Worldwide Air Conditioner Partner

Operation Manual

R290 Tri-thermal Ultra Mono Series



tcl-tekniikka.fi

This manual gives detailed description of the precautions that should be brought to your attention during operation.
In order to ensure correct service of the wired controller please read this manual carefully before using the unit.
For convenience of future reference, keep this manual after reading it.

CONTENTS

1 Introduction.....01

1.1 Scope Of Application.....01
1.2 First Setup.....01
1.3 Main Page Display.....04
1.4 Icons.....05

2 Settings.....08

2.1 Climate Curve.....08
2.2 DHW Settings.....10
2.3 Function Settings.....11
2.4 Schedule Settings.....15
2.5 EMS.....16
2.6 AHS.....17
2.7 System Parameter.....19
2.8 Wired Controller Parameters.....20

3 Error query.....22

4 Version query.....23

5 Other.....23

6 Appendixes.....25

6.1 Climate Curve.....25
6.2 Error List.....27

7 Installation Instruction.....29

7.1 Material List.....29
7.2 Installation Steps.....29
7.3 Communication Cable Connection.....30

1 Introduction

1.1 Scope Of Application

This is a wired controller for CCHD (Combined Cooling, Heating and DHW) supply, applicable to the models belonging to the CCHD Supply Project.

1.2 First Setup

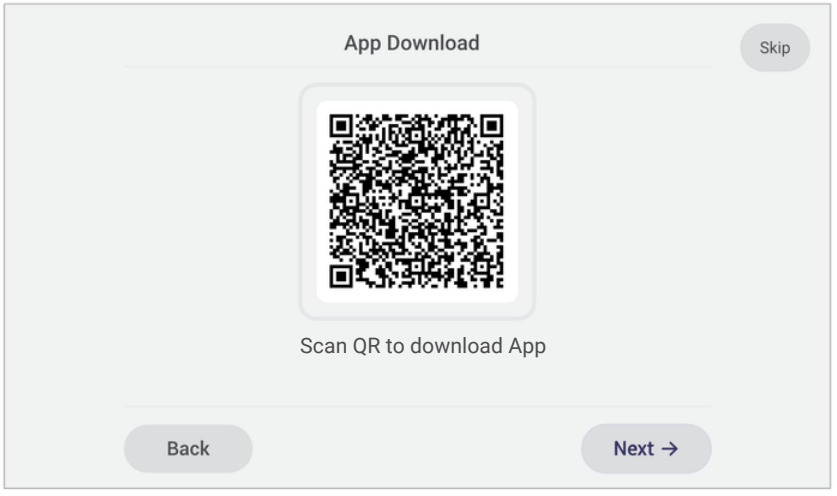
1.2.1 Language Selection

First, the screen will display a language selection interface. Please choose your preferred language from the list and click "Next" to proceed to the next step.

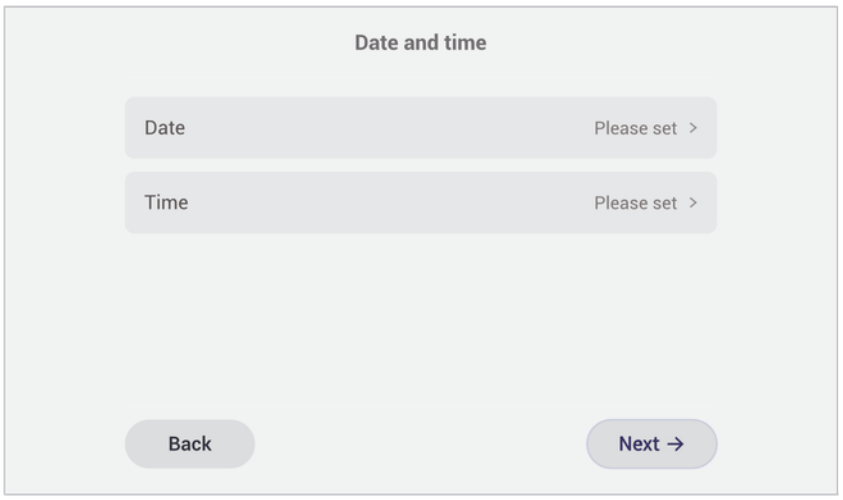


1.2.2 App Download

Next, the interface will display a QR code for downloading the application (App) along. Please use your mobile device to scan the QR code to download the official control App. Then, select your home Wi-Fi network from the list and connect to it. Once completed, click "Next" to continue.



1.2.3 Date And Time Settings



Set the Date:

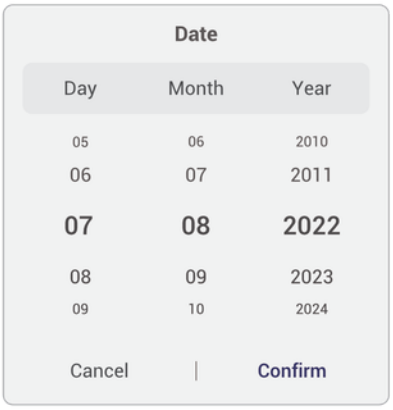
Use the scrollable lists or numeric input to select the correct day, month, and year. Ensure the date is accurate.

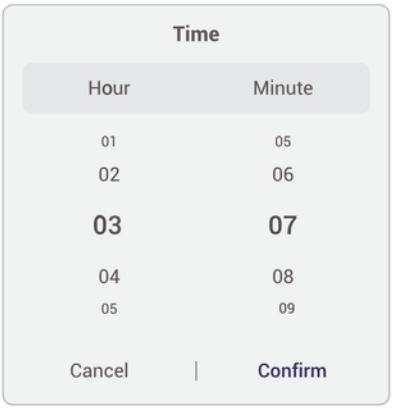
Set the Time:

Use the scrollable lists or numeric input to select the correct hour, minute.

Confirm Settings:

Review the date and time settings to ensure they are correct. Once you have confirmed that the settings are accurate, click "Next" to proceed to the next step.





1.2.4 DHW Configuration

Please select whether a Domestic Hot Water (DHW) tank is configured based on the actual hardware installation. If you select "Yes", If you choose 'Yes', please confirm if the Tank booster heater (TBH) and solar heater are installed. Use the "Back" button to return to the previous step, or use the "Next" button to save the current selection and proceed to the next configuration stage.



1.2.5 Temperature Zone Configuration

Now enter the temperature zone selection and detailed settings interface. Here, you need to specify or create the required temperature zones and define the following parameters for each zone:

Cooling Terminal Device:

Select the type of device used for cooling in this zone (e.g., Fan coil unit, Floor cooling system, etc.).

Heating Terminal Device:

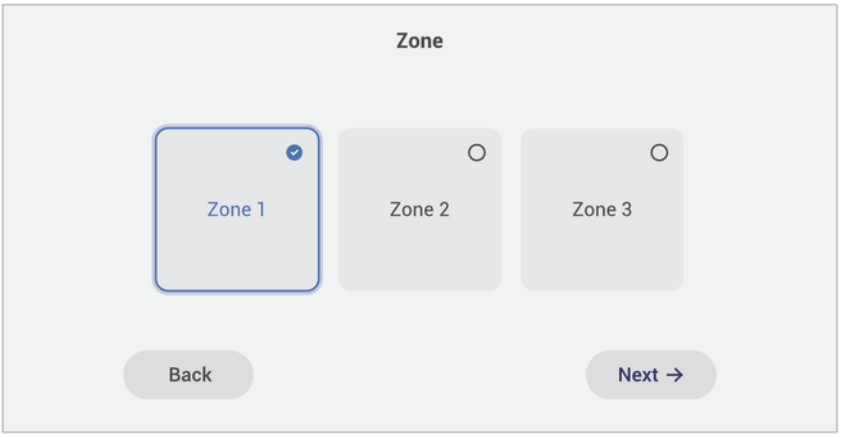
Select the type of device used for heating in this zone (e.g., Floor heating system, radiator, Fan coil unit, etc.).

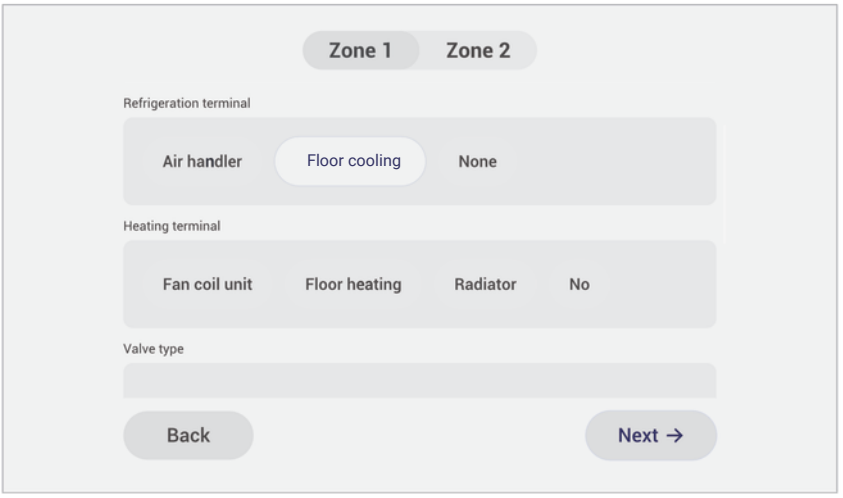
Valve Type:

Choose the corresponding valve type (three-way valve, two-way valve, mixing valve).

Temperature Control :

Choose to control water temperature or room temperature.

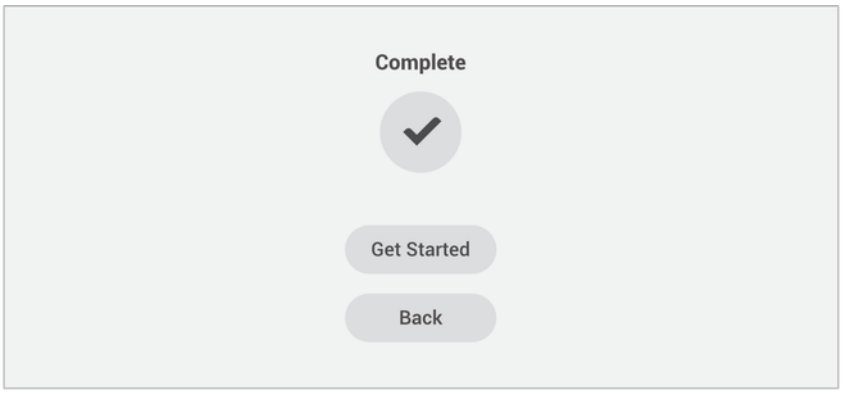




1.2.6 Completion

After completing all the above steps, the initialization setup is complete. Please click the "Get Started" button.

The controller will exit the setup wizard and enter the main operation interface for your daily use.



1.3 Main Page Display

The main interface can be divided into three clearly defined functional areas.



This system intuitively simulates and real - time reflects the control state of the unit through a dynamic visual scene.

Activation state:

When a certain temperature zone is in a controlled state, its corresponding area is highlighted in the interface, and the currently set control temperature value is clearly presented.

Sleep state:

When the temperature zone control is cancelled, this area will automatically turn gray and display dimly, and at the same time hide all temperature information.

Disable all temperature zones and enable domestic hot water only



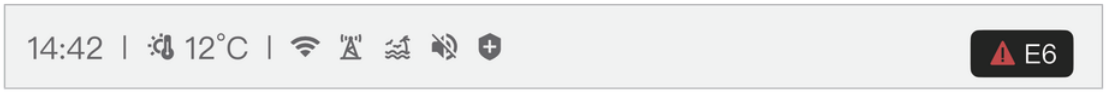
Only two temperature zones and domestic hot water only



1.4 Icons

Themaininterface can be divided into three clearly defined functional areas.

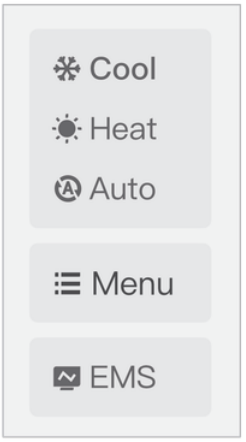
1.4.1 Display Icons



Information overview area



The core of the interface



Operational functions

- The upper modules, as the information overview area, displays the current time and ambient temperature in real time, enabling users to keep abreast of the device's operating status at any time.
- The middle modules is the core of the interface, intuitively showing the user's control over the living area and the core operation of the device.
- The right control panel centralizes the main operation functions, allowing users to conveniently and quickly switch modes and adjust the system.
- These three areas together form an efficient human-machine interaction interface that integrates information monitoring and function control.

Upper Modules

Mark No.	Content Description		Function Explanation
1	14:42	Time	The icon for the 24-hour clock is displayed when the format is set as the default.
2	12°C	Temperature display	The icon for the outdoor ambient temperature is displayed when the format is set as the default.
3	12°C	Temperature display	The icon is displayed when selecting indoor ambient temperature.
4		WiFi	The icon is displayed when the Wi-Fi networking is successful.
5		Smart grid	The icon is displayed when the Smart Grid mode is activated.
6		Vacation away mode	The icon is displayed when the"Away for Holiday" or "Home for Holiday" mode is activated.
7		Quiet Mode	The icon is displayed when the Quiet Mode mode is activated.
8		Sterilization mode	The icon is displayed when the Sterilization Mode is activated.
9	E6	Error mode	The icon is displayed when a system error occurs, accompanied by its specific fault code.
10		Freeze Protection	The icon is displayed when the entire unit enters freeze protection.

Mark No.	Content Description		Function Explanation
11		Built-in Pipeline Electric Heating	The icon is displayed when the built-in pipeline electric heating is turned on.
12		Energy Saving Mode	The icon is displayed when the energy saving mode is set to be effective.
13		Timer	The icon is displayed when the timer is active.
14		Pump	The icon is displayed when the pump is turned on.
15		Network Configuration	The icon is displayed when network configuration is in progress.
16		Child Lock	The icon is displayed when the child lock is activated.

Middle Modules

Mark No.	Content Description		Function Explanation
1			
2	1	Zone 1	The icon is displayed the zone1.
3	2	Zone 2	The icon is displayed the zone2.
4	3	Zone 3	The icon is displayed the zone3.
5		DHW	The icon is displayed the Domestic Hot Water Zone.
6		Power-on	The icon is illuminated when in Power-On status.
7		Power-off	The icon is unlit when in Power-Off status.
8		Display Room Temperature	When displaying room temperature, control based on the detected indoor temperature.
9	35°C	Display Water Temperature	When displaying water temperature, control based on the detected water temperature.
	45°C	DHW zone outlet Temperature	It means the DHW zone outlet temperature, displayed by default.

The Right Modules

Mark No.	Content Description		Function Explanation
1			
2	Cool	COOL mode	In the COOL mode, it can switch on the fan coil or the floor cooling system.
	Heat	HEAT mode	In the HEAT mode, it can switch on the floor heating system or the heating radiator.
3	Auto	AUTO mode	In the AUTO mode, it can automatically judge the operation modes according to the ambient temperatures.
4	Menu	Menu function	In the Menu interface, it can enter the system configuration interface to adjust parameters and preferences.
5	EMS	Energy management system	In the EMS interface, it supports viewing statistical bar charts of cooling capacity, heating capacity, and electricity consumption, as well as instantaneous values of carbon dioxide reduction and capacity.

NOTES:

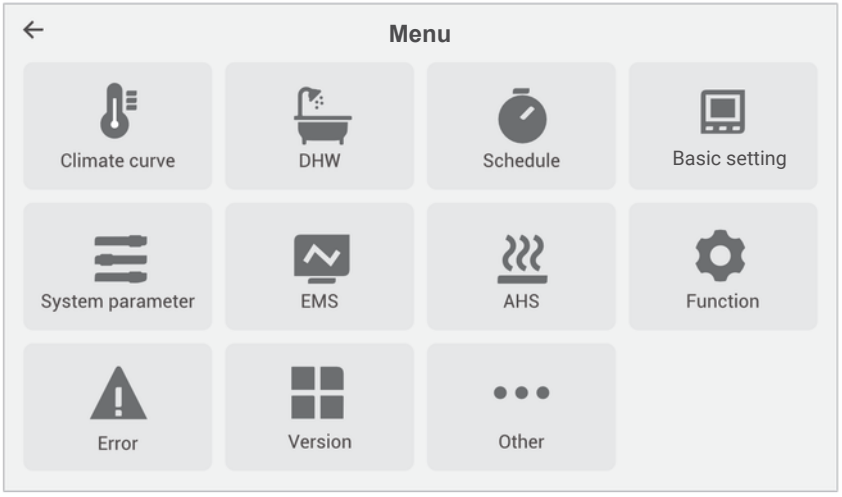
When an icon is displayed, it means that the corresponding function/system/device is switched on and vice versa;

Functions in the cooling mode: the fan coil is switched on and off; the floor cooling system is switched on and off;

Functions in the heating mode: the fan coil/floor heating system/the heating radiator is switched on and off;

Functions in the automatic mode: it automatically judges the operation modes according to the ambient temperatures.

1.4.2 Menu Icons

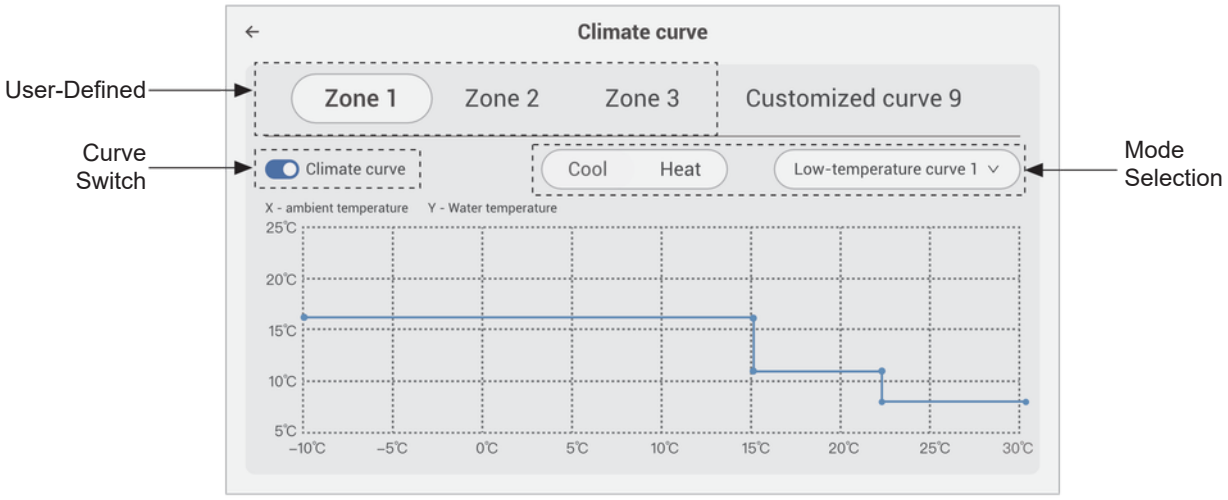


Mark No.	Icon	Function	Function Explanation
1		Climate curve	Used to set or modify the correspondence curve between the water temperature for heating/cooling and the outdoor temperature. By optimizing this curve, the best balance between energy efficiency and comfort can be achieved according to local climate characteristics.
2		DHW	Specifically used to configure parameters related to domestic hot water, such as setting the target water temperature, enabling scheduled heating, or setting energy-saving modes.
3		Schedule	The scheduling feature provides users with an intuitive and flexible periodic energy management system. Through a visual weekly view interface, you can easily plan the heat pump's operation status for each day and time period within the week. This enables fully automated, precise temperature control management, ensuring comfort while maximizing energy savings.
4		Basic setting	The basic settings of the line controller include display brightness, temperature settings, language selection, and other basic functions.
5		System parameter	Used to view and adjust various parameters during system operation, such as compressor frequency, water temperature, and pressure. This helps in monitoring and fine-tuning the system's performance.
6		EMS	Entry point for the energy management system. Used to configure the system's interaction with the smart grid, set power limits during peak usage times, and optimize operational strategies to reduce electricity costs.
7		AHS	Used to configure and manage the auxiliary heating system, such as electric auxiliary heat. You can set the start and stop conditions, temperature thresholds, and other parameters for the auxiliary heat source to ensure adequate heating during extremely cold weather or periods of high demand.
8		Function	This menu consolidates various system function toggles and basic settings, such as starting and stopping the system, resetting filter alarms, enabling frost protection, and other daily operational functions.
9		Error	Provides historical and current fault information. Users can view specific fault codes, occurrence times, and brief descriptions in this interface, which facilitates fault diagnosis and repair.
10		Version	Displays the software and hardware version numbers of the system's major components, such as the main control board and wired controllers. This information is crucial for system upgrades or when technical support is needed.
11		Other	Other settings include engineering settings such as function locking, power limiting mode, and refrigerant leakage detection.

2 Settings

2.1 Climate Curve

Thismenu is used toset independent heating and cooling water temperature curves for different zones. The system automatically adjusts the outlet water temperature by sensing changes in the outdoor environmental temperature, thereby achieving precise indoor temperature control. This ensures comfort while optimizing the system's energy efficiency.



Mode Selection

Cool Mode:

Suitable for summer cooling.By adjusting the curve, the system can optimize its dehumidification capability and cooling efficiency.

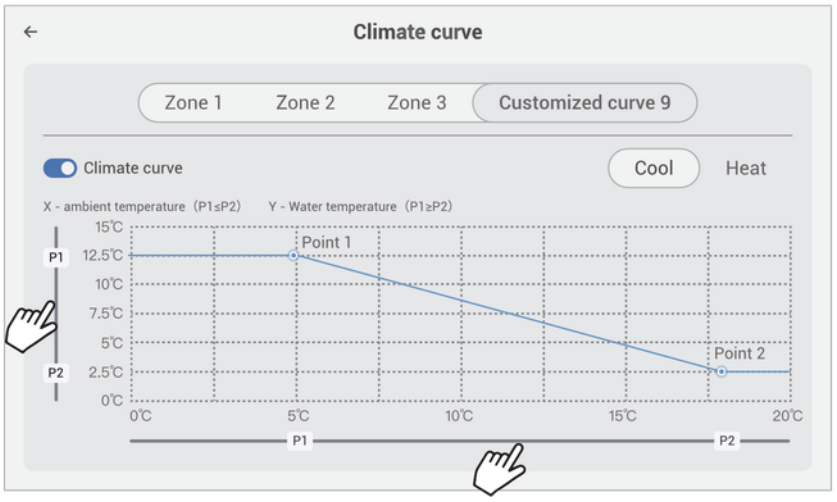
Heat Mode:

Suitable for winter heating.Byadjusting the curve slope, the system can appropriately increase the water outlet temperature when the weather is colder,ensuring sufficient heating.

Low-Temperature curve:

A gentle operating curve, typically used in spring and autumn or for low-temperature end systems like floor heating. This mode aims to maintain stable and comfortable temperatures while achieving high energy efficiency.

Curve Adjustment



After selecting a specific mode, users can fine-tune the curve on a graphical interface. By dragging key points on the curve, users can intuitively set the system's outlet water temperature at different outdoor temperatures.

Water temperature adjusting range:

Model	Running zone	Degrees centigrade (°C)		Fahrenheit °F	
		Set range	Initial value	Set range	Initial value
Automatic	Automatic cooling/ heating judgment	Automatic cooling/ heating judgment	Automatic cooling/ heating judgment	Automatic cooling/ heating judgment	Automatic cooling/ heating judgment
Cooling	Fan coil	5 ~ 20	10	41 ~ 68	50
	Floor cooling	16 ~ 25	18	61 ~ 77	64
	swimming pool	5 ~ 20	20	41 ~ 68	68
Heating(R290)	Fan coil	25 ~ 80	45	77 ~ 176	113
	The heating radiator	25 ~ 80	55	77 ~ 176	131
	Floor heating	25 ~ 45	35	77 ~ 113	95
	swimming pool	25 ~ 40	35	77 ~ 104	95
Water heating(R290)	/	20 ~ 70	45	68 ~ 158	113

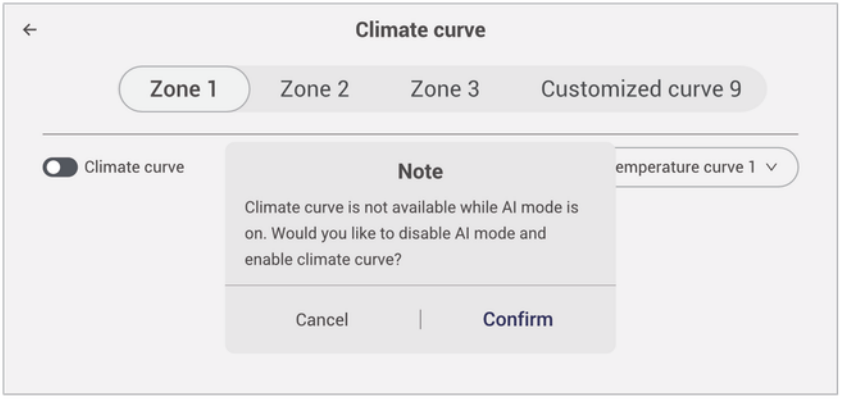
Indoor temperature adjusting range:

Model	Running zone	Degrees centigrade (°C)		Fahrenheit °F	
		Set range	Initial value	Set range	Initial value
Automatic	Automatic cooling/ heating judgment	Automatic cooling/ heating judgment	Automatic cooling/ heating judgment	Automatic cooling/ heating judgment	Automatic cooling/ heating judgment
Cooling	Fan coil	16 ~ 31	26	61 ~ 88	79
	Floor cooling	16 ~ 31	26	61 ~ 88	79
Heating(R290)	Fan coil	16 ~ 31	20	61 ~ 88	68
	The heating radiator	16 ~ 31	20	61 ~ 88	68
	Floor heating	16 ~ 31	20	61 ~ 88	68
Water heating(R290)	/	20 ~ 70	45	68 ~ 158	113

NOTES:
To prevent condensation due to high humidity in Floor cooling mode, the set temperature must always exceed the ambient dew point temperature.

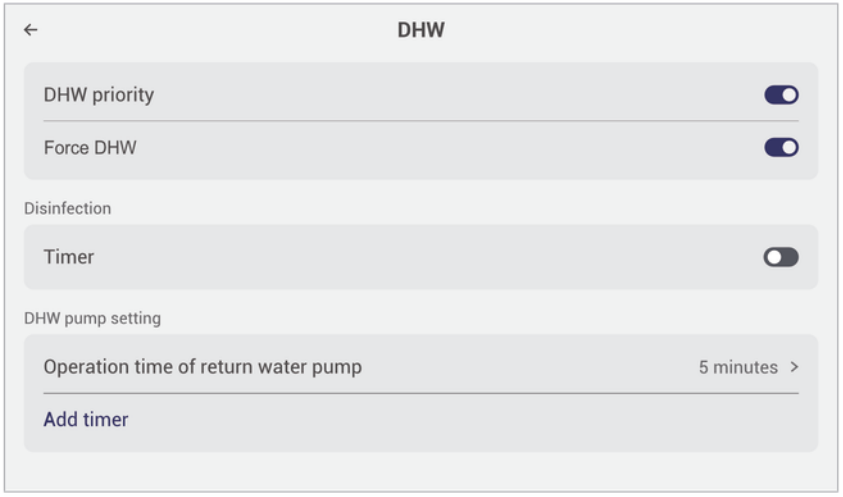
Entering Settings

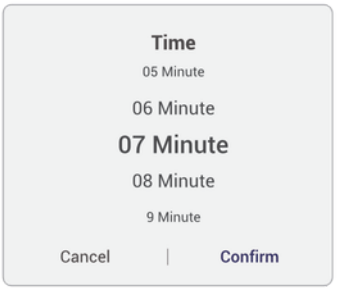
Whenthe systemisin AI Energy Saving Mode, if the user attempts to enter the climate curve settings, the system will display a prompt: "In AI Energy Saving Mode, the system will automatically optimize operation and will not follow the preset temperature curve. Do you want to exit AI Energy Saving Mode and enable the temperature curve?"
Press "OK" will exit AI Energy Saving Mode and automatically enter the main interface for climate curve settings.



2.2 DHW Settings

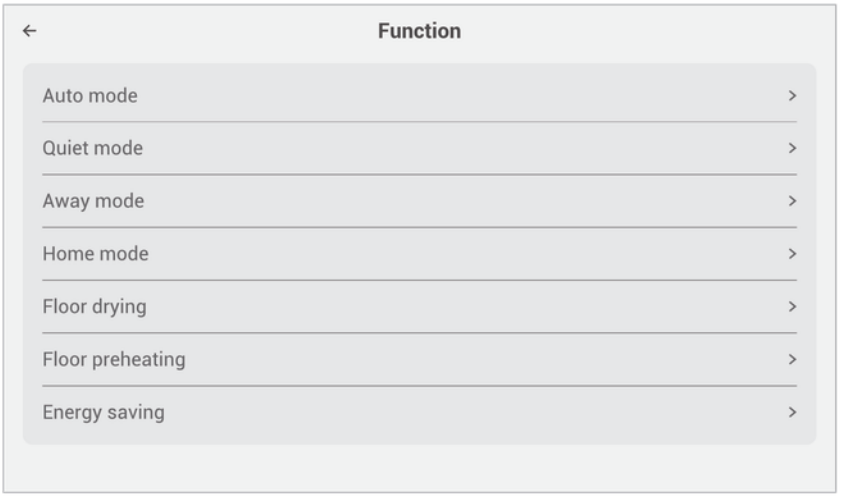
This menu is used for comprehensive configuration of the operating parameters and modes of the domestic hot water system. Users can manage the priority of hot water functions, manually activate heating, and set various advanced features including high-temperature sterilization, scheduled tasks, and circulation pump settings. This ensures comfortable, energy-efficient, and hygienic hot water supply.



DHW priority	When enabled, if the system needs to provide both heating and hot water simultaneously, it will prioritize the heating demand for domestic hot water.
Manual DHW activation	Start a domestic hot water heating cycle immediately, ignoring the current scheduled settings.
Disinfection	This area is used to configure the high-temperature sterilization function.
Timer	Enter the scheduled settings for the sterilization mode.
Date	You can scroll to select a specific day of the week as the execution date for the sterilization.
Time	You can scroll to select the specific start time for the sterilization (e.g., 10:00).
Temperature	You can set the high-temperature target value for the sterilization to ensure effective sterilization.
DHW pump setting	Domestic Hot Water Pump Settings
Operation time of return water pump	You can set the continuous running time for the circulating pump after each start (e.g., 5 minutes) to ensure that hot water reaches the usage point quickly, reducing waiting time.
Add timer	You can add new scheduled running tasks for the circulating pump to automatically run during specific time periods. This includes basic on/off and temperature control, allowing you to set daily control time periods for the pump. This will enable timed start and stop operations, further enhancing energy efficiency. 

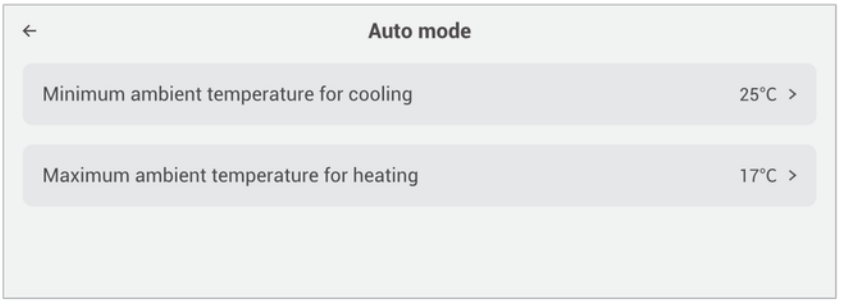
2.3 Function Settings

Thereare7modestochoosefrom the function mode.



2.3.1 Auto Mode

"Automatic mode setting" can set the minimum cooling and maximum heating ambient temperature; the automatic mode is an intelligent temperature control operation mode. The system automatically switches between the cooling and heating modes according to the ambient temperature without manual intervention, providing users with a comfortable indoor environment throughout the year.



Users can customize the following two key threshold temperatures based on their personal comfort needs:

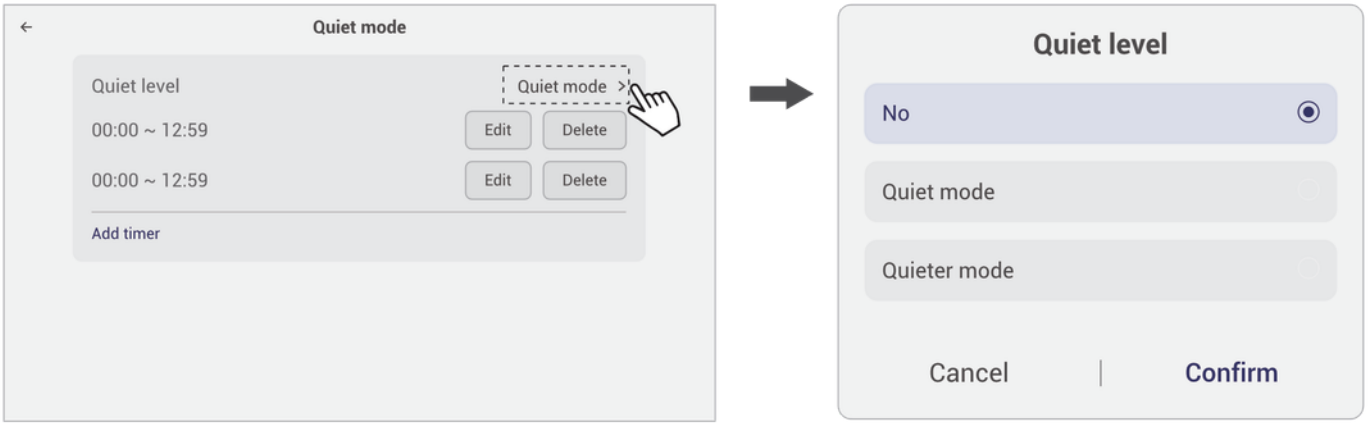
- **Cooling Start Temperature**
  Corresponding interface parameter:
  Minimum ambient temperature for cooling
  Setting method:
  Click on this option, then use the scroll selection or enter a number to set it.
- **Heating Start Temperature**
  Corresponding interface parameter:
  Maximum ambient temperature for heating
  Setting method:
  Click on this option, then use the scroll selection or enter a number to set it.



2.3.2 Quiet Mode

"Quiet mode" allows for user settings of the silent level (there are three in total) and time.

- Enter the Quiet Mode main interface. Optionally, click on "Quiet mode >" to set your preferred quiet level (no, quiet mode, quieter mode).
- Click the "Add timer" button below to create a new quiet period.
- In the pop-up time setting interface, use the scroll to select and set the start and end times for the quiet mode. After saving, this period will appear in the scheduled time list and can be "Edited" or "Deleted" at any time.



2.3.3 Away Mode & Home Mode

Occupancy modeisasmartfeature thatautomatically adjusts the system's operation strategy based on whether the user is at home. It includes two mutually exclusive working modes:

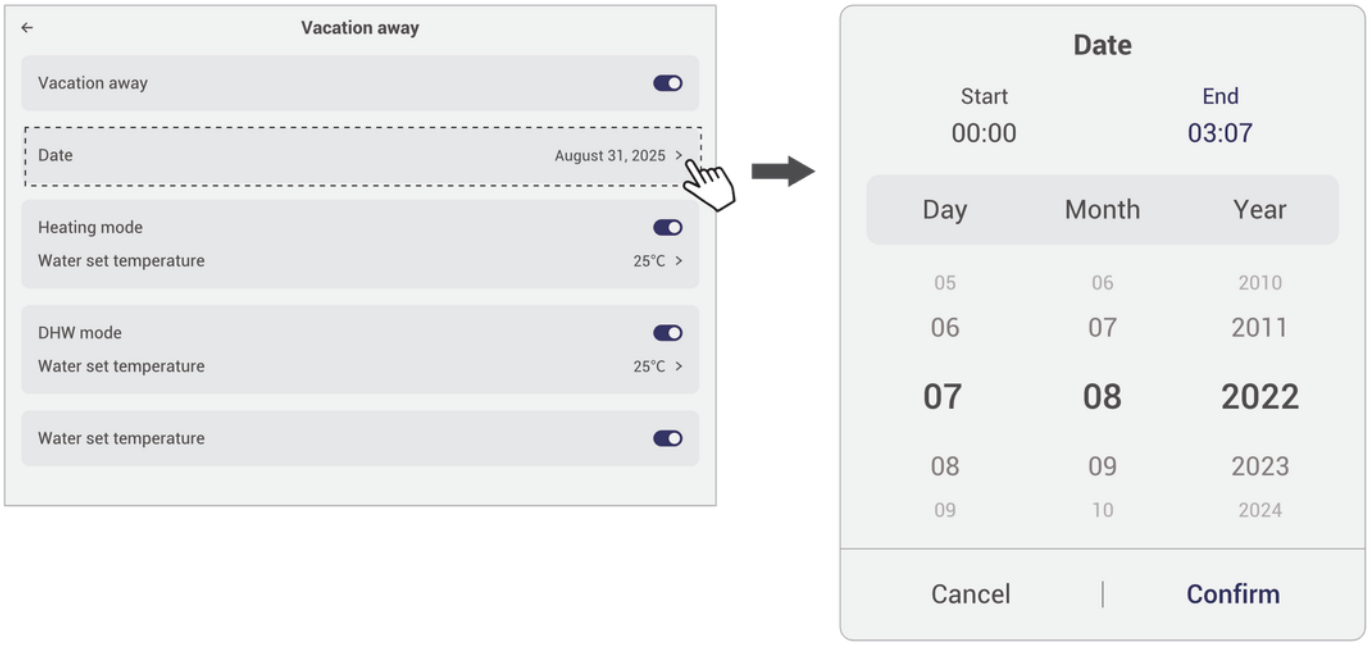
Away Mode For Vacations:

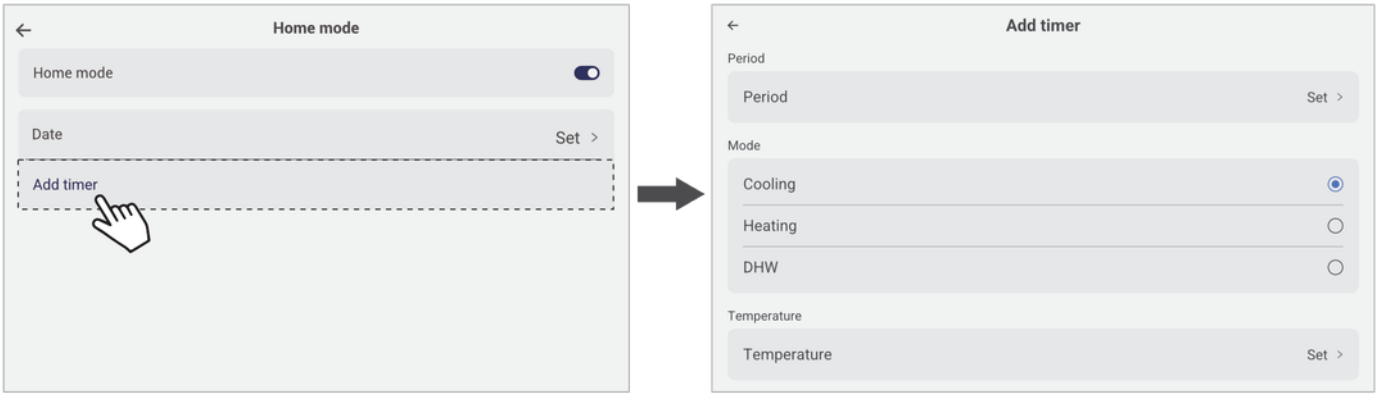
This mode provides an energy-saving and equipment protection solution for long-term absences, ensuring basic frost protection while minimizing energy consumption to the greatest extent possible.

Home Mode:

Designed for everyday living scenarios, this mode offers comprehensive comfort temperature control, maintaining normal and comfortable settings for cooling, heating, and domestic hot water.

If you plan to go on vacation, you can use the Away mode for Vacations to achieve energy savings and frost protection. In both modes, you can set departure and return dates, choose between cooling, heating, and hot water modes, and customize the operating temperatures.





Away Mode : Set the dates of your absence

Setting Method: Click to select dates via a calendar or use the scroll selector.

Heating Mode Settings

Corresponding Interface Parameters: Heating mode - Water set temperature

Domestic Hot Water Settings

Corresponding Interface Parameters: DHW mode - Water set temperature

NOTES:

- The Away Mode for Vacations and the Home Mode are mutually exclusive and cannot run simultaneously. The Away Mode for Vacations takes priority over the Home Mode.
- Before entering the Away Mode for Vacations, if the system is already in the scheduled sterilization function, it will only enter the Away Mode for Vacations after the sterilization process is completed.

2.3.4 Floor Drying

When the "Floor Drying Mode" is activated:

Click on "Set temperature" to set the drying temperature.

Set the duration in days for each of the three stages: "Before drying," "Drying," and "After drying."

After all parameters are set, the system will automatically execute the floor drying task according to the specified conditions.



2.3.5 Floor Preheating

To select the "Floor Preheating" mode:

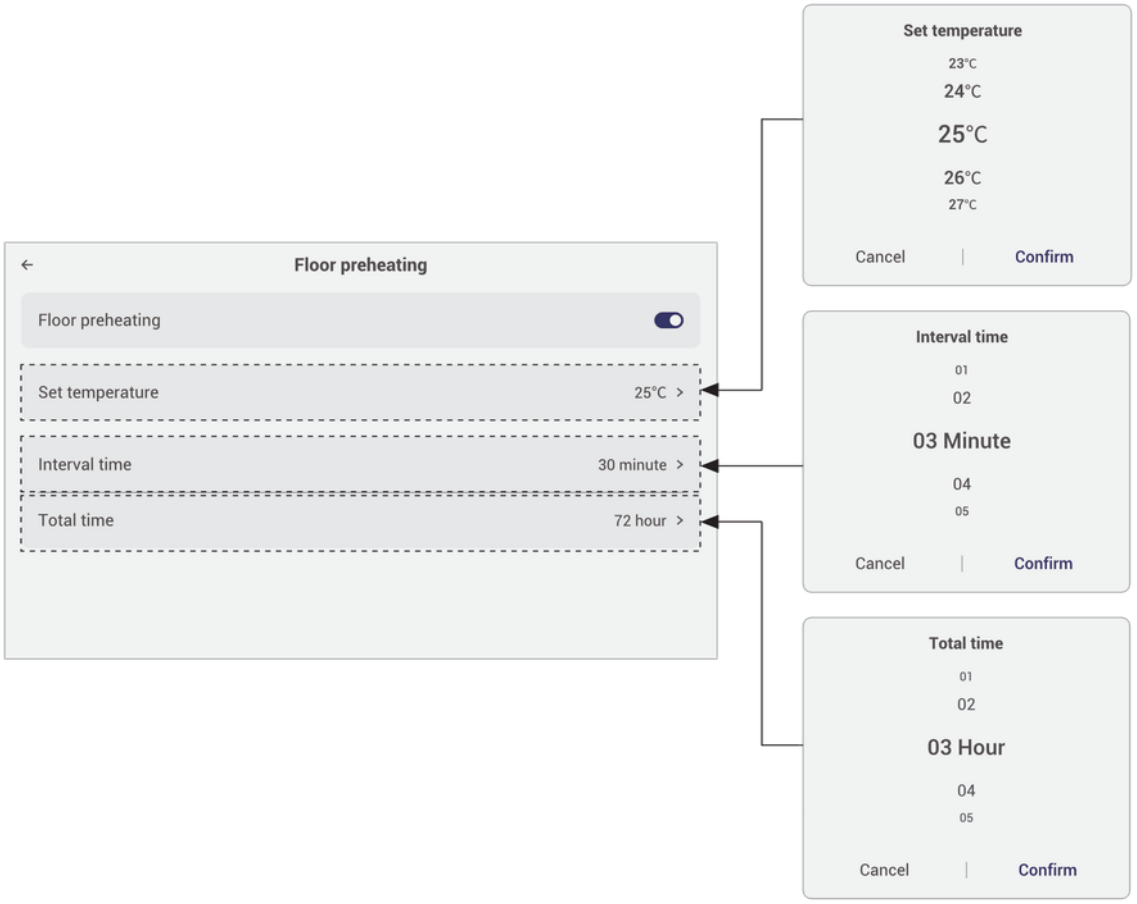
Choose the "Floor preheating" option to enter the function settings interface.

Click on the "Set temperature" option and set the preheating target temperature by either entering a number or using the scroll selector (e.g., 25°C).

Set the "Interval time" option to define the duration of each cycle during which the system will run.

Use the "Total time" option to set the maximum total duration for which the preheating function will operate.

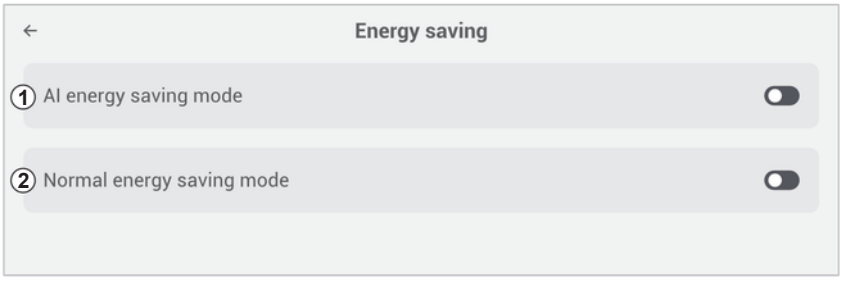
After all parameters are set, the system will automatically execute the preheating task according to the specified conditions.



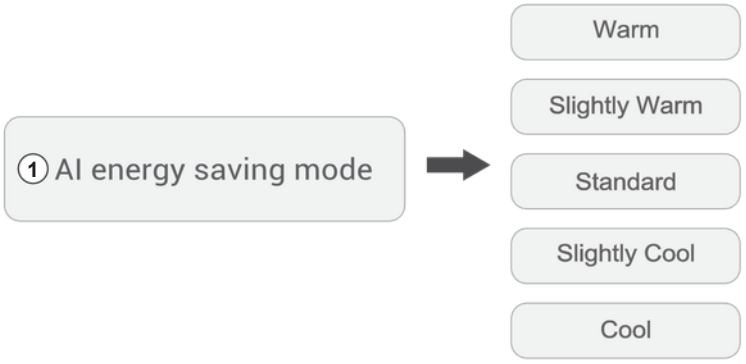
2.3.6 Energy Saving

Enter the "Energy Saving" settings menu.

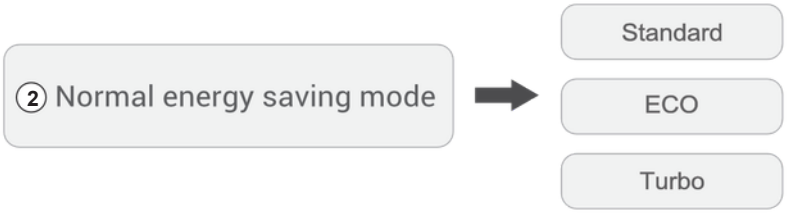
Select your preferred energy-saving type.



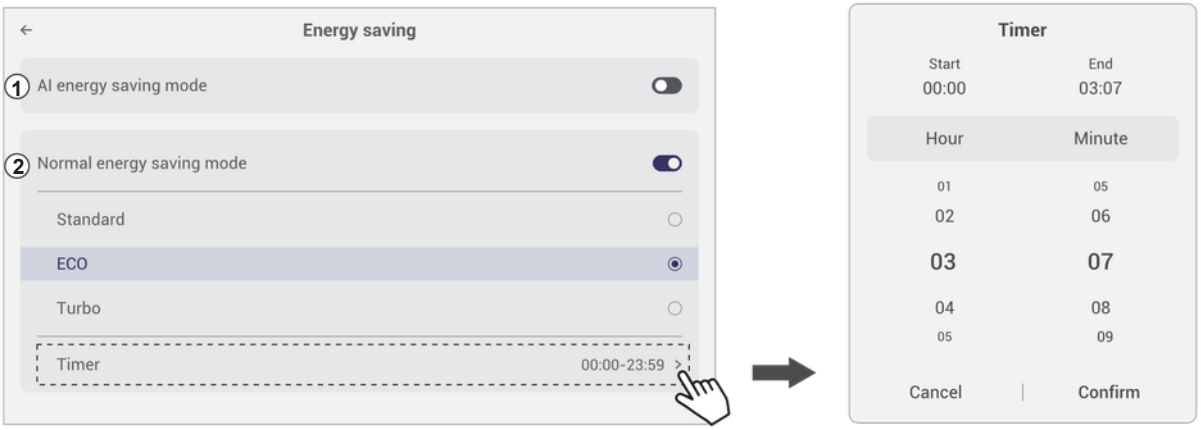
Choose "AI Energy Saving," and then slide to select your preferred comfort level from "Warm" to "Cool" based on your personal preference.



Select "Normal Energy Saving," and then choose the desired energy-saving intensity from options such as Standard, ECO and Turbo.



Click on "Timer" to set the time period for the selected energy-saving mode.
Confirm to enable, and the system will run according to the new settings.

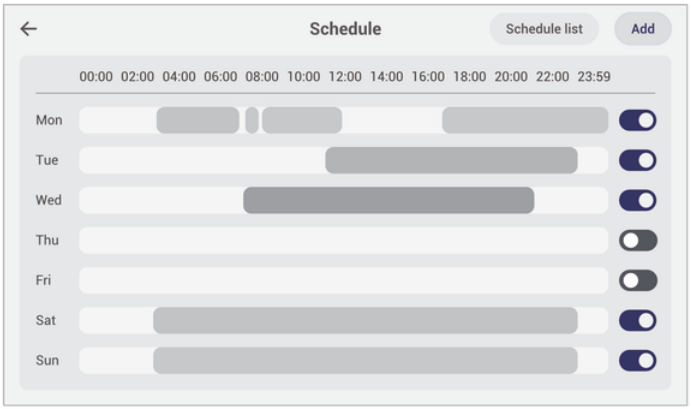


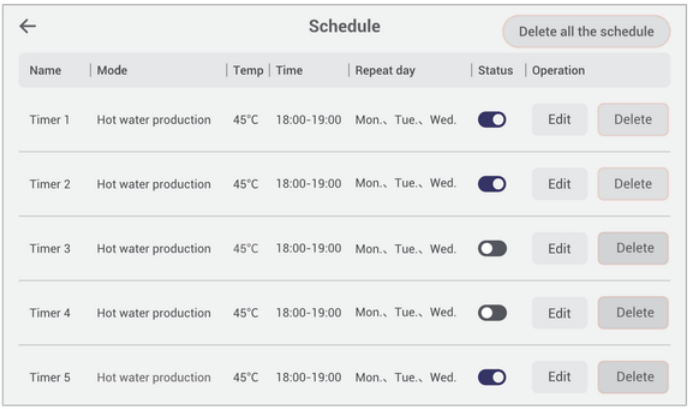
2.4 Schedule Settings

In the schedule settings, you can visually see all the set schedule blocks, which will be displayed in different colors or styles on the corresponding date and time slots. The horizontal axis is divided into two-hour intervals, ranging from 0:00 to 24:00, while the vertical axis represents the days of the week from Monday to Sunday. By clicking on each time slot, you can view specific parameter settings such as the machine's operating mode, operating temperature, and on/off status.

The schedule interface uses a clear two-dimensional matrix layout, allowing you to see all your scheduled events at a glance:

- Horizontal Axis (Time): The top time axis ranges from 00:00 to 23:59, with default intervals of every two hours, covering the full 24 hours of a day.
- Vertical Axis (Date): The left side represents the days of the week from Monday to Sunday, covering a complete weekly cycle.





In the schedule list interface, click the edit button corresponding to the scheduled time to enter the editing interface, where you can modify the specific parameters of the scheduled time. The main parameters include:

•Operating Mode: Choose from modes such as cooling, heating, auto, or off.

•Target Temperature: Set the precise temperature to be maintained during that time period.

• Enable/Disable: Enable or disable the schedule setting.

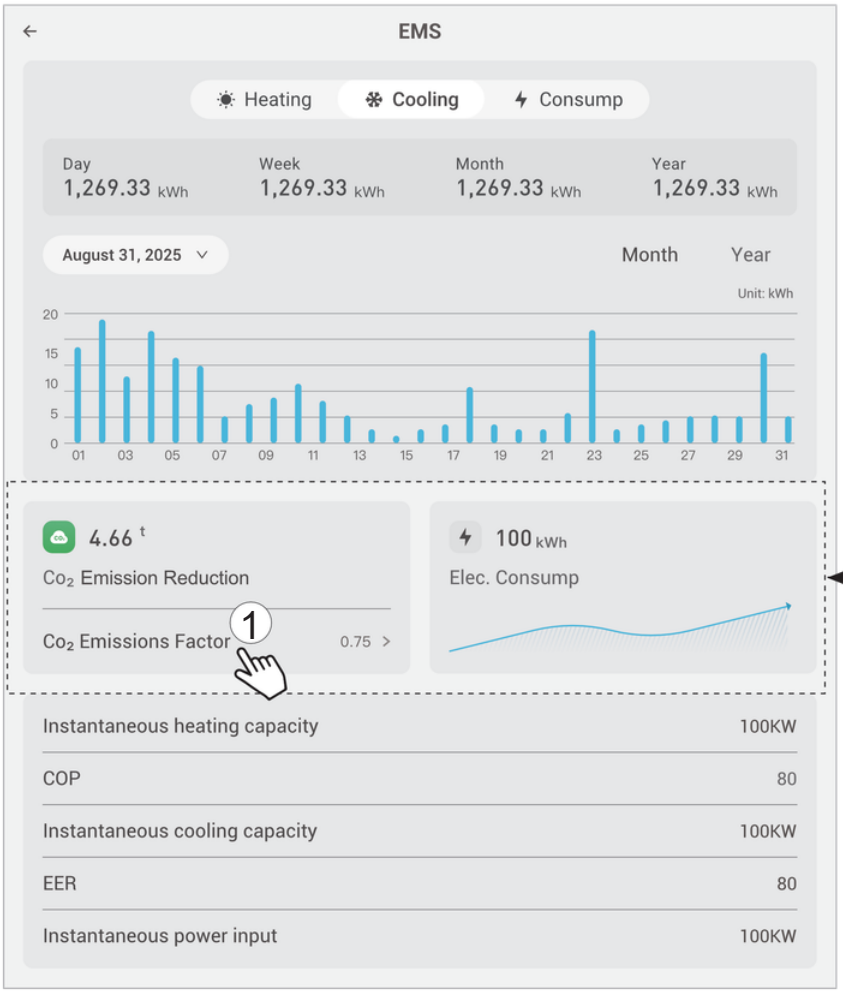
2.5 EMS

Enter the EMS main interface.

At the top, select the type of energy consumption you are interested in (Heating, Cooling, Total Consump).

Support viewing statistical data on cooling, heating, and electricity on a monthly or annual basis.

Click on the date selection box to switch between months or years and view the data statistics bar chart for the corresponding period.



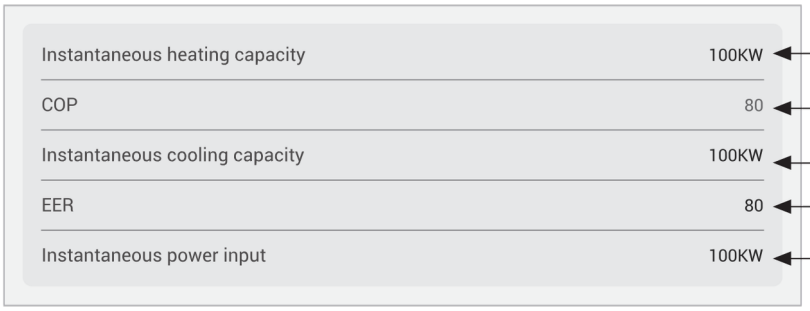
Parameters display area closely related to energy consumption.

Set CO2 Emissions Factor:

Tap the CO2 Emissions Factor (1) to enter and set the CO2 Emissions Factor that is appropriate for your local context.

CurrentElectricity Consumptionand Period-over-Period Analysis:

Current Electricity Consumption: Displays the specific electricity consumption for the current statistical period.

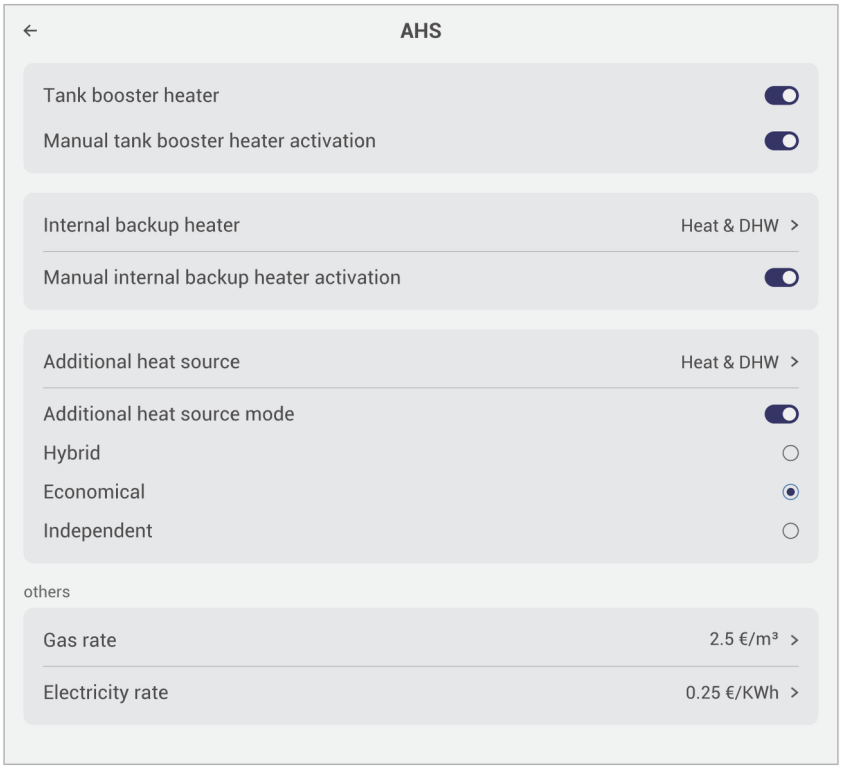


2.6 AHS

NOTES:

Due to the measurement uncertainty of the sensors, the above-listed test results for COP, EER, and capacity should be treated as indicative, as they may deviate from the actual values.

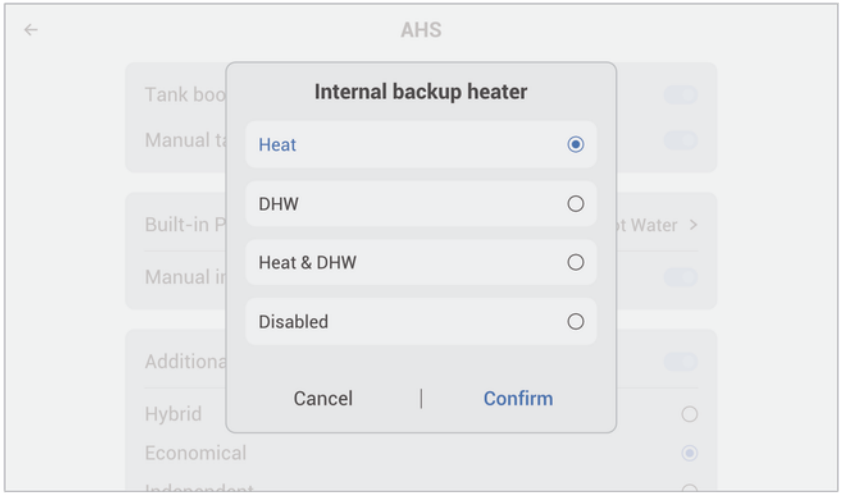
After entering the AHS main menu, the following functional modules are displayed:

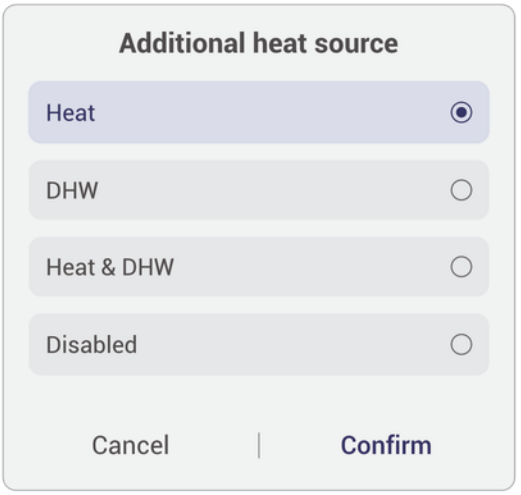


Tank Booster Heater	Used to enhance the heating capacity of the water tank, ensuring the water temperature reaches the desired level.
Internal Backup Heater	Provides additional heating support when the primary heating system cannot meet the demand.
Additional Heat Source	Allows for the connection and management of external heat sources to increase the overall heating capacity of the system.
Others	Includes other related settings and configuration options to meet specific needs.

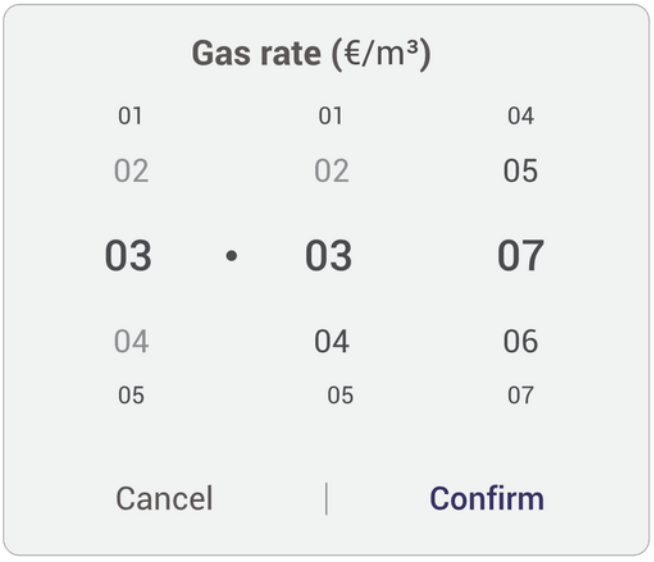
To immediately start auxiliary heating.

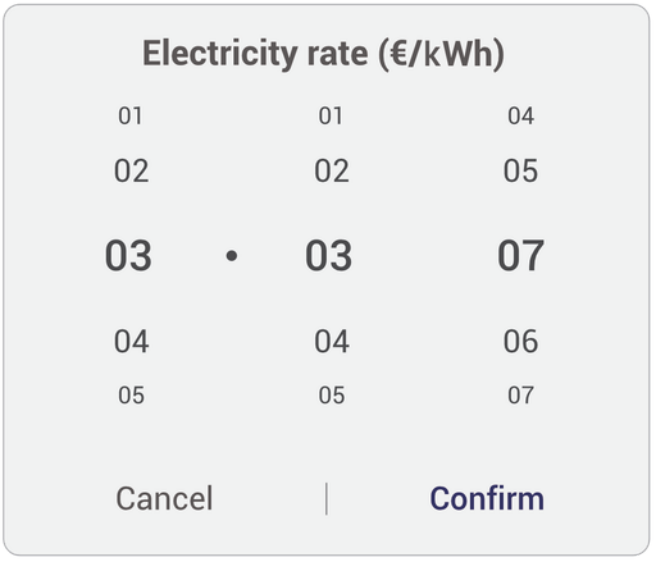
- Click "Manual tank booster heater activation";
- Click "Internal backup heater >" or "Additional heat source";
- Select the operating mode:
  Heat (Heating only): Enable only for auxiliary heating.
- DHW (Domestic Hot Water only): Enable only for auxiliary domestic hot water.
  Heat & DHW (Both Heating and Domestic Hot Water): Provide both auxiliary heating and domestic hot water.
  Disabled (Turn off this function): Disable the auxiliary heating function.
  Click "Confirm" to save the settings: Confirm your selection and save the settings so that the system operates according to the chosen mode.





- Click "Additional heat source mode";
- Select the operating mode:
  Hybrid : The system will automatically choose the most suitable combination of heat sources based on current conditions.
  Economical : The system will operate in the most cost-effective way, prioritizing the use of the lower-cost heat source.
  Independent : The system will use only the additional heat source for heating, without mixing with other heat sources.
- Click "Confirm" to save the settings:
  Confirm your selection and save the settings so that the system operates according to the chosen mode.
- Click "Gas rate" to enter the gas price settings:
  Here, you can input the current gas price, which the system will use to calculate operating costs.
- Click "Electricity rate" to enter the electricity price settings:
  Here, you can input the current electricity price, which the system will use to calculate operating costs.

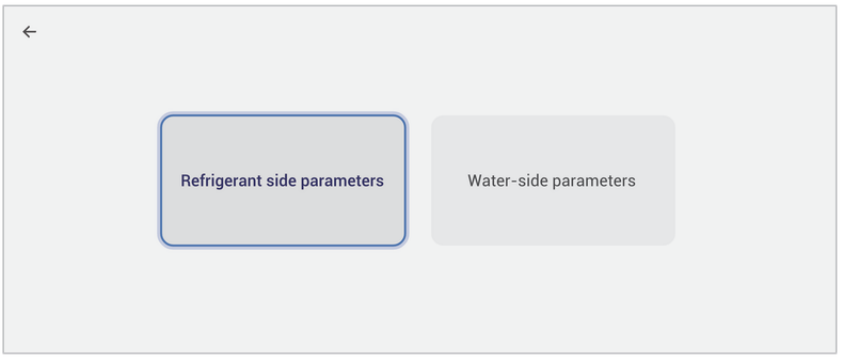




2.7 System Parameter

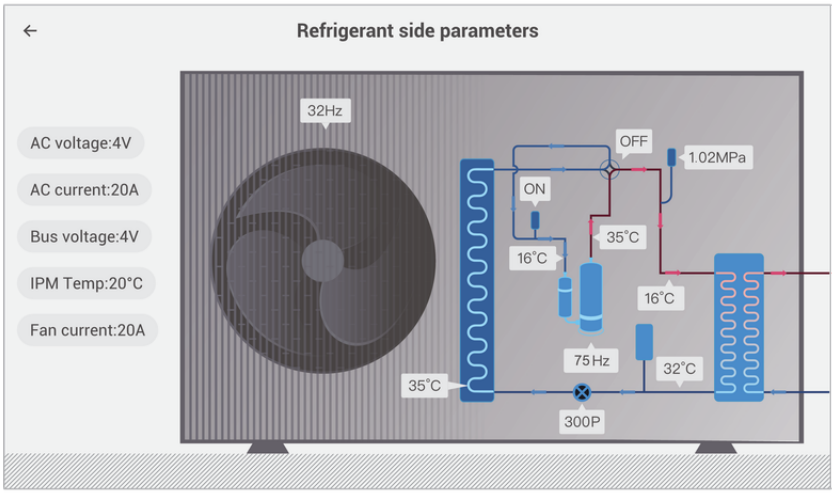
After entering the interface, select the temperature zone to be viewed.

There are two modes available for selection: "refrigerant side parameters" and "water - side parameters".

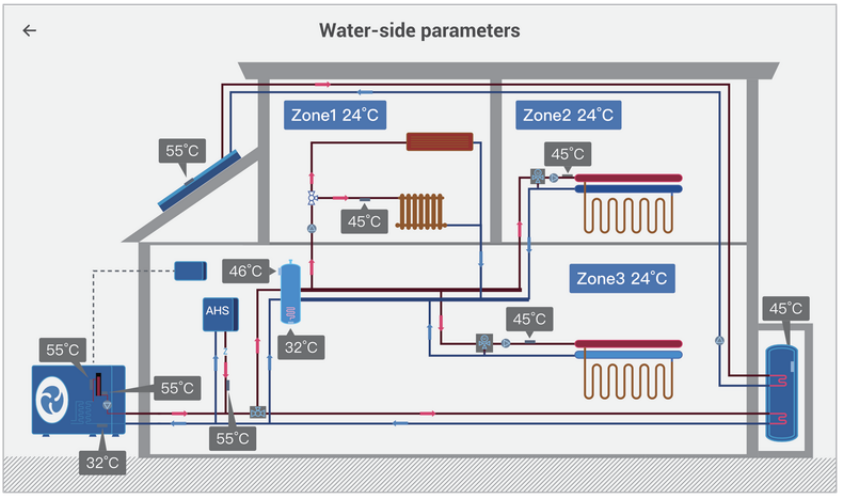


The key operational data and system operation diagrams on the refrigerant side are primarily used for diagnosis by professionals. This includes:

- Electrical Parameters: Such as AC voltage/current, bus voltage.
- Temperature Data: Such as the temperature of the IPM (Intelligent Power Module) and temperatures from various critical point sensors.
- Operating Status: Such as compressor operating frequency, system pressure, and the status of the four-way valve.

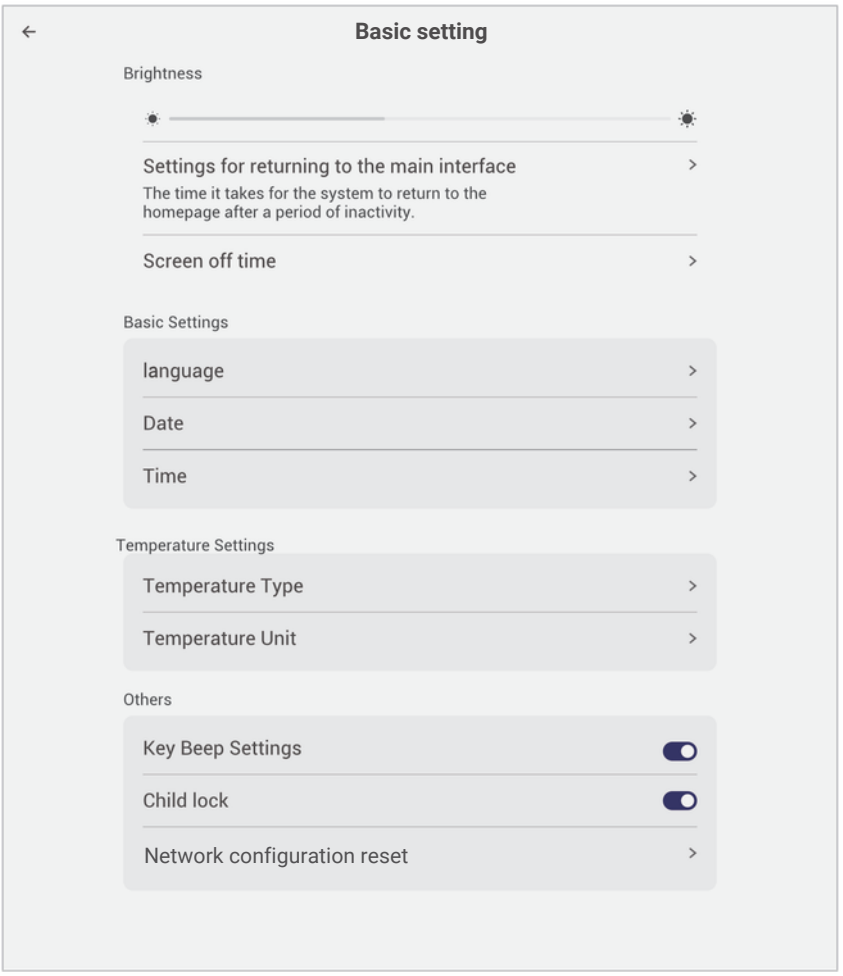


The key operational data and system operation diagrams for the water side can intuitively display the entire heat exchange process of water in various temperature zones along with the relevant parameters.



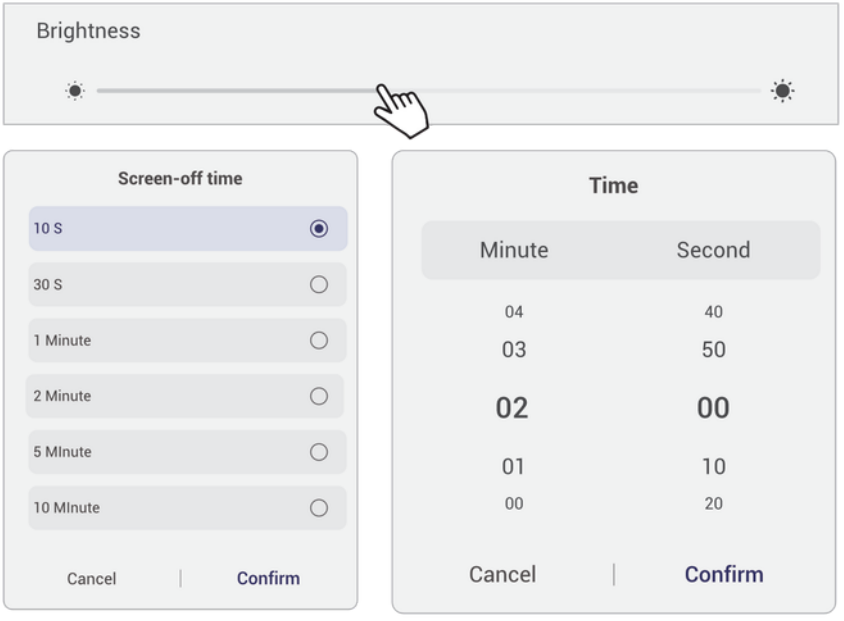
2.8 Wired Controller Parameters

The basic settings of the line controller include display brightness, Basic Settings temperature settings, language selection, and other functions:



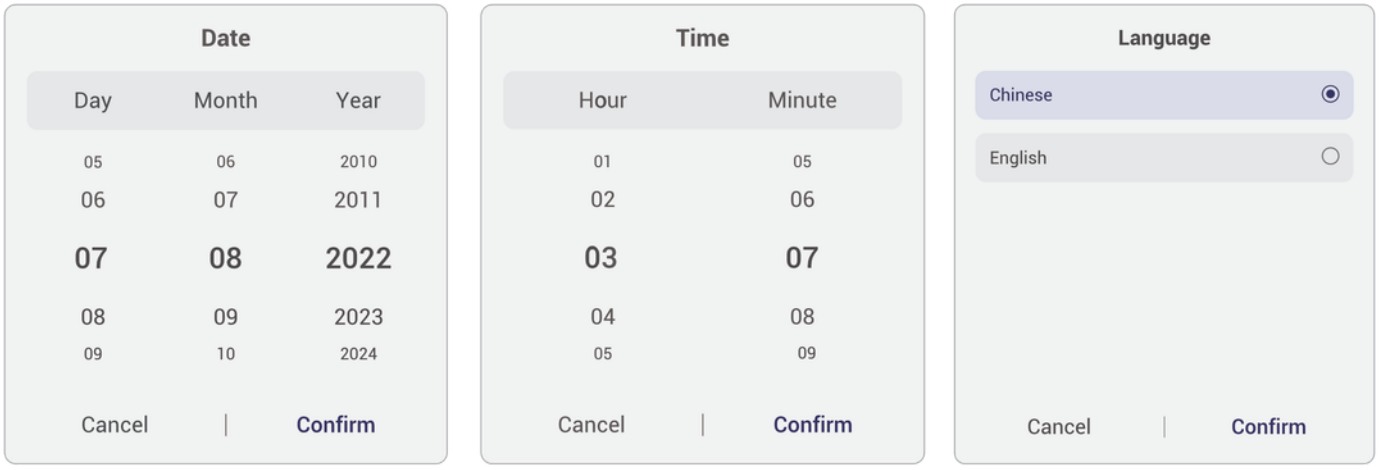
2.8.1 Display And Brightness

Under the Display & Brightness section, you can adjust the screen brightness via the slider and configure the Return-to-Home Timeout and the Screen-off Timeout.



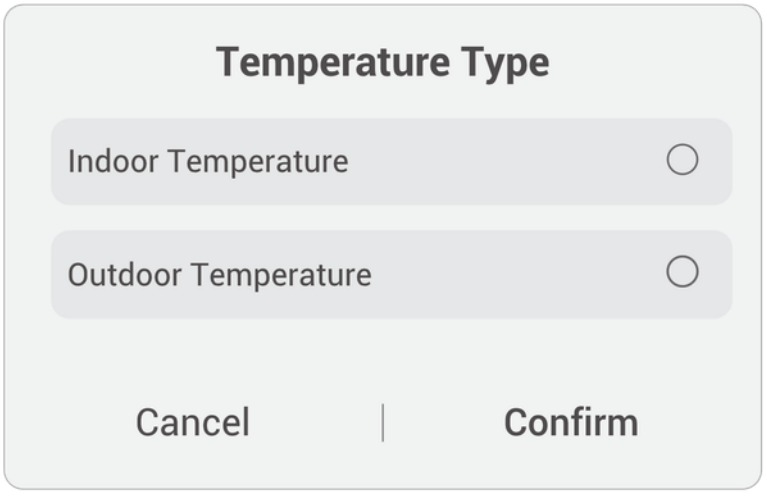
2.8.2 Basic Settings

Set the device's language, date and time, and other basic information.



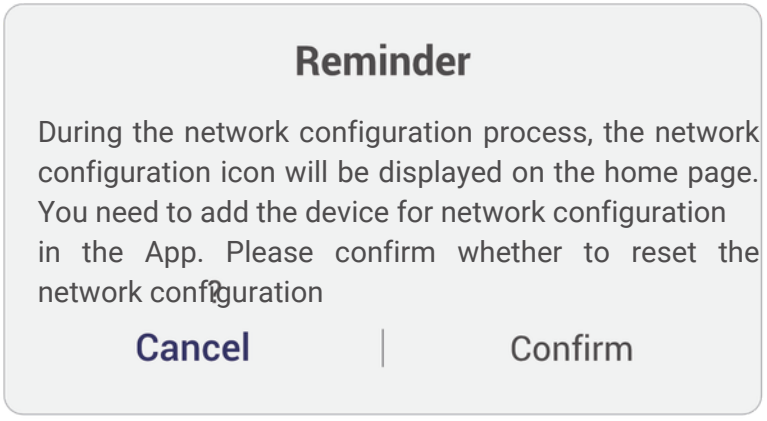
2.8.3 Temperature Display

Customize the Temperature Display Source.



2.8.4 Others

Other settings include button sound switch, child lock switch, reset network function, and automatic synchronization network time switch.



Device Services, the device has enabled the following services, which are used for device initialization and functions during normal operation.

TCP service: Used for device control and data transmission.

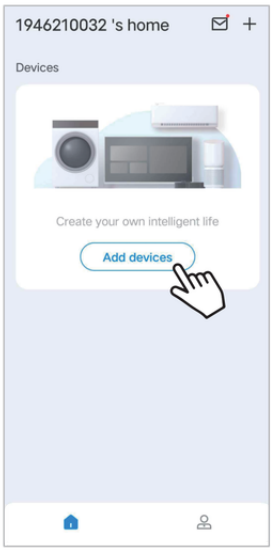
UDP service: Used for the device to get NTP time from network.

BLE Service GATT Service: Used for network configuration.

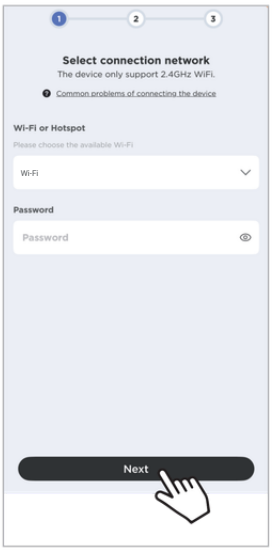
Network interface: Wi-Fi 802.11, Bluetooth 4.2.

2.8.5 App Network Configuration

Open the App (If the App is not installed, scan the QR code in Section 2.1.2 to download and install it).



To add a device, click the "Add devices" button or click the add icon “+” in the upper right corner to enter the device selection interface. Select the "ATW Heat Pump" device and enter the Select connection network interface.

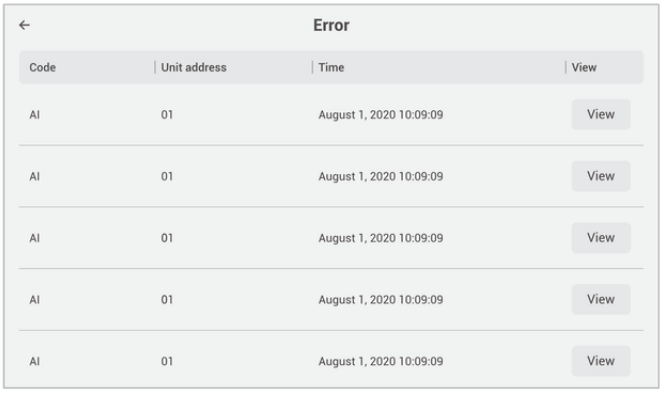


Select the WiFi that needs to be connected and enter the password, click the Next button, and wait for the network configuration process to complete before automatically jumping to the successful addition interface.

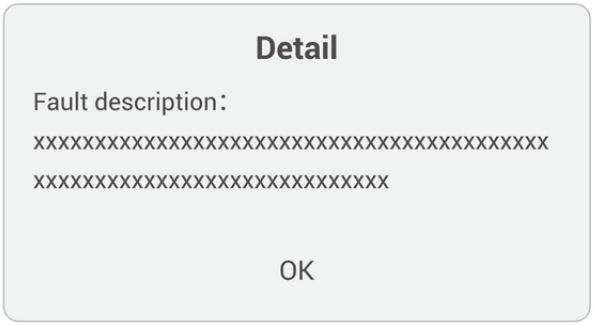
3 Error query

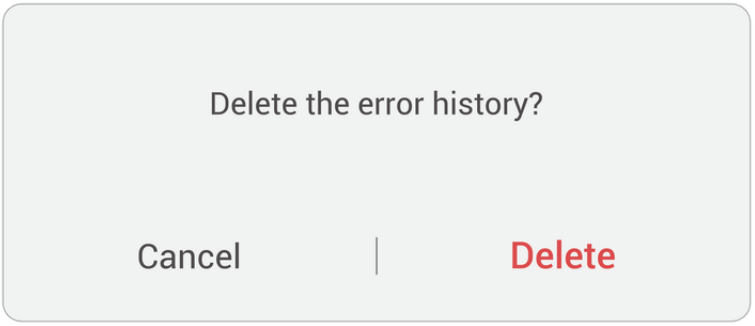
Enter the “Error” menu, where the system provides two options: “Current Error” and “Historical Error”.





- “Current Error”: This list displays all active fault information, including:
  Fault Code: A unique code for each fault, used for quick identification.
  Unit Address: The specific location of the device or component where the fault occurred.
  Time of Occurrence: The time when the fault was first detected.
- If you need to know the detailed description and handling suggestions of a certain fault, just click "View" on the right side of the fault record, and you can enter the details page to check the complete fault description.
  To trace back past problems, you can switch to the "Historical Faults" tab to browse all recovered fault records. On this page, you can choose to delete specific historical records. The system will pop up a "secondary confirmation" dialog box. Select "Delete" to confirm the deletion, or select "Cancel" to abort the operation.





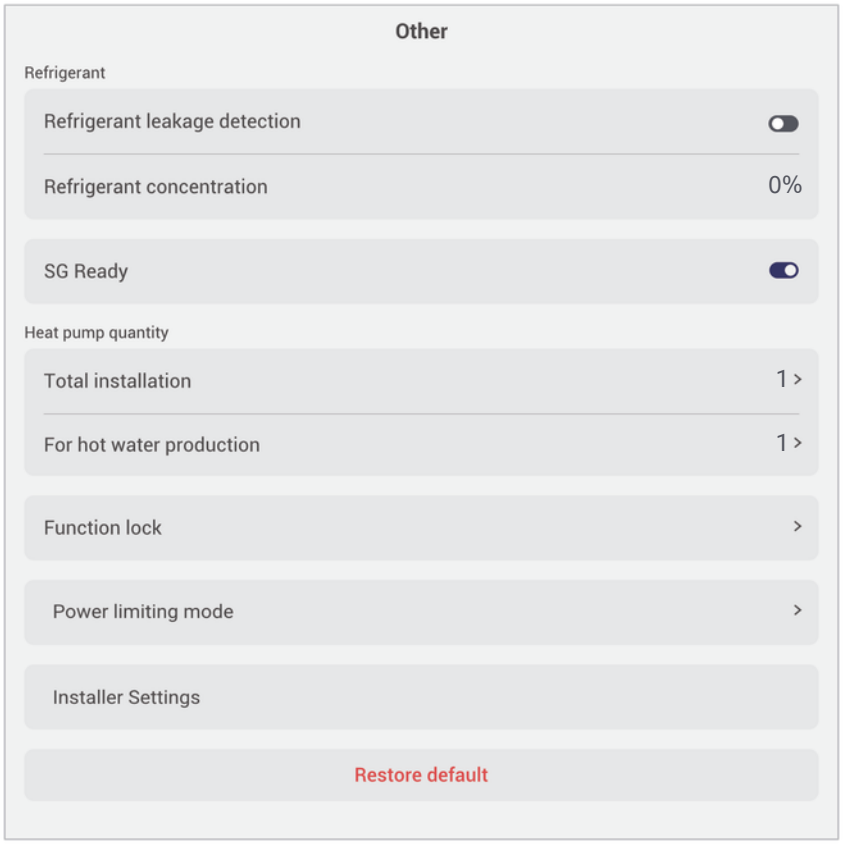
4 Version query

The current version numbers (such as V1.0.0) of different printed circuit boards (like PCB A, PCB B) inside the main controller are clearly listed in the interface. Technicians can compare this information with the latest version to determine whether the system needs to be upgraded or confirm whether the versions of each component match. Ordinary users do not need to operate this interface and only need to check it when the technical support personnel require providing the version number.



5 Other

Other settings include engineering settings such as function locking, power limit mode, refrigerant leak detection, heat pump quantity setting, factory reset, and other functions.



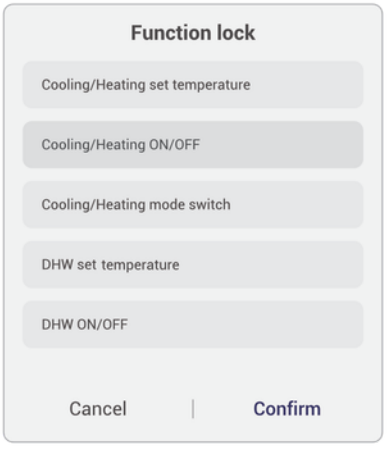
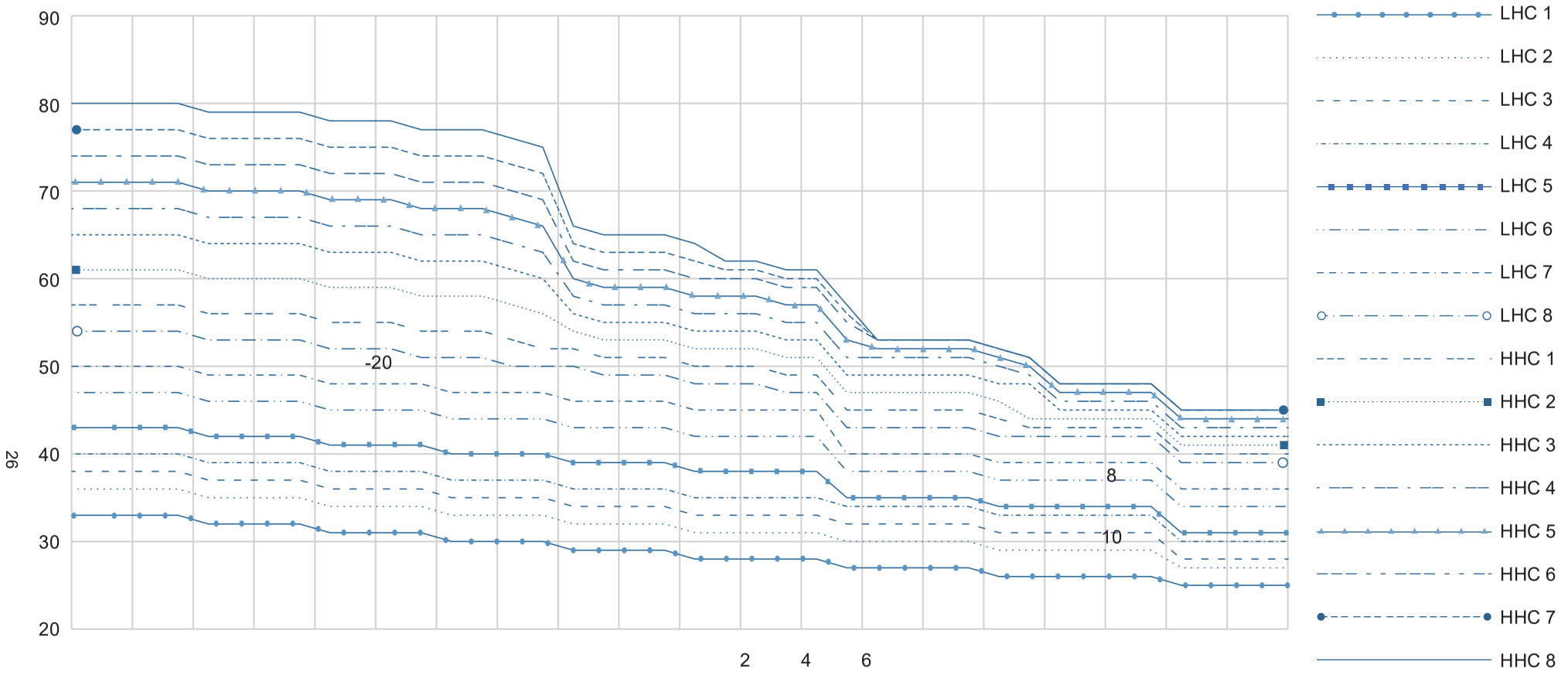
Refrigerant Leak Detection	Select whether to enable.	
Refrigerant concentration	When the Refrigerant Leak Detection is enabled, it will display the refrigerant leak concentration (e.g., 60%).	
SG Ready	Smart Grid Ready Function, enabling the heat pump to respond to grid signals and participate in demand-side.	
Total Installed Quantity	Set the total number of heat pump units in the system.	
For hot water production	Specify the number of units dedicated to domestic hot water production.	
Function Lock	It can lock the control panel in different modes to prevent unauthorized operations.	
Power Limiting Mode	Set the maximum operating power limits for the outdoor and indoor units. You can add multiple time periods and set different power limits for each period. The system will check for overlapping time periods to ensure the settings are valid.	

Table of Heating Ambient Temperatures - Target Water Temperatures (Unit: ℃)

	≤-20																			
T Outer-ring temperature-20-19-18-17-16-15-14-13-12-11-10											**-9**	**-8**	**-7**	**-6**	**-5**	**-4**	**-3**	**-2**	**-1**	**0**
Low temperature curve 133		3333		33	32	3232		32	31	3131		31	30	3030		30	29	2929		29	28
Low temperature curve 236		3636		36	35	3535		35	34	3434		34	33	3333		33	32	3232		32	31
Low temperature curve 338		3838		38	37	3737		37	36	3636		36	35	3535		35	34	3434		34	33
Low temperature curve 440		4040		40	39	3939		39	38	3838		38	37	3737		37	36	3636		36	35
Low temperature curve 543		4343		43	42	4242		42	41	4141		41	40	4040		40	39	3939		39	38
Low temperature curve 647		4747		47	46	4646		46	45	4545		45	44	4444		44	43	4343		43	42
Low temperature curve 750		5050		50	49	4949		49	48	4848		48	47	4747		47	46	4646		46	45
Low temperature curve 854		5454		54	53	5353		53	52	5252		51	51	5150		50	50	4949		49	48
High temperature curve 157		5757		57	56	5656		56	55	5555		54	54	5453		52	52	5151		51	50
High temperature curve 261		6161		61	60	6060		60	59	5959		58	58	5857		56	54	5353		53	52
High temperature curve 365		6565		65	64	6464		64	63	6363		62	62	6261		60	56	5555		55	54
High temperature curve 468		6868		68	67	6767		67	66	6666		65	65	6564		63	58	5757		57	56
High temperature curve 571		7171		71	70	7070		70	69	6969		68	68	6867		66	60	5959		59	58
High temperature curve 674		7474		74	73	7373		73	72	7272		71	71	7170		69	62	6161		61	60
High temperature curve 777		7777		77	76	7676		76	75	7575		74	74	7473		72	64	6363		63	62
High temperature curve 880		8080		80	79	7979		79	78	7878		77	77	7776		75	66	6565		65	64

																				≥20
T Outer-ring temperature1		**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
		28	28	28	27	27	27	27	27	26	26	26	26	26	26	25	25	25	25	25
		31	31	31	30	30	30	30	30	29	29	29	29	29	29	27	27	27	27	27
		33	33	33	32	32	32	32	32	31	31	31	31	31	31	28	28	28	28	28
		35	35	35	34	34	34	34	34	33	33	33	33	33	33	30	30	30	30	30
High temperature curve 150		38	38	38	35	35	35	35	35	34	34	34	34	34	34	31	31	31	31	31
High temperature curve 252	Low temperature curve 231	42	42	42	38	38	38	38	38	37	37	37	37	37	37	34	34	34	34	34
High temperature curve 354	Low temperature curve 333	45	45	45	40	40	40	40	40	39	39	39	39	39	39	36	36	36	36	36
High temperature curve 456	Low temperature curve 435	48	47	47	43	43	43	43	43	42	42	42	42	42	42	39	39	39	39	39
High temperature curve 558	Low temperature curve 538	Low temperature curve 128	49	49	45	45	45	45	45	44	43	43	43	43	43	40	40	40	40	40
High temperature curve 660	Low temperature curve 642	52	51	51	47	47	47	47	47	46	44	44	44	44	44	41	41	41	41	41
High temperature curve 761	Low temperature curve 745	54	53	53	49	49	49	49	49	48	48	45	45	45	45	42	42	42	42	42
High temperature curve 862	Low temperature curve 848	56	55	55	51	51	51	51	51	50	49	46	46	46	46	43	43	43	43	43
		58	57	57	53	52	52	52	52	51	50	47	47	47	47	44	44	44	44	44
		60	59	59	55	53	53	53	53	52	51	48	48	48	48	45	45	45	45	45
		61	60	60	56	53	53	53	53	52	51	48	48	48	48	45	45	45	45	45
		62	61	61	57	53	53	53	53	52	51	48	48	48	48	45	45	45	45	45

LHC-Low heating curve HHC-High heating curve



0

6.2 Error List

NO.	Error Code	Descri p t i o n
1	L1	The water temperature difference between plate heat exchanger inlet and outlet is too large.
2	L2	The water temperature difference between plate heat exchanger inlet and outlet is abnormal.
3	L3	Plate heat exchanger outlet water temperature is too low.
4	L4	Plate heat exchanger outlet water temperature is too high.
5	L5	Plate heat exchanger inlet water temperature is too low.
6	L6	Plate heat exchanger inlet water temperature is too high.
7	L7	Water side antifreeze.
8	L8	Insufficient water flow fault.
9	Lb	Auxiliary electric heating feedback failure.
10	LC	Water tank electric heating feedback failure.
11	Ld	Emergency frequent defrosting.
12	LE	External water pump failure.
13	LP	Main water pump failure.
14	EO	Communication failure between indoor unit and outdoor unit.
15	E3	Coil temperature sensor fault.
16	E4	Refrigerant leak fault.
17	E5	DIP abnormal.
18	E7	Outdoor temperature sensor failure.
19	E8	Exhaust temperature sensor failure.
20	EA	Outdoor current sensor failure.
21	Eb	communication failure between indoor unit and wired controller.
22	EC	Communication failure between drive board and main PCB.
23	Ed	Indoor unit EE error.
24	EE	Outdoor EEPROM failure.
25	EF	Outdoor DC fan failure
26	EH	Malfunction of outdoor air intake sensor.
27	Ej	Communication failure between indoor unit and thermostat.
28	En	Module communication error.
29	d1	Abnormal outlet water temperature after auxiliary heating.
30	d2	Abnormal temperature of plate heat exchange inlet water.
31	d3	Abnormal temperature of plate heat exchange outlet water.
32	d4	Plate heat exchanger refrigerant gas pipe is abnormal.
33	d5	Plate heat exchanger refrigerant liquid pipe is abnormal.

NO.	Error Code	Descri p t i o n
34	d6	Abnormal final outlet water temperature of the system.
35	d7	Zone 1 inlet water temperature abnormal.
36	d8	Zone 2 inlet water temperature abnormal.
37	d9	Zone 3 inlet water temperature abnormal.
38	dA	Zone 1 room temperature abnormal.
39	dB	Zone 2 room temperature abnormal.
40	dC	Zone 3 room temperature abnormal.
41	dF	The inlet water temperature of the balance tank is abnormal.
42	dH	The outlet water temperature of the balance tank is abnormal.
43	dj	Abnormal temperature of solar panel.
44	dn	Abnormal water tank temperature.
45	P0	IPM module protection,compressor overcurrent,IPM overcurrent, inverter module protection.
46	P1	DC bus overvoltage, undervoltage, voltage overvoltage, undervoltage, AC input undervoltage.
47	P2	AC input overcurrent.
48	P4	Exhaust temperature too high protection.
49	P5	Refrigeration anti-overcooling failure.
50	P6	Refrigeration prevents overheating failure.
51	P7	Heating protection against overheating.
52	P8	Outdoor ambient temperature too high and too low protection.
53	H1	High pressure switch protection.

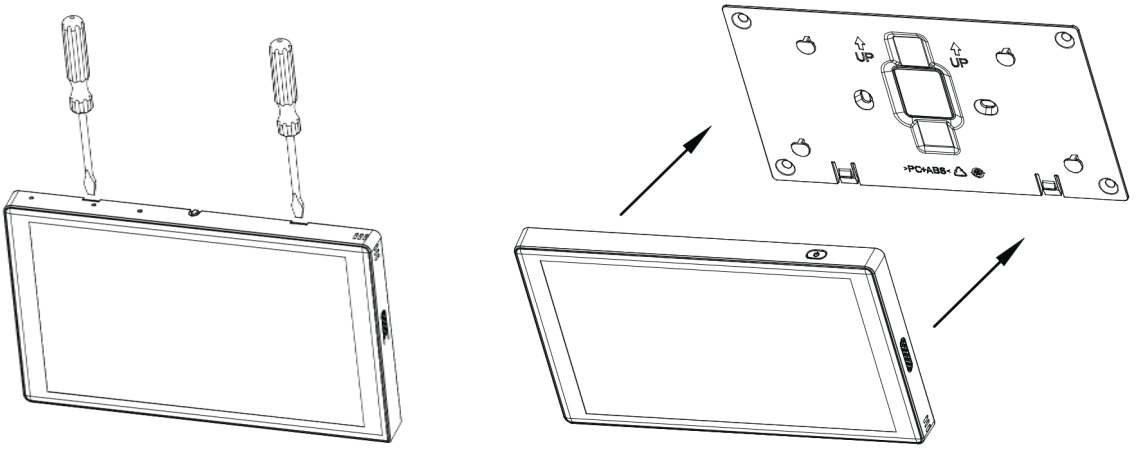
7 Installation Instruction

7.1 Material List

Serial number	Name	Quantity	Remark
1	Communication cable	x1	
2	wired controller	x1	
3	Screw	x2	

7.2 Installation Steps

1) Use the tool to pry the front and rear covers of the wired controller from the lower buckle.

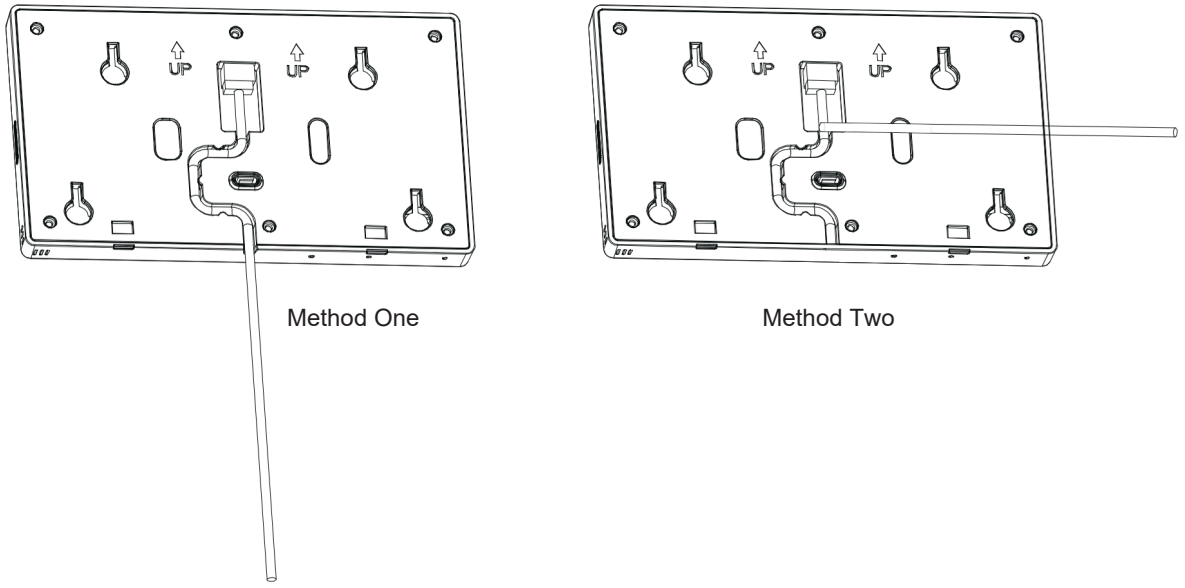


2) Method One:

Pass the communication cable of the accessory through the opening of the rear cover, and stick the communication cable in the cable slot of the rear cover. Reserve 20mm-30mm length in the wire controller.

Method Two:

The entry hole for the cables in the back box is located at the rear (i.e., the side facing away from the wall), with 80mm-90mm of cable reserved so that the cables can enter the back box directly from inside the wall.



Method One

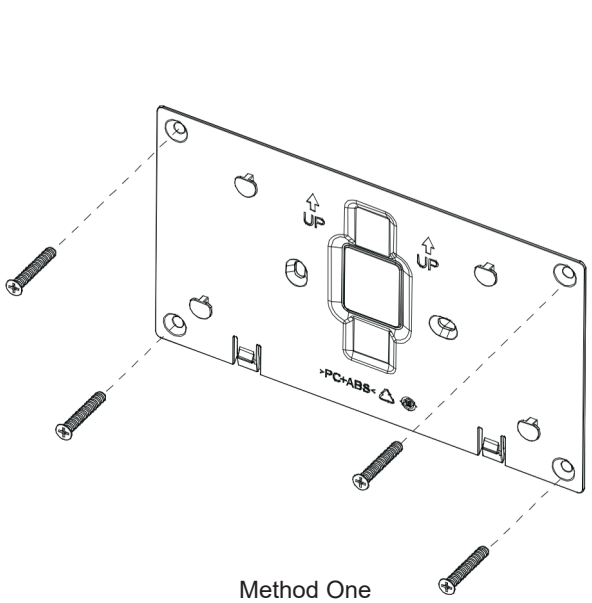
Method Two

3) Method One:

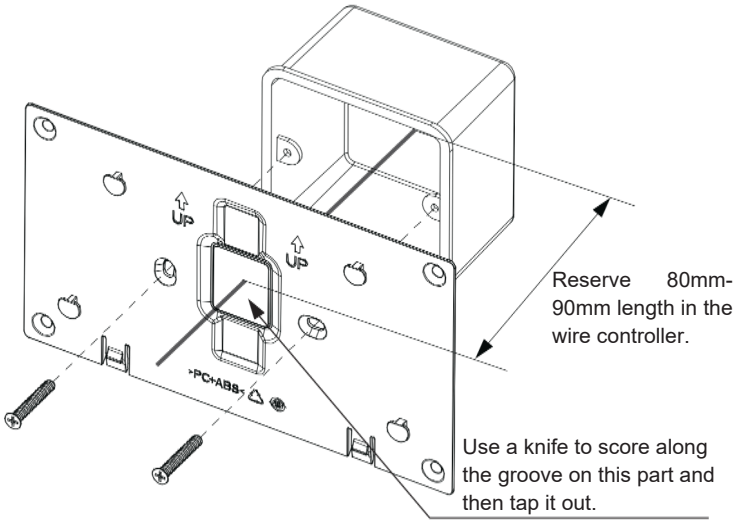
Use the screws(accessory) to install the rear cover of the wired controller on the wall.

Method Two:

Align the wired controller base with the back box, organize all cables within the cavity of the back box, and then secure the base to the back box using screws.



Method One

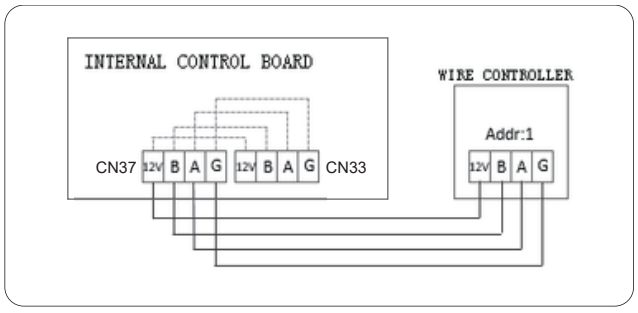


Method Two

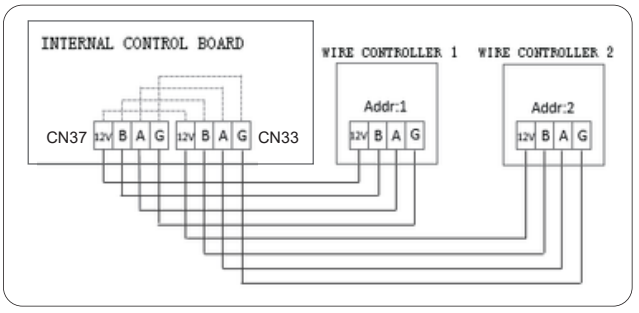
⚠ Battery Disposal

Do not dispose of batteries as unsorted municipal waste, Refer to local laws for proper disposal of batteries. Batteries may have a chemical symbol at the bottom of the disposal icon. This chemical symbol means that the battery contains a heavy metal that exceeds a certain concentration. An example is Pb: Lead (>0.004%).Appliances and used batteries must be treated in a specialized facility for reuse, recycling and recovery. By ensuring correct disposal, you will help avoid possible negative consequences for the environment and hu man health.

7.3 Communication Cable Connection



One-to-one control



Two-to-one control