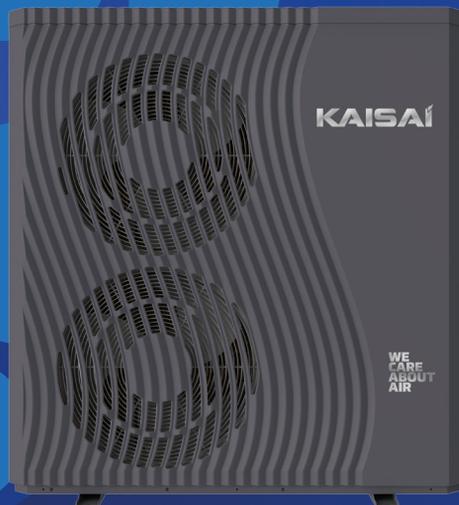


KAISAI



INSTALLATION MANUAL

AIR TO WATER HEAT PUMP

SERIES #R290

**WE
CARE
ABOUT
AIR**



Installation Manual

Air to Water Heat Pump

MODEL: KHX-14PY3, KHX-16PY3



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1. Preface

In order to provide the customers with high quality, strong reliability and good versatility products, this heat pump is produced by strict design and manufacture 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, unnecessary maintenance which is not in line with this manual.

The unit must be installed by qualified personnel.

It is vital that the below instructions are adhered to at all times to keep the warranty.

—The unit can only be opened or repaired by a qualified installer or an authorized 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.

Inverter air source water heat pump is a kind of high efficiency, energy saving and environment friendly equipment, which is mainly used for house warming. It can work with any kinds of indoor unit such as fan coil, radiator, or floor heating pipe, by providing warm or hot water. One unit of monoblock heat pump can also work with several indoor units.

The air source water heat pump unit is designed to have heat recovery by using super heater which can provide hot water for sanitary purpose.

2. Safety Instructions

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

Mark Notes

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

Icon Notes

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

Warning

| Operation | Meaning |
|--|--|
|  Prohibition | DO NOT put fingers or others into the fan and evaporator of the unit, otherwise harm may occur. |
|  Shut off the power. | When there is something wrong or strange smells, the power supply needs to be shut off to stop the unit. Continue running may cause short circuit or fire. |

| Operation | Meaning |
|--|--|
|  Prohibition | DO NOT put fingers or others into the fan and evaporator of the unit, otherwise harm may occur. |
|  Shut off the power. | When there is something wrong or strange smells, the power supply needs to be shut off to stop the unit. Continue running may cause short circuit or fire. |

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

| | |
|---|---|
|  | <p>Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.</p> |
|  | <p>The appliance shall be stored in a room and installed in the environment without continuously operating or potential ignition sources (for example: open flames, an operating gas appliance or an operating electric heater or Electric Spark or hot objects).</p> |

ATTENTION

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

| Operation | Meaning |
|---|---|
|  Check the installation basement. | <p>Please check the installation basement regularly (once a month), to avoid any decline or damage to the basement, which may hurt people or damage the unit.</p> |

| | |
|---|---|
|  Switch off the power. | Please switch off the power when cleaning or maintaining. |
|  Prohibition | It is prohibited from using copper or iron as fuse. The right fuse must be fixed by electricians for the heat pump. |
|  Prohibition | It is prohibited from spray the flammable gas to the heat pump, as it may cause fire. |

3. Features

This series of heat pump unit owns following features:

3.1. Advanced Controlling

The PC micro-computer based controller is available for the users to review or set the running parameters of the heat pump. Centralized controlling system can control several units by PC.

3.2. Nice Appearance

The heat pump is designed with beautiful looking. The monoblock one has the water pump included which is very easy for installation.

3.3. Flexible Installation

The unit has a smart structure with compact body, just as simple outdoor installation is needed.

3.4. Quiet Running

The heat pump unit use a special designed heat exchanger to enhance whole efficiency.

3.5. Good Heat Exchange Rate

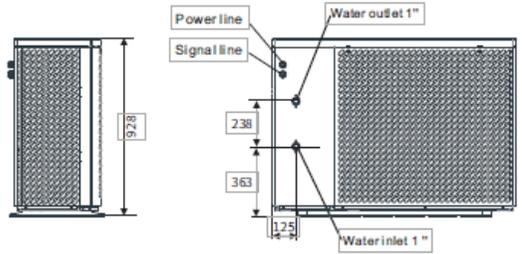
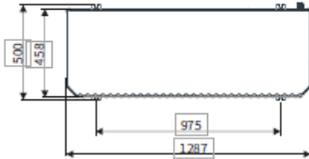
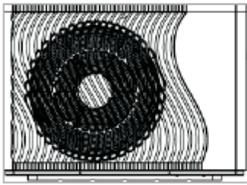
The heat pump unit use a special designed heat exchanger to enhance whole efficiency.

3.6. Large Working Range

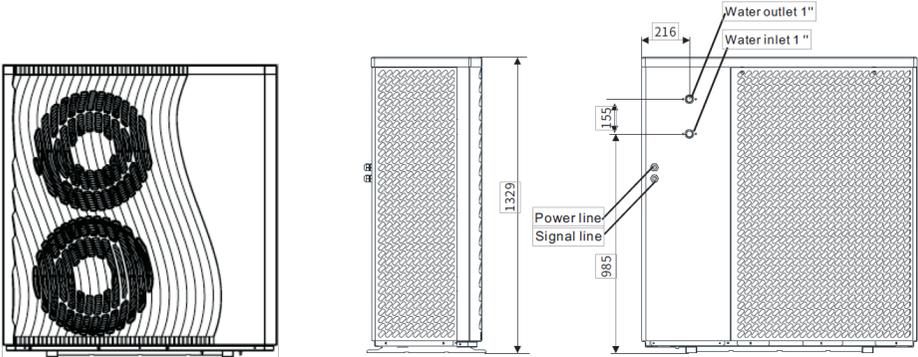
This series of heat pump is designed to work under different working conditions as low as -15 degrees for heating.

4. Unit Dimension(mm)

4.1. Models: KHX-14PY3



4.2. Models: KHX-16PY3



5. Installation Diagram

KAISAI monoblock heat pumps can provide heating/cooling and domestic hot water. Floor heating loops and fan coil units are used for space heating and fan coil units are used for space cooling. Domestic hot water is supplied from the domestic hot water tank connected to the heat pump.

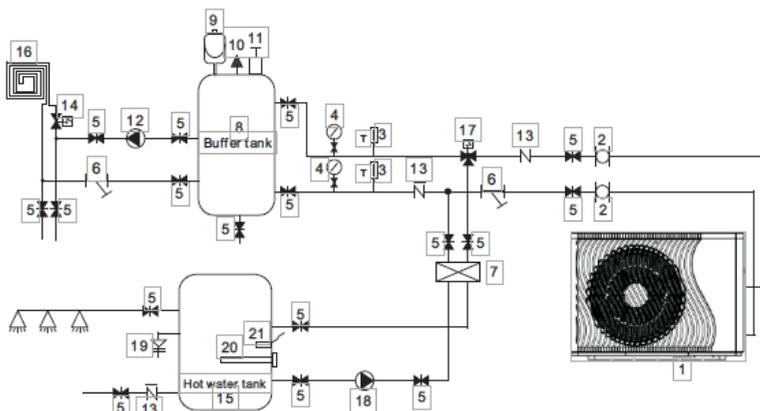
5.1 Traditional Installation

KAISAI provides the monoblock heat pump with a main circulation pump built inside. When install the unit, installers should connect the heat pump with other parts including the buffer tank (for space heating/cooling), storage water tank (for domestic hot water) and water pumps (for space heating/cooling water circulation and domestic hot water). External fittings are also needed including a safety valve, a water charge valve, hot water valves (three-way valve). Temperature sensor should be added in the storage water tank. An additional electric heater can be installed in the DHW tank or the buffer tank which can get the control signal from the heat pump.

installing in one environment which have operating or potential ignition sources.

6.1. Application of Heat Pump

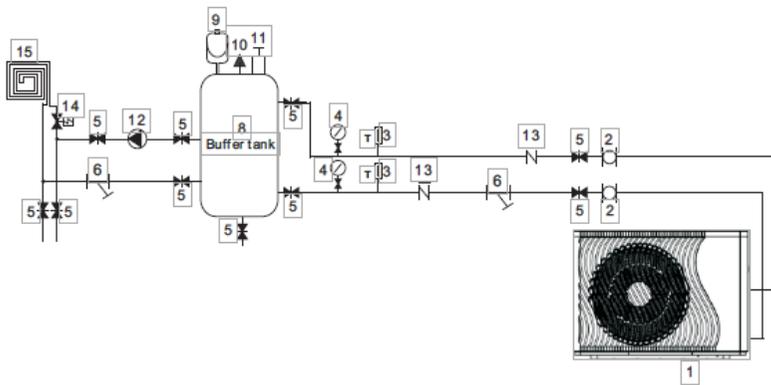
6.1.1. House Heating/Cooling + Domestic Hot Water



| | | | | | |
|---|----------------------|----|----------------------------------|----|-------------------|
| 1 | Heat pump | 10 | Relief valve | 19 | PT valve |
| 2 | Flexible pipe | 11 | Air vent valve | 20 | Electrical heater |
| 3 | Thermometer | 12 | Water pump for floor heating | 21 | Hot water sensor |
| 4 | Manometer | 13 | Check valve | | |
| 5 | Shut-off valve | 14 | Floor heating valve | | |
| 6 | Y type water filter | 15 | Hot water tank | | |
| 7 | Plate heat exchanger | 16 | Floor heating pipe/fan coil unit | | |
| 8 | Buffer tank | 17 | Hot water valve | | |
| 9 | Expansion tank | 18 | Hot water pump | | |

Remark: Item 17, 18, 20, 21 can be connected with heat pump.

6.1.2. House Heating/Cooling (including Buffer tank)



| | | | | | |
|---|---------------------|----|------------------------------|----|----------------------------------|
| 1 | Heat pump | 7 | Plate heat exchanger | 13 | Check valve |
| 2 | Flexible pipe | 8 | Buffer tank | 14 | Floor heating valve |
| 3 | Thermometer | 9 | Expansion tank | 15 | Floor heating pipe/fan coil unit |
| 4 | Manometer | 10 | Relief valve | | |
| 5 | Shut-off valve | 11 | Air vent valve | | |
| 6 | Y type water filter | 12 | Water pump for floor heating | | |

6.2. Choose a right heat pump unit

- (1) Based on the local climate condition, construction features and insulation level, calculate the required cooling(heating) capacity per square meter.
- (2) Conclude the total capacity which will be needed by the construction.
- (3) According to the total capacity needed, choose the right model by consulting the heat.
- (4) Pump features as below:
 - a. Cooling only unit: chilled water outlet temp. at 5-15°C, maximum ambient temp. at 43°C.
 - b. Heating and Cooling unit: for cooling chilled water outlet temp. at 5-15°C, maximum ambient temp. at 43°C. For heating, warm water outlet temp. at 9-75°C, minimum ambient temp. at -25°C.
 - c. Unit application
Inverter air source water heat pump is used for house, office, hotel, and so forth, which need heating or cooling separately, with each area needed to be controlled.

6.3. 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.

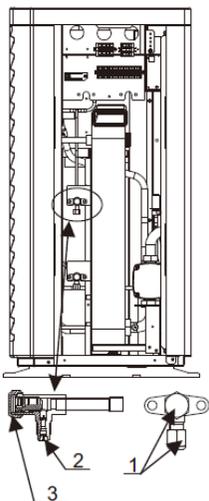
6.4. Installation Place

- a. The unit can be installed on any place outdoor which can carry heavy machine such as terrace, housetop, ground and so on.
- b. The location must have good ventilation.
- c. The place is free from heat radiation and other fire flame.
- d. A pall is needed in winter to protect the heat pump from snow.
- e. There must be not obstacles near the air inlet and outlet of the heat pump. A place which is free from strong air blowing.
- f. There must be water channel around the heat pump to drain the condensing water. There must be enough space around the unit for maintenance.
- g. A place which is far away operating or potential ignition sources (for example: open flames, an operating gas appliance or an operating electric heater or Electric Spark or hot object)

6.5. Refrigerant charge

The heat pump is not infused with the refrigerant 290 and full of high-pressure nitrogen or keep it in a vacuum instead, please follow these steps to infusing refrigerant R290.

1. Preparations



Stop valve signs:
Low pressure

- a. Please in a well-ventilated environment while charge refrigerant.
 - b. Keep away from open flames or potential sources of fire.
 - c. Disconnect the power supply of the heat pump.
 - d. Carefully check the nameplate of the heat pump and charge strictly according to the labeled amount.
2. Check the pressure of nitrogen gas inside the system. The heat pump has charged about 30 Bar pressure nitrogen gas inside the system, please check whether there is still high-pressure nitrogen before charging refrigerant, otherwise check the leakage point. (Use spanner remove the seal nut 1 and 3, use 5mm inner hexagon spanner open the valve 2. If it can Blowing out the high-pressure gas then the heat pump is not leaking.)
3. Use 5mm inner hexagon spanner open the valve 2 and release all the nitrogen gas inside the system.

4. Vacuumize the heat pump. Connect the vacuum pump with the valve 2, keep vacuum pump running until the absolute pressure below 30Pa or operating time more than one hour.

5. Charge refrigerant. Keep the refrigerant in liquid state when charging and strictly according to the labeled amount.

6. Finish the charging, close the valve 2 and screw the seal nut 1 and 3.

6.6. Water Loop Connection

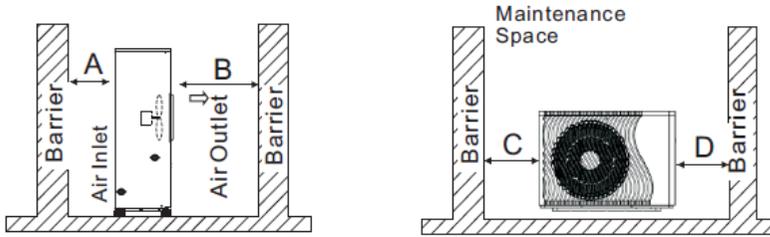
Please pay attention to below matters when the water pipe is connected:

- (1) Try to reduce the resistance to the water from the piping.
- (2) The piping must be clear and free from dirty and blocks. Water leakage test must be carried out to ensure there is no water leaking. And then the insulation can be made.
- (3) Attention that the pipe must be tested by pressure separately. DO NOT test it together with the heat pump.
- (4) There must be 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.
- (5) 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.
- (6) Try to avoid air stayed inside of the water pipe, and there must be air vent on the top point of the water loop.
- (7) There must be thermometer and pressure meter at the water inlet and outlet, for easy inspection during running.

6.7. Power Supply Connection

- (1) Open the front panel, and open the power supply access.
- (2) The power supply must go through the wire access and be connected to the power supply terminals in the controlling box. Then connect the 3-signal wire plugs of the wire controller and main controller.
- (3) 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.
- (4) If an additional auxiliary heater is need 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.

6.8. Location of the Unit



The picture shows the location of horizontal air outlet unit.



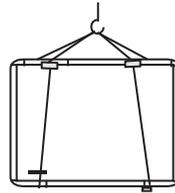
Attention

Requirements:

A>500mm ; B>1500mm ;
C>1000mm ; D>500mm

6.9. Transit

When the unit needs to be hung up during installation, an 8 meters 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)



Picture 1



WARNING

DO NOT touch the heat exchanger of the heat pump with fingers or other objects!

6.10. Trial Running

6.10.1. Inspection before trial running

- (1) Check the indoor unit, and make sure that the pipe connection is right and the relevant valves are open.
- (2) 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.

- (3) 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.
- (4) 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 the power is on, review the indicator on the controller to see if there is any failure indication. The gas gauge can be connected to the check valves to see the high pressure (or low pressure) of the system during trial running.

6.10.2. Trial running

- (1) 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.
- (2) 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.
- (3) Then check whether the power input and running current is in line with the manual. If not please stop and check.
- (4) 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.
- (5) The parameters of the controller are set by the factory, it is not allowed to change then by the user himself.

If the water flow rate is lower than 70% of the rated water flow, the defrosting efficiency will be lower. The suggested water flow rate shall be the rated flow rate which is shown on the nameplate.

7. Maintenance

7.1. Precautions for Daily Use

Before starting up the unit for the first time or after a long-time shutdown, the following preparations must be made:

- (1) Thoroughly inspect and clean up the unit.
- (2) Clean the waterway system.
- (3) Check water pump, regulating valve and other waterway equipment.
- (4) Tighten all wire connections.

Do not change the system parameters before consulting the engineer.

Ensure the water refill and exhaust device in the waterway is well, otherwise the performance and reliability of the unit will become worse.

Ensure the waterways are clean and avoid dirt and blockage.

Timely check the electricity, water and replace the faulty parts.

Please use the parts provided or recommended by the company, do not use the unqualified parts.

Refrigerant supplement:

Each unit has been equipped with sufficient refrigerant when leaving the factory. Do not charge or change the refrigerant.

If you need to replenish the refrigerant due to leakage, please contact the engineers or dealers.

7.2. Periodic Maintenance (every 6 months)

| | |
|---|---|
| Preparation | Before maintenance, please ensure that the unit stop running and cut off the power supply. |
| Inspection and cleaning of fin heat exchanger | In order to ensure that heat exchangers remain in optimum condition for heat exchange, their surfaces must be clean. |
| Inspection and cleaning of plate heat exchanger | Every 6 months or when the capacity of the unit drops by more than 10%, check the water-side heat exchanger for scale and clean the heat exchanger. |
| Check the electrical wiring | Check if the contact point is loose, oxidized, or blocked by sundries, etc., which causes poor contact of the electronic wiring. |

7.3. Inspection and Maintenance

7.3.1. Preparing for inspection and maintenance

Danger!

Risk of death caused by fire or explosion if there is a refrigerant leakage!

Only carry out the work if you are competent and have knowledge about the special features and risks of R290 refrigerant.

The product contains combustible refrigerant R290. In the event of a leak, escaping refrigerant may mix with air to form a flammable atmosphere. There is a risk of fire and explosion.

Ensure that space is sufficiently aerated around the product.

Observe the basic safety rules before carrying out inspection and maintenance work or installing spare parts.

Disconnect the product from the power supply but ensure that the product is still earthed.

7.3.2. Cleaning the product

Do not clean the product with a high-pressure cleaner or a direct jet of water.

Clean the product using a sponge and hot water with a cleaning agent.

Do not use abrasive cleaners. Do not use solvents. Do not use any cleaning agents that contain chlorine or ammonia.

7.3.3. Checking the evaporator, fan, and condensate discharge

Check whether there is dirt between the fins or whether depositions have adhered to the fins.

Clean the fins using a soft brush, avoid fins from being bent.

Check whether dirt has been accumulated on the condensate tray or in the condensate discharge pipe.

Check whether the water can drain freely.

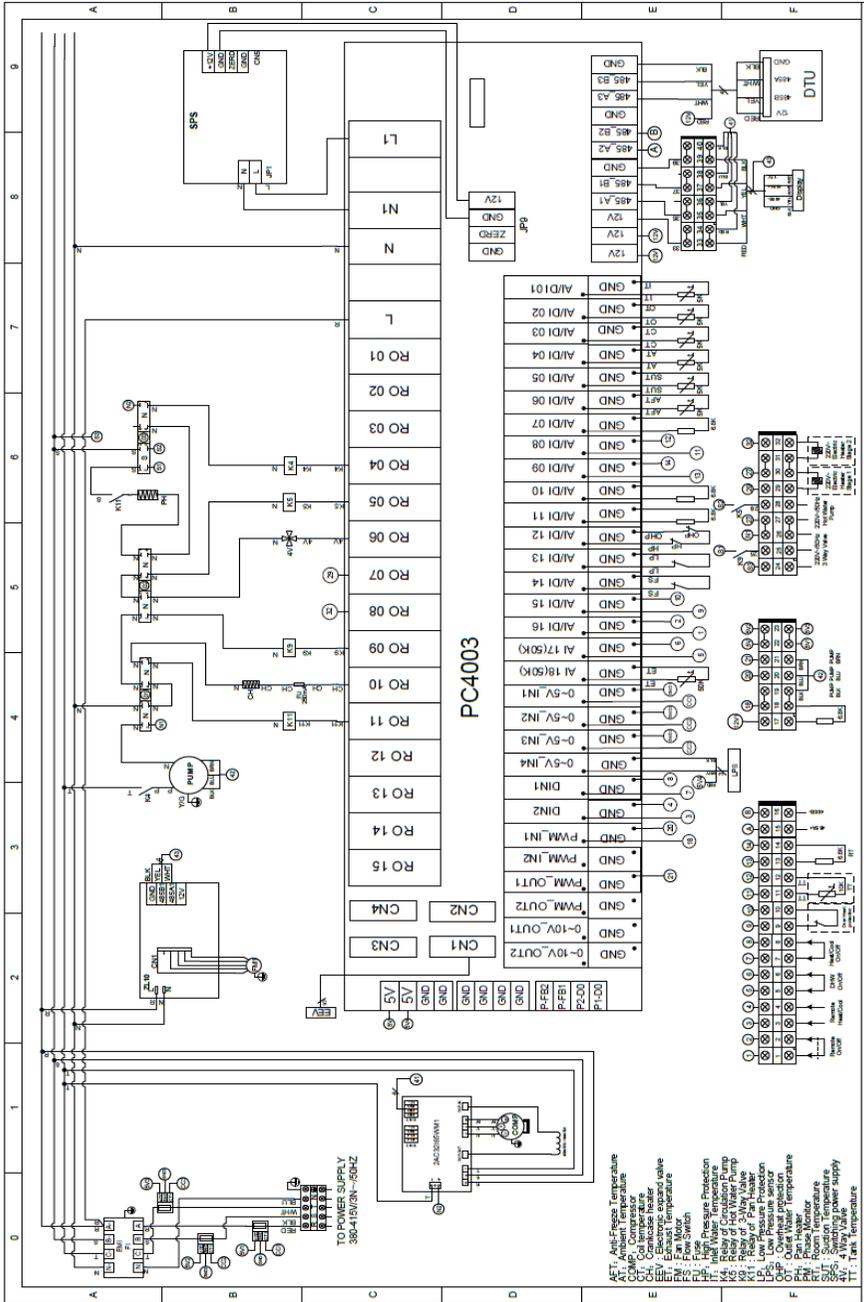
8. Parameters

| Model | | KHX-14PY3 | KHX-16PY3 |
|---|-------------------|-------------------|-------------------|
| Power Supply | / | 380~415V/3N~/50Hz | 380~415V/3N~/50Hz |
| Moisture Resistance | IPX | IPX4 | IPX4 |
| Electrical Shockproof | I | I | I |
| Heating Condition - Ambient Temp. (DB/WB): 7/6°C, Water Temp. (In/Out): 30/35°C | | | |
| Heating Capacity Range | kW | 5.40~14.95 | 8.00~22.00 |
| Heating Power Input Range | kW | 1.05~3.85 | 1.60~6.90 |
| Heating Current Input Range | A | 1.9~6.8 | 2.8~12.2 |
| Cooling Condition - Ambient Temp. (DB/WB): 35/24°C, Water Temp. (In/Out): 12/7°C | | | |
| Cooling Capacity Range | kW | 3.60~10.50 | 4.20~15.00 |
| Cooling Power Input Range | kW | 1.12~4.47 | 1.80~7.30 |
| Heating Current Input Range | A | 2.0~7.9 | 3.2~12.9 |
| Hot Water Condition - Ambient Temp. (DB/WB): 20/15°C, Water Temp. (In/Out): 15/55°C | | | |
| Hot Water Capacity Range | kW | 6.50~18.50 | 10.00~27.00 |
| Hot Water Power Input Range | kW | 1.27~4.65 | 1.90~7.10 |
| Hot Water Current Input Range | A | 2.4~8.21 | 3.4~12.5 |
| Max. Power Input | kW | 5.3 | 9 |
| Max. Current Input | A | 10.5 | 15.8 |
| Water Flow | m ³ /h | 1.7 | 2.9 |
| Refrigerant / Proper Input | kg | R290 / 0.85kg | R290 / 1.30kg |
| CO ₂ Equivalent | Ton | 0.0026 | 0.0039 |
| Sound Pressure (1m) | dB(A) | 44 | 47 |
| Sound Power Level (EN12102) | dB | 58 | 62 |
| Net Weight | kg | 160 | 202 |
| Operation Pressure(Low Side) | MPa | 0.8 | 0.8 |
| Operation Pressure(High Side) | MPa | 3.0 | 3.0 |
| Unit Dimension(L/W/H) | mm | 1287×458×928 | 1250×540×1330 |
| Shipping | mm | 1420×540×1080 | 1380×570×1480 |

| | | | |
|---------------------------------|-------|-----------------------|-----------------------|
| Dimension(L/W/H) | | | |
| Compressor | Brand | HIGHLY | HIGHLY |
| Circulation Pump | Brand | GRUNDFOS | GRUNDFOS |
| Operating Ambient Temperature | °C | -25~43 | -25~43 |
| Fan Quantity | / | 1 | 2 |
| Fan Motor Type | / | DC motor | DC motor |
| Fan Motor Power Input (min~max) | W | 60~120 | 60~160 |
| Fan Speed (RPM) | RPM | 220~600 | 300~750 |
| Water Connection (inch) | inch | 1 | 1 |
| Water Pressure Drop (max) | kPa | 20 | 65 |
| Circulation Pump Head | m | 7.5 | 12.5 |
| Cabinet Type | | Galvanized sheet+ ASA | Galvanized sheet+ ASA |

9. Wiring Diagram

9.1 Model: KHX-14PY3

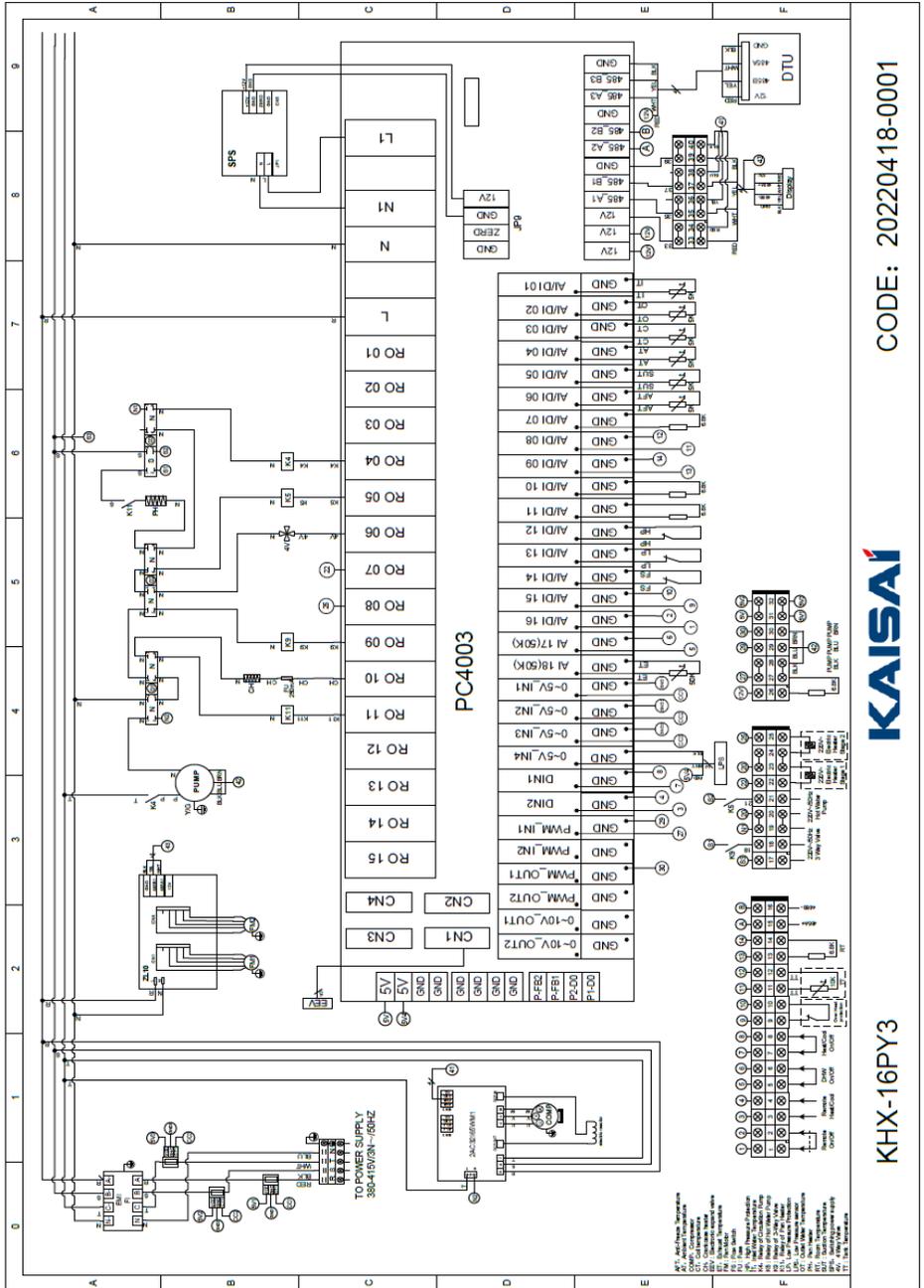


CODE: 20220418-0002



KHX-14PY3

9.2. Model: KHX-16PY3



CODE: 20220418-0001

KAISAI

KHX-16PY3

10. Display Operation Guide

10.1. Main Interface Display and Function

(1) Power on Interface



(2) Starting up Interface



Key function

| Key number | Key name | Key Function |
|------------|---------------------|---|
| ① | Lock screen | Click this key to lock the screen. White represents not enabled, while blue represents enabled |
| ④ | On and off | Click this key to switch ON or OFF. Blue represents ON, while white represents OFF |
| ⑤ | Temperature setting | Click this key to set the target temperature |
| ⑮ | Mode key | Hot water mode, heating mode, cooling mode, hot water+ heating mode or hot water+ cooling mode can be selected by pressing this key |

Note:

② is home icon. This icon is shown by sliding the main interface.

③ is tank water temperature. The machine is in hot water mode when this icon is shown; Otherwise this icon is not shown.

⑥ is outlet water temperature or room temperature. If H25=0, the outlet water temperature will be shown. If H25=1, the room temperature will be shown.

⑦ is Target Temperature of No.1 Unit.

⑧ is fault icon. This icon will flash when there is an error shown up, then the display will enter failure record interface after tapping this icon;

⑨ is defrosting icon. It will display in the defrosting process of the unit.

⑩ is timing mute icon which displays only when activated.

⑪ is timing switch which displays only when activated.

⑫ is ambient temperature.

⑬ is system time.

⑭ is current mode.

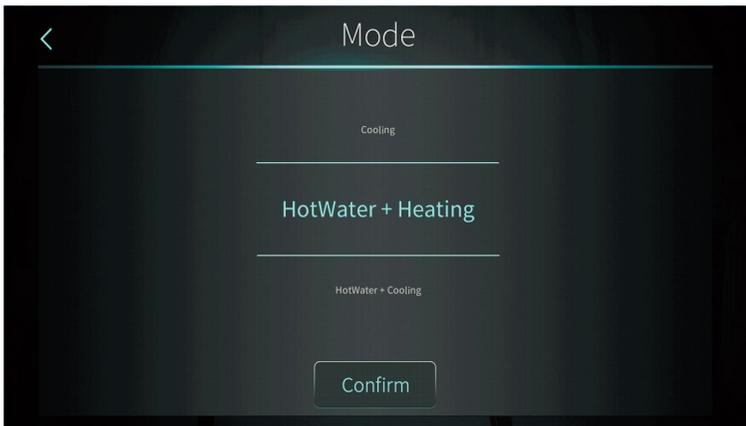
10.2. ON/OFF

(1) In shutting down interface (on/off key is in white status), press on/off key can start up the machine.



(2) In starting up interface (on/off key is in blue status), press on/off key can shut down the machine.

10.2.1. Mode switch



There are five modes can be selected after sliding the mode icon.

(1) selecting hot water mode icon, then the display will change to this mode interface;

- (2) selecting heating mode icon, then the display will enter this mode interface;
- (3) selecting cooling mode icon, then the display will switch to this mode interface;
- (4) selecting hot water+ heating mode icon, then the display will go into hot water+ heating mode interface;
- (5) selecting hot water+ cooling mode icon, then the display will come to hot water+ cooling mode interface;

Note: a) If the machine model you purchased has no cooling function, the key of cooling mode will not be displayed.

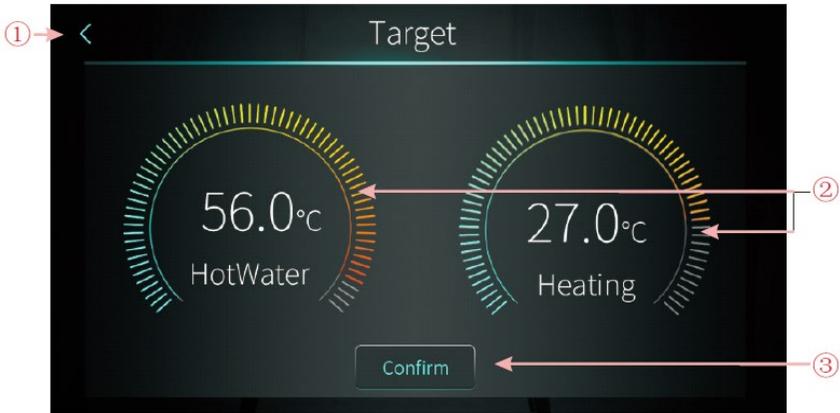
b) If the machine model you purchased has no hot water function, the key of hot water mode function will not be displayed.

In the main interface, there are five modes that can be selected after tapping the mode key.

- (1) tapping hot water mode icon ①, then the display will change to this mode's interface;
- (2) tapping heating mode icon ②, then the display will enter this mode's interface;
- (3) tapping cooling mode icon ③, then the display will switch to this mode's interface;
- (4) tapping hot water + heating mode icon ④, then the display will go into the hot water + heating mode's interface;
- (5) tapping hot water + cooling mode icon ⑤, then the display will come to the hot water + cooling mode's interface;

Note: If your unit is a heating-only model (without a cooling function), the "cooling" key will show on the interface.

10.3. Setting of target temperature

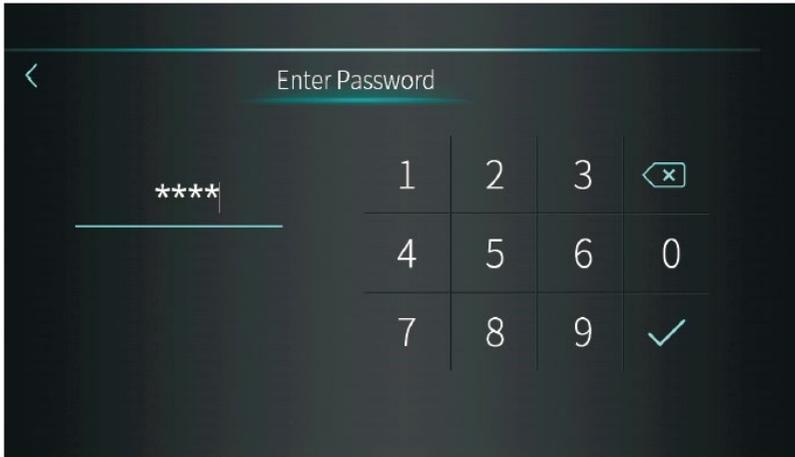


Take hot water + heating mode for example:

- (1) Tapping ①, the wire controller back to main interface;
- (2) Sliding ②, the target temperature can be adjusted in the clockwise or counter clock--wise direction;
- (3) Tapping ③, the target temperature can be saved.

10.3.1. Unlock screen

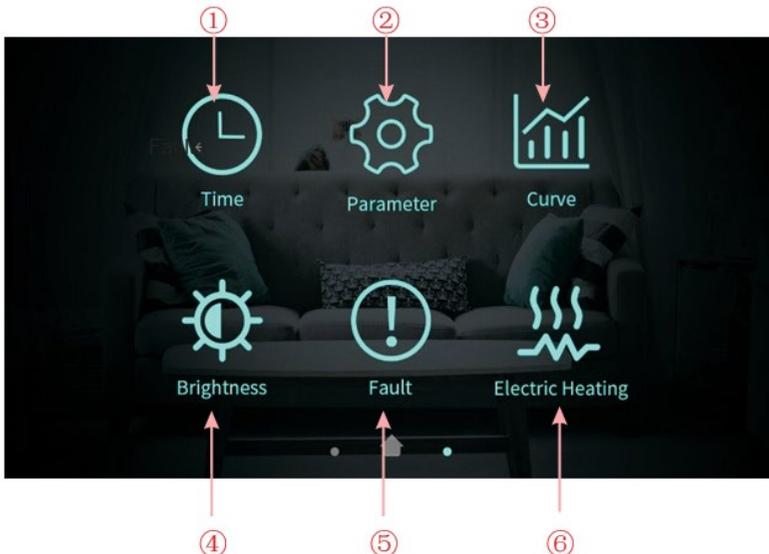
Click the lock screen key again while the screen has been locked, pop-up keyboard is shown as following:



Note: Input the password of 22 or 022, click the enter key and the screen will be unlocked.

10.4. Setting interface display and function

Swipe from right to left on the main interface to enter the function setting interface, and swipe from left to right on the function setting interface to return to the main interface. The function setting interface is shown in the figure below.



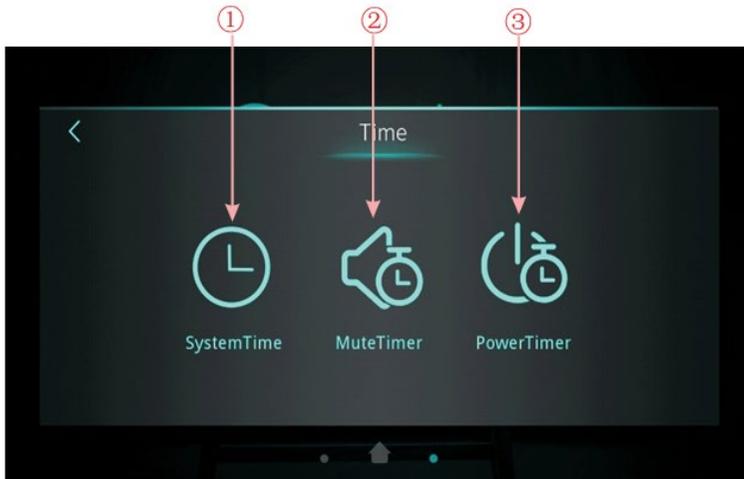
10.4.1. Buttons description

| Key number | Key name | Key function |
|------------|--------------------------|---|
| ① | Time setting | Click this key to set the time function. |
| ② | Factory parameter | Click the key and enter the password to enter the factory parameter settings and status parameters interface. |
| ③ | Curve key | Click this key to view the temperature curve. |
| ④ | Adjust brightness | Click this button to adjust screen brightness |
| ⑤ | Fault | Click to view fault history |
| ⑥ | One key electric heating | When activate electric heating function, the color of the icon will turn blue, otherwise it will turn white. |

10.4.2. Time setting

In the setup interface:

(1) Tapping the button①, then the interface display is shown as follows:



10.4.3. System time setting

In the time setting interface, click ① interface displays as follows:

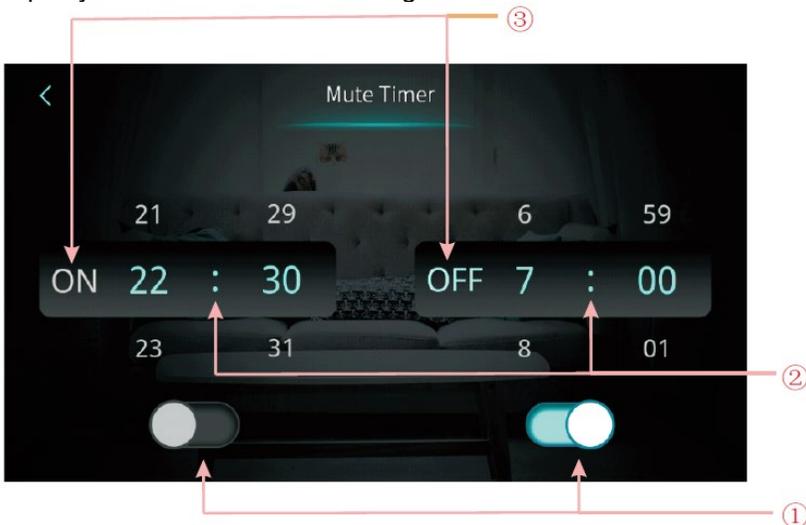


When entering the page of system time setting, the system time will be initialized to the time at the moment when the system time setting button is pressed, and you can adjust the time by sliding up and down.

Note: When the temperature unit is? the time format is displayed as: month-day-year hour: minute: second.

10.4.4. Mute Timer setting

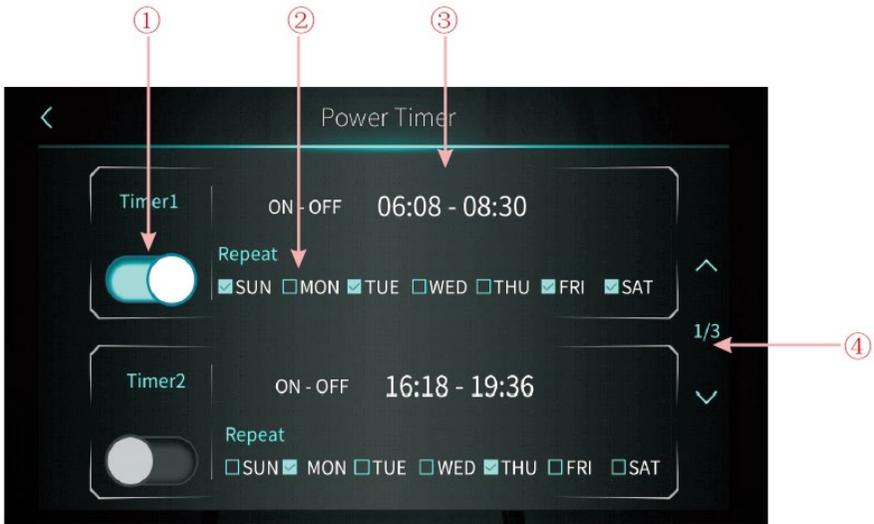
Click the lock screen key again while the screen has been locked, the pop-up keyboard is shown as following:



| NO. | Name | Key color | Button function |
|-----|--|-------------------------------|---|
| ① | Whether enable the mute timer on function | Enable: Blue Disable: Gray | Click this key to enable or disable the mute timer on function |
| | Whether enable the mute timer off function | Enable: Blue Disable: Gray | Click this key to enable or disable the mute timer off function |
| ② | The mute timer on setting point | | select from 0:00-23:59 |
| | The mute timer off setting point | | select from 0:00-23:59 |
| ③ | The status of mute timer on | Enable: Blue Disable: Gray | The status of mute timer on is shown |
| | The status of mute timer off | Enable: Blue Disable: Gray | The status of mute timer on is shown |

10.4.5. Power Timer setting

In the time setting interface, click ③ interface displays as follows:



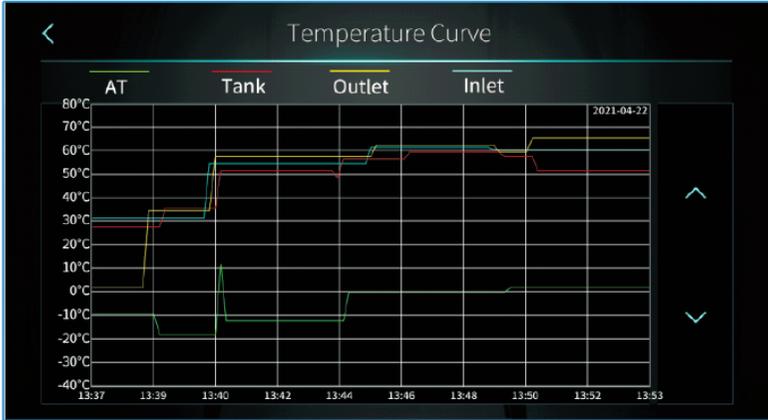
| NO. | Name | Button function |
|-----|---------------------------|---|
| ① | Timing switch function on | Clicking the button, when the font color is blue, the timing switch is on |
| ② | Week setting | Set the day of the week to activate the timing switch |

| | | |
|---|---------------------|--|
| ③ | Time period setting | Set the time to turn on and the time to turn off |
| ④ | Turn page | A total of 6 timing switch time periods can be set which can be selected by turning the page |

10.4.6. Temperature Curve

In the setup interface:

Tapping operating mode button④, then the interface display is shown as follows:

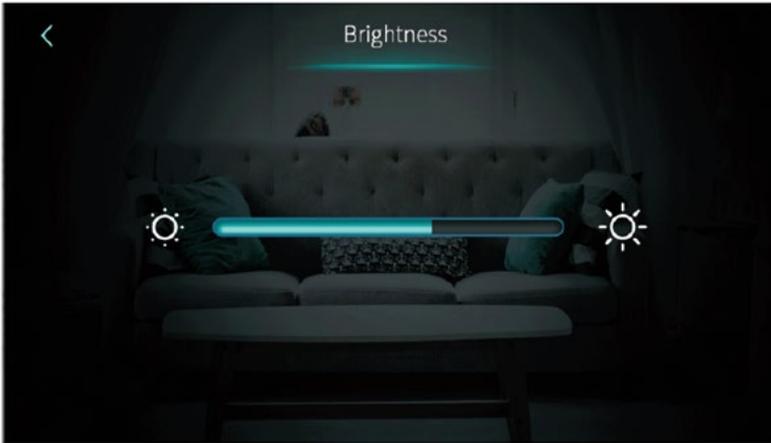


Note:

- 1) This curve function records the water inlet temperature, water outlet temperature, tank water temperature and ambient temperature;
- 2) Temperature data is collected and saved every five minutes. Timekeeping is made from the latest data saving, if the power is disrupted when the time is less than five minutes, the data during such period will not be saved;
- 3) Only curve for power-on status is recorded, and that for power-off will not be saved;
- 4) The value of the abscissa indicates the time from the point on the curve to the current time point. The rightmost point on the first page is the latest temperature record;
- 5) Temperature curve record is provided with power-down memory function.

10.4.7. Color Display Calibration

In the setting interface: Tapping operating mode button⑤, then the interface display is shown as follows:

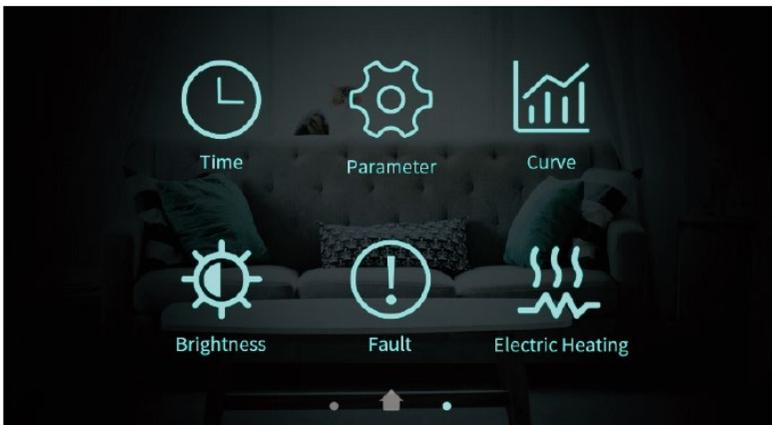


Note:

- 1) The middle display bar can be dragged or clicked to adjust the brightness of the screen with power-down memory.
- 2) Press the back key to return to the previous level and save the brightness setting value.
- 3) The screen has the function of automatic on and off, if there is no operation for 30s, the screen will enter the half-time screen state.
- 4) If there is no operation for another 5 minutes (a consecutive 5 minutes), the screen will enter the screen state.

10.4.8. Electric Heating

In the setup interface: Tapping operating mode button ⑥, then the interface display is shown as follows:



Note: If you enter one-key electric heating, the icon is blue, otherwise it is gray.

10.5. Status interface display

Swipe from left to right on the main interface to enter the status interface, and swipe from right to left on the status interface to return to the main interface. The status interface is shown in the figure below.



10.6. Fault interface display and function



①: Fault code

②: Fault name

③: Occurrence time of the fault: Day an month hour: minute: second Note:
If the current temperature is °F, occurrence time of the fault: Month and day
hour: minute: second.

④: Click this key to clear all fault records





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