INSTALLATION GUIDE

AIR TO WATER HEAT PUMP

EVI SERIES

Read the instructions before installation. The appliance contains gas R32

- Please read this manual carefully before installing, modifying, or adjusting the heating system. This manual contains all the information you need to use and install the heat pump. The installer must read the manual and carefully follow the operating and maintenance instructions.
- The installer is responsible for the installation of the product and must follow all the manufacturer's instructions and application rules. Failure to follow the instructions in this manual, or incorrect installation, will automatically invalidate the warranty.
- Incorrect installation and use may result in serious injury or death, as well as damage to persons and property.

ALSAVO accepts no responsibility for damage to persons, property or errors caused by installations which do not follow the instructions in this manual. Any improper use will be considered dangerous.

Documentation management

The installer provides the user with the manual for reference and safekeeping.

Transport Information

- Delivery of the Unit, the heat pumps are fixed on the pallet and covered with a cardboard box.
- To protect from any damage, the heat pump must be transferred in its package.
- Heat pumps must be stored and transferred in a vertical position in their original packaging. If it is not the case, it cannot be operated until a minimum period of 24H has passed before the unit can have the electrical power turned on.

General warnings

- Work on the heat pump (such as installation, repair, connection and initial commissioning) may only be carried out by authorized personnel who have successfully completed a qualified technical or vocational training course and attended a refresher course. This applies to heating engineers and air-conditioning technicians who, by virtue of their technical training and knowledge of heat pumps, are experienced in the installation and maintenance of heating, air-conditioning and cooling equipment, as well as heat pumps. However, due to the different designs of different brands of heat pumps, it is essential to read this manual carefully and to use the unit in accordance with the instructions.
- The heat pump must be kept permanently under powered, especially during the winter season, to protect it from freezing.
- Safely dispose of packaging materials such as staples and other metal or wooden parts that could cause injury.
- Mount the unit on a base or stand capable of supporting its weight and elevate it to allow condensate to drain easily.
- During installation, it is necessary to take into account the impact of strong winds and hurricanes on the installation, to adjust the position and to reinforce its stability.

Electrical Wiring Safety

- Electrical installation must be carried out by professionals in accordance with current electrotechnical guidelines and the regulations of the relevant energy supply company.
- Prior to any intervention, disconnect the power supply (turn off the main switch, break the circuit breaker) and secure against unintentional restart.
- Ensure that all wiring is correctly dimensioned. Ensure that terminal connections and cables are protected from water and moisture. Incomplete connections or fastenings can cause fires.
- Connect the device to earth, in compliance with local laws and regulations. Do not connect the earth cable to the gas or water pipe, or to the lightning protection cable. This could cause a fire. Incomplete grounding may

result in electric shock.

- When wiring the power supply, ensure that the terminal block is securely fastened. If the terminal block is not tightened sufficiently, the terminals may overheat and cause a fire.

HFC Gaseous Refrigerant comply with standards and regulation (EU) No 517/2014

- Training and certification, the operator of the relevant application shall ensure that the relevant personnel have obtained the necessary certification, which implies appropriate knowledge of the applicable regulations and standards as well as the necessary competence in emission prevention and recovery of fluorinated greenhouse gases and handling safety the relevant type and size of equipment.
- Record keeping, operators of equipment which is required to be checked for leaks, a leak test must be performed, when the appliance is first started and at once a year operator establish and maintain records.
- After completing the installation work, check that there are no refrigerant leaks.
- There is refrigerant in the refrigeration circuit, which can be very cold or very hot. Do not touch the refrigeration circuit during and immediately after operation. Burns or frostbite may occur if the copper pipes in the refrigeration circuit are touched. To avoid injury, allow the pipes to return to normal temperature, or wear protective gloves if you must touch them.
- When working on the refrigerant circuit, make sure the workplace is well ventilated. Never work on the refrigerant circuit in closed rooms or confined spaces.
- Do not allow HFC refrigerant gas to encounter flames, embers or hot objects, otherwise there is a risk of flashover.
- Never allow HFC refrigerant gas to escape into the atmosphere (this is prohibited and is harmful to the environment).

Water Connection

- We recommend dosing the water circuit with "glycol" to protect the heat pump exchanger from any risk of freezing during the cold season. Despite the frost protection, leaving the machine switched on may result in a power failure, which may result in the water circuit not being protected.
- WARNING: When not using the heat pump, to prevent the risk of freezing in you must :
  Leave the heat pump switched on, as it will operate at low temperatures and avoid any risk of freezing.
  In the event of a total power cut, drain the heat pump, otherwise the plate heat exchanger will be damaged by frost.
- Always wear safety glasses and protective gloves.
- Contact with internal parts may cause burns. To avoid injury, allow internal parts to cool down to normal temperature, or wear protective gloves if you must touch them. And to avoid electric shock, please disconnect the unit from the power supply before working on it.
- Seals must not be damaged or removed during assembly.
- The domestic water connection must comply with local drinking water standards.

More Generals Information

- Do not touch internal parts (pump, etc.) during and immediately after operation.
- This device must not be used by minors. Before using it, please undergo appropriate training and read this manual to understand the hazards involved.
- Children must be supervised to ensure that they do not play with the equipment, and that they stay away from the site during installation.
- Equipment covers and service panels must be replaced as soon as work is completed.
  Original spare parts are strongly recommended, as components and spare parts must at least meet the technical requirements defined by the manufacturer.

DANGER

- Risk of electric shock due to incorrect connection to the mains supply.
  Non-compliance with the rules of the art when making electrical connections can lead to the risk of electric shock and material damage.
- Be sure to install protective circuit breakers in accordance with local laws and regulations.
  Failure to install a protective device may result in a risk of electric shock and fire.
- Before working on the heat pump, switch off the power supply via the circuit breaker.
- When the service panels are removed, the user must take all necessary precautions to avoid any incident.
- Never leave the unit unattended during installation or maintenance when the service panel is removed.
- Do not touch the water pipes during and immediately after operation, as they may be hot. To avoid injury, allow the pipes to cool to normal temperature, or wear protective gloves.
- Do not touch any switch with wet fingers. Touching a switch with wet fingers can cause an electric shock.
- Before touching electrical parts, switch off the power supply to the unit.
- To avoid burns, do not touch the machine's inlet and outlet pipes while the machine is running.
- To avoid cuts, do not touch the machine's radiator fins directly with your hands.
- Ask your dealer or a qualified person to follow the instructions in this manual for installation work. Do not install the unit yourself. Incorrect installation may lead to water leakage, electric shock or fire, resulting in injury, death or property damage.
- Be sure to use the accessories and parts supplied by the manufacturer during installation. Incorrect use of other parts can lead to water leaks, electric shock and product malfunction.
- Ensure that all electrical work is connected by a qualified person using a separate mains supply in accordance with local laws and regulations and this manual. Insufficient circuit capacity or incorrect electrical construction can lead to fire and malfunction.
- Be sure to install earth leakage circuit breakers in accordance with local laws and regulations. Failure to install an RCD may result in electrocution in the event of malfunction or water leakage in the system.

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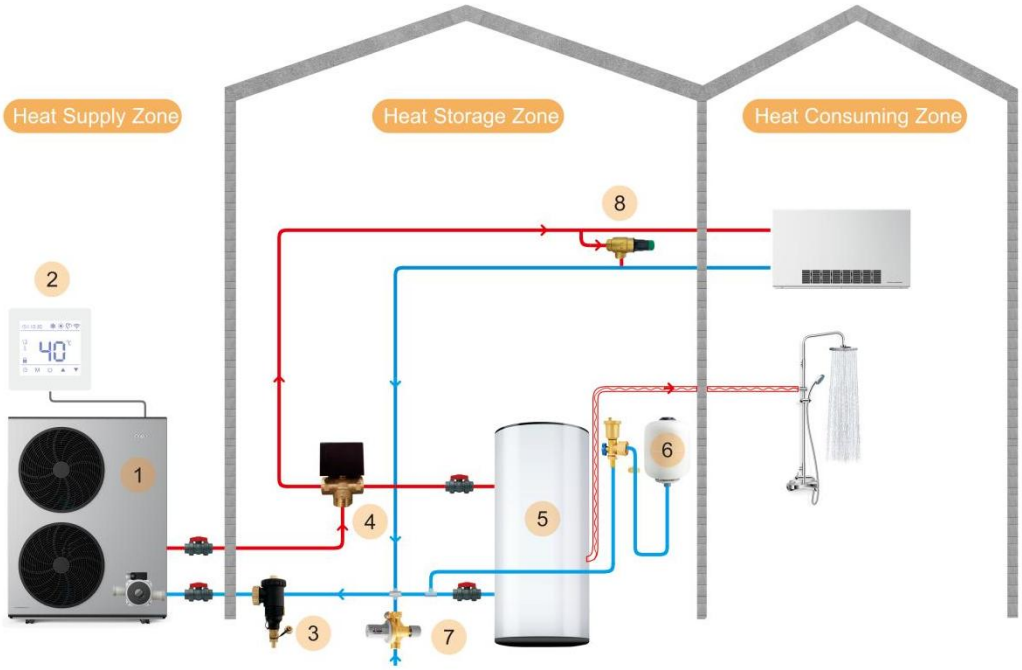
1. System Quick Installation Schematic

1.1. Single Circulation - Auto Bypass Install

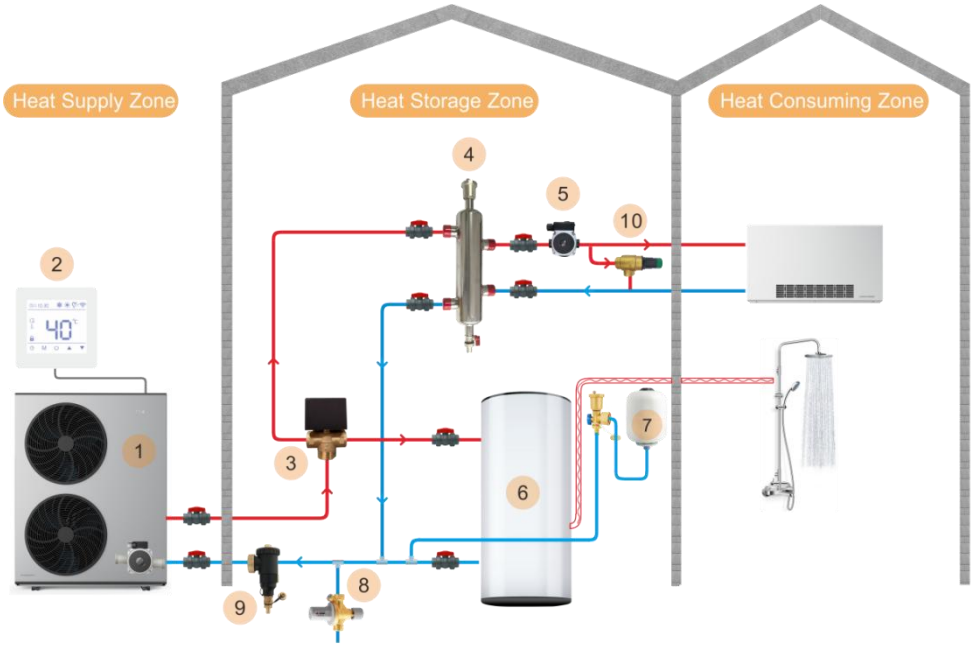
P20=7(Domestic water tank & room cooling and heating model)



1.Monobloc Unit
2.Controller (Monobloc Unit)
3.Magnetic Particle Filter
4.3 Way Valve
5.DHW Cylinder
6.Expansion Vessel
7.Aotumatic water refill valve
8.Differential pressure bypass valve

1.2. Dual Circulation Pump - Low Loss Header (Retrofit of Old System)

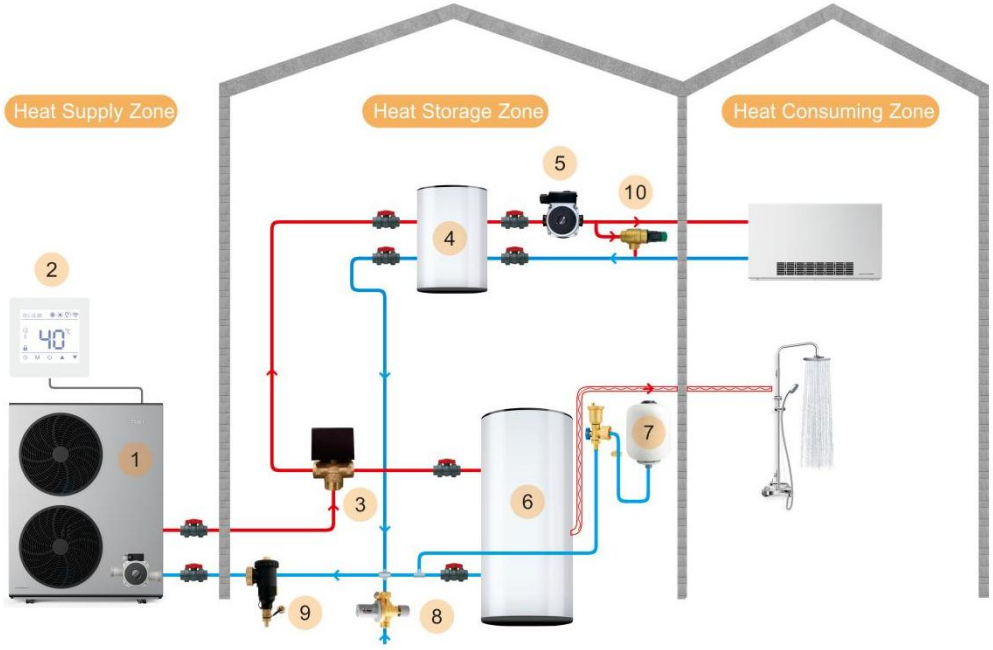
P20=7(Domestic water tank & room cooling and heating model)



1.Monobloc Unit
2.Controller (Monobloc Unit)
3.3 Way Valve
4.Low Loss Header
5.Circulation Pump
6.DHW Cylinder
7.Expansion Vessel
8.Aotumatic water refill valve
9.Magnetic Particle Filter
10.Differential pressure bypass valve

1.3. Dual Circulation Pump - Buffer Tank

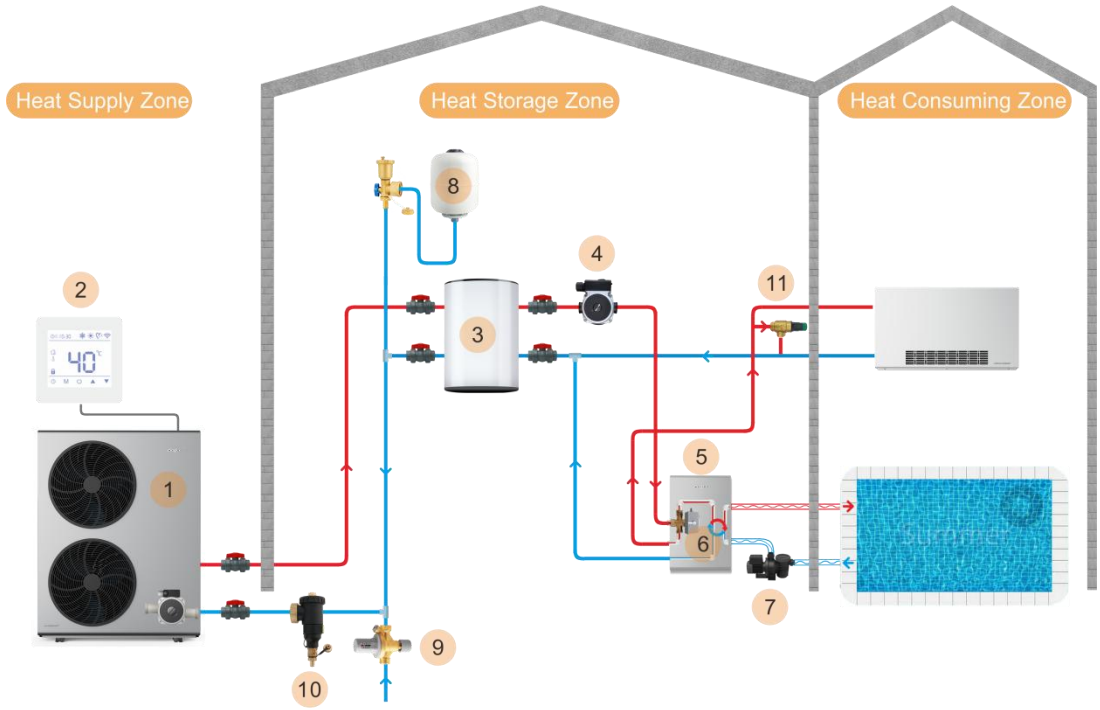
P20=7(Domestic water tank & room cooling and heating model)



1.Monobloc Unit
2.Controller (Monobloc Unit)
3.3 Way Valve
4.Buffer Tank
5.Circulation Pump
6.DHW Cylinder
7.Expansion Vessel
8.Aotumatic water refill valve
9.Magnetic Particle Filter
10.Differential pressure bypass valve

1.4. Dual Circulation Pump - Swimming Pools

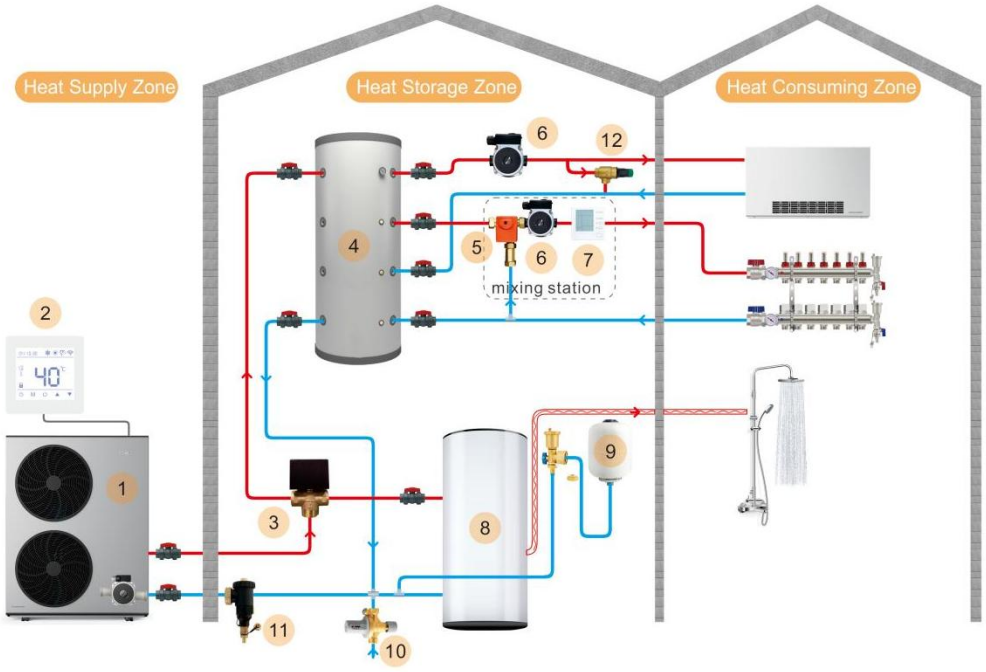
P20=2(Single room heating model), When running pool mode, P26=1



1.Monobloc Unit
2.Controller (Monobloc Unit)
3.Buffer Tank
4.Circulation Pump
5.Heat Exchanger for pool
6.3 Way Valve
7.Circulation water pump
8.Expansion Vessel
9.Aotumatic water refill valve
10.Magnetic Particle Filter
11.Differential pressure bypass valve

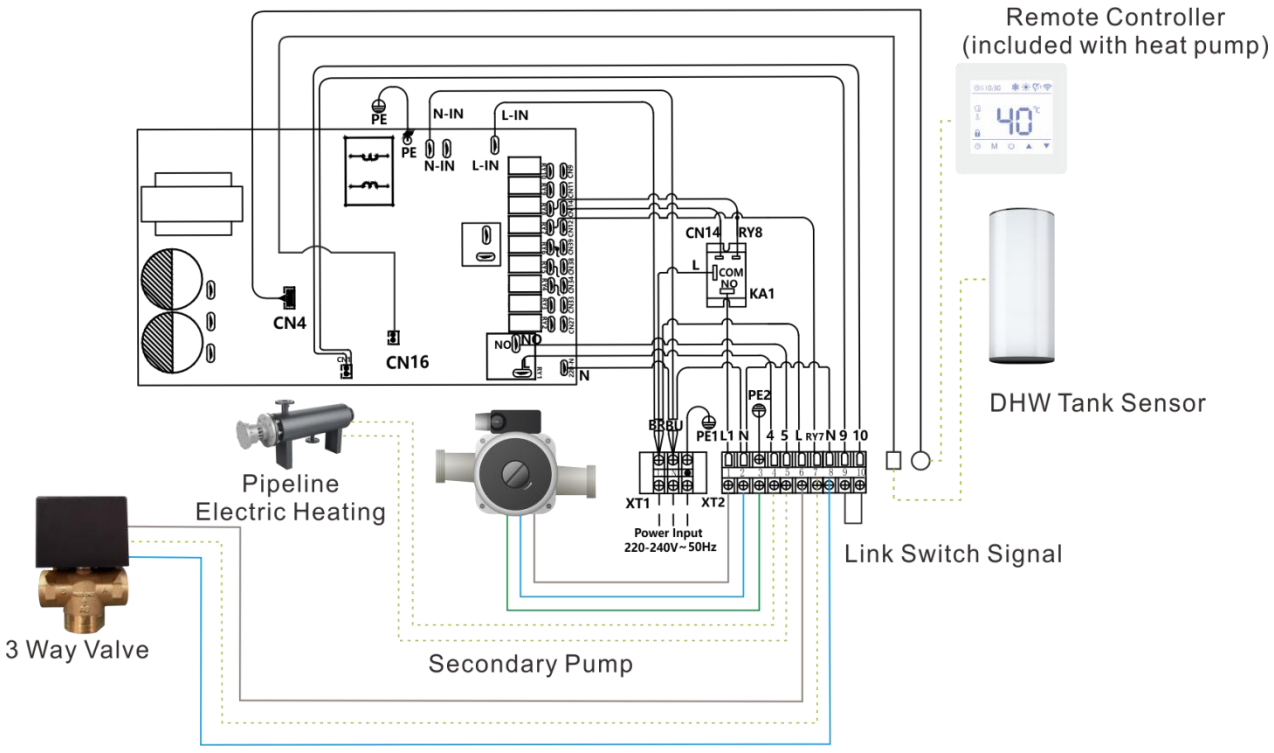
1.5. Dual Circulation Pump - Under Floor Heating

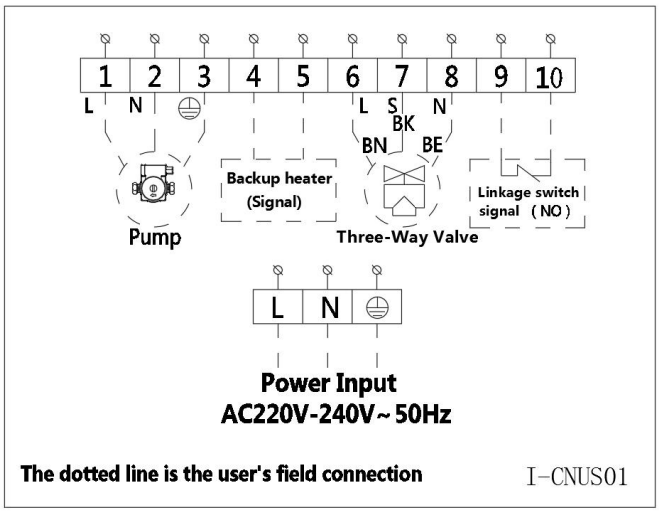
P20=3(Domestic water tank & room heating model)

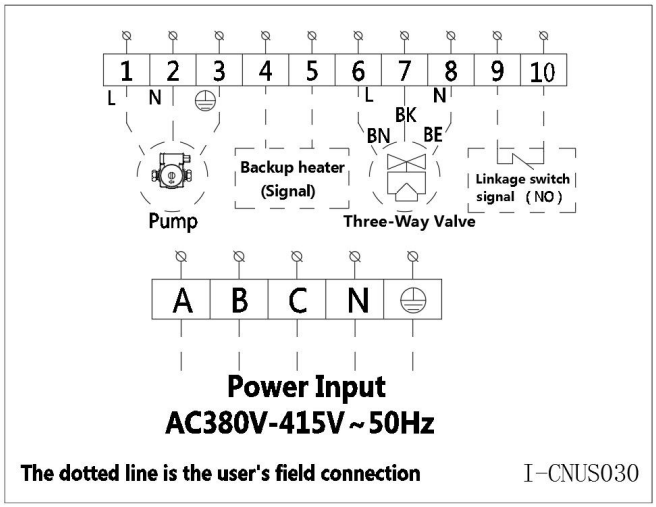


1.Monobloc Unit
2.Controller (Monobloc Unit)
3.3 Way Valve
4.Buffer Tank
5.Mixer Valve
6.Circulation Pump
7.Controller
8.DHW Cylinder
9.Expansion Vessel
10.Aotumatic water refill valve
11.Magnetic Particle Filter
12.Differential pressure bypass valve

1.6. Wiring



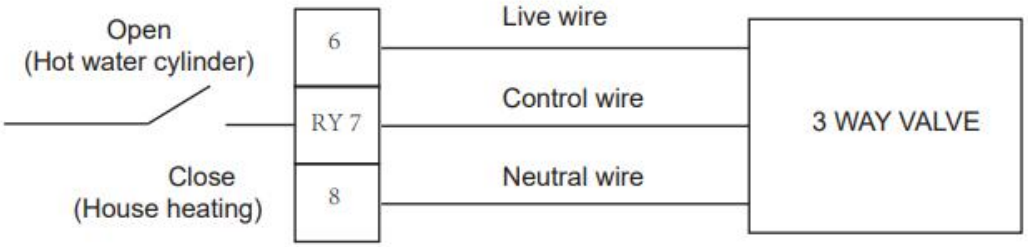




1. For terminals 1 to 3, they are connected to circulator pump. For the models integrated with circulator pump, they are already connected in default. If you have secondary circulator pump, you can also connect to these terminals.

2. For the terminal 4 & 5, they are control signal for backup heater(Signal).

3. For terminals 6 to 8, they are for the three way valve. (6: Live wire, 7: Control wire, 8: Neutral wire)

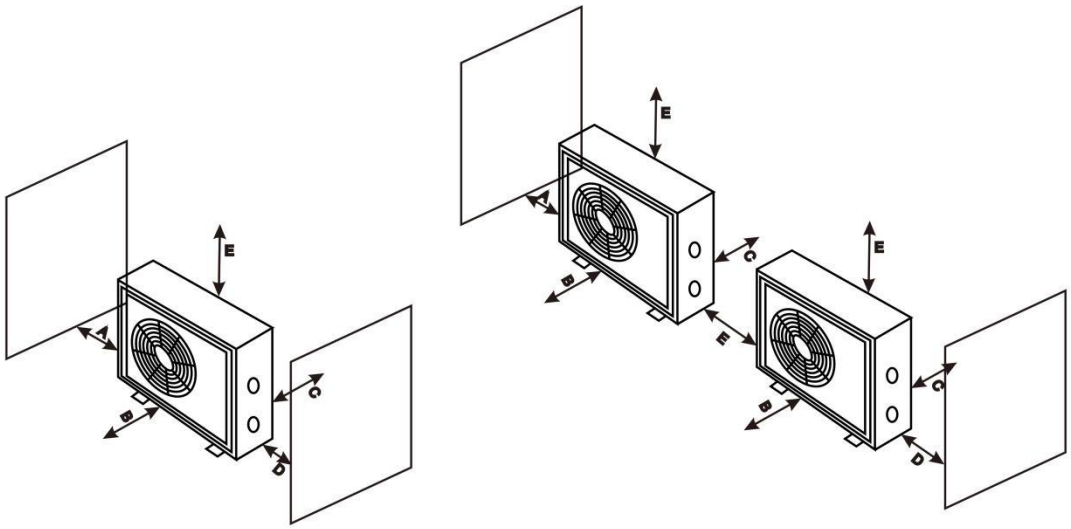


4. For terminal 9 to 10, they work as a switch to control the heat pump. They are connected in default. If you need to control the heat pump by additional switch, you can connect your device to these terminals.

2. Monobloc Unit Installation

2.1. Installation Location and Space Requirements

Providing the required clearance around the outdoor unit allows the system to operate properly, since this is the renewable input energy for the system (free air).



Model	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)
ALSAVO HEAT 10iu	300	1500	300	300	600
ALSAVO HEAT 12iuT	300	1500	300	300	600
ALSAVO HEAT 19iuT	500	2000	500	500	1000
ALSAVO HEAT 26iuT	500	2000	500	500	1000

*The distance mentioned in the drawing is the minimum request.

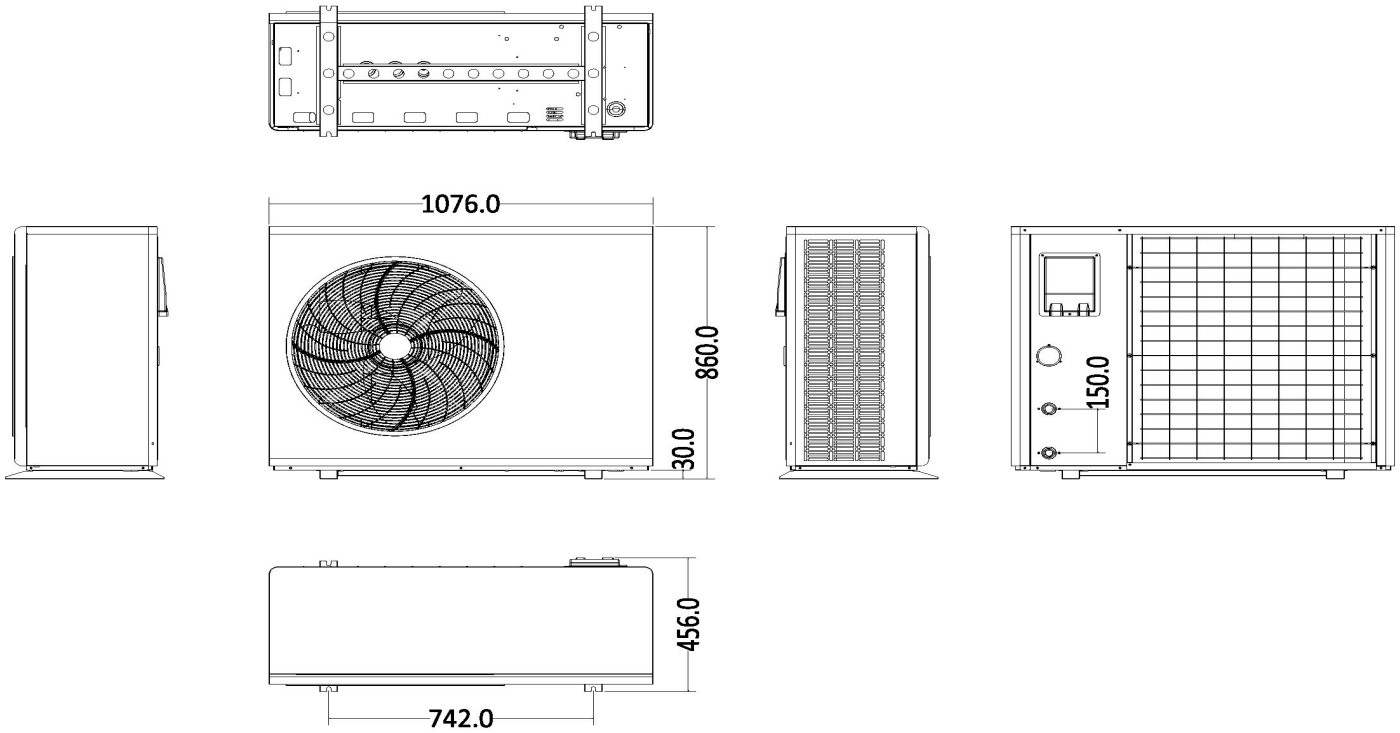
- The appliance can't be installed indoor.
- Place the appliance on anti-vibration studs on a stable, solid and level surface.
- This surface must be able to bear the weight of the appliance (in particular in the case of installation on a roof, a balcony or any other support).
- The appliance must not be installed:
    - With the blowing towards a permanent or temporary obstacle (awning, brushwood, etc.),
    - Near a heat source or flammable gas,
    - Near high-frequency equipment,
- In a location where it might be flooded by the condensates produced by the appliance when operating.

To prevent any noise produced in running of the heat pump

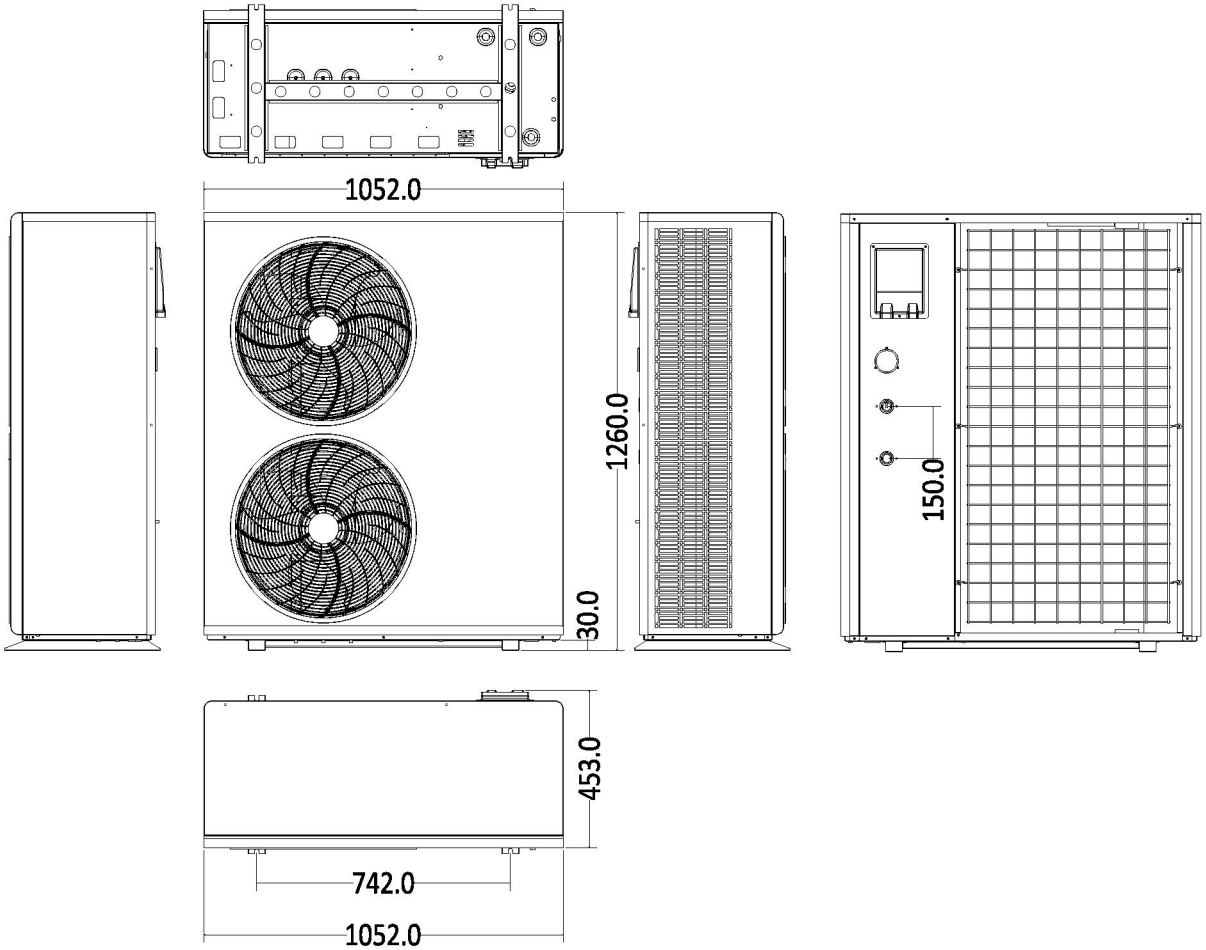
- Do not install it under or facing a window.
- Do not tilt it towards your neighbors'.
- Install an acoustic screen around the heat pump, respecting the distances.

2.2. Dimensions and Mounting Bracket Foot Position Reference

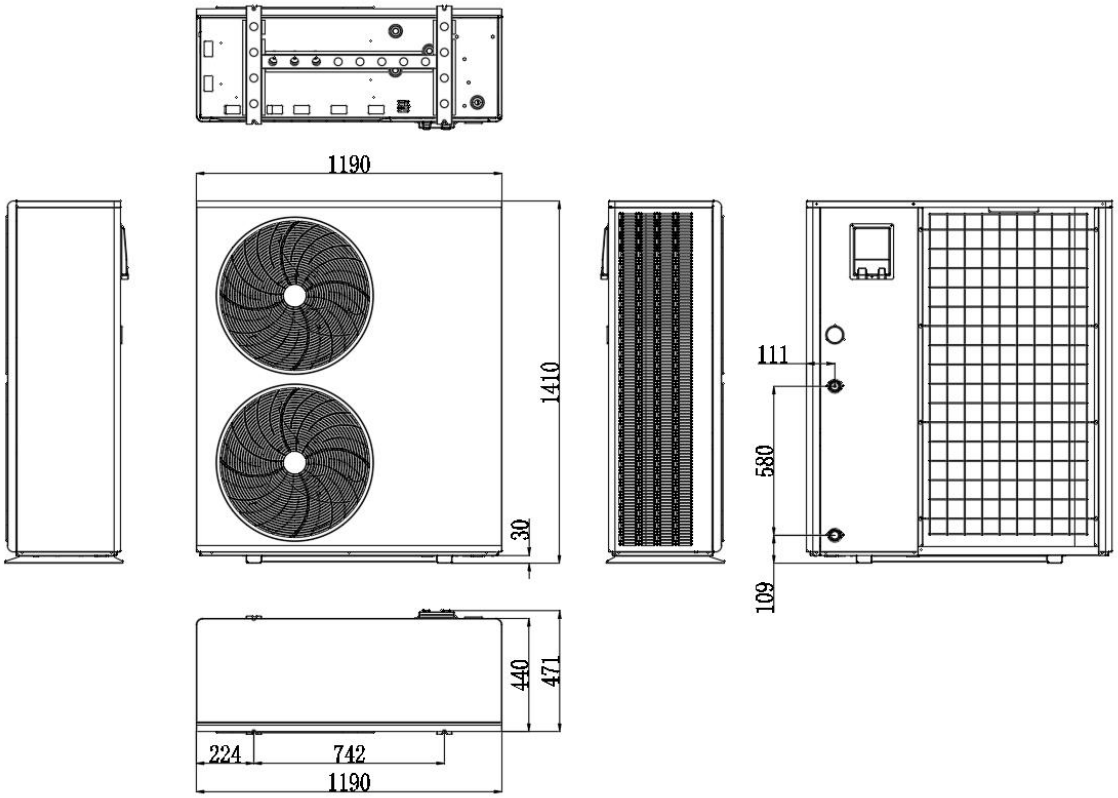
Models: ALSAVO HEAT 10iu



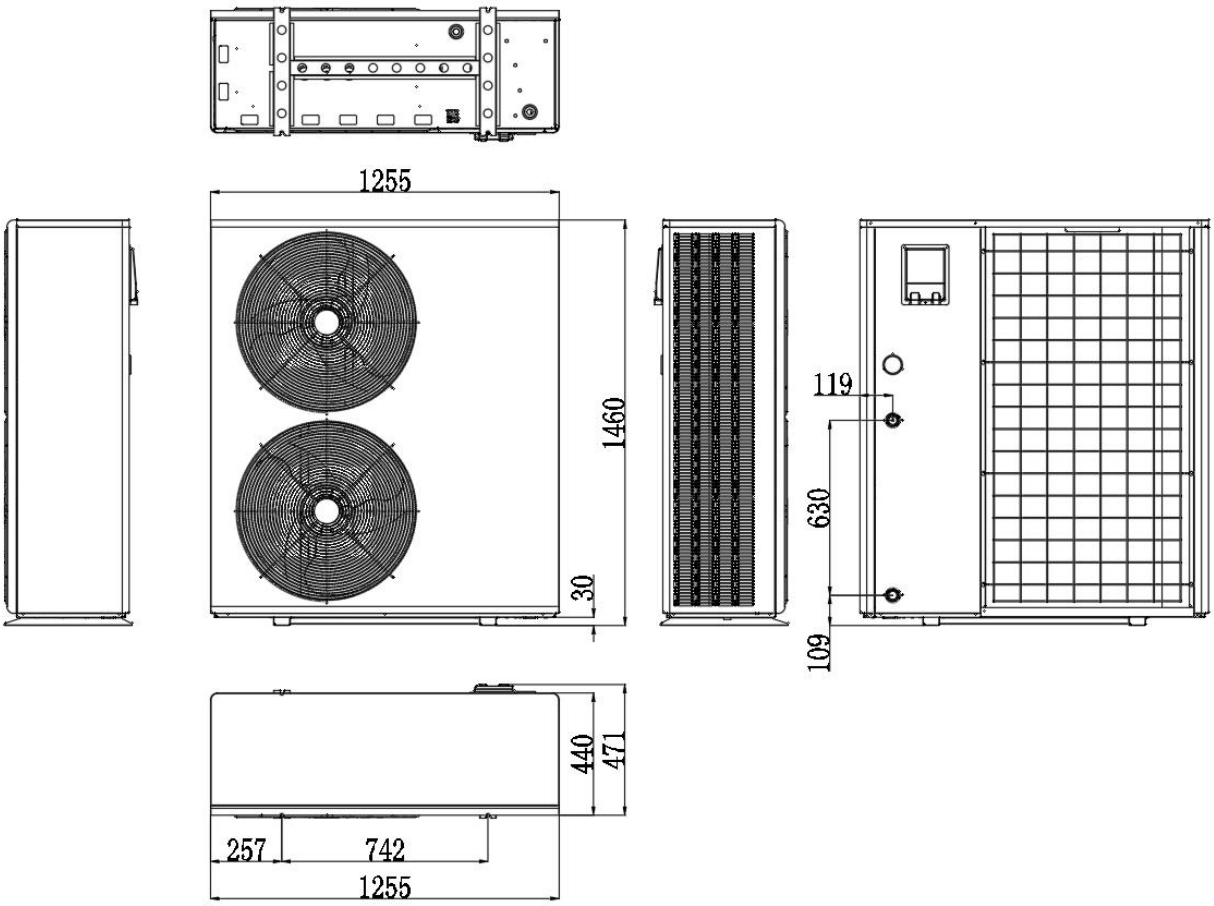
Models: ALSAVO HEAT 12iuT



Models: ALSAVO HEAT 19iuT



Models: ALSAVO HEAT 26iuT



3. Electrical requirements

3.1. References for protecting devices and cable specification

Model	Maximum current	Power Cord			Circuit breaker
		Live Wire	Naught wire	Earth	
ALSAVO HEAT 10iu	18A	1 x 4mm^2	4mm^2	4mm^2	20A/30mA
ALSAVO HEAT 12iuT	12A	3 x 2.5mm^2	2.5mm^2	2.5mm^2	15A/30mA
ALSAVO HEAT 19iuT	15A	3 x 2.5mm^2	2.5mm^2	2.5mm^2	20A/30mA
ALSAVO HEAT 26iuT	18A	3 x 4mm^2	4mm^2	4mm^2	20A/30mA

※ Above data is subject to modification without notice.

3.2. Primary Pipework Sizing Guide

Table of recommendations for pipework

Model	Pipe O.D.
ALSAVO HEAT 10iu	28mm
ALSAVO HEAT 12iuT	28mm
ALSAVO HEAT 19iuT	32mm
ALSAVO HEAT 26iuT	40mm

*Please note that these sizes are for guidance only and may differ dependent on pipe run, pressure losses within the system and number of bends.

3.3. Expansion Vessel & Buffer Tank Selection

Model	Expansion vessel	Buffer tank
ALSAVO HEAT 10iu	5L	60L
ALSAVO HEAT 12iuT	8L	80L
ALSAVO HEAT 19iuT	12L	100L
ALSAVO HEAT 26iuT	12L	200L

If the system volume exceeds that shown in the table, or if the head height exceeds 7 meters, an additional expansion vessel must be installed.

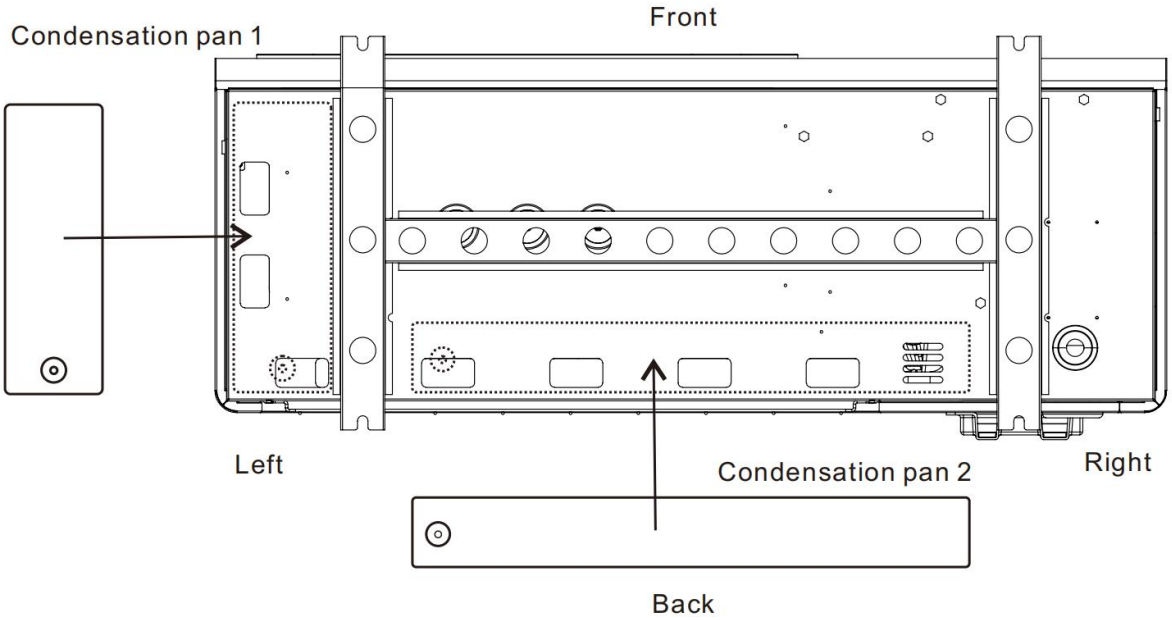
3.4. Flow Rate

Model	ALSAVO HEAT 10iu	ALSAVO HEAT 12iuT	ALSAVO HEAT 19iuT	ALSAVO HEAT 26iuT
Advise water flux (m^3/h)	1.5-2.5	2.0-3.0	3.0-4.0	4.5-5.5

3.5. Condensation Pan

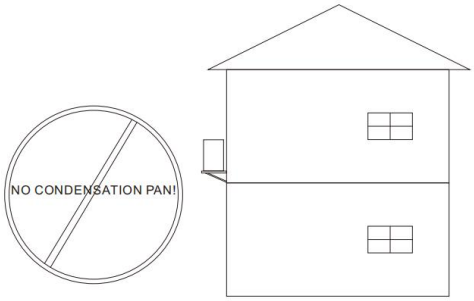
Condensation Pan 1	Condensation Pan 2	Magnet x 8	Drain Jet x 2	Drain Hose x 2
				

The condensation pan is only used to collect condensation water generated when the heat pump is running and to be removed by the drain pipe.



WARNING:

1. The condensation pan is attached to the heat pump chassis through magnets, if the heat pump is installed too high, it is prohibited to use the condensation pan to avoid falling off and causing personal injury or property damage.

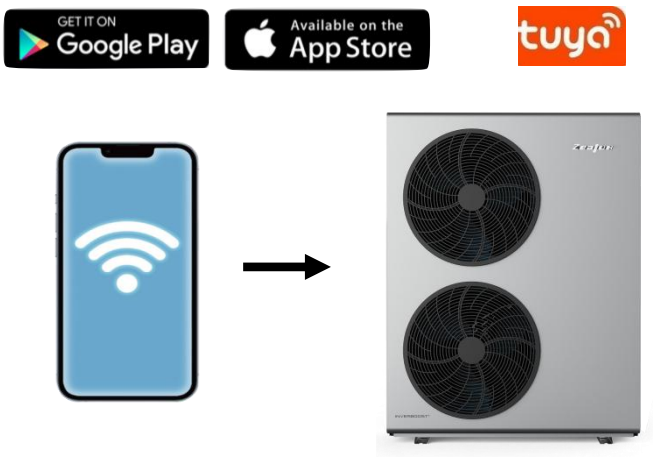


2. If it freezes in winter or the ambient temperature is below 0 degrees Celsius, please remove the condensation pan to avoid condensation water freezing and causing blockage and damage to the heat pump.

4. TUYA APP Introduction

4.1. TUYA Wifi APP Download

Download "Tuya Smart" APP from GOOGLE PLAY for Android or APP STORE for iPhone.

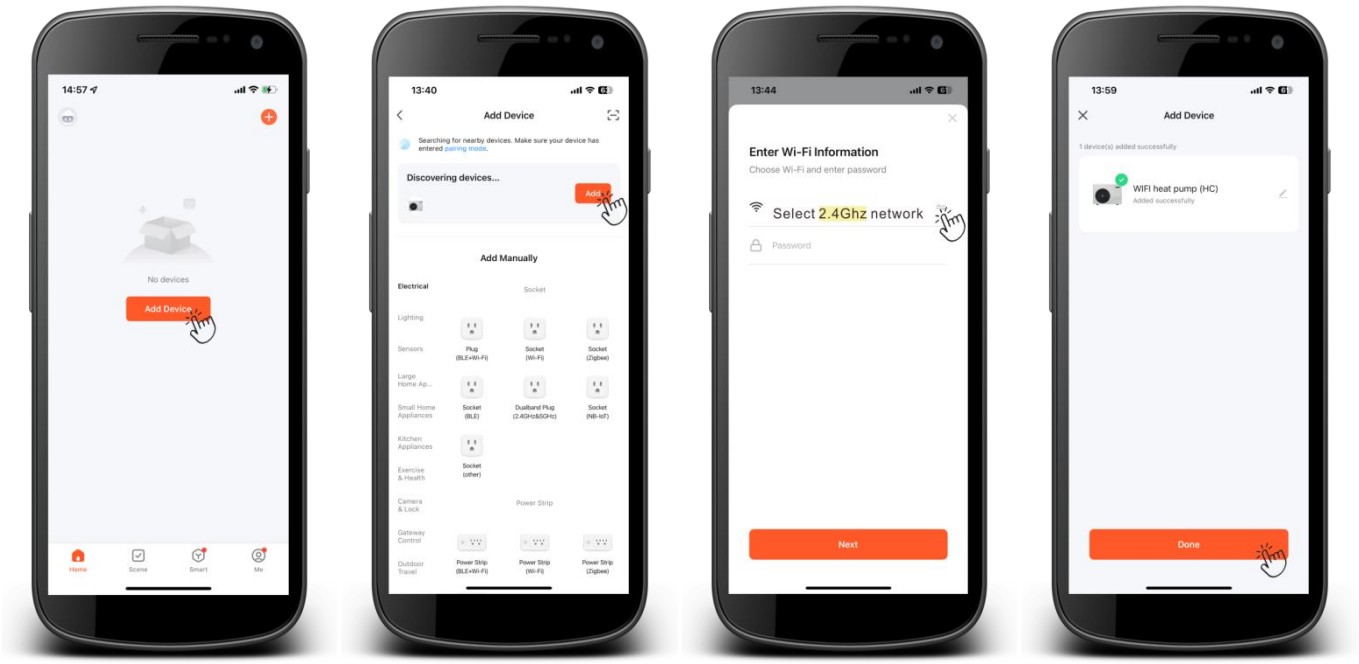


4.2. Connection

Make sure your smart phone is under 2.4 GHz wireless network signal and your heat pump device is on to use TUYA and follow instruction as below.

4.2.1. Keep pressing the mode selection button M and down ▼ buttons on the control panel until you see the WIFI icon is flicking, that means the heat pump is waiting for the connection of WIFI.

4.2.2. Press "Add Device", and the heat pump will auto detected by the app, then please add your heat pump device.

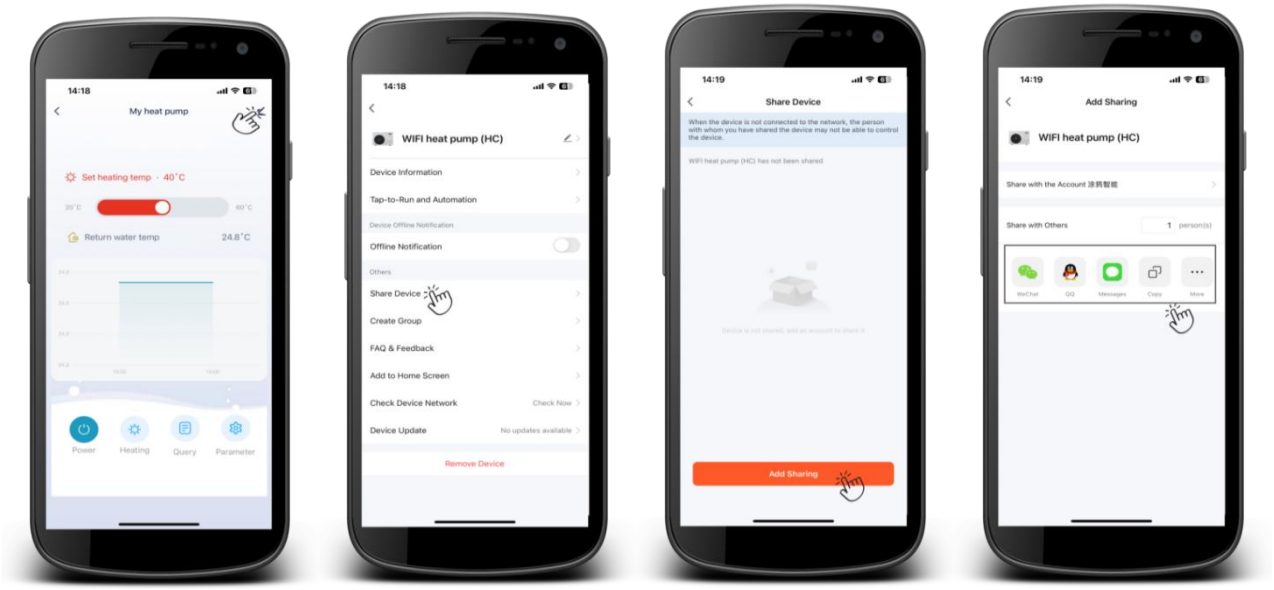


Select 2.4 GHz WIFI Network and enter password. If your device is on, press Next directly, and it will connect successfully.

4.3. Connection Share

Users who have successfully connected can freely share the link of the machine, so that other members can also control it through their mobile phone.

4.3.1. Use "Share Device" function and create a group to share the connection

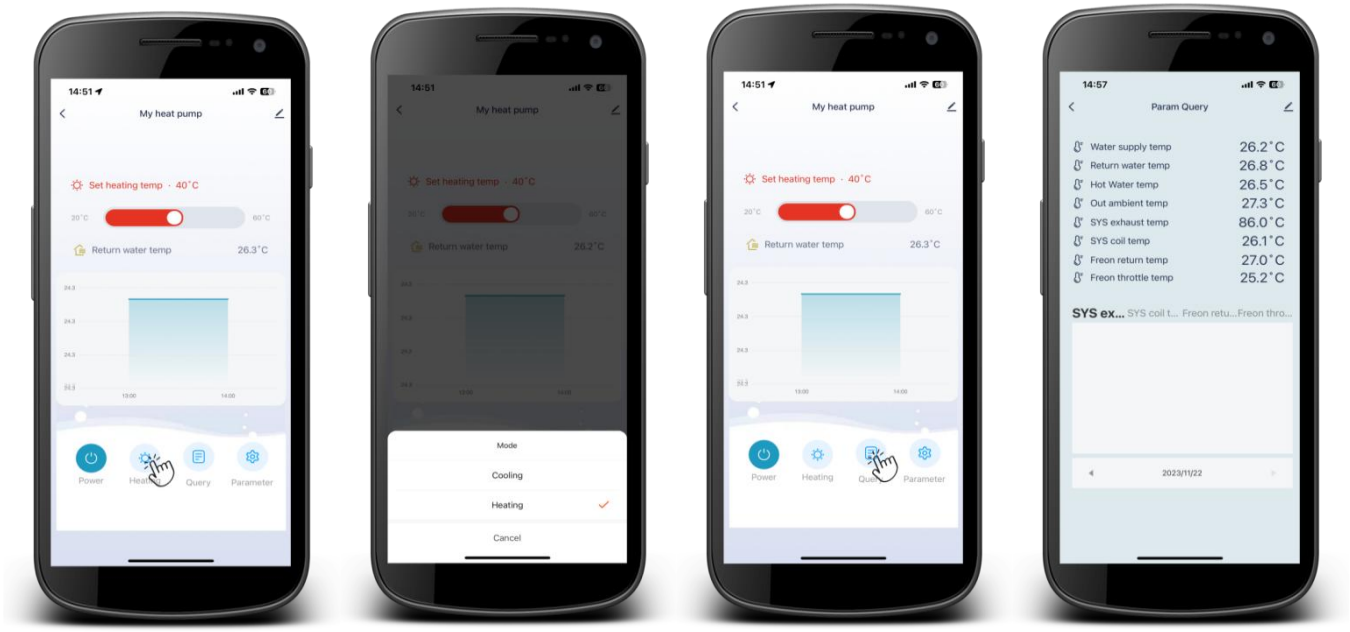


4.4. Operating mode, target temperature and work status control

- Turn on/off the heat pump by pressing "power".

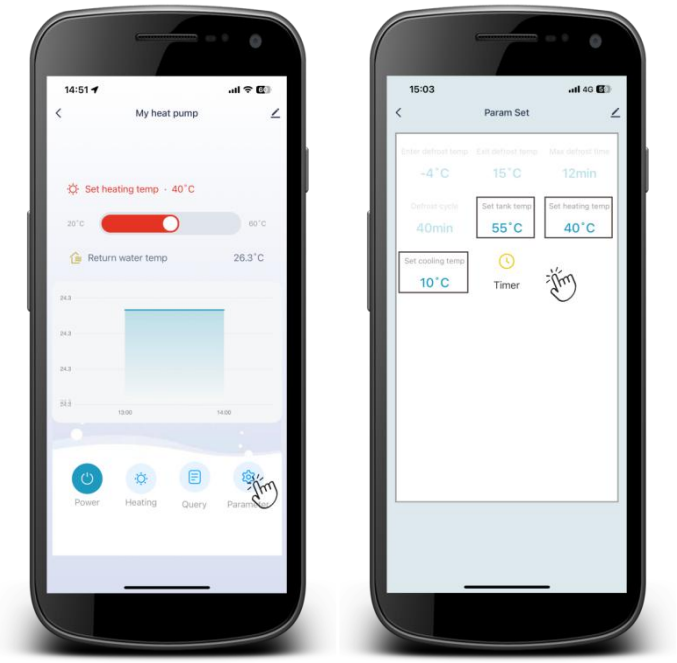
- Adjust the target temperature by dragging the right end of the temperature bar around the temperature dial. Temperature regulation accuracy is ±0.5℃.

- Changing work status by choosing "Heating" “Cooling”.



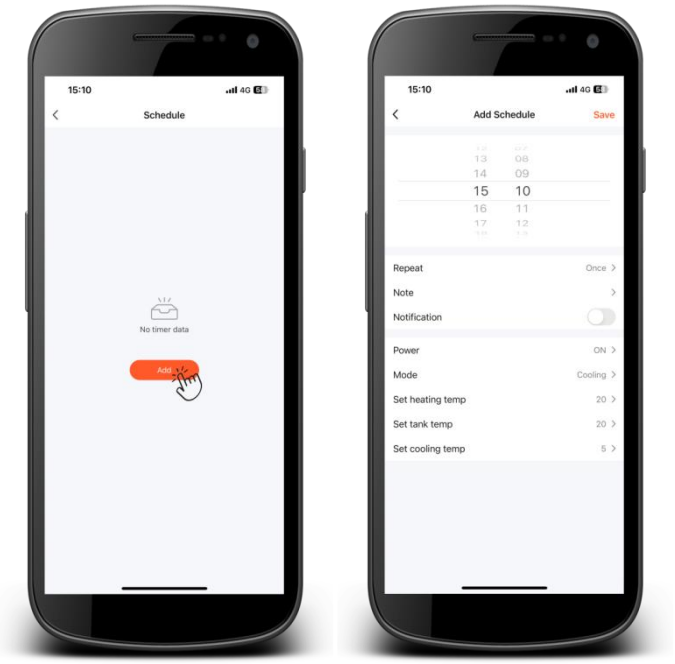
Press the "setting" button and enter the setting interface.

Only "DHW Tank temperature" “Heating temperature” “Cooling temperature” can be adjusted.



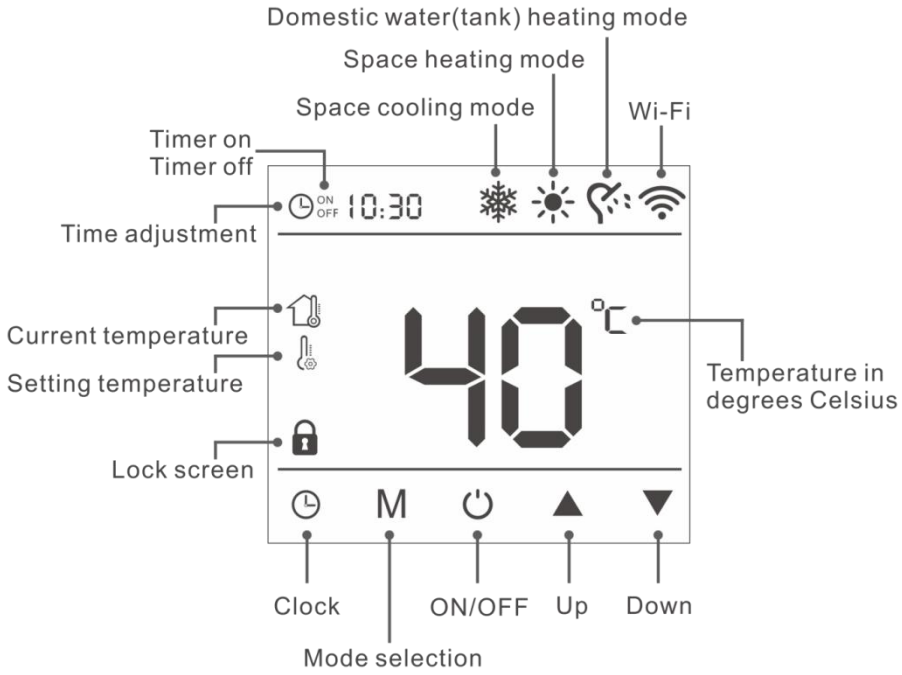
4.5. Timer set up

Press the "Timer" to set a timer.



5. Controller

5.1. Description of the Main Functions of the Keypad



5.2. Main Function and Icon Introduction

5.2.1. Mode Introduction

: Space heating mode (P20=2)
: Space cooling mode (P20=4)
:Space heating/cooling mode (P20=6)
: Domestic water tank heating mode (P20=1)
: Space heating + Domestic water tank heating mode (P20=3)
: Space cooling + Domestic water tank heating mode (P20=5)
: Space heating/cooling mode + Domestic water tank heating mode (P20=7)

5.3. Controller Operation

5.3.1. ON/OFF

1/ Press ON/OFF button to turn on or off the machine.

Short press turn on/off the machine

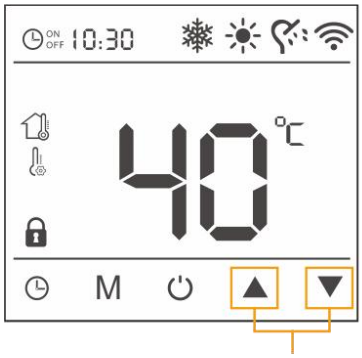
2/ Lock/unlock Screen

The controller will automatically lock 30 seconds after no operation.

Long pressing to unlock the controller

5.3.2. Temperature Adjustment

1/ Press the up ▲ and down ▼ to adjust the target temperature

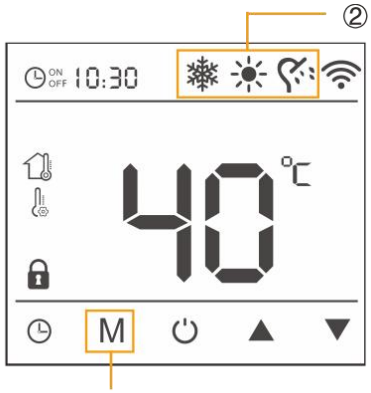


Short press to adjust the target temperature

5.3.3. Mode Selection

1/ Press M to change the operation mode.

(Valid when P20 = 3, 5, 6, 7)



5.3.4. Adjusting the Heating Temperature (Direct Heating)

In the water tank mode, it displays the set temperature of the water tank and the real-time temperature of the water tank. In the main interface, use the ▲ and ▼ to set the set temperature of the water tank.

In heating mode, it displays the set temperature and real-time return water temperature. In the main interface, use the ▲ and ▼ keys to adjust the set temperature.

In cooling mode, it displays the return water set temperature and the real-time return water temperature. In the main interface, use the ▲ and ▼ keys to adjust the set temperature.

In the “Space heating + Domestic water tank heating mode” and “Space cooling + Domestic water tank heating mode”, the set temperature in the room or water tank mode is displayed according to the actual operation mode, and the real-time temperature also displays the return water or water tank temperature according to the actual operation mode. Do not use the ▲ and ▼ keys to adjust the set temperature in the main interface of starting up.

5.3.5. Zone Thermostat Setting (Adjust directly on the fan coil or the mixing valve controller)

The water temperature setting provided by the heat pump can be adjusted in the parameter settings. Long press ⏲ and ▲ for 3 seconds to enter parameter setting, press ▲ and ▼ to select P value, press ⏲ to enter P value setting. Using ▲ and ▼ to change the setting.

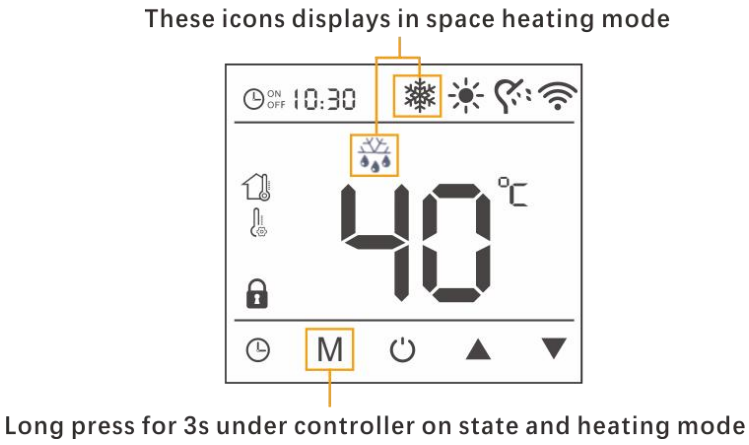
Parameter	Function Description	Optional range	Factory default
P2	Space heating mode set temperature	15-65℃	35℃
P3	Space cooling mode set temperature	12-35℃	12℃
P5	Space mode start hysteresis	2-15℃	3℃
P6	Constant temperature difference (set the difference value between the set temperature and the actual temperature when the constant temperature is started)	0-6℃	2℃
P7	Backup heat source control mode	0: No backup heat source 1: Heating mode according to P9) Hot water mode (energy-saving heating) 2: Heating mode (controlled by P8); hot water mode (fast heating)	0
P10	Maximum water outlet temperature in space heating	(MAX.TEMP)25-67℃	65℃
P19	Pump control when reach target temperature in space mode	0: Always on/ 1: Turn on the water pump at intervals after reaching the target temperature 2: Stop the pump when it reaches the temperature	0

5.3.6. Hot Water Tank Temperature Setting

The settings of the domestic water tank provided by the heat pump can be adjusted in the parameter settings. Long press ◷ and ▲ for 3 seconds to enter parameter setting, press ▲ and ▼ to select P value, press ◷ to enter P value setting. Using ▲ and ▼ to change the setting.

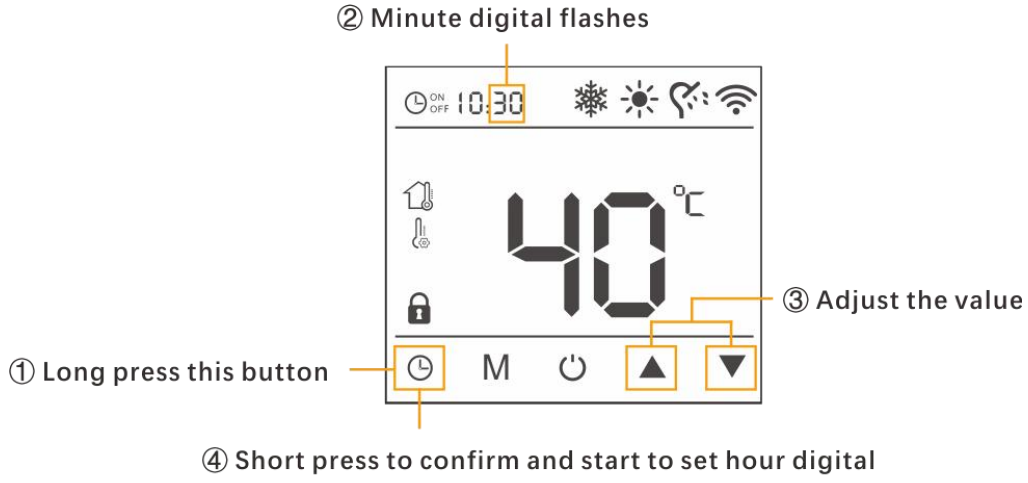
Parameter	Function Description	Optional range	Factory default
P1	Domestic water tank set temperature	20-60℃	45℃
P4	Water tank heating start hysteresis	3-15℃	5℃

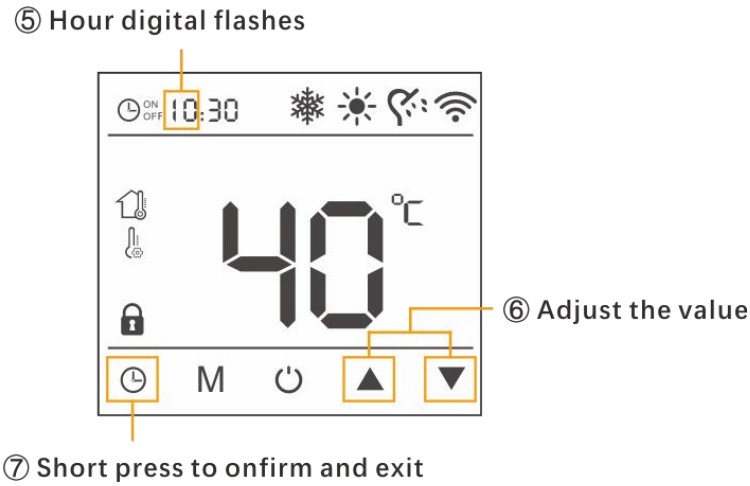
5.3.7. Mandatory Defrosting



Manual forced defrosting can be performed when the machine is in a frosty condition due to a low ambient temperature and the machine is unable to defrost properly. Press and hold the mode selection button M for 3 seconds under the on state of the controller and heating mode to enter the mandatory defrosting process.

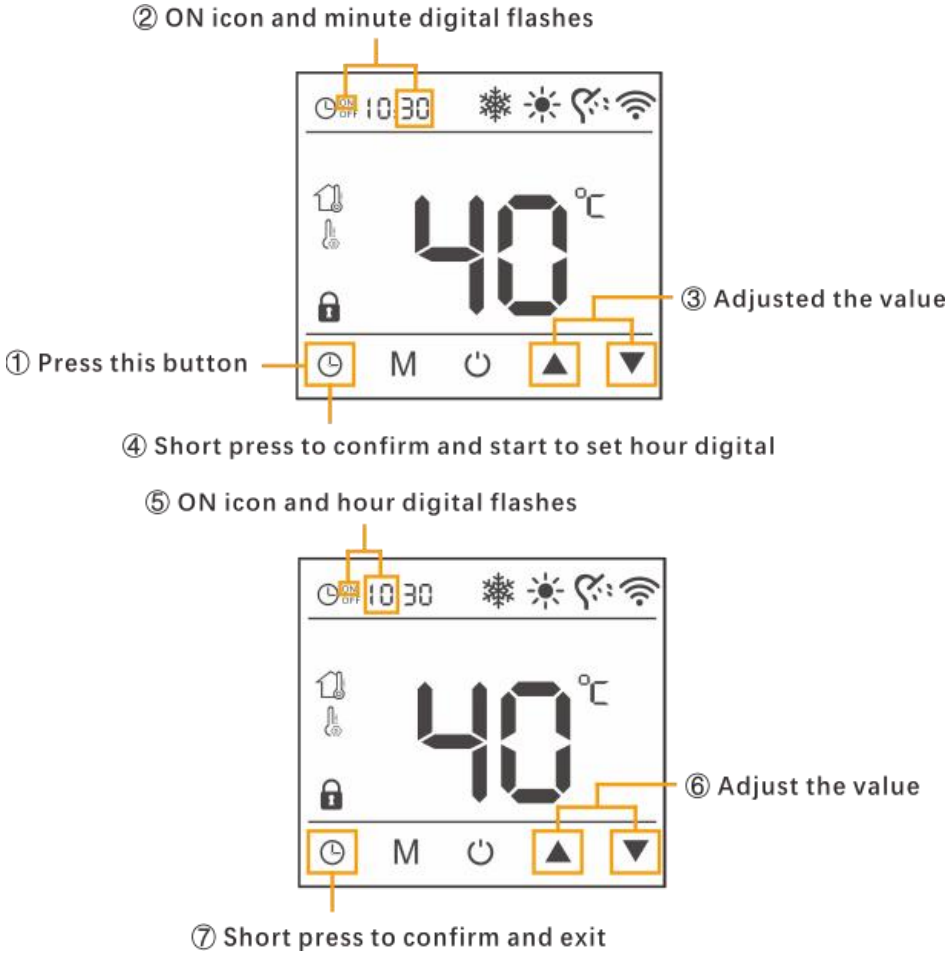
5.3.8. Time Setting





Note: The clock setting will be automatically determined, and the clock adjustment state will be exited 10 seconds after no operation.

5.3.9. Timer Setting



After setting the timer on time, press the clock button to display the last set timer off time, the timer off icon OFF flashes, same way to set the timer off time as setting timer on time.

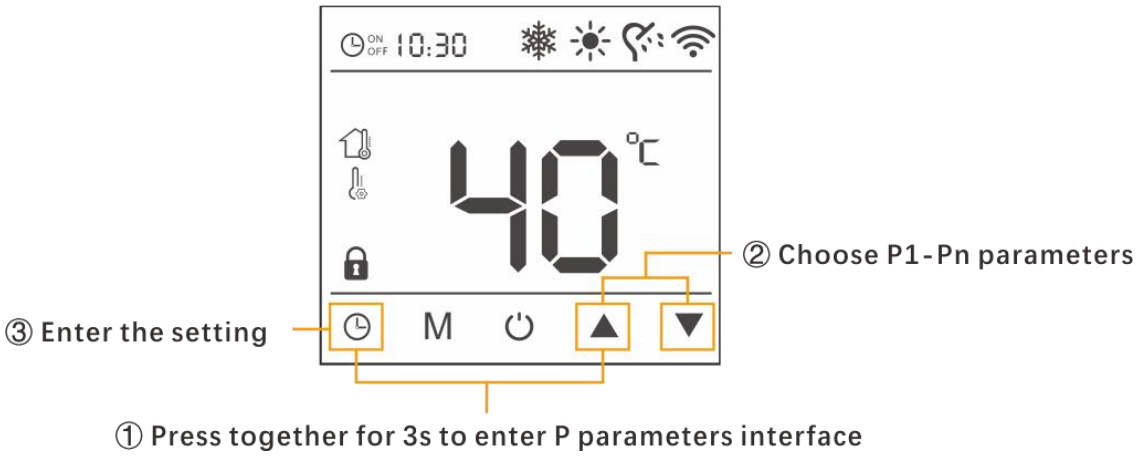
Note: The timer setting will be automatically determined, and the timer adjustment state will be exited 10 seconds after no operation and then the timer on icon ON and timer off icon OFF will be always on.

5.3.10. Cancel the Timer Setting

A confirm timer setting can be canceled by restarting the controller.

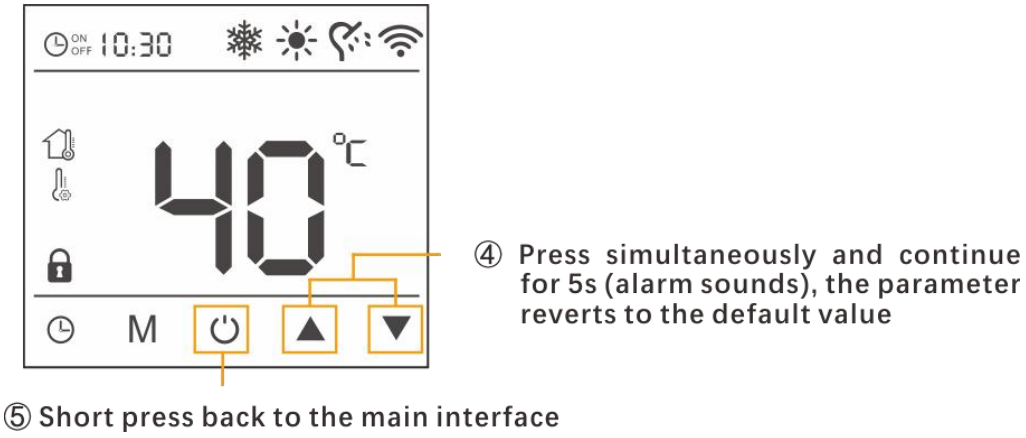
5.3.11. Parameter Restore Factory Settings

1/ P Parameter viewing and setting

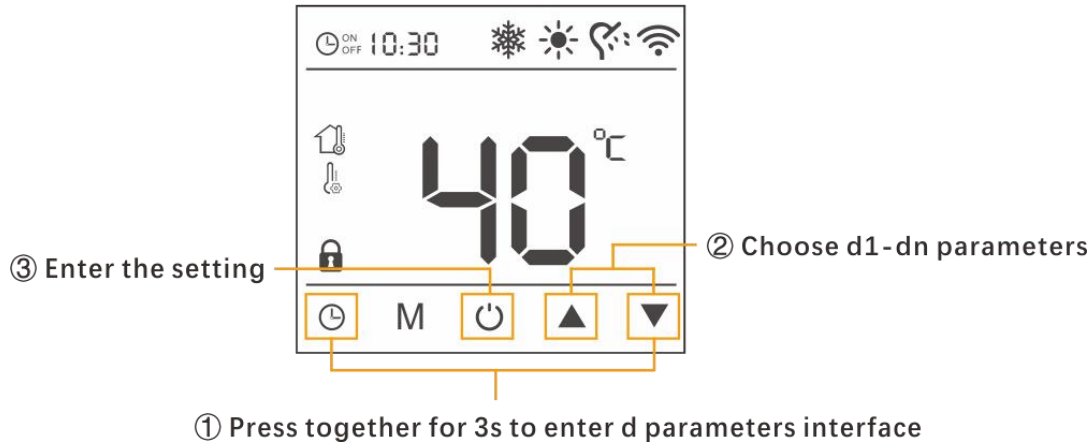


2/Parameter reset

Press and hold the up ▲ and down ▼ buttons at the same time for 5s, when beep sound is heard, the parameters are reset and the default values are displayed.



5.3.12. d Parameter viewing



5.4. Installation Zone System

5.4.1. DHW Tank Settings

5.4.1.1. DHW Tank Electric Heating Settings

The electric heating settings of the domestic water tank provided by the heat pump can be adjusted in the parameter settings. Long press ◷ and ▲ for 3 seconds to enter parameter setting, press ▲ and ▼ to select P value, press ◷ to enter P value setting. Using ▲ and ▼ to change the setting.

Parameter	Function Description	Optional range	Factory default
P8	Electric heating start temperature	-30~15℃	-7℃
P9	Start time in electric heating does not heat up	2-90 minutes	30 minutes

5.5. Heating Settings

5.5.1. Recommended Setting Temperature for Terminal Equipment

Equipment	Suggest setting temperature
Floor heating	30℃
Fan coil	40℃
Heating radiator	50℃

5.5.2. Weather Compensation Mode

5.5.2.1. Weather Compensation Mode Introduction

This mode automatically adjusts the target water inlet temperature of the unit according to the change of the outdoor ambient temperature in the heating mode. The lower the outdoor ambient temperature is, the higher the target water inlet temperature is set (Maximum not to exceed the maximum water outlet temperature in room heating P10 - 5°C); the higher the outdoor ambient temperature is, the lower the target water inlet temperature is set (when the outdoor ambient temperature is 18°C, the target water inlet temperature is 18°C).

When the weather compensation mode is on, the main interface of the controller presses the ▲ and ▼ button for adjusting the P24 parameter (curve translation adjustment parameter 1). This value is 0℃ by default, and the adjustable range is 0 to 10℃. The higher this value is, the higher the target inlet water temperature of the unit is.

5.5.2.2. ON/OFF of the Weather Compensation Mode

Weather compensation mode is off by default.

Set through the line controller parameter P23, when P23=1, the weather compensation mode is on; when P23=0, the weather compensation mode is off. (Default value P23=0, i.e. weather compensation mode is off by default)

5.5.2.3. Weather Compensation Operating Logic

$$\mathrm{Ts} = \frac{\mathrm{P25} - 18}{28} * (18 - \mathrm{Tout}) + 18 + \mathrm{P24}$$

- Formula code parsing:

  Ts: Target temperature under weather compensation mode(maximum limit value is P10-5℃)

  P25: Curve adjustment parameter 2, adjustment range: 30-45, default: 30

  P24: Curve adjustment parameter 1, adjustment range: 0-10, default: 0

Target water temp in Weather Compensation Mode							
Temp outdoor / P24 Range / P25 value	-10°C	-7°C	2°C	7°C	12°C	16°C	18°C
	0-10	0-10	0-10	0-10	0-10	0-10	0-10
30	30-40°C	28.7-38.7°C	24.9-34.9°C	22.7-32.7°C	20.6-30.6°C	18.9-28.9°C	18-28°C
31	31-41°C	29.6-39.6°C	25.4-35.4°C	23.1-33.1°C	20.8-30.8°C	18.9-28.9°C	18-28°C
32	32-42°C	30.5-40.5°C	26-36°C	23.5-33.5°C	21-31°C	19-29°C	18-28°C
33	33-43°C	31.4-41.4°C	26.6-36.6°C	23.9-33.9°C	21.2-31.2°C	19.1-29.1°C	18-28°C
34	34-44°C	32.3-42.3°C	27.1-37.1°C	24.3-34.3°C	21.4-31.4°C	19.1-29.1°C	18-28°C
35	35-45°C	33.2-43.2°C	27.7-37.7°C	24.7-34.7°C	21.6-31.6°C	19.2-29.2°C	18-28°C
36	36-46°C	34.1-44.1°C	28.3-38.3°C	25.1-35.1°C	21.9-31.9°C	19.3-29.3°C	18-28°C
37	37-47°C	35-45°C	28.9-38.9°C	25.5-35.5°C	22.1-32.1°C	19.4-29.4°C	18-28°C
38	38-48°C	35.9-45.9°C	29.4-39.4°C	25.9-35.9°C	22.3-32.3°C	19.4-29.4°C	18-28°C
39	39-49°C	36.8-46.8°C	30-40°C	26.3-36.3°C	22.5-32.5°C	19.5-29.5°C	18-28°C
40	40-50°C	37.6-47.6°C	30.6-40.6°C	26.6-36.6°C	22.7-32.7°C	19.6-29.6°C	18-28°C
41	41-51°C	38.5-48.5°C	31.1-41.1°C	27-37°C	22.9-32.9°C	19.6-29.6°C	18-28°C
42	42-52°C	39.4-49.4°C	31.7-41.7°C	27.4-37.4°C	23.1-33.1°C	19.7-29.7°C	18-28°C
43	43-53°C	40.3-50.3°C	32.3-42.3°C	27.8-37.8°C	23.4-33.4°C	19.8-29.8°C	18-28°C
44	44-54°C	41.2-51.2°C	32.9-42.9°C	28.2-38.2°C	23.6-33.6°C	19.9-29.9°C	18-28°C
45	45-55°C	42.1-52.1°C	33.4-43.4°C	28.6-38.6°C	23.8-33.8°C	19.9-29.9°C	18-28°C

- Examples of Applications of Weather Compensation Mode

  When P25 is set to 30 and P24 to 0, the target water inlet temperature is set to 30°C under the -10°C ambient temperature correspondence, and the corresponding target water inlet temperature is 18°C at 18°C ambient temperature, which is highly energy efficient and the comprehensive energy efficiency is close to A+++.

5.5.3. Direct Heating Mode (user-specified target water temperature)

P23 parameter is set to 0 (weather compensation mode is off), user can adjust the target inlet water temperature by pressing the ▲ and ▼ buttons directly from the controller.

5.6. DHW Tank Heating Settings

5.6.1. DHW Tank Heating Priority Settings

When P20=1, 3, 5, 7, it is DHW tank heating priority.

5.6.2. DHW Tank Reheating Temperature and Maximum Heating Time Settings

Parameter	Function Description	Optional range	Factory default
P1	Domestic water tank set temperature	20 ~ 60℃	45℃
P4	Water tank heating start hysteresis	3-15℃	5℃

* If the user requires domestic hot water above 50°C, domestic hot water can be heated to 65°C once a day through the operation of setting the serialization function in section 4.6.3.1 (P32 is set to 1, P33 is set to set the heating time period for electric heating according to the user's needs, and P34 is set to set the target domestic hot water temperature to be heated by electric heating).

5.6.3. DHW Tank Sterilization Mode Settings (target serialization temperature 60-75°C, default 65°C)

5.6.3.1. Water Tank High Temperature Sterilization Function

- Motion Activation

①The first time it is enabled, each time the unit is powered up and recognizes that P32 is a non-zero value, it is programmed to set d40 to 1 once and to select a serialization operating period close to the current point in time to heat the tank temperature (achieved through the output of the relay controlling the electric heating of the tank) to P34 Setting temperature once.

②When the water tank is heated to P34 Setting temperature, end the last timer and restart the timer (d40=P32); when the countdown of the day (d40 can be checked) is 1 and the serialization operation period is reached, perform the water tank temperature heating to P34 Setting temperature once.

- Motion Completion

When the unit identifies that the temperature of the water tank is ≥ P34 Setting temperature (parameter adjustable), the relay stops the output, completes the serialization function of the current time, and enters the next serialization cycle timing.

The DHW Tank must be equipped from thermostatic mixing valve to regulate mixed water between 30 to 50°C and avoid any risk of serious burns (must be installed at the outlet of the domestic hot water tank). This mandatory accessories.

5.6.3.2. Corresponding Controller Parameters

Controller Parameters	Parameters Explanation	Adjustment Range	Unit	Default Value	Minimum Adjustment Value	Remark
P32	Sterilization function cycle days setting	0-30	Day	14	±1	When set to 0, the Sterilization function does not run; When set to 1, the Sterilization function runs on a daily cycle.
P33	Sterilization runtime	0-23	Hour	1	±1	When set to 1, means that the water tank heat by using the water tank electric heating from 1:00 a.m., and ends when the water tank temperature reaches P34 Setting temperature, and enters the next timing cycle
P34	Sterilization target water temperature setting	60-75	℃	65	±1	
d40	Sterilization countdown days	30-0	Day	P32 set value	Decreasing by 1 per day	

During the process of heating with the water tank electric heating, the icon on the controller flashes, indicating that the target water temperature of the water tank is being heated up to P34 Setting temperature; until the heating process is finished, the icon turns into a normally lit state.

The Sterilization function is not performed when the tank temperature sensor is faulty.

5.7. Pool Heating Function Setting

- Pool Heating Function

  When P26=1, operation is based on the operation target frequency set by P27.

- Mode Introduction

  The house heat pump as a heat source can be adapted to the client's pool heat exchanger, and the pool water is heated through the pool heat exchanger.

- Mode Open

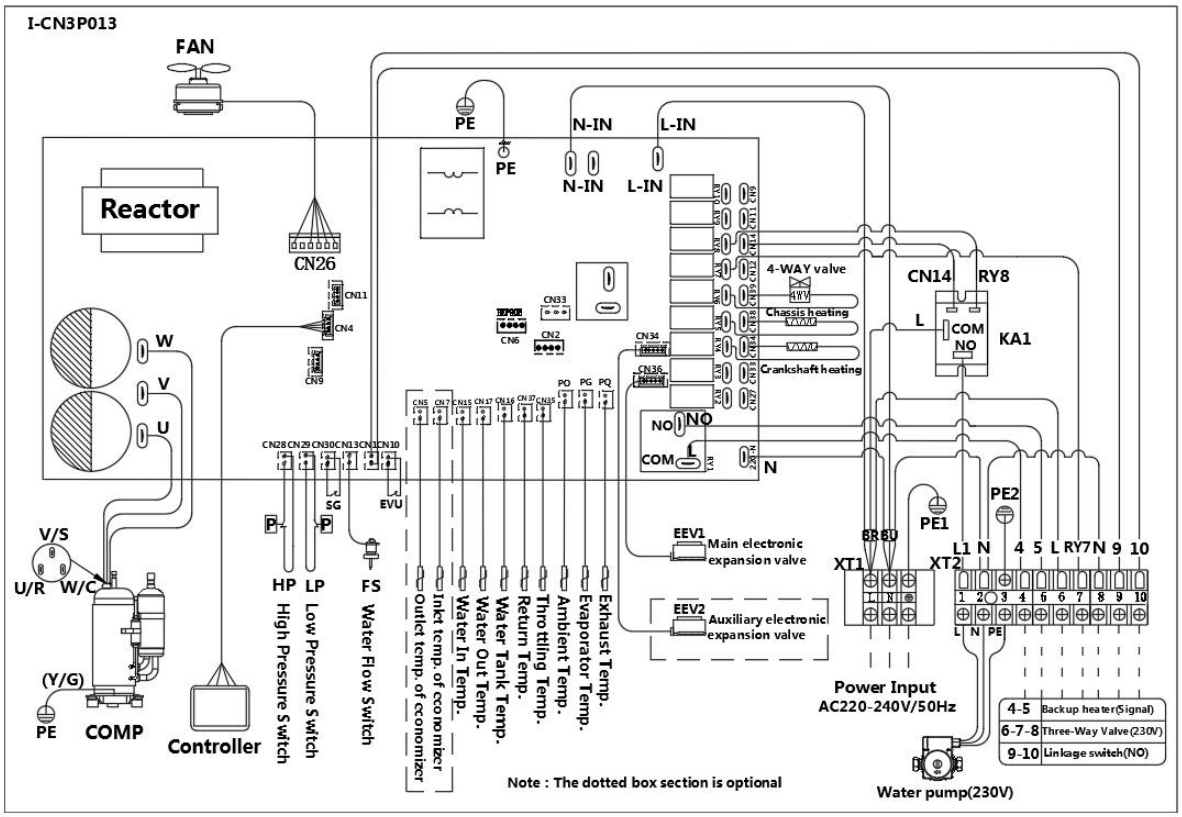
  When the parameter P26 is set to value 1, it is selected to be heated according to the frequency limitation of the swimming pool mode.

Parameter P27 is the highest frequency limiting parameter in swimming pool mode (to ensure that the optimal capacity output of the unit is achieved to ensure the heating effect of the swimming pool mode.

If the pool mode is not turned on, it will run according to the default frequency table of heating when heating the swimming pool, and after it is turned on, it will run according to the optional frequency limiting of the capacity.

5.8. External Backup Heater Function Settings

Wiring Diagram (For 4,5)



5.9. Night mode

5.9.1. Start or Stop the Night Mode

At the same time press and hold the ‘M’ key plus ‘Up’ key 3 seconds to start the change function, the next box icon display.

Start the Night Mode, Will be based on P37, P38 parameters to limit the maximum operating frequency and fan speed,Contains all the working patterns.

5.9.2. Mute mode

The Mute mode is divided into normal mute and timing mute. Normal Mute (‘M’ key plus ‘Up’ key length press 3 seconds) is adjusted to mute mode, directly press 5.9.1 point to limit the maximum frequency and maximum speed; Timing Mute is when the timing mute is enabled (the third interval is changed to timing mute) , then the mute mode is run within a fixed time (the cycle is effective) , the rest are run in the original mode.

5.10. System Check (Installation)

5.10.1. Refer to section "4.3.12 d Parameter viewing" for details of the query procedure.

Parameter	Parameter Description
d01	Frequency
d02	Current
d03	Water inlet temperature
d04	Domestic tank temperature
d05	Water outlet temperature
d06	Sterilization function countdown days
d07	Exhaust temperature
d08	Ambient temperature
d09	Evaporator temperature
d10	Return temperature

d11	Temperature after throttling
d12	Electronic expansion valve opening (displayed as actual opening angle)
d13	Protection code
d14	Shutdown code
d15	Shutdown time (last shutdown time, minutes)
d16	Outdoor fan speed (actual value*10)
d17	Target frequency
d18	EVI electronic expansion valve opening (displayed as actual opening angle)
d19	IPM module temperature
d20	WIFI connection status: 0, 1, 6: configuration status; 2: configured; 3: connected to the router; 4: connected to the cloud; 5: low power mode
d21	Economizer inlet temperature
d22	Economizer outlet temperature
d23	AC input R phase voltage
d24	Main return air overheat
d25	Operating hours
d26	Operating days
d27	DC voltage
d28	AC input voltage
d29	Compressor output power
d30	Compressor phase voltage
d31	Compressor phase current
d32	Remote signal strength
d33	System high pressure values
d34	System low pressure values
d35	System low-pressure saturated evaporation temperature
d36	Power of the whole unit
d37	Cumulative power consumption
d38	Overall energy efficiency COP
d39	Inlet and outlet water temperature difference
d40	Query SG to display operation status (0: off; 1: operation status 1; 2: operation status 2; 3: operation status 3; 4: operation status 4)

5.11. Common Faults During Installation and Solutions

Error Code	Code Definitions	Reasons	Solutions
E14	Water Flow Protection	1. The primary or secondary side of the water resistance is too large, resulting in the inability to normal water circulation or circulation abnormally slow, unable to achieve the required normal water flow; there is air into the circulating water pipe. 2. The water system is dirty and clogged. 3. Water flow switch is damaged. 4. Circulating water pump is damaged or stuck. 5. The water system is built too long or the pump capacity is insufficient 6. Water flow switch terminal on the PCB is damaged.	1. The air in the water system need to be emptied, please set the air exhaust valve at the highest point of the water system and check that it can vent properly. 2. Check filter condition and clean regularly. 3. Replace a new water flow switch 4. Resolve water pump jamming issue according to pump maintenance practices; replace damaged pumps. 5. The distance between the buffer tank/DHW cyliner and the house heat pump is too far, and the head of the circulation pump is not enough, if necessary, add additional circulation pumps, used to help the water circulation of the water tank 6. Short-circuiting the water flow switch terminal on the PCB to check if the PCB is damaged, if damaged, replace the PCB.
E02	DHW Cylinder Temp. Sensor Failure	1. The DHW cylinder temperature sensor terminal CN16 on the PCB is not plugged in properly. 2. The tank temperature sensor is not installed deep enough in the tank and is not filled with thermally conductive silicone grease. 3. DHW cylinder temperature sensor resistance drift. 4. DHW cylinder actual outlet water temperature exceeds 67°C. 5. The CN16 detection terminal on the PCB is damaged.	1. Check the sensor wiring and CN16 terminal; the actual distance between the DHW cylinder and the house heat pump needs to be within 5m (sensor wire length is 5m). 2. The sensor needs to be completely submerged in the water of the DHW cylinder and filled with thermally conductive silicone grease. 3. Replace the DHW cylinder temperature sensor. 4. Reduce the target temperature of the DHW cylinder appropriately. 5. Replace the PCB.
E08	Communication Failure Between Controller and PCB	1. The controller terminal CN4 on the PCB is not plugged in properly. 2. Communication line wiring sequence error. 3. Transformers, inverters, and other interferences near the installation of line controllers, or near strong wires and grounding wires. 4. Signal cable is damaged. 5. Abnormalities in the hardware	1. Checking and correcting poor contact conditions on communication cables. 2. Check whether the wiring sequence of the 2 ends of the communication cable is the same. 3. Try to keep the signal line away from the strong electricity, frequency converter, transformer vicinity. 4. Replace signal cable. 5. Confirm the situation of the wiring port, if there is no abnormality, then replace the controller to try to run, if E08 communication failure occurs within 3 minutes, it is presumed

		ports of the PCB or controller.	that the controller or the PCB failure, replace the controller or the PCB.
E13	Over/Under Voltage Protection	1. Supply voltage above or below the operating voltage range of the machine, A/B/C to N input voltage below 150V or above 265V. 2. Single-phase units were required to be 230VAC, but 380VAC power was actually utilized.	Check whether the voltage is consistent with the power requirements on the nameplate: single-phase measurement of the L, N input terminal voltage is 230VAC, three-phase ABCN measurement of the input terminals whether the voltage between the fire line is 380VAC, the voltage between the fire line and the zero line 230VAC (three-phase units must be connected to the zero line). If the voltage is normal then the driver board voltage detection circuit is damaged. Confirm whether the grid voltage is dropping after startup.
E15	System Pressure Overload Protection	1. Water resistance of the water circulation system is too large, the house heat pump is unable to maintain and continue to output and circulate heat properly. 2. The installation environment of the house heat pump is not ventilated, resulting in the inability to normal heat transfer; dirty evaporator affects the heat transfer; fan abnormality (low wind speed, reduced airflow). 3. Electronic expansion valve out of adjustment (coil loose or valve not operating). 4. Voltage switch loose or damaged high. 5. PCB is damaged.	1. Check if the water flow is normal, regularly clean the filter or replace with clean water. 2. Improve the ventilation environment and clean the evaporator regularly if it becomes fouled. Observing fan operation. 3. Touch the valve body of the electronic expansion valve by hand and then feel whether the electronic expansion valve is rotating or not. 4. If the detection pressure has reached 4.2Mpa as soon as the power is turned on, then the PCB is damaged or the pressure switch is loose/damaged, you need to check whether the high-pressure switch terminal on the PCB is loose/check whether the pressure switch is damaged-measurement of the pressure switch under the state of shutdown to see whether the pressure switch operates, and if there is an action, then it is damaged and needs to be replaced. 5. If there is no problem with the pressure switch then the PCB is suspected to be abnormal, the alternative method of replacing the PCB can be used for confirmation.
E23	Excessive Temperature Difference Between Inlet and Outlet Water Protection	1. Insufficient water flow and high water resistance in the water circuit system. 2. Resistance drift of inlet/outlet temperature sensors. 3. Water inlet and outlet sensors are reversed.	1. Clean the filter if the water line is dirty and clogged, check the water system(water pressure, criculation pump operation, whether the air is emptied). 2.Measure the actual inlet and outlet water temperature, replace the sensor to measure the temperature is not normal, then the PCB

		4. Abnormal pump operation.	detection circuit is damaged. If poor sensor insulation is detected, the temperature will deviate more than the actual temperature.
Application Failure	WiFi Connection Failure	1. It is not under the 2.4Ghz frequency WiFi signal or it is not well connected to the smart phone. 2. The WiFi protocol is not WiFi5. 3. Smart phone does not authorize Bluetooth functionality and location and storage permissions. 4. WiFi module failure in controller. 5. Cell phone system update, APP connection appeared flashback.	1. Connection need to be under 2.4Ghz frequency WiFi signal. 2. The WiFi protocol need to be WiFi5. 3. Bluetooth functionality and location and storage permissions need to be authorized on the smart phone. 4. Replace the controller. 5. Check for updates, wait for the vendor to update the app and upload it to APP Store and google play.
Application Failure	Heating Failure When Heat Conditions are Met	Linkage switch CN1 signal disconnection.	Check the CN1 port so that the linkage switch signal is a closed signal.
Application Failure	Unit Inside Water Pump Jammed	The unit has not been running for a long time.	Refer to Section “3.9. Pump Clogging Repair Guide”.

5.12. SG - Ready Solution

5.12.1. SG - Ready Logic

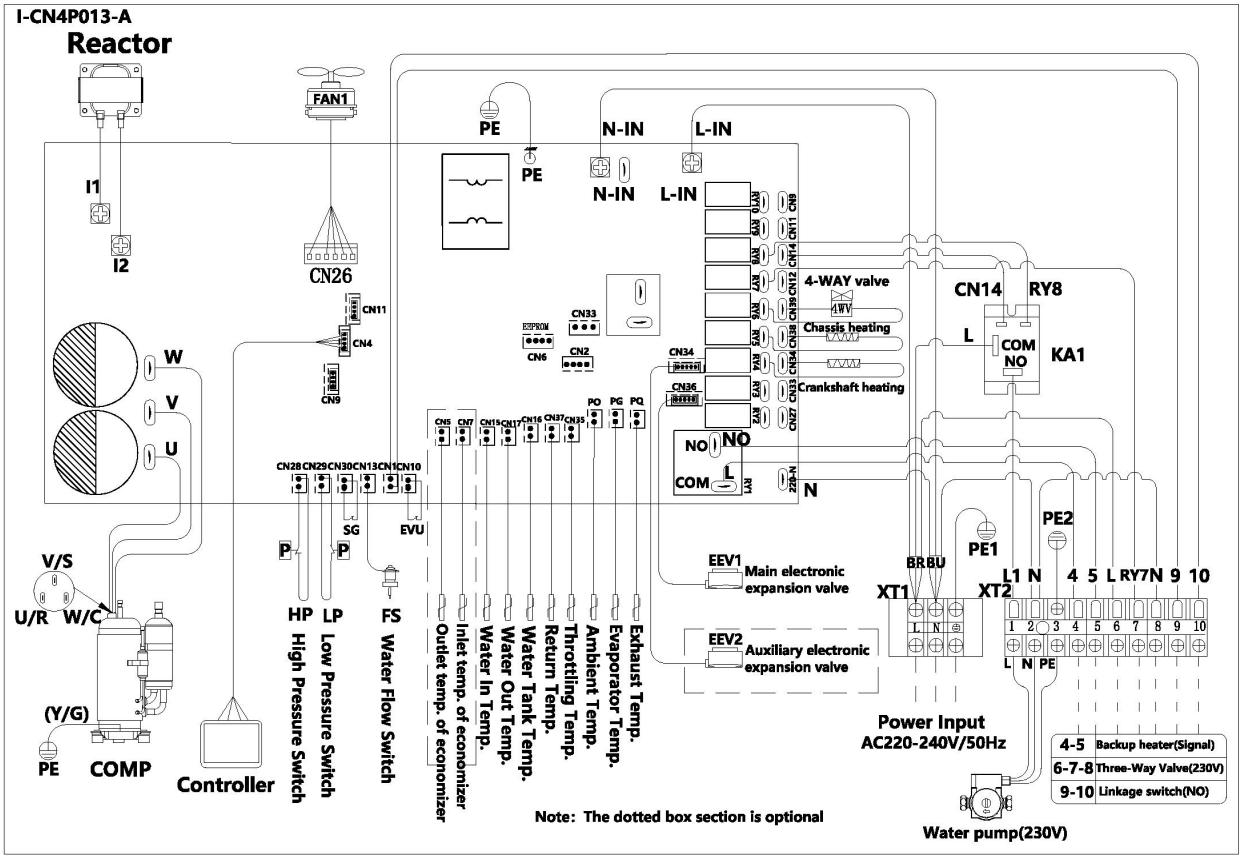
This function is only available for power supply networks that support the "SG-Ready" standard, which is a smart power grid management solution in which the heat pump can operate economically at the current grid load via a digital signal provided by the grid. SG-Ready function is only available for heat pump heating mode and hot water mode function.

Display Status	Operation Mode	Input Signal		Control Logic
		EVU	SG	Heating Mode/Hot Water Mode
SG-Ready	1	1	0	When the received state is SG signal connected and EVU signal disconnected: After the heating/hot water mode has been continuously off for a maximum of 2 hours, it automatically switches to the operation mode 2. The above control is operated up to 3 times in a day, each time running time is not less than 10 minutes, when the cumulative running time exceeds 2 hours, it will be automatically switched to operation mode 2.
	2	0	0	When the received state is both SG and EVU signals are disconnected: （1）The system automatically disables hot water mode operation. （2）The system automatically turns off the sterilization mode, water tank electric heating （3）The heat pump automatically stops running for 1 hour after the maximum running time of the heating mode ≥ SG running time (this time can be set).
	3	0	1	When the received state is SG signal disconnected and EVU signal connected: （1）The system hot water mode is active and the heat pump automatically prioritizes the operation of the hot water mode. （2）The electric heating is turned on when the water tank temperature < water tank setting temperature -5℃. （4）The electric heating is turned off when the water tank temperature ≥ water tank setting temperature +5℃.
	4	1	1	When the received state is both SG and EVU signals are connected: （1）The system hot water mode is active and the heat pump automatically runs hot water mode as a priority. The hot water tank target temperature is automatically set to 75°C. （2）The electric heating function of the water tank is executed as follows, when the hot water tank temperature ≤65℃, the electric heating will turn on. When the hot water tank temperature ≥75℃, the electric heating will turn off. （3）The heat pump automatically switches to the operating heating mode and performs according to the normal control logic state.

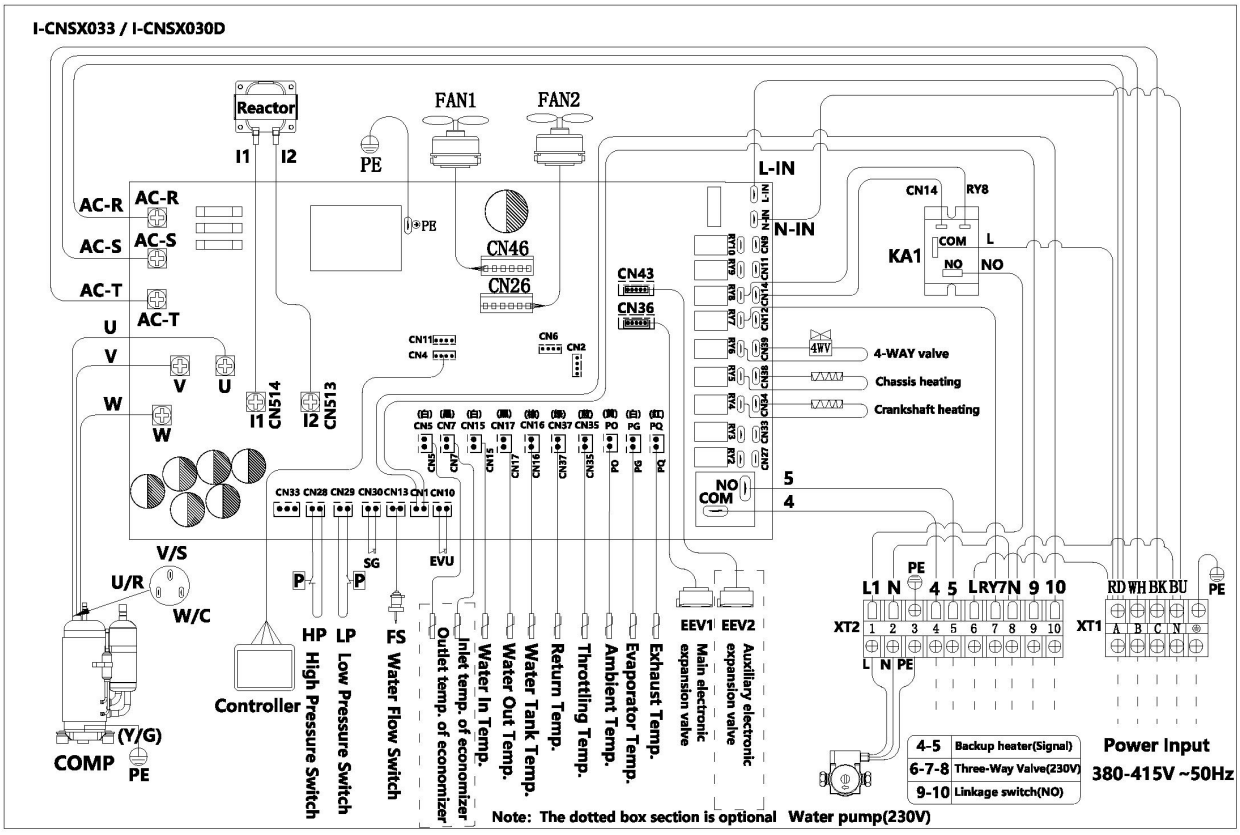
5.12.2. SG - Ready Wiring

CN10 - EVU, CN30 – SG

ALSAVO HEAT 10iu



ALSAVO HEAT 12iuT, ALSAVO HEAT 19iuT, ALSAVO HEAT 26iuT



6. Accessories and Options

6.1. Standard Accessories

ITEM	PHOTO	SPECIFICATION	ERP	REMARK
Controller		HCLCD02iV1	117020333	Standard 1pc.
Controller extension cable		M-XHX10MBK 10m	117040047	Standard 1pc.
Controller installation base		XHQKZ-86HB White	133020117	Standard 1pc.
Plastic Expansion Tube		8mm	136020166	Standard 2pcs
Screws		STϕ4*20	124010005	Standard 2pcs

7. Controller Setting Data (P Parameters)

Parameter No.	Function Description	Optional range	Factory default
P1	Domestic water tank set temperature	20～60℃	45℃
P2	Room heating mode set temperature	15～65℃	35℃
P3	Room cooling mode set temperature	12～35℃	12℃
P4	Water tank heating start hysteresis	3～15℃	5℃
P5	Room mode start hysteresis	2～15℃	3℃
P6	Constant temperature difference (set the difference value between the set temperature and the actual temperature when the constant temperature is started)	0～6℃	2℃
P7	Backup heat source control mode 0: No backup heat source 1: Heating mode according to P9 Hot water mode (energy-saving heating) 2: Heating mode (controlled by P8); hot water mode (fast heating)	0～2	0
P8	Maximum limiting temperature of the ambient environment for electric heating start-up	-30～15℃	-7℃
P9	Start time in electric heating does not heat up	2～90 minutes	30 minutes
P10	Maximum water outlet temperature in room heating	（MAX.TEMP）25～67℃	65℃
P11	Critical temperature for the outdoor ambient temperature to be too low	-40～0℃	-25℃
P12	Defrost mode	0: Smart defrost 1: Periodical defrost	1
P13	Defrost temperature setting	-15～2℃	-4℃
P14	Defrost exit temperature setting	8～20℃	15℃
P15	Defrost program interval	25～70 minutes	40 minutes
P16	Duration of defrosting process	2～20 minutes	12 minutes
P17	Tank temperature compensation	-10～10℃	0℃
P18	Temperature compensation of outlet and inlet water	-10～10℃	0℃
P19	Pump control when reach target temperature in room mode	0: Always on 1: Turn on the water pump at intervals after reaching the target temperature 2: Stop the pump when it reaches the temperature	0

P20	Model parameter selection: 1: Single water tank model 2: Single room heating model 3: Domestic water tank & room heating model 4: Single room cooling model 5: Domestic water tank & room cooling model 6: Room cooling and heating model 7: Domestic water tank & room cooling and heating model	1、2、3、4、5、6、7	2
P21	Turn on the pump manually, only valid in off state of the controller	0: Off 1: Turn on the water pump forcibly	Power on or switch off the machine to release the settings
P22	Phase sequence protection	0：Off 1：On	1
P23	Temperature compensation mode	0：Off 1：On	0
P24	Curve translation adjustment parameter 1	0～10℃	0℃
P25	Curve Slope Adjustment Parameter 2	30～45℃	30℃
P26	Heating type	0：ECO 1：Powerful	0
P27	Maximum frequency limit for pool heating	30～100Hz	75
P28	Pool heating return air overheat temperature	-10～10℃	3℃
P29	Power compensation value	-40～200(*10W)	20
P30	Design of water flow rate	0.1～5.0 m³/h	1.2
P31	Correction parameter for temperature difference between inlet and outlet water	-9.9～9.9℃	0.0℃
P32	Cycle day setting for sterilization function	0～30 days	14 days
P33	Sterilization operation period	0～23 o'clock	1 o'clock
P34	Target water temperature setting for sterilization	60～75℃	65℃
P35	SG-Ready	0：Off 1：On	0
P36	Main interface water temperature display selection	0：Inlet water temperature 1：Outlet water temperature	1
P37	Frequency for silent mode	30 ~ 80Hz	75Hz
P38	Fan speed for silent mode	40 ~ 70 （*10RPM）	50

8. General Warranty and Disclaimer Policy

We are offering a 3-year warranty for the whole unit.

The heat pump product sold by the manufacturer is covered by a limited warranty for a period of 3 years from the date of purchase. This warranty covers any defects in materials, including the compressor, coil, and refrigerant leaks, and any parts or components that fail due to normal use.

Notice:

1) We recommend that you retain the pallet and packaging that the heat pump was delivered with in case you need to return the unit to us for repairs under the warranty.

2) Read the instructions carefully before you open, use and maintain the device. Failure to comply with these instructions will void the warranty. The manufacturer of this product will not be held responsible if someone comes to harm, or the unit is damaged as a result of faulty installation, troubleshooting or unnecessary maintenance.

1. DETAIL POLICY

1) The warranty covers only material or manufacturing defects that prevent the product from being able to be installed or operated in a normal way. Defective parts will be replaced or repaired.

2) The warranty does not cover transportation damage, any use other than what is intended, damage caused by incorrect assembly or improper use, damage caused by impact or other error, damage caused by frost cracking or by improper storage.

3) The warranty becomes void if the user modifies the product.

4) The warranty does not include product-related damage, property damage or general operational loss.

5) The warranty is limited to the initial retail purchase and cannot be transferred and it does not apply to products moved from their original location.

6) The manufacturer’s liability cannot exceed the repair or replacement of defective parts and does not include labour costs to remove and reinstall the defective part, transportation costs to and from the service centre, and all other materials necessary to carry out the repair.

2. SPARE PARTS AND REPAIRS

We provide spare parts for our air source heat pumps.

For the defects within warranty, we will offer the spare parts to replace.

For the defects out of warranty, please contact us for a quotation.

3. PROCEDURE

To make a claim under this warranty, the customer must contact the manufacturer's customer service department and provide proof of purchase and a description of the problem. The manufacturer will provide instructions for returning the defective product or parts and will either repair or replace the product or parts in accordance with the terms of this warranty.

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