

WATER CIRCULATED

Installation & Instruction Manual



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Preface

Welcome to air source water heat pump. Your decision to purchase heat pump will reward you for many years.

This is your assurance that you have purchased quality heat pump system available, one that is manufactured in a state-of-the-art facility and go with innovation.

Necessary reading

Carefully read these operating and installation instructions and keep them safe. Should the equipment change hands, pass these instructions to the subsequent owner. Pass them to the trained contractors for servicing purposes.

Qualified only

Positioning, installation and commissioning must be carried out by trained personnel working in accordance with these *operating and installation instructions*.

Protection

Where children or persons with limited physical, sensory or mental capabilities are to be allowed to control this equipment ensure that this will only happen under supervision or after appropriate instructions by a person responsible for their safety. Children should be supervised to ensure that they do not play with the equipment.

For information

The pictures and drawings in this manual is for your information only. The manufacture has the right to change or improve the product when it is needed, without prior notification to the users of this device.

Quality check at first receipt of this product

When the product is delivered to the users, please check whether there is any damage on the unit during transportation; If there is any please talk with the forwarder or the contractor.

If the heat pump unit just can be installed a while latter, please keep it free from damage, rust or abrasion by following methods.



- 1, all the access like the water connections must be sealed correctly;
- 2, the unit must be free from sunshine, and placed under 45°C;
- 3, the unit must be free from heavy dust to avoid dirty on the evaporator;
- 4, the unit must be placed free from chaos to avoid accident.
- 5, please check the unit during stock

Safety Precautions




To prevent the users and others from the harm of this unit, and avoid damage on the unit or other property, and use the heat pump properly, please read this manual carefully and understand the following information correctly.

The piping connection and wiring should be installed according to the local legal laws and regulations as well as the profession standard.

2.1 Mark Notes



Mark	Meaning
 WARNING	A wrong operation may lead to death or heavy injury on people.
 ATTENTION	A wrong operation may lead to harm on people or loss of material.



2.2 Icon Notes




Icon	Meaning
	Prohibition. What is prohibited will be nearby this icon
	Compulsory implement. The listed action need to be taken.
	ATTENTION (include WARNING) Please pay attention to what is indicated.

Safety Precautions

2.3 Warning




Installation	Meaning
 Professional installer is required.	The heat pump must be installed by qualified personals, to avoid improper installation which can lead to water leakage, electrical shock or fire.
 Earthing is required	Please make sure that the unit and power connection have good earthing, otherwise may cause electrical shock.





Operation	Meaning
 PROHIBITION	DO NOT put fingers or others into the fans and evaporator of the unit, otherwise harm may be occurred.
 Shut off the power	When there is something wrong or strange smell, the power supply need to be shut off to stop the unit. Continue to run may cause electrical short or fire.

Move and repair	Meaning
 Entrust	When the heat pump need to be moved or installed again, please entrust dealer or qualified person to carry it out. Improper installation will lead to water leakage, electrical shock, injury or fire.
 Entrust	When the heat pump need to be repaired, please entrust dealer or qualified person to carry it out. Improper movement or repair on the unit will lead to water leakage, electrical shock, injury or fire.
 Prohibit	It is prohibited to repair the unit by the user himself, otherwise electrical shock or fire may be occur.

Safety Precautions

2.4 Attention

Installation	Meaning
 Installation Place	The unit CANNOT be installed near the flammable gas. Once there is any leakage of the gas, fire can be occur.
 Fix the unit	Make sure that the basement of the heat pump is strong enough, to avoid any decline or fall down of the unit
 Need circuit breaker	Make sure that there is circuit breaker for the unit, lack of circuit breaker can lead to electrical shock or fire.

Operation	Meaning
 Check the installation basement	Please check the installation basement in a period (one month), to avoid any decline or damage on the basement, which may hurt people or damage the unit
 Switch off the power	Please switch off the power for clean or maintenance.
 Prohibition	It is prohibited to use copper or iron as fuse. The right fuse must be fixed by electrician for the heat pump.
 Prohibition	It is prohibited to spray the flammable gas to the heat pump, as it may cause fire.

Overall information of the heat pump

3.1 Device description

The air source heat pump extracts heat from ambient air and transfer it to water. By circulating the water, the energy is used to warm the house efficiently. Through the usage of floor heating, the heat pump COP can be as high as 4.5

In reverse, cooling is also available when it is needed.

Compared with oil boiler, gas boiler and electrical heater, heat pump is the best solution with high efficiency, safety and environment protect.

This air source heat pump use advanced heating technology and intelligent control system, to produce hot water at more than 55°C. So it can work with the floor heating pipe, the fan coil or the radiator, and replace the boiler directly.

In addition, the air heat pump can be used to provide hot water for sanitary use, like kitchen, shower, etc.

3.2 Features of the AIR HEAT PUMP

1, Save our planet---earth, by green technology

Heat pump transfer heat from air to the space for heating, so that there is no burning, no waste, no dirty gas, thus maintain good environment for human and save earth from waste.

2, Serve people by high efficiency and money saving

The heat pump is driven by electricity, and annually average efficiency can be higher than 4. By timer function, users can make use of the electric power at the low point of a day, thus save money for every family.

3, Good for life with safe running

To use heat pump for heating can avoid electrical shot and burning, thus keep people free from explosion or poisoning.

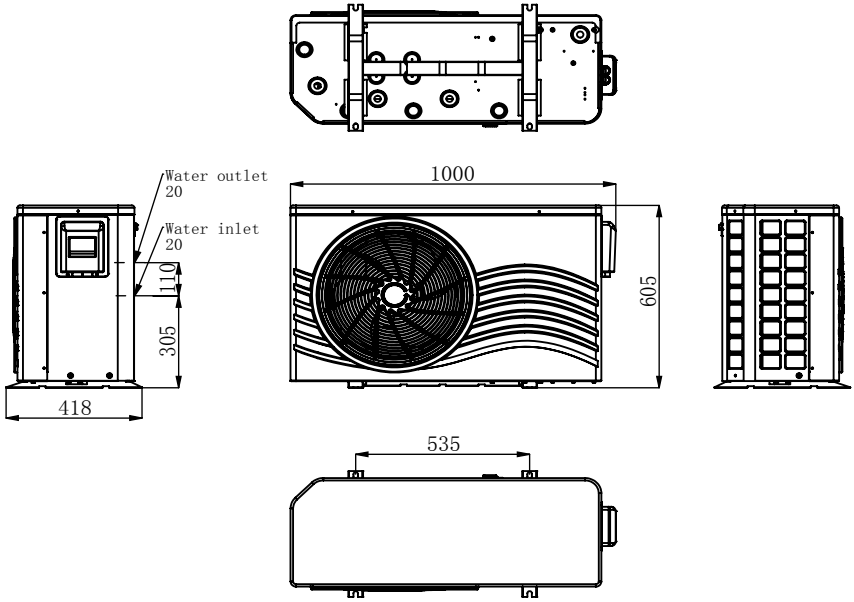
4, Easy operation

Heat pump is controlled and protected by micro-computer based controller, the desired water temperature is set according to real requirement. System protection program will guarantee the unit to be running at hard environment.

Overall information of the heat pump

3.3 Heat pump dimension and view

Unit Models : HPRD7.5



Overall information of the heat pump

3.4 Specification data

Unit	Model	HPRD7.5
Rated heating capacity	kW	7.5
Rated hot water capacity	L/h	187.5
Rated heating power input	kW	1.98
Rated heating current input	A	9.8
COP		3.79
Power supply		220V ~/50Hz
Compressor quantity	pcs	1
Compressor type		Rotary
Fan quantity		1
Fan power input	KW	0.035
Fan rotate speed	RPM	870
Noise	dB(A)	50
Water pipe outlet/inlet		DN20
Unit dimension (L/W/H)	mm	1000/418/605
Net Weight	kg	(Subject to data on the nameplate)
Gross weight	kg	(Subject to data on the package)

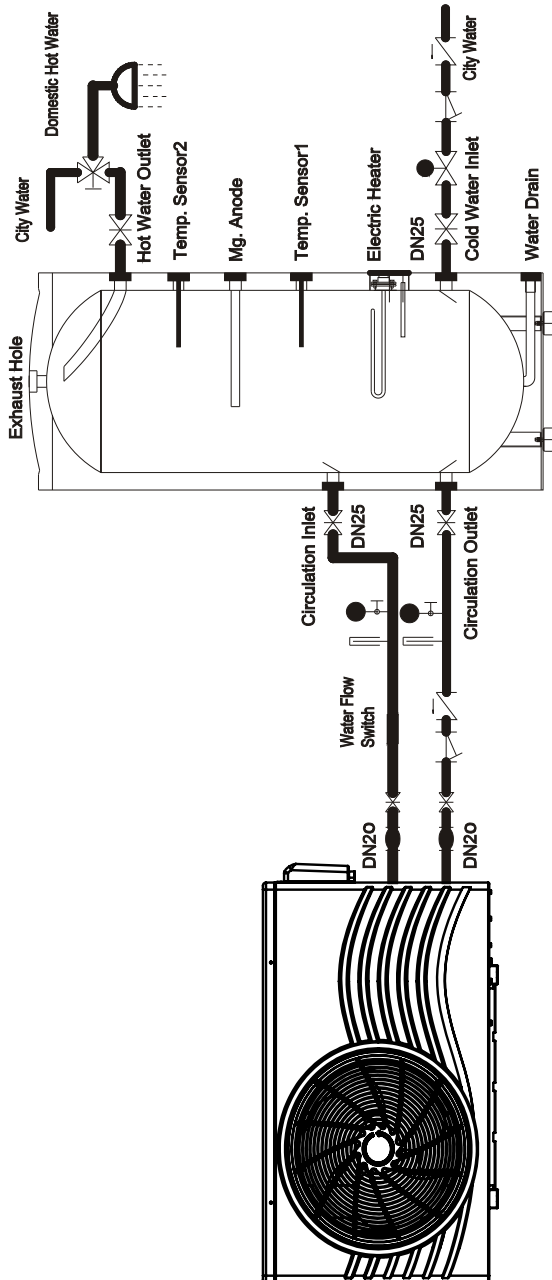
Testing condition:

Ambient temp. (DB/WB):20°C/15°C, water inlet temp:15°C, Recycled outlet temp:55°C;

Installation

4.1 Installation schematic

4.1.1 The connection diagram of hot water project



Installation

4.2 Function introduction

Shutdown Protection

After heat pump being shut down, compressor will stop for 3 minutes at least before it starting up once again.

Running protection

During high temp. ambient condition, Fan motor might stop running

Defrosting

When there is frost formed on the unit, heat pump will enter defrosting mode(2-10min) to make heat pump running at good condition.
Fan motor will be stopped during defrosting mode.

Running condition

The running condition for the heat pump is from $-15^{\circ}\text{C}\sim 45^{\circ}\text{C}$.

Please do not use lake water, river water or untreated ground water for our heat pump.

Power off

Please power off the heat pump when there is thunder/radio/power grid fluctuating affecting our heat pump running. After that, power on and restart our heat pump by pressing On/off button.

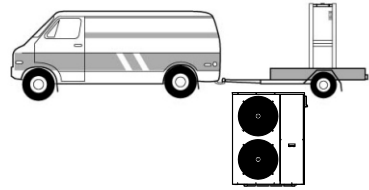
Current leakage protector

Please must connect one current leakage protector between power supply and circuit breaker.

Installation

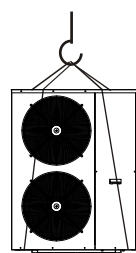
4.3 Transit

When the heat pump is transported please keep the unit stand up. The unit cannot be laid down, otherwise the inner parts of the device may be damaged.

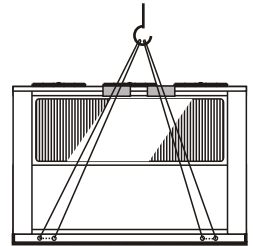


When the unit need to be hung up during installation, a 8 metres cable is needed, and there must be soft material between the cable and the unit to prevent damage to the heat pump cabinet. (See picture 1)


Or please use forklift, since there is wood chassis as package.



Picture 1



Picture 2

 WARNING	DO NOT touch the heat exchanger of the heat pump with fingers or other objects!
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4.4 Installation occasions

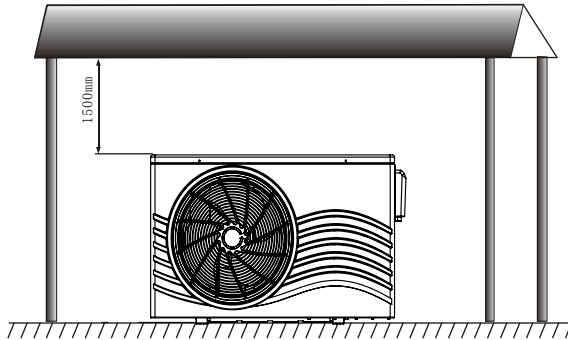
- The unit can be installed on any place outdoor which can carry heavy machine such as terrace, housetop, ground and so on.
- The location must have good ventilation.
- The place is free from heat radiation and other fire flame.
- A pall is needed in winter to protect the heat pump from snow. (See picture 2)
- There must be not obstacles near the air inlet and outlet of the heat pump.
- There must be water channel around the heat pump to drain the condensing water .
- A place which is free from strong air blowing.
- There must be enough space around the unit for maintenance.

4.5 Installation method

The heat pump can be installed onto the concrete basement by expansion screws, or onto a steel frame with rubber feet which can be placed on the ground or housetop.

Make sure that the unit is placed horizontally.

Picture3: Snow shelter



Attention

Snow shelter is necessary if the heat pump is to work normally at cold area in winter.

4.6 Water loop connection

Please pay attention to below matters when the water pipe is connected:

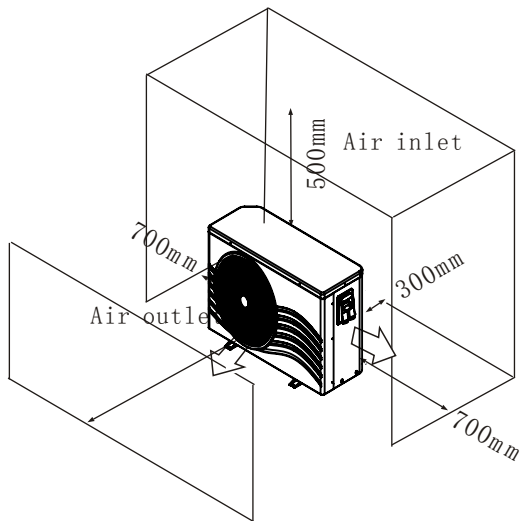
- Try to reduce the resistance to the water from the piping.
- The piping must be clear and free from dirt and blocks. Water leakage test must be carried out to ensure there is no water leaking. And then the insulation can be made.
- Attention that the pipe must be tested by pressure separately. DO NOT test it together with the heat pump.
- There must be an expansion tank on the top point of the water loop, and the water level in the tank must be at least 0.5 meter higher than the top point of the water loop.
- The flow switch is installed inside of the heat pump, check to ensure that the wiring and action of the switch is normal and controlled by the controller.
- The connection between the heat pump and the construction is better to be flexible type, to avoid vibration transfer. The support to the water pipe must be separate, but not rely on the heat pump unit.
- Try to avoid air staying inside of the water pipe, and there must be an air vent on the top point of the water loop.
- There must be a thermometer and pressure meter at the water inlet and outlet, for easy inspection during running.
- There must be drainage on the low points of the water system, and there is already drainage on the chassis of the heat pump. The water in the system must be drained out during winter if the heat pump is not running. And there must be an air vent on the high point of the water system to drive air out of the water. Drainage and air vent need not to be insulated, in order to maintain.

Installation

4.7 Location of the unit

DO NOT place the unit in an enclosed area with a limited air volume, where the units discharge air will be re-circulated.

DO NOT place the unit to shrubs which can block air inlet. These locations deny the unit of a continuous source of fresh air which reduces its efficiency and may prevent adequate heat delivery.



Installation

4.8 Power supply connection


- Open the front panel, and open the power supply access.
- The power supply must go through the wire access and be connected to the power supply terminals in the controlling box.
- If the outside water pump is needed, please insert the power supply wire into the wire access also and connect to the water pump terminals.
- If an additional auxiliary heater is needed to be controlled by the heat pump controller, the relay (or power) of the aux-heater must be connected to the relevant output of the controller.

4.9 Cable and switch

- The unit should use independent power supply, Wiring required by Table 6.1, Power supply voltage must in line with rated voltage.
- Power supply circuit must be equipped with an All-pole disconnect device have at least 3mm contact opening distance.
- The wiring must be completed by professional technicians in accordance with circuit diagram.
- Power supply circuit must have earth wire, the earth wire of power should be connected with external earth wire safely. And the external earth wire must be in order.
- The creepage protection device must be settled in accordance with the relevant national technical standards for electronic equipment.
- The power wire and signal wire should be neatly arranged. High voltage wire and low voltage wire must be separated and free from any interference, and they must be free from any pipe and valves of the unit.
- When all the wiring is completed, the power can only be connected after a double check.

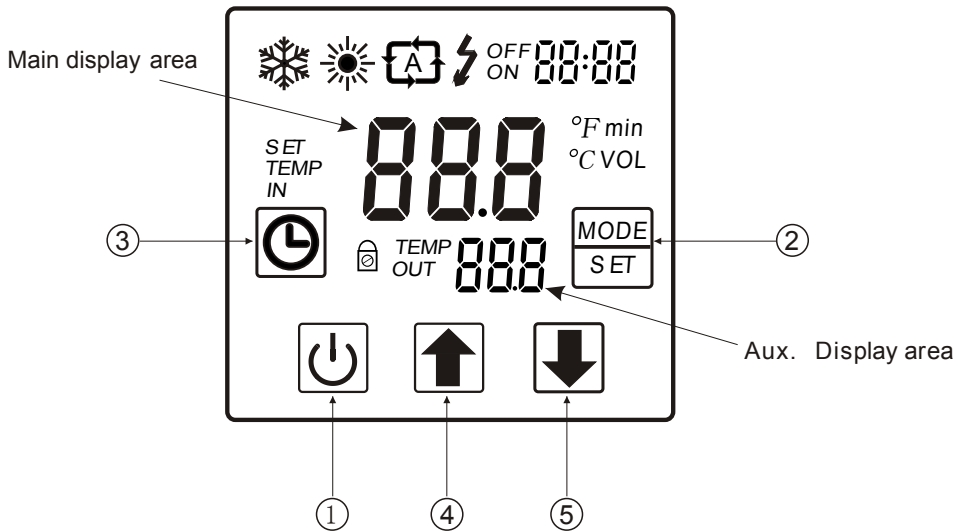
4.10 Trial running

Inspection before trial running

- Check the indoor unit, and make sure that the pipe connection is right and the relevant valves are open .
- Check the water loop, to ensure that the water inside of the expansion tank is enough, the water supply is good, the water loop is full of water and without any air. Also make sure there is good insulation for the water pipe.
- Check the electrical wiring. Make sure that the power voltage is normal, the screws are fastened, the wiring is made in line with the diagram, and the earthing is connected.
- Check the heat pump unit including all of the screws and parts of the heat pump to see if they are in good order. When power on, review the indicator on the controller to see if there is any failure indication. The gas gauge can be connected to the check valve to see the high pressure(or low pressure) of the system during trial running.
- Start the heat pump by press "  " key on the controller. Check whether the water pump is running, if it runs normally there will be 0.2 MPa on the water pressure meter.
- When the water pump runs for 1 minutes, the compressor will start. Hear whether there is strange sound from the compressor. If abnormal sound occurs please stop the unit and check the compressor. If the compressor runs well please look for the pressure meter of the refrigerant.
- Then check whether the power input and running current is in line with the manual. If not please stop and check.
- Adjust the valves on the water loop, to make sure that the hot(cool) water supply to each door is good and meet the requirement of heating(or cooling).
- Review whether the outlet water temperature is stable.
- The parameters of the controller are set by the factory, it is not allowed to change then by user himself.

Operation and Use






5.1 Function of controller



1) Button function

NO	Symbol	Name	Function
①		On/off	Press this button can start up or shut down the unit, cancel the current operation or back to the upper interface
②		Mode	Press this button can switch modes or save parameter setting .
③		Clock	Press this button can set the clock and timer
④		Up	Press this button can move up or increase parameter value .
⑤		Down	Press this button can move down or decrease the parameter value .



Operation and Use

Symbol	Meaning	Function
	Cooling	It is showed when the unit in cooling mode.
	Heating	It is showed when the unit in heating mode and flashed in defrosting .
	Automatic	It is showed when the unit in automatic mode.
	Electric-heating	It is showed when the unit in electric-heating mode. (Swimming pool unit without this display)
<i>ON</i>	Timer on	It is showed when the unit sets the timer on
<i>OFF</i>	Timer off	It is showed when the unit sets the timer off
<i>IN</i>	Inlet water	It is showed when the main display area gives the inlet water temperature.(measured value)
<i>OUT</i>	Outlet water	It is showed when the AUX display area gives the outlet water temperature.(measured value)
<i>TEMP</i>	Temperature	It is showed when the main/AUX display area gives temperature
<i>VOL</i>	Flow	It is showed when the main display area gives the water flow value
<i>min</i>	Minute	It is showed when the main display area gives minute value
<i>°F</i>	Fahrenheit	It is showed when the main/ AUX display area gives Fahrenheit value
<i>°C</i>	Centigrade	It is showed when the main/ AUX display area gives centigrade value
<i>SET</i>	Parameter setting	It is showed when the parameter can be setted .
	Lock	It is showed when the keyboard is locked.

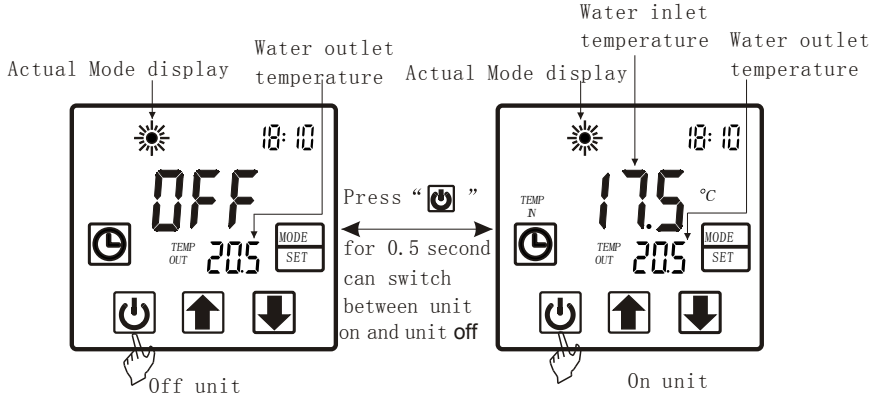
Operation and Use

5.2 The controller usage


5.2.1 Starting up and shutting down

In the off interface, press  for 0.5s can start up the unit, and aux. display-area shows water outlet temperature ;In the running interface, press  "for 0.5s can shut down the unit and aux. display-areashows "OFF".

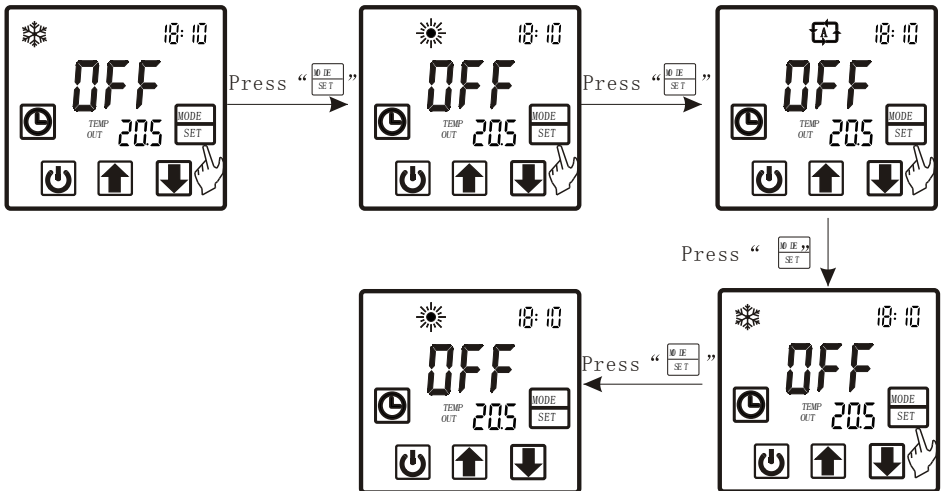
Attention: the operation of Starting up and shutting down can only be done in the main interface. For example:



5.2.2 Modes switching

If it is colds/heat unit ,in the main interface, you can switch different modes of cooling, heating, auto mode by pressing  .

Attention: The modes switching is useless if the unit you buy is single-cold/single-heat unit. For example:



Operation and Use

5.2.3 Temperature setting

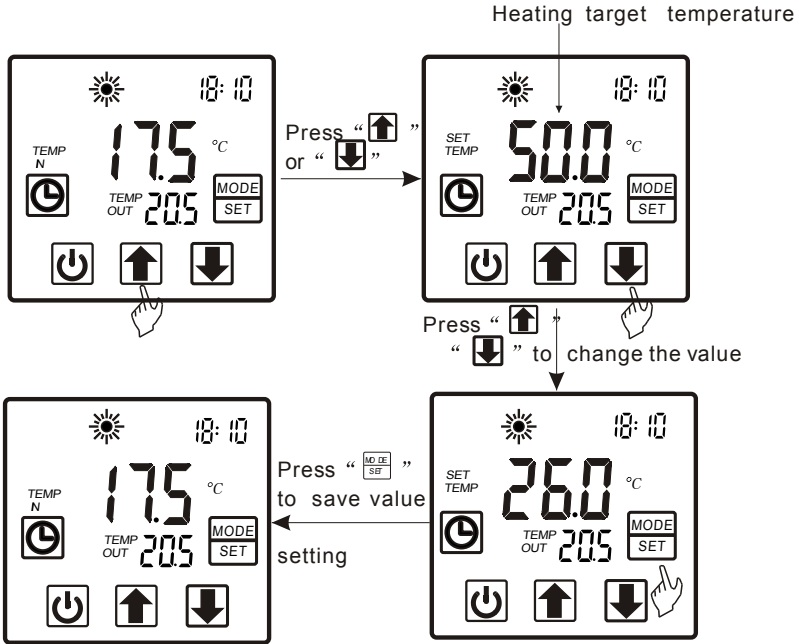
In the main interface press “


Press “


Press “


Attention : If there is no operation for 5s, system would remember parameter setting and back to the main interface .

For example:



In the main interface ,press “

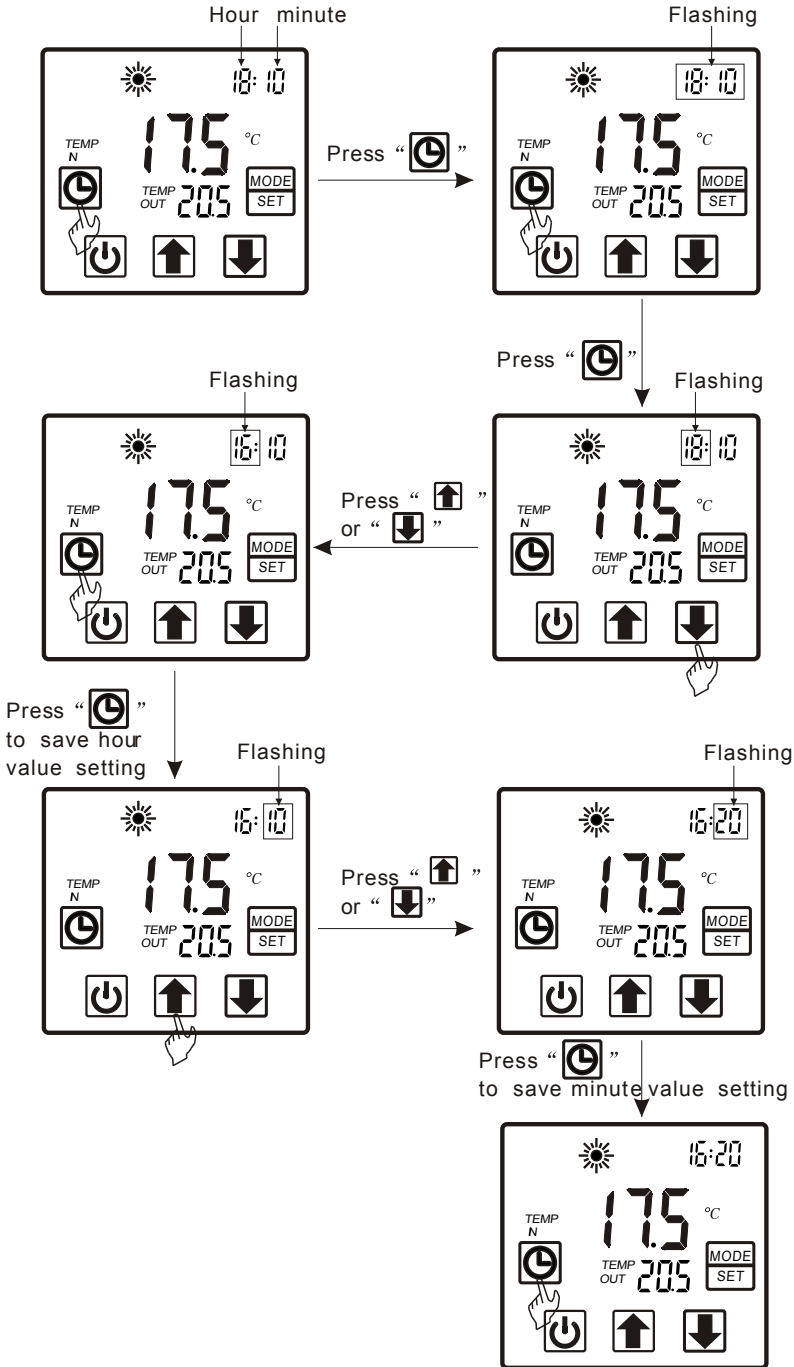
At the same time,minute start to flashing,press “

Press “

Attention : If there is no operation for 5s system will remember parameter setting and back to the main interface .

For example:

Operation and Use



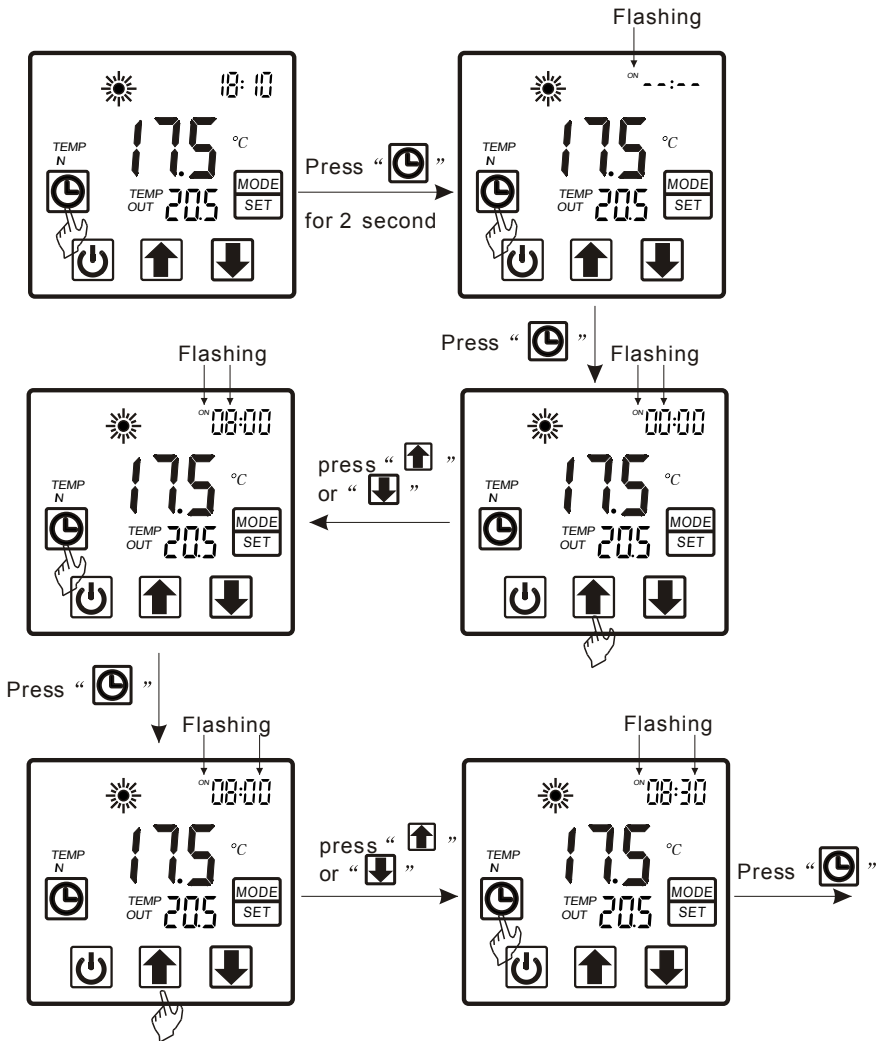
Operation and Use

5.2.5 Timer setting

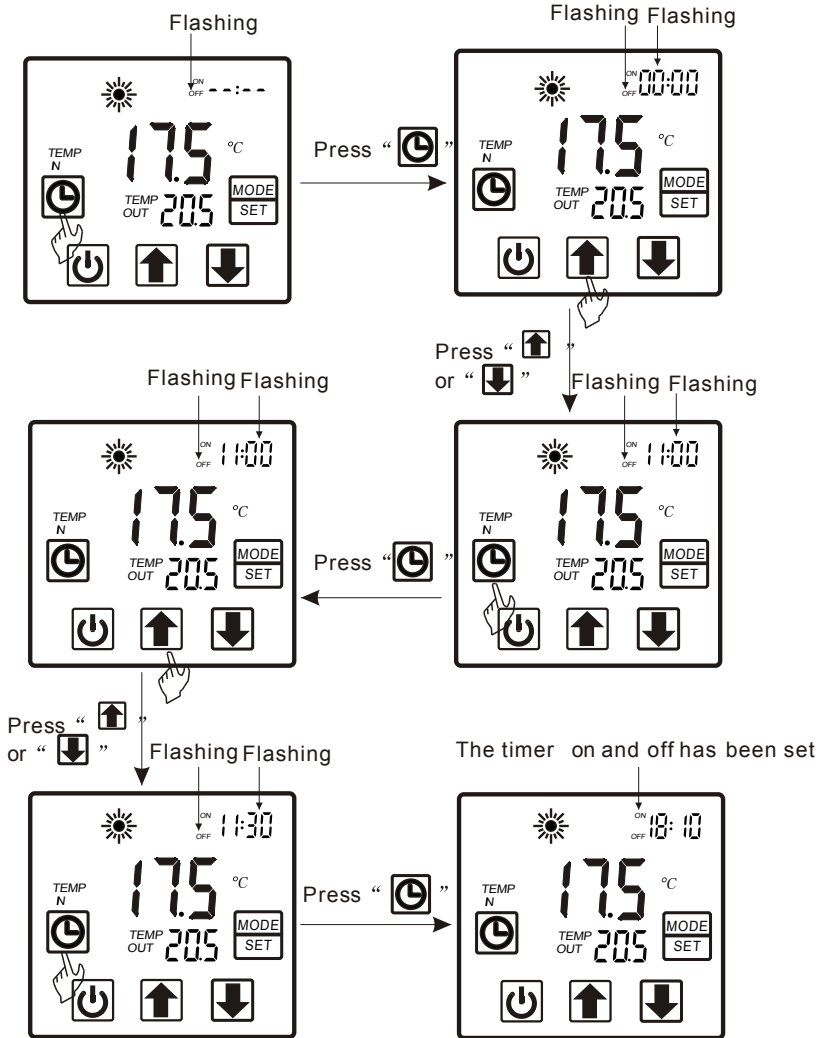
In the main interface, press “⏸” hold on 2 seconds and "on" is flashing, at this time, you can set the timer on (means the unit timer is on), then press “⏸” again and hold on 2 seconds and "off" is flashing you can set the timer off (means the unit timer is off). If you want cancel the timer off, In the "off" flashing interface press, “⏻” to cancel.

Attention : 1) If there is no operation for 5s, system will remember clock setting and back to the main interface .

2) By pressing “⏸” till the "off" flashing, you can set the timer off without timer on.





Operation and Use

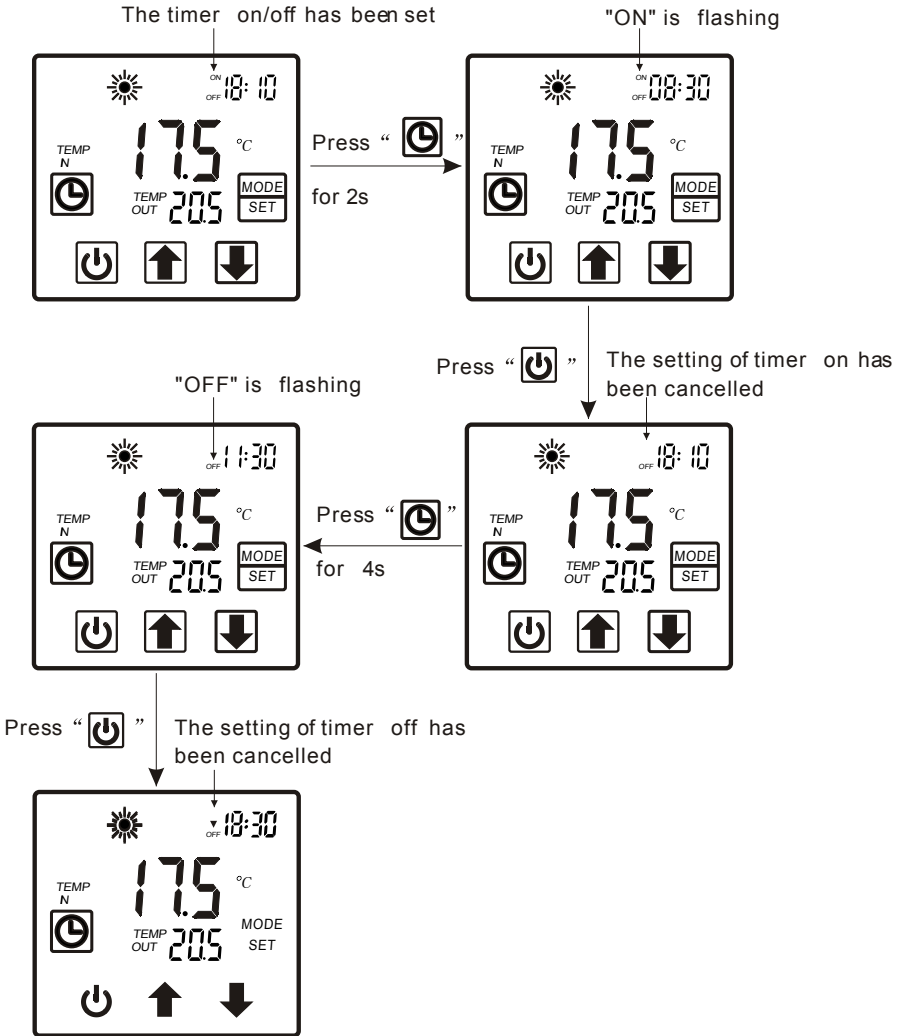


Operation and Use

5.2.6 Cancel the timer setting


Press “” for 2s and “ON” is flashing, at this time, press “” to cancel the setting of timer on ;It is the same way to cancel the setting of timer off.

For example:

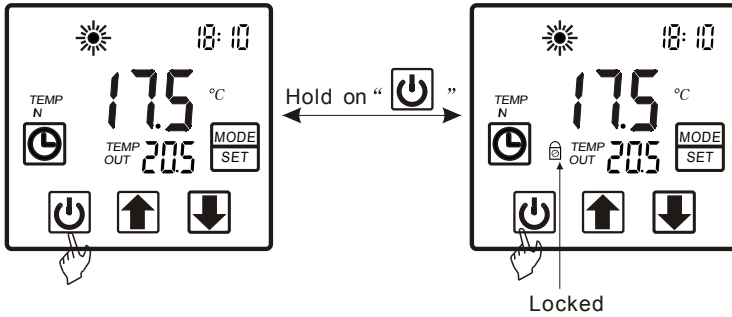


Operation and Use

5.3 Keyboard lock

To avoid mis-operation, please lock the controller after parameter setting . At the maininterface,press “

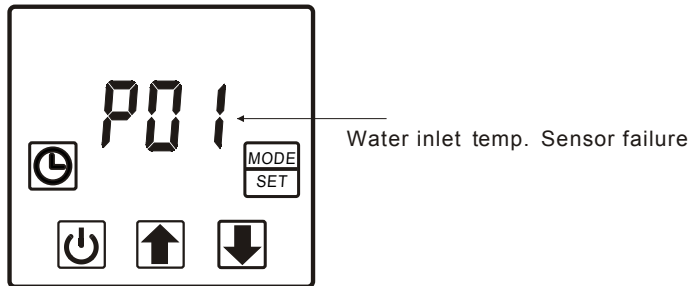
NOTES : When the unit is in alarming state, the key lock can be removed automatically .



5.4 Malfunction display

There will be malfunction code showing on the controller screen when relative malfunction occurs.

You can refer to the malfunction table to find out the failure cause and solution . For example :



Operation and Use

5.5 Parameter list

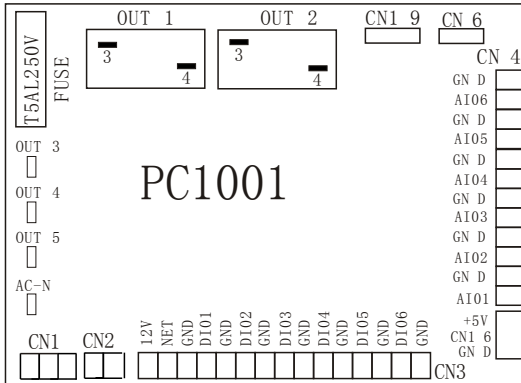
Meaning	Default	Remarks
Heating the target temperature set point	55°C	Adjustable

Trouble Shooting Guide

Malfunction	Display	Cause	Solution
Water inlet temp.Sensor failure	P01	The water inlet temp. Sensor is open or shortcircuit	Check or change the water inlet temp. Sensor
Water outlet temp.Sensor failure	P02	The water outlet temp. sensor is open or shortcircuit	Check or change the water outlet temp. Sensor
Ambient temp. Sensor failure	P04	The ambient temp. sensor is open or short circuit	Check or change the ambient temp. Sensor
Pipe temp. Sensor failure	P05	The pipe temp. sensor is open or short circuit	Check or change the pipe temp. Sensor
Evaporator temp.Sensor failure	P07	The evaporator temp. Sensor is open or shortcircuit	Check or change the evaporator temp. Sensor
High pressure protect	E01	The exhaust pressure is high , high pressure switch action	Check high pressure switch and cooling return circuit
Low pressure protect	E02	The suction pressure is low, Low pressure switch action	Check low pressure switch and cooling return circuit
Flow switch failure	E03	No water or litter water in water system	Check the flow volume, water pump is failure or not
Temp.is too much different between water-inlet and outlet	E06	Water flow volume not enough, Water system pressure difference is small	Check the flow volume, water system is jammed or not
Antifreezing under cooling mode	E07	Water flow volume not enough	Check the flow volume, water system is jammed or not
The primary anti-freezing protection start .	E19	Ambient temperature is too low	
The second anti-freezing protection start	E29	Ambient temperature is too low	
Communication failure	E08	Communication failure between remote wire controller and main board	Check the wire connection between remote wire controller and main board

Operation and Use

5.6 Connection of PCB illustration

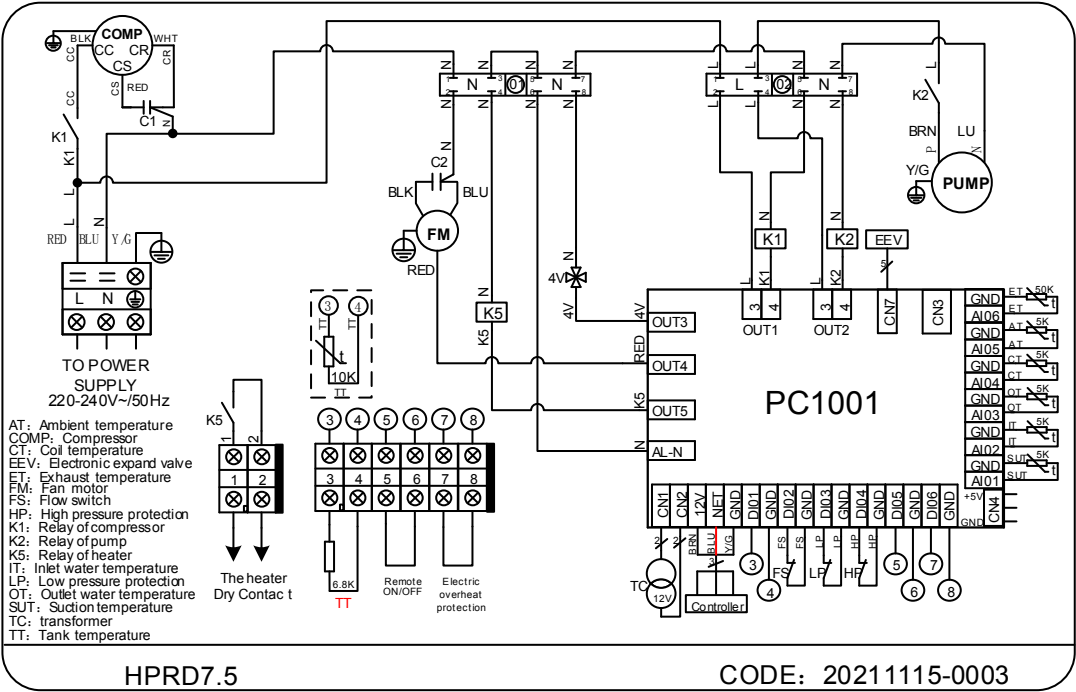


Connections explanation:

No.	Symbol	Meaning
1	OUT 1	Compressor of system1 (220-230VA C)
2	OUT 2	Water pump (220-230VA C)
3	OUT 3	4 way valve (220-230VA C)
4	OUT 4	High speed offan motor(220-230VA C)
5	OUT 5	Low speed of fan motor(220-230VA C)
6	AC- N	Neutral wire
7	NET GND 12V	Wire controller
8	DI01 GN D	On/Off Switch(input)(nouse)
9	DI02 GN D	Flow switch (input)(normal close)
10	DI03 GN D	Low pressure protect
11	DI04 GN D	High pressure protect
12	DI05 GN D	No use
13	DI06 GN D	No use
14	AI01 GN D	Suction temp. (input)
15	AI02 GN D	Water in temp. (input)
16	AI03 GN D	Water out temp. (input)
17	AI04 GN D	Temp. Of coil (input)
18	AI05 GN D	Ambient temp. (input)
19	AI06 GN D	Adjustable fan speed/Exhaust temperature
20	CN 1	Primary transformer
21	CN 2	Secondary transformer
22	CN 6	Without use
23	CN1 9	Electronic expansion valve
24	5V CN16 GN D	Flow meter

Operation and Use

5.7 Wiring diagram



HPRD7.5

CODE: 20211115-0003

Maintenance And Inspection

Look over and clear the failure according to below information.

Failure	Possible causes for the failure	Solutions
Heat pump cannot be started	<ol style="list-style-type: none"> 1 Wrong power supply 2 power supply cable loose 3 circuit breaker open 	<ol style="list-style-type: none"> 1 shut off the power and check power supply; 2 check power cable and make right connection 3 check for the cause and replace the fuse or circuit breaker
Water pump is running with high noise or without water	<ol style="list-style-type: none"> 1 lack of water in the piping 2 much air in the water loop 3 water valves closed 4 dirt and block on the water filter 	<ol style="list-style-type: none"> 1 check the water supply and charge water to the piping; 2 discharge the air in the water loop; 3 open the valves in water loop; 4 clean the water filter.
Heat pump capacity is low, compressor do not stop	<ol style="list-style-type: none"> 1 lack of refrigerant; 2 bad insulation on water pipe; 3 low heat exchange rate on air side exchanger; 4 lack of water flow 	<ol style="list-style-type: none"> 1 check for the gas leakage and recharge the refrigerant; 2 make good insulation on water pipe; 3 clean the air side heat exchanger; 4 clean the water filter
High compressor exhaust	<ol style="list-style-type: none"> 1 too much refrigerant 2 low heat exchange rate on air side exchanger 	<ol style="list-style-type: none"> 1 discharge the redundant gas 2 clean the air side heat exchanger
Low pressure problem of the system	<ol style="list-style-type: none"> 1 lack of gas 2 block on filter or capillary 3 lack of water flow 	<ol style="list-style-type: none"> 1 check the gas leakage and recharge freon; 2 replace filter or capillary; 3 clean the water filter and discharge the air in water loop.
Compressor do not run	<ol style="list-style-type: none"> 1 power supply failure 2 compressor contactor broken 3 power cable loose 4 protection on compressor 5 wrong setting on return water temp. 6 lack of water flow 	<ol style="list-style-type: none"> 1 check off the power supply; 2 replace compressor contactor; 3 tighten the power cable; 4 check the compressor exhaust temp.; 5 reset the return water temp.; 6 clean the water filter and discharge the air in water loop.
High noise of compressor	<ol style="list-style-type: none"> 1 liquid refrigerant goes into compressor 2 compressor failure 	<ol style="list-style-type: none"> 1 bad evaporation, check the cause for bad evaporation and get rid of this; 2 use new compressor;
Fan do not run	<ol style="list-style-type: none"> 1 failure on fan relay 2 fan motor broken 	<ol style="list-style-type: none"> 1 replace the fan relay; 2 replace fan motor.
The compressor runs but heat pump has not heating or cooling capacity	<ol style="list-style-type: none"> 1 no gas in the heat pump; 2 heat exchanger broken; 3 compressor failure. 	<ol style="list-style-type: none"> 1 check system leakage and recharge refrigerant; 2 find out the cause and replace the heat exchanger; 3 replace compressor.
Low outlet water temperature	<ol style="list-style-type: none"> 1 low water flow rate; 2 low setting for the desired water temp.; 	<ol style="list-style-type: none"> 1 clean the water filter and discharge the air in water loop. 2 reset the desired water temperature.
Low water flow protection	<ol style="list-style-type: none"> 1 lack of water in the system; 2 failure on flow switch 	<ol style="list-style-type: none"> 1 clean the water filter and discharge the air in water loop. 2 replace the flow switch.

7.1 Caution & Warning

- 7.1.1 The unit can only be repaired by qualified installer centre personnel or an authorised dealer. (for Europe market) 8.
- 7.1.2 This appliance is not intended for use by persons (including children) with reduced physical sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. (for Europe market)
Children should be supervised to ensure that they do not play with the appliance.
- 7.1.3 Please make sure that the unit and power connection have good earthing, otherwise may cause electrical shock.
- 7.1.4 If the supply cord is damaged, it must be replaced by the manufacturer or our service agent or similarly qualified person in order to avoid a hazard.
- 7.1.5 Directive 2002/96/EC (WEEE):
The symbol depicting a crossed-out waste bin that is underneath the appliance indicates that this product, at the end of its useful life, must be handled separately from domestic waste, must be taken to a recycling centre for electric and electronic devices or handed back to the dealer when purchasing an equivalent appliance.
- 7.1.6 Directive 2002/95/EC (RoHs): This product is compliant with directive 2002/95/EC (RoHs) concerning restrictions for the use of harmful substances in electric and electronic devices.
- 7.1.7 The unit CANNOT be installed near the flammable gas. Once there is any leakage of the gas, fire can occur.
- 7.1.8 Make sure that there is circuit breaker for the unit, lack of circuit breaker can lead to electrical shock or fire.
- 7.1.9 The heat pump located inside the unit is equipped with an over-load protection system. It does not allow for the unit to start for at least 3 minutes from a previous stoppage.
- 7.1.10 The unit can only be repaired by the qualified personnel of an installer center or an authorized dealer. (for North America market)
- 7.1.12 Installation must be performed in accordance with the NEC/CEC by authorized person only. (for North America market)
- 7.1.13 Use Supply Wires Suitable for 75 °C
- 7.1.14 Caution: Single wall heat exchanger, not suitable for potable water connection.

Appendix

7.2 Cables specification

7.2.1 Single phase unit

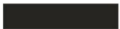
Nameplate maximum current	Phase line	Earth line	MCB	Creepage protector	Signal line
No more than 10A	$2 \times 1.5\text{mm}^2$	1.5mm^2	20A	30mA less than 0.1 sec	$n \times 0.5\text{mm}^2$
10~16A	$2 \times 2.5\text{mm}^2$	2.5mm^2	32A	30mA less than 0.1 sec	
16~25A	$2 \times 4\text{mm}^2$	4mm^2	40A	30mA less than 0.1 sec	
25~32A	$2 \times 6\text{mm}^2$	6mm^2	40A	30mA less than 0.1 sec	
32~40A	$2 \times 10\text{mm}^2$	10mm^2	63A	30mA less than 0.1 sec	
40~63A	$2 \times 16\text{mm}^2$	16mm^2	80A	30mA less than 0.1 sec	
63~75A	$2 \times 25\text{mm}^2$	25mm^2	100A	30mA less than 0.1 sec	
75~101A	$2 \times 25\text{mm}^2$	25mm^2	125A	30mA less than 0.1 sec	
101~123A	$2 \times 35\text{mm}^2$	35mm^2	160A	30mA less than 0.1 sec	
123~148A	$2 \times 50\text{mm}^2$	50mm^2	225A	30mA less than 0.1 sec	
148~186A	$2 \times 70\text{mm}^2$	70mm^2	250A	30mA less than 0.1 sec	
186~224A	$2 \times 95\text{mm}^2$	95mm^2	280A	30mA less than 0.1 sec	

7.2.2 Three phase unit

Nameplate maximum current	Phase line	Earth line	MCB	Creepage protector	Signal line
No more than 10A	$3 \times 1.5\text{mm}^2$	1.5mm^2	20A	30mA less than 0.1 sec	$n \times 0.5\text{mm}^2$
10~16A	$3 \times 2.5\text{mm}^2$	2.5mm^2	32A	30mA less than 0.1 sec	
16~25A	$3 \times 4\text{mm}^2$	4mm^2	40A	30mA less than 0.1 sec	
25~32A	$3 \times 6\text{mm}^2$	6mm^2	40A	30mA less than 0.1 sec	
32~40A	$3 \times 10\text{mm}^2$	10mm^2	63A	30mA less than 0.1 sec	
40~63A	$3 \times 16\text{mm}^2$	16mm^2	80A	30mA less than 0.1 sec	
63~75A	$3 \times 25\text{mm}^2$	25mm^2	100A	30mA less than 0.1 sec	
75~101A	$3 \times 25\text{mm}^2$	25mm^2	125A	30mA less than 0.1 sec	
101~123A	$3 \times 35\text{mm}^2$	35mm^2	160A	30mA less than 0.1 sec	
123~148A	$3 \times 50\text{mm}^2$	50mm^2	225A	30mA less than 0.1 sec	
148~186A	$3 \times 70\text{mm}^2$	70mm^2	250A	30mA less than 0.1 sec	
186~224A	$3 \times 95\text{mm}^2$	95mm^2	280A	30mA less than 0.1 sec	

When the unit will be installed at outdoor, please use the cable which can against UV.

Note: _____



Code:20220512-0002