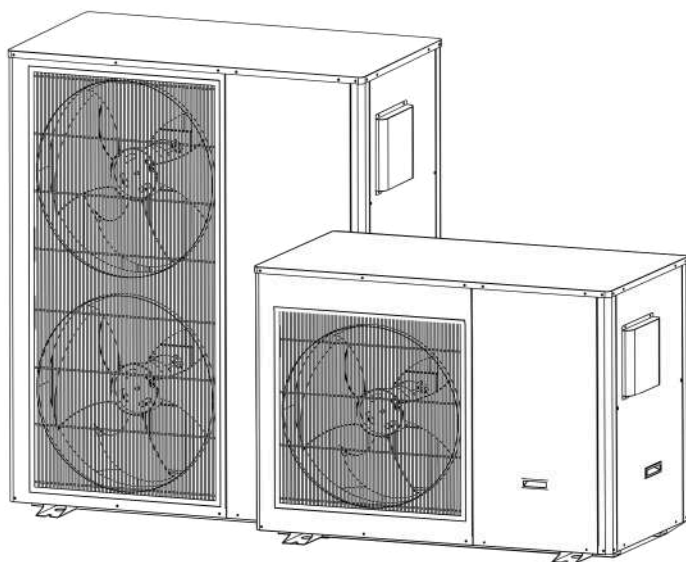




DC INVERTER Heat Pump

Installation Manual&User Manual

Air to Water Heat Pump
Heating+Cooling+DHW



Attention

Thank you for choosing our product, we shall be more than glad to service you. For you to better operate this product and to prevent accidents due to misoperation, please read carefully this user manual before carrying out any installation or operation, also please pay special attention to the warning, prohibition and attention instructions. We are continuously supplementing and upgrading this user manual to better service for you!

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Part 1. Before Use

1.Attentions



Warning



Caution



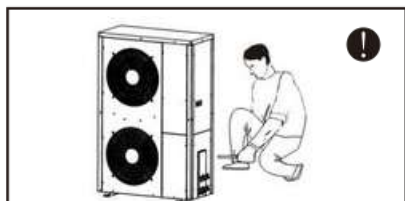
Prohibition



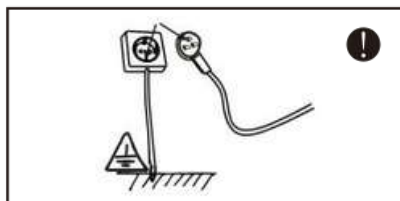
This appliance is not intended for use by persons, including children, with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.



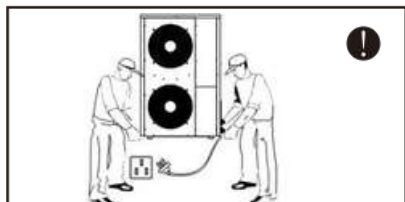
Be sure to read this manual before use.



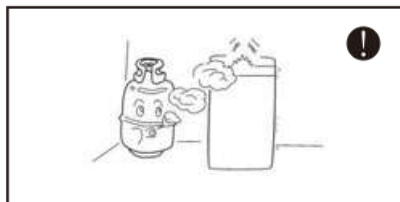
Be sure to read this manual before use. The installation, dismantling and maintenance of the unit must be performed by qualified personnel. It is forbidden to do any change to the structure of the unit. Otherwise injury of person or unit damage might happen.



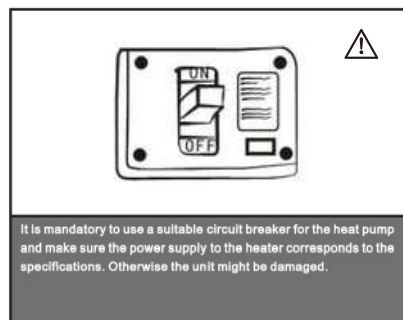
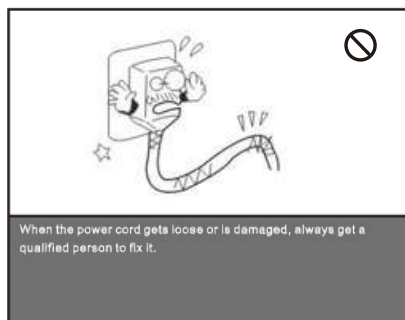
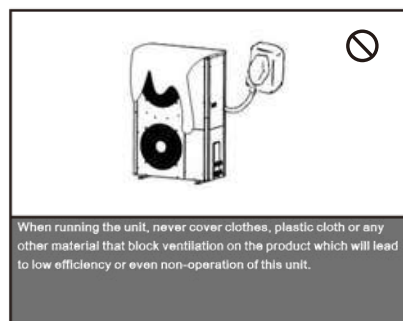
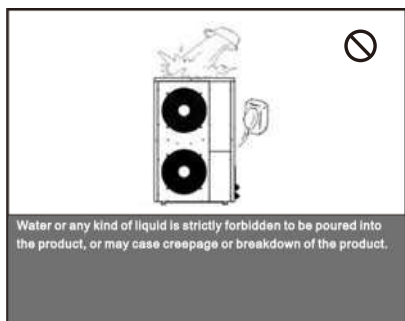
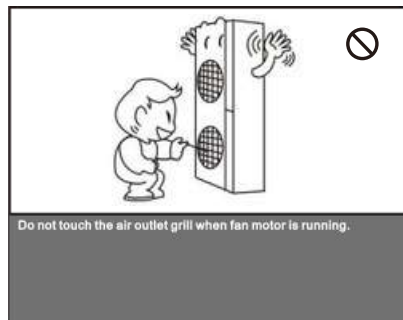
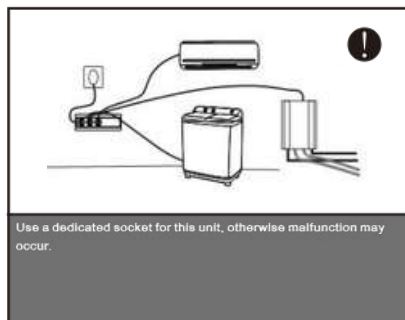
The power supply to the unit must be grounded.



Make sure the power supply to the heat pump unit is off before any operations are done on the unit. When the power cord gets looser or is damaged, always get a qualified person to fix it.



Keep the unit away from the combustible or corrosive environment.



safety precaution

2. Installation instructions

1. Installation should comply with local regulations and requirements .
2. Choose a suitable space for use (please refer to indoor/outdoor unit location selection) .
3. The cooling capacity/ heating capacity of the heat pump should be compatible with the size , height , and heat insulation effect of the room .
4. Before installation, be sure to confirm the neutral line , L , N , A phase , B phase , C phase ,ground line of the user power supply and the neutral line of the heat pump , L , N , A phase , B phase , C phase, ground One correspondence .
5. This heat pump complies with the safety and operation standards issued by the country.
6. When the heat pump needs to be installed or moved. It must be operated by professional refrigeration installation and maintenance personnel. Heat pumps installed by non-professionals are prone to quality or safety problems .
7. The user should provide a power supply that satisfies the installation and use . The allowable range of voltage that can be used by this product is $\pm 10\%$ of the rated value. If this range is exceeded , it will affect the normal operation of the heat pump. If necessary, use a voltage stabilizer to avoid property damage .
8. The heat pump must have an independent circuit . The independent circuit needs to install a leakage protector and an automatic circuit breaker. Need to be purchased by the user.
9. The heat pump should be installed in accordance with the national wiring regulations .
10. The heat pump must be grounded correctly and reliably, otherwise it may cause electric shock or fire.
11. Please do not turn on the power of the heat pump until the piping and wires are connected and carefully checked.

3. R290 refrigerant introduction

The heat pump uses environmentally friendly R290 refrigerant . This is a slightly flammable refrigerant . Although it can burn and explode under certain conditions , as long as it is installed in a room of the correct area and used correctly, there will be no danger of combustion and explosion. Compared with ordinary refrigerants , R290 is an environmentally friendly refrigerant that does not destroy the ozone layer, and its greenhouse effect value is also very low.

- Be aware that refrigerants may not contain an odour.

safety precaution



WARNING

1. Please read this manual before installation , operate and maintenance .
2. Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer
3. Pls do not puncture or ignite the heat pump .
4. The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater.)
5. When repairs are required , please contact the nearest after-sales service center. When repairing , you must strictly abide by the operation manual provided by the manufacturer, and it is forbidden to repair by non-professionals .
6. Pls comply with the relevant national gas laws and regulations .
7. The refrigerant in the system needs to be recovered and removed during maintenance or disposal .
8. Servicing shall be performed only as recommended by the manufacturer.
9. The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
10. All working procedure that affects safety means shall only be carried by competent persons.



R290 refrigerant



Read the manual
before use

Detection of flammable refrigerants

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

safety precaution

Transport 、 Storage

- Transport of equipment containing flammable refrigerants.

Compliance with the transport regulations.

- Marking of equipment using signs.

Compliance with local regulations.

- Disposal of equipment using flammable refrigerants.

Compliance with national regulations.

- Storage of equipment/appliances .

The storage of equipment should be in accordance with the manufacturer's instructions.

- Storage of packed (unsold) equipment .

Storage package protection should be constructed such that mechanical damage to the equipment inside the package will not cause a leak of the refrigerant charge.

The maximum number of pieces of equipment permitted to be stored together will be determined by local regulations.

4.Information on servicing

Repairs to sealed components

- During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.

- Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.

1. Ensure that apparatus is mounted securely.
2. Ensure that seals or sealing materials have not degraded such that they no longer serve the purpose of preventing the ingress of flammable atmospheres. Replacement parts shall be in accordance with the manufacturer's specifications.

NOTE: The use of silicon sealant may inhibit the effectiveness of some types of leak detection equipment. Intrinsically safe components do not have to be isolated prior to working on them.

safety precaution

Repair to intrinsically safe components

- Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.
- Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating. Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

Cable

- Check whether the cable will be affected by wear, corrosion ,overpressure , vibration , sharp edges or other adverse environments . The inspection should also consider the influence of aging or continuous vibration of the compressor and fan on the cable .

Leak detection methods

- The following leak detection methods are deemed acceptable for systems containing flammable refrigerants.
- Electronic leak detectors shall be used to detect flammable refrigerants, but the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed and the appropriate percentage of gas (25 % maximum) is confirmed.
- Leak detection fluids are suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.
- If a leak is suspected, all naked flames shall be removed/ extinguished.
- If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak. Oxygen free nitrogen (OFN) shall then be purged through the system both before and during the brazing process.

safety precaution

Remove and vacuum

- When breaking into the refrigerant circuit to make repairs – or for any other purpose – conventional procedures shall be used. However, it is important that best practice is followed since flammability is a consideration. The following procedure shall be adhered to:
 1. Remove refrigerant;
 2. Purge the circuit with inert gas;
 3. Evacuate;
 4. Purge again with inert gas;
 5. Open the circuit by cutting or brazing.
- The refrigerant charge shall be recovered into the correct recovery cylinders. The system shall be “flushed” with OFN to render the unit safe. This process may need to be repeated several times. Compressed air or oxygen shall not be used for this task.
- Flushing shall be achieved by breaking the vacuum in the system with OFN and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. When the final OFN charge is used, the system shall be vented down to atmospheric pressure to enable work to take place. This operation is absolutely vital if brazing operations on the pipe-work are to take place.
- Ensure that the outlet for the vacuum pump is not close to any ignition sources and there is ventilation available.

Procedure of refrigerant filling

- In addition to conventional charging procedures, the following requirements shall be followed.
 1. Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them.
 2. Cylinders shall be kept upright.
 3. When filling refrigerant, there should be without the fire source near the unit;
 4. Ensure that the refrigeration system is earthed prior to charging the system with refrigerant.
 5. Label the system when charging is complete (if not already).
 6. Extreme care shall be taken not to overfill the refrigeration system.

safety precaution

7. Prior to recharging the system it shall be pressure tested with OFN. The system shall be leak tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

Checks to the area

- Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimised. For repair to the refrigerating system, the following precautions shall be complied with prior to conducting work on the system.

Work procedure

- Work shall be undertaken under a controlled procedure so as to minimise the risk of a flammable gas or vapour being present while the work is being performed.

General work area

- All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided. The area around the workspace shall be sectioned off. Ensure that the conditions within the area have been made safe by control of flammable material.

Checking for presence of refrigerant

- The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with flammable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.

Presence of fire extinguisher

- If any hot work is to be conducted on the refrigeration equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO₂ fire extinguisher adjacent to the charging area.

No ignition sources

- No person carrying out work in relation to a refrigeration system which involves exposing any pipe work that contains or has contained flammable refrigerant shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which flammable refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. "No Smoking" signs shall be displayed.

safety precaution

Ventilated area

- Ensure that the work area is open or fully ventilated before opening the system or performing thermal processing operations. Keep ventilation during operation. Ventilation will safely dilute the leaked refrigerant and quickly discharge it into the atmosphere .

Checks to the refrigeration equipment

- Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt consult the manufacturer's technical department for assistance.
- The following checks shall be applied to installations using flammable refrigerants:
 1. The charge size is in accordance with the room size within which the refrigerant containing parts are installed;
 2. The filling amount should be determined according to the marked amount on the heat pump's rating plate ;
 3. The ventilation machinery and outlets are operating adequately and are not obstructed;
 4. If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant;
 5. Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected;
 6. Refrigeration pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components;
 7. unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

Checks to electrical devices

- Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised.

Initial safety checks shall include:

1. That capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;
2. That there no live electrical components and wiring are exposed while charging, recovering or purging the system
3. That there is continuity of earth bonding.

safety precaution

Scrapping

- Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of reclaimed refrigerant. It is essential that electrical power is available before the task is commenced.
 1. Become familiar with the equipment and its operation.
 2. Isolate system electrically.
 3. Before attempting the procedure ensure that:
 - Mechanical handling equipment is available, if required, for handling refrigerant cylinders;
 - All personal protective equipment is available and being used correctly;
 - The recovery process is supervised at all times by a competent person;
 - Recovery equipment and cylinders conform to the appropriate standards.
 4. Pump down refrigerant system, if possible.
 5. If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
 6. Make sure that cylinder is situated on the scales before recovery takes place.
 7. Start the recovery machine and operate in accordance with manufacturer's instructions.
 8. Do not overfill cylinders. (No more than 80 % volume liquid charge).
 9. Do not exceed the maximum working pressure of the cylinder, even temporarily.
 10. When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
 11. Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.

Recovery

- When removing refrigerant from a system, either for servicing or decommissioning , it is recommended good practice that all refrigerants are removed safely.
- When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

safety precaution

- The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of flammable refrigerants. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical
- components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt. The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant Waste Transfer Note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.
- If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely.

Labelling

- Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. Ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

5. Maintenance safety matters

WARNING

- For repairs or scrapping, please contact the nearest or authorized service center. Repairs performed by unqualified personnel may be dangerous .
- When charging the heat pump with R290 refrigerant and maintaining it, please strictly observe the manufacturer's requirements . This chapter mainly focuses on the special maintenance requirements of R290 refrigeration appliances. Please refer to the after-sales service manual for detailed maintenance operations .
- Qualification requirements for maintenance personnel

safety precaution

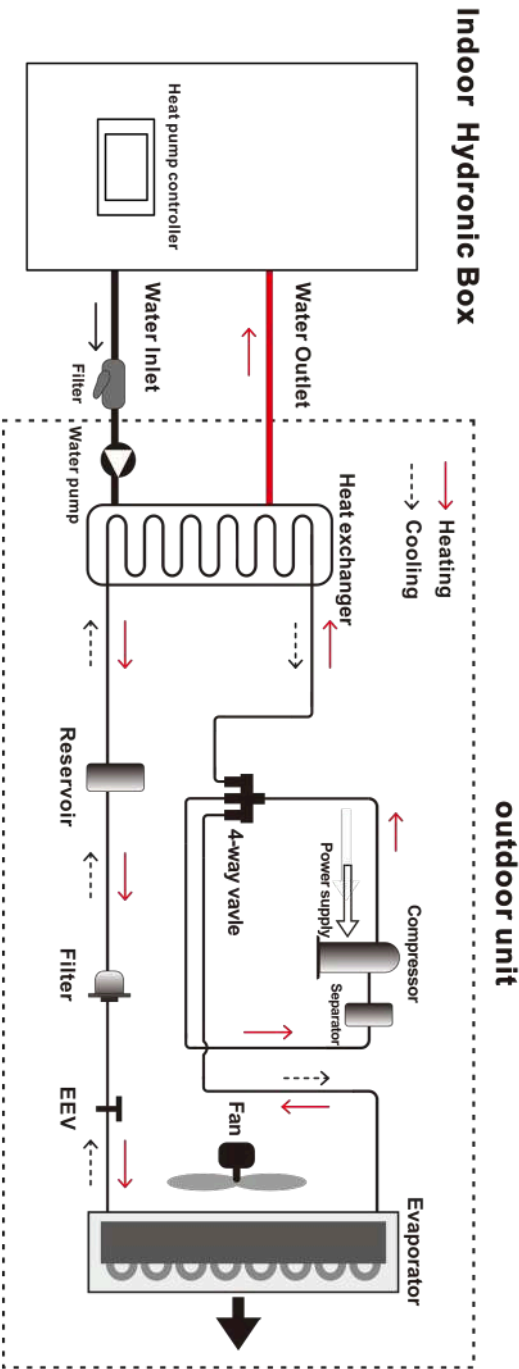
1. All operating personnel or refrigeration circuit maintenance personnel should obtain a valid certificate issued by an industry- recognized evaluation agency to determine that they have the qualifications for safe handling of refrigerants as required by the industry-recognized evaluation specifications .
2. The maintenance and repair of the equipment can only be carried out in accordance with the method recommended by the equipment manufacturer. If other professionals are required to assist in maintaining and repairing the equipment , it should be carried out under the supervision of personnel qualified to use flammable refrigerants .



WARNING

1. To avoid electrical shock , make sure to disconnect power supply 1minute or more before operating the electrical part. Even after 1minute , always measure the voltage at the terminals of main circuit capacitors or electrical parts and, before touching, make sure those voltages are lower than the safety voltage.
2. Power supply wire line size must be selected according to this manual. And must be grounded.
3. Don't put in hands or stick to air outlet grill when fan motor are working.
4. Don't use wet hand touch wire lines , and don't pull any wire lines of the unit .
5. Water or any other kind liquid is forbidden to poured into the unit .
6. Select correct air breaker and leakage protection switch .
7. Don't touch the fin of source side heat exchanger, it may hurt your finger.
8. If any wire line is loose or damaged , suggest let qualified person to fix i

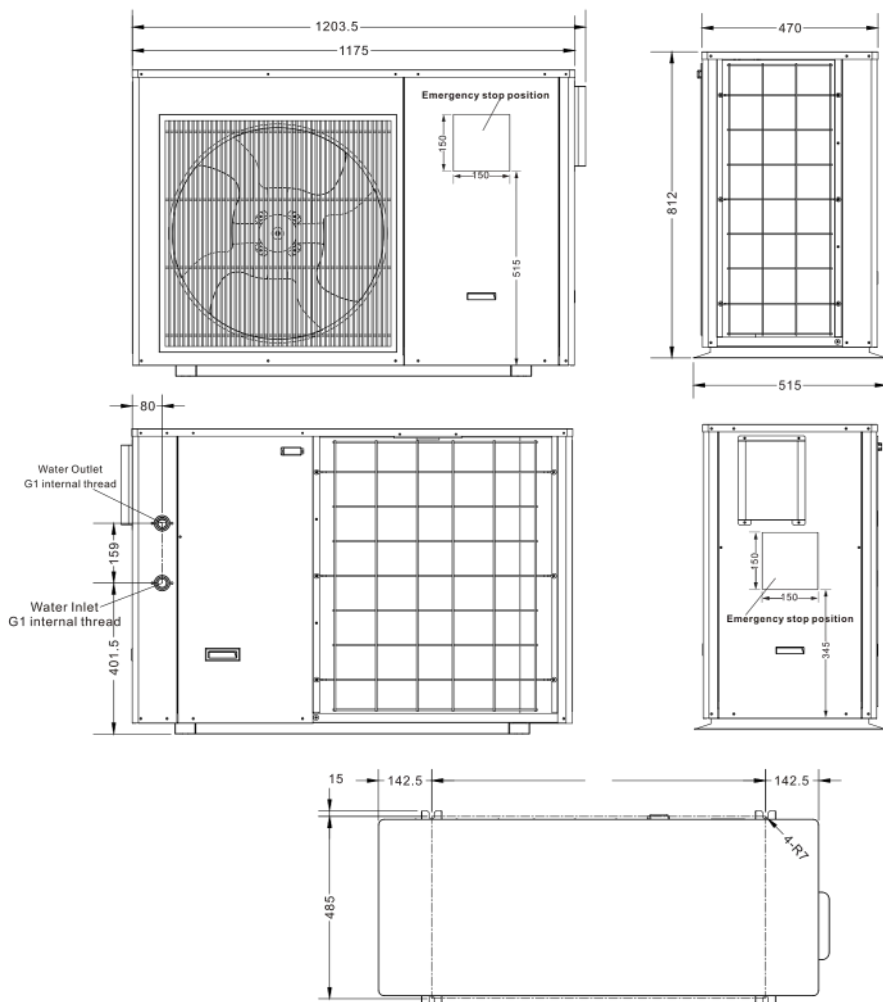
6. Functioning Principles



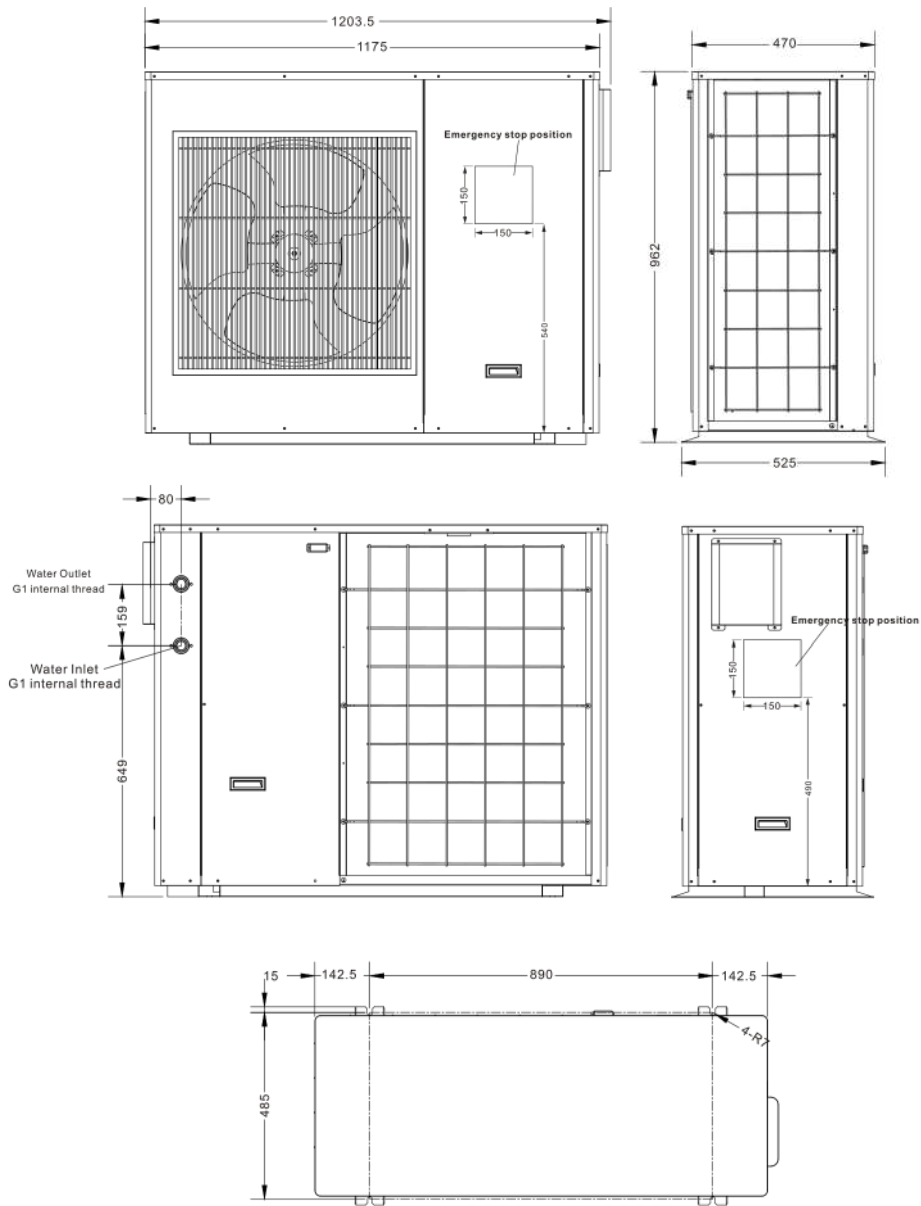
7. Emergency switch installation location instructions:

According to the following model diagram, each model has two recommended installation positions. in the recommended box area can be drilled and screwed, the drilling bit or the screwed projection should not exceed 30mm in depth when drilling.

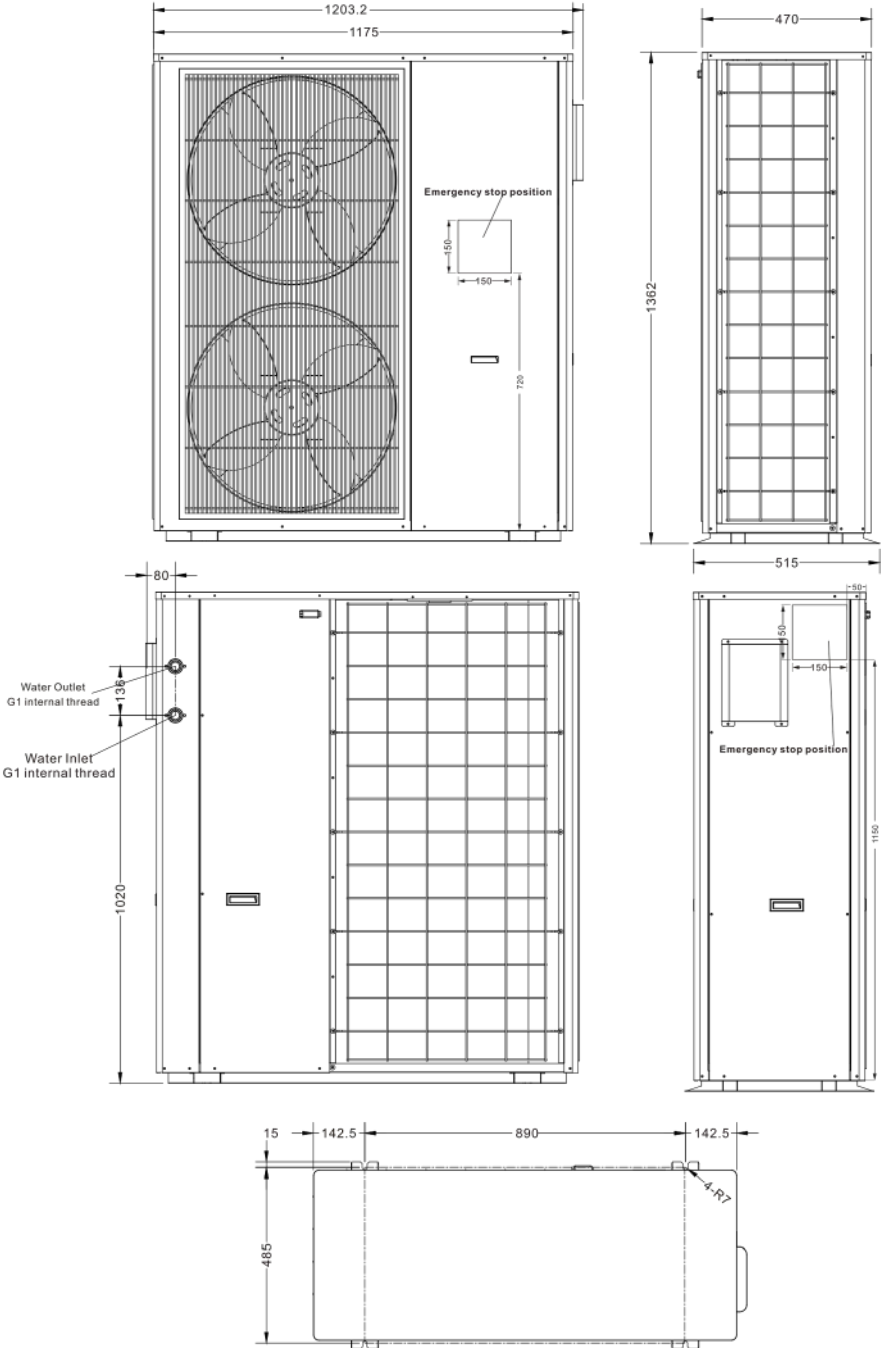
9.5kw-12kw



15kw



22kw



Outdoor unit

Model	Power Supply	Size(L*W*H mm)	Net Weight(KG)
WESTON-JN-MN-R290-9.5KW-1F	220-240VAC/1N/50-60Hz	1204*475*812	110
WESTON-JN-MN-R290-9.5KW-3F	220-240VAC/1N/50-60Hz	1204*475*812	110
WESTON-JN-MN-R290-12KW-1F	220-240VAC/1N/50-60Hz	1204*475*812	118
WESTON-JN-MN-R290-12KW-3F	380-415VAC/3N/50-60Hz	1204*475*812	118
WESTON-JN-MN-R290-15KW-1F	220-240VAC/1N/50-60Hz	1204*475*962	125
WESTON-JN-MN-R290-15KW-3F	380-415VAC/3N/50-60Hz	1204*475*962	125
WESTON-JN-MN-R290-22KW-1F	220-240VAC/1N/50-60Hz	1204*475*1362	139
WESTON-JN-MN-R290-22KW-3F	380-415VAC/3N/50-60Hz	1204*475*1362	140

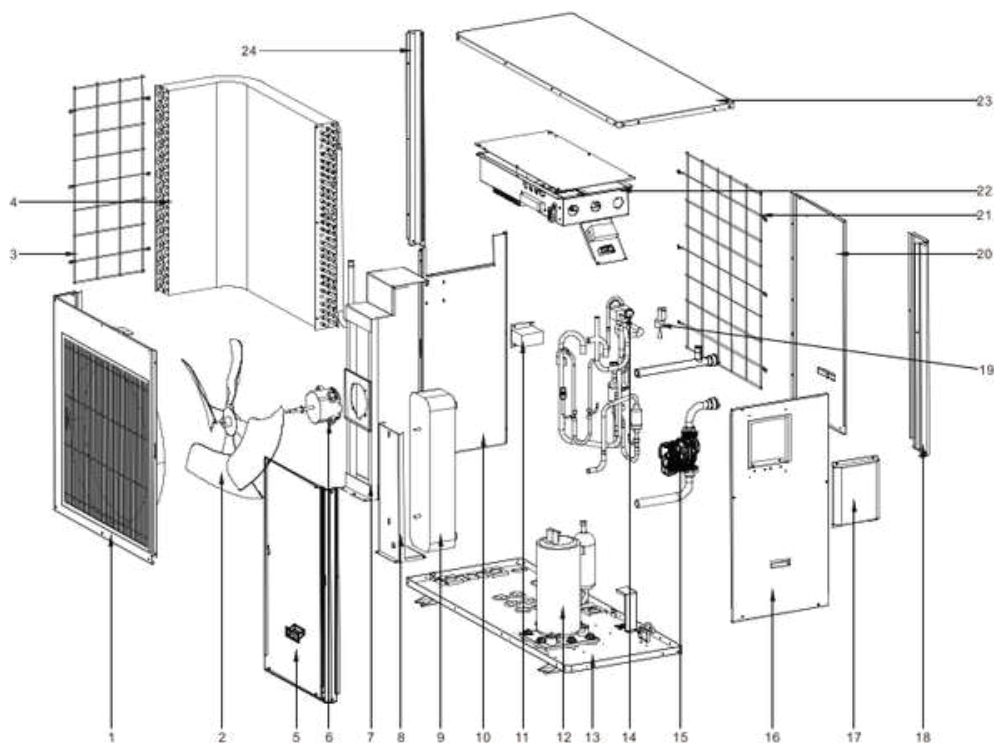
Indoor Hydronic Box

Model	Power Supply	Size(L*W*H mm)	Net Weight(KG)
HB01	220-240VAC/1N/50-60Hz	600*290*825	31
HB02	220-240VAC/1N/50-60Hz	600*290*825	31
HB03	220-240VAC/1N/50-60Hz	600*290*825	35
HB04	380-415VAC/3N/50-60Hz	600*290*825	32
HB05	380-415VAC/3N/50-60Hz	600*290*825	32
HB06	380-415VAC/3N/50-60Hz	600*290*825	36

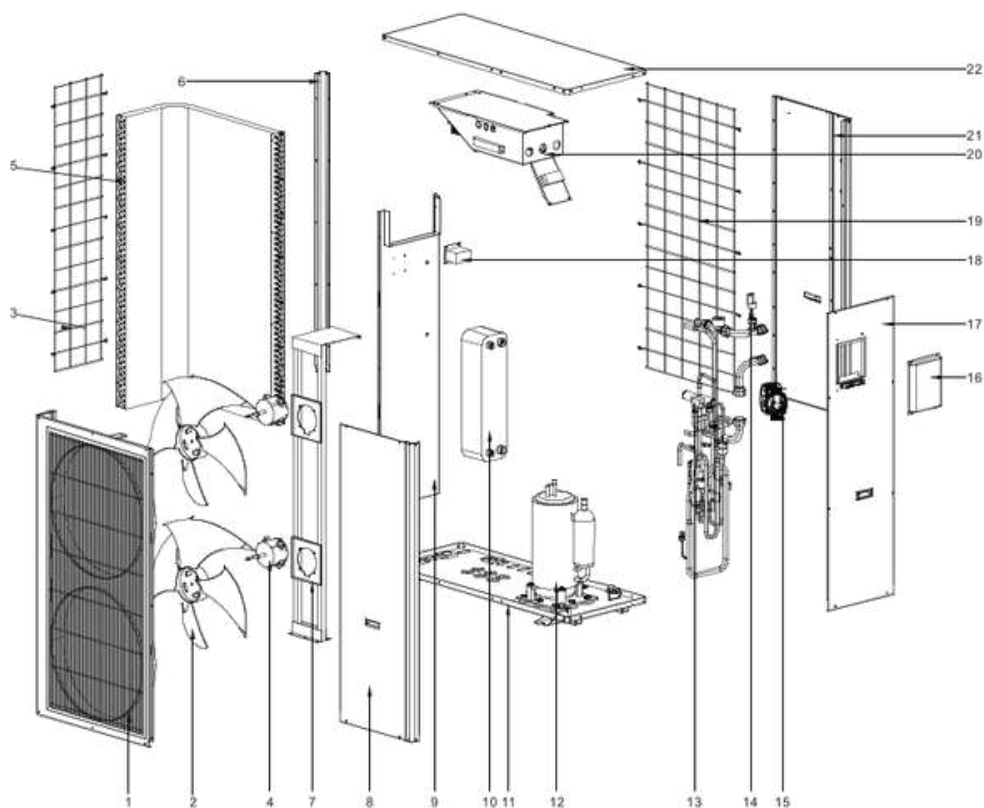
An experience values for different houses

Apartment (W/m ²)		Single house (W/m ²)	
Living room	100~130	Living room	120~150
Bedroom	110~140	Bedroom	120~150
Study room	100~120	Study room	110~130

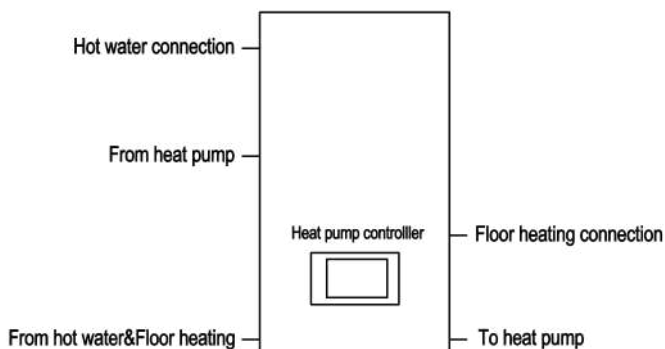
Mode	Cooling	Heating
Ambient temperature range	10°C~46°C	-25°C~45°C
Outlet water temperature range	7°C~20°C	30°C~70°C



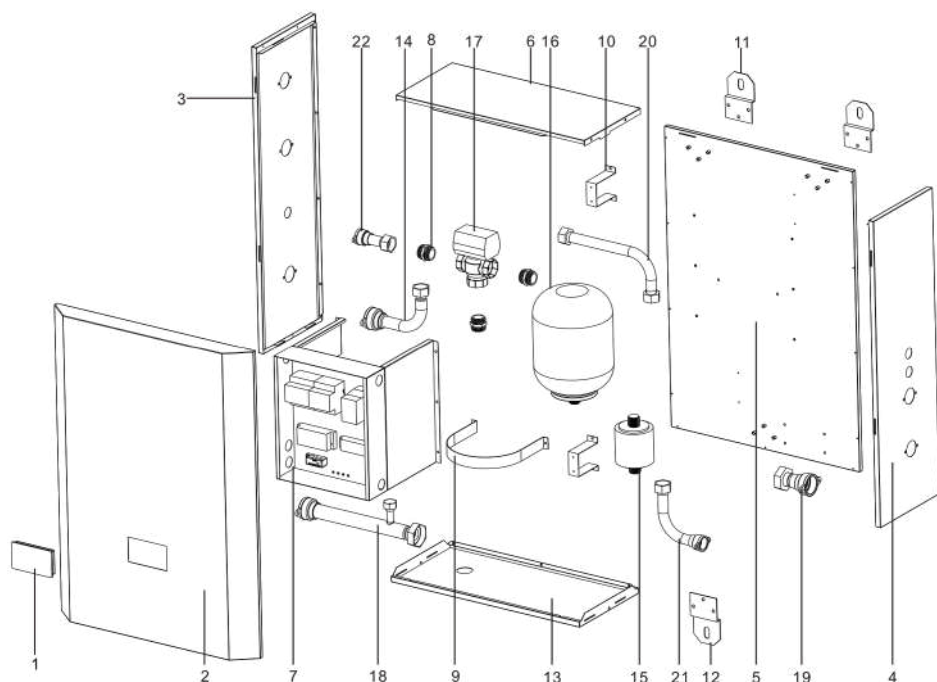
1	Front plate	9	Plate heat exchanger	17	Handle
2	Fan	10	Middle plate	18	Behind right plate
3	Left the protection net	11	Reactance	19	Water switch
4	Evaporator	12	Compressor	20	Behind plate
5	Front right plate	13	Chassis component	21	After the protection net
6	Motor	14	Four-way valve	22	Electronic components
7	Motor support	15	Pump	23	Top cover
8	Heat exchanger support	16	Right plate	24	Left plate



1	Front plate	9	Middle plate	17	Right plate
2	Fan	10	Plate heat exchanger	18	Reactance
3	Left the Protection net	11	Chassis component	19	After the protective net
4	Motor	12	Compressor	20	Electronic components
5	Evaporator	13	Four-way valve	21	Behind plate
6	Left plate	14	Water switch	22	Top cover
7	Motor support	15	Pump		



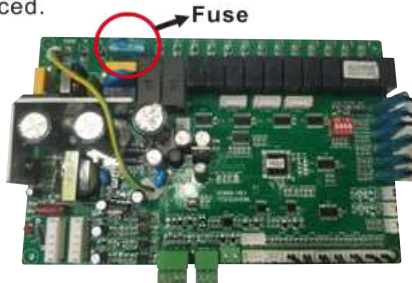
Indoor Hydronic Box



1	Controller	9	Fix of Expansion tank	17	Three-way valve
2	Front plate	10	Hold of water pipe	18	Inlet Pipe of Pump
3	Left plate	11	Hanger	19	Outlet Pipe of Pump
4	Right plate	12	Hanger2	20	Inlet pipe of electric heater
5	Back plate	13	Lower panel	21	Outlet pipe of electric heater
6	Top Cover	14	Copper connector	22	Connection pipe of three-way valve
7	Electronic components	15	Electric heater		
8	Connection pipe of three-way valve	16	Expansion tank		

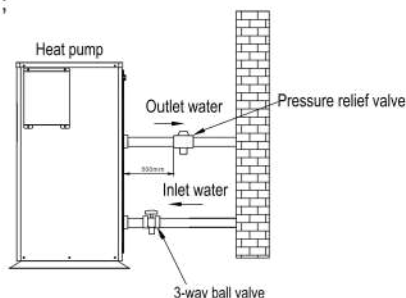
1. Fuses on the main power board:

After the protection of the power fuse on the main board is burned, the whole main board needs to be replaced.



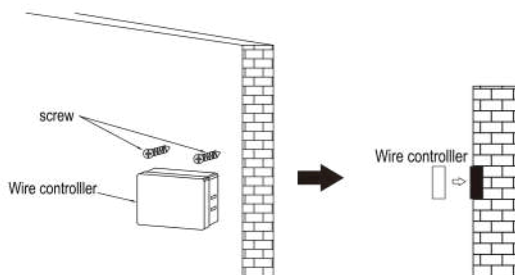
2, the installation location of the water circuit pressure relief valve:

When installing the connecting water system, it is necessary to add a pressure relief valve at the outlet of the machine (distance from the outlet interface not more than 500mm, and ensure that the pressure relief valve is installed in the outdoor, can not be installed in the indoor waterway), the pressure relief valve pressure relief for 0.6MPa (default, adjustable);



3, the Installation of the wire controller:

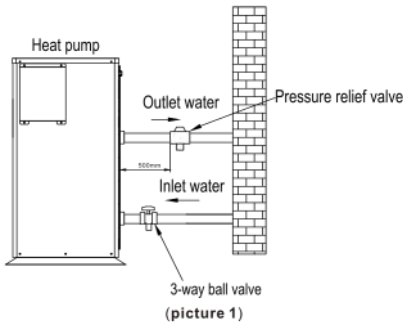
The wire controller must be embedded in the wall and installed reliably to ensure that it cannot touch the back of the wire controller.



4. Protection of the connection line of the heat pump and the wire controller: When installing the connection line of the machine and the wire controller, the connection line is drawn from the machine to the wire controller board connector section, the wire body is not allowed to be exposed, and the wire tube needs to be protected.

When there is a power outage, the water in the heat pump water circulation system needs to be drained clean to prevent prevent freezing the heat pump.

- 1.Open the three-way ball valve of the heat pump inlet (see picture 1).
- 2.Open the needle valve at the inlet of the heat exchanger inside the heat pump (picture 2).



(picture 2)

8.Water pump
Pump information



GPA25-9H



GPA25-11H

GPA25-9H

Basic parameters

Energy Efficiency Index (EEI)	≅0.21
Max.delivery head	9m
Max.volume flow	4.5m3/h
Rated .volume flow	2.5m3/h

Power

Main connection	1P 220-240VAC ,50/60Hz
Power(W)	10-95
Electri current(A)	0.1-0.9

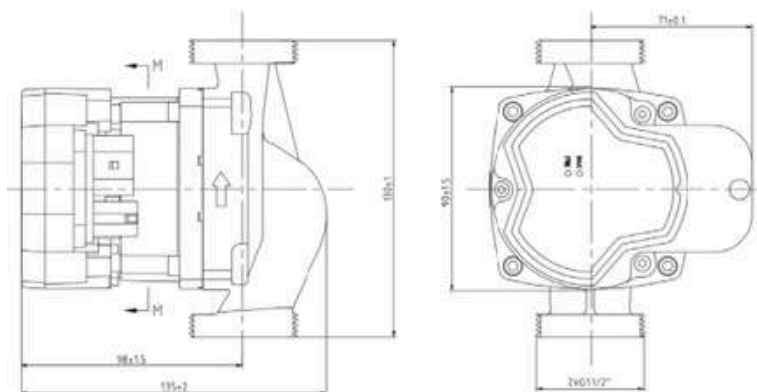
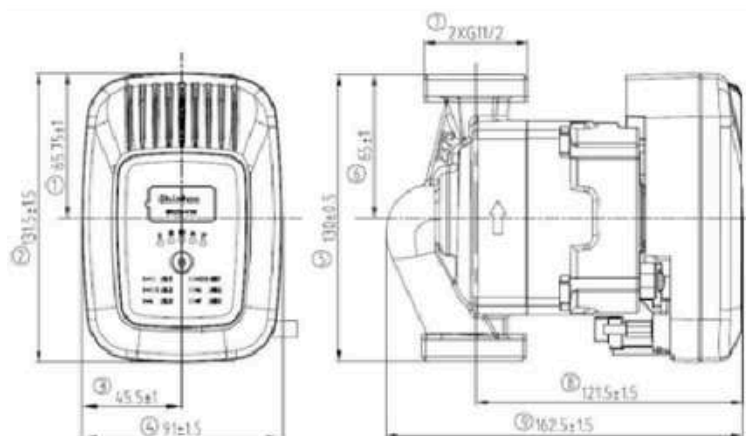
GPA25-11H

Basic parameters

Energy Efficiency Index (EEI)	$\cong 0.21$
Max.delivery head	11m
Max.volume flow	5.5m ³ /h
Rated .volume flow	3.5m ³ /h

Power

Main connection	1P 220-240VAC ,50/60Hz
Power(W)	10-140
Electri current(A)	0.3-1.2

**GPA25-9H****GPA25-11H**

9.Heat pump installation and wiring

9.1.1Heat pump installation location and attentions

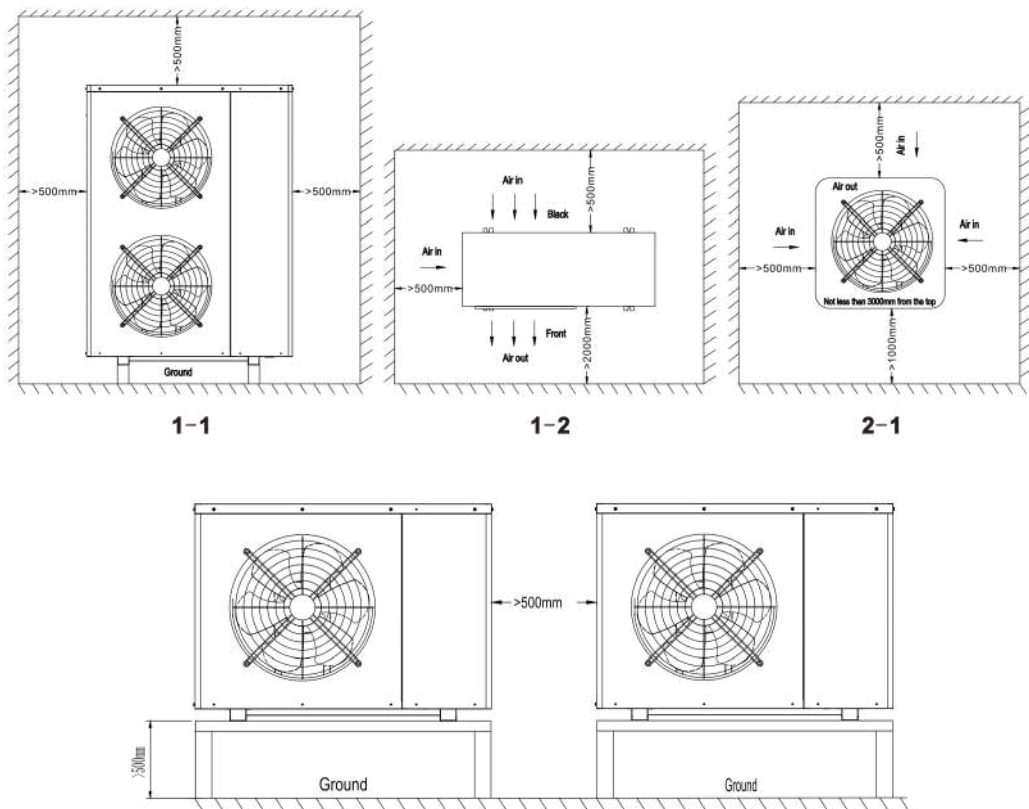
Heat pump is not allowed to be installed in the place where combustible gas may leaks.

Heat pump is not allowed to be installed in the place where there is oil or corrosion gas released.

Heat pump should be installed in a open space, and good ventilating.

Heat pump each side to wall or barrel should be keep certain distance, air outlet to barrel distance should 2m,air inlet distance to wall or barrel 0.5m,bottom distance to ground 0.5m,other side distance should be enough for installation or repairing.

*Heat pump should be installed on concrete basic or steel bracket, and anti-shock pad should be put between heat pump and basic or bracket. Then use expansion bolt to fix heat pump on bracket. Water drainage pipe and ditch should be set around heat pump and water pipes and water tank. When testing or repairing, maybe need drain plenty of water, and when heat pump is working, there are some condensed water flow down.

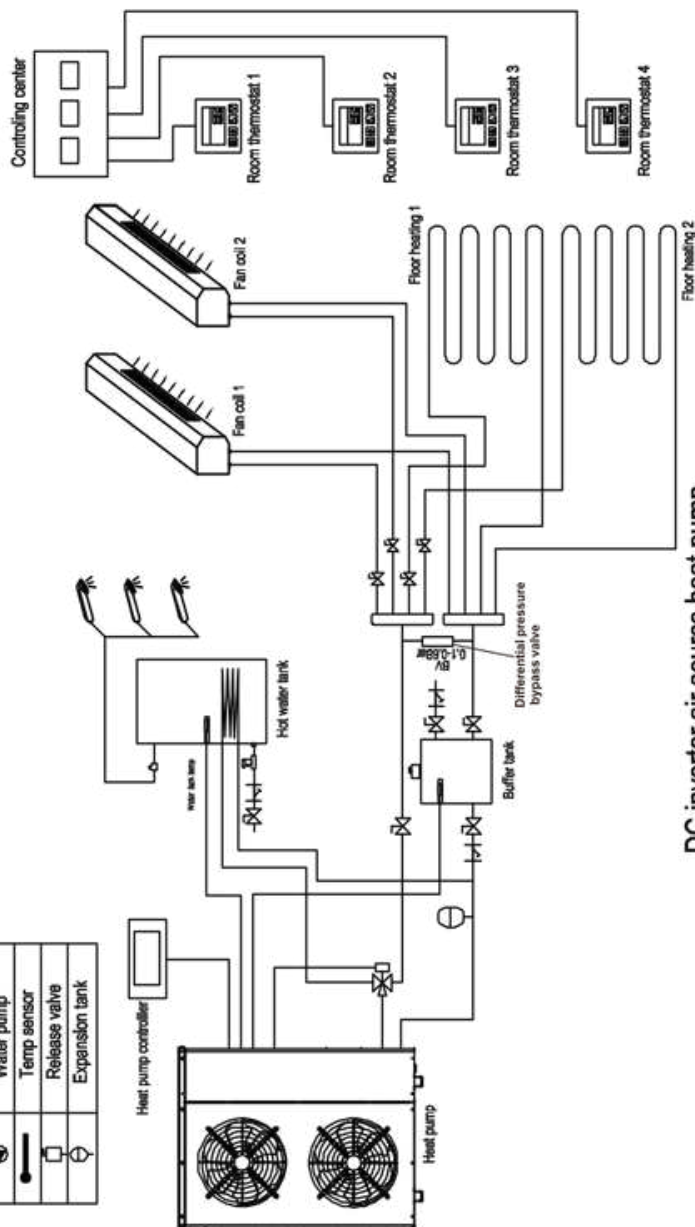


Primary circulation system

Notice:

1. Pls select the right modes according to your demand then install it according to the installation diagram. If only hot water function required, pls select heating+hot water mode, and then put the hot water sensor into the hot water tank.
2. Fan coil can be controlled by linkage thermostat shall be installed.
3. This is primary circulation system; if you not need to control the temperature by different zone, you can use this system.

Symbol	Name
	3-way valve
	2-way valve
	Ball valve
	Non-return valve
	Filter
	Water pump
	Temp sensor
	Release valve
	Expansion tank



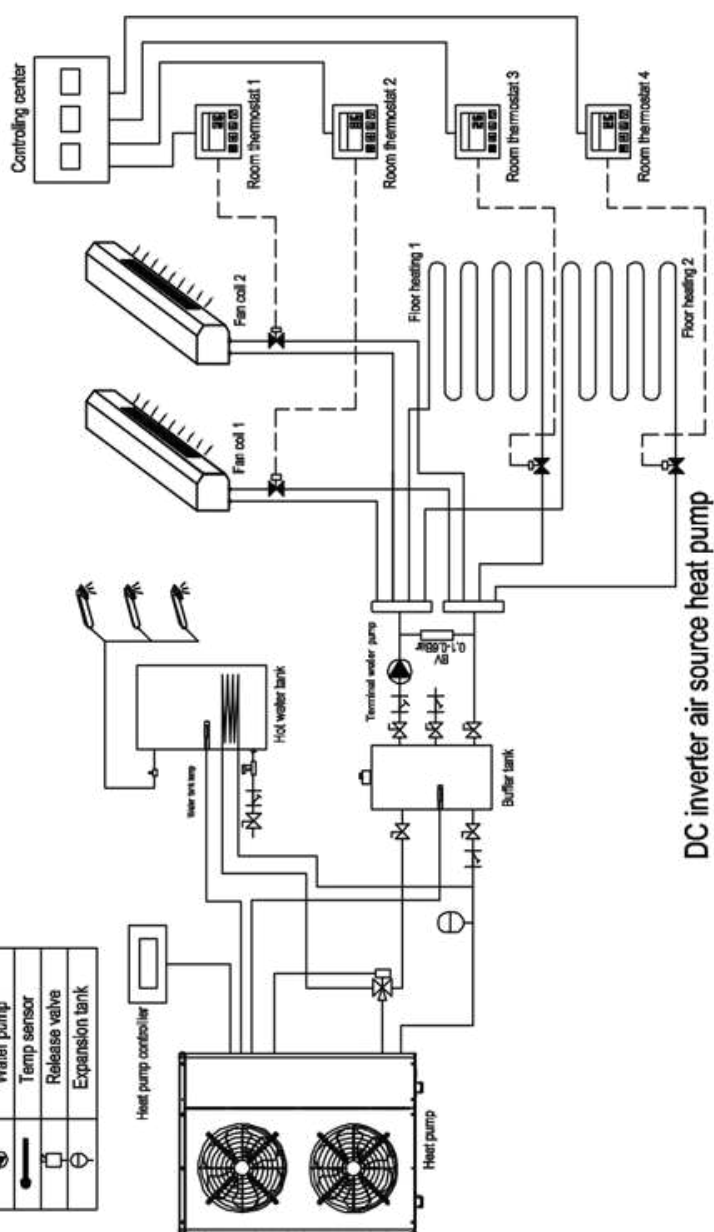
DC inverter air source heat pump

Secondary circulation system

Notice:

1. P's select the right modes according to your demand then install it according to the installation diagram. If only hot water function required, pls select heating-hot water mode, and then put the hot water sensor into the hot water tank.
2. Two-way valve and BV valve are optional for installation. Only if you need to control the temperature by different zone, then pls install both.
3. Fan coil can be controlled by linkage with the secondary circulation pump. Meanwhile, a passive linkage thermostat shall be installed.

Symbol	Name
	3-way valve
	2-way valve
	Ball valve
	Non-return valve
	Filter
	Water pump
	Temp sensor
	Release valve
	Expansion tank



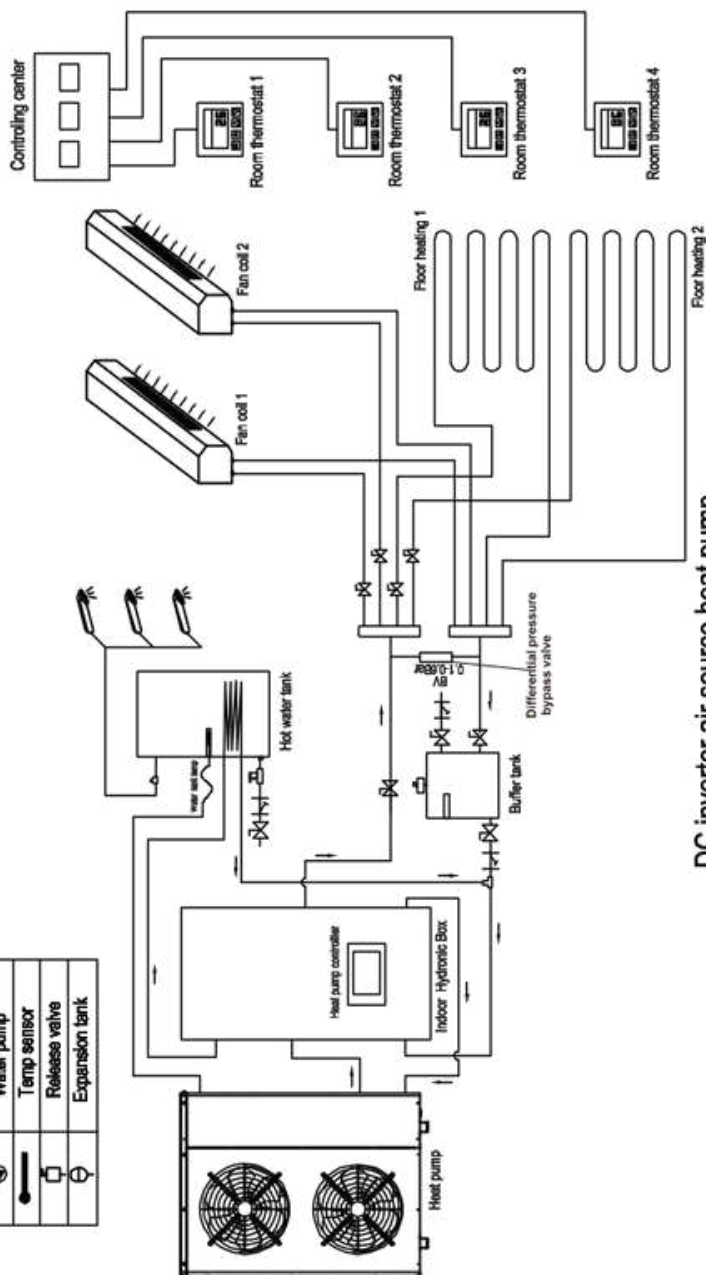
DC inverter air source heat pump

Heat pump Installation system (outdoor unit & Indoor Hydronic Box)

Notice:

1. Pls select the right modes according to your demand then install it according to the installation diagram. If only hot water function required, pls select heating+hot water mode, and then put the hot water sensor into the hot water tank.
2. Fan coil can be controlled by linkage thermostat shall be installed.
3. This is primary circulation system, if you not need to control the temperature by different zone, you can use this system.

Symbol	Name
	3-way valve
	2-way valve
	Ball valve
	Non-return valve
	Filter
	Water pump
	Temp sensor
	Release valve
	Expansion tank



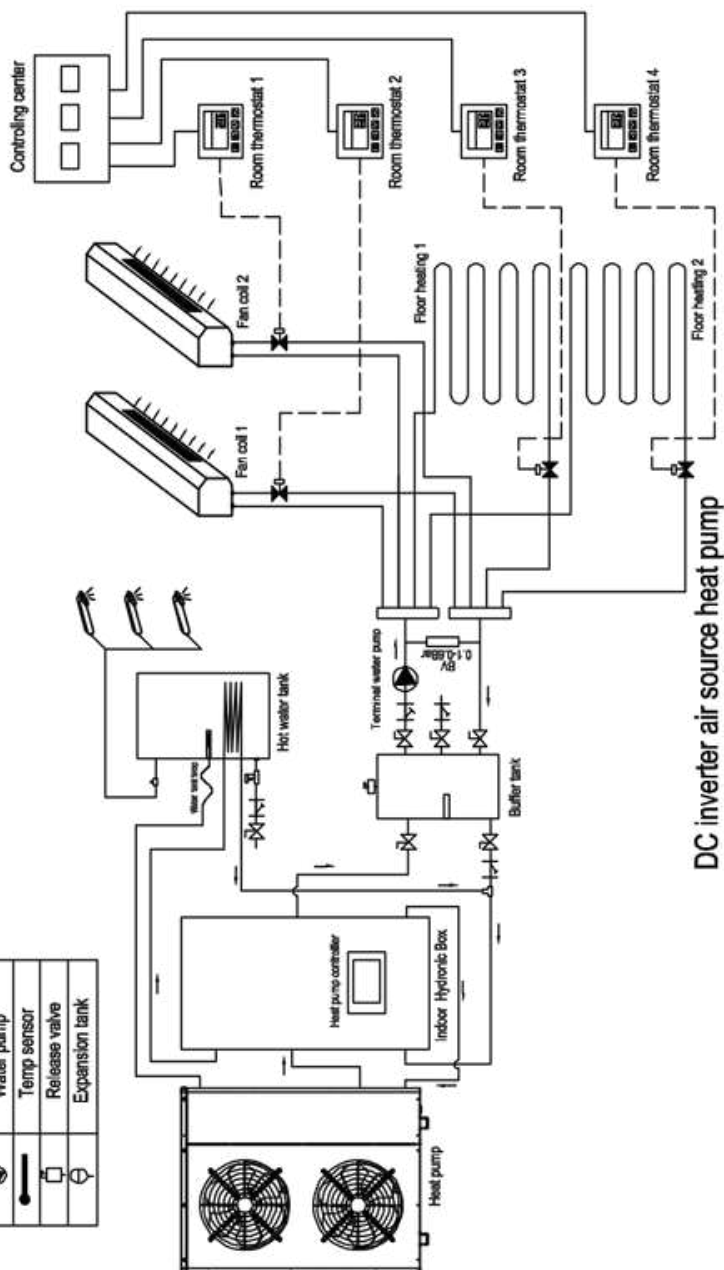
DC inverter air source heat pump

Heat pump Installation system (outdoor unit & Indoor Hydronic Box)

Notice:

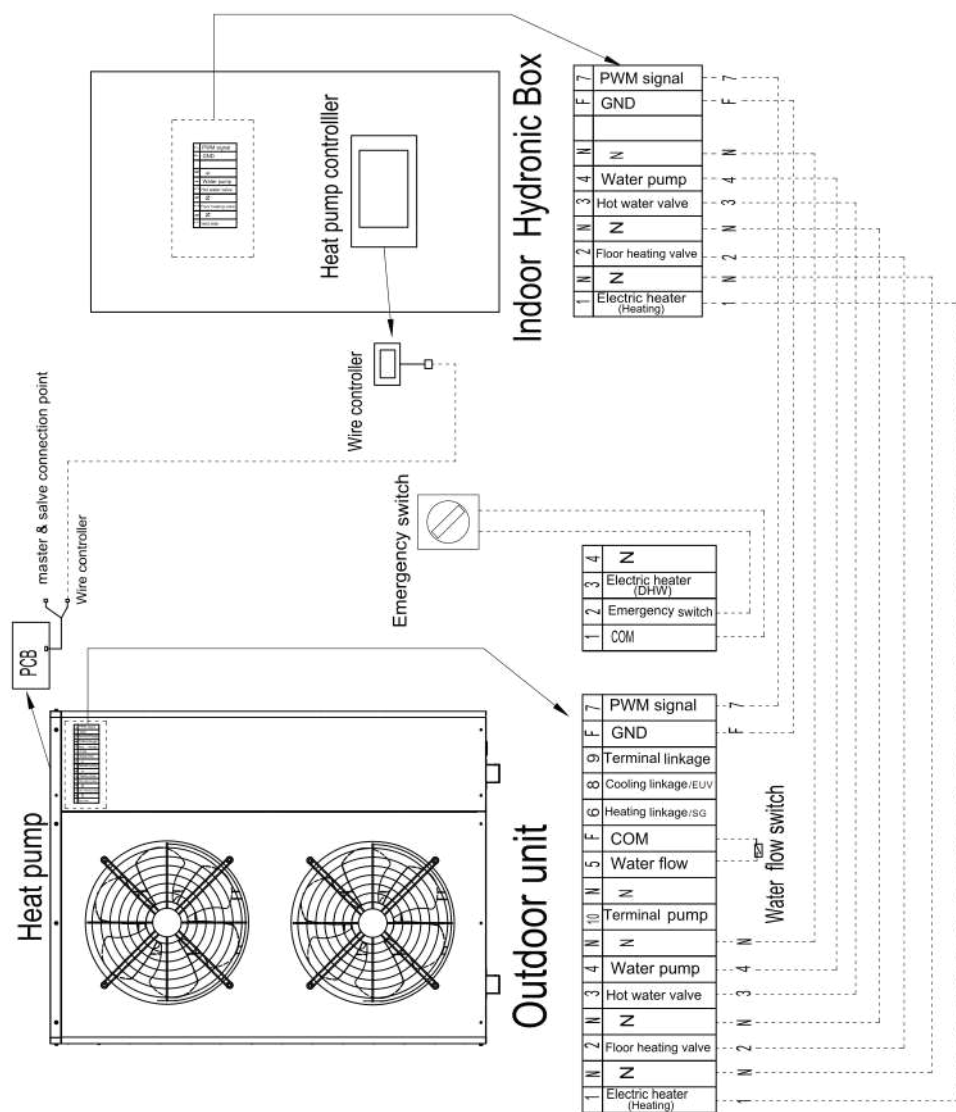
1. Pls select the right modes according to your demand then install it according to the installation diagram. If only hot water function required, pls select heating+hot water mode, and then put the hot water sensor into the hot water tank.
2. Two-way valve and BV valve are optional for installation. Only if you need to control the temperature by different zone, then pls install both.
3. Fan coil can be controlled by linkage with the secondary circulation pump. Meanwhile, a passive linkage thermostat shall be installed.

Symbol	Name
	3-way valve
	2-way valve
	Ball valve
	Non-return valve
	Filler
	Water pump
	Temp sensor
	Release valve
	Expansion tank

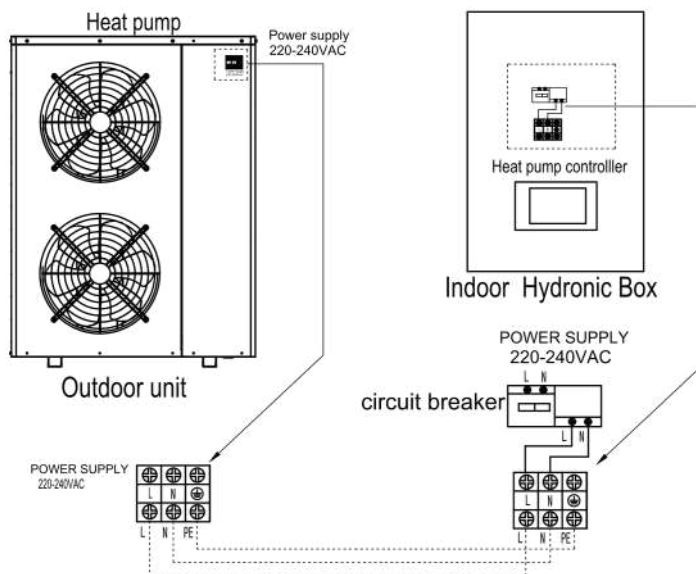


DC inverter air source heat pump

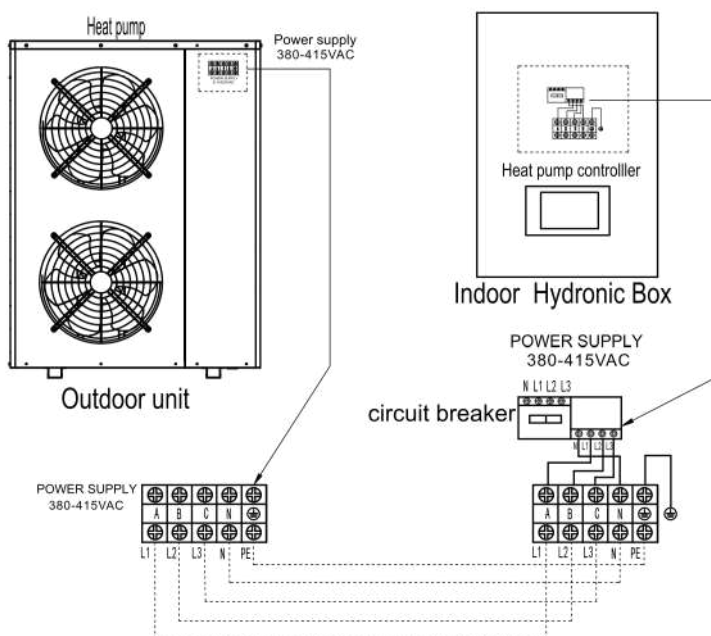
Electrical wiring connections between the outdoor unit and the indoor unit

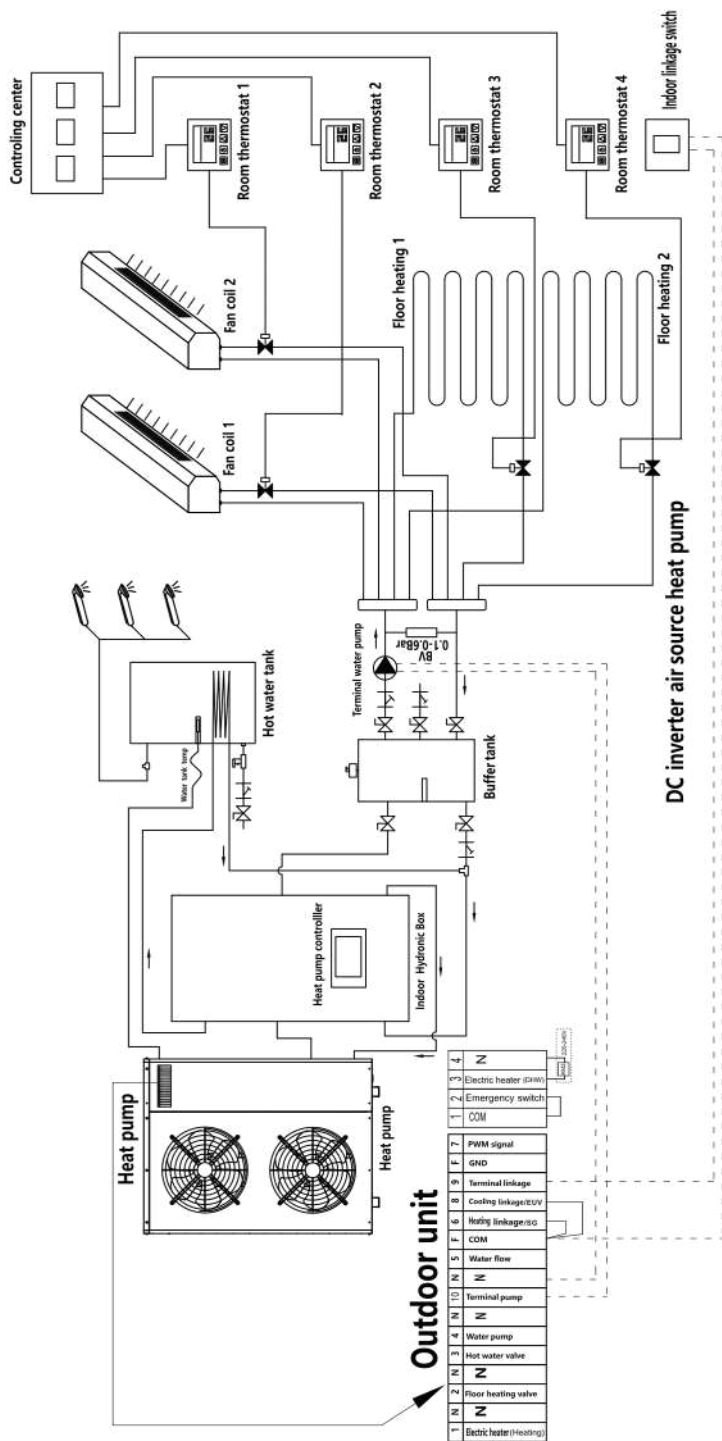


220-240VAC/50-60Hz



380-415VAC/50-60Hz





Tips for installation related to the water pipe part:

Install a valve at the highest point of each water circulation for releasing air from water system.

A Y-shape filter is very important in front of circulating water pump of heat pump.

If more pieces heat pump installed in one water pipe system, the connection of these heat pumps can't be in series, only can be in parallel or independent.

Pre-start up

Checking before pre-start up

Check if the water pipe are connected well and if there is any leakage. The water supply valve are open.

Make sure the water flow is enough and meet the demand of the heat pump selected and water flow smoothly without air. In cold area, pls make sure that the water flow is without freezing.

Check if the power cable is connected well and properly grounded.

Check if fan blade is blocked by the fixing plate of fan blade and fan blade protecting grill.

Check if the tank has been filled with water or enough water volume that can meet the demand of heat pump running.

△ If everything above is OK, the unit can start up. If any of them fails, please improve it.

Pre-start up

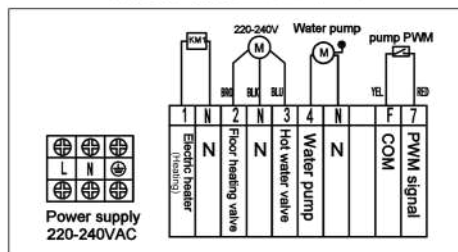
After check completely and confirm no problem for installation, the unit can be power to start up.

After connect power supply, heat pump delay 3mins to start. Check carefully is there is some abnormal noise or vibration or if the working current is normal or if water temp increasing is normal.

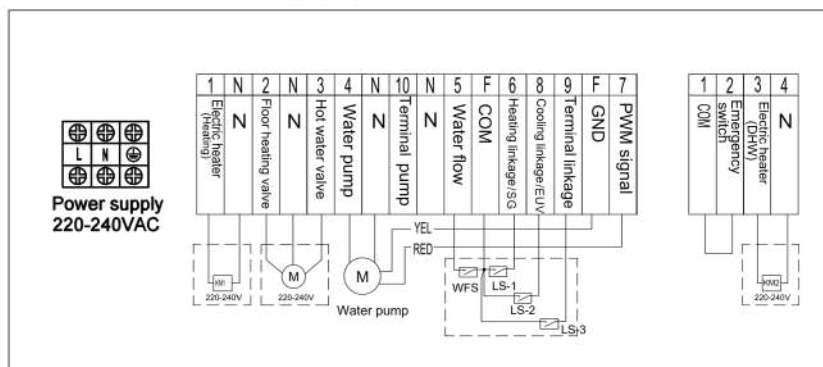
After the unit is working properly for 10 minutes without any problem, then the pre-start up is usefully completed. If not, pls refer to service and Maintenance.

Terminal connection mode of heat pump

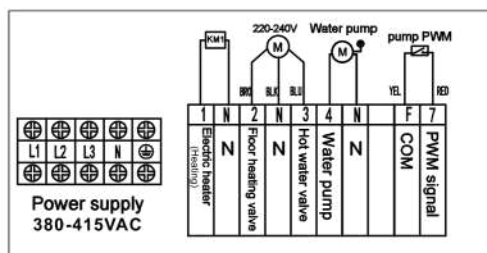
Indoor unit 220-240VAC



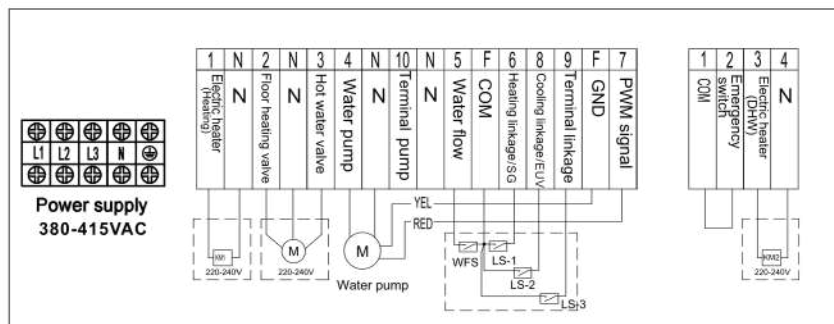
Outdoor unit 220-240VAC



Indoor unit 380-415VAC



Outdoor unit 380-415VAC

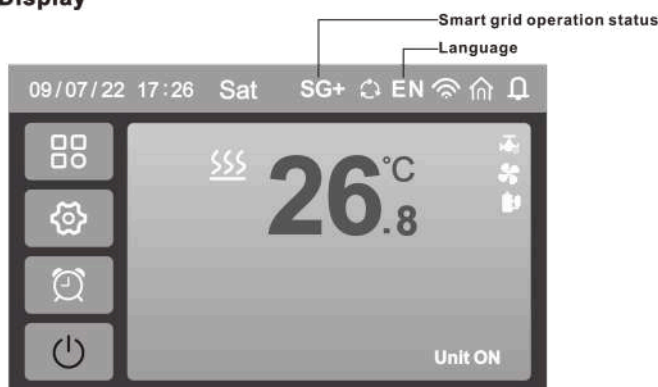


Part 2. Use

Operation panel instruction

1.Wire Controller Display

Display Icon



1、Clock setting: **09/07/22 17:26 Sat** Place on the clock position, then enter the clock setting interface.

2、Press  icon to switch between the dynamic main interface/concise main interface.

3、Press  icon to return to the main interface (dynamic/simple).

4、Press  icon to view faults, the icon shows red when there is a current fault.

5、 : Compressor running  : fan running  : water pump running

6、 **25.1°C**
 **24.4°C**

The upper part is the inlet water temperature and the lower part is the tank temperature (only available when the model is selected with hot water mode), click on the temperature position to enter the water temperature setting interface.

 : Heating mode

 : Hot water mode

 : Cooling mode



1.On/off button, click to set the switch according to the prompt box; the button is white when switched off and red when switched on.



2.Mode button, click to enter the mode selection screen.



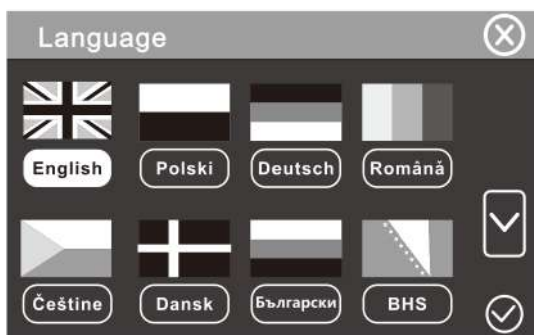
3.Menu key, click to enter the function menu selection screen.



4.Timer key, click to enter the timer setting interface; red is displayed when the timer is in use, white is displayed when the timer is not in use

**UNIT BY
READY**

5.Language (10 Languages)

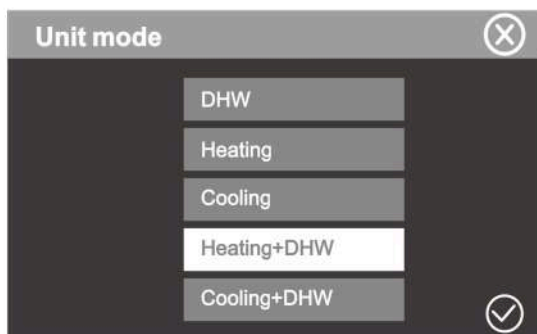


6.Display the status of the machine

Interface for turn on/off.



Interface for choose mode.



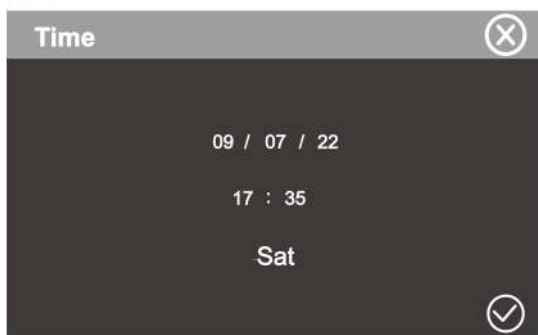
Click on the corresponding mode, select the mode, then click  icon to confirm the mode selection and return to the main screen; or click  icon to cancel the selection and return to the main screen.

Timer settings screen



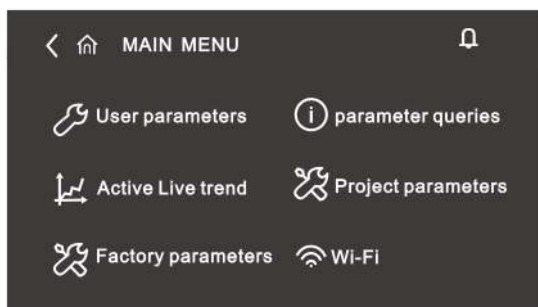
1. Click  icon, Turn on/off the corresponding timer function, with the possibility of setting 3 timer segments.
2. Click on the clock position, and you can set the week, hour, minute, and set temperature corresponding to the timing.
3. Click  or icon, Save settings and return to the main screen.
4. Click  icon, Switch timing page.

Clock setting interface:

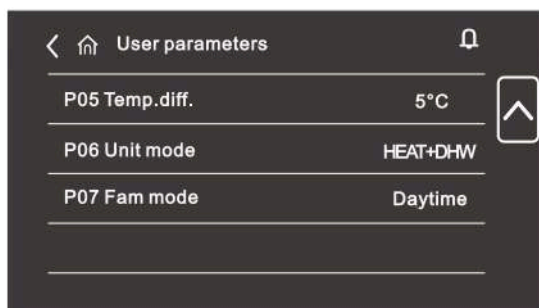
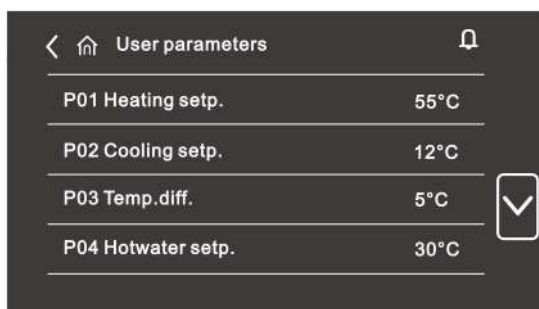


1. Click the corresponding position of the clock to set the clock.
2.  Save the set clock and return to the main interface.
3.  Cancel the setting and return to the main interface.

Main Menu:



User parameter:

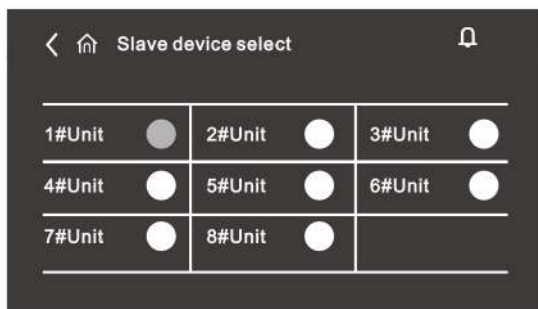


User setting parameter:

Setting of heating temperature, cooling temperature, cooling/heating return temperature, hot water temperature & hot water return temperature (only available in hot water mode)

Parameter	Description	Range	Initial value
P01	Heating setp	10°C~75°C	45°C
P02	Cooling setp	12°C~30°C	12°C
P03	Temp.diff	2°C~18°C	5°C
P04	Hotwater setp	10°C~75°C	50°C
P05	Temp.diff	2°C~18°C	5°C
P06	Unit mode	DHW/Heating/Cooling/Heating+DHW/Cooling+DHW	HEAT+DHW
P07	Fan mode	Daytime mode/ECO mode/Night mode/Test mode	Daytime

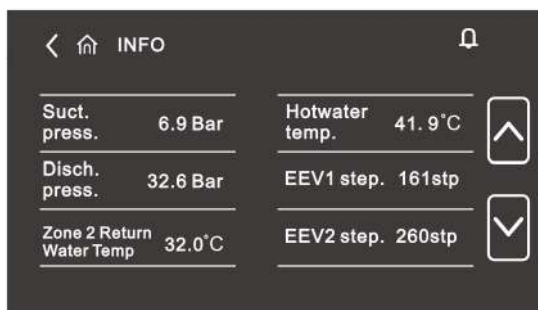
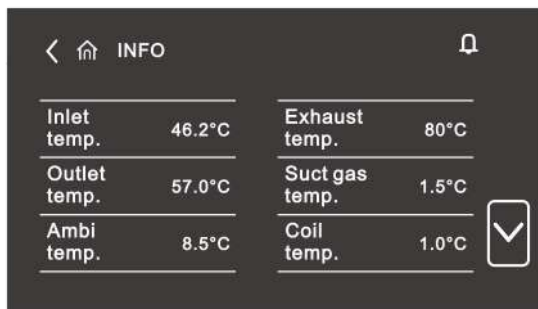
Parameter queries:



Unit heat pump status, icon indicating that the detection is online, icon indicating that the detection is offline.

Click the online unit to enter the next level menu, click the offline unit is invalid;

Long press a unit, the corresponding unit enters the forced defrost, if the unit meets the defrost temperature condition can enter the defrost.



INFO		
Comp. current	7A	
Comp. frequency	69Hz	
Driving temp.	40.0°C	
Evap. temp.	8.3°C	
DC bus voltage	518V	
Cond. temp.	36.5°C	

INFO		
DC fan 1 speed	790r pm	
DC fan target	800r pm	
DC fan 2 speed	790r pm	
DC pump flow	2.20m³/h	
DC pump speed	100%	

</

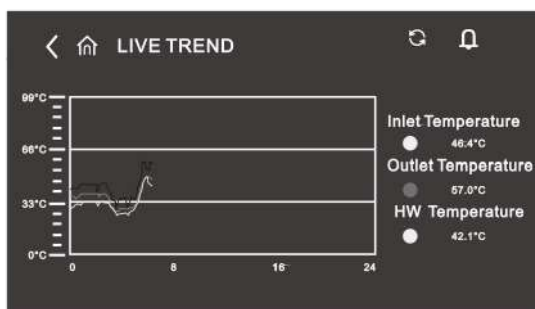
Digital input status		
Flow switch	ON	
Cooling linkage	ON	
Linkage switch	ON	
Heating linkage	ON	
A/C Linkage switch	ON	

Digital output status					
DC Pump	OFF	Three-way valve	OFF	↑	
Chassis heater	OFF	Heating heater	OFF		
Crank heater	OFF	Hotwater heater	OFF	↓	

Digital input status					
SG grid singal	OFF			↑	
EUV powered signal	OFF				
				↓	

INFO					
A-phase voltage	384V	A-phase current	3.6A	↑	
B-phase voltage	384V	B-phase current	4.0A		
C-phase voltage	384V	C-phase current	3.7A	↓	

Active Live trend:



1. View the temperature for 24 hours, including the inlet water temperature, outlet water temperature and tank temperature (for models with no hot water dispenser selected, the tank temperature is displayed as 0).

2. Click  icon to clear the record.

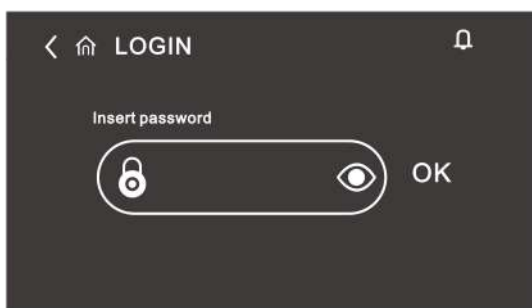
Project parameters:

Enter the password. Set the parameters for economy mode, language setting, germicidal setting and project setting.

factory parameters

Enter the password. Set the settings for the main electronic expansion valve, auxiliary electronic expansion valve, defrost parameters, fan parameters, other parameters and frequency parameters.

Password screen



History of faults record

Time	Description
24/01/22 17:48	#01 E63 Eco outlet TP failure
24/01/22 17:48	#01 E62 Eco Inlet TP failure
24/01/22 17:48	#02 E27 Water Out TP failure
24/01/22 17:48	#02 E16 Coil TP failure
24/01/22 17:48	#02 E21 Air TP failure
24/01/22 17:48	#02 E14 Water Tank TP failure

The last 6 faults can be displayed.

Click  icon to switch between the current fault screen and the history of faults record.

Click  icon to clear the history of faults .

End pump selection (only available for mode with 2 Zone Temp.control function) :

Parameter F24 is set to 1, and the end pump of zone 2 start running;

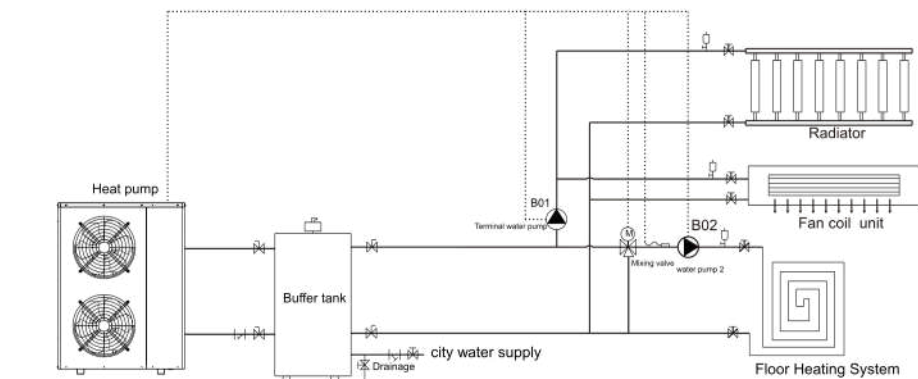
Parameter F24 is set to 0, and the end pump of zone 2 stop running.

MAIN MENU → Factory parameters → Other settings.

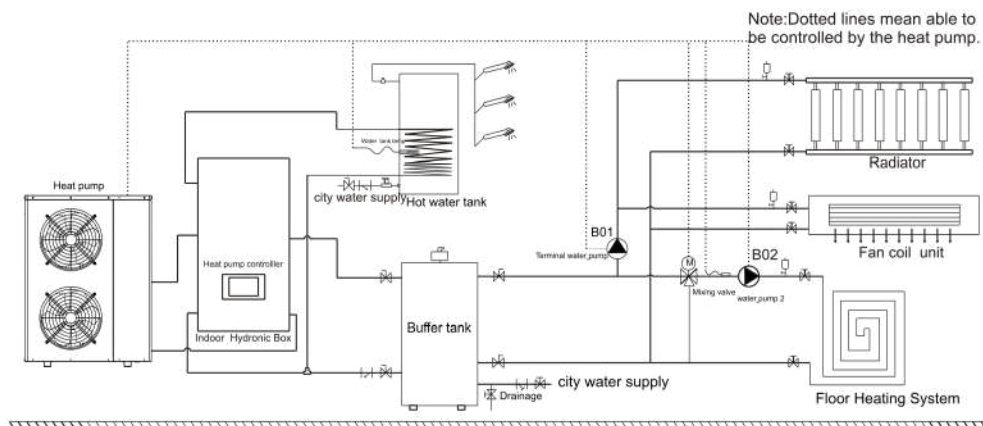
To enter the parameters of F24-F26, you need to enter a password. Please Contact technical personnel for the password.

Parameter	Definition	Range	Default
F24	Zone 2 function ON /OFF	0 -OFF/1-ON	0
F25	Zone 2 setting Temp	10 - 60°C	40°C
F26	Zone 2 Delta Temp	2 - 18°C	4°C

Note:Dotted lines mean able to be controlled by the heat pump.



Two Temperature Zones



Two Temperature Zones

SG(SMART GRID) ready Function

When the smart grid parameter G13 is selected as YES, the heat pump starts to operate this function, and the ports are SG and EUV respectively.

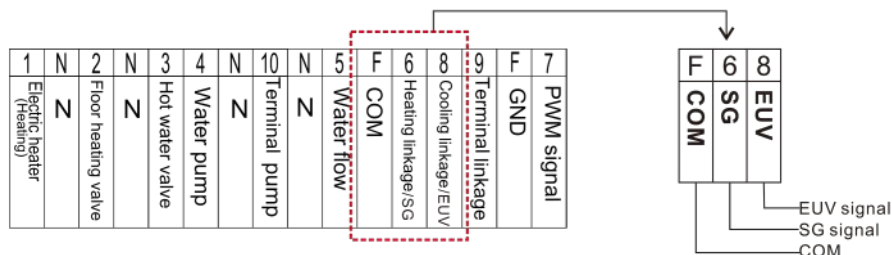
When the smart grid parameter G13 is set to NO, the heat pump stops running this function. .

MAIN MENU → Project parameters → Project settings.

To enter the parameters of the G13-G23 smart grid, you need to enter a password. Please Contact technical personnel for the password.

Under Heating+DHW, Cooling+DHW, DHW:

SMART GRID			
Running state	SG	EUV	Display on the wire controller
Reduce heating capacity	OFF	OFF	No display
Normal operation	ON	OFF	SG+
Increase heating capacity	ON	ON	SG+
	OFF	ON	SG-

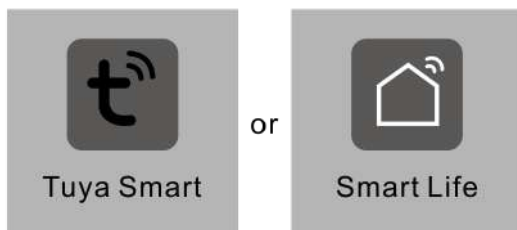


2.WIFI remote control (this function is only valid for some models with WIFI function)

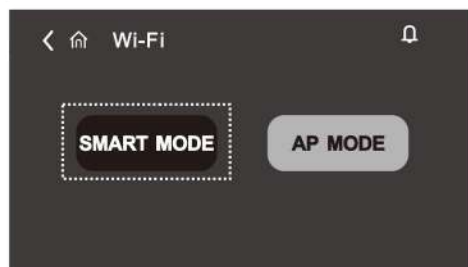
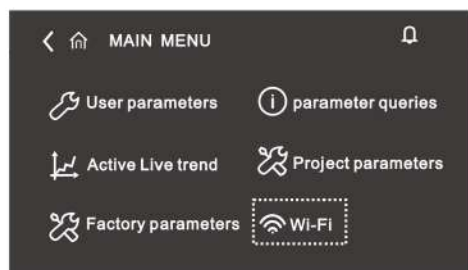
Download APP

1.First,enter the mobile phone's application store, download the "Tuya Smart"or " Smart Life" APP, and then run the APP after the download is complete.

2.Turn on the Bluetooth function of the phone, the WIFI network needs to be in the 2.4G band (not the 5G band) and also ensure that the WIFI connection has a good signal;



3.Press and hold "SMART MODE"icon on the wire controller to enter the AP configuration network, and the WiFi icon"  " on the wire controller will be flashes.



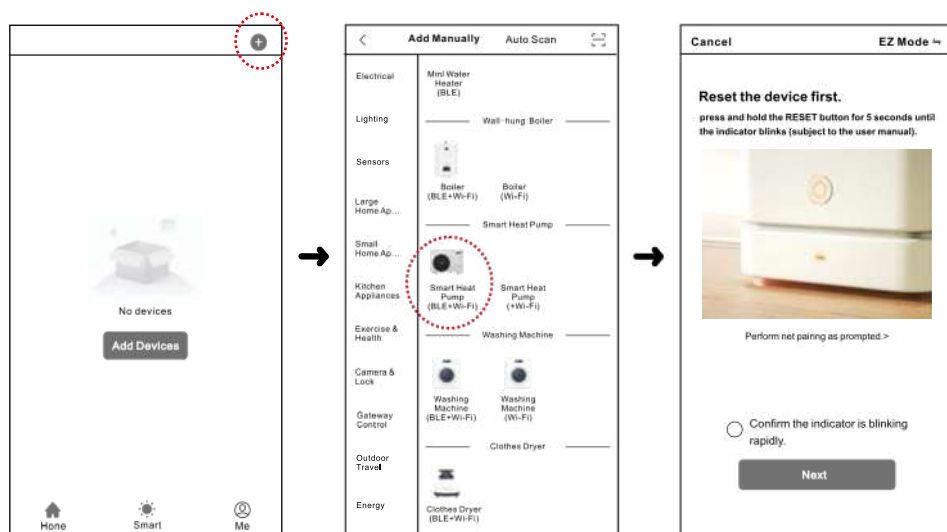


4. Turn On the APP, click the " + " in the upper right corner, then click "Large Home APP", and then click "Smart Heat Pump (BLE+Wi-Fi)" to connect the WIFI.

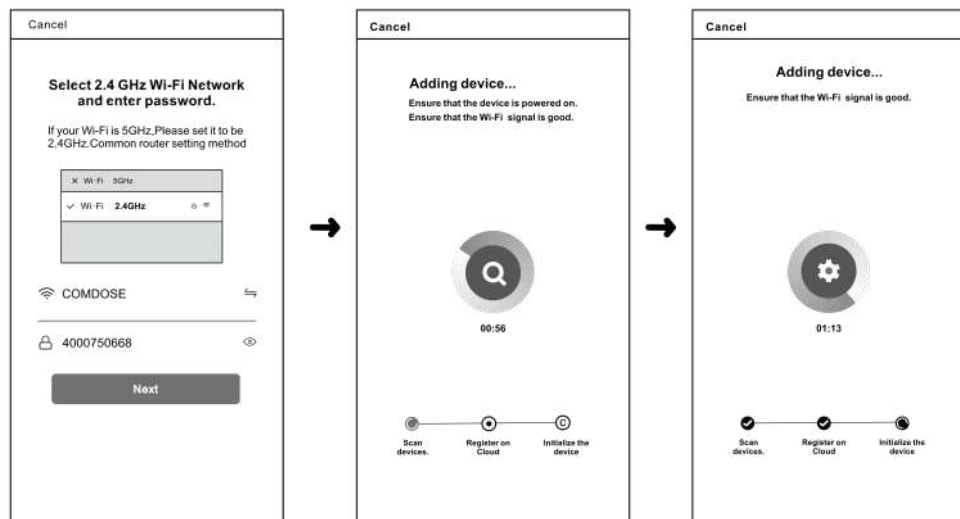


Smart Heat Pump
(BLE+Wi-Fi)

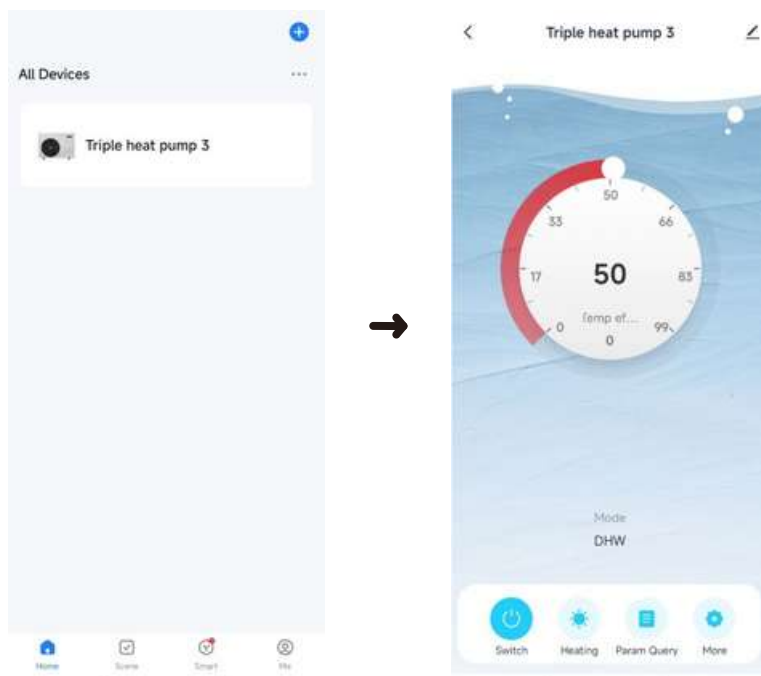
Connect Wifi : Click " + " in the next interface to display the currently recognized WIFI name, then enter the PASSWORD of the current WIFI, and then click "NEXT".



5. Click to select "Confirm the indicator is blinking rapidly", and then click "NEXT", the APP will automatically search for the current UNIT, and it will show that the addition is successful after completion.

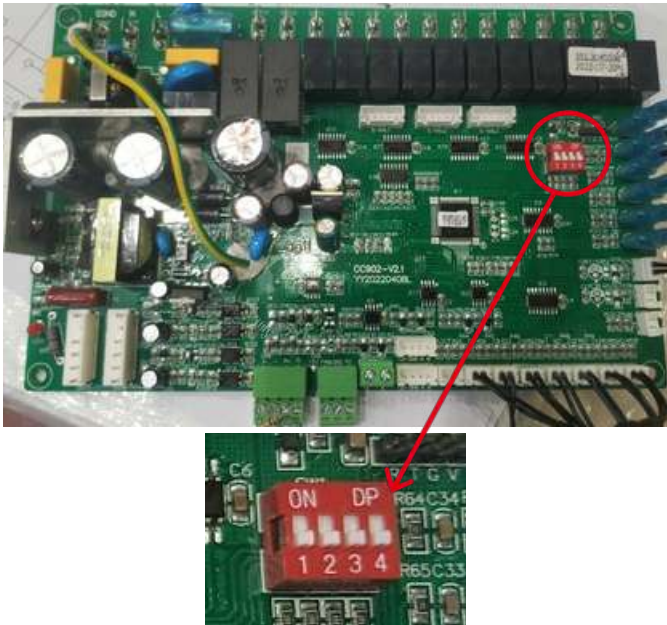


6. Enter the display interface of the current UNIT, click the "unit" device, you can view the water temperature and can set the set water temperature and mode of the device.



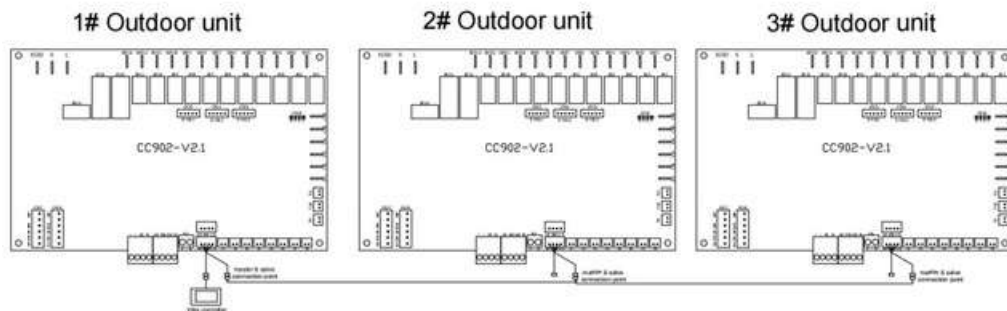
3.Cascade Connection (Master & Salve) Operation Instructions

1.the dial switch on the main board need to set well, 1#Unit / 2#Unit / 3#Unit / 4#Unit.....The maximum number of salve unit in cascade is 8.

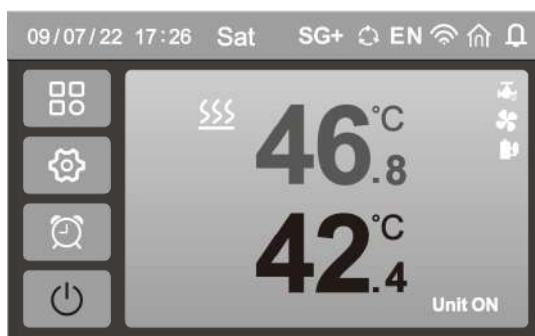


SW1 ONDP 1 2 3 4 1# Unit	SW1 ONDP 1 2 3 4 5# Unit
SW1 ONDP 1 2 3 4 2# Unit	SW1 ONDP 1 2 3 4 6# Unit
SW1 ONDP 1 2 3 4 3# Unit	SW1 ONDP 1 2 3 4 7# Unit
SW1 ONDP 1 2 3 4 4# Unit	SW1 ONDP 1 2 3 4 8# Unit

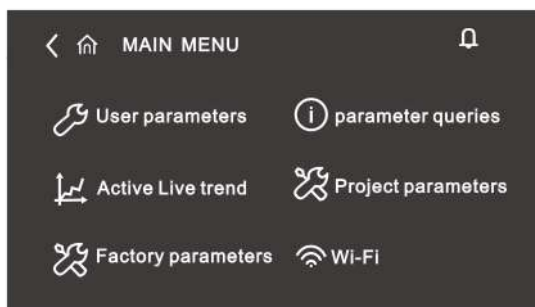
2.The PCB board connection of each heating unit, as shown in the figure below.



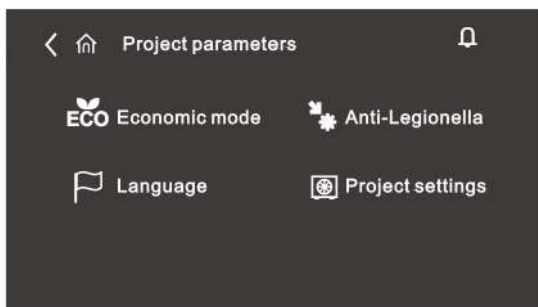
3.Click the “” to enter into the main menu.



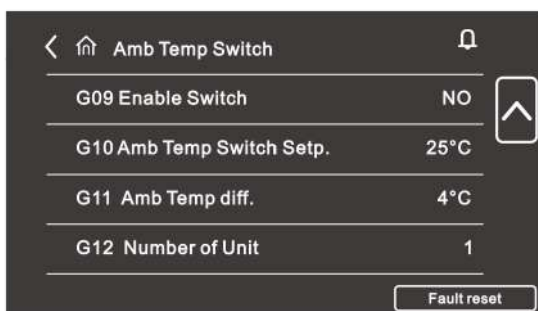
4.Enter the “Project Parameters” from the Main Menu and enter the password 0816.



5. Enter the "Project Settings"



6. Change the "G12 Number of Unit" to 2-8 (The number is setted according to the actual online units required).



7. Finish the cascade setting, can be started.

Part3. Maintenance and repairing.

1、Maintenance Tips

The heat pump unit is a highly automated equipment. The unit status check is carried out regularly during use. If the unit can be maintained and maintained for a long time and effectively, the unit's operational reliability and service life will be unexpectedly improved.

1. Users should pay attention to the use and maintenance of this unit: all safety protection devices in the unit are set before leaving the factory, do not adjust by yourself;
2. Always check whether the power supply and electrical system wiring of the unit is firm, whether the electrical components are malfunctioning, and if necessary, repair and replace them in time;
3. Always check the water system's hydration, the water tank safety valve, the liquid level controller and the exhaust device to work properly, so as to avoid the air circulation into the system and reduce the water circulation, thus affecting the unit's heating capacity and unit operation reliability;
4. The unit should be kept clean and dry and well ventilated. Regularly clean (1-2 months) air-side heat exchangers to maintain good heat transfer;
5. Always check the operation of each component of the unit, check the oil pipe at the pipe joint and the gas valve, and ensure that the refrigerant of the unit is not leaking;
6. Do not stack any debris around the unit to avoid blocking the air inlet and outlet. The unit should be clean and dry and well ventilated.
7. If the downtime is long, the water in the unit piping should be drained, and the power supply should be cut off and the protective cover should be placed. When running again, check the system thoroughly before starting up;
8. If the unit fails and the user cannot solve the problem, please inform the company's special maintenance department in order to send someone to repair it in time;
9. The main unit condenser cleaning, the company recommends using a 50 ° C concentration of 15% hot oxalic acid to clean the condenser, start the host with a circulating water pump for 20 minutes, and finally rinse with tap water 3 times. (It is recommended to reserve a three-way interface when installing the pipe and seal one interface with a wire plug) in case of cleaning. Do not wash the condenser with a corrosive cleaning solution. The water tank needs to be removed after a period of use (usually two months, depending on local water quality).

2、Error input and protection alarm

Code	Description	Possible cause	Check & solution
Er 03	Water flow failure	1. Pump failure. 2. The water pipeline is blocked. 3. The water flow of the pump is low.	1.Check if water pump broken and replacement needed. 2. Clean the pipes of the water circuit. 3. Replace the water pump with one with higher water flow.
Er 04	Antifreeze in winter	Too low ambient temp. and water entering temp.	No action required.
Er 05	High pressure fault	1.Too much refrigerant filled in. 2.Liquid-like refrigerant flows from evaporator into compressor. 3.EE valve failure.	1.Discharge certain refrigerant. 2.Check and adjust EE valve,make sure EE valve sensor is well connected with return gas pipe. 3.Check if EE valve broken and replacement needed.
Er 06	Low pressure fault	1.Check if dry filter jammed. 2.Failure of EE valve. 3.Lack of refrigerant.	1.Check repair or replace filter. 2.Check if EE valve broken and replacement needed. 3.Refill certain refrigerant.
Er 09	Communication failure	Communication failure between PCB and controller.	Check if connection in good condition or replacement needed.
Er 10	Communication failure of frequency conversion module (alarm when communication between outer board and drive board is disconnected)	The communication line between the main board and the driver board is disconnected	Check if connection in good condition or replacement needed.
Er 12	Exhaust temp too high protection	Temp.sensor broken or not enough refrigerant.	Raplace temp.sensor or fill in certain refrigerant.
Er 14	Water tank temperature sensor fault	Temp.sensor short circuit or open circuit.	Check if temp.sensor in good conditions,or replace related sensor.
Er 15	Water inlet temperature sensor fault	Temp.sensor short circuit or open circuit.	Check if temp.sensor in good conditions,or replace related sensor.
Er 16	Evaporator coil temperature sensor fault	Temp.sensor short circuit or open circuit.	Check if temp.sensor in good conditions,or replace related sensor.
Er 18	Exhaust temperature fault	Temp.sensor short circuit or open circuit.	Check if temp.sensor in good conditions,or replace related sensor.
Er 20	Abnormal protection of frequency conversion module	1. Frequency drive failure, need to check the specific fault serial number.	Determine the cause of the fault according to the corresponding fault serial number.
Er 21	Ambient temperature sensor fault	Temp.sensor short circuit or open circuit.	Check if temp.sensor in good conditions,or replace related sensor.
Er 23	Cooling outlet water temperature supercooling protection	1. The water pipeline is blocked. 2. The water flow of the pump is low.	1. Clean the pipes of the water circuit. 2. Replace the water pump with one with higher water flow.
Er 26	Heat sink temperature fault	1. DC fan speed is low or not turning. 2. The temperature sensor of radiator is bad.	1. Replace the DC fan or PCB motherboard. 2. Replace the new temperature sensor
Er 27	Outlet water temperature sensor fault	Temp.sensor short circuit or open circuit.	Check if temp.sensor in good conditions,or replace related sensor.
Er 29	Return gas temperature sensor fault	Temp.sensor short circuit or open circuit.	Check if temp.sensor in good conditions,or replace related sensor.
Er 32	Heating too high outlet water temperature protection	1. The water pipeline is blocked. 2. The water flow of the pump is low.	1. Clean the pipes of the water circuit. 2. Replace the water pump with one with higher water flow.
Er 33	Coil temperature too high	1. DC fan speed is low or not turning. 2. The heatsink temperature sensor is bad.	1. Replace the DC fan or PCB motherboard. 2. Replace the temperature sensor.
Er 34	The temperature of frequency conversion module is too high	1. DC fan speed is low or not turning. 2. The frequency of compressor is too high.	1. Replace the DC fan. 2. Reduce the speed of compressor.

Er 42	Cooling coil temperature sensor failure	Temp.sensor short circuit or open circuit.	Check if temp.sensor in good conditions,or replace related sensor.
Er 44	Air temp too low	Low ambient temperature	Suspend use and drain the pipe.
Er 64	DC fan 1 fault	1. Factory parameters of the DC fan parameters are not set correctly. 2. DC fan is bad.	1. Check the factory parameters of the DC fan parameters to change to 1. 2. Replace the DC fan.
Er 66	DC fan 2 fault	1. Factory parameters of the DC fan parameters are not set correctly. 2. DC fan is bad.	1. Check the factory parameters of the DC fan parameters to change to 1. 2. Replace the DC fan.
Er 67	Low pressure switch failure	1. Low pressure pressure sensor is wired incorrectly. 2. Low pressure pressure sensor is bad.	1. Change the low pressure pressure sensor wiring to the correct connection. 2. Replace the low pressure sensor with a new one.
Er 68	High pressure switch failure	1. High pressure pressure sensor is wired wrongly. 2. High pressure pressure sensor is bad.	1. Change the wiring of high pressure pressure sensor to the correct connection. 2. Replace the new low pressure pressure sensor.
Er 69	Too low pressure protection	1.Check if dry filter jammed. 2.Failure of EE valve. 3.Lack of refrigerant.	1.Check repair or replace filter. 2.Check if EE valve broken and replacement needed. 3.Refill certain refrigerant.
Er 70	Too high pressure protection	1.Too much refrigerant filled in. 2.Liquid-like refrigerant flows from evaporator into compressor. 3.EE valve failure.	1.Discharge certain refrigerant. 2.Check and adjust EE valve,make sure EE valve sensor is well connected with return gas pipe. 3.Check if EE valve broken and replacement needed.

3、 Other problem and repairing

No	Error	Possible reason	Method
1	Heat pump doesn't run	1. Power supply cable is loose 2. The fuse of power supply is fused.	1. Cut off the power supply to check and repair. 2. Change the fuse.
2	Heating capacity is too small	1. Refrigerant is not enough 2. Water system insulating is not good 3. Air heat exchanger is dirty 4. Water heat exchanger scaled	1. Check leakage and repair and refill gas 2. Improve the insulation 3. Clean air heat exchanger 4. Clean water heat exchanger
3	Compressor doesn't run	1. Power supply has error 2. Cable connecting is loose 3. Compressor is overheat	1. Check reason and solve 2. Check loose and repair 3. Check reason and repair
4	Compressor noise is loud	1. Expansion valve damaged lead to liquid entering compressor 2. The internal parts of compressor damaged 3. Compressor lack of oil	1. Change expansion valve 2. Change compressor 3. Compensate oil for compressor
5	Fan motor doesn't run	1. Fan blade fixing screw is loose 2. Fan motor damaged 3. Fan motor capacitance damaged	1. Tight the screw 2. Change fan motor 3. Change the capacitance
6	Compressor run, but not heat	1. There is not refrigerant at all 2. Compressor damaged	1. Check leakage and repair 2. Change compressor

Warranty card

Product model:

Bar code:

[illegible]

Items of warranty

1. Warranty terms: _____ ; Within warranty, any problem because of quality, please contact us for support.
2. When repair needed, please show the warranty card and invoice of order or other proof.
3. We don't afford the problem that is caused by re-fitment or adding other function by user.
4. Warranty card and invoice or other purchasing proof will be invalid if alerted.
5. Please keep the warranty card and invoice or other purchasing proofs well, we will need these for service purpose.
6. We will not provide free warranty for below conditions:
 - (1) without proof;
 - (2) errors caused by re-fitment or not correct operating;
 - (3) damage caused by not professional people operating;
 - (4) faulty by moving or falling;
 - (5) faulty caused by natural disaster;
 - (6) After the power failure, the water in the pipeline of the unit was not discharged, which caused the unit to freeze.

CERTIFICATE

Product Model: _____

Bar code: _____

PRODUCT CERTIFICATE

Product model: See the nameplate of the indoor unit

Factory code: See body barcode

Date of manufacture: See body barcode

Inspection conclusion:

PASS
05

Inspector:

WESTON

CLIMATE

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