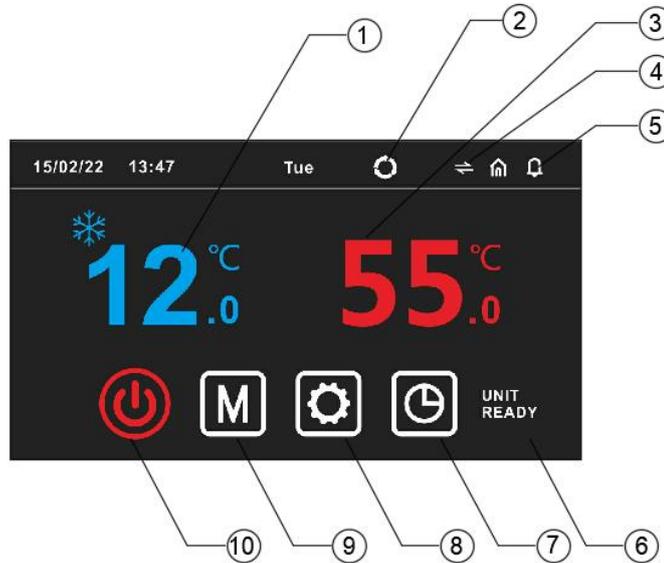


Function description of full DC frequency converter

❖ 1. Main interface (simple graphic)



① Heating / Cooling temperature display :



Displays the current cooling real-time temperature in blue fonts.



Displays the current

real-time heating temperature in orange font.

In the upper left corner of the temperature display, when there is  or  icon, it indicates that the unit is running the cooling or heating mode.

② Displays the fan mode of the current unit:



indicates day mode;



indicates night mode;



indicates economic mode;



indicates test mode.

③ Hot water temperature display:



Displays the current hot water temperature in red font. In the upper left corner of the temperature

display, when there is  icon, it indicates that the unit is running the hot water mode.

④ Simple graph and dynamic graph switching: Click the  icon to switch between simple graph and dynamic graph.

⑤ Click  to check the current fault alarms and historical fault alarms.

⑥ The display of heat pump status on the right below corner : The running status of heat pump is displayed here

⑦ Timing setting: Click  to enter into timing setting ; in red when there is a timing, , in white when there is no timing. .

⑧ System parameter setting: Click this icon to enter the setting interface.

⑨ Mode setting: Click this icon to enter the mode setting interface.

⑩ Power on and off: Click the icon to operate the power on and off.  shows red when it is turned on, and  shows white when it is turned off.

❖ 2. Dynamic graph

Hot water tank temperature

② Hot water setting temperature. Click here to enter the temperature setting

③ Current working mode,  is Cooling mode,  is heating mode

④ Current cooling/heating temperature. When the current mode is cooling mode, display the current cooling temperature. When the current temperature is in heating mode, the current heating temperature is displayed.

⑤ Cooling/heating setting temperature, click here to enter the temperature setting

⑥ Click the unit icon to set the power on/off.

❖ 3. Turn ON/OFF

➤ Click  to set the unit on/off. If the icon is in white color , it means that the current unit is off.

And if icon is in red color , it means that current unit is on.

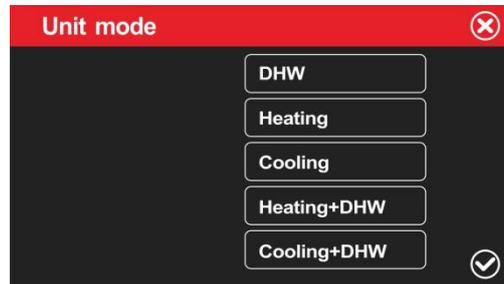


❖ 4. Mode switch

➤ Click  to set the unit mode. After selecting the required mode, click  to confirm, and click

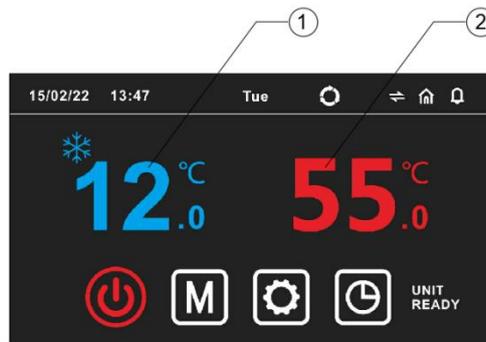


to Cancel and exit the page.

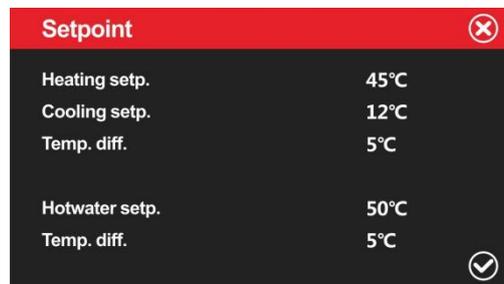


➤ **5. Temperature setting**

➤ Click the ①② position of the real-time temperature to enter the temperature setting interface.



➤ **Set the temperature and hysteresis of each mode in the temperature setting interface.**



Cooling setp. : Cooling stop temperature setting

Heating setp. : Heating stop temperature setting

Temp. Diff. : when running heating/cooling mode, The difference between the unit's shutdown temperature and the set temperature after reaching the setting temperature.

Hotwater setp. : Hot water tank temperature stop temperature setting

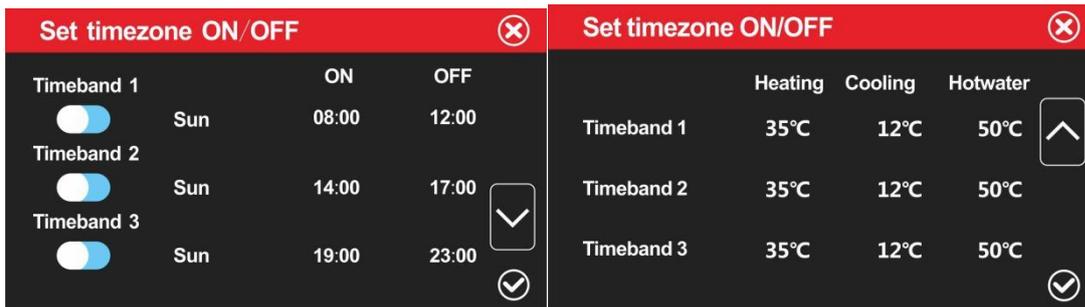
Temp. Diff. : when running hot water mode, The difference between the unit's shutdown temperature and the set temperature after reaching the setting temperature.

❖ **6.Timer setting**



➤ Press the  button to pop up the timing control interface, and set the timing in the timing control

interface.



Timing period is not enabled/enabled: the switch is left when not enabled , and the switch is right when enabled 

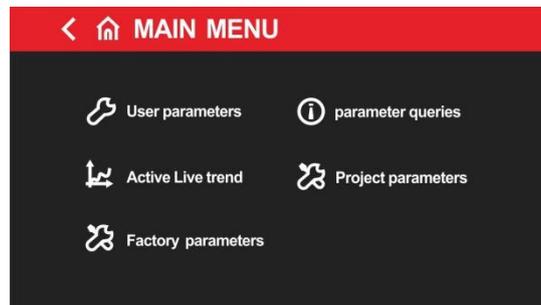
ON: Set for the timing power-on time.

OFF: Set for timing off time.

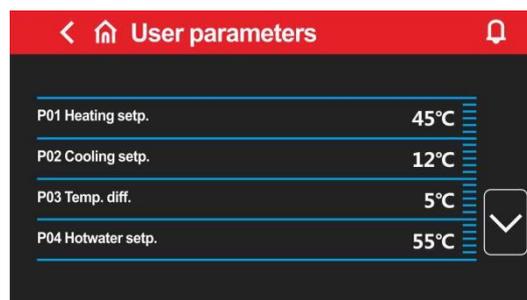
Timeband1/2/3, means that there are three timings that can be set, and each timing can set different hot water, heating and cooling temperatures.

❖ 7.Parameters query and setting

➤ Press  to Main Menu as below :



① User Parameters : Press  **User parameters** for user parameter setting

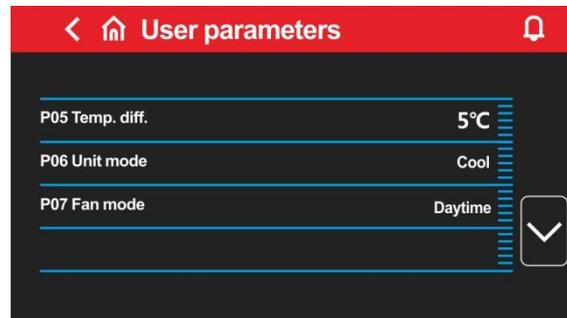


P01 Heating setp. : Heating shutdown temperature

P02 Cooling setp. : Cooling shutdown temperature

P03 Temp. Diff. : The difference between the unit's shutdown temperature and the setting temperature after reaching the setting temperature.

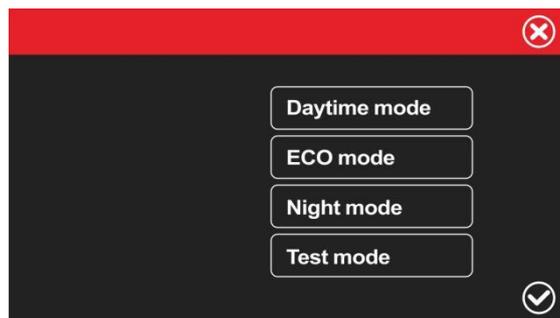
P04 Hotwater setp. : Hotwater heating shutdown temperature.



P05 Temp. Diff. : When the machine is operating hot water mode, the difference between the unit's shutdown temperature and the set temperature after reaching the setting temperature.

P06 Unit mode: Modes choice of heat pumps.

P07 Fan mode: Modes choice of fans. Day Mode, Economic Mode, Testing Mode and Night Mode are optional.



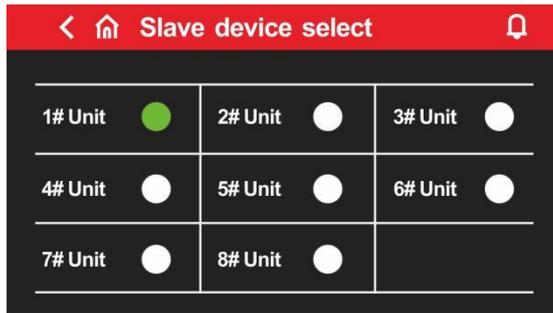
Daytime, day mode, the compressor outputs according to the maximum capacity; Pressure, test mode, the heat pump outputs according to the test capacity.

ECO mode - economic mode, the heat pump can automatically output capacity as required according to the ambient temperature;

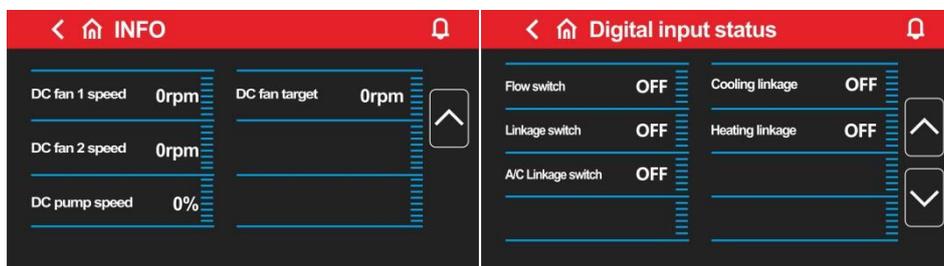
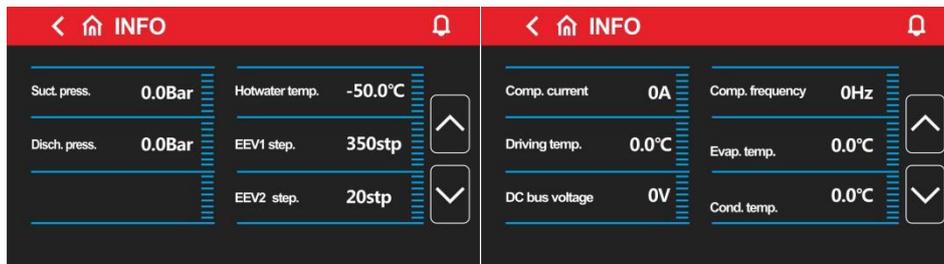
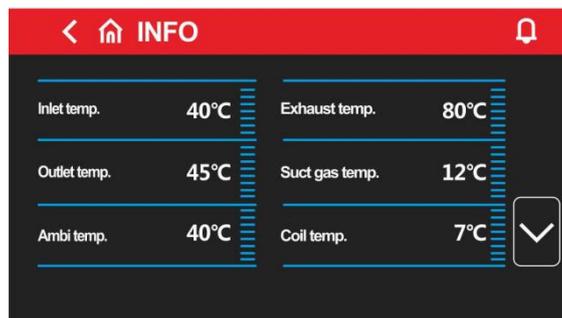
Night mode - night mode, the heat pump has low output capacity from 8 pm to 8 am, and high output at other times;

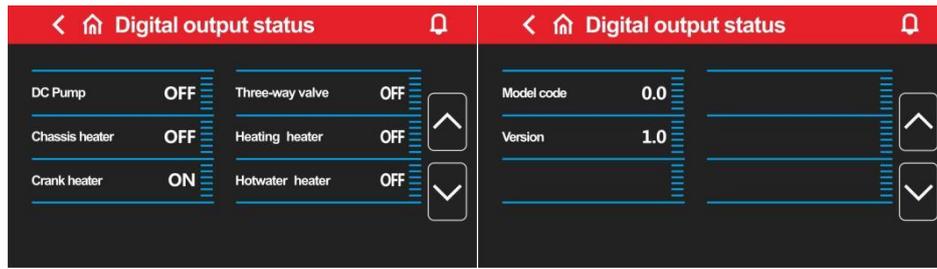
Test mode - 工厂调试性能的模式。

②Parameter query: Click  you can check the operating parameters.

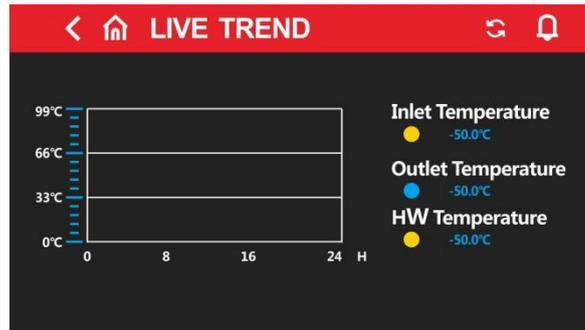


When a single unit is running, the 1# Unit icon is to the right  , click 1# unit to query the operating parameters of the 1# unit; if there is a linkage network, you can click 2#, 3#...8# to query the operating parameters of the corresponding unit, and the software version number. If the unit icon is displayed  , the unit is not connected.

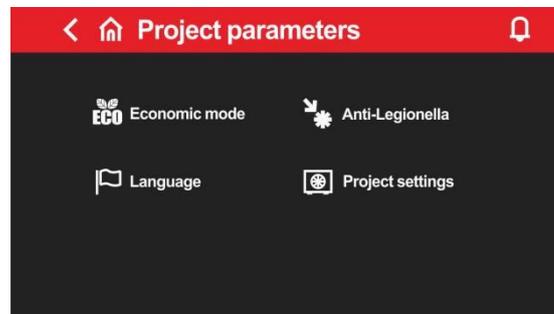




③ Press this  **Active Live trend** can check the curves of heating temperature, outlet water temperature, and hot water tank temperature changing with running time

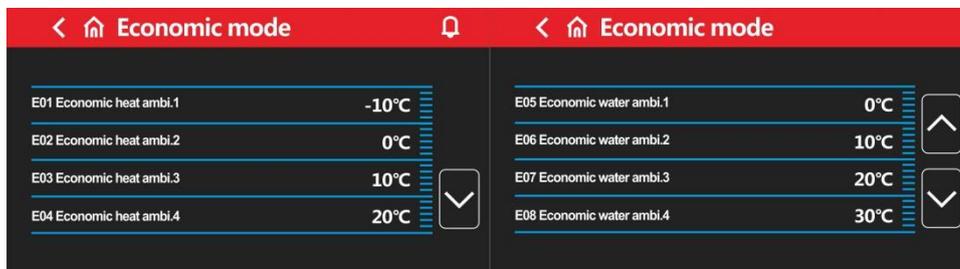


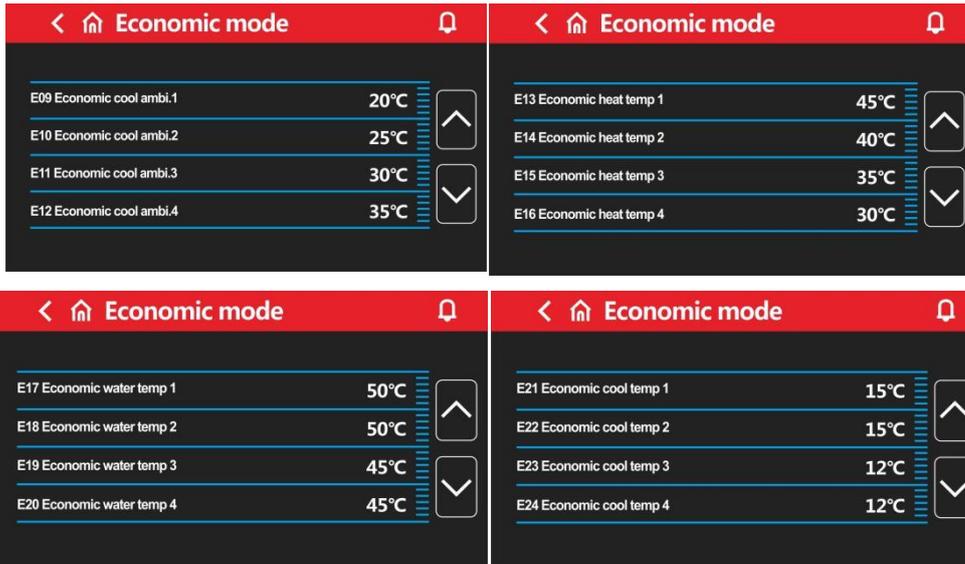
④ Engineering parameters: click here **Project parameters** and enter the password to set the engineering parameter. This password is only provide for the construction contractor, if needed, please contact our engineers, it can be operated after receiving our authorization.



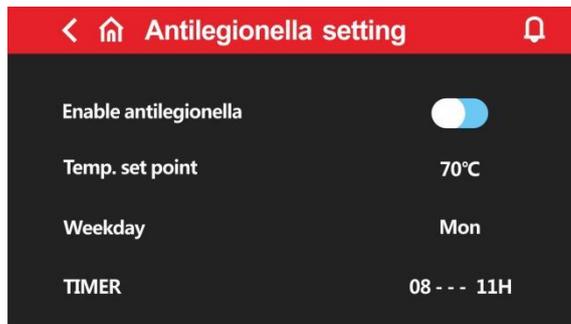
Click  **Economic mode**

can enter the setting of relevant parameter on ECO mode





Click  **Anti-Legionella** can enter Relevant parameter settings for high temperature sterilization mode.



Enable antilegionella: Disable or enable sterilization function, right is enable ;

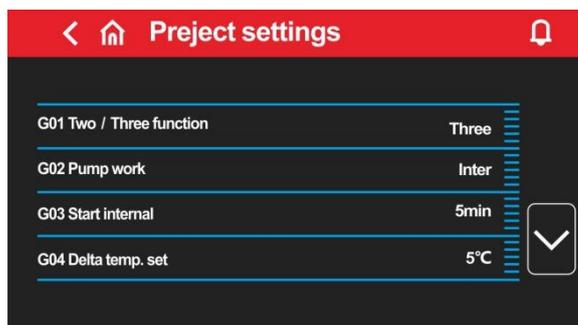
Temp. Setpoint: Sterilization temperature setting;

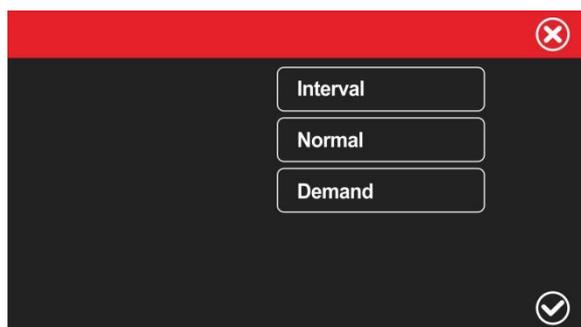
Weekday: Sterilization work days, once a week;

TIMER: Sterilization time point, once a week;

Press  **Language** to enter the language selection interface;

Press  **Project settings** to access the relevant settings of project parameters



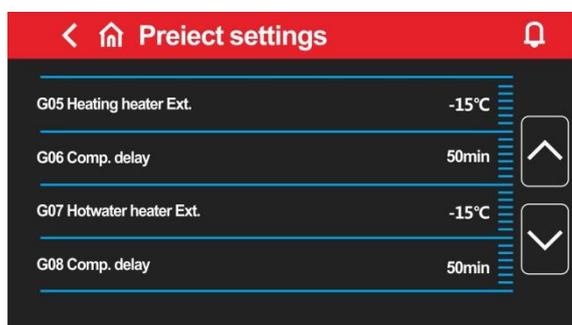


Two/Three function :Click "two" and "three" to select whether the current unit is double supply or triple supply;

DC Pump work: The working mode of the inverter water pump can be selected as demand, always on, intermittently on;

Start internal: The interval time for the start of the inverter water pump in intermittent mode;

Delta temp. set: The inverter water pump controls the current temperature difference between the incoming and outgoing water;

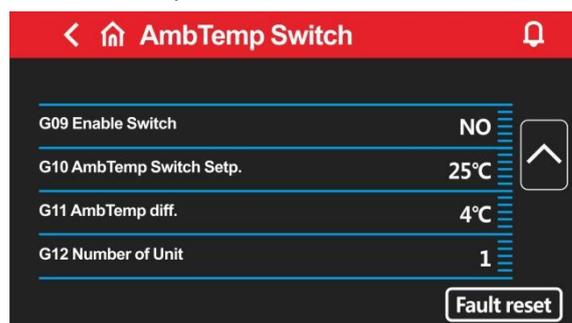


Heating heater Ext.: Start-up ambient temperature of heating electric heater;

Comp. Delay: heating electric heater start delay;

Hotwater heater Ext.: Start-up ambient temperature of hot water electric heater;

Comp. Delay: Hot water electric heater start delay;



Enable Switch:

(With this function , the heat pump can do heating /cooling automatically based on the ambient temperature setting)

Enable Switch -No : turn off the automatic cooling/heating mode which is based on the ambient temperature; Original setting is Disable before delivery .

Enable Switch-Yes : turn on the automatic cooling/heating mode which is based on the ambient temperature.

AmbTemp Switch setp.: Switch the ambient temperature setting point of the cooling/heating mode;

when the ambient temperature is lower than the set point-hysteresis, the unit will automatically switch to heating or hot water + heating;

when the ambient temperature is higher than the set point +In case of hysteresis, the unit will automatically switch to cooling or hot water+refrigeration;

when the ambient temperature is higher than the set point-hysteresis and lower than the set point + hysteresis maintains the current mode

Amb Temp.diff: The difference between the ambient temperature switching mode and the set temperature.

Number of Unit:

When the units are networked and the operating parameters of multiple units need to be queried, select the corresponding number of units

Fault reset:

Reset current fault

⑤ Factory parameters : Press here  and enter the password to query and set the factory parameters, this password needs to contact the technical engineer, and the operation can only be done after authorization.

❖ 8. Current/historical alarm query

-  The flashing icon in the upper right corner indicates that there is an alarm. Press this icon to pop up the current alarm interface.

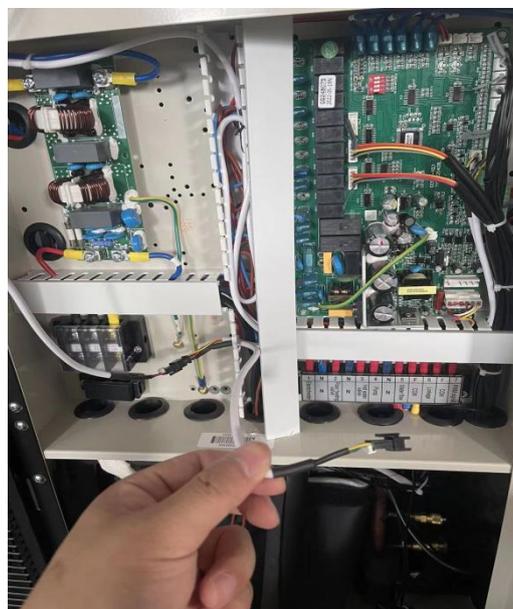
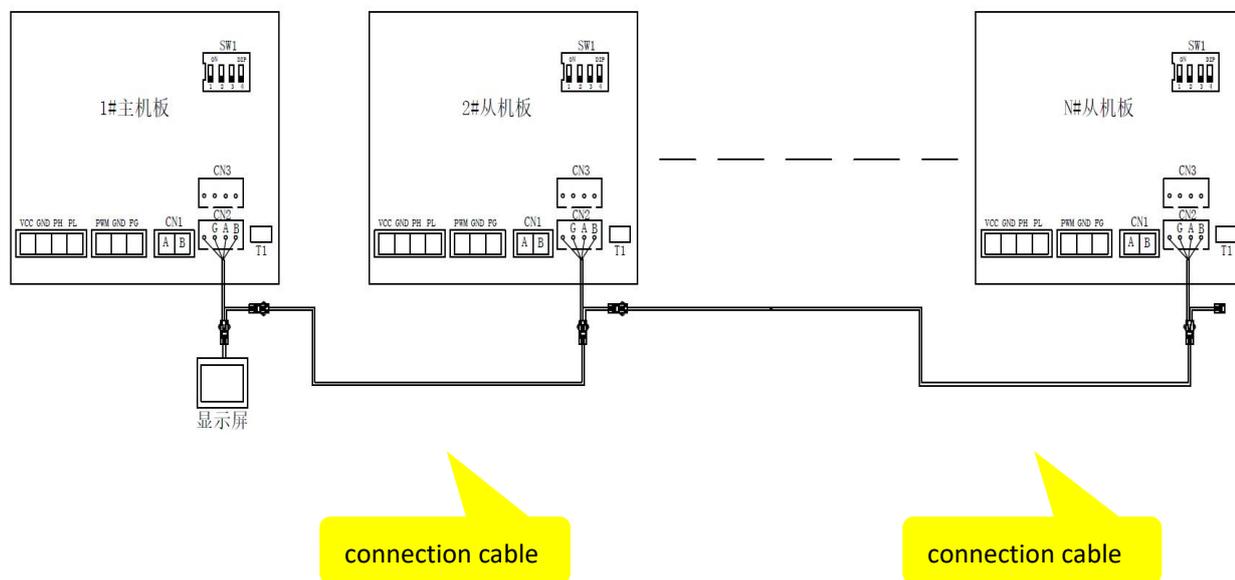


Time	Description
15/02/22 14:01	#01 E67 Low press sensor failure
15/02/22 14:01	#01 E68 High press sensor failure
15/02/22 14:01	#01 E42 Cool coil TP failure
15/02/22 14:01	#01 E29 Return TP failure
15/02/22 14:01	#01 E63 Eco outlet TP failure
15/02/22 14:01	#01 E62 Eco inlet TP failure

- Press  to show a dialog box for whether to delete historical alarms, press "YES" to delete historical alarms, and press "NO" to cancel the operation.
- Press  to switch between current alarm and historical alarm.
- Press  to return to main menu.

9.Master-Slave Connection:

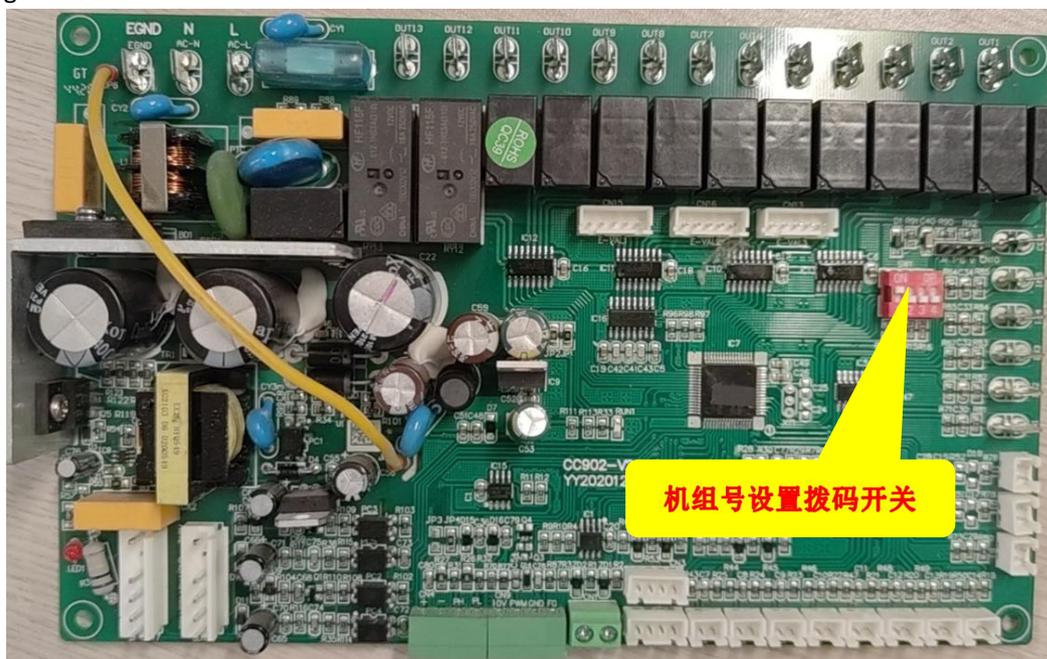
9.1 Connect each module with the corresponding quick connect cable as shown in the figure below.





9.2 Each unit needs to set the unit number, the master unit is set to 1, and the other units are set to 2, 3, 4.....n in turn. If two or more units have the same unit number, they cannot communicate normally, please restart set up.

9.3 The unit number is set using the 2-4 bits of the DIP switch SW1 on the main board, the location is as shown in the figure below



9.4 The unit number setting as follows

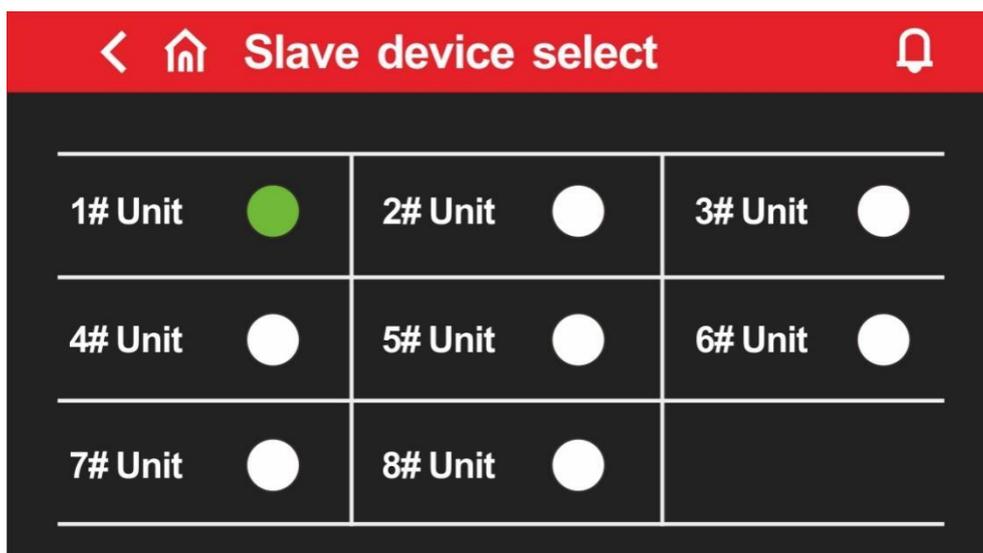
	SW1- 2	SW1- 3	SW1- 4
#1	OFF	OFF	OFF
#2	OFF	OFF	ON
#3	OFF	ON	OFF
#4	OFF	ON	ON
#5	ON	OFF	OFF
#6	ON	OFF	ON
#7	ON	ON	OFF
#8	ON	ON	ON

For example, the settings of 1# and 2# are as follows:



9.5 Open the screen as shown in the picture below, set the "Slave device select" parameter to the number of units connected online, if there are 4 units, set it to 4, if there are 8 units, set it to 8, the maximum number is 8, and the factory default setting is 1.

9.6 After all the above operations are completed, the unit can be started up and commissioned. If all units are connected normally, the circle behind the unit will be green, as shown in the picture below. Click each unit number to view the operating parameters of each unit.



10. WIFI module connection

1、 Accessories required for module connection

Signal line



Power Supply



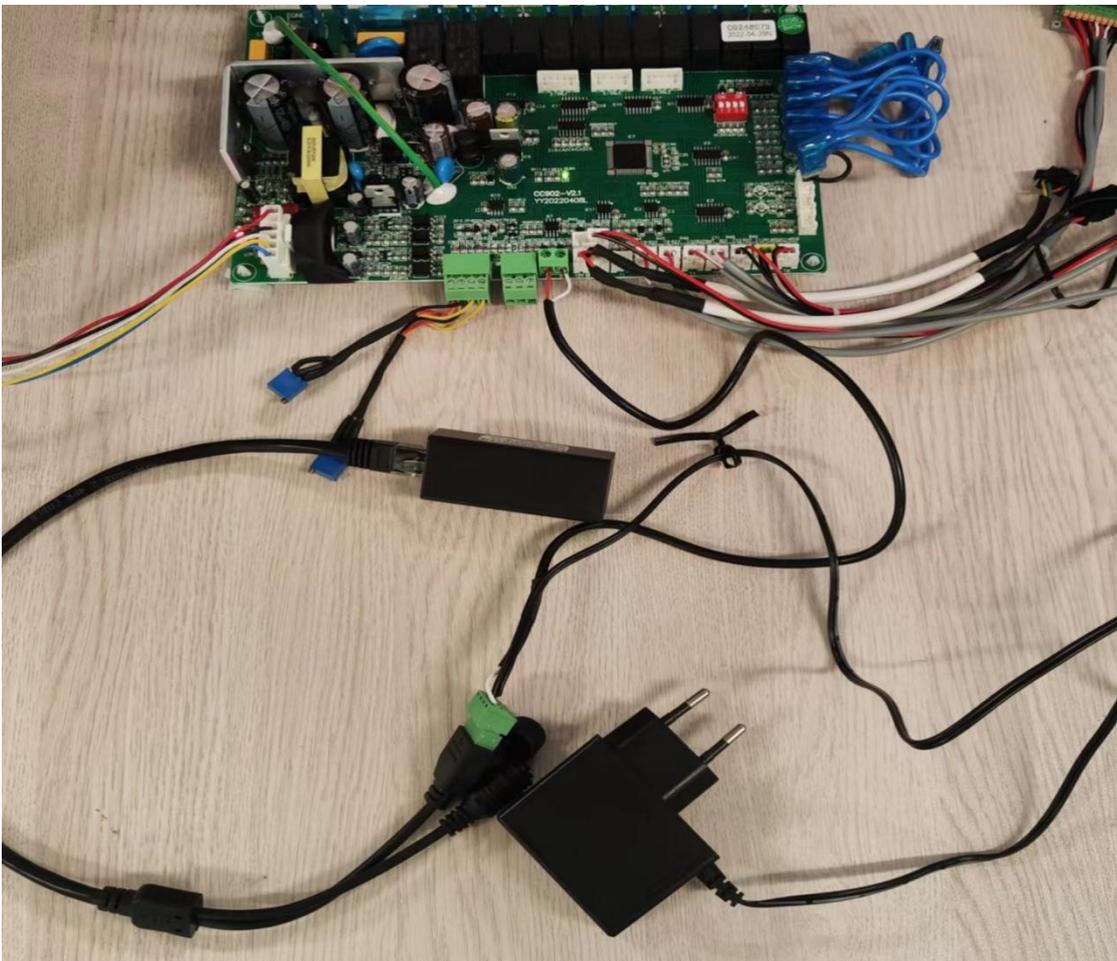
Cable



WIFI module

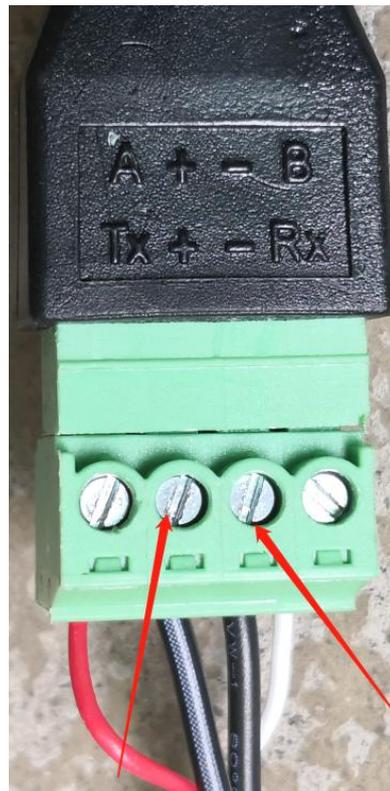
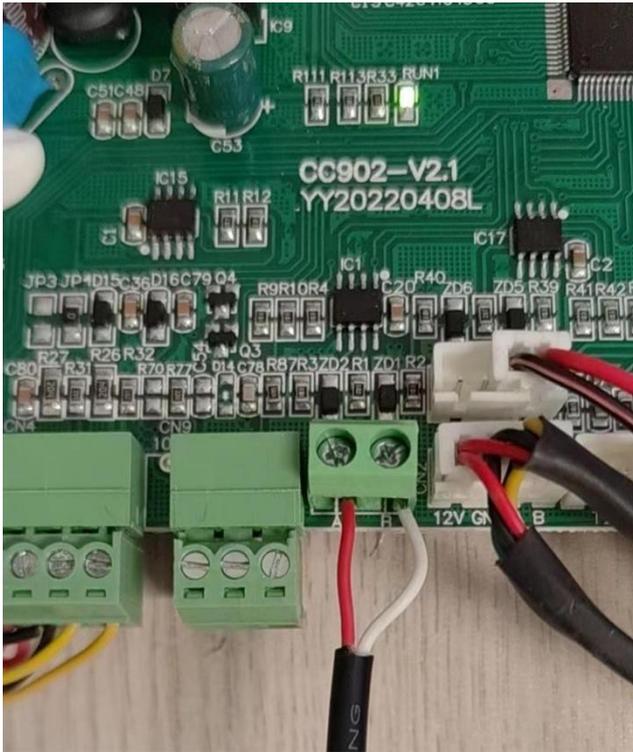


Connection diagram



Noted: When connecting the signal cable, pay attention to the position of the red line and the white line. The red end

is connected to the A of the connection line and the other end is connected to the + of the main control board; the white end is connected to the connection line B and the other end is connected to the - of the main control board. If the connection is reversed, communication is not possible.



The power plug is connected to a 230V power supply. The black and white line of the power cord is connected to the + of the connection line, and the black line is connected to the - of the connection line. If the connection is reversed, the module cannot supply power.

11.APP registration:

1. If it is the first time to use, the WIFI module needs to be equipped with a network to use it. The network configuration steps are as follows:

Step 1: Register

After downloading the APP, enter the APP landing page. Click the new user to register with the mobile phone number or email. After successful registration, enter the user name and password and click to log in.

(To download the APP, you need to scan the QR code below, and then open it in the browser to download)



The image shows two side-by-side screenshots of a mobile application interface. The left screenshot is the login screen, titled "Heat Pump" in blue. It features a "Login Account" button, a "Password" input field with a toggle for visibility, and a "Log in" button at the bottom. The right screenshot is the registration screen, titled "Email User Register" with a close "X" icon at the top. It includes an "Email" input field, a "Please enter the password (min" input field, and a "Please confirm the password a" input field. At the bottom, there is a "registered" button. Below the screenshots, there are two lines of text: "Email User Register | Any problems?" and "Click login and agree(User agreement and privacy terms)" repeated twice.

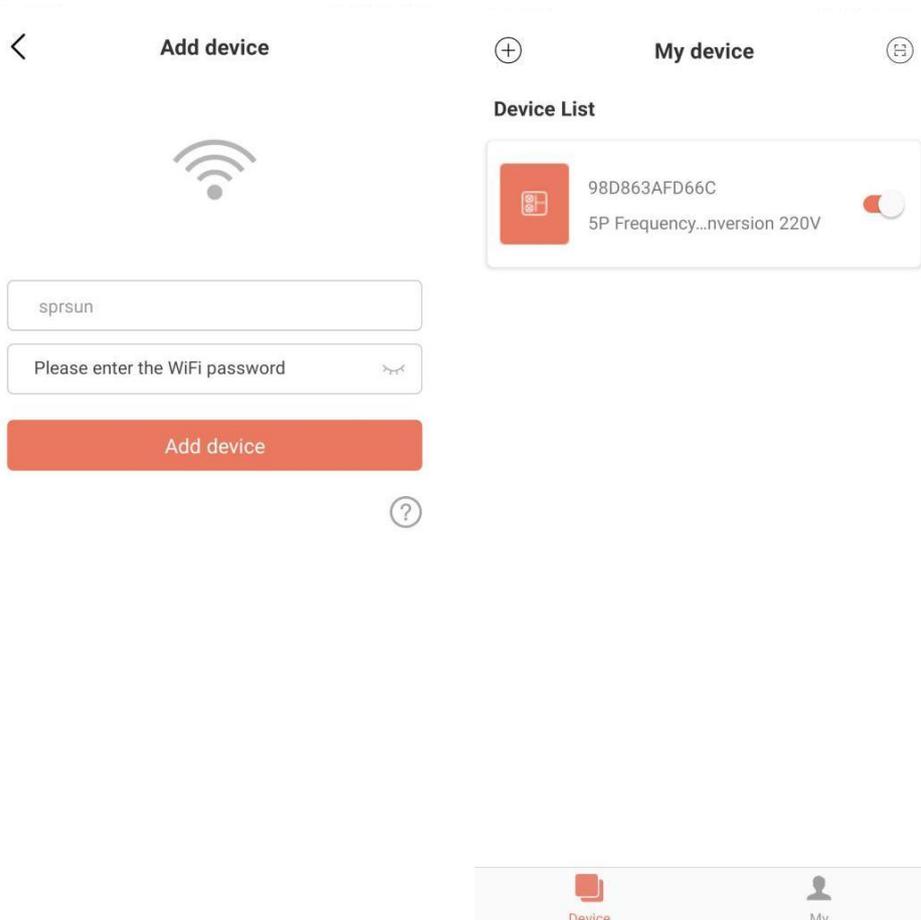
Step 2: Add devices on the LAN

Modules that have not been connected to the network require the LAN to add devices. After entering my device,

click the icon  in the upper left corner to enter the add device page, the above box will display the name of the WIFI currently connected to the phone, enter the WIFI password, first gently press the raised button of the connection line, and then click add device, Until it shows that the connection is successful, then click the arrow, you can see the currently connected APP is displayed in the list.



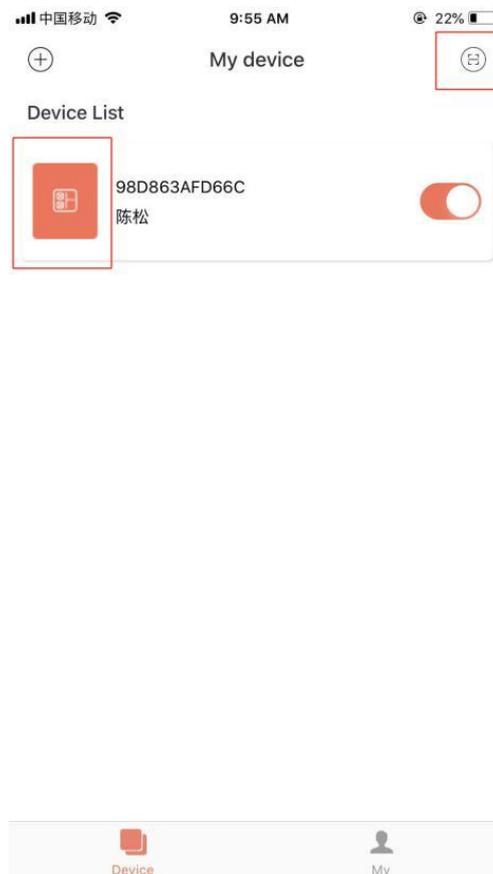
Click the button, the green light of the module flashes quickly, and it enters the distribution network mode.



3. Scan the code to add device: For modules that have been bound to APP, you can scan code to add device. If the module has been connected to the network, the module will automatically connect to the network



after power-on. And for module has been bound, you can click the icon on the far left of the APP device list to display the QR code of the module. If other people want to bind the module, just click the icon directly and scan the QR code to bind



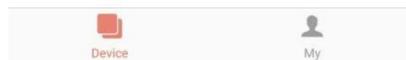
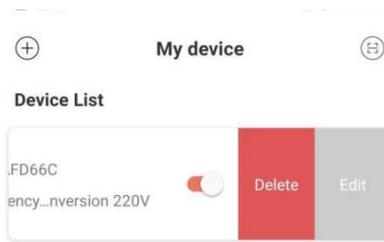
Explanation

1) The device list displays the device associated with this user, and shows the device's online and offline status.

When the device is offline, the device icon is gray, and the device is online color.

2) The switch on the right side of each device row indicates whether the device is currently turned on.

3) The user can disassociate with the device or modify the device name. When swiping to the left, the delete and edit buttons appear on the right side of the device row. Click Edit to modify the device name, and click Delete to disassociate the device, as shown below:



4) When adding a device to the local area network, the App will connect the device to the local area network through the local area network WiFi connected to the mobile phone. If you want to connect the device to the specified WiFi, please select the WiFi in the wireless LAN set in the mobile phone before returning to this page.

5) The App must follow the privacy and safe use of mobile phones, so before entering this page to add a device,

the App will ask the user if they agree to access the user's location. If it is not allowed, the App will not be able to complete the LAN addition of the device.

6)

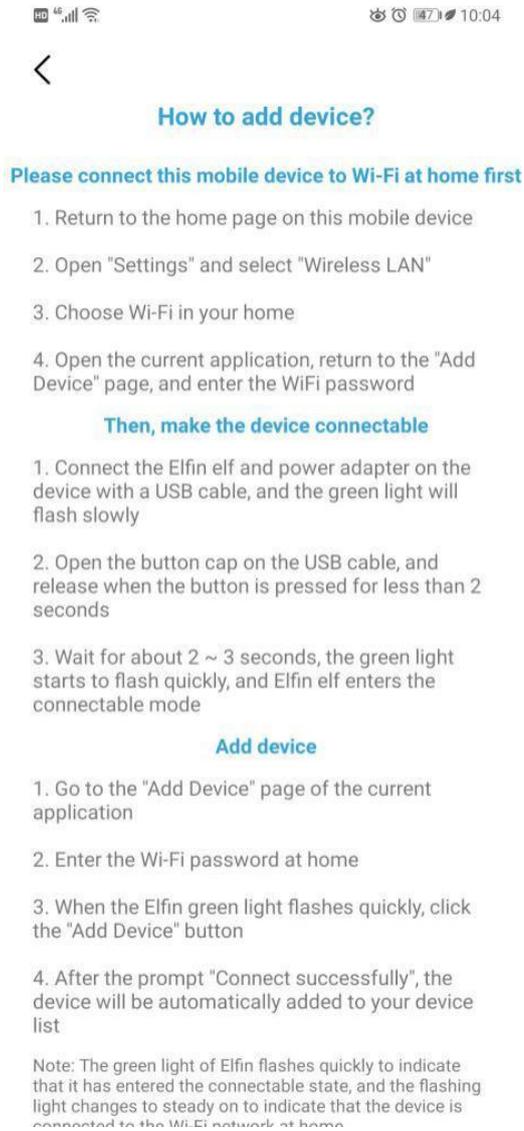
6) The WiFi icon on the page shows the name of the local area network WiFi connected to the mobile phone. In the input box under the WiFi name, the user needs to fill in the WiFi connection password. The user can click on the eye icon to confirm that the password is filled in correctly.

7) Short press the module's network distribution case, and confirm whether the device has entered the connectable state. The device's connection indicator flashes at a high speed to indicate that it has entered the network ready state), and then click the add device button, and the App will automatically add and Bind the device. Click the question mark icon in the lower right corner of the password input box, you can see detailed help instructions

8) The process of adding a device includes the connection and adding process of the device. The connection process refers to the device connecting to the local area network, and the addition process refers to adding the device to the user's device list. After the device is successfully added, the user can use the device. The process information for adding a device is as follows:

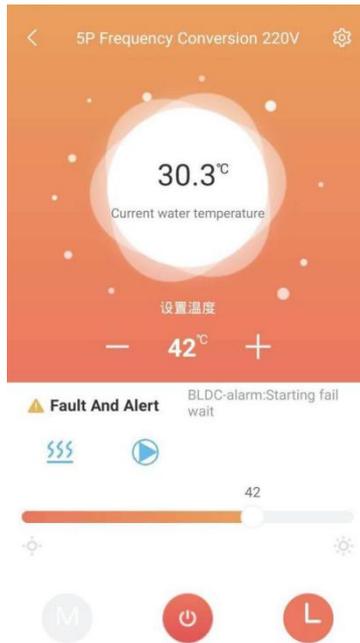
- Start connecting devices.

- The device connection succeeds or fails.
- Start adding devices.
- The device is successfully added or failed.



Use of APP

1.1. Device Homepage



Explanation

- 1) Click a device in the device list to enter this page.
- 2) The background color of the bubble indicates the current operating state of the device:
 - a .Gray indicates that the device is in the shutdown state, at this time, you can change the working mode, set the mode temperature, set the timing, or you can press the key to switch on and off.
 - b . Multicolor indicates that the device is turned on, each working mode corresponds to a different color, orange indicates heating mode, red indicates hot water mode, and blue indicates cooling mode。
 - c . When the device is in the power-on state, you can set the mode temperature, set the timer, press the key to switch on and off, but you can not set the working mode (that is, the working mode can only be set when the device is off)
- 3) The bubble shows the current temperature of the device.
- 4) Below the bubble is the set temperature of the device in the current operating mode.
- 5) Set the temperature is about **+**, **-** button, Each click adds or subtracts the current setting value to the device.
- 6) Below the setting temperature is the Fault And Alert. When the device starts to alarm, the specific Alert reason will be displayed next to the yellow warning icon. In case of device Fault And Alert, the Fault And Alert content will be displayed on the right side of this area. Click this area to jump to the detailed Error Information.

Search Opration Name			
User Mask	Query Parm	TimeEdit	Error Info
AlrmResByBms	NONE		
Too many mem writings	OK		
Retain mem write error	OK		
Inlet probe error	OK		
Outlet probe error	OK		
Ambient probe error	OK		
Condenser coil temp	OK		
Water flow switch	OK		
Phase sequ.prot.alarm	OK		
Unit work hour warning	OK		
Pump work hour warning	OK		
Comp.work hour warning	OK		
Cond.fan work hourWarn	OK		
Low superheat - Vlv.A	OK		

7) Immediately below the fault alarm area, display the current working mode, heat pump, fan and compressor in

sequence (corresponding blue icon when it is on, but not displayed when it is off).

8) The slide bar below is used to set the temperature in the current mode.

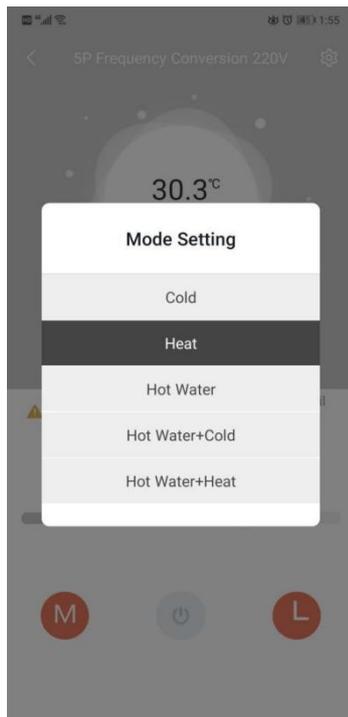
Slide the slider left and right to set the allowable temperature in the current working mode.

9) The bottom three buttons are in order from left to right: working mode, device switching machine and device

timing. When the current background is color, the working mode button cannot be clicked.

a.

Click Work Mode to see the mode selection menu, and you can set the working mode of the device (black is the current setting mode of the device). The diagram as below:

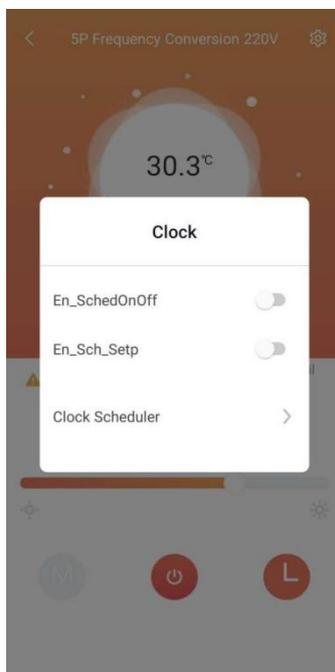


b.

Click "on/off" and set "on/off" command to the device.

c.

Click the device Timer to see the Timer Settings menu. Click the Clock Schedule to set the device Timer function. The diagram below:



Detailed information of the units

Note :1) Click this Main Interface menu on the upper right corner to enter this setting page.

2)Users with manufacturer rights can check all the functions , including :

User mask, defrost , other parm, factory settings, manual control , query parm, time edit, error info

The image shows two side-by-side screenshots of a mobile application interface. Both screens have a red header with a search bar labeled 'Search Opration Name'. The left screen has a navigation bar with 'User Mask', 'Defrost', 'Other Parm', 'User Mode', and 'M'. The right screen has a navigation bar with 'User Mask', 'Query Parm', 'TimeEdit', and 'Error Info'. Both screens display a table of parameters with their values and a wrench icon for editing.

Parameter	Value	Action
CoolHeat_Mode	Cold	Wrench icon
HeatSetP	14.00	Wrench icon
CoolSetP	27.00	Wrench icon
W_TankSetP	34.00	Wrench icon
Hotwater_start_diff	5.00	Wrench icon
Hotwater_stop_diff	27.00	Wrench icon
Temp_Diff	5.00	Wrench icon
Stop_Temp_Diff	2.00	Wrench icon
Kp	5.00	Wrench icon
Ti	200	Wrench icon
Td	0	Wrench icon
PmpMode	Setting	Wrench icon
FanMode_Sel	Day	Wrench icon
En_AuxHeat	N	Wrench icon

3) User with user rights , only can check part of the functions : User mask, query parm, TimeEdit , alarms