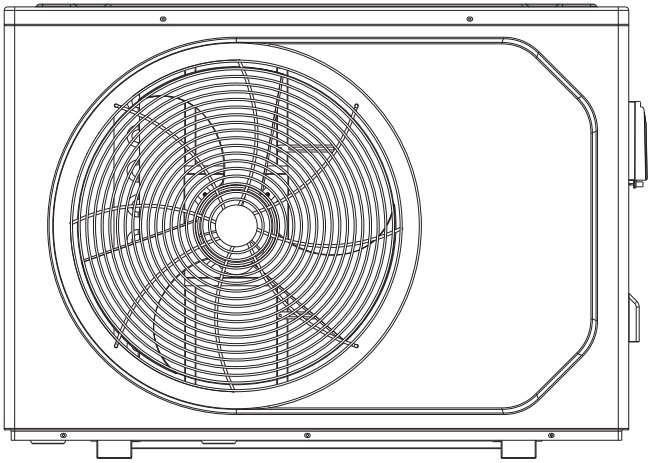
# MHP35KS-02

## USER MANUAL



Original instructions

Swimming Pool Heat Pump

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This manual provides all the necessary information for the proper use of the equipment, ensuring optimal performance and safety for the operators.

# 1. PURPOSES AND CONTENTS OF THE MANUAL

This manual provides essential information for the installation, operation, and maintenance of the units, aimed at helping operators use the equipment efficiently, even without prior knowledge of the apparatus.

This manual describes the equipment's specifications at the time of its market release. It may not include subsequent technological updates made by the company to enhance performance, ergonomics, safety, and functionality. As such, the company is not obligated to update manuals for earlier versions of the equipment.

It is strongly recommended that users adhere to the instructions in this manual, particularly those related to safety and routine maintenance.

## 1. 1 CONSERVATION OF THE MANUAL

The manual should be kept as a reference for the appliance, stored in a dry, safe place, and made accessible to all users who may need it for guidance on proper operation.

The company reserves the right to make changes to its products and manuals without being required to update earlier versions. It is not responsible for any errors resulting from printing or transcription.

Any updated copies or sections of the manual provided by the manufacturer should be stored alongside the original.

For any additional information regarding the manual or the operation and maintenance of the appliance, the company is available to assist.

## 1. 2 SYMBOLS USED IN THE MANUAL

| | |
|---|---|
| | Indicates actions that could be hazardous to people and/or interfere with the proper operation of the equipment. |
| | Indicates operations that are not allowed. |
| | Indicates important instructions that the operator must follow to ensure the proper and safe operation of the equipment. It also includes general notes. |

Caution: Risk of fire due to flammable materials

**⚠ WARNING**

This heat pump uses flammable refrigerant R32.
Any operation on the refrigerant circuit is not allowed without authorization.
Before servicing or repairing the refrigerant circuit, the following safety measures must be taken to ensure safe operation.

| | | |
|---|---|---|
| | WARNING | This symbol indicates the appliance uses flammable refrigerants.<br>Leakage of refrigerants exposed to an external ignition source could cause a fire hazard. |
| | CAUTION | This symbol signifies that the operating manual must be thoroughly read. |
| | CAUTION | This symbol denotes that only trained personnel should handle this equipment, referring to the installation manual as a guide. |
| | CAUTION | This symbol indicates service technicians should use the installation manual as a reference while handling the equipment. |
| | CAUTION | This symbol signifies that information such as the installation or operating manual is available for consultation. |

## 2. RELATED ATTENTION

| 2.1 Work procedure |
| --- |
| All tasks must follow a controlled process to minimize the risk of flammable gases or vapors being present during operation. |
| 2.2 General work area |
| All personnel in the vicinity must be informed of the ongoing work. Avoid working in confined spaces. The work area should be clearly marked, secured, and special attention should be given to potential sources of heat or open flames nearby. |
| 2.3 Refrigerant Presence Check |
| Before and during maintenance, a suitable refrigerant detector must be used to verify the absence of flammable gases. Ensure that leak detection equipment is compatible with flammable refrigerants, does not generate sparks, and is properly sealed or designed with built-in safety measures. |
| 2.4 Availability of Fire Extinguishers |
| If any hot work is required on the refrigeration system or its components, appropriate fire extinguishing equipment must be readily available. A dry powder or $CO_2$ fire extinguisher should be placed near the work area. |
| 2.5 Elimination of Ignition Sources |
| Heat, flames, or sparks must not be present near any component or piping that contains or has contained a flammable refrigerant. All potential ignition sources, including smoking, must be kept at a safe distance during installation, servicing, removal, or disposal, as refrigerant may be released into the surroundings. The work environment must be assessed before starting to eliminate fire hazards, and "No Smoking" signs must be prominently displayed. |
| 2.6 Ventilation Requirements |
| Ensure the work area is outdoors or adequately ventilated before starting system maintenance or hot work. Proper ventilation must be maintained throughout the entire operation. |
| 2.7 Inspection of Refrigeration Equipment |
| When replacing electrical components, only manufacturer-approved parts should be used to ensure compatibility and safety. If uncertain, consult the manufacturer's technical support.<br>The following checks must be performed on systems using flammable refrigerants:<br>a. Ensure the refrigerant charge size is suitable for the room where the equipment is installed.<br>b. Verify that ventilation openings and air vents are functioning correctly and not blocked.<br>c. If an indirect refrigeration circuit is used, inspect the secondary circuit as well.<br>d. Equipment labels and safety markings must remain visible and legible. Any unreadable labels should be replaced.<br>e. Refrigerant pipes and components must be positioned to avoid exposure to substances that could cause corrosion. |
| 2.8 Electrical Component Inspection |
| Repair and maintenance of electrical components must include initial safety checks and thorough inspections. If a safety-related defect is found, the power supply must not be connected until the issue is resolved.<br>Initial safety inspections should include:<br>a. Ensuring capacitors are safely discharged to prevent sparking.<br>b. Confirming that no electrical components or wiring are exposed during refrigerant charging, recovery, or purging.<br>c. Verifying that the grounding connection is intact and continuous. |

## 3. PERMITTED USE

| |
| --- |
| • Please read and understand the instructions and recommendations in this manual carefully, as they contain important information regarding the safe handling and operation of the heat pump. Keep this manual in an easily accessible place for future reference. |
| • Installation must be performed by a qualified professional in compliance with applicable regulations and the manufacturer's guidelines. Improper installation may result in injury to people or animals and may cause damage to the equipment. The manufacturer shall not be held liable for any such consequences. |

| |
|---|
| • Upon unpacking the heat pump, inspect the contents for any potential damage. Additionally, check that the pressure displayed on the gauge is above 80 psi. A lower pressure reading may indicate a refrigerant leak. |
| • Before connecting the heat pump, verify that the installation conditions align with the specifications in this manual and do not exceed the product's allowable limits. |
| • In case of a malfunction or defect, immediately disconnect the power supply and refrain from attempting repairs. Repairs should only be carried out by an authorized technical service provider using original spare parts. Failure to adhere to these guidelines may compromise the safe operation of the heat pump. |
| • To ensure optimal performance and efficiency, regular maintenance must be performed according to the instructions provided. |
| • If the heat pump is resold or transferred, ensure that all technical documentation accompanies the unit for the new owner's reference. |
| • This heat pump is specifically designed for heating swimming pools. Any other application is considered improper, incorrect, and potentially hazardous. |
| • The manufacturer or distributor shall not be held responsible for any damage resulting from incorrect installation, improper operation, or failure to comply with the instructions in this manual and applicable installation standards. |

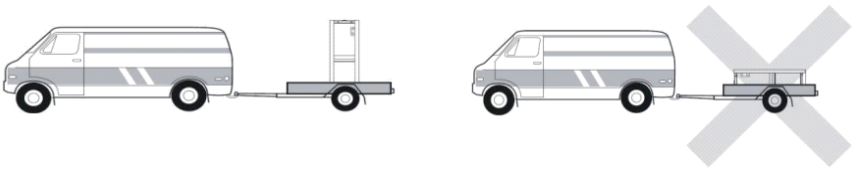
# 4. GENERAL

## 4.1 General Delivery Terms

All equipment, regardless of whether it is shipped with free carriage and packaging, is transported at the consignee's own risk.

Upon receipt, the responsible individual must visually inspect the heat pump for any transport-related damage, including issues with the refrigerant system, body panels, electrical control box, or frame. Any damage observed must be recorded on the carrier's delivery receipt and reported to the carrier in writing via registered mail within 48 hours.

The equipment must always be stored and transported in an upright position on a pallet and kept in its original packaging. If the unit has been laid horizontally during storage or transport, it must remain upright for at least 24 hours before being powered on.



## 4.2 Safety Instruction

⚠ WARNING

Please read carefully the safety instructions before using the equipment. The following instructions are vital for safety so please strictly comply with them.

| During installation and servicing |
|---|
| Only qualified personnel should perform installation, start-up, maintenance, and repairs, in accordance with current standards and regulations.<br>Before operating, installing, commissioning, or servicing the equipment, the responsible individual must review and understand all instructions outlined in the installation manual and technical specifications of the heat pump.<br>Do not install the unit near heat sources, flammable materials, or near the building's air intake.<br>If the installation area is not restricted, a protective grille must be installed around the heat pump.<br>To prevent severe burns, avoid walking on pipes during installation, repairs, or maintenance activities.<br>Prior to servicing the refrigerant system, turn off the heat pump and wait a few minutes before attaching temperature and pressure sensors. Check the refrigerant level during servicing.<br>Ensure that the high and low-pressure switches are properly connected to the refrigerant system and that they disconnect the electrical circuit when tripped during the equipment's annual leak inspection.<br>Inspect refrigerant components for any signs of corrosion or oil leakage. |
| **Operation** |
| To avoid serious injury, never touch the fan when it is in operation.<br>Keep the heat pump out of children's reach to prevent injuries caused by the heat exchanger blades.<br>Never operate the equipment without water in the pool or if the circulating pump is not functioning.<br>Check the water flow rate monthly and clean the filter as necessary. |
| **Cleaning** |
| Before cleaning, switch off the power supply to the equipment.<br>Close the water inlet and outlet valves.<br>Do not insert objects into the air or water intakes or outlets. Do not rinse the equipment with water. |
| **Repairs** |
| Ensure that work on the refrigerant system complies with current safety regulations.<br>Only qualified personnel should perform brazing.<br>Use only parts certified by our technical department when replacing defective refrigerant components.<br>When replacing pipes, use only copper pipes that conform to the NF EN12735-1 standard.<br>For leak detection during pressure testing: To avoid fire or explosion hazards, never use oxygen or dry air. Use dehydrated nitrogen or a nitrogen-refrigerant mixture. The pressure during testing must not exceed 42 bar on both the low and high-pressure sides. |

## 4.3 Water treatment

Swimming pool heat pumps are compatible with all water treatment systems. However, the treatment system (e.g., chlorine, pH regulators, bromine, or salt chlorinator dosing pumps) must be installed downstream of the heat pump in the hydraulic circuit.

To prevent damage, the pool water's pH level must be maintained between 6.9 and 8.0.

## 4.4 General characteristics

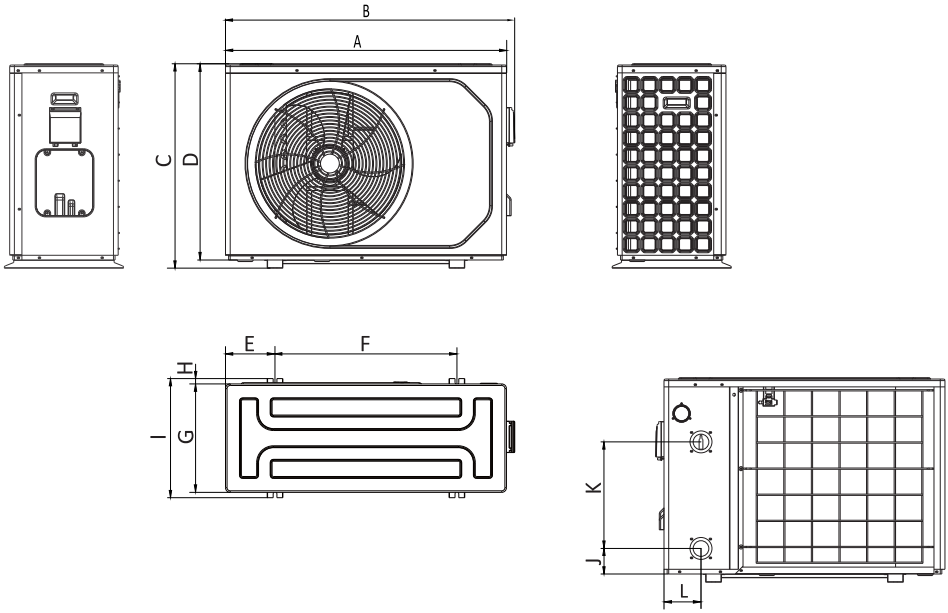
- A heat pump has the following features:
- CE certification and complies with the RoHS European directive.
- High performance with up to 80% energy savings compared to a conventional heating system.
- Clean, efficient and environmentally friendly R32 refrigerant.
- Reliable high output leading brand compressor.
- Wide hydrophilic aluminum evaporator for use at low temperatures. User-friendly intuitive remote control.
- Heavy duty ABS shell, anti-UV treated and easy to maintain. Designed to be silent.
- Dual antifreeze system to avoid frost damage:
- Revolutionary exchanger with patented antifreeze system.
- A smart monitoring system to preserve the pipework and liner without emptying the pool in winter.

## 5. DESCRIPTION

### 5.1 Technical Specification

| Model No. | | MHP25KS-02 | MHP35KS-02 |
|---|---|---|---|
| * Heating Capacity at Air 26°C, Humidity 80%, Water 26°C in, 28°C out | | | |
| Heating Capacity | kW | 25~6.8 | 35~8.8 |
| Power Input | kW | 4.12~0.43 | 5.15~0.56 |
| COP | / | 12.5~6.6 | 12.3~6.6 |
| * Heating Capacity at Air 15°C, Humidity 70%, Water 26°C in, 28°C out | | | |
| Heating Capacity | kW | 21.5~5.5 | 25.5~6.4 |
| Power Input | kW | 4.7~0.72 | 5.2~0.84 |
| COP | / | 7.1~4.8 | 7.1~4.8 |
| * Cooling Capacity at Air 35°C, Water 29°C in, 27°C out | | | |
| Cooling Capacity | kW | 14.9~3.8 | 19.3~4.9 |
| Power Input | kW | 3.92~0.57 | 5.08~0.73 |
| EER | / | 6.5~3.6 | 6.5~3.6 |
| Power supply | | 380~415V/3/50 | |
| Max Power Input | kW | 5.17 | 7.25 |
| Max Current | A | 9.2 | 12.8 |
| Water Flow Volume | $m^3/h$ | 11 | 15 |
| Refrigerant | | R32 | |
| Heat Exchanger | | Titanium | |
| Air Flow Direction | | Horizontal | |
| Kind of defrost | | by 4 way valve | |
| Compressor | | Mitsubishi | |
| Working temp. range (°C) | | −15~43 | |
| Casing Material | | SHEET METAL | |
| Water Proof Level | | IPX4 | |
| Noise level 1m | dB(A) | 47~58 | 49~59 |
| Noise level 10m | dB(A) | 27~38 | 29~39 |
| Net Weight | kg | 88 | 98 |
| Gross Weight | kg | 99 | 110 |
| Net Dimensions | mm | 1092x445x742 | |
| Package Dimensions | mm | 1150x460x862 | |

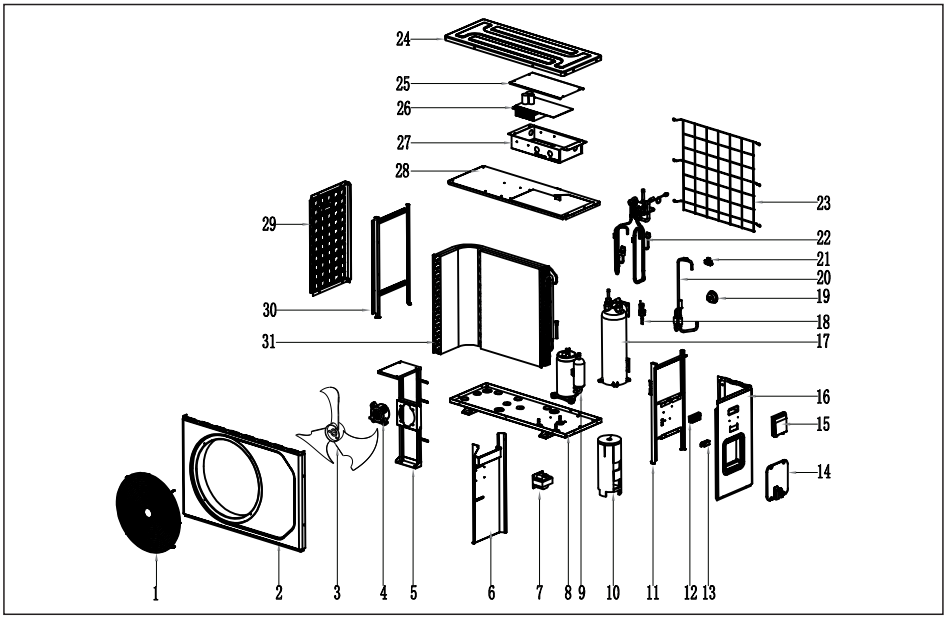
## 5.2 Unit Dimension




**Dimension(mm)**

| Models | MHP35KS-02 |
|---|---|
| A | 1065 |
| B | 1092 |
| C | 742 |
| D | 722 |
| E | 176 |
| F | 710 |
| G | 421 |
| H | 34 |
| I | 445 |
| J | 81.5 |
| K | 440 |
| L | 134 |

## 5.3 Exploding View




| | | | |
|---|---|---|---|
| 1 | Fan guard | 17 | Titanium Tube Heat Exchanger |
| 2 | Front panel | 18 | Water flow switch |
| 3 | Fan blade | 19 | Pressure Gauge |
| 4 | Motor | 20 | Electronic Expansion Valve Assy |
| 5 | Motor Bracket | 21 | Ambient Temperature Bracket |
| 6 | Middle Partition Plate | 22 | 4-Way Valve Assembly |
| 7 | Reactor | 23 | Rear Grille |
| 8 | Chassis Assembly | 24 | Top Cover |
| 9 | Compressor | 25 | Electrical Box Cover |
| 10 | Compressor Soundproof Cotton | 26 | Main Control Board |
| 11 | Right Support Frame Assembly | 27 | Electrical Box |
| 12 | Terminal Block | 28 | Top Frame Assembly |
| 13 | Wire Clamp | 29 | Left Panel |
| 14 | Terminal Cover Plate | 30 | Left Support Frame Assembly |
| 15 | Wired Controller Waterproof Box | 31 | Evaporator Assembly |
| 16 | Right Panel | | |

# 6. INSTALLATION

⚠ WARNING

Installation must be performed by a qualified technician.
This section is for reference only and should be reviewed and adjusted as needed to suit the actual installation conditions.

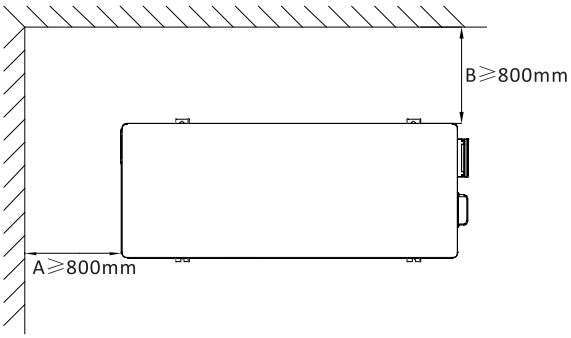
## 6.1 Pre-requirements

Required equipment for heat pump installation:
A power supply cable appropriate for the unit's power requirements.
A bypass kit and PVC piping compatible with your installation, along with a pipe cutter, PVC adhesive, and sandpaper.
Wall plugs and expansion screws suitable for securing the unit to its support.
It is recommended to use flexible PVC pipes for connection to minimize vibration transmission.
Suitable mounting studs may be used to elevate the unit.

## 6.2 Location

Please comply with the following rules concerning the choice of heat pump location.

- Choose a location that allows easy access for operation and maintenance.
- The unit should be installed on the ground, preferably on a level concrete base. Ensure the surface is stable and capable of supporting the unit's weight.
- Provide a drainage system near the unit to prevent water accumulation in the installation area.
- If necessary, elevate the unit using appropriate mounting pads that can support its weight.
- Ensure proper ventilation, with the air outlet positioned away from windows of neighboring buildings to prevent exhaust air recirculation. Maintain sufficient clearance around the unit for servicing and maintenance.
- Avoid installing the unit in areas exposed to oil, flammable gases, corrosive substances, sulfur compounds, or near high-frequency equipment.
- Do not place the unit near roads or pathways where it may be exposed to mud splashes.
- To minimize noise disturbance, position the unit in an area least likely to affect neighbors.
- Keep the unit as far as possible out of reach of children.

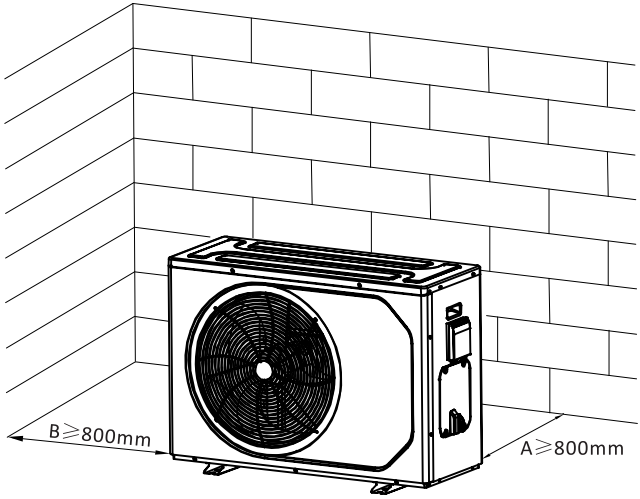


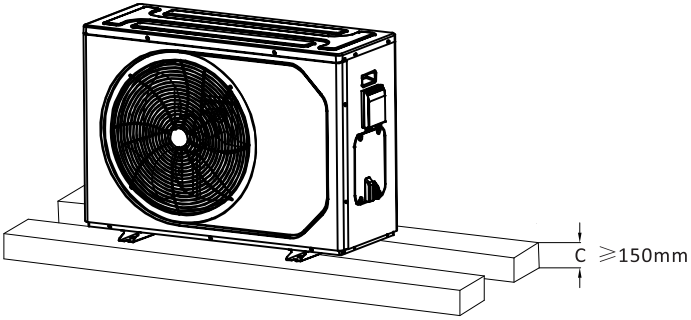

There should be no obstacles within 3m in front of the air outlet.

## 6.3 Installation Dimensions And Exploded View

### 6.3.1 Installation Dimensions

When installing the unit near a building, ensure adequate clearance around the unit. The specific requirements are as follows:

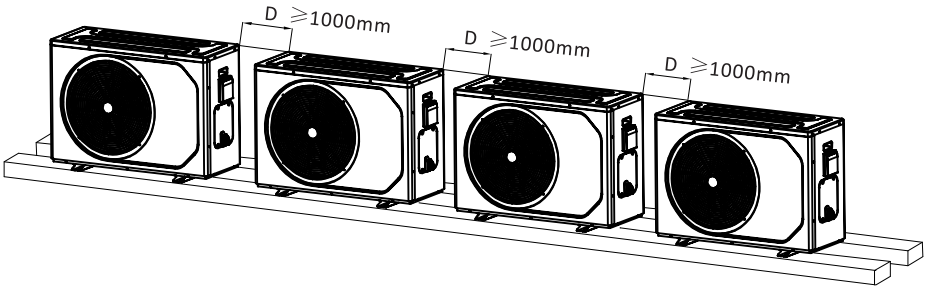



**Note:**
Standard Environment: The base should be 150–200mm above the ground.
Rainy/Humid Areas: It is recommended to have a clearance of at least 300mm and to include a drainage system.
Cold Regions: The base height should be ≥ snow depth + 100mm.

### 6.3.2 Installation Dimensions

When installing the unit near a building, ensure adequate clearance around the unit. The specific requirements are as follows:



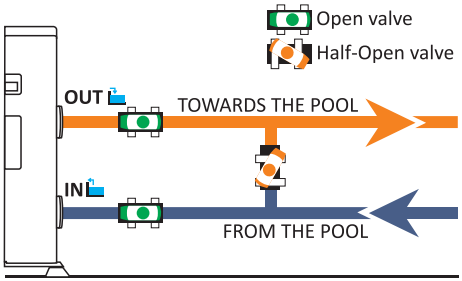

## 6.4 Connecting The Condensation Draining Kit

During operation, the heat pump generates condensation, which may lead to varying amounts of water runoff depending on the humidity level. To manage this water flow, it is recommended to install a condensation drainage kit.
How to install the condensation drainage kit?
Position the heat pump, ensuring it is elevated by at least 10 cm using solid, water-resistant pads. Then, connect the drainage pipe to the designated outlet located beneath the unit.
To reduce noise caused by heat pump vibrations, the unit can be positioned on vibration-absorbing pads.

Installation Procedure:
Place a pad between each foot of the unit and its support. Then, securely fasten the heat pump to the support using appropriate screws.

## 6.5 Hydraulic connection

By-Pass assembly
The heat pump must be connected to the pool by means of a By-Pass assembly.
A By-Pass is an assembly that regulate the flow circulating in the heat pump.
During maintenance operations, the By-Pass permits the heat pump to be isolated from the system without interrupting your installation.
**Making a hydraulic connection with the By-Pass kit**



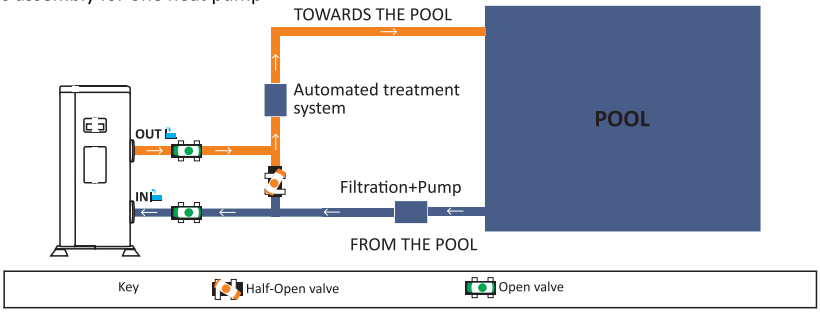
**⚠ WARNING**

Do not circulate water through the hydraulic system for at least 2 hours after applying the adhesive.

Step 1: Take the necessary steps to cut your pipes.
Step 2: Make a straight perpendicular cut through the PVC pipes with a saw.

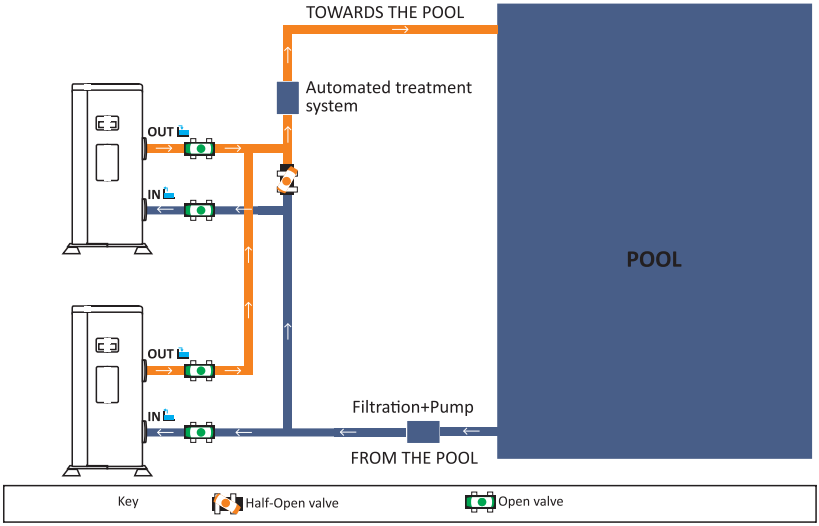
Step 3: Assemble your hydraulic circuit without connecting it in order to check that it perfectly fits your installation, then dismantle the pipes to be connected.
Step 4: Chamfer the ends of the cut pipes with sandpaper.
Step 5: Apply stripper to the ends of the pipes to be connected. Step 6: Apply the adhesive in the same place.
Step 6: Assemble the pipes.
Step 7: Clean off any adhesive remaining on the PVC.
Step 8: Leave to dry for at least 2 hours before putting the hydraulic circuit into water.

## By-Pass assembly for one heat pump




## By-Pass assembly for more than one heat pump

The filter located before the heat pump should be cleaned regularly to ensure the water in the system remains clear, preventing any operational issues caused by dirt or blockages in the filter.



## 6.6 Electrical installation

For safe operation and to ensure the integrity of your electrical system, the unit must be connected to the main power supply in compliance with the following regulations:
Upstream, the general electricity supply must be protected by a 30 mA differential switch.
The heat pump should be connected to an appropriate D-curve circuit breaker (see table below) in compliance with the current standards and regulations of the country where the system is installed.
The power supply cable must be selected based on the unit's rated power and the required cable length for the installation (see table below). Additionally, the cable must be suitable for outdoor use.
In places open to the public, it is mandatory to install an emergency stop button close to the heat pump.

| Models | Power supply | Max-current | Cable diameter | Protection Thermal magnetic (D curve) Protection |
|---|---|---|---|---|
| GSPVTH-25BA1 | 380~415V/ 3N~ /50Hz | 9.2A | RO2V 5x2.5 mm² | 16A |
| GSPVTH-35BA1 | | 12.8A | RO2V 5x4 mm² | 20A |

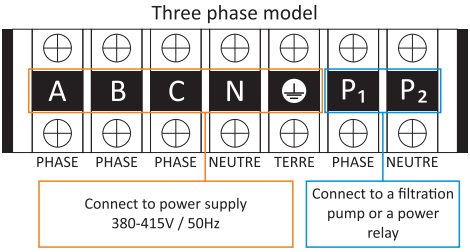
Cable cross-section suitable for max. length 10 meters. For longer than 10 meters, consult an electrician.

## 6.7 Electrical connection

⚠ WARNING

The heat pump's power supply must be disconnected before any operation.
Servo-control of a pump whose power exceeds 5A (1000W) requires the use of a power relay.

Please comply with the following instructions to electrically connect the heat pump.
Step 1: Detach the electrical side panel with a screwdriver to access the electrical terminal block.
Step 2: Insert the cable into the heat pump unit by passing it through the opening provided for that purpose.
Step 3: Connect the power supply cable to the terminal block in accordance with the diagram below.




Step 4: Carefully close the heat pump panel.
Servo-control of circulating pump
Depending on the type of installation, you can also connect a circulating pump to terminals P1 and P2 so that this operates in tandem with the heat pump.

## 7. OPERATING INSTRUCTIONS FOR THE WIRE CONTROLLER

### 7.1 USER INTERFACE

### 7.2 OPERATION

| Name/Icon | Function description |
|---|---|
| Lock/Unlock | 1. In the locked state, Press once to unlock; other buttons are enabled.<br>2. In the unlocked state, Press once to lock; other buttons are disabled.<br>3. The controller will automatically lock if there is no operation for 60s. |
| Power on/off | 1. In the unlocked state, long press for 1s to power on/off.<br>2. When powered off, the icon is grey.<br>3. When powered on, the icon is red (Heating mode), blue (Cooling mode), or yellow (Auto mode). |
| Mode | 1. In the unlocked and powered-on state, press once to cycle through the seven operating modes: Heating , Cooling , and Auto .<br>2. In the unlocked and powered-on state, long press for 5s to switch the temperature display unit (℃ / ℉). |
| Function | 1. In the unlocked state, press once to enter the function interface.<br>2. Function interface: PROGRAM, SETTING, TIME, ERROR, WIFI.<br>3. In the unlocked and powered-off state, long press " " for 5s. When three beeps "Di, Di, Di" are heard, factory settings have been successfully restored. |
| Up | 1. In the unlocked and powered-on state, press once to set the temperature.<br>2. Each press increases the value by 1.<br>3. In the unlocked and powered-off state, long press for 5s to start forced pump drainage; the pump icon " " will flash.<br>Long press again for 5s to stop forced pump drainage. |
| Down | 1. In the unlocked and powered-on state, press once to set the temperature.<br>2. Each press decreases the value by 1.<br>3. In the unlocked and powered-on state, when not in Cooling mode, long press for 5s to start forced defrost; the defrost icon " " will light up. |

| | |
|---|---|
| Collapse | 1. When this symbol is displayed, the icon on the left side of the main interface is hidden, and the corresponding output cannot be seen.<br>2. Press to switch to the Expand Button state. |
| Expand | 1. When this symbol is displayed, the icon on the left side of the main interface is shown, allowing the corresponding output to be seen.<br>2. In the expanded state, the symbol " " appears when the four-way valve is active.<br>3. Press to switch to the Collapse Button state. |

7.3 LCD ICONS

| N0. | Icon | Status | Function or Meaning | Notes |
|---|---|---|---|---|
| 1 | | OFF | Unit is OFF or not in Heating mode | Indicates system ON/OFF status |
| 2 | | ON | Unit is ON and in Heating mode | Indicates system ON/OFF status |
| 3 | | OFF | Unit is OFF or not in Cooling mode | Indicates system ON/OFF status |
| 4 | | ON | Unit is ON and in Cooling mode | Indicates system ON/OFF status |
| 5 | | OFF | Unit is OFF or not in Auto mode | Indicates system ON/OFF status |
| 6 | | ON | Unit is ON and in Auto mode | Indicates system ON/OFF status |
| 7 | | ON | Silent Mode | Displayed when unit is ON |
| 8 | | ON | Standard Mode | Displayed when unit is ON |
| 9 | | ON | Powerful Mode | Displayed when unit is ON |
| 10 | | Blinking | WIFI Pairing Status | |
| 11 | | ON | WIFI Connected Successfully | |
| 12 | | OFF | Indicates Water Inlet | |
| 13 | | ON | Indicates Water Outlet | |
| 14 | | ON | Celsius temperature unit | |
| 15 | | ON | Fahrenheit temperature unit | |
| 16 | | ON | Anti-freeze mode active | |
| 17 | | Flashing | When powered off: the circulation pump runs, entering water drainage mode. | |

| | | | | |
|---|---|---|---|---|
| 18 | | ON | Powered on and in defrost mode. | |
| 19 | | ON | Alarm is active. | |
| 20 | | ON | button-pad locked | |
| 21 | | ON | Circulation Pump Running | |
| 22 | | ON | Compressor Running | |
| 23 | | ON | Fan Running | |
| 24 | | ON | Four-way Valve Running | |

## 7.4 CONTROL FUNCTION INTRODUCTION

### 7.4.1 Screen Lock and Unlock

On the main interface, press the lock icon to lock the screen. Other buttons on the display will then be disabled.
On the main interface, press the lock icon to unlock the screen. Other buttons on the display will then be enabled.

### 7.4.2 Power On/Off

In the main interface unlocked state, long press " " for 1s to power on or off.

When powered on: the mode icon ( , , or ) lights up.

When powered off: the mode icon ( , , or ) turns off.

### 7.4.3 Temperature Setting

In the main interface unlocked state, press the “+” or “-” to adjust the set temperature.

### 7.4.4 Mode Setting

In the main interface unlocked and powered-on state, press the " " to cycle through the 7 operation modes.

-Silent Heating : “ ”; Silent Cooling : “ ”; Auto Mode : “ ”;

-Silent Heating : “ ”; Silent Cooling : “ ”;

-Silent Heating : “ ”; Silent Cooling : “ ”;

Figure 1 – Power Off

Figure 2 – Cooling Mode

Figure 3 – Heating Mode

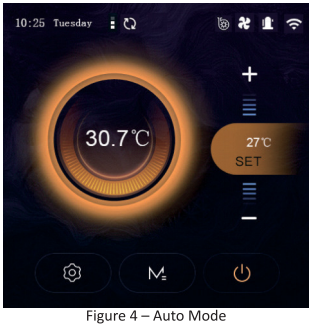


Figure 4 – Auto Mode

7.4.5 Time Setting

On the main interface, press “ ” → “ (TIME)” to enter the time setting interface. press the corresponding field to set the year, month, day, hour, and minute.
DATE: Year / Month / Day
TIME: Hour : Minute

7.4.6 Timer Setting

On the main interface, press “ ” → “ (TIME)” → “ ” to enter the “TIMER” setting interface.

Press the corresponding time period to enable (ON) or disable (OFF) the timer (a total of three periods).

| | | | |
|---|---|---|---|
| PERIOD 1 | 08:00 – 12:00 | ON | OFF |
| PERIOD 2 | 14:00 – 17:00 | ON | OFF |
| PERIOD 3 | 19:00 – 23:00 | ON | OFF |

7.4.7 Forced defrosting function

In non-cooling mode, long press the “ ” for 5s to enter forced defrost.
LCD Display: The defrost icon “ ” will light up.

7.4.8 Water Circuit Purging / Forced Pump Activation

In non-cooling mode, long press the “ + ” to forcibly start the water pump. Press again or directly press “ ⏻ ” to exit.
LCD Display: The water pump icon “ ” will flash.

7.4.9 Unit Status Inquiry

On the main interface, press “ ⚙ ” → “PROGRAM” → “STATUS” to enter the temperature parameter viewing interface. See the table below:

| Query Code | Meaning | Display Range |
|---|---|---|
| A01 | WATER IN TEMP. | -30~99°C(-22~210°F) |
| A02 | WATER OUT TEMP. | -30~99°C(-22~210°F) |
| A03 | AMBIENT TEMP. | -30~99°C(-22~210°F) |
| A04 | EXHAUST TEMP. | 0~125°C(-32~257°F) |
| A05 | RETURN AIR TEMP. | -30~99°C(-22~210°F) |
| A06 | OUTER COIL TEMP. | -30~99°C(-22~210°F) |
| A07 | INNER COIL TEMP. | -30~99°C(-22~210°F) |
| A08 | MAIN OPENING | |
| A09 | COMP. CURRENT | |
| A10 | HEAT SINK TEMP. | |
| A11 | DC BUS U VALUE | |
| A12 | COMP. ACTUAL FR | |
| A13 | DC FAN1 SPEED | RPM |
| A14 | DC FAN2 SPEED | RPM |
| A15 | AC VOLTAGE | V |
| A16 | BOARD VERSION | 0 |
| A17 | INLINE VERSION | 100 |

7.4.10 User Parameter Query

On the main interface, press “ ⚙ ” → “PROGRAM” → press “PARA” once to enter the user parameter query interface.

| Setting Code | Parameter Name | Adjustment Range | Initial Value |
|---|---|---|---|
| P01 | HEAT SET TEMP. | 8℃~40℃(46℉~104℉) | 27°C (81°F) |
| P02 | COOL SET TEMP. | 8℃~28℃(46℉~82℉) | 27°C (81°F) |
| P03 | AUTO SET TEMP. | 8℃~40℃(46℉~104℉) | 27°C (81°F) |
| P04 | DIFF TEMP. | 1°C~18°C(2~32°F) | 1°C (2°F) |
| P05 | PUMP WORK WAY | 0 = Continuous /<br>1 = Cyclic Operation | 1 |

7.4.11 Switch Between Fahrenheit and Celsius

In the unlocked main interface under power-on status, long press the “ ” button for 5s to switch between Fahrenheit and Celsius.

7.4.12 Wi-fi Function

On the unlocked main interface, press “ ” → “ WIFI → “REENTER” to enter WiFi configuration.

The “ ” icon will flash, indicating that WiFi pairing can be configured.
For app download and usage, please refer to the WiFi Function Manual.

7.4.13 Restore factory Settings

In the unlocked and power-off state, long press “ ” for 5s. When three beeps are heard, the factory settings have been successfully restored.

7.4.14 Display fault

When the unit has a fault, the fault indicator symbol and fault code will be displayed at the top of the main interface.
On the main interface, press “ ” → ERROR to view the fault history. Long press “ ” for 2s to clear the fault records.

| Code | Description | Notes |
|---|---|---|
| E03 | Water Flow Fault | |
| E04 | Anti-freeze Protection | |
| E05 | High Pressure Protection | |
| E06 | Low Pressure Protection | |
| E09 | Communication Fault Between the Controller and Main-board | |
| E10 | Communication Fault Between the Main-board and Driver Board | |
| E12 | Exhaust Temperature Too High | |
| E15 | Inlet Water Temperature Sensor Fault | |
| E16 | External Coil Temperature Sensor Fault | |
| E18 | Exhaust Temperature Sensor Fault | |
| E20 | Inverter Module Abnormal Protection | |
| E21 | Ambient Temperature Sensor Fault | |
| E23 | Cooling Outlet Water Temperature Too Low | |
| E27 | Outlet Water Temperature Sensor Fault | |

| | | |
|---|---|---|
| E29 | Return Air Temperature Sensor Fault | |
| E32 | Heating Outlet Water Temperature Too High or Inlet and Outlet Water Temperature Difference Too Large | |
| E33 | Cooling External Coil Temperature Too High | |
| E42 | Internal Coil Temperature Sensor Fault (Cooling Coil) | |
| Err 46 | DC Fan 1 Fault | |

**Notes:**

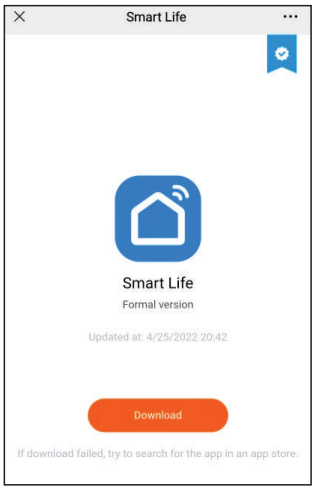
E20 Fault will simultaneously display the following fault codes, switching every 3s. Fault codes 1-128 have higher priority and will be displayed first. Only when there are no faults in the range of 1-128 will faults in the range of 257-384 be displayed. If two or more faults of the same priority occur simultaneously, the fault code numbers will be accumulated. For example, if faults 16 and 32 occur simultaneously, the display will show 48.

| Fault Code | Name | Description | Recommended Action |
|---|---|---|---|
| 1 | IPM Over-current | IPM module issue | Replace the inverter module |
| 2 | Compressor Synchronization Error | Compressor fault | Replace the compressor |
| 4 | Reserved | — | — |
| 8 | Compressor Phase Loss | Compressor wiring breakage or poor contact | Check the compressor input wiring |
| 16 | DC Bus Voltage Low | Input voltage too low, PFC module fault | Check input voltage, replace the module |
| 32 | DC Bus Voltage High | Input voltage too high, PFC module fault | Replace the inverter module |
| 64 | Heat Sink Temperature Too High | Main fan fault, airflow blockage | Check the fan and airflow paths |
| 128 | Heat Sink Temperature Fault | Heat sink sensor short-circuit or open circuit fault | Replace the inverter module |
| 257 | Communication Fault | Inverter module did not receive command from the controller | Replace the inverter module |
| 258 | AC Input Phase Loss | Phase loss on input (valid for three-phase modules) | Check the input wiring |
| 260 | AC Input Over-current | Three-phase imbalance on input (valid for three-phase modules | Check the compressor input wiring |
| 264 | AC Input Voltage Low | Input voltage too low | Check the input voltage |
| 272 | High Pressure Fault | Compressor high-pressure fault (reserved) | |
| 288 | IPM Over-temperature | Main fan fault, airflow blockage | Check the fan and airflow paths |
| 320 | Compressor Peak Current Too High | Excessive compressor line current, mismatch between drive program and compressor | Replace the inverter module |
| 384 | PFC Module Over-temperature | PFC module temperature too high | Inspect the PFC module |

## 8. WIFI FUNCTIONALITY MANUAL

### 8.1 Download APP and Registration:

Download "Smart Life" app from the app store, as shown in the below:




### 8.2 Controller Network Configuration:

8.2.1 Smart Network Mode:

Step 1:

1) To manually enter Smart Configuration mode: tap “REENTER (One-Key Configuration)”.

2) The “ ” icon will start flashing, indicating that the device is ready for network configuration via your smart phone.

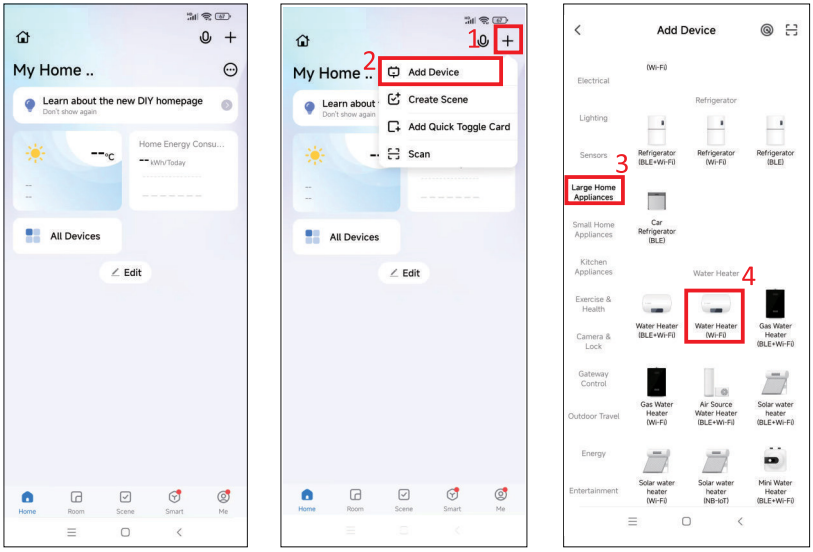
3) After 3 mins, the device will exit configuration mode, and the “ ” icon will stop flashing. The WiFi module will no longer accept configuration. To re-enter configuration mode, tap “REENTER (One-Key Configuration)” again.

Step 2:

Enable Wi-Fi on your smart-phone and connect Wi-Fi with internet access.

Step 3:

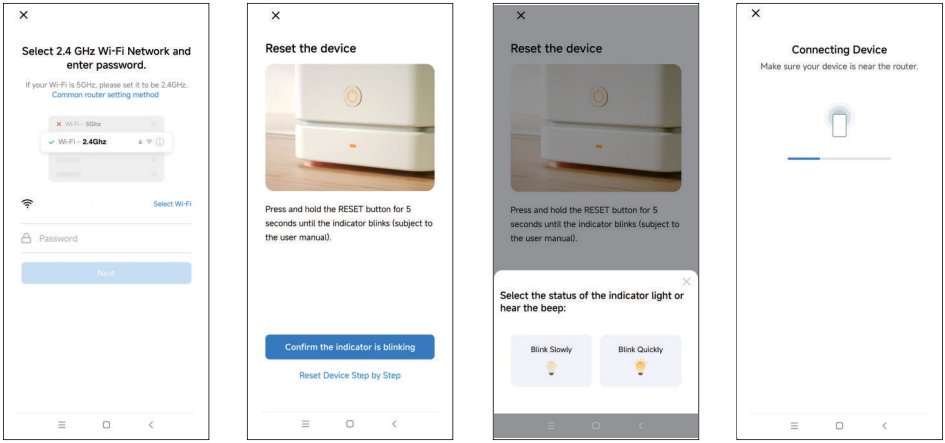
Open the "Smart Life" app, log in and press " + " icon, select "Add Device," and choose "Water Heater" under "Major Appliances" to add the device.




Step 4:

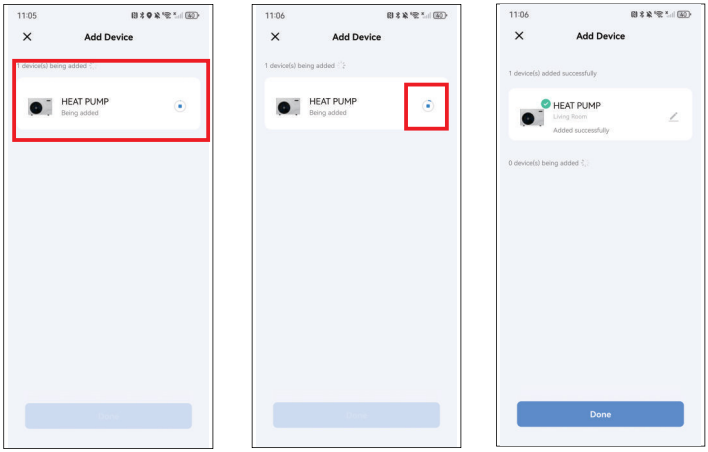
1) After selecting the heat pump, enter the Wi-Fi connection interface, enter the Wi-Fi password (must match your phone's Wi-Fi), and press "Confirm."

2) In the "Add Device" interface, ensure controller is in Smart Network Mode, press "Confirm the indicator is blinking" to start device connection.




Step 5:

When "Device Found," "Device Registered to Smart Cloud," and "Device Initialization" are all completed, the connection is successful, The system will show "Device Added Successfully." You can change the device name, select the installation location (Living Room, Master Bedroom, etc.), and click "Finish" to enter the device operation interface.




8.2.2 AP Network Mode

Step 1:

1) Long press " REENTER " for 1s to enter AP network mode. The “ ” icon will start flashing, indicating that the device is ready for network configuration via your smart phone.

2) After 3 mins, the device will exit configuration mode, and the “ ” icon will stop flashing. The WiFi module will no longer accept configuration. To re-enter AP Configuration mode, tap “REENTER (One-Key Configuration)” again.

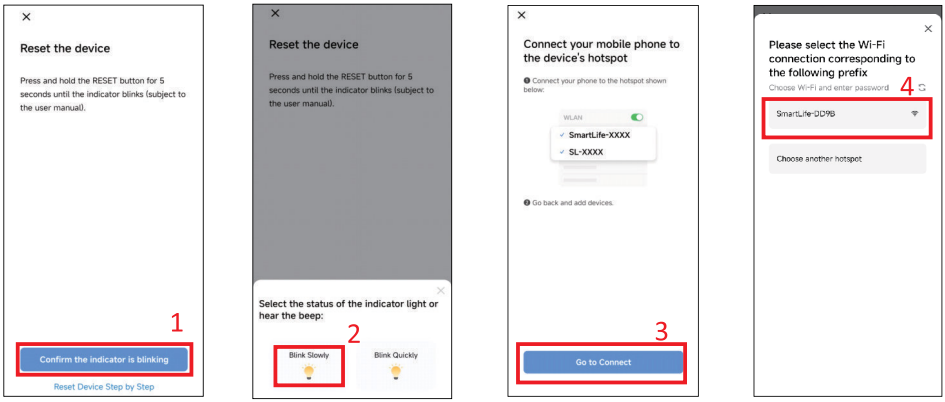
Step 2 & Step 3:

Follow the same steps as in Smart Network Mode.

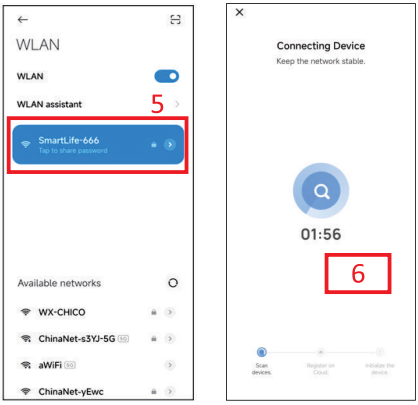
Step 4:

1)After selecting the heat pump, enter the Wi-Fi connection interface, enter the Wi-Fi password (must match your phone’s Wi-Fi), and press "Confirm" (same as Smart Network Mode).

2)In the “Add Device” interface, ensure the controller is in AP Network Mode, then press “Confirm the indicator is slowly flashing.” Follow the prompt to connect your phone to the device’s hotspot by pressing "Go to Connect," then proceed to device connection.



3)Settings the phone's Wi-Fi interface, find and select the corresponding "SmartLife_XXX" network. Then, return to the "Smart Life" app, which will automatically enter device connection.



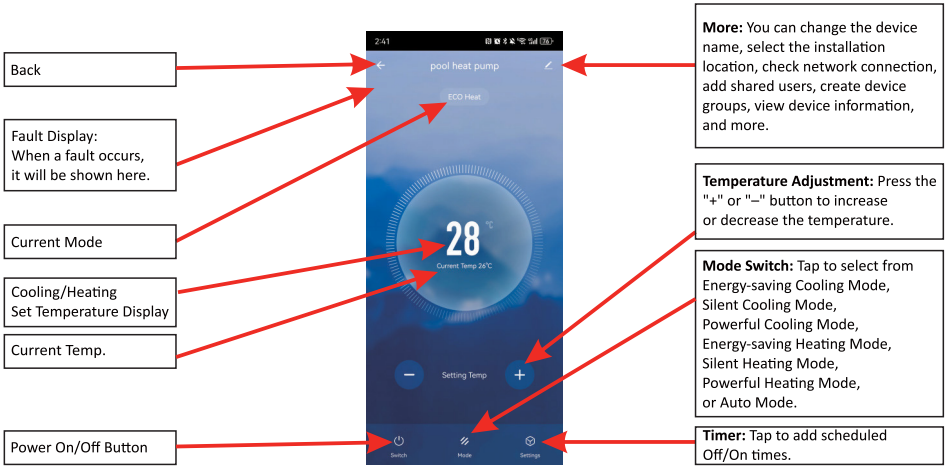

Step 5: (Same as Smart Network Mode)

1) When "Device Found," "Device Registered to Smart Cloud," and "Device Initialized" are complete, the connection is successful. The system will show "Device Added Successfully." You can change the device name, select the installation location (Living Room, Master Bedroom, etc.), and click "Finish" to enter the device operation interface.

Note: If the connection fails, manually enter AP network mode and repeat the steps above to reconnect.

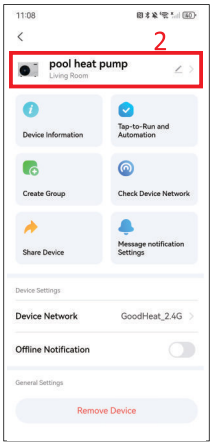
## 8.3 Software Function

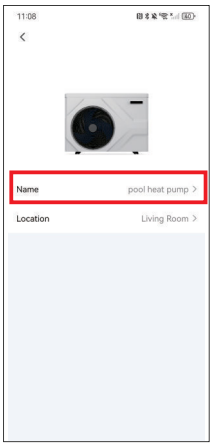
1) After successful device binding, enter the “pool heat pump” (device name, can be changed) operation interface.
2) In the "Smart Life" main interface, press "pool heat pump" under "All Devices" to enter the device operation interface.



## 8.4 Modify Device Name

press the image to enter "Device Details," then press "Device Name" to rename the device.

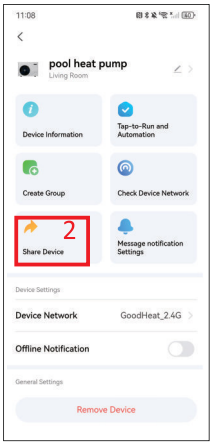


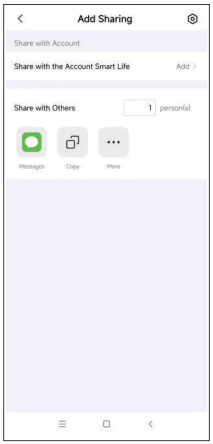



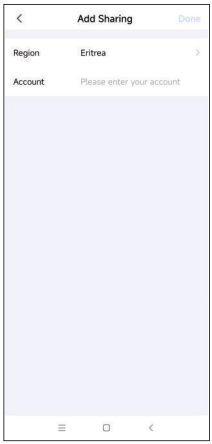

## 8.5 Device Sharing

1) To share a bound device, the sharer follows the steps below.
2) After sharing, the recipient will appear in the list.
3) To remove a shared user, long press the selected user, and the delete option will appear. press "Delete" to remove.

Enter the recipient's account, press "Finish," and the shared account will appear in the list.

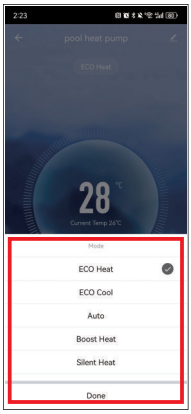


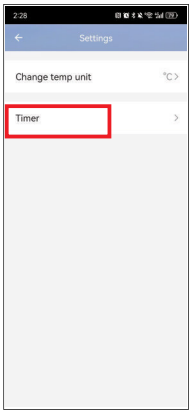



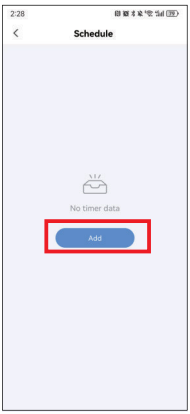



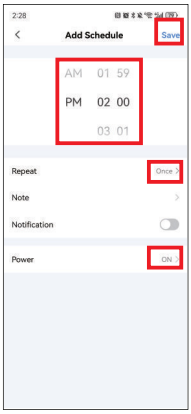
## 8.6 Mode Settings

In the device operation main interface, press “ ” icon to open the mode selection interface. Select the desired mode.




## 8.7 Timer Settings

On the main device operation interface, press the “Timer” button to enter the timer settings interface, as shown below. Tap Add Timer.

In the timer setting screen, slide up or down to set the hour and minute. Set the repeat days and choose On or Off. Tap Save at the top right corner to confirm, as shown in the following steps.

## 8.8 Device Removal

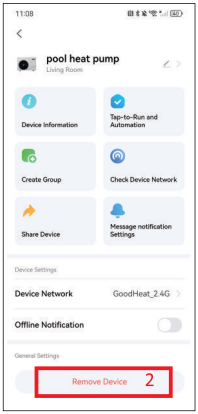
- Wired Controller Removal

If the device has already been added and needs to be removed, press “REENTER” for 1s. The device will be removed and re-enter Smart WiFi Setup mode. The “ ” icon will flash for 3 mins. During this period, the device can be reconnected. After 3 mins, it will exit setup mode automatically.

Alternatively, press “REENTER” for 1s to remove the device and re-enter AP WiFi Setup mode. The “ ” icon will flash for 3 mins. If not connected within 3 mins, the device will exit setup mode automatically.

- APP Removal

On the device operation main interface, press “ ” icon to enter the device details interface. At the bottom of the device details interface, press "Remove Device" to enter Smart Network Mode. You can reconnect within 3mins; after 3mins, the network mode will exit. Follow the steps shown in the image.



## 9. Operation

### 9.1 Conditions of use

For the heat pump to operate normally, the ambient air temperature must be between -15°C and 43°C.

### 9.2 Recommendations prior to start-up

Before activating the heat pump, please:
√ Check that the unit is firmly secured and stable.
√ Check that the gauge indicates a pressure greater than 80 psi.
√ Check that the electrical wiring is properly connected to the terminals.
√ Check the earthing.
√ Check that the hydraulic connections are tight and that there is no leakage of water.
√ Check that the water is circulating correctly in the heat pump and that the flow rate is adequate.
√ Remove any unnecessary object or tool from around the unit.

### 9.3 Operation

(1). Activate the unit's power supply protection (differential switch and circuit-breaker).
(2). Activate the circulating pump if it is not servo-controlled.
(3). Check the By-Pass opening and the control valves.
(4). Activate the heat pump by pressing once on.
(5). Adjust the remote control clock.
(6). Select the required temperature by using one of the remote control's modes.
(7). The heat pump's compressor will start up after a few moments.
All you have to do now is wait until the required temperature is reached.

⚠ WARNING

Under normal conditions, a suitable heat pump can heat the water in a swimming pool by 1°C to 2°C per day. It is therefore quite normal to not feel any temperature difference in the system when the heat pump is working.
A heated pool must be covered to avoid any loss of heat.

## 10. MAINTENANCE AND SERVICING

⚠ WARNING

Before undertaking maintenance work on the unit, ensure that you have disconnected the electrical power supply.

### 10.1 Cleaning

The heat pump's casing must be cleaned with a damp cloth. The use of detergents or other household products could damage the surface of the casing and affect its properties.
The evaporator at the rear of the heat pump must be carefully cleaned with a vacuum cleaner and soft brush attachment.

### 10.2 Annual maintenance

The following operations must be undertaken by a qualified person at least once a year.
√ Carry out safety checks.
√ Check the integrity of the electrical wiring.
√ Check the earthing connections.
√ Monitor the state of the pressure gauge and the presence of refrigerant.

### 10.3 Winter storage

In the winter months when the ambient temperature is lower than 3°C, a shut-down heat pump must be winterised to avoid any frost damage.

Note: If a circulating pump is servo-controlled by the heat pump, drain this also.