



Air To Water Heat Pump (Indoor Unit)

STN Series

Installation Manual

Version 3.0

www.solaxpower.com



eManual in the QR code or
at <http://kb.solaxpower.com/>

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About This Manual

Scope of Validity

This manual is an integral part of indoor unit of air to water heat pump. It describes the assembly, installation, electrical connection, commissioning, maintenance and troubleshooting of the product. Please read it carefully before operating.

This manual is valid for the following indoor unit models:

- **Control Unit**
STN1-C01
- **Hydraulic Unit**
STN1-C02(3) | STN1-C02(6) | STN1-C02(9)
STN3-C02(3) | STN3-C02(6) | STN3-C02(9)
- **Hydraulic Integrated Unit**
STN1-C03(3/6/9) | STN3-C03(3/6/9)
STN1-C03(3/6/9W3) | STN3-C03(3/6/9W3)

Model description

STNX-C0X(X)



Item	Meaning	Description
1	Phase	"1": one phase "3": three phase
2	Category	"1": Control Unit "2": Hydraulic Unit "3": Hydraulic Integrated Unit
3	Electric heating	"3/6/9": It contains electric heating for pipelines. "3/6/9W3": It contains electric heating for pipelines and water tanks.

Target Group

The installation, wiring, commissioning and maintenance can only be performed by qualified personnel who:

- Are licensed and/or satisfy state and local regulations.
- Have good knowledge of this manual and other related documents.

Conventions

The symbols that may be found in this manual are defined as follows.

Symbol	Description
 DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
 WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
 CAUTION!	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE!	Provides tips for the optimal operation of the product.

Change History

Version 3.0 (2025-07-22)

Updated "[8.2 Test Run](#)" (Added the instructions of device reset)

Version 2.0 (2025-07-16)

Updated "[3.1 Selection of Installation Location](#)"

Updated "[4.1 Unpacking](#)"

Updated "[5 Unit Installation](#)"

Added "[6 Hydraulic Installation of Hydraulic Integrated Unit](#)"

Updated "[7.3.3 Wiring of Additional Pumps](#)"

Updated "[9.2 Troubleshooting for Error Codes](#)"

Updated "[11 Technical Data](#)"

Version 1.0 (2025-05-26)

Updated "[2.2 Main Parts of Indoor Unit](#)"

Updated "[4.2 Accessories of Indoor Unit](#)"

Updated "[7 Electrical Connection](#)"

Updated "[11 Technical Data](#)"

Version 0.0 (2025-03-31)

Initial release

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1 Safety

Installation

WARNING!

- For electrical work according to the installation manual, be sure to use professional tools. If the power supply capacity is insufficient, or the circuit is incomplete, it may cause fire or electric shock.
- The unit must have a grounding device. If the power supply has no grounding device, be sure not to connect the unit.

CAUTION!

- When installing, be sure to use the correct or specific materials. The use of substandard parts or materials may cause fire, electric shock, or machine fall, resulting in injury.
- For safe grounding installation, please read the installation instructions. Improper installation may cause fire, electric shock, machine fall, or water leakage, resulting in injury.
- Please do not attempt to move or repair the unit without authorization. Unreasonable movement or maintenance of the unit may cause water leakage, electric shock, or fire, resulting in injury. If you need to repair or maintain the unit, please call a professional technician.

Wiring

WARNING!

- Incorrect wiring can cause fire. Connect the power cable strictly according to the wiring diagram in the installation manual to avoid burning the unit or causing fire.

NOTICE!

- Use a specific wire and fix it to the terminal block. This connection prevents the pressure of the wire from being applied to the component.

Operation

DANGER!

- Do not clean the unit when the power supply is on. Otherwise, you may be injured by high-speed fans or electric shocks.
- Do not put your fingers into the fan and evaporator. A fan running at high speed can cause serious injury.

WARNING!

- When there is an error or an odor, please do not continue to run the unit. Please turn off the power and stop running the unit. Otherwise it could cause an electric shock or a fire.

WARNING!

- If the power cable is damaged, be sure to be replaced by the manufacturer or its service agent, or someone equally professional to avoid danger.

CAUTION!

The following prohibited behaviors may cause fire or electric shock.

- During operation, please do not unplug or plug in the power supply.
- Do not touch or operate the unit when your hands are wet.
- Do not place heaters or other electrical appliances near power cables.
- Water cannot be poured directly from the unit, and do not allow water to enter the electrical components.

2 Product Overview

2.1 Appearance and Dimensions

Control Unit

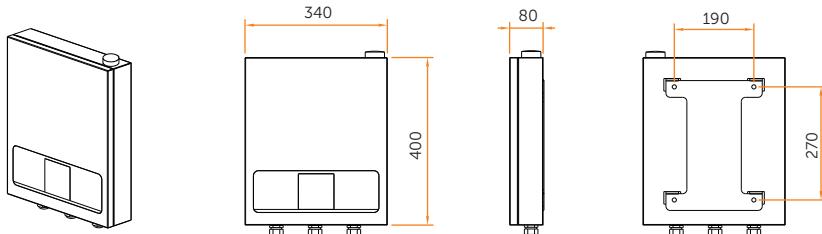


Figure 2-1 Dimensions (Unit: mm)

Hydraulic Unit

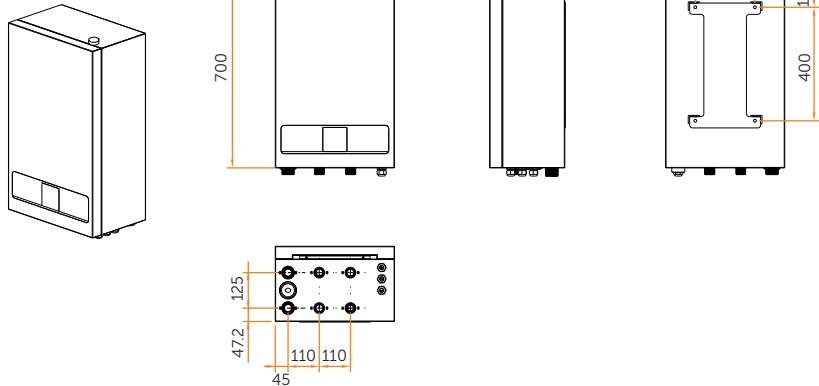


Figure 2-2 Dimensions (Unit: mm)

Hydraulic Integrated Unit

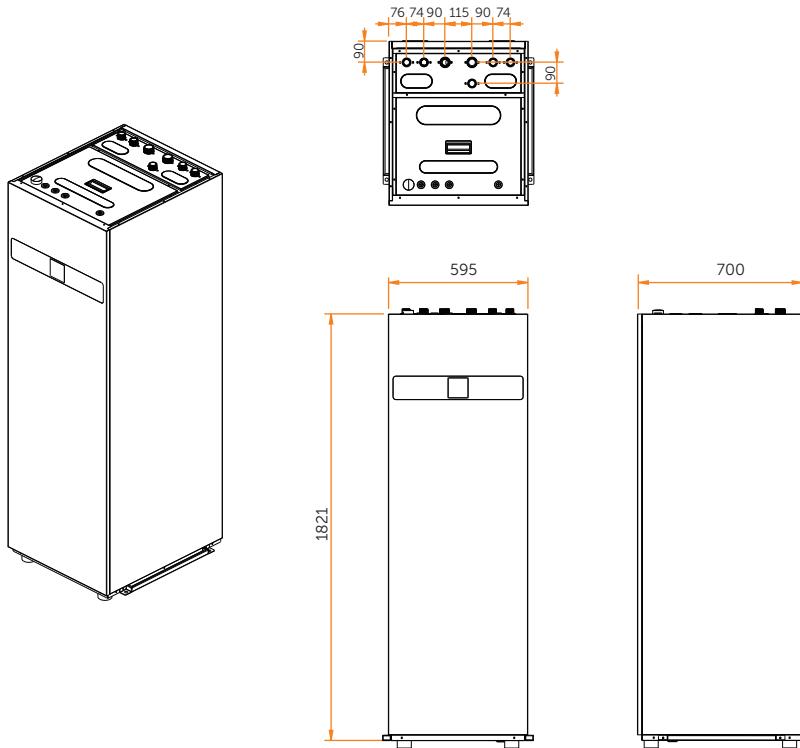
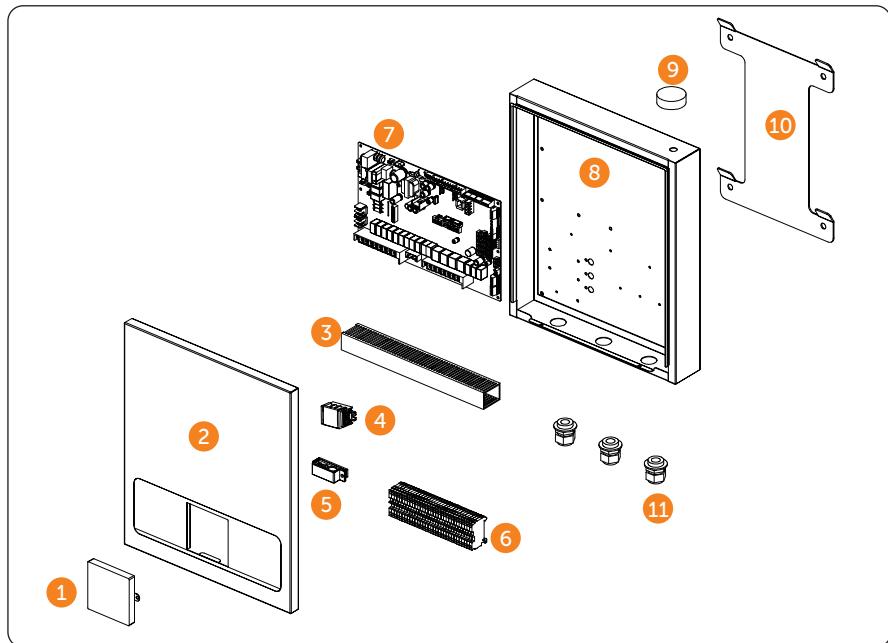


Figure 2-3 Dimensions (Unit: mm)

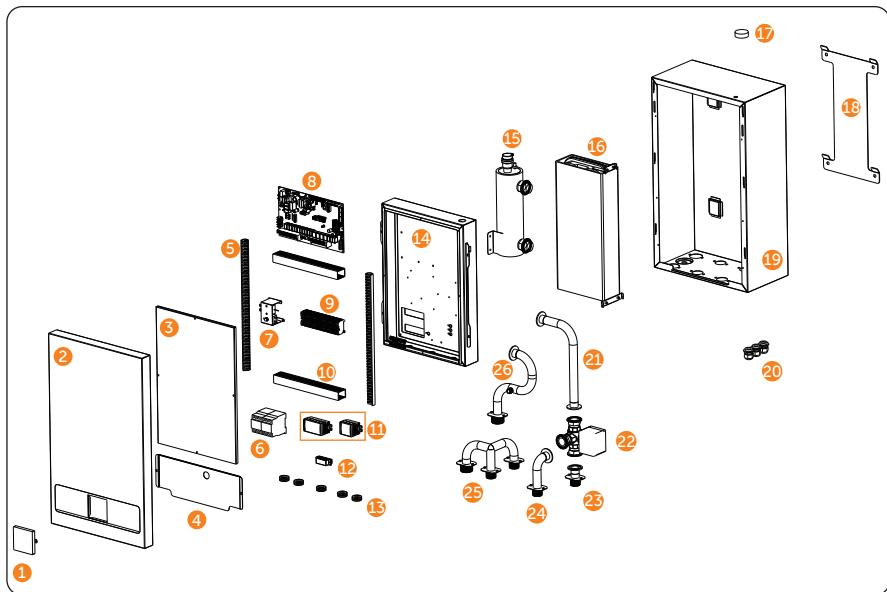
2.2 Main Parts of Indoor Unit

2.2.1 Control Unit



1	Wired controller	5	Cable clamp	9	Antenna
2	Plate component	6	Terminal block	10	Bracket
3	Square trunking	7	PCB	11	PG joint
4	Three-position wiring socket	8	Box component		

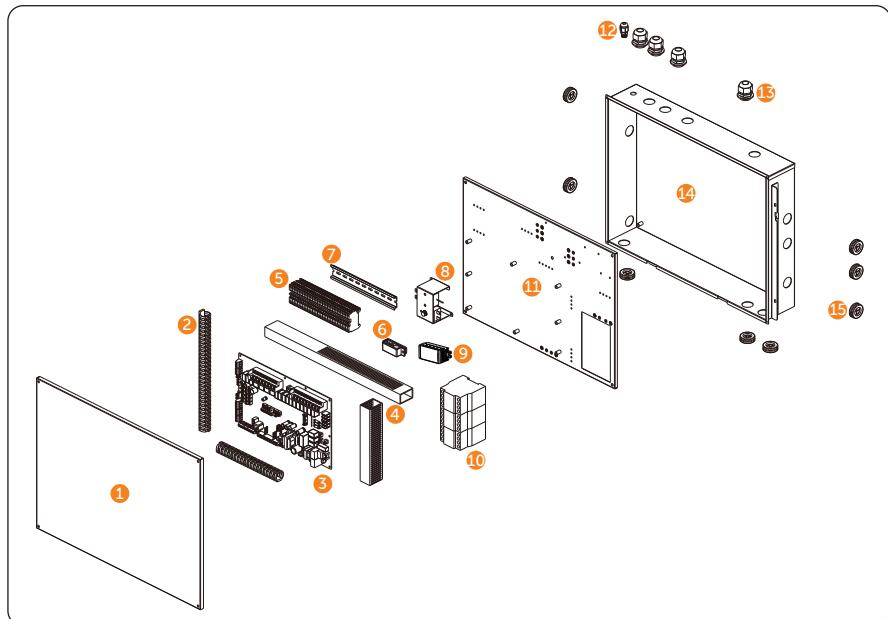
2.2.2 Hydraulic Unit



1	Wired controller	10	Square trunking	19	Box component
2	Front panel	11	Five-position wiring socket (for 3-phase) Three-position wiring socket (for 1-phase)	20	PG joint
3	Electrical box cover	12	Cable clamp	21	Electric heating outlet pipe
4	Baffle plate	13	Coil	22	Three-way solenoid valve
5	Circular trunking	14	Electrical box	23	Underfloor heating water outlet pipe
6	Contactor	15	Electric heating component	24	Domestic hot water outlet pipe
7	Temperature control switch	16	Expansion tank component	25	Three-way pipe
8	PCB	17	Antenna	26	Electric heating inlet pipe
9	Terminal block	18	Bracket		

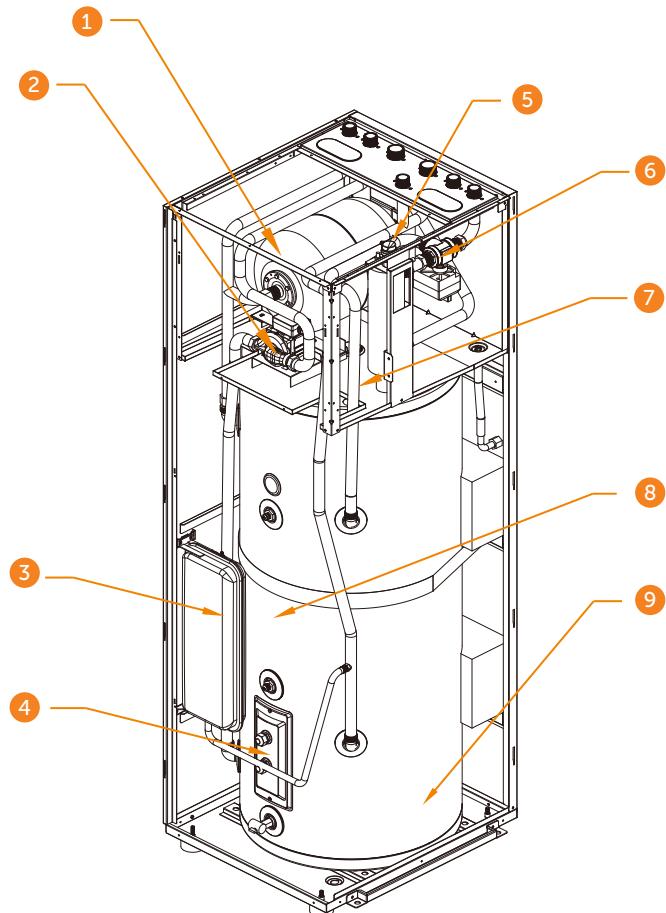
2.2.3 Hydraulic Integrated Unit

Main parts of Control Box



1	Electrical box cover	6	Cable clamp	11	Fixing plate
2	Circular trunking	7	Guide rail	12	PG7 joint
3	PCB	8	Temperature controller	13	M25 joint
4	Square trunking	9	Five-position wiring socket	14	Electrical box
5	Terminal block	10	Contactor	15	Ø25 coil

Main parts of Hydraulic Integrated Unit



1	18L expansion tank (Used for the domestic hot water)	4	Water tank electric heating	7	Electric heating
2	Circulator pump	5	Exhaust valve	8	Temperature sensor
3	8L expansion tank (Used for the heating system)	6	Three-way solenoid valve	9	190L domestic hot water tank

3 Preparation before Installation

3.1 Selection of Installation Location

3.1.1 Environment Requirement

WARNING!

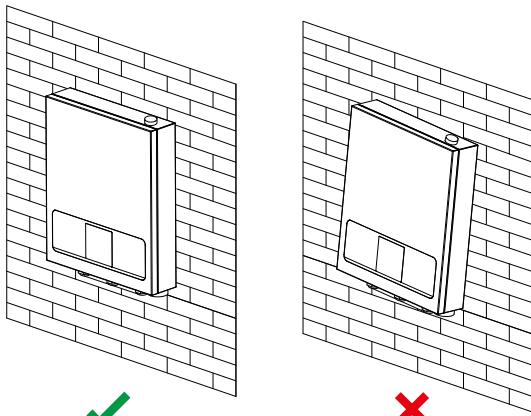
- Small animals in contact with electrical parts may cause the unit to malfunction, smoke or fire.
- Installation in the following places may cause unit failure.
 - » Where the power supply voltage fluctuates seriously.
 - » Where flammable gases or materials are present.

- Keep the environment around the unit clean.
- Choose an well-ventilated indoor environment for installation. Installation location drainage will not affect the surrounding site.
- Ensure that the drainage at the installation site does not affect the surrounding area.
- The installation location should have enough space for pipe connection, electrical connection, commissioning and maintenance.
- The bracket of Control Unit or Hydraulic Unit should be installed on the wall that can bear its weight.

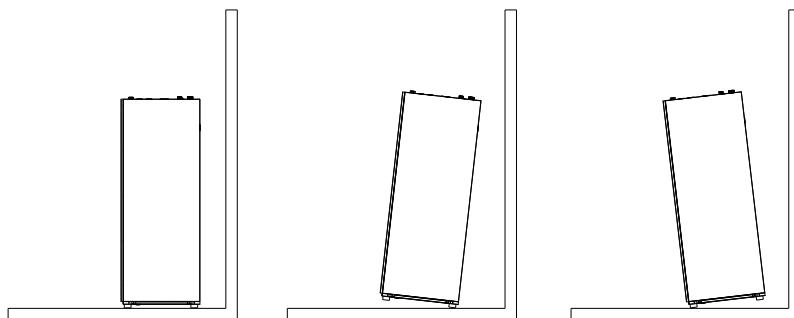
Table 3-1 Environment requirement

Model	Control Unit	Hydraulic Unit	Hydraulic Integrated Unit
Installation method	Wall mounting		Floor standing
Ambient temperature	-25°C ~ 48°C		5°C ~ 40°C
Ambient humidity	0%-100%RH		
Protection level	IPX4		

3.1.2 Angle Requirement



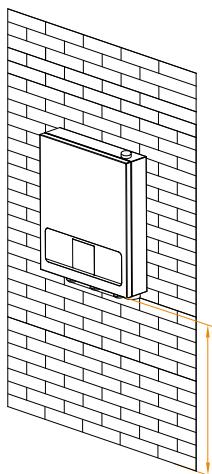
Hydraulic Unit



Hydraulic Integrated Unit

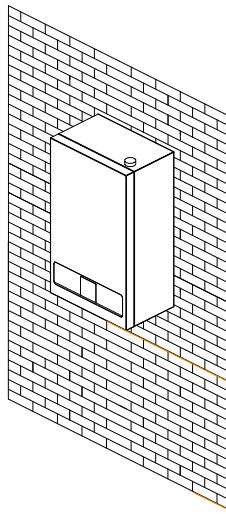
3.1.3 Clearance Requirement

The recommended installation clearance requirement are as follows. Please control the clearance around the unit according to the actual situation.



1.5~2.0 m

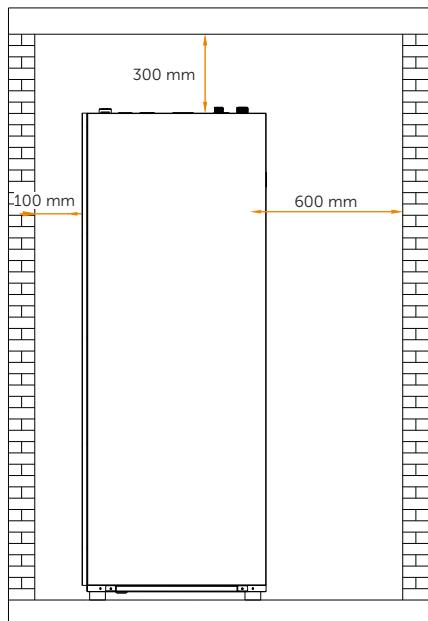
Control Unit



1.5~2.0 m

Hydraulic Unit

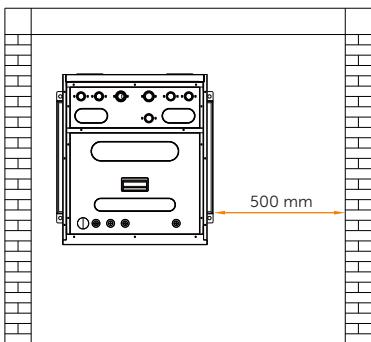
Recommended clearance:



100 mm

300 mm

600 mm



500 mm

Hydraulic Integrated Unit

3.2 Tools Requirement

Installation tools include but are not limited to the following recommended ones. If necessary, use other auxiliary tools on site. Please note that the tools used must comply with local regulations.



3.3 Additionally Required Materials

Table 3-2 Additionally required materials

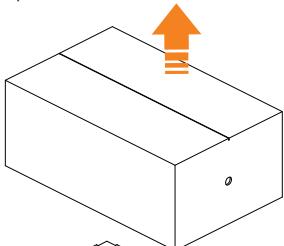
No.	Required material	Type	Conductor cross-section	Outer diameter
1	Main power cable (3-phase)	 Three-core cable, voltage rating of 600 V, a temperature resistance of 105°C	4~6 mm ²	5~10 mm
2	Main power cable (1-phase)	 Five-core cable, voltage rating of 600 V, a temperature resistance of 105°C	4~6 mm ²	5~10 mm

4 Unpacking and Inspection

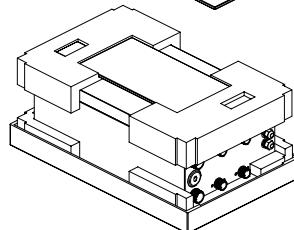
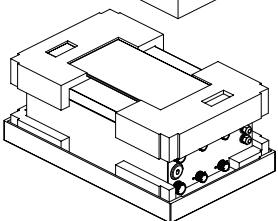
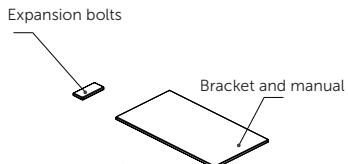
4.1 Unpacking

Hydraulic Unit

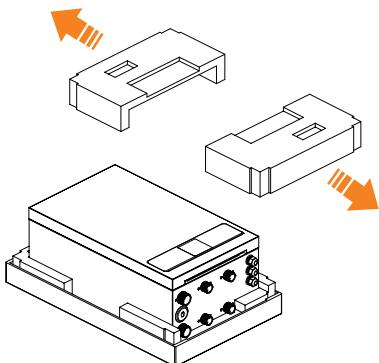
1 Remove the outer carton of indoor unit upwards;



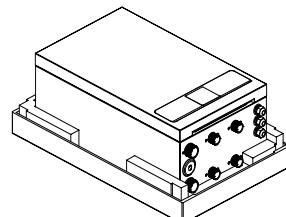
2 Take out two packing bags;



3 Remove the foam board from the unit;

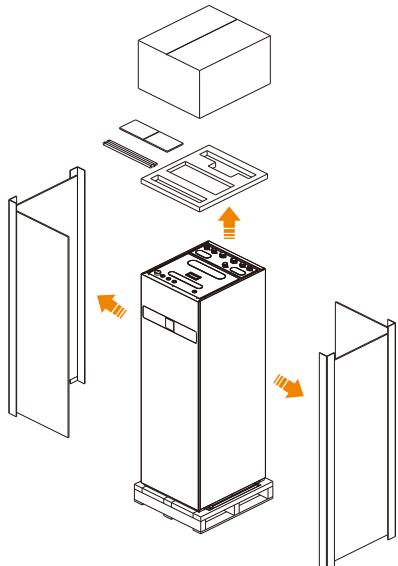


4 Complete the unpacking.

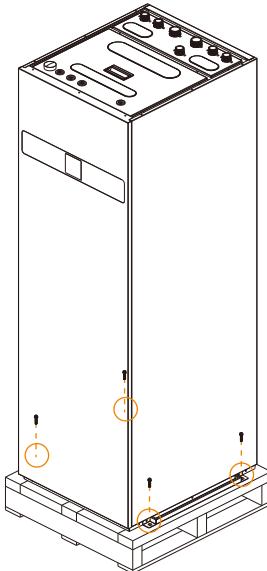


Hydraulic Integrated Unit

- 1 Remove the outer carton of indoor unit upwards, and take out the accessories.

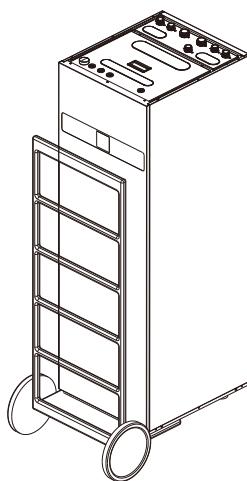
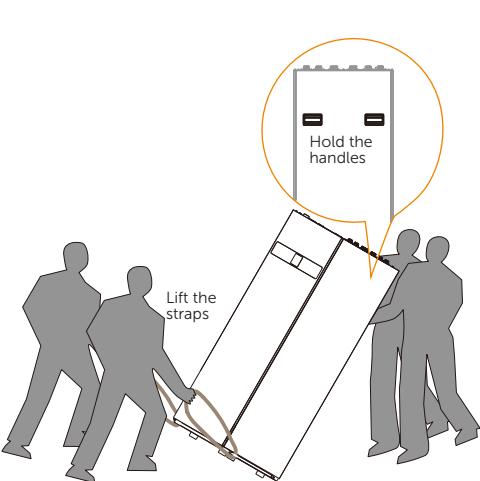


- 2 Unscrew the four screws from the wooden base;



- 3 Move the unit down from the wooden base; (Recommended at least 4 persons)

- 4 (Optional): Move the unit by a trolley.



 **WARNING!**

- When moving the Hydraulic Integrated Unit, keep it vertical to the ground. If you need to dump it, it can be dumped for a short time.

4.2 Accessories of Indoor Unit

Control Unit

Illustration	Name	Quantity	Remark
	Installation Manual	1 PC	For guiding installers to install the product correctly
	Operation Manual	1 PC	For guiding users to operate the wired controller
	Bracket	1 PC	For mounting the indoor unit on the wall
	Expansion bolts (M8*85)	4 PCS	For installing the bracket
	Cable tie (3.6*230 mm)	2 PCS	For bundling and securing cables, pipes or other items

Hydraulic Unit

Illustration	Name	Quantity	Remark
	Installation Manual	1 PC	For guiding installers to install the product correctly
	Operation Manual	1 PC	For guiding users to operate the wired controller
	Bracket	1 PC	For mounting the indoor unit on the wall

Illustration	Name	Quantity	Remark
	Expansion bolts (M8*85)	4 PCS	For installing the bracket
	Cable tie (3.6*230 mm)	2 PCS	For bundling and securing cables, pipes or other items
	Drain joint (18.5*16 mm)	1 PC	For drainage

Hydraulic Integrated Unit

Illustration	Name	Quantity	Remark
	Installation Manual	1 PC	For guiding installers to install the product correctly
	Operation Manual	1 PC	For guiding users to operate the wired controller
	Expansion bolts (M8*85)	4 PCS	For fixing the unit feet
	Rubber block	4 PCS	For fixing the unit
	Drain joint	1 PC	For connecting the drain hole of the rear plate
	Drain hose	1 PC	For connecting the drain joint
	Throat band	1 PC	For fastening the connection point of drain joint and drain hose

5 Unit Installation

5.1 Control Unit

Step 1: Locate and drill the holes with Ø12 drill bit. The depth of holes should be 85 mm. Fix the bracket to the wall using four expansion bolts. Make sure the bracket is level with the ground.

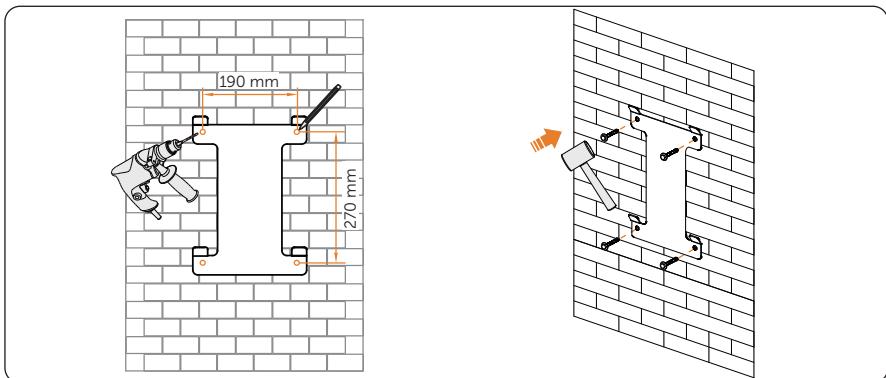


Figure 5-1 Securing the bracket

Step 2: Lift up the unit (recommended one person) and hang it onto the bracket. Make sure that the hanging holes of the unit are properly inserted into the four lugs of the bracket.

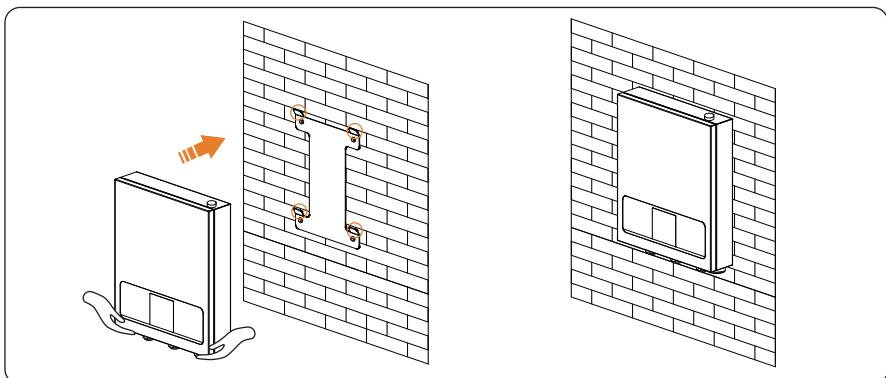


Figure 5-2 Hanging the unit

5.2 Hydraulic Unit

NOTICE!

- The domestic hot water tank and the Hydraulic Unit should be as close as possible.

Step 1: Locate and drill the holes with Ø12 drill bit. The depth of holes should be 85 mm. Fix the bracket to the wall using four expansion bolts. Make sure the bracket is level with the ground.

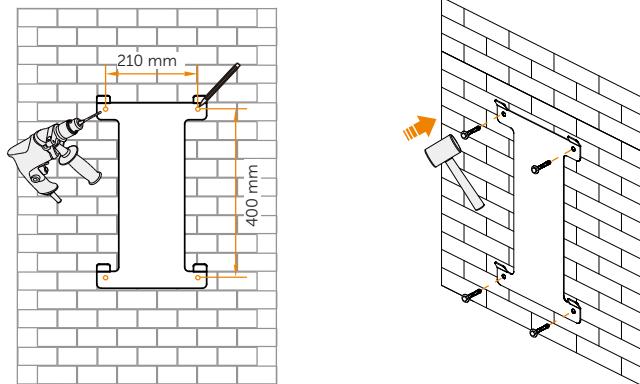


Figure 5-3 Securing the bracket

Step 2: Lift up the unit (recommended 2 persons) and hang it onto the bracket. Make sure that the hanging holes of the unit are properly inserted into the four lugs of the bracket.

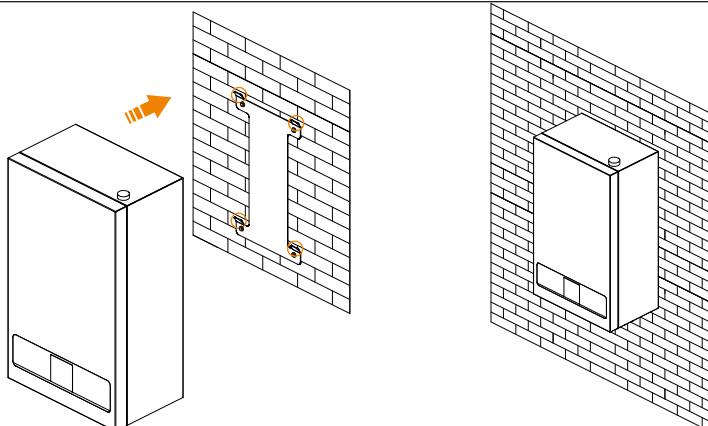


Figure 5-4 Hanging the unit

Step 3: Insert the drain joint from the accessory package into the drain hole and rotate it 90°. Then insert the rubber hose (16*2mm, provided by the user) into the drain joint.

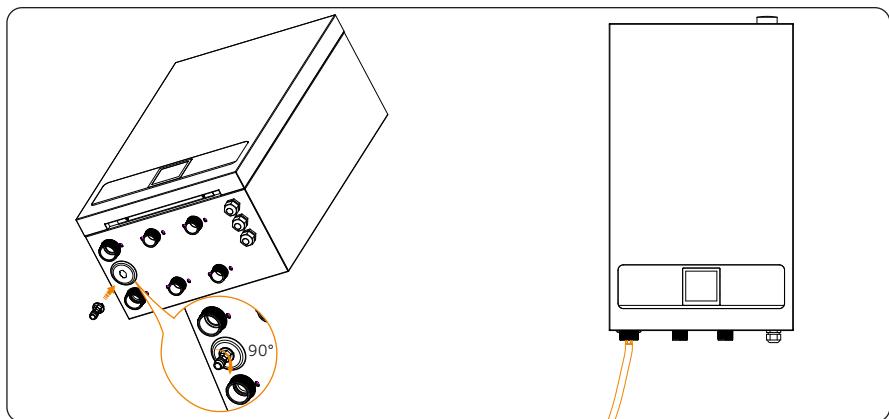


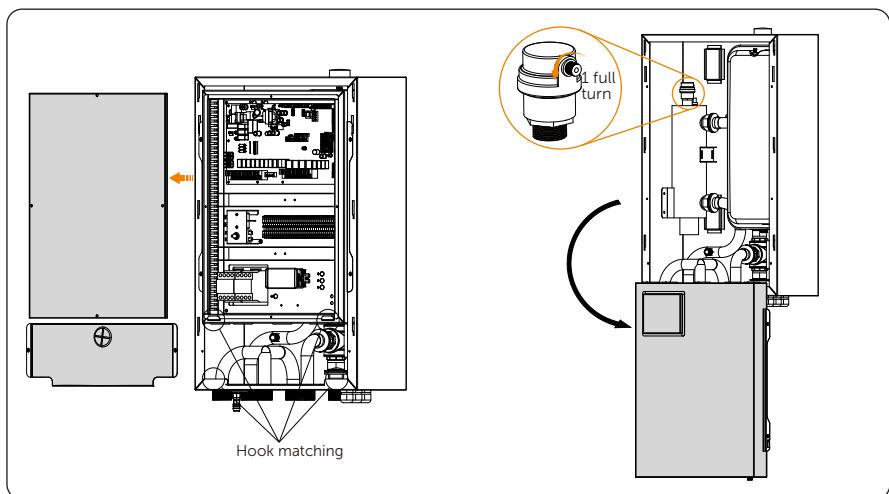
Figure 5-5 Installing the drain joint and drain hose

Exhausting

Step 1: Remove the cover plate of electrical box and the baffle; Turn the electrical box upside down and hang it on the unit casing through hooks.

Step 2: Turn the exhaust valve at least 1 full turn counterclockwise to release air from the system.

Step 3: Restore the cover plate of the electrical box to its original position.

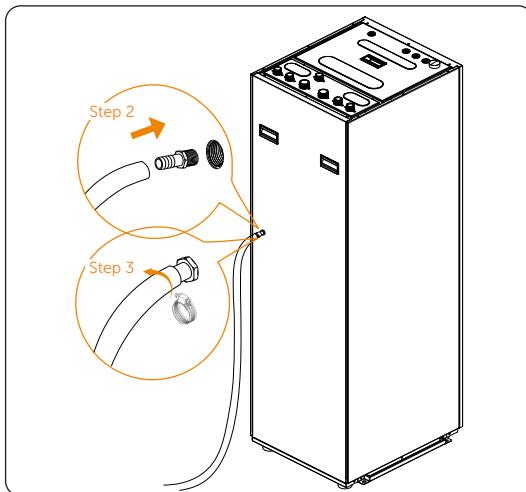


5.3 Hydraulic Integrated Unit

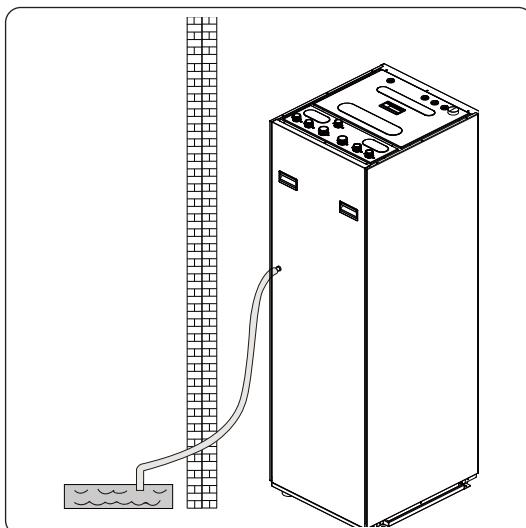
Step 1: Place the unit against the wall. (Refer to “[3.1.3 Clearance Requirement](#)”)

Step 2: Connect the drain hose to the drain joint. Tighten the drain joint into the drain hole in the rear panel.

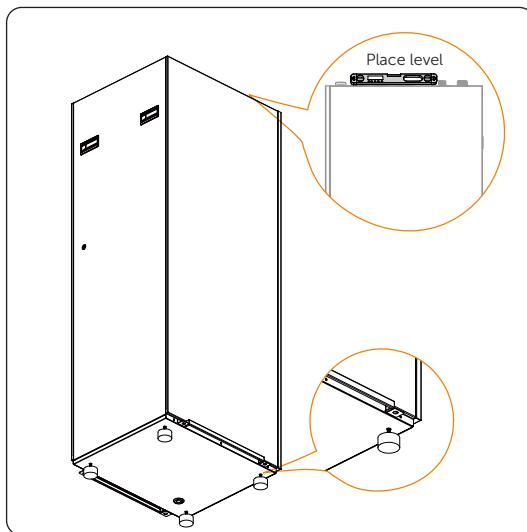
Step 3: Tie the throat band to the connection point of the drain hose and the drain joint.



Step 4: Lead the drain hose to the sewer.

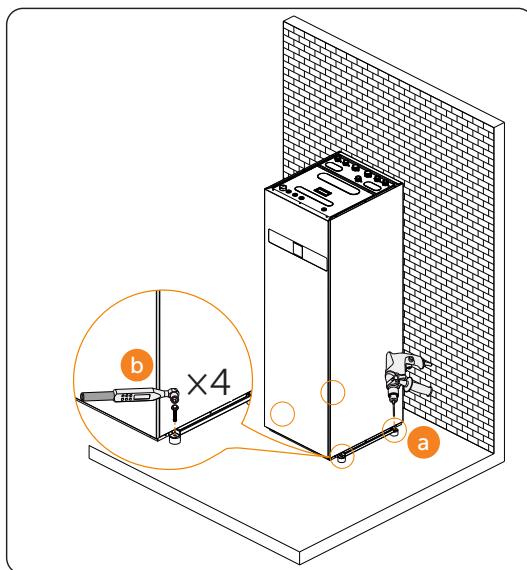


Step 5: (Optional) Adjust the rubber feet at the bottom of the unit until the unit is level.



Step 6: Fix the unit.

- Locate and drill the holes with Ø12 drill bit. The depth of holes should be 85 mm.
- Align the four holes at the bottom of the unit and place four rubber blocks. Then tighten the hexagon of expansion bolts into the holes.



6 Hydraulic Installation of Hydraulic Integrated Unit

6.1 Roof Panel of Hydraulic Integrated Unit

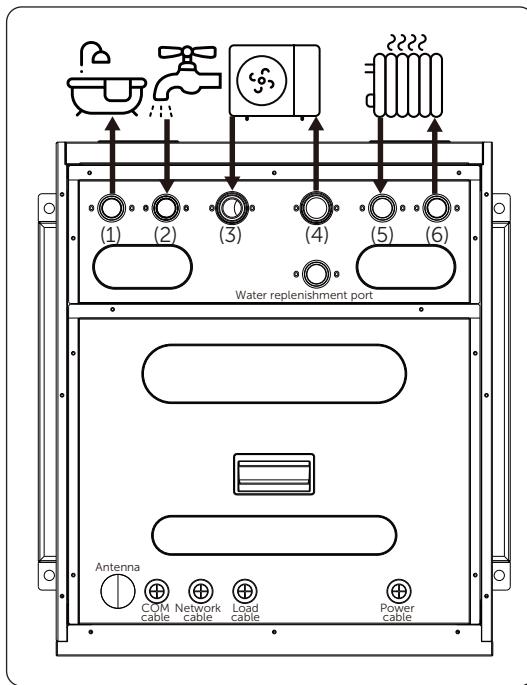


Figure 6-6 Top view of roof panel

No.	Description
1	Output to the domestic hot water (DHW)
2	Input from the tap water
3	Input from the heat pump
4	Output to the heat pump
5	Input from the heating system
6	Output to the heating system

6.2 Precautions

Pipeline cleaning

WARNING!

Residue in the pipeline can damage the system.

- Metal/plastic filings and similar residue may get stuck in pumps, valves and heat exchangers.
- Keep foreign bodies from entering the pipeline.
- Do not leave pipe parts and connections directly on the ground.
- When removing burrs, make sure that no residue remains in the pipe.
- Before connecting the heat pump and indoor unit, rinse the pipe system to remove any foreign bodies.

Insulating material

WARNING!

Material damage due to UV radiation!

- The insulating layer may become brittle and crack due to ultraviolet radiation.
- Use UV-resistant and moisture-proof insulating materials.
- For outdoor pipes and connections, use insulating materials with a thickness of at least 19 mm.
- For pipes in buildings, use insulating materials with a thickness of at least 12 mm.
- All heat-conducting pipes must be provided with appropriate insulation materials according to applicable regulations.

Anti-freezing protection

WARNING!

Material damage due to frost!

- If there is a power outage, the water in the pipes may freeze and get damaged.
- Install a drain valve to drain the water to avoid the risk of frost.
- In cooling mode, all connections and pipelines must be insulated according to applicable standards to prevent condensation.

6.3 General Pipe Connection

Select the pipe size according to the following table.

- Avoid using joints on the heat exchange tubes to reduce pressure drop.
- Use **PPR** pipes or **stainless steel** pipes at all connections between the Hydraulic Integrated Unit and heat pump, heating system, and domestic water tank.
- Use materials (pipes and joints) from the same supplier to avoid leakage.

Table 6-1 Recommended thickness of the sealing material

Pipe length (m) between the unit and the terminal device	Minimum insulation thickness (mm)
<20	20
20~30	30
30~40	40
40~50	50

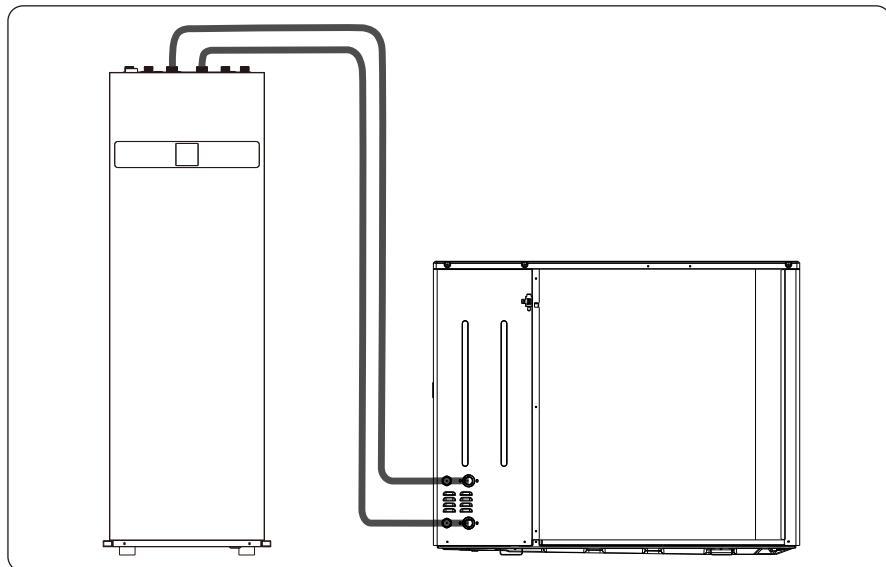


Figure 6-1 Connections between the heat pump and hydraulic integrated unit

6.4 Connecting to the Heat Pump

Step 1: Connect from the outlet of the heat pump to the joint (3) of Hydraulic Integrated Unit (refer to ["6.1 Roof Panel of Hydraulic Integrated Unit"](#)) with a pipe. Install an exhaust valve in this pipeline.

Step 2: Connect from the joint (4) of Hydraulic Integrated Unit (refer to ["6.1 Roof Panel of Hydraulic Integrated Unit"](#)) to the water inlet of the heat pump with a pipe. Install a ball valve and a drain valve in this pipeline.

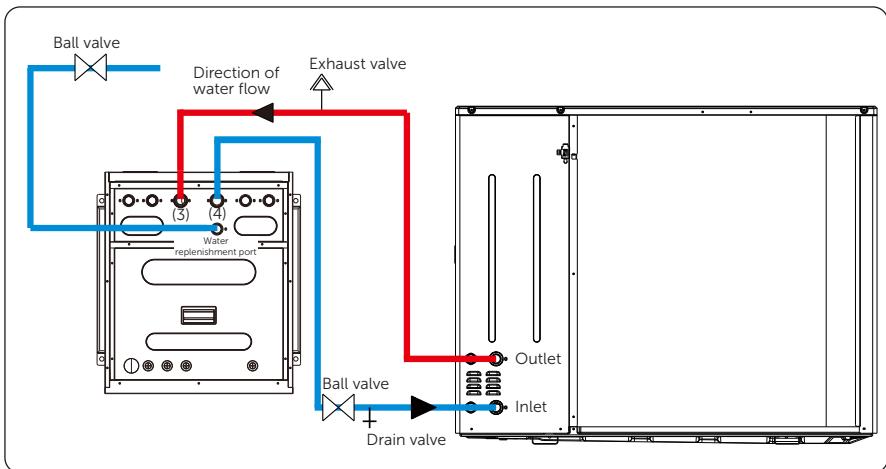


Figure 6-2 Connecting to the heat pump

NOTICE!

- When the heating system is short of water, please add water to the replenishing water hole.

6.5 Connecting to the Heating System

Step 1: Connect from the joint (6) of Hydraulic Integrated Unit to the heating system (such as underfloor heating, air duct) with a pipe. Install a ball valve and a drain valve in this pipeline.

Step 2: Connect from the heating system to the joint (5) of Hydraulic Integrated Unit with a pipe. Install a ball valve and a particle filter in this pipeline.

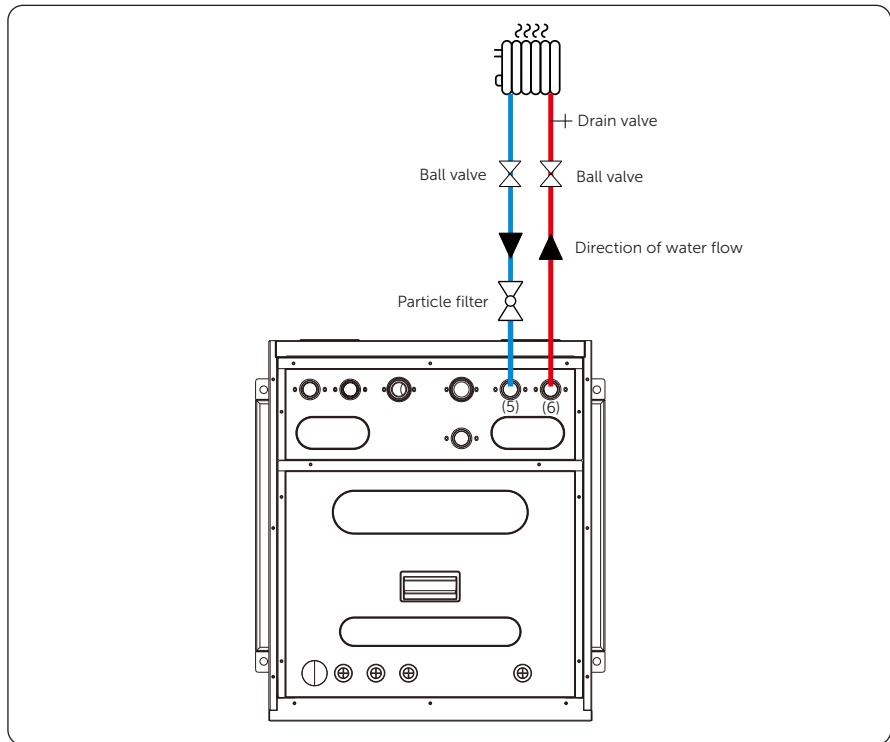


Figure 6-3 Connecting to the heating system

6.6 Connecting to the Tap Water

Step 1: Connect from the tap water to the joint (2) of Hydraulic Integrated Unit with a pipe. In this pipeline, install the **ball valve**, **check valve** and **pressure relief valve** in sequence.

⚠ WARNING!

Risk of system damage

- Ensure that the pressure relief valve is in good condition and the outlet is not blocked or closed. Otherwise, excessive pressure occurs in the system.

Step 2: Connect from the joint (1) of Hydraulic Integrated Unit to the DHW with a pipe.

⚠ WARNING!

Risk of scalding

- If the installation requires DHW temperature $> 65^{\circ}\text{C}$, a temperature **mixing device** must be installed.

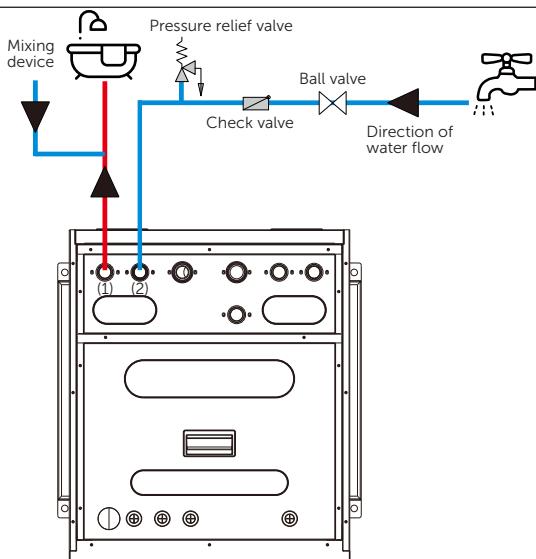


Figure 6-4 Connecting to the tap water and DHW

NOTICE!

- Fill the DHW tank and heating system before powering on the heating system, and establish the correct pressure.

6.7 Filling the Heat Pump, Hydraulic Integrated Unit and Heating System

⚠ CAUTION!

- Before filling with water, please flush the water tank and the tap water system to prevent water pollution.

NOTICE!

- Fill the DHW tank and heating system before powering on the heating system, and establish the correct pressure.

NOTICE!

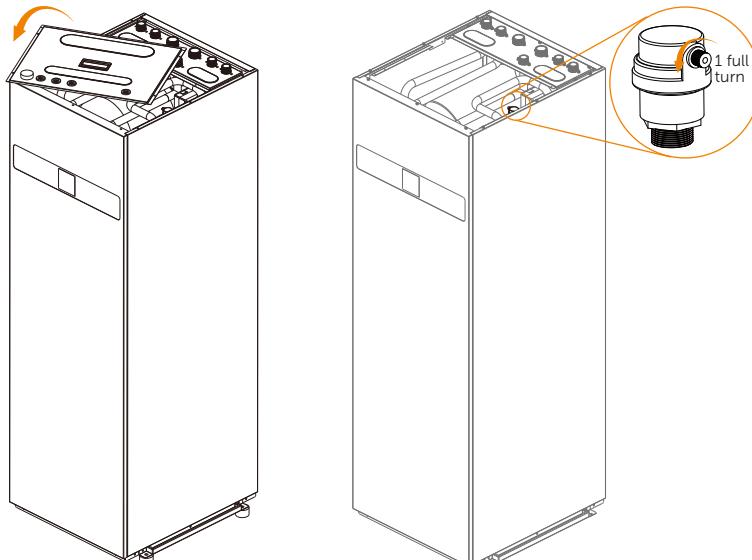
- Carefully vent the system when filling.

Exhausting

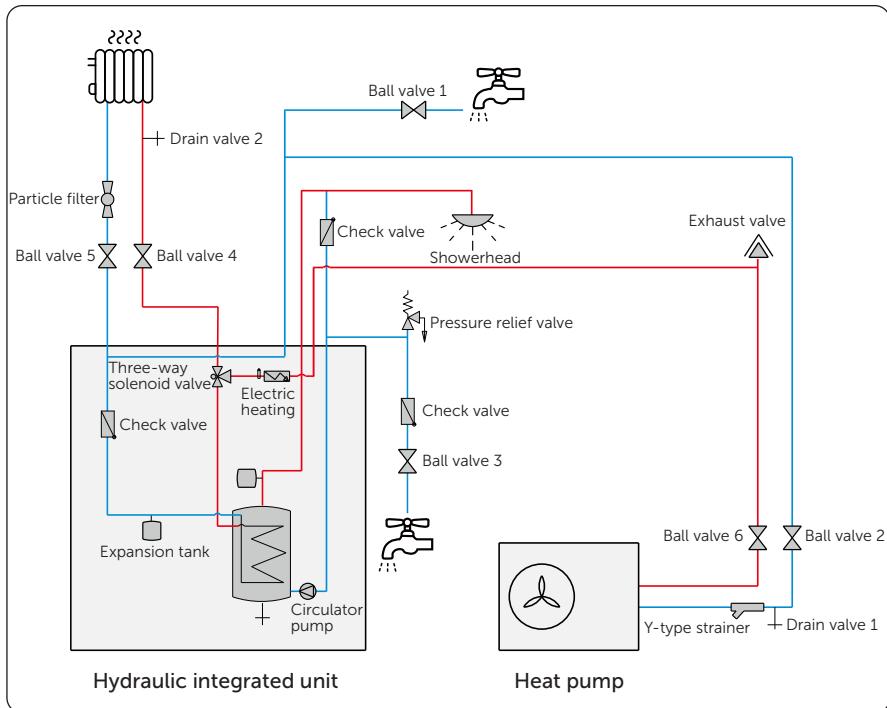
Step 1: Unscrew the screws and remove the top cover plate of the unit.

Step 2: Turn the exhaust valve at least 1 full turn counterclockwise to release air from the system.

Step 3: Cover the plate and tighten the screws.



Procedures for filling water



- Step 1:** Turn off the power to the heat pump and Hydraulic Integrated Unit.
- Step 2:** Open all thermostatic valves in the heating system.
- Step 3:** Close the **Ball valve 4**, **Ball valve 5**, **Particle filter** and **Ball valve 6** on the outdoor unit side.
- Step 4:** Connect the drain hose to the **Drain valve 1** on the outdoor unit side.
- Step 5:** Open the **Ball valve 2** and fill the **Ball valve 1** with water until there are no more bubbles in the drain hose and water comes out steadily.
- Step 6:** Open the **Ball valve 6**.
- Step 7:** When water can come out steadily from **Drain valve 1**, close the **Ball valve 2** and **Ball valve 6**.
- Step 8:** Fill the **Ball valve 3** with water into the DHW tank. Close the tap water when only water is coming out of the **Showerhead**.
- Step 9:** Connect the drain hose to the **Drain valve 2**.
- Step 10:** Open the **Particle filter**, **Drain valve 4** and **Ball valve 5** to fill the heating system.

Step 11: Fill water until only water flows steadily out of the drain hose.

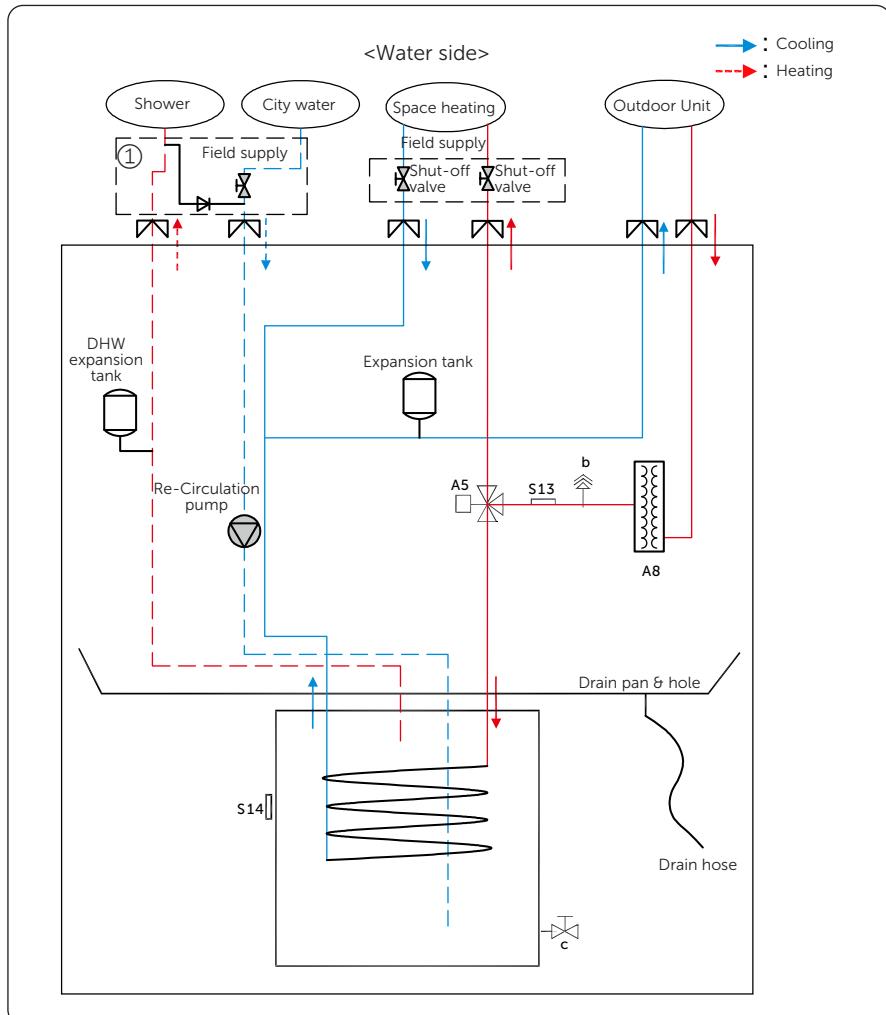
Step 12: Close the **Ball valve 4** on the heating system side and remove the hose.

Step 13: Open the **Exhaust valve** and close them when only water flows out.

Step 14: Continue filling until the pressure gauge shows the target pressure.

Step 15: Close the **Ball valve 5** on the heating system side.

Water cycle diagram



Category	Symbol	Explanation
Water side	S13	Electric heater outlet sensor
	S14	DHW tank temperature sensor
	A5	3-way valve
	A8	Electric backup heater
	b	Air vent
	c	Drain valve

NOTICE!

- ^①If the domestic hot water side is to meet the demand for zero cold water, the hot water outlet should be divided into a branch to the cold water inlet, and a check valve should be installed on this branch.

7 Electrical Connection

WARNING!

- All wiring and component installation work should be done by licensed electricians who complies with the laws and regulations of the country in which the unit is installed.

WARNING!

- Wiring must comply with the requirements of the relevant national technical standards for electrical equipment.

WARNING!

- Turn off the power when wiring.

WARNING!

- Wiring should be performed in strict accordance with the wiring diagram and instructions.

WARNING!

- The unit should use a separate dedicated power supply with a power supply voltage and frequency that meets the rated specifications.

WARNING!

- Always install a grounding cable! Do not connect the grounding wire to a public pipe, lightning arrester, or the mounting bracket of the outdoor unit. An unreliable ground cable or grounding point may cause electric shock.

WARNING!

- Use the correct specification cables to supply power to the unit.

WARNING!

- Power and signal cables should be reasonably arranged, not interfering with each other, and not coming into contact with the connecting piping or valve.

 **WARNING!**

- All cables connected to the unit should avoid rainwater seeping into the interior of the unit to prevent electrical leakage.

 **WARNING!**

- All power supplies to the equipment must be switched on and off manually. Ensure that the voltage at the equipment circuit nodes is fully discharged when the switch is disconnected.

 **WARNING!**

- The fuse or manual switch of the power supply shall match the working voltage and current of the unit.

 **WARNING!**

- Power cables not connected to the control box should not pass through the control box. Failure to do so may cause the unit to malfunction.

7.1 Opening the Cover Plate

7.1.1 Hydraulic Unit

Step 1: Unscrew the two screws at the bottom of the cover plate.

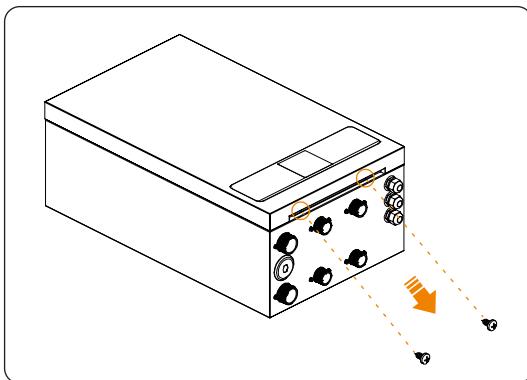


Figure 7-1 Unscrewing the screws from cover plate

Step 2: Remove the cover plate of the unit.

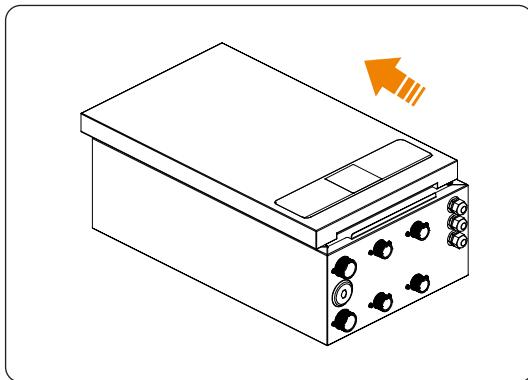


Figure 7-2 Removing the cover plate

Step 3: Unscrew the six screws of the electrical box cover and the baffle plate, and remove the electrical box cover and the baffle plate.

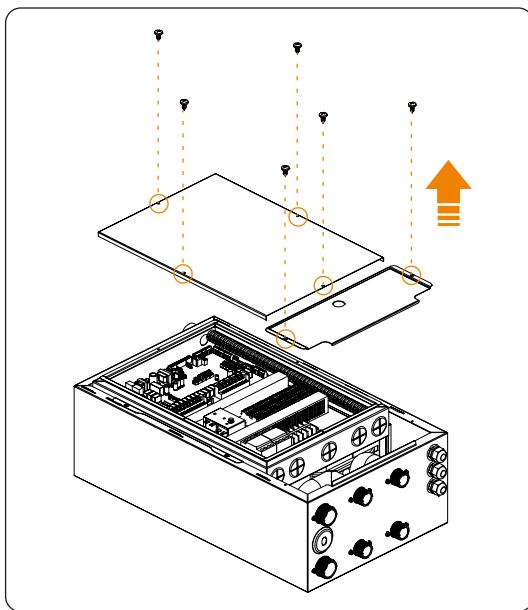


Figure 7-3 Unscrewing the screws from the cover plate

7.1.2 Hydraulic Integrated Unit

Step 1: Unscrew the five screws at the bottom and top of the cover plate.

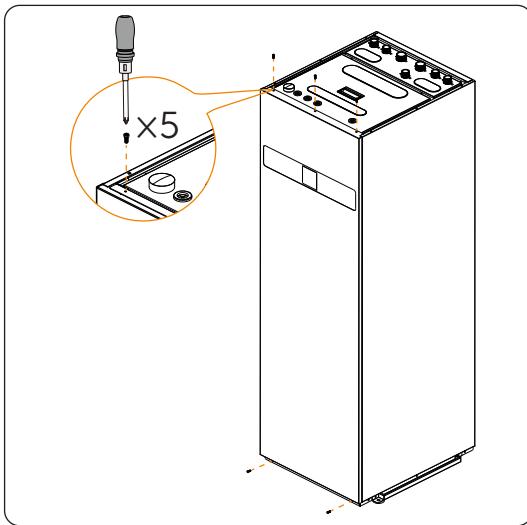


Figure 7-4 Unscrewing the screws from cover plate

Step 2: Unplug the connection plug of the communication cable, then remove the cover plate of the unit.

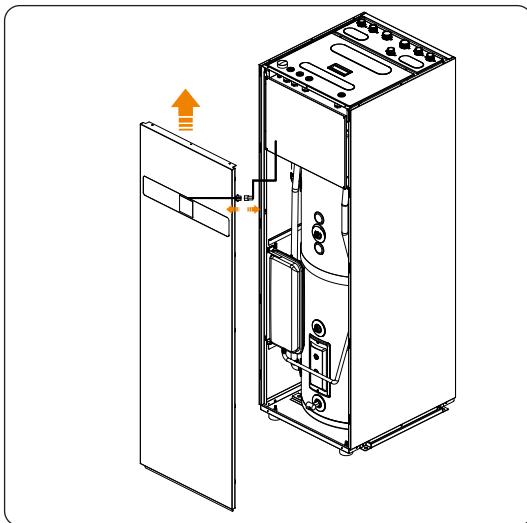


Figure 7-5 Removing the cover plate

Step 3: Unscrew the four screws of the electric box cover plate, and remove the cover plate.

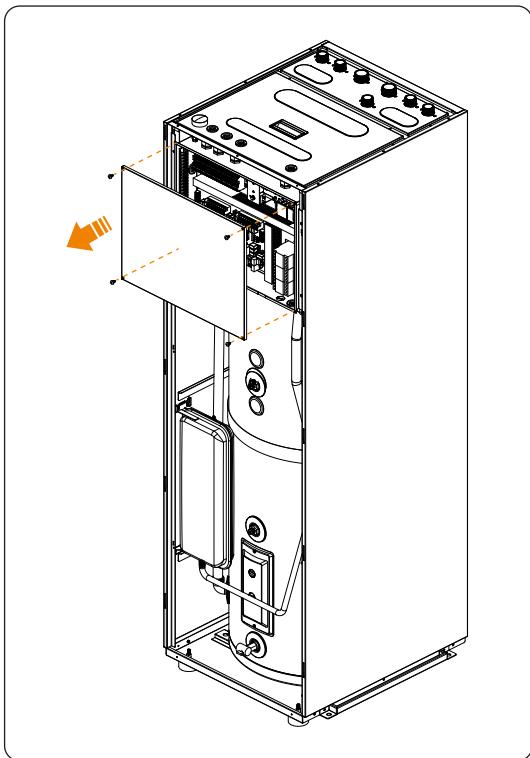


Figure 7-6 Unscrewing the screws from the cover plate

7.2 Connecting the Power Supply

7.2.1 Precautions

For connection of the unit to a power supply terminal, the terminal should be a circular wiring terminal with an insulation casing.

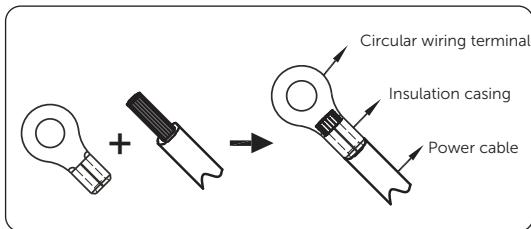


Figure 7-7 Wiring terminal

Observe the following instructions:

- Use a power cable that conforms to the specifications and connect the power cable firmly. Apply a proper tightening torque to prevent the cord from being accidentally pulled out by an external force.
- Do not connect two power cables with different diameters to the same power supply terminal. Otherwise, the cables may overheat due to loose wiring.

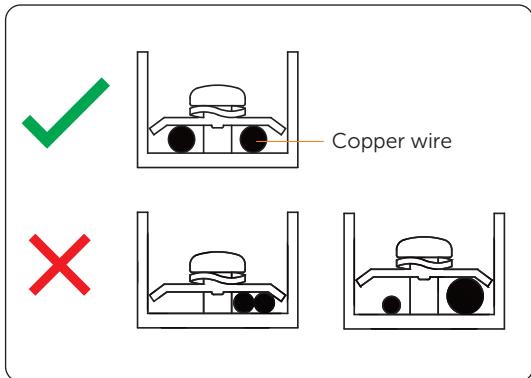
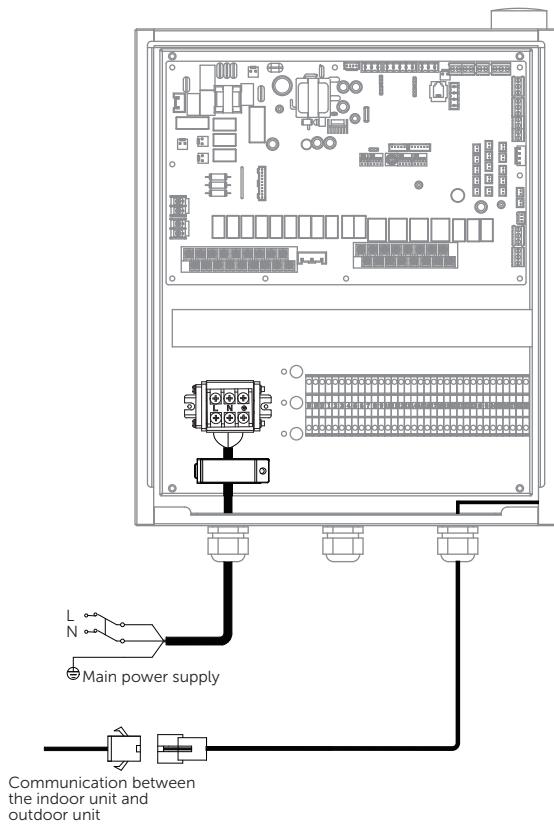


Figure 7-8 Proper power wiring connections

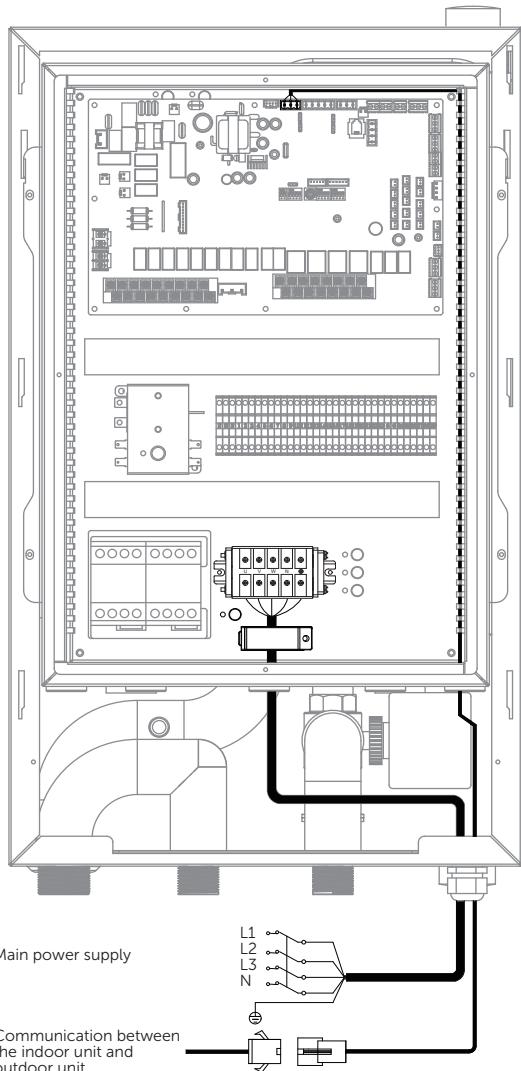
7.2.2 Control Unit

1-phase

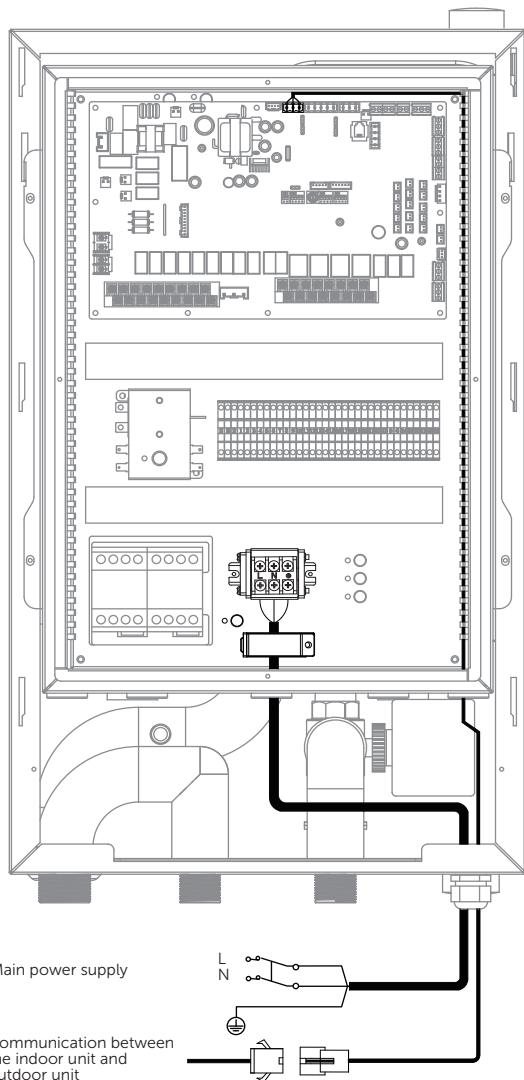


7.2.3 Hydraulic Unit

3-phase

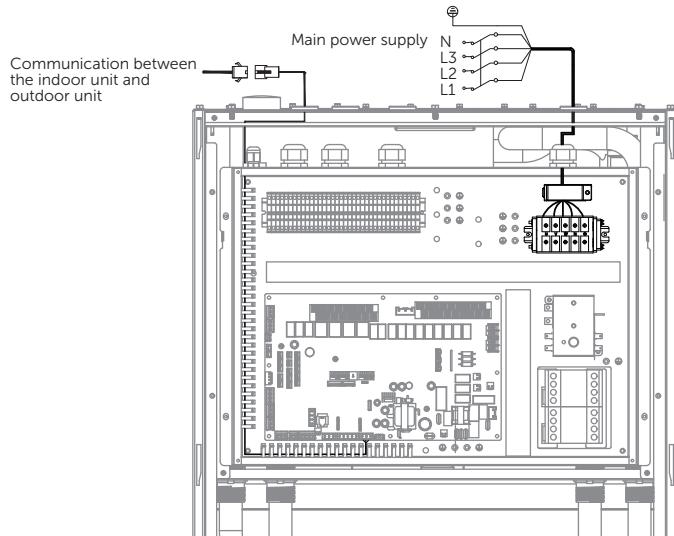


1-phase

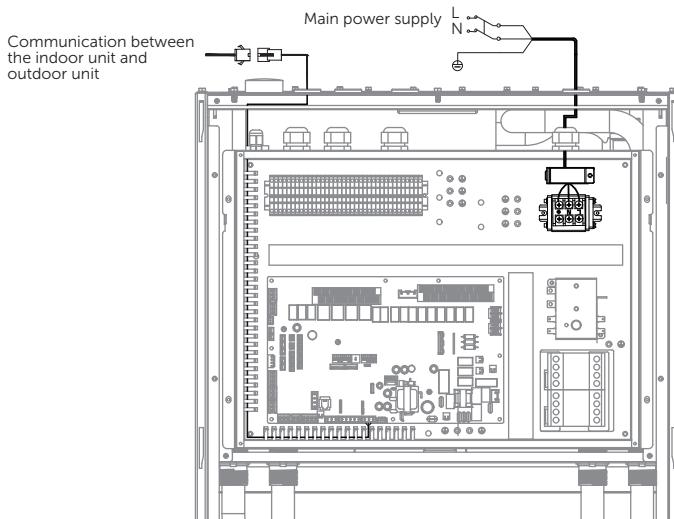


7.2.4 Hydraulic Integrated Unit

3-phase



1-phase



7.3 Connecting Other Components

NOTICE!

- The part is introduced with the Hydraulic Unit as example. The wiring principle of the Control Unit and Hydraulic Integrated Unit is similar to that of Hydraulic Unit.

The port provides the control signal to the load. Two kinds of control signal ports:

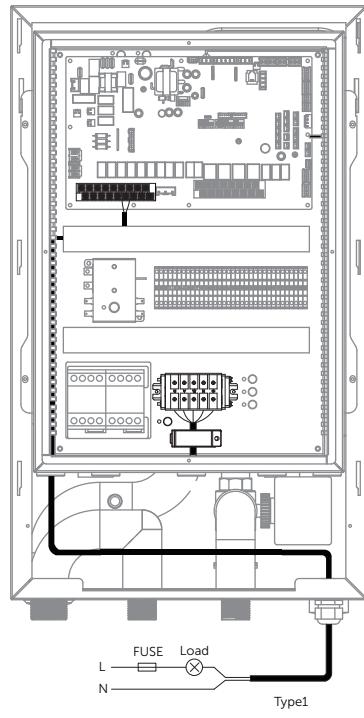
Type 1: Dry contactor without voltage.

Type 2: Signal with 220-240 V 1N~ 50 Hz or 380-415 V 3N~ 50 Hz voltage.

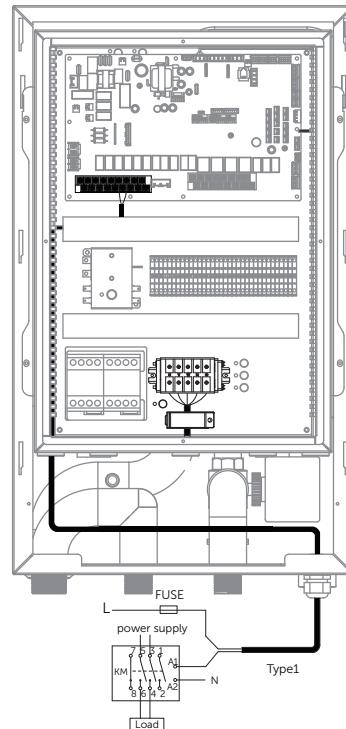
NOTICE!

- If the current of load < 0.2 A, the load can be connected to the port directly. If the load current ≥ 0.2 A, it is necessary to connect the AC contactor to the load.
- Illustrations below are for 3-phase units. The principle is the same for 1-phase units.
- Illustrations below are based on units with a backup heater.

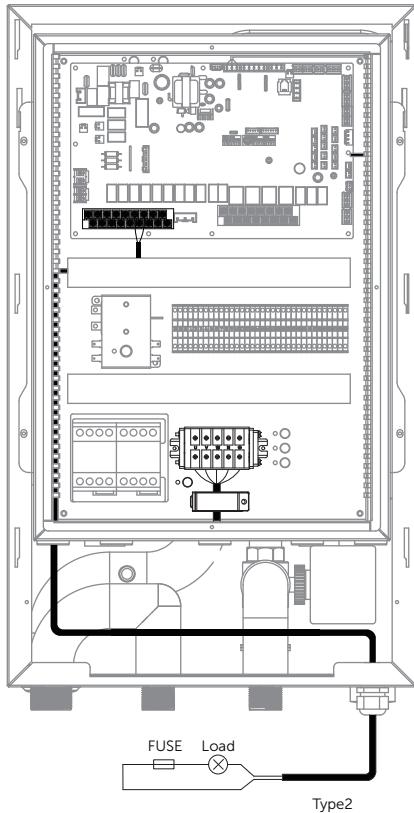
Low Power Load (Type 1)



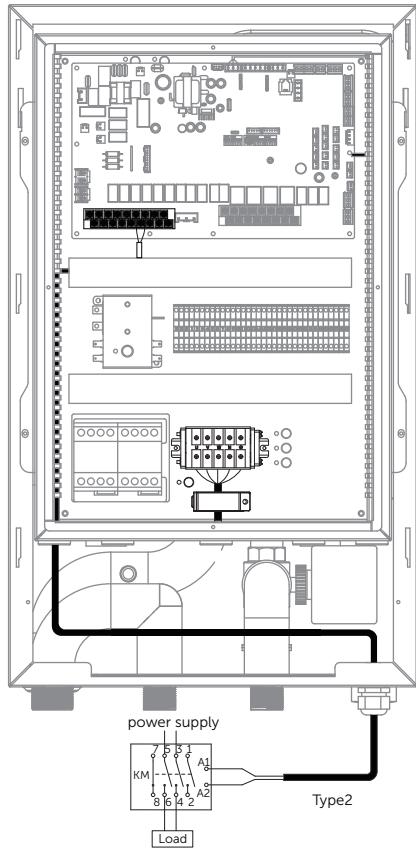
High Power Load (Type 1)



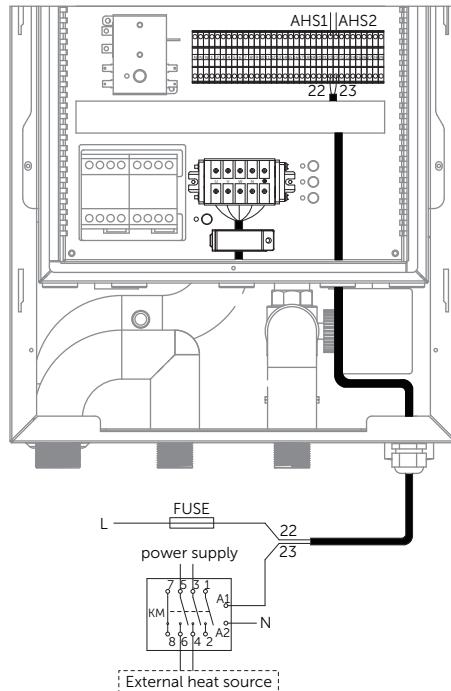
Low Power Load (Type 2)



High Power Load (Type 2)



7.3.1 Wiring of Additional Heat Source (AHS)



NOTICE!

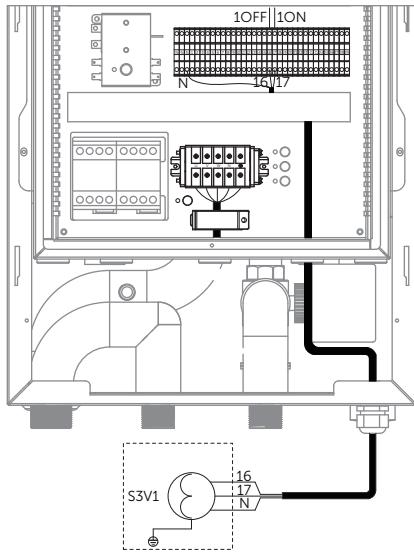
- This part only applies to basic units (without a backup heater). For customized units (with a backup heater), the hydraulic module should not be connected to any Additional heat source as there is an interval backup heater in the unit.
- In some cases (such as SG READY or X-HUB function), the hot water target temperature will be executed according to the maximum water temperature.

7.3.2 Wiring of 3-Way Valves

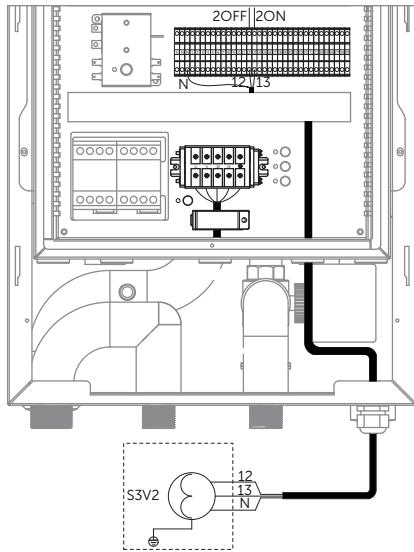
For the installation location of SV1, SV2, SV3 and S3Vmpb2, please refer to the chapter "Typical applications" in *Outdoor Unit Installation Manual*.

Electrical Connection

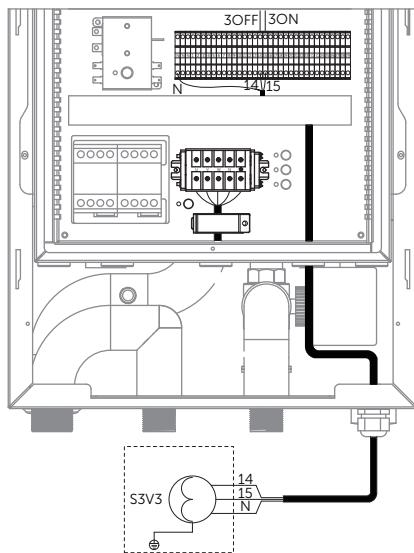
S3V1



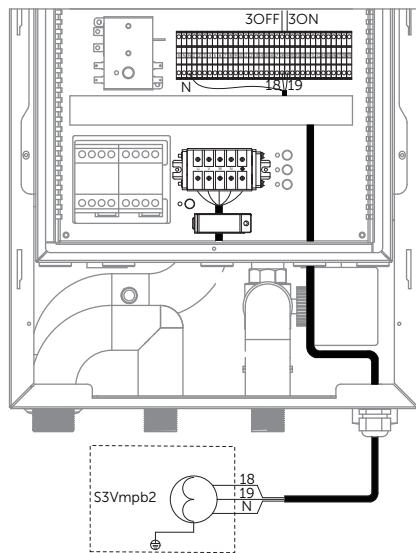
S3V2



S3V3



S3Vmpb2



NOTICE!

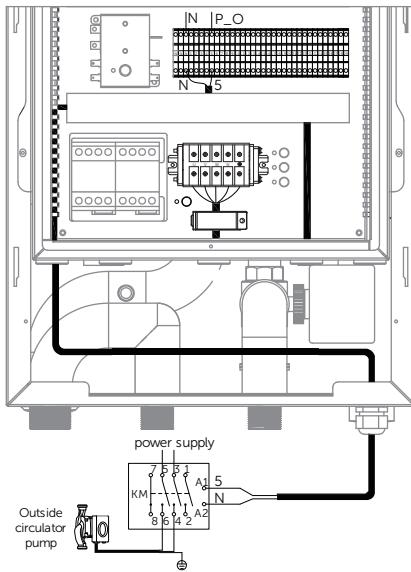
- N is for the neutral conductor.

Table 7-2 Wire requirements

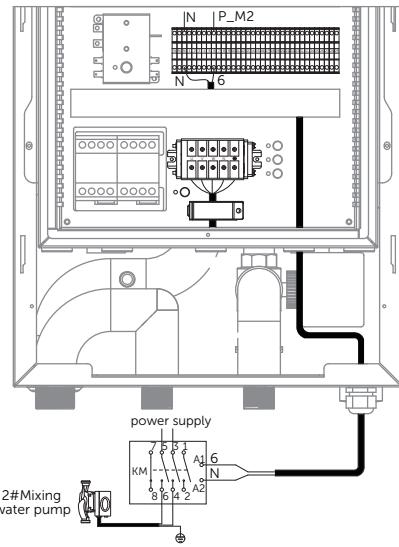
Voltage	220-240 V AC
Maximum running current (A)	0.2
Minimum wire size (mm ²)	0.75
Control port signal type	Type 2

7.3.3 Wiring of Additional Pumps

Outside circulator pump (P_O)

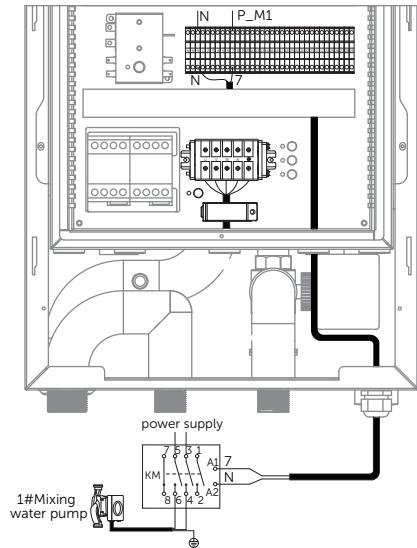


B2 Mixing pump (P_M2)

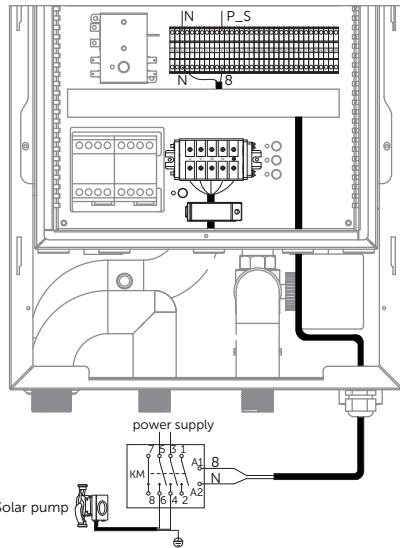


Electrical Connection

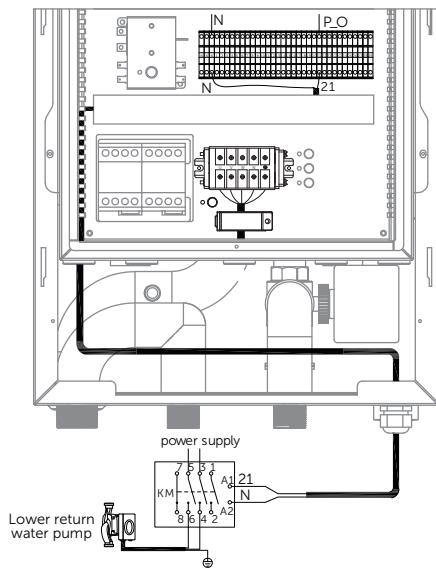
B1 Mixing pump (P_M1)



Solar water pump (P_S)



Lower return water pump (P_R)



7.3.4 Wiring of Defrost Indication

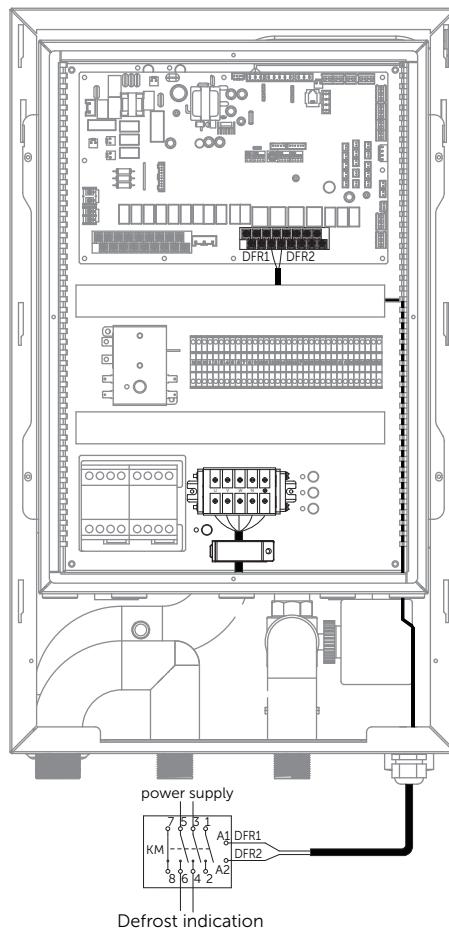


Table 7-3 Wire requirements

Voltage	220-240 V AC
Maximum running current (A)	0.2
Minimum wire size (mm ²)	0.75
Control port signal type	Type 2

7.3.5 Wiring of Fault Indication

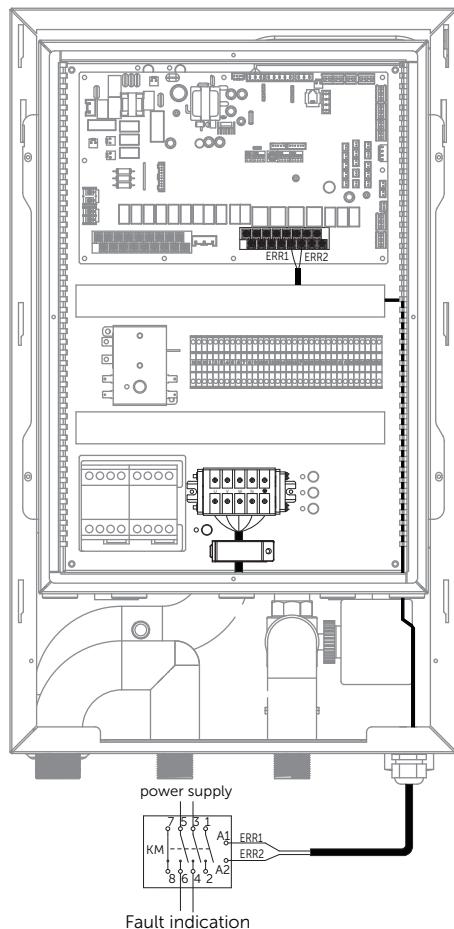
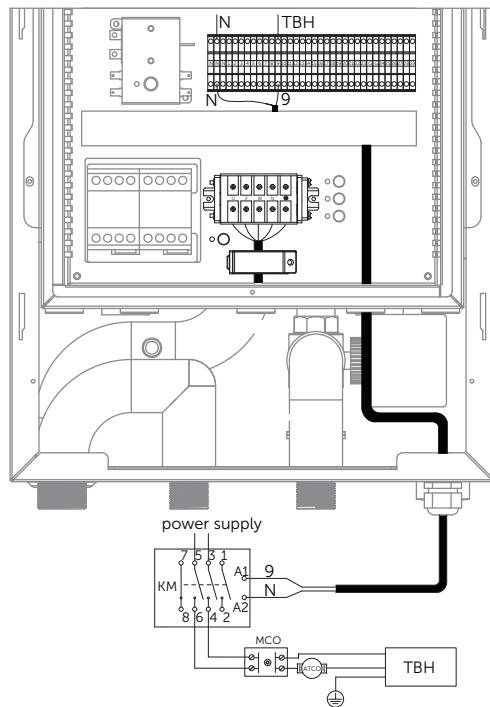


Table 7-4 Wire requirements

Voltage	220-240 V AC
Maximum running current (A)	0.2
Minimum wire size (mm ²)	0.75
Control port signal type	Type 2

7.3.6 Wiring of Tank Booster Heater (TBH)

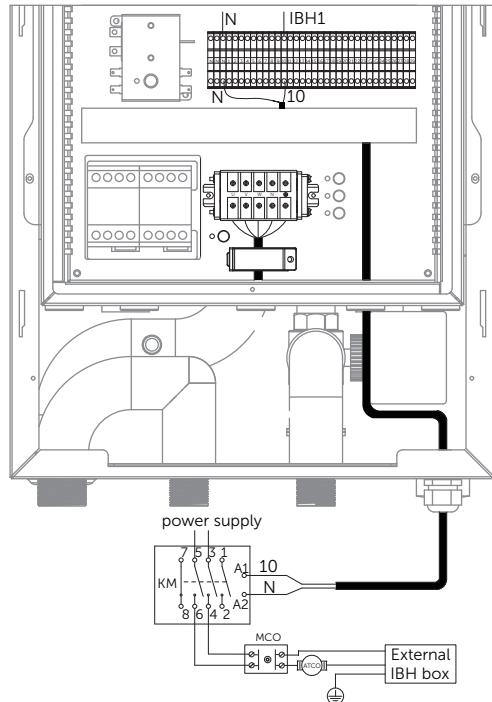


NOTICE!

- MCO: Manual reset thermal protector
- ATC: Auto reset thermal protector

7.3.7 Wiring of External IBH Box

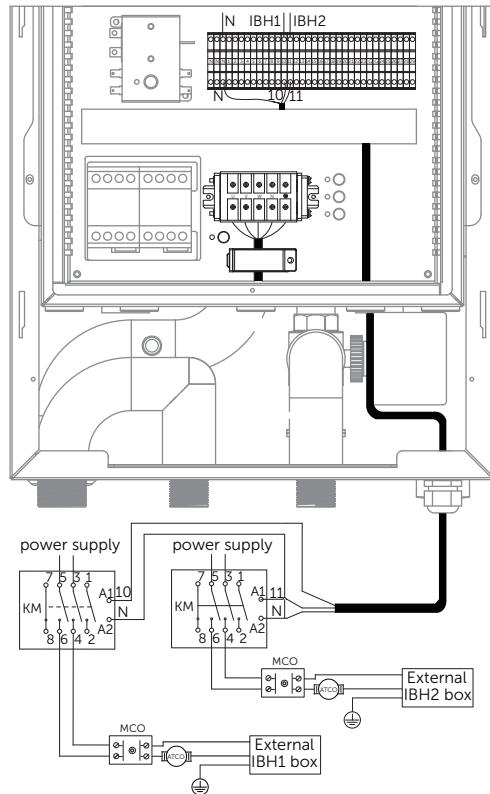
For one-step control IBH



NOTICE!

- The output port of AC contactor 1 is connected to the yellow cable of IBH.

For two/three-step control IBH



NOTICE!

- The output port of AC contactor 2 is connected to the red cable of IBH.

Gear output

The IBH can be configured by **SW1**. Under different configurations, the output actions of IBH1 and IBH2 are as follows.

- When **SW1** is set to **00**, IBH1 and IBH2 remain off.
- When **SW1** is set to **01**:

Requirement	IBH1	IBH2
Off	Off	Off
On	On	Off

- When **SW1** is set to **10**:

Requirement	IBH1	IBH2
Off	Off	Off
On	Off	On

- When **SW1** is set to **11**, the gear can be set by the parameter **IBH_GEAR**.

» **IBH_GEAR=1:**

Gear position	IBH1	IBH2
Gear 0	Off	Off
Gear 1	On	On

» **IBH_GEAR=2:**

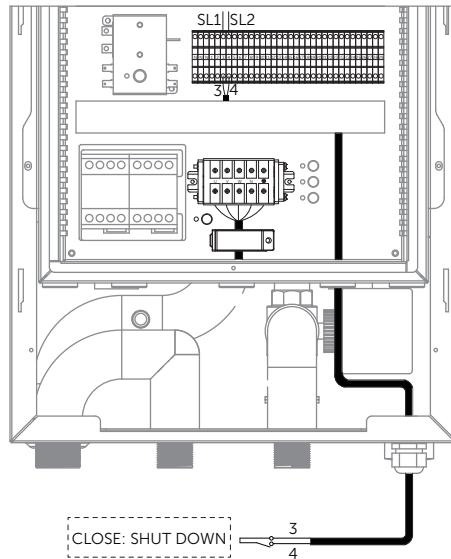
Gear position	IBH1	IBH2
Gear 0	Off	Off
Gear 1	On	Off
Gear 2	On	On

» **IBH_GEAR=3:**

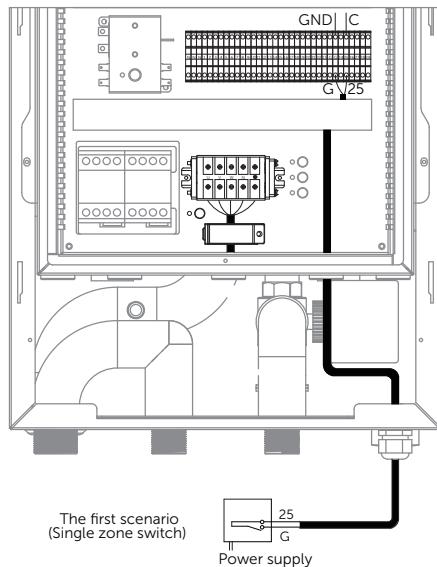
Gear position	IBH1	IBH2
Gear 0	Off	Off
Gear 1	On	Off
Gear 2	Off	On
Gear 3	On	On

7.3.8 Wiring of Room Thermostat (RT)

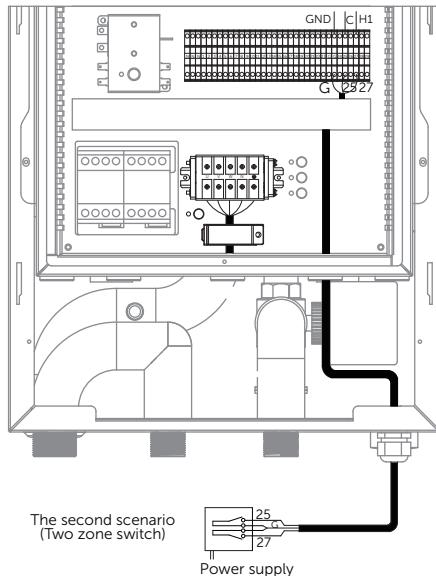
Single zone mode switch



Single zone switch



Two zone switch



Three zone switch

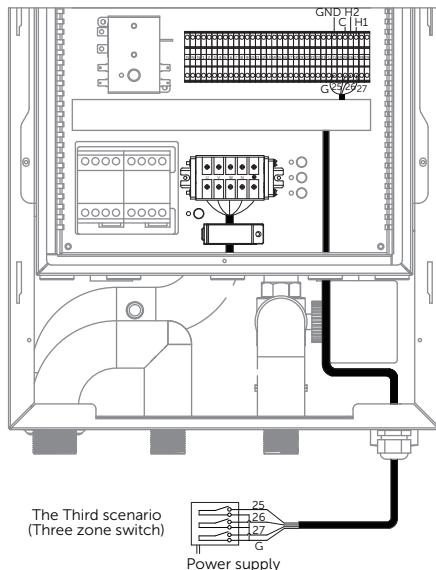


Table 7-5 Wire requirements

Voltage	220-240 V AC
Maximum running current (A)	0.2
Minimum wire size (mm ²)	0.75
Control port signal type	Type 2

The wiring of room thermostat can be connected in four ways (as described in the figures above) and the specific connection method depends on the application.

When **RT_CTRL** is set to "**ZoneA.Mode.SW** (Single zone mode switch)":

- When C signal is closed, zone A turns on the cooling mode.
- When C signal is disconnected and H signal is closed, zone A turns on the heating mode.
- When both C signal and H signal are disconnected, zone A turns off the RT control function.

When **RT_CTRL** is set to "**ZONE.A.SWITCH** (Single zone switch)":

- When C signal is closed, zone A turns on the RT control function.
- When C signal is disconnected, zone A turns off the RT control function.

When **RT_CTRL** is set to "**2 ZONE.SWITCH** (Two zone switch)":

- When C signal is closed, zone A turns on the RT control function.
- When C signal is disconnected, zone A turns off the RT control function.
- When the air conditioning area is heating mode:
 - » When H1 signal is closed, zone B1 turns on the RT control function.
 - » When H1 signal is disconnected, zone B1 turns off the RT control function.

When **RT_CTRL** is set to "**3 ZONE.SWITCH** (Three zone switch)":

- When C signal is closed, zone A turns on the RT control function.
- When C signal is disconnected, zone A turns off the RT control function.
- When the air conditioning area is heating mode:
 - » When H1 signal is closed, zone B1 turns on the RT control function.
 - » When H1 signal is disconnected, zone B1 turns off the RT control function.
 - » When H2 signal is closed, zone B2 turns on the RT control function.
 - » When H2 signal is disconnected, zone B2 turns off the RT control function.

NOTICE!

- The wiring of thermostat should correspond to the settings of the wired controller.
- The unit, the power of room and thermostat should be connected to the same neutral cable.
- When the room thermostat is not set, the room temperature sensor T_a should be set to NON, not VALID.
- Zone B1 and zone B2 can only be operated in heating mode. The thermostats for zone A, B1 and B2 must be correct.

7.3.9 Wiring of Solar Energy Input Signal (Low Voltage)

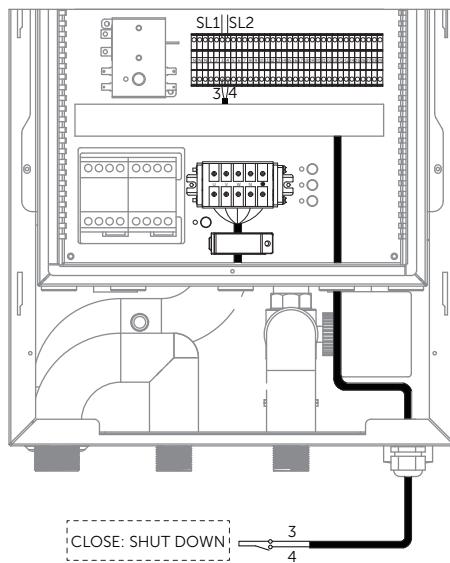


Table 7-6 Wire requirements

Voltage	220-240 V AC
Maximum running current (A)	0.2
Minimum wire size (mm ²)	0.75
Control port signal type	Type 2

7.3.10 Wiring of Remote Shutdown

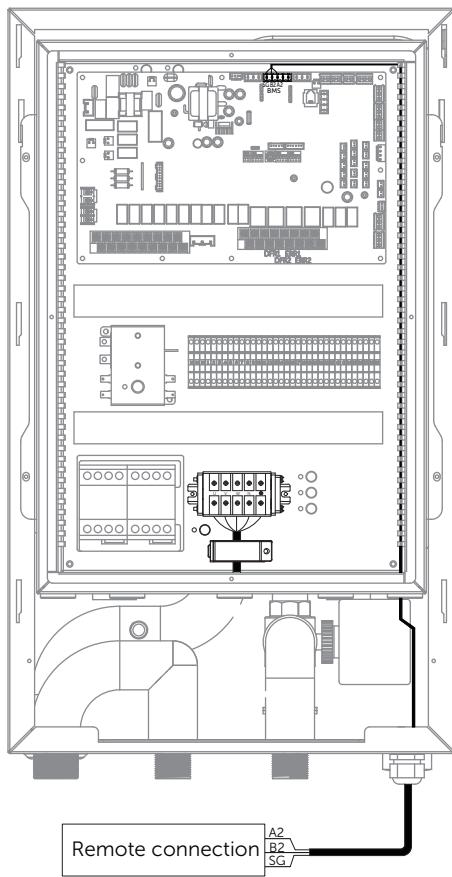


Table 7-7 Wire requirements

Voltage	220-240 V AC
Maximum running current (A)	0.2
Minimum wire size (mm ²)	0.75
Control port signal type	Type 2

7.3.11 Wiring of Smart Grid

The unit has a smart grid feature, and there are two ports on the PCB to connect SG signals and EVU signals as below.

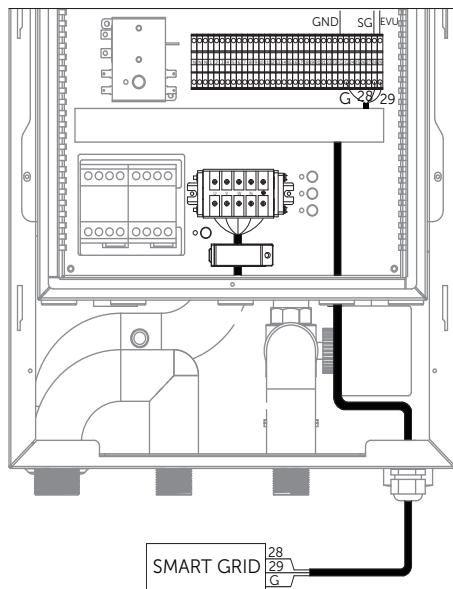


Table 7-8 Wire requirements

Voltage	220-240 V AC
Maximum running current (A)	0.2
Minimum wire size (mm ²)	0.75
Control port signal type	Type 2

NOTICE!

- To utilize smart grid function, the THW mode must be set available.

How to turn on smart grid function

The premise for turning on the smart grid function is that **SMART_GRID** is set to "Enable" and **POWER_MODE** is set to "AUTO".

SMART_GRID has four options: **REGULAR**, **CFG.1#**, **CFG.2#**, **CFG.3#**.

Regular configuration

SG signal	EVU signal	Smart grid status
1	0	<p>The unit is forced to shut down.</p> <ul style="list-style-type: none"> When POWER_MODE is set to "AUTO", the unit is forced to run in "ECO" mode; Forced to turned off the hot water mode; The Backup Heater remains off; The STERILIZATION function is invalid; When heating or cooling mode needs to be turned on, run the ECO_RUN_TIME and turn off the unit.
0	0	<p>When POWER_MODE is set to "AUTO", the unit is forced to run in "STRONG" mode.</p> <p>If the unit is running in hot water mode and the hot water is turned on:</p> <ul style="list-style-type: none"> The unit is forced to give priority to hot water; The Backup Heater operates as follows: <ul style="list-style-type: none"> When THWt hot water temp. < DHW Target Temp. -2°C, turn on the Backup Heater. When THWt hot water temp. ≥ DHW Target Temp. +3°C, turn off the Backup Heater.
0	1	<p>When POWER_MODE is set to "AUTO", the unit is forced to run in "STRONG" mode.</p> <p>If HOT_WATER is set to "Use":</p> <ul style="list-style-type: none"> Forced start of DHW mode and making it first; DHW Target Temp. is set to 70°C automatically. If the Backup Heater is set to "Enable": <ul style="list-style-type: none"> When THWt hot water temp. < 69°C, turn on the Backup Heater. When THWt hot water temp. ≥ 70°C, turn off the Backup Heater.
1	1	

Configuration 1

SG signal	EVU signal	Smart grid status
1	0	<p>The unit operates normally.</p> <p>When POWER_MODE is set to "AUTO", the unit is forced to run in "STANDARD" mode.</p>
0	0	<p>When POWER_MODE is set to "AUTO", the unit is forced to run in "ECO" mode;</p> <p>Forced to turned off the hot water mode;</p> <ul style="list-style-type: none"> • The Backup Heater remains off; • The STERILIZATION function is invalid; • When heating or cooling mode needs to be turned on, run the ECO_RUN_TIME and turn off the unit.
0	1	<p>When POWER_MODE is set to "AUTO", the unit is forced to run in "STRONG" mode.</p> <p>If the unit is turned on and in DHW mode:</p> <ul style="list-style-type: none"> • The unit is forced to give priority to DHW mode. • The Backup Heater operates as follows: <ul style="list-style-type: none"> » When THWt hot water temp. < HOT_WATER_TEMP_SET -2°C, turn on the Backup Heater. » When THWt hot water temp. ≥ HOT_WATER_TEMP_SET +3°C, turn off the Backup Heater. <p>When POWER_MODE is set to "AUTO", the unit is forced to run in "STRONG" mode.</p> <p>If HOT_WATER is set to "Use":</p> <ul style="list-style-type: none"> • The DHW mode is forced to be turned on, and DHW is forced to be given priority; • The DHW Target Temp. is set to 70°C automatically. • If the Backup Heater is set to "Enable", the Backup Heater operate as follows. <ul style="list-style-type: none"> » When THWt hot water temp. < 69°C, turn on the Backup Heater. » When THWt hot water temp. ≥ 70°C, turn off the Backup Heater.

Configuration 2

SG signal	EVU signal	Smart grid status
If Max. Smart Grid Lock Time is not "0":		
1	0	<ul style="list-style-type: none"> During the Max. Smart Grid Lock Time, when there is no antifreeze demand, compressor off, turn off the IBH, AHS and Backup Heater; Exceeding the Max. Smart Grid Lock Time, the press is allowed to be loaded, but the IBH, AHS and Backup Heater remain closed; Otherwise, the following instructions will be followed: <ul style="list-style-type: none"> When there is no antifreeze demand, compressor off, turn off the IBH, AHS, and Backup Heater;
0	0	<p>The unit operates normally.</p> <p>When POWER_MODE is set to "AUTO", the unit is forced to run in "ECO" mode.</p>
0	1	<p>When POWER_MODE is set to "AUTO", the unit is forced to run in "STRONG" mode;</p> <p>The unit is forced to give priority to hot water;</p> <p>The actions of Backup Heater and IBH are as follows.</p> <ul style="list-style-type: none"> If the Backup Heater is set to "Use" and DHW mode is turned on: <ul style="list-style-type: none"> When THWt hot water temp. < HOT_WATER_TEMP_SET -2°C, turn on the Backup Heater. When THWt hot water temp. ≥ HOT_WATER_TEMP_SET +3°C, turn off the Backup Heater. Otherwise, when the DHW mode is turned on, the unit is running to make DHW, the IBH will: <ul style="list-style-type: none"> When THWt hot water temp. < HOT_WATER_TEMP_SET -2°C, turn on the IBH. When THWt hot water temp. ≥ HOT_WATER_TEMP_SET +3°C, turn off the IBH.

SG signal EVU signal Smart grid status

When **POWER_MODE** is set to "AUTO", the unit is forced to run in "**STRONG**" mode;

The unit is forced to give priority to hot water;

The actions of the Backup Heater and IBH refer to the following.

If the **Backup Heater** is set to "**Use**":

- The **DHW Target Temp.** is automatically set to MAX (70°C, user set upper limit).
- If DHW mode is turned on:
 - » When **THWt hot water temp.** < MAX (70°C, user set upper limit) -1°C, turn on the **Backup Heater**.
 - » When **THWt hot water temp.** ≥ MAX (70°C, user set upper limit) -1°C, turn off the **Backup Heater**.

1 1

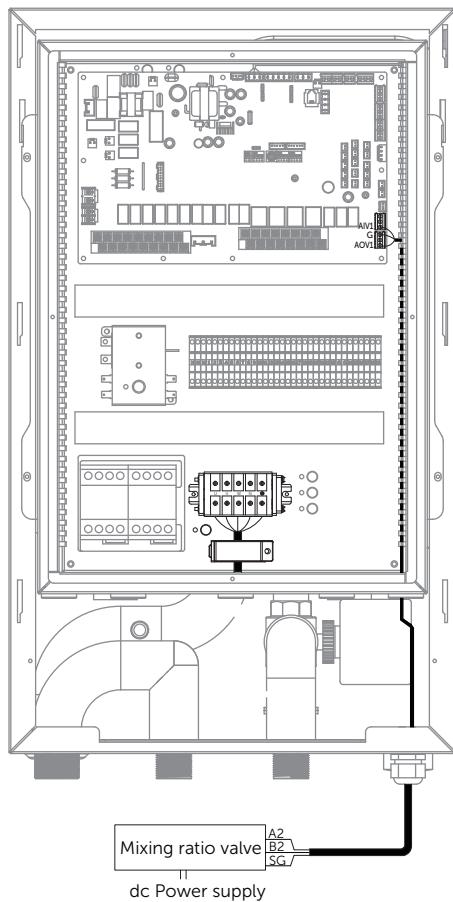
Otherwise, the following actions will be performed.

- The **DHW Target Temp.** is automatically set to MAX (60°C, user set upper limit).
- If DHW mode is turned on and the unit is running to produce hot water:
 - » When **THWt hot water temp.** < MAX (60°C, user set upper limit) -1°C, turns on the IBH.
 - » When **THWt hot water temp.** ≥ MAX (60°C, user set upper limit), turns off the IBH.

Configuration 3

SG signal	EVU signal	Smart grid status
1	0	<p>If ECO_RUN_TIME is within the time, the unit operates normally.</p> <p>When ECO_RUN_TIME is exceeded or "0", and when there is no antifreeze demand, compressor off, turn off the IBH, AHS, and Backup Heater.</p>
0	0	<p>When POWER_MODE is set to "AUTO", the unit is forced to run in "ECO" mode.</p> <p>The unit operates normally.</p>
0	1	<p>When POWER_MODE is set to "AUTO", the unit is forced to run in "STRONG" mode;</p> <p>The unit is forced to give priority to DHW;</p> <p>If the Backup Heater is set to "Use" and the DHW is on, the Backup Heater operates as follows:</p> <ul style="list-style-type: none"> • When THWt hot water temp. < HOT_WATER_TEMP_SET -2°C, turn on the Backup Heater. • When THWt hot water temp. ≥ HOT_WATER_TEMP_SET +3°C, turn off the Backup Heater.
1	1	<p>When POWER_MODE is set to "AUTO", the unit is forced to run in "STRONG" mode;</p> <p>The unit is forced to give priority to DHW;</p> <p>The DHW Target Temp. is automatically set to 70°C;</p> <p>If the Backup Heater is set to "Use", and the DHW is on, the Backup Heater action is as follows:</p> <ul style="list-style-type: none"> • When THWt hot water temp. < 69°C, turn on the Backup Heater. • When THWt hot water temp. ≥ 70°C, turn off the Backup Heater.

7.3.12 Wiring of Mixing Ratio Valve



8 Commissioning

8.1 Checking before Test Run

CAUTION!

- The unit must be reliably grounded!

Table 8-1 Checklist

Item	YES	NO
Check the leakage protection is effective	<input type="checkbox"/>	<input type="checkbox"/>
Check the ground cable is correctly connected and ground terminal is tightened	<input type="checkbox"/>	<input type="checkbox"/>
Check the safety protection devices (such as fuses) meets the requirements	<input type="checkbox"/>	<input type="checkbox"/>
Check the voltage and frequency of the power supply are the same as the rated voltage and frequency on the unit nameplate	<input type="checkbox"/>	<input type="checkbox"/>
Check all cables and circuit connectors are tightened and fastening screws are not loose	<input type="checkbox"/>	<input type="checkbox"/>
Check the power cable meets the requirements	<input type="checkbox"/>	<input type="checkbox"/>
Check the switch meets the requirements	<input type="checkbox"/>	<input type="checkbox"/>
Check the electrical components is not damaged	<input type="checkbox"/>	<input type="checkbox"/>
Check the system electrical circuits have no open or short circuits	<input type="checkbox"/>	<input type="checkbox"/>
Check the connection of the wired controller meets the requirements	<input type="checkbox"/>	<input type="checkbox"/>

8.2 Test Run

⚠ WARNING!

- Do not start the heat pump without filling water, it may cause damage to the system.

Control the unit operation with the wired controller and check the following items.

- The switch on the wired controller is normal.
- The function buttons on the wired controller are normal.
- The wired controller does not report errors.

NOTICE!

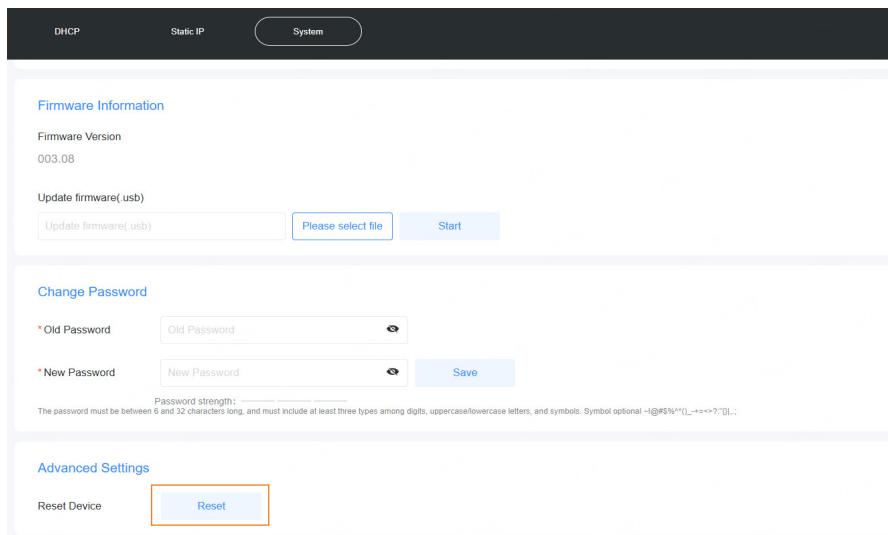
- When restarting the unit after power-off, the unit is equipped with a protection function and the compressor starts with a 3-minute delay.
- During the winter, the unit is strictly prohibited from power failure to ensure the normal operation of the anti-freezing function of the unit.

Reset device

Step 1: Connect to the Wi-Fi hotspot (named "Wifi__" + device SN).

Step 2: Use a browser to visit <https://192.168.10.10> and log in (**username**: "admin"; initial **password**: "device SN of Indoor Unit", e.g., B02XXXXXXXXXX).

Step 3: At the bottom of the **System** page, click **Reset** and then click **Confirm** to reset.
After a successful reset, the router password, local login password, static IP information will be restored to factory settings.



The screenshot shows the 'System' page of a device's configuration interface. At the top, there are tabs for 'DHCP', 'Static IP', and 'System' (which is highlighted with a blue border). Below the tabs, there's a section titled 'Firmware Information' showing the 'Firmware Version' as '003.08'. Under 'Update firmware(usb)', there's a 'Please select file' button and a 'Start' button. Further down, there's a 'Change Password' section with fields for 'Old Password' and 'New Password', and a 'Save' button. A note about password strength is provided: 'The password must be between 6 and 32 characters long, and must include at least three types among digits, uppercase/lowercase letters, and symbols. Symbol optional -!@#\$%^&_+=<>?;,.:.'. At the bottom, there's an 'Advanced Settings' section with a 'Reset Device' button and a 'Reset' button (which is highlighted with an orange border).

9 Troubleshooting

9.1 Error Codes

NOTICE!

- 0#: Master board
- 1#~7#: Slave board

Fault	0# board	1# board	2# board	3# board	4# board	5# board	6# board	7# board
Compressor low pressure alarm	97	193	289	385	481	577	673	769
Compressor high pressure alarm	98	194	290	386	482	578	674	770
Fin temp probe error	101	197	293	389	485	581	677	773
Exhaust temp probe error	102	198	294	390	486	582	678	774
Exhaust temp error	103	199	295	391	487	583	679	775
J5 pressure sensor error	104	200	296	392	488	584	680	776
J6 pressure sensor error	105	201	297	393	489	585	681	777
RRSs low pressure error	106	202	298	394	490	586	682	778
PRSD high pressure error	107	203	299	395	491	587	683	779
TS suction temp error	108	204	300	396	492	588	684	780
EVAP in temp error	109	205	301	397	493	589	685	781
TS low suction temp error	110	206	302	398	494	590	686	782
Defrost error	111	207	303	399	495	591	687	783
Suction and discharge temp difference error	112	208	304	400	496	592	688	784

Troubleshooting

Fault	0# board	1# board	2# board	3# board	4# board	5# board	6# board	7# board
Low evaporating temp error	113	209	305	401	497	593	689	785
TA restrict COMPf from turning on	115	211	307	403	499	595	691	787
Low TWin1 plate heat exchanger inlet water temp error	116	212	308	404	500	596	692	788
High TWin1 plate heat exchanger inlet water temp error	117	213	309	405	501	597	693	789
FANf1 fan motor speed error 1	118	214	310	406	502	598	694	790
FANf2 fan motor speed error 2	119	215	311	407	503	599	695	791
Inverter module communication error	124	220	316	412	508	604	700	796
Inverter module error	125	221	317	413	509	605	701	797
Compressor model setting	126	222	318	414	510	606	702	798
TECO1 temp. error	127	223	319	415	511	607	703	799
TECO2 temp. error	128	224	320	416	512	608	704	800
TRFgas sensor error	129	225	321	417	513	609	705	801
TRFliq sensor error	130	226	322	418	514	610	706	802
High evaporating temp error	131	227	323	419	515	611	707	803
Ambient temp error	161	257	353	449	545	641	737	833
Communication error	162	258	354	450	546	642	738	834
EEPROM error	163	259	355	451	547	643	739	835
IBH overload	164	260	356	452	548	644	740	836
Overload	165	261	357	453	549	645	741	837

Fault	0# board	1# board	2# board	3# board	4# board	5# board	6# board	7# board
Low plate heat exchanger outlet water temp error	166	262	358	454	550	646	742	838
High plate heat exchanger outlet water temp error	167	263	359	455	551	647	743	839
Plate heat exchanger outlet water temp sensor error	168	264	360	456	552	648	744	840
Water flow error	169	265	361	457	553	649	745	841
Lack-phase protection	170	266	362	458	554	650	746	842
Plate heat exchanger inlet water temp sensor error	171	267	363	459	555	651	747	843
TWout2 water temp error	172	268	364	460	556	652	748	844
Fault-phase protection	173	269	365	461	557	653	749	845
TWout1_TWin1_DIFF_LARGE	174	270	366	462	558	654	750	846
TWout1_TWin1_DIFF_ERR	175	271	367	463	559	655	751	847
PUMPf warning	176	272	368	464	560	656	752	848
Communication error	177	273	369	465	561	657	753	849
IDU and ODU communication error	178	274	370	466	562	658	754	850
Protocol version mismatch	179	275	371	467	563	659	755	851
Water pump failure	180	276	372	468	564	660	756	852
Mac model setting error	181	277	373	469	565	661	757	853

Fault	0# board	1# board	2# board	3# board	4# board	5# board	6# board	7# board
R290 sensor error	182	278	374	470	566	662	758	854
R290 leak error	183	279	375	471	567	663	759	855
Flow sensor error	184	280	376	472	568	664	760	856
Mac set error	185	281	377	473	569	665	761	857

9.2 Troubleshooting for Error Codes

Error code	Diagnosis and solution
10	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether there is any problem with the wiring of tank electric heating • Whether the tank electric heating is faulty • Whether the set temperature has been reached • Whether other components of the circuit are faulty
12	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether there is any problem with the wiring of DHW temperature probe • Whether the temperature probe is faulty • Whether other components of the circuit are faulty
14	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether there is any problem with the wiring of the system total outlet water temperature probe • Whether the temperature probe is faulty • Whether the set temperature has been reached • Whether other components of the circuit are faulty
84	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether there is any problem with the wiring of the air conditioner total outlet water temperature probe • Whether the temperature probe is faulty • Whether the set temperature has been reached • Whether other components of the circuit are faulty
97	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether the input status of the low pressure signal of compressor is normal • Whether there is any leakage of refrigerant

Error code	Diagnosis and solution
98	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether the input status of the low pressure signal of compressor is normal • Whether the compressor is running normally • Whether the unit is well ventilated • Whether the ambient temperature is too high • Whether the condenser heat dissipation is good • Whether the system is blocked • Whether the refrigerant charge is too much
102	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether the input status of the temperature signal is normal • Whether the refrigerant flow rate is stable • Whether the system load changes frequently • Whether there is any problem with the temperature probe
104	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether the input status of the pressure transmission signal is normal • Whether the refrigerant characteristics are affected • Whether the oil circulation is normal • Whether the pipeline is blocked • Whether the system vibration and shock are too large
111	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether the ambient humidity is high • Whether the temperature is low • Whether the refrigerant charge is insufficient • Whether the wind speed is too low • Whether the sensor failure leads to wrong judgment and defrosting • Whether the defrosting parameter setting is reasonable • Whether the defrosting method is reasonable.
112	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether the refrigerant charge is abnormal • Whether the refrigerant leaks • Whether the evaporator or condenser is faulty • Whether the compressor is abnormal • Whether there is any mixing of air in the system • Whether there is any problem with the throttling device
116/117	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether the pipeline is blocked • Whether the plate heat exchanger is leaking • Whether the water flow rate is abnormal • Whether the temperature of hot-side medium is abnormal • Whether the temperature of cold side medium is abnormal

Error code	Diagnosis and solution
118	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether there is electrical faults • Whether there is control system fault • Whether the fan impeller or fan shaft is faulty • Whether the air circulation is not smooth • Whether the ambient temperature is too high or too low
125	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether the driver board is faulty • Whether there is a large external interference • Whether the parameter setting is improper
162	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether the wiring connection is right • Whether the communication module is faulty • Whether there is a large electromagnetic interference • Whether there is a problem with the software
163	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether the EEPROM chip is damaged • Whether the circuit is connected incorrectly • Whether the software is incompatible • Whether there is any error in data writing
164	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether there is any problem of IBH wiring • Whether the IBH is faulty • Whether the set temperature has been reached • Whether other components of the circuit are faulty
169	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether the pipeline is blocked • Whether the pump is faulty • Whether there is air in the system • Whether the water level is too low
170	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether the power supply is connected incorrectly • Whether the electrical equipment is faulty
173	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether the power supply is faulty • Whether the external circuit changes
178	<p>Check the following items:</p> <ul style="list-style-type: none"> • Whether the wiring connection is right • Whether the communication module is faulty • Whether there is a large electromagnetic interference • Whether there is a problem with the software or parameter setting • Whether there is a problem with the voltage

Error code	Diagnosis and solution
182	<p>Check the following items:</p> <ul style="list-style-type: none">• Whether the circuit is faulty• Whether the sensor is faulty• Whether other parts of the refrigeration system are faulty
183	<p>Check the following items:</p> <ul style="list-style-type: none">• Whether the software reports incorrect information• Whether sensors are damaged• Whether pipe connections are not tight• Whether pipes are broken• Whether components of the unit are damaged

NOTICE!

- Only some of the error codes are given here for troubleshooting, if there are other types of errors, please contact technical support.

10 Maintenance

By user

Items	Check notes	Maintenance interval
General	Clean around the indoor unit	Once a month
	Clean the piping around the indoor unit	Once a month

By installer

Items	Check notes	Maintenance interval
General	Check if all the parts are in the proper position	Once a year
	Check for leaks in the water loop	Once a year
	Check that the backup heater is well insulated	Once a year
	Check that the water pressure reducing valve in the DHW water loop is working properly	Once a year
	Check that the TBH in the DHW water tank is clean and in good condition	Once a year
	Check that the 3-way valve is switching well	Once a year
	Check whether the temperature probe is normal	Once a year
	Check whether all kinds of water pumps work properly	At all times if problems arise
	Check whether the communication cable of the indoor unit is working properly	At all times if problems arise
	Check whether the wired controller is working properly	At all times if problems arise
Electrics	Check the appearance of the power transformer and isolation transformer, and check the output voltage	Once a year
	Check whether the control board, drive board, display board, sensors are aged or not	Once a year
	Check and fasten the input and output plugs of control board, including the connection between driver board and control board, and the connection between control board and sensors	Once a year

Items	Check notes	Maintenance interval
Electrics	Check whether the contact suction of the contactor has arc and burn marks, and whether the suction is flexible	Once a year
	Check whether the wiring terminal is correctly connected to the control board	Once a year
	Check the output connections between the control board and each contactor, the input connections of the fan capacitor, high and low voltage switches, etc.	Once a year
	Note: Focus on the plug terminals (such as high and low pressure switches and electronic expansion valves). If they are loose or in poor contact, please replace them immediately.	Once a year
	Check electrical components such as control panels that are prone to problems	Once a year
	Check the specifications and aging condition of the power cable, and replace the cable if necessary	Once a year
	Check whether other wiring is normal	Once a year
Mechanical	Check whether the external heat source is working properly	Once a year
	Check whether the fan and motor are working properly	Once a year

11 Technical Data

Control Unit

Model	STN1-C01					
Power supply	220-240 V 1N~ 50 Hz					
Rated current	0.1 A					
User interface	4 inch high-resolution touch panel					
Communication	WiFi/Ethernet/RS485					
Installation	Wall mounting					
Dimensions (WxHxD)	340 x 400 x 80 mm					
Weight	6.5 kg					

Hydraulic Unit

Model	STN1-C02(3)	STN1-C02(6)	STN1-C02(9)	STN3-C02(3)	STN3-C02(6)	STN3-C02(9)
Power supply	220-240 V 1N~ 50 Hz			380-415 V 3N~ 50 Hz		
Rated current	14 A	26 A	41 A	4.5 A	8.7 A	13.5 A
User interface	4 inch high-resolution touch panel					
Communication	WiFi / Ethernet / RS485					
Backup heater	Capacity combination	3.0 kW + 6.0 kW				
	Power supply	220-240 V 1N~ 50 Hz			380-415 V 3N~ 50 Hz	
	Rated running current	14 A	26 A	41 A	4.5 A	8.7 A
Expansion tank size	8 L					
Piping connections (water)	(G1")/(G1-1/4")*					
Recommend circuit breaker	20 A	26 A	63 A	6 A	16 A	20 A
Installation	Wall mounting					
Net dimensions (WxHxD)	420 x 700 x 265 mm					
Net weight	33 kg					

*G1 connects to indoor water pipe, G1-1/4 connects to outdoor unit water outlet.

Hydraulic Integrated Unit

Model	STN1-C03(3)	STN1-C03(6)	STN1-C03(9)	STN3-C03(3)	STN3-C03(6)	STN3-C03(9)
Power supply	220-240 V 1N~ 50 Hz			380-415 V 3N~ 50 Hz		
Rated current	14 A	26 A	41 A	4.5 A	8.7 A	13.5 A
User interface	4 inch high-resolution touch panel					
Communication	WiFi / Ethernet / RS485					
Backup heater	Capacity combination	3.0 kW + 6.0 kW				
	Power supply	220-240 V 1N~ 50 Hz			380-415 V 3N~ 50 Hz	
	Rated running current	14 A	26 A	41 A	4.5 A	8.7 A
Expansion tank size	18 L + 8 L					
DHW tank size	190 L					
Piping connections (water)	(G1")/(G1-1/4")*					
Recommend circuit breaker	20 A	26 A	63 A	6 A	16 A	20 A
Installation	Floor standing					
Net dimensions (WxHxD)	595 x 700 x 1875 mm					
Net weight	186 kg					

*G1 connects to indoor water pipe, G1-1/4 connects to outdoor unit water outlet.

Technical Data

Model	STN1-C03 (3W3)	STN1-C03 (6W3)	STN1-C03 (9W3)	STN3-C03 (3W3)	STN3-C03 (6W3)	STN3-C03 (9W3)	
Power supply	220-240 V 1N~ 50 Hz			380-415 V 3N~ 50 Hz			
Rated current	14 A	26 A	41 A	4.5 A	8.7 A	13.5 A	
User interface	4 inch high-resolution touch panel						
Communication	WiFi / Ethernet / RS485						
Backup heater	Capacity combination	3.0 kW + 6.0 kW					
	Power supply	220-240 V 1N~ 50 Hz			380-415 V 3N~ 50 Hz		
	Rated running current	14 A	26 A	41 A	4.5 A	8.7 A	13.5 A
Expansion tank size	18 L + 8 L						
DHW tank size	190 L						
Piping connections (water)	(G1")/(G1-1/4")*						
Recommend circuit breaker	20 A	26 A	63 A	6 A	16 A	20 A	
Installation	Floor standing						
Net dimensions (WxHxD)	595 x 700 x 1875 mm						
Net weight	186 kg						

*G1 connects to indoor water pipe, G1-1/4 connects to outdoor unit water outlet.

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Warranty Registration

Please visit the website: <https://www.solaxcloud.com/user-center/> to complete the warranty registration. For more detailed warranty terms, please visit SolaX official website: www.solaxpower.com.



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