

SWIMMING POOL HEAT PUMP UNIT

Installation & Instruction Manual

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1. PREFACE

- In order to provide our customers with quality, reliability and versatility, this product has been made to strict production standards. This manual includes all the necessary information about installation, debugging, discharging and maintenance. Please read this manual carefully before you open or maintain the unit. The manufacture of this product will not be held responsible if someone is injured or the unit is damaged, as a result of improper installation, debugging, or unnecessary maintenance. It is vital that the instructions within this manual are adhered to at all times. The unit must be installed by qualified personnel.
- The unit can only be repaired by qualified installer centre, personnel or an authorised dealer.
- Maintenance and operation must be carried out according to the recommended time and frequency, as stated in this manual.
- Use genuine standard spare parts only. Failure to comply with these recommendations will invalidate the warranty.
- Swimming Pool Heat Pump Unit heats the swimming pool water and keeps the temperature constant. For split type unit, The indoor unit can be Discretely hidden or semi-hidden to suit a luxury house.

Our heat pump has following characteristics:

1 Durable

The heat exchanger is made of PVC & Titanium tube which can withstand prolonged exposure to swimming pool water.

2 Installation flexibility

The unit can be installed outdoors or indoors.

3 Quiet operation

The unit comprises an efficient rotary/ scroll compressor and a low-noise fan motor, which guarantees its quiet operation.

4 Advanced controlling

The unit includes micro-computer controlling, allowing all operation parameters to be set. Operation status can be displayed on the LED wire controller. Remote controller can be chosen as future option.

2.SPECIFICATION

2.1 Performance data of Swimming Pool Heat Pump Unit

*** REFRIGERANT : R410A

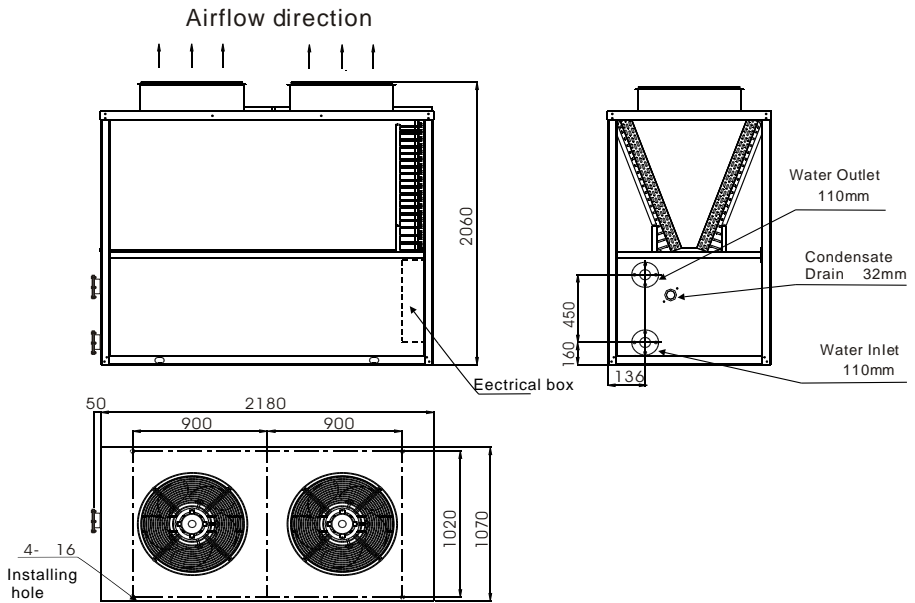
Unit		PASRW500S-V-P
Heating Capacity	kW	190
	BTU/h	646000
Heating Power Input	kW	32.8
Running Current	A	70.8
Power Supply		380-415V/3N~/50Hz
Compressor Quantity		4
Compressor		scroll
Fan Quantity		2
Fan PowerInput	W	2000×2
Fan Rotate Speed	RPM	920
Fan Direction		vertical
Noise	dB(A)	67
Water Connection	mm	110
Water Flow Volume	m ³ /h	60
Water Pressure Drop(MAX)	kPa	21
Unit Net Dimensions(L/W/H)	mm	see the drawing of the units
Unit Shipping Dimensions(L/W/H)	mm	see package label
Net Weight	kg	see nameplate
Shipping Weight	kg	see package label

Heating: Outdoor air temp:24°C/19°C, Inlet water temp:26°C

2.SPECIFICATION

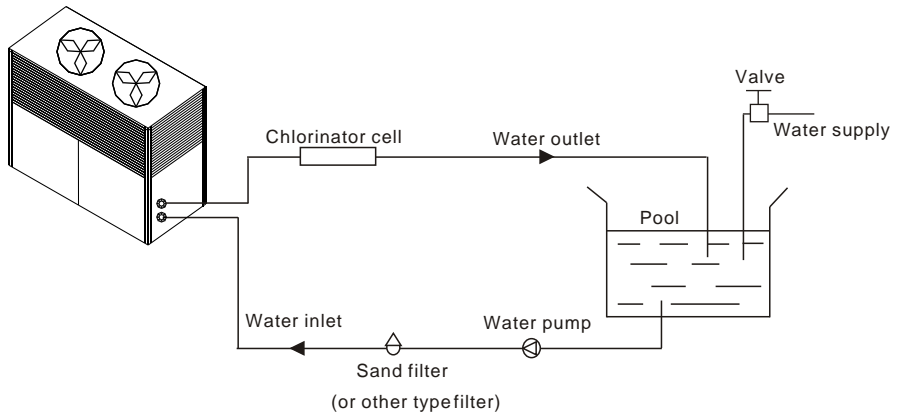
2.2 The dimensions for Swimming Pool Heat Pump Unit

Models :PASRW500S-V-P



3.INSTALLATION AND CONNECTION

3.1 Installation illustration



Installation items:

The factory only provides the main unit and the water unit; the other items in the illustration are necessary spare parts for the water system, that provided by users or the installer.

Attention:

Please follow these steps when using for the first time

1. Open valve and charge water.
2. Make sure that the pump and the water-in pipe have been filled with water.
3. Close the valve and start the unit.

The schematic diagram is for reference only. Please check the water inlet/outlet label on the heat pump while plumbing installation.

3.INSTALLATION AND CONNECTION

3.2 Swimming Pool Heat Pumps Location

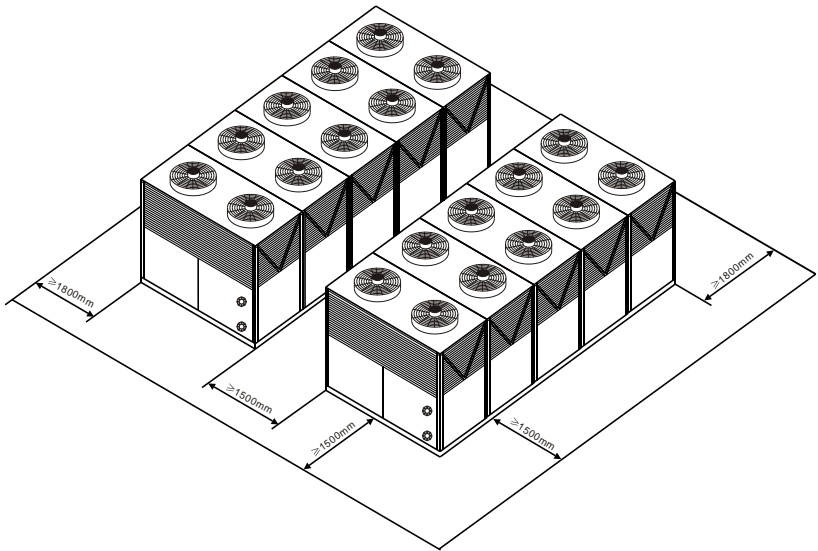
The unit will perform well in any outdoor location provided that the following three factors are present.

1. Fresh Air - 2. Electricity - 3. Pool filter piping

The unit may be installed virtually anywhere outdoors. For indoor pools please consult the supplier. Unlike a gas heater, it has no draft or pilot light problem in a windy area.

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.



3.3 How Close To Your Pool?

Normally, the pool heat pump is installed within 7.5 metres of the pool. The longer the distance from the pool, the greater the heat loss from the piping. For the most part, the piping is buried. Therefore, the heat loss is minimal for runs of up to 15 metres (15 metres to and from the pump = 30 metres total), unless the ground is wet or the water table is high. A very rough estimate of heat loss per 30 metres is 0.6 kW-hour, (2000 BTU) for every 5 °C difference in temperature between the pool water and the ground surrounding the pipe, which translates to about 3% to 5% increase in run time.

3. INSTALLATION AND CONNECTION

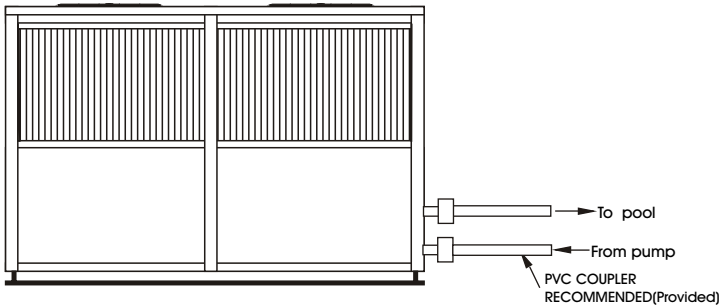
3.4 Swimming Pool Heat Pumps Plumbing

The Swimming Pool Heat Pumps exclusive rated flow titanium heat exchanger requires no special plumbing arrangements except bypass (please set the flow rate according to the nameplate). The water pressure drop is less than 10kPa at max. Flow rate. Since there is no residual heat or flame Temperatures, The unit does not need copper heatsink piping. PVC pipe can be run straight into the unit.

Location: Connect the unit in the pool pump discharge (return) line downstream of all filter and pool pumps, and upstream of any chlorinators, ozonators or chemical pumps.

Standard model have slip glue fittings which accept 40mm NB PVC pipe for connection to the pool or spa filtration piping. By using a 50 NB to 40NB you can plumb 50NB PVC piping straight into the unit.

Give serious consideration to adding a quick coupler fitting at the unit inlet and outlet to allow easy draining of unit for winterizing and to provide easier access should servicing be required.



Condensation: Since the Heat pump cools down the air about 4 -5°C , water may condense on the fins of the horseshoe shaped evaporator. If the relative humidity is very high, this could be as much as several litres an hour. The water will run down the fins into the basepan and drain out through the barbed plastic condensation drain fitting on the side of the basepan. This fitting is designed to accept 3/4" clear vinyl tubing which can be pushed on by hand and run to a suitable drain. It is easy to mistake the condensation for a water leak inside the unit.

NB: A quick way to verify that the water is condensation is to shut off the unit and keep the pool pump running. If the water stops running out of the basepan, it is condensation. AN EVEN QUICKER WAY IS to TEST THE DRAIN WATER FOR CHLORINE - if there is no chlorine present, then it's condensation.

3. INSTALLATION AND CONNECTION

3.5 Swimming Pool Heat Pumps Electrical Wiring

NOTE: Although the unit heat exchanger is electrically isolated from the rest of the unit, it simply prevents the flow of electricity to or from the pool water. Grounding the unit is still required to protect you against short circuits inside the unit. Bonding is also required.

The unit has a separate molded-in junction box with a standard electrical conduit nipple already in place. Just remove the screws and the front panel, feed your supply lines in through the conduit nipple and wire-nut the electric supply wires to the three connections already in the junction box (four connections if three phase). To complete electrical hookup, connect Heat Pump by electrical conduit, UF cable or other suitable means as specified (as permitted by local electrical authorities) to a dedicated AC power supply branch circuit equipped with the proper circuit breaker, disconnect or time delay fuse protection.

Disconnect - A disconnect means (circuit breaker, fused or un-fused switch) should be located within sight of and readily accessible from the unit. This is common practice on commercial and residential air conditioners and heat pumps. It prevents remotely-energizing unattended equipment and permits turning off power at the unit while the unit is being serviced.

3.6 Initial startup of the Unit

NOTE- In order for the unit to heat the pool or spa, the filter pump must be running to circulate water through the heat exchanger.

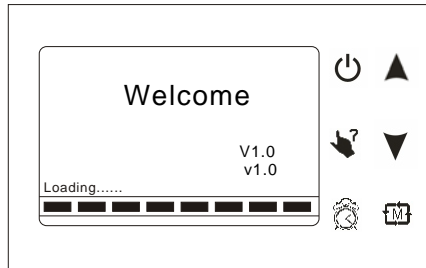
Start up Procedure- After installation is completed, you should follow these steps:







1. Turn on your filter pump. Check for water leaks and verify flow to and from the pool.
2. Turn on the electrical power supply to the unit, then press the key ON/OFF of wire controller. It should start in several seconds.
3. After running a few minutes make sure the air leaving the top(side) of the unit is cooler (Between 5-10 °C)
4. With the unit operating turn the filter pump off. The unit should also turn off automatically,
5. Allow the unit and pool pump to run 24 hours per day until desired pool water temperature is reached. When the water-in temperature reach setting, The unit just shuts off. The unit will now automatically restart (as long as your pool pump is running) when the pool temperature drops more than 2 °C below set temperature.

Time Delay- The unit is equipped with a 3 minute built-in solid state restart delay included to protect control circuit components and to eliminate restart cycling and contactor chatter. This time delay will automatically restart the unit approximately 3 minutes after each control circuit interruption. Even a brief power interruption will activate the solid state 3 minute restart delay and prevent the unit from starting until the 5 minute countdown is completed. Power interruptions during the delay period will have no effect on the 3 minute countdown.

4. USAGE AND OPERATION

4.1 Function of wire controller



Button	Name	Function
	ON/OFF	Press this button to start up/shut off the unit, cancel current operation or back to upper interface.
	HELP	Press this button to check button function or system state.
	MODE	Press this button to change the current mode, page up or confirm current operation.
	CLOCK	Press the button to set the clock, the timer on or timer off
	Up	Press this key to select the upward option or increase the parameter value.
	Down	Press this key to select the downward option or decrease the parameter value.

4. USAGE AND OPERATION

4.2 Usage of wire controller

4.2.1 The way to use

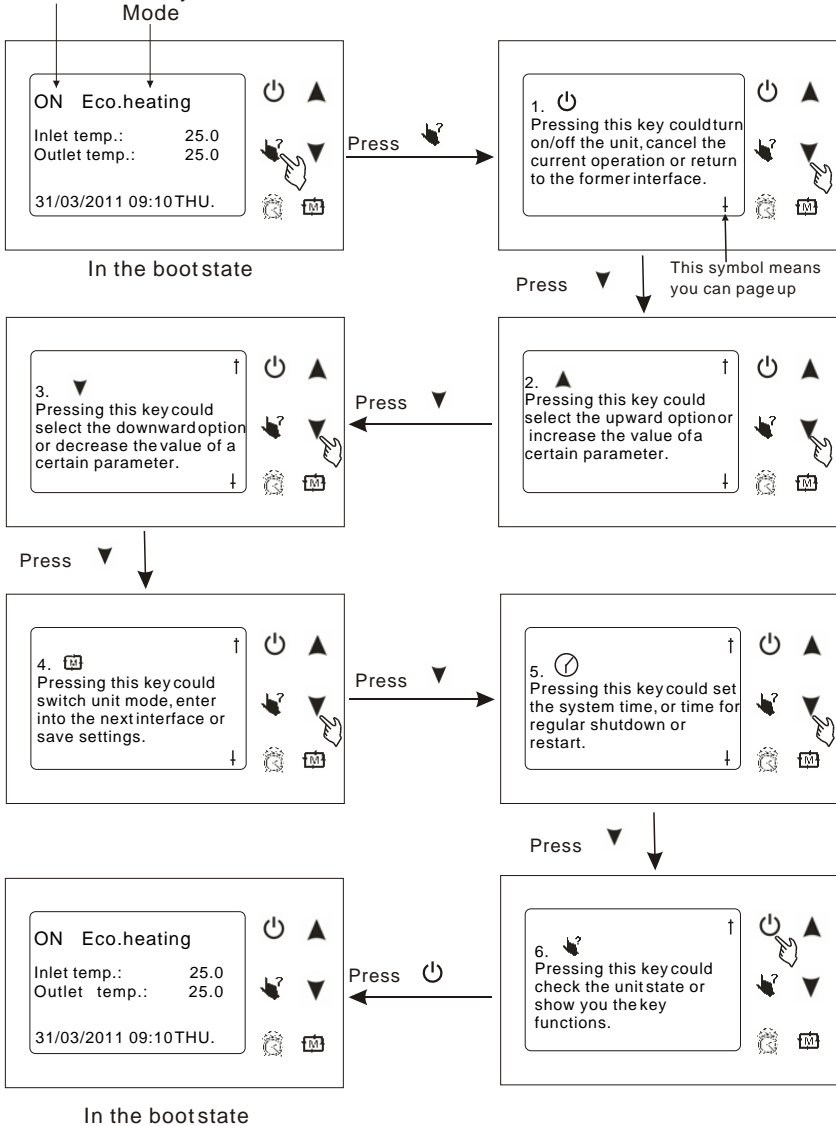
You can use at any interface, it will show relevant button function of current interface.

You can press to exit the "help" interface.

For example

Press at main interface, system will show all button function; Press a lock interface, system will show and button function.

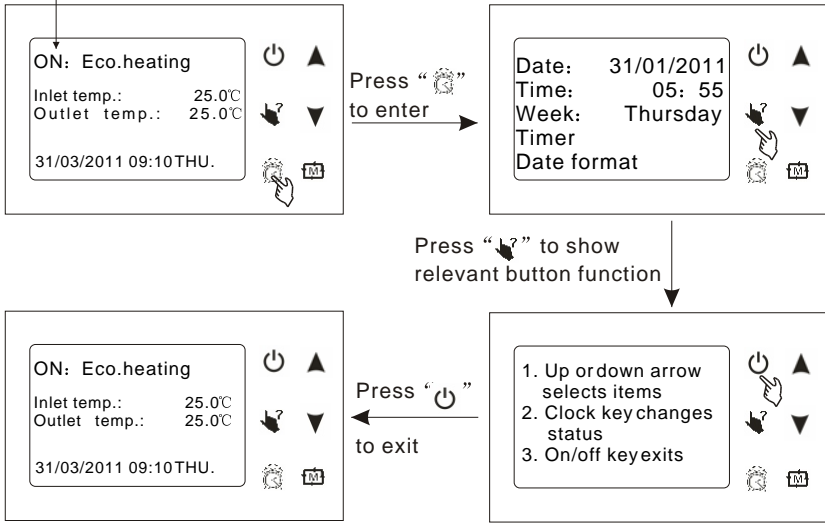
Both are OK when system show ON or OFF



4. USAGE AND OPERATION

Press “?” at clock interface, the screen shows as follow:

Both are OK when system shows ON or OFF

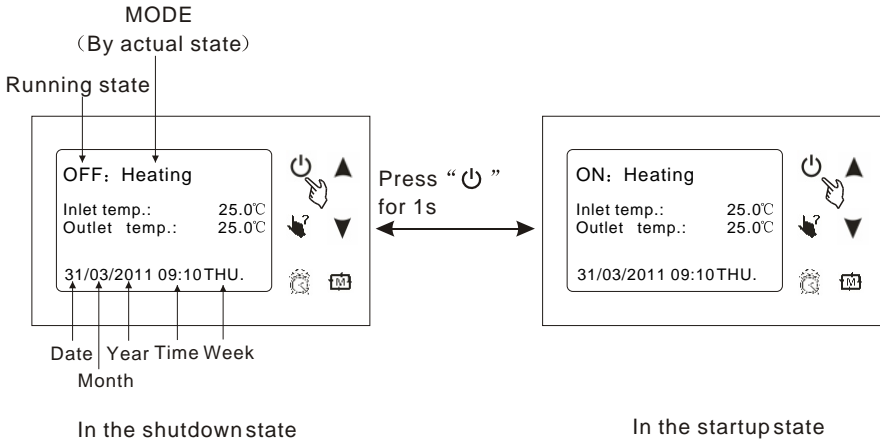


4.2.2 Starting up and shutting down

Press “⏻” in the shutdown state for 1s to start up the system;

Press “⏻” in the startup state for 1s to shut down the system.

For example:

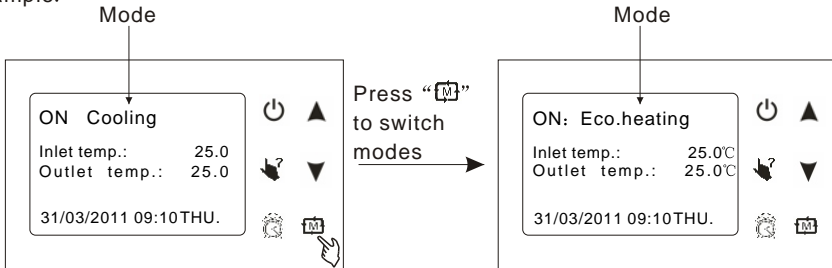


4. USAGE AND OPERATION

4.3 The operation of mode switching

At main interface, you can switch modes of cooling, economic heating, heating, rapid heating by pressing “**M**”. Or switch modes of cooling, economic heating and automatic. The different unit gets different mode types.

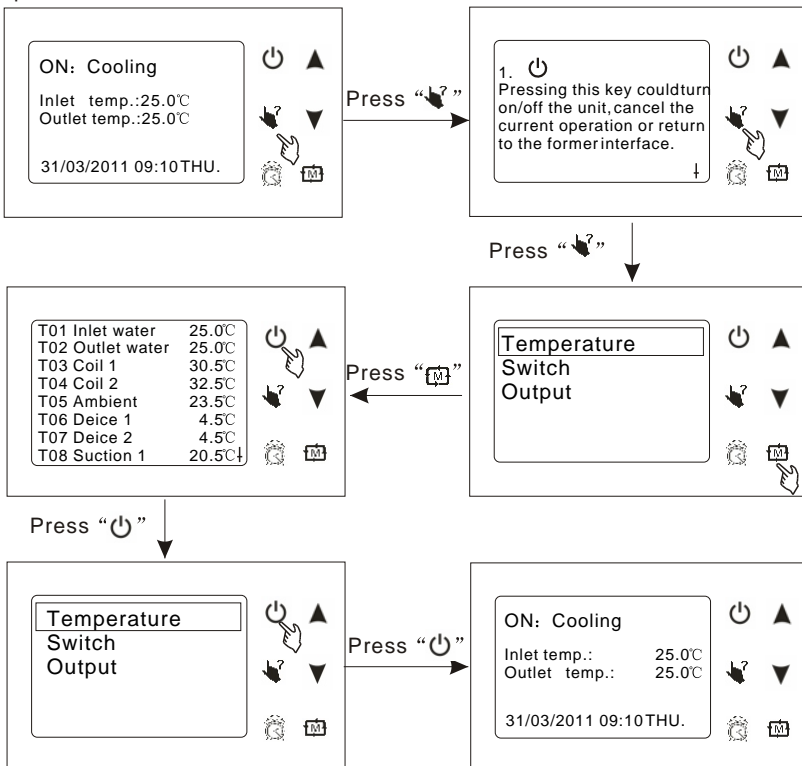
Attention: the operation of mode is invalid when the unit you buy is cooling only or heating only. For example:



4.4 The operation of system state checking

At any interface, you can enter system working state by pressing “**?**” twice, press “**▲**” (pageup) or “**▼**” (pagedown) to select the needing parameter, press “**M**” to enter, and press “**⏻**” to exit.

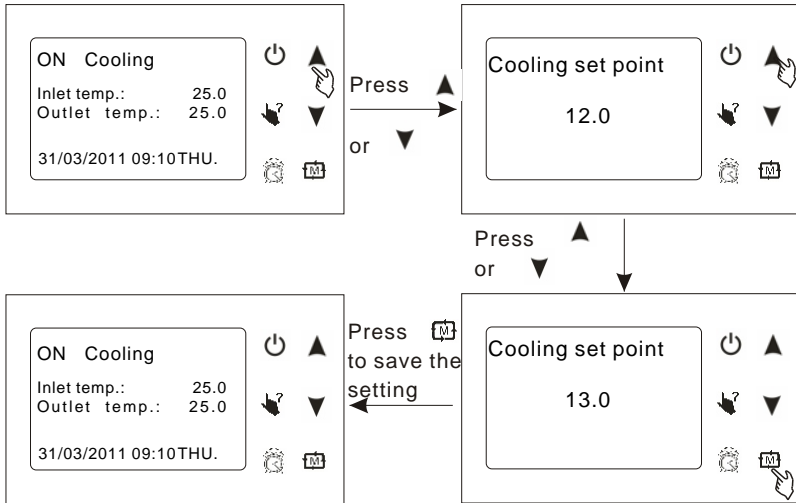
For example:



4. USAGE AND OPERATION

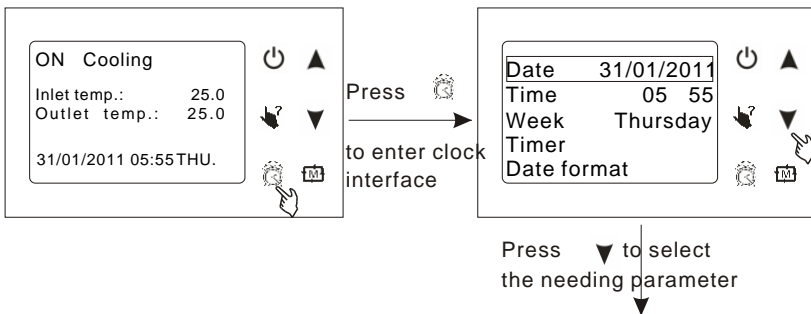
4.5 The operation of parameter setting

At main interface, press ▲ or ▼ enter parameter setting interface, press ▲ increasing or ▼ decreasing can change parameter value, press [M] to save the setting and exit. Press [P] can no save the setting but exit. You can refer to parameter table to set relevant temperature.

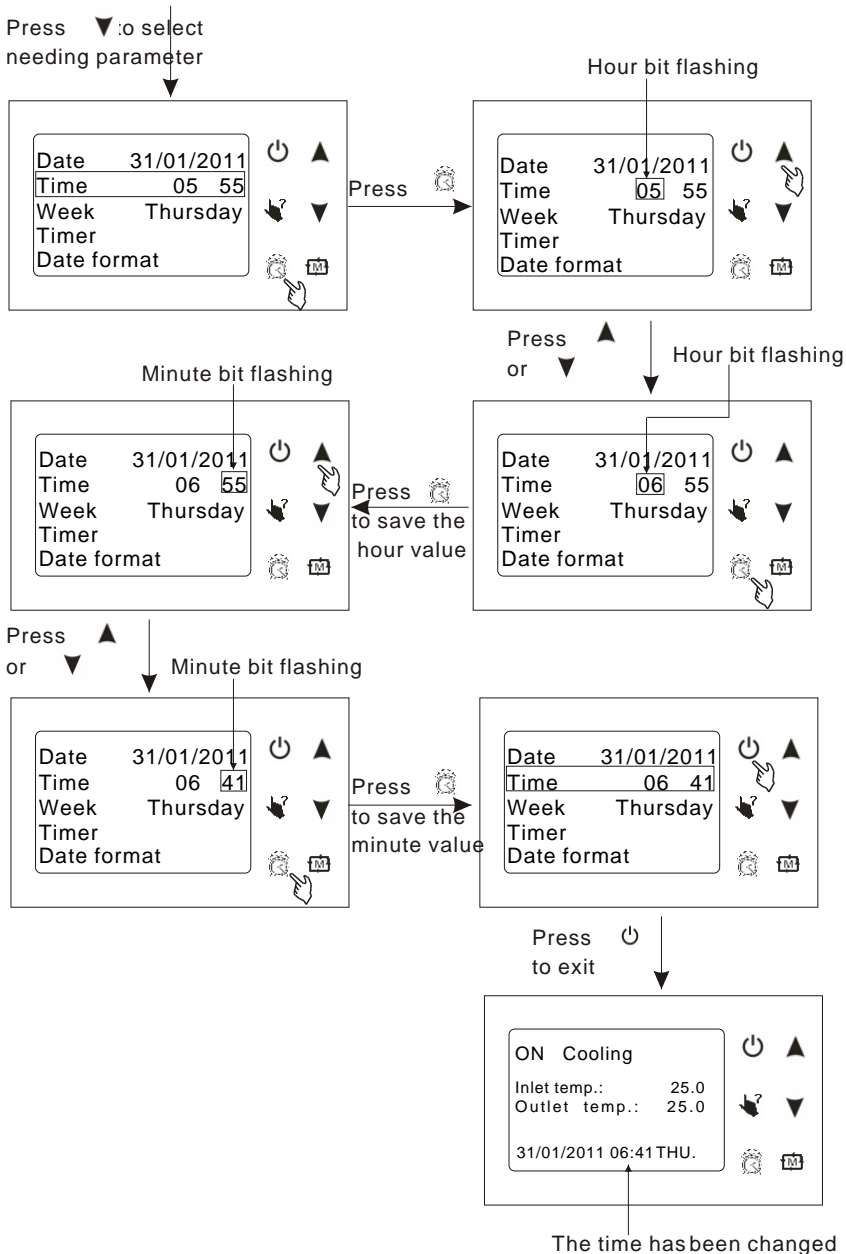


4.6 The operation of clock setting

At main interface, press [C] to enter clock setting interface, select the needing parameter and press [C] at this time, parameter value flashing, press ▲ (Increasing) or ▼ (Decreasing) can change parameter value, then press [C] to save, press [P] cancel the setting or back to the main interface. timer setting refer to timer operation
For example



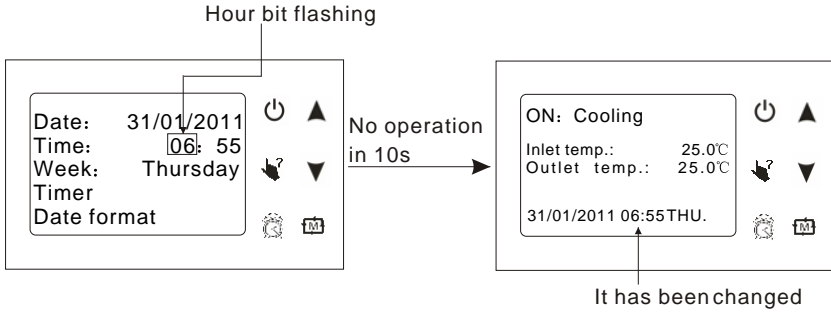
4. USAGE AND OPERATION



Tips The setting of date and week is the same with clock;
 If there is no operation in 10s, system will remember parameter setting automatic and back to the main interface.,

As follow

4. USAGE AND OPERATION



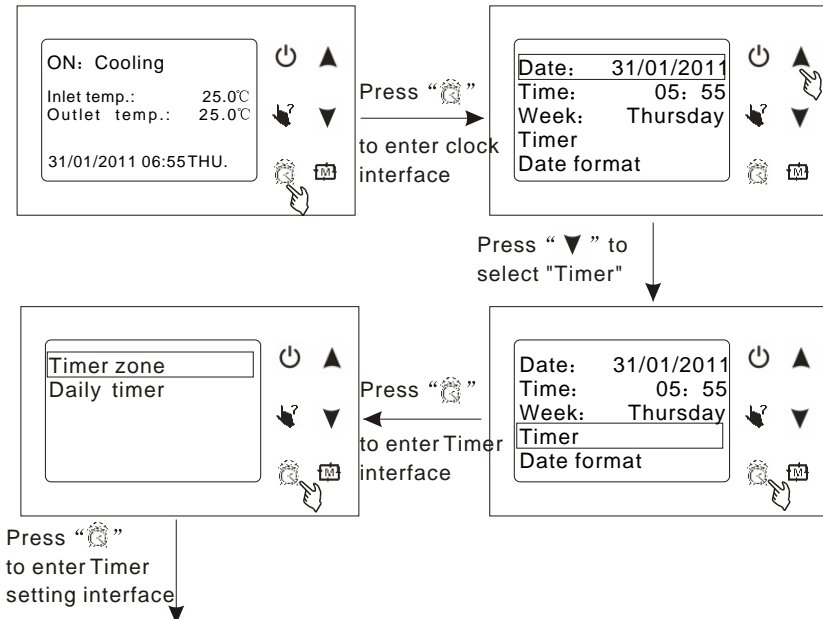
4.7 The operation of timer setting

You can set four timer on and timer off according to your need.

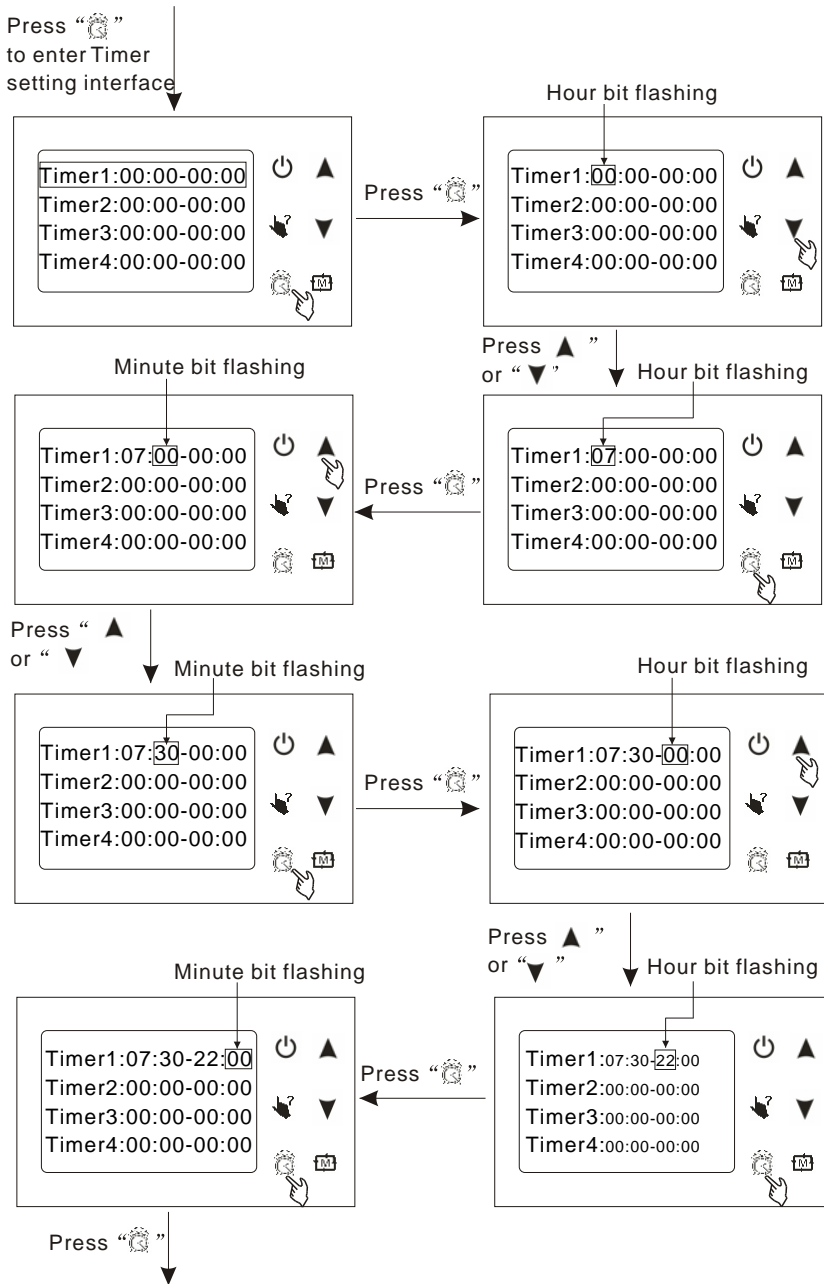
At main interface, press “” to enter timer setting, press “” to select “Timer”, then press “” to enter timer setting interface, (timer setting: you can set four timer on and timer off, and the time you set can from Monday to Sunday.) , the operation is the same with clock setting.

For example:

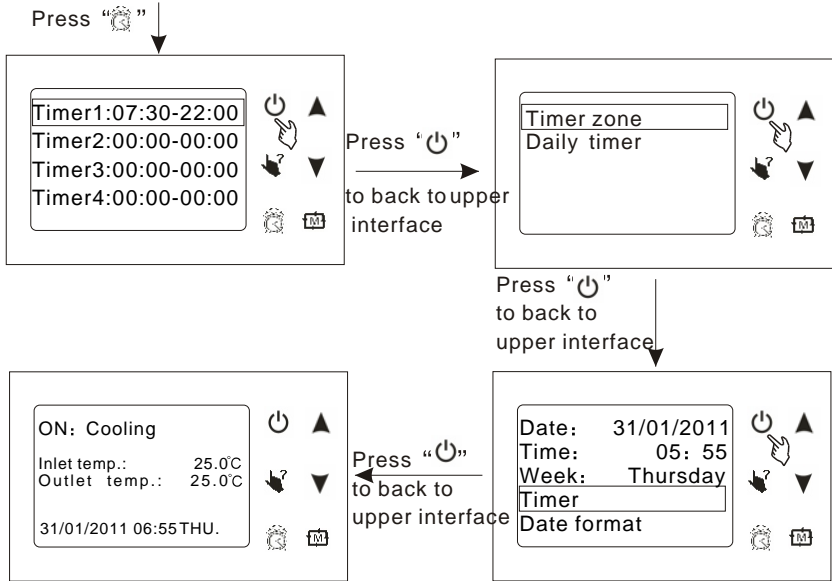
A. Timer setting



4. USAGE AND OPERATION

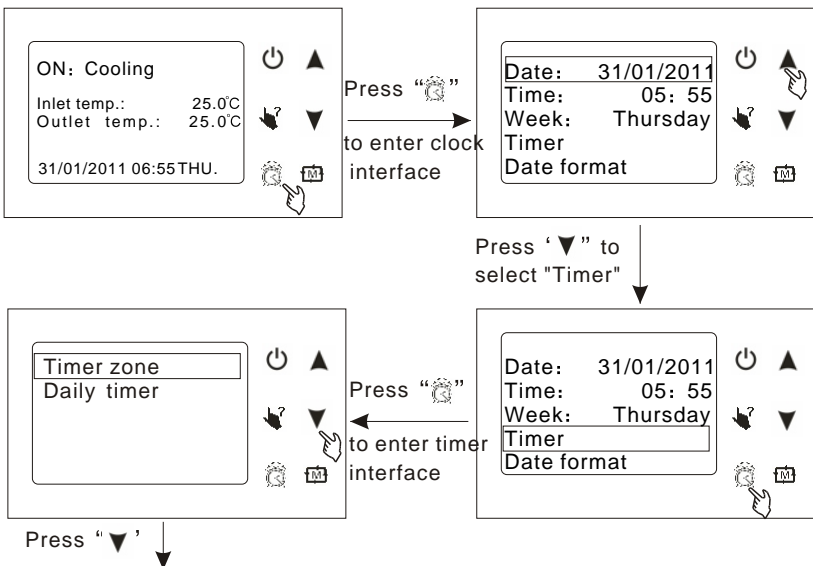


4. USAGE AND OPERATION

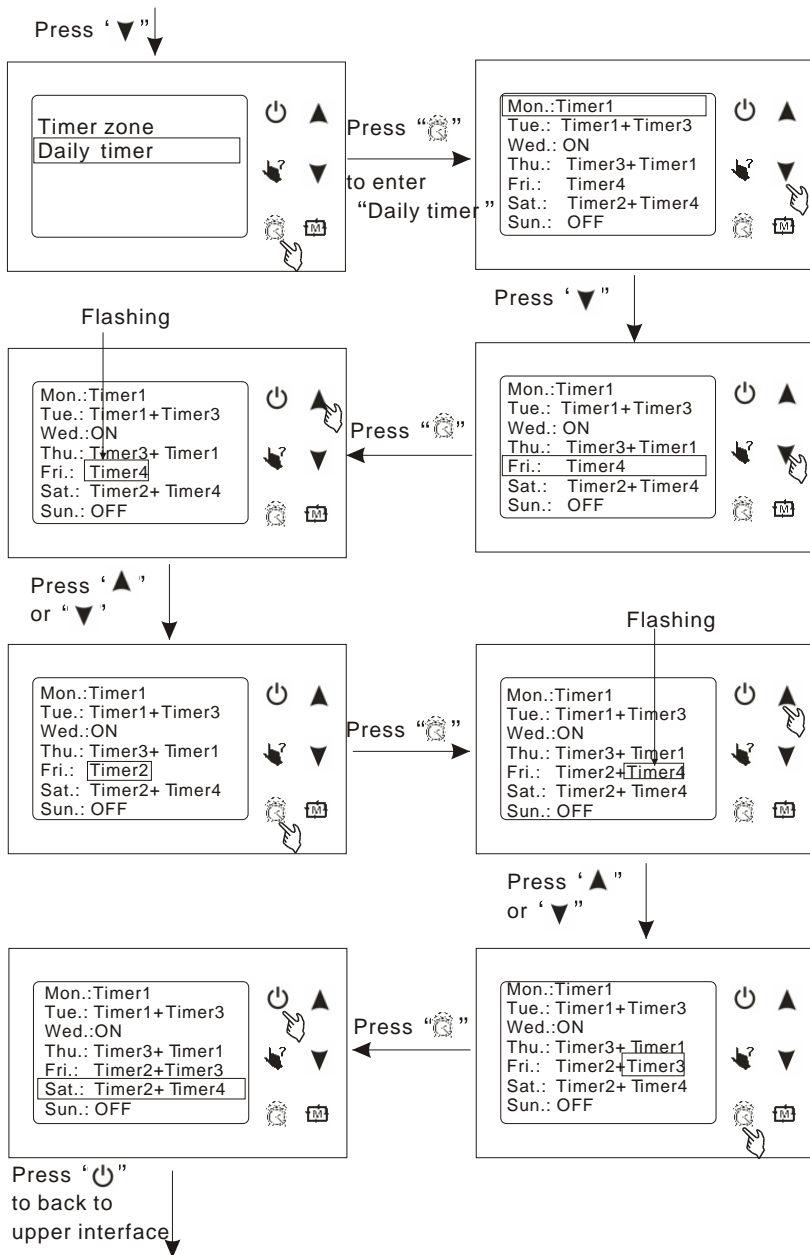


- Tips: 1) The operation of Timer2, Timer3, Timer4 is the same with Timer1;
 2) Timer1 :07:30-22:00 means system starts up at 7:30, and shutdown at 22:00 automatically;
 3) If there is no operation in 10s, system will memory parameter setting automatically.

B. The operation of daily timer

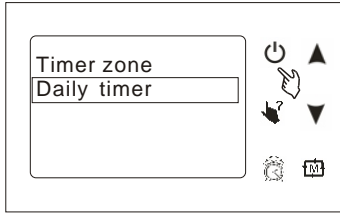


4. USAGE AND OPERATION

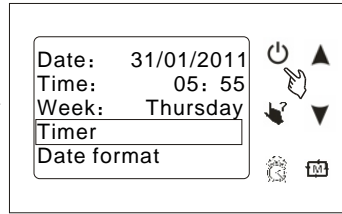


4. USAGE AND OPERATION

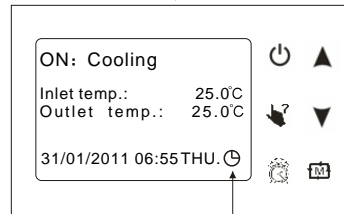
Press "⏻"
to back to upper
interface



Press "⏻"
to back to
upper
interface



Press "⏻"
to back to upper
interface



If "⏻" has been shown, it means
timer on/off has been set

Tips: The Timer operations of Monday, Tuesday, Wednesday, Thursday, Saturday, Sunday is the same with Friday.

Monday: OFF : means Monday Timer hasn't been set, and the running state is the same with Sunday at 24:00, for example, if system is running at 24:00 on Sunday, then it will be running the whole day on Monday, and vice versa;

Wednesday: ON : means system will be running the whole day on Wednesday

Thursday: OFF : means system will be off the whole day on Thursday;

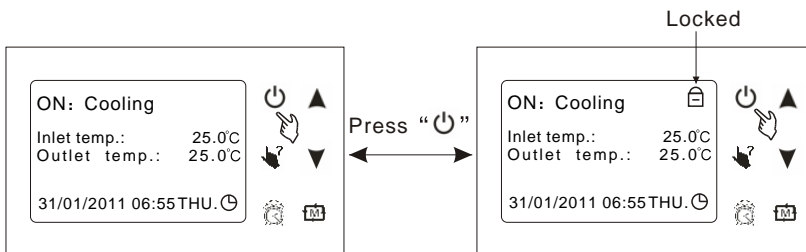
Saturday: Timer1+Timer2 : means the time to startup and to shut down is according to Timer1 and Timer2.

If there is no operation in 10s, system will memory the parameter setting automatically and back to main interface.

4. USAGE AND OPERATION

4.8 Keyboard lock

To avoid mis-operations, please lock the controller after parameter setting.
 At the main interface, pressing “⏻” for 5 seconds, the keyboard will be locked.
 When the keyboard is locked, pressing “⏻” for 5 seconds, the keyboard will be unlocked.



NOTES:

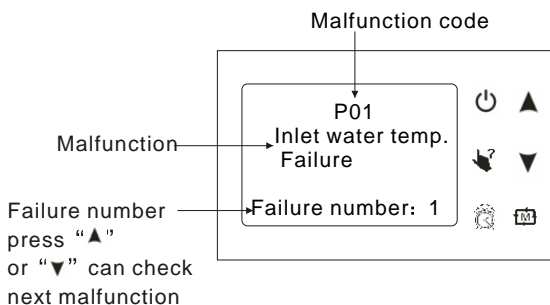
When the unit is in alarming state, the key lock can be removed automatically.

4.9 Malfunction display

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

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

For example:



4.10 Parameter table

Meaning	Default	Remarks
Set-point of cooling target temp.	27°C	Ajustable
Set-point of heating target temp.	27°C	Ajustable
Set-point of auto mode target temp.	27°C	Ajustable

5. MAINTENANCE AND INSPECTION

5.1 Malfunction table

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

Malfunction	Display	Reason	Resolution
Power on			
Normal working			
Inlet temp. Sensor failure	P01	The temp. Sensor is broken or short circuit	Check or change the temp. Sensor
Outlet temp. Sensor failure	P02	The temp. Sensor is broken or short circuit	Check or change the temp. Sensor
Ambient temp. Failure	P04	The temp. Sensor is broken or short circuit	Check or change the temp. Sensor
System 1/2/3/4 Coil temp. Failure	P15(system1),P25(system2) P35(system3),P45(system4)	The temp. Sensor is broken or short circuit	Check or change the temp. Sensor
System 1/2/3/4 absorb Temp. Failure	P17(system1),P27(system2) P37(system3),P47(system4)	The temp. Sensor is broken or short circuit	Check or change the temp. Sensor
System 1/2/3/4 anti-freeze Temp. Failure	P19(system1),P29(system2) P39(system3),P49(system4)	The temp. Sensor is broken or short circuit	Check or change the temp. Sensor
Using side system 1/2/3/4 Anti-freeze temp. Failure	P191(system1),P291(system2) P391(system3),P491(system4)	The temp. Sensor is broken or short circuit	Check or change the temp. Sensor
System 1/2/3/4 coil inlet Temp. Failure	P151(system1),P251(system2) P351(system3),P451(system4)	The temp. Sensor is broken or short circuit	Check or change the temp. Sensor
System 1/2/3/4 high Pressure protection	E11(system1),E21(system2) E31(system3),E41(system4)	The high-pressure switch is broken	Check the pressure switch and cold circuit
System 1/2/3/4 low Pressure protection	E12(system1),E22(system2) E32(system3),E42(system4)	The low-pressure switch is broken	Check the pressure switch and cold circuit
Water flow failure	E03	No water/little water in water system	Check the pipe water flow and water pump
Electric-heater Overheat protection	E04	Electrical-heat is over heat	Check or change electrical-heat
Water inlet and outlet Temp. Too big	E06	Water flow is not enough and low differential pressure	Check the pipe water flow and whether water system is jammed or not
System 1/2/3/4 anti-freeze Protection	E06	Water flow is not enough and low differential pressure	Check the pipe water flow and whether water system is jammed or not
System 1/2/3/4 source side Anti-freeze protection	E17(system1),E27(system2) E37(system3),E47(system4)	Water flow is not enough	Check the pipe water flow and whether water system is jammed or not
System 1/2/3/4 using side Anti-freeze protection	E171(system1),E271(system2) E371(system3),E471(system4)	Water flow is not enough	Check the pipe water flow and whether water system is jammed or not
Anti-freeze protect level 1	E19	The ambient temp. is low	/
Anti-freeze protect level 2	E29	The ambient temp. is low	/
System protection	E05	The protection system is failure	Check each protection point of the system
Communication failure	E08	Communication failure between wire controller and mainboard	Check the wire connection between remote wire controller and main board

5. MAINTENANCE AND INSPECTION

5.2 SYSB malfunction Table

The common failure cause and solution.

Malfunction	Display	Canse	Solution
System 1 exhaust temp.failure	P181	The sensor is open or shortcircuit	Check or change the sensor
System 2 exhaust temp.failure	P281	The sensor is open or shortcircuit	Check or change the sensor
Ambient temp.sensor failure	P04	The sensor is open or shortcircuit	Check or change the sensor
System 1 anti-freeze temp.failure	E171	The sensor is open or shortcircuit	Check or change the sensor
System 2 anti-freeze temp.failure	E271	The sensor is open or shortcircuit	Check or change the sensor
System 1 economizer inlet temp.failure	P101	The sensor is open or shortcircuit	Check or change the sensor
System 2 economizer inlet temp.failure	P201	The sensor is open or shortcircuit	Check or change the sensor
System 1 economizer outlet temp.failure	P102	The sensor is open or shortcircuit	Check or change the sensor
System 2 economizer outlet temp.failure	P202	The sensor is open or shortcircuit	Check or change the sensor
System 1 anti-freeze protection	P19	Water flow volume not enough	Check the flow volume, water system is jammed or not
System 2 anti-freeze protection	P29	Water flow volume not enough	Check the flow volume, water system is jammed or not
Communication failure	E08	Communication failure between remote wire controller and main board	Check the wire connection between remote wire controller and main board
System 1 current protection	E151	Current through compressor too heavy	Check through the power supply for compressor or short circuit
System 2 current protection	E251	Current through compressor too heavy	Check through the power supply for compressor or short circuit
System 1 exhaust high temp.protection	P182	Compressor exhaust temp.too high	Check through the refrigerant system
System 2 exhaust high temp.protection	P282	Compressor exhaust temp.too high	Check through the refrigerant system

6.APPENDIX

APPENDIX1. Connection of PCB illustration

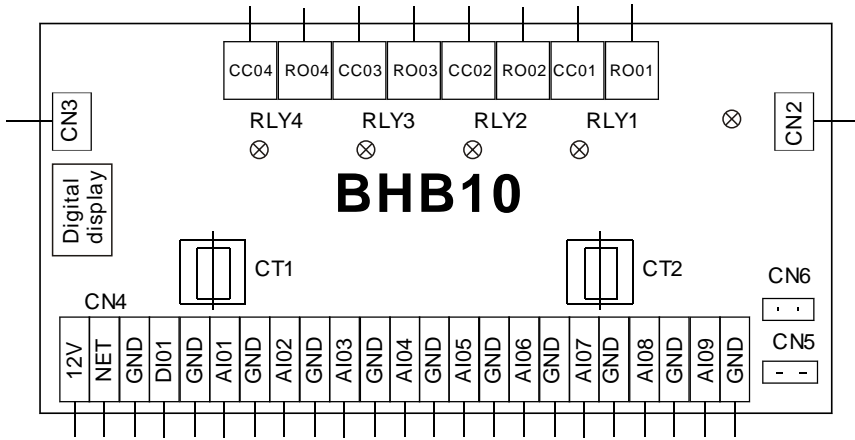
											RO 11	RO 10	RO 09	RO 08	RO 07	RO 06	RO 05	RO 04	RO 03	RO 02	RO 01	L	L	L		N	N													
											PC8001																													
											PC8001																													
RS 485B	RS 485A	GND	NET	12V	5V	DI 11	O-10V	GND	DI/DO03	DI/DO02	DI/DO01	DI 10	DI 09	DI 08	DI 07	DI 06	DI 05	DI 04	DI 03	DI 02	DI 01	GND	AI 16	AI 15	AI 14	AI 13	AI 12	AI 11	AI 10	AI 09	AI 08	AI 07	AI 06	AI 05	AI 04	AI 03	AI 02	AI 01	AC12V	AC12V

Connections explanation:

NO.	Symbol	Meaning	NO.	Symbol	Meaning
1	L	Live line	27	DI 11	System protection signal
2	N	Null line	28	AI 01	Water input temperature input
3	RO 01	Compressor 1 output(220VAC)	29	AI 02	Water output temperature output
4	RO 02	Compressor 2 output(220VAC)	30	AI 03	System 1 fan coil temperature input
5	RO 03	Compressor 3 output(220VAC)	31	AI 04	System 2 fan coil temperature input
6	RO 04	Compressor 4 output(220VAC)	32	AI 05	System 3 fan coil temperature input
7	RO 05	High speed /souce pump output(220VAC)	33	AI 06	System 4 fan coil temperature input
8	RO 06	Low speed output (220VAC)	34	AI 07	Ambient temperature input
9	RO 07	Water pump output(220VAC)	35	AI 08	System 1 antifreeze temperature input
10	RO 08	4-way valve output(220VAC)	36	AI 09	System 2 antifreeze temperature input
11	RO 09	Electric heater output(250VAC)	37	AI 10	System 3 antifreeze temperature input
12	RO 10	Spray valve output(220VAC)	38	AI 11	System 4 antifreeze temperature input
13	RO 11	Alarm system output(220VAC)	39	AI 12	System 1 suction temperature input
14	DI/DO 1	Emergency switch output	40	AI 13	System 2 suction temperature input
15	DI/DO 2	Mode indicator output	41	AI 14	System 3 suction temperature input
16	DI/DO 3	Emergency switch input	42	AI 15	System 4 suction temperature input
17	DI 01	System 1 high pressure protection input	43	AI 16	No use
18	DI 02	System 2 high pressure protection input	44	GND	Connecting to the remote controller
19	DI 03	System 3 high pressure protection input	45	NET	
20	DI 04	System 4 high pressure protection input	46	12V	
21	DI 05	System 1 low pressure protection input	47	RS485A	
22	DI 06	System 2 low pressure protection input	48	RS485B	
23	DI 07	System 3 low pressure protection input	49	AC12V	12V power input
24	DI 08	System 4 low pressure protection input	50	AC12V	
25	DI 09	Water flow switch protection input	51	CN2	System 1 electric expansion valve output
26	DI 10	Electric heater overload protection input	52	CN3	System 2 electric expansion valve output

6.APPENDIX

APPENDIX2. Connection of PCB illustration



Connections explanation:

No.	Symbol	Meaning
1	RO01	System1 mangtic valve outlet (220-230VAC)
2	RO02	System2 mangtic valve outlet (220-230VAC)
3	RO03	System1 alert outlet (220-230VAC)
4	RO04	System2 alert outlet (220-230VAC)
5	CC01	System1 mangtic valve inlet (220-230VAC)
6	CC02	System2 mangtic valve inlet (220-230VAC)
7	CC03	System1 alert inlet (220-230VAC)
8	CC04	System2 alert inlet (220-230VAC)
9	NET GND 12V	Wire controller
10	DI01 GND	Mode/communication
11	AI01 GND	System 1 anti-freeze temp.(input)
12	AI02 GND	System 2 anti-freeze temp.(input)
13	AI03 GND	System 1 economizer inlet temp.failure(input)
14	AI04 GND	System 1 economizer outlet temp.failure(input)
15	AI05 GND	System 2 economizer inlet temp.failure(input)
16	AI06 GND	System 2 economizer outlet temp.failure(input)
17	AI07 GND	System 1 exhaust temp.(input)
18	AI08 GND	System 2 exhaust temp.(input)
19	AI09 GND	Ambient temp.(input)

6.APPENDIX

.BHB10 malfunction Table

1 The common failure cause and solution.

Malfunction	Digital display	Detector display	Canse	Solution
System 1 exhaust temp.failure	81	P181	The sensor is open or short circuit	Check or change the sensor
System 2 exhaust temp.failure	81	P281	The sensor is open or short circuit	Check or change the sensor
Ambient temp.sensor failure	4	P04	The sensor is open or short circuit	Check or change the sensor
System 1 anti-freeze temp.failure	9	E171	The sensor is open or short circuit	Check or change the sensor
System 2 anti-freeze temp.failure	9	E271	The sensor is open or short circuit	Check or change the sensor
System 1 economizer inlet temp.failure	01	P101	The sensor is open or short circuit	Check or change the sensor
System 2 economizer inlet temp.failure	01	P201	The sensor is open or short circuit	Check or change the sensor
System 1 economizer outlet temp.failure	02	P102	The sensor is open or short circuit	Check or change the sensor
System 2 economizer outlet temp.failure	02	P202	The sensor is open or short circuit	Check or change the sensor
System 1 anti-freeze protection	71	P19	Water flow volume not enough	Check the flow volume,water system is jammed or not
System 2 anti-freeze protection	71	P29	Water flow volume not enough	Check the flow volume,water system is jammed or not
Communication failure	\	E08	Communication failure between remote wire controller and main board	Check the wire connection between remote wire controller and main board
System 1 current protection	51	E151	Current through compressor too heavy	Check through the power supply for compressor or short circuit
System 2 current protection	51	E251	Current through compressor too heavy	Check through the power supply for compressor or short circuit
System 1 exhaust high temp.protection	82	P182	Compressor exhaust temp.too high	Check through the refrigerant system
System 2 exhaust high temp.protection	82	P282	Compressor exhaust temp.too high	Check through the refrigerant system

2 The indicator light display of failure cause.

Malfunction	Indicator light
System 1 failure	1 on 1 off
System 1 failure	2 on 1 off
Ambient failure	3 on 1 off

6.APPENDIX

APPENDIX3. Caution & Warning

1. The unit can only be repaired by qualified installer centre personnel or an authorised dealer. (for Europe market)
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.
3. Please make sure that the unit and power connection have good earthing, otherwise may cause electrical shock.
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.
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.
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. The unit CANNOT be installed near the flammable gas. Once there is any leakage of the gas, fire can occur.
8. Make sure that there is circuit breaker for the unit, lack of circuit breaker can lead to electrical shock or fire.
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.
10. The unit can only be repaired by the qualified personnel of an installer center or an authorized dealer. (for North America market)
11. Installation must be performed in accordance with the NEC/CEC by authorized person only. (for North America market)
12. USE SUPPLY WIRES SUITABLE FOR 75°C.
13. Caution: Single wall heat exchanger, not suitable for potable water connection.

6.APPENDIX

APPENDIX4. Cable specification

1. Single phase unit

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

2. Three phase unit

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

