

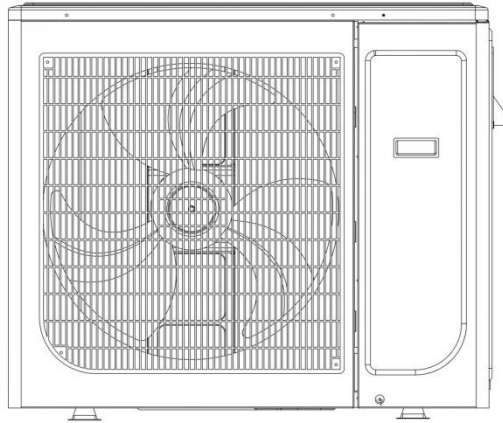
Installation manual

DC INVERTER AIR TO WATER HEAT PUMP MONOBLOCK TYPE

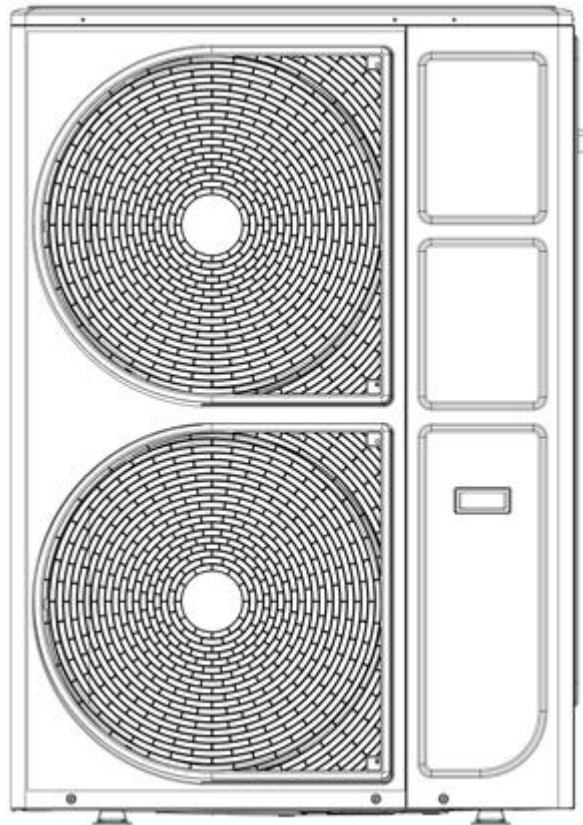
Please read this manual carefully before using this product and keep it for your reference.

DC INVERTER AIR TO WATER HEAT PUMP

Product parameters & installation instructions



RF8I/bd



RF12I/bd
RF16I/bd

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! Please read the instructions carefully before installation, please do not discard. Please save the manual for future reference.

! Make sure it is installed by a professional before running the unit. If in doubt, please contact your dealer for advice and information.

! If the unit is not used for a long time, it is recommended not to turn off the power; if the power is turned off, the product protection device (such as the pump anti-lock function and antifreeze device) will not be available.

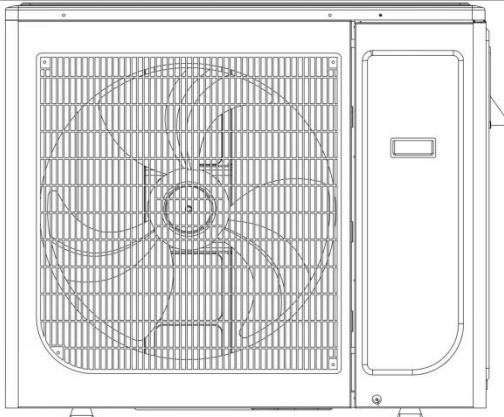
Basic information

The air source heat pump main unit is recommended to be installed in a well ventilated area. The unit can be connected to the fan coil, underground heating equipment, low temperature radiator and other end connections.

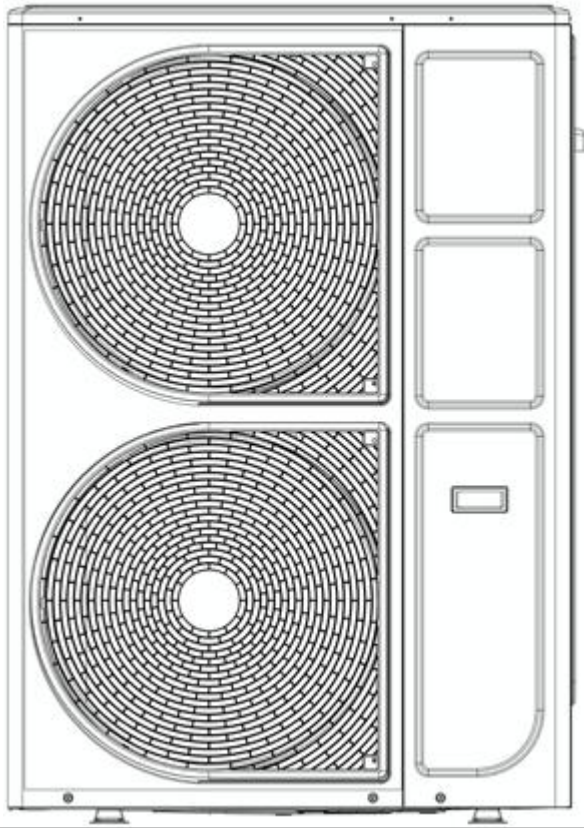
A backup heater is built into the system to assist in heating at low temperatures. The backup heater can also be used as a backup heating when the external unit fails.

Items in the product packaging box

Before installation, please make sure that all items are in the carton.

Carton of Monoblock heat pump		
Items	Picture	Qty.
Instruction manual	Installation manual DC INVERTER AIR TO WATER HEAT PUMP MONOBLOCK TYPE <small>Please read this manual carefully before using this product and keep it for your reference.</small>	1
HEAT PUMP RF8I/bd		1

HEAT PUMP
RF12I/bd
RF16I/bd



1

Tools required to install the unit

1. Impact drill
2. Level
3. Water pipe bending equipment
4. Tape measure
5. Torque wrench
6. Pipe cutting machine
7. Sleeve group
8. Screwdriver
9. Wire stripper
10. Bow saw
11. Corresponding rule hole opener
12. Adjustable wrench
13. Protective equipment such as gloves and glasses



Safety instructions

To prevent injury to users and others, or property damage, be sure to follow the instructions below. Incorrect operation may result in injury or damage.

Please install the unit in compliance with local laws, regulations and standards; check the voltage and frequency; the unit is only used for grounding sockets, and the unit must have independent switches.

The following security defenses need to be considered:

- Please read the following warnings before installation.
- Be sure to check the details that need attention, including security issues.
- After reading the installation instructions, be sure to save them for future reference.



Caveat

Ensure that the unit is installed safely and reliably.

If the unit is not secure or not installed, it will cause damage. The minimum required support weight is 20g/mm². When installing the machine in a closed area or limited space, please consider the size of the room and the ventilation to prevent suffocation caused by refrigerant leakage.

Use a specific wire and secure it to the terminal block (this connection prevents the wire from being applied to the part).

Wiring errors can cause fire.

Please connect the power cord in strict accordance with the wiring diagram on the manual to avoid causing burnout of the equipment or fire.

When installing, be sure to use the correct or specific materials.

Failure to use parts or materials may result in fire, electric shock, or falling of the machine, resulting in injury.

Safety grounding installation, please read the installation instructions.

Improper installation may result in fire, electric shock, falling of the machine, or water leaking, resulting in injury.

Electrical work according to the installation manual, be sure to use professional tools.

If the power supply capacity is insufficient or the circuit is incomplete, it may cause fire or electric shock.

The unit must have a grounding device.

If the power supply does not have a grounding device, be sure not to connect the machine.

Non-professional installers, please do not attempt to move or repair the machine.

Unreasonable movement or maintenance of the unit may cause water leakage, electric shock, or fire, resulting in injury. Need to repair or maintain the machine, please find a professional technician.

Do not unplug or plug in the power during operation.

It may cause fire or electric shock.

Do not touch or operate the machine when the hands are wet.

It may cause fire or electric shock.

Do not place heaters or other electrical appliances near the power cord.

It may cause fire or electric shock.

Please note that water cannot be poured directly from the machine. Do not allow water to enter the electrical components.

It may cause fire or electric shock.



Note

Do not install the unit in a location where there may be flammable gas leaks.

If there is a flammable gas leak and gathers around the unit, it will cause an explosion.

Drainage systems and piping work are carried out according to the instructions.

If the drainage system or piping is defective, water leakage will occur and should be disposed of immediately to avoid other household products getting wet and damaged.

Do not clean the unit when the power is on.

When cleaning the machine, turn off the power. Failure to do so may result in injury from a high speed fan or electric shock.

Do not continue to run the unit when there is a problem with the unit or if there is a smell. Please turn off the power and stop running the unit. Doing so may cause electric shock or fire.

Please be careful when the product is not packed or when it is installed.

Sharp edges can cut people, paying special attention to the edges and fins of the heat exchanger.

After installation or after repair, please check if the refrigerant or refrigerant will leak.

If the refrigerant is not enough, the unit will not work properly.

The installation of the external unit must be flat and firm

Avoid abnormal vibration and noise

Do not put your fingers into the fan and evaporator. High-speed fan can cause serious injury

This device is not designed for people who are physically or mentally weak (including children) and who do not have experience and who do not understand the heating system. Unless it is used under the direction and supervision of the responsible person, or has received training on the use of this equipment. Children should be used under the supervision of an adult to ensure that they use the device safely.

If the power cord is damaged, it must be replaced by the manufacturer or its service agent, or the same professional, to avoid danger.

Materials needed

Monoblock type heat pump power line: three-core insulated wire; 9KW with $\geq 6\text{mm}^2$ three-core insulated wire; 15KW and 18KW with $\geq 10\text{mm}^2$ three-core insulated wire
When wiring it requires isolation device

Low voltage cable: 0.75mm shielded twisted pair

Note: All control wires must be installed 300mm away from the main wire.

Inlet and outlet pipe requirements (internal thread)

RF8l/bd 3/4"

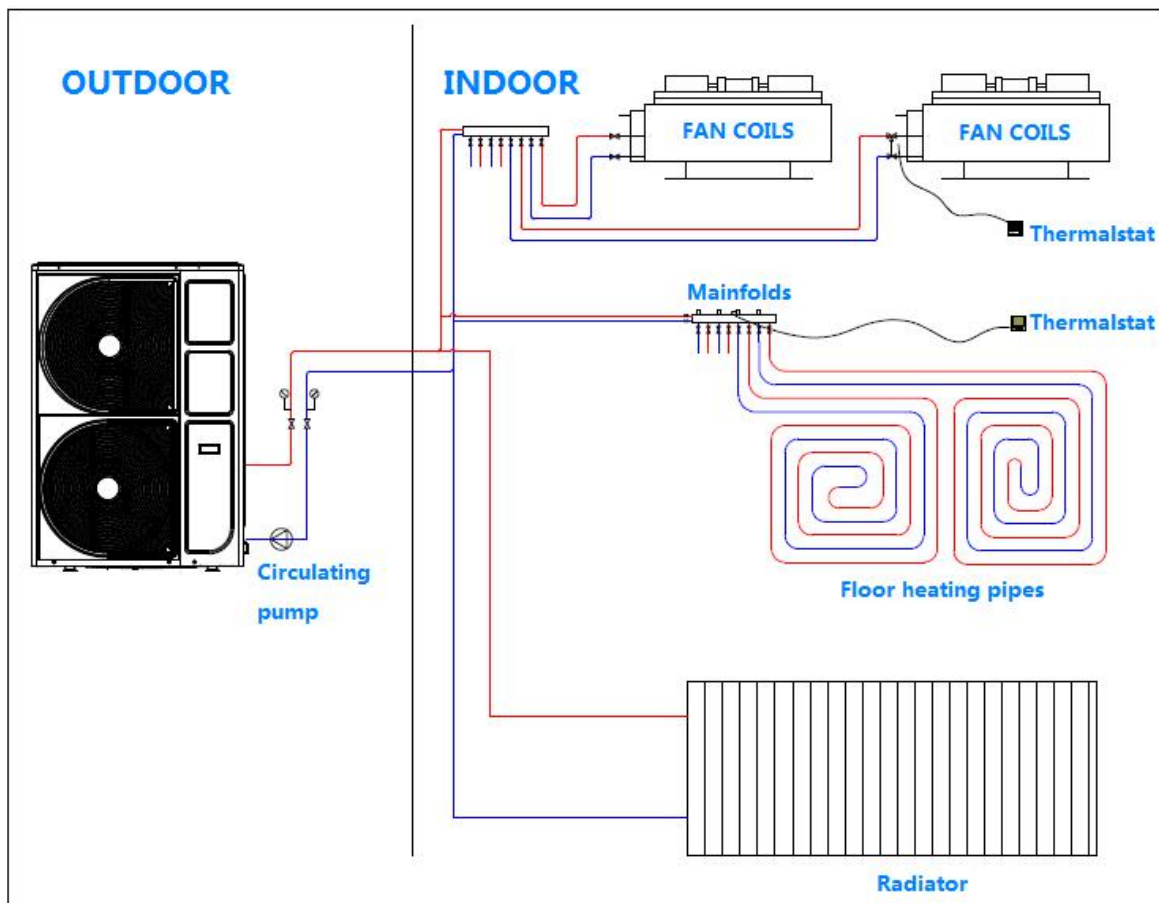
RF12l/bd 1"

RF16l/bd 1"

Heating operation range

Working Condition		Outdoor temp.		Water temp.
		Dry bulb °C	Wet bulb °C	Water inlet °C
Heating	Max.	43	/	55
	Min.	-30	/	10

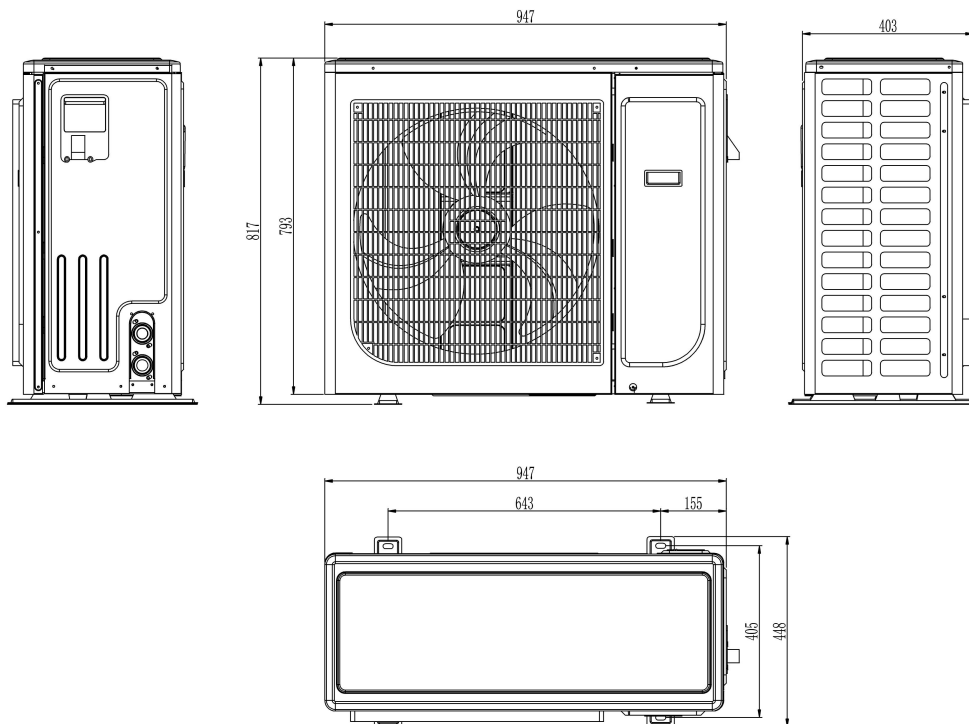
Equipment installation diagram



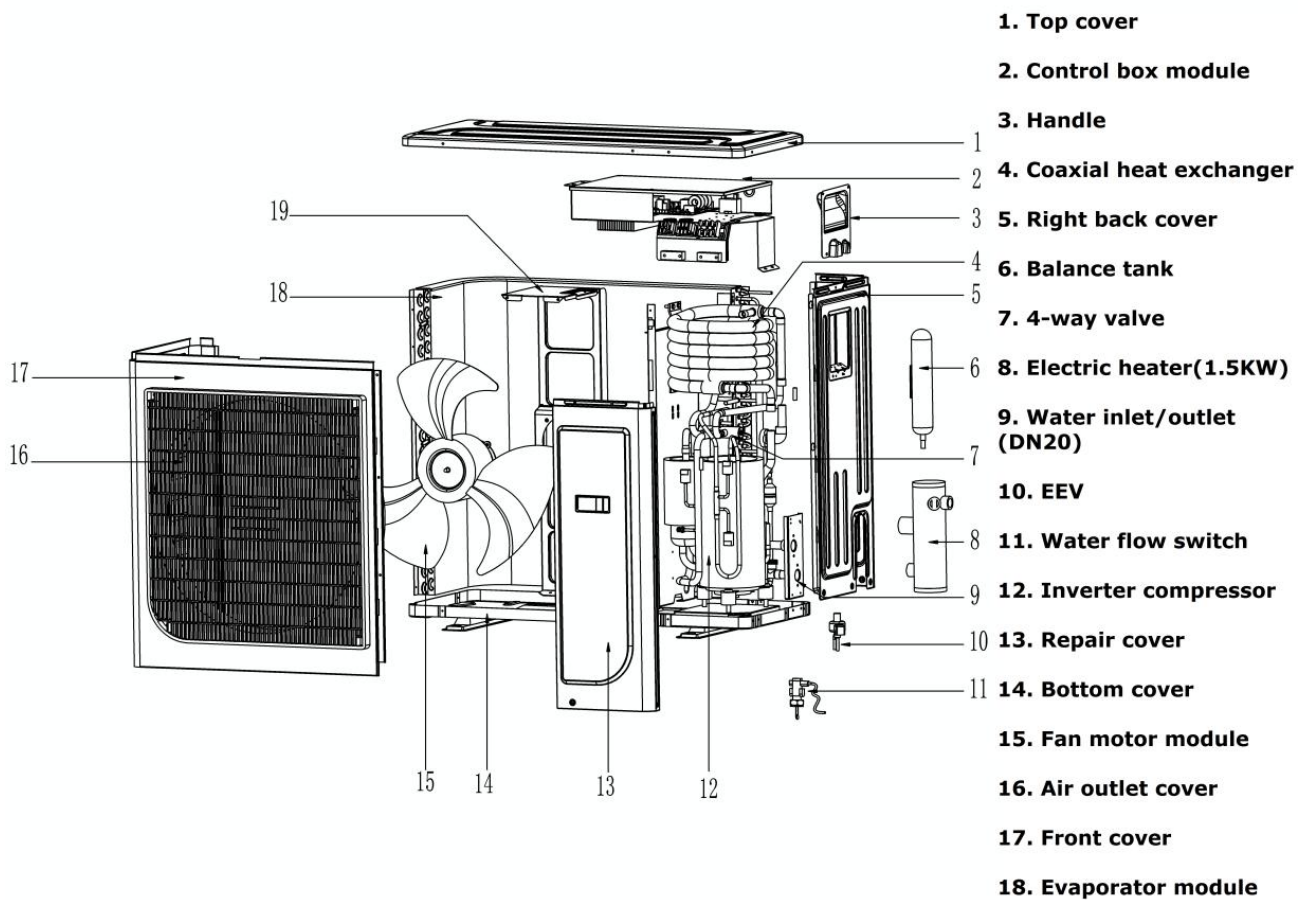
Note

1. In the winter heating season, the unit is strictly forbidden to power off to ensure the normal operation of the unit's antifreeze function.
2. When the unit is not in use for a long time, please drain the water from the system.
3. If the unit is not used after being used for a long time, please disassemble the special exhaust port of the pump first, and use a screwdriver to check whether the pump rotor can run normally. If it cannot be rotated normally or the rotation is blocked and the rotation is not smooth, you can use a screwdriver. Rotate a few more turns until the rotor is running freely. If you have any questions, please call the after-sales service.

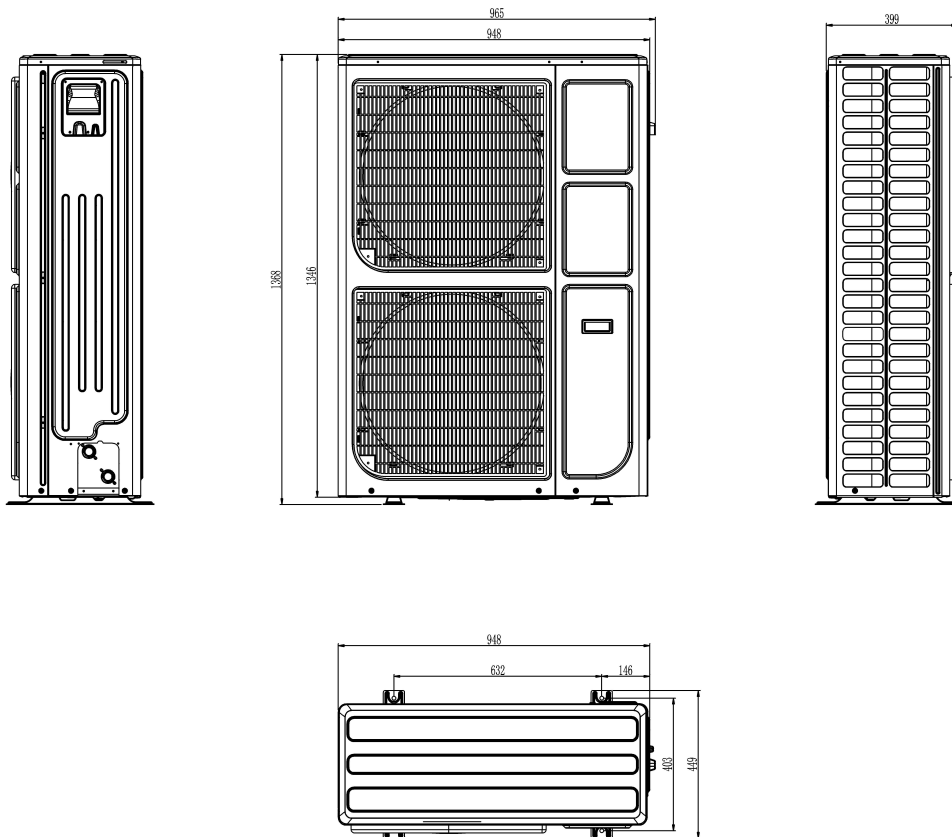
Equipment Overview
RF8I/bd Dimension:



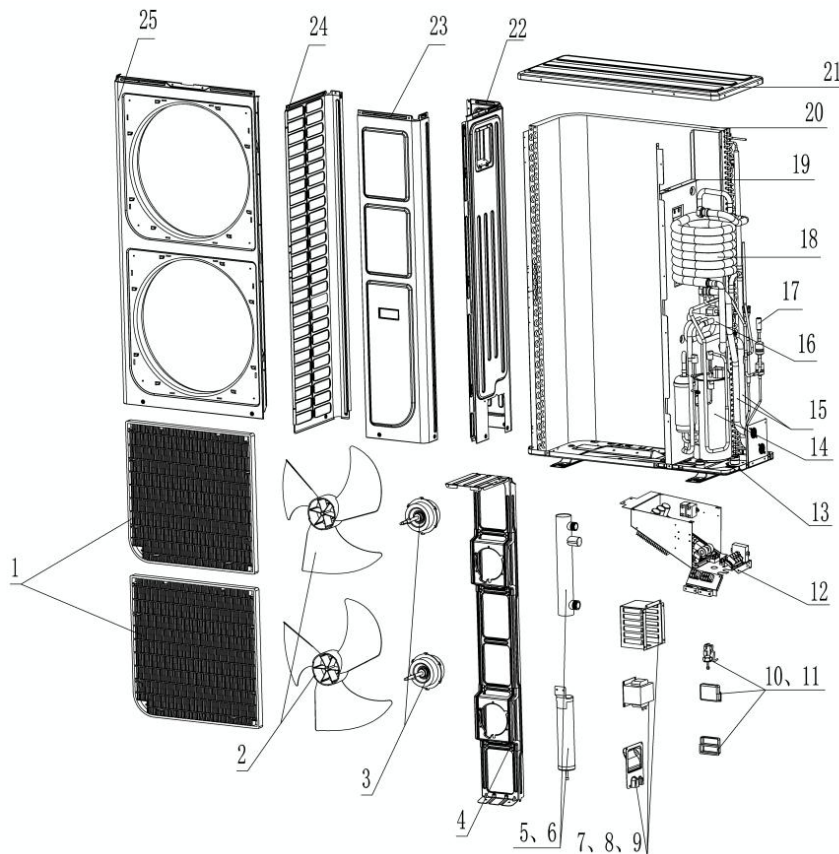
RF8I/bd Internal structure



RF12I/bd
Dimension:

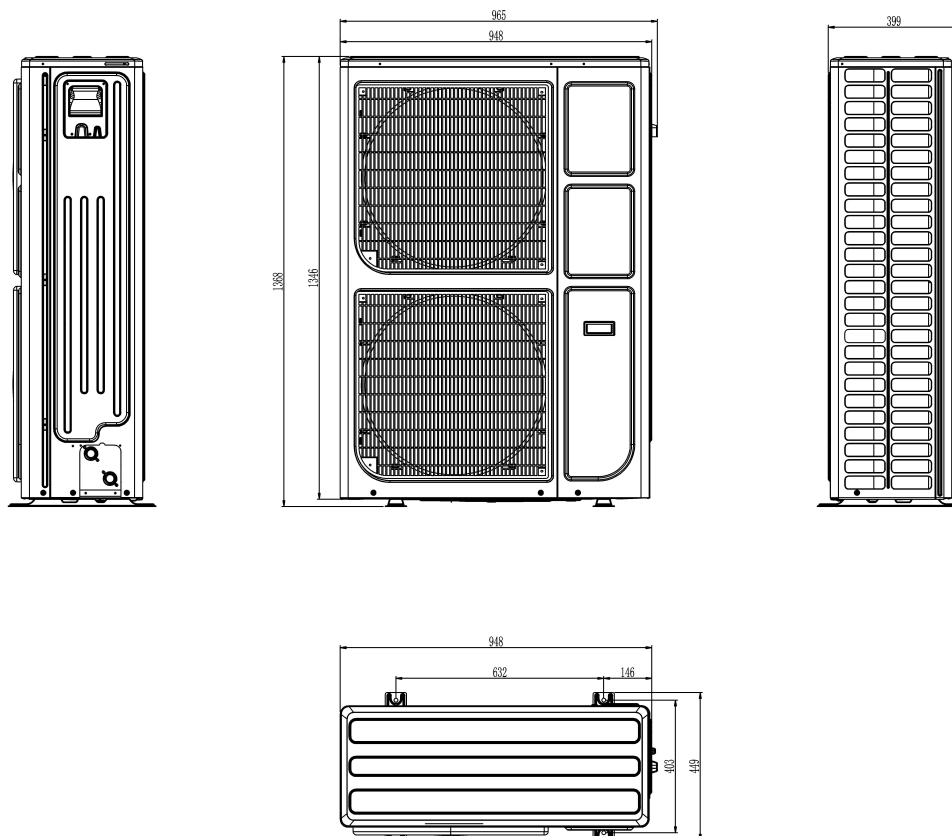


RF12I/bd Internal structure

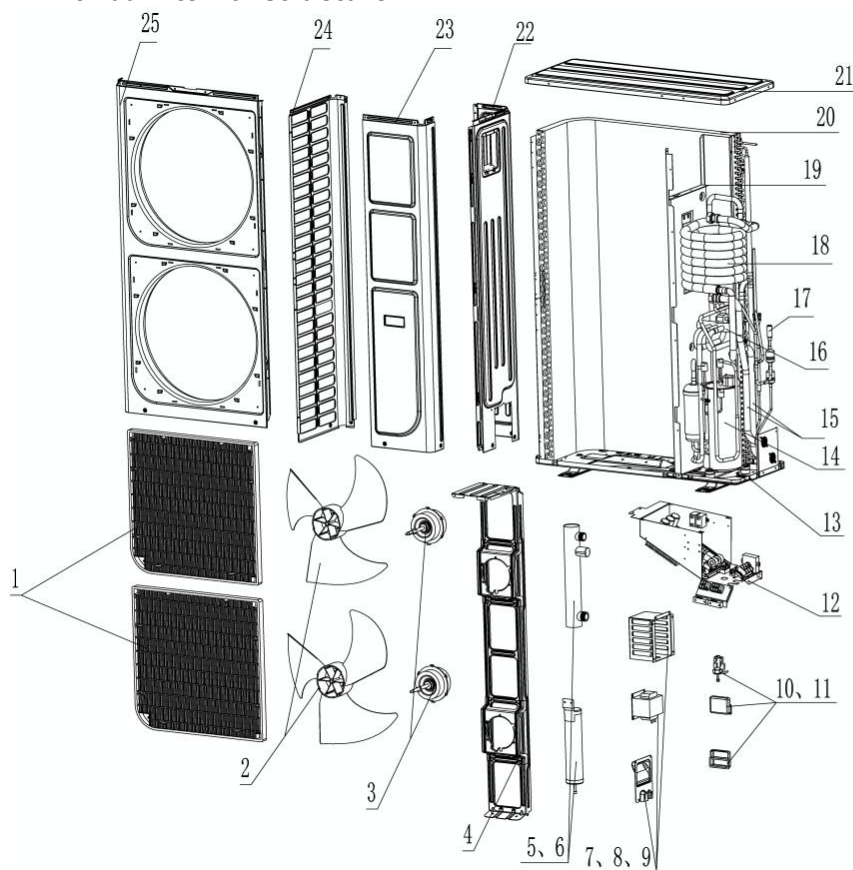


1. Air outlet cover
2. Fan blades
3. Motor
4. Motor bracket
5. Balance tank
6. Pipeline electric heater
7. Metal handle
8. Reactor
9. Resistive waterproof box
10. Plastic buckle
11. Water flow opener
12. Control box
13. Bottom cover
14. Compressor
15. Water inlet/outlet pipe
16. 4-way valve
17. EEV
18. Coaxial heat exchanger
19. Middle clapboard
20. Evaporator
21. Top cover
22. Left side cover
23. Right back cover
24. Right front side cover
25. Right front cover

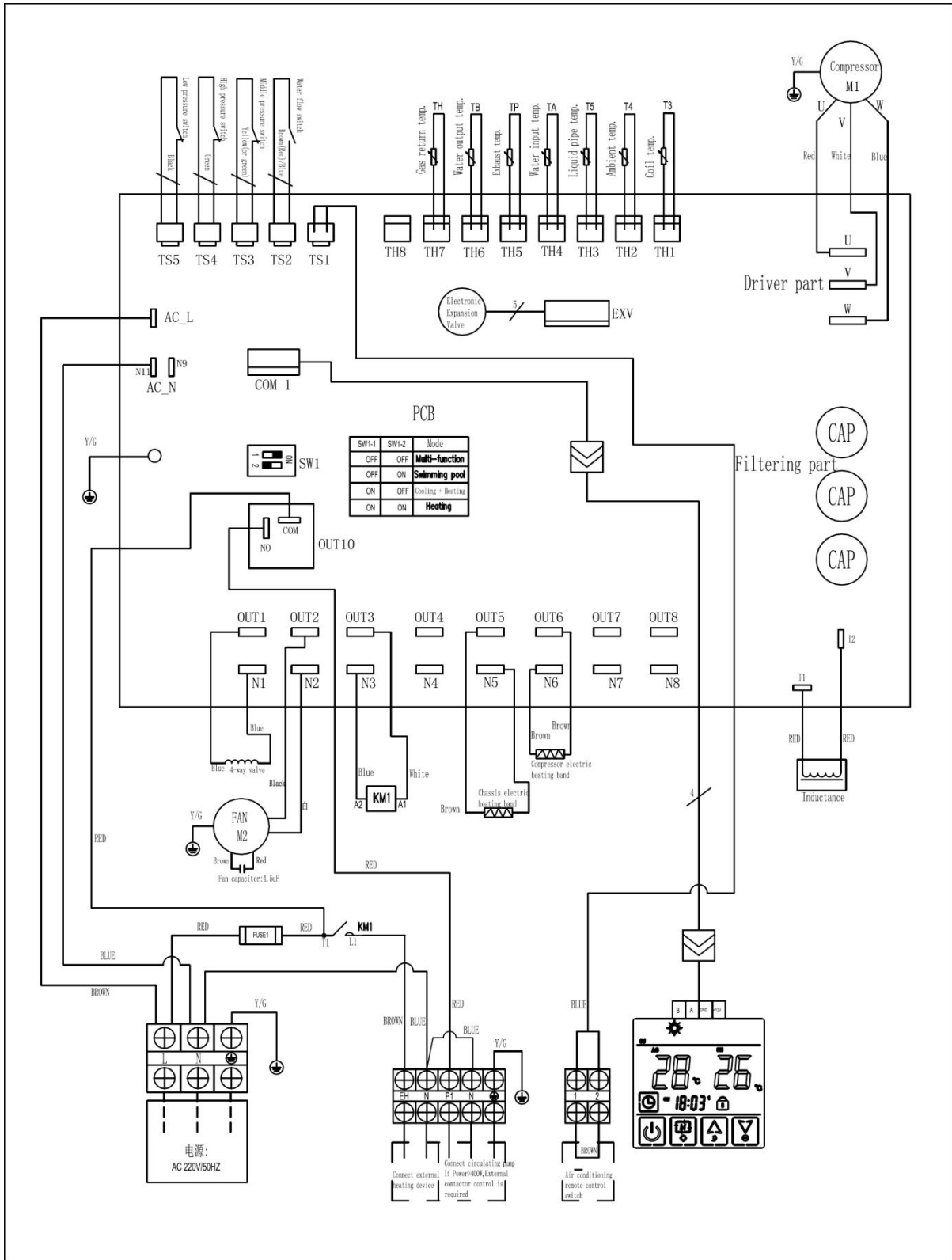
RF16I/bd Dimension:



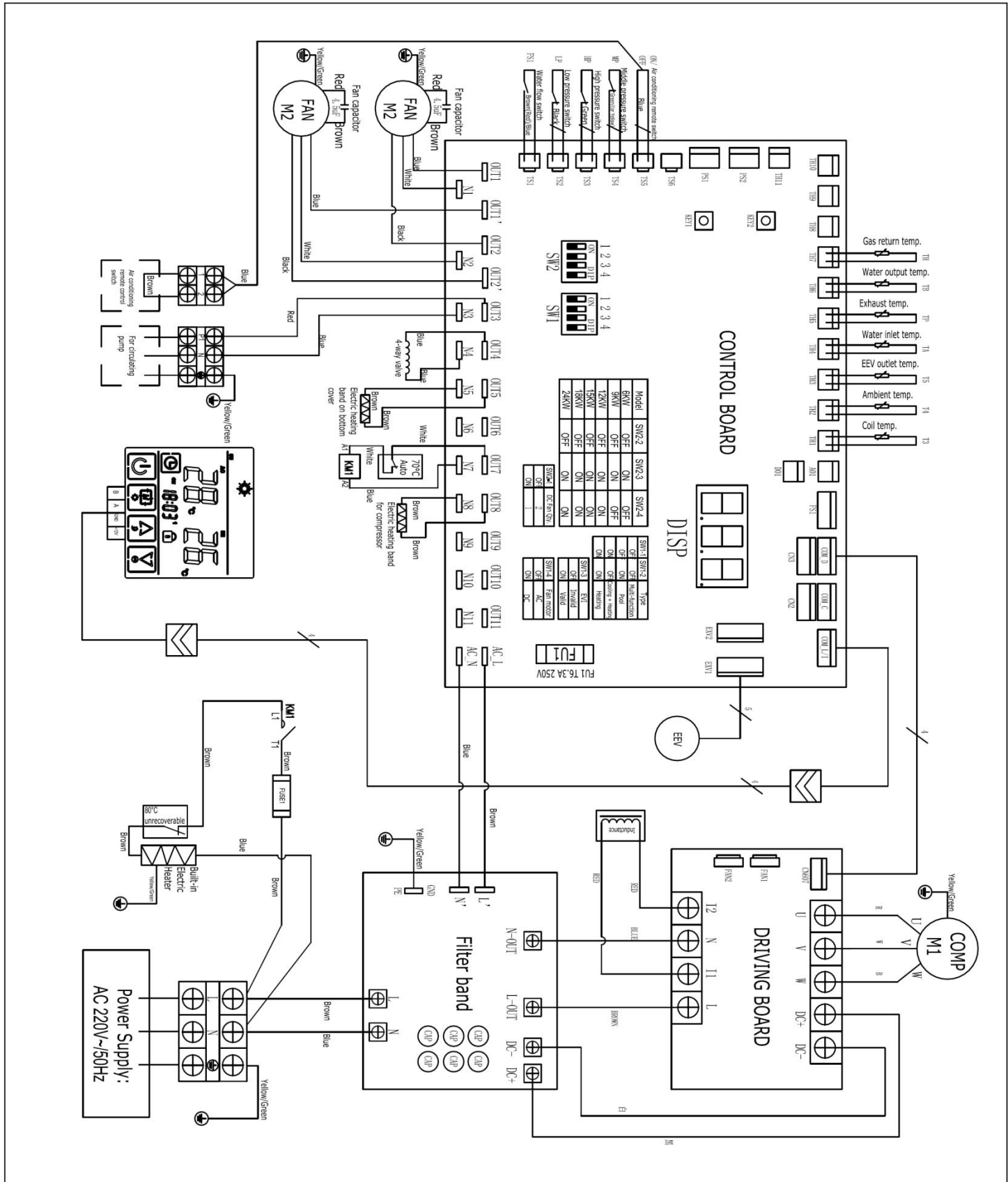
RF16I/bd Internal structure



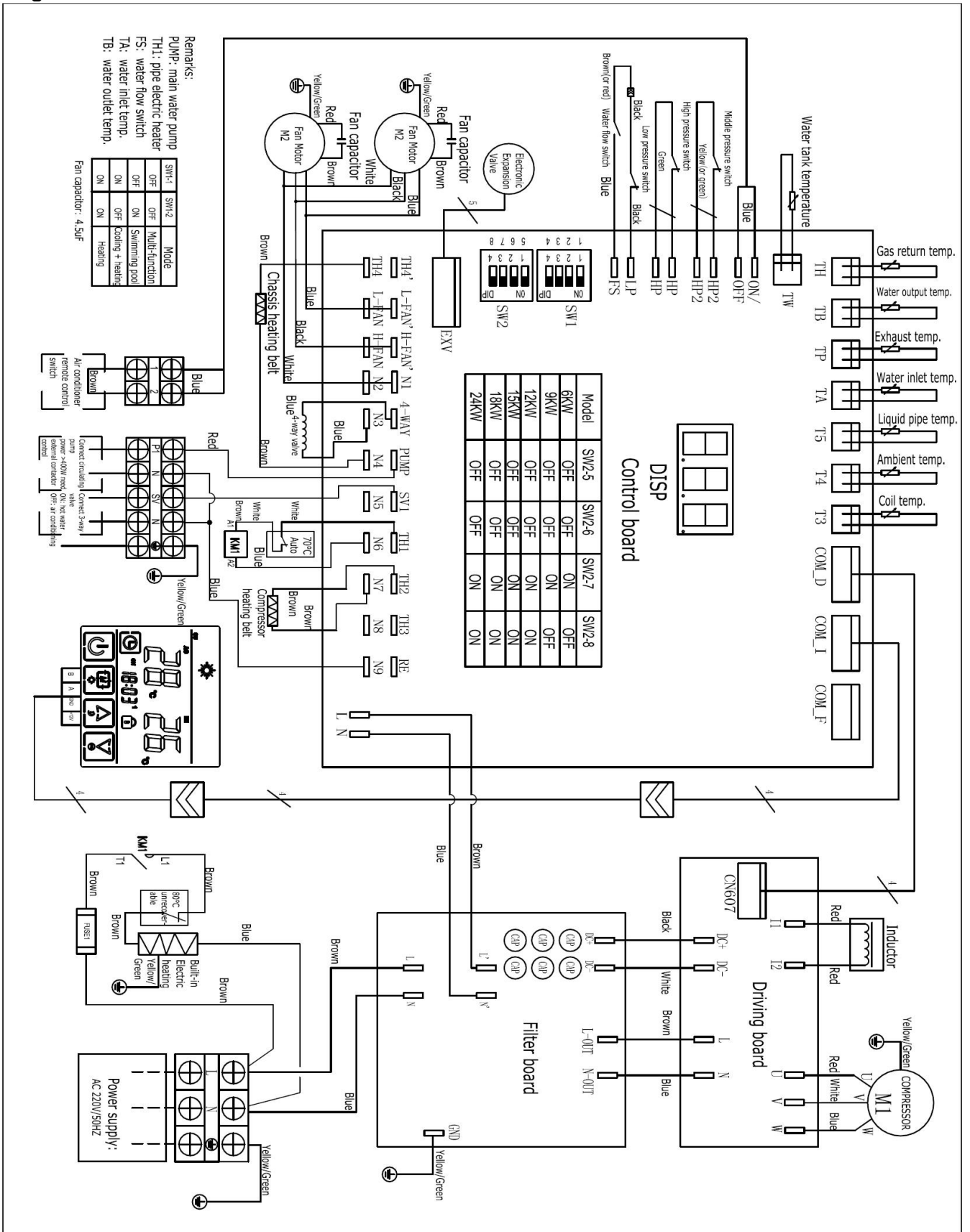
RF81/bd Wiring diagram



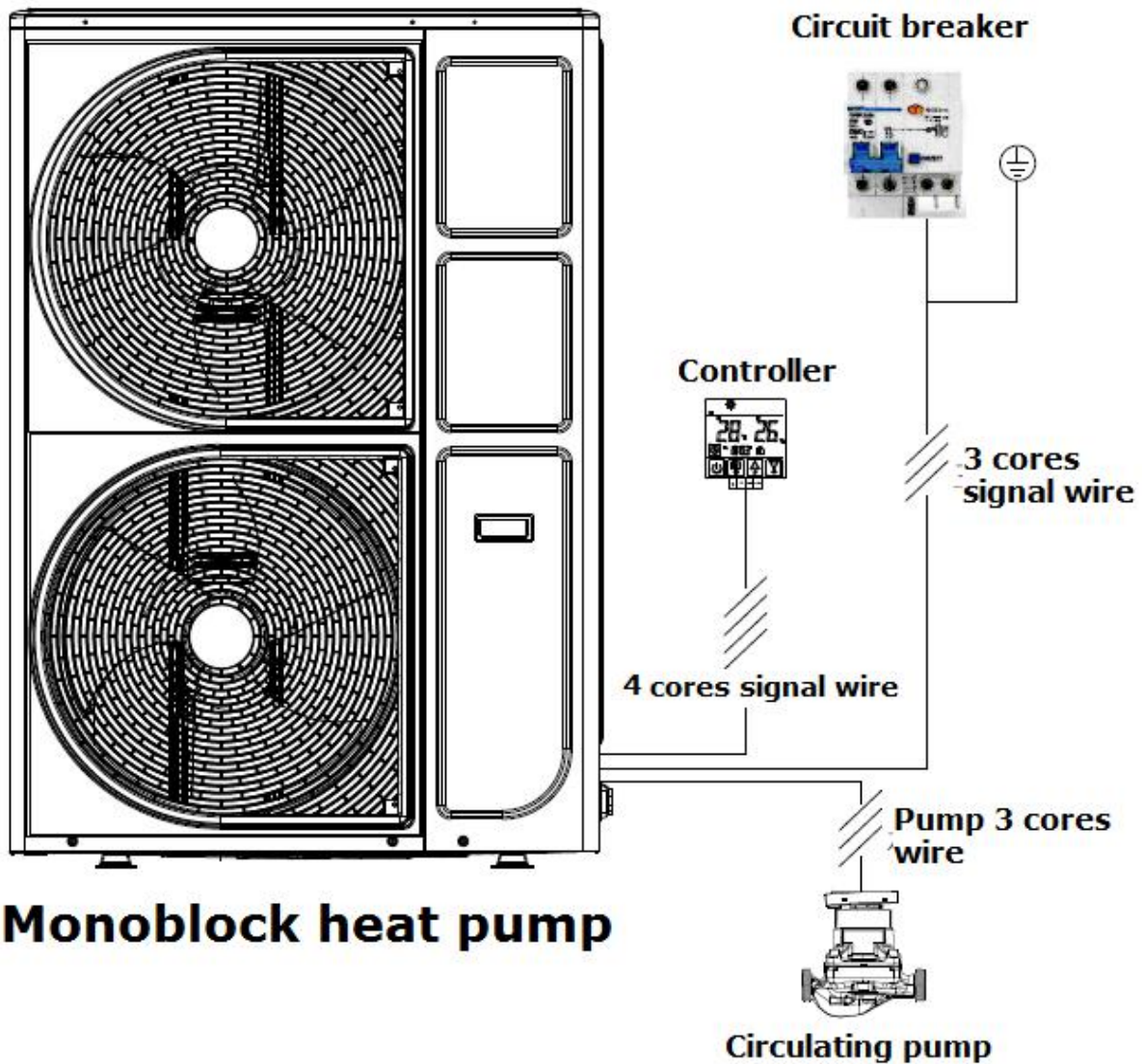
RF121/bd wiring diagram



RF16/bd Wiring diagram



Heat pump external wiring:



Monoblock heat pump

Note: For specific wiring, please refer to the wiring diagram.

Grounding of the power supply should select the grounding point connection that meets the requirements;

Maximum input current of the whole machine (for reference only, **subject to the machine nameplate**).

Model	Rated input power / current	E-heater input power / current	Total max. input power / current
RF8l/bd	4400W /20A	1500W/ 6.8 A **	20+6.8A**
RF12l/bd	5200W /24A	3000W/13.6 A **	24+13.6A**
RF16l/bd	6600W /30A	3000W/13.6 A **	30+13.6A**
***Auxiliary heater			

Field wiring



Caveat

- When wiring, please turn off the power;

- All wiring and component installation work should be performed by a licensed electrician and comply with the laws and regulations of the country in which it is located;
- Wiring work should be carried out in strict accordance with the circuit diagram and instructions of the machine;
- Use a dedicated power supply, do not use the power of other devices;
- Be sure to install the ground wire. Do not connect the ground wire of the machine to a public pipe, lightning arrester, or mainframe mount as a grounding point. Unreliable ground or grounding points can easily cause electric shock accidents;
- Install the leakage protector, otherwise it may cause electric shock.

Water pipe engineering

Check the water cycle

Note: Y-type filter must be installed at the water inlet.

Before proceeding with the installation, please check the following points:

- *The maximum water pressure does not exceed 10 bar.
- * This system does not have a shut-off valve. For the convenience of service and maintenance, please install one at each inlet and outlet. Pay attention to the installation position of the closing valve. Note that the direction of the opening/closing valve is important for maintenance service.
- * A drain valve should be installed on all the bottoms of the system to allow the water to drain completely during maintenance.
- * There must be a vent on the top of the system. The location of the vents is chosen for easy maintenance.
- * Pay attention to the components in the piping to be able to withstand the water pressure.



Do not use parts that have not been sprayed. These parts are severely corroded because copper pipes are used in the water circulation inside the machine.



When using a three-way valve or a two-way valve in a water circuit cycle, the maximum switching time of the valve must be less than 60 seconds.

Water injection

1. Connect the water supply system to the drain and water inlet
2. Make sure the automatic vent valve is open (at least two turns).
3. Fill the water until the water column pressure gauge shows that the pressure is close to 2 bar

Use the exhaust valve to drain the air from the water as much as possible. In order to avoid air in the waterway, the equipment may malfunction.

4. Spare heater:

Check that the container of the backup heater is filled with water because the pressure relief valve is open. Water must be removed from the valve.



Note

When water is injected, the air in the system may not be completely discharged. The remaining air is automatically expelled by the exhaust valve after the machine has been running for one hour. May be you need to inject with water later again.

The water pressure displayed by the water column pressure gauge depends largely on the water temperature (the higher the water temperature, the greater the water pressure)

However, the water pressure should be kept above 0.3 bar at any time to prevent air from entering the water cycle.

The machine may discharge excess water through the pressure relief valve

The quality of the water must comply with relevant standards or according to European Standard 98/83EC

Rated water flow

RF8l/bd	1.2 m ³ /h
RF12l/bd	1.98 m ³ /h
RF16l/bd	2.06m ³ /h

Machine installation

Installation guide

Select the installation location considerations

Caveat

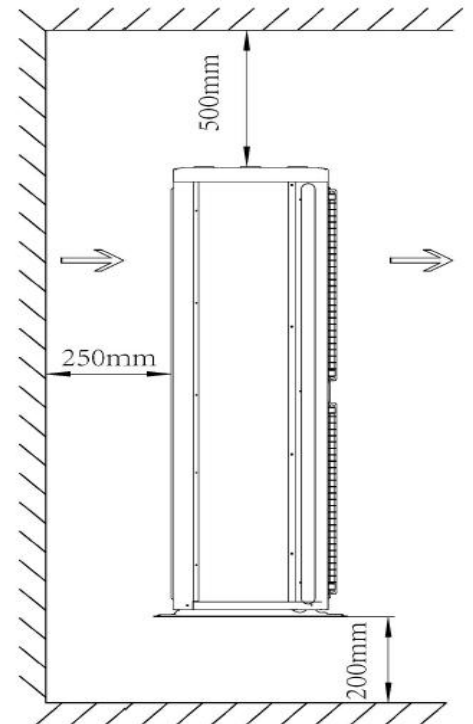
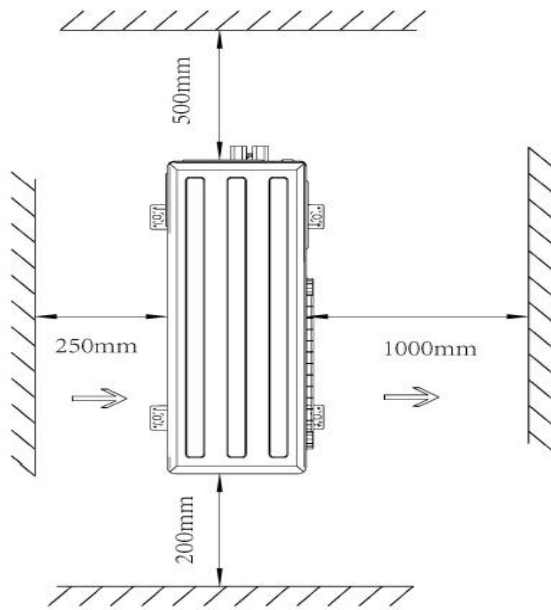


Please take appropriate measures to prevent the outside machine from being used as a habitat by some small animals.

Small animal contact with electrical parts may cause the unit to malfunction, smoke or catch fire. Please keep the environment around the unit clean.

1. Choose a location that is strong enough to support the weight and vibration of the unit so that the noise from the unit's operation is not amplified.
2. Choose a place where the unit can discharge hot air, or where the noise of the unit does not cause problems for neighbors or users.
3. Avoid installing near the bedroom, and the noise of the unit operation will cause trouble.
4. Space should be sufficient to move the unit.
5. There must be sufficient ventilation space, and there should be no obstacles in the air inlet and outlet.
6. There should be no flammable gas leakage near the installation point.
7. Install the unit, power cord and wires, and keep at least three meters away from the TV and other radios to avoid image quality and sound quality interference.
8. Due to radio waves, even if the distance is more than three meters, there will still be electromagnetic interference.
9. At the seaside or in high air salinity, the life of the machine may be shortened due to corrosion.
10. When the external machine is defrosting, the water will flow out from the outside machine. Please do not place anything that must be kept dry under the unit.

Installation space

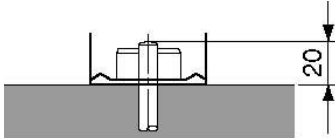


Installer

Installation of the whole machine

When installing the unit, please refer to the installation guide and select a suitable installation location.

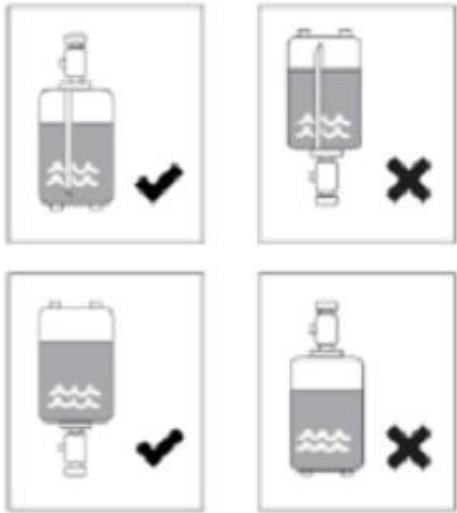
1. Check the strength and level of the installation position. The unit will not cause vibration or noise after installation.
2. Prepare four sets of basic M8 bolts, nuts and washers. (on request)
3. According to the basic diagram, fix the unit with the basic bolts. It is best to screw it into the foundation bolt, leaving 20mm on the base surface



Wall brackets are not available in the outside unit unless there is a specific installation guide in the wall bracket.


- Injecting refrigerant
- The refrigerant of the whole machine is injected by the manufacturer.
- Important information about refrigerant
- The product contains fluorinated greenhouse gases mentioned in the Kyoto Protocol. Do not discharge the gas into the atmosphere.
- Refrigerant type: R410A
- Global warming potential: 1975
- Note: The State may require the machine to have a text in its official language when fulfilling EU regulations on specific fluorinated greenhouse gases. Therefore, the machine comes with a multi-language version of the label on fluorinated greenhouse gases. Paste the indication on the back of the label.

- Refilling the refrigerant
- If you need to refill the refrigerant, please refer to the machine nameplate, which describes the type of refrigerant and its required quantity.
- Adding refrigerant
- Add R410A considerations
- Add the specified amount of refrigerant and inject it into the liquid tube in liquid form. Because the refrigerant is a mixed refrigerant that is injected into the tube in a gaseous state, it may change the composition of the refrigerant, making it inoperable.
- Before injecting, please check if the cylinder is equipped with a siphon



Use the R410A special tool to ensure that the required pressure resistance is achieved and that other things are prevented from entering the system. Be careful, wear glasses and gloves.

Pre-operation check Check before initial start

 Turn off the power before connecting

After installation, please check the following before accessing the circuit breaker.

Field wiring

Make sure that the wiring of the instrument panel and the whole machine, the wiring of the whole machine and the wiring of the whole machine and the water tank are carried out according to the instruction manual, the circuit diagram and the compliance with European and national laws and regulations.

2. Fuses or protective devices

Check the specifications and type of fuses and installed protective equipment to meet the requirements. Make sure that the fuses and protective devices are not ignored.

3. Ground wire

Connect the ground wire correctly and tighten the grounding terminal

4. Internal wiring

Check if the switch box is loose and the electrical components are damaged.

5. Fixed

Check that the machine is fixed and avoid abnormal noise and vibration during starting.

6. Damaged equipment

Check the unit for damaged components or the tube is squeezed

7. Refrigerant leakage

Check the unit for refrigerant leakage. If there is a leak, please contact your local dealer.

8. Power supply voltage


Check the power supply voltage on the power supply screen. The power supply voltage must match the rating on the unit nameplate.

9. Air exhaust valve

Make sure the air vent valve is open (at least 2 turns)


10. Pressure relief valve

Check that the backup heater container is filled with water after the pressure relief valve is opened. It is purifying water rather than air.

 The backup heater container does not fill the water and runs the system, which can damage the heater.

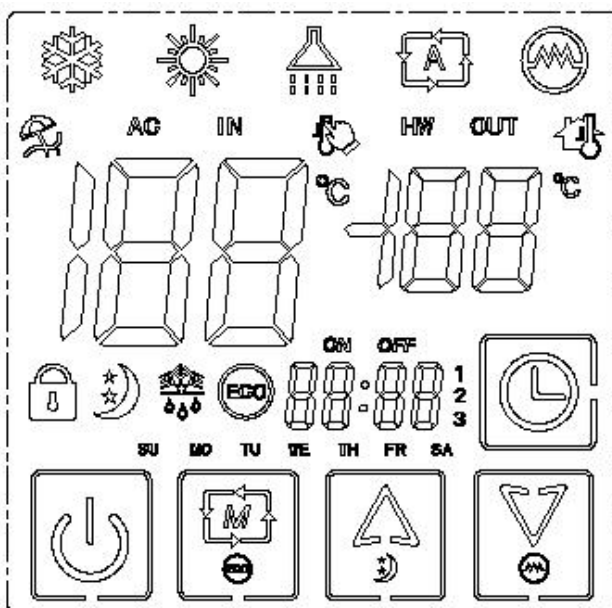
Close the valve

Install the shutoff valve correctly and open it.

 Operating the system with the valve closed will damage the pump!

Display interface operation instructions

1. Overall display interface



2. Mode Icons



Cooling mode icon;




Heating mode icon;



Hot water mode icon;



Auto

operation mode icon;  Icon for mandatory electric heating mode and disinfection.

3. Day Icons



SU:Sunday; MO:Monday; TU:Tuesday; WE:Wednesday; TH:Thursday; FR:Friday; SA:Saturday

4. Main Display Area



When main unit type is:

Multi-function unit:display air-conditioning return water temperature

Cool&heat unit:display air-conditioning return water temperature

Hot water unit:display tank temperature

Unit for pool heating or cooling:display return water temperature



It is holiday mode icon,only display when holiday mode is set.



It is temperature setting icon,only display when enter into temperature settings.

5. Second Display Area



When main unit type is:

Multi-function unit:display tank temperature

Cool&heat unit:display air-conditioning water outlet temperature

Hot water unit:display setting temperature

Unit for pool heating or cooling:display water outlet temperature

 Indoor temperature icon

6. Function Icon and Clock&Timer Area






 Safety lock;  Night mode;  Defrosting and anti-freezing in winter 
Clock and timer area



7. Touch Screen Keys Area






How to use the keys



 ON/OFF or holiday mode: on/off switch if short press; enter into holiday mode if press this button for 5S. Any set or query mode, short press this button to exit the setup or query condition.


 Mode selection / Setup key: switching from different modes if short press; After up or down to adjust temperature, short click this button to confirm; In Boot mode, long press this key to enter or exit the power saving mode; In saving mode will display  icon.

 Up: increase temperature or time if short press, enter into night mode if press this key for long time; On the same time will display  icon.



 Down: reduce temperature or time if short press, enter into mandatory electric heating (electric heating mode) if press this key for long time. On the same time will display  icon.



 Timer or clock settings: enter into clock time settings if press this key for short time; and enter into timer mode settings if press this key for long time.



 The first power on, if no any operation 120 second, the LCD will be locked, and display  icon.




After the screen light up, if the screen is locked, long press mode key  for 5s the LCD will be unlocked. (When choose to have automatic lock screen function)



Combination keys

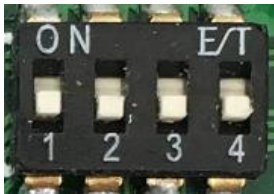
Press  +  for over 5 seconds, enter into parameter settings; press this combination key again, exist parameter settings.

Press  +  for long time, enter into parameter check mode; press this combination key again for long time, exist parameter check mode.

Long press  +  at same time, enter into checking history failures; long press this combination key again to exist.

In cooling mode, long press  +  to enter into gas recycling mode,  will flash; long press this combination key to exist gas recycling.

When unit is OFF, long press  to enter into holiday mode, only display ; long press this key again to exist holiday mode.



Drawing code definition of line controller:

Drawing code1: Lock screen selection: ON-no operation after 2S , automatically lock screen ; OFF-no automatically lock screen


Drawing code2: Buzzer prompted selection: ON- When operating, buzzer is not responding; OFF- When operating, buzzer is responding;











Drawing code3: Backlight automatically shut down selection: ON-Screen backlight normally ON; OFF- no operation after 30 seconds, screen backlight automatically shut down;

Drawing code4: Screen test mode: ON - screen test state; OFF - screen is normal;







Function Instruction

Water temperature settings



When enter into temperature settings,will display ,the settings are different based on different modes:

- 1) If cooling or heating mode; The main display interface display AC and set temperature, Press  or  to change setting value,press  to confirm and exist water temperature settings.
- 2) If hot water mode, the second display interface will display HW and setting temperature, press  or  Change the Settings, press  this icon to confirm and exit temperature settings.
- 3) If air-conditioning+hot water mode,Press  or  will set air-condition temperature firstly,press  to enter into hot water temperature settings,and press  again to confirm and exist water temperature settings.



EEPROM parameter settings

After entering into parameter setting interface ,firstly the main and second display area will show 4-digit number" 8888",password required. After correct password input, will display "XX YYY", "XX" is parameter type, "YYY" is parameter value. "X" will flash firstly,press  or  to switch from different parameter types,and press  to confirm,then "X" stops flash, "YYY" starts flash entering into parameter value change mode,press  or  to change parameter values,press  to confirm,then "YYY" stop flash,"X" starts flash.

Parameter Check

When enter into parameter setting interface, the display areas will display "XX YYY", "XX" is parameter number, "YYY" is parameter value.Press  or  to switch different parameters.


History Error Check








When enter into history error check mode,will display "P XX" or "E XX", "P" is protection, "E" is error. Press  or  to switch different errors, can check 5 history errors.





Safety lock(Design for Children)





Enter the safety lock, in addition to the ON/OFF button, the other ON the control panel buttons will be locked.





Timer







Long press , enter into Timer settings.


The 1st step: mode selection. Firstly mode icon will flash, press  or  to select mode, the selection switching from  +  air-conditioning mode,  hot water mode,  tank disinfection mode, press  to confirm; Every mode can have 3 timers.

The 2nd step: select timer. Press  or  to switch from Timer 1 on, Timer 1 off, Timer 2 on, Timer 2 off, Timer 3 on, Timer 3 off; Press  entering into Timer 1 on settings; Short press  to go back to last step(mode selection).


The 3rd step: select Timer day. Press  or  to select which day to apply, press  to confirm and enter into next step(select the Hour), short press  to go back to last step(select Timer).

The 4th step: select the Hour. Press  or  to select the Hour, press  to confirm and enter into next step; Short press  to go back to last step.

The 5th step: select the Minute. Press  or  to select the Minute. Press  or  to select the Minute, press  to confirm and enter into the next Timer selection(the 2nd step); Short press  to go back to last step;

During Timer settings, long press  or fail to operate for 10 seconds to exist current Timer settings and exist.

Under the holiday mode, all Timer function settings will be invalid.











Delete timer setting, after enter into timer operation mode, long press  key Until exit timer state

Clock Display

Clock includes: Day, hour and minute, and the hour uses 24-hour-system;

Clock always displays on screen, no matter the unit is running or not.

Clock settings

Short press  enter into clock setting. When entering into clock settings, firstly the "Day" starts flashing, press  or  to select the Day, press  to confirm and enter into the "Hour" setting, it starts flashing, press  or  to select the Hour, press  to confirm and enter into the "Minute" setting, the "Minute" flashing, press  or  to select the Minute, after finishing settings, press  to confirm and complete clock settings.

Appendix

RF8I/bd(for DC motor): EEPROM parameter

No.	Parameter Name	Code	Default Value	Unit	Range	Accuracy
1	Air-conditioning water temperature difference	Ta	2	°C	1~5	1
2	Hot water temperature difference	Tb	5	°C	2~15	1
3	Superheat under cooling	SHc	3	°C	0~15	1
4	Superheat under heating	SHh	-1	°C	-5~10	1
5	Cooling test mode compressor frequency	LCF_C	68	Hz	20~120	1
6	Heating test mode compressor frequency	LCF_H	68	Hz	20~120	1

7	Hot water test mode compressor frequency	LCF_W	68	Hz	20~120	1
8	Cooling test mode EEV opening degree	EEV_C	250/5	P	(0~480)/5	1
9	Heating test mode EEV opening degree	EEV_H	150/5	P	(0~480)/5	1
10	Hot water mode EEV opening degree	EEV_W	150/5	P	(0~480)/5	1
11	Defrosting enter temperature	DST	-5	°C	-15~0	1
12	Defrosting entry temperature difference	Dt _n	5	°C	0~15	1
13	First defrosting judgment time	T1	40	min	20~90	1
14	Defrost process EEV opening degree	Opl	480/5	P	(0~480)/5	1
15	Compressor frequency under defrosting	FD	60	Hz	20~120	1
16	Maximum operating frequency	Fmax	80	Hz	20~120	1
17	Power lost memory	PR	1	0/1	0-without 1-with	/
18	Frequency limits under low noise mode	Fs	55	Hz	20~120	1
19	Disinfection set temperature	Tx	65	°C	55~75	1
20	Disinfection lasting time	Td	30	Min	20~120	1
21	Mode priority	Mp	0	0/1/2	0-hot water priority 1-aircon priority 2-priority for which one start firstly	/

22	Compressor resonance point 1	FR1	0	Hz	20~120	1
23	Compressor resonance point 2	FR2	0	Hz	20~120	1
24	Compressor resonance point 3	FR3	0	Hz	20~120	1
25	Compressor resonance point 4	FR4	0	Hz	20~120	1
26	Electrical heating water tank open ambient temperature	Teh	4	°C	-10~40	1
27	Auto temperature compensation valid or invalid		0	0/1	0-invalid 1-valid	/
28	Compensation high point	Hi_A	5	°C	0~20	1
29	Compensation low point	Lo_A	0	°C	-20~0	1
30	The maximum compensation value	A	5	°C	0~10	1
31	High temperature stop unit valid or invalid		0	0/1	0	/
32	High temperature stop unit setting	T4h	24	°C	10~30	1
33	Economical modes setting	S	10	°C	5~20	1
34	water pump running status	Pump	1	0/1	0-open 1min stop 3min 1-open 1min stop 10min 2-open 2min stop 15min 3-Nonstop	/
35	Low temperature stop compressor setting	T4L	-30	°C	-40~-21	1
36	Pipe electric heater being valid or invalid	HD	0	0/1	0- valid	1

					1-invalid	
37	Cooling mode if being valid or not		0	0/1	0-valid 1-invalid	/
38	High pressure switch 2 valid or invalid (System parameters)		0	0/1	0-valid 1-invalid	/
39	Minimum opening setting	MinEEV	80/5	P	(0~480)/5	1
40	Minimum water temperature requirement for entering defrosting	Tdf	15	°C	0~40	1
41	Tube electric heater running ambient temperature	T4g	-20	°C	-40~20	1
42	Exit defrosting temperature	Ft	15	°C	10~25	1
43	Defrost longest running time	FT	10	Min	1~20	1
44	Return oil to the lowest frequency	Fo	50	Hz	20~60	1
45	Reset EEPROM		0		0-normal, 1-reset	1
46	Chassis electric heating start temperature	BHon	-5	°C	-15~0	1
47	Minimum operating frequency	Fmin	25	Hz	20~100	1
48	Test mode DC fan motor speed	FspeedT	900/15	Rpm	200~ 1000/15	1
49	DC fan minimum speed	FanMin	360/15	Rpm	200~500/15	1
50	DC fan Maximum speed	FanMax	850/15	Rpm	500~ 1000/15	1
51	DC fan silent mode	NoiseFan	650/15	Rpm	500~ 1000/15	1
52	Cooling mode coil temperature	CondT	40	°C	20~60	1

53	Heating mode coil temperature	EvapT	5	°C	-10~20	1
54	DC fan speed shielding point 1	SR1	0/15	Rpm	0~1000/15	1
55	DC fan speed shielding point 2	SR2	0/15	Rpm	0~1000/15	1
56	DC fan speed shielding point 3	SR3	0/15	Rpm	0~1000/15	1
57	Heating mode conversion	HeatChange	0		0/1	
58	Heating target exhaust temperature correction	TargetTPh	0	°C	-10~15	1
59	Whether to open the pipe electric heating before defrost		1	0/1	0-invalid 1-valid Pool machine forced invalid	1
60	Trv valid or invalid	enTrV	1	0/1	0-invalid 1-valid	1
61	Four-way switching fault judgment condition	Trv	3	°C	0~10	1
62	Chassis electric heating Start time	BaseHeatTime	6	10Min	0~100	1
63	AC and DC conversion		1		0-AC 1-DC	
64	Low ambient temperature limits the return water temperature is valid or not		1	0/1	0-invalid 1-valid	1
65	Address coding		0		0-15	1

RF8I/bd(for AC motor): EEPROM parameter

No.	Parameter Name	Code	Default Value	Unit	Range	Accuracy
1	Air-conditioning water temperature difference	Ta	2	°C	1~5	1

2	Hot water temperature difference	Tb	5	°C	2~15	1
3	Refrigeration target exhaust temperature correction	TargetTPc	0	°C	-10~15	1
4	Superheat under heating	SHh	-1	°C	-5~10	1
5	Cooling test mode compressor frequency	LCF_C	68	Hz	20~120	1
6	Heating test mode compressor frequency	LCF_H	68	Hz	20~120	1
7	Hot water test mode compressor frequency	LCF_W	68	Hz	20~120	1
8	Cooling test mode EEV opening degree	EEV_C	250/5	P	(0~480)/5	1
9	Heating test mode EEV opening degree	EEV_H	150/5	P	(0~480)/5	1
10	Hot water mode EEV opening degree	EEV_W	150/5	P	(0~480)/5	1
11	Defrosting enter temperature	DST	-5	°C	-15~0	1
12	Defrosting entry temperature difference	Dt	6	°C	0~15	1
13	First defrosting judgment time	T1	40	min	20~90	1
14	Defrost process EEV opening degree	Opl	480/5	P	(0~480)/5	1
15	Compressor frequency under defrosting	FD	60	Hz	30~120	1
16	Maximum operating frequency	Fmax	85	Hz	30~120	1
17	Power lost memory	PR	1	0/1	0-without 1-with	/
18	Frequency limits under low noise mode	Fs	55	Hz	30~120	1

19	Disinfection set temperature	Tx	65	°C	55~75	1
20	Disinfection lasting time	Td	30	Min	20~120	1
21	Mode priority	Mp	0	0/1/2	0-hot water priority 1-aircon priority 2-priority for which one start firstly	/
22	Compressor resonance point 1	FR1	0	Hz	0~120 (If set to 0, the resonance point is closed.)	1
23	Compressor resonance point 2	FR2	0	Hz	0~120	1
24	Compressor resonance point 3	FR3	0	Hz	0~120	1
25	Compressor resonance point 4	FR4	0	Hz	0~120	1
26	Electrical heating water tank open ambient temperature	Teh	4	°C	-10~40	1
27	Auto temperature compensation valid or invalid		0	0/1	0	1
28	Compensation high point	Hi_A	5	°C	0~20	1
29	Compensation low point	Lo_A	0	°C	-20~0	1
30	The maximum compensation value	A	5	°C	0~10	1
31	High temperature stop unit valid or invalid		0	0/1	0	1
32	High temperature stop unit setting	T4h	24	°C	10~30	1
33	Economical modes setting	S	10	°C	5~20	1

34	Heating standby mode pump running status	Pump	1	0/1	0-open 1min stop 3min 1-open 1min stop 10min 2-open 2min stop 15min 3-Nonstop	1
35	Low temperature stop compressor setting	T4L	-25	°C	-40~-21	1
36	Pipe electric heater being valid or invalid	HD	0	0/1	0-valid 1-invalid	1
37	Cooling mode if being valid or not		0	0/1	0-valid 1-invalid	1
38	High pressure switch 2 valid or invalid (System parameters)		0	0/1	0-valid 1-invalid	1
39	Minimum opening setting	MinEEV	80/5	P	(0~480)/5	1
40	Minimum water temperature requirement for entering defrosting	Tdf	15	°C	0~40	1
41	Tube electric heater running ambient temperature	T4g	-20	°C	-40~20	1
42	Exit defrosting temperature	Ft	15	°C	10~25	1
43	Defrost longest running time	FT	10	Min	1~20	1
44	Return oil to the lowest frequency	Fo	50	Hz	30~60	1
45	Reset EEPROM		0		0-normal 1-reset	1
46	Chassis electric heating start temperature	BHon	-5	°C	-15~0	1
47	Minimum operating	Fmin	25	Hz	20~30	1

	frequency					
48	Heating mode conversion	HeatChange	0		0/1	
49	Heating target exhaust temperature correction	TargetTPh	0	℃	-10~15	1
50	Whether to open the pipe electric heating before defrost		1	0/1	0-invalid 1-valid	1
51	Trv valid or invalid		1	0/1	0-invalid 1-valid	1
52	Four-way switching fault judgment condition	Trv	3	℃	0~10	1
53	Chassis electric heating Start time	BaseHeatTime	6	10Min	0~100	1
54	Low ambient temperature limits the return water temperature is valid or not		1	0/1	0-invalid 1-valid	1
55	Address coding		0		0-15	1

RF12I/bd, RF16I/bd: EEPROM parameter

No.	Parameter Name	Code	Default Value	Unit	Range	Accuracy
1	Air-conditioning water temperature difference	Ta	2	℃	1~5	1
2	Hot water temperature difference	Tb	5	℃	2~15	1
3	Refrigeration target exhaust temperature correction	TargetTPc	0	℃	-10~15	1
4	Superheat under heating	SHh	-1	℃	-5~10	1
5	Cooling test mode compressor frequency	LCF_C	68	Hz	20~120	1
6	Heating test mode compressor frequency	LCF_H	68	Hz	20~120	1

7	Hot water test mode compressor frequency	LCF_W	68	Hz	20~120	1
8	Cooling test mode EEV opening degree	EEV_C	250/5	P	(0~480)/5	1
9	Heating test mode EEV opening degree	EEV_H	150/5	P	(0~480)/5	1
10	Hot water mode EEV opening degree	EEV_W	150/5	P	(0~480)/5	1
11	Defrosting enter temperature	DST	-5	°C	-15~0	1
12	Defrosting entry temperature difference	Dt	6	°C	0~15	1
13	First defrosting judgment time	T1	40	min	20~90	1
14	Defrost process EEV opening degree	Opl	480/5	P	(0~480)/5	1
15	Compressor frequency under defrosting	FD	60	Hz	30~120	1
16	Maximum operating frequency	Fmax	95	Hz	30~120	1
17	Power lost memory	PR	1	0/1	0-without 1-with	/
18	Frequency limits under low noise mode	Fs	55	Hz	30~120	1
19	Disinfection set temperature	Tx	65	°C	55~75	1
20	Disinfection lasting time	Td	30	Min	20~120	1
21	Mode priority	Mp	0	0/1/2	0-hot water priority 1--aircon priority 2-priority for which one start firstly	/

22	Compressor resonance point 1	FR1	0	Hz	0~120 (If set 0, the resonance point is closed.)	1
23	Compressor resonance point 2	FR2	0	Hz	0~120	1
24	Compressor resonance point 3	FR3	0	Hz	0~120	1
25	Compressor resonance point 4	FR4	0	Hz	0~120	1
26	Electrical heating water tank open ambient temperature	Teh	4	°C	-10~40	1
27	Auto temperature compensation valid or invalid		0	0/1	0-invalid 1-valid	/
28	Compensation high point	Hi_A	5	°C	0~20	1
29	Compensation low point	Lo_A	0	°C	-20~0	1
30	The maximum compensation value	A	5	°C	0~10	1
31	High temperature stop unit valid or invalid		0	0/1	0	/
32	High temperature stop unit setting	T4h	24	°C	10~30	1
33	Economical modes setting	S	10	°C	5~20	1
34	Heating standby mode pump running status	Pump	1	0/1	0-open 1min stop 3min 1-open 1min stop 10min 2-open 2min stop 15min 3-Nonstop	/
35	Low temperature stop compressor setting	T4L	-25	°C	-30~-21	1

36	Pipe electric heater being valid or invalid	HD	0	0/1	0-valid 1-invalid	1
37	Cooling mode if being valid or not		0	0/1	0-valid 1-invalid	/
38	High pressure switch 2 valid or invalid (System parameters)		0	0/1	0-valid 1-invalid	/
39	Minimum opening setting	MinEEV	80/5	P	(0~480)/5	1
40	Minimum water temperature requirement for entering defrosting	Tdf	15	℃	0~40	1
41	Tube electric heater running ambient temperature	T4g	-20	℃	-20~20	1
42	Exit defrosting temperature	Ft	15	℃	10~25	1
43	Defrost longest running time	FT	10	Min	1~20	1
44	Return oil to the lowest frequency	Fo	50	Hz	30~60	1
45	Test mode fan speed	TF	2		1-low 2-high	/
46	Chassis electric heating start temperature	BHon	-5	℃	-15~0	1
47	Minimum operating frequency	Fmin	25	Hz	20~100	1
48	Heating mode conversion	HeatChange	0		0/1	
49	Heating target exhaust temperature correction	TargetTPh	0	℃	-10~15	1
50	Reset EEPROM		0		0, 1	1
51	Whether to open the pipe electric heating before defrost		1	0/1	0-invalid 1-valid	1

52	Chassis electric heating Start time	BaseHeatTime	6	10Min	0~100	1
53	Trv valid or invalid	enTrV	1	0/1	0-invalid 1-valid	1
54	Four-way switching fault judgment condition	Trv	3	℃	0~10	1
55	Test mode DC fan speed	FspeedT	900/15	Rpm	200~ 1000/15	1
56	DC fan minimum speed	FanMin	250/15	Rpm	200~500/15	1
57	DC fan maximum speed	FanMax	850/15	Rpm	500~ 1000/15	1
58	DC fan silent mode	NoiseFan	650/15	Rpm	500~ 1000/15	1
59	Cooling mode coil temperature	CondT	40	℃	20~60	1
60	Heating mode coil temperature	EvapT	5	℃	-10~20	1
61	DC fan speed shielding point 1	SR1	0/15	Rpm	0~1000/15	1
62	DC fan speed shielding point 2	SR2	0/15	Rpm	0~1000/15	1
63	DC fan speed shielding point 3	SR3	0/15	Rpm	0~1000/15	1

Main Errors and Protection

Error Code	Error Name	Error Analysis	Diagnostic Method	Solution
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P01	Water flow protecting	<ol style="list-style-type: none"> 1. System lack of water 2. Flow switch fault 3. System blocking 	<ol style="list-style-type: none"> 1. check the water injection valve whether is off or cut off the water supply 2. check the flow switch whether is blocking or break off 3. Check the Y type filter whether is blocking 	<ol style="list-style-type: none"> 1. open the valve 2. Change the water flow switch 3. clean or change filter net
P02	High pressure protection	<ol style="list-style-type: none"> 1. lower flow; 2. high pressure switch fails; 3. Cooling system blocked; 4. EEV valve locked. 	<ol style="list-style-type: none"> 1. check if system lack of water or insufficient pump water flow; 2. check if high pressure switch cuts if unit OFF; 3. check if cooling system blocked; 4. check if any EEV reset sound when power off and on under unit OFF mode. 	<ol style="list-style-type: none"> 1. Refill water or change bigger flow pump or add a booster pump; 2. change high pressure switch; 3. change filter; 4. change EEV valve.
P03	Low pressure protection	<ol style="list-style-type: none"> 1. Lack refrigerant 2. refrigeration system blocking 3. beyond system working range 	<ol style="list-style-type: none"> 1. check the system whether is leaking 2. Check the filter net whether is blocking 3. check the ambient temperature or water temperature whether is beyond limit 	<ol style="list-style-type: none"> 1. leak repairing and inject refrigerant again 2. change the filter. 3. Beyond system limit can't opening
P04	T3 coil over-heat protection	<ol style="list-style-type: none"> 1. Outdoor fan vent blocked 2. Outdoor heat exchange blocked; 3. T3 sensor temperature deviation. 	<ol style="list-style-type: none"> 1. check if outdoor fan vent blocked; 2. check outdoor heat exchange blocked; 3. check outdoor temperature sensor resistance value if correct 	<ol style="list-style-type: none"> 1. clean outdoor fan ven; 2. clean heat exchange; 3. change temperature sensor.
P05	Exhaust gas temperature protection	<ol style="list-style-type: none"> 1. System lack of gas; 2. exhaust gas sensor temperature deviation. 	<ol style="list-style-type: none"> 1. check system if any leakage; 2. check exhaust gas temperature sensor resistance value if correct 	<ol style="list-style-type: none"> 1. Fix leakage and recharge gas; 2. change temperature sensor.

P06	Outlet water temperature anti-freezing protection	1. lower water flow; 2. heat exchanger blocked; 3. Y-shaped filter blocked; 4. Overflow load.	1. check if air exists in water system; 2. Plate heat exchanger if blocked; 3. check if Y-shaped filter has block; 4. check design of indoor water system if reasonable,if have water bypass.	1. If drain valve has problem,change a new one; 2. blow plate heat exchanger with water or high-pressure gas through reverse direction; 3. clean Y-shaped filter; 4. water system must have bypass
P07	Pipe temperature anti-freezing protection	1. system lack of gas; 2. water system has block; 3. cooling system has block.	1. check system if any leakage; 2. check Y-shaped filter has block; 3. check if cooling system filter has block.	1. fix leakage and re-charge gas; 2. clean Y-shaped filter; 3. change filter.
P08	Middle-pressure protection	Middle pressure switch cuts	check if middle pressure switch cuts under unit OFF condition	change middle pressure switch
P10	Low pressure sensor protection	1.Lack refrigerant 2.refrigeration system blocking 3.beyond system working range	1.check the system whether is leaking 2. Check the filter net whether is blocking	1.leak repairing and inject refrigerant again 2change the filter. 3. Beyond system limit can't opening
P11	DC fan motor 1 fault	1.Fan failure or stuck 2.Main controll board failure	1.Check whether the fan is stuck or replace the new fan; 2. Replace the main control board	1.Check whether the fan is stuck or replace with a new fan; 2. Replace the main control board
P12	DC fan motor 2 fault	1.Fan failure or stuck 2.Main controll board failure	1.Check whether the fan is stuck or replace the new fan; 2. Replace the main control board	1.Check whether the fan is stuck or replace with a new fan; 2. Replace the main control board

P13	Four-way valve switching fault	<ol style="list-style-type: none"> 1. The inlet and outlet water temperature sensor is inserted backwards; 2. Four-way valve failure; 3. The main control board is faulty. 	<ol style="list-style-type: none"> 1. Check the inlet and outlet water temperature sensor and the motherboard are inserted incorrectly; 2. Check whether the four-way valve is switched and operated normally; 3. Check whether the sampling temperature of the main control board is normal and accurate; 	<ol style="list-style-type: none"> 1. Correct the wrong place; 2. Try to switch repeatedly to see if it can move, if not, replace it; 3. If not, replace it;
E01	Controller communication failure	<ol style="list-style-type: none"> 1. The communication cable is broken; 2. The line controller is faulty; 3. The main control board is faulty. 	<ol style="list-style-type: none"> 1. Check if the communication cable is broken or the plug is not in good contact; 2. Confirm that the line controller is normal on the normal machine; 3. Use the normal line controller to confirm whether it is normal on the faulty machine. 	<ol style="list-style-type: none"> 1. Replace the communication cable or repair; 2. Replace the line controller; 3. Replace the main control board;
E02	TP1 exhaust gas temperature sensor failure	<ol style="list-style-type: none"> 1. The sensor cable is open or shorted; 2. Sensor failure; 3. The main control board is faulty; 	<ol style="list-style-type: none"> 1. Check if the sensor and connection are abnormal with a multimeter; 2. Replace the fault sensor with a normal sensor to confirm whether it is normal; 3. Replace the main control board to confirm whether it is normal; 	<ol style="list-style-type: none"> 1. Repair the cable and plug or replace the sensor; 2. Replace the motherboard
E03	T3 coil temperature sensor failure	<ol style="list-style-type: none"> 1. The sensor cable is open or shorted; 2. Sensor failure; 3. The main control board is faulty; 	<ol style="list-style-type: none"> 1. Check if the sensor and connection are abnormal with a multimeter; 2. Replace the fault sensor with a normal sensor to confirm whether it is normal; 	<ol style="list-style-type: none"> 1. Repair the cable and plug or replace the sensor; 2. Replace the motherboard

			3. Replace the main control board to confirm whether it is normal;	
E04	T4 ambient temperature sensor failure	<ol style="list-style-type: none"> 1. The sensor cable is open or shorted; 2. Sensor failure; 3. The main control board is faulty; 	<ol style="list-style-type: none"> 1. Check if the sensor and connection are abnormal with a multimeter; 2. Replace the fault sensor with a normal sensor to confirm whether it is normal; 3. Replace the main control board to confirm whether it is normal; 	<ol style="list-style-type: none"> 1. Repair the cable and plug or replace the sensor; 2. Replace the motherboard
E05	T5 liquid gas temperature sensor	<ol style="list-style-type: none"> 1. The sensor cable is open or shorted; 2. Sensor failure; 3. The main control board is faulty; 	<ol style="list-style-type: none"> 1. Check if the sensor and connection are abnormal with a multimeter; 2. Replace the fault sensor with a normal sensor to confirm whether it is normal; 3. Replace the main control board to confirm whether it is normal; 	<ol style="list-style-type: none"> 1. Repair the cable and plug or replace the sensor; 2. Replace the motherboard
E06	TH return gas temperature sensor failure	<ol style="list-style-type: none"> 1. The sensor cable is open or shorted; 2. Sensor failure; 3. The main control board is faulty; 	<ol style="list-style-type: none"> 1. Check if the sensor and connection are abnormal with a multimeter; 2. Replace the fault sensor with a normal sensor to confirm whether it is normal; 3. Replace the main control board to confirm whether it is normal; 	<ol style="list-style-type: none"> 1. Repair the cable and plug or replace the sensor; 2. Replace the motherboard
E07	TW water tank temperature sensor failure	<ol style="list-style-type: none"> 1. The sensor cable is open or shorted; 2. Sensor failure; 3. The main control board is faulty; 	<ol style="list-style-type: none"> 1. Check if the sensor and connection are abnormal with a multimeter; 2. Replace the fault sensor with a normal 	<ol style="list-style-type: none"> 1. Repair the cable and plug or replace the sensor; 2. Replace the motherboard

			<p>sensor to confirm whether it is normal;</p> <p>3. Replace the main control board to confirm whether it is normal;</p>	
E08	T6 inlet water temperature sensor failure	<p>1. The sensor cable is open or shorted;</p> <p>2. Sensor failure;</p> <p>3. The main control board is faulty;</p>	<p>1. Check if the sensor and connection are abnormal with a multimeter;</p> <p>2. Replace the fault sensor with a normal sensor to confirm whether it is normal;</p> <p>3. Replace the main control board to confirm whether it is normal;</p>	<p>1. Repair the cable and plug or replace the sensor;</p> <p>2. Replace the motherboard</p>
E09	T7 outlet water temperature sensor failure	<p>1. The sensor cable is open or shorted;</p> <p>2. Sensor failure;</p> <p>3. The main control board is faulty;</p>	<p>1. Check if the sensor and connection are abnormal with a multimeter;</p> <p>2. Replace the fault sensor with a normal sensor to confirm whether it is normal;</p> <p>3. Replace the main control board to confirm whether it is normal;</p>	<p>1. Repair the cable and plug or replace the sensor;</p> <p>2. Replace the motherboard</p>
E10	Controller and Drive PCB Communicate failure	<p>1. The communication cable is broken;</p> <p>2. The main control board is faulty;</p> <p>3. Drive module failure</p>	<p>1. Check if the communication cable is broken or the plug is not in good contact;</p> <p>2. Replace the main control board to confirm whether it is normal;</p> <p>3. Replace the driver board to confirm that it is normal;</p>	<p>1. Replace the communication cable or repair;</p> <p>2. Replace the main control board;</p> <p>3. Replace the drive module;</p>
E11	Economizer import sensor failure	<p>1. The sensor cable is open or shorted;</p> <p>2. Sensor failure;</p> <p>3. The main control board is</p>	<p>1. Check if the sensor and connection are abnormal with a multimeter;</p> <p>2. Replace the fault</p>	<p>1. Repair the cable and plug or replace the sensor;</p> <p>2. Replace the motherboard</p>

		faulty;	sensor with a normal sensor to confirm whether it is normal; 3. Replace the main control board to confirm whether it is normal;	
E12	Economizer exit sensor failure	1. The sensor cable is open or shorted; 2. Sensor failure; 3. The main control board is faulty;	1. Check if the sensor and connection are abnormal with a multimeter; 2. Replace the fault sensor with a normal sensor to confirm whether it is normal; 3. Replace the main control board to confirm whether it is normal;	1. Repair the cable and plug or replace the sensor; 2. Replace the motherboard
E13	Reserved			
E14	Low pressure sensor LPS failure	1. The sensor cable is open or shorted; 2. Sensor failure; 3. The main control board is faulty;	1. Check if the sensor and connection are abnormal; 2. Replace the fault sensor with a normal sensor to confirm whether it is normal; 3. Replace the main control board to confirm whether it is normal;	1. Repair the cable and plug or replace the sensor; 2. Replace the motherboard
E15	DC main cable voltage extra low	<p>Wiring error or IPM module failure</p> <p>Check for incorrect wiring, reconnect the cable or replace the IPM module</p>		
E16	DC main cable voltage extra high			
E17	AC current protection (input current)			
E18	IPM module abnormal			

E19	PFC abnormal
E20	Compressor start failure
E21	Compressor lack phase
E22	IPM module reset
E23	Compressor over-current
E24	PFC module extra high temperature
E25	Current detection Circuit failure
E26	out of step
E27	PFC module temperature sensor abnormal
E28	communication failure
E29	IPM module extra high temperature
E30	IPM module temperature sensor failure
E31	reserved
E32	IPM adjustment data
E33	IPM adjustment data
E34	AC input voltage abnormal
E35	IPM adjustment data
E36	Reserved

Wiring error or IPM module failure

Check for incorrect wiring, reconnect the cable or replace the IPM module

E37	IPM module current frequency limits	Wiring error or IPM module failure Check for incorrect wiring, reconnect the cable or replace the IPM module
E38	IPM module voltage frequency limits	

Parameter Check

No.	Name	Description
1	Compressor running frequency	Current frequency
2	EEV valve open angle	Current open angle/5
3	Ambient temperature	Current temperature
4	Outlet temperature	Current temperature
5	Exhaust gas temperature	Current temperature
6	Suction gas temperature	Current temperature
7	Coil temperature	Current temperature
8	EEV valve outlet temperature	Current temperature
9	Water pump status	0-OFF;1-ON
10	4-way valve status	0-OFF;1-ON
11	Fan status	0- OFF; 1- low fan speed; 2- high fan speed
12	Solenoid 3-way valve	0-OFF; 1-ON
13	Solenoid 2-way valve	0-OFF;1-ON
14	Tube electric heater	0-OFF;1-ON
15	Tank electric heater	0-OFF;1-ON
16	Compressor running current	Present current
17	Voltage	Current voltage/10
18	Return oil status	0- no return oil; 1- return oil running

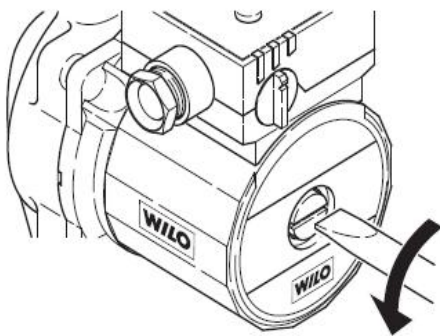
19	High pressure 2 status	0-OFF;1-ON
20	Bottom plate heating status	0-OFF;1-ON
21	DC bus voltage	Actual voltage/5
22	Compressor current	Present current
23	PFC temperature	current temperature
24	IPM temperature	current temperature
25	DC fan speed	Current speed / 15
26	Inverter compressor target frequency	target frequency

Note:

In the winter heating season, the unit is strictly prohibited from powering off to ensure the normal operation of the unit's antifreeze function.

When the unit is not in use for a long time, please drain the water from the system.

If the unit is not used after being used for a long time, please disassemble the special exhaust port of the pump (as shown below), use a screwdriver to check whether the pump rotor can run normally. If it can't rotate normally or the rotation is blocked and the rotation is not smooth, you can Use a screwdriver to turn a few turns until the rotor runs freely; if you have any questions, please call the after-sales service.



The product will be subject to change in design specifications, performance and technical parameters, etc., without prior notice, please refer to the product.

The final interpretation right belongs to KONNEN.