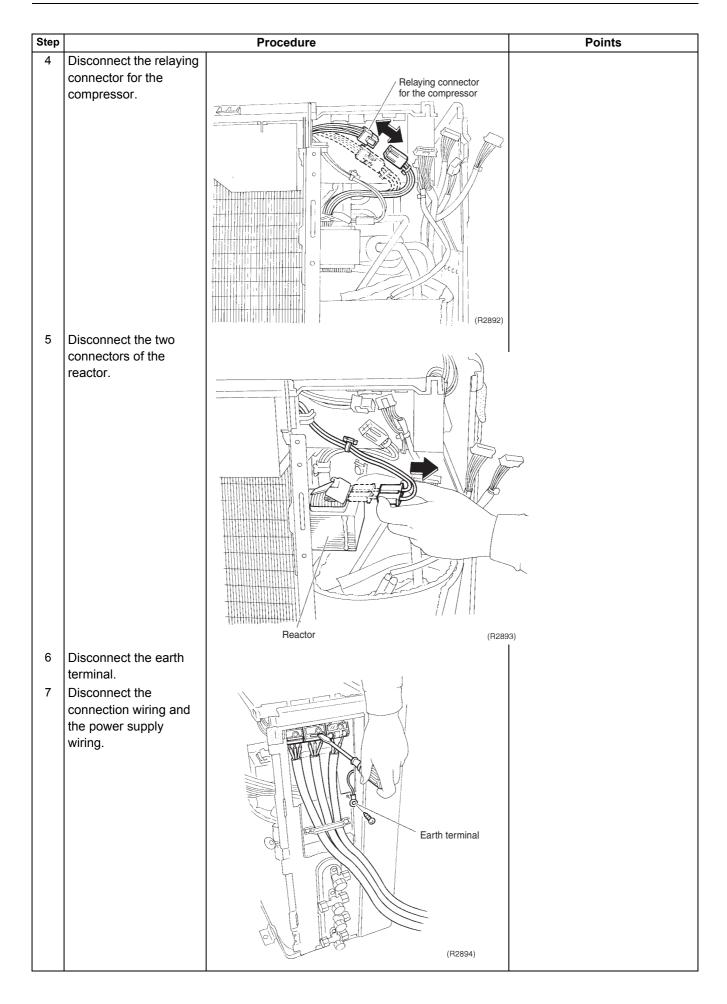
1.2 Removal of the PCB

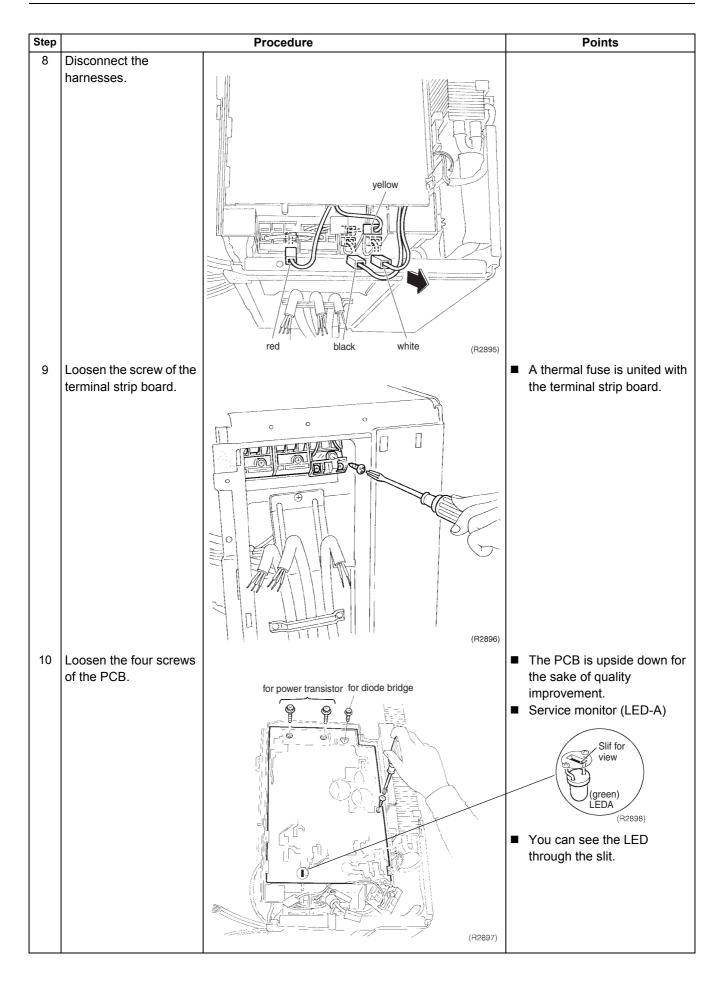
Procedure

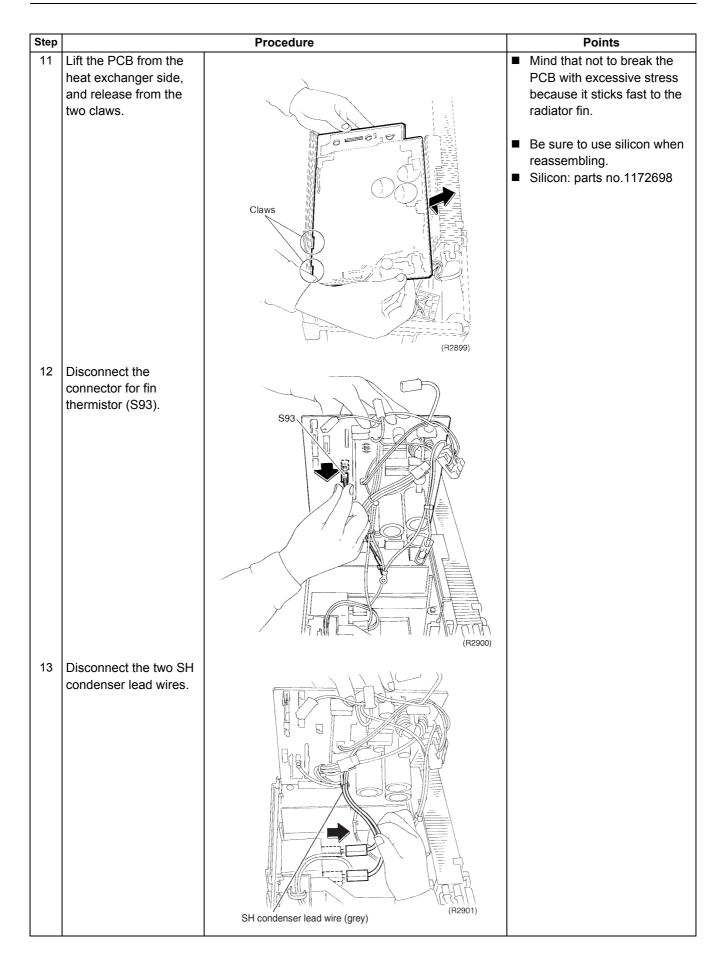
/ Warning

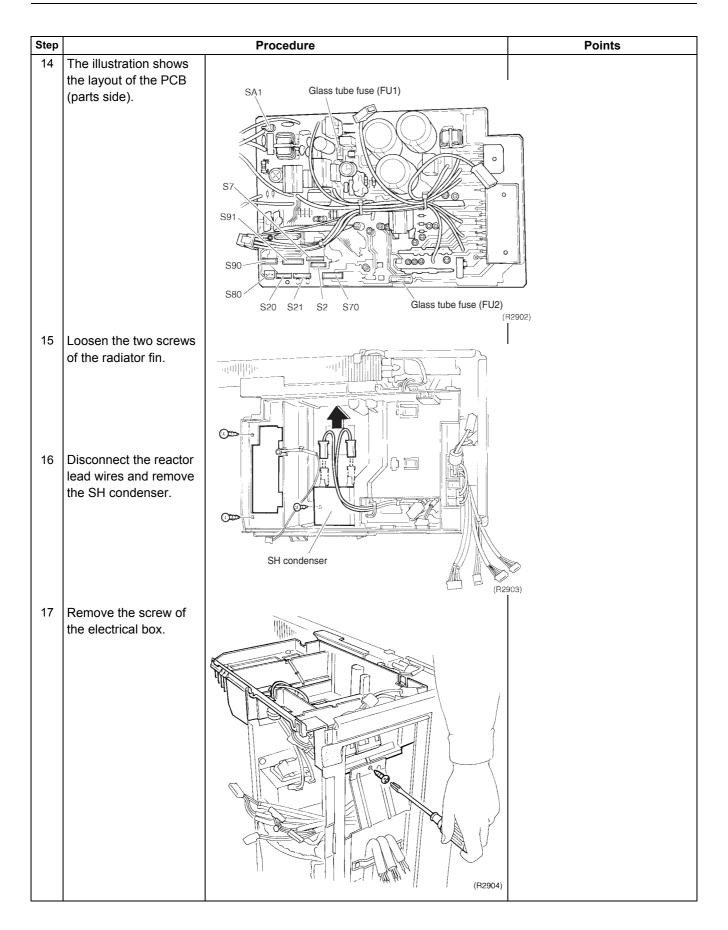
Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.









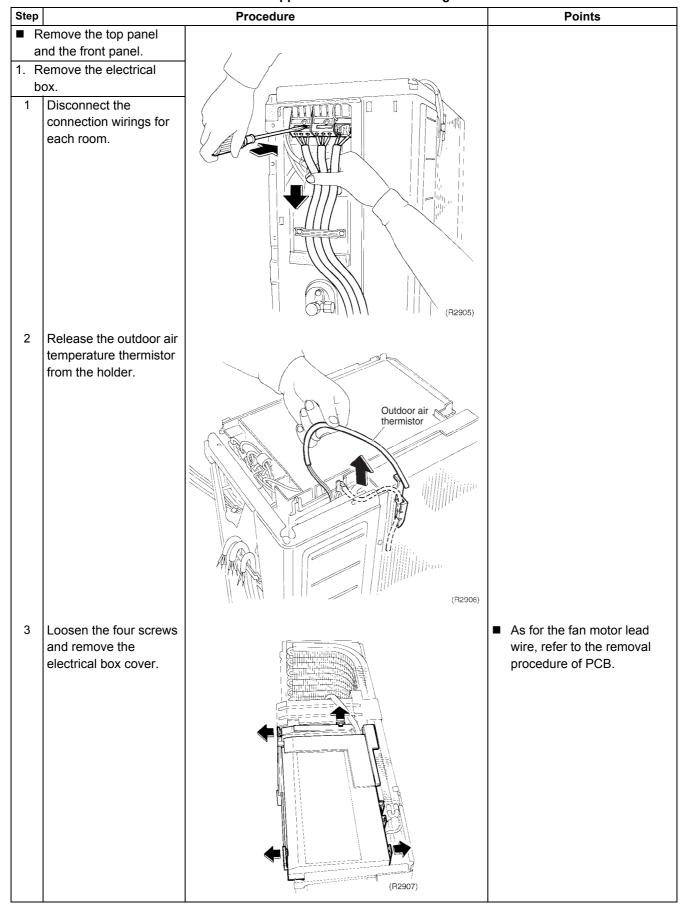


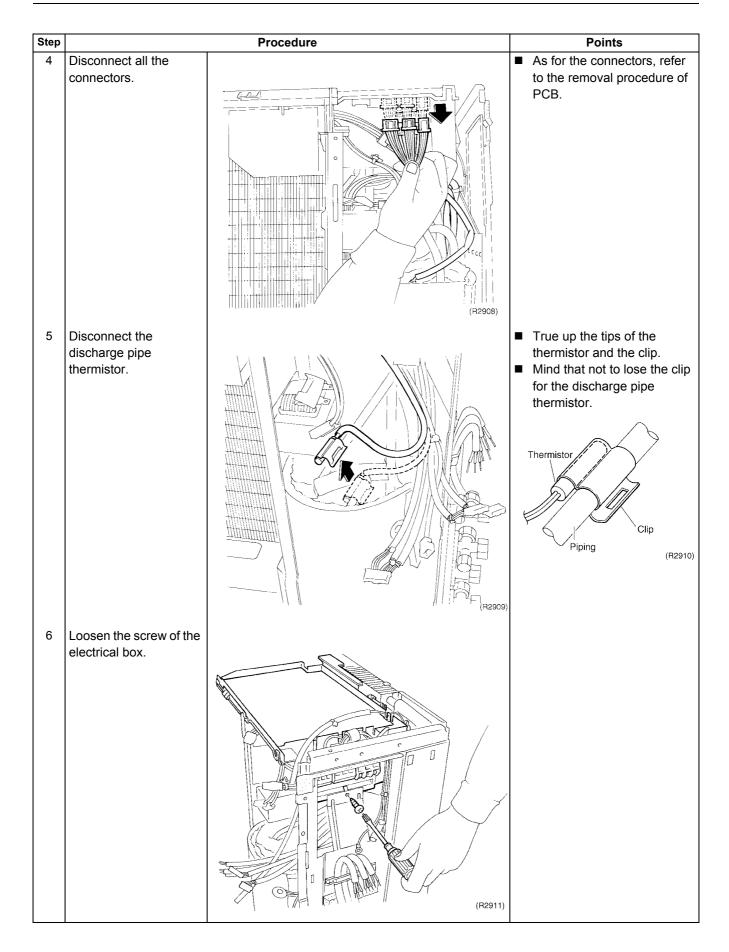
1.3 Removal of the Electrical Box

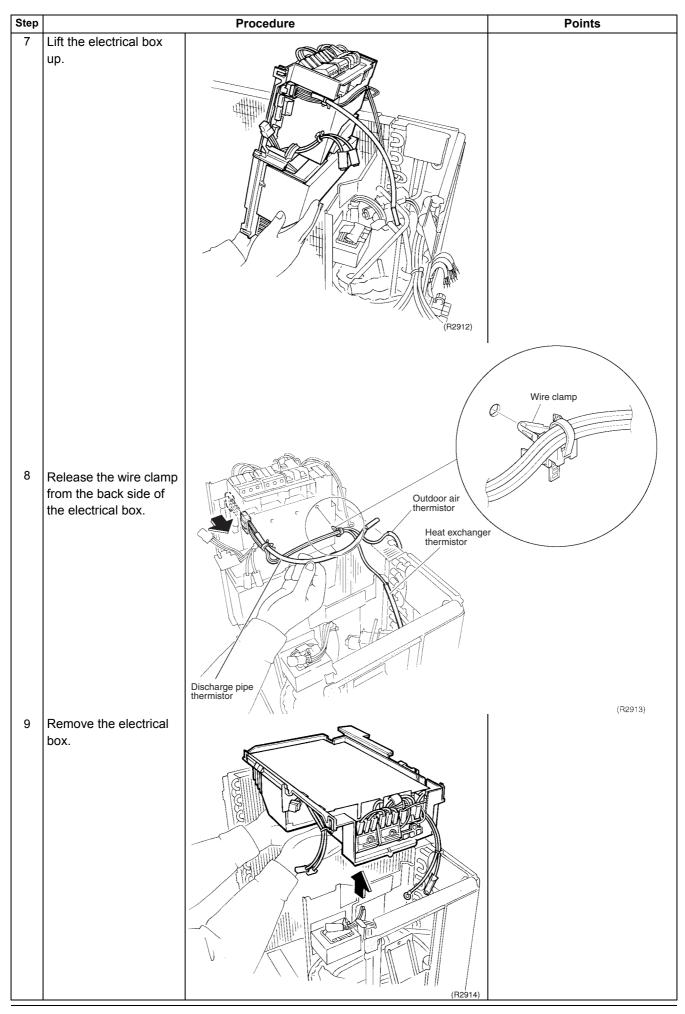
Procedure

Warning

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





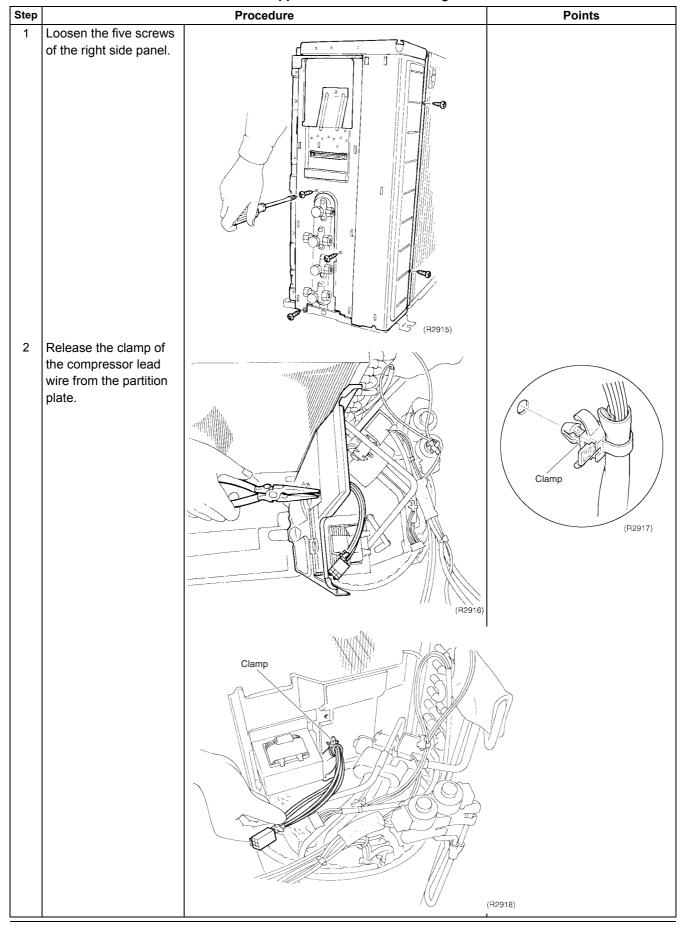


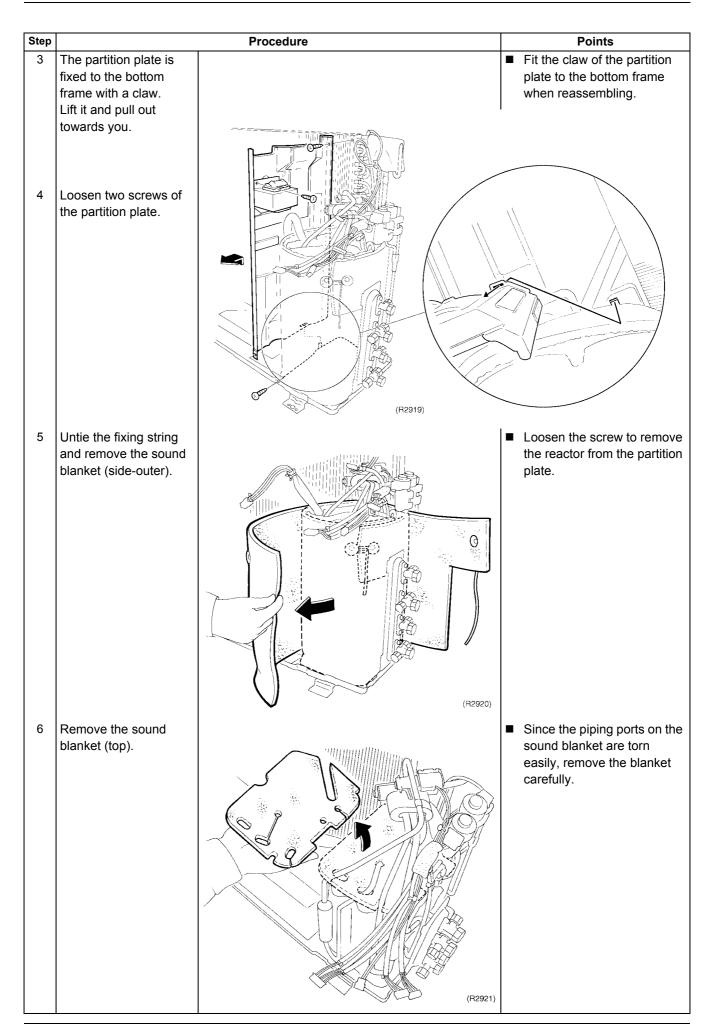
1.4 Removal of the Sound Blanket

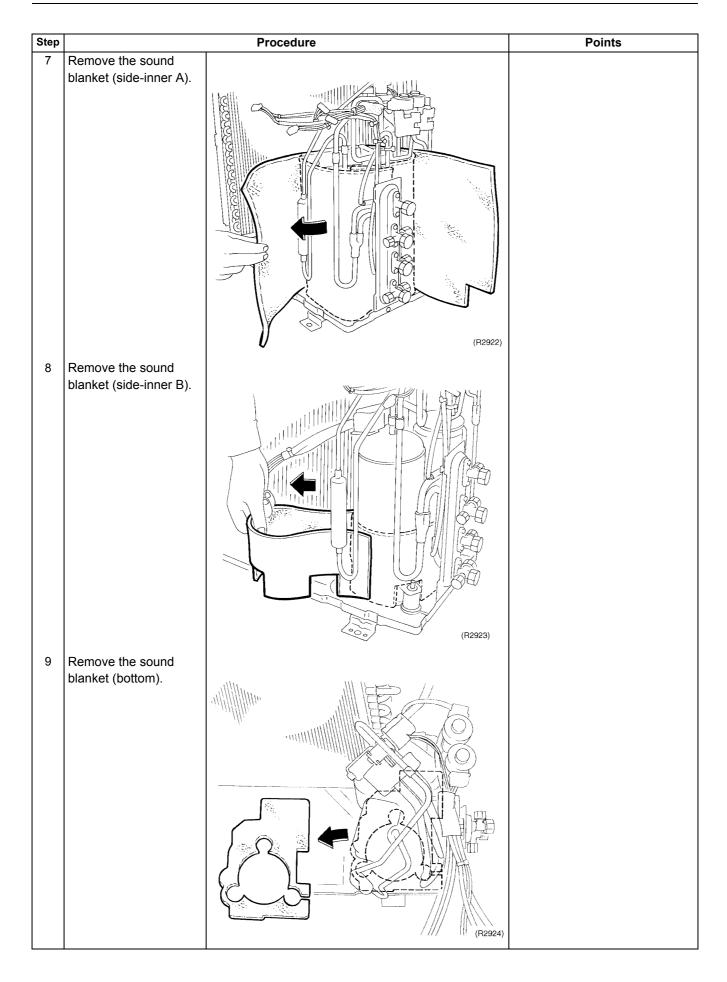
Procedure

/ Warning

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





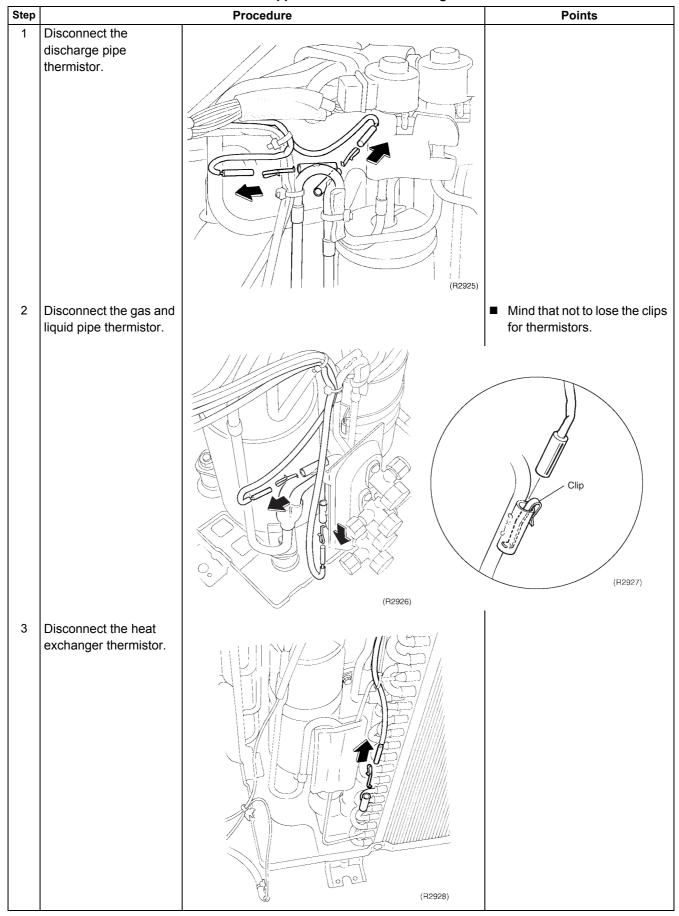


1.5 Removal of the Thermistor

Procedure

/ Warning

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

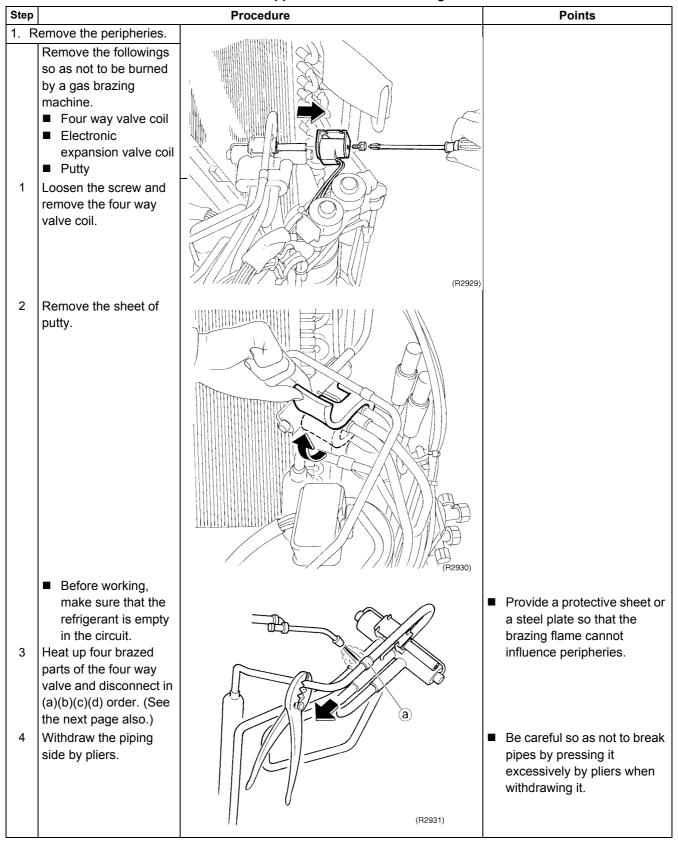


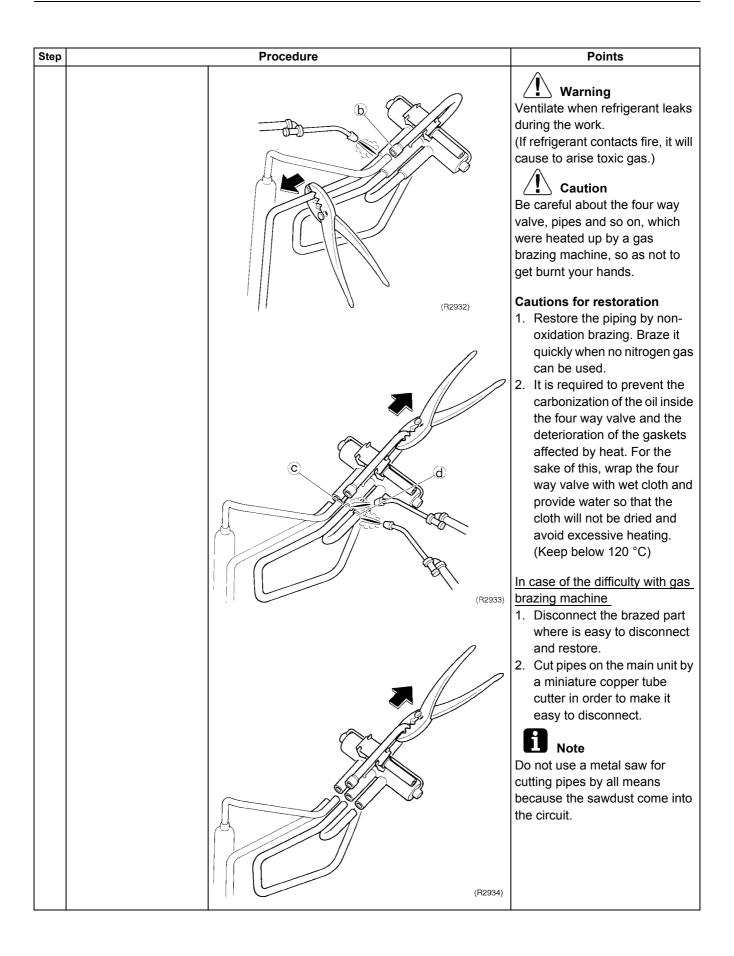
1.6 Removal of the Four Way Valve

Procedure

/ Warning

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



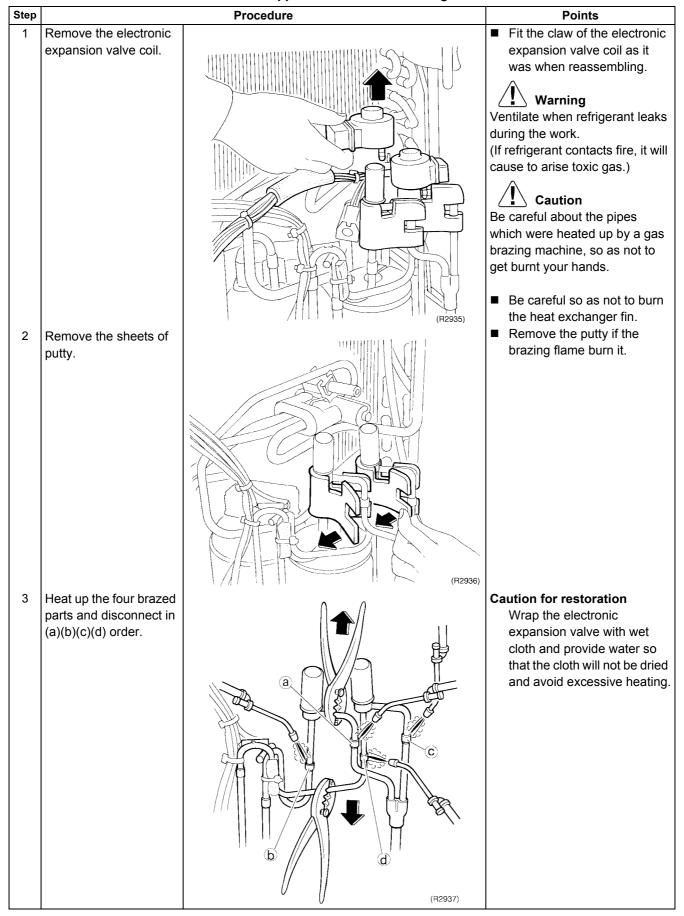


1.7 Removal of the Electronic Expansion Valve

Procedure

✓ Warning

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

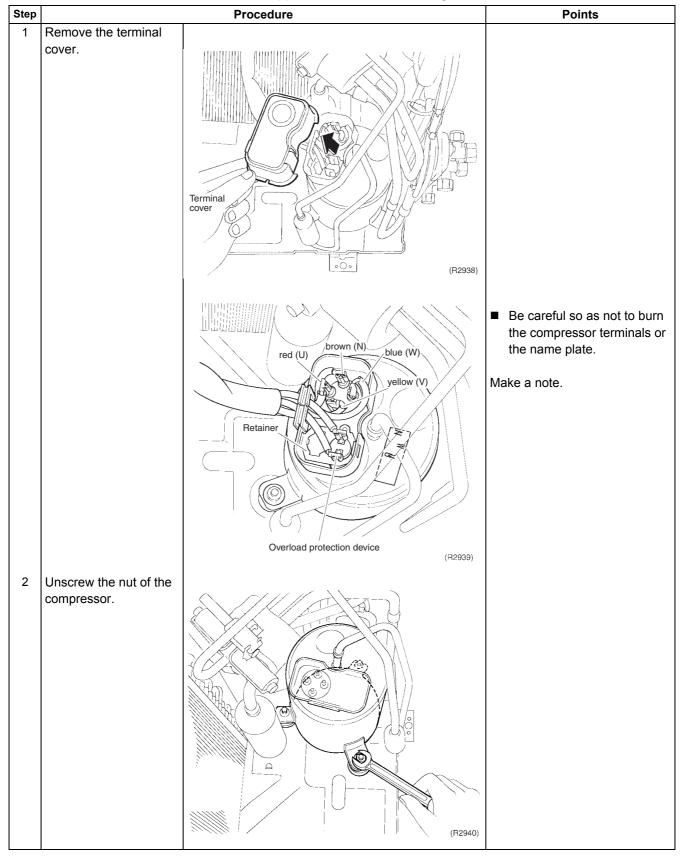


1.8 Removal of the Compressor

Procedure

/ Warning

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



Step Procedure Points ■ Before working, Warning make sure that the refrigerant is empty Since it may happen that in the circuit. refrigeration oil in the ■ Be sure to apply compressor will catch fire, nitrogen prepare wet cloth so as to replacement when extinguish fire immediately. heating up the brazed part. Warning 3 Heat up the brazed part Ventilate when refrigerant leaks of the discharge side during the work. and disconnect. (If refrigerant contacts fire, it will cause to arise toxic gas.) **∖** Caution Be careful about the pipes which were heated up by a gas brazing machine, so as not to (R2941) get burnt your hands. Heat up the brazed part 4 of the suction side and disconnect. 5 Lift the compressor up and remove it. (R2943)

Part 8 Others

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Others SiENBE12-627

1. Others

1.1 Test Run from the Remote Control

For Heat pump

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

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

For Cooling Only

Select the lowest programmable temperature.

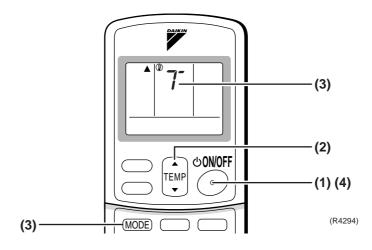
- Trial operation in cooling mode may be disabled depending on the room temperature. Use the remote control for trial operation as described below.
- After trial operation is complete, set the temperature to a normal level (26°C to 28°C).
- For protection, the machine disables restart operation for 3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

Trial Operation and Testing

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

Trial operation from Remote Control

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



SiENBE12-627 Others

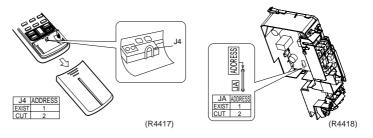
1.2 Jumper Settings

1.2.1 When Two Units are Installed in One Room

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

How to set the different addresses

- Control PCB of the indoor unit
- (1) Remove the front panel.
- (2) Remove the sensor parts cover (2-screws), then remove the electric parts box (1-screw).
- (3) Slide the metallic cover to remove it. (4-claws on the electric parts box)
- (4) Cut the jumper JA on PCB.
- Infrared remote control
- (1) Slide the front cover and take it off.
- (2) Cut the address jumper J4.



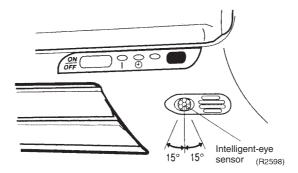
1.2.2 Jumper Setting

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

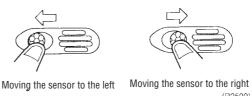
Others SiENBE12-627

1.2.3 Adjusting the Angle of the Intelligent Eye Sensor

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



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



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



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

Part 9 Appendix

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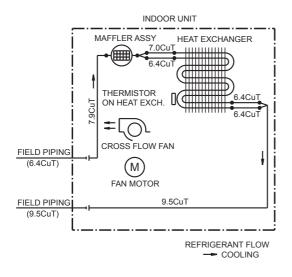
Piping Diagrams SiENBE12-627

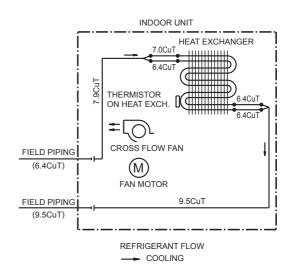
1. Piping Diagrams

1.1 Indoor Units

1.1.1 Wall Mounted Type

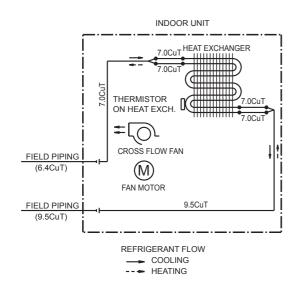
FTKS20/25/35D3VMW(L), ATKS20/25/35E2V1B FTKS20/25/35CAVMB, ATKS20/25/35DAVMB

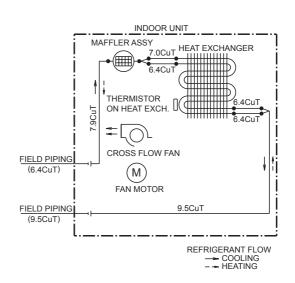




4D050757A 4D033698E

FTXG25/35EV1BW(S), ATXG25/35EV1B FTXS20/25/35D3VMW(L), ATXS20/25/35E2V1B

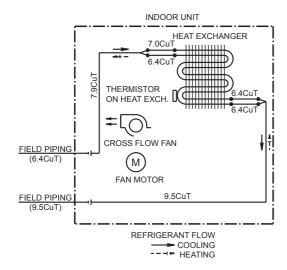




4D045301B 4D047912E

SiENBE12-627 Piping Diagrams

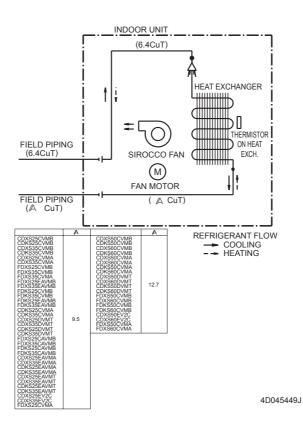
FTXS20/25/35CAVMB, ATXS20/25/35DAVMB



4D049319A

1.1.2 Duct Connected Type

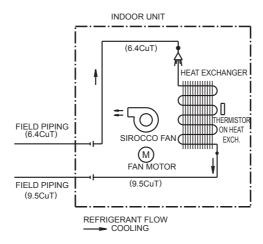
FDK(X)S25/35CAVMB, FDK(X)S25/35EAVMB



Piping Diagrams SiENBE12-627

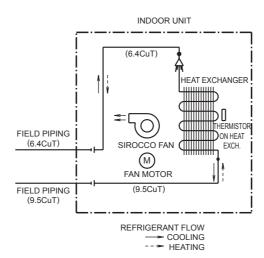
1.1.3 Floor / Ceiling Suspended Dual Type

FLKS25/35BAVMB



4D034012E

FLXS25/35BAVMB

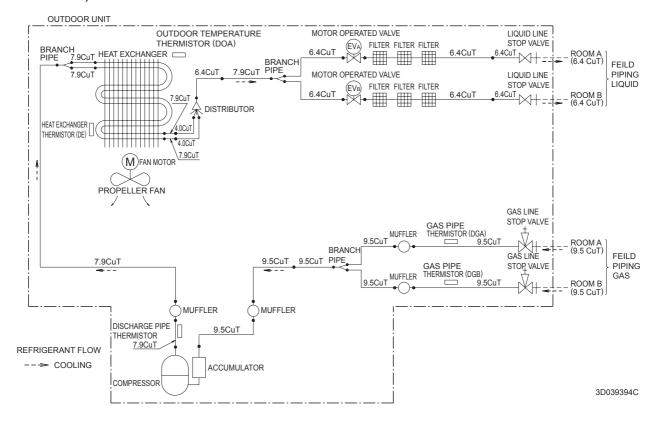


4D048722A

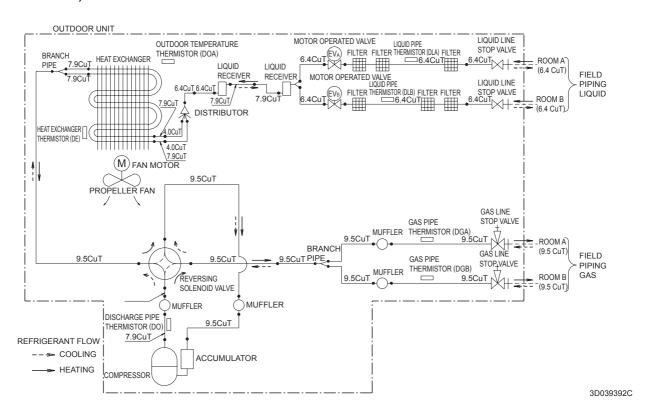
SiENBE12-627 Piping Diagrams

1.2 Outdoor Units

2MKS40DAVMB, 2AMK40BAVMB



2MXS40DAVMB, 2AMX40BAVMB



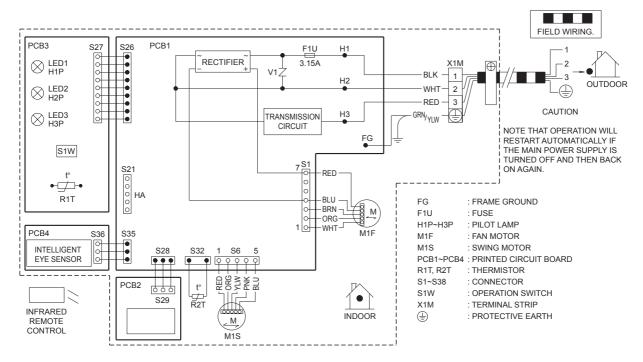
Wiring Diagrams SiENBE12-627

2. Wiring Diagrams

2.1 Indoor Units

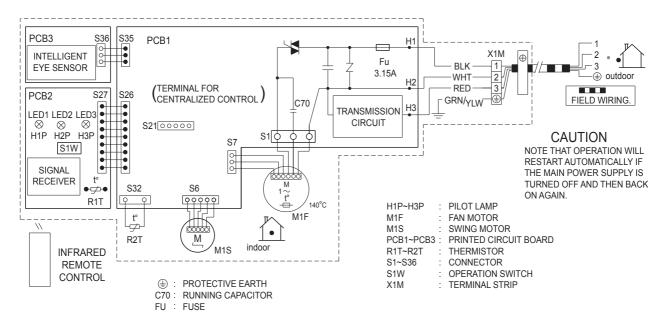
2.1.1 Wall Mounted Type

FTK(X)20/25/35D3VMW(L), ATK(X)S20/25/35E2V1B



3D051268A

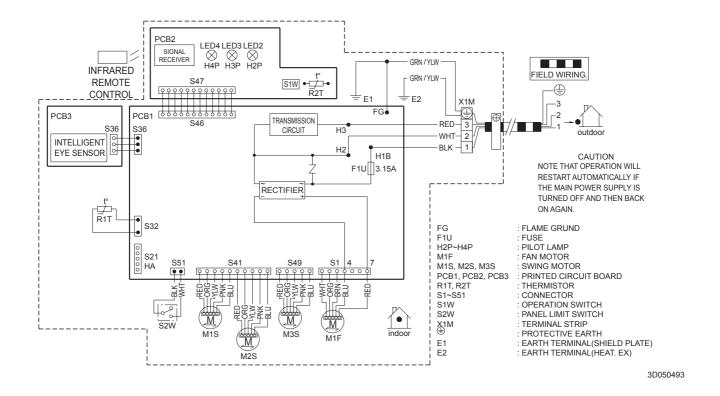
FTK(X)S20/25/35CAVMB, ATK(X)S20/25/35DAVMB



3D033599G

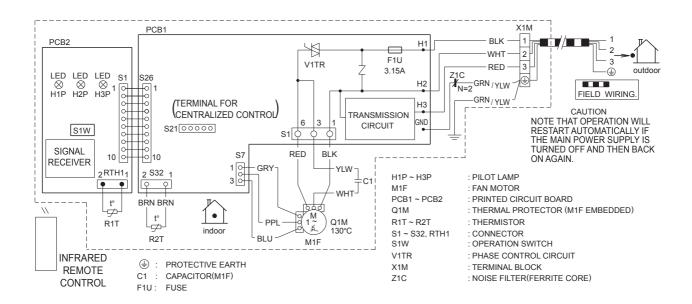
SiENBE12-627 Wiring Diagrams

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



2.1.2 Duct Connected Type

FDK(X)S25/35CAVMB, FDK(X)S25/35EAVMB

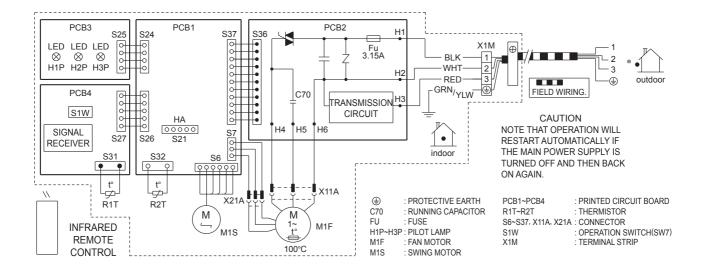


3D045012K

Wiring Diagrams SiENBE12-627

2.1.3 Floor / Ceiling Suspended Dual Type

FLK(X)S25/35BAVMB

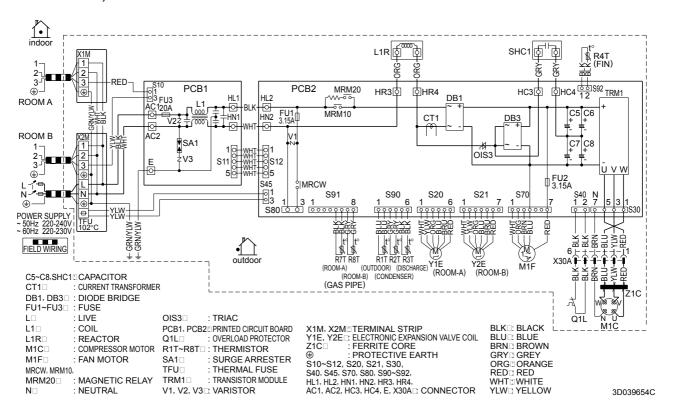


3D033909E

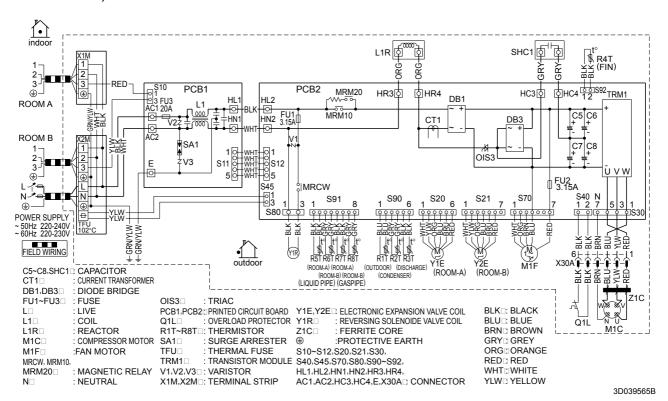
SiENBE12-627 Wiring Diagrams

2.2 Outdoor Units

2MKS40DAVMB, 2AMK40BAVMB



2MXS40DAVMB, 2AMX40BAVMB



Wiring Diagrams SiENBE12-627

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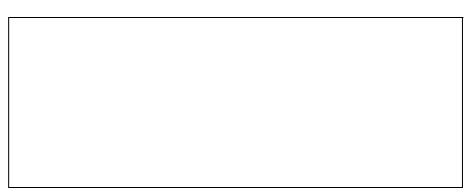
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