Multi-function Water Tank

Installation and Instruction Manual

CONTENT

Preface

In order to provide the customers with high quality, strong reliability and good versatility product, this Multi-function water tank is produced by strict design and manufacture standards. This manual includes all the necessary information about installation, debugging, operating 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 qualified installer 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.

To prevent the users and others from the harm of this unit, and avoid damage on the unit or other property, and use the unit 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 heavy injury on people.
 ATTENTION	A wrong operation may lead to harm on people or loss of material.

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.

Warning

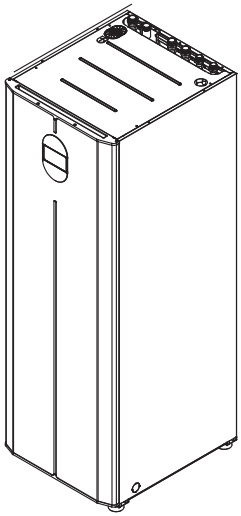
Installation	Meaning
 Professional installer is required.	The multi-fuction water tank must be installed by qualified personals, to avoid improper installation which can lead to water leakage, electrical shock or fire.
 Earthing is required	Please make sure that the unit and power connection have good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

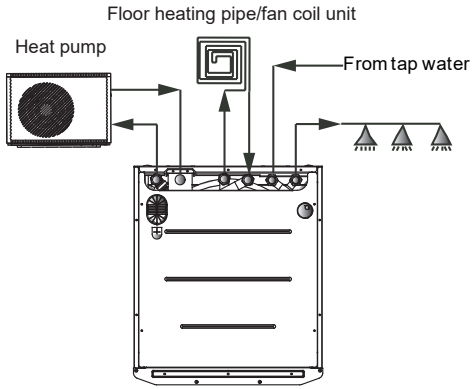
Operation	Meaning
 Shut off the power	When there is something wrong or strange smell, the power supply need to be shut off to stop the unit. Continue to run may cause electrical short or fire.

Move and repair	Meaning
 Entrust	When the unit 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	It is prohibited to repair the unit by the user himself, otherwise electrical shock or fire may be occur.
 Prohibit	When the unit 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.

Specification

1. Application of multi-fuction water tank



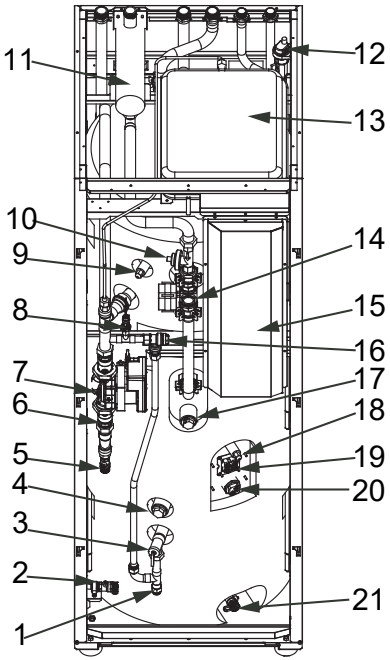


When heat pump connect to multi-function, Parameters need to be set "H30=3".

Note:

1.The capacity of the adaptive heat pump host cannot not exceed 22kW.
2.The maximum temperature of the domestic hot water tank is 60°C.
3.Ambient temperature is 10℃~43℃

2. Internal composition of the multi-fuction water tank

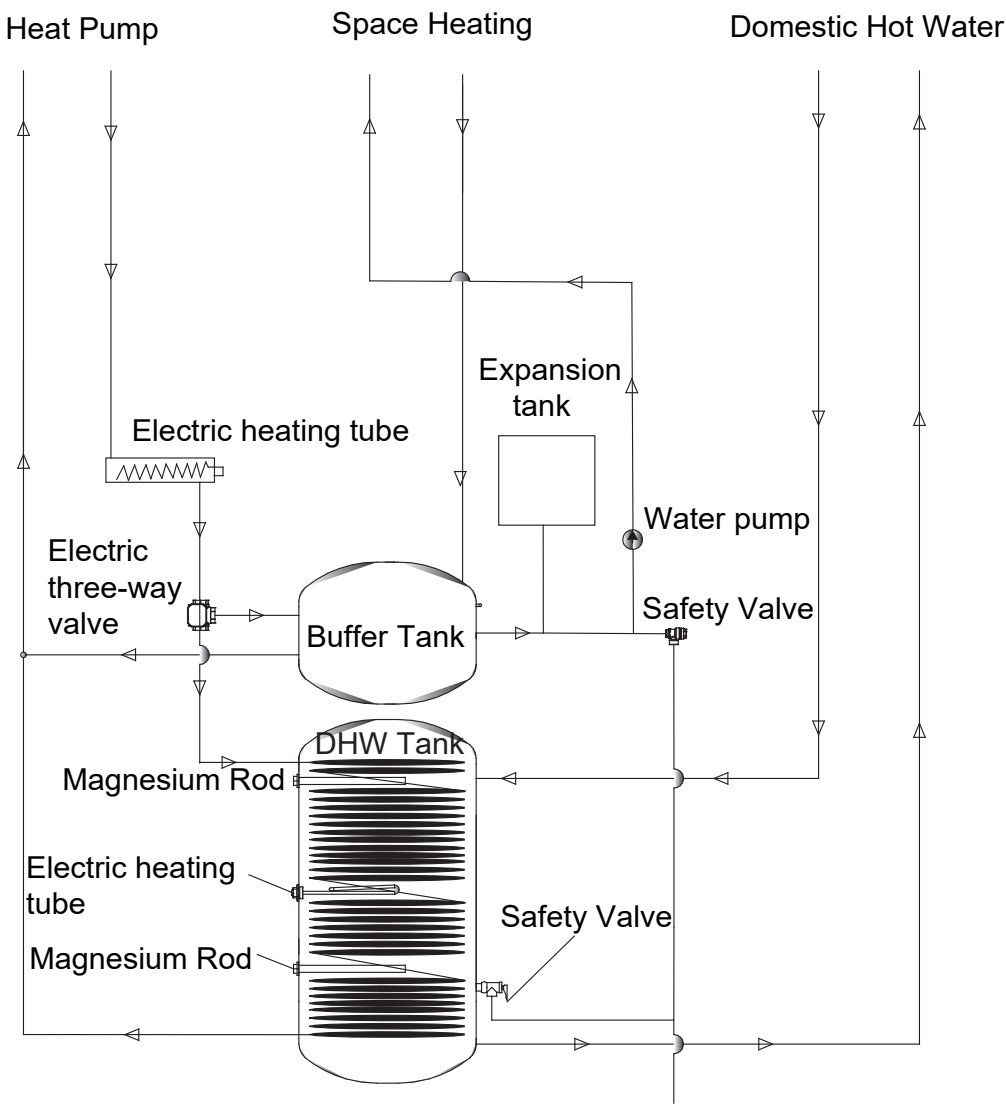


1	Pressure Relief Drain Port
2	Internal Coil Drain Port
3	Hot Water Tank Pressure Relief Valve
4	Magnesium Anode Rod
5	Heating Water Tank Drain Port
6	Ball Valve
7	Water Pump
8	Water Pressure Sensor
9	Heating Water Tank Temperature Sensor
10	Water Flow Sensor
11	Electric Heating
12	Automatic Air Vent Valve
13	Expansion Tank
14	Electromagnetic Three-Way Valve
15	Electric Control Box
16	Heating Water Tank Pressure Relief Valve
17	Magnesium Anode Rod
18	Hot Water Tank Temperature Sensor
19	Hot Water Tank Thermostat
20	Hot Water Tank Electric Heating
21	Hot Water Tank Drain Port

Note:

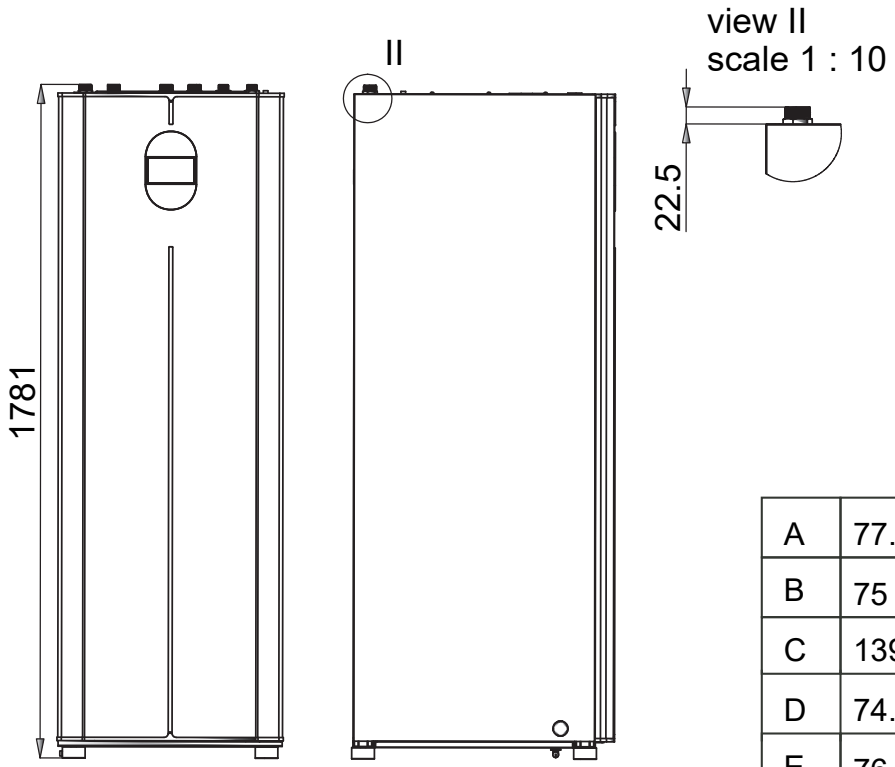
1.The role of the Pressure Relief Drain is to automatically drain to relieve pressure when the system pressure is too high.
The end of the pipeline should be directed to a floor drain, drainage ditch, or outdoor safe area to prevent the discharged water from flowing directly onto the ground or near equipment.
2.If the drainage frequency is abnormally high
(e.g., frequent pressure relief), it may be due to abnormal system pressure or a malfunction of the pressure relief valve. Timely maintenance is required, rather than just dealing with the drain pipe.

3. System Schematic Diagram

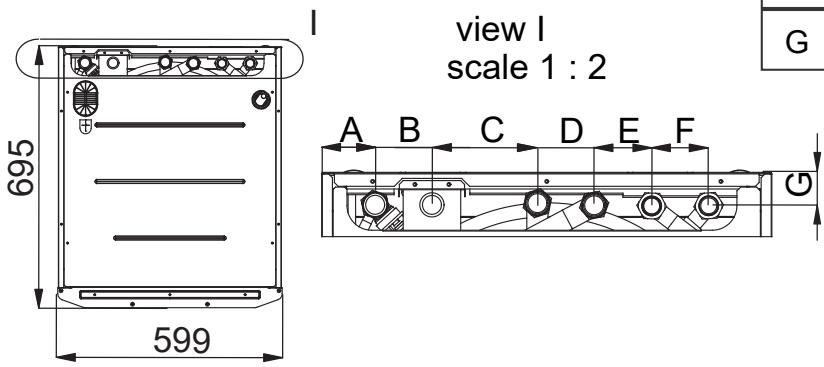


4. Unit dimension

**Unit : mm



A	77.5
B	75
C	139.5
D	74.5
E	76.5
F	75.5
G	44.5



Installation

1. Installation Precautions

• The unit must be installed indoors only.
• The unit must be installed on a flat and solid surface.
• Choose a location with good air circulation.
• Choose a location with easy drainage access.
• Choose a location where the unit's operational noise will not cause discomfort to users.
• Choose a location that allows convenient maintenance access.
• Maintain a minimum distance from walls, ceilings, or other obstructions.
• Select an area unlikely to experience flammable gas leaks.
• Ensure the lengths of the heat pump pipes and wiring are within a reasonable range.
• When the unit is full of water, it becomes extremely heavy. Install it on a sturdy concrete surface, accounting for the combined weight of the unit and the water.
• Please kindly put the unit on the horizontal ground and adjust the feet to make the unit horizontal and stable. There are adjustable rubber feets at the bottom of the unit. Make sure that the unit is placed horizontally.

Installation

Please hire a licensed water system installer to install this water circuit.
• The water circuit must comply with relevant national regulations and local building codes.
• Ensure that the components installed in the water circuit can withstand water pressure during operation.
• Do not apply excessive force to pipes that may be damaged.
• When inserting pipes into the wall, cover the pipe ends to prevent dust and dirt. If connecting an existing heat pump to the water tank, ensure the water pipes are clean before installation.
• Select an appropriate sealant that can withstand the system's pressure and temperature.
• Ensure two wrenches are used to tighten the connections.
• If non-brass metal pipes are used for installation, ensure the pipes are insulated to prevent electrochemical corrosion.
• Do not use broken or deformed pipes. Using substandard pipes may lead to equipment failure.
• Ensure the water circuit pipes are insulated (insulation thickness: 20 mm or more) to prevent condensation during cooling operation, reduce heating capacity loss, and avoid freezing of outdoor water pipes in winter.
• After installation, inspect the connection areas for leaks during the trial run.
If a power outage or pump malfunction occurs, drain the system immediately.

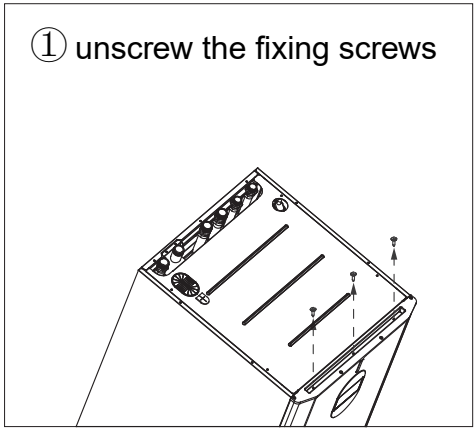
Installation

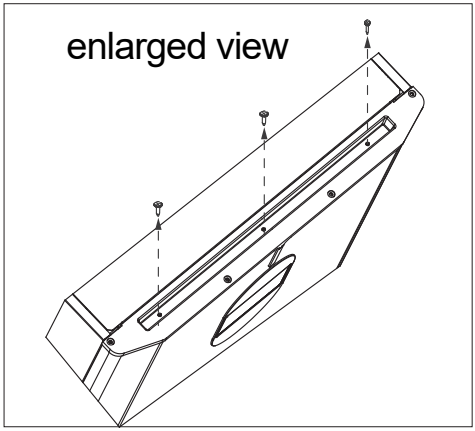
Please pay attention to below matters when the water pipe is connected:
Try to reduce the resistance to the water from the piping.
The piping must be clear and free from dirty and blocks. Water leakage test must be carried out to ensure there is no water leaking. And then the insulation can be made.
Pay attention that the pipe must be tested by pressure separately.
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.
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.
Try to avoid air stayed inside of the water pipe, and there must be air vent on the top point of the water loop.
There must be thermometer and pressure meter at the water inlet and outlet, for easy inspection during running.

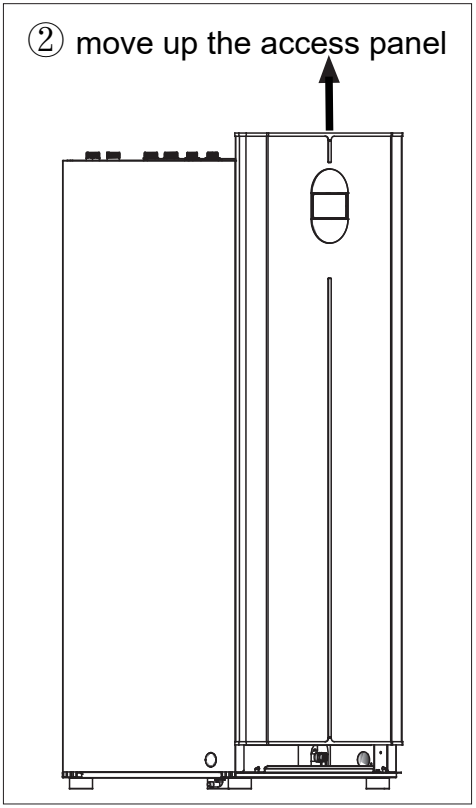
Open the front panel, and open the power supply access.
The power supply must go through the wire access and be connected to the power
supply terminals in the control box. Then connect the 4-core cable plugs of the wire controller and main controller.
If the outside water pump is needed, please insert the power supply wire into the wire access also and connect to the Booster water pump terminals.

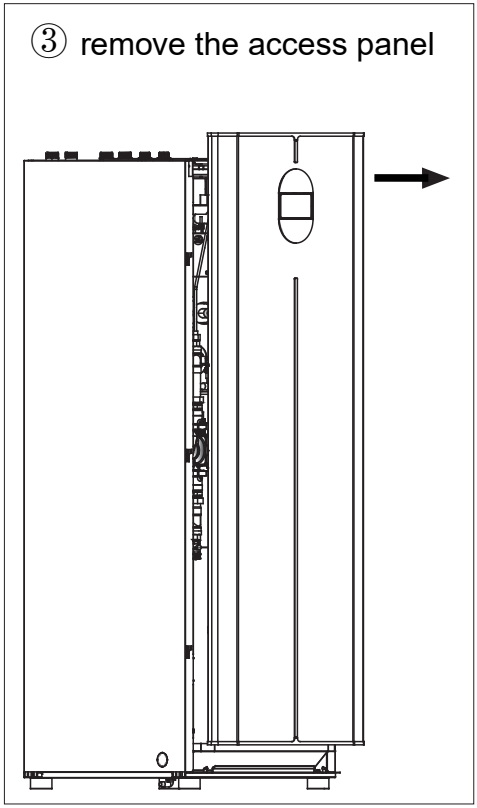
2. Access to internal parts

The unit has removable access panels.

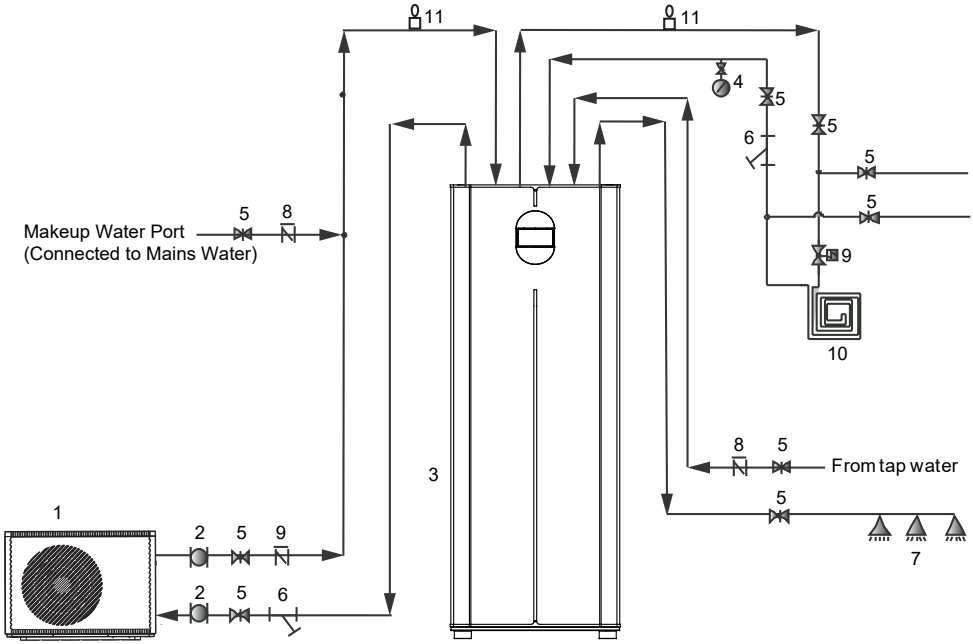








3. Technical Installation Instructions
--- House Heating/Cooling + Domestic Hot Water

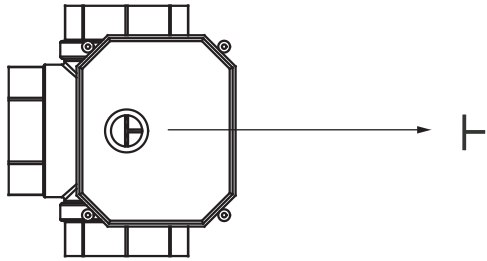


1	Heat pump	7	Domestic hot water
2	Flexible pipe	8	Check valve
3	Multi-fuction water tank	9	Floor heating valve
4	Manometer	10	Space heating / cooling
5	Shut-off valve	11	Air Vent Valve
6	Y type water filter		

Remark: Item 8 can be connected with heat pump.
For connections, refer to the circuit diagram.
Refer to the host manual for the operation of the wire controller.
The air vent valve needs to be installed at the highest point of the system.

4.System Makeup Water

1.Before replenishing water in a heating system, an exhaust valve must be installed at the highest point of the pipeline. This is a critical step to ensure system efficiency and prevent operational issues.
2.Before starting the water replenishment, first power on the water tank. Switch the mode to hot water mode within the wireless controller. Wait until the three-way valve actuator displays "⊢" before beginning the water replenishment process. During the replenishment, maintain the hot water mode state and ensure the power remains uninterrupted.
3.When the shower head for domestic hot water produces normal water flow, it indicates that the water replenishment of the hot water tank is complete.
4.When the pressure relief valve of the heating water tank starts to relieve pressure, it indicates that the water replenishment of the heating water tank is complete.
5.After both water tanks are fully replenished with water, press the power-on button on the wireless controller interface to initiate a system trial run. If the wireless controller does not display any faults and the outdoor unit starts without any abnormalities, the system installation is considered complete.



Electromagnetic three - way valve

Installation

5. Drainage Instructions

Note:
When the unit is not used for an extended period, the water in the tank and pipes should be drained completely to prevent freezing in the waterlines from damaging the machine.

Before draining, turn off the unit's power and close the shut-off valve connecting the main water pipe to the water tank to stop water supply to the unit. During draining, open the shut-off valves at the hot water tank drain port, heating water tank drain port, and internal coil drain port, and connect drain pipes. Ensure the end of the drain pipes points to a floor drain, drainage ditch, or safe outdoor area to prevent discharged water from flowing directly onto the ground or near the unit. Once no water flows out of the drain pipes, close the shut-off valves at the drain ports and water inlet.

6. Inspection before trial running

Check the indoor unit and ensure pipe connections are correct and all relevant valves are open.
Check the water loop to confirm water supply is sufficient, flow is normal, the loop is completely filled with water, and free of air. Also ensure proper insulation of the water pipes.
Verify electrical wiring: confirm normal power voltage, securely fastened screws, wiring matches the diagram, and proper grounding is implemented.
Inspect the heat pump unit, including all screws and components, to ensure they are in good condition.
When powering on, check display indicators for any fault codes. The display may show system high or low pressure during the test run.

7. Trial running

Start the heat pump by pressing the "  " key on the display.
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 minute, the compressor will start. Listen for any strange sounds from the compressor. If abnormal sounds occur, stop the unit and check the compressor. If the compressor runs well, check the refrigerant pressure meter.
Then check whether the power input and running current are in line with the manual. If not, stop and check.
Adjust the valves on the water loop to ensure that the hot/cool water supply is good and meets the heating/cooling requirements.
Check whether the outlet water temperature is stable.
The controller parameters are factory-set and must not be changed by the user.

Operation and Use

1.Main interface display and function

Key	Function
①	Screen lock button: You can perform various operations on the display when the lock is open, but you cannot operate the display when the lock is closed. After locking the screen, press the screen lock button and enter the password to unlock the screen.
④	On/off button: when the button is displayed in blue, it means power on state, and it will turn to white as tapped and switch to power off state.
⑤	Target temperature setting button. When the button is tapped, the unit will enter the target temperature setting interface, allowing you to set the target temperature of the current mode.
⑰	Mode selection button. When the button is tapped, the unit will enter the mode selection interface, allowing you to set the mode. There are five modes : heating, cooling, hot water, hot water + cooling, hot water + heating.

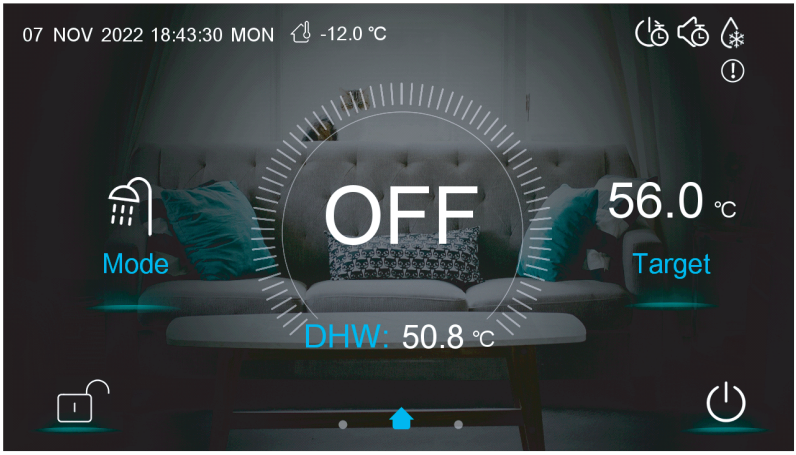
Icon	Function
②	Main interface icon: It indicates that the current page is the main interface.
③	DHW temperature: The unit is in DHW mode when this icon is shown, otherwise this icon is not shown.
⑥	Inlet temperature: Display the control temperature: Outlet, Room,Buffer Tank, Inlet
⑦	Target temperature: Display the current mode target temperature.
⑧	Fault icon: This icon will be displayed when the unit fails ,then the display will enter Failure record interface after tapping this icon
⑨	Defrosting icon: This icon will be displayed when the unit enters the defrosting function.
⑩	Mute timer icon: This icon will be displayed after the mute timer function is enabled.
⑪	Power on/off timer icon: This icon will be displayed after the power on/off timer function is enabled.
⑫	Mode&temp.&power timer icon: This icon will be displayed when enters this timer
⑬	SG Ready Icon: This icon will be displayed when enters SG Ready, SG Ready includes five modes: Solar Sleep Mode, Solar Low Mode, Solar Medium Mode, Solar High Mode, Normal Mode
⑭	Ambient temperature: Display the current ambient temperature.
⑮	System time: Display the current real-time time. The time can be changed as required.
⑯	Running mode icon: representing the unit is currently running in DHW+heating mode. There are five modes, namely: heating, cooling, hot water, DHW+ cooling, DHW + heating

Operation and Use

1.1 On and off

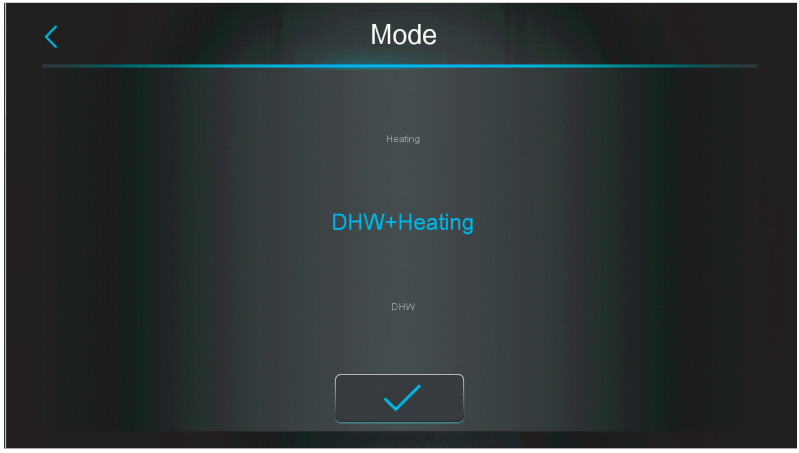
As the main interface shows

(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.

1.2 Mode switch



Operation and Use

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

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

(2) selecting heating mode icon, then the display will change to this mode interface;

(3) selecting cooling mode icon, then the display will change to this mode interface;

(4) selecting DHW+heating mode icon, then the display will change to DHW+heating mode interface;

(5) selecting DHW+cooling mode icon, then the display will change to DHW+cooling mode interface;

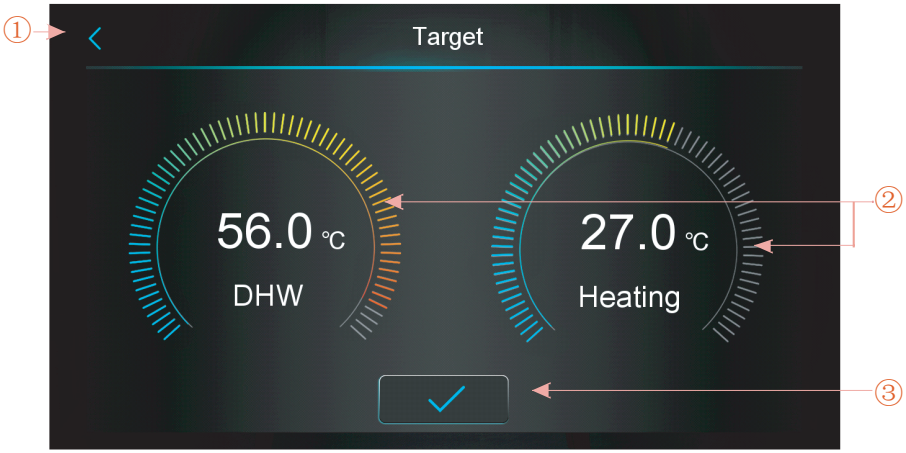
Note: a) If the machine model you purchased has no cooling function, the key of cooling mode will not be displayed.

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

c) If the machine model you purchased has only DHW function, the mode interface only displays DHW icon.

1.3 Setting of target temperature

1.3.1 Disable zone control



Take DHW + heating mode for example:

(1)Tapping ①, the wire controller back to the main interface;

(2)Sliding ②, the target temperature can be adjusted in the clockwise or counterclock--wise direction. Minimum adjustment range is 0.5 ℃.

(3)Tapping ③, the target temperature can be saved.

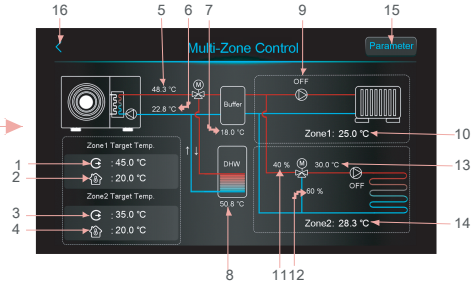
Note: When room temperature control, click the room temperature display in the main interface to enter the room target temperature setting page, and slide the adjustment to set the room target temperature.

Operation and Use

1.3.2 Enable zone control

1.3.2.1 Heating Mode Multi-Zone Control

When heating or DHW+heating mode, click “ ” to enter the multi-zone function interface:

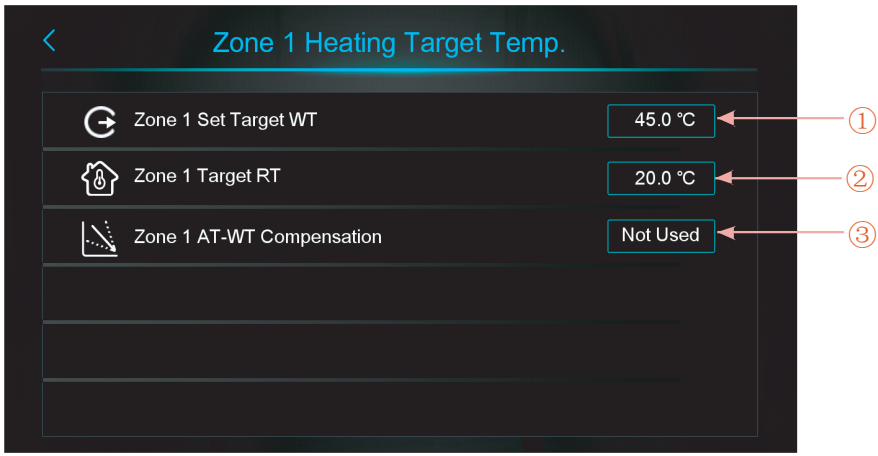


1	Display target outlet temperature in zone 1/target outlet water temperature after compensation
2	Display room target temperature in zone 1, when Z01=4/5/6/7/8/9,it displays “/”
3	Display target outlet temperature in zone 1/target outlet water temperature after compensation
4	Display room target temperature in zone 2, when Z01=4/5/6/7/8/9,it displays “/”
5	Display outlet water temperature
6	Display inlet water temperature
7	When H25=buffer tank control, display buffer tank temperature When H25≠buffer tank control, display --- , and Buffer will become “Not used”
8	Display Tank temperature
9	When zone 1 pump turns on, display “ON”, otherwise display “OFF”
10	Display zone 1 room temperature. When Z01=4/5/6/7/8/9, it means the unit is connected to the passive switch thermostat or room thermostat, and the unit will just receives the signal, when the thermostat asks the unit to turn on, then here will show Zone1: Start, otherwise, it will show Zone1:Stop.
11	Display the percentage of zone 2 mixing valve steps.
12	Display 100 - the percentage of zone 2 mixing valve steps
13	Display zone 2 mixing water temperature
14	Display zone 2 room temperature. When Z01=4/5/6/7/8/9, it means the unit is connected to the passive switch thermostat or room thermostat, and the unit will just receives the signal, when the thermostat asks the unit to turn on, then here will show Zone2: Start, otherwise, it will show Zone2:Stop.
15	After clicking, enter password, will enter the multi-zone function parameter list.
16	Click to return the main screen.

Operation and Use

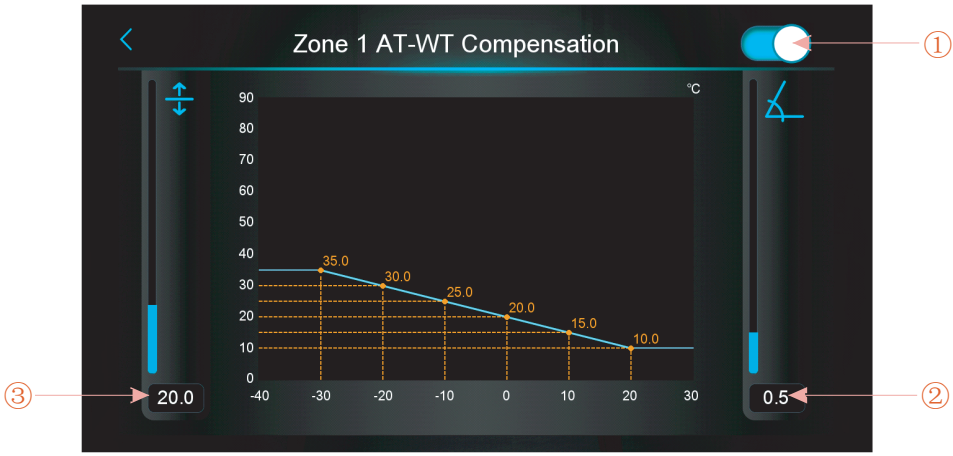
1）Zone 1 target temperature setting interface

Click “ ” to enter the target temperature in zone 1:



Number	Key name	Key function
①	Zone 1 Set Target WT	Click to set zone 1 target outlet water temperature
②	Zone 1 Target RT	Click to set zone 1 room target temperature,when Z01=4/5/6/7/8/9,it displays “/”
③	Zone 1 AT-WT Compensation	Click to enter the zone 1 weather compensation curve, When the zone 1 weather compensation is disable, it will display Not Used. Enable to display the compensated temperature. Enable condition:Z01=1/3/4/6/7/9 and Z16=1

Zone 1 weather compensation curve



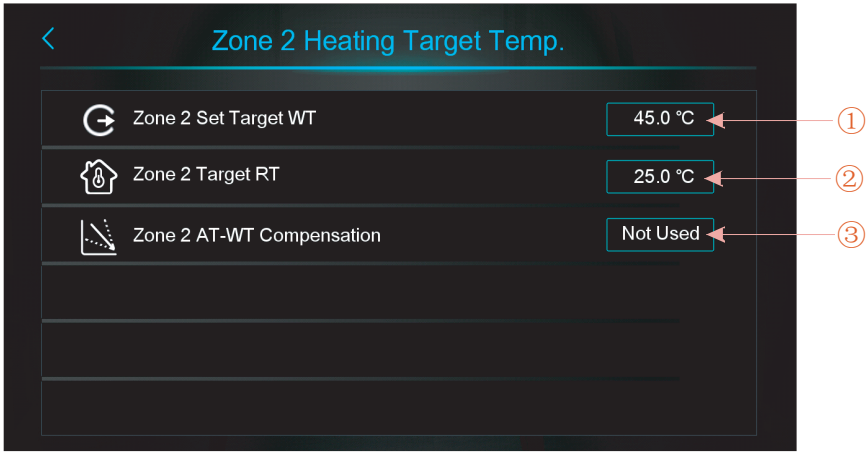
Operation and Use

Number	Key name	Key function
①	Enable key	Enable weather compensation button.
②	Slope	Set the slope by sliding up and down or clicking on the value
③	Offset	Set the offset by sliding up and down or clicking on the value

Celsius calculation formula: Compensated temp. = -Slope*Current AT + Offset
Fahrenheit calculation formula: Compensated Target = -Slope*(Current AT-32)+ Offset

2）Zone 2 target temperature setting interface

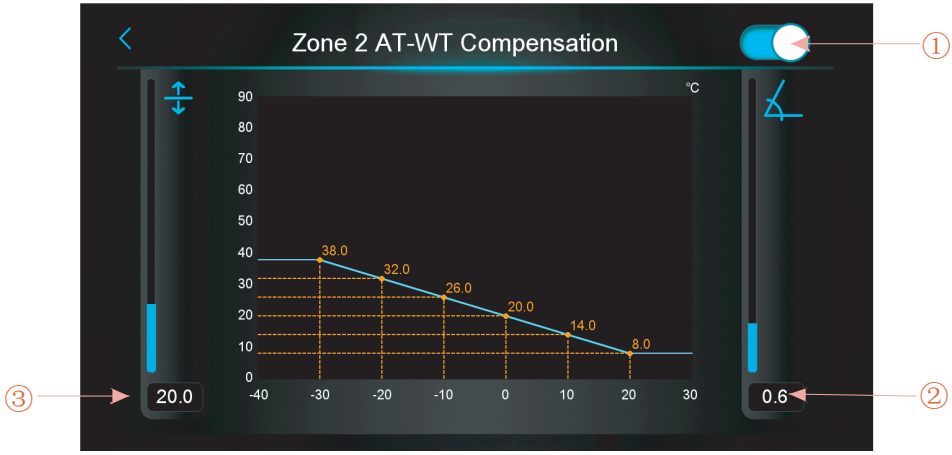
Click "  " to enter the target temperature in zone 2:



Number	Key name	Key function
①	Zone 2 Set Target WT	Click to set the zone 2 target outlet water temperature
②	Zone 2 Target RT	Click to set the zone 2 room target temperature, when Z01=4/5/6/7/8/9, it displays "/"
③	Zone 2 AT-WT Compensation	Click to enter the zone 2 weather compensation curve, When the zone 2 weather compensation is disable, it will display Not Used. Enable to display the compensated temperature. Enable condition:Z01=2/3/5/6/8/9 and Z17=1

Operation and Use

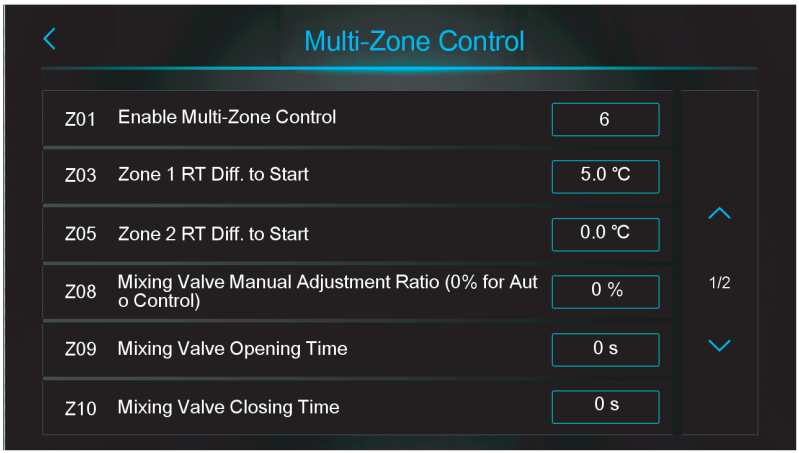
Zone 2 weather compensation curve



Number	Key name	Key function
①	Enable key	Enable weather compensation button.
②	Slope	Set the slope by sliding up and down or clicking on the value
③	Offset	Set the offset by sliding up and down or clicking on the value

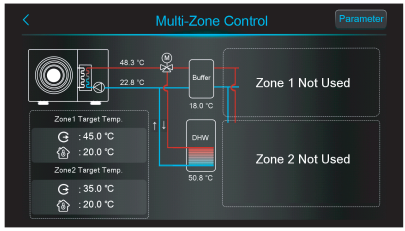
3）Zone control function parameters

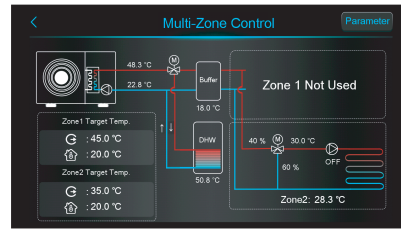
Click“ Parameter ”enter the password to enter the zone control function parameters

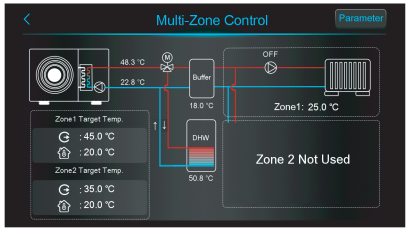


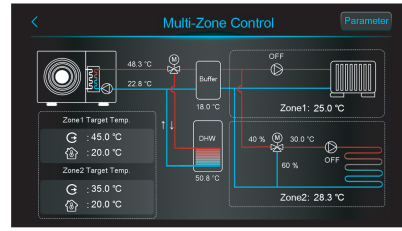
Operation and Use

A: Set Z01 to change the main zone control interface
When Z01=0, it means disable zone 1 and zone 2, display Not Used;
When Z01=2/5/8, it means disable Zone 1, Zone 1 will display Zone 1 Not Used;
When Z01=1/4/7, it means disable Zone 2, Zone 2 will display Zone 2 Not Used;
When Z01=3/6/9, it means enable Zone 1 and Zone 2.



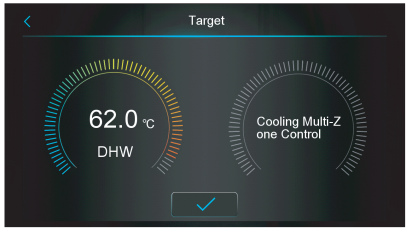


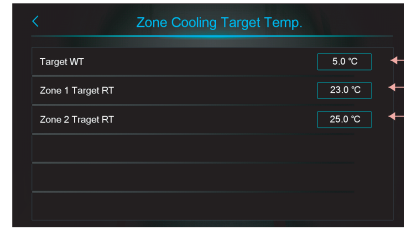




1.3.2.2 Cooling Multi-Zone Control

When cooling or DHW+cooling mode, click "  " to enter the multi-zone function interface:



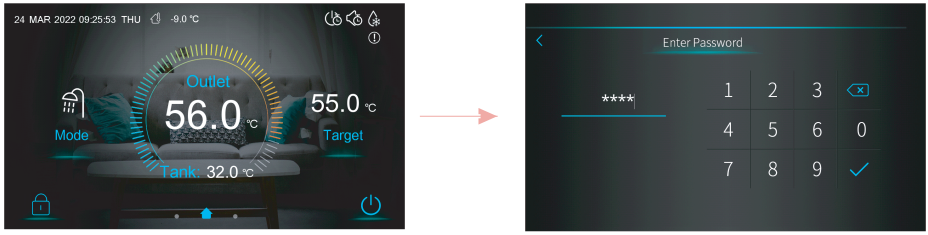


1	Click to set the cooling target temperature
2	Click to set the zone 1 room target temperature
3	Click to set the zone 2 room target temperature

Operation and Use

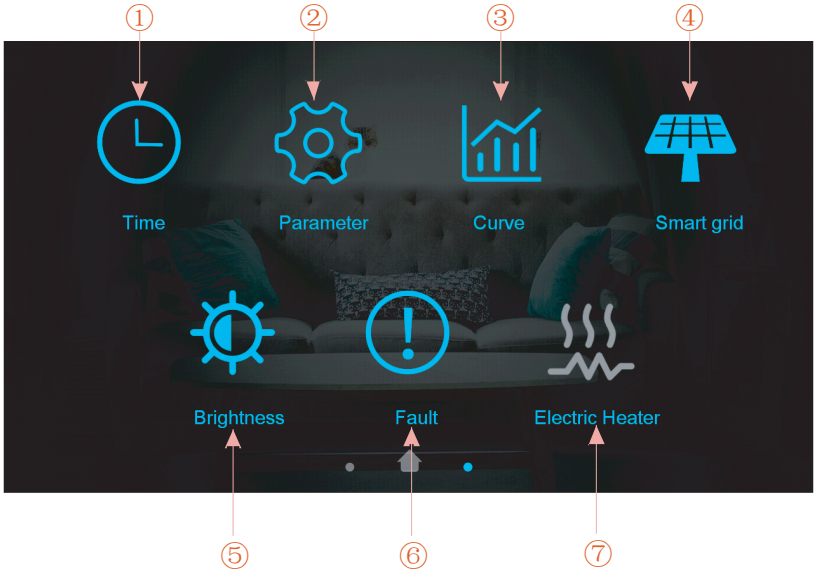
1.4 Unlock screen

After locking screen, click “ ”to pop up the following screen. Enter password to unlock.



2. 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.



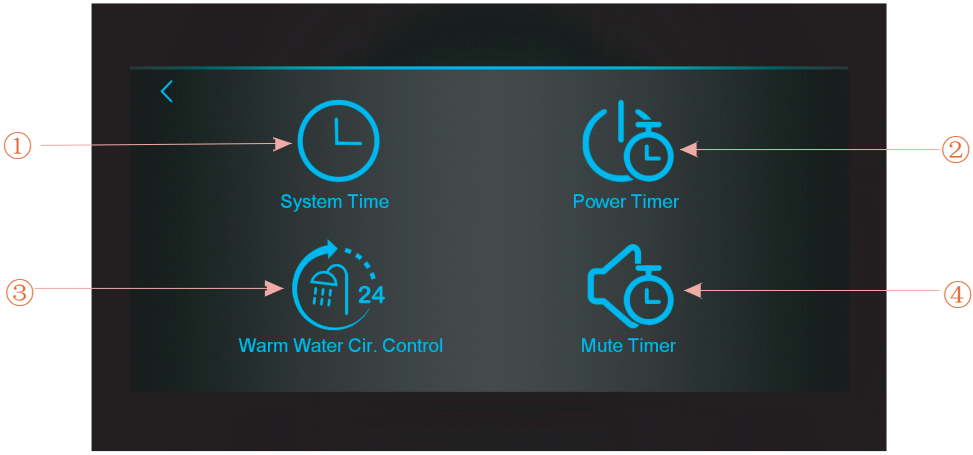
Operation and Use

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	Smart grid	Click this key to Smart Grid
⑤	Adjust brightness	Click this key to adjust screen brightness
⑥	Fault	Click to view fault history
⑦	Electric Heater	Click to turn on/off the electric heater

2.1 Time setting

In the setup interface, t apping the button, then the interface display is shown as follows:



Operation and Use

Key number	Key name	Key function
①	System Time	Click to set system time
②	Power Timer	Click to set timed switch on/off
③	Warm Water Cir. Control	Click to set warm water pump timed cycle, hide the icon when H40=0/2, show the icon when H40=1
④	Mute Timer	Click to set timed mute, hide the icon when H22=0, show the icon when H22=1

2.1.1 System time setting

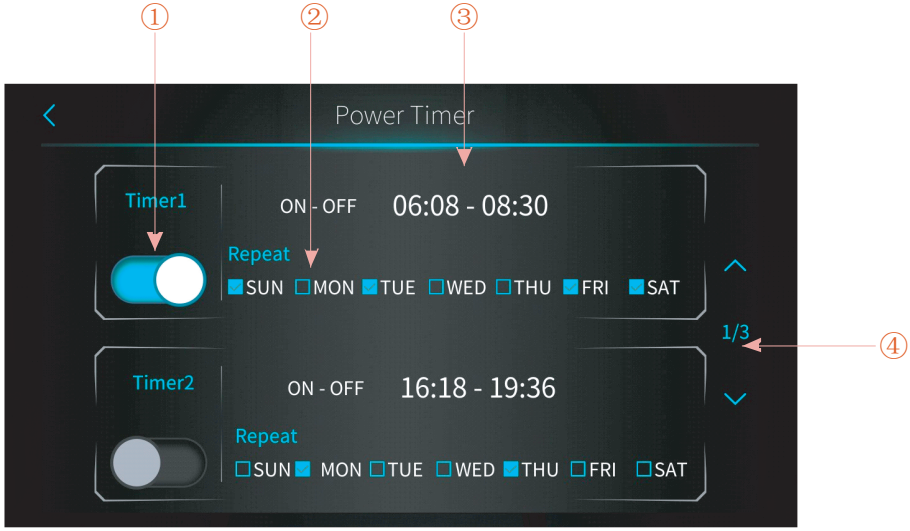
In the time setting interface, click ①nterface displays as follows:

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.

Operation and Use

2.1.2 Power Timer setting

In the time setting interface, click ②interface displays as follows:

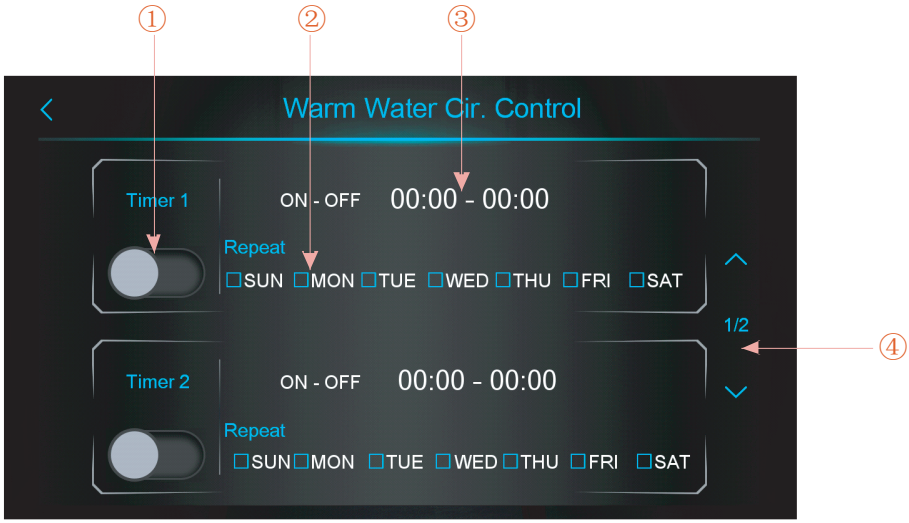


NO.	Name	Button function
①	Timing switch function on	Clicking the button, when the font color is blue, the timing switch is on
②	Week setting	Set the day of the week to activate the timing switch
③	Time period setting	Set the time to turn on and the time to turn off
④	Turn page	A total of 6 timing switch time periods can be set, which can be selected by turning the page

Operation and Use

2.1.3 Warm Water Cir. Control

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

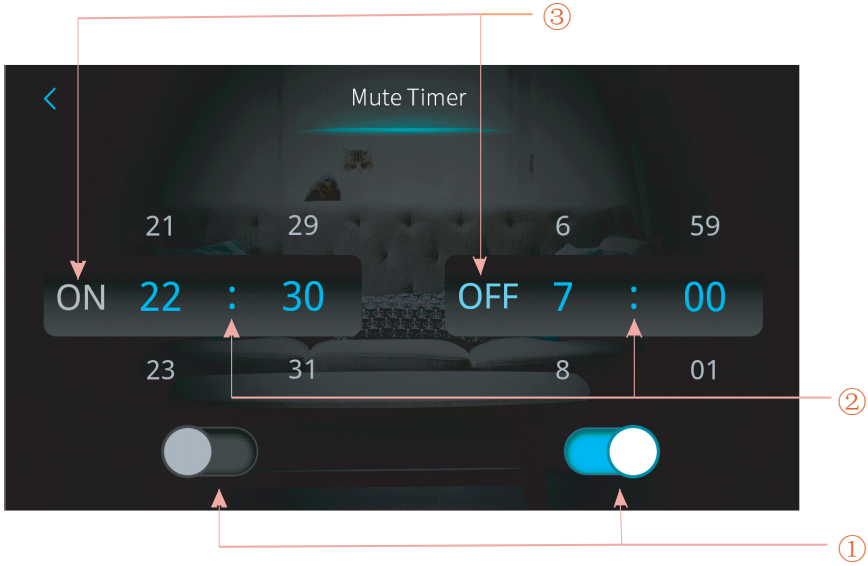


NO.	Name	Button function
①	Timing switch function on	Clicking the button, when the font color is blue, the timing switch is on
②	Week setting	Set the day of the week to activate the timing switch
③	Time period setting	Set the time to turn on and the time to turn off
④	Turn page	A total of 3 timing switch time periods can be set, which can be selected by turning the page

Operation and Use

2.1.4 Mute Timer setting

In the time setting interface, click ④interface displays as follows:

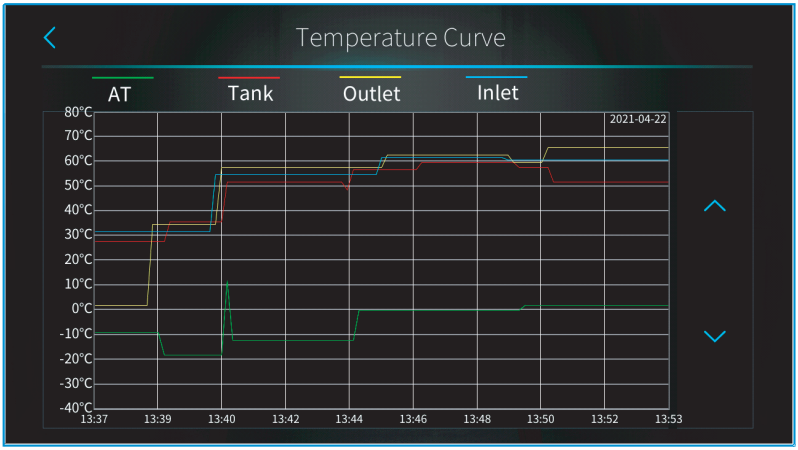


NO.	Name	Key color	Button function
①	Whether enable the mute timer on function	Enable: Blue Disable: Gray	Click this key to enable or disable the mute timer on function
	Whether enable the mute timer off function	Enable: Blue Disable: Gray	Click this key to enable or disable the mute timer off function
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

Operation and Use

2.2 Temperature Curve

In the setup interface, t apping the button, 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.

Operation and Use

2.3 Smart Grid

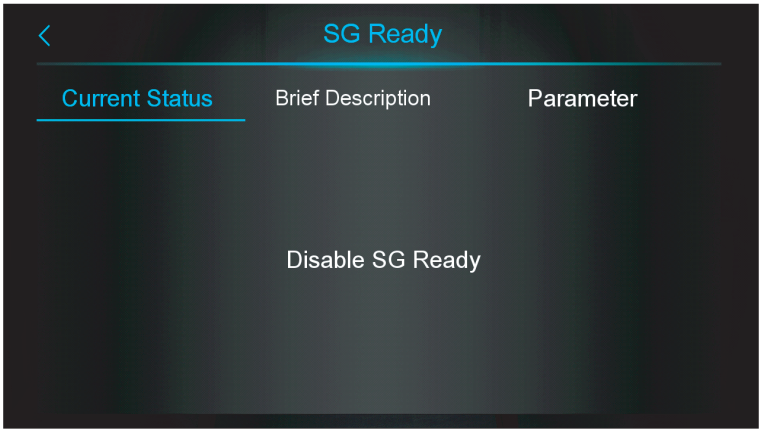
In the setup interface, t apping the button, then the interface display is shown as follows:

Key number	Key name	Key function
①	SG Ready	Click to enter SG Ready
②	Mode&Temp.& Power Timer	Click to enter Mode&Temp.&Power Timer

2.3.1 SG Ready Function

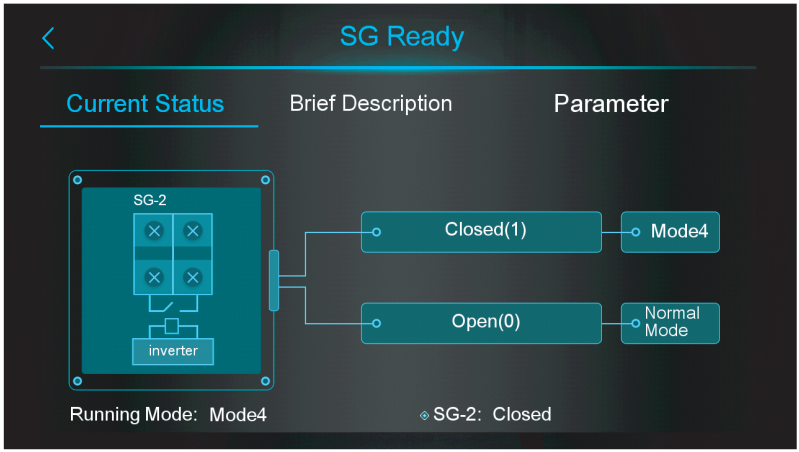
2.3.1.1 Disable SG Ready

When the Smart Grid Ready mode is not yet set, the interface will display:



2.3.1.2 Smart Grid Ready=1

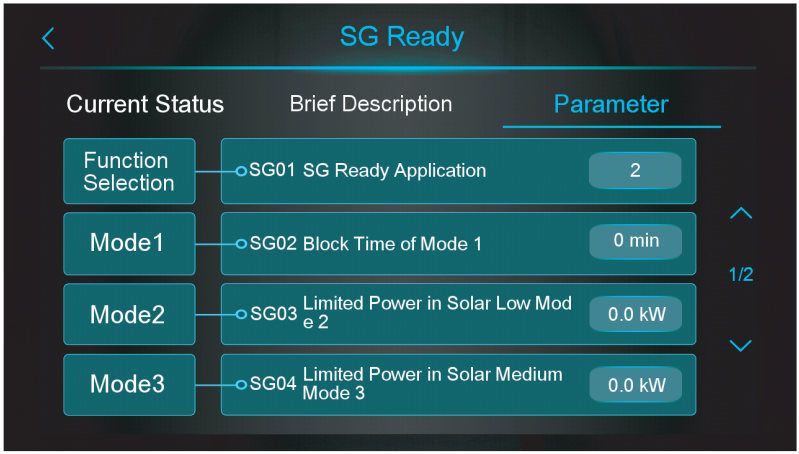
When using one dry contact, the interface will display:



Click “Brief Description”to enter the function description screen:

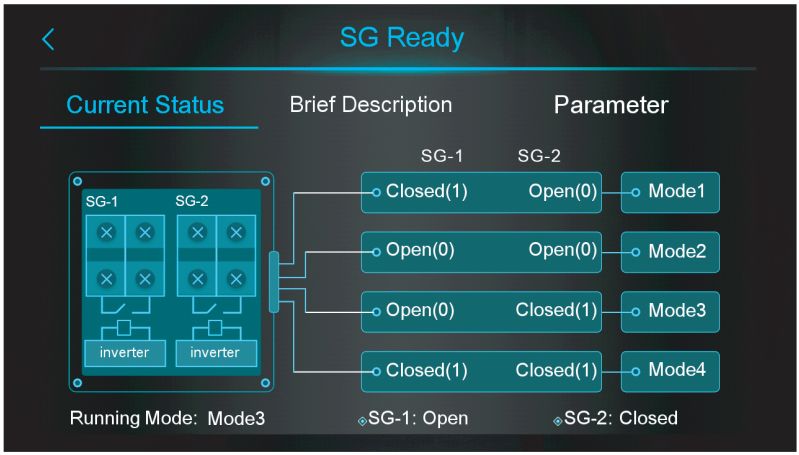
Operation and Use

Click "Parameter" and enter the password to enter the parameter setting screen:



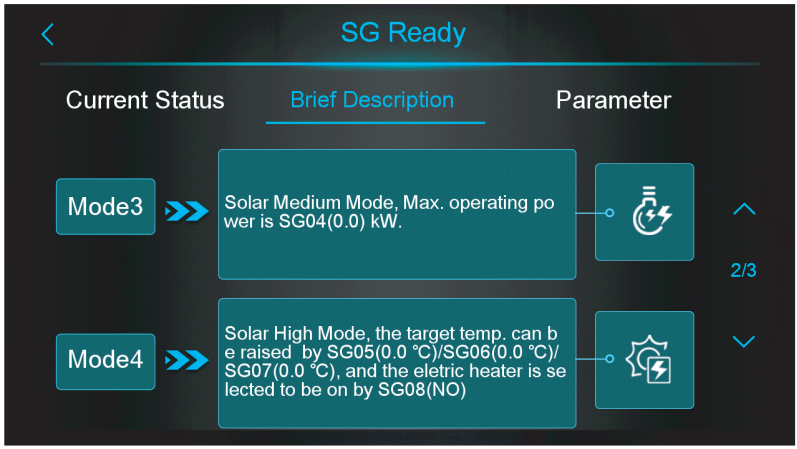
2.3.1.2 Smart Grid Ready=2

When using two dry contacts , the interface will display:

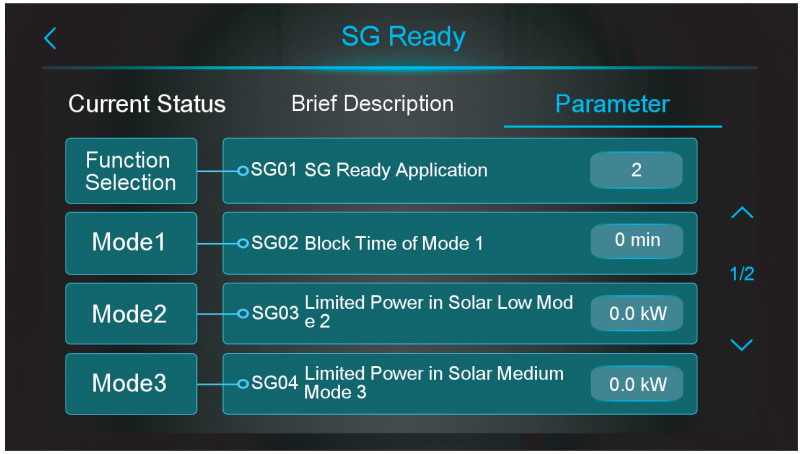


Operation and Use

Click “Brief Description”to enter the function description screen:



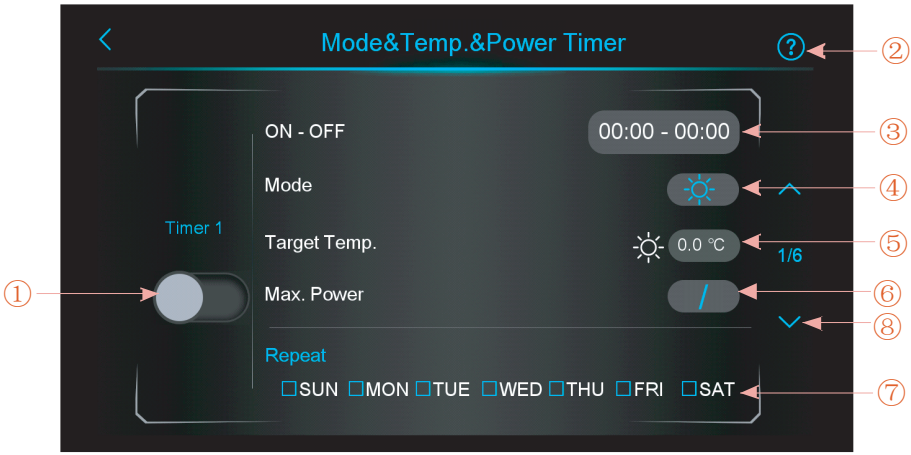
Click "Parameter" and enter the password to enter the parameter setting screen:



Operation and Use

2.3.2 Mode&Temp.&Power Timer

Click “  ” to enter the Mode&Temp.&Power Timer screen:

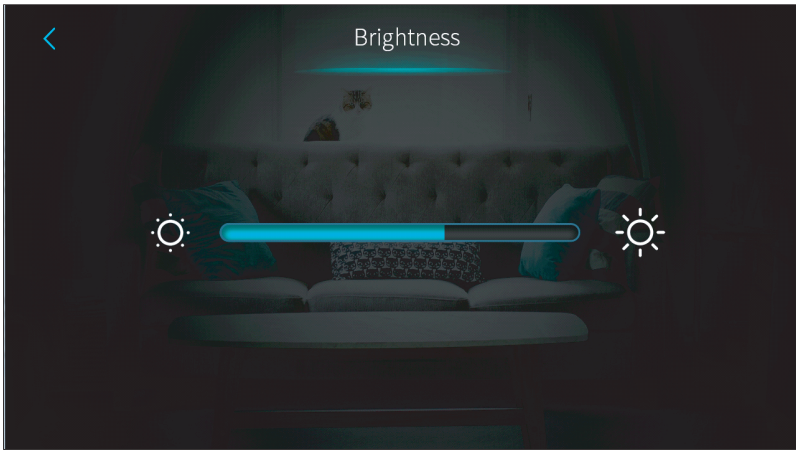


NO.	Name	Button function
①	Enable key	Enable the timer,when the font color is blue, the timing switch is on
②	Function Description	Click to enter the function introduction
③	Time setting	Set timer time
④	Mode	Set target mode, If you don’t need to control mode, please choose “/”
⑤	Target Temp.	Set target temperature
⑥	Max. Power	Set power limitation, Setting range 0.0~99.9KW. If you don’t need to limite the power, please set “Max. Power” to 0.
⑦	Week setting	Set timer date
⑧	Turn page	A total of 6 timing switch time periods can be set, which can be selected by turning the page

Operation and Use

2.4 Color Display Calibration

In the setup interface, t apping the button, then the interface display is shown as follows:



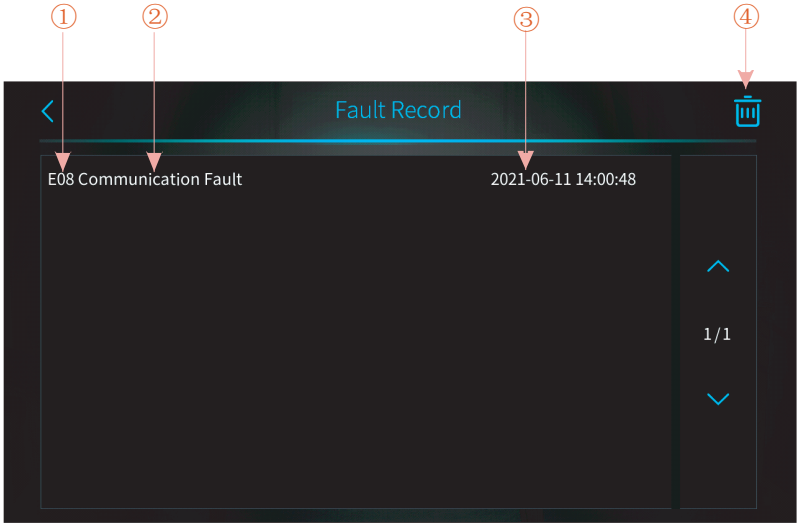
Note:

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, the screen will enter the screen state.

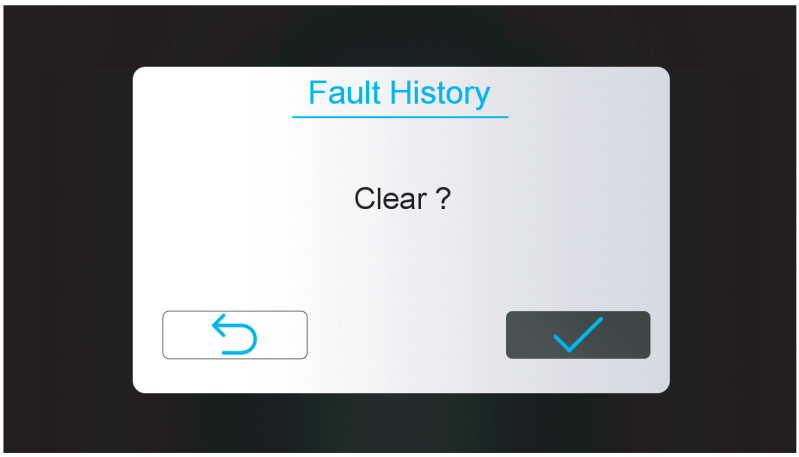
Operation and Use

2.5.Fault interface display and function

In the setup interface, t apping the button, then the interface display is shown as follows:



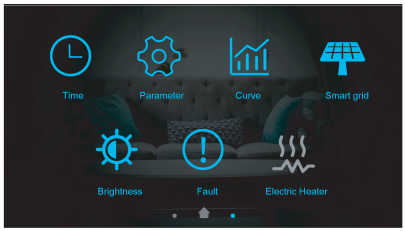
①:Fault code ②:Fault name
③:Occurrence time of the fault: Day and month hour:minute:second
Note:If the current temperature is ℉,occurrence time of the fault:
Month and day hour: minute: second
④:Click this key to clear all fault records, enter the date of the day into the OK screen.

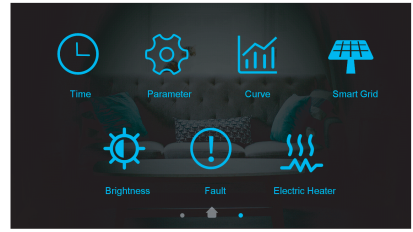


Operation and Use

2.6 Electric Heater

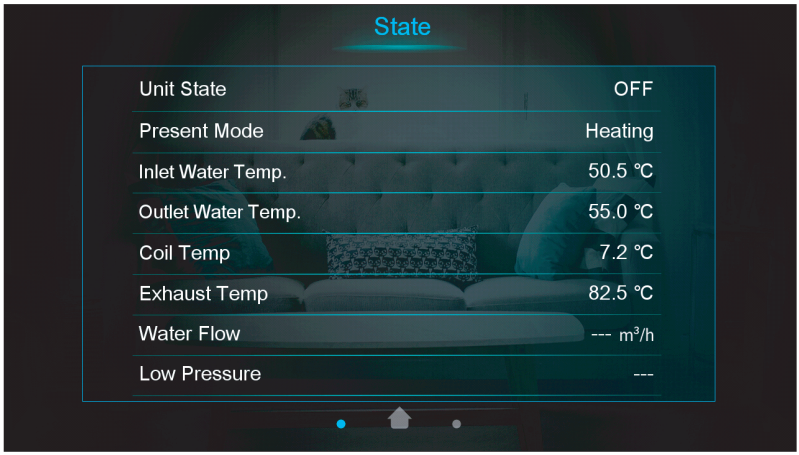
In the setup interface, t apping the button, One-click to turn electric heater on or off.
On is bright, off is grey.
Note: When electric heating is not enabled, the icon is hidden.





3.Status interface display

Swipe from left to right on the main screen to enter the main status screen. Swipe from right to left on the main status screen to return to the main screen interface. The main status screen displays the main status parameters.



Operation and Use

4.Parameter list and breakdown table

4.1 Electronic control fault table

Can be judged according to the remote controller failure code and troubleshooting.

Protect/fault	Fault display	Reason	Elimination methods
Inlet Water Temp. Sensor Fault	P01	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Outlet Water Temp. Sensor Fault	P02	The temp. sensor is broken or short circuit	Check or change the temp. sensor
DHW Tank Sensor Fault	P03	The temp. sensor is broken or short circuit	Check or change the temp. sensor
AT Sensor Fault	P04	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Suction Temp. Sensor Fault	P17	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Heating Returning Water Temp. Sensor Fault	P013	The temp. sensor is broken or short circuit	Check or change the temp. sensor
DHW Returning Water Temp. Sensor Fault	P018	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Heating Leaving Water Temp. Sensor Fault	P023	The temp. sensor is broken or short circuit	Check or change the temp. sensor
DHW Leaving Water Temp. Sensor Fault	P028	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Room Temp. Sensor Fault	P42	The temp. sensor is broken or short circuit	Check or change the temp. sensor
EVI Inlet Sensor Fault	P101	The temp. sensor is broken or short circuit	Check or change the temp. sensor
EVI Outlet Sensor Fault	P102	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Distributor Tube Temp. Sensor Fault	P152	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Coil Temp. Sensor Fault	P153	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Exhaust Temp. Sensor Fault	P181	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Overhigh Exhaust Temp.	P182	The compressor is overload	Check whether the system of the compressor running normally
Anti-freezing Temp. Sensor Fault	P191	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Mix Tube Outlet Water Temp. Sensor Fault	P02a	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Buffer Tank Temp. Sensor Fault	P03a	The sensor is broken or short circuit	Check or change the temp. sensor
Pressure Sensor Fault	PP11	The pressure sensor is broken or short circuit	Check or change the pressure sensor or pressure
High Pressure Sensor Fault	PP12	The pressure sensor is broken or short circuit	Check or change the pressure sensor or pressure
Low AT Protection	TP	The ambient temp. is low	Check the ambient temp value
No Cooling at Low AT Protection	TC	The temp. sensor is incorrectly--detected or the temp.sensor is lower--than the set value A30	Check or change the temp. sensor
Electric Heater Overheat Fault	E04	The electric-heaterprotection switch is broken	Check whether the electric heater runs at the temperature above 150℃ for a long time
Excess Temp. Diff. Between Inlet & outlet	E06	Water flow is not enough and low differential pressure	Check the pipe water flow and whether water system is jammed or not
Communication Fault	E08	Communication failure between wire controller and mainboard	Check the wire connection between remote wire controller and main board

Operation and Use

Protect/fault	Fault display	Reason	Elimination methods
Primary Anti-freezing Fault	E19	The ambient temp. is low	Check the ambient temp value
Secondary Anti-freezing Fault	E29	The ambient temp. is low	Check the ambient temp value
Insufficient Defrosting Water Flow Alarm	E030	The unit flow rate is less than the minimum flow value of the unit.	Check or change waterway systems to provide unit flow
Flow Switch Fault	E032	No water/little water in water system	Check the pipe water flow and water pump
Overhigh Outlet Water Temp.	E065	No water/little water in water system	Check the pipe water flow and water pump
Low Outlet Water Temp. Temp. Fault	E071	No water/little water in water system	Check the pipe water flow and water pump
Fan Motor 1 and PCB Communication Fault	E081	Speed control module and main board communication fail	Check the communication connection
Fan Motor 2 and PCB Communication Fault	E082	Speed control module and main board communication fail	Check the communication connection
Display and PCB Communication Fault	E084	The wire controller software is not match the mainboard software	Check the wire control software number and the mainboard software number
Communication Fault with Hydraulic Module	E08c	Hydraulic Module and mainboard communication fail	Check the communication connection
HP Fault	E11	The high-pressure switch is broken	Check the pressure switch and cold circuit
LP Fault	E12	The low-pressure switch is broken	Check the pressure switch and cold circuit
Anti-freezing Fault	E171	Use side water system temp. is low	1. Check the water temp. or change the temp. sensor 2. Check the pipe water flow and whether water system is jammed or not
Fan Motor1 Fault	F031	1. Motor is in locked-rotor state 2. The wire connection between DC-fan motor module and fan motor is in bad contact	1. Change a new fan motor 2. Check the wire connection and make sure they are in good contact
Fan Motor2 Fault	F032	1. Motor is in locked-rotor state 2. The wire connection between DC-fan motor module and fan motor is in bad contact	1. Change a new fan motor 2. Check the wire connection and make sure they are in good contact
Zone 1 Room Temp. Sensor Fault	P105	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Zone 2 Room Temp. Sensor Fault	P106	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Zone 2 Mixing Temp. Sensor Fault	P107	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Abnormal Adjustment of Mixing Valve	E122	1. Mixing Valve is incorrectly connected; 2. Mixing Valve is damaged;	1. Plug and unplug terminals; 1. Replace the Mixing Valve;
Zone 1 Thermostat Communication Fault	E08g	1. Thermostat not connected 2. Thermostat failure 3. Wrong parameter setting	1. Check the wiring connection between the thermostat and the unit 2. Replace the thermostat 3. Check the parameters
Zone 2 Thermostat Communication Fault	E08h	1. Thermostat not connected 2. Thermostat failure 3. Wrong parameter setting	1. Check the wiring connection between the thermostat and the unit 2. Replace the thermostat 3. Check the parameters
Low Water Flow Protection	E035	Water flow is too low	Increased water flow

Operation and Use

Frequency conversion board fault table:

Protect/fault	Fault display	Reason	Elimination methods
IPM Overcurrent Fault	F00	IPM Input current is large	Check and adjust the current measurement
Comp. Driver Fault	F01	Lack of phase, step or drive hardware damage	Check the measuring voltage check frequency conversion board hardware
Pre-Charge Failure	F03	The PFC circuit protection	Check the PFC switch tube short circuit or not
DC Power Bus Overvoltage Fault	F05	DC bus voltage>Dc bus Overload-voltage protection value	Check the input voltage measurement
DC Power Bus Undervoltage	F06	DC bus voltage<Dc bus Underload-voltage protection value	Check the input voltage measurement
AC Power Undervoltage Fault	F07	The input voltage is low, causing the input current is low	Check the input voltage measurement
AC Power Overcurrent Fault	F08	The input voltage is too high, more than outage protection current RMS	Check the input voltage measurement
Input Power Voltage Sampling Fault	F09	The input voltage sampling fault	Check andadjust the current measurement
DSP and PFC Communication Fault	F12	DSP and PFC connect fault	Check the communication connection
DSP and Comp. Driver Communication Fault	F11	DSP and Inverter board communication failure	Check the communication connection
Comp. Driver and PCB Communication Fault	F151	DSP and Mainboard communication failure	Check the communication connection
IPM Overheat Fault	F13	The IPM module is overheat	Check and adjust the current measurement
Comp. Overcurrent Fault	E051	The compressor is overload	Check whether the system of the compressor running normally
Input Power Lacking Phase Fault	F15	The input voltage lost phase	Check and measure the voltage adjustment
IPM Current Sampling Fault	F18	IPM sampling electricity is fault	Check and adjust the current measurement
Comp. Driver Temp. Sensor Fault	F17	The transducer is overheat	Check and adjust the current measurement
IGBT Power Device Overheat Alarm	F20	The IGBT is overheat	Check and adjust the current measurement
Comp. Weak Magnetic Alarm	F16	Compressor magnetic force is not enough	Check and adjust the current measurement
AC Input Current Frequency Decrease Alarm	F22	Input current is too large	Check and adjust the current measurement
EEPROM Alarm	F23	MCU error	Check whether the chip is damaged Replace the chip
Destroyed EEPROM & No Activated Fault	F24	MCU error	Check whether the chip is damaged Replace the chip
Input Power Current Sampling Fault	F25	The V15V is overload or undervoltage	Check the V15V input voltage in range 13.5V~16.5V or not
IGBT Overheat Fault	F26	The IGBT is overheat	Check and adjust the current measurement
Comp. Current Frequency Decrease Alarm	F33	The compressor current frequency reduction	Check and adjust the current measurement
AC Power Overvoltage Fault	F10	Input voltage>Input Overload--voltage protection value	Check whether the input voltage is higher than 265V
Compressor Lacking Phase Fault	F14	The compressor lost phase	Check whether compressor cables are connected properly and reliably
EEPROM Fault	F29	Failed to read the memory chip	Check the frequency conversion board
Overspeed Fault	F21	The compressor is running abnormally	Check whether the compressor cable is nor--mal and whether the compressor is blocked

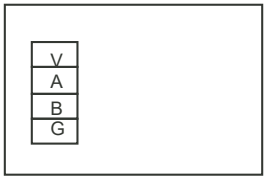
Protect/fault	Fault display	Reason	Elimination methods
Driver (Fan)Temp.Sensor Fault	F120	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Driver (Fan)IPM Overheat Fault	F106	The fan IPM drive plate has poor heat dissipation	Check heat dissipation conditions
Driver (Fan) External Overcurrent Fault	F105	The fan IPM hardware running current is too large	Check whether the fan is blocked
Driver (Fan) Power Lacking Phase Fault	F101	The fan lost phase	Check whether fan cables are connected properly and reliably
Driver (Fan) Current Sampling Fault	F112	Fan sampling electricity is fault	Check whether the fan drive plate is abnormal
Driver (Fan) Start Fault	F102	The fan fails to start	Check whether the fan is blocked
Driver (Fan) Internal Overcurrent Fault	F113	The fan software running current is too large	Check whether the fan is blocked
Driver (Fan) overspeed Fault	F109	The fan speed is too high	Check whether the fan drive board is abnormal

4.2 Parameter list

Meaning	Default	Remarks
Cooling target temperature set point	12℃	Adjustable
Heating the target temperature set point	45℃	Adjustable
Hot water target temperature set point	55℃	Adjustable

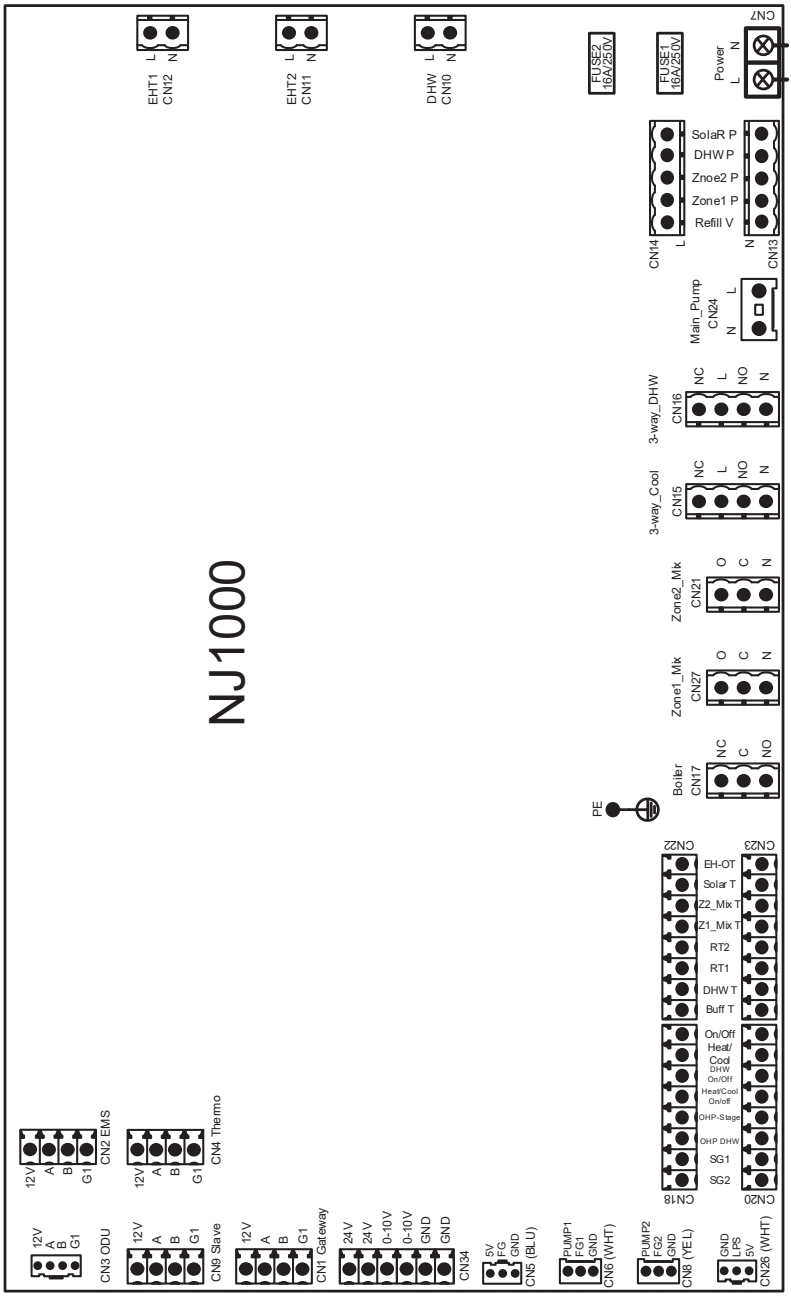
5. Interface diagram

5.1 Wire control interface diagram and definition



Sign	Meaning
V	12V（power +)
A	485A
B	485B
G	GND(power-)

5.2 Controller interface diagram and definition



Appendix

Appendix 1、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 agentor 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 be 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℃.
13. Caution: Single wall heat exchanger, not suitable for potable water connection.

Appendix 2、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	