

## OPERATION MANUAL

<b>Caution Statements</b> .....	<b>1</b>
<b>Safety Precautions</b> .....	<b>2</b>
<b>1. Safety requirements and responsibilities</b> .....	<b>7</b>
<b>2. Product Introduction Information</b> .....	<b>8</b>
2.1 Term .....	8
2.2 System operation schematic diagram .....	8
2.3 Product Main Function Description .....	9
2.4 Heat pump installation .....	10
2.5 Temperature limit for use .....	10
2.6 Your heat pump has been pre-set at the factory .....	10
2.7 Suggestions for energy-saving use of heat pumps .....	11
2.8 More comfortable usage tips for heat pumps .....	11
<b>3. System operation instructions</b> .....	<b>12</b>
3.1 Working principle of wire controller .....	12
3.2 Touch screen operation .....	12
3.3 IoT applications .....	12
3.4 Use the application to check the following system requirements .....	12
3.6 Controller status and display .....	12
3.7 Display instructions for the main interface of the Controller .....	12
3.8 Display instructions and setting methods for each interface of the Controller .....	14
<b>4. Explanation of terminology definitions in the appendix</b> .....	<b>39</b>
4.1 Description of each system component .....	39
4.2 Explanation of climate curve .....	39
4.3 Heating system circuit description .....	40
4.4 Secondary pump .....	40
4.5 Online Description of Control Strategies .....	40
4.6 Explanation of Temperature Control in Control Strategy .....	40
4.7 Smart Grid Description .....	40
4.8 Explanation of DHW Priority Enabling in Hybrid Mode .....	41
4.9 Instructions for using zero cold water for DHW users .....	41

Please follow these safety instructions closely to prevent accidents and material losses.

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Safety instructions explained

 **DANGER** : This symbol warns against the risk of injury.

**NOTE:** ● This symbol warns against the risk of material losses and environmental pollution.

● Details identified by the word "Note" contain additional information.

The contains easily flammable refrigerant in safety group A3 according to ISO 817 and ANSI/ASHRAE Standard 34.

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### Target group

These instructions are exclusively intended for qualified contractors.

- Work on the refrigerant circuit with flammable refrigerant in safety group A3 may only be carried out by authorised contractors. These contractors must be trained in accordance with EN 378 Part 4 or IEC 60335-2-40, Section HH. The certificate of competence from an industry-accredited body is required.
- Brazing/soldering work on the refrigerant circuit may only be carried out by contractors certified in accordance with ISO 13585 and AD 2000, Datasheet HP 100R. And only by contractors qualified and certified for the processes to be carried out. The work must fall within the range of applications purchased and be carried out in accordance with the prescribed procedures. Soldering/brazing work on accumulator connections requires certification of personnel and processes by a notified body according to the Pressure Equipment Directive (2014/68/EU).
- Work on electrical equipment may only be carried out by a qualified electrician.
- All safety-relevant points must be checked regularly by the particular certified heating contractors. This applies especially before initial commissioning, as well as during maintenance, inspection and decommissioning.
- The system must be commissioned by the system installer or a qualified person authorised by the installer.

### Regulations to be observed

- National installation regulations.
  - Statutory regulations for the prevention of accidents.
  - Statutory regulations for environmental protection.
  - Statutory requirements for pressure equipment: Pressure Equipment Directive 2014/68/EU.
  - Codes of practice of the relevant trade associations.
  - Relevant country-specific safety regulations.
  - Applicable regulations and guidelines for operation, service, maintenance, repair and safety of cooling, air conditioning and heat pump systems containing flammable and explosive refrigerant.
-

## Safety instructions for working on the system

The unit contains flammable refrigerant R290 (propane C<sub>3</sub>H<sub>8</sub>). If there is a leak, the escaping refrigerant may form a flammable or explosive atmosphere in the ambient air. A safety zone is defined in the immediate vicinity of the unit, in which special rules apply when working on the appliance.

### WARNING

#### 1. Working in the safety zone

##### DANGER

1.1 Risk of explosion: Escaping refrigerant may form a flammable or explosive atmosphere in the ambient air.

1.2 Take the following measures to prevent fire and explosion in the safety zone:

- Keep ignition sources away, e.g. naked flames, hot surfaces, electrical devices not free of ignition sources, mobile devices with integrated batteries (e.g. mobile phones, fitness watches, etc.).

- Permissible tools:

All tools for working in the safety zone must be designed and explosion-protected in accordance with the applicable standards and regulations for refrigerant in safety group A3, e.g. brushless machines (cordless screwdrivers), extraction equipment, disposal containers, installation aids, vacuum pumps, conductive hoses, mechanical tools of non-sparking material, etc.

1.3 The tools must also be suitable for the pressure ranges in use.

1.4 Tools must be in perfect maintenance condition.

- The electrical equipment must meet the requirements for areas at risk of explosion, zone 2.
- Do not use flammable materials, e.g. sprays or other flammable gases.
- Discharge static: Before beginning work, touch earthed objects, such as heating or water pipes.
- Do not remove, block or bridge safety equipment.
- Do not make any changes:  
Do not modify the unit, inlet/outlet lines, electrical connections/cables or the surroundings. Do not remove any components or seals.

#### 2. Working on the system

- Switch off the power supply to the unit, e.g. at a separate fuse or mains isolator. Check that the system is no longer live.

2.1 In addition to the control circuit there may be several power circuits.

2.2 Contact with live components can result in severe injuries. Some components on PCBs remain live even after the power supply has been switched off.

2.3 Prior to removing covers from the appliances, wait at least 4 minutes until the voltage has completely dropped out.

- Safeguard the system against re-connection.
- Wear suitable personal protective equipment when carrying out any work.

2.4 Hot surfaces and fluids can result in burns or scalding. Cold surfaces may cause frostbite.

- Prior to servicing or maintenance tasks, switch off and allow the equipment to cool down or warm up.
- Do not touch hot or cold surfaces on the appliance, fittings or pipework.

 **WARNING**
**3. Safe guard the system****NOTE:**

Electronic assemblies can be damaged by electrostatic discharge.

Before beginning work, touch earthed objects, such as heating or water pipes, to discharge any static.

**4. Work on the refrigerant circuit**

4.1 R290 refrigerant (propane) is an air displacing, colourless, flammable, odourless gas which forms explosive mixtures with air.

4.2 Refrigerant drained must be properly disposed of by authorised contractors.

4.3 Perform the following measures before beginning work on the refrigerant circuit:

- Check the refrigerant circuit for leaks.
- Ensure very good ventilation especially in the floor area and sustain this for the duration of the work.
- Secure the area surrounding the work area.
- Inform the following persons of the type of work to be carried out:
  - All maintenance personnel.
  - All persons in the vicinity of the system.
- Inspect the area immediately around the heat pump for flammable materials and ignition sources: Remove all flammable, movable materials and any ignition sources from the safety zone.
- Before, during and after the work, check the surrounding area for escaping refrigerant using an explosion-proof refrigerant detector suitable for R290. This refrigerant detector must not generate any sparks and must be suitably sealed.
- A CO<sub>2</sub> or powder extinguisher must be to hand in the following cases:
  - Refrigerant is being drained.
  - Refrigerant is being topped up.
  - Soldering or welding work is being carried out.
- Display signs prohibiting smoking.

 **DANGER**

4.4 Escaping refrigerant can lead to fire and explosions that result in very serious injuries or death.

- Do not drill or apply heat to a refrigerant circuit filled with refrigerant.
- Do not operate the valves unless a fill valve or extraction equipment is attached.
- Take measures to prevent electrostatic charge.
- No smoking! Prevent naked flames and sparks. Never switch lights or electrical appliances on or off.
- Components that contain or contained refrigerant must be labelled, and stored and transported in well ventilated areas in accordance with the applicable regulations and standards.

4.5 Direct contact with liquid and gaseous refrigerant can cause serious damage to health, e.g. frostbite and/or burns. There is a risk of asphyxiation if it is breathed in.

- Prevent direct contact with liquid and gaseous refrigerant.
- Wear personal protective equipment when handling liquid and gaseous refrigerant.
- Never breathe in refrigerant vapours.

## **WARNING**

4.6 Refrigerant is under pressure:

- Mechanical loading of lines and components can cause leaks in the refrigerant circuit.
- Do not apply loads to the lines and components, e.g. by supporting or placing tools.

4.7 Hot and cold metallic surfaces of the refrigerant circuit may cause burns or frostbite if skin contact is made. Wear personal protective equipment to protect against burns or frostbite.

4.8 When refrigerant is being removed, hydraulic components may freeze. Drain heating water from the heat pump beforehand.

4.9 Damage to the refrigerant circuit can cause refrigerant to enter the hydraulic system. After completion of the work, vent the hydraulic system correctly. When doing so, ensure the area is sufficiently ventilated.

## **5. Installation**

### **5.1 Frost protection**

**NOTE:** Freezing can cause damage to the heat pump.

- Thermally insulate all the hydraulic lines.
- In order to activate the frost protection function, electrically connect the heat pump before filling the secondary circuit. Switch on the power supply.
- Only fill the secondary circuit with suitable fill water in accordance with VDI 2035, not with media containing antifreeze.

### **5.2 Connecting cables**

#### **DANGER**

With short electrical cables, should there be leakage in the refrigerant circuit, gaseous refrigerant may reach the inside of the building.

- Seal the pipe entry to the building using the most suitable current technology. Route the pipes into the building through, for example, a suitable pipe liner with wall seal flanges.

### **5.3 Repair work**

**NOTE:** Repairing components that fulfil a safety function can compromise the safe operation of the system.

- Replace faulty components only with genuine spare parts.
- Do not undertake any repairs on the inverter. Replace the inverter if there is a defect.

### **5.4 Auxiliary components, spare and wearing parts**

**NOTE:**

- Auxiliary components, spare parts and wearing parts that have not been tested together with the system can compromise its function.
- Installing non-authorised components and making non-approved modifications or conversions can compromise safety and may invalidate our warranty.
- For installation and replacements, use only Hisense original parts or spare parts approved by Hisense.

 **WARNING**

## 6. Safety instructions for operating the system

### 6.1 What to do if refrigerant escapes

 **DANGER**

6.1.1 Escaping refrigerant can lead to fire and explosions that result in very serious injuries or death.

6.1.2 Take the following measures to prevent fire and explosion:

- Ensure very good ventilation especially in the floor area of the unit.
- No smoking! Prevent naked flames and sparks. Never switch lights or electrical appliances on or off.
- Evacuate any people from the danger zone.
- From a safe position, switch off the electricity supply for all system components.
- Remove ignition sources from the danger zone.
- Let the system user know that no ignition source may be brought into the danger zone for the duration of the repair.
- Repair work must be carried out by an authorised contractor.
- Do not restart the system until repairs and a leak test have been carried out. Perform a leak test for both the refrigerant circuit and the connections on the heating water side.

6.1.3 Direct contact with liquid and gaseous refrigerant can cause serious damage to health, e.g. frostbite and/or burns. Prevent direct contact with liquid and gaseous refrigerant.

6.1.4 Breathing in refrigerant may cause suffocation. Never breathe in refrigerant vapours.

### 6.2 If water escapes from the appliance

 **DANGER**

6.2.1 If water escapes from the appliance there is a risk of electric shock. Switch off the heating system at the external isolator (e.g. fuse box, domestic distribution board).

6.2.2 If water escapes from the appliance, there is a risk of scalding. Never touch hot heating water.

### 6.3 What to do if the unit ices up

**NOTE:**

6.3.1 A build-up of ice in the condensate pan and in the fan area of the outdoor unit can cause damage to the equipment.

6.3.2 Please note the following:

- Do not use mechanical items/aids for the removal of ice.
- Before using electrical heating appliances, check the refrigerant circuit for leaks with a suitable measuring device.
  - The heating appliance should not be a source of ignition.
  - The heating appliance must meet the requirements of EN 60335-2-30.
- If ice regularly builds up on the unit (e. g. in areas where frost and heavy fog occur frequently), install fanning heating that is suitable for refrigerant R290 and/or an electric ribbon heater in the condensate pan (accessories or factory-fitted).

### **WARNING**

#### **6.4 Safety instructions for storage of the unit**

The unit is charged at the factory with refrigerant R290 (propane).

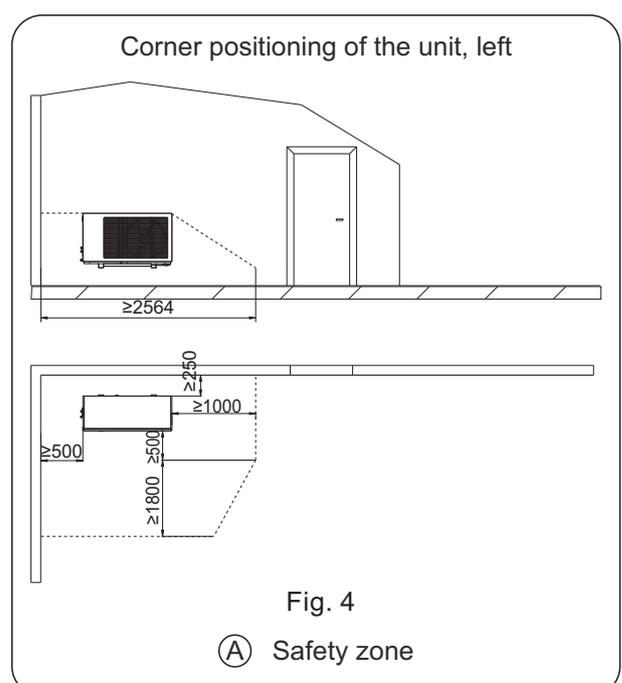
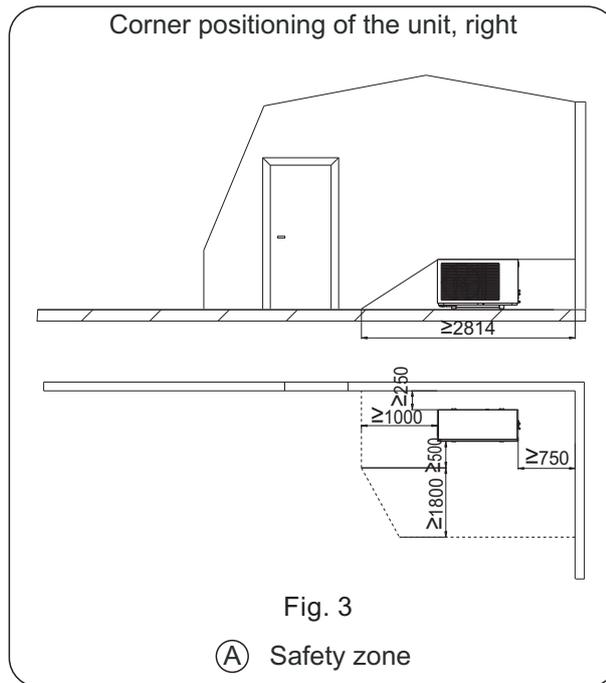
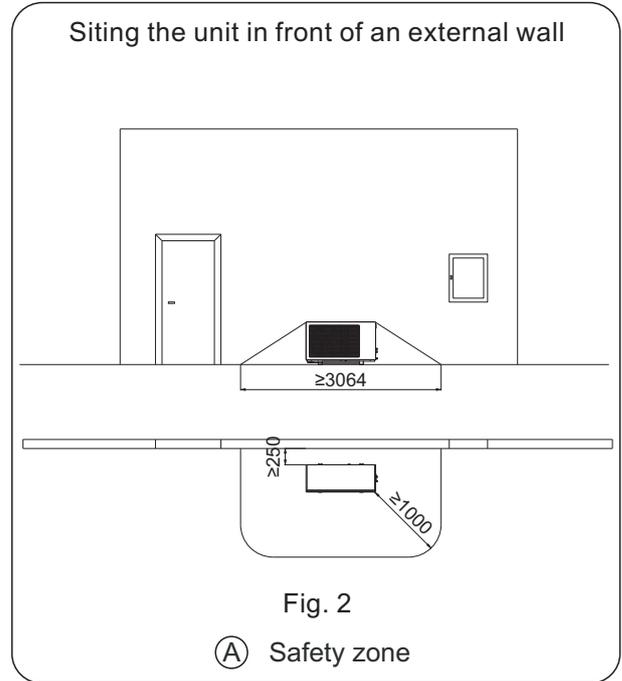
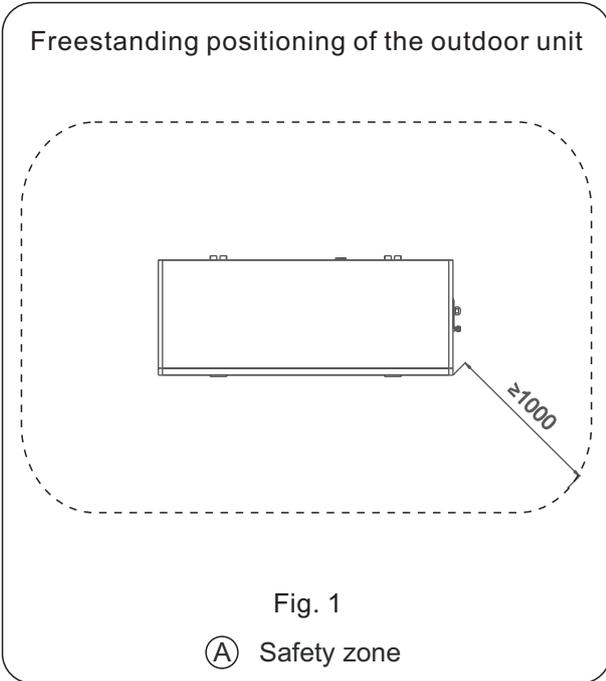
#### **DANGER**

6.4.1 Escaping refrigerant can lead to fire and explosions that result in very serious injuries or death. There is a risk of asphyxiation if it is breathed in.

6.4.2 Store the unit in the following conditions:

- An explosion prevention plan must be in place for storage.
- Ensure there is sufficient ventilation at the storage location.
- Temperature range for storage: -25°C to 70 °C.
- Only store the unit in its exfactory protective packaging.
- Protect the unit against damage.
- The maximum number of units that may be stored in one place is determined by local conditions.

1. Safety requirements and responsibilities



When cleaning the unit, it is necessary to shut down the machine and cut off the power switch. If the unit is operated with electricity, cleaning can cause electric shock and personal safety injuries. Our company is not responsible for this.

In winter or when the ambient temperature is below 2°C, if the machine is shut down for a long time without use, please make sure to drain the water in the waterway and water tank to prevent water from freezing and expanding, causing the waterway and water tank to freeze and crack, and damaging the machine. If the anti-freeze protection of the unit is stopped due to a power outage, resulting in frost cracking and damage to the unit, our company is not responsible for this.

We are not responsible for any loss of profits, unrealized savings or other direct or indirect subsequent losses caused using the WiFi interface integrated in the system or the corresponding Internet services. We are not responsible for any losses caused by improper use.

Liability is limited to typical damages caused by a breach of basic contractual obligations due to minor negligence, and the performance of minor negligence is essential for the proper performance of the contract. If the damage is caused intentionally or due to gross negligence, or if mandatory liability is applied due to product liability legislation, the limitation of liability shall not apply.

## 2. Product Introduction Information

### 2.1 Term

Please refer to the appendix for specific details.

### 2.2 System operation schematic diagram

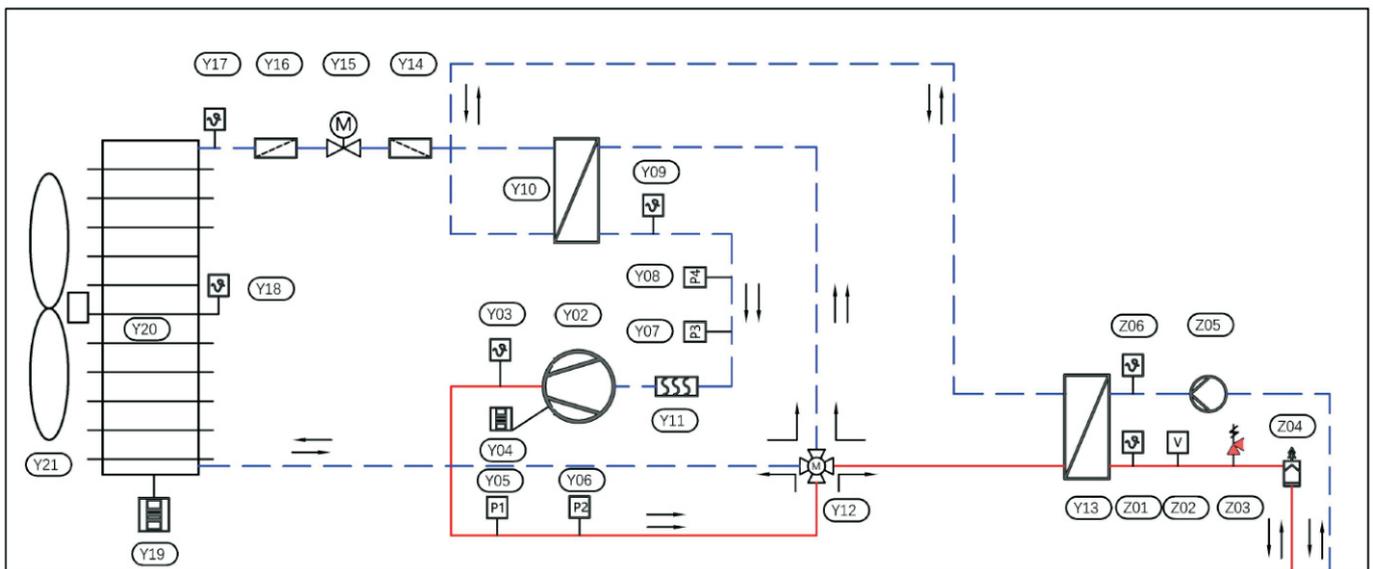


Fig. 5

Serial Number	Name
Y01	Internal principles of the unit
Y02	Compressor
Y03	Exhaust temperature sensor
Y04	Crankshaft heating strip
Y05	High pressure switch
Y06	High pressure sensor
Y07	Low pressure switch
Y08	Low pressure sensor
Y09	Return air temperature sensor
Y10	Reheater
Y11	Gas-liquid separator
Y12	Four-way reversing valve
Y13	Plate heat exchanger
Y14	Filter
Y15	Electronic expansion valve
Y16	Filter
Y17	Outer coil temperature sensor
Y18	Ambien temperature sensor
Y19	Chassis heating belt
Y20	Finned heat exchanger
Y21	Fan assembly
Y22	Reservoir
Z01	Water outlet temperature sensor
Z02	Water flow switch
Z03	Safety valve
Z04	Automatic exhaust valve
Z05	Built in primary inverter circulating pump
Z06	Water inlet temperature sensor

## 2.3 Product Main Function Description

Heat pump function

- Cooling
- Heating
- Domestic hot water
- High temperature sterilization - DHW
- Automatic mode
- Holiday mode
- Gas/solar hot water linkage
- Cascade control
- Dual temperature zone control
- Night mode
- Quiet mode
- Timing function
- Zero cold water function
- Climate curve selection
- IOT Platform Management System
- OTA remote upgrade function

### 2.4 Heat pump installation

A heat pump can heat or cool your room through a heating system and heat up your home's hot water.

Your heating contractor will install the required system components for your building based on the functions you will be using. According to your heat pump type, up to two heating/cooling circuits can be directly connected to the indoor side for room heating or cooling.

If your system has a separate buffer cylinder, your heating/cooling circuit will be connected to this cylinder and heated and cooled through it. In such a system configuration, up to 3 heating/cooling circuits can be connected. The heat pump only provides direct heat/cooling to the buffer cylinder. Due to the large volume of the buffer tube, the operating frequency of your heat pump will decrease, but the operating time will be longer, which will enable the unit to achieve higher efficiency and make your heat pump operate more safely and reliably.

#### NOTE:

In systems with separate buffer cylinders, it is not possible to use them for room heating at the same time as room cooling.

The discharge point of domestic hot water (DHW) in residential areas is supplied through the DHW water tank. You will install an additional separate DHW water tank and connect it to the unit.

### 2.5 Temperature limit for use

#### 2.5.1 Air/water heat pumps utilize outdoor air as a heat source. The operation is only valid within the specified temperature range:

- Outdoor ambient temperature range for room heating: -25~30°C.
- Indoor cooling and outdoor ambient temperature range: 16~45°C.
- DHW domestic hot water outdoor environmental temperature range: -25~45°C.

If the outdoor ambient temperature is higher than the upper limit or lower than the lower limit, turn off the unit. You will see this information on the heat pump control unit.

Even outside the specified temperature range, in order to meet the heat demand for room heating and DHW heating, the heat pump control unit automatically turns on the electric heater (If installed) for heating.

Once the external temperature returns to the temperature range, the heat pump will automatically start and run again.

#### 2.5.2 Test run

The debugging and matching of the heat pump control unit must comply with local conditions and the structural characteristics of the building, coupled with guidance from the user operating system, and must be carried out by your heating contractor.

**NOTE:** These operating instructions also describe the functions that can only be provided by certain heat pump models or accessories. These functions have not been clearly defined. Regarding the scope and accessories of your heat pump and heating system, please contact your contractor.

### 2.6 Your heat pump has been pre-set at the factory

Therefore, it is ready to run:

#### 2.6.1 Room heating/cooling mode

- After turning on, the water temperature will be heated to the default set temperature of 50°C.
- If a separate buffer cylinder is installed, the buffer cylinder will be heated.

#### 2.6.2 DHW heating

- In mixed mode, DHW heating takes priority and defaults to "set DHW temperature" of 50°C.
- Any installed DHW auxiliary circulation pump will start.
- If necessary, auxiliary electric heating can also be used to heat DHW's hot water.

#### 2.6.3 Anti Freezing

- Ensure defrosting protection for your heat pump, DHW water tank, and any individual buffer water tank.

Attention: When the external temperature is below -20°C, if the heat pump malfunctions and if electric heater has installed, only the instantaneous heating water heater inside the indoor unit is turned on to provide frost protection for the system.

### 2.6.4 Winter/Summer Conversion

- This conversion is automatic and automatically switches modes based on the ambient temperature.

#### Date and time

- The date and time are set by the factory. You can change the settings at any time to meet your personal needs. If there is a power failure, all settings will be retained.

## 2.7 Suggestions for energy-saving use of heat pumps

### 2.7.1 Energy saving suggestions when using room heating:

- Don't set too high room temperature: every degree of room temperature reduction can save up to 6% on heating costs. Do not set the standard room temperature above 20°C.
- Adjust the setting in the room heating schedule ("time program") at night or when not at home frequently.
- Adjust the heating curve to heat your home at the temperature you personally like throughout the year.
- To turn off unnecessary functions (such as room heating in summer).
- If you want to leave, please set the "holiday mode". During your vacation, the room temperature will decrease, DHW heating will be turned off, and you can set it according to your own needs.

### 2.7.2 Energy saving suggestions for heating in DHW:

- Heat DHW to a lower temperature during nighttime or regular absences.
- Only turn on the DHW cycle when you regularly use hot water.

#### Smart grid

Use free or cheap excess electricity to provide electricity for your heating system. To use this feature, please contact your heating contractor.

## 2.8 More comfortable usage tips for heat pumps

### 2.8.1 How to increase comfort

- Set personal preferred temperature.
- Adjust the time program of your heating/cooling circuit to automatically reach your personal preferred temperature when you are present.
- Adjust the heating curve to heat your home at the temperature you personally like throughout the year.
- If you need a longer heating/cooling stage in the short term, please manually set the heating time.

### 2.8.2 Provide sufficient DHW heating demanded

- Adjust the time program to heat DHW so that there is enough hot water according to your habits. For example, more DHW is needed in the morning than during the day.
  - Adjust the zero return time program of the DHW circulation pump so that when extracting hot water more frequently, domestic hot water can be immediately obtained from the faucet.
  - If you need your DHW temperature to rise for a period of time, you can set the temperature you need on the online controller, but it cannot exceed the set temperature range.
-

## 3. System operation instructions

### 3.1 Working principle of wire controller

All of your system settings can be done through a remote control unit or other room temperature control devices and IoT platforms.

### 3.2 Touch screen operation

This unit is equipped with a 5-inch color touch screen. To input settings and check information, click the button on the screen. Operate through remote control units or room temperature control devices, with separate operating instructions.

### 3.3 IoT applications

Allow you to operate through mobile devices such as smartphones and other systems. The available functions depend on the system equipment, such as the presence or absence of separate room control components.

### 3.4 Use the application to check the following system requirements:

- WiFi connections are controlled by routers.
- Smartphone or tablet operating system

-Apple system

-Android system

### 3.5 For more detailed information, please refer to the wireless connection control instructions.

### 3.6 Controller status and display

Whether the status display is lit or not depends on the working status of the heat pump.

During runtime, each symbol displays a meaning.

Display meaning:

- The display screen darkens, indicating that if there is no operation within 1 minute, the screen will automatically darken.
- Continuously lit display screen: indicates that you are operating the control line controller. Each input operation is confirmed by a brief flashing.

### 3.7 Display instructions for the main interface of the Controller



Fig. 3

## System operation instructions

The top of the main interface displays from left to right: year- month -day, time, ambient temperature, cascade, night mode, silent, holiday, timer, sterilization, defrosting, electric heater, return water, gas, water pump, fan, compressor, WIFI.

	Mode selection: Click to enter mode selection.
	Menu selection: Click to enter the menu selection.
	Power on/off: Click to achieve power on/off operation.
	Temperature display: indicates an ambient temperature of -50°C.
	Temperature display: indicates that the water temperature is 12.3°C.
	Cascade display: When the unit cascade is running, it is constantly on.
	Night mode display: When the unit enters night mode, it remains constantly on.
	Silent mode display: When the unit enters silent mode, it remains on and displays continuously.
	Holiday mode display: When the crew enters holiday mode, it remains on and displays continuously.
	Timed display: When the timed function is enabled, it remains constantly on.
	Sterilization display: When the sterilization function is enabled, it is constantly on.
	Defrosting display: When the unit enters defrosting, it remains on continuously.
	Electric heating display: When the electric heating is started, it is constantly on.
	Zero cold water display: When the return water pump is started, it is constantly on; When the return water pump does not start and the return water timing is set, it flashes and displays.
	Gas display: When the gas is started, it is constantly on.
	Water pump display: When the water pump is running, it is constantly on.
	Fan display: When the fan is started, it is constantly on.
	Compressor display: When the compressor is started, it is constantly on.
	WiFi display: When the machine is successfully connected to WIFI, it will be constantly on.
	Mixing valve display: When the dual temperature zone of the machine is enabled, the mixing valve icon "  " is constantly on and displays the percentage opening.
	Fault display: When there is a unit fault, the icon flashes. Clicking on the icon will enter real-time fault/fault record viewing; When the fault is eliminated, the icon goes off.

## 3.8 Display instructions and setting methods for each interface of the Controller

### 3.8.1 Mode selection

When the homepage is on, press the “” key (or press “” on the menu page) to enter the unit mode selection function page.

Click on the corresponding mode on the mode selection page to switch modes.

Press the back button or home button in the bottom left corner to return to the home page.

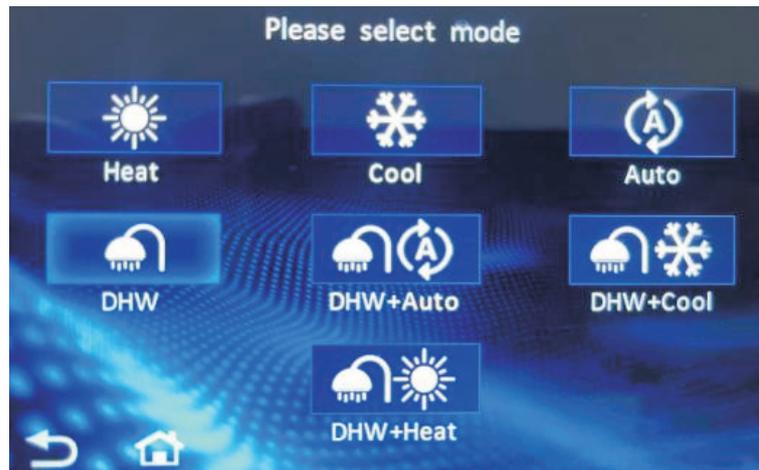


Fig. 4

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### 3.8.2 Menu selection

When the homepage is on, press the “” key to enter the unit menu selection function page.

Click the corresponding function button on the menu selection page to enter the corresponding function settings page.

Press the back button or home button in the bottom left corner to return to the home page.



Fig. 5

## 3.8.3 Function selection

Under the menu page, press the “” key to enter the function selection page.  
Press the back button or home button in the bottom left corner to return to the home page.



Fig. 6

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### 3.8.3.1 Function selection - Night mode

On the function selection page, press “” to select the night mode and select the percentage of machine operating capacity. Then turn on the button switch to set the activation time period in Night Mode Start and End Time.



Fig. 7

### 3.8.3.2 Function selection - Mute mode

On the function selection page, press “” to select the silent mode. First, select the maximum operating frequency of the compressor and fan, and then turn on the button switch. The machine will be limited to the maximum operating frequency set.



Fig. 8

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### 3.8.3.3 Function Selection - Automatic Mode

On the function selection page, press “” to select automatic mode, which can automatically switch between cooling and heating based on the set ambient temperature for automatic heating and cooling.



Fig. 9

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### 3.8.3.4 Function selection - Hybrid mode

On the function selection page, press “” to select the hybrid mode. When the ambient temperature is lower than the set temperature, the gas will be turned on; When the ambient temperature is equal to the set temperature, it remains unchanged; When the ambient temperature is higher than the set temperature, the gas will be turned off. If the water temperature does not reach the set temperature within the set time after the heat pump is turned on, turn on the gas; When the set temperature is reached, the heat pump is turned on and the gas is turned off. Additionally, a separate time for turning on the gas can be set.



Fig. 10

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### 3.8.3.5 Function Selection - Holiday Mode

On the function selection page, press “” to select the vacation mode, and the vacation can be set to start and end times. During vacation time, the water outlet temperature and domestic hot water temperature are set according to the holiday temperature to start and stop the machine.



Fig. 11

### 3.8.3.6 Function selection - Water temperature setting

On the function selection page, press “” to select the water temperature setting, and you can choose from three water temperature setting methods: Fixed (user fixed setting), OTC point (External Temperature Compensated external temperature compensation point, automatically set water temperature), and OTC Gradient (external temperature compensation slope, automatically set water temperature).



Fig. 12



Fig. 13



Fig. 14

## Fixed: Temperature needs to be set on the main interface by oneself

OTC point: Determine the coordinate curve by setting the minimum ambient temperature, maximum ambient temperature, water temperature at minimum ambient temperature, and water temperature at maximum ambient temperature. The machine will calculate the corresponding water temperature at the current ambient temperature based on the set curve.

OTC Gradient: The highest water temperature, lowest water temperature, and curve slope can be set. By setting these three values, the coordinate curve can be determined, and the machine will calculate the corresponding water temperature at the current ambient temperature based on the set curve. Additionally, users can set the slope of the curve based on their perceived comfort. The slope curve is 0.2~2.2.

Gradient Curve	Ttwo_c1_water_p Ttwo_c2_water_p
0.2	-0.2×Ta+24
0.3	-0.3×Ta+26
0.4	-0.4×Ta+28
0.5	-0.5×Ta+30
0.6	-0.6×Ta+32
0.7	-0.7×Ta+34
0.8	-0.8×Ta+36
0.9	-0.9×Ta+38
1	-1.0×Ta+40
1.1	-1.1×Ta+42
1.2	-1.2×Ta+44
1.3	-1.3×Ta+46
1.4	-1.4×Ta+48
1.5	-1.5×Ta+50
1.6	-1.6×Ta+52
1.7	-1.7×Ta+54
1.8	-1.8×Ta+56
1.9	-1.9×Ta+58
2	-2.0×Ta+60
2.1	-2.1×Ta+62
2.2	-2.2×Ta+64

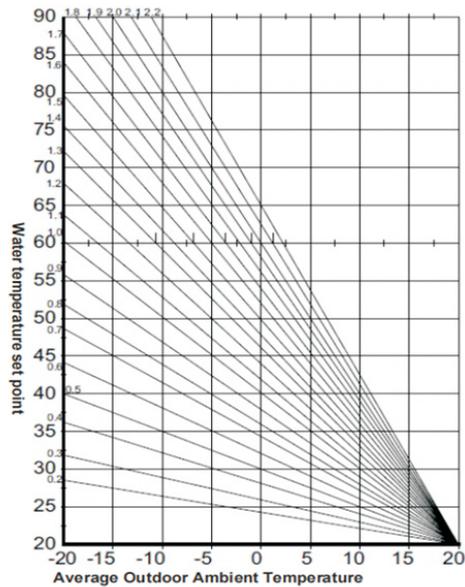


Fig. 15

### 3.8.3.7 Function selection - Sterilization setting

On the function selection page, press “” to select the sterilization mode. The sterilization mode can be selected as "automatic", "manual", or "disabled". When selecting the automatic mode, you can choose how many days to set the interval, when to start, set the sterilization running time, and set the sterilization temperature. In addition, there is a separate switch to enable sterilization on the sterilization mode page (effective once in non disabled mode).



Fig. 16

### 3.8.3.8 Function selection - User settings

On the function selection page, press “” to select the user mode, and you can choose to enable "manual defrosting", "manual activation of electric heating", and "water drainage".



Fig. 17

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### 3.8.3.9 Function selection - Zero cold water setting

On the function selection page, press “” to select the zero cold water mode. The zero cold water mode can be selected as “cycle”, “disable”, “continuous return”, or “temperature difference return”; When there is no set timed return water, it can be returned at any time; When the timed water return function is set, it enters the timed water return mode and can only be returned within the timed water return time period.

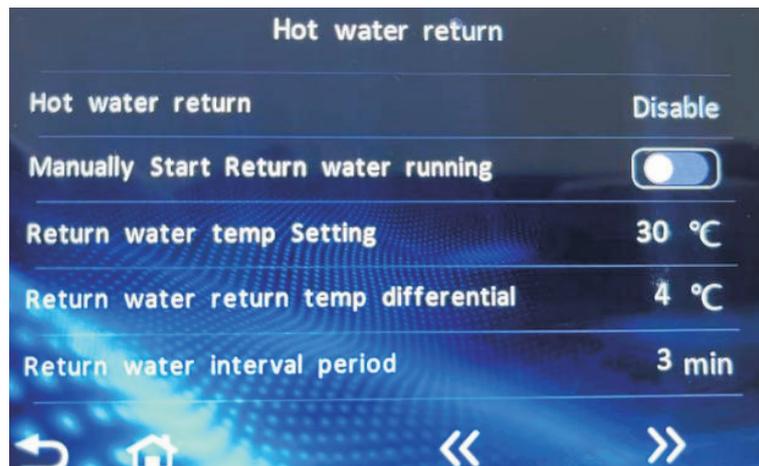


Fig. 18

### 3.8.3.10 Function selection - Timing setting

On the function selection page, press “” to select the timing mode, and you can choose the time period from Monday to Sunday for the scheduled opening. The time period that needs to be opened can be set by the user.

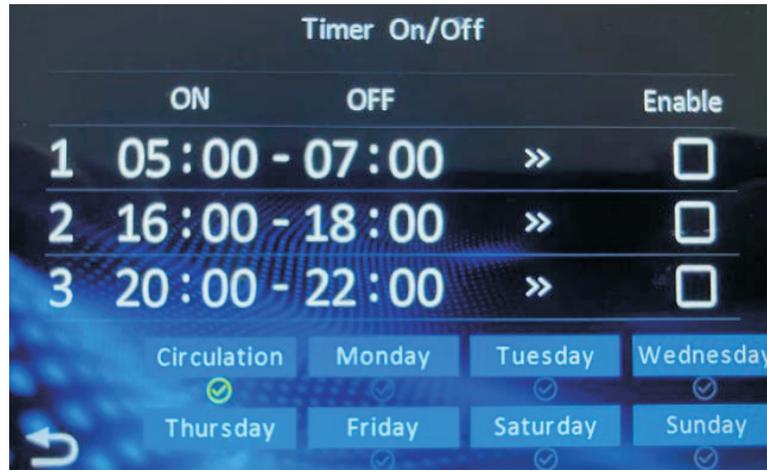


Fig. 19

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### 3.8.3.11 Function selection - Test settings

On the function selection page, press “” to select the testing mode, and you can choose to turn on the frequency or opening of the compressor, fan, electronic expansion valve, and water pump. Note that entering test mode requires a password, which is 1122.

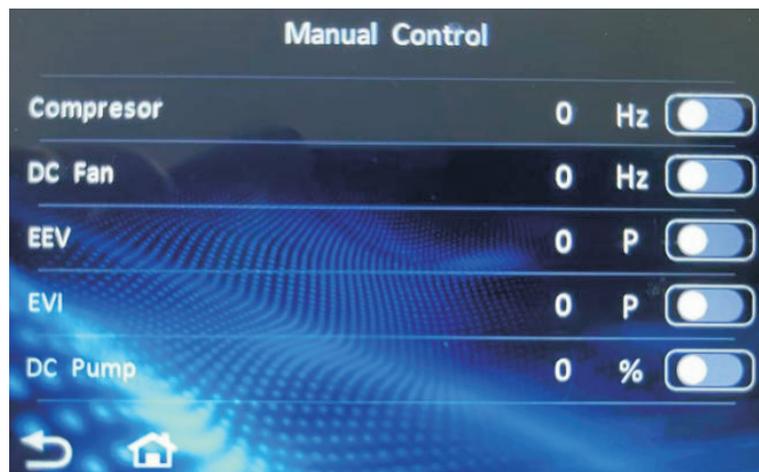


Fig. 20

### 3.8.3.12 Function selection - Hot water setting

On the function selection page, press “” to select the hot water setting, and you can choose whether to require hot water mode and whether hot water is prioritized.

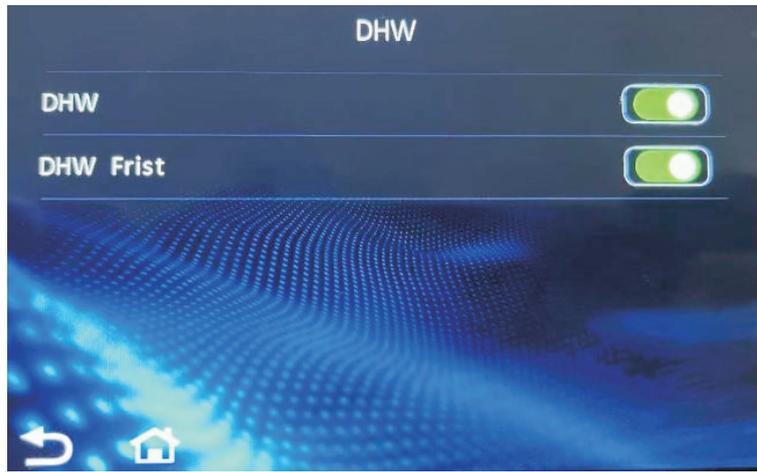


Fig. 21

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### 3.8.3.13 Function Selection - Climate Curve Setting

On the function selection page, press “” to select the climate curve setting. You can select “Disabled”, “Mild”, “Strong”, and set the heating/cooling curve constant. The climate curve formula is as follows:

Mild cooling curve  $TWS = -0.4 * TW + 24 + \text{constant a}$

Strong refrigeration curve  $TWS = -0.4 * TW + 22 + \text{constant a}$

Mild heating curve  $TWS = -0.28 * TW + 32.8 + \text{constant b}$

Strong heating curve  $TWS = -0.52 * TW + 50.2 + \text{constant b}$



Fig. 22

### 3.8.3.14 Function selection - Machine model setting

On the function selection page, press “” to select the machine model settings.

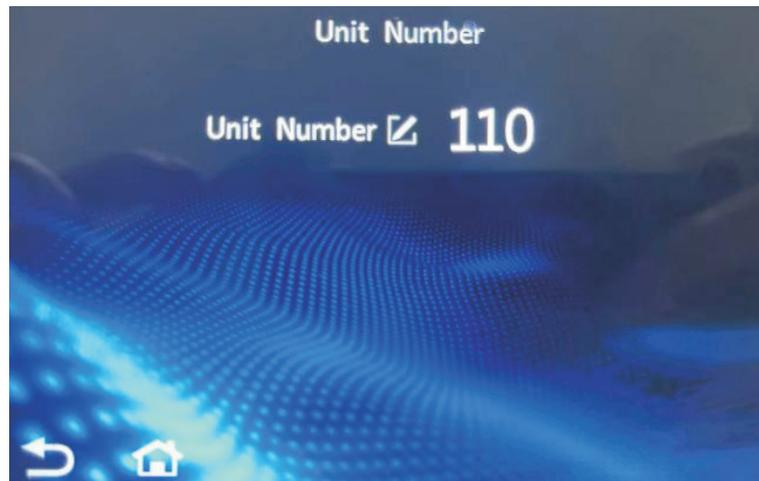


Fig. 23

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### 3.8.3.15 Function Selection - Dual Temperature Zone Setting

On the function selection page, press “” to select the dual temperature zone setting. You can choose “disable”, “demand selection”, “temperature control”, and also set the interval time for adjusting the mixing valve, adjusting the mixing valve cycle, adjusting the percentage of single adjustment of the mixing valve, and controlling the return difference.



Fig. 24

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### 3.8.3.16 Function selection - Water pump anti blocking

On the function selection page, press “” Select the anti blocking mode of the water pump, and you can choose the running time and interval time to enable this mode. Press “Activate This Control Method” to Activate.

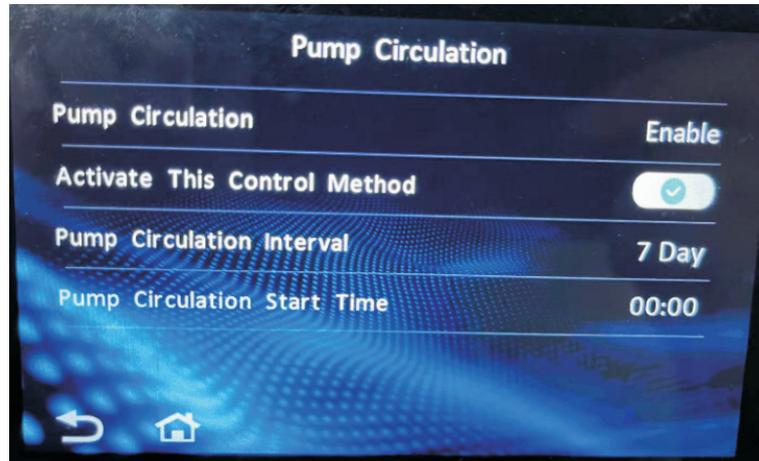


Fig. 25

### 3.8.3.17 Function Selection - Floor Drying

On the function selection page, press  "Select floor drying, you can choose different operating curves (A-F) and custom curves, and turn on the Screed Drying button to start the floor drying mode.

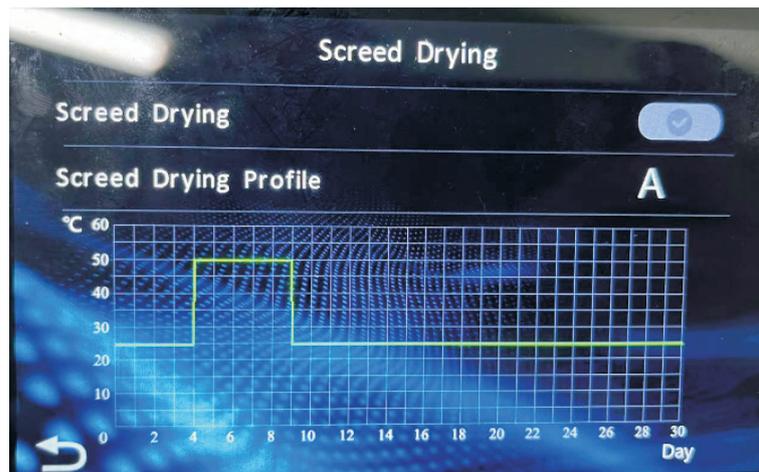


Fig. 26



Fig. 27

## 3.8.4 Query selection

Under the menu page, press the “” key to enter the query selection function page. Press the back button or home button in the bottom left corner to return to the home page.

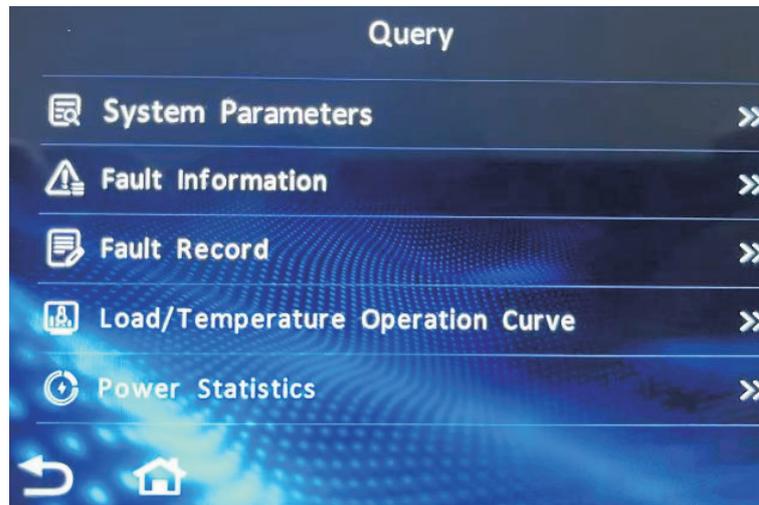


Fig. 28

### 3.8.4.1 System parameter viewing

On the query page, press the “ System Parameters” key to enter the system parameter query page, where you can query relevant parameters of machine operation, such as compressor operating frequency, exhaust temperature, and other information.



Fig. 29

### 3.8.4.2 Real time fault viewing

On the query page, press the “  Fault Information ” key to enter the real-time fault query page, where you can query the real-time fault information of the machine.

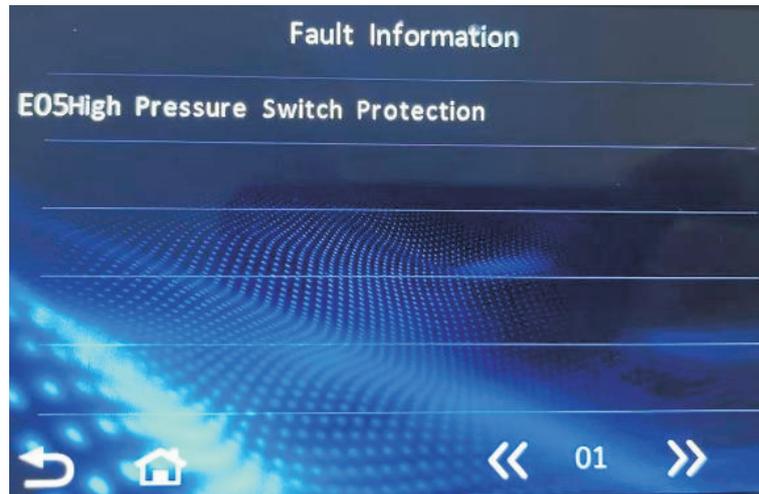


Fig. 30

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### 3.8.4.3 Historical fault viewing

On the query page, press the “  Fault Information ” key to enter the historical fault query page, where you can query the historical fault information of the machine.



Fig. 31

## 3.8.4.4 View running curves

On the query page, press the “[Load/Temperature Operation Curve](#)” key to enter the running curve page, where you can query the machine's information curve, including inlet temperature, outlet temperature, ambient temperature, and compressor operating frequency.

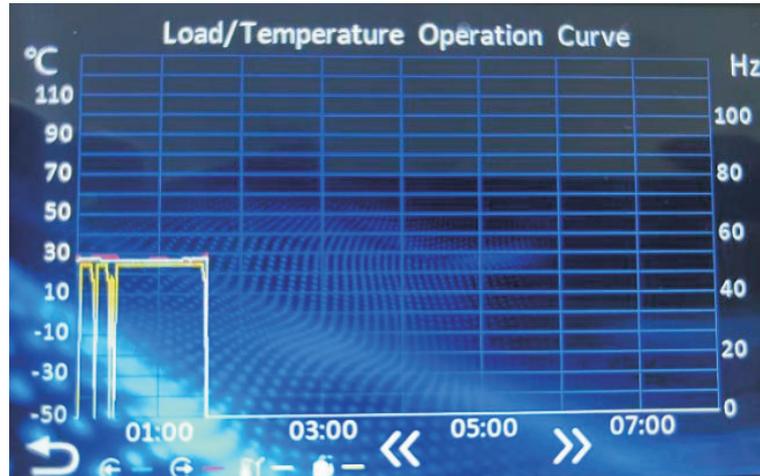


Fig. 32

## 3.8.4.5 Electricity statistics viewing

On the query page, press the “[Power Statistics](#)” key to enter the power consumption statistics page, where you can view the total power consumption of the machine, 24-hour power consumption, input power, input power, input voltage, and corresponding operating curves.



Fig. 33

## 3.8.5 Set Selection

Under the menu page, press the “” key to enter the settings selection page.  
Press the back button or home button in the bottom left corner to return to the home page.



Fig. 34

---

### 3.8.5.1 Date and time settings

Under the settings page, press the “ Date & Time” key to enter the date and time page, which can be set according to the actual time.

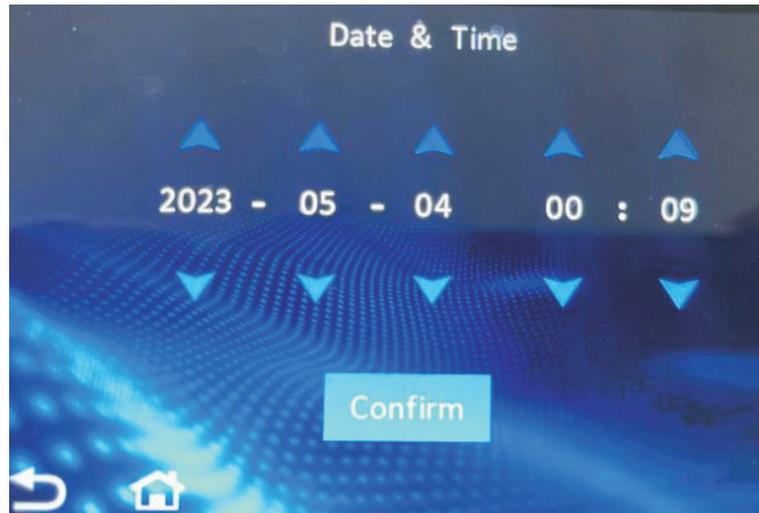


Fig. 35

### 3.8.5.2 Display sound settings

Under the settings page, press the “ Display & Sound” key to enter the display sound page, where you can set touch sound, screen brightness, screen rest time, and language according to actual settings.



Fig. 36

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### 3.8.5.3 Parameter settings

Under the settings page, press the “ Factory Parameters” key to enter the parameter settings page. Users can set relevant parameters according to their needs. Please refer to the Service and User Manual for details.



Fig. 37

### 3.8.5.4 Restore factory settings

Under the settings page, press the “ Restore Factory Settings” key to enter the factory reset page, which allows for factory reset.



Fig. 38

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### 3.8.5.5 Version View

Under the settings page, press the “ About” key to enter the version viewing page, where you can view the versions of the machine's main control program and line control program.



Fig. 39

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## 3.8.6 WIFI distribution network

### 3.8.6.1 Device distribution network binding operation

① Log in with your account, open the mobile app Connect Life, and select “Add Device”.

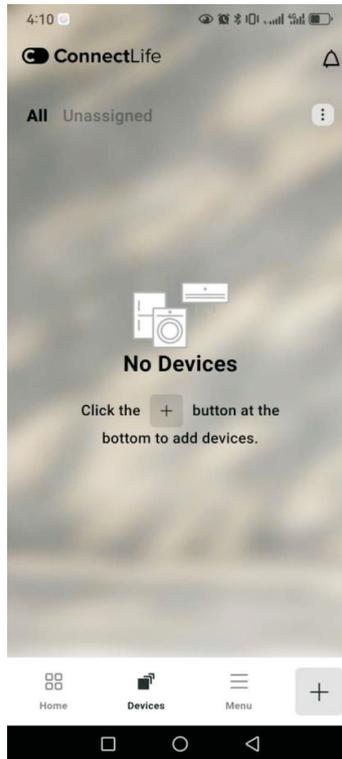


Fig. 40

② Select “Triple supply heating unit”.

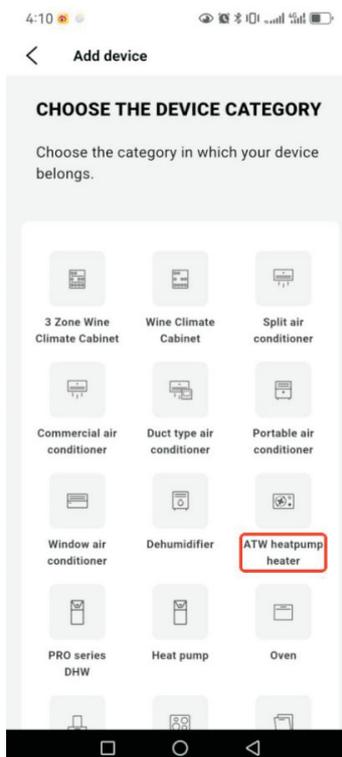


Fig. 41

## ③ Click Next

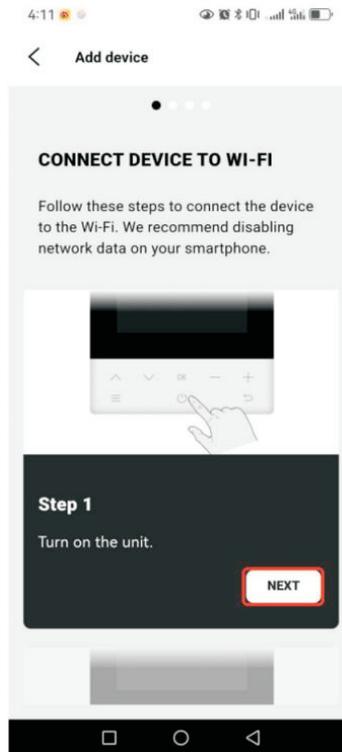


Fig. 42

## ④ Click on "Open Settings"

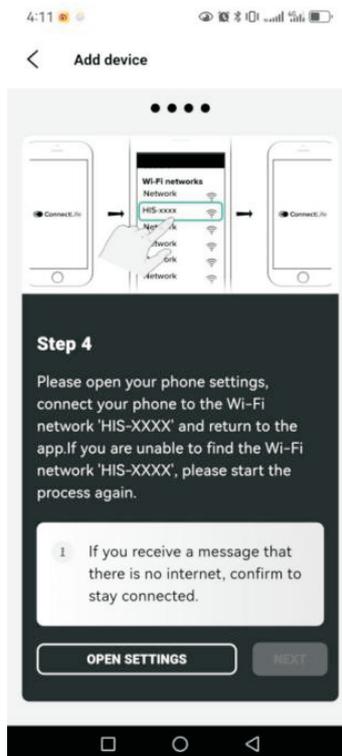


Fig. 43

⑤ Select devices starting with “HIS -” to generate hotspots.

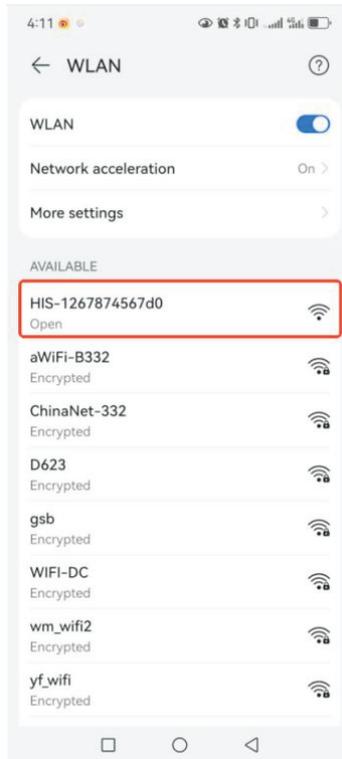


Fig. 44

⑥ Click “Next” to return to the Connect Lift application, wait for this network configuration interface to pop up, and fill in the correct ssid and password.

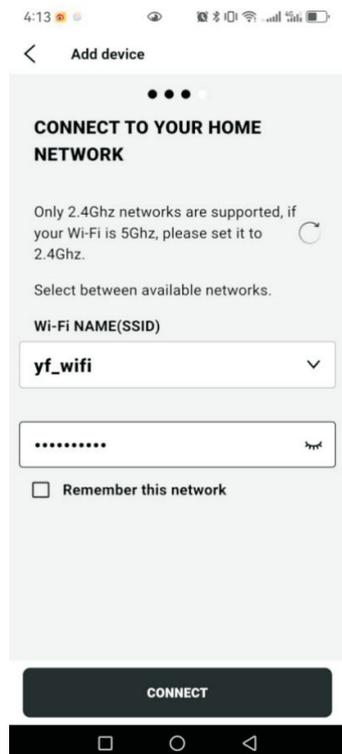


Fig. 45

⑦ Wait for the distribution process to end, then click “Add Device”. After successfully adding the device, the Connect Lift application will pop up a successful prompt message, and at this point, the device's network binding operation is completed.

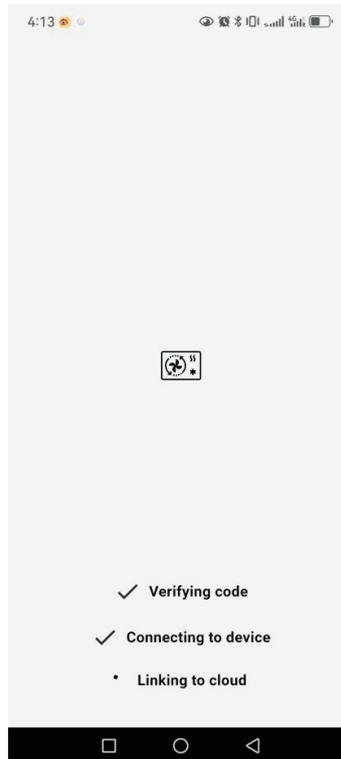


Fig. 46

### 3.8.6.2 Software OTA update operation process

① Select menu page.



Fig. 47

② Click on “Firmware Update” .

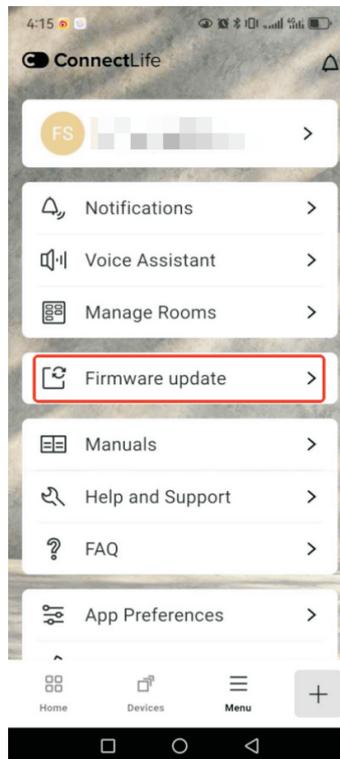


Fig. 48

### 3.8.6.3 Unbind operation (very important, if not unbound, it will result in the end user being unable to bind)

① Enter the device that was successfully added just now.

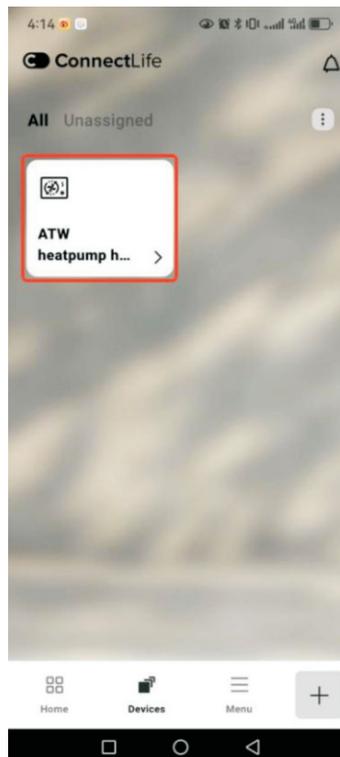


Fig. 49

② Go to “Settings Options” .

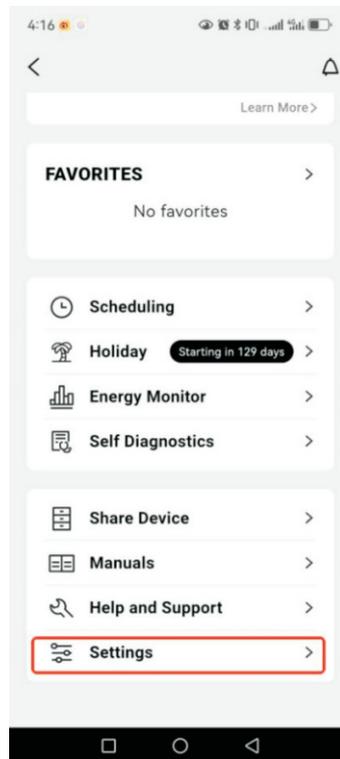


Fig. 50

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③ Click the “Unbind Device” button.

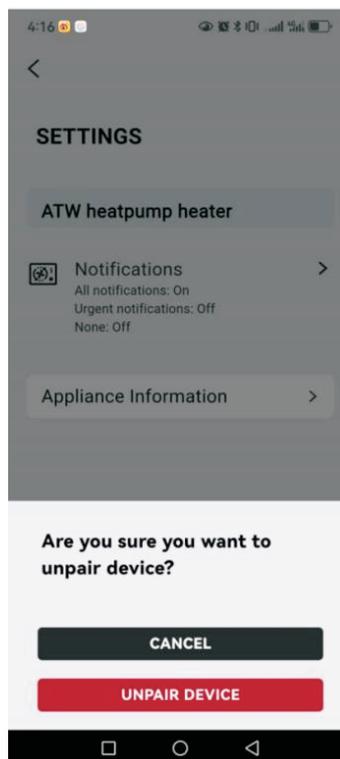


Fig. 51

④ Confirm from the Connect Life device interface that the device has been removed.

**Note: Very important, if not unbound, it will result in the end user being unable to bind.**

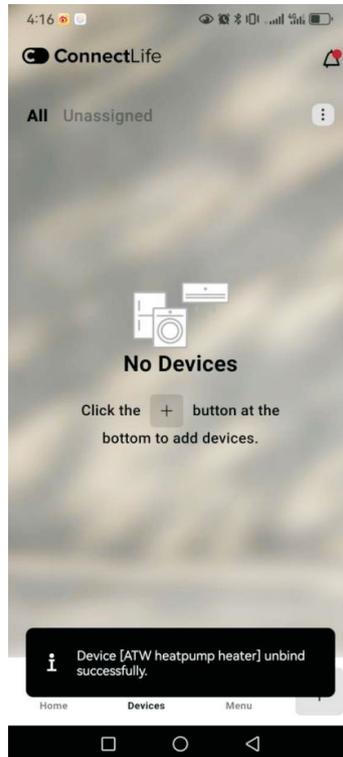


Fig. 52

### 3.8.7 Maintenance and upkeep

The inspection and maintenance of heating systems are regulated by the German Building Energy Law and DIN 4755, DVGW-TRGI 2018, DIN 1988-8, and EN 806 standards. Regular maintenance to ensure fault free, energy-saving, environmentally friendly, and safe heating and cooling operation. For this, it is best to arrange an inspection and maintenance contract with your local contractor.

Please note that your outdoor unit contains A3 safety group highly flammable refrigerant. To ensure the reliability of the heat pump throughout its service life, there are special requirements for inspection and maintenance. After 12 years, special testing of safety equipment is required. Please contact your contractor.

### 3.8.8 Domestic hot water tank

According to standard EN 806-5, maintenance and cleaning should be carried out no later than 2 years after commissioning and as required. Only qualified contractors should clean the interior of DHW cylinders and DHW connectors.

If any water treatment equipment (such as water gates or injection systems) is installed in the cold water supply of DHW cylinders, please ensure timely replenishment. Please follow the manufacturer's instructions for this.

### 3.8.9 Safety valve (DHW water tank)

Users or contractors must check the function of the safety valve through exhaust every six months (see valve manufacturer's instructions). The valve seat may be contaminated. During the heating process, water may flow out of the safety valve. Exports are open to the atmosphere.

Please note that overvoltage may cause damage. Do not close the safety valve.

**If a water filter is installed to maintain high hygiene standards, perform the following steps:**

Replace the filter element on the non backwash filter every six months (visually inspect every two months).

Open the backwash filter and backwash every two months.

If the connecting cables or circuits of the equipment or externally installed accessories are damaged, they must be replaced with scenario recommended cables or circuits. For this, please contact your qualified contractor.

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### 4. Explanation of terminology definitions in the appendix

#### 4.1 Description of each system component

##### 4.1.1 compressor

The compressor is the core component of a heat pump. The compressor can raise the refrigerant to the temperature level required for heating mode.

##### 4.1.2 evaporator

The evaporator is the core component of a heat pump. It can promote the transformation of refrigerant from liquid to gas, achieving the absorption process of heat energy.

##### 4.1.3 condenser

The condenser is the core component of a heat pump. It can promote the transformation of refrigerant from gaseous to liquid state, achieving the process of releasing heat energy.

##### 4.1.4 Expansion valve

Throttling, the liquid refrigerant is depressurized into low temperature and low pressure through the expansion valve, ready for evaporation and heat absorption.

##### 4.1.5 Fan

Forced convection assists heat exchange and improves efficiency.

##### 4.1.6 Buffer water tank

In heating or cooling systems, the water circulation plays a role in temperature balance, while the buffer tank can improve the overall efficiency of system operation.

##### 4.1.7 Domestic water tank

In a hot water system, a unit used to store the user's domestic hot water.

##### 4.1.8 Hot water three-way valve

The hot water system and heating water system are divided into two independent heating water systems, and the water side switch is achieved through a three-way valve.

##### 4.1.9 Automatic exhaust valve

When the water temperature rises or there is pipeline leakage in the water system, there may be air in the pipeline, which affects the system water flow and needs to be discharged through the exhaust valve.

##### 4.1.10 Pressure relief valve

To stabilize the pressure of the water system and prevent damage to waterway components, the factory preset pressure is 3 bar.

##### 4.1.11 Expansion tank

There are differences in the coefficient of expansion of water at different temperatures, so expansion tanks are used to stabilize the system water pressure at different water temperatures.

##### 4.1.12 Built in circulating water pump

The water side system provides circulating power.

##### 4.1.13 Auxiliary circulating water pump

If the installed water pipeline is relatively long, the resistance of the water system is high, and the head of the built-in circulation pump is insufficient to meet the water system requirements, then the water side system circulation pump should be added as needed to provide auxiliary circulation power.

#### 4.2 Explanation of climate curve

The climate curve helps to match the regional climate, ensuring that heat pumps are effective during peak cold and hot demand, such as heating in winter and energy-saving cooling in summer. Intelligent heat pumps will adaptively adjust and utilize climate curve optimization, such as low-temperature automatic defrosting and high-temperature warming defrosting, to maximize annual energy efficiency.

### 4.3 Heating system circuit description

A heating or cooling circuit is a non ventilated circuit sealed between the ends (such as a underfloor heating system), in which heating water or coolant circulates. The residential units in the building have several heating and cooling circuits that can be provided separately, such as a heating circuit for your apartment and a heating circuit for a separate apartment. If different types of terminals (such as underfloor heating and radiators) are installed in residential units or buildings, these units are usually connected to different heating or cooling circuits.

For different heating/cooling circuits, different flow rates and temperatures can be used simultaneously.

Heating/cooling circuit.

Heating circuit A heats your room, such as through a radiator.

Heating/Cooling Circuit Heating/Cooling circuit heats your room in winter and cools it in summer, such as floor heating systems.

### 4.4 Secondary pump

The secondary pump of a heat pump refers to the circulating pump located at the end of the heat pump in the heat pump system. The secondary pump is mainly used to control and optimize the water circulation on the user side.

### 4.5 Online Description of Control Strategies

Heat pump cascade is a system with multiple heat pumps, in which each heat pump has its own control unit. The entire department.

Controlled and monitored by the control unit of the heat pump. The heat pump can achieve modular parallel connection and automatically determine the number of operating units based on indoor actual needs. Even if one unit malfunctions, it does not affect the equipment of other units. During system operation, the intelligent rotation function is automatically activated to balance the running time of each unit, ensuring stable and long-lasting operation of the equipment.

### 4.6 Explanation of Temperature Control in Control Strategy

The constant temperature control of heat pumps ensures continuous, stable, and efficient heat output, especially in hot water supply, space heating, or refrigeration applications. Constant temperature control is mainly achieved through the following mechanisms:

- 1) Temperature sensor: Temperature sensors are installed in the heat pump system, usually located at the inlet and outlet of the heat source, to monitor the water temperature and provide real-time feedback.
- 2) Controller: receives sensor signals, compares set temperatures with actual values, calculates deviations, and adjusts heating or cooling outputs.
- 3) Variable frequency drive: Adjust the compressor or pump speed, respond to controller commands, increase the frequency of low frequency, high load, and high heat demand, and vice versa.

### 4.7 Smart Grid Description

When the electricity is in a free state, the heat pump will operate to the maximum extent when it is turned on, and the hot water mode will be prioritized and electric heating will be turned on. During the shutdown period, the heat pump will turn off heating. In order to enable you to use the smart grid, your contractor has connected the heat pump control unit to the main power supply through two switch contacts. The power supply company can use these switch contacts to match the operation of the heat pump with the current level of grid utilization.

Four grid utilization options have been considered:

4.7.1 Insufficient power in the power grid (peak power consumption state): If there is not a large amount of available power, the heat pump will turn off electric heating and operate in ECO mode.

Once the power supply is restored, the heat pump will automatically restart using the set operating program.

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## Explanation of terminology definitions in the appendix

4.7.2 No excess electricity, normal grid utilization (valley electricity consumption state): The heat pump operates according to its settings and agreed terms (electricity price).

4.7.3 A small amount of excess electricity (free of charge state): If the time in the time program is in an active state, the heat pump will start.

4.7.4 A large amount of excess electricity (free of charge state): The power utility provides excess electricity for free. Even if no time phase is active in the time program, the power utility will immediately start the heat pump. The system components are heated to the highest possible temperature or cooled to the lowest possible temperature, regardless of the power consumption of the heat pump.

### **4.8 Explanation of DHW Priority Enabling in Hybrid Mode**

After turning on the DHW priority selection switch, the heat pump will automatically determine the priority to complete the DHW mode during the dual mode operation. When the DHW mode reaches the user's set temperature, the heat pump will switch to other modes to continue running until the temperature is reached; When the DHW reaches the opening temperature difference during the operation of other modes, the heat pump will switch back to DHW mode.

### **4.9 Instructions for using zero cold water for DHW users**

The heat pump can achieve the process of immediately supplying hot water without the need to drain cold water. Users set up a hot water circulation pump and return water pipeline to maintain continuous water circulation in the system, achieving instant heating between the heater and the water consumption point.

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# Hisense

Product improvement, specifications and appearance in this manual are subject to change without prior notice.